SCANNED

HEALTH AND SCIENCE BUILDING
ANTELOPE VALLEY COLLEGE

ARCHITECT: _____
IBP / ARCHITECTURE

SEAL

STRUCTURAL: _____
KPFF STRUCTURAL ENGINEERS

SEAL

MECHANICAL: _____
S & K ENGINEERS

SEAL

ELECTRICAL: _____
S & K ENGINEERS

SEAL

CIVIL ENGINEER: _____
VCA ENGINEERS, INC.

SEAL

DSA APPROVED

SFM APPROVED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

HEALTH AND SCIENCE BUILDING
ANTELOPE VALLEY COLLEGE
IBP PROJECT NO. 20641.00

APP03 1 1 2 2 0 1

AC PB FLS NUTAN RATEL SS SPA

DATE 10-13-09

AC-P. BISHOP

SIGNATURES
00005-1

PROJECT DIRECTORY

SITE ADDRESS	**ANTELOPE VALLEY COMMUNITY COLLEGE** 3041 West Avenue K Lancaster, CA 93536-5426
OWNER	**ANTELOPE VALLEY COMMUNITY COLLEGE DISTRICT** 3041 West Avenue K Lancaster, CA 93536-5426 (661) 722-6300 (661) 722-6532 FAX
Doug R. Jensen, Dir. of Facilities Planning	djensen@avc.edu
PROGRAM MANAGER	**KLASSEN CORPORATION** 2021 Westwind Drive Bakersfield, CA 93301 (661) 324-3000 (661) 324-3900 FAX
L. Phil Klassen, V. P.	lphil@klassencorp.com
Sam Kamand, Sr. Project Manager	samk@klassencorp.com
ARCHITECT	**tBP/ARCHITECTURE** 5455 Wilshire Boulevard, Suite 1200 Los Angeles, CA 90036 (323) 556-3788 (323) 556-3799 FAX
Jim Pan, Sr. Project Manager	jpan@tbparchitecture.com
Mika Klein, Project Architect	mklein@tbparchitecture.com
	1000 Burnett Avenue, Suite 140 Concord, CA 94520 (925) 246-6419 (925) 246-6495 FAX
Gabrielle Blackman, Principal Designer	gblackman@tbparchitecture.com
STRUCTURAL ENGINEER	**KPFF STRUCTURAL ENGINEERS** 2 North Lake Avenue, Suite 820 Pasadena, CA 91101 (626) 578-1121 (626) 578-9121 FAX
Aldrin J. Orue, S.E., Principal	aorue@kpff-pas.com
Gary Duncan, Project Manager:	gduncan@kpff-pas.com

PLUMBING, MECHANICAL AND ELECTRICAL ENGINEERS	**S & K ENGINEERS** 412 East Huntington Drive Monrovia, CA 91016 (626) 930-1383 (626) 930-1385 FAX
Manojit Sinha, Principal Mechanical	msinha@skengineers.com
Kevin Keyfauver, Principal Electrical	kkeyfauver@skengineers.com
Rob Vazquez, Project Manager, Plumbing	rvazquez@skengineers.com
John Holland, Mechanical Engineer	jholland@skengineers.com
Lester Jung, Electrical Engineer	ljung@skengineers.com
CIVIL ENGINEERS	**VCA ENGINEERS, INC.** 3951 Medford Street Los Angeles, CA 90063 (323) 729-6098 (323) 729-6043 FAX
Virgil C. Aoanan, PE, SE, Principal	vcaengineers@earthlink.net
Allan Lumidao, Project Engineer	allan.lumidao@sbcglobal.net
LANDSCAPE ARCHITECT	**MELENDREZ** 617 South Olive Street, Suite 1100 Los Angeles, CA 90014 (213) 673-4400 (213) 673-4410 FAX
Scott Baker, Principal	sbaker@melendrez.com
Willie Nishizawa, Associate	wnishizawa@melendrez.com
Darren Shirai, Sr. Designer	dshirai@melendrez.com
SPECIFICATIONS	**CHEW SPECIFICATIONS** 4381 Paseo Santa Catarina Newbury Park, CA 91320 (805) 375-0491 (866) 206-5566 FAX
Marvin Chew, Principal	chewspec@verizon.net
ACOUSTICAL ENGINEER	**ROWAN WILLIAMS DAVIES AND IRWIN INC.** 650 Woodlawn Road West Guelph, Ontario, Canada N1K 1B8 (519) 823-1311 (519) 823-1316 FAX
Darron Chin-Quee, Project Director	darron.chinquee@rwdi.com

LABORATORY CONSULTANT	**RESEARCH FACILITIES DESIGN** 3965 Fifth Avenue, Suite 300 San Diego, CA 92103 (619) 297-0159 (619) 294-4901 FAX
Sean Towne, Principal	set@rfd.com
Mark Ranyak, Laboratory Architect	mwr@rfd.com
Paul Lemestre, Mechanical Engineer	pl@rdf.com
Jim Cooley, Electrical Engineer	jc@rdf.com
TECHNOLOGY CONSULTANT	**VANTAGE TECHNOLOGY CONSULTING GROUP** 1600 Rosecrans Ave., Bldg 1B, Ste. 201 Manhattan Beach, CA 90266 (310) 536-7676 (310) 536-7677 FAX
Phil Crompton, Principal	phil.crompton@vantagetcg.com
Anthony Tima, Engineer	anthony.tima@vantagetcg.com
FOOD SERVICES CONSULTANT	**LASHOBER + SOVICH** 20315 Ventura Boulevard, Woodcourt Suite D Woodland Hills, CA 91364 (818) 713-9011 (818) 713-1104 FAX
Larry Lanier, President	llanier@lashobersovich.com
HARZARDOUS MATERIALS CONSULTANT	**SCHIRMER ENGINEERING CORPORATION** 21221 South Western Avenue, Suite 100 Torrance, CA 90501 (310) 782-0850 (310) 782-1970 FAX
Christopher Prueher, Sr. Consultant	chris_prueher@schirmereng.com
Steve Tollington	steve_tollington@schirmereng.com
PLANETARIUM CONSULTANT	**SPITZ, INC.** P.O. Box 198, Route 1 Chadds Ford, PA 19317 (610) 459-5200 (610) 459-3830 FAX
J. Allan Wells	awells@spitzinc.com

WIND STUDY CONSULTANT	**ROWAN WILLIAMS DAVIES AND IRWIN INC.** 650 Woodlawn Road West Guelph, Ontario, Canada N1K 1B8 (519) 823-1311 (519) 823-1316 FAX
Ryan Latchmann, Project Manager	rlatchmann@rwdi.com
Michael Ratcliff, Project Director	mratcliff@rwdi.com
Darron Chin-Quee, Acoustical Specialist	darron.chinquee@rwdi.com

HEALTH AND SCIENCE BUILDING
ANTELOPE VALLEY COLLEGE

ARCHITECT: _____
tBP ARCHITECTURE

LICENSED ARCHITECT
JIM C PAN
No. C 26074
REN. 4-30-11
STATE OF CALIFORNIA

SEAL

STRUCTURAL: _____
KPFF STRUCTURAL ENGINEERS

REGISTERED PROFESSIONAL ENGINEER
ALDRIN J. ORUE
No. 14399
Exp. 12/31/09
STRUCTURAL
STATE OF CALIFORNIA

SEAL

MECHANICAL: _____
S & K ENGINEERS

REGISTERED PROFESSIONAL ENGINEER
JOHN G. HOLLAND
No. M-20430
Exp: 6/30/10
MECHANICAL
STATE OF CALIFORNIA

SEAL

ELECTRICAL: _____
S & K ENGINEERS

REGISTERED PROFESSIONAL ENGINEER
LESTER JUNG
No. 10979
Exp. 6/30/2009
ELECTRICAL
STATE OF CALIFORNIA

SEAL

CIVIL ENGINEER: _____
VCA ENGINEERS, INC.

REGISTERED PROFESSIONAL ENGINEER
VIRGILIO C. AGAPAN
CIVIL
STATE OF CALIFORNIA

SEAL

_____
DSA APPROVED

_____
SFM APPROVED

PROJECT TITLE: **Antelope Valley Community College District**
Health & Science Building - 05-157

PROJECT ADDRESS: **3041 West Ave. K, Lancaster, CA 93536-5426**

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January - 2010

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NOTICE TO CONTRACTORS CALLING FOR BIDS

Owner:	**Antelope Valley Community College District**
Project Description:	**Health and Science Building** **3041 West Avenue "K"** **Lancaster, CA 93536**
Submittal of Bid Proposals:	**2:00 PM, March 11, 2010**
Architect:	**tBP/ Architecture** **5455 Wilshire Boulevard, Suite 1200** **Los Angeles, CA 90036**
Project Manager:	**Chris Klassen, Project Manager** **Sam Kamand, Program Manager** **Klassen Corporation** **2010 West Avenue K #827** **Lancaster CA 93536** **661-718-2333 – phone** **661-718-2281 – fax** **chrisk@klassencorp.com** **samk@klassencorp.com**

Antelope Valley Community College District, hereinafter "the Owner" will receive up to, but not later than the above-stated date and time, sealed Bid Proposals for the Agreements and Purchase Orders of the Work on the Project generally described below:

Each trade contractor or supplier qualified as the lowest responsive and responsible bidder on a portion of the work will enter into an Agreement or Purchase Order with the Owner, and thus become a Prime Contractor or Prime Supplier. The Owner has retained a full time Project Manager, hereinafter referred to as the "PM", that will coordinate, expedite, manage and supervise the Project and the activities of multiple Prime Contractors and Prime Suppliers. As Prime Contractors each will be required to furnish a Performance Bond, Labor and Material Payment Bond, Automobile Liability Insurance, Workers Compensation Insurance, and Commercial General Liability Insurance and name both the Owner and PM as "Additional Insured" under each policy. As Prime Suppliers there are no requirements for furnishing Performance / Payment Bonds or Automobile / Workers Compensation / Liability Insurance.

Bid Package No.	Bid Package Description	Required Classification of California Contractors' License
3005	Demolition, Earthwork and Asphalt Repair	C-12, A, B

3021	Utilities	C-34, C-36
3035	Landscaping	C-27
3041	Structural Concrete and Reinforcing	C-8, C-50
3042	Site Concrete	C-8
3071	Masonry	C-29
3072	Glass Fiber Reinforced Concrete (GFRC)	C-8
3075	Structural Steel and Miscellaneous Steel Fabrication	C-51
3095	Wood and Plastics	C-6
3131	Roofing and Water Proofing	C-39
3133	Standing Seam Roofing and Aluminum Wall panels	C-20, C-39, C-43
3171	Doors, Frames and Hardware	C-6, B, C-61, D-16, D-24, D-28
3195	Aluminum Storefront Entrances and Glass and Glazing	C-17, C-5
3221	Building Insulation.	C-2
3231	Metal Studs, Drywall, Plaster Systems, Acoustics and Sound Proofing.	C-9, C-5, C-2, C-6,C-35, D-50
3241	Finish Flooring, Tile, Epoxy Terrazzo, Precast Terrazzo Units, Resinous Flooring	C-54, C-15
3255	Painting	C-33
3271	Specialties	C-6, C-5, B, C-61
3328	Planetarium and lecture Hall Seating.	B, C-6, D-34, C-5
3332	Planetarium Projection Dome	A, B, C-51, D-34
3334	Greenhouse Building	B
3341	Plumbing	C-36
3351	Fire Sprinkler System (Wet Pipe System)	C-16
3361	HVAC, HVAC Controls, Sheet Metal and Laboratory Fume Hoods	C-20, C-43, C-4
3365	Communications and Equipment	C-7
3367	Vertical Transportation	C-11
3375	Electrical, Audio Visual including equipment and Fire Alarm Systems	C-7, C-10
3390	Janitorial	C61/ D63

1. **Submittal of Bid Proposals.** All Bid Proposals shall be submitted on forms furnished by the Owner. Bid Proposals must conform with, and be responsive to, the Bid and Contract Documents, copies of which may be obtained from the Owner as set forth above. Bid

Proposals and the required Bid Bond will be received at the time noted above. **Failure of any Bidder to submit its Bid Proposal at or prior to the time stated above for submittal of Base Bid Proposals shall result in the Owner rejecting the Bid Proposal of such Bidder as being untimely.** Upon submittal of such a Bid Proposal, neither withdrawal nor modifications to any portion of the Bid Proposal shall be permitted, unless written request for withdrawal or modification is actually received by the Owner prior to the last time for submission of Bid Proposals. Bid Proposals shall be submitted to Project Manger at the address stated above.

2. Single Bid Proposal for Multiple Bid Packages. Each Bidder shall have the option to submit a Bid Proposal for up to five (5) Big Packages combined. The Bidder **MUST** bid each package separately, in addition to the combined bid. Bidders electing to submit a bid proposal on multiple bid packages are required to hold a B (General Building) license. Example: a Bidder interested in submitting a Bid Proposal for Bid Package #3005 and #3011 combined, for a lower bid price than each Bid Package separate, would insert both bid package bid forms into the combined bid envelope and provide the combined bid amount with the words "combined base bid amount" noted. The District will compare the Bid Proposals for combined Bid Packages with Bid Proposals for individual Bid Packages. If the combined bid is lower than the sum of the apparent low individual bid packages, the District will award to the combined bidder. If the sum total of the individual packages is lower than the combined bid, the individual bids will be awarded. **Each bidder is allowed only one (1) combined bid proposal.** If bidder is submitting a combined bid for multiple packages, write the words "MULTIPLE BID PACKAGES" and the number of each package on the outside of the seal envelope. Each Bid Proposal, including Multiple Bid Package proposals, must be accompanied by the required Bid Security for the Bid Package.

3. Bid and Contract Documents. The Bid and Contract Documents are available by contacting Klassen Corporation 661-718-2333 (starting on 1/25/2010) and at the jobsite Office by contacting 661-718-2333 (starting on 1/25/2010). A deposit of $250.00 per set is required. Payments shall be made by check to Antelope Valley Community College District. The deposit is non-refundable. Office location **2010 West Avenue K #827, Lancaster, CA 93536.**

4. Documents Accompanying Bid Proposal. Each Bid Proposal (blue document) shall be accompanied by: (a) Bid Security (b) Non-Collusion Affidavit; (c) Statement of Bidder's Qualifications; (d) Certification of Drug-Free Workplace; (e) Exclusion of Asbestos Products; (f) Exclusion of Lead Products; (g) Certification of Workers' Compensation Insurance; and (h) Certification of Prevailing Wage Compliance (green documents). All information or responses of a Bidder in its Bid Proposal and other documents accompanying the Bid Proposal shall be complete, accurate and true; incomplete, inaccurate or untrue responses or information provided therein by a Bidder shall be grounds for the Owner to reject such Bidder's Bid Proposal for non-responsiveness.

5. Prevailing Wage Rates. Pursuant to California Labor Code §1773, the Director of the Department of Industrial Relation of the State of California has determined the generally prevailing rates of wages in the locality in which the Work is to be performed. The Prime Contractor awarded the Contract for the Work shall post a copy of all applicable prevailing wage

rates for the Work at conspicuous locations at the Site. The Prime Contractor and all Subcontractors performing any portion of the Work shall pay not less than the applicable prevailing wage rate for the classification of labor provided by their respective workers in prosecution and execution of the Work. Each Prime Contractor is responsible for determining applicable prevailing wage rates and the application of those rates. **The provisions of the Labor Compliance Program apply. Pursuant to California Labor Code Section 1771.7, the District has implemented and shall enforce the Labor Compliance Program that has been established for the Project. Refer to the General Conditions for further information.**

6. Contractors License Classification. In accordance with the provisions of California Public Contract Code §3300, the Owner requires that Bidders possess the correct classification (listed above) of California Contractors License at the time of submission of Bid Proposal. Any Bidder not so duly and properly licensed shall be subject to all penalties imposed by law. No payment shall be made for work, labor, materials or services provided under the Contract for the Work unless and until the Registrar of Contractors verifies to the Owner that the Bidder awarded the Contract is properly and duly licensed to perform the Work.

7. Contract Time. Substantial Completion of the Work shall be indicated in the Baseline Construction Schedule, which is incorporated in the Project Manual. Failure to achieve Substantial Completion within the Contract Time shall subject the Prime Contractor to assessment of Liquidated Damages for delayed Substantial Completion, as set forth in the Contract Documents.

8. Bid Security. Each Bid Proposal shall be accompanied by Bid Security in an amount not less than **TEN PERCENT (10%)** of the maximum amount of the Bid Proposal, inclusive of any additive alternate bid item(s). Failure of any Bid Proposal to be accompanied by Bid Security in the form and in the amount required shall render such Bid Proposal to be non-responsive and rejected by the Owner.

9. Withdrawal of Bid Proposals. No Bidder shall withdraw any Bid Proposals for a period of sixty days after the opening of Bid Proposals. During this time, all Bidders shall guarantee prices quoted in their respective Bid Proposals.

10. Pre- Bid Conference and Job-Walk. The Owner will conduct a **Pre-Bid Conference and Job Walk for the Work.** The Pre- Bid Conference and Job Walk will begin on the site at **1:00 PM on 2/09/2010.** Refer to Instruction for Bidders, Article 21.3, for information regarding the requirements of pre- Bid Conference and Job Walk attendance. Although this walk is not mandatory, it is in the best interest for all bidders to attend and it is the bidders sole responsibility to understand the project & specific job site conditions prior to submittal of any Bid Proposals.

11. Substitute Security. In accordance with the provisions of California Public Contract Code §22300, substitution of eligible and equivalent securities for any monies withheld by the Owner to ensure the Prime Contractor's performance under the Contract will be permitted at the request and expense of the Prime Contractor and in conformity with California Public Contract Code §22300. The foregoing notwithstanding, the Bidder to whom the Contract is awarded shall have **TEN (10) DAYS** following the Owner's transmittal of the form of Agreement to such Bidder for execution to make written request to the Owner to permit the substitution of securities for retention under California Public Contract Code §22300. The failure of such Bidder to make such written request to the Owner within said ten (10) day period shall be deemed a waiver of the

Bidder's rights under California Public Contract Code §22300.

12. **Waiver of Irregularities.** The Owner reserves the right to reject any or all Bid Proposals or to waive any irregularities or informalities in any Bid Proposal or in the bidding.

13. **Award of Contract.** The Contract for the Work, if awarded, will be by action of the Owner to the responsible Bidder submitting the lowest responsive Bid Proposal.

INSTRUCTIONS FOR BIDDERS

1. **Preparation and Submittal of Bid Proposal.**

1.1 **Bid Proposal Preparation.** All information required by the bid forms must be completely and accurately provided. Numbers shall be stated in both words and figures where so indicated in the bid forms; in the event of any conflict between a number stated in words and in figures, the words shall govern. Partial or incomplete Bid Proposals or Bid Proposals submitted on other than the bid forms included herein shall be deemed non-responsive and rejected. Bid Proposals not conforming to these Instructions for Bidders and the Notice to Prime Contractors Calling for Bids (Call for Bids) may be deemed non-responsive and rejected.

1.2 **Bid Proposal Submittal.** Bid Proposals shall be submitted to the Owner at the place designated in the Call for Bids in sealed envelopes bearing on the outside the Bidder's name and address along with an identification of the Work for which the Bid Proposal is submitted.

1.3 **Date and Time of Bid Proposal Submittal.** It is the sole and exclusive responsibility of Bidders to submit Bid Proposals to the Owner at the place designated in the Call for Bids prior to the scheduled closing time for receipt of Bid Proposals. The Owner will place a date/time stamp in a conspicuous location on the outer envelope containing the Bid Proposal. The date/time stamp shall be controlling and determinative as to the date and time of the Bidder's submittal of its Bid Proposal. Any Bid Proposal not timely submitted, as determined by the date/time stamp, shall be deemed non-responsive and returned unopened to such Bidder.

1.4 **Opening and Reading of Bid Proposals.** The Owner shall publicly open and read Bid Proposals after the last time for submittal of Bid Proposals. Bid Results are not final until the Board approval.

2. **Bid Security.** Each Bid Proposal shall be accompanied by cash, certified or cashier's check made payable to the Owner or a Bid Bond, in the form and content attached hereto, in favor of the Owner executed by the Bidder as a principal and a Surety as surety in an amount not less than the percentage of the maximum amount of the Bid Proposal, inclusive of additive Alternate Bid Items, if any ("the Bid Security") as set forth in the Call for Bids. The Bid Security is given to guarantee that the Bidder will execute the Contract if it is awarded to it in conformity with the Contract Documents. Failure of any Bid Proposal to include the required Bid Security shall render the Bid Proposal non-responsive and rejected by the Owner. In the event that the Bidder's Bid Security is in the form of a Bid Bond, the Bidder's Bid Proposal shall be deemed responsive only if said Bid Bond is in the form and content set forth herein and the Surety is on the list of sureties approved by the United States Department of Treasury, as set forth in the then current Federal Register and/or an Admitted Surety Insurer as that term is defined in California Code of Civil Procedure §995.120. In the event that the Bid Security shall be forfeited, the Bidder shall remain liable to the Owner for costs incurred by the Owner in procuring the Work which exceeds the Bid Proposal amount of such Bidder, less the amount of the forfeited Bid Security.

3. **Documents Accompanying Bid Proposal; Signatures.** The Bid Proposal must be submitted with the following: Bid Security, Non-Collusion Affidavit, Statement of Bidder's Qualifications, Drug Free Workplace Certification, Exclusion of Asbestos, Exclusion of Lead, Certificate of Worker's Compensation Insurance, and Prevailing Wage Compliance Certification. The Documents shall be executed by an individual duly authorized to execute the same on behalf of the Bidder. Any Bid Proposal not conforming to the foregoing may be rejected by the Owner as being non-responsive.

4. **Modifications.** Changes in, or additions to, the bid forms, recapitulations of the Work being bid upon, alternative proposals or any other modification of the bid forms which are not specifically called for or permitted may result in the Owner's rejection of the Bid Proposal as being non-responsive. No oral or telephonic modification of any Bid Proposal submitted will be considered. A telegraphic modification may be considered only if received by the Owner prior to the scheduled closing time for receipt of Bid Proposals and only if the U.S. Postal Service postmark evidences that a confirmation of the telegram duly signed by the Bidder was placed in the mail prior to such time.

5. **Erasures; Inconsistent or Illegible Bid Proposals.** Bid Proposals must not contain any erasures, interlineations or other corrections unless the same are suitably authenticated by affixing in the margin immediately opposite such erasure, interlineations or correction the surname(s) of the person(s) signing the Bid Proposal. Any Bid Proposal not conforming to the foregoing may be deemed by the Owner to be non-responsive. In the event any Bid Proposal submitted, or portions thereof, shall be reasonably determined by the Owner to be illegible, ambiguous or inconsistent, whether by virtue of any erasures, interlineations, corrections or otherwise, the Owner may reject such a Bid Proposal as being non-responsive.

6. **Examination of Site and Contract Documents.** Each Bidder shall, at its sole cost and expense, inspect the Site of the proposed Work to become fully acquainted with conditions relating to the Work and to fully understand the facilities, difficulties and restrictions attending the execution of the Work under the Contract Documents and the cost thereof. Bidders shall thoroughly review and be familiar with the Contract Documents, including without limitation, the Specifications and the Drawings. The failure or omission of any Bidder to receive or examine any of the Contract Documents, forms, instruments, addenda or other documents or to inspect the Site shall not relieve such Bidder from any obligation with respect to the Bid Proposal, the Contract or the Work required under the Contract Documents. The Owner assumes no responsibility or liability to any Bidder for, nor shall the Owner be bound by, any understandings, representations or agreements of the Owner's agents, employees or officers concerning the Contract Documents or the Work made prior to execution of the Contract. The submission of a Bid Proposal shall be deemed prima facie evidence of the Bidder's full compliance with the requirements of this section.

7. **Withdrawal of Bid Proposal.** Any Bidder may withdraw its Bid Proposal by either written or telegraphic request actually received by the Owner prior to the scheduled closing time for the receipt of Bid Proposals. In the event a Bidder submitting a Bid Proposal shall seek to withdraw its Bid Proposal, it shall be the sole and exclusive responsibility of the Bidder to notify the Owner of such withdrawal within the time and in the manner set forth above. Any written or telegraphic notice of withdrawal of a submitted Bid Proposal received after the scheduled closing time for receipt of Bid Proposals shall not be considered by the Owner, nor effective to withdraw such Bid Proposal.

8. **Agreement and Bonds.** The Agreement which the successful Bidder, as Prime Contractor, will be required to execute along with the forms and amounts of the Labor and Material Payment Bond and the Performance Bond and other documents and instruments which will be required to be furnished by the Bidder awarded the Contract at the time of execution of the Agreement are included in the Contract Documents and shall be carefully examined by the Bidder. The required number of executed copies of the Agreement and the form and content of the Performance Bond and the Labor and Material Payment Bond and other documents or instruments required at the time of execution of the Agreement shall be as specified in the Contract Documents.

9. **Interpretation of Drawings, Specifications or Contract Documents.** If any Bidder is in doubt as to the true meaning of any part of the Drawings, the Specifications or other portions of the Contract Documents; finds discrepancies, errors or omissions therein; or finds variances in any of the Contract Documents with applicable rules, regulations, ordinances and/or laws, a written request for an interpretation or correction thereof may be submitted to the Architect. It is the sole and exclusive responsibility of the Bidder to submit such request in sufficient time for the preparation of a response thereto and delivery of such response to all Bidders prior to the scheduled closing for receipt of Bid Proposals. Any request of any Bidder, pursuant to the foregoing sentence that is made less than seven (7) days prior to the scheduled closing date for the receipt of Bid Proposals shall be deemed untimely. Any interpretation or correction of the Contract Documents will be made only by written addendum duly issued by the Owner or the Architect. A copy of any such addendum will be mailed or delivered to each Bidder receiving a set of the Contract Documents. No person is authorized to render an oral interpretation or correction of any portion of the Contract Documents to any Bidder, and no Bidder is authorized to rely on any such oral interpretation or correction. Failure to request interpretation or clarification of the Drawings, the Specifications or other portions of the Contract Documents pursuant to the foregoing shall be deemed to be a waiver of any discrepancy, defect or conflict therein.

10. **Owner's Right to Modify Contract Documents.** Prior to the public opening and reading of Bid Proposals, the Owner expressly reserves the right to modify the Work, the Contract Documents, or any portion(s) thereof by the issuance of written addenda disseminated to all Bidders who have obtained a copy of the Specifications, Drawings and Contract Documents pursuant to the Call for Bids. In the event the Owner shall modify any portion of the Work or the Contract Documents pursuant to the foregoing, the Bid Proposal submitted by any Bidder shall be deemed to include any and all modifications reflected in any addenda issued pursuant to the foregoing.

11. **Bidders Interested in More Than One Bid Proposal; Non-Collusion Affidavit.** No person, firm, corporation or other entity shall submit, file or be interested in more than one Bid Proposal for the same Work; provided, however, that a person, firm or corporation that has submitted a sub-proposal to a Bidder or who has quoted prices for materials to a Bidder is not thereby disqualified from submitting a sub-proposal, quoting prices to other Bidders or submitting a Bid Proposal for the proposed Work to the Owner.

12. **Award of Contract.**

12.1 **Waiver of Irregularities or Informalities.** The Owner reserves the right to reject any and all Bid Proposals or to waive any irregularities or informalities in any Bid Proposal or in the bidding.

12.2 **Award to Lowest Responsive Responsible Bidder.** The award of the Contract, if made by the Owner through action of its Board of Trustees, will be to the responsible Bidder submitting the lowest responsive Bid Proposal.

12.3 **Responsive Bid Proposal.** A responsive Bid Proposal shall mean a Bid Proposal which conforms, in all material respects, to the Bid and Contract Documents.

12.4 **Responsible Bidder.** A responsible Bidder shall mean a Bidder who has the capability in all respects, to perform fully the requirements of the Contract Documents and the moral and business integrity and reliability, which will assure good faith performance. In determining responsibility, the following criteria will be considered: (i) the ability, capacity and skill of the Bidder to perform the Work of the Contract Documents; (ii) whether the Bidder can perform the Work of the Contract Documents promptly and within the time specified, without delay or interference; (iii) the character, integrity, reputation, judgment, experience and efficiency of the Bidder; (iv) the quality of performance of the Bidder on previous contracts, by way of example only, the following information will be considered: (a) the administrative, consultant or other cost overruns incurred by the Owner on previous contracts with the Bidder; (b) the Bidder's compliance record with contract general conditions on other projects; (c) the submittal by the Bidder of excessive and/or unsubstantiated extra cost proposals and claims on other projects; (d) the Bidder's record for completion of work within the contract time and the Bidder's compliance with the scheduling and coordination requirements on other projects; (e) the Bidder's demonstrated cooperation with the Owner and other contractors on previous contracts; (f) whether the work performed and materials furnished on previous contracts was in accordance with the Contract Documents; (v) the previous and existing compliance by the Bidder with laws and ordinances relating to contracts; (vi) the sufficiency of the financial resources and ability of the Bidder to perform the work of the Contract Documents; (vii) the quality, availability and adaptability of the goods or services to the particular use required; (viii) the ability of the Bidder to provide future maintenance and service for the warranty period of the Contract; (ix) whether the Bidder is in arrears to an owner on debt or contract or is a defaulter on any surety bond; (x) such other information as may be secured by the Owner having a bearing on the decision to award the Contract, to include without limitation the ability, experience and commitment of the Bidder to properly and reasonably plan, schedule, coordinate and execute the Work of the Contract Documents and whether the Bidder has ever been debarred from bidding or found ineligible for bidding on any other projects. The purpose of the above is to enable the Owner, in its opinion, to select the Bid Proposal that is in the best interests of the Owner; the ability of a Bidder to provide the required bonds will not of itself demonstrate responsibility of the Bidder.

13. **Subcontractors.**

13.1 **Designation of Subcontractors.** Each Bidder shall submit a list of its proposed Subcontractors for the proposed Work as required by the Subletting and Subcontracting Fair Practices Act (California Public Contract Code §§4100 et seq.) on the form furnished. The failure of any Bid Proposal to include all information required by the Subcontractors List may result in the Owner deeming the Bid Proposal to be non-responsive.

13.2 **Work of Subcontractors.** All Bidders are referred to Article 1.12 of the General Conditions of the Contract Documents and the notation therein that all Contract Documents are intended to be complimentary and that the organization or arrangements of the Specifications and Drawings shall not limit the extent of the Work of the Contract Documents. Accordingly, all Bidders are encouraged to disseminate all of the Specifications, Drawings and other Contract Documents to all persons or entities submitting sub-bids to the Bidder. The omission of any portion or item of the Work from the Bidder's Bid Proposal or from the Bidder's sub-bidders' sub-bids which is/are necessary to produce the intended results and/or which are reasonably inferable from the Contract Documents shall not be a basis for adjustment of the Contract Price or the Contract Time.

13.3 **Subcontractor Bonds.** In accordance with California Public Contract Code §4108, if a Bidder requires a bond or bonds of its Subcontractor(s), whether the expense of procuring such bond or bonds are to be borne by the Bidder or the Subcontractor(s), such requirements shall be specified in the Bidder's written or published request for sub-bids. Failure of the Bidder to comply with these requirements shall preclude the Bidder from imposing bonding requirements upon its Subcontractor(s) or rejection of a Subcontractor's bid under California Public Contract Code §4108(b).

14. **Workers' Compensation Insurance.** In accordance with the provisions of California Labor Code §3700, the successful Bidder shall secure Workers' Compensation Insurance for its employees engaged in the Work of the Contract. The successful bidder shall sign and deliver to the Owner the following certificate prior to performing any of the Work under the Contract:

> "I am aware of the provisions of §3700 of the California Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code and I will comply with such provisions before commencing the performance of the Work of the Contract."

The form of such Certificate is included as part of the Contract Documents.

15. **Bid Security Return.** The Bid Security of three or more low bidders, the number being solely at the discretion of the Owner, will be held by the Owner for the period for which Bid Proposals must be held open (which is set forth in the Call for Bids) or until posting by the successful Bidder(s) of the bonds, certificates of insurance required and return of executed copies of the Agreement, whichever first occurs, at which time the Bid Security of such other Bidders will be returned to them.

16. **Forfeiture of Bid Security.** In the event the Bidder to whom an award of the Contract is made fails or refuses to execute the Agreement within five (5) calendar days from the date of receiving notification that it is the bidder to whom the Contract has been awarded, the Owner may declare the Bidder's Bid Security forfeited as damages caused by the failure of the Bidder to enter into the Contract and may thereupon award the Work and the Contract to the responsible Bidder submitting the next lowest Bid Proposal or may call for new bids, in its sole and exclusive discretion.

17. **Contractor's License.** No Bid Proposal will be considered from a Bidder who, at the time Bid Proposals are opened, is not licensed to perform the Work of the Contract Documents, in accordance with the Contractors License Law, California Business & Professions Code §§7000 et seq. This requirement is not a mere formality and will not be waived by the Owner. The required California Contractor's License classification(s) for the Work is set forth in the Call for Bids.

18. **Anti-Discrimination.** It is the policy of the Owner that in connection with any work performed under contracts there be no discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age or marital status. All Bidders agree to comply with the Owner's anti-discrimination policy and all applicable Federal and California laws including but not limited to the California Fair Employment & Housing Act beginning with California Government Code §§12940 et seq. and California Labor Code §1735. In addition, all Bidders agree to require like compliance by any Subcontractor employed by them on the Work of the Contract.

19. **Owner Provided Tests and Inspections.** All Bidders are referred to the Special Conditions and the notation therein of the items of the Work which are subject to tests and inspections and the hours and/or dollar limits of tests and inspections which will be provided by or through the Owner. Bidders are also referred to Article 11 of the General Conditions and the notation therein that should any act, omission or other conduct of the Prime Contractor result in hours or dollars for completing required tests and inspection, the Prime Contractor shall bear all additional time and costs to complete required tests and inspections.

20. **Bidder's Qualifications.** Each Bidder shall submit with its Bid Proposal a Statement of Bidder's Qualifications which is included within the Contract Documents. All information required by Statement of Bidder's Qualifications shall be completely and fully provided. Failure of any Bid Proposal to be accompanied by the Statement of Bidder's Qualifications completed with all information required and bearing the signature of the Bidder's duly authorized representative under penalty of perjury may result in the Owner deeming the Bid Proposal to be non-responsive and rejected. In the event that the Owner shall determine that any information provided by a Bidder in the Statement of Bidder's Qualifications is false or misleading, or is incomplete so as to be false or misleading, the Owner may reject the Bid Proposal submitted by such Bidder as being non-responsive.

21. **Job-Walk.**

21.1 **Owner Conduct of Job-Walk**. The Owner will conduct a Job-Walk at the time and place designated in the Call for Bid. Regardless of whether the Job-Walk is or is not designated as being mandatory, the Owner may, in its sole and exclusive discretion, elect to conduct one or more Job-Walk(s) in addition to that set forth in the Call for Bids, in which event the Owner shall notify all Bidders who have theretofore obtained the Contract Documents pursuant to the Call for Bids of any such additional Job-Walk. If the Owner elects to conduct any Job-Walk in addition to that set forth in the Call for Bids, the Owner shall, in its notice of any such additional Job-Walk(s), indicate whether Bidders' attendance at such additional Job-Walk(s) is/are mandatory; in the event that any such additional Job-Walk(s) is/are designated as being mandatory, the provisions of Paragraph 21.2, below shall be deemed to apply to such additional Job-Walk(s).

21.2 **Mandatory Job-Walk**. If the Job-Walk is designated in the Call for Bids as being mandatory, the failure of any Bidder to have its authorized representative present at the Job-Walk will be grounds for the Owner to declare the Bid Proposal of such Bidder to be non-responsive. Where the Job-Walk is mandatory, a Bidder may have more than one authorized representative and/or representatives of its Subcontractors present at the Job-Walk; provided, however that attendance by representatives of the Bidder's Subcontractors without attendance by a representative of the Bidder shall not be sufficient to meet the Bidder's obligations hereunder and will be grounds for the Owner to declare the Bid Proposal of such Bidder to be non-responsive. Notwithstanding any other provisions of the Call for Bids or these Instructions for Bidders, in the event that the Job-Walk is designated in the Call for Bids as being mandatory, the Owner will not consider the Bid Proposal of any Bidder who has obtained the Bid and Contract Documents, pursuant to Call for Bids, after the date and time set forth therein for such mandatory Job-Walk; any Bid Proposal submitted by any such Bidder shall be deemed non-responsive, rejected and returned to the Bidder submitting the same.

21.3 **Non-Mandatory Job-Walk**. Unless designated in the Call for Bids as being mandatory, the Job-Walk shall be deemed non-mandatory; the failure of any Bidder to have its authorized representative(s) present at such non-mandatory Job-Walk shall not be a basis for deeming the Bid Proposal of such Bidder to be non-responsive. The foregoing notwithstanding, all Bidders are encouraged to attend the Job-Walk. In the event that the Job-Walk is not designated as being mandatory, Bid and Contract Documents may be obtained by a Bidder, on or after the time designated for the Job-Walk; in such event, if such Bidder desires a Job-Walk to be conducted, it shall be the sole and exclusive responsibility of such Bidder to request, in writing, that the Owner conduct an additional Job-Walk. If an additional Job-Walk is requested by a Bidder pursuant to the foregoing sentence, the Owner may, in its sole and exclusive discretion, elect to conduct or not conduct such requested Job-Walk with consideration of factors such as the time remaining before the scheduled closing time for the receipt of Bid Proposals; the Owner may condition the conducting of such requested Job-Walk upon reimbursement, by the Bidder requesting such Job-Walk, of the actual or reasonable costs of the Owner's personnel and/or the Owner's agents or representatives in arranging for and conducting such Job-Walk. The election of the Owner not to conduct a Job-Walk requested by a Bidder obtaining the Contract Documents after the date and time designated in the Call for Bids for the Job-Walk shall not operate to waive, limit or restrict any of the provisions of the Contract Documents, the Bidder's submittal of a Bid Proposal in conformity with the Contract Documents, or if awarded the Contract, performance of the Work and other obligations in strict conformity with the Contract Documents. If the Owner elects to conduct an additional Job-Walk requested by a Bidder who has obtained the Contract Documents after the time designated in the Call for Bids for the Job-Walk, the Owner shall notify all other Bidders who have theretofore obtained the Contract Documents of such requested Job-Walk and the date, time and place where such requested Job-Walk will be conducted and all such other Bidders may attend such requested additional Job-Walk.

22. **Public Records.** Bid Proposals and other documents responding to the Call for Bids become the exclusive property of the Owner upon submittal of the same to the Owner. At such time as the Owner shall issue the Notice of Intent to award the Contract pursuant to Paragraph 26 of these Instructions for Bidders, all Bid Proposals and other documents submitted to the Owner in response to the Call for Bids become a matter of public record and shall be thereupon be considered public records, except for information contained in such Bid Proposals deemed to be Trade Secrets (as defined in California Civil Code §3426.1) and information provided in response to the Owner's Pre-Qualification Questionnaire. A Bidder that indiscriminately marks all or most of its Bid Proposal as exempt from disclosure as a public record, whether by the notations of "Trade Secret," "Confidential," "Proprietary," or otherwise, may result in the Owner deeming such Bid Proposal to be non-responsive. The Owner shall in no way be liable or responsible for the disclosure of such records, including those exempt from disclosure if disclosure is deemed required by law, by an order of Court, or which occurs through inadvertence, mistake or negligence on the part of the Owner or its officers, employees or agents. At such time as Bid Proposals are deemed a matter of public record, pursuant to the above, any Bidder or other party shall be afforded access for inspection and/or copying of such Bid Proposals, by request made to the Owner in conformity with the California Access to Public Records Act, California Government Code §§6250, et. seq. In the event the Owner is required to defend or otherwise respond to any action or proceeding wherein request is made for the disclosure of the contents of any portion of a Bid Proposal deemed exempt from disclosure hereunder, the Bidder submitting the materials sought by such action or proceeding agrees, upon submission of its Bid Proposal to the Owner for consideration, to defend, indemnify and hold harmless the Owner in any action or proceeding from and against any liability, including without limitation attorneys' fees arising there from. Further, in such event, the party submitting materials sought by any other party shall be solely responsible for the cost and defense in any action or proceeding seeking to compel disclosure of such materials; the Owner's sole involvement in any such action shall be that of a stakeholder, retaining the requested materials until otherwise ordered by a court of competent jurisdiction.

23. **Drug Free Workplace Certificate.** In accordance with California Government Code §§8350 et seq., the Drug Free Workplace Act of 1990, the successful Bidder will be required to execute a Drug Free Workplace Certificate concurrently with execution of the Agreement. The successful Bidder will be required to implement and take the affirmative measures outlined in the Drug Free Workplace Certificate and in California Government Code §§8350 et seq. Failure of the successful Bidder to comply with the measures outlined in the Drug Free Workplace Certificate and in California Government Code §§8350 et seq. may result in penalties, including without limitation, the termination of the Agreement, the suspension of any payment of the Contract Price otherwise due under the Contract Documents and/or debarment of the successful Bidder.

24. **Compliance with Immigration Reform and Control Act of 1986.** The Bidder shall be solely and exclusively responsible for the employment of individuals in connection with any of the Work of the Contract in conformity with the Immigration Reform and Control Act of 1986, 8 USC §§1101 et seq. ("the IRCA"); the successful Bidder shall also require that any person or entity employing labor in connection with any of the Work of the Contract shall so similarly comply with the IRCA.

25. **Alternate Bid Proposals; Alternate Bid Item(s).** Unless specifically called for in the Bid Proposal forms, Bidders shall not submit alternate Bid Proposals nor submit any bid for alternate bid item(s). In the event that the Bid Proposal forms do not specifically call for the submittal of alternate bid(s) or bid(s) for alternate item(s) and a bidder submits alternate bid(s) or bid(s) for alternate bid item(s), the Owner may deem such Bid Proposal(s) to be non-responsive and reject the same. In the event that alternate Bid Proposals or alternate item(s) are specifically called for in the Bid Proposal forms, any Bid Proposal which does not include alternate bid(s) or bid(s) for the alternate item(s) may be deemed by the Owner to be non-responsive and rejected. In the event that alternate bid item(s) are specifically called for in the Bid Proposal forms, the Bidder is referenced to the provisions of the Contract Documents permitting the Owner, during performance of the Work of the Contract Documents, to add such alternate item(s) if the same did not form a basis for award of the Contract or to delete such alternate item(s) if the same formed a basis for award of the Contract. In accordance with the Contract Documents, if the Owner elects during performance of the Work to add or delete alternate item(s) specifically called for in the Bid Proposal forms, the cost or credit (inclusive of all direct and indirect costs, supervision, overhead and profit) for such alternate item(s) shall be the amount(s) set forth in the Bidder's Bid Proposal for such alternate item(s).

26. **Notice of Intent to Award Contract.** Within fourteen (14) calendar days following the public opening and reading of Bid Proposals for the Contract, the Owner will issue a Notice of Intent to Award the Contract, identifying the name of the Bidder to whom the Owner intends to award the Contract, the date of the Owner's Board of Trustees meeting at which the Owner's Board of Trustees will entertain a motion for award of the Contract and such Notice will be mailed to all Bidders submitting a Bid Proposal. The Owner, may in its sole and exclusive discretion, elect to shorten or extend the time for its issuance of the Notice of Intent to Award the Contract.

27. **Bid Protest.** Any Bidder submitting a Bid Proposal to the Owner may file a protest of the Owner's intent to award the Contract provided that each and all of the following are complied with:

(a) The bid protest is in writing;

(b) The bid protest is filed and received by the Owner's Director of Facilities Planning not more than five (5) calendar days following the date of issuance of the Owner's Notice of Intent to Award the Contract;

(c) The written bid protest sets forth, in detail, all grounds for the bid protest, including without limitation all facts, supporting documentation, legal authorities and argument in support of the grounds for the bid protest; any matters not set forth in the written bid protest shall be deemed waived. All factual contentions must be supported by competent, admissible and creditable evidence.

Any bid protest not conforming to the foregoing shall be rejected by the Owner as invalid. Provided that a bid protest is filed in strict conformity with the foregoing, the Owner's Director of Facilities Planning or such individual(s) as may be designated in his/her discretion, shall review and evaluate the basis of the bid protest, and shall provide a written decision to the Bidder submitting the bid protest concurring with or denying the bid protest. The written decision of the Owner's Director of Facilities Planning shall be final and not subject to reconsideration or appeal by the Owner or the Owner's Board of Trustees. No Bidder shall seek judicial relief, in any form, relative to the Owner's intent to award the Contract, or the protest thereof, unless the foregoing bid protest procedure has been strictly and timely complied with by the Bidder. The issuance of a written decision by the Owner's Director of Facilities Planning shall be an express condition precedent to the institution of any legal proceeding relative to the bidding process, the Owner's intent to award the Contract, or the Owner's determination to reject all Bid Proposals. In the event that any legal proceeding shall be instituted relative to the bidding process, the Owner's intent to award the Contract or the Owner's determination to reject all Bid Proposals and the Owner is named as a party therein, the prevailing party(ies) in any such legal proceeding, including any appeals there from, shall recover from the other party(ies) to such legal proceeding, as costs, all attorneys' fees and costs incurred in connection with all such proceedings.

28. **Implementation of Disabled Veteran Business Enterprises Requirements.** In accordance with Education Code Section 17076.11, the Owner has a participation goal for disabled veteran business enterprises of at least three percent per year of the overall dollar amount of funds allocated to the Owner by the State Allocation Board pursuant to the Leroy F. Greene School Facilities Act of 1998 for construction or modernization and expended each year by the Owner. Prior to and as a condition precedent for final payment under any contract for this project, the successful bidder will be required to provide appropriate documentation to the Owner identifying the amount paid to disabled veteran business enterprises in conjunction with the contract, so the Owner can assess its success at meeting this goal.

29. **Substitutions.**

(a) All bids should be calculated and submitted on the project as described in the bid documents, and on the assumption that substitution requests submitted with the bid will not be approved. Notwithstanding the foregoing, substitution requests submitted with bids will be given due consideration and adjustments to the contract, which may include adjustment to contract price, will be contained in a change order should the request be approved. Bidders not desiring to bid without prior approval of a proposed substitution should follow the procedure contained in this section for pre-bid review of proposed substitutions.

(b) Should the bidder wish to request prior to bid opening any substitution for the specified materials, process, service, or equipment, the bidder shall submit a written request at least 10 working days before the bid opening date and time. If the requested substitution is acceptable, the Owner will approve it in an addendum issued to all bidders of record. Requests received less than 10 working days prior to bid opening will not be considered prior to the bid date. Extensions of the bid date shall not operate to extend the deadline for requesting substitutions unless the Owner so states in an addendum issued to all bidders of record.

(c) If a substitution is not requested and considered prior to the bid date, the bidder shall submit with the bid all proposed substitutions, if any, on the Substitution Listing form contained in the bid documents.

(d) With respect to any materials, process, service, or equipment listed in the bid, unless the bidder clearly indicates in its Substitution Listing that it is proposing to use an "equal" material, process, service, or equipment, its bid shall be considered as offering the specified material, process, service, or equipment referred to by the brand name or trade name specified.

(e) Unless expressly authorized in the bid documents, no bid may be conditioned on the Owner's acceptance of a proposed substitution. Any bid containing any such condition may be treated as a non-responsive bid.

(f) It is expressly understood and agreed that the Owner reserves the right to reject any proposed substitution. It is further expressly understood and agreed that in the event the Owner rejects a proposed "equal" item, or any other requested substitution, the specified material, process, service, or equipment designated by brand name or trade name, or other item as specified, will be provided.

(g) No substitution request of any kind or nature may be made after the bid date, except by the express written permission of the Owner and on such terms as Owner may require, or in an emergency, as in the case where a specified material, process, service, equipment, or other item has become unavailable through no fault of the bidder.

(h) These time limitations shall be complied with strictly, and in no case will an extension of time for completion be granted because of the failure to request the substitution of an item at the times and in the manner set forth herein.

(i) Prior to contract award, the Owner shall notify the bidder of the Owner's decision concerning proposed substitutions of "equal" items submitted with the bid. The Owner shall notify bidder of the Owner's decision on any other proposed substitutions as those decisions are made. Notification of all decisions by the Owner shall be in writing, and no proposed substitution shall be deemed approved unless the Owner has confirmed it in writing.

(j) With respect to all proposed substitutions, the requirements applicable to the Contractor in the Contract Documents shall be applicable to all bidders requesting substitutions.

[End of Section] mf

SUPPLEMENTARY INSTRUCTIONS

MODIFICATIONS OF THE INSTRUCTIONS TO BIDDERS

30. GENERAL:

To be considered, Proposals must be made in accordance with these instructions to Bidders.

When any article of the foregoing Instructions to Bidders is supplemented hereby, the provisions of such article shall remain in effect; all supplemental provisions shall be considered as added thereto. Where any such article is amended, voided, or superseded thereby, provisions of such article not so specifically amended, voided or superseded shall remain in effect.

In order to meet the specific demands of criteria, quality control, schedule and budget, the Owner has elected to utilize "Construction Management" procedures on this project.

There is no General Contractor, per se. In lieu thereof, the Owner has retained a full-time "Project Manager", hereinafter referred to as the "PM", to coordinate, expedite, manage and supervise the project.

The PM will provide an on-site Project Manager, whose function is to:

Represent the Owner in all on-site construction matters.

Coordinate the work of various, individual "prime" contractors.

Interpret and insure compliance with contract documents in cooperation with Architect and Engineer.

Schedule and interface the work of related, but independent "prime" contractors.

Review and act on all requests, claims and questions relative to construction activities.

Review and check all "prime" contractors' schedules, progress, workmanship, shop drawings and payment requests for approval by the Architect and Engineer.

In general, serve all on-site functions of a Project Manager on a " Non- traditional" construction project.

The Prime Contractor will provide the temporary facilities so indicated in Division I.

Each Contractor providing work on the project will be a "prime" contractor, direct with the Owner. As such, each "prime" will be required to furnish a Performance Bond and Labor and Material Payment Bond, for their portion of the Work.

The Architect will be visiting the job site during the construction period for inspections and resolution of questions. In addition, the Architects' Consultants (Civil, Mechanical, Electrical and Landscape) will visit the project during their respective phases of work. The

Architect/Engineer will attend the owner project management meeting every other week.

Pre-bid questions for design intent and interpretation shall be directed to the Architect. Pre bid questions for coordination and administrative duties should be directed to the Project Manager.

Upon receipt of all bids and notification of contract award, a Pre-Construction meeting will be held on the project site for attendance by all "prime" contractors, the Architect, the Engineers, the Project Manager and the Owner. This will be a project Management meeting.

Subsequent to the Pre-Construction meeting, the PM will develop and distribute a Master Construction Schedule showing key dates for start/completion of each "prime" contractor's work. Special meetings may be called as required to expedite progress. The Project Manager will request from each Prime Contractor to submit to the Project Manager a schedule of values with Twenty-One (21) day from the date of Notice to Process.

The Project Manager may request copies of major purchase orders affecting project schedule. Proof of early issuance of purchase orders will be required for any time extension requests.

Each bidder is solely responsible for familiarizing himself with the existing (site) conditions, all pertinent requirements of the Contract Documents (including: Instructions to Bidders, Bid Packages, General Conditions and other "Boiler Plate", General Requirements, Plans and Specifications, quantities and requirements.

Each "prime" contractor is responsible for the compliance with the requirements of the Contract Documents and all pertinent codes.

Each "prime" contractor is responsible for the installation and protection of their own work until acceptance of said work. Damage to another contractor's work must be corrected at cost to the party causing damage.

The Project Manager will provide temporary sanitary facilities, construction water and normal construction power at no cost to "prime" contractors for this project. Hook-up/connections, surface lines and site distribution will be the "prime" contractors' responsibility.

Each "prime" contractor shall be responsible for progress and final clean-up of their particular work/craft.

All requests for payment will be submitted in review form to the Project Manager not later than the 25th of each successive month. The Project Manager may approve (or require corrections in said requests) for submission to PM.

The PM will present a formal, monthly Payment Request to the Architect not later than the 30th of each month.

Each Prime Contractor must submit a declaration of the estimated cost of respective Bid(s).

Upon review and certification by the Architect, the Owner will issue a check to the prime

Contractor thru the Project Manager for the approved/certified sum, according to the conditions of the contract.

The owner will require each prime Contractor to allocate 5% of the total contact amount for closeout documents. The closeout process will begin upon certification by the A/E, owner and Project Manager that the work of the prime Contractor is Substantially Complete. Once the entire project is deemed substantially complete, the Owner may take beneficial occupancy of the Facility(s) and the warranty period may begin.

Upon completion and final acceptance of the "prime" contractor's work, the Owner will file a Notice of Completion and, pay the final retention monies to said "prime" contractors according to the conditions of the contract.

31. Labor Compliance Program

This project is a "public work" as defined within Labor Code § 1720. The Owner will employee a private Labor Compliance Agency to manage the Labor Compliance requirements.

The awarding body ("District" or "Agency") has initiated a Labor Compliance Program ("LCP") that received "Initial Approval" from the Director of the California Department of Industrial Relations ("DIR") on accordance with California Labor Code ("Labor Code") § 1720 et seq. effective March 2003, which requires the payment of the prevailing rate of per diem wages or the prevailing rate of hourly wages, and the prevailing rate of per diem or hourly wages for holiday and overtime work and the employment of apprentices for any State Funded School Facilities project of $1,000 or more.

A copy of the awarding body's LCP and applicable DIR Wage Determinations are on file at the District or Agency office and are available for inspection or reference during normal business hours.

All bids are subject to full compliance with the provisions of Labor Code § 1771.7 The law requires the payment of prevailing wages by all prime ("general") contractors, subcontractors, and sub-subcontractors to their respective employees.

The relevant sections (sections 1720 – 1815) of the Labor Code imposing mandatory compliance are set forth below:

1720. (a) As used in this chapter, "public works" means:

(1) Construction, alteration, demolition, installation, or repair work done under contract and paid for in whole or in part out of public funds, except work done directly by any public utility company pursuant to order of the Public Utilities Commission or other public authority. For purposes of this paragraph, "construction" includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.

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1722. "Awarding body" or "body awarding the contract" means department, board, authority, officer or agent awarding a contract for public work.

1722.1. For the purposes of this chapter, "contractor" and "subcontractor" include a contractor, subcontractor, licensee, officer, agent, or representative thereof, acting in that capacity, when working on public works pursuant to this article and Article 2 (commencing with Section 1770).

1723. "Worker" includes laborer, worker, or mechanic.

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1771. Except for public works projects of one thousand dollars ($1,000) or less, not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the public work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in this chapter, shall be paid to all workers employed on public works. This section is applicable only to work performed under contract, and is not applicable to work carried out by a public agency with its own forces. This section is applicable to contracts let for maintenance work.

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1771.5. (a) Notwithstanding Section 1771, an awarding body may not require the payment of the general prevailing rate of per diem wages or the general prevailing rate of per diem wages for holiday and overtime work for any public works project of twenty-five thousand dollars ($25,000) or less when the project is for construction work, or for any public works project of fifteen thousand dollars ($15,000) or less when the project is for alteration, demolition, repair, or maintenance work, if the awarding body elects to initiate and enforce a labor compliance program pursuant to subdivision (b) for every public works project under the authority of the awarding body. (b) For the purposes of this section, a labor compliance program shall include, but not be limited to, the following requirements:

(1) All bid invitations and public works contracts shall contain appropriate language concerning the requirements of this chapter.

(2) A pre construction conference shall be conducted with the contractor and subcontractors to discuss federal and state labor law requirements applicable to the contract.

(3) Project contractors and subcontractors shall maintain and furnish, at a designated time, a certified copy of each weekly payroll containing a statement of compliance signed under penalty of perjury.

(4) The awarding body shall review, and, if appropriate, audit payroll records to verify compliance with this chapter.

(5) The awarding body shall withhold contract payments when payroll records are delinquent or inadequate.

(6) The awarding body shall withhold contract payments equal to the amount of underpayment and applicable penalties when, after investigation, it is established that underpayment has occurred.

c) For purposes of this chapter, "labor compliance program" means a labor compliance program that is approved, as specified in state regulations, by the Director of the Department of Industrial Relations.

(d) For purposes of this chapter, the Director of the Department of Industrial Relations may revoke the approval of a labor compliance program in the manner specified in state regulations.

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1771.7. (a) An awarding body that chooses to use funds derived from either the Kindergarten-University Public Education Facilities Bond Act of 2002 or the Kindergarten-University Public Education Facilities Bond Act of 2004 for a public works project, shall initiate and enforce, or contract with a third party to initiate and enforce, a labor compliance program, as described in subdivision (b) of Section 1771.5, with respect to that public works project. (b) This section applies to public works that commence on or after April 1, 2003. For purposes of this subdivision, work performed during the design and preconstruction phases of construction, including, but not limited to, inspection and land surveying work, does not constitute the commencement of a public work.

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1772. Workers employed by contractors or subcontractors in the execution of any contract for public work are deemed to be employed upon public work.

1773.1. (a) Per diem wages, when the term is used in this chapter or in any other statute applicable to public works, shall be deemed to include employer payments for the following:

(1) Health and welfare.

(2) Pension.

(3) Vacation.

(4) Travel.

(5) Subsistence.

(6) Apprenticeship or other training programs authorized by

Section 3093, so long as the cost of training is reasonably related to the amount of the contributions.

(7) Worker protection and assistance programs or committees established under the federal Labor Management Cooperation Act of 1978 (Section 175a of Title 29 of the United States Code), to the extent that the activities of the programs or committees are directed to the monitoring and enforcement of laws related to public works.

(8) Industry advancement and collective bargaining agreements administrative fees, provided that these payments are required under a collective bargaining agreement pertaining to the particular craft, classification, or type of work within the locality or the nearest labor market area at issue.

(9) Other purposes similar to those specified in paragraphs (1) to(8), inclusive.

(b) Employer payments include all of the following:

(1) The rate of contribution irrevocably made by the employer to a trustee or third person pursuant to a plan, fund, or program.

(2) The rate of actual costs to the employer reasonably anticipated in providing benefits to workers pursuant to an enforceable commitment to carry out a financially responsible plan or program communicated in writing to the workers affected.

(3) Payments to the California Apprenticeship Council pursuant to Section 1777.5.

(c) Employer payments are a credit against the obligation to pay the general prevailing rate of per diem wages. However, no credit shall be granted for benefits required to be provided by other state or federal law. Credits for employer payments also shall not reduce the obligation to pay the hourly straight time or overtime wages found to be prevailing.

(d) The credit for employer payments shall be computed on an annualized basis where the employer seeks credit for employer payments that are higher for public works projects than for private construction performed by the same employer, except where one or more of the following occur:

(1) The employer has an enforceable obligation to make the higher rate of payments on future private construction performed by the employer.

(2) The higher rate of payments is required by a project labor agreement.

(3) The payments are made to the California Apprenticeship Council pursuant to Section 1777.5.

(4) The director determines that annualize would not serve the purposes of this chapter.

(e) (1) For the purpose of determining those per diem wages for contracts, the representative of any craft, classification, or type of worker needed to execute contracts shall file with the Department of Industrial Relations fully executed copies of the collective bargaining agreements for the particular craft, classification, or type of work involved. The collective bargaining agreements shall be filed after their execution and thereafter may be taken into consideration pursuant to Section 1773 whenever filed 30 days prior to the call for bids. If the collective bargaining agreement has not been formalized, a typescript of the final draft may be filed temporarily, accompanied by a statement under penalty of perjury as to its effective date.

(2) Where a copy of the collective bargaining agreement has previously been filed, fully executed copies of all modifications and extensions of the agreement that affect per diem wages or holidays shall be filed.

(3) The failure to comply with filing requirements of this subdivision shall not be grounds for setting aside a prevailing wage determination if the information taken into consideration is correct.

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1774. The contractor to whom the contract is awarded, and any subcontractor under him, shall pay not less than the specified prevailing rates of wages to all workmen employed in the execution of the contract.

1775. (a) (1) The contractor and any subcontractor under the contractor shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit not more than fifty dollars ($50) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rates as determined by the director for the work or craft in which the worker is employed for any public work done under the contract by the contractor or, except as provided in subdivision (b), by any subcontractor under the contractor.

(2) (A) The amount of the penalty shall be determined by the Labor Commissioner based on consideration of both of the following:

(i) Whether the failure of the contractor or subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the contractor or subcontractor.

(ii) Whether the contractor or subcontractor has a prior record of failing to meet its prevailing wage obligations.

(B) (i) The penalty may not be less than ten dollars ($10) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, unless the failure of the contractor or subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the contractor or subcontractor.

(ii) The penalty may not be less than twenty dollars ($20) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the contractor or subcontractor has been assessed penalties within the previous three years for failing to meet its prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned.

(iii) The penalty may not be less than thirty dollars ($30) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Labor Commissioner determines that the violation was willful, as defined in subdivision (c) of Section 1777.1.

(C) When the amount due under this section is collected from the contractor or subcontractor, any outstanding wage claim under Chapter 1 (commencing with Section 1720) of Part 7 of Division 2 against that contractor or subcontractor shall be satisfied before applying that amount to the penalty imposed on that contractor or subcontractor pursuant to this section.

(D) The determination of the Labor Commissioner as to the amount of the penalty shall be review able only for abuse of discretion.

(E) The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the contractor or subcontractor, and the body awarding the contract shall cause to be inserted in the contract a stipulation that this section will be complied with.

(b) If a worker employed by a subcontractor on a public works project is not paid the general prevailing rate of per diem wages by the subcontractor, the prime contractor of the project is not liable for any penalties under subdivision (a) unless the prime contractor had knowledge of that failure of the subcontractor to pay the specified prevailing rate of wages to those workers or unless the prime contractor fails to comply with all of the following requirements:

(1) The contract executed between the contractor and the subcontractor for the performance of work on the public works project shall include a copy of the provisions of Sections 1771, 1775, 1776, 1777.5, 1813, and 1815.

(2) The contractor shall monitor the payment of the specified general prevailing rate of per diem wages by the subcontractor to the employees, by periodic review of the certified payroll records of the subcontractor.

(3) Upon becoming aware of the failure of the subcontractor to pay his or her workers the specified prevailing rate of wages, the contractor shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subcontractor for work performed on the public works project.

(4) Prior to making final payment to the subcontractor for work performed on the public works project, the contractor shall obtain an affidavit signed under penalty of perjury from the subcontractor that the subcontractor has paid the specified general prevailing rate of per diem wages to his or her employees on the public works project and any amounts due pursuant to Section 1813.

(c) The Division of Labor Standards Enforcement shall notify the contractor on a public works project within 15 days of the receipt by the Division of Labor Standards Enforcement of a complaint of the failure of a subcontractor on that public works project to pay workers the general prevailing rate of per diem wages.

1776. (a) Each contractor and subcontractor shall keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

(1) The information contained in the payroll record is true and correct.

(2) The employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by his or her employees on the public works project.

(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the contractor on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the body awarding the contract, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the body awarding the contract, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the contractor, subcontractors, and the entity through which the request was made. The public may not be given access to the records at the principal office of the contractor.

(c) The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division.

(d) A contractor or subcontractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested the records within 10 days after receipt of a written request.

(e) Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated to prevent disclosure of an individual's name, address, and social security number. The name and address of the contractor awarded the contract or the subcontractor performing the contract shall not be marked or obliterated. Any copy of records made available for inspection by, or furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (29 U.S.C. Sec. 175a) shall be marked or obliterated only to prevent disclosure of an individual's name and social security number. A joint labor management committee may maintain an action in a court of competent jurisdiction against an employer who fails to comply with Section 1774. The court may award restitution to an employee for unpaid wages and may award the joint labor management committee reasonable attorney's fees and costs incurred in maintaining the action. An action under this subdivision may not be based on the employer's misclassification of the craft of a worker on its certified payroll records. Nothing in this subdivision limits any other available remedies for a violation of this chapter.

(f) The contractor shall inform the body awarding the contract of the location of the records enumerated under subdivision (a), including the street address, city, and county, and shall, within five working days, provide a notice of a change of location and address.

(g) The contractor or subcontractor has 10 days in which to comply subsequent to receipt of a written notice requesting the records enumerated in subdivision (a). In the event that the contractor or subcontractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit twenty-five dollars ($25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. A contractor is not subject to a penalty assessment pursuant to this section due to the failure of a subcontractor to comply with this section.

(h) The body awarding the contract shall cause to be inserted in the contract stipulations to effectuate this section.

(i) The director shall adopt rules consistent with the California Public Records Act (Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1 of the Government Code) and the Information Practices Act of 1977 (Title 1.8 (commencing with Section 1798) of Part 4 of Division 3 of the Civil Code) governing the release of these records, including the establishment of reasonable fees to be charged for reproducing copies of records required by this section.

1777.1. (a) Whenever a contractor or subcontractor performing a public works project pursuant to this chapter is found by the Labor Commissioner to be in violation of this chapter with intent to defraud, except Section 1777.5, the contractor or subcontractor or a firm, corporation, partnership, or association in which the contractor or subcontractor has any interest is ineligible for a period of not less than one year or more than three years to do either of the following:

(1) Bid on or be awarded a contract for a public works project.

(2) Perform work as a subcontractor on a public works project.

(b) Whenever a contractor or subcontractor performing a public works project pursuant to this chapter is found by the Labor Commissioner to be in willful violation of this chapter, except Section 1777.5, the contractor or sub-contractor or a firm, corporation, partnership, or association in which the contractor or subcontractor has any interest is ineligible for a period up to three years for each second and subsequent violation occurring within three years of a separate and previous willful violation of this chapter to do either of the following:

(1) Bid on or be awarded a contract for a public works project.

(2) Perform work as a subcontractor on a public works project.

(c) A willful violation occurs when the contractor or subcontractor knew or reasonably should have known of his or her obligations under the public works law and deliberately fails or refuses to comply with its provisions.

(d) Not less than semiannually, the Labor Commissioner shall publish and distribute to awarding bodies a list of contractors who are ineligible to bid on or be awarded a public works contract, or to perform work as a subcontractor on a public works project pursuant to this chapter. The list shall contain the name of the contractor, the Contractor's State License Board license number of the contractor, and the effective period of debarment of the contractor. The commissioner shall also place advertisements in construction industry publications targeted to the contractors and subcontractors, chosen by the commissioner, that state the effective period of the debarment and the reason for debarment. The advertisements shall appear one time for each debarment of a contractor in each publication chosen by the commissioner. The debarred contractor or subcontractor shall be liable to the commissioner for the reasonable cost of the advertisements, not to exceed five thousand dollars ($5,000). The amount paid to the commissioner for the advertisements shall be credited against the contractor's or subcontractor's obligation to pay civil fines or penalties for the same willful violation of this chapter.

(e) For purposes of this section, "contractor or subcontractor" means a firm, corporation, partnership, or association and its responsible managing officer, as well as any supervisors, managers, and officers found by the Labor Commissioner to be personally and substantially responsible for the willful violation of this chapter.

(f) For the purposes of this section, the term "any interest" means an interest in the entity bidding or performing work on the public works project, whether as an owner, partner, officer, manager, employee, agent, consultant, or representative. "Any interest" includes, but is not limited to, all instances where the debarred contractor or subcontractor receives payments, whether cash or any other form of compensation, from any entity bidding or performing work on the public works project, or enters into any contracts or agreements with the entity bidding or performing work on the public works project for services performed or to be performed for contracts that have been or will be assigned or sublet, or for vehicles, tools, equipment, or supplies that have been or will be sold, rented, or leased during the period from the initiation of the debarment proceedings until the end of the term of the debarment period. "Any interest" does not include shares held in a publicly traded corporation if the shares were not received as compensation after the initiation of debarment from an entity bidding or performing work on a public works project.

(g) For the purposes of this section, the term "entity" is defined as a company, limited liability company, association, partnership, sole proprietorship, limited liability partnership, corporation, business trust, or organization.

(h) The Labor Commissioner shall adopt rules and regulations for the administration and enforcement of this section.

1777.5. (a) Nothing in this chapter shall prevent the employment of properly registered apprentices upon public works.

(b) Every apprentice employed upon public works shall be paid the prevailing rate of per diem wages for apprentices in the trade to which he or she is registered and shall be employed only at the work of the craft or trade to which he or she is registered.

(c) Only apprentices, as defined in Section 3077, who are in training under apprenticeship standards that have been approved by the Chief of the Division of Apprenticeship Standards and who are parties to written apprentice agreements under Chapter 4 (commencing with Section 3070) of Division 3 are eligible to be employed at the apprentice wage rate on public works. The employment and training of each apprentice shall be in accordance with either of the following:

(1) The apprenticeship standards and apprentice agreements under which he or she is training.

(2) The rules and regulations of the California Apprenticeship Council.

(d) When the contractor to whom the contract is awarded by the state or any political subdivision, in performing any of the work under the contract, employs workers in any apprentice able craft or trade, the contractor shall employ apprentices in at least the ratio set forth in this section and may apply to any apprenticeship program in the craft or trade that can provide apprentices to the site of the public work for a certificate approving the contractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected. However, the decision of the apprenticeship program to approve or deny a certificate shall be subject to review by the Administrator of Apprenticeship. The apprenticeship program or programs, upon approving the contractor, shall arrange for the dispatch of apprentices to the contractor. A contractor covered by an apprenticeship program's standards shall not be required to submit any additional application in order to include additional public works contracts under that program.

"Apprentice able craft or trade," as used in this section, means a craft or trade determined as an apprentice able occupation in accordance with rules and regulations prescribed by the California Apprenticeship Council. As used in this section, "contractor" includes any subcontractor under a contractor who performs any public works not excluded by subdivision (o).

(e) Prior to commencing work on a contract for public works, every contractor shall submit contract award information to an applicable apprenticeship program that can supply apprentices to the site of the public work. The information submitted shall include an estimate of journeyman hours to be performed under the contract, the number of apprentices proposed to be employed, and the approximate dates the apprentices would be employed. A copy of this information shall also be submitted to the awarding body if requested by the awarding body.

Within 60 days after concluding work on the contract, each contractor and subcontractor shall submit to the awarding body, if requested, and to the apprenticeship program a verified statement of the journeyman and apprentice hours performed on the contract. The information under this subdivision shall be public. The apprenticeship programs shall retain this information for 12 months.

(f) The apprenticeship program that can supply apprentices to the area of the site of the public work shall ensure equal employment and affirmative action in apprenticeship for women and minorities.

(g) The ratio of work performed by apprentices to journeymen employed in a particular craft or trade on the public work may be no higher than the ratio stipulated in the apprenticeship standards under which the apprenticeship program operates where the contractor agrees to be bound by those standards, but, except as otherwise provided in this section, in no case shall the ratio be less than one hour of apprentice work for every five hours of journeyman work.

(h) This ratio of apprentice work to journeyman work shall apply during any day or portion of a day when any journeyman is employed at the jobsite and shall be computed on the basis of the hours worked during the day by journeymen so employed. Any work performed by a journeyman in excess of eight hours per day or 40 hours per week shall not be used to calculate the ratio. The contractor shall employ apprentices for the number of hours computed as above before the end of the contract or, in the case of a subcontractor, before the end of the subcontract. However, the contractor shall endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the jobsite. Where an hourly apprenticeship ratio is not feasible for a particular craft or trade, the Chief of the Division of Apprenticeship Standards, upon application of an apprenticeship program, may order a minimum ratio of not less than one apprentice for each five journeymen in a craft or trade classification.

(i) A contractor covered by this section that has agreed to be covered by an apprenticeship program's standards upon the issuance of the approval certificate, or that has been previously approved for an apprenticeship program in the craft or trade, shall employ the number of apprentices or the ratio of apprentices to journeymen stipulated in the applicable apprenticeship standards, but in no event less than the 1-to-5 ratio required by subdivision (g).

(j) Upon proper showing by a contractor that he or she employs apprentices in a particular craft or trade in the state on all of his or her contracts on an annual average of not less than one hour of apprentice work for every five hours of labor performed by journeymen, the Chief of the Division of Apprenticeship Standards may grant a certificate exempting the contractor from the 1-to-5 hourly ratio, as set forth in this section for that craft or trade.

(k) An apprenticeship program has the discretion to grant to a participating contractor or contractor association a certificate, which shall be subject to the approval of the Administrator of Apprenticeship, exempting the contractor from the 1-to-5 ratio set forth in this section when it finds that any one of the following conditions is met:

(1) Unemployment for the previous three-month period in the area exceeds an average of 15 percent.

(2) The number of apprentices in training in the area exceeds a ratio of 1 to 5.

(3) There is a showing that the apprentice able craft or trade is replacing at least one-thirtieth of its journeymen annually through apprenticeship training, either on a statewide basis or on a local basis.

(4) Assignment of an apprentice to any work performed under a public works contract would create a condition that would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large, or the specific task to which the apprentice is to be assigned is of a nature that training cannot be provided by a journeyman.

(l) When an exemption is granted pursuant to subdivision (k) to an organization that represents contractors in a specific trade from the 1-to-5 ratio on a local or statewide basis, the member contractors shall not be required to submit individual applications for approval to local joint apprenticeship committees, if they are already covered by the local apprenticeship standards.

(m) (1) A contractor to whom a contract is awarded, who, in performing any of the work under the contract, employs journeymen or apprentices in any apprentice able craft or trade shall contribute to the California Apprenticeship Council the same amount that the director determines is the prevailing amount of apprenticeship training contributions in the area of the public works site. A contractor may take as a credit for payments to the council any amounts paid by the contractor to an approved apprenticeship program that can supply apprentices to the site of the public works project. The contractor may add the amount of the contributions in computing his or her bid for the contract.

(2) At the conclusion of the 2002-03 fiscal year and each fiscal year thereafter, the California Apprenticeship Council shall distribute training contributions received by the council under this subdivision, less the expenses of the Division of Apprenticeship Standards for administering this subdivision, by making grants to approved apprenticeship programs for the purpose of training apprentices. The funds shall be distributed as follows:

(A) If there is an approved multi-employer apprenticeship program serving the same craft or trade and geographic area for which the training contributions were made to the council, a grant to that program shall be made.

(B) If there are two or more approved multi-employer apprenticeship programs serving the same craft or trade and geographic area for which the training contributions were made to the council, the grant shall be divided among those programs based on the number of apprentices registered in each program.

(C) All training contributions not distributed under subparagraphs

(A) and (B) shall be used to defray the future expenses of the Division of Apprenticeship Standards.

(3) All training contributions received pursuant to this subdivision shall be deposited in the Apprenticeship Training Contribution Fund, which is hereby created in the State Treasury. Notwithstanding Section 13340 of the Government Code, all money in the Apprenticeship Training Contribution Fund is hereby continuously appropriated for the purpose of carrying out this subdivision and to pay the expenses of the Division of Apprenticeship Standards.

(n) The body awarding the contract shall cause to be inserted in the contract stipulations to effectuate this section. The stipulations shall fix the responsibility of compliance with this section for all apprentice able occupations with the prime contractor.

(o) This section does not apply to contracts of general contractors or to contracts of specialty contractors not bidding for work through a general or prime contractor when the contracts of general contractors or those specialty contractors involve less than thirty thousand dollars ($30,000).

(p) All decisions of an apprenticeship program under this section are subject to Section 3081.

1810. Eight hours labor constitutes a legal day's work in all cases where the same is performed under the authority of any law of this State, or under the direction, or control, or by the authority of any officer of this State acting in his official capacity, or under the direction, or control or by the authority of any municipal corporation, or of any officer thereof. A stipulation to that effect shall be made a part of all contracts to which the State or any municipal corporation therein is a party.

1811. The time of service of any workman employed upon public work is limited and restricted to 8 hours during any one calendar day, and 40 hours during any one calendar week, except as hereinafter provided for under Section 1815.

1812. Every contractor and subcontractor shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by him or her in connection with the public work. The record shall be kept open at all reasonable hours to the inspection of the awarding body and to the Division of Labor Standards Enforcement.

1813. The contractor or subcontractor shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit twenty-five dollars ($25) for each worker employed in the execution of the contract by the respective contractor or subcontractor for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of this article. In awarding any contract for public work, the awarding body shall cause to be inserted in the contract a stipulation to this effect. The awarding body shall take cognizance of all violations of this article committed in the course of the execution of the contract, and shall report them to the Division of Labor Standards Enforcement.

****

1815. Notwithstanding the provisions of Sections 1810 to 1814, inclusive, of this code, and notwithstanding any stipulation inserted in any contract pursuant to the requirements of said sections, work performed by employees of contractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon public work upon compensation for all hours worked in excess of 8 hours per day at not less than 1 1/2 times the basic rate of pay.

[End of Section] mf

3005 Demolition and Earthwork
Bid Form 05-157-3005

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3005, Demolition and Earthwork and Division one(1) of the contract specification except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 02221 - Demolition

Section 02230 - Site Clearing

Section 02316 – Excavating, Backfilling and Compaction for Pavement

Section 02317 - Excavating, Backfilling and Compaction for Structures

Section 02765 – Pavement Repair

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide all rough grading work for all site work including but not limited to curbing, gutters, flatwork, building pads, landscaping, etc. Refer to schedule, rough grade for construction purposes first. Then final rough as needed just prior to each final site work item being done including cutting/backfilling for all curbing, gutter, planters, flatwork, decomposed granite, paver, etc. Final grading by others is only for final prep, watering, compaction.
4. All over-excavation work
5. Remove all demolition work and excess spoils to a satisfactory offsite dumping location. Provide manifests.
6. Provide the landscape demolition work per the contract documents.
7. Provide and maintain protection for existing trees or improvements designated, noted or required to remain. Repair and or replace if damaged.
8. Provide SWPPP, erosion control, dust control, sweeping service for site and off site dirt and dust clean up as required until the slabs are poured. Continue these operations when onsite to rough fine grade for all site work per the schedule.
9. Prior to utilities contractor starting work, provide certification of rough grading operation.
10. Saw cut and demolition of asphalt and concrete per the contract documents. Remove all material to a satisfactory offsite dumping location. Provide manifests.
11. Saw cut and demolition of existing sidewalks and paving.
12. All Demolition and offsite removal of all work per the contract documents. Also included in this demolition work is the offsite removal of the underground utilities including electrical high voltage and communication duct banks in coordination with electrical contractor and buildings scheduled to be demolished per the contract documents. Disconnect and feeder removal will be handled by the electrician. There is a power duct bank feeding the existing facilities building FC1 (to be demolished) from the Main Substation SS1 just south of the new building. There is a communications duct bank from TE2 to the facilities building (FC1) to the existing auto body shop (west of building). There is a power duct bank from the main substation SS1

to pull box 14 (north of building). These are all within the demo site plan but not shown on the drawings. These concrete encased duct banks are to be demolished and removed by this contract.

13. Coordinate with CM, contractors, owner, and other projects.
14. Access to pedestrians, vehicles, and campus personnel shall be maintained at all times according to the campus wide logistics plan. Use of designated staging area and site access is mandatory.
15. Coordinate with electrical, mechanical, plumbing and telecommunications contractors to maintain continuity of underground utilities prior to start of building and site demolition.
16. Remove and deliver to the owner items scheduled to be salvaged.
17. Bonding/insurance Requirements
18. Division 1 and boiler plate specifications.
19. Remove communications pull box 10.
20. Build the temporary emergency exit from west side of APL 2 per CM direction.
21. Demolish communications duct bank from pull box 12 to FC1.
22. Natural Gas Line: cap off and isolate with valve.
23. Demolish communications duct bank just outside the SS1 building on the north side from pull box 9A to pull box 14.
24. Dewatering of site due to wet weather conditions, run-off, broken water mains, line and branch off is the responsibility of this prime contractor. The site is a low point on campus and run-off is more likely to come onto the construction site.
25. Potential bidders need to visit the site during the pre-bid period and submit RFI's 72 hours prior to the bid due date.
26. Fencing and maintenance of the fencing is the responsibility of this prime contractor throughout the duration of this project. 48 hour notice from CM will be provided for any modifications during construction.

Expressly excluded items are as follows:

1. Testing & inspections.
2. Irrigation or trimming of existing trees to remain
3. Disconnect and remove electrical cables
4. Base material and installation
5. Footings including excavation

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation and acknowledge their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $2000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 –Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3021 Utilities Site
Bid Form 05-157-3021

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3021 Utilities and Division (1) of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 02318 – Excavating, Backfilling and Compacting for Utilities

Section 02320 - Trenching

Section 02510 - Water Distribution Systems

Section 02530 - Sanitary Sewer Systems including ion neutralization systems

Section 02630 – Storm Water System

Section 15181 – Site Chilled water and Heating Water Piping

Section 15190 – Medium Pressure Natural gas Piping

Section 13930 – Fire water Piping

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Furnish and install complete site sewer system as indicated up to new/existing points of connection outside the building. Coordinate with the building utility contractor for connection into work.
4. Remove all excess spoils to a satisfactory offsite dumping location.
5. Submittals.
6. Trenching, backfill & compaction as needed for this work.
7. Relocation and adjusting of new and existing site utilities per the contract documents and as required including all labor, materials, and equipment to do so.
8. Site Gas work including valves, boxes, and connections including building supplies to new/existing points of connection outside the building.
9. Supply and installation of complete storm drainage system including building services up to new/existing points of connection outside the building as indicated.
10. Furnish and install complete Site fire water system including building services up to new/existing points of connection outside of building. Coordinate with the building utility contractor for connection into work.

11. Furnish and install complete exterior domestic water system as indicated up to new/existing points of connection outside the building. Coordinate with the building utility contractor for connection into work.
12. Furnish and install of complete exterior gas distribution system per plumbing drawings as indicated up to new/existing points of connection outside the building. Coordinate with the building utility contractor for connection of work into the building.
13. Maintain Established grades and batter board per certified grades report
14. Record drawings that are detailed with horizontal and vertical controls.
15. The specifically included items (1-13) and list of pertaining specifications listed above apply to the green house building included herein the contract documents. Add allowance for fifty feet to west-south-west from the location of the green house building indicated on the drawings.
16. Bonding Requirements.
17. Testing of Systems
18. Furnish and install PIV's, FDC's, tamper switch and all necessary components for site fire water system.
19. Remove and return campus facilities and maintenance existing backflow preventers where time warrants removal of such. Maintain water service continuity by reconnecting the water lines.
20. Coordinate with demolition contractor before commencing cap-off, relocation and isolation of existing utilities on site (water, natural gas, irrigation, sanitary sewer, storm water).
21. Provide as built photo album of all site work prior to areas being covered up. Photos shall provide all detailed information to denote location including depths.
22. Freeze protection for all work as needed or required.
23. SWPPP during this phase of construction.

Expressly excluded items are as follows:

1. Demolition work
2. Utilities inside the building.
3. Grease Interceptor (Coordination Required)
4. Acid Neutralization Tank (coordination still required)

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation and acknowledge their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3035 Landscape
Bid Form 05-157-3035

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3035 Landscaping and Division (1) of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 02320 – Trenching, backfilling and Compacting

Section 02505 – Decomposed Granite

Section 02520 – Precast Concrete Pavers

Section 02520 – Precast Concrete Pavers

Section 02810 - Landscape Irrigation System

Section 02900 - Landscape Planting

Section 02970 - Landscape Maintenance and Plan Establishment

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Supply and installation of fill dirt, soil preparation & finish grading of landscape areas.
4. Supply, installation and maintenance of complete irrigation system (controllers, low voltage electrical in conduit, valves and associated boxes, lines, heads, etc.).
5. Furnish and Install Irrigation Control System that is compatible with the existing Maxicom irrigation control system on campus including but not limited to programming and graphics representation of irrigation stations and piping system into/interfaces of the campus irrigation system facilities integrator at the Maintenance and Operations building.
6. Furnish and install the required piping and its associated connections to the established campus irrigation water distribution loop on campus.
7. Maintain established set site grades per the certified grades report.
8. Supply and installation of landscaping including establishment and maintenance periods.
9. Schedule a pre-installation meeting with Klassen project manager and the campus grounds department.
10. Maintain existing landscape areas within the site limit such as lawn, trees, shrubs and plants, including removal of weeds.
11. Record drawings detailed with vertical and horizontal controls.
12. Bonding Requirements
13. Furnish and install required irrigation water supply to the Green House.
14. Furnish and install all decomposed granite including binder and soil treatments necessary.
15. Provide and install the concrete pavers complete per the contract documents.
16. Coordinate with the site demolition and utilities contractors to restore, cap off and maintain continuity of the existing irrigation system on campus. The restoration, cap-off and re-route of

existing irrigation lines and the central system is the responsibility of the landscape prime contractor.

17. Provide as built photo album of all underground work prior to areas being covered up. Photos shall provide all detailed information to denote location and depth.
18. Freeze protection for work as needed or required.

Expressly excluded items are as follows:

1. Demolition, removal and disposal of existing landscaping and irrigation system

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation and acknowledge their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $1000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3041 Structure Concrete
Bid Form 05-157-3041

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3041, Structural Concrete and Division (1) of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 03100 - Concrete Forms and Accessories

Section 03200 - Concrete Reinforcement

Section 03300 - Cast-in-Place Concrete

Section 03331 – Hard Rock Light Weight Concrete Fill

Section 03335 – Colored Concrete paving

Section 05810 – Seismic Joint Assemblies

Section 07110 – Waterproofing Membrane Type A

Section 07260 – Vapor Control System (application after slab pour)

Section 07195 – Under slab Vapor Retarder

Section 12480 – Foot Grilles

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Concrete footings, Slabs on Grade, Grade and Tie beams, Concrete Moment Connections.
4. Provide and install concrete fill in steel stairs.
5. Provide and install all waterproofing, membranes, base, sand, and misc accessories with work associated with this package.
6. Provide and install the reinforcing steel and necessary splice requirements for extension wall footings. Excavate footing and remove spoils to a satisfactory offsite dumping location.
7. Coordinate with other trades for the proper depressed slab areas to achieve correct elevation and size.
8. Coordinate with underground trades for sleeving. Any digging around sleeves, pipes, stepping of footings or modifications to reinforcing steel shall be performed by this package. Refer to structural drawings for further information.
9. Provide and install all concrete equipment pads/curbs/footings.
10. Submittals

11. Backfilling of work
12. Re-align form boards after elevators, plumbing, fire sprinkler & electrical underground work.
13. Layout, supply and installation of complete structural concrete work including forming, reinforcing, pumping, placement, finish, grout/dry pack @ steel columns, masonry footings, work indicated on Landscape drawings, concrete fill at exterior window sills, stair tread fill and nosings, columns, cast in place walls, footings, slabs, decks, grade beams, base, misc. accessories, etc..
14. Layout & installation of fabricated embedments, set leveling nuts at each template to proper elevation and paint nut, removal of bolt template plates.
15. Provide templates and set anchor bolts provided by others, per plans for sill plates @ steel stud framing. Coordinate with Steel Stud Contractor.
16. Provide Soil treatment below slabs on grade.
17. Provide and install under slab vapor barrier.
18. Structural Steel Contractor will supply metal templates for steel columns. Concrete Contractor will install anchor bolts to templates and set templates. Set up coordination meetings with steel contractor prior to placing embeds and prior to placing concrete to ensure correct placement.
19. Conform to certified pad grades and re-grade if necessary to meet specified and established grades/elevation report.
20. Maintain established grades and elevations of set batter boards and datum lines.
21. Bonding Requirements
22. Provide the expansion/seismic/joint work systems associated with this package including any attachment portion that connects to another's work.
23. Provide and install the foot grilles associated with concrete complete.
24. Provide and install the cast in place colored concrete on the project complete.
25. Concrete sealers.
26. Structural Concrete associated with the greenhouse.
27. Utilities trench and covers per 10/4.03.
28. Provide and install the waterproofing system per section 07110 complete.
29. Provide and install the waterproofing system per section 07116 complete.
30. Provide and install the lithocrete system per the contract documents complete.
31. Provide and install option # 1 for slab vapor control system per section 07260 per the contract documents complete.
32. Provide and maintain SWPPP during this phase of construction.

Expressly excluded items are as follows:

1. Site paving, curbing, benches and gutter work
2. Light bases
3. base for site concrete work
4. Pre-cast concrete caps
5. Site testing and inspections
6. Supply of fabricated embedments
7. Decomposed Granite
8. Concrete Pavers
9. GFRC Paneling System

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Additive Alternate # 6 per section 01230 of the contract specifications: Add sloped floor in Planetarium. Add floor Ramps at Planetarium vestibules. Add projector platform in Planetarium.

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation and acknowledge their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3042 Site Concrete
Bid Form 05-157-3042

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3042, Site Concrete and Division (1) of the specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 02319 – Base Course

Section 02751 - Portland Cement Concrete Site Work

Section 03100 - Concrete Formwork

Section 03200 - Concrete Reinforcement

Section 02770 – Site Concrete

Section 07900 - Joint Sealers

Specifically included items are as follows:

1. Provide and install the complete parking lot curbing, gutter and sidewalk concrete work.
2. Provide and install all exterior concrete paving, curbing, truncated domes, ADA ramps, wheel stops, Fire lanes, landscape Planters, base and gutter work complete per the contract documents.
3. Provide and install new exterior light pole footings/bases including but not limited to anchor bolts and leveling plates. Coordinate with Electrical Contractor for necessary electrical raceways.
4. Provide and install footings and cast-in-place work at the concrete benches. Provide contractor qualifications, contact info, and pictures for work of similar style/difficulty prior to work starting. The strict tolerances of these cast-in-place architectural items will be enforced.
5. Provide and install the concrete splash blocks around the building complete.
6. Provide all joint work systems associated with work in this package.
7. Provide concrete mow strip in court yard.
8. Provide and install the complete site signage shown in concrete flatwork or asphalt paving including any necessary footings.
9. Remove and reinstall existing site signage as noted in the contract documents.
10. Maintain site grades/elevation per certified report.
11. Provide and install base for all site concrete work.
12. Fine grading/compaction/soil prep required.
13. Mowing curbs
14. Provide and maintain SWPPP during this phase of construction.

Expressly excluded items are as follows:

1. Structural Concrete (except site light pole bases)

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare this bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $3000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

Certificates of insurance must state the following information.

Job 05-157 - Antelope Valley College Health & Science Building
Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3071 Masonry
Bid Form 05-157-3071

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____.

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3071, Masonry and Division (1) of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 04820 - Reinforced Unit Concrete Masonry

Section 07900 - Joint Sealers

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install all masonry associated with this project complete including but not limited to block, grout, reinforcing, Stoguard, waterproofing, drainage, and misc. accessories.
4. Coordinate, layout, and install all embedments provide by other trades to be set into masonry work.
5. Provide and install the pre-cast concrete sills at masonry walls.
6. Coordinate, layout, and install all block outs for penetrations/openings through CMU work.
7. Bonding Requirements
8. Grout/set items embedded in masonry.
9. Masonry scaffolding as required to complete the project.
10. Coordinate with other contractors for installation of embedments in masonry by this contract
11. Provide sample masonry units to match campus standards for approval by the Architect and the owner.

Expressly excluded items are as follows:

1. Concrete footings and dowel from footings

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3072 Glass Fiber Reinforced Concrete (GFRC)
Bid Form 05-157-3072

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3072, and Division (1) one of the contract specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 03455 – Glass Fiber Reinforced Precast Concrete (GFRC)

Section 07190 – Water-Repellant Coating (at GFRC work only)

Section 07920 - Joint Sealers

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. It is a requirement of the GFRC, Storefront, Steel, Metal Panel contractors create a mock up of each detail requiring coordination. This shall occur prior to fabrication of any finish paneling. Coordinate with other trades to have this completed.
3. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
4. Provide and install all GFRC associated with this project complete including but not limited to framing, necessary connections and accessories required to connect to the building structure steel members
5. Expansion/Seismic/expansion/joint sealers associated with this work.
6. Coordinate, layout, and install all material provided by other trades to be complete the system.
7. Prepare, and submit design drawings, specifications and calculations of the GFRC and Steel Curtain walls system (span exceeding ten feet) to the Department of State Architect for deferred approval. This activity is on schedule critical path.
8. Coordinate with structure steel contractor, storefront and entrances contractor, standing Seam Contractor, roofing and water proofing contractor to achieve a complete and functional system
9. Bonding Requirements
10. Provide and install all steel attachments not welded to structural steel or embedded in concrete.
11. Sealing of GFRC Panels.
12. Equipment/scaffolding needed to complete this work. Metal stud contractor will have scaffolding up from start of stud framing to completion of wallboard.

Expressly excluded items are as follows:

1. Connections welded to structural steel contractors work.
2. Items embedded in structural concrete contractors work.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: Not Applicable

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.)

with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3075 Structural Steel, and Miscellaneous Steel Fabrication
Bid Form 05-157-3075

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3075, Structural Steel and Metal Fabrications and Division (1) of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 05026 – Welded Stud Connectors

Section 05030 – Hot-Dip Galvanizing

Section 05120 - Structural Steel

Section 05315 – Floor and Roof Steel Deck

Section 05410 – Structural Cold-Formed Metal Framing

Section 05500 - Metal Fabrications

Section 05510 – Steel Stairs

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. It is a requirement of the GFRC, Storefront, Steel, Metal Panel contractors create a mock up of each detail requiring coordination. This shall occur prior to fabrication of any finish paneling. Coordinate with other trades to have this completed.
4. Provide and install the complete Structure Steel Systems complete including but not limited to supports, channels, braces, attachments, Steel Curtain Wall supports and connections in coordination with the GFRC, Storefront, Elevator Shafts, Steel Curtain Wall and Windows systems.
5. Provide and install elevator guide rails.
6. Provide and install the steel stair systems complete.
7. Provide and install all steel handrails, railing, and guardrails for the project complete excluding the stainless steel railing system.
8. Provide and install the service stairs complete.
9. Provide and install the steel piping, plates, supports, and angles for all counter work. Coordinate with other trades for proper installation.
10. Provide and install all steel grating shown on the contract documents complete.
11. Provide and install all steel ladders.
12. Coordinate steel framing for mechanical openings and shafts for equipment with mechanical, plumbing, electrical.
13. Coordinate required support for the fume hoods exhaust stacks on the roof with mechanical contractor.

14. Shop drawings.
15. Layout, supply and installation of complete structural and miscellaneous steel including columns, beams, connections, embedments, compression posts, angle iron, decking, bent plates, stairs, steel ladders, steel guardrails, block outs and misc accessories.
16. Supply / fabrication of concrete & masonry embedments
17. Supervision of installation of fabricated embedments (anchor bolts for steel columns) in concrete work. Provide knowledgeable representative for all onsite pours and during embed placement to verify correct location. Set up a coordination meeting prior to installing templates to ensure these are properly installed.
18. Provide metal templates for all column base plates installed by Concrete Contractor.
19. Bonding Requirements
20. Structural members required by other trades.
21. Provide safety cabling/restraint systems for building during construction until permanent safety railing/etc is installed.
22. All GFRC items embedded in concrete or welded to structural steel. Coordinate final design details prior to fabrication and provide all required attachments stated above.

Expressly excluded items are as follows:

1. Stainless steel counters
2. Doors, door frames.
3. Stainless Steel railing system and infill panels
4. Concrete and concrete reinforcing
5. Installation of embedments. Contractor is responsible for onsite and offsite coordination and supervision of the installation for proper installment.
6. Doors, Door Frames, and Door Hardware.
7. Fire Proofing
8. Plywood
9. Concrete
10. Cost for onsite testing and inspections. Contractor is still responsible for coordinating these requirements with the CM and inspector.
11. Non-Structural Cold formed framing (metal Studs).
12. Grout and dry packing.
13. Finish painting (except touch up on galvanizing).

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Additive Alternate # 6 per section 01230 of the contract specifications: Add projector platform and railing in Planetarium.

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledge their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or

representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3085 Miscellaneous Carpentry
Bid Form 05-157-3085

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3085, Miscellaneous Carpentry and Division(1) one of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 06105 – Miscellaneous Carpentry

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Bonding Requirements
4. Provide and install all plywood unless otherwise stated in the excludes.
5. Labor and Materials for Miscellaneous Carpentry including rough carpentry.
6. Wood grounds, nailers, blocking, sleepers, caps, cant strips, rough hardware, equipment support bases, stripping and attachments.
7. Wood required by Roofing, HVAC, plumbing, and sheet metal Contractors
8. Coordinate with all necessary trades for proper installation of work.
9. Fire Retardant Treated Wood
10. Plywood required by all trades
11. Wood wall backing in coordination with the drywall contractor.

Expressly excluded items are as follows:

1. Finish Carpentry Items
2. Metal Stud Work
3. Drywall
4. Insulation
5. Hardwood/maple paneling
6. Wood Flooring Systems

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3095 Wood, Plastics and Food Service
Bid Form 05-157-3095

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3095, Architectural Woodwork and Division (1) one of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 05521 – Stainless Steel railing

Section 06620 – Solid Polymer Tops

Section 06621 – Quartz Surfacing

Section 06655 – Resin Panels

Section 06410 – Plastic Laminate Case Work

Section 07920 - Joint Sealers

Section 08310 – Access Panels and Frames

Section 11400 - Food Service Equipment

Section 11450 – Residential Appliances

Section 11602 – Laboratory Casework and other furnishings

Section 11605 – Laboratory Equipment

Specifically included items are as follows:

1. Clean up excess material and debris **daily**, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install the towel rings on cabinetry as shown on the contract documents.
4. Provide and install all interior millwork including but not limited to wood window sills, caps, edging, base, and trim complete.
5. Hardware associated with this work.
6. Provide and install all cabinets, shelving and counters, etc. as shown in the contract documents complete.
7. Supply, installation and coordination of all required grommets.
8. Shop drawings.
9. Supervision of installation of cabinet backing/blocking within walls.
10. Bonding Requirements
11. Provide and install lab equipment, lab fitting, lab fixtures and lab plumbing fixtures.

12. Provide and install the stainless steel handrails and infill complete per the contract documents
13. Provide and install the stainless steel work per the contract documents complete.
14. Provide and install the food service and residential equipment/appliances complete per the contract documents.
15. Provide and install all plywood, supports, attachments, braces, corbels, etc. necessary for a complete installation.
16. Meet all health department requirements.
17. Coordinate with MEP trades to make sure all services are in design and properly sized/located/etc.
18. Coordinate with framing, concrete, and flooring contractor for all requirements prior to that work starting.
19. Prepare submit a complete shop drawings with calculation for review by the Health Department having jurisdiction.
20. Provide and install Food Service Equipment complete.
21. Coordinate with the MEP, Flooring and Concrete contractors for proper installation of the complete Food Service Equipment.
22. Submittals and shop drawings.
23. Perform field measurements of areas where the Food Service Equipment scheduled to be installed and submit shop drawings before start of equipment fabrication.
24. Coordinate with MEP contractors for the required services of the residential appliances.
25. Prepare and submit complete shop drawings with calculation for review by the Health Department.
26. Review the availability of domestic hot water as required by the Health Department.
27. Bonding Requirements.
28. Provide and install all mounts, supports, connections, brackets, etc. required for work pertaining to this package.
29. Protect all work daily and after installation to ensure no damage is made to items such as countertops. Cover these areas thoroughly.

Expressly excluded items are as follows:

1. Backing in walls

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Additive Alternate # 4 per specifications section 01230: Change plastic laminate finish on casework to wood finish.

Total_____

Additive Alternate # 9 per section 01230 of the contract specifications: Add two kitchens to Nutrition/Food lab (Four (4) total when completed).

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3131 Roofing and Water Proofing
Bid Form 05-157-3131

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3131, Roofing and water proofing and Division (1) one of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07531 – Thermoplastic Membrane Roofing

Section 07222 – Gypsum Underlayment Board

Section 07220 – Roof Insulation

Section 07920 - Joint Sealers

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Submittals
4. Layout, supply and installation of complete roofing work including tapered roof insulation, elastomeric flashing cement, single ply roofing, roof walk pads, attachments, penetrations, sleeves, supports, etc..
5. Provide and install sheet metal work relative to roofing system. This includes sheet metal, coping, roof penetrations and flashing.
6. Bonding Requirements
7. Provide and install the work per sections 07222 and 07220 complete as they pertain to the roofing system.
8. Joint Sealants required for the roofing system.

Expressly excluded items are as follows:

1. Plywood
2. Sheet Metal Work not pertaining to the roofing system (coordination still required)
3. Wood nailers, caps, blocking.
4. Insulation and underlayment board work for the standing seam system.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: **NOT APPLICABLE**

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is

Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3133 Standing Seam Roofing and Aluminum Wall Panels
Bid Form 05-157-3133

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3133, Standing Seam Roofing and Aluminum Wall Panels and Division (1) one of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 05080 – Anodized Aluminum Finishes (with work associated with this package)

Section 05082 – Fluoropolymer Resin Coating

Section 05580 – Performed Metal Columns Covers

Section 05810 – Seismic joint Cover Assemblies (associated with this work)

Section 07112 – Water Proofing Membrane Type B

Section 07220 – Roof Insulation

Section 07412 – Aluminum Wall Panels

Section 07610 – Standing Seam Roofing

Section 07920 - Joint Sealers (associated with this package)

Section 10705 – Exterior Aluminum Sun Shades (not attached to storefront/window systems)

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Submittals
4. It is a requirement of the GFRC, Storefront, Steel, Metal Panel contractors create a mock up of each detail requiring coordination. This shall occur prior to fabrication of any finish paneling. Coordinate with other trades to have this completed.
5. Layout, supply and installation of complete Standing Seam roofing and Aluminum Wall Panels work including, attachments, penetrations, sleeves, supports, etc..
6. Coordination with roofing and utility contractors for flashing and counter flashing.
7. Bonding Requirements
8. Provide and install the general sheet metal/flashing work for the project.
9. Equipment/scaffolding needed to complete this work. Metal stud contractor will have scaffolding up from start of stud framing to completion of wallboard.
10. Provide and install the sunshade devices that are not attachment to the window systems.
11. Provide and install the roof insulation system complete per section 07220 as pertains to work performed by this package.

12. Provide and install the water proofing system per section 07112 complete per the contract documents.

Expressly excluded items are as follows:

1. Plywood
2. HVAC Ducting
3. Wood nailers, caps, blocking, etc
4. Built up roof membranes
5. Louvers
6. Sheet metal work integral to the roofing system. (For example: Metal coping **not** integral with the roofing system would be by this package)

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: **NOT APPLICABLE**

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their

insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3171 Doors, Frames, and Hardware
Bid Form 05-157-3171

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3171, Doors, Frames, and Hardware and Division (1) Specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07920 - Joint Sealers

Section 08110 - Steel Doors and Frames

Section 08210 - Wood Doors

Section 08215 – Stile and Rail Wood Doors

Section 08314 – ICU Sliding Doors

Section 05080 – Anodized Aluminum Finishes (associated with this work)

Section 08710 – Door Hardware

Section 16722 – Access Control

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install all wood, steel, hollow metal, acoustical, sliding, complete including but not limited to doors, frames, hardware, attachments, grout, sealants and misc accessories as shown on the contract documents.
4. Bonding Requirements
5. Provide and install the sliding ICU and rail wood door system complete per the contract documents
6. Provide cylinders/keying for storefront entrances
7. Provide and install complete door hardware system in coordination with electronic hardware devices.
8. Provide Control Access Card readers per section 16722 Access Control. Coordinate with campus and electrical contractor for a fully functional system.
9. Acoustical noise reduction systems associated with this work.
10. Caulking/sealant at all door frames.
11. Provide and install, in coordination with the campus locksmith, the appropriate master/sub-master keying system. A meeting with the campus locksmith prior to fabrication of systems is required of this contractor.

Expressly excluded items are as follows:

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Deductive Alternate # 6 per section 01230 of the contract specifications: Replace doors and frames in Planetarium to standard height.

Total_____

Deductive Alternate # 6 per section 01230 of the contract specifications: Replace card readers at doors with key and cylinder locks.

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their

insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3195 Aluminum Storefront Entrances & Glass and Glazing
Bid Form 05-157-3195

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3195, Aluminum Storefront Entrances and Glass & Glazing and Division (1) one of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 05082 – Fluoropolymer Resin Coating

Section 07920 - Joint Sealers

Section 08410 – Aluminum-Framed Storefronts and Entrances

Section 08800 – Glass and Glazing

Section 08900 – Exterior Glazed Assemblies and Entrances

Section 08950 – Steel Curtain Walls, Windows, Fins, Shades

Section 10705 - Sunshades

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. It is a requirement of the GFRC, Storefront, Steel, Metal Panel contractors create a mock up of each detail requiring coordination. This shall occur prior to fabrication of any finish paneling. Coordinate with other trades to have this completed.
4. Provide and install all glazing
5. Provide and install the aluminum doors, frames, and hardware associated with the storefront system. Door contractor to provide cylinders/keying.
6. Bonding Requirements
7. Provide and install exterior aluminum sun shades and fins under the contract documents that attach to work associated with this work.
8. Sheet Metal, break metal, metal edging, metal covers associated with this work.
9. Equipment/scaffolding needed to complete this work. Metal stud contractor will have scaffolding up from start of stud framing to completion of wallboard.

Expressly excluded items are as follows:

1. Hollow metal work.
2. Glass block work
3. Wood sills/jambs
4. Glazing within cabinetry.
5. Toilet accessory mirror units.
6. Sun shades not attached to work associated with this contract.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Deductive Alternate # 1 per section 01230 of the contract specifications: Remove Vertical shading fins from North and East elevations.

Total_____

Deductive Alternate # 2 per section 01230 of the contract specifications: Remove Vertical shading fins from West and South elevations.

Total_____

Deductive Alternate # 3 per section 01230 of the contract specifications: Remove solar shading canopy at courtyard elevation.

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3221 Building Insulation
Bid Form 05-157-3221

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___ No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3231, Metal Studs, insulation, drywall, and plaster and Division (1) of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07210 – Building Insulation

Section 07920 - Joint Sealers

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install building insulation complete.
4. Coordinate with other trade contractors
5. Provide and install attachments/tape/supports required for work associated with this package.
6. Bonding Requirements

Expressly excluded items are as follows:

1. Insulation in built up roofing system
2. wood work
3. Tile work inside of the building and at the fountain.
4. Masonry Scaffolding
5. Plywood
6. Supply of access panels
7. Metal Stud work
8. Exterior wallboard/ dens glass.
9. Scaffolding

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or

representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3231 Metal Studs, Drywall, Plaster Systems, Acoustics and Sound proofing
Bid Form 05-157-3231

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3231, Metal Studs, insulation, drywall, and plaster and Division (1) specifications of the contract documents except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 05810 – Seismic joint Cover Assemblies (associated with this work)

Section 07114 – Water Proofing Membrane Type C

Section 09820 – Acoustical Insulation and Sealants

Section 09100 – Non-Structural metal framing

Section 07810 – Sprayed Fireproofing

Section 07920 - Joint Sealers

Section 09220 – Lath and Portland Cement Plaster

Section 09250 – Gypsum Board

Section 09220 - Portland Cement Plaster

Section 09255 – Cement backer Board

Section 09260 – Gypsum Board Shaft Wall Systems

Section 09280– Gypsum Sheathing Board

Section 08310 – Access Panels and Frames (installation and coordination)

Section 09510– Acoustical Ceiling

Section 09515– Linear Metal Ceiling

Section 09525– Fabric Covered Acoustical Wall Panels

Section 07225 – Fire and Smoke Containment Insulation System

Section 07884 – Penetration Fire Stop System

Section 10191 – Cubical Curtains

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install the metal stud systems complete including but not limited to track, studs, blocking, backing, angles, mineral wool, caulking, sealants, plates, closures, safing, C-H studs, furring, crickets, soffits, walls, enclosures, metal stud work at the acoustical Ceiling, vapor retarders, attachments, and misc accessories.
4. Provide and install the exterior Portland cement plaster system complete.
5. Provide and install all interior and exterior wallboard/drywall complete including but not limited to board, attachments, taping, finishing, caulking, sealants, and misc accessories.
6. Provide and install complete fire rated assemblies associated with walls, ceilings, enclosures, soffits and shafts associated with this trade. Review all fire rated assemblies for proper installation and U.L. approved assembly conformance. Notify architect prior to any areas in question being covered up or becoming inaccessible prior to completing an assembly.
7. Provide and install metal stud framing. Coordinate with trade for proper installation.
8. Provide and install light gauge steel attachments/clips into concrete, and steel work.
9. Provide and install control/expansion/seismic joints required for work associated with this package.
10. Provide and install all required Sprayed Fire Resistive Coating systems complete per the contract documents.
11. Provide, install and maintain the interior scaffolding required by all trades except for the Curtain Steel Walls and steel contractors from start of stud framing until completion of drywall.
12. Provide, install and maintain the exterior scaffolding required by all trades except for the masonry, Steel Curtain Walls and steel contractors from start of stud framing to completion of wall board/building paper/stucco.
13. Provide and install above ceiling acoustical ceiling suspension/seismic/tie/hanger wires for all systems installed in ceiling systems.
14. Provide and install all furring, cut outs, and rough openings required by other trades for work installed in work provided by this contract and areas out of plumb or needing furring.
15. Provide and install cubical curtains as indicated in the contract documents.
16. Provide supervision for layout of concrete slab anchor bolts for steel stud framing
17. Provide and install all metal backing. Coordinate with other trades for proper installation
18. Upon completion of drywall, scrape and clean all taping mud from floor and surfaces unintended for application of product. Walk project/areas with site superintendent to relieve this trade of cleaning after this operation.
19. Bonding Requirements
20. Provide and install the acoustical and metal ceiling panel systems per the contract documents complete.
21. Requirements during winter/weather periods to meet schedule requirements.

Expressly excluded items are as follows:

1. Sheet Metal Flashing
2. Insulation
3. wood work
4. Tile work.
5. Steel Curtain Walls and Steel Scaffolding
6. Plywood
7. Supply of access panels

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3241 Finish Flooring, Tile, Epoxy Terrazzo, Precast Terrazzo Units, Resinous Flooring
Bid Form 05-157-3241

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3241 and Division (1) one of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07118 – Water Proofing Membrane Type E

Section 07260 – Vapor Control Barrier (Option 2 only, concrete contractor to perform option 1)

Section 07920 - Joint Sealers

Section 09310 - Ceramic Tile

Section 09440 – Epoxy Terrazzo

Section 09442- Precast Terrazzo Units

Section 09650 - Resilient Flooring

Section 09651 – Resilient Wall Base

Section 09672 – Resinous Flooring

Section 09680 - Carpeting

Section 09682- Carpet Tile

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install the complete tile system per the contract documents complete.
4. Provide and install the marble saddles located next to tile work per the contract documents.
5. Submittals
6. Provide moisture testing of flooring areas per specifications. To be conducted and recorded by an independent testing facility.
7. Provide and install the epoxy terrazzo systems per the contract documents complete.
8. Provide and install the resilient flooring and wall base systems per the contract documents complete.
9. Provide and install the resinous flooring system per the contract documents complete.
10. Provide and install the carpeting and carpet tile systems per the contract documents complete.
11. Sanded caulking at grout space adjacent to door frames.
12. Bonding Requirements

13. Final Cleaning/polishing/sealing of materials.
14. Provide an Allowance line item for 20,000 square feet of the vapor control barrier per section 07260. Price per square foot is subject to industry standard costing.

Expressly excluded items are as follows:

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Additive Alternate # 7 per section 01230 of the contract specifications: Change Rubber Flooring at hallways and stairs to epoxy terrazzo flooring with precast base and precast terrazzo stair treads and risers.

Total_____

Additive Alternate #11 per section 01230 of the contract specifications: Change Commercial Homogenous Tile (CHT) to rubber tile (RT) in laboratories and Lab accessory rooms.

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3255 Painting
Bid Form 05-157-3255

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3255, Painting and Division (1) one of the contract specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 09900 - Painting

Section 07190 – Water-Repellant Coating (at CMU walls only)

Section 09720 – Wall Covering

Section 09905 – High performance Coating

Section 09940 – Decorative Paint Finish System

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide protection of adjacent work from damage and overspray during the painting operation.
4. Provide 160 hours allowance for labor and materials for the project as directed by the project manager/design team.
5. Provide all scaffolding, equipment and tools required for the work of this trade.
6. Bonding Requirements
7. Provide and install all wall covering systems per the contract documents complete. Coordinate with owner and architect for selections/designs.
8. Provide and install the high performance coatings per section 09905 complete per the contract documents.
9. Provide and install water repellant coating per section 07190 at CMU walls complete.
10. Provide and install the decorative paint finish system per the contract documents complete.
11. Weather requirements in order to meet schedule requirements.

Expressly excluded items are as follows:

1. Prefinished materials
2. Water Repellent coating at GFRC Panels.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is

Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3271 Specialties
Bid Form 05-157-3271

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3271, Specialties and Division (1) of the contract documents, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 06105 - Miscellaneous Carpentry

Section 07920 - Joint Sealers

Section 09725 – FRP Wall Panel

Section 10160 - Toilet Compartments and Screens

Section 10115 – Marker Boards and Tack Boards

Section 10260 – Corner Guards

Section 10290- Bird Control System

Section 10400 - Signs and Building Identification

Section 10500 – Steel Lockers

Section 10520 - Fire Extinguishers and Cabinets

Section 10810 – Toilet Room Accessories

Section 10990 – Building Specialties (Key Storage Vault)

Section 12490 – Roller Shades

Specifically included items are as follows:

1. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
2. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
3. Provide and install the toilet partitions complete per the contract documents.
4. Provide and install the toilet, bath, accessories complete per the contract documents.
5. Provide and install the fire extinguishers and cabinets as shown in the contract documents complete. Coordinate with other trades for proper size and location of openings and backing required.
6. Provide and install all interior and exterior building signage as shown on the contract documents complete.
7. Provide and install the mop racks per the contract documents complete.

8. Coordinate with the steel, metal stud and drywall contractors for proper installation of all attachments per the contract documents.
9. Furnish and install ADA grab bars in restrooms as indicated on the drawings
10. Provide and install all mirrors per the contract documents complete.
11. Provide and install corner guards per the contract documents complete
12. Provide the hand dryers. Coordinate with the electrician for the proper requirements and installation.
13. Provide and install all metal lockers complete per the contract documents.
14. Provide and install all mirrors per the contract documents complete.
15. Bonding Requirements
16. Provide and install bird control system per the contract documents. Coordinate with all contractors.
17. Provide and install the window covering and electronic shades per the contract documents complete.
18. Review all work for ADA compliance/coordination issues prior to work affecting any trade. Notify architect in writing.

Expressly excluded items are as follows:

1. Signage in concrete paving and asphalt.
2. Stainless steel counters and railing
3. Wood Flooring
4. Wood Veneer Wall System

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: **NOT APPLICABLE**

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3328 Planetarium and Lecture Hall Seating
Bid Form 05-157-3328

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3328, Planetarium Seating except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 12610 – Planetarium Seating

Section 12730 - Upholstered Seating

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install the Planetarium and upholstered seating per the contract documents complete. Coordinate with the structure concrete, communication and Audio Visual, Planetarium Dome, and electrical contractors for work associated with this package.
4. Provide protection from dirt, debris, paint, etc. after installation of the seating.
5. Provide final cleaning of seating surfaces prior to turnover to the owner.
6. Shop/Coordination drawings.
7. Bonding Requirements

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3332 Planetarium Projection Dome
Bid Form 05-157-3332

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3332, and Division (1) one of the contract specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 11652 – Planetarium Projection Dome and ceiling Assembly

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Bonding Requirements
4. Provide and install the Planetarium Projection and Dome seating assembly complete per the contract documents.
5. Coordinate with all trades associated with this work so that all systems can work together properly.
6. Provide and install all wire, terminations, and devices associated with this package.
7. Provide any steel embeds with layouts to other trades for proper installation of the work.
8. Provide and install the control devices associated with the work performed by this bid package.
9. Coordinate with the Structure Steel, concrete, Roofing, GFRC and Curtain Walls and electrical contractors for the proper requirements and installation of all work associated with this contract.
10. Prepare and submit complete design drawings and calculations to obtain deferred approval from the Department of State Architect.
11. This is a critical activity on the project construction schedule.
12. Bonding Requirements

Expressly excluded items are as follows:

1. conduit
2. structural steel
3. Main Power Disconnect.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Public Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3334, Greenhouse and Division (1) one of the contract specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 13340 - Green House

Specifically included items are as follows:

1. Payment & performance bonds
2. Shop drawings & submittals
3. Provide all safety equipment and instruction required.
4. Provide all scaffolding, equipment and tools required for the work of this trade.
5. Coordination, layout, supervision, supply and installation of complete greenhouse system including but not limited to one building with framing, doors, glazing, vents & covering, exhaust fans, coolers, heaters, controllers, benches and necessary sinks, mist spray irrigation system, lighting, shading with automatic interface with the green house building automation control system, internal electrical, lighting, irrigation mist system and control wiring, connect the Greenhouse utilities to provided Points of Connection by the site utilities contractor five (5) feet outside the building, etc
6. Clean up excess material and debris daily, dispose in dumpster provided, leaving the job site in a clean and safe condition

Expressly excluded items are as follows:

1. Concrete foundation & slab
2. Janitorial cleaning.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 – Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3341 Plumbing
Bid Form 05-157-3341

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3341, Plumbing and Division (1) Specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07842 – Fire stopping

Section 07920 - Joint Sealers

Section 08310 - Access Panels and Frames

Section 10250 – Head Walls

Section 15050 - Basic Mechanical Materials and Methods

Section 15060 – Hangers and Supports
Section 15070 – Mechanical Sound, Vibration, and Seismic Control
Section 15075 – Mechanical Identification
Section 15080 – Mechanical Insulation
Section 15110 – Valves
Section 15120 – Piping Specialty
Section 15130 – Pumps
Section 15140 – Domestic and Non-Portable (Industrial) water Piping
Section 15150 – Sanitary Soil, waste, Grease Waste and Vent Piping
Section 15160 – Storm Water (including roof drains and down spouts)
Section 15180 – Heating and Cooling Piping
Section 15190 – Fuel (MPG) Piping Building
Section 15210 – Laboratory Air and Vacuum Piping
Section 15220 – Purified water and laboratory Waste and Vent Piping
Section 15410 – Plumbing Fixtures
Section 15415 – Laboratory Plumbing
Section 15440 – Domestic and Non-Portable (Industrial) Pumps
Section 15460 – Domestic water Conditioning Equipment
Section 15480 – Domestic water and Non-Portable (Industrial) Water Equipment
Section 15485 – Reverse Osmosis/DE-ionized Water System
Section 15510 – Heating Boilers and Accessories

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and Install Building Exterior wall Hydrants with freeze protection

4. Provide and install all penetrations for work associated with this trade complete including all necessary caulking, sealants, and safing per the contract documents.
5. Review contract documents for ADA and minimum/ maximum spacing requirement issues with plumbing work prior to installation. Notify the construction manager prior to install of any issues.
6. Provide and install the fountain system complete per the contract documents.
7. Provide and install all plumbing and Mechanical piping for work performed by the owner or other trades as required.
8. Make connection to all utilities to existing points of connection outside of the building.
9. Provide all scaffolding, equipment and tools required for the work of this trade.
10. Layout, supply and installation of complete Mechanical and plumbing work including tie-ins, building plumbing, plumbing fixtures, trim, ADA showers, condensate, rain water, caulking, roof flashing, rain water splash blocks, roof jacks, etc..
11. Fire safing and fire caulking related to this work.
12. Provide and install the boiler and four pipe system complete per the contract documents including but not limited to boiler, piping, insulation, connections, equipment, pumps, piping to AHU's, air separators, expansion tanks, chemical feeders as shown in the contract documents. Coordinate with Site utilities Contractor for point of connection located on the outside perimeter of the Building. Provide excavation, compaction, backfill, and spoil removal requirements.
13. Provide and install all Condensate drainage required for the HVAC work from units to building drainage sanitary sewer system.
14. Provide and install the boiler and four pipe systems as shown in the contract documents form point of connection.
15. Roof Penetrations and Flashing
16. Provide and install all caulking and fire caulking required by work performed by this contract.
17. Prepare and submit Mechanical, Plumbing coordination drawings
18. Record drawings, owner instruction and maintenance / operation manuals.
19. Coordinate the installation of the Boilers at the APL building with the Project Manager and schedule installation during the heating off season.
20. Coordinate required shafts area with drywall, structure steel and metal studs contractors.
21. Payment & performance bonds
22. Provide and install the headwalls medical gas connections per section 10250 complete per the contract documents. Coordinate with other trades for backing and connections into the headwalls.
23. Provide roof drains and downspouts. Coordinate with landscape contractor to empty into planters.
24. Provide as built photo album of all, underground, under slab, wall, and ceiling work prior to areas being covered up. Photos shall provide all detailed information to denote location such as room #, wall #, and item noted (4" waste line).
25. Provide all required natural gas piping inside the building and connect to existing points of connection outside the building.
26. Freeze protection for work as required or needed.

Expressly excluded items are as follows:

1. Concrete Curbs for Equipment. Contractor is still required to coordinate proper installation / sizing.
2. Site utilities up to provided point of connection outside the building
3. Pre plumbed laboratory units.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Additive Alternate # 9 per section 01230 of the contract specifications: Add two Kitchens to Nutrition/Food lab (Four (4) total when completed).

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

Certificates of insurance must state the following information.

Job 05-157 - Antelope Valley College Health & Science Building
Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3351 Fire Sprinkler System (Wet Pipe System)
Bid Form 05-157-3351

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3351, Fire Sprinkler System and Division (1) one of the contract specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07842 – Fire stopping

Section 08310 - Access Doors and Frames

Section 13910 – Basic Fire Suppression materials and Methods

Section 13930 - Automatic Wet Pipe Fire Protection Sprinkler System

Section 15050 - Basic Mechanical Requirements

Section 12480 – Hydraulic Elevators

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install all penetrations for work associated with this trade complete including all necessary caulking, sealants, and safing per the contract documents.
4. Provide all scaffolding, equipment and tools required for the work of this trade.
5. Layout, supply and installation of complete fire sprinkler work including tie-in to POC, site fire water piping, back flow preventer, pumps, riser, building fire water piping, valves, heads, alarms, bells, controls, etc..
6. Fire safing / fire caulking related to this work.
7. Supply and coordination of layout of access doors required for this work.
8. Prepare and submit for review coordination drawings
9. Design and prepare calculation to submit such to the Department of State Architect (DSA) for deferred approval. This is a critical path activity on the schedule.
10. Coordinate with the elevator contractor the requirements for fire suppression in concert with the State of California Elevator Inspector.
11. Coordinate with the communication and electrical contractor the requirements for electrical and communication services into the elevator.
12. Record drawings, owner instruction and maintenance / operation manuals.
13. Payment & performance bonds
14. Provide as built photo album of all, underground, under slab, wall, and ceiling work prior to areas being covered up. Photos shall provide all detailed information to denote location such as room #, wall #, and item noted.

Expressly excluded items are as follows:

1. Conduit, boxes and line voltage electrical.
2. Installation of access panels.
3. Site utilities

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3361 HVAC, HVAC Controls, Sheet Metal and Laboratory Fume Hoods
Bid Form 05-157-3361

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3361, HVAC and HVAC Controls and Division (1) Specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07842 – Fire stopping

Section 07920 - Joint Sealers

Section 08310 - Access Panels and Frames

Section 10200 – Exterior Aluminum Wall Louvers

Section 15050 - Basic Mechanical Materials and Methods

Section 15060 – Hangers and Supports
Section 15070 – Mechanical Sound, Vibration, and Seismic Control
Section 15075 – Mechanical Identification
Section 15080 – Mechanical Insulation
Section 15110 – Valves
Section 15120 – Piping Specialty
Section 15130 – Pumps
Section 15140 – Domestic and Nov-Portable (Industrial) water Piping
Section 15150 – Sanitary Soil, waste, Grease Waste and Vent Piping
Section 15160 – Storm Water
Section 15180 – Heating and Cooling Piping
Section 15190 – Fuel (MPG) Piping Building
Section 15210 – Laboratory Air and Vacuum Piping
Section 15220 – Purified water and laboratory Waste and Vent Piping
Section 15410 – Plumbing Fixtures
Section 15415 – Laboratory Plumbing
Section 15440 – Domestic and Non-Portable (Industrial) Pumps
Section 15460 – Domestic water Conditioning Equipment
Section 15480 – Domestic water and Non-Portable (Industrial) Water Equipment
Section 15485 – Reverse Osmosis/DE-ionized Water System
Section 15510 – Heating Boilers and Accessories
Section 15540 – Fuel Fired Heaters
Section 15550 – Breeching, Chimney, and Stack
Section 15710 – Heat Exchangers
Section 15720 – Air Handling Units
Section 15739 – Split System Air Conditioning Units
Section 15750 – Humidity Control Equipment
Section 15790 – Variable frequency Drives
Section 15810 – Ducts
Section 15820 – Duct Accessories

Section 15825 – Duct Silencers (sound traps)
Section 15829 – Combination Smoke Detectors
Section 15830 – Fans
Section 15831 – Fume Hood Exhaust Fans
Section 15840 – Air Terminal Units
Section 15850 – Air Outlets and Inlets
Section 15860 – Air Cleaning Devices
Section 15910 – Direct Digital Controls
Section 15930 – Laboratory Air Flow Control System
Section 15950 – Testing Adjusting, and Balancing
Section 11661 – Fume Hoods and other Containment Units
Section 16722 - Communications

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install all penetrations for work associated with this trade complete including all necessary caulking, sealants, and safing per the contract documents.
4. Provide all scaffolding, equipment and tools required for the work of this trade.
5. Fire safing and fire caulking related to this work.
6. Install duct smoke detector to be provided by others.
7. Provide and install all Condensate drainage required for the HVAC work from units to building drainage sanitary sewer system.
8. Provide and install the boiler and four pipe systems as shown in the contract documents form point of connection.
9. Provide and install combination smoke/fire dampers.
10. Coordinate with the Fire Alarm contractor for complete and functioning fire alarm and control systems.
11. Provide and install the roof access hatches. Coordinate with other trades for the proper installation of these hatches.
12. Provide and install all equipment curbs complete as required.
13. Provide and install all caulking and fire caulking required by work performed by this contract.
14. Provide and install all HVAC equipment required per the contract documents.
15. Provide and install the insulation and acoustical work as required for the HVAC work.
16. Provide and install all sheet metal flashing and trim as required per the contract documents
17. Supply and coordination of the layout of access panels required for this work.
18. Prepare and submit Mechanical coordination drawings
19. Provide and Install equipment, patch cords, patch panels, and devices for the Building Automation System at building IDFs, BDF and the campus MDF for communication with the campus central BAS system. Coordinate with communication contractor to complete system installation and testing at each location in building and at the M&O Building
20. Record drawings, owner instruction and maintenance / operation manuals.
21. Coordinate placement of the AHU, Stacks, exhaust and intake roof penetrations and equipment with the structure steel contractor
22. Coordinate required shafts area with drywall, structure steel and metal studs contractors. Set up coordination meeting during submittal phase and prior to work starting.
23. Payment & performance bonds
24. Provide and install exterior wall aluminum wall louvers per the contract documents.
25. Provide contaminate removal laboratory fume hoods. Prepare and submit complete shop drawings with calculation for review by the Health Department. Coordinate fume hoods intake and exhaust control system with BAS. The proper interface of the fume hoods and BAS if of high importance.

Expressly excluded items are as follows:

1. Concrete Curbs for Equipment. Contractor is still required to coordinate proper installation / sizing.
2. Site utilities up to the provided point of connection outside the building
3. Installation of access panels
4. Pre plumbed laboratory units.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Additive Alternate # 9 per section 01230 of the contract specifications: Add two Kitchens to Nutrition/Food lab (Four (4) total when completed).

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3365 Communications and Equipment
Bid Form 05-157-3365

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3365, Communications and Audio Visual Equipment Speakers, Projection Screens, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 16750 - Communications Cabling

Specifically included items are as follows:

1. Provide and install the wall mounted equipment cabinets for communications work complete.
2. Provide and install the wiring/cabling for communications work complete.
3. Provide and install the communications Cable Management/ cable support system complete.
4. Provide and install all communications equipment racks complete.
5. Provide and install all communications devices, and outlets complete per the contract documents.
6. Provide and install the communications floors boxes per the contract documents complete.
7. Provide and install the wireless transmitters, controllers and receivers per the contract documents complete.
8. Provide and install the telecommunications bonding requirements.
9. Final Testing of the system.
10. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
11. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace
12. Provide and install building backbone cell tubing, Telephone Cables, Multimode and single mode fiber and terminate such into the campus main distribution frame. Coordinate patching of Fire Alarm and Energy management System into the building BDF and into the MDF thereafter.
13. Provide matrix of telecommunications equipment and interface of such with other building systems for review and approval.

Expressly excluded items are as follows:

1. Site Underground conduit and manholes/Pull Boxes.
2. Conduit and line voltage wiring

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Additive Alternate # 9 per section 01230 of the contract specifications: Add two Kitchens to Nutrition/Food lab (Four (4) total when completed).

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured

(General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3367 Vertical Transportation (Elevators)
Bid Form 05-157-3367

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3367, and Division (1) one of the contract specifications, except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07842 – Fire stopping

Section 08310 – Access Panels and Frames

Section 13851 - Fire Alarm and Detection System

Section 14420 - Elevators

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Coordinate with the Electrical contractor for complete and functioning fire alarm and communication system.
4. Coordinate with the Fire Sprinklers contractor for complete and functioning Fire Sprinkler system as required by the Local fire department and the Elevator Inspector.
5. Provide all equipment, accessories and installation for a complete Elevator system as described in the Drawings and specifications.
6. Coordinate with the metal studs, and structure steel contractors for complete work.
7. Prepare and submit design drawings and calculations of the elevators to obtain approval from the elevator inspector/DSA. This is a critical activity on the project schedule
8. Coordinate with the elevator inspector for all inspections.

Expressly excluded items are as follows:

1. Fire sprinkler bells.
2. Combination smoke/fire dampers.
3. Conduit, boxes and line voltage wiring.

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: NOT APPLICABLE

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Center
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

Each certificate must list project location or can state "All California Operations"

The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3375 Electrical, A/V and Fire Alarm System
Bid Form 05-157-3375

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3375, Electrical and Fire Alarm System and Division (1) one of the contract specifications except as otherwise expressly provided herein, in accordance with the following:

Sections:

Section 07842 – Fire stopping

Section 07920 - Joint Sealers

Section 08310 – Access Panels and Frames

Section 11064 - Production Lighting Control

Section 11130 – Audio Equipment Speakers

Section 11132 – Projection Screens

Section 13851 – Fire Alarm System

Section 16050 - Basic Electrical Materials and Methods

Section 16011 – Short Circuit and Protective Device Coordination Study

Section 16060 – Grounding and Bonding

Section 16070 – Electrical Hangers and Support

Section 16075 – Electrical Identification

Section 16112 – Laboratory Electrical Requirements

Section 16121 – Medium-Voltage Cable

Section 16123 – Building Wire and Cable

Section 16130 – Raceway and Boxes

Section 16131 – Cabinets and Enclosures

Section 16140 – Wiring Devices

Section 16150 – Wiring Connections

Section 16235 – Engine Generator

Section 16321 – Pad Mounted Transformers

Section 16411 – Enclosed Switches

Section 16412 – Enclosed Circuit Breakers

Section 16413 – Automatic Transfer Switches

Section 16441 – Switch Boards

Section 16442 – Panel Boards

Section 16443 – Motor Control Centers

Section 16461 – Dry Type Transformers

Section 16491 – Fuses

Section 16510 – Interior Luminaries

Section 16520 – Exterior Luminaries

Section 16750 – Communication Cabling (Conduit only)

Section 16775 – ALS

Section 16722 – Access Control (Conduits and Wiring Only)

Section 14240 – Hydraulic Elevators (electrical requirements)

Section 16750 – Telecommunications Projector mounts

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide and install all penetrations for work associated with this trade complete including all necessary caulking, sealants, and safing per the contract documents.
4. Coordinate electrical demolition work. Remove material to a satisfactory offsite dumping location. Provide manifests.
5. Relocation and adjusting of new and existing site utilities per the contract documents and as required including all labor, material, and equipment to do so.
6. Furnish and install Electrical and telecommunication duct banks for connection of work into the building
7. Coordinate with all trades associated with this work.
8. Final testing of all systems associated with this contract.
9. Provide and install all site underground electrical work including but not limited to conduit, Electrical Cables, Pull Boxes, slurry, excavation, backfill and Manholes.
10. Provide and install the site lighting per the contract documents complete.
11. Provide and install all conduit systems and back boxes for all low voltage contractors complete. Coordinate with contractors for all requirements.
12. Provide and install all line voltage work for the entire project including what is required by the low voltage contractors.
13. Provide and install new electrical equipment/gear per the contract documents complete.
14. Provide, install and maintain temp lighting and power for all trades. Project Manager will assign the point of connection.

15. Remove and reinstall existing electrical work per the contract documents complete.
16. Provide all scaffolding, equipment and tools required for the work of this trade.
17. Layout, supply and installation of complete electrical work including tie-in to existing, fixtures, book shelf lighting, panels, conduits, jack flashing at roof, clocks, etc.
18. Coordination, supply and installation of conduit, sleeves, boxes & pull strings for all low voltage electrical work as necessary, required, or needed by the low voltage contractors. Coordinate locations and conduit sizes prior to starting work.
19. Disconnect, establish continuity and remove low and high voltage electrical cables and conductors in coordination with the demolition contractor. Demolition contractor will remove duct banks.
20. Fire safing and fire caulking related to this work.
21. Record drawings, owner instruction and maintenance / operation manuals.
22. Payment & performance bond
23. Provide and install the lighting control systems and equipment required per the contract documents complete.
24. Provide and install the lighting and control devices per the contract documents complete.
25. Provide and install the complete lighting systems.
26. Provide and install the emergency lighting transfer cabinet and emergency lighting per the contract documents complete
27. Provide and install the audio visual systems complete per the contract documents including mounting complete.
28. Provide and install wiring and conduit for food service equipment and residential appliances
29. Provide and install conduits and wiring including conduit only for low voltage for the Laboratory equipment
30. Coordination with other trades for work associated with this package.
31. Provide and install the wire, connections, and devices for the audio visual and communication systems. Coordinate with the electrical contractor for work associated with this package.
32. Provide and install the building fire alarm system complete per the contract documents. Coordinate with campus system and utility contractors for a complete system.
33. Bonding Requirements
34. Provide and install the assisted listening system per the contract documents complete.
35. Provide and install conduit and wiring for all elevators in the building, including but not limited to, electrical, fire alarm and communications.
36. Provide and install fire alarm devices for the building elevators in coordination with the elevator inspector and building fire alarm system.
37. Provide and install wiring and conduits for the access control system
38. Provide and install wiring and conduit for the all automatic door openers.
39. Provide and install conduit for the elevator emergency telephone system
40. Provide and install emergency generator per the contract documents
41. Coordinate and provide necessary electrical work for owner provided equipment.
42. Provide and install required patching equipment and cords between the fire alarm system and the building IDFs, BDF, M&O Building, campus police and the campus MDF to achieve central and local monitoring of the fire alarm system on campus. Coordinate with Communication contractor for a complete and functional system. Programming of the Fire Alarm System at the M&O Building, campus police and the building itself is part of the contract documents an its a mandatory requirement.
43. Coordinate with metal studs and Dry wall contractor for required area in building shafts for electrical raceways.
44. Prepare and submit for review coordination drawings.
45. Copper Bus work
46. Testing of equipment, cables and devices.
47. Required high voltage fuses, at existing high voltage switch #13 and any and all other materials needed for completion.
48. Provide as built photo album of all, underground, under slab, wall, and ceiling work prior to areas being covered up. Photos shall provide all detailed information to denote location such as room #, wall #, and item noted (4" conduit for building power).
49. Provide and install all supports, connections, mounts, brackets, etc for all work pertaining to this package.

Expressly excluded items are as follows:

1. Concrete and rebar associated with light poles
2. Irrigation controls and irrigation controls demolition
3. Concrete equipment curbs. Contractor is still required to coordinate proper installation / sizing.
4. Plywood
5. Communications and HVAC Controls low voltage wiring/devices

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates:

Deductive Alternate # 5 per section 01230 of the contract specifications: Remove LED wall washer lights at Planetarium Lobby wall.

Total_____

Additive Alternate # 9 per section 01230 of the contract specifications: Add two Kitchens to Nutrition/Food lab (Four (4) total when completed).

Total_____

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

3390 Janitorial
Bid Form 05-157-3390

Bid Date: March 11, 2010

Bid Time: 2:00 p.m.

Project Name: Antelope Valley College Health & Science Building
Project Address: 3041 West Avenue K
Lancaster, CA 93536

Closed Bid Opening

NAME OF BIDDER: _____

The undersigned is:

_____A Sole Proprietorship

_____Partnership composed of _____

Residing at _____

and _____

Residing at _____

_____A Corporation organized under the laws of the State of _____

Corporation Number: _____

COMPLETE THE FOLLOWING:

Contact Person: _____

Business Address: _____

_____

Telephone/Fax Number: _____

e-mail Address: _____

Federal I.D. Number: _____

Signature: _____

By: _____
(Write in name of Signor)

Title: _____

Date: _____ [CORPORATE SEAL]

CALIFORNIA STATE CONTRACTORS INFORMATION:

License No: _____

Expiration Date: _____

In Name Of: _____

Type of License: _____

Are you a member of any Union? Yes___No___ If yes, which one?_____

TO: **Klassen Corporation,** 2021 Westwind Drive, Bakersfield, CA 93301

1. The undersigned bidder, having familiarized himself with the terms of the project documents, the local conditions affecting the performance of the contract, the cost of the work at the place where the work is to be done, and the drawings and specifications and other contract documents, proposes and agrees to perform the contract within the time stipulated, including all of its component parts and everything required to be performed, and to provide and furnish any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility, and transportation services necessary to perform the contract and complete in a workmanlike manner all of the work required in connection with 3390, Janitorial except as otherwise expressly provided herein, in accordance with the following:

Specifically included items are as follows:

1. Clean up excess material and debris daily, leaving the job site in a clean and safe condition.
2. Provide and implement all necessary safety equipment and guidelines to maintain a safe workplace.
3. Provide 2 laborers during the construction period 40 hours a week per person at the direction of the CM. These laborers will be asked to perform general construction labor work such as clean up, site maintenance, dust control, grinding, cutting, etc. Provide insurance requirements including the use of carts, water truck, and skip loader. CM can request alternate laborers if ones provided are not adequate for the project.
4. Provide all scaffolding, equipment and tools required for the work of this trade.
5. Furnish materials and labor for complete janitorial cleaning work.
6. Power wash exterior of building and project site.
7. Payment & performance bonds

The undersigned acknowledges receipt of the following addenda to the Drawings and Project Manual (give number and date of each):

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

Addenda No._____, Dated_____ Addenda No._____, Dated_____

The undersigned acknowledges receipt of the Project Documents including the Construction Schedule, Agreement, General Conditions, Supplemental and Special Conditions:

_____

Signature

Total Lump Sum Base Bid: _____

MANPOWER / SCHEDULE OF VALUES:

Attach or provide breakdown of bid and estimate in lieu of schedule of values within 48 hours of bid submission.

Alternates: **NOT APPLICABLE**

The bidder agrees that upon written notice of acceptance of this bid, he will execute the Agreement and other required documents within **10** calendar days after the documents are presented for execution.

Attached is bid security in the amount of not less than 10% of the bid: $_____, bid bond, certified check or cashier's check.

The bidder has carefully examined the plans and specifications for this project, prepared and furnished by Klassen Corporation, and acknowledges their sufficiency and completeness to prepare his bid.

It is understood and agreed that the work under the contract shall be commenced by the bidder, if awarded the contract, on the date to be stated in Klassen Corporation's Notice to Proceed or the Contractor's date of Commencement as set forth in Contractor's Contract.

The undersigned acknowledges: (1) that the following insurance requirements apply to all Prime Contractors and Subcontractors on this project (2) their ability to meet these requirements and their insurance provider has reviewed these requirements prior to bidding (3) the cost for any premiums for these requirements are included in this bid.

_____

Signature

2. Liquidated damages will be $4000 per calendar day under the conditions outlined in Article 7.5 of the Agreement and Supplemental Conditions.

3. Worker's Compensation Insurance, Comprehensive General Liability Insurance and Automobile Liability Insurance are specified in the Contract - Supplemental Conditions.

   Certificates of insurance must state the following information.

   Job 05-157 - Antelope Valley College Health & Science Building
   Antelope Valley Community College (Owner) and Klassen Corporation, their elected or appointed officials, agents and employees are hereby named as additional insured (General Liability) with Waiver of Subrogation for (General Liability and Workers' Comp.) with respects to work performed by the named insured and insurance provided is Primary. Copies of policy endorsements (form CG20-10-11-85) must be attached to the certificates.

   Auto Insurance must include "all automobiles" or "owned", "non-owned" and "hired".

   Each certificate must list project location or can state "All California Operations"

   The cancellation notice on the Accord form must be revised. The words "will endeavor" and "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" must be crossed out. Klassen Corporation must be notified of cancellation within 30 days.

4. In the event that Klassen Corporation deems it necessary to take the Bid under advisement, the undersigned agrees that his bid shall not be withdrawn within 60 calendar days from bid submittal, during which time Klassen Corporation will consider and act upon said bids.

DESIGNATION OF SUBCONTRACTORS
SUB-CONTRACTORS/SUPPLIERS

DESIGNATION OF SUBCONTRACTORS/SUB SUBCONTRACTORS/SUPPLIERS

Portion of Work	Subcontractor Name & License Number	Location and Place of Business

NOTE: The contract documents require that each sub - subcontractor must have a valid and appropriate contractor license issued by the State of California.

BID BOND

KNOW ALL MEN BY THESE PRESENTS that we, _____, as Surety and _____, as Principal, are jointly and severally, along with their respective heirs, executors, administrators, successors and assigns, held and firmly bound unto **Antelope Valley Community College District**, hereinafter the "Obligee" for payment of the penal sum hereof in lawful money of the United States, as more particularly set forth herein.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, the Principal has submitted the accompanying Bid Proposal dated _____, 20__, which, inclusive of additive Bid Alternates, if any, is in the amount of _____Dollars ($_____) to the Obligee for the Work commonly described as the **Antelope Valley Community College District, Health & Science Building – 05-157 - Bid Package Description _____ Bid Package No. _____.**

WHEREAS, subject to the terms of this Bond, the Surety is firmly bound unto the Obligee in the penal sum of **TEN PERCENT (10%)** of the maximum amount of the Bid Proposal submitted by the Principal to the Obligee, as set forth above.

NOW THEREFORE, if the Principal shall not withdraw said Bid Proposal within the period specified therein after the opening of the same, or, if no period be specified, for sixty (60) days after opening of said Bid Proposal; and if the Principal is awarded the Contract, and shall within the period specified therefor, or if no period be specified, within five (5) days after the prescribed forms are presented to him for signature, enter into a written contract with the Obligee, in accordance with the Bid Proposal as accepted and give such bond(s) with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such Contract and for the payment for labor and materials used for the performance of the Contract, or in the event of the withdrawal of said Bid Proposal within the period specified for the holding open of the Bid Proposal or the failure of the Principal to enter into such Contract and give such bonds within the time specified, if the Principal shall pay the Obligee the difference between the amount specified in said Bid Proposal and the amount for which the Obligee may procure the required Work and/or supplies, if the latter amount be in excess of the former, together with all costs incurred by the Obligee in again calling for Bids, then the above obligation shall be void and of no effect, otherwise to remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or the Call for Bids, the Work to be performed thereunder, the Drawings or the Specifications accompanying the same, or any other portion of the Contract Documents shall in no way affect its obligations under this Bond, and it does hereby waive notice from the Obligee of any such change, extension of time, alteration or addition to the terms of said Contract, the Call for Bids, the Work, the Drawings or the Specifications, or any other portion of the Contract Documents.

In the event suit or other proceeding is brought upon this Bond by the Obligee, the Surety shall pay to the Obligee all costs, expenses and fees incurred by the Obligee in connection therewith, including without limitation, attorneys fees.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument this _____ day of _____, 20__ by their duly authorized agents or representatives.

(Corporate Seal)

_____
(Principal Name)

By:_____

_____
(Typed or Printed Name)

Title: _____

(Corporate Seal)

_____
(Surety Name)

By:_____
(Signature of Attorney-in-Fact for Surety)

(Attach Attorney-in-Fact Certificate)

_____
(Typed or Printed Name)

( )_____
(Area Code and Telephone Number of Surety)

NON-COLLUSION AFFIDAVIT

STATE OF CALIFORNIA]
COUNTY OF _____]

BID PACKAGE NO. _____;BID PACKAGE DESCRIPTION: _____
PROJECT: Health & Science Building - 05-157

I, _____, being first duly sworn, deposes and says that I am
(Typed or Printed Name)
the _____ of _____, the party
(Title) (Bidder Name)
submitting the foregoing Bid Proposal ("the Bidder"). In connection with the foregoing Bid Proposal, the undersigned declares, states and certifies that:

1. The Bid Proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization or corporation.

2. The Bid Proposal is genuine and not collusive or sham.

3. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any other bidder or anyone else to put in sham bid, or to refrain from bidding.

4. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price, or that of any other bidder, or to fix any overhead, profit or cost element of the bid price or that of any other bidder, or to secure any advantage against the public body awarding the contract or of anyone interested in the proposed contract.

5. All statements contained in the Bid Proposal and related documents are true.

6. The bidder has not, directly or indirectly, submitted the bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any person, corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Executed this ____ day of _____, 20 ___ at _____.
(City, County and State)

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____ _____
(Signature) (Address)

_____ _____
(Name Printed or Typed) (City, County and State)

(_____)_____
(Area Code and Telephone Number)

STATEMENT OF BIDDER'S QUALIFICATIONS

I, _____, being first duly sworn, depose, say and certify
(Type or Print Name)
that I am the _____ of _____,
(Title) (Bidder Name)
the Bidder submitting the forgoing Bid Proposal.

1. **Bidder's Organization**

1.1 Form of entity of Bidder, i.e., corporation, partnerships, etc.:

1.1.1 If corporation, state the following: _____
State of incorporation: _____
Date of incorporation: _____
President: _____
Secretary: _____
Treasurer: _____

1.1.2 If partnership, state the following:
Date of organization: _____
Type of partnership: _____
Names of all general partners; if any of the general partners are not natural persons, provide the information for each such general partner requested by 1.1.1, 1.1.2 and 1.1.4 as appropriate:
_____
_____
_____

1.1.3 If proprietorship, state the following:
Names of all proprietors: _____
_____
_____
_____

1.1.4 If joint venture, state the following:
Date of organization: _____
Names of all Joint Ventures; for each Joint Venture, identify the form of entity and provide the information requested by 1.1.1, 1.1.2 and 1.1.3 above for each Joint Venture, as appropriate:
_____
_____
_____

1.1.5 If other than listed above, describe type of organization and name all principals:

_____

_____

_____

1.2 How many years has your organization been in business as a contractor?

_____

1.3 How many years has your organization been in business under its present name?

_____

1.3.1 Identify any former names under which your organization has conducted business.

_____

_____

2. **Financial**

2.1 If you are the apparent low bidder will you provide a Financial Statement for the identical organization of the Bidder? Yes_____ No_____. If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (i.e., parent/subsidiary, etc.).

2.2 The Financial Statement provided to be current audited, reviewed or compiled Financial Statement of your organization prepared by a Certified Public Accountant licensed in the State of California utilizing generally accepted accounting practices applied in a consistent manner. The Financial Statement must include a current balance sheet and income statement showing: (i) current assets (i.e., cash, accounts receivable, accrued income, deposits, material inventory, etc.); (ii) net fixed assets; (iii) other assets; (iv) current liabilities (i.e., accounts payable, accrued salaries, accrued payroll taxes, etc.); and (v) other liabilities (i.e., capital, capital stock, earned surplus and retained earnings).

3. **Licensing**

3.1 List all jurisdictions, other than the State of California, in which your organization is licensed to do business as a contractor, and for each jurisdiction listed, identify the class of license or description of the work permitted by the license.

_____

_____

3.2 California Contractor's License

3.2.1 License Number: _____

3.2.2 Expiration Date: _____

3.2.3 Responsible Managing Employee or Responsible Managing Officer:

_____

_____

3.2.4 License Classification(s):

_____

3.3 Has a claim or other demand ever been made against your organization's California Contractor's License Board? Yes_____ No_____. If so, on a separate attachment state the following: (i) the name, address and telephone each such claimant; (ii) the date of each such claim or demand; (iii) the circumstances giving rise to each such claim or demand; and (iv) the disposition of each such claim or demand.

3.4 Has a complaint ever been filed against your organization's California Contractor's License with the California Contractor's License Board? Yes_____ No _____. If so, on a separate attachment state the following for each such complaint: (i) the name of the complainant; (ii) the date of the complaint, and (iii) the disposition thereof, including without limitation, any disciplinary action imposed by the California Contractor's License Board.

3.5 Attach to this Statement true and correct copies of the following:

3.5.1 Your organization's California Contractor's License (the copy must clearly and legibly show: (i) the licensee name; (ii) the expiration date: and (iii) the classification(s) of licensure).

3.5.2 The Contractor's License Bond posted by your organization in connection with your organization's California Contractor's License pursuant to California Business and Professions Code §§ 7071.5 and 7071.6 (the copy of must clearly and legibly show: (i) the Bond number or other information sufficient for identification; (ii) the name, address and telephone number of the Surety on the Bond; (iii) the signature of the individual executing the Bond on behalf of the Surety and if such individual's authority is conferred by a power of attorney or by such individual's designation as an attorney in fact on behalf of the Surety, including a clear and legible copy of such power of attorney or attorney in fact designation; (iv) the principal on such Bond; and (v) the expiration date of such Bond).

3.5.3 If your organization's California Contractor's License is issued by virtue of the qualification of a responsible managing employee or responsible

managing officer of your organization, the Qualifier's Bond, if required pursuant to California Business & Professions Code §7071.9 (the copy must clearly and legibly show: (i) the Bond number or other information sufficient for identification; (ii) the name, address and telephone number of the Surety on the Bond; (iii) the signature of the individual executing the Bond on behalf of the Surety and if such individual's authority is conferred by a power of attorney or by such individual's designation as an attorney in fact on behalf of the Surety, including a clear and legible copy of such power of attorney or attorney in fact designation; (iv) the principal on such Bond; and (v) the expiration date of such Bond).

4. **Experience**

4.1 List the categories of work your organization typically performs with its own forces.

4.2 Claims and suits (if you answer yes to any of the following, you must attach details).

4.2.1 Have any lawsuits or other proceedings, including without limitation arbitration proceedings, ever been brought against your organization or any of its principals or officers in connection with any construction contract or construction project? Yes_____ No_____. If so, describe the circumstances, the amount or relief sought and the disposition of each such lawsuit or other proceeding.

4.2.2 Has your organization ever filed a lawsuit or initiated other proceedings, including without limitation arbitration proceeding, in connection with any construction contract or construction project? Yes_____ No_____. If so, describe the circumstances, the amount or relief sought and the disposition of each such lawsuit or other proceeding.

4.2.3 Are there any judgments, orders, decrees or arbitration awards pending, outstanding or by which your organization or any of its officers, partners, or principals are bound by? Yes _____ No _____. If so, describe each such judgment, order or arbitration award and the present status of the satisfaction or discharge thereof.

4.3 On a separate attachment, list all construction projects your organization has in progress and for each project listed, state (i) a general description of the work performed or to be performed by your organization, (ii) the dollar value of the work performed or to be performed by your organization; (iii) the owner's name, name of the owner's representative, the owner's address and telephone number; (iv) the project architect, address and telephone number; (v) percent presently completed and (vi) the scheduled completion date.

4.4 On a separate attachment, list all construction projects completed by your organization in the past five years and for each project, state: (i) a general description of the work performed by your organization on the project; (ii) the dollar value of the work performed or to be performed by your organization; (iii) the owner's name, name of the owner's representative, the owner's address and telephone number; (iv) contract amount; (v) date of completion; and (vi) whether the project was completed within contract time and contract budget.

4.5 Has your organization ever refused to sign a contract awarded to it? Yes_____ No_____. If so, on a separate attachment state the following: (i) describe each such contract; (ii) the owner's name, address and telephone number; (iii) a description of the project; and (iv) the circumstances of the refusal to sign the contract.

4.6 Has your organization ever failed to complete a construction contract? Yes_____ No_____. If so, on a separate attachment state the following: (i) describe each such contract; (ii) the owner's name, address and telephone number; (iii) a description of the project; and (iv) the circumstances of the failure to complete.

4.7 Has your organization ever been declared in default of a construction contract? Yes_____ No_____. If so, on a separate attachment state the following: (i) describe each such contract; (ii) the owner's name, address and telephone number; (iii) a description of the project; and (iv) the circumstances of the declaration of default.

4.8 Has a claim or other demand ever been asserted against any Bid Bond, Performance Bond or Labor and Material Payment Bond posted by your organization in connection with any construction contractor or your submittal of a proposal on a construction contract? Yes _____ No_____. If so, on a separate attachment state the following: (i) state the name, address and telephone number of each such claimant; (ii) the date of the claim; and (iii) the disposition thereof.

4.9 On a separate attachment identify all contracts for Projects awarded to your organization by a California public school district (kindergarten through 12th grade) or a California community college district. For each contract identified, provide: (i) an identification of the district awarding the contract; (ii) the name, address, telephone and fax number of the person in each such district responsible for overseeing or administering such contract; (iii) the name, address, telephone and fax number of the individual at the office of the Architect of record for each such project responsible for oversight of the Project or administration of the contract; (iv) a general description of the Project, including dollar value of construction, size by square footage, type of structure,

i.e., wood frame, masonry block, steel frame, etc. and type or use of Project, i.e., general classroom, administrative, laboratory, multi-use, etc.

5. **References**

(Include name, contact person, telephone/fax number and address of each reference provided).

5.1 Trade References (3 minimum)

_____
_____
_____
_____

5.2 Bank References

_____
_____
_____
_____

5.3 Owner References (3 minimum)

_____
_____
_____
_____

6. **Accuracy**

I am authorized to execute this Statement of Bidder's Qualifications under penalty of perjury on behalf of the Bidder; I have personal knowledge of each of the responses contained in this Statement of Bidders' Qualifications and/or I have conducted necessary and appropriate inquiry to determine the truth, completeness and accuracy of each of the foregoing responses. The responses to each and all of the foregoing are complete and accurate; there are no omissions of material fact or information that render any of the foregoing false or misleading; there are no omissions of material fact or information that render any of the foregoing false or misleading, there are no misstatements of fact in any of the foregoing.

Executed this _____ day of _____, 20_____, at _____.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____
(Signature)

DRUG-FREE WORKPLACE CERTIFICATION

I, _____ , the _____ 6
(Print Name) (Title)

_____, declare, state and certify to all of the following;
(Prime Contractor Name)

1. I am aware of the provisions and requirements of California Government Code §§8350 et seq., the Drug Free Workplace Act of 1990.

2. I am authorized to certify, and do certify, on behalf of Prime Contractor that a drug free workplace will be provided by Prime Contractor by doing all of the following:

A. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in Prime Contractor's workplace and specifying actions which will be taken against employees for violation of the prohibition;

B. Establishing a drug-free awareness program to inform employees about all of the following:

(i) The dangers of drug abuse in the workplace;

(ii) Prime Contractor's policy of maintaining a drug-free workplace;

(iii) The availability of drug counseling, rehabilitation and employee-assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations;

C. Requiring that each employee engaged in the performance of the Contract be given a copy of the statement required by subdivision (A), above, and that as a condition of employment by Prime Contractor in connection with the Work of the Contract, the employee agrees to abide by the terms of the statement.

3. Prime Contractor agrees to fulfill and discharge all of Prime Contractor's obligations under the terms and requirements of California Government Code §8355 by, inter alia, publishing a statement notifying employees concerning: (a) the prohibition of any controlled substance in the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the Work of the Contract be given a copy of the statement required by California Government Code §8355(a) and requiring that the employee agree to abide by the terms of that statement.

4. Prime Contractor and I understand that if the Owner determines that Prime Contractor has either: (a) made a false certification herein, or (b) violated this certification by failing to carry out and to implement the requirements of California Government Code §8355, the Contract

awarded herein is subject to termination, suspension of payments, or both. Prime Contractor and I further understand that, should Prime Contractor violate the terms of the Drug-Free Workplace Act of 1990, Prime Contractor may be subject to debarment in accordance with the provisions of California Government Code §§8350, et seq.

5. Prime Contractor and I acknowledge that Prime Contractor and I are aware of the provisions of California Government Code §§8350, et seq. and hereby certify that Prime Contractor and I will adhere to, fulfill, satisfy and discharge all provisions of and obligations under the Drug-Free Workplace Act of 1990.

I declare under penalty of perjury under the laws of the State of California that all of the foregoing is true and correct.

Executed at _____ this _____day of
(City and State)
_____, 20___.

_____
(Signature)

_____
(Handwritten or Typed Name)

EXCLUSION OF ASBESTOS PRODUCTS

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID:

PROJECT TITLE/BID #: Health & Science Building - 05-157
OWNER: Antelope Valley Community College District

The Prime Contractor agrees that asbestos containing products or materials will not be used in performing work under the Agreement.

At completion of work under the Agreement, the Prime Contractor will warrant and represent to the OWNER the following:

1. That no asbestos containing products or materials were used in performing work under the Agreement.
2. That should any asbestos containing products be found on the project, the Prime Contractor will replace them, together with all related materials, at no cost to the OWNER.
3. That should the replacement require any interruption in the normal operation of the school, the Prime Contractor will pay all costs necessarily incurred to keep the school functioning with the least possible disruption to its day-to-day operations.

Executed at_____, California, on _____, 20____.

Firm Name _____ By_____

Signed_____

[Signature must match that on bid]

EXCLUSION OF LEAD PRODUCTS

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID:

PROJECT TITLE/BID #: **Health & Science Building – 05-157**

OWNER: **Antelope Valley Community College District** _____

Pursuant to the provisions of the California Education Code for construction, modernization, or renovation of school facilities, lead based paint, lead plumbing, and solders, or other potential sources of lead contamination shall not be utilized in the construction of any new school facility or the modernization or renovation of any existing school facility.

The Contractor agrees that sources and potential sources of lead contamination, whether in products or materials, will not be used in performing work under the Agreement.

At completion of work under the Agreement, the Prime Contractor will warrant and represent to the Owner the following:

1. That no sources or potential sources of lead contamination were used in performing work under the Agreement.

2. That should any sources or potential sources of lead contamination be found to have been used by the Prime Contractor or any subcontractor, supplier, or vendor on the Project, the Prime Contractor will replace them, together with all related materials, at no cost to the Owner.

3. That should the replacement require any interruption in the normal operation of the school, the Prime Contractor will pay all costs necessarily incurred to keep the school functioning with the least possible disruption to its day-to-day operations.

Executed at_____,California, on _____,20____.

Contractor Name _____ By_____

Signed _____

[Signature must match that on bid]

AGREEMENT

THIS AGREEMENT is made this ____ day of _____, 20__, in the city of **Lancaster**, County of **Los Angeles**, State of California, by and between **Antelope Valley Community College District, 3041 West Avenue K, Lancaster, CA 93536,** hereinafter "Owner" and _____, with its principal place of business at _____, _____ hereinafter "Prime Contractor".

WITNESSETH, that the Owner and the Prime Contractor in consideration of the mutual covenants contained herein agree as follows:

1. **The Work.** Within the Contract Time and for the Contract Price, subject to adjustments thereto pursuant to the Contract Documents, the Contractor shall perform and provide all necessary labor, materials, tools, equipment, utilities, services and transportation to complete within the agreed contract time in a workmanlike manner all of its Work required in connection with the work of improvement commonly referred to as **Health & Science Building - 05-157** Prime Contractor shall complete all of its Work covered by the Contract Documents, including without limitation, the Drawings and Specifications prepared by the Architect, tBP Architects and other Contract Documents enumerated in Article 5 below, along with all modifications and addenda thereto issued in accordance with the Contract Documents.

2. **Contract Time.** The Work shall be commenced on the date stated in the Owner's Notice to Proceed; the Prime Contractor shall achieve Substantial Completion of the Work within the Contract Time of delineated within the construction schedule from and after the Commencement Date set forth in the Notice to Proceed. The construction schedule is incorporated into the Bid Package.

3. **Contract Price.** The Owner shall pay the Prime Contractor as full consideration for the Prime Contractor's full, complete and faithful performance of the Prime Contractor's obligations under the Contract Documents, subject to any additions or deduction as provided for in the Contract Documents, the Contract Price of _____ Dollars ($_____). The Contract Price is based upon the Prime Contractor's Base Bid Proposal and the following Alternate Bid Items, if any:

The Owner's payment of the Contract Price shall be in accordance with the Contract Documents.

4. **Liquidated Damages.** In the event of the failure or refusal of the Prime Contractor to achieve Substantial Completion of the Work of the Contract Documents within the Contract Time, as adjusted, the Prime Contractor shall be subject to assessment of Liquidated Damages in accordance with the Contract Documents.

Prime Contractor shall be assessed liquidated damages in the manner and in the amounts stated in the Supplementary Conditions for each and every day specific phases of the work required under the Project documents and Master Schedule remain unfinished past the time for completion, as set forth in the Agreement including Master Schedule and any extensions of time granted by the District to Prime Contractor under the terms of the Project documents.

5. **The Contract Documents.** The documents forming a part of the Contract Documents consist of the following, all of which are component parts of the Contract Documents.

Notice to Contractors Calling for Bids
Instructions for Bidders
Supplementary Instructions
Bid Proposal
Exclusion of Asbestos
Non-Collusion Affidavit
Statement of Bidder's Qualifications
Exclusion of Lead
Bid Addenda Nos. _____
Specifications & Drawings
Guarantee
Agreement
Performance Bond
Labor and Material Payment Bond
Prevailing Wage Compliance Certification
Certificate of Workers Compensation
Drug-Free Workplace Certificate
General Conditions
Supplemental Conditions
Safety Provisions
Baseline Construction Schedule

6. **Authority to Execute.** The individual(s) executing this Agreement on behalf of the Prime Contractor is/are duly and fully authorized to execute this Agreement on behalf of Prime Contractor and to bind the Prime Contractor to each and every term, condition and covenant of the Contract Documents.

IN WITNESS WHEREOF, the Owner and the Prime Contractor as of the date set forth above have duly executed this Agreement.

CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTOR'S STATE LICENSE BOARD. ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTOR'S STATE LICENSE BOARD, P.O. BOX 2600, SACRAMENTO, CALIFORNIA 95826

"OWNER"

By: _____
Deborah Wallace

Title: _____
Vice President, Business Services

"PRIME CONTRACTOR"

By: _____

Title: _____
(CORPORATE SEAL)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that we, _____, as Principal, and _____ as Surety, are held and firmly bound unto **Antelope Valley Community College District** hereinafter "the Obligee", in the penal sum of $_____ Dollars ($) in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, the Obligee, by resolution of its Board of Trustees passed on _____, 20___, has awarded to the Principal a Contract for the Work described as the Antelope Valley Community College District, Health & Science Building - 05-157 .
Bid Package Description: _____Bid Package No.:_____

WHEREAS, the Principal, on or about _____, 20___, entered into a written agreement with the Obligee for performance of the Work; the Agreement and all other Contract Documents set forth therein are incorporated herein and made a part hereof by this reference.

WHEREAS, by the terms of the Contract Documents, the Principal is required to furnish a bond ensuring the Principal's prompt, full and faithful performance of the Work of the Contract Documents.

NOW THEREFORE, if the Principal shall promptly, fully and faithfully perform each and all of the obligations and things to be done and performed by the Principal in strict accordance with the terms of the Contract Documents as they may be modified or amended from time to time; and if the Principal shall indemnify and save harmless the Obligee and all of its officers, agents and employees from any and all losses, liability and damages, claims, judgments, liens, costs, and fees of every description, which may be incurred by the Obligee by reason of the failure or default on the part of the Principal in the performance of any or all of the terms or the obligations of the Contract Documents, including all modifications, and amendments, thereto, and any warranties or guarantees required thereunder; then this obligation shall be void; otherwise, it shall be, and remain, in full force and effect.

The Surety, for value received, hereby stipulates and agrees that no change, adjustment of the Contract Time, adjustment of the Contract Price, alterations, deletions, additions, or any other modifications to the terms of the Contract Documents, the Work to be performed thereunder, or to the Specifications or the Drawings shall limit, restrict or otherwise impair Surety's obligations or Obligee's rights hereunder; Surety hereby waives notice from the Obligee of any such changes, adjustments of Contract Time, adjustments of Contract Price, alterations, deletions, additions or other modifications to the Contract Documents, the Work to be performed under the Contract Documents, or the Drawings or the Specifications.

In the event of the Obligee's termination of the Contract due to the Principal's breach or default of the Contract Documents, within twenty (20) days after written notice from the Obligee to the Surety of the Principal's breach or default of the Contract Documents and Obligee's termination of the Contract, the Surety shall notify Obligee in writing of Surety's assumption of obligations hereunder by its election to either remedy the default or breach of the Principal or to take charge of the Work of the Contract Documents and complete the Work at its own expense ("the Notice of Election"); provided, however, that the procedure by which the Surety undertakes to discharge its obligations under this Bond shall be subject to the advance written approval of the Obligee, which approval shall not be unreasonably withheld, limited or restricted. The insolvency of the Principal or the Principal's mere denial of a failure of performance or default under the Contract Documents shall not by itself, without the Surety's prompt, diligent inquiry and investigation of such denial, be justification for Surety's failure to give the Notice of Election or for its failure to promptly remedy the failure of performance or default of the Principal or to complete the Work.

In the event the Surety shall fail to issue its Notice of Election to Obligee within the time provided for hereinabove, the Obligee may thereafter cause the cure or remedy of the Principal's failure of performance or default or to complete the Work. The Principal and the Surety shall be each jointly and severally liable to the Obligee for all damages and costs sustained by the Obligee as a result of the Principal's failure of performance under the Contract Documents or default in its performance of obligations thereunder, including without limitation the costs of cure or completion exceeding the then remaining balance of the Contract Price; provided that the Surety's liability hereunder for the costs of performance, damages and other costs sustained by the Obligee upon the Principal's failure of performance, or default, under the Contract Documents shall be limited to the penal sum hereof, which shall be deemed to include the costs or value of any Changes of any Work which increases the Contract Price.

In the event suit or other proceeding is brought upon this Bond by the Obligee, the Surety shall pay to the Obligee all costs, expenses and fees incurred by the Obligee therewith, including without limitation, attorneys fees.

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument this _____ day of _____, 20__ by their duly authorized agent or representative.

(Corporate Seal)

_____
(Principal Name)

By: _____

_____
(Typed or Printed Name)

Title: _____

(Corporate Seal)

_____
(Surety Name)

By: _____
(Signature of Attorney-in-Fact for Surety)

(Attach Attorney-in-Fact Certificate)

_____
(Typed or Printed Name)

_____
(Area Code and Telephone Number for Surety)

(___) _____
(Area Code and Telecopier Number for Surety)

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that we, _____ as Principal, and _____ as Surety, are held and firmly bound unto **Antelope Valley Community College District** hereinafter "the Obligee", in the penal sum of _____ Dollars ($) in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, the Obligee, by resolution of its Board of Trustees passed on _____, 20__, has awarded to the Principal a Contract for the Work described as Antelope Valley Community College District, Health & Science Building - 05-157.
Bid Package Description: _____ Bid Package No.: _____

WHEREAS, the Principal, on or about _____, 20___, entered into a written agreement with the Obligee for performance of the Work, the Agreement and all other Contract Documents set forth therein are incorporated herein and made a part hereof by this reference.

WHEREAS, by the terms of the Contract Documents, the Principal is required to furnish a bond for the prompt, full and faithful payment to any Claimant, as hereinafter defined, for all labor materials or services used, or reasonably required for use, in the performance of the Work.

NOW THEREFORE, if the Principal shall promptly, fully and faithfully make payment to any Claimant for all labor, materials or services used or reasonably required for use in the performance of the Work then this obligation shall be void; otherwise, it shall be, and remain, in full force and effect.

The term "Claimant" shall refer to any person, corporation, partnership, proprietorship or other entity including without limitation, all persons and entities described in California Civil Code §3181, providing or furnishing labor, materials or services used or reasonably required for use in the performance of the Work under the Contract Documents, without regard for whether such labor, materials or services were sold, leased or rented. This Bond shall inure to the benefit of all Claimants so as to give them, or their assigns and successors, a right of action upon this Bond.

In the event suit is brought on this Bond by any Claimant for amounts due such Claimant for labor, materials or services provided or furnished by such Claimant, the Surety shall pay for the same and reasonable attorneys fees pursuant to California Civil Code §3250.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, deletion, addition, or any other modification to the terms of the Contract Documents, the Work to be performed there under, the Specifications or the Drawings, or any other portion of the Contract Documents, shall in any way limit, restrict or otherwise affect its obligations under this Bond; the Surety hereby waives notice from the Obligee of any such change, extension of time, alteration, deletion, addition or other modification to the Contract Documents, the Work to be performed under the Contract Documents, the Drawings or the Specifications of any other portion of the Contract Documents.

LABOR AND MATERIAL PAYMENT BOND

IN WITNESS WHEREOF, the Principal and Surety have executed this instrument this _____ day of _____, 20__ by their duly authorized agent or representative.

(Corporate Seal)

_____
(Principal Name)

By: _____
(Signature)

_____
(Typed or Printed Name)

Title: _____

(Corporate Seal)

_____
(Surety Name)

By: _____
(Signature of Attorney-in-Fact for Surety)

(Attach Attorney-in-Fact Certificate)

_____
(Typed or Printed Name of Attorney-in-Fact)

_____
(Area Code and Telephone Number of Surety)

_____
(Area Code and Facsimile Number of Surety)

CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

I,_____, the _____ of
(Name) (Title)
_____,declare, state and certify that:
(Contractor Name)

1. I am aware that California Labor Code §3700(a) and (b) provides:

"Every employer except the state shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this state.

(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer, or one employer in a group of employers, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees."

2. I am aware that the provisions of California Labor Code §3700 require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of this Contract.

_____
(Contractor Name)

By:_____
(Signature)

_____
(Typed or printed name)

PREVAILING WAGE COMPLIANCE CERTIFICATION

Project Name: **AVCCD - Health & Science Building - 05-157**

To: Antelope Valley Community College District
3041 West Avenue K
Lancaster, CA 93534

I hereby certify that I will conform to the State of California Public Works Contract Requirements regarding wages; benefits; on-site audits with 48-hour notice; payroll records; and, apprentice and trainee employment requirements.

_____
Contractor (type or print)

_____
Contractor's Signature

_____
Date

GUARANTEE

The undersigned _____("Prime Contractor")
(Prime Contractor Name)
hereby warrants and guarantees that all work, materials, equipment and workmanship provided, furnished or installed by or on behalf of Prime Contractor in connection with the work of improvement described as **Antelope Valley Community College District, AVCCD – Health & Science Building - 05-157** (the "Work") have been provided, furnished and installed in strict conformity with the Contract Documents for the Work, including without limitation, the Drawings and the Specifications. Prime Contractor further warrants and guarantees that all work, materials, equipment and workmanship as provided, furnished and/or installed are fit for use as specified and fulfill all applicable requirements of the Contract Documents including without limitation, the Drawings and the Specifications. Prime Contractor shall, at its sole cost and expense, repair, correct and/or replace any or all of the work, materials, equipment and/or workmanship of the Work, together with any other items which may be affected by any such repairs, corrections or replacement, that may be unfit for use as specified or defective within a period of one (1) year from the date of the Owner's Final Acceptance of the Work, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of the Prime Contractor's failure and/or refusal to comply with the provisions of this Guarantee, within the period of time set forth in the Contract Documents after the Owner's issuance of the Notice to the Prime Contractor of any defect(s) in the Work, materials, equipment or workmanship, Prime Contractor authorizes the Owner, without further notice to Prime Contractor, to repair, correct and/or replace any such defective item at the expense of the Prime Contractor. The Prime Contractor shall reimburse the Owner for all costs, expenses or fees incurred by the Owner in providing or performing such repairs, corrections or replacements within ten (10) days of the Owner's presentation of a demand to the Prime Contractor for the same.

The provisions of this Guarantee and the provisions of the Contract Documents for the Work relating to the Prime Contractor's Guarantee(s) and warranty (ies) relating to the Work shall be binding upon the Prime Contractor's Performance Bond Surety and all successors or assigns of Prime Contractor and/or Prime Contractor's Performance Bond Surety.

The provisions of this Guarantee are in addition to, and not in lieu of, any provisions of the Contract Documents for the Work relating to the Prime Contractor's guarantee(s) and warranty(ies) or any guarantee(s) or warranty(ies) provided by any material supplier or manufacturer of any equipment, materials or other items forming a part of, or incorporated into the Work, or any other guarantee or warranty obligation of the Prime Contractor, prescribed, implied or imposed by law.

The undersigned individual executing this Guarantee on behalf of Prime Contractor warrants and represents that he/she is duly authorized to execute this Guarantee on behalf of Prime Contractor and to bind Prime Contractor to each and every provision hereof.

Dated: _____

By: _____
(Signature)

_____
(Typewritten or handwritten name)

_____
(Title)

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY)

PRODUCER

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED

INSURER A:
INSURER B:
INSURER C:
INSURER D:
INSURER E:

SAMPLE

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				EACH OCCURRENCE	$ 1,000,000
	X COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	$ 100,000
	CLAIMS MADE [X] OCCUR				MED EXP (Any one person)	$ 5,000
					PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:				GENERAL AGGREGATE	$ 2,000,000
	POLICY [ ] PRO-JECT [ ] LOC				PRODUCTS - COMP/OP AGG	$ 2,000,000
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO				BODILY INJURY (Per person)	$
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$
	SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	$
	X HIRED AUTOS					
	X NON-OWNED AUTOS					
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
					AGG	$
	EXCESS LIABILITY				EACH OCCURRENCE	$
	OCCUR [ ] CLAIMS MADE				AGGREGATE	$
						$
	DEDUCTIBLE					$
	RETENTION $					$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				X WC STATUTORY LIMITS [ ] OTHER	
					E.L. EACH ACCIDENT	$ 1,000,000
					E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
					E.L. DISEASE - POLICY LIMIT	$ 1,000,000
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

AVCCD – Health & Science Building – 05-157 : Owner, Architect and CM, their officers, agents, and employees are hereby named as additional insured (Gen.Liab.) with waiver of subrogation (Gen. Liab. & Workers Comp.) as respects to work performed by the named insured & the insurance provided is primary. Endorsements are attached.

CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER: ____

Antelope Valley Community College District
C/O - Klassen Corporation
2021 Westwind Drive
Bakersfield, CA 93301
Attn: Nicole Jannett

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ~~XXXXXXXX~~ MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, ~~BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.~~

AUTHORIZED REPRESENTATIVE

© ACORD CORPORATION 1988

Purchase Order

Form No. 502-083

THIS PURCHASE ORDER NO. MUST APPEAR ON ALL SHIPPED MATERIAL AND CORRESPONDENCE : P.O.

DATE ISSUED	ACCT PAYABLE PHONE NO. EXT.	BID/QUOTE/CONTRACT NO	QUOTE BY	DELIVERY HOURS 8:00 AM - 4:00 PM (Mon.-Fri.)	DUE DATE
BUYER	BUYER FAX NO	VENDOR NO	VENDOR PHONE NO	VENDOR FAX NO / SHIP VIA CHPEST WAY	FOB DES
BUYER PHONE NUMBER EXT.	REQUESTOR NAME	PO TERMS Due Immediately	WAREHOUSE INSTRUCTIONS (DELIVER TO)		

FROM

ANTELOPE VALLEY COLLEGE
3041 W. Avenue K
Lancaster CA 93536-5426

TO

SHIP TO

Accounts Payable
3041 W. Avenue K
Lancaster CA 93536-5426

DISTRICT NO

FISCAL YEAR

LINE/SCHD	ITEM DESCRIPTION	QTY	UNIT	COST	EXTENSION
1- 1		1.00	EA	00.0000	0.00

REQ#
REQUESTER

Sub Total
Total Tax Amount
Total Frt Amount
Total PO Amount

AUTHORIZED/APPROVAL SIGNATURE

PURCHASE ORDER
TERMS AND CONDITIONS

1. **Acknowledge:** Receipt of this Purchase Order on space provided for acceptance on face hereof and return one (1) signed copy to Owner and Project Manager IMMEDIATELY or we reserve the right to cancel. Advise promptly, in writing of any delays or difficulties in making shipment or shipments.

2. **Submittals:** Vendor agrees to submit at his expense, to the Project Manager's office, shop drawings, samples color charts, or other descriptive data as may be necessary, within the time limit specified on accompanying Purchase Order, for approval of the project Owner or Project Manager, in strict accordance with project plans and specifications. Vendor further agrees to furnish additional copies of final approved drawings as required for Owner and Project Manager's use, and for use of other suppliers of labor or material on any project to which this transaction relates. Failure to meet any deadline constitutes grounds for unilateral cancellation of this Purchase Order "for cause" and entitles Owner to assess back charges against Vendor for the delays.

3. **Payment:** Will not be due before and unless items have arrived at destination in good condition, free from defects or deviations and are in complete accordance with plans and specifications of any project to which this transaction applies and to which any of the goods or services furnished by the Vendor may be delivered or destined, and acceptable to the Owner's Representative and to the Project Manager and until proper shipping documents and invoices have been properly executed and received, all as conditions precedent to payment. The price stated in this Purchase Order includes all applicable Federal, State and local sales taxes and delivery fees so that the goods, materials and supplies are delivered FOB @ job site at no additional cost to Owner and Project Manager. Payments will be made by check or draft. Exchange, if any, must be paid by Vendor. Discounts if any, will be taken on gross amount of invoice, unless otherwise specified and will be figured from date of acceptance by the Owner and Project Manager in accordance with this Purchase Order.

4. **Assignment:** In whole or in part no assignment of this Purchase Order will be honored without the prior written approval from the Owner or Project Manager.

5. **Delivery-Delays:** a) Unless otherwise provided in this Purchase Order or in other written agreement, delivery in whole shall be made on the agreed delivery dates and earlier deliveries may be returned at the Vendor's risk and expense. If shipped by other than Vendor, mark Vendor's name and Purchase Order Number on all bills of lading, delivery slips, packing slips or memos. Mark the outside of the packages with Owner's and Project Manager's name, job number and Purchase Order Number. b) Delays attributable to the Vendor and or his suppliers may constitute a basis for cancellation in whole or in part of this Purchase Order and justify back charges assessed against the Vendor or a separate claim, to compensate the Owner for any and all consequential damages, loss, or delays in the timely prosecution and completion of the work of improvement.

6. **Liens:** Vendor agrees to deliver to Owner Project Manager the articles covered by this Purchase Order free and clear of all Liens, Claims and Incumbrances.

7. **Changes:** No changes in filling this Purchase Order as to quantities, descriptions, prices, F.O.B. point, etc., shall be made without prior written authorization from Project Manager's purchasing department. Payments will not be made on unauthorized changes and differences in quantities and descriptions shall be returned at Vendor's expense and risk. Shipments containing backorders will not be accepted.

_____ _____
Owner Initials Vendor Initials

8. **Warranty:** All goods and services delivered or furnished by Vendor are fully warranted to be completely safe and fit for the purpose for which ordered and safe and fit for use upon any project for which ordered or for which delivered or destined. This warranty is in addition to all other warranties, express or implied and must accompany the final billing in writing.

9. **Compliance With Law:** In filling this Purchase Order, the Vendor shall comply at all times with and give all stipulations and representations required by all Federal, State, Municipal and local laws ordinances, codes, rules, orders, requirements and regulations thereunder.

10. **Defective Work:** If material and or services performed by the Vendor is found to be defective, the Owner and Project Manager shall have the right to require the prompt correction thereof, if practicable, by the Vendor at the Vendor's expense and risk, or upon authorization by the Vendor, to correct the work in the Owner's work site, back charging the Vendor for the cost of making such corrections. If correction of such work is impracticable, the Vendor shall bear all risk after notice of rejection and the Vendor will, if request to do so by the Owner and Project Manager, at its expense, promptly remove and replace such work, or the part or parts thereof which are unacceptable or defective, or if the Vendor is unable or refuses to replace promptly, the Owner and Project Manager may by this agreement or otherwise replace such work or such parts and back charge to the Vendor the excess cost occasioned to the Owner, thereby.

11. **Claims:** Vendor agrees to indemnify, save, and hold harmless the Owner and Project Manager for all loses from claims arising out of the delivery or use of the materials or services furnished by the Vendor, including but not limited to claims for damages resulting form death, bodily injury or property damage and including any claims against the Owner and the Project Manager for damages due to breach of any warranty, express or implied and to defend any such claims to conclusion at his own expense (including fees and expenses due to employment of Attorneys).

12. **Cancellation:** This Purchase Order is severable as to each item ordered, by the Owner and the Project Manager and no payment hereunder, partial or final, will be considered as acceptance of any goods or services delivered or furnished or as a waiver of any promise or condition.

13. **Acceptance:** This Purchase Order when signed and accepted constitutes the entire agreement between the Owner and Vendor. All previous quotations, correspondence, negotiations, etc. are completely superseded by this Purchase Order.

14. **Resolution of Disputes**: If any disagreement or dispute arises out of, or related to, a claimed breach of this Purchase Order, or any subsequent amendment(s) thereto, arising out of or related to this transaction or any errors or omissions, failure to pay fees for services or work performed, or any other disagreement in the future of any nature, type or description regardless of the facts or the legal theories which may be involved, such claim(s) or dispute(s) shall be submitted to mediation by a mediator selected from the American Arbitration Association Panel of Mediators and the parties agree to try in good faith to reach agreement through mediation. If, after all reasonable efforts to resolve the issues by mediation have been exhausted and the parties are still in dispute, any remaining unresolved issues shall be decided by arbitration by a single neutral arbitrator from the Construction Panel of the Los Angeles office of the American Arbitration Association. All proceedings in connection with mediation or arbitration shall be held in Bakersfield, California.

_____ Owner Initials

_____ Vendor Initials

Notice of the demand for mediation or arbitration shall be given in writing by one party to the other party to this Agreement within a reasonable time after the dispute has arisen. The arbitrator shall have the power to decide all questions of fact, law and equity. The award rendered by the arbitrator shall be final, conclusive, binding and not appealable, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

In the event that any dispute arises, it is agreed that each party shall bear its own attorneys fees and costs, except that each party shall pay one-half (50%) of the fees of the mediator, arbitrator, and any filing or administrative fees associated with mediation or arbitration.

The parties have read, understood, and considered the meaning, legal significance and implication of the above provisions and have knowingly and intentionally agreed to waive their right to trial by court, or jury, and proceed to resolve any and all claims and issues through the alternative dispute resolution protocol described herein.

_____ Owner Initials

_____ Vendor Initials

Revised 4/16/03 by NJT

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16.15 Days

16.16 Entire Agreement

GENERAL CONDITIONS

ARTICLE 1: DEFINITIONS; GENERAL

1.1 **Owner**. The term "Owner" shall refer to the ANTELOPE VALLEY COMMUNITY COLLEGE DISTRICT unless otherwise stated, references to the "Owner" in the Contract Documents shall mean the Owner, the Owner's authorized representatives, including the Project Manager, if a Project Manager is designated, the Owner's Board of Trustees and the Owner's officers, employees, agents and representatives.

1.2 **Prime Contractor**. The Prime Contractor is the person or entity identified as such in the Agreement; references to "Prime Contractor" in the Contract Documents shall mean the Prime Contractor or the Prime Contractor's authorized representative. Each Prime Contractor shall enter into an Agreement with the Owner to perform a certain portion or portions of the Work. There will or may be more than one Prime Contractor under this Multiple Prime – PM project delivery system. Whenever the term "Contractor" in the singular or "Contractors" in the plural is used in this document, it shall refer individually and collectively to one or all of the Prime Contractors, as the context implies.

1.3 **Architect**. The Architect is the person or entity identified as such in the Agreement; references to the "Architect" in the Contract Documents shall mean the Architect or the Architect's authorized representative.

1.4 **The Project Manager**. The Project Manager is the person or entity identified as such in the Agreements: references to the Project Manager in the Contract Documents shall mean the Project Manager or the Project Manager's authorized representative. The Project Manager's duties are to coordinate, expedite, manage, and supervise the Project. The Project Manager will provide an on-site Project Manager whose function is to represent the Owner in all on site construction matters, and coordinate the work of various individual "Prime Contractors".

1.5 **The Work**. The term "Work" shall be deemed to mean the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment or services provided or to be provided by the Prime Contractor to fulfill the Prime Contractor's obligations under the Contract Documents. The Work may constitute the whole or a part of the Project.

1.6 **The Project**. The Project is the total construction of which the Work performed by the Prime Contractors under the Contract Documents which may be the whole or a part of the Project and which may include construction by the Owner or by separate Contractors.

1.7 **Surety**. The Surety is the person or entity that executes, as surety, the Contractor's Labor and Material Payment Bond and/or Performance Bond.

1.8 **Subcontractors; Sub-Subcontractors**. A Subcontractor is a person or entity who has a direct contract with the Prime Contractor to perform a portion of the Work at the Site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means any Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate Prime Contractor to the Owner or Subcontractors of any separate Contractor. A

Sub-Subcontractor is a person or entity of any tier, who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-Subcontractor" is referred to throughout the Contract Documents as if singular in number and means any Sub-Subcontractor, of any tier, or an authorized representative of any Sub-Subcontractor.

1.9 **Material Supplier.** A Material Supplier is any person or entity who only furnishes materials, equipment or supplies for the Work without fabricating, installing or consuming them in the performance of the Work of the Contract.

1.10 **Drawings and Specifications.** The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing generally, the design, location and dimensions of the Work and may include without limitation, plans, elevations, sections, details, schedules or diagrams. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, criteria and workmanship for the Work and related services. The Drawings and Specifications are intended to delineate and describe the Work and its component parts so as to permit skilled and competent contractors to bid upon the Work and prosecute the same to completion.

1.11 **Special Conditions; Supplemental Conditions.** To the extent they are part of the Contract Documents, Special Conditions and Supplemental Conditions are special or supplemental provisions, not otherwise provided for in the Agreement or the General Conditions, which apply to the Work.

1.12 **Contract Documents.** The Contract Documents consist of the Agreement between the Owner and the Prime Contractor, Conditions of the Contract (whether General, Special, Supplemental, Division one, Bid packages, or otherwise), Drawings, Specifications, including addenda thereto issued prior to execution of the Agreement and any other documents listed in the Agreement. The Contract Documents shall include modifications issued after execution of the Agreement. The Contract Documents form the Contract for Construction.

1.13 **Intent and Correlation of Contract Documents.**

1.13.1 **Work of the Contract Documents.** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work awarded to the Prime Contractor by the Owner. The Contract Documents are complementary and what is required by one shall be as binding as if required by all; performance by the Prime Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable there from as being necessary to produce the intended results. Organization of the Specifications into divisions, sections or articles, and the arrangement of Drawings shall not control the Prime Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Where any portion of the Contract Documents is silent and information appears elsewhere in the Contract Documents, such other portions of the Contract Documents shall control.

1.13.2 **Technical Terms.** Unless otherwise stated in the Contract Documents, words or terms which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.13.3 **Conflict in Contract Documents.** Conflicts, inconsistencies or ambiguities in the Contract Documents shall be resolved by the Architect in accordance with Article 3.1.9 of the General Conditions; where conflicts or inconsistencies arise between the Drawings and the Specifications, in resolving such conflicts or inconsistencies, the Architect will be governed generally by the following standards: the Drawings are intended to describe matters relating to placement, type, quantity and the like; the Specifications are intended to describe matters relating to quality, materials, compositions, manufacturers and the like. The most stringed takes precedent.

1.13.4 **Conflicts, Order of Precedence. Notwithstanding the order of precedence provisions** set forth in this Paragraph, in the event of conflict between any of the Contract Documents, the provision placing a more stringent requirement or greater burden on Contractor or requiring the greater quantity or higher quality material or the workmanship shall prevail, unless otherwise directed by Project Manager or Design Consultant in writing. Conflicts that cannot be so resolved shall be interpreted in accordance with the following order of precedence (the first being the highest order of precedence):

.1 Applicable Laws (provided, however, that where the Contract Documents or manufacturer's recommendations or specification required standards higher than those of Applicable Laws, the Contract Documents or manufacturer recommendations or specifications shall control).

.2 Bid Packages.

.2 Change Orders, Unilateral Change Orders and Field Orders.

.3 Addenda.

.4 Construction Contract.

.5 Supplementary Conditions.

.6 General Conditions.

.7 General Requirements.

.8 Specifications.

.9 Drawings (with large-scale details taking precedence over smaller scale details).

.10 Reference Documents.

1.14 **Shop Drawings; Samples; Product Data ("Submittals").** Shop Drawings are diagrams, schedules and other data specially prepared for the Work by the Prime Contractor or a Subcontractor, Sub-Subcontractor, manufacturer, Material Supplier, or distributor to illustrate some portion of the Work. Samples are physical examples of materials, equipment or workmanship forming a part of, or to be incorporated into the Work. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Prime Contractor to illustrate materials or equipment for some portion of the Work. Shop Drawings, Samples and Product Data prepared or furnished by the Prime Contractor or any of its Subcontractors or Material Suppliers are collectively referred to as "Submittals".

1.15 **(PROJECT SPECIFIC) Division of State Architect ("DSA").** The DSA is the California Division of the State Architect including without limitation the DSA's Office of Construction Services, Office of Design Services and the Office of Regulation Services; references to the DSA in the Contract Documents shall mean the DSA, its offices and its authorized employees and agents. The authority of the DSA over the Work and the performance thereof shall be as set forth in the Contract Documents and Title 24 of the California Code of Regulations.

1.16 **(PROJECT SPECIFIC) Owner's Inspector.** The Owner's Inspector is the individual designated and employed by the Owner in accordance with the requirements of Title 24 of the California Code of Regulations. The Owner's Inspector shall be authorized to act on behalf of the Owner as provided for in the Contract Documents and in Title 24 of the California Code of Regulations, as the same may be amended from time to time.

1.17 **Contract Document Terms.** As used in the Contract Documents, the term "provide" shall mean "provide complete in place" or to "furnish and install" such item. Unless otherwise provided in the Contract Documents, the terms "approved;" "directed;" "satisfactory;" "accepted;" "acceptable;" "proper;" "required;" "necessary" and "equal" shall mean as approved, directed, satisfactory, accepted, acceptable, proper, required, necessary and equal, in the opinion of the Architect. The term "typical" as used in the Drawings shall require the installation or furnishing of such item(s) of the Work designated as "typical" in all other areas similarly marked as "typical"; Work in such other areas shall conform to that shown as "typical" or as reasonably inferable there from.

1.18 **Prime Contractor's Superintendent.** The Prime Contractor's Superintendent is the individual employed by the Prime Contractor whose principal responsibility shall be the supervision and coordination of the Work; the Prime Contractor's Superintendent shall not perform routine construction labor.

1.19 **Record Drawings.** The Record Drawings are a set of the Drawings marked by the Prime Contractor during the performance of the Work to indicate completely and accurately the actual as-built condition of the Work. The Record Drawings shall be sufficient for a capable and qualified draftsman to modify the Drawings to reflect and indicate the Work actually in place at Final Completion of the Work. The owner with withhold five percent (5%) of the monthly progress payments and the total cost thereafter in addition to the ten percent (10%) retention. The five percent (5%) is to ensure that project closeout documents including but not limited to as-built drawings are complete and submitted to the owner as a condition for final payment.

1.20 **Project Manager.** The Project Manager is the individual or entity designated as such in the Supplemental Conditions. The Project Manager is an independent contractor retained by the Owner and shall be authorized and empowered to act on behalf of the Owner. The Owner reserves the right to remove or replace the Project Manager during Prime Contractor's performance of the Work. The replacement of the designated Project Manager shall not result in adjustment of the Contract Price or the Contract Time or otherwise affect, limit or restrict Prime Contractor's obligations hereunder.

1.21 **Construction Equipment.** The term "Construction Equipment" shall be deemed to refer to equipment utilized for the performance of any portion of the Work, but which is not incorporated into the Work.

1.22 **Site.** The Site is the physical area designated in the Contract Documents for Prime Contractor's performance, construction and installation of the Work.

ARTICLE 2: OWNER

2.1 Information Required of Owner.

2.1.1 **Surveys; Site Information.** Information, if any, concerning physical characteristics of the Site, including without limitation, surveys, soils reports, and utility locations, to be provided by the Owner are set forth in the Contract Documents. Information not provided by the Owner or necessary information in addition to that provided by the Owner concerning physical characteristics of the site of the Work which is required for Prime Contractor's completion of the Work in accordance with the terms of the Contract Documents shall be obtained by Prime Contractor without adjustment to the Contract Price or the Contract Time.

2.1.2 **Permits; Fees.** Except as otherwise provided in the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities which relate to the Work of the Prime Contractor under the Contract Documents. To the extent that permits and fees are designated as the responsibility of the Prime Contractor under the Contract Documents, the Prime Contractor shall be solely responsible for obtaining the same; the cost of such permits or fees and any costs incurred by the Prime Contractor in obtaining such permits shall be included within the Contract Price.

2.1.3 **Drawings and Specifications.** Except as otherwise provided for in the Contract Documents, the Owner shall furnish the Prime Contractor, free of charge, the number of copies of the Drawings and the Specifications as set forth in the Supplemental Conditions. All of the Drawings and the Specifications provided by the Owner to the Prime Contractor remain the property of the Owner; the Prime Contractor shall not use the Drawings or the Specifications in connection with any other work of improvement other than the Work of the Project.

2.1.4 **Furnishing of Information.** Information or services to be provided by the Owner under the Contract Documents shall be furnished by the Owner with reasonable promptness to avoid delay in the orderly progress of the Work. Information about existing conditions furnished by the Owner under the Contract Documents is obtained from sources believed to be reliable, but the Owner neither guarantees nor warrants that such information is complete and accurate. The Prime Contractor shall verify all information provided by the Owner. To the extent that the Contract Documents depict existing conditions on or about the Site, or the Work involves the renovation, removal or remodeling of existing improvements or the Work involves any tie-in or other connection with any existing improvements, the conditions and/or existing improvements depicted in the Contract Documents are as they are believed to exist. Prime Contractor shall bear the risk of any variations between conditions or existing improvements depicted in the Contract Documents and those conditions or existing improvements actually encountered in the performance of the Work. The existence of any variations between conditions or existing improvements depicted in the Contract Documents and those actually encountered in the performance of the Work shall not result in any Owner liability therefore, nor shall any such variations result in an adjustment of the Contract Time or the Contract Price.

2.2 **Owner's Right to Stop the Work.** In addition to the Owner's right to suspend the Work or terminate the Contract pursuant to the Contract Documents, the Owner, may, by written order, direct the Prime Contractor to stop the Work, or any portion thereof, until the cause for such stop work order has been eliminated if the Prime Contractor: (i) fails to correct Work which is not in conformity and in accordance with the requirements of the Contract Documents, or (ii) otherwise fails to carry out the Work in conformity and accordance with the Contract Documents. The right of the Owner to stop the Work hereunder shall not be deemed a duty on the part of the Owner to exercise such right for the benefit of the Prime Contractor or any other person or entity, nor shall the Owner's exercise of such right waive or limit the exercise of any other right or remedy of the Owner under the Contract Documents or at law.

2.3 **Partial Occupancy or Use.**

2.3.1 **Owner's Right to Partial Occupancy.** The Owner may occupy or use any completed or partially completed portion of the Work, provided that: (i) the Owner has obtained the consent of, or is otherwise authorized by, public authorities with jurisdiction thereof, to so occupy or use such portion of the Work and (ii) the Owner and the Prime Contractor have accepted, in writing, the responsibilities assigned to each of them for payments, retention, if any, security, maintenance, utilities, damage to the Work, insurance and the period for correction of the Work and commencement of warranties required by the Contract Documents for such portion of the Work partially used or occupied by the Owner. In the event the Prime Contractor and the Owner are unable to agree upon the matters set forth in (ii) above, the Owner may nevertheless use or occupy any completed or partially completed portion of the Work, with the responsibility for such matters subject to resolution in accordance with the Contract Documents. Immediately prior to such partial occupancy or use of the Work, or portions thereof, the Owner, the Owner's Inspector, the Prime Contractor and the Architect shall jointly inspect the portions of the Work to be occupied or to be used to determine and record the condition of the Work.

2.3.2 **No Acceptance of Defective or Nonconforming Work.** Unless otherwise expressly agreed upon by the Owner and the Prime Contractor, the Owner's partial occupancy or use of the Work or any portion thereof, shall not constitute the Owner's acceptance of the Work not complying with the requirements of the Contract Documents or which is otherwise defective.

2.4 **The Owner's Inspector.** In addition to the authority and rights of the Owner's Inspector as provided for elsewhere in the Contract Documents, all of the Work shall be performed under the observation of the Owner's Inspector. The Owner's Inspector shall have access to all parts of the Work at any time, wherever located and whether partially or completely fabricated, manufactured, furnished or installed. The performance of the duties of the Owner's Inspector under the Contract Documents shall not relieve or limit the Prime Contractor's performance of its obligations under the Contract Documents.

ARTICLE 3: ARCHITECT

3.1 **Architect's Administration of the Contract.**

3.1.1 **Administration of Contract.** The Architect will provide administration of the Contract as described in the Contract Documents, and will be one of the Owner's representatives during construction until the time that Final Payment is due the Prime Contractor under the Contract

Documents. The Architect will advise and consult with the Owner, the Project Manager and the Owner's Inspector with respect to the administration of the Contract and the Work. The Architect is authorized to act on behalf of the Owner to the extent provided for in the Contract Documents; and shall have the responsibilities and powers established by law, including Title 24 of the California Code of Regulations.

3.1.2 **Periodic Site Inspections**. The Architect will visit the Site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine, in general, if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. The Architect will not be required to make exhaustive or continuous Site inspections to check quality or quantity of the Work. On the basis of Site observations as an architect, the Architect will keep the Owner informed of the progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work.

3.1.3 **Prime Contractor Responsibility for Construction Means, Methods and Sequences.** Each Prime Contractor shall be fully responsible for the construction means, methods, techniques, procedures and sequences necessary and appropriate to fully complete in a workmanlike manner of good quality free from defects and on time all of the work awarded to the Prime Contractor by Owner. The Architect will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, these being solely the Prime Contractor's responsibility. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Prime Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

3.1.4 **Verification of Applications for Payment.** In accordance with Article 8 hereof, the Architect will review the Prime Contractor's Applications for Progress Payments and for Final Payment, verify the extent of Work performed and the amount properly due the Prime Contractor on such Application for Payment. The Architect and the Inspector of record shall review progress as-built drawings before sign off on monthly and final payments.

3.1.5 **Rejection of Work.** The Architect is authorized to reject Work which is defective or does not conform to the requirements of the Contract Documents. Whenever the Architect considers it necessary or advisable, for implementation of the intent of the Contract Documents, the Architect will have authority to require additional inspections or testing of the Work, whether or not such Work is fabricated, installed or completed.

3.1.6 **Submittals.**

3.1.6.1 **Architect's Review.** The Architect will review and approve or take other appropriate action upon the Prime Contractor's Submittals, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Re-view of Submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Prime Contractor as required by the Contract Documents. The Architect's review of the Prime Contractor's Submittals shall

not relieve the Prime Contractor of its obligations under the Contract Documents. The Architect's review of Submittals shall not constitute approval of safety measures, programs or precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item in a Submittal shall not indicate approval of an assembly of which the item is a component with the Submittal(s) required and relating to such assembly have been reviewed by the Architect.

3.1.6.2 **Time for Architect's Review.** The Architect's review of Submittals will be conducted promptly so as not to delay or hinder the progress of the Work or the activities of the Prime Contractor, the Owner or the Owner's separate Prime Contractors while allowing sufficient time, in the Architect's reasonable professional judgment, to permit adequate review of Submittals. The foregoing notwithstanding, the Architect's review and return of Submittals will conform with the time limits and other conditions, if any, set forth in the Specifications.

3.1.7 **Changes to the Work; Change Orders.** The Project Manager will prepare the Change Orders for review by the Architect where he or she may authorize minor Changes in the Work in accordance with Article 9.9 hereof. The Architect shall identify and direct the project manager whether to proceed or not on changes in work pertaining to life safety and structural changes before obtaining DSA approval. The Architect shall compile and submit to DSA respective Field Change Directives for approval.

3.1.8 **Completion**. The Architect will conduct observations to determine the date or dates of Substantial Completion and issue a certificate of substantial completion and the date of Final Completion, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract Documents and assembled by the Prime Contractor, and will verify that the Prime Contractor has complied with all requirements of the Contract Documents and is entitled to receipt of Final Payment.

3.1.9 **Interpretation of Contract Documents.**

3.1.9.1 **Authority of Architect.** The Architect will interpret and decide matters concerning the requirements of the Contract Documents on written request of either the Owner or the Prime Contractor. The Architect's response to such requests will be made with reasonable promptness and within the time limits agreed upon, if any. If no agreement is reached establishing the time for the Architect's review and response to requests under this Article 3.1.9, the Architect shall be afforded a fifteen (15) day period after receipt of such request to review and respond thereto. Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both the Owner and the Prime Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith. The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

3.1.9.2 **Request for Information.** In the event that the Prime Contractor shall encounter any condition which the Prime Contractor believes, in good faith and with reasonable basis, is the result of an ambiguity, conflict, error or omission in the Contract Documents (collectively "the Conditions"), it shall be affirmative obligation of the Prime Contractor to timely notify the Architect, in writing, of the Conditions encountered and to request information from the Architect necessary to

address and resolve any such Conditions before proceeding with any portion of the Work affected or which may be affected by such Conditions. In the event that the Prime Contractor shall fail to so timely notify the Architect in writing of any Conditions encountered and the Prime Contractor proceeds to perform any portion of the Work containing or affected by such Conditions the Prime Contractor shall bear all costs associated with or required to correct, remove, or otherwise remedy any portion of the Work affected thereby without adjustment of the Contract Time or the Contract Price. In requesting information of the Architect to address and resolve any Conditions the Prime Contractor shall act with promptness in submitting any such written request so as to allow the Architect a reasonable period of time to review, evaluate and respond to any such request, taking into account the then current status of the progress and completion of the Work and the actual or potential impact of any such Conditions upon the completion of the Work within the Contract Time. The Contract Time shall not be subject to adjustment in the event that the Prime Contractor shall fail to timely request information from the Architect. The Architect's responses to any such Prime Contractor request for information shall conform with the standards and time frame set forth in Article 3.1.9.1 of these General Conditions. The foregoing provisions notwithstanding, in the event that the Architect reasonably determines that any of Prime Contractor's request(s) for information pursuant to this Article 3.1.9.2: (i) does not reflect adequate or competent supervision or coordination by the Prime Contractor or any Subcontractor; or (ii) does not reflect the Prime Contractor's adequate or competent knowledge of the requirements of the Work or the Contract Documents; or (iii) is not justified for any other reason, Prime Contractor shall be liable to the Owner for all costs incurred by the Owner associated with the processing, reviewing, evaluating and responding to any such request for information, including without limitation, fees of the Architect and any other design consultant to the Architect or the Owner. In responding to any of Prime Contractor's request(s) for information, the Architect shall, in the response, indicate if the Architect has made the determination pursuant to the preceding sentence and, if so, the amount of costs to be borne by the Prime Contractor for the processing, review, evaluation and response to the request for information. Thereafter, the Owner shall be authorized to deduct such amount from any portion of the Contract Price then or thereafter due the Prime Contractor.

3.2 **Communications; Project Manager and Architect's Role.** All communications regarding the Work, the performance thereof or the Contract Documents shall be in writing; verbal communications shall be reduced to writing. Communications between the Prime Contractor and the Owner shall be through the Project Manager. All written communications between separate contractors, if any, shall be through the Project Manager. All written communications between the Prime Contractor and any Subcontractor, Material Supplier or others directly or indirectly engaged by the Prime Contractor to perform or provide any portion of the Work shall be available to the Owner, the Project Manager and the Architect for review, inspection and reproduction as may be requested from time to time. Failure or refusal of the Prime Contractor to permit the Owner, the Project Manager or Architect to review, inspect or reproduce such written communications may be deemed a default of Prime Contractor hereunder.

3.3 **Termination of Architect; Substitute Architect.** In case of termination of employment of the Architect, the Owner shall appoint a substitute architect whose status under the Contract Documents shall be that of the Architect.

ARTICLE 4: THE PRIME CONTRACTOR

4.1 **Prime Contractor Review of Contract Documents.**

4.1.1 **Examination of Contract Documents.** The Prime Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner pursuant to the Contract Documents and shall at once report to the Project Manager and Architect any errors, inconsistencies or omissions discovered. If the Prime Contractor performs any Work knowing, or what with reasonable diligence it should have discovered or known, that such Work involves an error, inconsistency or omission in the Contract Documents without prior notice to the Project Manager and Architect of the same, the Prime Contractor shall assume full responsibility for such performance and shall bear all attributable costs for correction of the same.

4.1.2 **Field Measurements.** Prior to commencement of the Work, or portions thereof, the Prime Contractor shall take field measurements and verify field conditions at the Site and shall carefully compare such field measurements and conditions and other information known to the Prime Contractor with information provided in the Contract Documents. Errors, inconsistencies or omissions discovered shall be reported to the Architect at once.

4.1.3 **Dimensions; Layouts and Field Engineering.** Dimensions indicated in the Drawings are intended for reference only. The Drawings are intended to be diagrammatic and schematic in nature; the Prime Contractor shall be solely responsible for dimensioning and coordinating the Work of the Contract Documents. All field engineering required for laying out the Work and establishing grades for earthwork operations shall be by the Prime Contractor at its expense. Any field engineering or other engineering to be provided or performed by the Prime Contractor under the Contract Documents and required or necessary for the proper execution or installation of the Work shall be provided and performed by the an engineer duly registered under the laws of the State of California in the engineering discipline for such portion of the Work.

4.1.4 **Work in Accordance With Contract Documents.** The Prime Contractor shall perform all of the Work in strict conformity with the Contract Documents and approved Submittals.

4.2 **Site Investigation; Subsurface Conditions.**

4.2.1 **Prime Contractor Investigation.** The Prime Contractor shall be responsible for, and by executing the Agreement acknowledges, that it has carefully examined the Site and has taken all steps it deems reasonably necessary to ascertain all conditions which may effect the Work, or the cost thereof, including, without limitation, conditions bearing upon transportation, disposal, handling or storage of materials; availability of labor or utilities; access to the Site; and the physical conditions and the character of equipment, materials, labor and services necessary to perform the Work. Any failure of the Prime Contractor to do so will not relieve it from the responsibility for fully and completely performing all Work without adjustment to the Contract Price or the Contract Time. The Owner assumes no responsibility to the Prime Contractor for any understandings or representations concerning conditions or characteristics of the Site, or the Work, made by any of its officers, employees or agents prior to the execution of the Agreement, unless such understandings or representations are expressly set forth in the Agreement.

4.2.2 **Subsurface Data.** By executing the Agreement, the Prime Contractor acknowledges that it has examined the boring data and other subsurface data available and satisfied

itself as to the character, quality and quantity of surface and subsurface materials, including without limitation, obstacles which may be encountered in performance of the Work, insofar as this information is reasonably ascertainable from an inspection of the Site, review of available subsurface data and analysis of information furnished by the Owner under the Contract Documents. Subsurface data or other soils investigation report provided by the Owner hereunder are not a part of the Contract Documents. Information contained in such data or report regarding subsurface conditions, elevations of existing grades, or below grade elevations are approximate only and is neither guaranteed nor warranted by the Owner to be complete and accurate. The Prime Contractor shall examine all boring and other subsurface data to make its own independent interpretation of the subsurface conditions and acknowledges that its bid is based upon its own opinion of the conditions which may be encountered. The Owner assumes no responsibility for any conclusions or interpretations made by Prime Contractor on the basis of available subsurface data or other information furnished by Owner under the Contract Documents.

4.2.3 **Subsurface Conditions**. If the Work under the Contract Documents involves digging trenches or other excavations that extend deeper than four feet below the surface, the Prime Contractor shall promptly and before the following conditions are disturbed, notify the Owner's Inspector, in writing, of any: (i) material that the Prime Contractor believes may be material that is hazardous waste, as defined in California Health and Safety Code §25117, that is required to be removed to a Class I or Class II or Class III disposal site in accordance with provisions of existing law; (ii) subsurface or latent physical conditions at the site differing from those indicated; or (iii) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in the Work or the character provided for in the Contract Documents. If upon notice to the Owner of the conditions described above and upon the Owner's investigation thereof, the Owner determines that the conditions so materially differ or involve such hazardous materials which require an adjustment to the Contract Price or the Contract Time, the Owner shall issue a Change Order in accordance with Article 9 hereof. In accordance with California Public Contract Code §7104, any dispute arising between the Prime Contractor and the Owner as to any of the conditions listed in (i), (ii) or (iii) above, shall not excuse the Prime Contractor from the completion of the Work within the Contract Time and the Prime Contractor shall proceed with all Work to be performed under the Contract Documents. The Owner reserves the right to terminate the Contract pursuant to Article 15.2 hereof should the Owner determine not to proceed because of any condition described in (i), (ii) or (iii) above.

4.3 **Supervision and Construction Procedures.**

4.3.1 **Supervision of the Work.** Each Prime Contractor shall supervise and direct performance of its own Work in accordance with the Master Schedule prepared by the Project Manager, using the Prime Contractor's best skill and attention. The Prime Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract Documents, without interference with, disruption of, or delay to the work of other Contractors working on the Project, unless Contract Documents give other specific instructions concerning these matters. The Prime Contractor shall be responsible for inspection of portions of Work already performed under the Contract Documents to determine that such portions are in proper condition to receive subsequent Work.

4.3.2 **Responsibility for the Work; Coordination of the Work.** The Prime Contractor shall be responsible to the Owner for acts and omissions of the Prime Contractor's employees, Subcontractors and their agents and employees, and all other persons performing any portion of the Work under a contract with the Prime Contractor. The Prime Contractor shall not be relieved of the obligation to perform the Work in accordance with the Contract Documents either by activities or duties of the Project Manager, Owner's Inspector or the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Prime Contractor. The Prime Contractor shall be responsible for all necessary or appropriate coordination of the Work and component parts thereof so that Substantial Completion of the Work will be achieved within the Contract Time and the Work will be completed for the Contract Price. The coordination of the Work is a material obligation of the Prime Contractor hereunder and shall include without limitation, conducting regular coordination meetings with its Subcontractors and Material Suppliers, sequencing the operations of Subcontractors and Material Suppliers, and adapting its planned means, methods and sequences of construction operations as necessary to accommodate field or changed conditions at the Site.

4.3.3 **Surveys.** The Prime Contractor shall prepare or cause to be prepared all detailed surveys necessary for performance of the Work, including without limitation, slope stakes, points, lines and elevations. The Prime Contractor shall be responsible for the establishment, location, maintenance and preservation of benchmarks, reference points and stakes for the Work. The cost of any surveys and the establishment, location, maintenance and preservation of benchmarks, reference points and stakes shall be included within the Contract Price. The Prime Contractor shall be solely responsible for all loss or costs resulting from the loss, destruction, disturbance or damage of benchmarks, reference points or stakes.

4.3.4 **Construction Utilities.** The Prime Contractor shall arrange for the furnishing of and shall pay the costs of all utility services, including, without limitation, electricity, water, gas and telephone necessary for performance of the Work and the Prime Contractor's obligations under the Contract Documents. The Prime Contractor shall furnish and install necessary or appropriate temporary distributions of utilities, including meters, to the Site. Any such temporary distributions shall be removed by the Prime Contractor upon completion of the Work. The costs of all such utility services, including the installation and removal of temporary distributions thereof, shall be borne by the Prime Contractor and included in the Contract Price.

4.3.5 **Existing Utilities; Removal, Relocation and Protection.** In accordance with California Government Code §4215, the Owner shall assume the responsibility for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site which are not identified in the Drawings, Specifications or other Contract Documents. Prime Contractor shall be compensated for the costs of locating, repairing damage not due to the Prime Contractor's failure to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Drawings, Specifications and other Contract Documents with reasonable accuracy and for equipment on the Site necessarily idled during such work. Prime Contractor shall not be assessed Liquidated Damages for delay in completion of the Work when such delay is caused by the failure of the Owner or the owner of the utility to provide for removal or relocation of such utility facilities. Nothing in this Article 4.3.5 shall be deemed to require the Owner to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred from the presence of other visible facilities, such as buildings, meters and junction boxes, on or adjacent to the Site. In the event that Prime

Contractor, in performing the Work, shall encounter utility facilities not identified by the Owner in the Drawings, Specifications, or other Contract Documents, the Prime Contractor shall immediately notify, in writing, the Owner, the Owner's Inspector, the Architect, the Project Manager and the utility owner. In the event that such utility facilities are owned by a public utility, the public utility shall have the sole discretion to perform repairs or relocation work or permit the Prime Contractor to do such repairs or relocation work at a reasonable price.

4.4 **Labor and Materials.**

4.4.1 **Payment for Labor, Materials and Services.** Unless otherwise provided in the Contract Documents, the Prime Contractor shall provide and pay for labor, materials, equipment, tools, Construction Equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

4.4.2 **Employee Discipline.** The Prime Contractor shall enforce strict discipline and good order among the Prime Contractor's employees, the employees of any Subcontractor or Sub-subcontractor, and all other persons performing any part of the Work at the Site. The Prime Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. The Prime Contractor shall dismiss from its employ and direct any Subcontractor or Sub-subcontractor to dismiss from their employment any person deemed by the Owner to be unfit or incompetent to perform Work and thereafter, the Prime Contractor shall not employ nor permit the employment of such person for performance of any part of the Work without the prior written consent of the Owner, which consent may be withheld in the reasonable discretion of the Owner.

4.4.3 **Prime Contractor's Superintendent.** The Prime Contractor shall employ a competent superintendent and all necessary assistants who shall be in attendance at the Site at all times during performance of the Work. The Prime Contractor's communications relating to the Work or the Contract Documents shall be through the Prime Contractor's superintendent. The superintendent shall represent the Prime Contractor and communications given to the superintendent shall be binding as if given to the Prime Contractor. The Prime Contractor shall dismiss the superintendent or any of his/her assistants if they are deemed, in the sole reasonable judgment of the Owner, to be unfit, incompetent or incapable of performing the functions assigned to them. In such event, the Owner shall have the right to approve of the replacement superintendent or assistant.

4.4.4 **Prohibition on Harassment.**

4.4.4.1 **Owner's Policy Prohibiting Harassment.** The Owner is committed to providing a campus and workplace free of sexual harassment and harassment based on factors such as race, color religion, national origin, ancestry, age, medical condition, marital status, disability or veteran status. Harassment includes without limitation, verbal, physical or visual conduct which creates an intimidating, offensive or hostile environment such as racial slurs; ethnic jokes; posting of offensive statements, posters or cartoons or similar conduct. Sexual harassment includes without limitation the solicitation of sexual favors, unwelcome sexual advances, or other verbal, visual or physical conduct of a sexual nature.

4.4.4.2 **Prime Contractor's Adoption of Anti-Harassment Policy.** Prime Contractor shall adopt and implement all appropriate and necessary policies prohibiting any form of discrimination in the workplace, including without limitation harassment on the basis of any classification protected under local, state or federal law, regulation or policy. Prime Contractor shall take all reasonable steps to prevent harassment from occurring, including without limitation affirmatively raising the subject of harassment among its employees, expressing strong disapproval of any form of harassment, developing appropriate sanctions, informing employees of their right to raise and how to raise the issue of harassment and informing complainants of the outcome of an investigation into a harassment claim. Prime Contractor shall require that any Subcontractor or Sub-subcontractor performing any portion of the Work to adopt and implement policies in conformity with this Article 4.4.4.

4.4.4.3 **Prohibition on Harassment at the Site.** Prime Contractor shall not permit any person, whether employed by Prime Contractor, a Subcontractor, Sub-subcontractor, or any other person or entity, performing any portion of the Work at or about the Site to engage in any prohibited form of harassment. Any such person engaging in a prohibited form of harassment directed to any individual performing or providing any portion of the Work at or about the Site shall be subject to appropriate sanctions in accordance with the anti-harassment policy adopted and implemented pursuant to Article 4.4.4.2 above. Any person, performing or providing Work on or about the Site engaging in a prohibited form of harassment directed to any student, faculty member or staff of the Owner or directed to any other person on or about the Site shall be subject to immediate removal and shall be prohibited thereafter from providing or performing any portion of the Work. Upon the Owner's receipt of any notice or complaint that any person employed directly or indirectly by Prime Contractor in performing or providing the Work has engaged in a prohibited form of harassment, the Owner will promptly undertake an investigation of such notice or complaint. In the event that the Owner, after such investigation, reasonably determines that a prohibited form of harassment has occurred, the Owner shall promptly notify the Prime Contractor of the same and direct that the person engaging in such conduct be immediately removed from the Site. Unless the Owner's determination that a prohibited form of harassment has occurred is grossly negligent or without reasonable cause, Owner shall have no liability for directing the removal of any person determined to have engaged in a prohibited form of harassment nor shall the Contract Price or the Contract Time be adjusted on account thereof. Prime Contractor and the Surety shall defend, indemnify and hold harmless the Owner and its employees, officers, board of trustees, agents, and representatives from any and all claims, liabilities, judgments, awards, actions or causes of actions, including without limitation, attorneys' fees, which arise out of, or pertain in any manner to: (i) the assertion by any person dismissed from performing or providing work at the direction of the Owner pursuant to this Article 4.4.4.3; or (ii) the assertion by any person that any person directly or indirectly under the employment or direction of the Prime Contractor has engaged in a prohibited form of harassment directed to or affecting such person. The obligations of the Prime Contractor and the Surety under the preceding sentence shall be in addition to, and not in lieu of, any other obligation of defense, indemnity and hold harmless whether arising under the Contract Documents, at law or otherwise; these obligations shall survive the completion of the Work or the termination of the Contract.

4.5 **Taxes**. The Prime Contractor shall pay, without adjustment of the Contract Price, all sales, consumer, use and other taxes for the Work or portions thereof provided by the Prime Contractor under the Contract Documents.

4.6 **Permits, Fees and Notices; Compliance With Laws.**

4.6.1 **Payment of Permits, Fees.** Unless otherwise provided in the Contract Documents, the Owner shall secure and pay for the building permits, other permits, governmental fees, licenses and inspections necessary or required for the proper execution and completion of the Work.

4.6.2 **Compliance With Laws.** The Prime Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and other orders of public authorities bearing on performance of the Work.

4.6.3 **Notice of Variation From Laws.** If the Prime Contractor knows, or has reason to believe, that any portion of the Contract Documents are at variance with applicable laws, statutes, ordinances, building codes, regulations or rules, the Prime Contractor shall promptly notify the Architect and the Owner's Inspector, in writing, of the same. If the Prime Contractor performs Work knowing, or with reasonable diligence should have known, it to be contrary to laws, statutes, ordinances, building codes, rules or regulations applicable to the Work without such notice to the Architect and the Owner's Inspector, the Prime Contractor shall assume full responsibility for such Work and shall bear the attributable costs arising or associated there from, including without limitation, the removal, replacement or correction of the same.

4.7 **Submittals.**

4.7.1 **Purpose of Submittals.** Shop Drawings, Product Data, Samples and similar submittals (collectively "Submittals") are not Contract Documents. The purpose for submission of Submittals is to demonstrate, for those portions of the Work for which Submittals are required, the manner in which the Prime Contractor proposes to provide or incorporate such item of the Work in conformity with the information given and the design concept expressed in the Contract Documents.

4.7.2 **Prime Contractor's Submittals.**

4.7.2.1 **Prompt Submittals.** The Prime Contractor shall review, approve and submit to the Project Manager and Architect or such other person or entity designated by the Owner, the number of copies of Submittals required by the Contract Documents. All Submittals required by the Contract Documents shall be prepared, assembled and submitted by the Prime Contractor to the Architect within the time frames set forth in the Submittal Schedule incorporated and made a part of the Master Schedule prepared the Project Manager and as specified in Article 7 of these General Conditions. Prime Contractor's submission of Submittals in conformity with the Submittal Schedule is a material consideration of the Contract. In the event of Prime Contractor's failure or refusal to deliver Submittals to the Architect in accordance with the Submittal Schedule, the Prime Contractor shall be subject to per diem assessments in the amount set forth in the Supplemental Conditions for each day of delayed submission for any Submittal beyond the date set forth in the Submittal Schedule for Prime Contractor's submission of such Submittal. Prime Contractor and Owner acknowledge and agree that if Prime Contractor shall fail to deliver Submittals in accordance with the Submittal Schedule, the Owner will incur costs and expenses not contemplated by the Contract Documents, the exact amount of which are difficult to ascertain and fix. Prime Contractor and the Owner acknowledge and agree that the per diem assessment for delayed submission of Submittals set forth in the Supplemental Conditions represents a reasonable estimate of costs and expenses the Owner will incur as a result of delayed submission of

Submittals and that the same is not a penalty. Notwithstanding Prime Contractor's submission of all required Submittals in accordance with the Submittal Schedule, in the event that the Owner or the Architect reasonably determines that all or any portion of such Submittals fail to comply with the requirements of Articles 4.7.2.2, 4.7.2.3 and 4.7.2.4 of these General Conditions and/or such Submittals are not otherwise complete and accurate so as to require re-submission, Prime Contractor shall bear all costs associated with the review and approval of resubmitted Submittals, including without limitation Architect's fees incurred in connection therewith; provided that such costs are in addition to, and not in lieu of, any per diem assessments imposed under this Article 4.7.2.1 for Prime Contractor's delayed submission of Submittals. In the event of the Owner's imposition of the per diem assessments due to the Prime Contractor's delayed submission of Submittals or in the event of the Owner's assessment of costs and expenses incurred to review incomplete or inaccurate Submittals, the Owner may deduct the same from any portion the Contract Price then or thereafter due the Prime Contractor. Submittals not required by the Contract Documents or which do not otherwise conform to the requirements of the Contract Documents may be returned without action. No adjustment to the Contract Time or the Contract Price shall be granted to the Prime Contractor on account of its failure to make timely submission of any Submittal.

4.7.2.2 **Approval of Subcontractor Submittals**. All Submittals prepared by Subcontractors, of any tier, Material Suppliers, manufacturers or distributors shall bear the written approval of the Prime Contractor thereto prior to submission to the Architect for review. Any Submittal not bearing the Prime Contractor's written approval shall be subject to return to the Prime Contractor for re-submittal in conformity herewith, with the same being deemed to not have been submitted. Any delay, impact or cost associated therewith shall be the sole and exclusive responsibility of the Prime Contractor without adjustment to the Contract Time or the Contract Price.

4.7.2.3 **Verification of Submittal Information**. By approving and submission of Submittals, the Prime Contractor represents to the Owner and Architect that the Prime Contractor has determined and verified materials, field measurements, field construction criteria, catalog numbers and similar data related thereto and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents.

4.7.2.4 **Information Included in Submittals**. All Submittals shall be accompanied by a written transmittal or other writing by the Prime Contractor providing an identification of the portion of the Drawings or the Specifications pertaining to the Submittal, with each Submittal numbered consecutively for ease of reference along with the following information: (i) date of submission; (ii) project name; (iii) name of submitting Subcontractor; and (iv) if applicable, the revision number. The foregoing information is in addition to, and not in lieu of, any other information required for the Architect's review, evaluation and approval of the Prime Contractor's Submittals.

4.7.2.5 **Prime Contractor Responsibility for Deviations**. The Prime Contractor shall not be relieved of responsibility for correcting deviations from the requirements of the Contract Documents by the Architect's approval of Submittals unless the Prime Contractor has specifically informed the Architect in writing of such deviation at the time of submission of the Submittal and the Architect has given written approval to the specific deviation. The Prime Contractor shall not be relieved of responsibility for errors or omissions in Submittals by the Architect's approval thereof.

4.7.2.6 **No Performance of Work Without Approval.** The Prime Contractor shall perform no portion of the Work requiring the Architect's review and approval of Submittals until the Architect has completed its review and granted its approval of such Submittal. The Prime Contractor shall not perform any portion of the Work forming a part of a Submittal or which is affected by a related Submittal until the entirety of the Submittal or other related Submittal has been fully approved. Such Work shall be in accordance with approved Submittals and other applicable portions of the Contract Documents.

4.7.3 **Architect Review of Submittals.** The purpose of the Architect's review of Submittals and the time for the Architect's return of Submittals to the Prime Contractor shall be as set forth elsewhere in the Contract Documents, including without limitation, Article 3.1.6 of the General Conditions. If the Architect returns a Submittal as rejected or requiring correction(s) and re-submission, the Prime Contractor, so as not to delay the progress of the Work, shall promptly thereafter resubmit a Submittal conforming to the requirements of the Contract Documents; the resubmitted Submittal shall indicate the portions thereof modified in order to obtain the Architect's approval. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications accompanying Submittals. The Architect's review of the Submittals is for the limited purposes described in the Contract Documents.

4.7.4 **Deferred Approval Items.** In the event that any portion of the Work is designated in the Contract Documents as a "Deferred Approval" item, Prime Contractor shall be solely and exclusively responsible for the preparation of Submittals for such item(s) in a timely manner so as not to delay or hinder the completion of the Work within the Contract Time.

4.8 **Materials and Equipment.**

4.8.1 **Specified Materials, Equipment.** References in the Contract Documents to any specific article, device, equipment, product, material, fixture, patented process, form, method or type of construction, by name, make, trade name, or catalog number, with or without the words "or equal" shall be deemed to establish a minimum standard of quality or performance, and shall not be construed as limiting competition.

4.8.2 **Approval of Substitutions or Alternatives.** The Prime Contractor may propose to furnish alternatives or substitutes for a particular item specified in the Contract Documents, provided that the Prime Contractor provides advance written notice to the Architect of such proposed substitution or alternative and certifies to the Architect that the quality, performance capability and functionality (including visual and/or aesthetic effect) of the proposed alternative or substitute will meet or exceed the quality, performance capability and functionality of the item or process specified, and must demonstrate to the Architect that the use of the substitution or alternative is appropriate and will not delay completion of the Work or result in an increase to the Contract Price. The Prime Contractor shall submit engineering, construction, dimension, visual, aesthetic and performance data to the Architect to permit its proper evaluation of the proposed substitution or alternative. If requested by the Architect, Prime Contractor shall promptly furnish any additional information or data regarding a proposed substitution or alternative which the Architect deems reasonably necessary for the evaluation of the proposed substitution or alternative. The Prime Contractor shall not provide, furnish or install any

substitution or alternative without the Architect's prior approval of the same; any alternative or substitution installed or incorporated into the Work without first obtaining the Architect's approval of the same shall be subject to removal pursuant to Article 12 hereof. The Architect's decision shall be final regarding the approval or disapproval of the Prime Contractor's proposed substitutions or alternatives. Neither the Contract Time nor the Contract Price shall be increased on account of any substitution or alternative proposed by the Prime Contractor and which is approved by the Architect; provided, however, that in the event a substitution or alternative is approved by the Architect and purchase, fabrication and/or installation or such approved substitution or alternative shall be less expensive than the originally specified item, the Contract Price shall be reduced by the actual cost savings realized by the Prime Contractor's furnishing and/or installation of such approved substitution or alternative. The Prime Contractor shall be solely responsible for all costs and fees of the Architect, of the Architect's consultant(s) and/or governmental agencies to review and/or approve any proposed substitution or alternative. The Prime Contractor shall be solely responsible for any increase in the cost of any approved substitution or alternative or any Work affected by such alternative or substitution. The foregoing notwithstanding, all requests for the Architect's review and approval of any proposed substitution or alternative and all engineering, construction, dimension and performance data substantiating the equivalency of the proposed substitution or alternative shall be submitted by Prime Contractor not later than thirty-five (35) days following the date of the Owner's award of the Contract to Prime Contractor by action of the Owner's Board of Trustees. The Architect may reject, without review, any request for approval of proposed alternatives or substitutions submitted more than thirty-five (35) days after the date of the Owner's award of the Contract to Prime Contractor. The foregoing process and time limits shall apply to any proposed substitution or alternative regardless of whether the substitute or alternate item is to be provided, furnished or installed by Prime Contractor, any Subcontractor, any Sub-Subcontractor, Material Supplier or Manufacturer.

4.8.3 **Placement of Material and Equipment Orders** . Prime Contractor shall, after award of the Contract, promptly and timely place all orders for materials and/or equipment necessary for completion of the Work so that delivery of the same shall be made without delay or interruption to the timely completion of the Work. Prime Contractor shall require that any Subcontractor or Sub-Subcontractor performing any portion of the Work similarly place orders for all materials and/or equipment to be furnished by any such Subcontractor or Sub-Subcontractor in a prompt and timely manner so that delivery of the same shall be made without delay or interruption to the timely completion of the Work. Upon request of the Architect, the Prime Contractor shall furnish reasonably satisfactory written evidence of the placement of orders for materials and/or equipment necessary for completion of the Work, including without limitation, orders for materials and/or equipment to be provided, furnished or installed by any Subcontractor or Sub-Subcontractor.

4.8.4 **Owner's Right to Place Orders for Materials and/or Equipment.** Notwithstanding any other provision of the Contract Documents, in the event that the Prime Contractor shall, upon request of the Architect, fail or refuse, for any reason, to provide reasonably satisfactory written evidence of the placement of orders for materials and/or equipment necessary for completion of the Work, or should the Owner determine, in its sole and reasonable discretion, that any orders for materials and/or equipment have not been placed in a manner so that such materials and/or equipment will be delivered to the Site so the Work can be completed without delay or interruption, the Owner shall have the right, but not the obligation, to place such orders on behalf of the Prime Contractor. In the event that the Owner shall exercise the right to place orders for materials and/or equipment pursuant to the foregoing, the Owner's conduct in that regard shall not be deemed to be an exercise, by the Owner,

of any control over the means, methods, techniques, sequences or procedures for completion of the Work, all of which remain the responsibility and obligation of the Prime Contractor pursuant to Article 4.3.1 hereof. Notwithstanding the right of the Owner to place orders for materials and/or equipment pursuant to the foregoing, the election of the Owner to exercise, or not to exercise, such right shall not relieve the Prime Contractor from any of Prime Contractor's obligations under the Contract Documents, including without limitation, completion of the Work within the Contract Time and for the Contract Price. In the event that the Owner shall exercise the right hereunder to place orders for materials and/or equipment on behalf of Prime Contractor pursuant to the foregoing, Prime Contractor shall reimburse the Owner for all costs and fees incurred by the Owner in placing such orders; such costs and fees may be deducted by the Owner from any portion of the Contract Price then or thereafter due the Prime Contractor.

4.9 **Safety.**

4.9.1 **Safety Programs.** The Prime Contractor shall be solely responsible for initiating, maintaining and supervising all safety programs required by applicable law, ordinance, regulation or governmental orders in connection with the performance of the Contract, or otherwise required by the type or nature of the Work. The Prime Contractor's safety program shall include all actions and programs necessary for compliance with California or federally statutorily mandated workplace safety programs, including without limitation, compliance with the California Drug Free Workplace Act of 1990 (California Government Code §§8350 et seq.). Without limiting or relieving the Prime Contractor of its obligations hereunder, the Prime Contractor shall require that its Subcontractors similarly initiate and maintain all appropriate or required safety programs.

4.9.2 **Safety Precautions.** The Prime Contractor shall be solely responsible for initiating and maintaining reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (i) employees on the Work and other persons who may be affected thereby; (ii) the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Prime Contractor or the Prime Contractor's Subcontractors or Sub-subcontractors; and (iii) other property or items at the site of the Work, or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

4.9.3 **Safety Signs, Barricades.** The Prime Contractor shall erect and maintain, as required by existing conditions and conditions resulting from performance of the Contract, reasonable safeguards for safety and protection of property and persons, including, without limitation, posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

4.9.4 **Safety Notices.** The Prime Contractor shall give or post all notices required by applicable law and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

4.9.5 **Safety Coordinator.** The Prime Contractor shall designate a responsible member of the Prime Contractor's organization at the Site whose duty shall be the prevention of accidents and

the implementation and maintenance safety precautions and programs. This person shall be the Prime Contractor's superintendent unless otherwise designated by the Prime Contractor in writing to the Owner's Inspector and the Architect.

4.9.6 **Emergencies.** In an emergency affecting safety of persons or property, the Prime Contractor shall act, at the Prime Contractor's discretion, to prevent threatened damage, injury or loss.

4.9.7 **Hazardous Materials.**

4.9.7.1 **Use of Hazardous Materials.** In the event that the Prime Contractor, any Subcontractor or anyone employed directly or indirectly by them shall use, at the Site, or incorporate into the Work, any material or substance deemed to be hazardous or toxic under any law, rule, ordinance, regulation or interpretation thereof (collectively "Hazardous Materials"), the Prime Contractor shall comply with all laws, rules, ordinances or regulations applicable thereto and shall exercise all necessary safety precautions relating to the use, storage or disposal thereof.

4.9.7.2 **Prohibition on Use of Asbestos Construction Building Materials ("ACBMs").** Notwithstanding any provision of the Drawings or the Specifications to the contrary, it is the intent of the Owner that ACBMs not be used or incorporated into any portion of the Work. In the event that any portion of the Work depicted in the Drawings or the Specifications shall require materials or products which the Prime Contractor knows, or should have known with reasonably diligent investigation, to contain ACBM's, Prime Contractor shall promptly notify the Architect and the Owner's Inspector of the same so that an appropriate alternative can be made in a timely manner so as not to delay the progress of the Work. Prime Contractor warrants to the Owner that there are no materials or products used or incorporated into the Work which contain ACBM's. Whether before or after completion of the Work, if it is discovered that any product or material forming a part of the Work or incorporated into the Work contains ACBM's, the Prime Contractor shall at its sole cost and expense remove such product or material in accordance with any laws, rules, procedures and regulations applicable to the handling, removal and disposal of ACBM's and to replace such product or material with non-ACBM products or materials and to return the affected portion(s) of the Work to the finish condition depicted in the Drawings and Specifications relating to such portion(s) of the Work. Prime Contractor's obligations under the preceding sentence shall survive the termination of the Contract, the warranty period provided under the Contract Documents, the Prime Contractor's completion of the Work or the Owner's acceptance of the Work. In the event that the Prime Contractor shall fail or refuse, for any reason, to commence the removal and replacement of any material or product containing ACBM's forming a part of, or incorporated into the Work, within ten (10) days of the date of the Owner's written notice to the Prime Contractor of the existence of ACBM materials or products in the Work, the Owner may thereafter proceed to cause the removal and replacement of such materials or products in any manner which the Owner determines to be reasonably necessary and appropriate; all costs, expenses and fees, including without limitation fees and costs of consultants and attorneys, incurred by the Owner in connection with such removal and replacement shall be the responsibility of the Prime Contractor and the Prime Contractor's Performance Bond Surety.

4.9.7.3 **Disposal of Hazardous Materials.** Prime Contractor shall be solely and exclusively responsible for the disposal of any Hazardous Materials on or about the Prime Contractor's obligations hereunder shall include without limitation, the transportation and disposal of any

Hazardous Materials in strict conformity with any and all applicable laws, regulations, orders, procedures or ordinances.

4.10 **Maintenance of Documents.**

4.10.1 **Documents at Site.** The Prime Contractor shall maintain at the Site: (i) one record copy of the Drawings, Specifications and all addenda thereto; (ii) Change Orders approved by the Owner and all other modifications to the Contract Documents; (iii) Submittals reviewed by the Architect; (iv) Record Drawings; (v) Material Safety Data Sheets ("MSDS") accompanying any materials, equipment or products delivered or stored at the Site or incorporated into the Work; and (vi) all building and other codes or regulations applicable to the Work, including without limitation, Title 24, Part 2 of the California Code of Regulations. During performance of the Work, all documents maintained by Prime Contractor at the Site shall be available to the Owner, the Project Manager, the Architect, the Owner's Inspector and DSA for review, inspection or reproduction. Upon completion of the Work, all documents maintained at the Site by the Prime Contractor pursuant to the foregoing shall be assembled and transmitted to the Architect for delivery to the Owner.

4.10.2 **Maintenance of Record Drawings.** During its performance of the Work, the Prime Contractor shall maintain Record Drawings, as described in Article 1.18 hereof, consisting of a set of the Drawings which are marked to indicate all field changes made to adapt the Work depicted in the Drawings to field conditions, changes resulting from Change Orders and all concealed or buried installations, including without limitation, piping, conduit and utility services. All buried or concealed items of Work shall be completely and accurately marked and located on the Record Drawings. The Record Drawings shall be clean and all changes, corrections and dimensions shall be marked in a neat and legible manner in a contrasting color. Record Drawings relating to the Structural, Mechanical, Electrical and Plumbing portions of the Work shall indicate without limitation, circuiting, wiring sizes, equipment/member sizing and shall depict the entirety of the as built conditions of such portions of the Work. The Record Drawings shall be continuously maintained by the Prime Contractor during the performance of the Work. At any time during the Prime Contractor's performance of the Work, upon the request of the Owner, the Owner's Inspector or the Architect, the Prime Contractor shall make the Record Drawings maintained here under available for the Owner's review and inspection. The Owner's review and inspection of the Record Drawings during the Prime Contractor's performance of the Work shall be only for the purpose of generally verifying that Prime Contractor is continuously maintaining the Record Drawings in a complete and accurate manner; any such inspection or review shall not be deemed to be the Owner's approval or verification of the completeness or accuracy thereof. The failure or refusal of the Prime Contractor to continuously maintain complete and accurate Record Drawings or to make available the Record Drawings for inspection and review by the Owner may be deemed by the Owner to be Prime Contractor's default of a material obligation hereunder. Without waiving, restricting or limiting any other right or remedy of the Owner for the Prime Contractor's failure or refusal to continuously maintain the Record Drawings, the Owner may, upon reasonably determining that the Prime Contractor has not, or is not, continuously maintaining the Record Drawings in a complete and accurate manner, take appropriate action to cause the continuous maintenance of complete and accurate Record Drawings, in which event all fees and costs incurred or associated with such action shall be charged to the Prime Contractor and the Owner may deduct the amount of such fees and costs from any portion of the Contract Price then or thereafter due the Prime Contractor. In accordance with Article

8.4.2 of these General Conditions, prior to receipt of the Final Payment, Prime Contractor shall deliver the Record Drawings to the Project Manager.

4.11 **Use of Site**. The Prime Contractor shall confine operations at the Site to areas permitted by law, ordinances or permits, subject to any restrictions or limitations set forth in the Contract Documents. The Prime Contractor shall not unreasonably encumber the Site or adjoining areas with materials or equipment. The Prime Contractor shall be solely responsible for providing security at the Site with all such costs included in the Contract Price. The Owner shall at all times have access to the Site.

4.12 **Clean Up**. The Prime Contractor shall at all times keep the Site and all adjoining areas free from the accumulation of any waste material or rubbish caused or generated by performance of the Work. Without limiting the generality of the foregoing, Prime Contractor shall maintain the Site in a "rake-clean" standard on a daily basis. In the event that the Work of the Contract Documents includes painting and/or the installation of floor covering, prior to commencement of any painting operations or the installation of any flooring covering, the area and adjoining areas of the Site where paint is to be applied or floor covering is to be installed shall be in a "broom-clean" condition. Prior to completion of the Work, Prime Contractor shall remove from the Site all rubbish, waste material, excess excavated material, tools, Construction Equipment, machinery, surplus material and any other items which are not the property of the Owner under the Contract Documents. Upon completion of the Work, the Site and all adjoining areas shall be left in a neat and broom clean condition satisfactory to Owner. The Owner's Inspector or Project Manager shall be authorized to direct the Prime Contractor's clean-up obligations hereunder. If the Prime Contractor fails to clean up as provided for in the Contract Documents, the Owner may do so, and all costs incurred in connection therewith shall be charged to the Prime Contractor; the Owner may deduct such costs from any portion of the Contract Price then or thereafter due the Prime Contractor.

4.13 **Access to the Work.** The Prime Contractor shall provide the DSA, the Owner, the Project Manager, the Owner's Inspector, the Architect and the Architect's consultant(s) with access to the Work, whether in place, preparation and progress and wherever located.

4.14 **Facilities and Information for the Owner's Inspector.**

4.14.1 **Information to Owner's Inspector**. The Prime Contractor shall furnish the Owner's Inspector access to the Work for obtaining such information as may be necessary to keep the Owner's Inspector fully informed respecting the progress, quality and character of the Work and materials, equipment or other items incorporated therein. The Owner's Inspector shall be authorized to exercise the Owner's rights under Article 2.2 of the General Conditions with respect to stoppage of the Work.

4.14.2 **Facilities for Owner's Inspector**. The Project Manager shall provide, at no additional cost or expense to the Owner, for use by the Owner, the Project Manager and the Owner's Inspector, at the Site, a temporary trailer meeting or exceeding the requirements set forth in the Specifications, along with the items of furniture, furnishings and office equipment identified in the Specifications. The Project Manager shall provide and pay for all costs, including without limitation, utility and telephone services associated with the use of such temporary trailer, until removal of the same is authorized by the Owner. The costs for providing of all such items pursuant to the foregoing shall be included within the Contract Price.

4.15 **Patents and Royalties.** The Prime Contractor and the Surety shall defend, indemnify and hold harmless the Owner and its agents, employees and officers from any claim, demand or legal proceeding arising out of or pertaining, in any manner, to any actual or claimed infringement of patent rights in connection with performance of the Work under the Contract Documents.

4.16 **Cutting and Patching.** The Prime Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make the component parts thereof fit together properly. The Prime Contractor shall not damage or endanger any portion of the Work, or the fully or partially completed construction of the Owner or separate contractors by cutting, patching, excavation or other alteration. The Prime Contractor shall not cut, patch or otherwise alter the construction by the Owner or separate contractor without the prior written consent of the Owner or separate contractor thereto, which consent shall not be unreasonably withheld. The Prime Contractor shall not unreasonably withhold consent to the request of the Owner or separate contractor to cut, patch or otherwise alter the Work.

4.17 **Encountering of Hazardous Materials.** In the event the Prime Contractor encounters Hazardous Materials at the Site which have not been rendered harmless or for which there is no provision in the Contract Documents for containment, removal, abatement or handling of such Hazardous Materials, the Prime Contractor shall immediately stop the Work in the affected area, but shall diligently proceed with the Work in all other unaffected areas. Upon encountering such Hazardous Materials, the Prime Contractor shall immediately notify the Owner's Inspector and the Architect, in writing, of such condition. The Prime Contractor shall proceed with the Work in such affected area only after such Hazardous Materials have been rendered harmless, contained, removed or abated. In the event such Hazardous Materials are encountered, the Prime Contractor shall be entitled to an adjustment of the Contract Time to the extent that the Work is stopped and Substantial Completion of the Work is affected thereby. In no event shall there be an adjustment to the Contract Price solely on account of the Prime Contractor encountering such Hazardous Materials.

4.18 **Wage Rates; Employment of Labor.**

4.18.1 **Determination of Prevailing Rates.** Pursuant to the provisions of Division 2, Part 7, Chapter 1, Article 2 of the California Labor Code at §§1770 et seq., the Owner has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the prevailing rate for holiday and overtime work in the locality in which the Work is to be performed for each craft, classification or type of worker needed to execute the Contract. Holidays shall be as defined in the collective bargaining agreement applicable to each particular craft, classification or type of worker employed under the Contract. Per diem wages shall be deemed to include employer payments for health and welfare, pensions, vacation, travel time and subsistence pay as provided in California Labor Code §1773.8, apprenticeship or other training programs authorized by California Labor Code §3093, and similar purposes when the term "per diem wages" is used herein. Holiday and overtime work, when permitted by law, shall be paid for at the rate of at least one and one-half (1 1/2) times the above specified rate of per diem wages, unless otherwise specified. The Prime Contractor shall post, at appropriate and conspicuous locations on the Site, a schedule showing all determined general prevailing wage rates.

4.18.2 **Payment of Prevailing Rates.** There shall be paid each worker of the Prime Contractor, or any Subcontractor, of any tier, engaged in the Work, not less than the general prevailing wage rate, regardless of any contractual relationship which may be alleged to exist between the Prime Contractor or any Subcontractor, of any tier, and such worker.

4.18.3 **Prevailing Rate Penalty**. The Prime Contractor shall, as a penalty, forfeit Fifty Dollars ($50.00) to the Owner for each calendar day or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of the Department of Industrial Relations for such work or craft in which such worker is employed for the Work by the Prime Contractor or by any Subcontractor, of any tier, in connection with the Work. Pursuant to California Labor Code §1775, the difference between such prevailing wage rates and the amount paid to each worker for each calendar day, or portion thereof, for which each worker was paid less than the prevailing wage rate, shall be paid to each worker by the Prime Contractor.

4.18.4 **Payroll Records**. Pursuant to California Labor Code §1776:

4.18.4.1 The Prime Contractor and each Subcontractor, of any tier, shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by them in connection with the Work.

4.18.4.2 The payroll records enumerated under Article 4.18.4.1 above shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Prime Contractor on the following basis: (i) a certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his/her authorized representative on request; (ii) a certified copy of all payroll records enumerated in Article 4.18.4.1 above shall be made available for inspection or furnished upon request to the Owner, the Division of Labor Standards Enforcement and the Division of Apprenticeship Standards of the Department of Industrial Relations; (iii) a certified copy of all payroll records enumerated in Article 4.18.4.1 above shall be made available upon request to the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the Owner, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to Article 4.18.4.2(i) above, the requesting party shall, prior to being provided the records, reimburse the cost of preparation by the Prime Contractor, Subcontractors and the entity through which the request was made. The public shall not be given access to such records at the principal office of the Prime Contractor; (iv) the Prime Contractor shall file a certified copy of the records enumerated in Article 4.18.4.1 above with the entity that requested such records within ten (10) days after receipt of a written request; (v) any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the Owner, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address and social security number. The name and address of the Prime Contractor or any Subcontractor, of any tier, performing a part of the Work shall not be marked or obliterated.

4.18.4.3 The Prime Contractor shall inform the Owner of the location of the records enumerated under Article 4.18.4.1 above, including the street address, city and county and shall, within five (5) working days, provide a notice of a change or location and address.

4.18.4.4 In the event of noncompliance with the requirements of this Article 4.18.4, the Prime Contractor shall have ten (10) days in which to comply, subsequent to receipt of written notice specifying in what respects the Prime Contractor must comply herewith. Should noncompliance still be evident after such 10-day period, the Prime Contractor shall, as a penalty to the Owner, forfeit Twenty-Five Dollars ($25.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from any portion of the Contract Price then or thereafter due the Prime Contractor.

4.18.4.5 The responsibility for compliance with the provisions of this Article 4.18.4 shall rest upon the Prime Contractor.

4.18.5 **Hours of Work.**

4.18.5.1 **Limits on Hours of Work**. Pursuant to California Labor Code §1810, eight (8) hours of labor shall constitute a legal day's work. Pursuant to California Labor Code §1811, the time of service of any worker employed at any time by the Prime Contractor or by a Subcontractor, of any tier, upon the Work or upon any part of the Work, is limited and restricted to eight (8) hours during any one calendar day and forty (40) hours during any one calendar week, except as hereafter provided. Notwithstanding the foregoing provisions, Work performed by employees of Prime Contractor or any Subcontractor, of any tier, in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1 1/2) times the basic rate of pay.

4.18.5.2 **Penalty for Excess Hours**. The Prime Contractor shall pay to the Owner Twenty-five Dollars ($25.00) for each worker employed on the Work by the Prime Contractor or any Subcontractor, of any tier, for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any calendar day and forty (40) hours in any one calendar week, in violation of the provisions of the California Labor Code, unless compensation to the worker so employed by the Prime Contractor is not less than one and one-half (1 ½) times the basic rate of pay for all hours worked in excess of eight (8) hours per day.

4.18.5.3 **Prime Contractor Responsibility**. Any Work performed by workers necessary to be performed after regular working hours or on Sundays or other holidays shall be performed without adjustment to the Contract Price or any other additional expense to the Owner.

4.18.6 **Apprentices.**

4.18.6.1 **Employment of Apprentices**. All apprentices employed by the Prime Contractor to perform any of the Work shall be paid the standard wage paid to apprentices under the regulations of the craft or trade for which such apprentice is employed, and such individual shall be employed only for the work of the craft or trade to which such individual is registered. Only apprentices, as defined in California Labor Code §3077 who are in training under apprenticeship standards and written apprenticeship agreements under California Labor Code §§3070 et seq. are eligible to be employed for the Work. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which such apprentice is training.

4.18.6.2 **Apprenticeship Certificate**. When the Prime Contractor or any Subcontractor, of any tier, in performing any of the Work employs workers in any Apprenticeable Craft or Trade, the Prime Contractor and such Subcontractor shall apply to the Joint Apprenticeship Committee administering the apprenticeship standards of the craft or trade in the area of the site of the Work for a certificate approving the Prime Contractor or such Subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected, provided, however, that the approval as established by the Joint Apprenticeship Committee or Committees shall be subject to the approval of the Administrator of Apprenticeship. The Joint Apprenticeship Committee or Committees, subsequent to approving the Prime Contractor or Subcontractor, shall arrange for the dispatch of apprentices to the Prime Contractor or such Subcontractor in order to comply with California Labor Code §1777.5. The Prime Contractor and Subcontractors shall submit contract award information to the applicable Joint Apprenticeship Committee which shall include an estimate of journeyman hours

to be performed under the Contract, the number of apprentices to be employed, and the approximate dates the apprentices will be employed. There shall be an affirmative duty upon the Joint Apprenticeship Committee or Committees, administering the apprenticeship standards of the crafts or trades in the area of the site of the Work, to ensure equal employment and affirmative action and apprenticeship for women and minorities. Prime Contractors or Subcontractors shall not be required to submit individual applications for approval to local Joint Apprenticeship Committees provided they are already covered by the local apprenticeship standards.

4.18.6.3 **Ratio of Apprentices to Journeymen**. The ratio of Work performed by apprentices to journeymen, who shall be employed in the Work, may be the ratio stipulated in the apprenticeship standards under which the Joint Apprenticeship Committee operates, but in no case shall the ratio be less than one hour of apprentice work for each five hours of labor performed by a journeyman, except as otherwise provided in California Labor Code §1777.5. The minimum ratio for the land surveyor classification shall not be less than one apprentice for each five journeymen. Any ratio shall apply during any day or portion of a day when any journeyman, or the higher standard stipulated by the Joint Apprenticeship Committee, is employed at the site of the Work and shall be computed on the basis of the hours worked during the day by journeymen so employed, except for the land surveyor classification. The Prime Contractor shall employ apprentices for the number of hours computed as above before the completion of the Work. The Prime Contractor shall, however, endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the site of the Work. Where an hourly apprenticeship ratio is not feasible for a particular craft or trade, the Division of Apprenticeship Standards, upon application of a Joint Apprenticeship Committee, may order a minimum ratio of not less than one apprentice for each five journeymen in a craft or trade classification. The Prime Contractor or any Subcontractor covered by this Article and California Labor Code §1777.5, upon the issuance of the approval certificate, or if it has been previously approved in such craft or trade, shall employ the number of apprentices or the ratio of apprentices to journeymen stipulated in the apprenticeship standards. Upon proper showing by the Prime Contractor that it employs apprentices in such craft or trade in the State of California on all of its contracts on an annual average of not less than one apprentice to each five journeymen, the Division of Apprenticeship Standards may grant a certificate exempting the Prime Contractor from the 1-to-5 ratio as set forth in this Article and California Labor Code §1777.5. This Article shall not apply to contracts of Prime Contractors, or to contracts of specialty contractors not bidding for work through a Prime Contractor, involving less than Thirty Thousand Dollars ($30,000.00) or twenty (20) working days. The term "Apprenticeable Craft or Trade," as used herein shall mean a craft or trade determined as an Apprenticeable occupation in accordance with rules and regulations prescribed by the Apprenticeship Council.

4.18.6.4 **Exemption From Ratios**. The Joint Apprenticeship Committee shall have the discretion to grant a certificate, which shall be subject to the approval of the Administrator of Apprenticeship, exempting the Prime Contractor from the 1-to-5 ratio set forth in this Article when it finds that any one of the following conditions are met: (i) unemployment for the previous three-month period in such area exceeds an average of fifteen percent (15%) or; (ii) the number of apprentices in training in such area exceeds a ratio of 1-to-5 in relation to journeymen, or; (iii) the Apprenticeable Craft or Trade is replacing at least one-thirtieth (1/30) of its journeymen annually through apprenticeship training, either on a statewide basis or on a local basis, or; (iv) if assignment of an apprentice to any Work performed under the Contract Documents would create a condition which would jeopardize such apprentice's life or the life, safety or property of fellow employees or the public at large, or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyman. When such exemptions from the 1-to-5 ratio between apprentices and journeymen are granted to an organization which represents Prime Contractors in a specific trade on a local or statewide basis, the member Prime Contractors will not be required to submit individual applications for approval

to local Joint Apprenticeship Committees, provided they are already covered by the local apprenticeship standards.

4.18.6.5 **Contributions to Trust Funds.** The Prime Contractor or any Subcontractor, of any tier, who, performs any of the Work by employment of journeymen or apprentices in any Apprenticeable Craft or Trade and who is not contributing to a fund or funds to administer and conduct the apprenticeship program in any such craft or trade in the area of the site of the Work, to which fund or funds other Prime Contractors in the area of the site of the Work are contributing, shall contribute to the fund or funds in each craft or trade in which it employs journeymen or apprentices in the same amount or upon the same basis and in the same manner as the other Prime Contractors do, but where the trust fund administrators are unable to accept such funds, contractors not signatory to the trust agreement shall pay a like amount to the California Apprenticeship Council. The Division of Labor Standards Enforcement is authorized to enforce the payment of such contributions to such fund(s) as set forth in California Labor Code §227. Such contributions shall not result in an increase in the Contract Price.

4.18.6.6 **Prime Contractor's Compliance.** The responsibility of compliance with this Article for all Apprenticeable Trades or Crafts is solely and exclusively that of the Prime Contractor. All decisions of the Joint Apprenticeship Committee(s) under this Article are subject to the provisions of California Labor Code §3081. In the event the Prime Contractor willfully fails to comply with the provisions of this Article and California Labor Code §1777.5, pursuant to California Labor Code §1777.7, the Prime Contractor shall: (i) be denied the right to bid on any public works contract for a period of one (1) year from the date the determination of non-compliance is made by the Administrator of Apprenticeship; and (ii) forfeit, as a civil penalty, Fifty Dollars ($50.00) for each calendar day of noncompliance. Notwithstanding the provisions of California Labor Code §1727, upon receipt of such determination, the Owner shall withhold such amount from the Contract Price then due or to become due. Any such determination shall be issued after a full investigation, a fair and impartial hearing, and reasonable notice thereof in accordance with reasonable rules and procedures prescribed by the California Apprenticeship Council. Any funds withheld by the Owner pursuant to this Article shall be deposited in the General Fund or other similar fund of the Owner. The interpretation and enforcement of California Labor Code §§1777.5 and 1777.7 shall be in accordance with the rules and procedures of the California Apprenticeship Council.

4.18.7. **Employment of Independent Prime Contractors.** Pursuant to California Labor Code §1021.5, Prime Contractor shall not willingly and knowingly enter into any agreement with any person, as an independent contractor, to provide any services in connection with the Work where the services provided or to be provided requires that such person hold a valid contractors license issued pursuant to California Business and Professions Code §§7000 et seq. and such person does not meet the burden of proof of his/her independent contractor status pursuant to California Labor Code §2750.5. In the event that Prime Contractor shall employ any person in violation of the foregoing, Prime Contractor shall be subject to the civil penalties under California Labor Code §1021.5 and any other penalty provided by law. In addition to the penalties provided under California Labor Code §1021.5, Prime Contractor's violation of this Article 4.18.7 or the provisions of California Labor Code §1021.5 shall be deemed an event of Prime Contractor's default under Article 15.1 of these General Conditions. The Prime Contractor shall require any Subcontractor or Sub-Subcontractor performing or providing any portion of the Work to adhere to and comply with the provisions of this Article 4.18.7.

4.18.8 **Labor Compliance Program** the following provisions shall apply only if the Construction Contract states that a Labor Compliance Program has been approved for the Project: Pursuant to California Labor Code Section 1771.7, District has implemented and shall enforce Labor Compliance Program that has been established for the Project. A pre-construction conference will be

held for the benefit of Contractor and the Subcontractors to discuss labor requirements of the Labor Compliance Program that apply to the Project at which attendance by Contractor is mandatory. The Labor Compliance Program includes, without limitation, provisions requiring Contractor to comply with the prevailing rates of wages, maintenance and submission of weekly certified payroll records, employment of apprentices and, compliance with legal hours of work, and debarment as set forth in Section 4.18, above. Contractor shall post "Notice of Initial Approval" of the District's Labor Compliance Program at the Site in accordance with 8 California Code of Regulations 16429. Contractor, and any Subcontractors, are required to comply with the requirements of the Labor Compliance Program, at no additional cost to District. Payroll records shall be certified and submitted to the labor compliance office, along with, and as a condition to, Contractor's Applications for Payment (or at the time intervals designated in the Labor Compliance Program) and furthermore shall be available for inspection at all reasonable hours at the principal office of Contractor. Contractor shall include, and shall require the Subcontractors to include, contractual provisions in all contracts they enter into for the performance of the Work, requiring each Subcontractor, of every Tier, who furnishes any labor for the performance of Work, to comply with these provisions at no additional cost. Compliance by Contractor with the requirements of this Section 4.18.9 shall be a condition to Contractor's right to payment under its Applications for Payment. Contractor and the Subcontractors shall comply with all applicable provisions of the California Labor Code and the Labor Compliance Program relating to prevailing wage, hours of work, apprentices, and maintenance and submission of certified payroll reports, and shall pay appropriate penalties as described in Section 4.18, above, for failure to comply pursuant to the California Labor Code, including, but not limited to, §~ 1775, 1776, 1777.7 and 1813. The requirements of this Section 4.18.9 are in addition to, and not a limitation upon, the other requirements of Section 4.18, above and other applicable provisions of the Contract Documents.

4.19 **Assignment of Antitrust Claims.** Pursuant to California Government Code §4551, the Prime Contractor and its Subcontractor(s), of any tier, hereby offers and agrees to assign to the Owner all rights, title and interest in and to all causes of action they may have under Section 4 of the Clayton Act, (15 U.S.C. §15) or under the Cartwright Act (California Business and Professions Code §§16700 et seq.), arising from purchases of goods, services or materials hereunder or any Subcontract. This assignment shall be made and become effective at the time the Owner tenders Final Payment to the Prime Contractor, without further acknowledgment by the parties. If the Owner receives, either through judgment or settlement, a monetary recovery in connection with a cause of action assigned under California Government Code §§4550 et seq., the assignor thereof shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the Owner any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the Owner as part of the Contract Price, less the expenses incurred by the Owner in obtaining that portion of the recovery. Upon demand in writing by the assignor, the Owner shall, within one year from such demand, reassign the cause of action assigned pursuant to this Article if the assignor has been or may have been injured by the violation of law for which the cause of action arose: and (i) the Owner has not been injured thereby; or (ii) the Owner declines to file a court action for the cause of action.

ARTICLE 5: SUBCONTRACTORS

5.1 **Subcontracts.** Any portion of the Work performed for the Prime Contractor by a Subcontractor shall be pursuant to a written agreement between the Prime Contractor and such Subcontractor which specifically incorporates by reference the Contract Documents and which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents, including without

limitation, the policies of insurance required under Article 6 of these General Conditions and obligates the Subcontractor to assume toward the Prime Contractor all the obligations and responsibilities of the Prime Contractor which by the Contract Documents the Prime Contractor assumes toward the Owner and the Architect. The foregoing notwithstanding, no contractual relationship shall exist, or be deemed to exist, between any Subcontractor and the Owner, unless the Contract is terminated and Owner, in writing, elects to assume the Subcontract. Each Subcontract for a portion of the Work shall provide that such Subcontract may be assigned to the Owner if the Contract is terminated by the Owner pursuant to Article 15 hereof, subject to the prior rights, if any, of the Surety obligated under a bond relating to the Contract. The Prime Contractor shall provide to the Owner copies of all executed Subcontracts and Purchase Orders to which Prime Contractor is a party within thirty (30) days after Prime Contractor's execution of the Agreement. During performance of the Work, the Prime Contractor shall, from time to time, as and when requested by the Owner, the Architect or the Project Manager provide the Owner with copies of any and all Subcontracts or Purchase Orders relating to the Work and all modifications thereto. The Prime Contractor's failure or refusal, for any reason, to provide copies of such Subcontracts or Purchase Orders in accordance with the two preceding sentences shall be deemed Prime Contractor's default in the performance of a material term of the Contract Documents.

5.2 **Substitution of Listed Subcontractor.**

5.2.1 **Substitution Process.** Any request of the Prime Contractor to substitute a listed Subcontractor will be considered only if such request is in strict conformity with this Article 5.2 and California Public Contract Code §4107. All costs incurred by the Owner, including without limitation, costs of the Owner's Inspector, the Architect, the Project Manager or attorneys fees in the review and evaluation of a request to substitute a listed Subcontractor shall be borne by the Prime Contractor; such costs may be deducted by the Owner from the Contract Price then or thereafter due the Prime Contractor.

5.2.2 **Responsibilities of Prime Contractor Upon Substitution of Subcontractor.** The Owner's consent to Prime Contractor's substitution of a listed Subcontractor shall not relieve Prime Contractor from its obligation to complete the Work within the Contract Time and for the Contract Price. The substitution of a listed Subcontractor shall not, under any circumstance, result in, or give rise to any to any increase of the Contract Price or the Contract Time on account of such substitution. In the event of the Owner's consent to the substitution of a listed Subcontractor, the Architect shall determine the extent to which, if any, revised or additional Submittals will be required of the newly substituted Subcontractor. In the event that the Architect determines that revised or additional Submittals are required of the newly substituted Subcontractor, the Architect shall promptly notify the Prime Contractor, in writing, of such requirement. In such event, revised or additional Submittals shall be submitted to Architect not later than thirty (30) days following the date of the Architect's written notice to the Prime Contractor pursuant to the foregoing sentence; provided that if in the reasonable and good faith judgment of the Architect, the progress of the Work or completion of the Work requires submission of additional or revised Submittals by the newly substituted Subcontractor in less than thirty (30) days, the Architect shall so state in its written notice to the Prime Contractor. In the event that the revised or additional Submittals are not submitted by Prime Contractor within thirty (30) days, or such earlier time as determined by the Architect pursuant to the preceding sentence, following the Architect's written notice of the requirement for revised or additional Submittals, Prime Contractor shall be subject to the per diem assessments for late Submittals as set forth in Article 4.7.2.1 of these General Conditions. Any revised or additional Submittals required pursuant to this Article 5.2.2 shall conform to the requirements of Article 4.7 of these General Conditions. Prime Contractor shall reimburse the Owner for all fees and costs, including without limitation fees of the Architect or any design consultant to the Architect or the Owner and DSA fees, incurred or associated with the processing, review and evaluation of any revised or additional Submittals required pursuant to this Article 5.2.2; the Owner may deduct such fees and

costs from any portion of the Contract Price then or thereafter due the Prime Contractor. In the event that additional or revised Submittals are required pursuant to this Article 5.2.2, such requirement shall not result in an increase to the Contract Time or the Contract Price.

ARTICLE 6: INSURANCE; INDEMNITY; BONDS

6.1 **Workers' Compensation Insurance; Employer's Liability Insurance.** The Prime Contractor shall purchase and maintain Workers' Compensation Insurance as will protect the Prime Contractor from claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed, whether such operations be by the Prime Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Prime Contractor shall purchase and maintain Employer's Liability Insurance covering bodily injury (including death) by accident or disease to any employee, which arises out of the employee's employment by Prime Contractor. The Employer's Liability Insurance required of Prime Contractor hereunder may be obtained by Prime Contractor as a separate policy of insurance or as an additional coverage under the Workers' Compensation Insurance required to be obtained and maintained by Prime Contractor hereunder. The limits of liability for the Employer's Liability Insurance required hereunder shall be as set forth in the Bid Documents or Supplemental Conditions.

6.2 **Comprehensive General Liability and Property Insurance.** The Prime Contractor shall purchase and maintain Commercial General Liability and Property Insurance as will protect the Prime Contractor from the types of claims set forth below which may arise out of or result from Prime Contractor's operations under the Contract Documents and for which the Prime Contractor may be legally responsible: (i) claims for damages because of bodily injury, occupational sickness or disease or death of the Prime Contractor's employees; (ii) claims for damages because of bodily injury, sickness or disease or death of any person other than the Prime Contractor's employees; (iii) claims for damages insured by usual personal injury liability coverage which are sustained (a) by a person as a result of an offense directly or indirectly related to employment of such person by the Prime Contractor, or (b) by another person; (iv) claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from; (v) claims for damages because of bodily injury, death of a person or property damages arising out of ownership, maintenance or use of a motor vehicle; and (vi) contractual liability insurance applicable to the Prime Contractor's obligations under the Contract Documents.

6.3 **Builder's Risk "All-Risk" Insurance.** The Owner, during the progress of the Work and until Final Acceptance of the Work by the Owner upon completion of the entire Contract, shall maintain Builder's Risk "All-Risk" Completed Value Insurance Coverage on all insurable Work included under the Contract Documents which coverage is to provide extended coverage and insurance against vandalism and malicious mischief, perils of fire, sprinkler leakage, civil authority, sonic boom, collapse and flood upon the entire Work which is the subject of the Contract Documents, and including completed Work and Work in progress to the full insurable value thereof. Owner's Builders Risk Insurance shall include coverage and insurance against the perils of earthquake if so indicated in the Bid Documents or Supplemental Conditions. Such insurance shall include the Owner as an additional named insured and any other person with an insurable interest designated by the Owner as an additional named insured. The Prime Contractor shall submit to the Owner for its approval all items deemed to be uninsurable. The risk of damage to the Work due to the perils covered by the Builder's Risk "All Risk" Insurance, as well as any other hazard which might result in damage to the Work, is that of the Prime Contractor and the Surety, and no claims for such loss or damage shall be recognized by the Owner, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Prime Contractor.

6.4 **Coverage Amounts.** The insurance required of the Prime Contractor hereunder shall be written for not less than any limits of liability specified in the Contract Documents, or required by law, whichever is greater. In the event of any loss or damage covered by a policy of insurance required to be obtained and maintained by the Prime Contractor hereunder, the Prime Contractor shall be solely and exclusively responsible for the payment of the deductible, if any, under such policy of insurance, without adjustment to the Contract Price on account thereof.

6.5 **Evidence of Insurance; Subcontractor's Insurance.**

6.5.1. **Certificates of Insurance.** Prior to commencement of the Work, Prime Contractor shall deliver to the Owner Certificates of Insurance evidencing the insurance coverages required by the Contract Documents. Failure or refusal of the Prime Contractor to so deliver Certificates of Insurance may be deemed by the Owner to be a default of a material obligation of the Prime Contractor under the Contract Documents, and thereupon the Owner may proceed to exercise any right or remedy provided for under the Contract Documents or at law. The Certificates of Insurance and the insurance policies required by the Contract Documents shall contain a provision that coverages afforded under such policies will not be canceled or allowed to expire until at least thirty (30) days prior written notice has been given to the Owner. The insurance policies required of Prime Contractor hereunder shall also name the Owner as an additional insured as its interests may appear. Should any policy of insurance be canceled before Final Acceptance of the Work by the Owner and the Prime Contractor fails to immediately procure replacement insurance as required, the Owner reserves the right to procure such insurance and to deduct the premium cost thereof and other costs incurred by the Owner in connection therewith from any sum then or thereafter due the Prime Contractor under the Contract Documents. The Prime Contractor shall, from time to time, furnish the Owner, when requested, with satisfactory proof of coverage of each type of insurance required by the Contract Documents; failure of the Prime Contractor to comply with the Owner's request may be deemed by the Owner to be a default of a material obligation of the Prime Contractor under the Contract Documents.

6.5.2. **Subcontractors' Insurance.** Prime Contractor shall require that every Subcontractor, of any tier, performing or providing any portion of the Work obtain and maintain the policies of insurance set forth in Articles 6.1 and 6.2 of these General Conditions; the coverages and limits of liability of such policies of insurance to be obtained and maintained by Subcontractors shall be as set forth in the Bid Documents or Supplemental Conditions. The policies of insurance to be obtained and maintained by Subcontractors hereunder are in addition to, and not in lieu of, Prime Contractor obtaining and maintaining such policies of insurance. Each of the policies of insurance obtained and maintained by a Subcontractor hereunder shall conform to the requirements of this Article 6. Upon request of the Owner, Prime Contractor shall promptly deliver to the Owner Certificates of Insurance evidencing that the Subcontractors have obtained and maintained policies of insurance in conformity with the requirements of this Article 6. Failure or refusal of the Prime Contractor to provide the Owner with Subcontractors' Certificates of Insurance evidencing the insurance coverages required hereunder shall be deemed a material default of Prime Contractor hereunder.

6.6 **Maintenance of Insurance.** Any insurance bearing on the adequacy of performance of Work shall be maintained after the Owner's Final Acceptance of all of the Work for the full one-year correction of Work period and any longer specific guarantee or warranty periods set forth in the Contract Documents. Should such insurance be canceled before the end of any such periods and the Prime Contractor fails to immediately procure replacement insurance as specified, the Owner reserves the right to procure such insurance and to charge the cost thereof to the Prime Contractor. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Prime Contractor's responsibility for payment of damages resulting from its operations or performance of the Work under the Contract Documents, including without limitation the Prime Contractor's obligation to

pay Liquidated Damages. In no instance will the Owner's exercise of its option to occupy and use completed portions of the Work relieve the Prime Contractor of its obligation to maintain insurance required under this Article until the date of Final Acceptance of the Work by the Owner, or such time thereafter as required by the Contract Documents. The insurer providing any insurance coverage required hereunder shall be to the reasonable satisfaction of the Owner.

6.7 **Prime Contractor's Insurance Primary**. All insurance and the coverages there under required to be obtained and maintained by Prime Contractor hereunder, if overlapping with any policy of insurance maintained by the Owner, shall be deemed to be primary and noncontributing with any policy maintained by the Owner and any policy or coverage there under maintained by Owner shall be deemed excess insurance. To the extent that the Owner maintains a policy of insurance covering property damage arising out of the perils of fire or other casualty covered by the Prime Contractor's Builder's Risk Insurance or the Comprehensive General Liability Insurance of the Prime Contractor or any Subcontractor, the Owner, Prime Contractor and all Subcontractors waive rights of subrogation against the others. The costs for obtaining and maintaining the insurance coverages required herein shall be included in the Contract Price.

6.8 **Indemnity**. Unless arising solely out of the Owner's active negligence, gross negligence or willful misconduct, the Prime Contractor shall indemnify, defend and hold harmless the Owner and its Board of Trustees, officers, employees, agents and representatives from and against any and all claims, demands or liability whether for damages, losses or other relief, including, without limitation attorneys fees and costs incurred or arising there from. The foregoing shall include without limitation: (i) injuries to or death of persons; (ii) damage to property; or (iii) theft or loss of property, resulting from, in whole or part, any acts, omissions or other conduct of Prime Contractor, any of Prime Contractor's Subcontractors, of any tier, or any other person or entity employed directly or indirectly by Prime Contractor in connection with the Work and their respective agents, officers or employees. In the event that any action or proceeding, whether judicial, administrative, arbitration or otherwise, shall be commenced on account of any claim, demand or liability subject to Prime Contractor's obligations hereunder, and such action or proceeding names the Owner as a party thereto, the Prime Contractor shall, at its sole cost and expense, defend the Owner in such action or proceeding with counsel reasonably satisfactory to Owner. In the event that there shall be any judgment, award, ruling, settlement, or other relief arising out of any such action or proceeding to which the Owner is bound by, Prime Contractor shall pay, satisfy or otherwise discharge any such judgment, award, ruling, settlement or relief; Prime Contractor shall indemnify and hold harmless the Owner from any and all liability or responsibility arising out of any such judgment, award, ruling, settlement or relief. The Prime Contractor's obligations hereunder shall be binding upon Prime Contractor's Performance Bond Surety and these obligations shall survive notwithstanding Prime Contractor's completion of the Work or the termination of the Contract.

6.9 **Payment Bond; Performance Bond**. Prior to commencement of the Work, the Prime Contractor shall furnish a Performance Bond as security for Prime Contractor's faithful performance of the Contract and a Labor and Material Payment Bond as security for payment of persons or entities performing work, labor or furnishing materials in connection with Prime Contractor's performance of the Work under the Contract Documents. Unless otherwise stated in the Supplemental Conditions, the amounts of the Performance Bond and the Payment Bond required hereunder shall be one hundred percent (100%) of the Contract Price. Said Labor and Material Payment Bond and Performance Bond shall be in the form and content set forth in the Contract Documents. The failure or refusal of the Prime Contractor to furnish either the Performance Bond or the Labor and Material Payment Bond in strict conformity with this Article 6.9 may be deemed by the Owner as a default by the Prime Contractor of a material obligation hereunder. Upon request of the Prime Contractor, the Owner may consider and accept, but is not obligated to do so, multiple sureties on such bonds. The Surety on any bond required under the Contract Documents shall be on the list of sureties approved by the United States Department

of Treasury, as set forth in the Federal Register and/or an Admitted Surety Insurer as that term is defined in California Code of Civil Procedure §995.120.

ARTICLE 7: CONTRACT TIME

7.1 **Substantial Completion of the Work Within Contract Time.** Unless otherwise expressly provided in the Contract Documents, the Contract Time is the period of time, including authorized adjustments thereto, allotted in the Contract Documents for Substantial Completion of the Work. The date for commencement of the Work is the date established by the Notice to Proceed issued by the Owner pursuant to the Agreement, which shall not be postponed by the failure to act of the Prime Contractor or of persons or entities for which the Prime Contractor is responsible. The date of Substantial Completion is the date certified by the Architect and the Owner's Inspector as such in accordance with the Contract Documents. The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

7.2 **Progress and Completion of the Work.**

7.2.1 **Time of Essence.** Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Prime Contractor confirms that the Contract Time is a reasonable period for performing and achieving Substantial Completion of the Work. The Prime Contractor shall employ and supply a sufficient force of workers, material and equipment, and shall prosecute the Work with such diligence so as to maintain progress, to prevent Work stoppage and to achieve Substantial Completion of all of the Work within the Contract Time.

7.2.2 **Substantial Completion.** Substantial Completion is that stage in the progress of the Work when the Work is complete in accordance with the Contract Documents so the Owner can occupy or use the Work for its intended purpose. Substantial Completion shall be determined by the Architect and the Owner's Inspector upon request by the Prime Contractor in accordance with the Contract Documents. The good faith and reasonable determination of Substantial Completion by the Owner's Inspector and the Architect shall be controlling and final.

7.2.3 **Correction or Completion of the Work After Substantial Completion.**

7.2.3.1 **Items for Correction or Completion.** Upon achieving Substantial Completion of the Work, the Owner, the Owner's Inspector, the Project Manager, the Architect and the Prime Contractor shall jointly inspect the Work and prepare a comprehensive list of items of the Work to be corrected or completed by the Prime Contractor. The exclusion of, or failure to include, any item on such list shall not alter or limit the obligation of the Prime Contractor to complete or correct any portion of the Work in accordance with the Contract Documents.

7.2.3.2 **Time for Completing Correction or Completion Items.** In addition to setting forth items for correction or completion pursuant to Article 7.2.3.1, the Owner, Project Manager, Prime Contractor and Architect shall, after the joint inspection, establish a reasonable time for Prime Contractor's completion of all items requiring correction or completion. In the event that the Owner, the Prime Contractor and the Architect are unable to mutually agree upon the time for the Prime Contractor's completion of such items, the Architect shall determine such time, and in such event, the time determined by the Architect shall be final and binding upon the Owner and Prime Contractor so long as the Architect's determination is made in good faith. The Prime Contractor shall promptly and diligently proceed to complete or correct all items noted on such list within the time established. In the event that the Prime Contractor shall fail or refuse, for any reason, to complete items requiring completion or correction within the time so established, Prime Contractor shall be subject to assessment

of Liquidated Damages in accordance with Article 7.4 hereof. The foregoing notwithstanding, in the event of Prime Contractor's failure or refusal to complete all items of the Work requiring correction or completion within the time so established, the Owner may, in its sole and exclusive discretion and without further notice to Prime Contractor, elect to cause the completion of such items of the Work requiring correction or completion, provided, however, that such election by the Owner shall be in addition to, and not in lieu of, any other right or remedy of the Owner under the Contract Documents or at law. In the event that the Owner shall elect to complete items of the Work requiring correction or completion, pursuant to the foregoing, Prime Contractor shall be responsible for all costs incurred by the Owner in connection therewith and the Owner may deduct such costs from any portion of the Contract Price then or thereafter due the Prime Contractor. In the event the costs incurred by the Owner to perform the items requiring correction or completion shall exceed the remaining Contract Price due to the Prime Contractor, the Prime Contractor's Performance Bond Surety shall be liable to Owner for any such excess costs.

7.2.4 **Final Completion**. Final Completion is that stage of the Work when all Work has been completed in accordance with the Contract Documents, including without limitation, the performance of all correction or completion items noted upon Substantial Completion, and the Contract has been otherwise fully performed by the Prime Contractor. Final Completion shall be determined by the Architect and the Owner's Inspector upon request of the Prime Contractor. The good faith and reasonable determination of Final Completion by the Owner's Inspector and the Architect shall be controlling and final.

7.2.5 **Prime Contractor Responsibility for Multiple Inspections**. In the event the Prime Contractor shall request determination of Substantial Completion or Final Completion by the Owner's Inspector and the Architect and it is determined by the Owner's Inspector and the Architect that the Work does not then justify certification of Substantial Completion or Final Completion and re-inspection is required at a subsequent time to make such determination, the Prime Contractor shall be responsible for all costs of such re-inspection, including without limitation, the fees of the Architect and the salary of the Owner's Inspector. The Owner may deduct all such costs from the balance of the Contract Price then due or thereafter due to the Prime Contractor.

7.2.6 **Final Acceptance**. Final Acceptance of the Work shall occur upon approval of the Work by the Owner's Board of Trustees; such approval shall be submitted for adoption at the next regularly scheduled meeting of the Owner's Board of Trustees after the determination of Final Completion. The commencement of any warranty or guarantee period under the Contract Documents shall be deemed to be the date upon substantial completion is established .

7.3 **Baseline Construction Schedule**. Project Manager shall prepare the baseline construction schedule as a CPM schedule in the Precedence Diagram Method (activity-on-node) format. The baseline construction schedule shall depict a workable plan showing the sequence, duration and interdependence of all activities required to represent the complete performance of all work on this Project. The baseline construction schedule shall begin with the projected date of issuance of the Notice to Proceed and conclude with the date of final completion per the project duration specified in the Contract Documents. The baseline construction schedule shall include detail of all project phasing, activities, staging, and sequencing logic relationships including all milestones necessary to define beginning and ending of each phase or stage and an allowance per month reflecting anticipated "normal" inclement weather.

7.3.1 **Preliminary Construction Schedule**. Within five (5) days following execution of the Agreement, the Prime Contractor shall prepare and submit to the Owner, the Project Manager and the Architect a Preliminary Construction Schedule indicating, in graphic form, the estimated rate of progress and sequence of all Work required under the Contract Documents. The purpose of the Preliminary Construction Schedule is to assure adequate planning and execution of the Work so that it is

completed within the Contract Time and to permit evaluation of the progress of the Work. The Preliminary Construction Schedule shall indicate the dates for commencement and completion of various portions of the Work, including, without limitation, the procurement and fabrication of major items, material and equipment forming a part of, or to be incorporated into, the Work as well as Site construction activities. The Preliminary Construction Schedule shall identify all Submittals Mock ups, reviews, equipment procurement, fabrication, deliveries, etc. required. With the exception of submittal activities, activity duration shall not be shorter than one working day and no longer than 15 working days. The Prime Contractor's use of any particular scheduling method, system or program for depiction of the Preliminary Construction Schedule shall be at the Prime Contractor's discretion; provided however, the Owner may direct the Prime Contractor's use of a particular progress scheduling technique, methodology or computer software program, if in the Owner's sole reasonable judgment such other technique, methodology or computer software program is reasonably necessary to depict the progress and scheduling of the Work or the logic and relationship of activities necessary to complete the Work. The Owner's direction in this regard shall not be deemed control over or assumption of construction means, methods or sequences, all of which remain the Prime Contractor's responsibility. Further, unless unreasonable under the circumstances, such direction shall not give rise to an increase in the Contract Time or the Contract Price. The Prime Contractor shall provide the Owner with a copy of the computer software program utilized by the Prime Contractor to prepare the Construction Schedule and without adjustment of the Contract Price, the Prime Contractor shall pay licensing or registration fees necessary for the Owner's use of such computer software program. The Prime Contractor may submit a Preliminary Construction Schedule depicting completion of the Work in a duration shorter than the Contract Time; provided that such Preliminary Construction Schedule shall not be a basis for adjustment to the Contract Price in the event that completion of the Work shall occur after the time depicted therein, nor shall such Preliminary Construction Schedule be the basis for any extension of the Contract Time, the Prime Contractor's entitlement to any extension of the Contract Time shall be based upon the Contract Time and not on any shorter duration which may be depicted in the Prime Contractor's Preliminary Construction Schedule. In the event any of the Construction Schedules required under this Article 7.3 utilizes the Critical Path Method of project scheduling, or other similar method that incorporates therein any "float" time, such float shall be deemed to belong to and owned by the Owner. As used herein, "float time" shall be deemed to refer to the time between the earliest start date and the latest start date, or between the earliest finish date and the latest finish date of each activity shown on the Construction Schedule. Should the Preliminary Project Schedule show variances from the requirements of the Baseline Construction Schedule, Prime Contractor shall make specific mention of those variations. Prime Contractor will not be relieved of the responsibility for executing the work in strict accordance with the requirements of the Contract Documents.

7.3.2 **Review of Preliminary Construction Schedule.** The Owner, the Project Manager and the Architect shall review the Preliminary Construction Schedule submitted by the Prime Contractor pursuant to Article 7.3.1 above for conformity with the requirements of the Contract Documents. Within five (5) days of the date of receipt of the Preliminary Construction Schedule, the Preliminary Construction Schedule will be returned to the Prime Contractor with comments to the form or content thereof. When accepted by Owner, Project Construction and Architect, the preliminary construction schedule shall form part of the basis by which the progress of work is measured. Submittal and approval of the preliminary construction schedule is a condition precedent to the issuance and payment of progress payments. No progress payments will be made until the approved construction schedule has been accepted by Owner. It is expressly understood and agreed that the time of beginning, the rate of progress, and the time of completion of the Work are of the essence of the Contract Documents. The Work shall be executed with such progress as required to prevent any delay this completion as required by the Contract Documents. Should Prime Contractor fail to comply with these provisions, progress payments may be stopped until Owner, Project Manager and Architect determine to its satisfaction that Prime Contractor is in compliance with these provisions. Review of the Preliminary Progress Schedule

and any comments thereto by the Owner, the Project Manager and/or the Architect shall not be deemed to be the assumption of construction means, methods or sequences by the Owner, the Project Manager or the Architect, all of which remain the Prime Contractor's obligations under the Contract Documents.

7.3.3 **Contract Construction Schedule;** Within ten (10) days of the return of the Preliminary Construction Schedule to the Prime Contractor pursuant to Article 7.3.2 above, the Project Manager shall prepare and submit to the Architect and the Owner the revised Baseline Construction Schedule which incorporates therein the comments from the Preliminary Construction Schedules. Upon the Owner's approval of the form and content of the Revised Baseline Construction Schedule, the same shall be deemed the "Approved Construction Schedule." The Owner's approval of a Construction Schedule shall be for the sole and limited purpose of determining conformity with the requirements of the Contract Documents. By the Approved Construction Schedule, the Owner shall not be deemed to have exercised control over, or approval of, construction means, methods or sequences, all of which remain the responsibility and obligation of the Prime Contractor in accordance with the terms of the Contract Documents. Further, the Approved Construction Schedule shall not operate to limit or restrict any of Prime Contractor's obligations under the Contract Documents nor relieve the Prime Contractor from the full, faithful and timely performance of such obligations in accordance with the terms of the Contract Documents. The activities, commencement and completion dates of activities, and the sequencing of activities depicted on the Approved Construction Schedule shall not be modified or revised by the Prime Contractor without the prior consent, or direction, of the Owner, Project Manager and the Architect. Updates to the Approved Construction Schedule pursuant to Article 7.3.5 below shall not be deemed revisions to the Approved Construction Schedule. In the event that the Approved Construction Schedule shall depict completion of the Work in a duration shorter than the Contract Time, the same shall not be a basis for an adjustment of the Contract Time or the Contract Price in the event that actual completion of the Work shall occur after such the time depicted in such Approved Construction Schedule. In such event, the Contract Price shall not be subject to adjustment on account of any additional costs incurred by the Prime Contractor to complete the Work prior to the Contract Time, as adjusted in accordance with the terms of the Contract Documents. Any adjustment of the Contract Time or the Contract Price shall be based upon the Contract Time set forth in the Contract Documents and not any shorter duration which may depicted in the Approved Construction Schedule.

7.3.4 **Revisions to Approved Construction Schedule.** In the event that the progress of the Work or the sequencing of the activities of the Work shall materially differ from that indicated in the Approved Construction Schedule, as determined by the Owner in its reasonable discretion and judgment, the Owner may direct the Project Manager to revise the Approved Construction Schedule; within fifteen (15) days of the Owner's direction, the Project Manager shall prepare and submit to the Architect and the Owner a revised Approved Construction Schedule, for review and approval.

7.3.5 **Updates to Approved Construction Schedule.** The Project Manager shall monitor and update the Approved Construction Schedule on a monthly basis, or more frequently as required by the conditions or progress of the Work, or as may be requested by the Owner. The Project Manager shall provide the Owner and the Architect with updated Approved Construction Schedules indicating progress achieved and activities commenced or completed within the prior updated Approved Construction Schedule. Updates to the Approved Construction Schedule shall not include any revisions to the activities, commencement and completion dates of activities or the sequencing of activities depicted on the Approved Construction Schedule. If requested by the Owner, the Project Manager shall also submit, with its updates to the Approved Construction Schedule a narrative statement including a description of current and anticipated problem areas of the Work, delaying factors and their impact, and an explanation of corrective action taken or proposed by the Prime Contractors. If the progress of the Work is behind the Approved Construction Schedule, the Prime Contractors shall indicate what measures will be taken to place the Work back on schedule. The Owner may, from time to time, and in the Owner's sole and exclusive discretion, transmit to the Prime Contractor's Performance

Bond Surety the Approved Construction Schedule, any updates thereof and the narrative statement described hereinabove. The Owner's election to transmit, or not to transmit such information, to the Prime Contractor's Performance Bond Surety shall in no way limit the Prime Contractor's obligations under the Contract Documents.

7.3.6 **Prime Contractor Responsibility for Construction Schedule**. The Project Manager shall be responsible for the preparation, submittal and maintenance of the Approved Construction Schedule required by the Contract Documents, and any failure of the Project Manager to do so may be deemed by the Owner as the Project Manager's default in the performance of a material obligation under Contract Documents. Any and all costs or expenses required or incurred to prepare, submit, maintain, and update the approved Construction Schedules shall be solely that of the Project Manager and no such cost or expense shall be charged to the Owner.

7.4 **Adjustment of Contract Time**. If Substantial Completion is delayed, adjustment, if any, to the Contract Time on account of such delay shall be in accordance with this Article 7.4.

7.4.1 **Excusable Delays.** If Substantial Completion of the Work is delayed by Excusable Delays, the Contract Time shall be subject to adjustment for such reasonable period of time as determined by the Architect; Excusable Delays shall not result in any increase in the Contract Price. Excusable Delays refer to unforeseeable and unavoidable casualties or other unforeseen causes beyond the control, and without fault or neglect, of the Prime Contractor, any Subcontractor, Material Supplier or other person directly or indirectly engaged by the Prime Contractor in performance of any portion of the Work. Excusable Delays include unanticipated and unavoidable labor disputes, unusual and unanticipated delays in transportation of equipment, materials or Construction Equipment reasonably necessary for completion and proper execution of the Work, and unanticipated unusually severe weather conditions. Neither the financial resources of the Prime Contractor or any person or entity directly or indirectly engaged by the Prime Contractor in performance of any portion of the Work shall be deemed conditions beyond the control of the Prime Contractor. If an event of Excusable Delay occurs, the Contract Time shall be subject to adjustment hereunder only if the Prime Contractor establishes: (i) full compliance with all applicable provisions of the Contract Documents relative to the method, manner and time for Prime Contractor's notice and request for adjustment of the Contract Time; (ii) that the event(s) forming the basis for Prime Contractor's request to adjust the Contract Time are outside the reasonable control and without any fault or neglect of the Prime Contractor or any person or entity directly or indirectly engaged by Prime Contractor in performance of any portion of the Work; and (iii) that the event(s) forming the basis for Prime Contractor's request to adjust the Contract Time directly and adversely impacted the progress of the Work as indicated in the Approved Construction Schedule or the most recent updated Approved Construction Schedule relative to the date(s) of the claimed event(s) of Excusable Delay. The foregoing provisions notwithstanding, if the Supplemental Conditions set forth a number of "Rain Days" to be anticipated during performance of the Work, the Contract Time shall not be adjusted for rain related unusually severe weather conditions until and unless the actual number of Rain Days during performance of the Work shall exceed those noted in the Supplemental Conditions and such additional Rain Days shall have directly and adversely impacted the progress of the Work as depicted in the Approved Construction Schedule or the most recent updated Approved Construction Schedule relative to the date(s) of such additional Rain Days. Note number of rain delays allowance in the Supplemntal Conditions once built into the schedule.

7.4.2 **Compensable Delays.** If Substantial Completion of the Work is delayed and such delay is caused by the acts or omissions of the Owner, the Architect, or separate contractor employed by the Owner (collectively "Compassable Delays"), upon Prime Contractor's request and notice, in strict conformity with Articles 7 and 9 of these General Conditions, the Contract Time will be adjusted by Change Order for such reasonable period of time as determined by the Architect and the Owner. The

Change Order shall state the number of calender delay days. In accordance with California Public Contract Code §7102, if the Prime Contractor's progress is delayed by any of the events described in the preceding sentence, Prime Contractor shall not be precluded from the recovery of damages directly and proximately resulting there from, provided that the Owner is liable for the delay, the delay is unreasonable under the circumstances involved and the delay was not within the reasonable contemplation of the Owner and the Prime Contractor at the time of execution of the Agreement. In such event, Prime Contractor's damages, if any, shall be limited to direct, actual and unavoidable additional costs of labor, materials or Construction Equipment directly resulting from such delay, and shall exclude indirect or other consequential damages. Except as expressly provided for herein, Prime Contractor shall not have any other claim, demand or right to adjustment of the Contract Price arising out of delay, interruption, hindrance or disruption to the progress of the Work. Adjustments to the Contract Price and the Contract Time, if any, on account of Changes to the Work or Suspension of the Work shall be governed by the applicable provisions of the Contract Documents, including without limitation, Articles 9 and 14 of these General Conditions.

7.4.3 **Inexcusable Delays.** Inexcusable Delays refer to any delay to the progress of the Work caused by events or factors other than those specifically identified in Articles 7.4.1 and 7.4.2 above. Neither the Contract Price nor the Contract Time shall be adjusted on account of Inexcusable Delays.

7.4.4 **Adjustment of Contract Time.**

7.4.4.1 **Procedure for Adjustment of Contract Time.** The Contract Time shall be subject to adjustment only in strict conformity with applicable provisions of the Contract Documents. Failure of Prime Contractor to request adjustment(s) of the Contract Time in strict conformity with applicable provisions of the Contract Documents shall be deemed Prime Contractor's waiver of the same.

7.4.4.2 **Limitations Upon Adjustment of Contract Time on Account of Delays.** Any adjustment of the Contract Time on account of an Excusable Delay or a Compensable Delay shall be limited as set forth herein. If an Inexcusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay which ends last. If an Inexcusable Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, which the Excusable Delay or the Compensable Delay exceeds the period of time of the Inexcusable Delay. In addition to the foregoing limitations upon extension of the Contract Time, no adjustment of the Contract Time shall be made on account of any Excusable Delays or Compensable Delays unless such delay(s) actually and directly impact Work or Work activities on the critical path of the then current and updated Approved Construction Schedule as of the date on which such delay first occurs. The Owner shall not be deemed in breach of, or otherwise in default of any obligation hereunder, if the Owner shall deny any request by the Prime Contractor for an adjustment of the Contract Time for any delay which does not actually and directly impact Work or Work activities on the then current and updated Approved Construction Schedule.

7.5 **Liquidated Damages**. Should the Prime Contractor neglect, fail or refuse to achieve Substantial Completion of the Work or certain phases thereof as required by the Approved Construction Schedule within the Contract Time, as adjusted, the Prime Contractor agrees to pay to the Owner the amount of per diem Liquidated Damages set forth in the Supplemental Conditions, not as a penalty but as Liquidated Damages, for every day beyond the Contract Time, as adjusted, until Substantial Completion of the Work is achieved. The Liquidated Damages amount set forth in the Supplemental Conditions and the Notice to Contractors is agreed upon by and between the Prime Contractor and the Owner because of the difficulty of fixing the Owner's actual damages in the event of delayed Substantial Completion of the Work. The Prime Contractor and the Owner specifically agree that said amount is a

reasonable estimate of the Owner's damage in such event, and that such amount does not constitute a penalty. Liquidated Damages may be deducted from the Contract Price then or thereafter due the Prime Contractor. The Prime Contractor and the Surety shall be liable to the Owner for any Liquidated Damages exceeding any amount of the Contract Price then held or retained by the Owner. Notwithstanding achievement of Substantial Completion of the Work, in the event that the Prime Contractor shall fail or refuse, for any reason, to promptly and diligently commence performance of all correction or completion items noted upon Substantial Completion and to complete the same within a reasonable time, as determined pursuant to Article 7.2.3.2 hereof, the Prime Contractor shall be liable to the Owner for the per diem Liquidated Damages set forth in the Supplemental Conditions from the date that such items should have been corrected or completed until the date that all such items are actually corrected or completed. In the event that the Prime Contractor shall fail or refuse to correct or complete items of the Work noted upon Substantial Completion and the Owner elects to exercise its right to cause completion or correction of such items pursuant to Article 7.2.3.2 hereof, the Owner's assessment of Liquidated Damages pursuant to the foregoing shall be in addition, and not in lieu of, the Owner's right to charge Prime Contractor with the cost of completing or correcting such items of the Work, as provided for under Article 7.2.3.2. The Prime Contractor and the Owner acknowledge and agree that the provisions of this Article 7.5 are reasonable under the circumstances existing at the time of the Prime Contractor's execution of the Agreement.

ARTICLE 8: CONTRACT PRICE

8.1 **Contract Price**. The Contract Price is the amount stated in the Agreement as such, and subject to any authorized adjustments thereto in accordance with the Contract Documents, is the total amount payable by the Owner to the Prime Contractor for performance of the Work under the Contract Documents. The Owner's payment of the Contract Price to the Prime Contractor shall be in accordance with the Contract Documents.

8.2 **Cost Breakdown; Cash Flow Projections**. Within fifteen (15) days of the execution of the Agreement by Prime Contractor, Prime Contractor shall furnish, on forms provided or approved by the Owner, a detailed estimate and complete Cost Breakdown of the entire Contract Price. The Cost Breakdown shall be subject to the Owner's review and approval of the form and content thereof; in addition to other requirements relating to the Cost Breakdown, the items included therein shall be organized consistent with the CSI format, shall correlate with activities described in the Construction Schedule, and shall include separate items and costs for: mobilization, bond premiums, general conditions and Prime Contractor's fee. In the event that the Owner shall reasonably object to any portion of the Cost Breakdown, within ten (10) days of the Owner's receipt of the Cost Breakdown, the Owner shall notify the Prime Contractor, in writing of the Owner's objection(s) to the Cost Breakdown. Within five (5) days of the date of the Owner's written objection(s), Prime Contractor shall submit a revised Cost Breakdown to the Owner for review and approval. The foregoing procedure for the preparation, review and approval of the Cost Breakdown shall continue until the Owner has approved of the entirety of the Cost Breakdown. Once the Cost Breakdown is approved by the Owner, the Cost Breakdown shall not be thereafter modified or amended by the Prime Contractor without the prior consent and approval of the Owner, which may be granted or withheld in the sole reasonable discretion of the Owner. Notwithstanding any provision of the Contract Documents to the contrary, payment of the Prime Contractor's overhead, supervision and general conditions costs and profit, as such items are reflected in the Cost Breakdown, shall be made by the Owner in equal installments with its disbursements of Progress Payments and the Final Payment with the amount of each such installment equal to the aggregate amount of such items as reflected in the Cost Breakdown divided by the number of months of the Contract Time. Upon request of the Owner, the Prime Contractor shall provide reasonably satisfactory evidence to substantiate the cost of any item included in the Cost Breakdown. Concurrently with submittal of its Cost Breakdown, the Prime Contractor shall submit for review and

approval a Cash Flow Projection on a monthly basis over the Contract Time duration for the entire Contract Price. The Cash Flow Projection shall be revised to take into account-authorized adjustments of the Contract Time or the Contract Price.

8.3 **Progress Payments.**

8.3.1 **Applications for Progress Payments.** During the Prime Contractor's performance of the Work, the Prime Contractor shall submit monthly, on the the established working day of each month, to the Project Manager and the Architect, Applications for Progress Payments, on forms approved by the Owner, setting forth an itemized estimate of Work completed in the preceding month for the purpose of the Owner's making of Progress Payments thereon. Values utilized in the Applications for Progress Payments shall be based upon the Owner approved Cost Breakdown pursuant to Article 8.2 above and such values shall be only for determining the basis of Progress Payments to Prime Contractor, and shall not be considered as fixing a basis for adjustments, whether additive or deductive, to the Contract Price, or for determining the extent of Work actually completed.

8.3.2 **Owner's Review of Applications for Progress Payments.** In accordance with Public Contract Code §20104.50, upon receipt of an Application for Progress Payment, the Owner shall cause the same to be reviewed by the Owner's Inspector, the Project Manager, if one is designated by the Owner, and the Architect, as soon as is practicable after receipt of such Application for Progress Payment. Such review shall be for the purpose of determining that the Application for Progress Payment is a proper Progress Payment request. For purposes of this Article 8.3.2, an Application for Progress Payment shall be deemed "proper" only if it is submitted on the form approved by the Owner, with all of the requested information of such form of Application for Progress Payment completely and accurately provided by the Prime Contractor and such completed Application for Progress Payment is accompanied by: (i) Certified Payrolls of the Prime Contractor and all Subcontractors, of any tier, for laborers performing any portion of the Work for which a Progress Payment is requested; (ii) duly completed and executed forms of Conditional Waiver and Release of Rights Upon Progress Payment in accordance with California Civil Code §3262 of the Prime Contractor, all Subcontractors of any tier, and Material Suppliers covering the Progress Payment requested; (iii) duly completed and executed forms of Unconditional Waiver and Release of Rights upon Progress Payment in accordance with California Civil Code §3262 of the Prime Contractor, all Subcontractors of any tier, and Material Suppliers covering the Progress Payment received by the Prime Contractor under the prior Application for Progress Payment; (iv) if applicable, a current union statement reflecting that the Prime Contractor and any Subcontractor of any tier, are current in the payment of any supplemental fringe benefits required pursuant to any collective bargaining agreement to which the Prime Contractor or any such Subcontractor is a party to or is otherwise bound by; and (v) a certification by the Prime Contractor that it has continuously maintained, or caused to maintained, the Record Drawings reflecting the actual as-built conditions of the Work performed be for which the Progress Payment is requested, it being understood that such certification is subject to verification by the Owner, Architect or the Project Manager prior to disbursement of the Progress Payment. In accordance with Public Contract Code §20104.50, an Application for Progress Payment determined by the Owner not to be a proper Application for Progress Payment shall be returned by the Owner to the Prime Contractor as soon as is practicable after receipt of the same from the Prime Contractor, but in no event not more than seven (7) days after the Owner's receipt thereof. The Owner's return of any Application for Progress Payment pursuant to the preceding sentence shall be accompanied by a written document setting forth the reason(s) why the Application for Progress Payment is not proper.

8.3.3 **Architect's, Project Manager's, and Owner's Inspector Review of Applications for Progress Payments.** Upon receipt of an Application for Progress Payment, the Architect, Project Manager, and the Owner's Inspector shall inspect and verify the Work to determine whether it has been performed in accordance with the terms of the Contract Documents and to determine the portion of the

Application for Progress Payment which is properly due to the Prime Contractor under the terms of the Contract Documents.

8.3.4 **Owner's Disbursement of Progress Payments.**

8.3.4.1 **Timely Disbursement of Progress Payments.** In accordance with Public Contract Code §20104.50, within thirty (30) days after the Owner's receipt of a proper Application for Progress Payment, there shall be paid, by Owner, to Prime Contractor a sum equal to ninety percent (90%) of the value of the Work indicated in the Application for Progress Payment which is actually in place as of the date of the Application for Progress Payment and as verified and approved by the Owner's Inspector and the Architect and the pro rata portion of the Prime Contractor's overhead, supervision and general conditions costs and profit for that month; provided, however, that the Owner's obligation to disburse any Progress Payment shall be subject to the Owner's receipt of all documents set forth in Article 8.3.2 above, each and all of which are conditions precedent to the Owner's obligation to disburse Progress Payments. If an Application for Progress Payment is determined not to be proper due to the failure or refusal of the Prime Contractor to submit documents with the Application for Progress Payment, as required by Article 8.3.2, or incompleteness or inaccuracies in any such documents submitted or if it is reasonably determined that the Record Drawings have not been continuously maintained to reflect the actual as built conditions of the Work completed in the period for which the Progress Payment is requested, the Sixty (60) day period hereunder for the Owner's timely disbursement of a Progress Payment shall be deemed to commence on the date that the Owner is actually in receipt of documents not submitted with the Application for Progress Payment, or corrections to documents with the Application for Progress Payment so as to render them complete and accurate, or the date upon which the Prime Contractor accurately and fully completes preparation of the Record Drawings relating to the Work for which the Progress Payment is requested.

8.3.4.2 **Untimely Disbursement of Progress Payments.** In accordance with Public Contract Code §20104.50, in the event that the Owner shall fail to make any Progress Payment within Sixty (60) days after receipt of an undisputed and properly submitted Application for Progress Payment, the Owner shall pay the Prime Contractor interest on the undisputed amount of such Application for Progress Payment equal to the legal rate of interest set forth in California Code of Civil Procedure §685.010(a). The foregoing notwithstanding, in the event that the Owner shall determine that any Application for Progress Payment is not proper, pursuant to Article 8.3.2 above, and the Owner does not return such Application for Progress Payment within the seven (7) day period provided for in Article 8.3.2, the period of time for the Owner's disbursement of the Progress Payment on such Application for Progress Payment without incurring the interest liability shall be reduced by the number of days exceeding the seven (7) day return period.

8.3.4.3 **Owner's Right to Disburse Progress Payments by Joint Checks.** Provided that the Owner is in receipt of the applicable Subcontract or Purchase Order, the Owner, may in its sole discretion, issue joint checks to the Prime Contractor and such Subcontractor or Material Supplier in satisfaction of its obligation to make Progress Payments or the Final Payment due hereunder.

8.3.4.4 **No Waiver of Defective or Non-Conforming Work.** The approval of any Application for Progress Payment or the disbursement of any Progress Payment to the Prime Contractor shall not be deemed nor constitute acceptance of defective Work or Work not in conformity with the Contract Documents.

8.3.5 **Progress Payments for Changed Work.** The Prime Contractor's Applications for Progress Payment may include requests for payment on account of Changes in the Work which have been properly authorized and approved by the Owner's Inspector, the Architect and all other

governmental agencies with jurisdiction over such Change in accordance with the terms of the Contract Documents and for which a Change Order has been issued. Except as provided for herein, no other payment shall be made by the Owner for Changes in the Work.

8.3.6 **Materials or Equipment Not Incorporated Into the Work.**

8.3.6.1 **Limitations Upon Payment.** Except as expressly provided for herein, no payments shall be made by the Owner on account of any item of the Work, including without limitation, materials or equipment which, at the time of the Prime Contractor's submittal of an Application for Progress Payment, has/have not been incorporated into and made a part of the Work.

8.3.6.2 **Materials or Equipment Delivered and Stored at the Site.** The Owner may, in its sole and exclusive discretion, make payment for materials or equipment not yet incorporated into the Work if, at or prior to the time of the Prime Contractor's submittal of a an Application for Progress Payment incorporating therein a request for payment of such materials or equipment if all of the following are complied with: (a) the materials or equipment have been delivered to the Site; (b) adequate arrangements, reasonably satisfactory to the Owner, have been made by the Prime Contractor to store and protect such materials or equipment at the Site including without limitation, insurance reasonably satisfactory to the Owner, covering and protecting against the risk of loss, destruction, theft or other damage to such materials or equipment while in storage; and (c) the establishment of procedures reasonably satisfactory to the Owner by which title to such materials or equipment will be vested in the Owner upon the Owner's payment therefore. The Prime Contractor acknowledges that the discretion to make, or not to make, payment for materials or equipment delivered or stored at the site of the Work pursuant to the preceding sentence shall be exercised exclusively by the Owner; the Owner's exercise of discretion not to make payment for materials or equipment delivered or stored at the Site, but not yet incorporated into the Work shall not be deemed the Owner's default hereunder. In the event that the Owner shall elect to make payment for materials or equipment delivered and stored at the Site, the costs and expenses incurred to comply with the requirements of (b) and (c) of this Article 8.3.6.2 shall be borne solely and exclusively by the Prime Contractor and no payment shall be made by the Owner on account of such costs and expenses.

8.3.6.3 **Materials or Equipment Not Delivered or Stored at the Site.** No payments shall be made by the Owner for materials or equipment to be incorporated into the Work where such materials or equipment have not been delivered or stored at the Site. The foregoing notwithstanding, the Owner may, in its sole and exclusive discretion, elect to make payment for materials or equipment not incorporated into the Work and which are not delivered or stored at the Site at or prior to the time of the Prime Contractor's submittal of an Application for Progress Payment incorporating therein a request for payment of such materials or equipment provided that each and all of the following have been complied with: (a) adequate arrangements, reasonably satisfactory to the Owner, have been made by the Prime Contractor to store and protect such materials or equipment at a bonded warehouse, and which arrangements shall include without limitation, insurance reasonably satisfactory to the Owner, covering and protecting against the risk of loss, destruction, theft or other damage to such materials or equipment while in storage; and (b) the establishment of procedures reasonably satisfactory to the Owner by which title to such materials or equipment will be vested in the Owner upon the Owner's payment therefore. The Prime Contractor acknowledges that the discretion to make, or not to make, payment for such materials or equipment delivered or stored at a bonded warehouse pursuant to the preceding sentence shall be exercised exclusively by the Owner; the Owner's exercise of discretion not to make payment for such materials or equipment shall not be deemed the Owner's default hereunder. In the event that the Owner shall elect to make payment for materials or equipment delivered and stored at a bonded warehouse, the costs and expenses incurred to comply with the requirements of (a) and (b) of this Article 8.3.6.3 shall be borne solely and exclusively by the Prime Contractor and no payment shall be made by the Owner on account of such costs and expenses.

8.3.6.4 **Materials or Equipment in Fabrication or Transit.** The provisions of this Article 8.3.6 notwithstanding, the Owner shall not make any payment on account of any materials or equipment which is in the process of being fabricated or which are in transit to the Site of or other storage location.

8.3.7 **Exclusions From Progress Payments.** In addition to the Owner's right to withhold disbursement of any Progress Payment provided for in the Contract Documents, neither the Prime Contractor's Application for Progress Payment shall include, nor shall the Owner be obligated to disburse any portion of the Contract Price for amounts which the Prime Contractor does not intend to pay any Subcontractor, of any tier, or Material Supplier because of a dispute or any other reason.

8.3.8 **Title to Work.** The Prime Contractor warrants that title to all Work covered by an Application for Progress Payment will pass to the Owner no later than the time of payment. The Prime Contractor further warrants that upon submittal of an Application for Progress Payment, all Work for which a Progress Payment has been previously issued and the Prime Contractor has received payment from the Owner therefore shall, to the best of the Prime Contractor's knowledge, information and belief, be free and clear of liens, claims, stop notices, security interests or encumbrances in favor of the Prime Contractor, Subcontractors, Material Suppliers or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

8.3.9 **Substitute Security for Retention.** In accordance with the provisions of California Public Contract Code §22300, eligible and equivalent securities may be substituted for any monies withheld by the Owner to ensure the Prime Contractor's performance under the Contract Documents at the request and expense of the Prime Contractor and in conformity with the provisions of California Public Contract Code §22300. The foregoing and the provisions of California Public Contract Code §22300 notwithstanding, failure of the Prime Contractor to request the substitution of eligible and equivalent securities for monies to be withheld by the Owner within ten (10) days following award of the Contract to Prime Contractor shall be deemed a waiver of such right.

8.4 **Final Payment.**

8.4.1 **Application for Final Payment.** When the Prime Contractor has achieved Final Completion and Acceptance of the entire Work and has otherwise fully performed its obligations under the Contract Documents, the Prime Contractor shall submit an Application for Final Payment on such form as approved by the Owner. Thereupon, the Architect and the Owner's Inspector will promptly make a final inspection of the Work and when the Architect and the Owner's Inspector find the Work acceptable under the Contract Documents and that the Contract has been fully performed by the Prime Contractor, the Architect and the Owner's Inspector will thereupon promptly approve the Application for Final Payment, stating that to the best their knowledge, information and belief, the Work on the entire Project has been fully completed in accordance with the terms of the Contract Documents. The Final Payment shall include the remaining balance of the Contract Price and any retention from Progress Payments previously withheld by the Owner.

8.4.2 **Conditions Precedent to Disbursement of Final Payment.** Neither Final Payment nor any remaining Contract Price shall become due until the Prime Contractor submits to the Owner each and all of the following, the submittal of which are conditions precedent to the Owner's obligation to disburse the Final Payment: (i) an affidavit or certification by the Prime Contractor that payrolls, bills for materials and other indebtedness incurred in connection with the Work for which the Owner or the Owner's property may or might be responsible or encumbered have been paid or otherwise satisfied; (ii)

a certificate evidencing that insurance required by the Contract Documents to remain in force after the Prime Contractor's receipt of Final Payment is currently in effect; (iii) a written statement that the Prime Contractor knows of no substantial reason that the insurance will not be renewable to cover any period following Final Payment as required by the Contract Documents; (iv) consent of the Surety on the Labor and Material Payment Bond and Performance Bond, to Final Payment if required; (v) duly completed and executed forms of Conditional or Unconditional Waivers and Releases of rights upon Final Payment of the Prime Contractor, Subcontractors of any tier and Material Suppliers in accordance with California Civil Code §3262, with each of the same stating that there are, or will be, no claims for additional compensation after disbursement of the Final Payment; (vi) Operations and Maintenance manuals and separate warranties provided by any manufacturer or distributor of any materials or equipment incorporated into the Work; (vii) the Record Drawings; (viii) the form of Guarantee included in the Contract Documents duly executed by an authorized representative of the Prime Contractor; (ix) any and all other items or documents required by the Contract Documents to be delivered to the Owner upon completion of the Work; and (x) if required by the Owner, such other data establishing payment or satisfaction of obligations such as receipts, releases and waivers of liens, stop notices, claims, security interest or encumbrances arising out of the Contract to the extent and in such form as may be required by the Owner.

8.4.3 **Disbursement of Final Payment**. Provided that the Owner is then in receipt of all documents and other items in Article 8.4.2 above as conditions precedent to the Owner's obligation to disburse Final Payment, not later than sixty (60) days following Final Acceptance the Owner shall disburse the Final Payment to the Prime Contractor. Pursuant to California Public Contract Code §7107, if there is any dispute between the Owner and the Prime Contractor at the time that disbursement of the Final Payment is due, the Owner may withhold from disbursement of the Final Payment an amount not to exceed one hundred fifty percent (150%) of the amount in dispute

8.4.4 **Waiver of Claims**. The Prime Contractor's acceptance of the Final Payment shall be deemed a waiver and release by the Prime Contractor of any and all claims against the Owner for compensation or otherwise in connection with the Prime Contractor's performance of the Contract.

8.4.5 **Claims Asserted After Final Payment**. Any lien, stop notice or other claim filed or asserted after the Prime Contractor's acceptance of the Final Payment by any Subcontractor, of any tier, laborer, Material Supplier or others in connection with or for Work performed under the Contract Documents shall be the sole and exclusive responsibility of the Prime Contractor who further agrees to indemnify, defend and hold harmless the Owner and its officers, agents, representatives and employees from and against any claims, demands or judgments arising or associated therewith, including without limitation attorneys fees incurred by the Owner in connection therewith. In the event any lien, stop notice or other claim of any Subcontractor, Laborer, Material Supplier or others performing Work under the Contract Documents remain unsatisfied after Final Payment is made, Prime Contractor shall refund to Owner all monies that the Owner may pay or be compelled to pay in discharging any lien, stop notice or other claim, including, without limitation all costs and reasonable attorneys fees incurred by Owner in connection therewith.

8.5 **Withholding of Payments**. The Owner may withhold any Progress Payment or the Final Payment, in whole or in part, or back charge the Prime Contractor to the extent it may deem advisable to protect the Owner on account of: (i) defective Work or Work not in conformity with the requirements of the Contract Documents which is not remedied; (ii) failure of the Prime Contractor to make payments when due Subcontractors or Material Suppliers for materials or labor; (iii) claims filed or reasonable evidence of the probable filing of claims by Subcontractors, laborers, Material Suppliers, or others performing any portion of the Work under the Contract Documents for which the Owner may be liable or responsible including, without limitation, Stop Notice Claims filed with the Owner pursuant to California Civil Code §3179 et seq.; (iv) a reasonable doubt that the Contract can be completed for the

then unpaid balance of the Contract Price; (v) tax demands filed in accordance with California Government Code §12419.4; (vi) other claims, penalties and/or forfeitures for which the Owner is required or authorized to retain funds otherwise due the Prime Contractor; (vii) any amounts due from the Prime Contractor to the Owner under the terms of the Contract Documents; or (viii) the Prime Contractor's failure to perform any of its obligations under the Contract Documents or its default under the Contract Documents or its failure to maintain adequate progress of the Work. In addition to the foregoing, the Owner shall not be obligated to process any Application for Progress Payment or Final Payment, nor shall Prime Contractor be entitled to any Progress Payment or Final Payment so long as any lawful or proper direction concerning the Work or the performance thereof or any portion thereof, given by the Owner, the Owner's Inspector, the Architect or any public authority having jurisdiction over the Work, or any portion thereof, shall not be fully and completely complied with by the Prime Contractor. When the Owner is reasonably satisfied that the Prime Contractor has remedied any such deficiency, payment shall be made of the amount withheld.

8.6 **Payments to Subcontractors**. The Prime Contractor shall pay all Subcontractors for and on account of Work of the Contract performed by such Subcontractors in accordance with the terms of their respective subcontracts and as provided for pursuant to California Public Contract Code §10262, the provisions of which are deemed incorporated herein by this reference. In the event of the Prime Contractor's failure to make payment to Subcontractors in conformity with California Public Contract Code §10262, the provisions of California Public Contract Code §10253 shall apply; by this reference, the provisions of California Public Contract Code §10253 are incorporated herein in its entirety, except that the references in said Section 10253 to "the director" shall be deemed to refer to the Owner.

ARTICLE 9: CHANGES

9.1 **Changes in the Work**. The Owner, at any time, by written order, may make Changes within the general scope of the Work under the Contract Documents or issue additional instructions; require additional Work or direct deletion of Work. The Prime Contractor shall not proceed with any Change involving an increase or decrease in the Contract Price or the Contract Time without prior written authorization (Construction Change Directive) from the Owner. The foregoing notwithstanding, the Prime Contractor shall promptly commence and diligently complete any Change to the Work subject to the Owner's written authorized issued pursuant to the preceding sentence; the Prime Contractor shall not be relieved or excused from its prompt commencement and diligent completion of any Change subject to the Owner's written authorization by virtue of the absence or inability of the Prime Contractor and the Owner to agree upon the extent of any adjustment to the Contract Time or the Contract Price on account of such Change. The issuance of a Change Order pursuant to this Article 9 in connection with any Change authorized by the Owner under this Article 9.1 shall not be deemed a condition precedent to Prime Contractor's obligation to promptly commence and diligently complete any such Change authorized by the Owner hereunder. The Owner's right to make Changes shall not invalidate the Contract nor relieve the Prime Contractor of any liability or other obligations under the Contract Documents. Any requirement of notice of Changes in the scope of Work to the Surety shall be the responsibility of the Prime Contractor. Changes to the Work depicted or described in the Drawings or the Specifications shall be subject to approval by the DSA under the Field Change Directive process. The Owner may make Changes to bring the Work or the Project into compliance with environmental requirements or standards established by state or federal statutes and regulations enacted after award of the Contract.

9.2 **Oral Order of Change in the Work**. Any oral order, direction, instruction, interpretation, or determination from the Owner, the Owner's Inspector or the Architect which in the opinion of the Prime Contractor causes any change to the scope of the Work, or otherwise requires an adjustment to the Contract Price or the Contract Time, shall be treated as a Change only if the Prime Contractor gives the

Architect and the Owner's Inspector written notice within ten (10) days of the order, directions, instructions, interpretation or determination and prior to acting in accordance therewith. Time is of the essence in Prime Contractor's written notice pursuant to the preceding sentence so that the Owner can promptly investigate and consider alternative measures to address the order, direction, instruction, interpretation or determination-giving rise to Prime Contractor's notice. Accordingly, Prime Contractor acknowledges that its failure, for any reason, to give written notice within ten (10) days of such order, direction, instruction, interpretation or determination shall be deemed Prime Contractor's waiver of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of such order, direction, instruction, interpretation or determination. The written notice shall state the date, circumstances, extent of adjustment to the Contract Price or the Contract Time, if any, requested, and the source of the order, directions, instructions, interpretation or determination that the Prime Contractor regards as a Change. Unless the Prime Contractor acts in strict accordance with this procedure, any such order, direction, instruction, interpretation or determination shall not be treated as a Change and the Prime Contractor hereby waives any claim for any adjustment to the Contract Price or the Contract Time on account thereof.

9.3 **Prime Contractor Submittal of Data.** Within thirty (30) days after receipt of a written order directing a Change in the Work or furnishing the written notice regarding any oral order directing a Change in the Work, the Prime Contractor shall submit to the Architect, the Owner's Inspector and the Owner a detailed written statement setting forth the general nature of the Change, the amount of any adjustment to the Contract Price on account thereof, properly itemized and supported by sufficient substantiating data to permit evaluation of the same, and the extent of adjustment of the Contract Time, if any, required by such Change. No claim or adjustment to the Contract Price or the Contract Time shall be allowed if not asserted by the Prime Contractor in strict conformity herewith or if asserted after Final Payment is made under the Contract Documents.

9.4 **Adjustment to Contract Price and Contract Time on Account of Changes to the Work.**

9.4.1 **Adjustment to Contract Price.** Adjustments to the Contract Price due to Changes in the Work shall be determined by application of one of the following methods, in the following order of priority:

9.4.1.1 **Mutual Agreement.** By negotiation and mutual agreement, on a lump sum basis, between the Owner and the Prime Contractor on the basis of the estimate of the actual and direct increase or decrease in costs on account of the Change. Upon request of the Owner or the Architect, the Prime Contractor shall provide a detailed estimate of increase or decrease in costs directly associated with performance of the Change along with cost breakdowns of the components of the Change and supporting data and documentation. The Prime Contractor's estimate of increase or decrease in costs pursuant to the foregoing, if requested, shall be in sufficient detail and in such form as to allow the Owner, the Owner's Inspector and the Architect to review and assess the completeness and accuracy thereof. The Prime Contractor shall be solely responsible for any additional costs or additional time arising out of, or related in any manner to, its failure to provide the estimate of costs within the time specified in the request of the Owner or the Architect for such estimate.

9.4.1.2 **Application of Saylor Current Construction Costs.** By application of the most recent edition of Saylor Current Construction Costs in effect at the time of Prime Contractor's performance of the Change in the Work for the locality of the Site. The Saylor Current Construction Costs shall be applied only to the extent that the Change in the Work is an item of costs specifically set forth in Saylor Construction Costs. In the event that Saylor Current Construction Costs shall cease publication, upon mutual agreement between the Owner and the Prime Contractor, for purposes of this Article 9.4.1.2, an alternate standardized estimating manual may be utilized in lieu of Saylor Construction Costs, if no mutual agreement is reached between the Owner and the Prime Contractor

regarding the utilization of an alternate estimating manual, adjustments to the Contract Price on account of Changes in the Work shall be determined by application of the methods set forth in Articles 9.4.1.1 or 9.4.1.3 hereof.

9.4.1.3 **Determination by the Owner.** By the Owner, whether or not negotiations are initiated pursuant to Article 9.4.1.1 above based upon actual and necessary costs incurred by the Prime Contractor as determined by the Owner on the basis of the Prime Contractor's records. In the event that the procedure set forth in this Article 9.4.1.3 is utilized to determine the extent of adjustment to the Contract Price on account of Changes to the Work, promptly upon determining the extent of adjustment to the Contract Price, the Owner shall notify the Prime Contractor in writing of the same; the Prime Contractor shall be deemed to have accepted the Owner's determination of the amount of adjustment to the Contract Price on account of a Change to the Work unless Prime Contractor shall notify the Owner, the Architect and the Owner's Inspector, in writing, not more than fifteen (15) days from the date of the Owner's written notice, of any objection to the Owner's determination. Failure of the Prime Contractor to timely notify the Owner, the Architect and the Owner's Inspector of Prime Contractor's objections to the Owner's determination of the extent of adjustment to the Contract Price shall be deemed Prime Contractor's acceptance of the Owner's determination and a waiver of any right or basis of the Prime Contractor to thereafter protest or otherwise object to the Owner's determination. Notwithstanding any objection of the Prime Contractor to the Owner's determination of the extent of any adjustment to the Contract Price pursuant to this Article 9.4.1.3, Prime Contractor shall, pursuant to Article 9.7 below, diligently proceed to perform and complete any such Change.

9.4.1.4 **Basis for Adjustment of Contract Price.** In the event of Changes in the Work resulting in an adjustment of the Contract Price and the adjustment of the Contract Price is based upon the methods set forth in Articles 9.4.1.1 or 9.4.1.3 above, the basis for adjustment of the Contract Price shall be as follows:

9.4.1.4.1 **Labor.** Prime Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Change. Such labor costs shall be limited to field labor for which there is a prevailing wage rate classification. Wage rates for labor shall not exceed the prevailing wage rates in the locality of the Site and shall be in the labor classification(s) necessary for the performance of the Change. Use of a labor classification, which would increase labor costs associated with any Change, shall not be permitted. Labor costs shall exclude costs incurred by the Prime Contractor in preparing estimate(s) of the costs of the Change, in the maintenance of records relating to the costs of the Change, coordination and assembly of materials and information relating to the Change or performance thereof, or the supervision and other overhead and general conditions costs associated with the Change or performance thereof.

9.4.1.4.2 **Materials and Equipment.** Prime Contractor shall be compensated for the costs of materials and equipment necessarily and actually used or consumed in connection with the performance of Changes. Costs of materials and equipment may include reasonable costs of transportation from a source closest to the site of the Work and delivery to the Site. If discounts by Material Suppliers are available for materials necessarily used in the performance of Changes, they shall be credited to the Owner. If materials and/or equipment necessarily used in the performance of Changes are obtained from a supplier or source owned in whole or in part by the Prime Contractor, compensation therefore shall not exceed the current wholesale price for such materials or equipment. If, in the reasonable opinion of the Owner, the costs asserted by the Prime Contractor for materials and/or equipment in connection with any Change is excessive, or if the Prime Contractor fails to provide satisfactory evidence of the actual costs of such materials and/or equipment from its supplier or vendor of the same, the costs of such materials and/or equipment and the Owner's obligation for payment of the same shall be limited to the then lowest wholesale price at which similar materials and/or

equipment are available in the quantities required to perform the Change. The Owner reserves the right to furnish materials and/or equipment required for the performance of Changes to the Work, in which event the Prime Contractor shall not be compensated for the costs of furnishing such materials and/or equipment or any mark-up thereon.

9.4.1.4.3 **Construction Equipment.** Prime Contractor shall be compensated for the actual cost of the necessary and direct use of Construction Equipment in the performance of Changes to the Work. Use of such Construction Equipment in the performance of Changes to the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Construction Equipment moved by its own power shall include time required to move such Construction Equipment to the site of the Work from the nearest available rental source of the same. If Construction Equipment is not moved to the Site by its own power, Prime Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Construction Equipment is used for performance of any portion of the Work other than Changes to the Work. Unless prior approval in writing is obtained by the Prime Contractor from the Architect, the Owner's Inspector and the Owner, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. The Prime Contractor shall not be entitled to an allowance or any other compensation for Construction Equipment or tools used in the performance of Changes to the Work where such Construction Equipment or tools have a replacement value of $500.00 or less. Construction Equipment costs claimed by the Prime Contractor in connection with the performance of any Change to the Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Owner's Inspector and the Owner, the allowable rate for the use of Construction Equipment in connection with Changes to the Work shall constitute full compensation to the Prime Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Construction Equipment operator), and any all other costs incurred by the Prime Contractor incidental to the use of such Construction Equipment.

9.4.1.4.4 **Mark-up on Costs of Changes to the Work.** In determining the cost to the Owner and the extent of increase to the Contract Price resulting from a Change adding to the Work, the allowance for mark-ups on the costs of the Change for all overhead (including home office and field overhead), general conditions costs and profit associated with the Change shall not exceed the percentage set forth in the Supplemental Conditions and Division One Section 1028 , regardless of the number of Subcontractors, of any tier, performing any portion of any Change to the Work. The foregoing notwithstanding, in the event that the Saylor Current Construction Costs, or a mutually agreed to estimating manual in the event that Saylor Current Construction Costs shall cease publication, is utilized to determine the costs of a Change and the cost computation therein includes an allowance for overhead, general conditions costs and/or profit, the Prime Contractor and any Subcontractor, of any tier, performing any portion of such Change, shall not be entitled to an allowance for overhead general conditions costs and/or profit beyond that reflected for such item of Change in the Saylor Current Construction Costs or other mutually agreed upon estimating manual. In the event of a Change to the Work resulting in a reduction of the Contract Price, no profit, general conditions or overhead costs shall be paid by the Owner to the Prime Contractor for the reduced or deleted Work. In such event, the adjustment to the Contract Price shall be the actual cost reduction realized by the reduced or deleted Work multiplied by the percentage set forth in the Supplemental Conditions for mark-ups on the cost of a Change adding to the scope of the Work.

9.4.1.5 **Prime Contractor Maintenance of Records.** In the event that Prime Contractor shall be directed to perform any Changes to the Work pursuant to Article 9.1 or 9.2, or should the Prime Contractor encounter conditions which the Prime Contractor, pursuant to Article 9.6, believes would obligate the Owner to adjust the Contract Price and/or the Contract Time, Prime Contractor shall maintain detailed records on a daily basis. Such records shall include without limitation hourly records for labor and Construction Equipment and itemized records of materials and equipment used that day in connection with the performance of any Change to the Work. In the event that more than one Change to the Work is performed by the Prime Contractor in a calendar day, Prime Contractor shall maintain separate records of labor, Construction Equipment, materials and equipment for each such Change. In the event that any Subcontractor, of any tier, shall provide or perform any portion of any Change to the Work, Prime Contractor shall require that each such Subcontractor maintain records in accordance with this Article 9.4.1.5. Each daily record maintained hereunder shall be signed by Prime Contractor's Superintendent or Prime Contractor's authorized representative; such signature shall be deemed Prime Contractor's representation and warranty that all information contained therein is true, accurate, and complete and relate only to the Change referenced therein. All records maintained by a Subcontractor, of any tier, relating to the costs of a Change to the Work shall be signed by such Subcontractor's authorized representative or Superintendent. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the Owner, the Architect or the Owner's Inspector upon request. In the event that Prime Contractor shall fail or refuse, for any reason, to maintain or make available for inspection, review and/or reproduction such records and the adjustment to the Contract Price on account of any Change to the Work is determined pursuant to Article 9.4.1.5, the Owner's reasonable good faith determination of the extent of adjustment to the Contract Price on account of such Change shall be final, conclusive, dispositive and binding upon Prime Contractor. Prime Contractor's obligation to maintain records under this Article 9.4.1.5 is in addition to, and not in lieu of, any other Prime Contractor obligation under the Contract Documents with respect to Changes to the Work.

9.4.2 **Adjustment to Contract Time.** In the event of any Change(s) to the Work pursuant to this Article 9, the Contract Time shall be extended or reduced by Change Order for a period of time commensurate with the time reasonably necessary to perform such Change. In the event that any Change shall require an extension of the Contract Time, the Prime Contractor shall not be subject to Liquidated Damages for such period of time. In the event that completion of the Work is delayed by causes for which the Owner is responsible and the delay is unreasonable under the circumstances involved, and not within the contemplation of the Prime Contractor and the Owner at the time of execution of the Agreement, the Prime Contractor shall not be precluded from the recovery of damages arising there from.

9.4.3. **Addition or Deletion of Alternate Bid Item(s).** In the event that the Bid for the Work includes proposal(s) for Alternate Bid Item(s), during Prime Contractor's performance of the Work, the Owner may elect, pursuant to this Article to add any such Alternate Bid Item(s) if the same did not form a basis for award of the Contract or delete any such Alternate Bid Item(s) if the same formed a basis for award of the Contract. In the event that the Owner shall elect to add or delete any such Alternate Bid Item(s), the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Prime Contractor's Bid.

9.5 **Change Orders.** If the Owner approves of a Change, a written Change Order prepared by the Project Manager and authorized by the Architect on behalf of the Owner shall be forwarded to the Prime Contractor describing the Change and setting forth the adjustment to the Contract Time and the Contract Price, if any, on account of such Change. All Change Orders shall be in full payment and final settlement of all claims for direct, indirect and consequential costs, including without limitation, costs of delays or impacts related to, or arising out of, items covered and affected by the Change Order, as well as any adjustments to the Contract Time. Any claim or item relating to any Change incorporated into a

Change Order not presented by the Prime Contractor for inclusion in the Change Order shall be deemed waived. The Prime Contractor shall execute the Change Order prepared pursuant to the foregoing; once the Change Order has been prepared and forwarded to the Prime Contractor for execution, without the prior approval of the Owner which may be granted or withheld in the sole and exclusive discretion of the Owner, the Prime Contractor shall not modify or amend the form or content of such Change Order, or any portion thereof. The Prime Contractor's attempted or purported modification or amendment of any such Change Order, without the prior approval of the Owner, shall not be binding upon the Owner; any such unapproved modification or amendment to such Change Order shall be null, void and unenforceable. Unless otherwise expressly provided for in the Contract Documents or in the Change Order, any Change Order issued hereunder shall be binding upon the Owner only upon action of the Owner's Board of Trustees approving and ratifying such Change Order. In the event of any amendment or modification made by the Prime Contractor to a Change Order for which there is no prior approval by the Owner, in accordance with the provisions of this Article 9.5, unless otherwise expressly stated in its approval and ratification of such Change Order, any action of the Board of Trustees to approve and ratify such Change Order shall be deemed to be limited to the Change Order as prepared by the Architect; such approval and ratification of such Change Order shall not be deemed the Owner's approval and ratification of any unapproved amendment or modification by the Prime Contractor to such Change Order.

9.6 **Prime Contractor Notice of Changes.** If the Prime Contractor should claim that any instruction, request, the Drawings, the Specifications, action, condition, omission, default, or other situation obligates the Owner to increase the Contract Price or to extend the Contract Time, the Prime Contractor shall notify the Owner's Inspector and the Architect, in writing, of such claim within ten (10) days from the date of its actual or constructive notice of the factual basis supporting the same. The Owner shall consider any such claim of the Prime Contractor only if sufficient supporting documentation is submitted with the Prime Contractor's notice to the Owner's Inspector and the Architect. Time is of the essence in Prime Contractor's written notice pursuant to the preceding sentence so that the Owner can promptly investigate and consider alternative measures to the address such instruction, request, Drawings, Specifications, action, condition, omission, default or other situation. Accordingly, Prime Contractor acknowledges that its failure, for any reason, to give written notice (with sufficient supporting documentation to permit the Owner's review and evaluation) within ten (10) days of its actual or constructive knowledge of any instruction, request, Drawings, Specifications, action, condition, omission, default or other situation for which the Prime Contractor believes there should an adjustment of the Contract Time or the Contract Price shall be deemed Prime Contractor's waiver, release, discharge and relinquishment of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of any such instruction, request, Drawings, Specifications, action, condition, omission, default or other situation. In the event that the Owner determines that the Contract Price or the Contract Time are subject to adjustment based upon the events, circumstances and supporting documentation submitted with the Prime Contractor's written notice under this Article 9.6, any such adjustment shall be determined in accordance with the provisions of Articles 9.4.1 and 9.4.2.

9.7 **Disputed Changes.** In the event of any dispute or disagreement between the Prime Contractor and the Owner or the Architect regarding the characterization of any item as a Change to the Work or as to the appropriate adjustment of the Contract Price or the Contract Time on account thereof, the Prime Contractor shall promptly proceed with the performance of such item of the Work, subject to a subsequent resolution of such dispute or disagreement in accordance with the terms of the Contract Documents. The Prime Contractor's failure or refusal to so proceed with such Work may be deemed to be Prime Contractor's default of a material obligation of the Prime Contractor under the Contract Documents.

9.8 **Emergencies.** In an emergency affecting the safety of life, or of the Work, or of property, the Prime Contractor, without special instruction or prior authorization from the Owner or the Architect, is permitted to act at its discretion to prevent such threatened loss or injury. Any compensation claimed by the Prime Contractor on account of such emergency work shall be submitted and determined in accordance with this Article 9.

9.9 **Minor Changes in the Work.** The Architect may order minor Changes in the Work not involving an adjustment in the Contract Price or the Contract Time and not inconsistent with the intent of the Contract Documents. Such Changes shall be effected by written order and shall be binding on the Owner and the Prime Contractor. The Project Manager or the Owner's Inspector may direct the Prime Contractor to perform Changes provided that each such Change does not result in an increase of more than $500.00 to the Contract Price and no adjustment of the Contract Time. The Prime Contractor shall carry out such orders promptly.

9.10 **Unauthorized Changes.** Any Work beyond the lines and grades shown on the Contract Documents, or any extra Work performed or provided by the Prime Contractor without notice to the Architect and the Owner's Inspector in the manner and within the time set forth in Articles 9.2 or 9.6 shall be considered unauthorized and at the sole expense of the Prime Contractor. Work so done will not be measured or paid for, no extension to the Contract Time will be granted on account thereof and any such Work may be ordered removed at the Prime Contractor's sole cost and expense. The failure of the Owner to direct or order removal of such Work shall not constitute acceptance or approval of such Work nor relieve the Prime Contractor from any liability on account thereof.

ARTICLE 10: SEPARATE CONTRACTORS

10.1 **Owner's Right to Award Separate Contracts.** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces or to award separate contracts in connection with other portions of the Project or other construction or operations at or about the Site. If the Prime Contractor claims that delay or additional cost is involved because of such action by the Owner, the Prime Contractor shall seek an adjustment to the Contract Price or the Contract Time as provided for in the Contract Documents. Failure of the Prime Contractor to request such an adjustment of the Contract Time or the Contract Price in strict conformity with the provisions of the Contract Documents applicable thereto shall be deemed a waiver of the same.

10.2 **Owner's Coordination of Separate Contractors.** The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Prime Contractor, with that of other Prime Contractors, who shall cooperate with them. Each Prime Contractor shall participate with other separate contractors and the Owner in reviewing their respective Construction Schedules when directed to do so. The Prime Contractor shall make any revisions to the Approved Construction Schedule for the Work hereunder deemed necessary after a joint review and mutual agreement. The Construction Schedules shall then constitute the Construction Schedules to be used by the Prime Contractor, separate contractors and the Owner until subsequently revised.

10.3 **Mutual Responsibility.** The Prime Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities at the site of the Work and shall connect and coordinate the Contractor's Work, construction and operations with theirs as required by the Contract Documents.

10.4 **Discrepancies or Defects.** If part of the Prime Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate Prime Contractor, the Prime Contractor shall, prior to proceeding with that portion of the Work, promptly report to the

Architect and the Owner's Inspector any apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Prime Contractor to so report shall constitute an acknowledgment that the Owner's or separate Prime Contractors' completed or partially completed construction is fit and proper to receive the Prime Contractor's Work, except as to defects not then discoverable by the Prime Contractor's reasonable diligence.

ARTICLE 11: TESTS AND INSPECTIONS

11.1 Tests; Inspections; Observations.

11.1.1 **Prime Contractor's Notice**. If the Contract Documents, laws, ordinances or any public authority with jurisdiction over the Work requires the Work, or any portion thereof, to be specially tested, inspected or approved, the Prime Contractor shall give the Architect, the Project Manager and the Owner's Inspector written notice of the readiness of such Work for observation, testing or inspection at least two (2) working days prior to the time for the conducting of such test, inspection or observation. If inspection, testing or observation is by authority other than the Owner, the Prime Contractor shall inform the Owner's Inspector and the Project Manager not less than two (2) working days prior to the date fixed for such inspection, test or observation. The Prime Contractor shall not cover up any portion of the Work subject to tests, inspections or observations prior to the completion and satisfaction of the requirements of such test, inspection or observation. In the event that any portion of the Work subject to tests, inspection or approval shall be covered up by Prime Contractor prior to completion and satisfaction of the requirements of such tests, inspection or approval, Prime Contractor shall be responsible for the uncovering of such portion of the Work as is necessary for performing such tests, inspection or approval without adjustment of the Contract Price or the Contract Time on account thereof.

11.1.2 **Cost of Tests and Inspections.** Costs for tests and inspection of the Work, portions thereof or materials incorporated into the Work shall be paid by the Owner as provided for in the Supplemental Conditions. Should any act, omission or other conduct of the Prime Contractor, any of its Subcontractors, of any tier, or Material Suppliers cause the number of hours or the costs of such tests or inspections to exceed that set forth in the Supplemental Conditions, the Prime Contractor shall be solely responsible for all such excess costs and the Owner may deduct such amount from any portion of the Contract Price then or thereafter due the Prime Contractor.

11.1.3 **Testing/Inspection Laboratory**. The Owner shall select duly qualified person(s) or testing laboratory (ies) to conduct the tests and inspections to be paid for by the Owner and required by the Contract Documents. All such tests and inspections shall be in conformity with Title 24 of the California Code of Regulations. Where inspection or testing is to be conducted by an independent laboratory or testing agency, materials or samples thereof shall be selected by the laboratory, testing agency, the Owner's Inspector, the Project Manager or the Architect and not by the Prime Contractor.

11.2 **Additional Tests, Inspections and Approvals**. If the Architect, the Project Manager, the Owner's Inspector or public authorities having jurisdiction over the Work determine that portions of the Work require additional testing, inspection or approval, the Architect will, upon written authorization from the Owner, instruct the Prime Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Prime Contractor shall give timely notice to the Architect, the Project Manager and the Owner's Inspector of when and where tests and inspections are to be made so the Owner's Inspector and the Architect may observe such procedures. The Owner shall bear the costs of such additional tests, inspections or approvals, except to the extent that such additional tests, inspections or approvals reveal any failure of the Work to comply with the requirements of the Contract Documents, in which case the Prime Contractor shall bear all costs made

necessary by such failures, including without limitation, the costs of corrections, repeat tests, inspections or approvals and the costs of the Architect's services or its consultants in connection therewith.

11.3 **Delivery of Certificates.** Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Prime Contractor and promptly delivered to the Architect.

11.4 **Timeliness of Tests, Inspections and Approvals.** Tests or inspections required and conducted pursuant to the Contract Documents shall be made or arranged by Prime Contractor to avoid delay in the progress of the Work.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.1 **Inspection of the Work.**

12.1.1 **Access to the Work.** All Work done and all materials and equipment forming a part of the Work or incorporated into the Work are subject to inspection by the Owner, the Project Manager, the Architect and the Owner's Inspector for conformity with the Contract Documents. The Prime Contractor shall, at its cost and without adjustment to the Contract Price or the Contract Time, furnish any facilities necessary for sufficient and safe access to the Work for purposes of inspection by the Owner, the Project Manager, the Architect, the Owner's Inspector, DSA or any other public or quasi-public authority with jurisdiction over the Work or any portion thereof.

12.1.2 **Limitations Upon Inspections.** Inspections, tests, measurements, or other acts of the Architect and the Owner's Inspector hereunder are for the sole purpose of assisting them in determining that the Work, materials, equipment, progress of the Work, and quantities generally comply and conform to the requirements of the Contract Documents. These acts or functions shall not relieve the Prime Contractor from performing the Work in full compliance with the Contract Documents. No inspection by the Architect or the Owner's Inspector shall constitute or imply acceptance of Work inspected. Inspection of the Work hereunder is in addition to, and not in lieu of, any other testing, inspections or approvals of the Work required under the Contract Documents.

12.2 **Uncovering of Work.** If any portion of the Work is covered contrary to the request of the Architect, the Owner's Inspector or the requirements of the Contract Documents, it must, if required by the Architect or the Owner's Inspector, be uncovered for observation by the Architect and the Owner's Inspector and be replaced at the Prime Contractor's expense without adjustment of the Contract Time or the Contract Price.

12.3 **Rejection of Work.** Prior to the Owner's Final Acceptance of the Work, any Work or materials or equipment forming a part of the Work or incorporated into the Work which is defective or not in conformity with the Contract Documents may be rejected by the Owner, the Project Manager the Architect or the Owner's Inspector and the Prime Contractor shall correct such rejected Work without any adjustment to the Contract Price or the Contract Time, even if the Work, materials or equipment have been previously inspected by the Architect or the Owner's Inspector or even if they failed to observe the defective or non-conforming Work, materials or equipment.

12.4 **Correction of Work.** The Prime Contractor shall promptly correct any portion of the Work rejected by the Owner, the Project Manager, the Architect or the Owner's Inspector for failing to conform to the requirements of the Contract Documents, or which is determined by them to be defective, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Prime Contractor shall bear all costs of correcting such rejected Work, including

additional testing and inspections and compensation for the Architect's services and expenses made necessary thereby. The Prime Contractor shall bear all costs of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors, caused by the Prime Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents, or which is defective.

12.5 **Removal of Non-Conforming or Defective Work.** The Prime Contractor shall, at its sole cost and expense, remove from the site all portions of the Work which are defective or are not in accordance with the requirements of the Contract Documents which are neither corrected by the Prime Contractor nor accepted by the Owner.

12.6 **Failure of Prime Contractor to Correct Work.** If the Prime Contractor fails to commence to correct defective or non-conforming Work within 3 days of notice of such condition and promptly thereafter complete the same within a reasonable time, the Owner may correct it in accordance with the Contract Documents. If the Prime Contractor does not proceed with correction of such defective or non-conforming Work within the time fixed herein, the Owner may remove it and store the salvable materials or equipment at the Prime Contractor's expense. If the Prime Contractor does not pay costs of such removal and storage after written notice, the Owner may sell such materials or equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Prime Contractor, including without limitation compensation for the Architect's services, attorneys fees and other expenses made necessary thereby. If such proceeds of sale do not cover costs which the Prime Contractor should have borne, the Contract Price shall be reduced by the deficiency. If payments of the Contract Price then or thereafter due the Prime Contractor are not sufficient to cover such amount, the Prime Contractor and the Surety shall promptly pay the difference to the Owner.

12.7 **Acceptance of Defective or Non-Conforming Work.** The Owner may, in its sole and exclusive discretion, elect to accept Work which is defective or which is not in accordance with the requirements of the Contract Documents, instead of requiring its removal and correction, in which case the Contract Price shall be reduced as appropriate and equitable.

ARTICLE 13: WARRANTIES

13.1 **Workmanship and Materials.** The Prime Contractor warrants to the Owner that all materials and equipment furnished under the Contract Documents shall be new, of good quality and of the most suitable grade and quality for the purpose intended, unless otherwise specified in the Contract Documents. All Work shall be of good quality, free from faults and defects and in conformity with the requirements of the Contract Documents. If required by the Architect or the Owner, the Prime Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment incorporated into the Work. Any Work or portion thereof not conforming to these requirements, including substitutions or alternatives not properly approved in accordance with the Contract Documents may be deemed defective. Where there is an approved substitution of, or alternative to, material or equipment specified in the Contract Documents, the Prime Contractor warrants to the Owner that such installation, construction, material, or equipment will equally perform the function and have the quality of the originally specified material or equipment. The Prime Contractor expressly warrants the merchantability, the fitness for use, and quality of all substitute or alternative items in addition to any warranty given by the manufacturer or supplier of such item.

13.2 **Warranty Work.** If, within one year after the date of Final Acceptance, any of the Work is found to be defective or not in accordance with the requirements of the Contract Documents, or otherwise contrary to the warranties contained in the Contract Documents, the Prime Contractor shall commence all necessary corrective action not more than seven (7) days after receipt of a written notice

from the Owner to do so, and to thereafter diligently complete the same. In the event that Prime Contractor shall fail or refuse to commence correction of any such item within said seven (7) day period or to diligently prosecute such corrective actions to completion, the Owner may, without further notice to Prime Contractor, cause such corrective Work to be performed and completed. In such event, Prime Contractor and Prime Contractor's Performance Bond Surety shall be responsible for all costs in connection with such corrective Work, including without limitation, general administrative overhead costs of the Owner in securing and overseeing such corrective Work. Nothing contained herein shall be construed to establish a period of limitation with respect to any obligation of the Prime Contractor under the Contract Documents. The obligations of the Prime Contractor hereunder shall be in addition to, and not in lieu of, any other obligations imposed by any special guarantee or warranty required by the Contract Documents, guarantees or warranties provided by any manufacturer of any item or equipment forming a part of, or incorporated into the Work, or otherwise recognized, prescribed or imposed by law. Neither the Owner's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by Owner shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Prime Contractor or the Prime Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein.

13.3 **Guarantee.** Upon completion of the Work, Prime Contractor shall execute and deliver to the Owner the form of Guarantee included within the Contract Documents. Pursuant to Article 8.4.2 above, Prime Contractor's execution and delivery of the form of Guarantee is an express condition precedent to any obligation of the Owner to disburse the Final Payment to the Prime Contractor.

13.4 **Survival of Warranties**. The provisions of this Article 13 shall survive the Prime Contractor's completion of Work under the Contract Documents, the Owner's Final Acceptance or the termination of the Contract.

ARTICLE 14: SUSPENSION OF WORK

14.1 **Owner's Right to Suspend Work**. The Owner may, without cause, and without invalidating or terminating the Contract, order the Prime Contractor, in writing, to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine. The Prime Contractor shall resume and complete the Work suspended by the Owner in accordance with the Owner's directive, whether issued at the time of the directive suspending the Work or subsequent thereto.

14.2 **Adjustments to Contract Price and Contract Time**. In the event the Owner shall order suspension of the Work, an adjustment shall be made to the Contract Price for increases in the direct cost of performance of the Work of the Contract Documents, actually caused by suspension, delay or interruption ordered by the Owner; provided however that no adjustment of the Contract Price shall be made to the extent: (i) that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Prime Contractor is responsible under the Contract Documents; or (ii) that an equitable adjustment is made or denied under another provision of the Contract Documents. The foregoing notwithstanding, any such adjustment of the Contract Price shall not include any adjustment to increase the Prime Contractor's overhead, general administrative costs or profit, all of which will remain as reflected in the Cost Breakdown submitted by the Prime Contractor pursuant to the Contract Documents. In the event of the Owner's suspension of the Work, the Contract Time shall be equitably adjusted.

ARTICLE 15: TERMINATION

15.1 **Termination for Cause.**

15.1.1 **Owner's Right to Terminate.** The Owner may terminate the Contract upon the occurrence of any one or more of the following events of the Prime Contractor's default: (i) if the Prime Contractor refuses or fails to prosecute the Work with diligence as will insure Substantial Completion of the Work within the Contract Time, or if the Prime Contractor fails to substantially Complete the Work within the Contract Time; (ii) if the Prime Contractor becomes bankrupt or insolvent, or makes a general assignment for the benefit of creditors, or if the Prime Contractor or a third party files a petition to reorganize or for protection under any bankruptcy or similar laws, or if a trustee or receiver is appointed for the Prime Contractor or for any of the Prime Contractor's property on account of the Prime Contractor's insolvency, and the Prime Contractor or its successor in interest does not provide adequate assurance of future performance in accordance with the Contract Documents within 10 days of receipt of a request for such assurance from the Owner; (iii) if the Prime Contractor repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment; (iv) if the Prime Contractor repeatedly fails to make prompt payments to any Subcontractor, of any tier, or Material Suppliers or others for labor, materials or equipment; (v) if the Prime Contractor disregards laws, ordinances, rules, codes, regulations, orders applicable to the Work or similar requirements of any public entity having jurisdiction over the Work; (iv) if the Prime Contractor disregards proper directives of the Architect, the Owner's Inspector or Owner under the Contract Documents; (vii) if the Prime Contractor performs Work which deviates from the Contract Documents and neglects or refuses to correct such Work; or (viii) if the Prime Contractor otherwise violates in any material way any provisions or requirements of the Contract Documents. Once the Owner determines that sufficient cause exists to justify the action, the Owner may terminate the Contract without prejudice to any other right or remedy the Owner may have, after giving the Prime Contractor and the Surety at least seven (7) days advance written notice of the effective date of termination. The Owner shall have the sole discretion to permit the Prime Contractor to remedy the cause for the termination without waiving the Owner's right to terminate the Contract, or otherwise waiving, restricting or limiting any other right or remedy of the Owner under the Contract Documents or at law.

15.1.2 **Owner's Rights Upon Termination.** In the event that the Contract is terminated pursuant to this Article 15.1, the Owner may take over the Work and prosecute it to completion, by contract or otherwise, and may exclude the Prime Contractor from the site. The Owner may take possession of the Work and of all of the Prime Contractor's tools, appliances, construction equipment, machinery, materials, and plant which may be on the site of the Work, and use the same to the full extent they could be used by the Prime Contractor without liability to the Prime Contractor. In exercising the Owner's right to prosecute the completion of the Work, the Owner may also take possession of all materials and equipment stored at the site of the Work or for which the Owner has paid the Prime Contractor but which are stored elsewhere, and finish the Work as the Owner deems expedient. In exercising the Owner's right to prosecute the completion of the Work, the Owner shall have the right to exercise its sole discretion as to the manner, methods, and reasonableness of the costs of completing the Work and the Owner shall not be required to obtain the lowest figure for completion of the Work. In the event that the Owner takes bids for remedial Work or completion of the Work, the Prime Contractor shall not be eligible for the award of such contract(s).

15.1.3 **Completion by the Surety.** In the event that the Contract is terminated pursuant to this Article 15.1, the Owner may demand that the Surety take over and complete the Work. The Owner may require that in so doing, the Surety not utilize the Prime Contractor in performing and completing the Work. Upon the failure or refusal of the Surety to take over and begin completion of the Work within twenty (20) days after demand therefore, the Owner may take over the Work and prosecute it to completion as provided for above.

15.1.4 **Assignment and Assumption of Subcontracts**. The Owner shall, in its sole and exclusive discretion, have the option of requiring any Subcontractor or Material Supplier to perform in accordance with its Subcontract or Purchase Order with the Prime Contractor and assign the Subcontract or Purchase Order to the Owner or such other person or entity selected by the Owner to complete the Work.

15.1.5 **Costs of Completion**. In the event of termination under this Article 15.1, the Prime Contractor shall not be entitled to receive any further payment of the Contract Price until the Work is completed. If the unpaid balance of the Contract Price as of the date of termination exceeds the Owner's direct and indirect costs and expenses for completing the Work, including without limitation, attorneys' fees and compensation for additional professional and consultant services, such excess shall be used to pay the Prime Contractor for the cost of the Work performed prior to the effective date of termination with a reasonable allowance for overhead and profit. If the Owner's costs and expenses to complete the Work exceed the unpaid Contract Price, the Prime Contractor and/or the Surety shall pay the difference to the Owner.

15.1.6 **Prime Contractor Responsibility for Damages**. The Prime Contractor and the Surety shall be liable for all damage sustained by the Owner resulting from, in any manner, the termination of Contract under this Article 15.1, including without limitation, attorneys' fees, and for all costs necessary for repair and completion of the Work over and beyond the Contract Price.

15.1.7 **Conversion to Termination for Convenience**. In the event the Contract is terminated under this Article 15.1, and it is determined, for any reason, that the Prime Contractor was not in default under the provisions hereof, the termination shall be deemed a Termination for Convenience of the Owner and thereupon, the rights and obligations of the Owner and the Prime Contractor shall be determined in accordance with Article 15.2 hereof.

15.1.8 **Owner's Rights Cumulative**. In the event the Contract is terminated pursuant to this Article 15.1, the termination shall not affect or limit any rights or remedies of the Owner against the Prime Contractor or the Surety. The rights and remedies of the Owner under this Article 15.1 are in addition to, and not in lieu of, any other rights and remedies provided by law or otherwise under the Contract Documents. Any retention or payment of monies to the Prime Contractor by the Owner shall not be deemed to release the Prime Contractor or the Surety from any liability hereunder.

15.2 **Termination for Convenience of the Owner**. The Owner may at any time, in its sole and exclusive discretion, by written notice to the Prime Contractor, terminate the Contract in whole or in part when it is in the interest of, or for the convenience of, the Owner. In such case, the Prime Contractor shall be entitled to payment for: (i) Work actually performed and in place as of the effective date of such termination for convenience of the Owner, with a reasonable allowance for profit and overhead on such Work, and (ii) reasonable termination expenses for reasonable protection of Work in place and suitable storage and protection of materials and equipment delivered to the site of the Work but not yet incorporated into the Work, provided that such payments exclusive of termination expenses shall not exceed the total Contract Price as reduced by payments previously made to the Prime Contractor and as further reduced by the value of the Work as not yet completed. The Prime Contractor shall not be entitled to profit and overhead on Work which was not performed as of the effective date of the termination for convenience of the Owner. The Owner may, in its sole and exclusive discretion, elect to have assigned to the Owner any Subcontract or Purchase Order to which the Prime Contractor is a party and thereupon requiring any Subcontractor or Material Supplier to performance in accordance with the Subcontract or Purchase Order between such Subcontractor or Material Supplier and the Prime Contractor. If the Owner elects to effectuate such assignment of any such Subcontract or Purchase Order, such assignment shall be effective in accordance with the Owner's written notice to the Prime Contractor and any

Subcontractor or Material Supplier of the Owner's election to have such Subcontract or Purchase Order assigned to the Owner.

ARTICLE 16: MISCELLANEOUS

16.1 **Governing Law.** This Contract shall be governed by and interpreted in accordance with the laws of the State of California.

16.2 **Marginal Headings; Interpretation.** The titles of the various Articles of these General Conditions and elsewhere in the Contract Documents are used for convenience of reference only and are not intended to, and shall in no way, enlarge or diminish the rights or obligations of the Owner or the Prime Contractor and shall have no effect upon the construction or interpretation of the Contract Documents. The Contract Documents shall be construed as a whole in accordance with their fair meaning and not strictly for or against the Owner or the Prime Contractor.

16.3 **Successors and Assigns.** Except as otherwise expressly provided in the Contract Documents, all terms, conditions and covenants of the Contract Documents shall be binding upon, and shall inure to the benefit of the Owner and the Prime Contractor and their respective heirs, representatives, successors-in-interest and assigns.

16.4 **Cumulative Rights and Remedies; No Waiver.** Duties and obligations imposed by the Contract Documents and rights and remedies available there under shall be in addition to and not in lieu of or otherwise a limitation or restriction of duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the Owner shall constitute a waiver of a right or remedy afforded it under the Contract Documents or at law nor shall such an action or failure to act constitute approval of or acquiescence in a breach hereunder, except as may be specifically agreed in writing.

16.5 **Severability.** In the event any provision of the Contract Documents shall be deemed illegal, invalid, unenforceable and/or void, by a court or any other governmental agency of competent jurisdiction, such provision shall be deemed to be severed and deleted from the Contract Documents, but all remaining provisions hereof, shall in all other respects, continue in full force and effect.

16.6 **No Assignment by Prime Contractor.** The Prime Contractor shall not sublet or assign the Contract, or any portion thereof, or any monies due there under, without the express prior written consent and approval of the Owner, which approval may be withheld in the sole and exclusive discretion of the Owner. The Owner's approval to such assignment shall be upon such terms and conditions as determined by the Owner in its sole and exclusive discretion.

16.7 **Gender and Number.** Whenever the context of the Contract Documents so require, the neuter gender shall include the feminine and masculine, the masculine gender shall include the feminine and neuter, the singular number shall include the plural and the plural number shall include the singular.

16.8 **Independent Prime Contractor Status.** In performing its obligations under the Contract Documents, the Prime Contractor shall be deemed an independent contractor to the Owner and not an agent or employee of the Owner.

16.9 **Notices.** Except as otherwise expressly provided for in the Contract Documents, all notices which the Owner or the Prime Contractor may be required, or may desire, to serve on the other, shall be effective only if delivered by personal delivery or by postage prepaid, First Class Certified Return Receipt Requested United States Mail, addressed to the Owner or the Prime Contractor at their

respective address set forth in the Contract Documents, or such other address (es) as either the Owner or the Prime Contractor may designate from time to time by written notice to the other in conformity with the provisions hereof. In the event of personal delivery, such notices shall be deemed effective upon delivery, provided that such personal delivery requires a signed receipt by the recipient acknowledging delivery of the same. In the event of mailed notices, such notice shall be deemed effective on the third working day after deposit in the mail.

16.10 **Disputes; Continuation of Work**. Notwithstanding any claim, dispute or other disagreement between the Owner and the Prime Contractor regarding performance under the Contract Documents, the scope of Work there under, or any other matter arising out of or related to, in any manner, the Contract Documents, the Prime Contractor shall proceed diligently with performance of the Work in accordance with the Owner's written direction, pending any final determination or decision regarding any such claim, dispute or disagreement.

16.11 **Dispute Resolution; Arbitration.**

16.11.1 **Claims Under $375,000.00**. Claims between the Owner and the Prime Contractor of $375,000.00 or less shall be resolved in accordance with the procedures established in Part 3, Chapter 1, Article 1.5 of the California Public Contract Code, §§20104 et seq.; provided however that California Public Contract Code §20104.2(a) shall not supersede the requirements of the Contract Documents with respect to the Prime Contractor's notification to the Owner of such claim or extend the time for the giving of such notice as provided in the Contract Documents. The term "claims" as used herein shall be as defined in California Public Contract Code §20104(b)(2).

16.11.2 **Arbitration**. Except as provided in Article 16.11.1, any other claims, disputes, disagreements or other matters in controversy between the Owner and the Prime Contractor arising out of, or related, in any manner, to the Contract Documents, or the interpretation, clarification or enforcement thereof shall be resolved by arbitration conducted in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association ("AAA") in effect as of the date that a Demand for Arbitration is filed, except as expressly modified herein. The locale for any arbitration commenced hereunder shall be the regional office of the AAA closest to the Site. The award rendered by the Arbitrator(s) shall be final and binding upon the Owner and the Prime Contractor. In connection with any arbitration proceeding commenced hereunder, the discovery rights and procedures provided for in California Code of Civil Procedure §1283.05 shall be applicable, and the same shall be deemed incorporated herein by this reference. A Demand for Arbitration shall be filed and served within a reasonable time after the occurrence of the claim, dispute or other disagreement giving rise to the Demand for Arbitration, but in no event shall a Demand for Arbitration be filed or served after the date when the institution of legal or equitable proceedings based upon such claim, dispute or other disagreement would be barred by the applicable statute of limitations. In the event more than one Demand for Arbitration is made by either the Owner or the Prime Contractor, all such controversies shall be consolidated into a single arbitration proceeding, unless otherwise agreed to by the Owner and the Prime Contractor. The Prime Contractor's Surety, a Subcontractor or Material Supplier to the Prime Contractor and other third parties may be permitted to join in and be bound by an arbitration commenced hereunder if required by the terms of their respective agreements with the Prime Contractor, except to the extent that such joinder would unduly delay or complicate the expeditious resolution of the claim, dispute or other disagreement between the Owner and the Prime Contractor, in which case an appropriate severance order shall be issued by the Arbitrator(s). The expenses and fees of the Arbitrator(s) shall be divided equally among the parties to the arbitration. Each party to any arbitration commenced hereunder shall be responsible for and shall bear its own attorneys' fees, witness fees and other cost and expense incurred in connection with such arbitration. The foregoing notwithstanding, the Arbitrator(s) may award arbitration costs, including Arbitrators' fees but excluding

attorneys' fees, to the prevailing party. The exclusive forum for confirmation, enforcement, vacation or correction of an arbitration award rendered hereunder shall be the Superior Court of the State of California for the county in which the regional office of the AAA where such arbitration is conducted The substantive and procedural rules for such post-award proceedings shall be as set forth in California Code of Civil Procedure §1285 et seq.

16.12 **Capitalized Terms**. Except as otherwise expressly provided, capitalized terms used in the Contract Documents shall have the meaning and definition for such term as set forth in the Contract Documents.

16.13 **Attorneys Fees**. Except as expressly provided for in the Contract Documents, or authorized by law, neither the Owner nor the Prime Contractor shall recover from the other any attorneys fees or other costs associated with or arising out of any legal, administrative or other proceedings filed or instituted in connection with or arising out of the Contract Documents or the performance of either the Owner or the Prime Contractor there under.

16.14 **Provisions Required by Law Deemed Inserted**. Each and every provision of law and clause required by law to be inserted in the Contract Documents shall be deemed to be inserted herein and the Contract Documents shall be read and enforced as though such provision or clause are included herein, and if through mistake, or otherwise, any such provision or clause is not inserted or if not correctly inserted, then upon application of either party, the Contract Documents shall forthwith be physically amended to make such insertion or correction.

16.15 **Days**. Unless otherwise stated, references to "days" in the Contract Documents shall be deemed to be calendar days.

16.16 **Entire Agreement**. The Contract Documents contain the entire agreement and understanding between the Owner and the Prime Contractor concerning the subject matter hereof, and supersedes and replaces all prior negotiations, proposed agreements or amendments, whether written or oral. No amendment or modification to any provision of the Contract Documents shall be effective or enforceable except by an agreement in writing executed by the Owner and the Prime Contractor.

[END OF SECTION]

SUPPLEMENTARY CONDITIONS

MODIFICATIONS OF THE GENERAL CONDITIONS

1. GENERAL

The "General Conditions of the Contract for Construction" are supplemented by the changes, deletions, and/or additions which follow in this supplement. Even though a portion of the "General Conditions of the Contract for Construction" may be modified, altered or voided by this supplement, the provisions of the unaltered portions shall remain in effect.

2. DEFINITIONS

A. Throughout the Contract Documents, "Owner" shall mean Antelope Valley Community College District.

B. Throughout the Contract Documents, "Architect" shall mean tBP Architecture.

C. Throughout the Contract Documents, "Project Manager" shall mean Klassen Corporation.

D. Throughout the Contract Documents, "Contractor" shall mean the person, company, partnership or corporation supplying the labor, or labor and material necessary to perform the Work.

E. Surety is the person, firm, or corporation that executes as surety the Contractor's Performance Bond and Labor and Material Payment Bond.

F. Throughout the Contract Documents, "Project" shall mean the total Scope of Construction for Antelope Valley Community College District - West Campus Expansion Project Phase I.

G. Throughout the Contract Document, "Agreement" shall be synonymous with Contract.

H. Throughout the Contract Documents, "Provide" shall mean the furnishing and installation of the specified item.

3. SPECIFIC CHANGES

ARTICLE 2 - OWNER

A. Add Paragraph 2.5: Paragraph to read as follows:

2.5 Acceptable Hours of Work. The facility will be occupied from **AVCCD** 7:30 a.m. to 9:00 p.m. Monday through Friday. The facility will be occupied from 7:30 a.m. to 5:00 p.m. on Saturdays. Construction activities shall be conducted after 6:30 a.m. and before 3:30 p.m. Monday through Friday. During performance of the Work on the project, Prime Contractor shall not interfere with the normal, regular, or existing business operations or activities of Owner at the site.

ARTICLE 4: THE PRIME CONTRACTOR

A. Sub Paragraph 4.3.3.1 shall be added to read as follows:

4.3.3.1 - Layout. Prime Contractor shall layout and establish all construction lines, level, grades, and locations required for the work and shall be responsible for the accuracy of same.

ii. Elevations and temporary bench marks shall be taken from the bench marks set by the surveyor, verify grades, lines, levels, locations and dimensions as indicated. Report any errors, inconsistencies, or deviations before commencing work.

iii. Protect all benchmarks and maintain them in place for the duration of the contract or until such time as Project Manager authorizes their removal.

B. Paragraph 4.3.4: Delete this paragraph in its entirety and replace with the following:

4.3.4 Water, Gas, & Electric Power. All utilities, including, but not limited to, electricity, water, gas and telephone, used and consumed on the Work shall be provided at the expense of Prime Contractor / Owner. Prime Contractor shall furnish and install necessary temporary distribution systems, including meters, if necessary from distribution systems to points on the project where utility is necessary to carry on the Work. Upon completion of work, Prime Contractor shall remove all temporary systems.

If the Work is for expansion of, addition to, or modernization of existing facility(ies). Prime Contractor may, with written permission of Owner, use the existing utilities by making pre-arranged payments to Owner for the costs involved in Prime contractor using and consuming such utilities.

C. Add the following sentence to Paragraph 4.6: Sentence to read as follows:

4.6 Permits, Fees and Notices. Prime Contractor shall give all legal notices as required for the Work of the Contract.

D. Sub Paragraph 4.9.1.1 shall be added to read as follows:

4.9.1.1 General Safety Provisions Prime Contractor will develop and implement a construction safety program in accordance with Project Manager's site rules and security requirements and the Williams-Steiger Occupational Safety and Health Act of 1970 and California Code 1 Regulations, Title 8 (Cal/OSHA) as may be amended and including all regulations adapted pursuant thereto in effect at the time of delivery or performance of service. In case of conflict between the documents the Williams-Steiger Act and Cal/OSHA shall be controlling.

The Prime Contractor will be solely responsible for all safety aspects of the work under the contract. The Prime Contractor will be responsible for ensuring that all second and/or third tier Subcontractors are familiar with, fully trained in, and comply with all safety provisions.

The Prime Contractor will at all times maintain a constant vigil for accidents and will prepare and submit to Project Manager's representative a written report for any accident, illness, or injury requiring outside medical attention. This report shall contain all data pertinent to the accident (time, place, description of accident, personnel involved, type of injuries, etc.) and shall be submitted within 5 working days. In lieu of a formal report the Prime Contractor may substitute the required Cal OSHA form. Prime Contractor will also notify Project Manager using (661) 324-3000 immediately after an accident, illness or injury has occurred.

At the conclusion of the project, Prime Contractor will submit to Project Manager a statement confirming the status of any accident and a release of liability holding Project Manager and the Owner harmless against any future claims.

Prime Contractor's General Safety Provisions, Site Rules & Security Requirements

Unless notified otherwise, the following rules shall be considered the minimum required and shall be adhered to by all Prime Contractors, their employees and visitors. Anyone violating these rules may be denied further access to Contractor sites;

Safety Materials and Inspection:

Jobsite "tailgate" meetings will be held weekly for Prime Contractor employees, temporary and permanent. Tailgate safety meetings are held for construction crews' benefit. Employees shall be required to attend the meetings and encouraged to participate and offer suggestions for improving safe work conditions and or practices.

The Prime Contractor foreman will make a daily safety inspection of the job-site, documenting activities on the Daily Jobsite Inspection Report provided. Any unsafe work conditions or unsafe acts by employees or sub-Prime Contractors will be noted and immediate corrective action taken.

Protective Clothing & Safety Equipment:

Prime Contractor and/or its personnel must wear appropriate safety clothing and use appropriate safety equipment. The instruction for proper use and maintenance of personal safety equipment and protective clothing is also the responsibility of the Prime Contractor. This includes, but is not limited to, safety glasses, welding goggles, safety shoes, respiratory protection gear (in special cases), ear protection and hard hats, as described below.

Personnel shall wear approved hard hats at all times in construction areas.

Personnel shall wear proper footwear and/or safety-toed shoes or boots with substantial soles. Additional foot protection, such as rubber boots or steel-toed protectors may be required where there is exposure to special hazards.

Wear safety glasses, goggles or face shields whenever there is an exposure to injury from flying particles or splash. Eye protection is particularly required when grinding, cutting, chipping, welding or using air tools for such things as breaking concrete.

Use proper respiratory equipment whenever there is exposure to harmful dusts, fumes, vapors or gases.

Whenever personnel is working on foot and exposed to mobile equipment or motor vehicle traffic, personnel must wear orange flager's vests or other equivalent high visibility orange apparel. If vests are used after dark, they must be of the reflective type.

Personnel shall wear protective gloves and boots whenever working with cement products, acids or chemicals.

Personnel must wear hearing protection such as plugs or muffs as directed or whenever exposure to noise exceeds 85 decibels. In general, if you need to shout in order to converse with a person close by, you should ask your Supervisor if ear protection is required.

Personnel Behavior:

Smoking is permitted in designated areas only. Prime Contractor shall confirm with Contractor which areas are designated smoking areas.

Control noise so as not to disturb or disrupt Owner, Project Manager or other Prime Contractor Personnel. No radios or portable headsets will be permitted without prior approval.

The use or possession of intoxicating beverages or drugs on the jobsite or immediately prior to entering the job site is prohibited.

Do your part to help keep work areas clean and free of debris and other tripping hazards.

Firearms are not permitted on the job site, inside vehicles or equipment.

With safety issues in mind, keep a lookout for other persons and employees that come into the vicinity of your work area.

Only those Prime Contractor vehicles actually required for delivery of equipment and materials or for the performance of necessary operations by the Prime Contractor will be admitted to the site. The speed limit of 5 mph will be observed. No personal vehicles are allowed.

All Contractor safety signs, notices and tags must be obeyed. The Prime Contractor must display appropriate safety signs, notices and barriers when work is in progress that could be hazardous.

Hand and Portable Electric Tools:

Prime Contractor and/or its personnel shall do the following:

Always use the right tool for the job.

Do not use defective tools or equipment.

Report tools or equipment to your Supervisor that are broke or do not work properly so that they can be replaced with safe ones.

Keep guards and safety devices in place and functioning properly.

Inspect electric cords, plugs and receptacles before use and have them repaired or replaced if worn or damaged.

Electric cords should not be spliced and taped. If portable electric service is provided to the job-site, each 15 and 20 amp receptacle must have grounding contacts through a ground fault interrupter circuit, or an assured equipment ground conductor maintenance program in progress.

Be certain that all electric hand tools and exposed non-current carrying parts of motors, generators (including portable units), and control equipment are properly grounded.

Do not use the power cord to lift or lower portable electric tools since this practice can break internal wiring and cause electric shorts.

All electrical equipment used is to be a type appropriate to the hazard classification of the area where work is to be performed and compiling with all applicable governmental standards and Contractor's maintenance procedures.

Ladders:

All ladders, scaffolding and etc. must be OSHA and Cal/OSHA approved.

All trades performing work shall have and implement a fall protection plan suitable for the site, activities, height and other conditions. Guardrails are required to guard the open sides of all work surfaces that are 7 ½ ft. or higher. A personal fall restraint system, which consists of anchorages, connectors, body belt and harness, and may include lanyards, lifelines, and rope grabs, shall be used to prevent an employee from falling.

Ladders should be inspected before use. Well built, undamaged ladders of the proper size should be used and should be long enough that side rails extend three feet above the landing. Metal ladders should not be used when working on electrical equipment since the ladders conduct electricity.

Prime Contractor and/or its personnel should always do the following when using ladders:

All ladders should have safety feet in good condition.

When setting the ladder, the base should be approximately one-fourth the length to its top support.

Secure ladders from falling by setting feet properly and tying them off at the top to prevent them from sliding over.

Face the ladder when going up or down and keep hands free of tools or materials.

Always bring materials up later using a hand line.

Scaffolds, Platforms and Safety Belts:

Prime Contractor and/or its personnel shall do the following:

Before using scaffolds or other work platforms, check them for security, proper planking and guardrails. They must conform to design standards or be designed by a licensed engineer.

Wood pole scaffolds must be tied every 20 feet horizontally and vertically for light trades, and 15 feet for heavy trades. Metal scaffolds must be tied every 26 feet vertically and 30 feet horizontally. A permit from Cal-OSHA is required for a scaffold over 36 feet high.

Scaffold platforms must have guardrails on the open sides if over 7-1/2 feet high. One set of "X" braces is sufficient if they intersect 20 to 36 inches above the platform. Toe boards are required where workers pass below. Access to scaffolds must be safe and unobstructed.

Do not use single plank for ramp access to work areas. A ramp must be at least 20 inches wide and have handrails if it is 7-1/2 feet or more in height.

Keep ramps and platforms clear of debris and unnecessary tools and materials.

When rolling scaffolds are used, height-to-base ratio must not exceed a 3:1 ratio, all wheels must be locked when in use, and work platform must be fully guarded. Rolling scaffolds should not be moved with someone on them.

Approved safety belts with lifelines or lanyards must be worn when you are exposed to falls from heights that would otherwise require guardrails or other fall protection. When working on roofs, every effort should be made to protect from falls by safety belts/lifelines, or by safety nets if working above 25 feet in height. If there is danger of falls on roof edges, guard lines can be installed 42 inches high and approximately 5 feet from the edge to warn roofers before they get too close.

Fire and Flammable Materials:

With respect to fire and flammable materials, Prime Contractor and/or its personnel shall also do the following:

All flammable liquids are to be stored only in approved closed metal containers, labeled FLAMMABLE.

Keep combustible waste materials picked up and discarded regularly.

Know the location and proper use of fire extinguishes and use only for fire fighting.

Use proper precautions when transferring fuel or refueling equipment. Stop motors, provide for grounding and bonding and do not smoke or allow open flames or other source of ignition in the area. Close containers tightly and eliminate any spillage. Remember that the vapors from flammable liquids can carry away from the liquid itself and are easily ignited.

Oxygen and acetylene cylinders are to be secured upright and stored separately (at least 20 feet apart or separated by a fire resistant wall at least six feet high, and not near other combustible materials, particularly oil and grease). Protective caps should be kept in place when they are not in use.

Never weld, burn or cut any containers that have held flammable liquids unless they are filled with water or are completely cleaned, ventilated and tested.

Never use gasoline for cleaning purposes. Use only approved cleaning solvents, in well ventilated areas.

All compressed gas cylinders must be stored in an upright position and secured against falling.

Hazardous Substances:

Prime Contractor and/or its personnel may be exposed to many different materials that have been determined to be hazardous substances if they are not handled in a safe manner.

Prime Contractor and/or its personnel shall know what information on hazardous substances is available and how to use it. Material Safety Data Sheet (MSDS) for each of the hazardous substance used shall be maintained on the job site by Prime Contractor foreman.

These are the rules when using hazardous substances:

Never use any chemical or substance without reading the label or the MSDS.

If you have questions or have not been instructed on the safe use of hazardous substances; seek clarification.

Contractor Machinery & Equipment:

The Prime Contractor shall not use Project Manager's, equipment or tools. The Prime Contractor must supply all such items necessary to complete the work of its trade.

Prime Contractor and/or its personnel shall do the following:

Only operate, service or repair machinery or equipment that it is qualified to operate or service.

Before operating any power-driven equipment or vehicles, make a careful Safety inspection. Any defects must be repaired before the equipment is operated.

Before starting machinery or putting equipment in motion, make certain there will be no danger to other persons or property.

The use of seat belts is required when operating motor vehicles or mobile earth moving equipment.

Never service or repair machinery or equipment while it is in motion. Always lock out machinery or equipment being serviced to prevent possible injury.

When mounting or dismounting equipment, always use the stairs or ladder. Never try to jump off.

Never ride any machinery, equipment, loads, or hooks unless in the seat provided by manufacturer or approved safety facilities or devices are used.

Equipment must never be operated within 10 feet of energized high voltage electrical lines. 50,000 volts and higher voltage requires greater distances in accordance with State and Federal Safety Regulations.

Always stay outside the area within the swing radius of rotating machines such as cranes, shovels, or a backhoe.

All equipment must be safely parked and secured before it is left unattended, even for short periods of time. Particularly lower all forklift beams, blades, booms, buckets, etc. to the ground and secure from possible movement.

When mobile equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

Cranes

Hazards associated with crane operation including electrocution from overhead power lines, equipment failures because of operator error, faulty or damages

equipment, overloading or lack of support are to be avoided at all times. Workers must be thoroughly familiar with hand signals used for communication with the crane operator. Slings and attachment must not be kinked, shortened by knots, bolts or other means, and must be inspected on a daily basis for defects.

Aerial devices, such as cherry pickers, lifts, and boom trucks used to position personnel, must observe continuous safety precautions. Only authorized persons may operate aerial devices. Aerial devices must not rest on any structure, only solid ground. Controls must be tested before use. Workers must stand only on the floor of the basket. No planks, ladders, or other means are allowed to gain greater height. A fall protection system must be worn and attached to the boom or basket. Brakes must be set when employees are elevated. An aerial lift truck must not be moved when an employee is on the elevated boom platform.

Prime Contractor and/or its personnel shall do the following:

The crane operator must be in good condition physically, mentally, and emotionally in order to maintain complete control of the crane at all times.

Before starting the crane do a pre operational inspection. This inspection is to be documented on the daily inspection and maintenance log, and initialed by the inspector.

Be mindful of specific jobsite restrictions, such as the location of overhead electric power lines, unstable soil, and high wind conditions.

To prevent employees from being struck or crushed by the crane, barricade accessible areas within the swing radius of the rear of the rotating superstructure.

Never work under a suspended load. When a load is being picked up or set down, it may shift, swing, or pivot, or a loose piece may even fall off; make sure that you keep far enough back to accommodate the dangers. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with Section 1591 (e), to provide adequate protection for the operator during loading and unloading operations.

Crane operators must avoid swinging loads over persons and should keep people away from loads when possible.

Crane attachments cannot exceed the capacity, rating, or scope recommended by the manufacturer.

Operators must be knowledgeable of crane capacities and limitations.

If the operator does not have a clear, unobstructed view of the entire lift, from beginning to end, a signal person must be assigned.

Excavation, Trenches, and Earthwork

Earthwork operations require reasonable precautions to avoid cave-ins, striking underground utilities, falling tools, material, and equipment, and hazardous air contaminants or oxygen. Before opening an excavation, all regional notification centers and all underground utility owners shall be notified of the proposed work and given adequate time to visit the work site to determine the presence of any underground obstructions.

Prime Contractor shall provide adequate protection to protect from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.

Protection shall be provided from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling into excavations, or by a combination of both if necessary.

Prime Contractor and/or its personnel shall do the following:

All trenches and other excavations five feet or more in depth are required to be shored, sloped, or otherwise protected from the hazards of moving ground, when employees are required to work in them.

Never enter or work in any trench or excavation that is not properly shored, sloped, shielded or otherwise protected from cave-in.

Use only ladders or other approved means of access to trenches and other excavations. Keep ladders close to the work area, and never more than 25 feet away from workers.

When working in trenches, stay away from the excavating equipment and stay within the shoring.

Use only safe crossings for getting across open trenches. Never jump over an open trench.

The spoils pile of dirt from a trench must be kept at least two feet away from the edge of excavation, and heavy equipment should be kept away from the area to help prevent cave-ins.

Keep alert for changing ground conditions or signs of possible earth movement.

The permit application will indicate what steps will be taken for soils testing. Soil Classification will be identified as A, B or C per Appendix A of Cal OSHA Title 8, Chapter 4, Section 1541.1. Appropriate excavation techniques will then be chosen per Appendix B to Section 1541.1.

If the trench is to be five feet or more in depth, with employees working in it, a permit from DOSH must be obtained. Also, a record search for underground utilities in the area should be made.

Hazardous Atmospheres:

Never enter any confined space such as a trench, excavation, manhole, underground vault, tank, pipes, etc. without first determining if there is adequate ventilation and that there are no flammable or toxic gases. Then enter only with permission of your Supervisor and with proper safety devices such as a lifeline and another person standing by for help as necessary.

Testing and Controls: In addition to the requirements set forth in the construction Safety Orders and the General Industry Safety Orders to prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements shall apply:

Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet in depth.

Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include proper respiratory protection or ventilation.

Adequate precaution shall be taken such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit of gas.

When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable level, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

Emergency Rescue Equipment: Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in sue.

Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials, and shall be individually attended at all times while the employee wearing the lifeline is in the excavation.

Hazards Associated with Water Accumulation:

Prime Contractor and/or its personnel shall do as follows:

Not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect personnel adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by a competent person to ensure proper operations.

If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person and compliance with Section 1540(h)(1) and (h)(2).

Stability of Adjacent Structures:

Prime Contractor and/or its personnel shall do as follows:

Where the stability of adjoining building, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to ensure the stability of such structures for the protection of personnel.

Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to personnel shall not be permitted except when:

a. A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure: or

b. The excavation is in stable rock; or

c. A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

Sidewalks, pavements and appurtenant structure shall not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

Hazardous Conditions:

Maintain access to fire hydrants and fire alarm boxes at the work site. Hydrants, alarm boxes and standpipe connections shall be kept clear of obstructions and kept visible at all times. If visibility cannot be maintained, the Prime Contractor shall provide clearly visible signs showing the location of the fire hydrant, fire alarm box, or standpipe connection.

Existing sprinkler systems are not to be shut down, restored, disconnected, or modified without authorization by Contractor. Sprinkler pipes are not to be used as supports or as grounds for welding equipment.

No open flames, welding, cutting, open electrical equipment, or other spark-producing equipment will be operated within the site or buildings without proper precautions. The Prime Contractor shall bear total responsibility for ensuring that proper precautions are taken.

Control at all times any fumes and/or vapors emitted by material used so as not to create a health hazard, interfere with, or be noticeable by Owner, Contractor or other Prime Contractor Personnel.

Prime Contractor shall control dust in such a manner so as to not cause an impact or interfere with other work, systems, or operations.

Prime Contractor will be responsible for insuring that all open holes, open ledges, etc. are protected from accidental entry by providing physical barriers in accordance with OSHA and Cal/OSHA standards.

E. Sub Paragraph 4.9.8 shall be added to read as follows:

4.9.8 Protection and Safeguarding the Work. Prime Contractor shall provide such lights, barricades, guardrails, posted signs, and other protective measures as may be required for the safe operation of the work or as directed by governing authorities.

F. Sub Paragraph 4.9.9 shall be added to read as The Attached "Safety Provisions":

4.9.10.10 Work Area: Prime Contractor personnel are permitted only in the specific areas where their work is being done; travel through other parts of the building and site is prohibited except as necessary to reach the work site. Use of Project Manager's office, office equipment and toilet is prohibited. The project site will have limited space available for storage of materials. The Prime Contractor and Project Manager's representative will prearrange all construction areas, storage areas, etc. prior to start of work.

4.9.10.17 Fork Lifts. Hand Jacks and Construction Equipment:
Under no circumstances should anyone other than a properly trained and certified person operate a forklift. Drivers must be sure that there is clear visibility in all directions before driving. The riding on equipment except in the seat provided by the manufacturer is strictly prohibited.

4.9.10.18 Project Manager Machinery & Equipment:
The Prime Contractor shall not use Project Manager machinery, equipment or tools. The Prime Contractor must supply all such items necessary to complete the job.

4.9.10.25 Flammable Material:
No flammables shall be stored or left unattended in any of the buildings or structures.

4.9.10.26 Electrical Equipment:
All electrical equipment used is to be a type appropriate to the hazard classification of the area where work is to be performed and compiling with all applicable governmental standards and Project Manager's maintenance procedures.

G. Sub Paragraph 4.11.1 shall be added to read as follows:

4.11.1 Storage of Materials

a. Project Manager will assign to Prime Contractor allowable areas for the storage or materials and equipment. Prime Contractor shall keep his materials and equipment strictly with the limits and areas assigned by Project Manager.

b. Materials shall be stored so as to cause no obstruction and shall be stored off sidewalks, roadways and underground services and utilities. Prime Contractor shall be responsible for protecting his materials and equipment inside secured and locked storage containers.

H. Sub Paragraph 4.12.1 shall be added to read as follows:

4.12.1 Removal of Surplus Materials and Waste. At the end of each work day, Prime Contractor shall remove all equipment, surplus materials, construction debris, waste and rubbish of every sort, and leave the premises in a clean, neat and orderly condition ready to be put to their intended use.

ARTICLE 6: INSURANCE, INDEMITY, BONDS

A. Sub Paragraph 6.3.1 shall be added to read as follows:

6.3.1 Builder's Risk "All-Risk" Insurance. Builder's Risk Insurance covering loss or damage to materials and equipment furnished by Owner that are to be incorporated into the completed facility shall be provided by Owner. Each Prime Contractor shall be responsible both for indemnity against any and all loss related to Prime Contractors acts or omissions and other insurable risks as well as for the payment of the applicable deductible $10,000.00 for each loss to the project and such materials or equipment which are in the care, custody and control of the Prime Contractor.

B. Sub Paragraph 6.9.1 shall be added to read as follows:

6.9.1 Payment Bond and Performance Bond

a. Unless otherwise specified in any Special Conditions, Contractor shall furnish a Performance Bond, and for any contract of $25,000 or more, a Payment Bond, each in an amount equal to 100 percent of the price stated in the Contract Documents. All bonds shall be provided by a corporate surety admitted in California. Personal sureties and unregistered sureties are unacceptable. The Performance Bond shall remain in full force and effect through the guarantee period as specified in the Contract Documents and through such extended period as permissible to cover latent conditions.

b. The Prime Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising there under. Bonds may be obtained through the Prime Contractor's usual source and the cost thereof shall be included in the Contract Sum. The amount (penal sum) of each bond shall be equal to 100 percent of the Contract Sum.

c. The Prime Contractor shall deliver the required bonds to the Owner via the Project Manager not later than ten (10) days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Prime Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

d. The Prime Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix a certified and current copy of the power of attorney to each of the bonds.

C. Paragraph 6.10 shall be added to read as follows:

6.10 Insurance Coverages, Limits and Endorsements Before any Work is performed under this AGREEMENT, Prime Contractor shall, at its sole cost, obtain and maintain in force the following insurance coverages:

a. Worker's Compensation Insurance, including occupational illness or disease coverage, or other similar social insurance in accordance with the laws of the nation, state, territory or province exercising jurisdiction over the employee and Employer's Liability Insurance with a minimum limit of $1,000,000 per occurrence. Prime Contractor shall obtain a waiver of subrogation in favor of Project Manager, its affiliates and Owner with respect to losses arising out of or in connection with the Work.

b. Commercial General Liability Insurance, including Contractual Liability, Product and Completed Operations Liability, and Broad Form Property Damage Liability coverages with a minimum combined single limit of $1,000,000 per occurrence. Such insurance shall protect against losses arising out of explosion, collapse or underground hazards. The policy shall be endorsed to name Project Manager, its affiliates and Owner, as additional insureds and Prime Contractor shall provide Project Manager with endorsement form CG 2010 dated 11-85 indicating such endorsement. Prime Contractor shall obtain a waiver of subrogation in favor of Project Manager, its affiliates and Owner with respect to losses arising out of or in connection with the Work.

c. Automobile Liability Insurance covering use of all owned, non-owned and hired automobiles with a minimum combined single limit of $1,000,000 per occurrence for bodily injury and property damage liability. This policy shall be endorsed to name Project Manager, its affiliates and Owner as additional insureds.

d. Tools and Equipment Insurance covering physical damage to or loss of all major tools and equipment, office furniture and equipment, and vehicles for which Prime Contractor is responsible throughout the course of the Work.

The foregoing insurance coverages shall be primary and non-contributing with respect to any other insurance or self-insurance, which may be maintained by Project Manager or Owner. Prime Contractor's Commercial General Liability and Automobile Liability Insurance policies shall contain a Cross-Liability or Severability of interest clause. Prime Contractor shall cause its insurance underwriters to issue Certificates of Insurance satisfactory in form to Project Manager (ACCORD form or equivalent) evidencing that the coverages, coverage extensions, policy endorsements required under this AGREEMENT are maintained in force and that not less than 30 days written notice will be given to Project Manager prior to any material modification or cancellation of the policies. At Project Manager's request, Prime Contractor shall provide Project Manager certified copies of each policy, pursuant to the terms of this AGREEMENT, affording insurance to Project Manager, Prime Contractor and Owner.

Term: The combined Single Limits Commercial General Liability Insurance, Automobile Liability Insurance, Workers' Compensation Insurance, and Endorsements shall be maintained by Prime Contractor for the period from execution of this AGREEMENT until expiration of the Prime Contractor's guarantee / warranty period.

ARTICLE 7: CONTRACT TIME

A. Sub Paragraph 7.5.1 shall be added to read as follows:

7.5.1 Liquidated Damages. Prior to bidding and as part of the bid Package, Project Manager shall establish a master CPM schedule (the "Construction Schedule") for completion of the Work of all Prime Contractors to meet the final completion date of the entire Project required by Owner. The Construction Schedule shall establish the following:

1. The overall Project final completion date required by Owner;

2. Project phases and corresponding completion dates to meet the overall Project final completion date;

3. Milestone dates for Prime Contractors' incremental activities within the Construction Schedule, including but not limited to Submittals, Tasks and Closeout Documents.

Prime Contractor, and the Prime Contractor's surety, if any, shall be liable for and shall pay Owner as and for liquidated damages and not as penalty the sum of **as stated in the Bid Package** per calendar day for Prime Contractor's failure to meet (1) the overall Project completion date, (2) the date for completing work on any phase of the Project and (3) the milestone dates for incremental activities established by the Construction Schedule. The liquidated damages shall be assessed for Prime Contractor's failure to meet the above dates until all of Prime Contractor's Work is substantially completed and substantial completion is established by Project Manager and Owner's Architect / Engineer.

ARTICLE 8: CONTRACT PRICE

A. Sub Paragraph 8.3.1.1 shall be added to read as follows:

8.3.1.1 Payments. At least fifteen days before the date established for each progress payment, the Project Manager shall submit to the Prime Contractor a Draw Request (G703) on which both Project Manager and Contractor shall agree as to the appropriate payment for work completed in accordance with the Schedule of Values. Upon agreement of Draw Request (G703), Project Manager shall submit to the Prime Contractor Application for Certification of Payment (G702). Such application shall be notarized if required.

ARTICLE 9: CHANGES

A. Add to the end of Paragraph 9.4.1.4.4 to read as follows:

9.4.1.4.4 Changes in the Work & Markup. For authorized and approved changes in the scope of Work, the limit of the combined overhead and profit for work performed by Prime Contractor and/or its Subcontractors and/or Sub-Subcontractors shall be fifteen percent (15%) of the total cost of all work and all materials identified in each change order regardless whether the work is performed by Prime Contractor's own forces or the work forces of any Subcontractors or Sub-Subcontractors.

Cost to which overhead and profit is to be applied shall be determined in accordance with Paragraph 9.4.1.4.4 of the General Conditions.

In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs, including labor, materials and Subcontracts and Sub-Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts or Sub-Subcontracts, they shall also be itemized. In no case will a change involving over $200.00 be approved without such itemization.

Reference section 01028 – Change Order Procedures for further information.

END OF SECTION

STATE OF CALIFORNIA DEPARTMENT OF GENERAL SERVICES

DIVISION OF THE STATE ARCHITECT

FORM DSA-103

INCREMENT #

DSA File No.: 19-C11

Application No.: 03-112201

Date Submitted:

Revised:

Revised:

Statement of Structural Tests and Special Inspections

School Name	Antelope Valley College	District	Antelope Valley Community College District

IMPORTANT: This form is only a summary list of the tests and special inspections required on the project. The actual tests and inspections must be performed as detailed on the approved plans and specifications. The project inspector is responsible for providing inspection of all facets of construction, including, but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A.

INSTRUCTIONS: Click a plus sign (+) before any category or subcategory to reveal additional tests and special inspections. An "X" before a listed test or inspection indicates it is a mandatory requirement. A shaded box indicates a test or special inspection that may be required, depending on the scope of the construction and other issues. A shaded box can be clicked indicating your selection of that test. **Note**: A minus (-) on a category or subcategory heading indicates that it can be collapsed. However, any selections you may have made will be cleared. Click on the "COMPILE" button to show only the tests finally selected. For more information on use of this form, see DSA-103.INSTR.

COMPILE

Note: All references to the California Building Code (CBC) are to the 2007 edition.

REQUIRED?	TEST OR SECIAL INSPECTION	TYPE **	PERFORMED BY **	CODE REFERENCE AND NOTES
-	**SOILS**			
	1. General:	2007 CBC, Table 1704A.7		
X	a. Verify that: • site has been prepared properly prior to placement of controlled fill and/or excavations for foundations, • foundation excavations are extended to proper depth and have reached proper material, and • materials below footings are adequate to achieve the design bearing capacity.	Periodic	GE*	* By geotechnical engineer or qualified representative.
-	**2. Compacted Fills:**	2007 CBC, Table 1704A.7		
X	a. Perform qualification testing of controlled fill materials	Test	Lab*	* Under the supervision of a geotechnical engineer
X	b. Verify use of proper materials and inspect lift thicknesses, placement, and compaction during placement of controlled fill	Continuous	GE*	* By geotechnical engineer or qualified representative.
X	c. Test compaction of controlled fill.	Test	Lab*	* Under the supervision of the geotechnical engineer.
-	**4. Pier Foundations:**	2007 CBC, Table 1704A.9		
X	a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	GE*	* By geotechnical engineer or qualified representative
X	b. Verify locations of piers.	Continuous	Project	
X	c. Confirm pier diameters, plumbness, bell diameters (if applicable), lengths, and embedment into bedrock (if applicable).	Continuous	GE*	* By geotechnical engineer or qualified representative.
X	e. Concrete piers.	Provide tests and inspections per CONCRETE section below.		
-	**5. Retaining Walls:**			
X	a. Placement of soil reinforcement, drainage devices, and backfill.	Continuous	GE*	* Placement, compaction and inspection of backfill per Section 1704A.7.1 for fills supporting foundations (see Section 2 above).
X	c. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
-	**CONCRETE**	(based on 2007 CBC, Table 1704A.4)		
-	**7. Cast in Place Concrete**			
	Material Verification and Testing:			
X	a. Verify use of required design mix.	Periodic	*	* To be performed by batch-plant special inspector and project inspector.
X	b. Test reinforcing steel.	Test	Lab	1916A.2; (see 1916A.4 for waiver). ASTM A370-06.

Statement of Structural Tests and Special Inspections

X	c. Perform slump test, determine the temperature of the concrete, and (where required) perform air content test	Test	Lab	ASTM C172-04, ASTM C31-98.
X	d. Test concrete (compression test).	Test	Lab	1905A.6, ASTM C39-05.
	Inspection:			
X	e. Inspect batching of concrete.	Continuous	Special	1704A.4.3; (see 1704A.4.4 for waiver)
X	f. Inspect placement of formwork, reinforcing steel, embedded items and concrete. Inspect curing and form removal.	Continuous	Project*	* May be performed by a special inspector when specifically approved by DSA.
X	g. Welding of reinforcing steel	Provide special inspection per STEEL, category 18.4, below.		
-	11. Post-Installed Anchors:			
X	a. Inspect installation of post-installed anchors	Continuous	Project	Table 1704A.4
X	b. Test post-installed anchors.	Test	Lab	1916A.8
-	12. Other Concrete:			
-	**MASONRY**	(based on 2007 CBC, Table 1704A.5.3)		
-	13. Structural Masonry: Check one: f'm = 1500psi	X	2500psi	
	Material Verification and testing:			
X	a. Test reinforcing steel	Test	Lab	1916A.2, ASTM A370-06.
X	b. Test masonry units, mortar and grout (unit strength method).	Test	Lab	1708A.1.4, 2105A.2.2.1 and 2105A.5, ASTM C140-06, C1586-05 & C1019-03.
X	c. Test masonry prisms (prism test method).	Test	Lab	2105A.2.2.2, ASTM C1314-03.
X	d. Verify proportions of site-prepared mortar and grout and/or verify certification of premixed mortar and plant batched grout.	Periodic	Special	ASTM C780-06.
X	e. Test core-drilled samples in compression and shear	Test	Lab	2105A.4.
	Inspection:			
X	f. Inspect preparation of prisms.	Continuous	Special	ASTM C1314-03
X	g. Verify size, location and condition of all dowels, construction supporting masonry, etc.	Periodic	Special	
X	h. Verify specified size, grade, and type of reinforcement.	Periodic	Special	
X	i. Welding of reinforcing steel.	Provide special inspection per STEEL, category 19.2(d) and 19.2(e) and/or 19.3(g) and 19.3 (h) below.		
X	j. Inspect placement of reinforcement, connectors, masonry units and construction of mortar joints	Periodic	Special	
X	k. Verify protection of masonry during cold weather (temperature below 40 degrees F) or hot weather (temperature above 90 degrees).	Periodic	Special	
X	l. Inspect type, size, and location of anchors and all other items to be embedded in masonry including other details of anchorage of masonry to structural members, frames and other construction.	Continuous	Special	
X	m. Inspect grout space prior to grouting and placement of grout	Continuous	Special	
-	**STEEL**	(based on 2007 CBC, Table 1704A.3)		
-	17. Structural Steel			
	Material Verification:			
X	a. Verify that all materials are appropriately marked and that: • Mill certificates indicate material properties that comply with requirements, • Material sizes, types and grades comply with requirements.	Periodic	*	* By special inspector when performed off-site; by project inspector for steel shipped directly to project site without welding or fabrication.
X	b. Test unidentified materials	Test	Lab	2212A.1, ASTM A370-06.

STATE OF CALIFORNIA DEPARTMENT OF GENERAL SERVICES

DIVISION OF THE STATE ARCHITECT

FORM DSA-103

INCREMENT #

DSA File No.: 19-C11

Application No.: 03-112202

Date Submitted:

Revised:

Revised:

Statement of Structural Tests and Special Inspections

X	c. Examine seam welds of structural tubes and pipes	Periodic	Special*	* See DSA IR 17-3.
	Inspection:			
X	d. Verify member locations, bracing and all details constructed in the field.	Continuous	Project	
X	e. Verify stiffener locations, connection tab locations and all construction details fabricated in the shop.	Periodic	Special	
-	**18. High Strength Bolts:**			
	Material Verification of High-Strength Bolts, Nuts, and Washers:			
X	a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA approved documents.	Periodic	Special	
X	b. Test high-strength bolts, nuts and washers.	Test	Lab	2212A.2, ASTM F606-02, A370-07
	Inspection of High-Strength Bolt Installation:			
X	c. Bearing-type ("snug tight") connections.	Periodic	Special*	* May be performed by the project inspector when approved by DSA.
X	d. Slip-critical connections.	*	Special	* "Continuous" or "Periodic" depends on the tightening method used, see 1704A.3.3.
-	**19. Welding:**			DSA IR 17-3, AWS D1.1-06.
	Verification of Materials, Equipment, Welders, etc:			
X	a. Verify weld filler material identification markings per AWS designation listed on the DSA approved documents and the WPS.	Periodic	Special	
X	b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	Special	
X	c. Verify WPS, welder qualifications and equipment.	Periodic	Special	See DSA IR 17-3
-	**19.1 Shop Welding:**			
X	a. Inspect groove, multi-pass, and fillet welds > 5/16"	Continuous	Special	Per AISC 360 (and AISC 341 as applicable).
X	b. Inspect single-pass fillet welds ≤ 5/16"	Periodic	Special	Per AISC 360 (and AISC 341 as applicable).
X	c. Inspect welding of stairs and railing systems.	Periodic	Special	Per AISC 360 (and AISC 341 as applicable).
X	d. Verification of reinforcing steel weldability	Periodic	Special	1704A.4.2 Verifies carbon equivalent reported on mill certificates.
X	e. Inspect welding of reinforcing steel.	Continuous	Special	Table 1704A.3 Item 5b, AWS D1.4-05
-	**19.2 Field Welding:**			
X	a. Inspect groove, multi-pass, and fillet welds > 5/16"	Continuous	Special	Per AISC 360 (and AISC 341 as applicable).
X	b. Inspect single-pass fillet welds ≤ 5/16"	Periodic	Special	Per AISC 360 (and AISC 341 as applicable)
X	c. Inspect end-welded studs (ASTM A-108) installation (including bend test)	Periodic	Special	Per AISC 360 (and AISC 341 as applicable).
X	d. Inspect floor and roof deck welds	Periodic	Special	Per AISC 360 (and AISC 341 as applicable)
X	e. Inspect welding of cold-formed steel	Periodic	Special*	* May be performed by the project inspector when approved by DSA.
X	f. Inspect welding of stairs and railing systems	Periodic	Special*	* May be performed by the project inspector when approved by DSA.
X	g. Verification of reinforcing steel weldability	Periodic	Special	1704A.4.2 Verifies carbon equivalent reported on mill certificates.
X	h. Inspect welding of reinforcing steel.	Continuous	Special	Table 1704A.3 Item 5b, AWS D1.4-05
-	**19.3 Non-destructive Testing:**			
X	a. Non-destructive testing.	Test	Lab	AWS D1.1-06, ANSI/ASNT CP-189 & SNT-TC-1A, ASTM E543-04.
-	**23. Other Steel:**			
X	**Quality assurance and acceptance for 'SLRS'**	Test	Lab	AISC 341, Appendix Q
X	**Quality assurance and acceptance for 'SLRS'**	Continuous	Special	AISC 341, Appendix Q
X	**Exterior metal studs and anchorage**	Periodic	Special*	*May be performed by the project inspector when approved by DSA

Statement of Structural Tests and Special Inspections

+	WOOD
+	OTHER

STATE OF CALIFORNIA DEPARTMENT OF GENERAL SERVICES

DIVISION OF THE STATE ARCHITECT

FORM DSA-103

INCREMENT #

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Statement of Structural Tests and Special Inspections

Summary of Verified Reports Required:

Note: Project inspector, contractor, architect and engineer verified reports are always required (Form DSA-6 or DSA 6A/E as applicable).

1 Soils Testing and Inspection: Geotechnical Verified Report - Form DSA-293
2 All Structural Testing: Laboratory Verified Report - Form DSA-291
3 Concrete Batch Plant Inspection: Special Inspection Verified Report - Form DSA-292
4 Masonry Inspection: Special Inspection Verified Report - Form DSA-292
5 Shop Welding Inspection: Special Inspection Verified Report - Form DSA-292
6 Field Welding Inspection: Special Inspection Verified Report - Form DSA-292
7 HS Bolt Installation Inspection: Special Inspection Verified Report - Form DSA-292

KEY to Columns

** Type -	** Performed By -
Continuous – Indicates that a continuous special inspection is required	GE – Indicates that the special inspection is to be performed by a registered geotechnical engineer or his or her authorized representative
Periodic – Indicates that a periodic special inspection is required	Lab – Indicates that the test is to be performed by a testing laboratory accepted in the DSA laboratory Evaluation and Acceptance (LEA) Program
Test – Indicates that a test is required	Project – Indicates that the special inspection is to be performed by the project inspector
	Special – Indicates that the special inspection is to be performed by a special inspector
(Note: The difference between "tests" and "special inspections" is addressed in IR 17-8)	(Note that reassignment of responsibility is permitted only with the written approval of DSA)

Jim Pan

Name of Architect or Engineer in general responsible charge

Aldrin Orue, S.E.

Name of Structural Engineer (When structural design has been delegated)

Signature of Architect or Structural Engineer — Date 10/9/09

PRINT

IDENTIFICATION STAMP
DIV OF THE STATE ARCHITECT
APP. #

AC N/A F/LS N/A SS

DATE

DOCUMENT 00320
GEOTECHNICAL DATA

A. A Geotechnical investigation was conducted at the site. The results of the investigation are found in the following document:

1. Title: Geotechnical Engineering Report, Proposed Health and Science Building, Antelope Valley College, Avenue K and 30th Street West, Lancaster, Los Angeles County, California.

2. Prepared by: Earth Systems, Southern California, 1024 West Avenue M-4, Palmdale, CA 93551, (661) 948-7538.

3. File No.: PL-07131-01.

4. Date: February 28, 2008.

B. A copy of the document is attached, referenced as Appendix A.

C. The document is obtained only for the Architect's use in design and is not a part of the Contract Documents. Neither the District nor the Architect guarantees the information contained in the report.

D. Reports and log of borings are available for the Contractor's information but are not a warranty of subsurface conditions or continuity between soil borings.

END OF DOCUMENT

Z:\SPECS\public\(1) CSI\WORKFILES\ANTELOPE VALLEY COLLEGE\HEALTH AND SCIENCE\(8) 07 22 09 - DSA BACKCHECK\00320 geo.doc

GEOTECHNICAL ENGINEERING REPORT

Proposed Health and Science Building
Antelope Valley College
Avenue K and 30th Street West
Lancaster, Los Angeles County, California
PL-07131-01

Prepared For

ANTELOPE VALLEY COMMUNITY COLLEGE DISTRICT

February 28, 2008

Prepared By

Earth Systems
Southern California
1024 West Avenue M-4
Palmdale, California 93551
(661) 948-7538
FAX (661) 948-7963

SECTION 01010 - SUMMARY OF THE WORK

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and Division-1 Specification sections, apply to work of this section.

SUMMARY:

Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.

PROJECT/WORK IDENTIFICATION:

General: Project Identification: **AVCCD – Health & Science Building – 05-157**
3041 West Avenue Lancaster, CA 93536-5426

Project Summary: The Project consists of a new two story 104,000 GSF Facility. The new teaching/Laboratory facility consist of classrooms, lecture halls, wet and dry laboratories, a Planetarium with observation deck, food service facility with open seating areas. The building architecture consists of standing seam and built-up roofing system, GFRC exterior curtain walls and windows, reinforced concrete foundation and structure steel super structure. The vertical circulation within the facility is serviced by a series of interior and exterior stair wells/cases and three vertical transportation cars.

Prime contracts, in the context used in this Section, are separate contracts that represent significant elements of work that are performed concurrently with and in close coordination with work performed on the project under other prime contracts. Prime contracts for this project include the following:

Contract Documents indicate the work of each prime Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract documents include, but are not necessarily limited to the following:

Site conditions and restrictions on use of the site.
Work to be performed subsequent to work under these prime Contracts.

Definition of the extent of Prime Contract Work: The extent of the work of each prime Contract is indicated in the Contract Documents. General names and terminology on the drawings and in the specifications controls the determination of which prime Contract includes a specific element of required work, except where no other more specific definition is contained in the Contract Documents.

Local custom and trade union jurisdictional settlements do not control the scope-of-work in each prime Contract. When a potential jurisdictional dispute or similar potential work interruption is first identified or threatened, affected parties of the prime Contracts shall promptly negotiate a reasonable settlement which will avoid or minimize such pending interruption and its delays or losses.

If it becomes necessary to refer to the contract documents to determine which prime Contract includes a specific element of required work, begin by referring to the prime

Contracts, themselves; then, if a determination cannot be made from the prime Contracts, refer, in the following order, to the Supplementary Conditions, this section of the Specifications, followed by the other Division-I sections and finally with the Drawings and other Sections of the Specifications.

Summary by References: Work of the prime Contracts can be summarized by reference to the Prime Contractors, General Conditions, Supplementary Conditions, Specification sections, Drawings, Addenda and Modifications to Contract Documents issued subsequent to the initial printing of this Project Manual and including but not necessarily limited to printed material referenced by any of these. It is recognized that the work of the prime Contracts is unavoidably affected or influenced by governing regulations, natural phenomenon, including weather conditions, and other forces outside the contract documents.

Abbreviated Written Summary: Briefly, and without force and effect upon the contract documents, the work of the prime Contracts can be summarized as follows:

The site work involves the following aspects of work: selective demolition, site clearing, earthwork for parking lot and future building pads, a/c paving and stripping, storm drain system, fire and sewer systems, utility services for parking lot and future buildings, concrete paving, sidewalks, masonry retaining walls , main line and sleeving for landscaping irrigation system, electrical telecom and security systems.

PRIME CONTRACTORS USE OF PREMISES:

General: During the entire construction period the Prime Contractors jointly shall have the exclusive use of the premises for construction operations, including full use of the site.

Use of the Site: Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.

Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary obtain and pay for such storage off-site.

Lock automotive type vehicles such as passenger cars and trucks and other types of mechanized and motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place.

COORDINATION:

General: The Project Manager shall coordinate the entire work of the project, including preparation of a general construction schedule and shall control site utilization from the beginning of construction activity through project close-out and warranty periods.

MISCELLANEOUS PROVISIONS:

Performance Requirements for Completed Work:

General: The Contract Documents indicate the intended occupancy and utilization of the site and building. Compliance with governing regulations is intended and required for the work. In addition to the requirement that every element of the work comply with applicable requirements of the contract documents, it is also required that:

Prior to the time of substantial completion inspect, test the work as necessary to ensure that the overall performance is in compliance with the Contract Documents.

Approximately 80 days after the Owner's occupancy and utilization of the project has achieved the 85 percent level, but not later than 300 days after the date of substantial completion, each Prime Contractor is required to return to the project and to re-inspect the work. Submit a report of results to the Owner. Instruct the Owner's operating personnel on specific operational requirements needed to maintain compliance. Report to the Owner the performances of completed-and-adjusted work.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01010
Rev: 4/13/07

SECTION 01028 -CHANGE ORDER PROCEDURE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Delivery, Storage, and Handling.

C. Documentation of change in Contract Sum and Contract Time.

D. Change procedures.

E. Construction Change Authorization.

F. Stipulated Sum change order.

G. Unit Price Change Order.

H. Time and Material Change Order.

I. Execution of Change Orders.

J. Correlation of Contractor submittals.

SECTION 01028 - CHANGE ORDER PROCEDURE

PART 1 – GENERAL

SECTION INCLUDES

Submittals.
Delivery, Storage, and Handling.
Documentation of change in Contract Sum and Contract Time.
Change procedures.
Construction Change Authorization.
Stipulated Sum change order.
Unit Price Change Order.
Time and Material Change Order.
Execution of Change Orders.
DSA Addenda and Change Orders.
Correlation of Contractor submittals.

1.02 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 0 and Division 1 Specification Sections, apply to work of this Section.

1.03 SUBMITTALS

A. Submit name of the individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Maintain a "Register of proposal requests, supplemental instructions, and Change Orders" at the job site, accurately reflecting current status of all pertinent data.

B. Make the Register available to the Architect for review at his request.

1.05 DOCUMENTATION OF CHANGE IN CONTRACT SUM AND CONTRACT TIME

A. Maintain detailed records of work done on a time and material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.

B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.

C. On request, provide additional data to support computations:

1. Quantities of products, labor, and equipment.

2. Taxes, insurance and bonds.

3. Overhead and profit.

4. Justification for any change in Contract Time.

5. Credit for deletions from Contract, similarly documented.

D. Support each claim for additional costs, and for work done on a time and material basis, with additional information:

1. Origin and date of claim.

2. Dates and times work was performed, and by whom.

3. Time records and wage rates paid.

4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.06 CHANGE PROCEDURES

A. If any bidder is in doubt as to the true meaning of any part of the Contract Documents, or finds discrepancies in or omissions from the drawings and specifications, a written request for information (RFI) or correction shall be submitted to the Architect. The Prime Contractor submitting the written request shall be responsible for its prompt delivery. Any interpretation or correction of the Contract Documents will be made only by addendum issued by the Architect, and a copy of any addendum will be hand-delivered, mailed, or faxed to each bidder known to have received a set of the Contract Documents. No person is authorized to make any oral interpretation of any provision in the Contract Documents, nor shall any oral interpretation be binding on the Owner. If there are discrepancies on drawings, plans,orplans, or specifications, or conflicts between drawings, plans, specifications, terms, or conditions, the interpretation of the Architect shall prevail. Prime Contractor shall become familiar with the plans, specifications, and drawings.

B. The Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the General Conditions Article 9: Changes and Ancillary Supplemental General Conditions by issuing an Instruction Bulletin (IB). A period of 3 working days will be provided to the Contractor to register his complaint in writing for the IB item. Failure to register a complaint within the 3 day period will result in acknowledgment by the Contractor that the minor change in the Work has no cost or time adjustment and that no claim will be submitted to the Owner.

C. The Architect may issue a Proposed Change Order (PCO), as authorized by General Conditions Article 9: Changes and Ancillary Supplemental General Conditions which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid and an estimated amount of the change in construction cost. Contractor will prepare and submit an estimate within 7 days. Failure by the Prime Contractor to submit an estimate within the stipulated 7 day time will result in the Architect's estimated amount of the change to the Contract sum or time allowed to complete construction becoming the approved amounts, and acknowledgment by the Contractor that no claim will be submitted to the Owner.

D. The Prime Contractor may propose a change for items other than previously addressed supplemental instructions by submitting a Request for Information to the Construction Manager which will be returned to the Contractor within 15 days. If the Construction Manager's reply necessitates a change in the contract sum or time, the Contractor shall submit within 15 days a PCO to the Construction Manager. Failure by the Prime Contractor to submit a PCO within the stipulated 14 day period will void the item from being considered at any time during construction and acknowledgment by the Prime Contractor that no claim will be submitted to the Owner. The change request shall describe the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement

describing the effect on Work by separate or other contractors. No additional compensation or time will be considered for the submitted claims at any future date. Document any requested substitutions in accordance with Section 01631, ", "Products and Substitutions".

1.07 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Manager may issue a document in the field, signed by the Owner, instructing the Contractor to proceed with a change in the Work, to expedite work and avoid or minimize delays in the work.

B. The document will describe changes in the Work, and will designate method of determining any change in Contract Sum or Contract Time.

C. Promptly execute the change in Work. Submit final costs for Work involved and/or change in Contract Time for inclusion in a subsequent Change Order.

1.08 STIPULATED SUM CHANGE ORDER

Based on PCO and Prime Contractor's fixed price quotation for a Change Order, and in accordance with Article 9.4.1.1, as approved by Architect, Construction Manager and Owner.

1.09 UNIT PRICE CHANGE ORDER

A. For predetermined unit prices and quantities, the Change Order will be executed on a fixed unit price basis.

B. For unit costs or quantities of units of work which are not predetermined, execute Work under a Construction Change Authorization.

C. Changes in Contract Sum or Contract Time will be computed as specified for Time and Material Change Order.

1.10 TIME AND MATERIAL CHANGE ORDER

A. Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract, with appropriate Contractor costs as determined according to "Changes and Extra Work" of the General Conditions.

B. Architect will determine the change allowable in Contract Sum and Contract Time as provided in the Contract Documents.

C. Maintain detailed records of work done on Time and Material basis.

D. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

Allowable Costs.. The term "Allowable Costs" means, and is limited to, the costs listed in this Paragraph 1.11 and that are not prohibited under Paragraph 1.12, below:

Labor. Straight-time wages and salaries, and overtime wages and salaries specifically authorized by District or College Project Manager in writing, for employees employed at the Site, or at fabrication sites off the Site, in the direct performance of the Extra Work or that would have been incurred in the direct performance of the Deleted Work, based on the actual cost for wages prevailing locally for each craft or type of the workers at the time the Extra Work is done or the Deleted Work is ordered eliminated. Labor costs for equipment operators and helpers involved in the performance of Extra Work shall be allowed only when such costs are not included in the invoice for equipment rental. The use of labor classification which would increase the Allowable Costs for Extra Work will not be permitted unless Contractor establishes the necessity for such additional costs. Overtime wages and salaries shall only constitute an Allowable Cost to the extent permitted by the Contract Documents and only as specifically authorized by College Project Manager in writing setting forth the amount of overtime anticipated, which amount shall be deemed the maximum amount of overtime reimbursable as an Allowable Cost.

Benefits. Net actual employer costs of payroll taxes (FICA, Medicare, SUTA, FUTA), insurance (as adjusted for experience modifiers, premium discounts, dividends, rebates, expense constants, assigned risk pool costs, net cost reductions due to policies with deductibles for self-insured losses, assigned risk rebates, or the like), health and welfare, pension, vacation, apprenticeship funds and benefits required by the Project Labor Agreement (if applicable), Labor Compliance Program (if applicable) or lawful collective bargaining agreements for employees on straight-time wages or salaries, and on overtime wages and salaries specifically authorized by College Project Manager in writing, for employees employed at the Site, or at fabrication sites off the Site. Contractor shall reduce its standard payroll tax percentages to properly reflect the effective cost reduction due to the estimated impact of the annual maximum wages subject to payroll taxes. An estimated percentage for labor burden may be used for the pricing of Compensable Changes; however, the percentage will be subject to verification by audit at Final Completion and the amount of any Change Order or Unilateral Change Order shall be subject to adjustment if its determined that the actual labor burden percentage is less than the estimated percentage used. Contractor shall provide if requested by District as a condition of its right to payment, a breakdown of the calculation by Contractor and the Subcontractors of amounts charged for labor benefits and burden, which information may be used to establish billing rates for Compensable Changes.

Materials, Consumables. Costs of materials and consumable items furnished or incorporated into the Work. Except for costs that have been previously agreed to between District and a District Materials Vendor in a District Materials Contract that has been assigned to Contractor such costs for Extra Work shall be at the lowest price available to Contractor but in no event shall such costs exceed competitive costs obtainable from other subcontractors, suppliers, manufacturers and distributors in the general vicinity of the Site.

Taxes. Sales taxes on the costs of the materials and consumable items described in Subparagraph 1.11-C, above.

Tool, Equipment Rental. Rental charges for necessary machinery and equipment, whether owned or hired, as authorized in writing by District or College Project Manager, exclusive

of hand tools. Regardless of ownership, such rental charges for Extra Work shall not exceed the lower of: (1) listed rates prevailing locally at equipment rental agencies or distributors at the time the Extra Work is performed; or (2) current U.S. Army Corp of Engineers scheduled charges for the area of the Project. Contractor shall attach a copy of the rate schedule to the daily reports and other documentation required by Paragraph 1.10, above. No charge shall be allowed or credit required for use of tools which have a replacement value of One Hundred Dollars ($100) or less. The allowable rental rates shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, loading, transportation, repairs and maintenance of any kind, depreciation, storage, insurance and all incidentals. If equipment used for Extra Work is used intermittently and, when not in use, could be returned to its rental source at less expense to District than holding it at the Site, it shall be returned, unless Contractor elects to keep it at the Site at no expense to District. All equipment shall be acceptable to College Project Manager, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and manufacturer's approved modifications shall be used to classify equipment, and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

Royalties, Permits. Additional or saved costs of royalties and permits .

Costs Not Allowed. Allowable Costs shall not include any of the following:

A. superintendent(s);
B. assistant superintendent(s);
C. project engineer(s);
D. project manager(s);
E. scheduler(s);
F. estimator(s);
G. drafting or detailing;
H. vehicles not dedicated solely to the performance of the Work;
I. small tools with a replacement value not exceeding One Hundred Dollars ($100);
J. office expenses, including staff, materials and supplies;
K. on-Site and off-Site trailer and storage rental and expenses;
L. Site fencing not added solely due to the performance of Extra Work;
M. utilities, including gas, electric, sewer, water, telephone, telefax and copier equipment;
N. computer and data-processing personnel, equipment and software;
O. federal, state or local business income and franchise taxes;
P. costs (other than the liquidated damages for Compensable Delay permitted by the Construction Contract) arising from or related to Delay or acceleration to overcome delay, whether incurred by Contractor or the Subcontractors, of any Tier;

Allowable Markups. Allowable Markups consist of the percentages set forth in this Paragraph that, except as otherwise stated in the Contract Documents, are to be applied to the Allowable Costs for purposes of computing permitted adjustments to the Contract Sum Payable. Allowable Markups are deemed to cover, without limitation, the following: (1) direct and indirect overhead, consumables, small tools, cleanup and profit of Contractor; (2) direct and indirect overhead, consumables, small tools, cleanup and profit of the Subcontractors, of every Tier; and (3) all costs that are not reimbursable to Contractor under Paragraph 1.12, above. Allowable Markups shall be computed and applied as follows:

Self-performed Work:

Compensable Change. With respect to a Compensable Change performed by Contractor with its own forces, the Allowable Markup shall be fifteen percent (15%) of the Allowable Costs that are added.

Deleted Work. Subject to further adjustment as provided in Article 9 of the General Conditions, with respect to Deleted Work involving Work to be performed by Contractor the District shall be entitled to a credit for Allowable Markup of eight percent (8%) of the Allowable Costs that are saved.

First-Tier Subcontractor Work:

Compensable Change. With respect to a Compensable Change performed by first-Tier Subcontractors, the Allowable Markup shall be (a) an Allowable Markup to the first-Tier Subcontractor of fifteen percent (15%) of (b) the Allowable Costs that are added for that portion of the Compensable Change performed by the first-Tier Subcontractor, plus (c) five percent (5%) on the sum of (a) and (b) as Allowable Markup to Contractor.

Deleted Work. Subject to further adjustment as in Article 9 of the General Conditions, with respect to Deleted Work involving Work to be performed by first-Tier Subcontractors District shall be entitled to a credit from the first-Tier Subcontractor of (a) eight percent (8%) of the (b) Allowable Costs saved for the portion of the Deleted Work involving Work of the first-Tier Subcontractor, and (c) an additional credit from Contractor on the sum of (a) and (b) of five percent (5%).

Lower-Tier Subcontractors' Work:

Compensable Change. With respect to a Compensable Change performed by second and all lower-Tier Subcontractors, the Allowable Markup shall be (a) an Allowable Markup to the lower-Tier Subcontractors of fifteen percent (15%) of the (b) cumulative Allowable Costs that are added for that portion of the Compensable Change performed by all lower-Tier Subcontractors, plus (c) an additional Allowable Markup on the sum of (a) and (b) of five percent (5%) for the first-Tier Subcontractor, plus (d) five percent (5%) on the sum of (a), (b) and (c) as Allowable Markup to Contractor. Under no circumstances shall the total, cumulative markup applied by all Subcontractors, of every Tier, exceed twenty-five percent (25%) for all Tiers.

Deleted Work. Subject to further adjustment as in Article 9 of the General Conditions, with respect to Deleted Work involving Work to be performed by second and any lower-Tier Subcontractors, the District shall be entitled to a cumulative credit from the lower-Tier Subcontractors of (a) eight percent (8%) of the (b) Allowable Costs for portion of the Deleted Work involving the Work of such lower-Tier Subcontractors, and (c) an additional credit from the first-Tier Subcontractor on the sum of (a) and (b) of five percent (5%), and (d) an additional credit from Contractor on the sum of (a), (b) and (c) of five percent (5%).

Review of Markups. It is Contractor's responsibility to review information submitted by Subcontractors to ensure that all markups by Subcontractors, of every Tier, comply with the requirements of the Contract Documents. Payment by District of markups that exceed Allowable Markups shall not be considered as a waiver by District of the right to repayment by Contractor of any markup charged that is in excess of Allowable Markups.

No Markup Allowed. Notwithstanding and without limitation to anything else stated in the Contract Documents, Contractor shall not be entitled to an Allowable Markup or any other amount or allowance as markup for overhead or profit on the following: (1) sums due to Contractor for Compensable Change that are based on agreed unit prices; (2) liquidated damages payable to Contractor pursuant to Section 3.4 of the Construction Contract for Compensable Delay; or (3) other amounts with respect to which the Contract Documents provide that no additional Allowable Markup shall be paid. Markup for overhead or profit on Compensable Changes that are performed by a District Materials Vendor pursuant to a District Materials Contract that has been assigned to Contractor pursuant to Section 2.5, above, shall be only permitted to be charged by the District Materials Vendor if, and if so only to the extent that, such markup is permitted under the terms of the District Materials Contract.

Net Allowable Costs. If any one Change or collection of Changes in the same or related portions of the Work or for Work covered by a single bulletin or instruction by District, College Project Manager or Design Consultant involves both additive adjustments and deductive adjustments, then the computation of amounts added or credited for Allowable Markups shall be based on the net difference between the additive items for which additional Allowable Markups is permitted and deductive items for which credits for Allowable Markups is required.

Unit Prices. Unless otherwise stated in the Contract Documents, unit prices stated in the Contract Documents or subsequently agreed upon by District and Contractor shall be deemed to include and_encompass all costs of performance, overhead and profit, including, without limitation, all Allowable Costs and Allowable Markups. If the unit price stated in the Contract Documents is based on an estimated quantity established by District in the Construction Contract and the actual quantity of such unit-priced item varies by more than 25% above or below the estimated quantity, an equitable adjustment in the Contract Sum Payable, shall be made upon demand of either District or Contractor. Such equitable adjustment shall be based solely upon any increase or decrease in Allowable Costs (without any Allowable Markups), due solely to the variation above 125% or below 75% of the estimated quantity.

Discounts. For purposes of determining Allowable Costs of a Compensable Change, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to District, and Contractor shall make provisions so that such discounts, rebates, refunds, and returns are secured.

Prompt Pricing. It is fundamental to the District's objective of controlling costs that performance of Compensable Changes on a time and materials basis of compensation and without a not-to-exceed price be limited to circumstances where it is impractical, without causing Delay to the Work, for Contractor to obtain competitive fixed or not-to-exceed prices pursuant to the regular pricing processes provided for by the Contract Documents. Contractor recognizes that prompt pricing by Contractor is critical to this objective. Accordingly, without limitation to any of District's other rights or remedies, it is agreed that if Contractor fails to timely submit a complete Change Order Request in accordance with Paragraph 1.06, above, with respect to any circumstance, event or occurrence constituting a Compensable Change that: (1) any resulting Delay to the performance of the Work (including, without limitation, the Compensable Change) shall be conclusively deemed to be an Unexcused Delay; (2) District shall have the option, exercised in its sole discretion, in lieu of exercising its rights under Paragraph 1.06, above, to unilaterally fix the amount of the adjustment to the Contract Sum Payable for such Compensable Change

based on the "estimating guide" method set forth in Subparagraph 9.4.1.2 of the General Conditions, and (3) such unilateral adjustment by District shall be final and binding upon Contractor for purpose of determining the amount of the adjustment to the Contract Sum Payable on account of such Compensable Change, without any further right or recourse on the part of Contractor for any additional compensation or adjustment to the Contract Sum Payable.

Final Payment. No Claim by Contractor for adjustment to the Contract Sum Payable shall be allowed if asserted after Final Payment.

Full Resolution. Except as otherwise stated in Paragraph 1.20, below, the signing of a Change Order by Contractor and District shall be conclusively deemed to be a full resolution, settlement and accord and satisfaction with respect to any and all Loss and Delay related to the subject matter of the Change Order including, without limitation, all rights to recovery of costs, expenses or damages for delay, disruption, hindrance, interference, extended or extraordinary (direct and indirect) overhead, unabsorbed home office overhead, multiplicity of changes, loss of productivity, labor, wage or material cost escalations, inefficiency, legal expenses, consultant costs, interest, lost profits or revenue, bond and insurance costs, changes in taxes and other similar and related Losses.

Reserved Rights. Change Orders shall be executed by Contractor without any express or implied reservation of rights by Contractor to reserve for the future the assertion of any right of recovery from District for Loss or Delay arising out of or relating to the subject matter of the Change Order. Unless specifically stated otherwise in the Change Order, execution by District of a Change Order shall not be interpreted as a waiver, release or settlement of any rights or claims that District may have for either: (1) Defective Work; (2) liquidated damages for Delay; or (3) recoupment by District (by way of withholding of funds, set off or recovery from Contractor) of amounts paid by District for costs or markups on costs that District determines, following payment of such amounts to Contractor, do not constitute reimbursable Allowable Costs or Allowable Markups under the terms of the Contract Documents.

No "Total Cost" Calculations. Contractor represents and warrants that it has the ability to generate and maintain complete and accurate cost accounting records that, if required, will reflect the actual Allowable Costs incurred or saved for multiple items of Compensable Change and, on an event-by-event basis, the effect of multiple Compensable Delays on the progress of the Work. Accordingly, Contractor agrees that all Change Order Requests and Claims shall be itemized in a manner that, with reasonable mathematical certainty and without reliance upon probabilities or inferences, segregates on a discrete, event-by-event basis the direct, actual Allowable Costs for which reimbursement is permitted and that are associated with each individual Compensable Change or Compensable Delay. Change Order Requests and Claims shall not be based, in whole or in part, upon any methodology (such as "total cost" or "modified total cost" methodologies) that purports to establish Contractor's entitlement to additional compensation inferentially based, solely or principally, on the difference between Contractor's total costs for the Work or a portion of the Work and its original Bid.

Multiple Changes. District reserves the absolute right to make whatever Changes, including, without limitation, Compensable Changes or Deleted Work, that it determines, in its sole discretion, are necessary and in its best interests. Under no circumstances shall the individual or cumulative number, value or scope of such Changes, or their individual and cumulative impact on the Work, become a basis for Contractor to assert any claim for breach of contract, rescission, termination, cardinal change or reformation of the Construction Contract, nor shall such circumstances be the basis for Contractor or any

Subcontractors, of any Tier, to assert a right of recovery of any Loss if such right is not permitted by, or is in excess of that allowed under, the Contract Documents.

Continuous Performance. No dispute or disagreement with respect to any Changes or Delay, including, without limitation, disputes over Contractor's right to or the amount of any adjustment to the Contract Sum Payable or Contract Time, shall relieve or excuse Contractor from the obligation to proceed with and maintain continuous, expeditious and uninterrupted performance of the Work, including performance of any disputed Changes.

1.11 EXECUTION OF CHANGE ORDERS

A. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in this section.

B. Change orders require approval by the Office of the State Architect per California Code of Regulations, Title 21, Section 38 prior to execution of change orders. District may provide a procedure for execution of change orders prior to OSA approval, to facilitate construction scheduling allowing Contractor to proceed.

ADDENDA AND CHANGE ORDERS

General. Work shall be executed in accordance with the approved plans addenda and change orders. Changes in the plans and specifications shall be made by addenda or change orders approved by the Office. [See Section 4-318(b)]

Addenda. Changes or alterations of the approved plans or specifications prior to letting a construction contract for the work involved shall be made by means of addenda which shall be submitted to and approved by the Office prior to distribution to contractors. Original copies of addenda shall be manually signed by the Architect or engineer in general responsible charge of preparation of the plans and specifications and by the Architect or registered engineer delegated responsibility for the portion affected by the addenda. [See Section 4-317(h)] One copy is required for the files of the Office.

Change Orders. Changes or alterations of the approved plans or specifications after a contract for the work has been let shall be made only by means of change orders submitted to and approved by the Office prior to commencement of the work shown thereon. Change orders shall state the reason for the change and the scope of work to be accomplished, and, where necessary, shall be accompanied by supplementary drawings referenced in the text of the change order. All change orders and supplementary drawings shall be manually signed by the Architect shall bear the approval of the school board and shall indicate the associated change in the project cost, if any. One copy of each change order is required for the files of the DSA Office.

Preliminary Change Orders. In order to expedite construction, preliminary change orders may be submitted to the Office. Preliminary change orders shall meet all the requirements necessary for a change order, with the exception of the approval of the school board and the associated change, if any, in costs. The preliminary change order does not require the stamp or seal, but does require the signature of the Architect or engineers. Work may proceed in accordance with the approved preliminary change order. An official change order shall be submitted to follow up on the preliminary change order as soon as possible.

1.12 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise schedule of values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust time for other items of work affected by the change, and resubmit.

C. Promptly enter changes in Project Record Documents.

END OF SECTION – 01028
Rev 1-20-10 (sk)

SECTION 01030 - ALTERNATES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Submission procedures.

B. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 0 and Division 1 Specification Sections, apply to work of this Section.

1.03 SUBMITTALS

A. Alternates described in this Section are required to be reflected in the bid submitted on the Bid Form for this work

B. Do not submit alternates other than described in this Section except as provided for under the General and Supplementary Conditions of the Contract.

1.04 MODIFICATIONS

A. Should the Owner elect to proceed on this basis of one or more of the Alternates, make all modifications to the Work required in the furnishing and installation of the selected alternate or alternates to the approval of the Architect.

B. No additional cost for modifications will be allowed except as proposed on the Bid Form.

1.05 SELECTION AND AWARD OF ALTERNATIVES

A. Indicate variation of Bid Price for Alternates described below and list in Bid Form Document or any supplement to it, which requests a 'difference' in Bid Price by deducting from the base bid price.

B. Bid will be evaluated on base bid price or on the base bid and any alternate bid or combination of alternates. The entire alternate bid must be accepted or rejected. The alternate bid shall remain in effect for a period of 365 days after the stated deadline for submission. Portions of an alternate bid may be incorporated into a change order during the period of time that the alternate bid remains in effect.

1.06 SCHEDULE OF ALTERNATES

ALTERNATE No. 1

Remove vertical shading fins from North and East elevations. Change paint on exterior X-braces from P-1 Bullshot (Red) to P-3 Galway (Blue).

ALTERNATE No. 2

Remove vertical shading fins from West and South elevations. Change paint on exterior X-braces from P-1 Bullshot (Red) to P-3 Galway (Blue).

ALTERNATE No. 3

Remove horizontal metal shading elements at Courtyard elevation.

ALTERNATE No. 4

Change Plastic laminate finish on casework to wood finish.

ALTERNATE No. 5

Remove LED wall washer lights at Planetarium Lobby wall.

ALTERNATE No. 6

Add sloped floor in Planetarium. Add floor ramps at Planetarium Vestibules. Add Planetarium seating. Change Planetarium doors and frames to standard height.

ALTERNATE No. 7

Change rubber flooring at hallways and stairs to thinset terrazzo flooring with precast base and precast terrazzo treads and risers.

ALTERNATE No. 8

Replace card readers at doors with key and cylinder locks.

ALTERNATE No. 9

Add 2 kitchens (including casework, equipment and plumbing fixtures) to Nutrition/Food Lab (4 total).

ALTERNATE No. 10

Change Black #06 Epoxy Laboratory Countertops to Blue #09 Epoxy.

ALTERNATE No. 11

Floor Finishes: Change commercial homogenous tile (CHT) to rubber tile (RF) in Laboratories and Lab Accessory Rooms.

END OF SECTION - 01030
05-16-07 - mf

SECTION 01040 - PROJECT COORDINATION

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification sections, apply to work of this section.

SUMMARY:

Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.

Minimum administrative and supervisory requirements necessary for coordination of work on the project to be fulfilled collectively by the Prime Contractors include but are not necessarily limited to the following:

Coordination and meetings.
Administrative and supervisory personnel.
Changes in the work.
Limitations for use of site.
Tradesmen and workmanship standards.
Special reports.
Inspection, Tests and Reports.
General installation provisions.
Cutting and patching.
Cleaning and protection.

These coordination requirements must be participated in by each Prime Contractor, where applicable, even though certain items for overall coordination purposes may be assigned to the Project Manager.

Refer to another Division 1 section for surveys and records reports.

Construction organization and start up:
Each Prime Contractor shall conform to the following:

Project Communications:

a) Submittals

b) Reports and Records

c) Recommendations

d) Coordination Drawings

e) Schedules

f) Resolutions of conflict

COORDINATION AND MEETINGS:

General: The Project Manager will prepare a written memorandum on required coordination activities, including such items as required notices, reports and attendance at meetings and distribute this memorandum to each entity performing work at the project site.

Each entity involved in the performance of work for entire project shall cooperate in the overall coordination of the work. Each entity, when requested, shall promptly furnish information for its portion of the work and shall respond promptly to the decisions and requests of personnel designated for coordination, supervisory, administrative, or similar functions.

Each trade installing concealed work, to which access must be available to the Owner after completion, shall furnish appropriate access doors and frames for installation by the Prime Contractor.

Similarly, the Prime Contractor shall furnish and install doors and frames giving access to elements of his work requiring the same. Locations must be suitable for access required, and acceptable to Architect. Access panels shall be compatible with construction in which they are installed, and installation shall be complete with required hardware, grounds, screeds, attachment devices and trim.

The Prime Contractor is responsible for coordination of structural, mechanical, and electrical elements prior to installation. Structural elements take precedence. All penetrations of structural elements must have approval of the Architect or Structural Engineer. Rerouting of ductwork, piping, or conduit around structural, mechanical or electrical elements is the responsibility of the mechanical or electrical subcontractors respectively and are not changes in the work and not claims for additional cost therefore will be valid.

Coordination Drawings: Prepare coordination drawings where work by separate entities requires fabrication off-site of products and materials, which must accurately interface. Coordination drawings shall indicate how work shown by separate shop drawings will interface and shall indicate installation sequence. Comply with all requirements of the "Submittals" section.

Where coordination drawings cover primarily the work of one prime contract, with only minor amounts of work by other Prime Contractors included, the Prime Contractor with the major amount of work shall prepare coordination drawings, as designated by the Project Manager.

Weekly Coordination Meetings: In addition to specific coordination meetings for each major element of work, and regular project meetings for other purposes (as indicated elsewhere in the contract documents), Project Manager will schedule and hold weekly general project coordination meetings at regularly scheduled times which are convenient for attendance by Prime Contractors and other entities then involved. Required attendance includes each Prime Contractor and every other entity identified by any Prime Contractor as being currently involved in coordination or planning for the work (of the entire project). Project Manager shall preside at each meeting, and shall record results of meetings and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.
At the option of the Project Manager, progress Applications for Payment may be withheld due to the non-attendance and participation in Weekly Progress Meetings until such time as the Prime Contractor is in compliance with the paragraph labeled "**Weekly Coordination Meetings**".

At the option of the Project Manager, monthly coordination meetings may be held integrally

with monthly progress meetings as specified in section "Schedules/Payments, Separate Prime Contracts".

ADMINISTRATIVE/SUPERVISORY PERSONNEL:

General: Each Prime Contractor shall provide specific coordinating personnel as reasonably required for interfacing work with other work of total project.

Submittal of Staff Names, Duties: Within 15 days of contract date, each Prime Contractor shall submit a listing of Prime Contractor's principal staff assignments and consultants, naming persons and listing their addresses and telephone numbers.

LIMITATIONS ON USE OF THE SITE:

General: Limitations on site usage as well as specific requirements that impact utilization are indicated on the drawings and by other contract documents. In addition to these limitations and requirements, the Project Manager shall administer allocation of available space equitably among the separate Prime Contractors and other entities needing access and space, so as to produce the best overall efficiency in performance of the total work of the project. Each Prime Contractor shall schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.

TRADESMEN AND WORKMANSHIP STANDARDS:

General: Each Prime Contractor shall instigate and maintain procedures to ensure that tradesmen performing work at site are skilled and knowledgeable in methods and craftsmanship needed to produce required quality levels for workmanship in completed work. Remove and replace work which does not comply with workmanship standards as specified and as recognized in the construction industry for applications indicated. Remove and replace other work damaged or deteriorated by faulty workmanship or its replacement.

Availability of Tradesmen: At each progress or coordination meeting, each Prime Contractor shall review the availability of tradesmen and projected needs to accomplish work as scheduled. Require each entity employing tradesmen to report on current and pending trade union actions and jurisdictional matters, which might affect progress of work. Where possible, dispute or delay as identified, consider alternatives and take actions to avoid disputes and delays.

SPECIAL REPORTS:

Reporting Accidents: Each Prime Contractor shall prepare and submit reports of significant accidents at site and anywhere else work is in progress. Record and document data and actions. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

INSPECTIONS, TESTS AND REPORTS:

General: Required inspection and testing services are intended to assist in determination of probable compliance's of the work with requirements, but do not relieve any Prime Contractor of responsibility for those compliance's, or for general fulfillment of requirements of contract

documents. Specified inspections and tests are not intended to limit any Prime Contractor's quality control program. Afford reasonable access to agencies performing tests and inspections. Comply with all requirements of the "Quality Control" section.

Owner's Tests: Where tests or inspections are indicated as Owner's responsibility, Owner will engage independent testing agency to perform required services.
Notice of Readiness: In accordance with the General Conditions, each Prime Contractor will give timely notice to the Owner, the Architect, the Engineers, and the Project Manager of the readiness of any part of the work for required tests and inspections.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

GENERAL INSTALLATION PROVISIONS:

Pre-Installation Conferences: Well in advance of installation of every major unit of work which requires coordination and interfacing with other work, each Prime Contractor involved shall meet at project site with installers and representatives of manufacturers and fabricators who are involved in or affected by unit of work, and in its coordination or integration with other work which has preceded or will follow. The Project Manager will set the dates and times for such conferences in consultation with the involved parties. At each meeting, review progress of other work and preparations for particular work under consideration, including requirements of contract documents, options, related change orders, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection. Project Manager shall record significant discussions of each conference, and agreements and disagreements, along with final plan of action; and shall distribute record of meeting promptly to everyone concerned.

Installer's Inspection of Conditions: The Prime Contractor involved shall require the Installer of each major unit of work to inspect the substrate to receive the work and the conditions under which the work is to be performed. The Installer shall report all unsatisfactory conditions in writing to the Prime Contractor. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

Manufacturer's Instructions: Where installations include manufactured products, comply with the manufacturer's applicable instructions and recommendations for installation, to the extent that these instructions and recommendations are more explicit or more stringent than requirements indicated in the contract documents.

Inspect each item of materials or equipment immediately prior to installation. Reject damaged and defective items.

Provide attachment and connection devices and methods for securing work properly. Secure work true to line and level, and within recognized tolerances. Allow expansion and building movement. Provide uniform joint width in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable visual-effect choices to the Architect for final decision.

Recheck measurements and dimensions of the work, as an integral step of starting each installation.

Install each unit of work during weather conditions and project status which will ensure the best possible results in coordination with the entire work. Isolate each unit of work from incompatible work as necessary to prevent deterioration.

Coordinate enclosure of the work with required inspections and tests, so as to minimize the necessity of uncovering work for that purpose.

Mounting Heights: Where mounting heights are not indicated, mount individual units of work as directed by the Architect. Refer questionable mounting height choices to the Architect for final decision.

Access Provisions: Each trade installing concealed work, to which access must be available to the Owner after completion, shall furnish and install appropriate access doors and frames for installation by the Prime Contractor for Finish Carpentry. Locations must be suitable for the access required, and accepted by Project Manager and Architect. Access panels shall be compatible with the construction in which they are installed, and installation shall be complete with required hardware, grounds, screeds, attachment devices and trim.

Coordination Guidelines: Structural elements take precedence. All penetrations of structural members must have approval of the Structural Engineer. Routing of ductwork, piping, or conduit around structural, mechanical or electrical elements is the responsibility of the respective Prime Contractors or their subcontractors. This responsibility is a part of the work and no claims arising from failure to coordinate the work will be accepted.

CUTTING AND PATCHING:

General: Do not cut-and-patch structural work in a manner resulting in reduction of load-carrying capacity or load/deflection ratio; submit proposed cutting and patching to Architect or Structural Engineer for structural approval before proceeding. Do not cut-and-patch operational elements and safety-related components in a manner resulting in reduction of capacities to perform in a manner intended or resulting in decreased operational life, increased maintenance, or decreased safety. Do not cut-and-patch work which is exposed on exterior or exposed in occupied spaces of building, in a manner resulting in reduction of visual qualities or resulting in substantial evidence of cut-and-patch work, both as judged solely by Architect. Remove and replace work judged by Architect to be cut-and-patched in a visually unsatisfactory manner.

> Engage original Fabricator/Installer to perform cutting-and-patching of structural work, operational/safety-related components, and visually-exposed work; or, if not available, engage only recognized experts; employ only proven methods.

Materials: Except as otherwise indicated or accepted by Architect or Engineer, provide materials for cutting-and-patching which will result in equal-or-better work than work being cut-and-patched, in terms of performance characteristics and including visual effect where applicable. Use materials identical with original materials where feasible and where recognized that satisfactory results can be produced thereby.

Temporary Support and Protection: Provide adequate temporary support for work to be cut, to prevent failure. Do not endanger other work. Provide adequate protection of other work during cutting-and-patching, to prevent damage; and provide protection of the work from adverse weather exposure.

Cut work by methods least likely to damage work to be retained and work adjoining.

Where physical cutting action is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work. Comply with the requirements of applicable sections of Division 2 where cutting-and-patching requires excavating and backfilling.

Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.

Where feasible, inspect and test patched areas to demonstrate integrity of work.

Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.

Where patch occurs in a smooth unpainted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coats.

CLEANING AND PROTECTION:

General: During handling and installation of work at the project site, each Prime Contractor shall clean and protect work in progress and adjoining work in the basis of continuous maintenance. Apply protective covering on installed work where it is required to ensure freedom from damage or deterioration at the time of substantial completion.

Clean and perform maintenance on installed work as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

Limiting Exposure of Work: To the extent possible through reasonable control and protection methods, each Prime Contractor shall supervise performance of the work in such a manner and by such means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period. Such exposure includes, where applicable, but not by way of limitation the following:

Excessive static or dynamic loading.
Excessive internal or external pressures.
Excessively high or low temperatures.
Thermal shock.
Excessively high or low humidity.
Air contamination or pollution.
Water or ice.
Solvents.
Chemicals.

Light.
Radiation.
Puncture.
Abrasion.
Heavy traffic.
Soiling.
Bacteria.
Insect infestation.
Combustion.
Electrical current.
High speed operation, improper lubrication, unusual wear or other misuse.
Incompatible interface.
Destructive testing.
Misalignment.
Excessive weathering.
Unprotected storage.
Improper shipping or handling.
Theft.
Vandalism.

END OF SECTION - 01040
5/16/07 - mf
1/20/10 - sk

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification sections, apply to work of this section.

SUMMARY:

This Section specifies administrative and procedural requirements for cutting and patching.

Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each prime Contractor.

Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

Requirements of this Section apply to mechanical and electrical installations. Refer to Division-15 and Division-16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

SUBMITTALS:

Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.

List products to be used and firms or entities that will perform Work.

Indicate dates when cutting and patching is to be performed.

List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.

Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.

Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

QUALITY ASSURANCE:

Requirements for Structural Work: Do not cut and patch structural work in a manner that would result in a reduction of load-carrying capacity or of load-deflection ratio.

Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

Foundation construction.
Structural concrete.
Miscellaneous structural metals.
Exterior curtain wall construction.
Equipment supports.
Piping, ductwork, vessels and equipment.
Structural systems of special construction in Division-13.

Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, or increased maintenance, or decreased operational life or safety.

Visual Requirements: Do not cut and patch construction exposed on the exterior or in its occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner. If possible retain the original installer or fabricator to cut and patch the exposed Work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.

PART 2 - PRODUCTS

MATERIALS:

Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

INSPECTION:

Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

Before proceeding, meet at the site with parties involved in cutting and patching, including mechanical and electrical contractors. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PREPARATION:

Temporary Support: Provide temporary support of Work to be cut.

Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

Take precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

PERFORMANCE:

General: Employ skilled workmen to perform cutting and patching work. Proceed with cutting and patching at the earliest feasible time and complete without delay.

Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with original installer's recommendations.

In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

Cut through concrete using a cutting machine such as a carborundum saw or diamond core drill.

Comply with requirements of applicable Sections of Division-2 where cutting and patching requires excavating and backfilling.

By-pass utility services such as pipe and conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

Where removal of walls or partitions extends one finished area into another patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch, after the patched area has received primer and second coat.

CLEANING:

Thoroughly clean areas where cutting and patching is performed or used as access. Remove completely point, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION - 01045
05/16/07 – mf
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SECTION 01050 – FIELD ENGINEERING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 GENERAL

A. Contractor shall provide and pay for field engineering services required for the project.

1. Survey work required in execution of the project

2. Civil, structural or other professional engineering services specified, or required to execute contractor's construction methods.

B. Identify existing control points and property line corner stakes indicated on the drawings, as required

1.03 QUALIFICATIONS OF SURVEYOR ENGINEER

A. Qualified professional engineer or registered land surveyor.

1.04 SURVEY REFERENCE POINT

A. The Project Manager will establish two (2) base lines and two (2) reference benchmarks, which shall be protected and maintained by each Prime Contractor. Prime Contractor shall furnish line and grade from these established control points.

1. It shall be the responsibility of each Prime Contractor using this control to verify that the base lines and benchmarks are undisturbed and true prior to establishing its control.

2. Should the Prime Contractor, during the course of work, disturb, damage and/or destroy the controls provided above, the Prime Contractor shall be responsible for replacing the controls at no additional cost to the Owner.

3. Should damage to the base control points occur, it shall be the responsibility of the Prime Contractor to notify the Project Manager immediately that damage has occurred.

B. **Survey Procedures**: Before proceeding with the layout of actual work, each Prime Contractor shall verify the layout information shown on the drawings, in relation to the property survey and existing bench marks. Each Prime Contractor shall record deviations, which are accepted, not corrected, on record drawings.

1. Locate and protect existing control points designated on drawings, prior to starting work; preserve all permanent reference points during construction.

   a. Do not change or relocate without prior written notice to the Architect or Construction Manager.

   b. Report to Construction Manager when any reference point is lost or destroyed, or requires relocation.

   c. Require surveyor to replace project control points which may be lost or destroyed.

1.05 PROJECT SURVEY REQUIREMENTS

A. Establish lines and levels locate and lay out, by instrumentation and similar appropriate means:

1. Stakes by grading and topsoil placement.

2. Utility slopes and invert elevations.

3. Batter boards lot structures

4. Building foundation, column locations and floor levels.

5. Controlling lines and levels required for the mechanical and electrical trades.

1.06 RECORDS

A. Submit name and address of surveyor and professional engineer to the Architect and Construction Manager.

B. On request of the Architect, submit documentation to verify accuracy of field engineering work.

C. Submit certificate signed by registered engineer or surveyor certifying that elevations and locations of improvements are in conformance, or non-conformance with the contract documents.

END OF SECTION - 01050
Rev: 4/23/2007 mf
1/20/10 sk

SECTION 01090 - DEFINITIONS AND STANDARDS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification sections, apply to this section.

SUMMARY:

This Section specifies administrative requirements for compliance with governing regulations, codes and standards.

> **Multiple Prime Contracts**: Provisions of this Section apply to the construction activities of each Prime Contractor.
> Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.
> Refer to General and Supplementary Conditions for requirements for compliance with governing regulations.

DEFINITIONS:

General: Definitions contained in this Article are not necessarily complete, but are general to the extent that they are not defined more explicitly elsewhere in the Contract Documents.

Indicated refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by the Project Manager/Architect", "requested by the Project Manager/Architect", and similar phrases. However, no implied meaning shall be interpreted to extend the Project Manager's or Engineer's responsibility into the Prime Contractor's area of construction supervision.

Approve: The term "approved," where used in conjunction with the Architect's action on the Prime Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Project Manager/Architect stated in General and supplementary Conditions. Such approval shall not release the Prime Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in the Contract Documents.

Furnish: The term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations."

Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations."

Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."

Installer: An "installer" is an entity engaged by the Prime Contractor, either as an employee, subcontractor or sub-subcontractor for performance of a particular construction activity, including installation, erection, application and similar required operations. Installers are required to be experienced in the operations they are engaged to perform.

Project Site is the space available to the Prime Contractor for performance of the Work, either exclusively or in conjunction with others performing other construction as part of the Project. The extent of the Project Site is shown on the Drawings, and may or may not be identical with the description of the land upon which the Project is to be built.

Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on, and, if required, to interpret results of those inspections or tests.

Project Inspector shall mean any individual duly approved by the enforcement agency as the on-site inspector for a particular project. The project inspector shall be hired by and paid by the owner and he/she shall act as the agent of the owner at the project site under the general direction of the architect or registered engineer in general responsible charge and under the supervision of the enforcement agency. The project inspector shall be independent of the Prime Contractor. The project inspector shall be responsible for inspecting all work included in the contract. A special inspector shall be responsible only for inspecting the work for which he/she is approved.

Project Manual: The project manual is the volume(s) that includes the bidding requirements, sample forms and all of the contract documents such as conditions of the contract and the specifications.

Plans: The reproductions of the official drawings adopted and approved by the Owner showing location, character, dimension and details of the work.

Specifications: The printed instructions and requirements which complement the plans as to the methods and manner of performing the work or to the quantities and qualities of the materials to be furnished.

Refer: Used to indicate that the subject is defined or specified in further detail at another location in the contract documents, or elsewhere as indicated. Except as otherwise noted, "refer" does not imply that the Prime Contractor must purchase or subcontract the subject work in any special manner.

Work: Work of the Prime Contractor or subcontractor includes labor, materials, and all equipment, plant and tools necessary for construction.

Required: Means as required by Project Manual or Contract Documents.

Related work in other sections: is a non-restricting term used throughout the specifications to coordinate the work and facilitate checking and bidding.

Equivalent to: means equal or superior in function and quality and acceptable to the Architect.

Or Equal: Where named products in specification text are accompanied by the term "or equal", or other language of similar effect, comply with those contract document provisions concerning "substitutions" for obtaining Architect's review and consideration.

Per: shall mean in accordance with.

Overlapping and Conflicting Requirements: Where compliance with 2 or more industry standards or sets of requirements is specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, most stringent requirement (which is generally recognized to be also most costly) is intended and will be enforced, unless specifically detailed language written into the contract documents (not by way of reference to an industry standard) clearly indicates that a less stringent requirement is to be fulfilled. Refer apparently-equal-but-different requirements, and uncertainties as to which level of quality is more stringent, to Architect/Engineer for a decision before proceeding.

SPECIFICATION FORMAT AND CONTENT EXPLANATION:

This article is provided to help the user of these Specifications understand the format, language, implied requirements and similar conventions. None of the explanations shall be interpreted to modify the substance of contract requirements.

Specification Format: These specifications are organized into Divisions/or Sections based on the Construction Specifications Institute's 16-Division format and numbering system. This organization conforms generally to recognized construction industry practice.

Specification Content: This Specification has been produced employing conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

> Language used in Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
> **Imperative Language** is used generally in the Specifications. Requirements expressed imperatively are to be performed by the Prime Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities which must be fulfilled indirectly by the Prime Contractor, or by others when so noted.

Assignment of Specialists: The Specification requires that specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and the assignments are requirements over which the Prime Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Prime Contractor.

This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

Trades: Use of titles such as "carpentry" is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter". It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

DRAWING SYMBOLS:

Abbreviations and Symbols: See end of Section for Abbreviations and Symbols listing.

Graphic symbols used on the Drawings are those recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., seventh edition.

Mechanical/Electrical Drawings: Graphic symbols used on mechanical and electrical Drawings are generally aligned with symbols recommended by ASHRAE. Where appropriate, they are supplemented by more specific symbols as recommended by technical associations including ASME, ASPE, IEEE and similar organizations. Refer instances of uncertainty to the Architect for clarification before proceeding.

INDUSTRY STANDARDS:

Applicability of Standards: Except where Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Prime Contractor must keep available at the Project Site for reference.

Referenced standards take precedence over standards that are not referenced but recognized in the construction industry as applicable.

Unreferenced Standards: Except as otherwise limited by the Contract Documents, standards not referenced but recognized in the industry as applicability will be enforced for performance of the Work. The Engineer will decide whether a code or standard is applicable, or which of several are applicable.

Publication Dates: Where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.

Updated Standards: At the request of the Engineer, Prime Contractor or authority having jurisdiction, submit a Change Order proposal where an applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of the Work affected. The Architect will decide whether to issue a Change Order to proceed with the updated standard.

Conflicting Requirements: Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Architect for a decision before proceeding.

Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the Engineer for decision before proceeding.

Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entities' construction activity. Copies of applicable standards are not bound with the Contract Documents.

Where copies of standards are needed for proper performance of a required construction activity, the Prime Contractor shall obtain copies directly from the publication source. Although copies of standards needed for enforcement of requirements may be part of required submittals, the Architect reserves the right to require the Prime Contractor to submit additional copies as necessary for enforcement of requirements.

Abbreviations and Names: Where acronyms or abbreviations are used in specifications or other Contract Documents they are defined to mean the industry recognized name of trade association, standards generating organization, governing authority or other entity applicable to contest of text provision. Refer to "Encyclopedia of Associations", published by Gale Research Company available in large libraries.

APPLICABLE LAWS AND REGULATIONS:

STATUTES
Education Code Section 17280 (Field Act – Kindergarten through 12th Grade)
Education Code Section 81130 (Field Act – Community Colleges)

LIST OF CALIFORNIA BUILDING STANDARDS CODE (TITLE 24, CALIFORNIA CODE OF REGULATIONS (C.C.R) :
APPLICABLE CODES AS OF OCTOBER 1, 2005.

2001 Building Standards Administrative Code, (Part I, Title 24 CCR)

2001 California Building Code (CBC), Volumes 1, 2 and 3 (Part 2, Title 24 CCR)
(1198 Edition Uniform Building Code (UBC) with 2001 California Amendments)
2004 California Electrical Code (CEC), (Part 3, Title 24 CCR)

2001 California Mechanical Code (CMC), (Part 4, Title 24 CCR)
(2000 Edition IAPMO Uniform Mechanical Code with 2001 California Amendments)

2001 California Plumbing Code (CPC), (Part 5 Title 24 CCR)
(2000 Edition IAPMO Uniform Plumbing Code with 2001 California Amendments)

2005 California Energy Code, (Part 6 Title 24 CCR)

2001 California Elevator Safety Construction Code (Part 7, Title 24 CCR)

2001 California Fire Code, (Part 9, Title 24 CCR)

2001 California Referenced Standards, (Part 12, Title 24 CCR)

1990 Title 19 CCR, Public Safety, State Fire Marshal Regulations

Underwriters Laboratory, Inc.
Applicable State Standards

NFPA 13, Automatic Sprinkler Systems (CA Amended), 1999 Edition

NFPA 14, Standpipe, Private Hydrant and Hose Systems (1999 Edition)

NFPA 24, Private Fire Service Mains and their Appurtenances (1995 Edition)

NFPA 72, National Fire Alarm Code (CA Amended) 1999 Edition
(Note See UL Standard 1971 for "Visual Devices")

Reference Code Section for NFPA Standards0CBC (SFM) 3504.1

ASME A18.1-1999 for Section 7-3094 Part 7, C.C.R. Title 24

APPLICABLE FEDERAL CODES AND STANDARDS

Americans with Disabilities Act (ADA), Title II or Title III

For Title II, Uniform Federal Accessibility Standards (UFAS) or Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)

For Title III, ADA Standards for Accessible Design

MANUFACTURER SPECIFCATIONS

All work shall conform to Title 24, California Code of Regulations (CCR)

Changes to the approved drawings and Specifications shall be made by Addenda or a Change Order Approved by the Office of The State Architect, as required by Section 4-388, Part I, Title 24 CCR.

A Project Inspector employed by the District (Owner) and Approved by The Office of the State Architect shall provide continuous inspection of the work. Duties of the Inspector are defined in Section 4-342, Part I, Title 24 CCR.

CONFORMANCE TO CODES AND STANDARDS:

Nothing in these plans or specifications is to be construed to permit work not conforming to these codes and standards. The requirements of the above mentioned codes and standards take precedence over the Contract Documents.

If the Prime Contractor or any subcontractor or bidder notices any conflict between the above mentioned codes and standards and the Contract Documents, he shall immediately notify the Architect who will resolve the conflict by addendum.

SUBMITTALS:

Permits, Licenses, and Certificates: For the Owner's records, submit copies of licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01090

05/16/07 - mf
01/20/10 - sk

SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract including General Conditions and Division 1 Specification sections apply to work of this section.

SUMMARY

This Section specifies administrative and procedural requirements for project meetings including but not limited to:

Pre-Construction Conference.
Pre-Installation Conferences.
Coordination Meetings.
Progress Meetings.

Construction schedules are specified in another Division-1 Section.

PRE-CONSTRUCTION CONFERENCE

Schedule a pre-construction conference and organizational meeting at the Project site or other convenient location **no later than 15 days** after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments. Prime Contractor shall record and distribute meeting notes to attendees to pertinent parties.

Project Manager shall prepare and record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

Attendees: The Owner, Architect, the Project Manager and its superintendent, major Prime Contractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.

Agenda: Discuss items of significance that could affect progress including such topics as:

Tentative construction schedule.
Critical Work sequencing.
Designation of responsible personnel.
Procedures for processing field decisions and Change Orders.
Procedures for processing Applications for Payment.
Distribution of Contract Documents.
Submittal of Shop Drawings, Product Data and Samples.
Preparation of record documents.
Use of the premises.
Office, Work and storage areas.
Equipment deliveries and priorities.
Safety procedures.
First aid.
Security.
Housekeeping.
Working hours.

Project Manager shall record significant discussions and agreements and disagreements of each conference, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Architect.

PRE-INSTALLATION CONFERENCES

Conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction and as indicated in individual sections of Technical Specifications. All pre-installation meetings shall be held at regularly scheduled coordination meetings. The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting.

Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
Contract Documents.
Options.
Related Change Orders.
Purchases
Deliveries.
Shop Drawings, Product Data and quality control Samples.
Possible conflicts.
Compatibility problems.
Time schedules.
Weather limitations.
Manufacturer's recommendations.
Compatibility of materials.
Acceptability of substrates.
Temporary facilities.
Space and access limitations.
Governing regulations.
Safety.
Inspection and testing requirements.
Required performance results.
Recording requirements.
Protection.

Project Manager shall record significant discussions and agreements and disagreements of each conference, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Architect.

Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

COORDINATION MEETINGS

Conduct Project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.

Application for Payment will not be authorized by Architect if these meetings are not being held.

As necessary, request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

Project Manager shall record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PROGRESS MEETINGS

Conduct progress meetings at the Project site at regularly scheduled intervals. Arrange with the Owner and Architect the scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.

Attendees: In addition to representatives of the Owner and Architect, each Prime Contractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.

Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.

Project Manager's Construction Schedule: See General Conditions, Article 7.3.5.

Review the present and future needs of each entity present, including such items as:

Interface requirements.
Time.
Sequences.
Deliveries.
Off-site fabrication problems.
Access.
Site utilization.
Temporary facilities and services.
Hours of Work.
Hazards and risks.
Housekeeping.
Quality and Work standards.
Change Orders.
Documentation of information for payment requests.

Reporting: **No later than 3 days** after each progress meeting date, **Project Manager shall distribute** copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

END OF SECTION - 01200
05/16/07 - mf
01/20/10 - sk

SECTION 01250 - CONTRACTOR'S REQUEST FOR INFORMATION

PART 1 - GENERAL

1.1 SUMMARY:

A. Section includes general requirements for Contractor's Requests for Information (RFI).

1. Procedure for shop drawings, product data and samples submittals are specified in accordance with Section 01340.

2. Procedure for substitutions is specified in accordance Section 01625.

1.2 CONTRACTOR'S REQUESTS FOR INFORMATION:

A. Submit a Request for Information to the Architect when:

1. An unforeseen condition or constructability question occurs.

2. Questions regarding information in the Contract Documents arise.

3. Information not found in the Contract Documents is required.

B. When possible, request such clarification either verbally or in writing at the next scheduled Project meeting.

1. When the RFI is answered at the Project meeting, number the RFI and enter the response into the meeting minutes.

2. When the urgency of the need, or the complexity of the item makes clarification at the next scheduled Project meeting impractical, prepare and submit a formal written RFI to the Architect without delay.

C. RFI received directly from a subcontractor will be returned to the Contractor unprocessed.

1.3 SUBMITTALS:

A. Submit RFIs within a reasonable time frame so as not to interfere with, or impede the progress of the Work.

1. Keep the number of RFIs to a minimum.

2. When the number and frequency of RFIs submitted becomes unwieldy, the Architect may require the Contractor to abandon the process and submit requests as either submittal, substitution or requests for change.

3. When an answer to an RFI has an effect on cost or time, notify the Architect in accordance with the Contract Documents when the RFI is received. Notification shall occur prior to commencing such work, so that the change order process can be initiated.

4. When submitting an RFI, alert the Architect, in writing, to the time available before the response will cause an impact to the Project.

B. When submitted in writing, submit the RFI in quadruplicate as follows:

1. Submit a legible written request (FAX is acceptable) on a standard CSI or AIA preprinted form or another form approved in advance by the Architect. Include the following information:

   a. Project name, as listed on the Contract Documents, Architect's project number or other identifying number, if any.
   b. Date.
   c. Name, address, telephone and FAX numbers of the Contractor.
   d. Number and title of affected Specification Section or Sections.
   e. Drawing numbers and detail references, as appropriate.
   f. Clear, concise explanation of information or clarification requested.
   g. Blank, lined spaces for Architect's written response.

C. Each page of each attachment to the RFI shall bear the RFI number in the lower right corner.

D. Number submitted RFI'S consecutively.

E. Sign and stamp all RFI forms. RFI from subcontractors or material suppliers shall be submitted through, and be reviewed by the Contractor prior to submittal to the Architect.

F. Unanswered RFI will be returned with a stamp or notation "NOT REVIEWED".

G. Prepare and maintain an RFI log. Update on a weekly basis. Log RFI number, brief description of content or subject discussed, date submitted, and date answered. Keep log current and furnish copy when so requested by the Architect.

H. Allow a minimum of 5 working days for review and response time; the response time will be increased if more information is required, when the RFI is submitted out-of-sequence, or if in the opinion of the Architect, more time is needed to answer the RFI.

1.4 QUALITY ASSURANCE :

A. Carefully study the Contract Documents to assure that the requested information is not available therein.

1. RFI which requests information available in the Contract Documents may not be answered by the Architect.

2. Before submitting RFI to the Architect, verify that the information requested is not indicated in the Contract Documents, or cannot be determined from a careful review of same.

B. In all cases where a RFI is issued to request clarification of coordination issues, for example, pipe and duct routing, clearances, specific locations of work shown diagrammatically, and similar items, the Contractor shall fully lay-out a suggested solution using drawings or sketches drawn to scale, and submit same with the RFI. RFI which fails to include a suggested solution will not be answered.

C. Do not use RFI for the following purpose:

1. To request approval of submittals.

2. To request approval of substitutions.

3. To request changes to the Contract Documents and to confirm action taken by the Contractor for requested changes/substitutions to the Contract Documents.

D. If the Contractor believes that a clarification by the Architect may result in a change in Contract price, the Contractor shall not proceed with the work indicated by the RFI until a Change Order or other acceptable tracking device is prepared and approved.

1. If the Contractor believes that a clarification by the Architect results in additional cost, the Contractor shall identify in the RFI the basis of the Contractor's bid as it relates to the RFI.

2. Answered RFI shall not be construed as approval to perform extra work.

END OF SECTION – 01250
10/20/10 - cs

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification Sections, apply to this Section.

SUMMARY:

This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:

Shop Drawings.
Product Data.
Samples.

Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.

SUBMITTAL PROCEDURES:

Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

Coordinate each submittal with purchasing, testing, delivery, other submittals and related activities that require sequential activity.

Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.

The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

Listing: Refer to Supplementary Conditions to the General Conditions, Article 4 for specified time listing requirements for all shop drawings, product data and samples and to materials and equipment elsewhere in Division for product list schedule.

Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Project Manager will promptly advise the Prime Contractor when a submittal being processed must be delayed for coordination.

If an intermediate submittal is necessary, process the same as the initial submittal.

Allow two weeks for reprocessing each submittal.

No extension of Contract Time will be authorized because of failure to transmit submittals to the Project Manager sufficiently in advance of the Work to permit processing.

Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

Include the following information on the label for processing and recording action taken.

Project Name.
Date.
Name and address of Architect.
Name and address of Prime Contractor.
Name and address of subcontractor.
Name and address of supplier.
Name of manufacturer.
Number and title of appropriate Specification Section.
Drawing number and detail references, as appropriate.

Provide 4" square spaces for Architect's/Engineer's review stamp. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through Prime Contractor's office will be returned without being reviewed.

Prime Contractor's **Review and Approval of Submittal**: Each submittal upon which proper execution of the Work is dependent shall bear the Prime Contractor's review and approval stamp, dated and signed by the Prime Contractor in every case, certifying the Prime Contractor has (a) reviewed, checked, and approved the submittal and coordinated submittal contents with all requirements of the Work and the Contract Documents including related Work, (b) determined and verified measurements, quantities, field construction criteria, materials and equipment including catalog numbers and identifications, and similar data, or will do so, and (c) states that Work illustrated or described in the submittal is recommended by Prime Contractor and that the Prime Contractor's guarantee and warranty will fully apply thereto.

Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Prime Contractor to the Project Manager and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Prime Contractor will be returned to the sender "without action".

Transmittal Form: Prepare a draft of a transmittal form and submit it to the Architect/Engineer for acceptance. Provide on the form places for the following information:

Project name.

Date.

To:

From:

Names of subcontractor, manufacturer and supplier.

References.

Category and type of submittal.

Submittal purpose and description.

Submittal and transmittal distribution record.

Signature of transmitter.

Prime Contractor's certification stating that the information submitted complies with the requirements of the Contract Documents, with a place for the Prime Contractor's signature.

Record relevant information and requests for data on the transmittal form. On the transmittal form, or on a separate sheet attached to the form, record deviations from the requirements of the Contract Documents, if any, including minor variations and limitations.

SHOP DRAWINGS:

Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.

Shop Drawings include fabrication and installation drawings, setting diagrams, shop work manufacturing instructions, coordination drawings, contractors' engineering calculations, schedules, patterns, templates and similar drawings. Include the following information:

Dimensions.
Identification of products and materials included.
Compliance with specified standards.
Notation of coordination requirements.
Notation of dimensions established by field measurement.

Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" but not larger than 36" x 48".

Submittals: Submit one correctable translucent reproducible print and two blue or blackline prints for the Project Manager's and Architect's (or Engineer's) review; the reproducible print will be returned.

Provide seven (7) prints of all shop drawings that are not larger than 8.5" x 14". Four (4) may be retained and remainder will be returned.

Resubmittals: If required by the Architect's review, resubmit revised drawings in the same form and quantity as indicated at Paragraph above.

Reproduction: When shop drawings are acceptable, as indicated by the Architect's review, make blue or blackline prints from the reviewed reproducible and distribute as follows: 4 copies to Project Manager, 1 copy to be preserved as Record Product Data in accordance with Section 01700, the number of copies as required for Prime Contractor's own purposes and those of his subcontractors and suppliers.

PRODUCT DATA:

Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

Manufacturer's printed recommendations.

Compliance with recognized trade association standards.

Compliance with recognized testing agency standards.

Application of testing agency labels and seals.

Notation of dimensions verified by field measurement.

Notation of coordination requirements.

Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

Submittals: Submit seven (7) copies of each required submittal; submit seven (7) copies where required for maintenance manuals. The Project Manager, Architect and Engineer will retain one each. The balance will be returned marked with action taken and corrections, and modifications required. Resubmit when so indicated by Architect's review.

Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.

Do not permit use of unmarked copies of Product Data in connection with construction.

SAMPLES:

Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Architect's Sample. Include the following:

Generic description of the Sample.
Sample source.
Product name or name of manufacturer.
Compliance with recognized standards.
Availability and delivery time.

Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.

Preliminary Submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.

Preliminary submittals will be reviewed and returned with the Architect's mark

indicating selection and other action.

Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.

Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.

Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

Sample sets may be used to obtain final acceptance of the construction associated with each set.

Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

Field Samples specified in individual Sections are special types of Samples. Field Samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the Work will be judged.

Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

Miscellaneous Submittals:

Miscellaneous Submittals are work related submittals (non-administrative) including warranties, maintenance agreements, workmanship bonds, survey data and reports, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operations and maintenance materials, overrun stock, and similar work related information and materials not processed as shop drawings, product data or samples.

Inspection and Test Reports: Classify and process each as either "shop drawing" or "product data", depending upon whether report is uniquely prepared for project or a standard publication.

Warranties: Refer to "Products and Substitutions" section for specific general requirements on warranties, product/workmanship bonds, and maintenance agreements. In addition to copies desired for Prime Contractor's use, furnish 2 executed copies, plus additional copies where required for maintenance manuals.

Standards: Where submittal of a copy of standards is indicated, submit a single copy for Architect's/Engineer's use. Where workmanship at project site and elsewhere is governed by standard, furnish additional copies to fabricators, installers and others involved in performance of the work.

ARCHITECT'S ACTION:

Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.

Compliance with specified characteristics is the Prime Contractor's responsibility.

Conditions of Review:

Architect's review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Prime Contractor from compliance with the project plans and specifications, nor departures therefrom. The Prime Contractor remains responsible for details and accuracy, for conforming and correlating all quantities and dimensions, for selecting fabrication processes for techniques of assembly, and for performing his work in a safe manner.

The Prime Contractor is responsible for coordinating his work with and between that of all Prime Contractors/Subcontractors and trades.

Absolutely no deviation from the Contract Documents will be permitted without written acknowledgment from the Prime Contractor to the Architect accompanying this submittal of all deviations contained in this submittal.

The Architect's review is not the final stage of acceptance for any part of the project, nor does it relieve the Prime Contractor of his Contract responsibilities.

Action Stamp: The Architect and Engineer will stamp each submittal to be returned with a review stamp with indications of the following conditions:

No Exceptions Taken: If this box is marked, the work covered by the submittal may proceed provided it complies with the requirements of the contract documents; acceptance of the work will depend upon that compliance.

Mark Corrections Noted: If this box is marked, the work covered by the submittal may proceed provided it complies with both the Architect's or Engineer's notations or corrections to the submittal and with the requirements of the contract documents; acceptance of the work will depend on that compliance.

Revise and Resubmit: If this box is marked, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise the submittal in accordance with the Architect's/Engineer's notations and resubmit without delay. Repeat if necessary.

Rejected: If this box is marked, do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise the submittal or prepare a new submittal in accordance with the Architect's/Engineer's notations and resubmit without delay.

Remarks Attached: If this box is marked, the review has occasioned comments that have been attached to the submittal. Process these comments as if they had been written on the submittal itself.

SUBMITTALS FOR JOBSITE USE:

Those submittals to be provided for jobsite use do not require Architect's review.

Provide and distribute copies as indicated at paragraph above.

Closeout Submittals: Refer to "Project Closeout" sections for specific general requirements on submittal of closeout information, materials, tools, and similar items.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION - 01300
05/16/07 - mf

SECTION 01311 - SCHEDULES/PAYMENTS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of each prime Contract, including General Conditions and other Division-1 Specification sections, apply to work of this section.

SUMMARY:

Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.

This section specifies schedules and payments integral for the Project, including but not necessarily limited to the following:

Progress Schedules
Color Schedules
Submittal Schedules
Progress Meetings Reporting
Schedule of Values
Payment Requests

COORDINATION, GENERAL:

Each Prime Contractor shall provide close administrative and procedural coordination of scheduling with other Prime Contractors. Each Prime Contractor shall also be responsive to the overall coordination responsibilities assigned to the Project Manager. Each Prime Contractor shall coordinate both the provisions of this and other sections, so as to provide consistency and logical coordination between the reports. Maintain coordination and correlation between separate reports by updating at monthly or shorter time intervals. Each Prime Contractor shall make appropriate distribution of each report and updated report to all other Prime Contractors involved in the work, Project Manager and Owner. In particular, provide close coordination of progress schedule, schedule of submittals & progress reports.

PRELIMINARY CONSTRUCTION SCHEDULES:

Incorporated into the Construction Documents, the Project Manager has provided a baseline construction schedule. Within five (5) days following execution of the Agreement, the Prime Contractors shall prepare and submit to Project Manager, individual preliminary construction schedules (General Conditions 7.3.1). Matching the Baseline Construction Schedule in bar-chart form showing its work, properly sequenced and coordinated with work of the Prime Contractors. Each schedule shall show completion of its work sufficiently in advance of date established for substantial completion of the entire work of the prime contracts. If schedule adjustments are necessary for proper sequencing and coordinating of the work, the Project Manager shall schedule a meeting with all Prime Contractors at the earliest possible date; at this meeting, each Prime Contractor shall negotiate reasonable adjustments to the schedule.

APPROVED CONSTRUCTION SCHEDULE:

Based on preliminary construction schedules, any updating and feedback occurring during the project start-up, the Project Manager shall create the approved Construction Schedule for the entire work of the prime contracts. Within ten (10) days of receipt of multiple prime preliminary construction schedules, submit a multi-sheet, comprehensive, integrated, bar-chart type progress schedule indicating, by phase, a time bar for each major category or unit of work to be performed at site; include minor elements of the work which are, nevertheless, involved in overall sequencing of the work. Show the work of each prime contract on a separate sheet, and prepare a simplified summary sheet of the combined work of the prime contracts. Arrange the schedules to show graphically the major sequences of work necessary for the completion of related elements of work. Arrange the schedules to show how substantial completion is scheduled to allow for the Architect's procedures for certification of substantial completion. Prepare and maintain the schedule on either a sheet of sufficient width (or else a series of sheets) to show the required data clearly for the entire Construction Time. Prepare schedule on sheets of stable transparency (or other reproducible material) to permit reproduction for the required distribution.

Arrange schedule with notations to show how the sequence of work is affected by requirements for phased completion, work by separate non-Prime Contractors, work by the Owner, pre-purchased materials, coordination with existing work, limitations of continued occupancies, non-interruptible services, partial occupancy prior to substantial completion, site restrictions, provisions for future work, seasonal variations, environmental control, and similar provisions of total project. Refer to other sections of Division 1 and other contract documents for requirements.

Following the initial submittal to and response by the Architect, the Project Manager shall print and distribute progress schedules to the Owner, separate Prime Contractors, the principal sub-contractors and suppliers and others with a need-to-know schedule-compliance requirement. Post copies in the temporary field office. When revisions are made, distribute updated issues to the same entities and post updated issues in the same locations. Delete entities from distribution when they have completed assigned work and are no longer involved in performance of scheduled work.

SUBMITTAL SCHEDULE:

Within five (5) days following execution of the Agreement, the Prime Contractors shall prepare & submit to Project Manager complete schedule of work-related submittals. Correlate submittal schedule as required by the General Conditions, and with the "listing of products" or the "procurement schedule" as specified in the "Products and Substitutions" sections and elsewhere in the contract documents.

PROGRESS MEETINGS, REPORTING:

General: In addition to specific coordination and pre- installation meetings for each element of work, and other regular project meetings held for other purposes, Project Manager shall schedule and hold a general progress meeting each month, with time coordinated with preparation of payment requests. Require each Prime Contractor and each entities involved in planning, coordination or performance of work to be properly represented at each meeting. Review each entity's present and future needs including interface requirements, time, sequences, deliveries, access, site utilization, temporary facilities and services, hours of work, hazards and risks, housekeeping, change orders, and documentation of information for payment requests.

Discuss whether each element of current work is ahead of schedule, on time, or behind schedule in relation with integrated and updated approved construction schedule. Determine how behind-schedule work will be expedited, and secure commitments from each Prime Contractor and other major entities involved in doing so. Discuss whether schedule revisions are required to ensure that current work and subsequent work will be completed within Contract Time of each prime contract. Review everything of significance that could affect progress of the work.

Initial Progress Meeting: Schedule the initial progress meeting, recognized as the "Pre-Construction Meeting", for a date not more than 15 days after commencement of the work. Conduct this meeting as an organizational meeting, and review responsibilities and personnel assignments.

Reporting: Within 3 days after each progress meeting date, Project Manager shall distribute copies of minutes-of-the-meeting to each entity present and to others who should have been present. Include a brief summary (in narrative form) of progress of the work since previous meeting and report.

Daily Reports: The Project Manager and Inspector (as owner's representative) shall each prepare a daily report, recording the following information concerning events at the site. Duplicate copies of the Inspectors Daily Reports shall be available for the Architect's (or engineer) review when requested.

List of Prime Contractors at the site.
List of subcontractors at the site.
Approximate total count of personnel at the site.
High/low temperatures, general weather conditions.
Accidents (refer to accident reports).
Meetings and significant decisions.
Unusual events (refer to special reports).
Stoppages, delays, shortages, losses.
Emergency procedures, field orders.
Orders/requests by governing authorities.
Change orders received, implemented.
Services connected, disconnected.
Equipment or system tests and start-ups.
Partial completions.
Substantial completions authorized.

Notice of Labor Disputes: Whenever an actual or potential labor dispute is delaying or threatens to delay the performance of the work, the Prime Contractor shall immediately notify the Architect, orally, and confirm in writing. Such notice shall include all relevant information concerning the dispute and its background.

SCHEDULE OF VALUES:

General: Each Prime Contractor shall prepare a schedule of values/cost breakdown, as required by the General Conditions. Provide breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports. Breakdown principal subcontract amounts into several line items. Round off to the nearest whole dollar, but with the total equal to the Contract Sum.

Sub-Schedules: Where work is separated into phases which require separately phased payments to Prime Contractor, provide sub-schedules showing values correlated with each phase of payment.

Material/Fabrication Values: For each unit of work where payment requests will be made on account of materials or equipment purchased, fabricated OR delivered but not yet installed, show "initial value" for payment request and "value added" for subsequent stage or stages of completion on that unit of work.

Time Coordination: In coordination of initial submittals and other administrative "start-up" activities, submit the schedule of values to the Project Manager at the earliest feasible date, but in no case later than 7 days before the initial payment period for the project.

Listing: Arrange the schedule with columns to indicate the generic name of item, related specification sections, the subcontractor, the supplier/manufacturer/fabricator, change orders (numbers) which have affected the value, the dollar value of the item, and the percentage of the Contract Sum to nearest one-hundredth percent and adjusted to total 100 percent.

Margins of Cost: Show line items of indirect costs, and margins on actual costs, only to the extent such items will be individually listed in payment requests. In general, each item in the schedule of values and in payment requests shall be established to be complete with its total expenses and proportionate share of general overhead and profit margin. Except as otherwise indicated, those major cost items that are not directly the cost of actual work-in-place, such as distinct temporary facilities, may be either shown as line items in schedule of values or may be distributed as general overhead expense, at each Prime Contractor's option.

Schedule Updating: Update and resubmit the schedule of values when change orders affect listing and when the actual performance of the work involves necessary changes of substance to values previously listed.

PAYMENT REQUESTS:

General: Except as otherwise indicated, the progress payment cycle for each Prime Contractor is to be regular. Each application must be consistent with previous applications and payments. Certain applications for payment, such as the initial application, the application at substantial completion, and the final payment application involve additional requirements.

Waivers of Lien: For each payment application, each Prime Contractor shall submit waivers of lien for every entity (including Prime Contractor) who could lawfully and possibly file a lien in excess of $100 arising out of the Contract and related to work covered by the payment. Submit partial waivers for the amount requested, prior to deduction of retainage, on each item. When application shows completion of an item, submit final or full waivers. The Owner reserves the right to designate which entities involved in the work must submit waivers.

Waiver Delays: Each progress payment must be submitted with Prime Contractor's waiver from the period of construction covered by the application. At the Prime Contractor's option, each progress payment may be submitted from waivers from the subcontractors or subcontractors and suppliers for the previous period of construction covered by the previous application. The final payment application must be submitted together with or preceded by final or complete waivers from every entity involved with performance of the work covered by the payment request.

Waiver Forms: Submit waivers on forms, and executed in a manner, acceptable to Project Manager.

Payment Application Times: The "date for each progress payment" for each Prime Contractor is as indicated in Owner-Prime Contractor Agreement and in the Supplementary Conditions to the General Conditions, Article 9.

Payment Application Forms: Certificate for Payment form available from Architect's office.

Application Preparation: Except as otherwise indicated, complete every entry provided for on the form, including notarization and execution by authorized persons. Incomplete applications will be returned by Project Manager without action. Entries must match current data of schedule of values, progress schedule and reports. Listing must include amounts of change orders issued prior to last day of the "period of construction" covered by application.

Initial Payment Application: The principal administrative actions and submittals which must precede or coincide with submittal of each Prime Contractor's first payment application can be summarized as follows, but not necessarily by way of limitation:

Listing of subcontractors and principal suppliers and fabricators.

Schedule of values.

Progress schedule (preliminary if not final).

Schedule of principal products.

Schedule of submittals (preliminary if not final).

Listing of Prime Contractor's staff assignments and principal consultants.

Performance and/or payment bonds.

Evidence satisfactory to Owner that Prime Contractor's insurance coverages have been secured.

Data needed by Owner to secure related insurance coverages.

Application at Time of Substantial Completion: Following issuance of Architect's final "certificate of substantial completion" on each Prime Contractor's work, and also in part as applicable to prior certificates on portions of completed work as designated, a "special" payment application may be prepared and submitted by Prime Contractor. The principal administrative actions and submittals which must proceed or coincide with such special applications can be summarized as follows, but not necessarily by way of limitation:

Approvals or Certifications by governing authorities assuring Owner's full access and use of completed work.

Warranties (guarantees), maintenance agreements and similar provisions of contract documents.

Final cleaning of the work.

Listing of Prime Contractor's incomplete work, recognized as exceptions to Architect's (or Engineer's) certificate of substantial completion.

Test/adjust/balance records, maintenance instructions, meter readings, start-up performance reports, and similar changeover information germane to Owner's occupancy, use, operation, and maintenance of completed work.

Application for reduction (if any) of retainage, and consent of surety.

Advice to Owner on coordination of shifting insurance coverages, including proof of extended coverage as required.

Architect's Certificate of Substantial Completion.

Final Payment Application: The administrative actions and submittals which must precede or coincide with submittal of each Prime Contractor's final payment application can be summarized as follows, but not necessarily by way of limitation:

Completion of project close-out requirements.

Completion of items specified for completion beyond time of substantial completion (regardless of whether special payment application was previously made).

Assurance, satisfactory to Owner, that unsettled claims will be settled and that work not actually completed and accepted will be completed without undue delay.

Transmittal of required project construction records to Owner.

Proof, satisfactory to Owner, that taxes, fees and similar obligations of Prime Contractor have been paid.

Removal of temporary facilities, services, surplus materials, rubbish and similar elements.

Change over of door locks and other provisions for Prime Contractor's access to Owner's property.

Consent of surety for final payment.

After the completion of the work contemplated by this Contract, the Prime Contractor shall file with the Owner his affidavit, sworn to before a Notary Public, stating that all workmen and persons employed, all firms supplying the materials and all subcontractors upon the project have been paid in full and that there are not bills outstanding against the project for either labor or materials, except certain items in connection with the Notices to Withhold have been filed under the provisions of the Statutes of the State of California. The filing of such affidavit by the Prime Contractor shall be a prerequisite to making, by the Owner, of the final payment on the contract.

Application Transmittal: Each Prime Contractor shall submit 3 executed copies of each payment application, one copy of which shall be complete with waivers of lien and similar attachments. Transmit each copy with a transmittal form listing those attachments, and recording appropriate information related to application in a manner acceptable to Project Manager. Transmit to Project Manager by means ensuring receipt within 24 hours.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01311
05/16/07 - mf

SECTION 01323 - CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for photographs to be taken before and during the construction of the Project.

1.2 SUBMITTALS

A. E-mail photos to the District and Architect within 3 days after capturing photographs.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXAMINATION

3.1 GENERAL

A. Provide time-dated construction photographs taken on first day of each month and at following stages of construction, when they do not coincide with the first day of the month.

1. Prior to beginning any work at the site.

2. Promptly after damage that may result in loss or liability occurs.

3. At completion of all construction work and when at project completion.

B. At each specified time during construction, take photographs from different views. Take 12 exterior views and 24 interior views. Views will be determined, or must be approved in advance by the Architect.

C. Take color photographs with a digital camera at a resolution of not less than 4 mega pixels.

D. E-mail photographs as specified above.

END OF SECTION
1/21/10 - CS

SECTION 01400 - QUALITY CONTROL SERVICES

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification sections, apply to this Section.

SUMMARY:

Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.

This Section specifies administrative and procedural requirements for quality control services.

Quality control services include inspections and tests and related actions including reports performed by independent agencies, governing authorities, and the Prime Contractors. They do not include Contract enforcement activities performed by the Project Manager/Architect.

Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Prime Contractors of responsibility for compliance with Contract Document requirements.

Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

> Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.

Inspections, test and related actions specified are not intended to limit the Prime Contractor's quality control procedures that facilitate compliance with Contract Document requirements.

Requirements for each Prime Contractor to provide quality control services required by the Project Manager/Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

RESPONSIBILITIES:

Prime Contractor Responsibilities: Each Prime Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity; these services include those specified to be performed by an independent agency and not by the Prime Contractors. Costs for these services shall be included in the Contract Sum.

> The Prime Contractor shall employ and pay an independent agency, to perform specified quality control services.

The Owner will engage and pay for the services of an independent agency to perform inspections and tests unless otherwise noted.

Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work, and the Prime Contractor is also required to engage an entity for the same or related element, the Prime Contractor shall not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.

Retesting: Each Prime Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Prime Contractor's responsibility.

Cost of retesting construction revised or replaced by the Prime Contractor is the Prime Contractor's responsibility, where required tests were performed on original construction.

Associated Services: All Prime Contractors shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:

Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
Security and protection of samples and test equipment at the Project Site.

Owner Responsibilities: The Owner will provide inspections, tests and similar quality control services specified to be performed by independent agencies and not by the Prime Contractors, except where they are specifically indicated as the Prime Contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.

The Owner will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services, which are the Owner's responsibility.

Independent Testing Laboratory: The testing laboratory shall be selected by, and be employed by the Owner. The testing laboratory shall be subject to the approval of the Architect. The testing laboratory shall perform all tests requested by the owner, Architect. Samples for testing shall be taken by the Inspector or a representative of the approved testing laboratory and not by the Prime Contractor.

Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the Project Manager/Architect and Prime Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.

The agency shall notify the Project Manager/Architect and Prime Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
The agency shall not perform any duties of the Prime Contractor.

Coordination: Each Prime Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Prime Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

The Prime Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

TESTS:

The Owner will select an independent testing laboratory to conduct the tests. Selection of material required to test shall be by the laboratory or the Owner's representative **and not by the Prime Contractor.**

The Prime Contractor shall notify the Owner's representative a sufficient time in advance of the manufacture of material to be supplied by him under the Contract Documents, which must by terms of the Contract be tested in order that the Owner may arrange for the testing of the same at the source of supply.

Any material shipped by the Prime Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection **shall not be incorporated in the job.**

The Owner will select and pay the testing laboratory costs for all tests and inspections, but may be reimbursed by the Prime Contractor for such costs under the Contract Documents.

SUBMITTALS:

The independent testing agency shall submit a certified written report of each inspection, test or similar service, to the Project Manager/Architect, in duplicate, unless the Prime Contractor is responsible for the service. If the Prime Contractor is responsible for the service, submit a certified written report of each inspection, test or similar service through the Prime Contractor, in duplicate.

Submit additional copies of each written report directly to the governing authority, when the authority so directs.

Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:

Date of issue.
Project title and number.
Name, address and telephone number of testing agency.
Dates and locations of samples and tests or inspections.
Names of individuals making the inspection or test.
Designation of the Work and test method.
Identification of product and Specification Section.
Complete inspection or test data.
Test results and an interpretations of test results.
Ambient conditions at the time of sample-taking and testing.
Commence or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
Name and signature of laboratory inspector.
Recommendations on retesting.

QUALITY ASSURANCE:

Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are pre-qualified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

REPAIR AND PROTECTION:

General: Upon completion of inspection, testing, sample-taking and similar services repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with the Contract Document requirements for "Cutting and Patching". Protect work exposed by or for quality control service activities, and protect repaired work. Repair and protection is the Prime Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

Each Prime Contractor shall protect construction exposed by or for quality control service activities, and protect repaired construction.

Repair and protection is the Prime Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

INSPECTION SERVICES:

INSPECTION BY THE OWNER:

The Owner and his representative shall at all times have access for the purpose of inspection to all parts of the work and to the shops wherein the work is in preparation, and the Prime Contractor shall at all times maintain proper facilities and provide safe access for such inspection.

The Owner and his representatives shall have the right to reject materials and workmanship, which are defective, or to require their correction. Rejected workmanship shall be removed from the premises without charge to the Owner. If the Prime Contractor does not correct such rejected work within a reasonable time, fixed by written notice, the Owner may correct it and charge the expense to the Prime Contractor.

Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out the same, the Prime Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any respect due to fault of the Prime Contractor or his subcontractor, he shall defray all expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the additional cost of labor and material necessarily involved in the examination and the Prime Contractor shall allow replacement.

BY THE OWNER'S INSPECTOR

A D.S.A. Certified Project Inspector employed by the Owner in accordance with the requirements of the California Code of Regulations, Title 24, will be assigned the to the work. The Inspector's duties are specifically defined in Title 24, Part I, Section 4-342.

> **He will perform his duties under the direction of the Architect and report to the Owner and Architect.** The primary duty of the Inspector is to check the Prime Contractor's work for compliance with the Contract Documents. The Prime Contractor will provide the Inspector access and facilities for access to all the work at all times and will provide a field office for the Inspector in accordance with Division 1 standards.

The work of construction in all stages of progress shall be subject to the personal continuous observation of the Inspector. He shall have free access to any or all parts of the work at any time. The Prime Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Prime Contractor from any obligation to fulfill the contract.

> The presence of an Inspector shall in no way change, mitigate or alleviate the responsibility of the Prime Contractor.

Relations with Architect or Engineer

The Inspector shall work under the direction of the architect or registered engineer. All inconsistencies or seeming errors in the plans and specifications shall be reported promptly to the architect or registered engineer for his interpretation and instructions. In no case, however, shall the instruction of the architect or registered engineer be construed to cause work to be done, which is not in conformity with the approved plans, specifications and change orders.

Job File

The inspector shall keep a file of approved plans and specifications (including all approved addenda or change orders) on the job at all times and shall immediately return unapproved documents to the architect for proper action. The inspector as a condition of this employment shall have and maintain on the job at all times, all codes and documents referred to in the plans and specifications.

Deviations

The inspector shall notify the Prime Contractor, in writing, of any deviations from the approved plans and specifications which are not immediately corrected by the Prime Contractor when brought to his attention. Copies of such notices shall be forwarded immediately to the architect or registered engineer, and to the Office of Architect and Construction. The inspector shall have the authority to stop the work as outlined in the General Conditions and as allowed by C.C.R. Title 24.

Failure on the part of the inspector to notify the Prime Contractor of deviations from the approved plans and specifications shall in no way relieve the Prime Contractor of any responsibility to complete the work covered by his contract in exact accordance with the approved plans and specifications and all laws and regulations.

In case any dispute arises between the Prime Contractor and the Inspector, as to materials furnished or the manner of performing the work, the Inspector shall have the authority to reject materials or suspend the work until dispute at issue can be referred or settled. The Inspector is not authorized to change, revoke, alter, enlarge, decrease in any way any requirements of Contract Documents, nor to issue directions contrary to the Contract Documents, drawings, project manual, specifications or change orders.

Air Balance Contractor Selection:

ACCEPTABLE Air Balance Contractors, Companies or Service will be only those designed, named or specified in Division 15, Air Balancing, or whose written acceptance has been granted by the Architect's Consulting Mechanical Engineer representing the Owner. UNDER NO CIRCUMSTANCES will the HVAC subcontractor perform, or select the subcontractor for Air Balancing or must not be associated financially with the HVAC Contractor.

TESTS AND INSPECTIONS:

General: Tests and inspections for the following will be required, but may not be limited, to the following:
Code section references are from Title 24, Part 2 of California Code of Regulations.

Masonry - State Chapter 21 A

Materials:
Masonry Units - 2102A.2, 4, 5 & 6.
Portland Cement, Lime - 2102A.2, 2 & 3.
Mortar & Grout Aggregates - 2102A.2, 1.
Reinforcing Bars - 2102A.2, 10.

Masonry Quality:
Portland Cement Tests - 2102A.2, 2 & 1903 A.2
Mortar & Grout Tests - 2105A.3.4, 2
Mortar Prism Tests - 2105A.3.2
Masonry Core Tests - 2105A.3.1
Reinforcing Bar Tests - 2102A.2, 10 & 1903A.5

Masonry Inspection:
Reinforced Masonry - 2105.A.7
Reinforcing Bar Welding Inspection - 1903A.5.2

Concrete - Chapter 19 A

Materials:
Portland Cement Tests - 1903A.2
Concrete Aggregates - 1903A.3
Reinforcing Bars - 1903A.5
Batch Plant Inspection - 1929A.4
Waiver of Batch Plant Inspection and Tests - 1929A.5

Concrete Quality:
Proportions of Concrete - 1905A.2
Strength Tests of Concrete - 1903A.8, 1905A.6
Splitting Tensile Tests - 1905A.4 & 1905A.1.5
Composite Construction Cores - 1929A.8

Concrete Inspection:
Job Site Inspection - 1701A.5.1 & 1929A.1
Batch Plant or Weighmaster Inspection - 1929A.4
Prestressed Concrete Inspection - 1929A.9
Reinforcing Bar Welding Inspection - 1929A.12

Structural Steel - State Chapter 22

Materials:
Structural Steel, Cold Formed Steel - 2203A.2 & 2203A.3
Material Identification - 2203A

Inspection and Tests of Structural Steel:
Tests of Structural & Cold Formed Steel - 2231A.1
Tests of High Strength Bolts, Nuts, Washers - 2231A.2
Tests of End Welded Studs - 2231A.3
Shop Fabrication Inspection - 2231A.4
Welding Inspection - 2231A.5
High Strength Bolt Inspection - 2231A.6
Steel Joists Load Tests - 2231A.7
Non-Destructive Weld Testing - 1703A & 2214A.9

Aluminum - State Chapter 20 A

Materials:

Alloys - 2006A
Identification - 2006A & TABLE 20A-II-A

Inspection:

Welding - 2012A

Foundations Chapter - State Chapter 18A

Earth Fill Compaction - 1802A

Inspection:

Excavation & Fills for Foundation - 1802A

COMPREHENSIVE LIST OF TESTS AND INSPECTIONS BY SPECIFICATION SECTION

Clarification of Owner and Prime Contractor responsibilities for testing as follows:

Specification Section		Responsibility	Test
02200	Earthwork	Owner	Compacted Fill Compaction Control
02513	Asphalt Concrete	Owner	Compaction of A/C & Base Course
02514	Portland Cement Paving	Contractor	Laboratory Mix Design
		Owner Contractor	Aggregate & Compression Test Review of Mix Design
02668	Water Systems	Contractor	Pressure Tests
02720	Storm Sewage System	Contractor	Pressure Test
02730	Sanitary Sewage System	Contractor	Pressure Test
02810	Irrigation	Contractor	Pressure Tests
		Contractor	Operational and Coverage Test
03310	Concrete	Contractor	Laboratory Mix Design
		Owner	Review of Mix Design
		Contractor	Certificate of Compliance for Aggregate
16100	Electrical	Contractor	Testing Per Section #16100
		Contractor	Hi-Pot Test (High Voltage Cable only)

END OF SECTION 01400
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SECTION 01420 - TESTING AND INSPECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Testing and inspection services to meet requirements of the California Building Code (CBC), Title 24, Parts 1 and 2, as indicated on the Drawings.

B. One or more DSA certified inspectors employed by District in accordance with the requirements of California Building Standards Administrative Code will be assigned to the Work with their duties as specifically defined in Section 4-333(b).

C. Tests of materials are required by a DSA certified testing agency as set forth in Section 4-335 of the California Building Standards Administrative Code.

1.2 RELATED SECTIONS

A. Section 01450: Contractor Quality Control.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TESTS

A. District will select an independent testing agency to conduct tests, sampling, and testing of materials. Selection of material to be tested shall be by the agency and not by Contractor.

B. Any material shipped from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from DSA Inspector such testing and inspection is not required shall not be incorporated into the Work.

C. District will select and directly reimburse testing agency the costs for all DSA and/or DSA required tests and inspections, but may be reimbursed by Contractor for such costs as noted in related sections of the Contract Documents.

D. The independent testing agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work. The agency shall not perform any duties of Contractor.

E. Contractor shall provide an insulated curing box with the capacity for 20 concrete cylinders and will relocate said box and cylinders as rapidly as required in order to provide for progress of the Work.

3.2 TEST REPORTS

A. Test reports shall include all tests performed, regardless of whether such tests indicate the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. Reports shall indicate the material or materials were sampled and tested in accordance with requirements of CBC, Title 24, Parts 1 and 2, as indicated on the Drawings. Test reports shall indicate specified design strength. They shall also definitely state whether or not material or materials tested comply with the specified requirements.

3.3 VERIFICATION OF TEST REPORTS

A. Each testing agency shall submit to the Division of the State Architect a verified report in duplicate covering tests which are required to be performed by that agency during progress of the Work. Such report shall be furnished each time construction on the Work is suspended, covering tests up to that time, and prior to Substantial Completion of the Work, covering all tests.

3.4 INSPECTION BY DISTRICT

A. District and its representatives shall at all times have access, for purpose of inspection, to all parts of the Work and to shops wherein the Work is in preparation, and Contractor shall at all times maintain proper facilities and provide safe access for such inspection.

B. DSA Inspector shall have the right to reject materials and/or workmanship deemed defective Work, and to require correction. Defective workmanship shall be corrected in a satisfactory manner and defective materials shall be removed from the premises and legally disposed of, all without charge to District. If Contractor does not correct such defective Work within a reasonable time, fixed by written notice and in accordance with the terms and conditions of the Contract Documents, District may correct such defective Work and proceed in accordance with related Articles of the Contract Documents.

C. Contractor is responsible for compliance to all applicable local, state, and federal regulations regarding codes, regulations, ordinances, restrictions, and requirements.

3.5 DSA INSPECTOR

A. DSA Inspector is employed by District in accordance with requirements of Title 24 of the California Code of Regulations with their duties specifically defined therein.

B. Inspection of Work shall not relieve Contractor from any obligation to fulfill all of the terms and conditions of the Contract Documents.

C. Contractor shall be responsible for scheduling times of inspection, tests, sample taking, and similar activities of the Work.

3.6 TESTS AND INSPECTIONS

A. The following tests and inspections do not limit inspection of the Work but are required by DSA, other agencies, or are required in related Sections of the Contract Documents.

B. Excavations, Foundations and Retaining Walls - CBC, Chapter 18A:

1. Inspection:

a. Inspection of Piles:	1704A.8

C. Concrete - CBC, Chapter 19A:

1. Materials:

a. Portland Cement	1704A.4.1; 1916A.1
b. Concrete Aggregate	1704A.4.1; 1903A.3
c. Reinforcing Bars	1704A.4.1; 1916A.2

2. Quality:

a. Proportions of Concrete	1905A.2; 1905A.3; 1905A.4
b. Strength Test of Concrete	1905A.1.1; 1905A.6
c. Concrete Mixing and Placing	1905A.8; 1905A.9; 1905A.10
d. Concrete Testing	1916A

3. Inspection:

a. Job Site	1905A.7
b. Batch Plant	1704A.4.3
c. Waiver of Batch Plant	1704A.4.4
d. Reinforcing Bar Welding	1903A.4; 1704A.4.2
e. Post-Installed Anchors in Concrete	1916A.8

D. Masonry - CBC, Chapter 21A:

1. Materials:

a.	Masonry Units	2103A.1
b.	Portland Cement, Lime	2103A
c.	Mortar & Grout Aggregates	2103A.8; 2103A.12; 2103A.12.3
d.	Reinforcing Bars	2103A.13.1

2. Quality:

a.	Portland Cement Tests	1916A.1
b.	Mortar & Grout Tests	2105A.5
c.	Masonry Prism Tests	2105A.2.2.2
d.	Masonry Core Tests	2105A.4
e.	Masonry Unit Tests	2105A.2.2.1
f.	Reinforcing Bar Tests	1916A.2

3. Inspection:

a.	Reinforced Masonry	1704A.5
b.	Reinforcing Bar Welding	1704A.4.2

E. Steel - CBC, Chapter 22A:

1. Materials:

a.	Structural Steel	2205A.1
b.	Cold-Formed Steel	2209A.1
c.	Material Identification	2203A.1

2. Quality:

a.	Test of Structural Steel and Cold-Formed Steel	2212A.1
b.	Tests of High Strength Bolts, Nuts and Washers	2212A.2
c.	Tests of End Welded Studs	2212A.3
d.	Shop Fabrication Inspection	2231.A.4

e.	Non-Destructive Weld Tests	1704A.3.1

3. Inspection:

a.	Shop Fabrication	1704A.3.2
b.	Welding	1704A.3.1
c.	Nelson Stud Welding	1704A.3.1.1
d.	High Strength Bolt Installation	1704A.3.3
e.	Examination of seam welds at HSS	DSA IR 17-3
f.	Quality Control products for SLRS	Appendix Q of AISC 341-05

F. Exterior Wall Coverings - CBC, Chapter 25A:

1. Materials:

a.	Portland Cement Plaster	2508A, 2509A, 2510A

END OF SECTION
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SECTION 01450 – CONTRACTOR QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general requirements for quality control of the Work, including test and inspection procedures.

B. Related work:

1. Divisions 2 through 16 for specific test procedures to be performed in compliance with this Section.

1.2 ADMINISTRATIVE STAFF

A. Provide a competent and adequate staff for the administration, coordination, supervision, and superintendence of the Work.

B. Do not change key members of this staff without the consent of the District, unless such staff members prove to be unsatisfactory to the Contractor and cease to be in his employ. If the Contractor intends to change a key staff member, he shall give the District written notice at least 15 days prior to the intended change.

C. Key staff members shall be full time employees, stationed at the site.

D. Project staff shall include, but shall not be limited to, the following:

1. Project Manager: The person who has responsibility for the prosecution of the work and who has the authority to act in matters for the coordination, direction, and technical administration of the work. Prior to commencement of the work, provide the District with the name of the project manager.

2. Superintendent: The person who shall be in attendance at the Project site during the performance of the work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

3. Additional staff: In addition to the general project superintendent required above, provide the services of coordinating engineer for HVAC, Plumbing, Fire Protection, and Electrical Work: The full time person who has the responsibility for the coordination of the mechanical and electrical work with the work of other trades, for the review of mechanical and electrical shop drawings, for the resolution of conflicts and interferences between trades, for directing adjustments in the work that shall be required to comply with the Contract Documents, and for commissioning the mechanical and electrical systems. This individual shall have previous experience in coordinating these areas of work on projects of similar scale and complexity.

1.3 CONTRACTOR QUALITY CONTROL SYSTEM

A. Establish a quality control system to perform sufficient inspections and tests of all items of Work, including that of all subcontractors, to ensure conformance with the Contract Documents for materials, workmanship, construction, finish, functional performance and identification.

B. Quality control system shall ensure that the Work complies with the requirements of the Contract Documents. Controls shall be adequate to cover all construction operations.

C. Apply, install, connect, erect, use, clean, adjust, and condition articles, materials and equipment in compliance with their manufacturer latest published instructions, unless more restrictive or stringent requirements are specified in the Specifications.

1. When specified or requested, furnish the Architect 2 copies of such printed instructions prior to introduction of such items.

2. If product manufacturer instructions are in conflict with the Contract Documents, notify the Architect for clarification before proceeding.

3. Keep a clean, legible copy of the various product manufacturers instructions applicable to the Work at the Project site.

D. Certificates:

1. When specified, deliver to the Architect 2 signed certificates from suppliers of materials, equipment and manufactured items stating that such materials and manufactured items meet or exceed the standards specified.

2. In lieu of such certification, the Contractor may submit reports of current tests made and attested by a reputable and recognized testing laboratory.

1.4 CONTRACTOR ASSISTANCE

A. Cooperate with individual or firm performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the individual or firm sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:

1. Providing access to the work to be tested or inspected and furnishing incidental labor and facilities necessary to facilitate inspections and tests.

2. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.

3. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.

4. Providing the individual or firm with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.

5. Providing security and protection of samples and test equipment at the Project site.

1.5 VERIFICATION OF CONDITIONS

A. Prior to installation of any product, inspect existing supports and assemblies to receive materials to be installed and arrange for correction of defects in the existing workmanship, material or conditions that may adversely affect work to be installed.

B. Installation of materials will constitute acceptance of existing conditions as being in proper condition to receive the materials to be applied and waiver of claim that existing conditions are defective as pertains to warranty requirements.

C. Where the Specifications require a product to be installed under the supervision or inspection of the material manufacturer or its representative, manufacturer or its representative shall also inspect the work in place and issue a letter to Architect verifying that this procedure was followed without exception.

1.6 INSTALLER QUALIFICATIONS

A. Where the Specifications dictate a certain level of experience or expertise from the subcontractor/installer by requiring a minimum number of years of experience in the successful installation of a product or a minimum number of successful installations for the product specified, it shall be the Contractor responsibility to verify the installer's competence and track record before signing a subcontract to perform the affected work.

1.7 MANUFACTURER FIELD SERVICES

A. An experienced, competent, and authorized representative of the manufacturer of each item of equipment for which field services are required in the Specifications shall visit the site of the Work and inspect, check, adjust if necessary, and approve the equipment installation.

B. In each case, the representative shall revisit the job-site as often as necessary until all problems are corrected and the equipment installation and operation are satisfactory, in the opinion of the Architect.

C. Each manufacturer representative shall furnish to the Architect a written report certifying that the equipment has been properly installed, and lubricated; is in accurate alignment; is free from any undue stress imposed by connecting piping or anchor bolts; and has been operated under full load conditions and that it operated satisfactorily.

D. All costs for these services shall be included in the Contract.

END OF SECTION

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SECTION 01500 - TEMPORARY FACILITIES

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification sections, apply to work of this section.

SUMMARY:

Definitions: Specific administrative and procedural minimum actions are specified in this section, as extensions of provisions in General Conditions and other Contract Documents. These requirements have been included for special purposes as indicated. Nothing in this section is intended to limit types and amounts of temporary work required, and no omission from this section will be recognized by Architect, Engineer, Engineer or Project Manager that such temporary activity is not required for successful completion of the work and compliance with requirements of Contract Documents. Provisions of this section are applicable to, but not by way of limitation as follows:

Utility services
Construction facilities
Support facilities
Security/protection provisions.

Multiple Prime Contracts: Provisions of this Section apply to construction activities of each Prime Contractor.

QUALITY ASSURANCE:

General: In addition to compliance with governing regulations and rules/recommendations of franchised utility companies, comply with specific requirements indicated and with applicable local industry standards for construction work (published recommendations by local "building councils").

ANSI Standards: Comply with applicable provisions of ANSI A10-Series standards on construction safety, including A10.3, A10.4, A10.5, A10.6, A10.7, A10.8, A10.9, A10.10, A10.11, A10.12, A10.13, A10.14, A10.15, A10.17, A10.18, A10.20, and A10.22.

Conservation: In compliance with Owner's policy on energy/materials conservation, install and operate temporary facilities and perform construction activities in manner which reasonably will be conservative and avoid waste of energy and materials including water.

JOB CONDITIONS:

General: Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the work. Terminate use and remove facilities at earliest reasonable time, when no longer needed or when permanent facilities have, with authorized use, replaced the need.

Conditions of Use: Install, operate, maintain and protect temporary facilities in a manner and at locations which will be safe, non-hazardous, sanitary, and protective of persons and property, and free of deleterious effects.

PARTS 2 AND 3 - PRODUCTS AND EXECUTION

TEMPORARY UTILITY SERVICES:

Water Service:

General: Owner will provide construction water service, sanitary facilities, including cleaning required during construction period (until permanent service is in use). Prime Contractors will be responsible for providing appurtenances for directing water to desired locations.

Electrical Power Service:

General: Electrical Prime Contractor will install waterproof, grounded electric power service of size, capacity and power characteristics required for temporary uses, including construction machinery, tools and equipment, lighting, heating (to extent indicated, if any), alarms, communication devices, and initial operation and testing of work which requires power and must be test operated or placed in service ahead of time permanent power service is available. Each Prime Contractor will be responsible for providing extension cords for operation of equipment used for his work.

Telephone Service:

General: The Project Manager will provide and arrange for local telephone company to install pay telephone service to Project Site; one instrument will be provided for use by Prime Contractors and their subcontractors.
Telephone service will be provided at the time of the start of the work and service will be maintained until end of project. This would contingent upon availability of telephone service lines from the telephone company.

TEMPORARY CONSTRUCTION FACILITIES:

The types of temporary construction facilities required include, but not by way of limitation as follows:

Water distribution
Drainage and watering equipment
Enclosure of work
Heat
Ventilation
Electrical power distribution
Lighting
Hoisting facilities
Stairs
Ladders
Roads

Provide facilities reasonably required to perform construction operations properly and adequately. Each Prime Contractor shall be responsible for providing all temporary facilities for the work of their contract (excluding those facilities specifically indicated above as being furnished by others.)

Heating: Heat with self-contained heaters, bearing UL, FM or other approval labels appropriate for application. Vent fuel-burning heaters, and equip units with individual thermostatic controls. Use electric-resistance space heaters only where no other, more energy-efficient, type of heater is available and allowable.

Supply power for electric welding by engine-driven power-generator sets.

Lighting: Project Manager will provide equipment for temporary lighting. Each Prime Contractor will coordinate placement of such equipment as needed to ensure proper workmanship. The Prime Contractor will provide temporary lighting and power once the project permanent power is established

TEMPORARY SUPPORT FACILITIES:

The Project Manager will provide for the use of all Prime Contractors, the following support facilities:

Sanitary facilities
Telephone

Each Prime Contractor will provide the first aid facilities, materials, and equipment required by governing authorities, laws, ordinances, regulations, standards, orders and underwriters for the work of his contract.

Project Manager will provide an air conditioned office for use by Project Inspector.

Inspector shall be provided a separate office (10' x 10' minimum).

The Prime Contractor shall provide for the use of the Owner's Inspector a temporary office to be located as directed by the Inspector and to be maintained until removal is authorized by the Owner. This office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. The door shall lock. A table satisfactory for the study of plans and two chairs shall be provided by the Prime Contractor. The Prime Contractor shall provide and pay for adequate electric lights, private local telephone service with a loud exterior bell, and adequate heat for this field office until completion of the Contract.

SECURITY/PROTECTION PROVISIONS:

The types of temporary security and protection provisions that the Project Manager will provide are described below. The Project Manager will provide security/protection services and systems in coordination with activities and in a manner to achieve reasonable security for the work.

Temporary Fire Protection:

Construction Sheds, Etc: Shall be placed outside of the building structure, limited to no more than 300 square feet area and located at least ten feet away from the buildings or from combustible materials storage piles. Stoves shall be set on properly protected floor with ample lateral clearance and particular attention shall be given to stack clearance and arrangement.

Gasoline, Oils, Paint and Other Volatile Liquids: Shall be kept outside, to be brought into the building in quantities only as needed. Such storage shall be in a well ventilated location, well removed from all open heating or lighting devices. Particular care shall be given to the housekeeping in the storage room to eliminate spillage and accumulation of oil wastes: provide approved waste and safety cans.

Fire Extinguishers: Each Prime Contractor shall provide types, sizes, numbers and locations as would be reasonably effective in extinguishing fires during early stages, by personnel at Project Site. Prime Contractor will instruct all his personnel at Project Site, at time of their first arrival, on proper use of extinguishers.

Barricades, Guardrails, Warning Signs and Lights:

Each Prime Contractor shall comply with recognized standards and code requirements for erection of substantial and structurally adequate barricades where needed to prevent accidents and losses. Paint with appropriate colors, graphics and warning signs to inform personnel at site, and the general public where exposure exists, of hazard being protected. Provide lighting where appropriate and needed for recognition of facility, including flashing red lights where appropriate.

Each Prime Contractor shall construct and maintain fences, guardrails, barricades, lights, flashers, shoring and warning signs as required by local authorities and State safety ordinances and as required to protect the Owner's property from injury or loss and as necessary for the protection of the public place for carrying on the work covered in this contract. Leave all protection in place and maintain until removal is authorized.

All temporary work shall conform to all the requirements of State and local authorities and underwriters which pertain to operation, safety, and fire hazard. The Prime Contractor shall furnish and install all items necessary for conformity with such requirements, whether or not called for under the separate divisions of these specifications. All fencing and barricades shall be removed upon completion of the project.

Each Prime Contractor shall protect all streets and sidewalks and shall repair all damage caused by his work at his own expense.

Noise Control: Noise from job equipment and construction operations shall be kept to a minimum by adequate mufflers and other means as approved by the Project Manager.

Dust Control: Throughout the entire contract period, the Prime Contractor shall palliate dust conditions in the working area, involved portions of the site and all roads used in the operations. This shall consist of intermittent watering and sprinkling of such frequency as will satisfactorily allay the dust during the hours that work is to be performed, as required.

Drainage Control: (Water) Prime Contractor shall at all times protect related or adjacent to his work, excavations, banks, trenches and/or the building from rain water, spring water, ground water, backing up on drains or sewers, and all other water admitted to any work by his operation. He shall provide all pumps and other equipment and enclosures to provide this protection.

Prime Contractor shall construct and maintain all necessary temporary drainage and do all pumping necessary to keep aforenoted excavations, etc., free of water.

Each Prime Contractor shall furnish and maintain pumping apparatus as needed to prevent any water damage to the work in progress.

Pollution Control: All fires are strictly forbidden. Refer to Fire Regulations.

Weather Protection: Prime Contractor shall at all times provide protection to the work against weather, rain, wind storms, frost or heat so as to maintain all work, materials, apparatus and fixtures free from injury or damage.

LOCATION AND USE OF TEMPORARY FACILITIES:

Project Manager will direct location of construction trailers, sheds, and other facilities which individual Prime Contractors bring to the Project Site.

Prime Contractors will be responsible for damage to existing improvements caused by the installation, presence, use, and removal of temporary facilities. Temporary Facilities shall be removed as soon as their use is not needed and immediately repair all damage to previously existing or new work.

END OF SECTION - 01500
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SECTION 01550 - DEWATERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes construction dewatering.

B. Related Sections:
1. Division 2 Section "Earthwork" for excavating, backfilling, site grading, and for site utilities.
2. Division 2 Section "Site Clearing" for site clearing activities.
3. Division 2 Section "Selective Demolition" for selective demolition activates.

1.3 PERFORMANCE REQUIREMENTS

A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of water due to weather conditions, break in water mains, and ground water in order to permit excavation and construction to proceed on dry, stable sub-grades.

1. Delegated Design: Design dewatering system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
2. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to sub-grades and permanent structures is prevented.
3. Prevent surface water from entering excavations by grading, dikes, or other means.
4. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.
5. Remove dewatering system when no longer required for construction.

1.4 SUBMITTALS

A. Shop Drawings: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of risers, headers, filters, pumps, power units, and discharge lines; and means of discharge, control of sediment, and disposal of water.
1. Include a written plan for dewatering operations including control procedures to be adopted if dewatering problems arise.

B. Delegated-Design Submittal: For dewatering system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Qualification Data: For qualified **Installer**.

D. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer that has specialized **in design of dewatering systems and** dewatering work.

B. Regulatory Requirements: Comply with governing E.P.A. notification regulations before beginning dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Pre-installation Conference: Conduct conference at **Project site**.

1. Review methods and procedures related to dewatering including, but not limited to, the following:

   a. Inspection and discussion of condition of site to be dewatered including coordination with temporary erosion control measures and temporary controls and protections.
   b. Geotechnical report.
   c. Proposed site clearing and excavations.
   d. Existing utilities and subsurface conditions.
   e. Coordination for interruption, shutoff, capping, and continuation of utility services.
   f. Construction schedule. Verify availability of Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   g. Testing and monitoring of dewatering system.

1.6 PROJECT CONDITIONS

A. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:

1. Notify **Construction Manager** no less than **one** day in advance of proposed interruption of utility.
2. Do not proceed with interruption of utility without **Construction Manager's** written permission.

B. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer. Owner will not be responsible for interpretations or conclusions drawn from this data.

1. Make additional test borings and conduct other exploratory operations necessary for dewatering.
2. The geotechnical report is **referenced** elsewhere in the Project Manual.

C. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

1. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Architect if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.

1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.
2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

C. Provide temporary grading to facilitate dewatering and control of surface water.

D. Monitor dewatering systems continuously.

E. Promptly repair damages to adjacent facilities caused by dewatering.

F. Protect and maintain temporary erosion and sedimentation controls, which are specified in a **Division 01 Section "Temporary Facilities and Controls" and Division 2 Section "Site Clearing"** during dewatering operations.

3.2 INSTALLATION

A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.

1. Space well points or wells at intervals required to provide sufficient dewatering.
2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.

B. Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.

C. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.

1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.

D. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.

1. Maintain piezometric water level a minimum of 24 inches below surface of excavation.

E. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

F. Provide standby equipment on site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to Owner.

1. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.

G. Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

3.3 FIELD QUALITY CONTROL

A. Observation Wells: Provide, take measurements, and maintain at least the minimum number of observation wells or piezometers indicated; additional observation wells may be required by authorities having jurisdiction.

1. Observe and record daily elevation of ground water and piezometric water levels in observation wells.
2. Repair or replace, within 24 hours, observation wells that become inactive, damaged, or destroyed. In areas where observation wells are not functioning properly, suspend construction activities until reliable observations can be made. Add or remove water from observation-well risers to demonstrate that observation wells are functioning properly.
3. Fill observation wells, remove piezometers, and fill holes when dewatering is completed.

B. Provide continual observation to ensure that subsurface soils are not being removed by the dewatering operation.

END OF SECTION - 01550
5/16/2007 - mf

SECTION 01575 - STORM WATER POLLUTION PREVENTION PLAN

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Preparation, implementation and monitoring of Storm Water Pollution Prevention Plan (SWPPP) for the purpose of preventing the discharges of pollutants from the construction site into the receiving waters. This includes elimination of non-storm water pollution discharges such as improper dumping, spills or leakage from storage tanks or transfer areas.

B. Compliance with all local, state and federal regulations governing storm water discharges associated with construction activities such as, but not limited to clearing, excavating, grading, demolition and other land disturbances.

C. Payment of application and annual fees required by the State Water Resources Control Board (SWRCB) within the duration of the construction contract.

D. Certification that the construction project has met all of the conditions of the General Construction Activity Storm Water Permit (GCASP).

NOTE: The District will not issue a job start until contractor has prepared and obtained approval of SWPPP from the District and submitted, if required a properly prepared notice of intent (NOI) with the appropriate filing fee to the District.

1.2 REFERENCES

A. National Pollutant Discharge Elimination System (NPDES) General Permit No CAS000002.

B. State Water Resources Control Board (SWRCB) Water Quality Order 99–08–DWQ.

C. Storm Water Best Management Practice Handbook for Construction Activities (BMP Handbook) published by California Storm Water Quality Association (CASQA).

D. City of Lancaster and/or Campus Storm Water Management Program.

1.3 RELATED DOCUMENTS

A. Drawings, Specifications and provisions of Construction Contract, including General, Special and Supplementary Conditions and other General Requirements.

1.4 RELATED SECTIONS

A. Other Division 1 Specification Sections.

1.5 SUBMITTALS

A. General: Comply with requirements of Section 01330.

B. Submit Notice of Intent and all applicable permit fees required by SWRCB.

C. Submit for approval the Storm Water Pollution Prevention Plan fourteen (14) Days after issuance of Notice to Proceed.

D. Submit inspection logs as required by Applicable Laws.

E. Submit Site monitoring reports as required by Applicable Laws.

F. Submit certifications as required by Applicable Laws.

PART 2- PRODUCTS

A. Use materials of a class, grade and type needed to meet the performance described in the BMP Handbook.

PART 3- EXECUTION

3.1 SWPPP PREPARATION AND APPROVALS

A. Prepare Storm Water Pollution Prevention Plan as required to comply with storm water regulations which specifies Best Management Practices (BMP) for the purpose of preventing the discharges of pollutants from the construction site into the receiving waters.

B. The Contractor shall comply with all the requirements in the District and/or the Campus Storm Water Management Program and prepare the Storm Water Pollution Prevention Plan in the format required or suggested by the Storm Water BMP Handbook.

C. For project sites, new or existing, with land disturbance of less than one (1) acre, the Contractor shall prepare and submit to the District the SWPPP for review and approval.

D. In addition to the above requirements, if the project site in which there is or will occur land disturbance of one (1) acre or more, the Contractor shall submit to the District a Notice of Intent as required by SWRCB with the appropriate filing fee. The Contractor shall also pay annual renewal fee(s) until the contract is completed and make all such checks payable to the State Water Resources Control Board.

3.2 SWPPP IMPLEMENTATION

The Contractor shall implement the Storm Water Pollution Prevention Plan as follows:

A. Install perimeter controls prior to starting other construction work at the site.

B. Contain on-site storm water at the jobsite. Do not drain on-site water directly into the storm drains.

C. Designate trained personnel for the proper implementation of the SWPPP.

D. Revise the SWPPP to suit changing site conditions and also when properly installed systems are ineffective.

3.3 SWPPP MONITORING

A. The Contractor shall conduct examination of storm water pollution prevention controls monthly, as well as before and after each storm and each 24-hour period during extended storm events.

B. The Contractor shall prepare and maintain, at the jobsite, a log of each inspection using Site Monitoring Report forms.

C. Distribute copies of the Storm Water Pollution Prevention Plan to the Contractor's superintendent, Subcontractors and College Project Manager. One (1) copy shall be posted on site at all times.

3.4 SWPPP LIABILITIES AND PENALTIES

A. Review of the SWPPP and inspection logs by the District or College Project Manager shall not relieve the Contractor from liabilities arising from non-compliance with storm water pollution regulations.

B. Payment of Penalties for non-compliance by the Contractor shall be the sole responsibility of the Contractor and will not be reimbursed by the District.

C. Compliance with the Clean Water Act pertaining to construction activities is the sole responsibility of the Contractor. For any fine(s) levied against the District due to noncompliance by the Contractor, the District will have the option to either require payment by Contractor of, or deduct from the Final Payment due the Contractor, the total amount of the fine(s) levied on the District and associated costs.

3.5 SWPPP DOCUMENTATION

A. Leave in place storm water pollution prevention controls needed for post-construction storm water management and remove those that are not needed as determined by the District. Thereafter, the left in place controls will be maintained by the District.

B. Provide site monitoring reports, SWPPP revisions, Compliance Certifications and related documents to the College Project Manager. Post-Construction storm water operation and management plan as mentioned in the compliance certifications shall be in place at the completion of the Construction Contract.

C. The Contractor shall submit to the District a completed Notice of Intent for any change of information (Construction Site Information and Material Handling/Management Practices).

D. The Contractor shall submit to the District at the completion of the construction Contract, a completed Notice of Termination (NOT) as required by SWRCB to terminate the coverage under the general permit.

END OF SECTION - 01575
05/07/2007 mf

SECTION 01600 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification Sections, apply to this Section.

SUMMARY:

This Section specifies administrative and procedural requirements governing the Prime Contractor's selection of products for use in the Project.

> **Multiple Prime Contracts**: Provisions of this Section apply to the construction activities of each Prime Contractor.

The Prime Contractor's Construction Schedule and the Schedule of Submittals are included under Sections "Submittals" and "Schedule/Payments".

Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions".

DEFINITIONS:

Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.

> **"Products"** are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
>
> **Named Products"** are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturers published product literature that is current as of the date of the Contract Documents.
>
> **"Materials"** are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
>
> **"Equipment"** is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

SUBMITTALS:

Product List Schedule: Prepare a schedule showing products specified in a tabular form acceptable to the Project Manager. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed. Indicate whether the product listed is one of those specified, a product conforming with performance specifications, or a product which must be reviewed under the provisions of Section 01631, Product Substitutions.

Coordinate the product list schedule with the Prime Contractor's Construction Schedule and the Schedule of Submittals.

Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:

Related Specification Section number.
Generic name used in Contract Documents.
Proprietary name, model number and similar designations.
Manufacturer's and name and address.
Supplier's name and address.
Installer's name and address.
Projected delivery date, or time span of delivery period.

Initial Submittal: Within 30 days after date of commencement of the Work, submit 3 copies of an initial product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.

Completed Schedule: Within 60 days after date of commencement of the Work, submit 3 copies of the completed product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.

Architect's Action: The Architect will respond in writing to the Prime Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Architect's response will include the following:

A list of unacceptable product selections, containing a brief explanation of reasons for this action.

QUALITY ASSURANCE:

Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

Compatibility of Options: When the Prime Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

Each Prime Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate Prime Contractors.

If a dispute arises between Prime Contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are incompatible and must be replaced.

PRODUCT DELIVERY, STORAGE, AND HANDLING:

Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.

Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.

Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation.

Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

PRODUCT SELECTION:

General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other products.

Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:

Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.

Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide on of the products indicated. No substitutions will be permitted.

Where products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Prime Contractor to use of these products only, the Prime Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

Compliance with Standards, Codes and Regulations: Where the specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.

Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.

Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.

PART 3 - EXECUTION

INSTALLATION OF PRODUCTS:

Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION - 01600
05/16/07 - mf

SECTION 01631 - PRODUCTS AND SUBSTITUTIONS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification sections, apply to work of this section.

SUMMARY:

This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

> **Multiple Prime Contracts**: Provisions of this Section apply to the construction activities of each Prime Contractor.

The Prime Contractor's Construction Schedule and the Schedule of Submittals are included under Sections "Submittals" and "Schedule/Payments".

Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

Procedural requirements governing the Prime Contractor's selection of products and product options are included under Section "Materials and Equipment".

DEFINITIONS:

Definitions: Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

Substitutions: Requests for changes in products, materials, equipment and methods of construction required by Contract Documents proposed by Prime Contractors after award of the Contract are considered requests for "substitutions". The following are not considered substitutions:

> Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
> Revisions to Contract Documents requested by the Owner or Architect.
> Specified options on products and construction methods included in the Contract Documents.
> The Prime Contractor's determination of, and compliance with, governing regulations and orders.

SUBMITTALS:

Substitution Request Submittal: Requests for substitution will be considered if received within 35 days after commencement of the Work. Requests received more than 35 days after commencement of the Work may be considered or rejected at the discretion of the Architect.

Submit 3 copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals.
Identify the product or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

Product Data, including Drawings and descriptions of products, and installation procedures.

A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability and performance.

Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.

A statement indicating the substitution's effect on the Prime Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.

Cost information, including a proposal of the net change, if any in the Contract Sum.
Certification by the Prime Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Prime Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

Substitution Warranty: All submittals of Request for Substitutions under the General and Supplementary Conditions of this Section shall be accompanied by a completely executed (filled out) and signed Substitution Warranty in the form entitled "Substitution Warranty", bound herein. Substitutions will not be accepted without the Substitution Warranty.

In addition to other requirements, Prime Contractor shall warrant in writing on his own letterhead that substituted materials shall perform as specified, and assume complete responsibility for same, including responsibility and costs required for modifications to building or other materials or equipment, and any additional coordination with work of other trades. Testing, if required shall be paid by Prime Contractor.

Architect's Action: Within one week of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, whichever is later, the Project Manager will notify the Prime Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a written instrument.

PART 2 - PRODUCTS

SUBSTITUTIONS:

Conditions: The Prime Contractor's substitution request will be received and considered by the Project Manager/Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.

Extensive revisions to Contract Documents are not required.

Proposed changes are in keeping with the general intent of Contract Documents.

The request is timely, fully documented and properly submitted.

THE REQUEST IS DIRECTLY RELATED TO AN "OR EQUAL" CLAUSE OR SIMILAR LANGUAGE IN THE CONTRACT DOCUMENTS.

The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.

The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Prime Contractor certifies that the substitution will overcome the incompatibility.

The specified product or method of construction cannot be coordinated with other materials, and where the Prime Contractor certifies that the proposed substitution can be coordinated.

The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Prime Contractor certifies that the proposed substitution provide the required warranty.

Where a proposed substitution involves more than one Prime Contractor, each Prime Contractor shall cooperate with the other Prime Contractors involved to coordinate the Work, provide uniformity and consistency, and to assure compatibility of products.

Refer elsewhere in Division 1 for definition of proprietary, semi-proprietary and non-proprietary specifications.

The Prime Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01631
05-16-07 - mf

SECTION 01655 - PRODUCT HANDLING

PART 1 - GENERAL

1.1 SUMMARY

A. Section establishes general requirements for product handling and storage, whether on or off the site, and supplements similar provisions found elsewhere in the Contract Documents.

B. Related work:

1. Division one for handling provisions for OFCI items.

1.2 QUALITY ASSURANCE

A. In the Contractor's quality control program include procedures required to insure protection of work and materials.

1.3 HANDLING

A. General:

1. Transport, deliver, handle, and store all materials and equipment used on the Project to prevent the intrusions of foreign matter, moisture, and to prevent damage. In all cases comply with the following.

2. Material and equipment manufacturer's instructions regarding temperature limitations.

3. Other environmental conditions required to maintain the original quality of the materials and equipment.

B. Packaging:

1. Provide packaged materials in their manufacturer's original containers with seals unbroken and labels intact until incorporating into the Work.

   a. Where this information is not provided by the manufacturer on the container, it shall be provided by the supplier, fabricator or subcontractor of these materials.

2. Wrapped or bundled materials shall clearly bear the manufacturer's name and trade mark.

C. Damaged materials: Remove damaged or otherwise unsuitable material and equipment promptly from the site. Do not install damaged materials.

1.4 STORAGE

A. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

B. Store products at the site to facilitate inspection and measurement of quantity or counting of units.

C. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.

1. Do not subject slabs-on-grade to excessive loading by shoring, storage of materials, or operation of construction equipment unless adequately protected by heavy planking. Maintenance of slabs in good condition is the responsibility of the Contractor who shall remove damaged areas of such slabs and replace them with new work, to the Architect's satisfaction, at no cost to the District.

2. Do not subject suspended slabs to construction loads exceeding their design loads, unless adequately shored with shoring designed for the Contractor by a California-licensed civil or structural engineer, who shall certify prior to imposing construction loads on slabs, that the shoring to be installed conforms with the shoring as designed.

D. Store products subject to damage by the elements above ground, under cover in weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

E. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.

F. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

G. Locate storage piles, stacks or bins to avoid being disturbed, and protect from damage of any sort.

H. Store materials and equipment in accord with their manufacturer's instructions, above grade, and properly protected from weather and construction activities.

I. Payment may be withheld for improperly packaged and stored materials.

1.5 PROTECTION

A. Protect finished surfaces, including floors jambs and soffits of all openings used as passageways or through which materials and equipment must travel.

B. Carts, hand trucks, wheelbarrows and similar wheeled conveyances used on or in any portion of the structure shall be equipped with pneumatic tires, unless otherwise authorized by the Architect.

C. Keep finished surfaces clean and unmarred until the date of acceptance.

D. Refer to individual Specification Sections for additional specific product handling and protection requirements.

1.6 MAINTENANCE

A. Maintain periodic system of inspection of stored products on a scheduled basis to assure that:

1. State of storage facilities is adequate to provide conditions recommended by the product manufacturer.

2. Required environmental conditions are maintained on a continuing basis.

3. Surfaces of products exposed to the elements are not adversely affected.

B. Mechanical and electrical equipment which require servicing and/or connection of temporary power for heating and other climatic protection devices, during long term storage, shall have complete manufacturer's instructions accompanying each item, with notice of enclosed instructions shown on the exterior of the packaging.

END OF SECTION

1/21/10 – mf/cs

END OF SECTION

SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and other Division-1 Specification sections, apply to work of this section.

SUMMARY:

This Section specifies administrative and procedural requirements for project closeout, including but not limited to:

Inspection procedures.
Project record document submittal.
Operating and maintenance manual submittal.
Submittal of warranties.
Final cleaning.
Closeout requirements for specific construction activities are included in the appropriate Sections in Division-2 through -16.

Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.

SUBSTANTIAL COMPLETION:

Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

Each Prime Contractor shall submit specific warranties, workmanship bonds, final certifications and similar documents.

The appropriate Prime Contractors shall obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, and similar releases.

Submit record drawings, and similar final record information.
Deliver tools, spare parts, extra stock, and similar items.

Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with constructions tools, mock-ups, and similar elements.

Complete final clean-up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

Inspection Procedures: On receipt of a request for review of completed work, the Project Manager will either proceed with observations or advise the Prime Contractor of unfilled requirements. The Project Manager will prepare the Certificate of Substantial Completion following review(s), or advise the Prime Contractor of construction that must be completed or corrected before the certificate will be issued.

The Project Manager with the Architect will review completed work when reasonably requested and assured that the Work has been substantially completed.
Completion of all work found to be acceptable under the conditions of the contract and according to the Contract Documents will form the basis of requirements for final acceptance.

FINAL ACCEPTANCE:

Preliminary Procedures: Before requesting final review of completed work for certification of final acceptance and final payment, complete the following. List exceptions in the request.

Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

Submit an updated final statement, accounting for final additional changes to the Contract Sum.

Submit a certified copy of the Architect's final observation checklist of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.

Submit consent of surety to final payment.

Submit a final liquidated damages settlement statement.

Subsequent Review of Completed Work: The Project Manager will observe the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Project Manager and Architect.

Upon completion of all work found to be acceptable under the Contract and according to the Contract Documents, the Architect will prepare a certificate of final acceptance, or advise the Prime Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

If necessary, subsequent observation(s) will be repeated.

RECORD DOCUMENT SUBMITTALS:

General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's/Project Manager's reference during normal working hours.

Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. **Give particular attention to concealed elements that would be difficult to measure and record at a later date.**

Indicate the location of all underground piping, conduits or infrastructure.
Indicate all revisions to construction documents that relate to location or routing.
Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
Note related Instruction Bulletin or Change Order numbers where applicable.
Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

Indicate invert elevations of pipe below grade or floor line, plugged wyes, tees, caps, manholes; exact locations and sizes of piping, valves, conduit, junction or pull boxes; and all other pertinent data, and similar items required for maintenance and repair service.

All such work shall be indicated by measured dimension to building corners or other permanent monuments, indicating its exact location in the concrete slabs or underground. Such drawings shall be made to scale.

Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to **substitutions,** selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

Upon completion of the Work, submit record Specifications to the Project Manager for the Owner's records.

Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work, which cannot otherwise be readily discerned later by direct observation. Noted related Instruction Bulletins or Change Orders and mark-up of record drawings and Specifications.

Upon completion of mark-up, submit complete set of record Product Data to the Project Manager for the Owner's records.

Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Prime Contractors will meet at the site with the Project Manager and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes.

Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Project Manager for the Owner's records.

Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

Table of Contents
Description of System
Detailed Operating & Maintenance instructions
Index to manufacturers literature
Copies of posted instructions
Emergency instructions
Spare parts list
Copies of warranties
Wiring diagrams
Recommended "turn around" cycles
Inspection procedures
Shop Drawings and Product Data
Fixture lamping schedule

The description of systems and general operating instructions for plumbing and electrical manuals may cover only complicated or unusual parts of these systems, such as sewage ejectors, transformers, high tension switchgear and signal and alarm systems. Manufacturer's literature and data shall be that of the actual equipment installed under contract for the particular facility. Further guidance is available in the ASHRAE guide and Data Book, 1970, Systems Volume, Chapter 39, Operation and Maintenance.

The preparation of operating and maintenance manuals posted instructions and instructions for training personnel in operating and maintaining equipment installed in the building shall be the responsibility of the Prime Contractor.

Final Submittal: Not less than 30 days prior to completion of the project or actual start of operation (and instruction period, whichever is earlier), the Architect will be furnished four (4) complete sets of manuals for distribution after acceptance as follows:

One set including the original and reproducible copy of posted operation instruction to the Architect.

One (1) set to the Prime Contractor to be used for instruction purposes and turned over to the operating engineer in charge after completion of instruction.

Two (2) sets to the Owner.

Scope: A separate manual or separate chapter will be prepared and submitted for each of the following classes of equipment or systems included in a project or as otherwise specified.

Heating Plants
Cooling Plants
Air Conditioning Systems
Heating Systems if separate from air conditioning
Ventilating Systems
Exhaust Systems
Control Systems
Plumbing Systems
Fire Protection
Electrical Systems.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

CLOSEOUT PROCEDURES

Posted Instructions: Operating instructions and diagrams shall be prepared for posting near the equipment. Instructions shall be framed and mounted by the Prime Contractor.

Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel at the job to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

Maintenance manuals
Record documents
Spare parts and materials
Tools
Lubricants
Identification systems
Control sequences
Hazards
Cleaning
Warranties and bonds.
Maintenance agreements and similar continuing commitments.

As part of this instruction for operating equipment demonstrate the following procedures:

Start-up
Shut-down
Emergency operations
Noise and vibration adjustments
Safety procedures
Economy and efficiency adjustments.

FINAL CLEANING:

General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".

Cleaning: The Prime Contractor for final cleaning shall employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.

Remove labels that are not permanent labels.

Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision - obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances.

Restore reflective surfaces to their original reflective condition.

Leave concrete floors broom clean. Remove all oil or other miscellaneous stains from concrete floors.

Vacuum carpeted surfaces.

Wipe surfaces of mechanical and electrical equipment.

Remove excess lubrication and other substances.

Clean plumbing fixtures to a sanitary condition.

Clean light fixtures and lamps.

Thoroughly sweep, rake and clean all roof surfaces all roofing and sheet metal and other debris, all visible paper labels.

Entire site, to within 50 feet of any construction accomplished under this contract shall be hand-raked clean of all debris (i.e., chunks of plaster, paper, rock, etc.)

Remove all stains, marks, asphalt and paint from all curbs, walks, and redwood headers. If stains and marks cannot be removed by normal cleaning procedure, the Contract shall, at his expense, use water blast (2,000 psi) technique.

Removal of Protection: Each Prime Contractor shall remove temporary protection and facilities installed for the protection of the Work during construction.

Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

CONTINUING INSPECTIONS:

General: Except as otherwise required by specific warranties, agreements to maintain, workmanship/maintenance bonds, and similar continuing commitments, comply with Owner's request to participate in inspections at end of each time period of such continuing commitments. Participate in general inspection of the work approximately one year beyond date(s) of completion.

END OF SECTION - 01700
05/16/07 - mf

SECTION 01735 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Selective demolition, dismantling, cutting and alterations as indicated, specified, and necessary for the completion of the Contract.

2. Rerouting or offsetting existing utilities, such as piping, ducts, conduit and wiring.

3. Removing demolished materials not indicated to be salvaged, from the site.

4. Preparation and cleaning of surfaces as required to install new work and finishes.

5. Patching, repairing and finishing existing items to remain to the specified condition with an invisible transition, under normal lighting conditions at the site, between new and existing.

6. Protection of work to remaining.

B. Related work:

1. Division 2 for site demolition and clearing.

2. Divisions 15 and 16 for disconnecting, cutting and capping utilities.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

A. Protection:

1. Do not begin demolition until temporary partitions, barricades, warning signs and other forms of protection are installed.

2. Protect utilities and existing improvements that are not to be removed from injury or damage resulting from the Contractor's operation. Replace damaged improvements and utilities in kind.

3. During demolition provide safeguards, including warning signs and lights, barricades, and the like, for protection of the public, Contractor's employees and existing improvements to remain.

B. Noise control: Refer to other Sections of Division One.

1. Exercise caution and care to prevent generation of unnecessary noise.

2. Keep noise levels to the minimum possible.

3. Discontinues noise producing operations, when requested by the District, and reschedule at a mutually acceptable time.

C. Dust control: Control dust at all times.

1. Provide dust-tight partitions to prevent dust escaping into other parts of the building where demolition is not in progress, as specified in other Sections of Division One.

2. Assume liability for claims related to flying dust caused by this work.

D. Water control:

1. Control the use of water to prevent damage to the existing facility and improvements to remain. Provide wet vacuum equipment where water, such as waste cooling water from concrete sawing, is used in and adjacent to existing building.

2. Provide impermeable floor coverings and suitable dams to prevent damage by water, and immediately clean-up and remove surplus water, and water spilled in non-working areas.

3. Assume liability for claims related to water seepage and leakage caused by this work.

E. Security: Coordinate security with the District; refer to Section 01500.

1. Take necessary precautions to keep trespassers out of demolition areas.

2. Properly secure demolition areas from entry when demolition is not in progress but do not block required exitways.

F. Safety:

1. If at any time the safety of existing construction appears to be endangered, take immediate measures to support such endangered construction; cease operations and immediately notify the Architect.

2. Do not resume demolition until Architect's instructions are received.

3.2 DEMOLITION

A. Existing conditions:

1. Intent of Drawings is to show existing conditions with information developed from field surveys and to generally show the extent and type of demolition required.

2. Make a detailed survey of existing conditions prior to commencing demolition, and report discrepancies or conflicts between Drawings and actual conditions in writing to the Architect for clarifications and instructions.

3. Do not proceed where such conflicts or discrepancies occur prior to receipt of Architect's instructions.

B. The Contractor shall be fully responsible for the adequacy and installation of temporary shoring and bracing systems used during demolition.

C. Demolition shall be performed by skilled and properly equipped personnel.

D. Remove existing construction only to the extent necessary for the proper installation of new construction and junction with existing materials. Cut back finished surfaces to straight, plumb or level lines as required.

E. If unanticipated conditions which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict.

1. Submit report to Architect in written, accurate detail.

2. Pending receipt of directive from Architect, rearrange demolition schedule as necessary to continue overall job progress without delay.

F. Where openings are cut oversize or in improper location, replace to excess removed material, to the Architect's satisfaction, at no additional cost to the District.

G. Coordinate demolition with other trades to assure the proper sequence, limits, methods and time of performance. Schedule demolition so as to impose a minimum of hardship on the present operation of the facilities and the performance of the work of other trades.

H. Whenever possible use small hand or small power tools designed for sawing or grinding; whenever possible avoid the use of tools with a hammering and chopping motion. Cut through finished surfaces from the exposed or finished side into concealed surfaces.

I. In general remove materials as follows:

1. Portland cement concrete:

a. Locate and identify reinforcing bars in concrete prior to drilling and cutting, and protect structural integrity of existing work.

b. Use removal methods that will not crack or structurally affect adjacent concrete constructions.

c. Cut back concrete to clean, straight lines by saw cutting a minimum of 1 -inch deep; remainder of concrete may be jack-hammered.

d. Where indicated and where it will not weaken the structure, cut off reinforcing bars flush with the face of the concrete.

e. Where existing reinforcing bars are shown to be bonded into new concrete or masonry, use caution not to bend or otherwise damage them while removing concrete cover. Protect existing rebar from corrosion until new concrete is cast.

f. Where new concrete topping or cementitious setting bed will be cast on existing slabs, scarify or scab the surface to a profile of 1/4 -inch to provide a mechanical bond with topping or setting bed.

2. Masonry: Cut back to joint lines and remove old mortar without damaging units to remain to allow space for repairs to backing where applicable.

3. Modular materials:

a. Remove to a natural breaking point in whole units to a joint line with no damaged or defective unit remaining where joining new construction.

b. After removing flooring materials, clean substrates of old cement and adhesive.

4. Gypsum board: Remove to a joint line on a support.

5. Lath/plaster:

a. Saw cut plaster, but not lath and weather barrier (paper backing), cleanly.

b. Leave at least 2 -inch of lath exposed to tie into new lath, where applicable.

c. Leave sufficient undamaged weather barrier exposed to create a watertight, by proper lapping, joint with the new weather barrier or flashing.

J. Materials not mentioned to be removed that interfere with new construction, except where structural integrity of the assembly is at risk, shall be cut to clean cut lines to provide for proper interface with new construction, or patching and repair, as required.

3.3 SALVAGE

A. Title to materials:

1. Except where indicated or specified otherwise, materials and equipment removed and not reused shall become the property of the Contractor and shall be removed from the site.

2. The District will not be responsible for the condition or loss of, or damage to, such property after notice to proceed.

3. Material and equipment shall not be viewed by prospective purchasers or sold on the site.

B. Remove items to be reused, clean and store in a protected location until re-installed or turned over to the District.

3.4 PATCHING

A. Patch materials to remain when damaged by demolition. Finish material and appearance of the patch or repair shall match the existing contiguous materials and finishes in all respects, as approved by the Architect.

1. Restore surfaces of existing building to original condition where damaged due to work of this Contract or due to insufficient protection. Pay for repair of damage to contents.

3.5 CLEAN-UP/DISPOSAL

A. Debris, waste, and removed materials, other than items to be salvaged, are Contractor's property for legal disposal off the site.

B. Continuously clean-up and remove these items and do not allow to accumulate in the building and on the site. Refer to Section 01740 for additional requirements on this subject.

END OF SECTION

1/21/10 – mf/cs

SECTION 01740 - CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general requirements for cleaning Project site and buildings.

B. Keep premises, and adjacent private and public properties free from accumulations of waste, debris and rubbish caused by construction operations.

C. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces. Remove remaining mockups and mockups.

1. Leave Project clean and ready for occupancy.

1.2 SAFETY REQUIREMENTS

A. Standards: Maintain Project in accord with State and local safety and insurance standards.

B. Hazard control:

1. Store volatile wastes in covered metal containers, and remove from premises daily.

2. Prevent accumulation of wastes, which create hazardous conditions.

3. Provide adequate ventilation during use of volatile or noxious substances.

C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not burn or bury rubbish and waste materials on Project site.

2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains. Store in containers with tight-fitting lids and remove to legal dumpsite or to recycling center.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. As appropriate for this work, and as follows.

B. Use only commercial grade sweeping compounds with broom cleaning.

C. Use only materials recommended by manufacturers for surfaces to be cleaned.

D. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

A. Keep premises, and adjacent private and public properties free from accumulations of waste materials and rubbish.

1. Remove debris and dirt from public property promptly; sweep sidewalks and adjacent streets daily when soiled by work performed under this Contract.

2. Remove waste materials, debris and rubbish from the Project site at least weekly.

3. Legally dispose of waste and rubbish at legal public or private dumping areas or recycling center off District's property.

B. Wet down materials and rubbish to lay dust and prevent it from blowing.

C. At least once a week, or more often if required, clean site and buildings, and dispose of waste materials, debris and rubbish off the site. Remove combustible materials such as paper and cardboard daily.

D. Provide on-site containers for collection of waste materials, debris and rubbish. Provide collection can at each location used as eating areas. Pick-up all garbage daily.

E. Do not allow debris and combustible materials to accumulate in, voids, cavities, interstitial spaces, and plenums created by wall, partition, and ceiling construction. These areas must be thoroughly cleaned out before being sealed or closed off by installation of finish materials.

F. Do not allow debris to clog drains. Clean roof drains, scuppers, floor drains and area drains free of debris. Verify that they drain properly. Keep drains clean of debris at all times..

G. Vacuum clean interior areas when ready to be painted. Refer to Section 09900 for other provisions on preparation of surfaces to be painted.

H. Handle materials in a controlled manner with as few handling as possible; do not drop or throw materials from heights.

I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

J. Restore damaged, including stained materials, and finishes that cannot be satisfactorily repaired, or that show evidence of repair unacceptable to the Architect, with new, undamaged materials.

1. Repair and restoration of damaged finishes shall be done by the original installers or experienced craftsmen thoroughly familiar with the work at hand.

3.2 FINAL CLEANING

A. Except as may be otherwise specified elsewhere, "clean" for the purpose of this Article means a level of cleanliness provided by experienced workers or professional cleaners using commercial quality building maintenance equipment and materials.

B. In preparation for Substantial Completion or Occupancy conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.

C. Remove non-permanent labels.

D. Clean transparent materials and mirrors, including glass in doors and windows. Remove misplaced glazing compound and other substances.

E. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances.

1. Restore reflective surfaces to their original reflective condition.

2. Leave concrete floors broom clean.

3. After cleaning resilient flooring, wax as specified in the appropriate Section(s) of Division 9.

4. Where rust is present, remove it without damaging substrate, and refinish area.

F. Vacuum carpeted surfaces. Shampoo where necessary.

G. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

1. Clean tops of equipment, both below and above ceiling spaces.

2. Clean ductwork, piping and conduit.

H. Clean the site, including landscaped areas, of rubbish, litter and other foreign substances.

1. Contaminated earth:

a. Final clean-up operation includes the removal and disposal of earth contaminated or unsuitable for support of plant life in planting areas, and filling of resulting excavations with suitable soil.

b. Contaminated areas include those used for disposal of waste concrete, mortar, plaster, masonry, and similar materials, areas in which washing out of concrete and plaster mixers or washing of tools and like cleaning operations have been performed, and areas that have been oiled, paved or chemically treated.

c. Do not dispose of waste oil, solvents, paints, solutions, or like penetrating material by depositing or burying on District's property.

2. Sweep paved areas broom clean; remove stains, spills and other foreign deposits.

3. Wash down paved surfaces.

4. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

I. Keep Project clean until occupied by District.

END OF SECTION

1/21/10 – mf/cs

SECTION 02316
EXCAVATING, BACKFILLING AND COMPACTING FOR PAVEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Excavating, backfill, and compacting for paved areas.

2. Installation of fill materials.

C. Related Sections:

1. Section 02230: Site Clearing.

2. Section 02310: Grading.

3. Section 02318: Excavating, Backfilling and Compacting for Utilities.

4. Section 02319: Base Course.

5. Section 02711: Bituminous Surfacing.

6. Section 02765: Pavement Repair.

7. Section 02770: Site Concrete Work.

1.2 SYSTEM DESCRIPTION

A. Import and Export of Earth Materials:

1. Fees: Pay as required by authorities having jurisdiction over the area.

2. Bonds: Post as required by authorities having jurisdiction over the area.

3. Haul Routes and Restrictions: Comply with requirements of authorities having jurisdiction over the area.

1.3 SUBMITTALS

A. Imported Soils: A geotechnical engineer, retained by the Owner as a Owner Consultant, shall obtain initial product Sample for testing in accordance with the terms of sub-section 3.05 of this section.

1.4 QUALITY ASSURANCE

A. Comply with Standard Specifications for Public Works Construction, current edition, except as modified herein and the recommendations in the Geotechnical Report.

1.5 PROJECT CONDITIONS

A. Information on Drawings or in soils report does not constitute a guarantee of accuracy or uniformity of soil conditions over the Project site.

B. A copy of the foundation investigation and soils report is available for examination at the Architect's office during regular office hours of Architect.

C. All work shall comply with the recommendations of the Geotechnical report.

D. The Geotechnical consultant's representative should review the site grading prior to scarification of the bottom of the remedial excavations. Local variations in soil conditions may warrant increasing the depth of remedial excavation. Any deeper areas of loose soils should be removed and be replaced as compacted, engineered fill.

PART 2 - PRODUCTS

2.1 BASE MATERIALS

A. Concrete Slabs On Grade: Provide "Crushed Aggregate Base "as specified in the Standard Specifications for Public Works Construction, Section 200: "Rock Materials," with ¾ inch maximum size aggregates. Provide 6 inch thick base, unless noted otherwise.

B. Bituminous Surfacing: As indicated on Drawings and specified in Section 02319 - Base Course.

2.2 FILL AND BACKFILL MATERIALS

A. Fill and backfill materials shall be previously excavated materials or imported fill material, free of clods and stones larger than 3 inches, foreign materials, vegetable growths, sod, expansive soils, rubbish and debris. Material shall conform to these specified requirements and related sections.

B. Fill material exhibiting a wide variation in consistency and/or moisture content shall be blended and/or aerated to stabilize and upgrade the material.

C. Imported Fill Material:

1. Provide suitable materials obtained from Project site excavations for earthwork and fill materials. If excavated materials are not of suitable quality or sufficient quantity, import additional materials as necessary.

2. Import soils should be equal to, or better than, the onsite soils in strength, expansion, compressibility, and soil chemistry characteristics. In general, import material should be free of organic matter and deleterious substances, have 100% passing a two-inch sieve, 60% to 100% passing a #4 sieve, no more than 20% passing a #200 sieve, an Expansion Index less than 20, a Liquid Limit less

than 35, and a Plasticity Index less 12. Import soils can be evaluated prior to their use, but will not be prequalified by the geotechnical consultant. Approval of import soils will be given only after the material is on the project, either in-place, or stockpiled in adequate quantity to complete the project. Imported material shall be clean and free of rubbish, debris, and toxic or hazardous contaminants. Adobe or clay soils are not permitted.

D. Other Fill Materials: Brick rubble and broken concrete originating from the Project site may be legally disposed of off the Project site or incorporated in fill, if reviewed by a geotechnical engineer, retained by the Owner as an Owner Consultant. Unless otherwise required, no such materials may be imported from outside the Project site.

E. Permeable Backfill:

1. Provide permeable backfill material behind retaining structures consisting of gravel, crushed gravel, crushed rock, natural sands, manufactured sand, or combinations of these materials conforming to the following gradations:

Sieve Size:	Percentage Passing:
3/4 inch (19mm)	100
3/8 inch (10mm)	80-100
No. 100	0-8
No. 200	0-3

2. Those portions of fill material passing a No. 4 sieve shall provide a sand equivalent of at least 60.

3. Provided backing for weep-holes shall consist of 2 cu. ft. of aggregate in burlap sacks, securely tied. Aggregate shall conform to requirements for No. 3 concrete aggregate as specified in subsection 200-1.4 of the Standard Specifications for Public Works Construction.

4. Permeable Backfill Alternate Materials: Instead of the materials specified for retaining structures backfill, a drainage matting system such as Miradrain by Mirafi, Inc., or equal, may be provided if reviewed by the Architect.

PART 3 - EXECUTION

3.1 SITE PREPARATION

A. Clear the Project site as required in Section 02230: Site Clearing.

B. Any existing pavements, foundations, slabs, vegetation, trash piles, uncompacted fill, abandoned underground utilities, and other debris should be removed from the proposed construction areas. All existing underground facilities and utility lines should be removed in their entirety or properly abandoned.

3.2 PROTECTION

A. Protect and guard excavations against danger to life, limb, and property as required by, but not limited to, OSHA regulations.

B. Protect adjacent existing improvements including landscaping against damage.

3.3 EXISTING UTILITY LINES

A. Protect existing utility lines from damage or displacement.

B. Remove conduits or pipes not in service, exposed during Work, unless a minimum cover of 2 feet is provided. Remove concrete, clay or other non-metallic pipe over 8 inches in diameter, unless otherwise indicated.

3.4 EXCAVATION

A. Unclassified Excavations: Comply with the Standard Specifications for Public Works Construction, Section 300: "Earthwork," except as modified herein.

B. Existing soils beneath the proposed pavement sections, including a distance of at least two feet beyond the pavement perimeter, where obtainable, should be excavated a minimum of 6 inches below existing site grade or finished sub-grade, whichever is lower. The bottom of the remedial excavation should then be scarified 6 inches. AS NOTED OTHERWISE ON GEOTECH REPORT,

3.5 FILL

A. Unclassified Fill and Compaction: Comply with the Standard Specifications for Public Works Construction, Section 300: "Earthwork," except as modified herein.

B. Provide fill materials as specified in Part 2 – Products. If excavated materials from the Project site are not of required quality or sufficient quantity, import additional materials as necessary.

C. In addition to the requirements of this section, import and/or exported materials shall comply with the requirements of Section 01420.

D. Imported fill materials shall be sampled by a geotechnical engineer, retained by the Owner as an Owner Consultant, for compliance with the requirements of Part 2 of this section.

E. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall submit all samples to a DSA approved independent approved testing laboratory for testing.

F. Initial sampling shall be performed by the geotechnical engineer, retained by the Owner as an Owner Consultant, before importing material to the Project site. Identify the location of the source site in addition to the address, name of the person and/or entity responsible for the source site. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain both the initial and additional samples from the identified site and shall submit all samples to the approved independent testing laboratory for testing.

G. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall perform additional sampling during import operations. If the total quantity of import is determined to be greater than 1000 cubic yards of material, one sample shall be obtained and submitted for testing tested for each 250 cubic yards of imported material. If the total quantity of import is determined to be less than 1000 yards, one sample shall be obtained and submitted for testing for each 100 cubic yards of imported material.

H. The independent approved testing laboratory shall perform the required tests and report results of all tests noting if the tested material passed or failed such tests and shall furnish copies to the IOR, Architect, OAR, DSA, Contractor, and others as required. Report shall state tests were conducted under the responsible charge of a licensed State of California professional engineer and the material was tested in accordance with applicable provisions of the Contract Documents, Title 24, CCR and the DSA. Upon completion of the Work of this section, the independent testing laboratory and geotechnical engineer shall submit a verified report to the DSA as required by Title 24, CCR.

I. Bills of lading or equivalent documentation will be submitted to the IOR on a daily basis.

J. Upon completion of import operations, provide the OAR a certification statement attesting that all imported material has been obtained from the identified source site.

3.6 INSTALLATION OF MATERIALS

A. Fill or backfill materials shall be installed in horizontal layers of 6 inches, unless otherwise required. Each layer shall be evenly placed and moistened or aerated as necessary. Unless otherwise reviewed by the geotechnical engineer, retained by the Owner as an Owner Consultant, each layer of fill material shall cover the length and width of the area to be filled before the next layer of material is installed. Top surface of each layer shall be installed to an approximate level with a crown or crossfall of at least 1 in 50, but no more than 1 in 20. Provide adequate drainage at all times during construction of the Work of this section.

3.7 COMPACTING

A. Each layer of fill material shall be compacted by tamping, sheepsfoot rollers, or pneumatic-tired rollers to provide specified relative compaction. At inaccessible locations, provide specified compaction by manually held, operated and directed compaction equipment.

B. Unless otherwise indicated, compact each layer of earth fill to a relative compaction of at least 90 percent.

C. When fill materials, or a combination of fill materials, are encountered or provided which develop densely packed surfaces as a result of installation or compacting operations, scarify each compacted layer before installing the next succeeding layer.

3.8 INSPECTION AND TESTING

A. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavations, sample material quality as required in Part 2, and observe installation and compaction of fill materials.

B. The geotechnical engineer, retained by the Owner as an Owner Consultant, will sample imported fill materials from their designated source before delivery to the Project site.

C. Installation of backfill shall be observed by the geotechnical engineer, retained by the Owner as an Owner Consultant.

D. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavation Work before the installation of fill and/or other materials.

E. Compaction: Test compaction in accordance with ASTM D 1557, Method C.

3.9 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.10 CLEANING

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02317
EXCAVATING, BACKFILLING AND COMPACTING FOR STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Excavating, backfilling, and compacting for buildings and structures.

2. Fill materials.

C. Related Sections:

1. Section 02230: Site Clearing.

2. Section 02310: Grading.

3. Section 02316: Excavating, Backfilling and Compacting for Pavement.

4. Section 02318: Excavating, Backfilling and Compacting for Utilities.

1.2 SYSTEM DESCRIPTION

A. Import and Export of Earth Materials:

1. Fees: Pay as required by authorities having jurisdiction over the area.

2. Bonds: Post as required by authorities having jurisdiction over the area.

3. Haul Routes and Restrictions: Comply with requirements of authorities having jurisdiction over the area.

1.3 SUBMITTALS

A. Imported Soils: A geotechnical engineer, retained by the Owner as a Owner Consultant, shall obtain initial product Sample for testing in accordance with the terms of sub-section 3.05 of this section.

B. Shoring calculations as required in sub-section 3.03 of this section.

1.4 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works Construction, current edition, except as modified herein and the Recommendations in the Geotechnical Report.

1.5 PROJECT CONDITIONS

A. Information on Drawings or in soils report does not constitute a guarantee of accuracy or uniformity of soil conditions over the Project site.

B. A copy of the foundation investigation and soils report is available for examination at the Architect's office during regular office hours of Architect.

C. The Geotechnical consultant's representative should review the site grading prior to scarification of the bottom of the remedial excavations. Local variations in soil conditions may warrant increasing the depth of remedial excavation. Any deeper areas of loose soils should be removed and be replaced as compacted, engineered fill.

PART 2 - PRODUCTS

2.1 FILL AND BACKFILL MATERIALS

A. Fill and backfill materials shall be a granular material previously removed from excavation, or imported fill material, free of large clods and stones larger than 3 inches, foreign materials, vegetable growths, sod, expansive soils, rubbish and debris. Material shall conform to these specified requirements and related sections.

B. Fill material exhibiting a wide variation in consistency and or moisture content shall be blended and/or aerated to stabilize and upgrade the material.

C. Imported Fill Material:

1. Provide suitable materials obtained from Project site excavations for earthwork and fill materials. If excavated materials are not of suitable quality or sufficient quantity, import additional materials as necessary.

2. Import soils should be equal to, or better than, the onsite soils in strength, expansion, compressibility, and soil chemistry characteristics. In general, import material should be free of organic matter and deleterious substances, have 100% passing a two-inch sieve, 60% to 100% passing a #4 sieve, no more than 20% passing a #200 sieve, an Expansion Index less than 20, a Liquid Limit less than 35, and a Plasticity Index less 12. Import soils can be evaluated prior to their use, but will not be prequalified by the geotechnical consultant. Approval of import soils will be given only after the material is on the project, either in-place, or stockpiled in adequate quantity to complete the project. Imported material shall be clean and free of rubbish, debris, and toxic or hazardous contaminants. Adobe or clay soils are not permitted.

D. Other Fill Materials: Brick rubble and broken concrete originating from the Project site may be legally disposed of off the Project site, or incorporated in fill, if reviewed by the geotechnical engineer, retained by the Owner as an Owner Consultant. Unless otherwise provided, no such materials may be imported from outside the Project site.

E. Permeable Backfill:

1. Provide permeable backfill material behind retaining structures consisting of gravel, crushed gravel, crushed rock, natural sands, manufactured sand, or combinations of these materials conforming to the following gradations:

Sieve Size	Percentage Passing
3/4 inch	100
3/8 inch	80-100
No. 100	0-8
No. 200	0-3

2. Those portions of fill material passing a No. 4 sieve shall provide a sand equivalent of at least 60.

3. Provided backing for weep-holes shall consist of 2 cu. ft. of aggregate in burlap sacks, securely tied. Aggregate shall conform to requirements for No. 3 concrete aggregate as specified in subsection 200-1.4 of the Standard Specifications for Public Works Construction.

4. Permeable Backfill Alternate Materials: Instead of the materials specified for retaining structures backfill, a drainage matting system such as Miradrain by Mirafi, Inc., or equal, may be provided if reviewed by the Architect.

PART 3 - EXECUTION

3.1 SITE PREPARATION

A. Clear the Project site as required in Section 02230: Site Clearing.

B Any existing pavements, foundations, slabs, vegetation, trash piles, uncompacted fill, abandoned underground utilities, and other debris should be removed from the proposed construction areas. All existing underground facilities and utility lines should be removed in their entirety or properly abandoned.

3.2 PROTECTION

A. Protect and guard excavations against danger to life, limb, and property as required by, but not limited to, OSHA regulations.

B. Protect adjacent existing improvements including landscaping against damage.

C. Shore, crib, or lag excavations and earthen banks as necessary to prevent caving-in, erosion or gullying of sides.

D. Divert or de-water excavations until concrete is placed, forms are removed, and backfilling is complete.

3.3 SHORING

A. Provide shoring as necessary to properly and safely support earth sides of excavations, curbs, sidewalks, gutter, drives and stairs, against movement and collapse.

B. Design and Calculations: Provide in accordance with requirement of governing California Building Code and Safety Orders of State of California, Division of Industrial Safety, Title 8, Subchapter 4, Article 6, Sections 1530 and 1541.

C. Remove shoring upon completion of Work, or when no longer needed, unless otherwise required by authorities having jurisdiction over the Work.

3.4 EXCAVATION

A. Existing soils beneath the proposed building areas, including a distance of at least five feet beyond the foundation perimeter, should be excavated a minimum of 36 inches below existing site grade or finished subgrade, whichever is lower. The base of the remedial excavation across an individual pad should be a level elevation. The bottom of the remedial excavation should then be scarified 6 inches.

B. One intent of the above remedial grading recommendations is to remove the upper loose site soils subject to significant hydrocompression within the proposed building areas. All exposed ground surfaces at the base of the remedial excavations should be reviewed for possible losse/soft soils and tested to verify that an "in-place dry density" of at least 106.0 p.c.f. is present. If this density does not exist at the specified depth, additional excavation will be required until suitable subgrade densities are found.

C. Form sides of footings, pads, grade beams, and slab foundations, unless otherwise indicated. Provide excavations of sufficient size to permit installation and removal of forms and other Work as required.

D. Machine-drill excavation for round footings to size and depth indicated. Provide a collar or casing, or other adequate protection, to exclude dirt and debris. Protect excavations with plank covers until concrete is placed.

E. Provide excavation bottoms level and free from loose material. Excavate to indicated or required elevations of undisturbed earth.

F. Provide excavations free from standing water by pumping, draining, or providing protection against water intrusion. If soil becomes soft, soggy, or saturated, excavate to firm undisturbed soil and fill as required. Slope adjacent grades away from excavations to minimize entry of water.

G. Calculate excavation quantities based on elevations or depths indicated on Drawings.

H. Provide 2000 psi concrete for backfill of over-excavated areas to indicated or required elevations.

I. Special preparation of B.E.P. areas: Excavate areas designated on Drawings as bottom of excavated planes (B.E.P.), by excavating and filling to indicated grades and elevations.

3.5 IMPORT/EXPORT OF MATERIALS

A. Provide fill materials as specified in Part 2- Products. If excavated materials from the Project site are not of required quality or sufficient quantity, import additional materials as necessary.

B. Imported fill materials shall be sampled by the geotechnical engineer, retained by the Owner as an Owner Consultant, for compliance with the requirements of Part 2 of this section.

C The geotechnical engineer, retained by the Owner as an Owner Consultant, shall submit all samples to a DSA approved independent testing laboratory for testing.

D. Initial sampling shall be performed by a geotechnical engineer, retained by the Owner as an Owner Consultant, before importing material to the Project site. Identify the location of the source site in addition to the address, name of the person and/or entity responsible for the source site. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain both the initial sample and additional samples from the identified site and shall submit all samples to the approved independent testing laboratory for testing.

E. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall perform additional sampling during import operations. If the total quantity of import is determined to be greater than 1000 cubic yards of material, one sample shall be obtained and submitted for testing for each 250 cubic yards of imported material. If the total quantity of import is determined to be less than 1000 yards, one sample shall be obtained and submitted for testing for each 100 cubic yards of imported material.

F. The independent approved testing laboratory shall perform the required tests and report results of all tests noting if the tested material passed or failed such tests and shall furnish copies to the IOR, Architect, IOR, DSA, Contractor, and others as required. Report shall state tests were conducted under the responsible charge of a licensed State of California professional engineer and the material was tested in accordance with applicable provisions of the Contract Documents, Title 24, CCR and the DSA. Upon completion of the Work of this section, the independent testing laboratory and geotechnical engineer shall submit a verified report to the DSA as required by Title 24, CCR.

G. Bills of lading or equivalent documentation will be submitted to the IOR on a daily basis.

H. Upon completion of import operations, provide the IOR a certification statement attesting that all imported material has been obtained from the identified source site.

3.6 BACKFILLING

A. After concrete has been placed, forms removed and concrete Work inspected, backfill excavations to indicated or required grades. Backfill simultaneously on each side of walls or grade beams. Remove rubbish, debris, and other waste materials from excavations before placing backfill.

B. Before installing any backfill, adequately cure concrete and provide bracing to stabilize structures. Protect waterproofing or dampproofing against damage during backfilling operations with required protection board. Remove bracing as backfill operation progresses.

C. Do not furnish or install expansive soils for below grade building walls.

D. Install each layer of material in a not to exceed thickness of 6 inches, unless otherwise required.

E. Rigidly control the amount of water to be installed to provide optimum moisture content for type of fill material furnished. Do not over-saturate or compact by flooding or jetting.

F. Install wall backfill before installing railings and fences on walls.

G. Impervious backfill materials shall be installed in layers along with and by the same methods specified for structure backfill. Impervious backfill materials shall be at the approximate grade and elevation and where exposed to erosion, shall be covered with at least a 12 inch layer of fill material as reviewed by the geotechnical engineer, retained by the Owner as an Owner Consultant.

H. Install weep hole drainage at the backside of walls so the backing completely covers the weep holes, is horizontally centered and extends at least 12 inches above the bottom of the weep opening. Provide an 8 inch square section of 1/4 inch galvanized or aluminum screen, with a minimum wire diameter of 0.03 inch, and install at the backside of each weep hole before installing the backfill material.

I. Where a reviewed drainage matting system is provided instead of permeable backfill for retaining structures, install in accordance with the manufacturer recommendations.

3.7 COMPACTING

A. Compact each layer of fill material by tamping, sheepsfoot rollers or pneumatic-tired rollers, to such extent as to provide specified relative compaction. At inaccessible locations, compact to specified requirements with hand-held, operated and directed compaction equipment.

B. Unless otherwise indicated, compact each layer of fill material to a relative compaction of at least 90 percent.

C. Do not compact by flooding or jetting.

D. When fill materials, or a combination of fill materials, are encountered or provided which develop densely packed surfaces as a result of installation or compacting operations, scarify each layer of compacted fill before installing the next succeeding layer.

3.8 INSPECTION AND TESTING

A. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavations, sample material quality as required in Part 2, and observe installation and compaction of fill materials.

B. The geotechnical engineer, retained by the Owner as an Owner Consultant, will sample imported fill materials from their designated source before delivery to the Project site.

C. Installation of backfill shall be observed by the geotechnical engineer, retained by the Owner as an Owner Consultant.

D. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavation Work before the installation of fill and/or other materials.

E. Compaction: Test compaction in accordance with ASTM D 1557, Method C.

F. DSA will inspect foundation excavations when completed and ready for forms, after forms are in place and before first placement of concrete.

3.9 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.10 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02318
EXCAVATING, BACKFILLING AND COMPACTING FOR UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Excavating, backfilling, and compacting utility trenches such as water, gas, irrigation, storm drain, sewer lines, concrete-encased conduits, and manholes, vaults, valve boxes, catch basins, underground tanks, thrust blocks, yard boxes, pull boxes and other utility appurtenances.

C. Related Sections:

1. Section 02230: Site Clearing.

2. Section 02310: Grading.

3. Section 02316: Excavating, Backfilling and Compacting for Pavement.

4. Section 02317: Excavating, Backfilling and Compacting for Structures.

5. Section 02510: Site Water Distribution Systems.

6. Section 02530: Site Sanitary Sewer Systems.

7. Section 02630: Storm Drainage Systems.

8. Section 02765: Pavement Repair.

9. Section 02770: Site Concrete Work.

10. Section 02810: Irrigation Systems.

11. Section 02811: Irrigation Systems (Design and Install).

12. Division 15: Mechanical.

13. Division 16: Electrical.

1.2 SYSTEM DESCRIPTION

A. Import and Export of Earth Materials:

1. Fees: Pay as required by authorities having jurisdiction over the area.

2. Bonds: Post as required by authorities having jurisdiction over the area.

3. Haul Routes and Restrictions: Comply with requirements of authorities having jurisdiction over the area.

1.3 SUBMITTALS

A. Imported Soil: A geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain initial product Sample for testing in accordance with the terms of sub-section 3.05 of this section.

1.4 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works construction, current edition except as modified herein and the Recommendations in the Geotechnical report.

1.5 PROJECT CONDITIONS

A. Information on Drawings or in soils report does not constitute a guarantee of accuracy or uniformity of soil conditions over the Project site.

B. A copy of the foundation investigation and soils report is available for examination at the Architect's office during regular business hours of Architect.

C. All work shall comply with the recommendations in the Geotechnical Report.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Bedding material from trench bottom to one foot above the pipe:

1. Sand, gravel, crushed aggregate or native free-draining granular material providing a sand equivalent of at least 30 or a coefficient of permeability greater than 1.4 inches per hour.

2. Sand complying with the Specifications for cement concrete aggregates.

B. Backfill Materials:

1. Excavated trench material to be installed for backfilling shall be clean, free of large clods, and stones larger than 2-1/2 inches in any dimension.

2. Cement-sand slurry shall be provided with 1 sack of cement per cubic yard of the mixture.

3. Imported Fill Material: Imported fill material shall be a granular material with sufficient binder to form a firm and stable unyielding subgrade and shall not have more than 60 percent of fines passing a 200 mesh sieve. Material shall provide a coefficient of expansion of not more than 2 percent from air dry to optimum moisture content and not more than 6 percent from air dry to saturation. Imported

materials shall be clean and free of rubbish, debris, and toxic or hazardous contaminants. Adobe or clay soils are not permitted.

PART 3 - EXECUTION

3.1 GENERAL

A. Before excavation, contact the "Underground Service Alert of Southern California" (USASC) for information on buried utilities and pipelines.

B. Barricade trenches, ditches, pits, sumps, and similar Work outside the barricaded working area with chain link fence as specified in Section 01500: Construction Facilities and Temporary Controls, and in accordance with Cal-OSHA standards and requirements.

C. Saw-cut concrete or bituminous paving for trench installation.

D. Trenches over 5 feet in depth shall conform to the Construction Safety Orders of the California Division of Industrial Safety.

E. Where indicated and/or required to excavate in lawn areas, protect adjoining lawn areas outside of the Work area. Replace or install removed sod upon completion of backfill by installing sod level with adjacent lawns. If installation of removed sod fails, furnish sod and install to match existing lawns.

F. Backfill over excavations to the required elevations with earth, gravel, sand, or concrete and compact as required. Provide excavations free from standing water by pumping, draining, or providing protection against water intrusion. Slope adjacent grades away from excavations to minimize entry of water.

G. Do not install piping lengthwise under concrete walks without review by the Architect.

H. Do not excavate trenches parallel to footings closer than 18 inches from the face of the footing or below a plane having a downward slope of 2 horizontal to one vertical, from a line 9 inches above bottom of footings.

1. Unless otherwise indicated on Drawings, depth of excavations outside the buildings shall allow for a minimum coverage above top of pipe, tank, or conduit measured from the lowest adjoining finished grade, as follows:

Steel Pipe	24 inches below finished grade
Copper Water Tube	18 inches below finished grade
Cast-Iron Pressure Pipe	36 inches below finished grade
Plastic Pipe (other than waste)	30 inches below finished grade
Tanks or other structures	36 inches below finished grade
Soil, Sewer & Storm Drain	minimum 18 inches below finished grade, and as required for proper pitch and traffic load.

	(Install polypropylene sewer pipe with at least 24 inches coverage)
Irrigation Pipe:	nonpressure pipe - 12 inches, pressure pipe 24 inches

2. Trench width shall provide ample space for fitting and joining. Excavate for piping bells and fittings, bell and spigot pipe and other fittings.

I. Unless indicated otherwise, excavate trenches to the required depths for utilities, such as pipes, conduit and tanks, with minimum allowances of 6 inches at the bottom and 6 inches at the sides for bedding of unprotected piping or as required for concrete encasement of conduits as indicated on Drawings. Grade bottom of trenches to a uniform smooth surface. Remove loose soil from the excavation before installing sand bedding or concrete encasement.

J. Provide excavations free from standing water by pumping, draining, or providing protection against water intrusion. If soil becomes soft, soggy, or saturated, excavate to firm undisturbed soil and fill as required. Slope adjacent grades away from excavations to minimize entry of water.

K. Provide a minimum clear dimension of 2 inches from sides of wall excavation to outer surfaces of buried pipes or conduits installed in the same trench or outside surfaces of containers and/or tanks.

L. Do not install backfill until required inspections and testing is completed.

M. Backfill electrical or other excavated utility trenches located outside of barricaded installation areas within 24 hours after inspection by the IOR.

N. Install backfill materials in layers not exceeding 6 inches in thickness and compact to 90 percent of the maximum density.

O. If materials excavated from the Project site are not permitted for trench backfill in paved areas, backfill trenches with a cement-sand slurry mix. Install backfill to an elevation of the existing undisturbed grade plus one inch.

P. Install and compact sand bedding to provide a uniform full length bearing under piping and conduits.

Q. Where portions of existing structures, walks, paving, or other improvements are removed or cut for piping or conduit installation, replace the material with equal quality, finished to match adjoining existing improvements. Repair pavement as specified in Section 02765: Pavement Repair.

3.2 IMPORT/EXPORT OF MATERIALS

A. Provide fill materials as specified in Part 2- Products. If excavated materials from the

Project site are not of required quality or sufficient quantity, import additional materials as necessary.

B. In addition to the requirements of this section, import and/or exported materials shall comply with the requirements of Section 01440.

C. Imported fill materials shall be sampled by a geotechnical engineer, retained by the Owner as a Owner Consultant, for compliance with the requirements of Part 2 of this section.

D. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall perform the tests by utilizing an independent approved testing laboratory.

E. Initial sampling shall be performed by the geotechnical engineer, retained by the Owner as an Owner Consultant, before importing material to the Project site. Identify the location of the source site in addition to the address, name of the person and/or entity responsible for the source site. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain both the initial sample and additional samples from the identified site and shall submit all samples to the approved independent testing laboratory.

F. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall perform additional sampling during import operations. If the total quantity of import is determined to be greater than 1000 cubic yards of material, one sample shall be obtained and submitted for testing for each 250 cubic yards of imported material. If the total quantity of import is determined to be less than 1000 yards, one sample shall be obtained and submitted for testing for each 100 cubic yards of imported material.

G. The independent approved testing laboratory shall perform the required tests and report results of all tests noting if the tested material passed or failed such tests and shall furnish copies to the IOR, Architect, IOR, DSA, Contractor, and others as required. Report shall state tests were conducted under the responsible charge of a licensed State of California professional engineer and the material was tested in accordance with applicable provisions of the Contract Documents, Title 24, CCR and the DSA. Upon completion of the Work of this section, the independent testing laboratory and geotechnical engineer shall submit a verified report to the DSA as required by Title 24, CCR.

H. Bills of lading or equivalent documentation will be submitted to the IOR on a daily basis.

I. Upon completion of import operations, provide the IOR a certification statement attesting that all imported material has been obtained from the identified source site.

3.3 INSPECTION AND TESTING

A. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavations, sample material quality as required in Part 2, observe installation and compaction of fill materials.

B. Compaction test shall be performed in accordance with ASTM D 1557, method "C."

3.4 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.5 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02319

BASE COURSE

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Installation of base material.

C. Related Sections:

1. Section 02230: Site Clearing.

2. Section 02310: Grading.

3. Section 02316: Excavating, Backfilling and Compacting for Pavement.

4. Section 02317: Excavating, Backfilling and Compacting for Structures.

5. Section 02318: Excavating, Backfilling and Compacting for Utilities.

6. Section 02711: Bituminous Surfacing.

7. Section 02765: Pavement Repair.

8. Section 02770: Site Concrete Work.

1.2 SUBMITTALS

A. Prior to import, Contractor shall submit written certification to IOR that crushed Miscellaneous Base (CMB) does not contain Polychlorinated biphenyls (PCB) above laboratory detection limits when tested in accordance with EPA Method 8082, and obtain written approval from Antelope Valley Community College District of import at the subject site.

B. Crushed aggregate base (CAB) shall consist of native rock from pre-evaluated commercial source. The Contractor shall submit written documentation, which identifies the source, volume, and proposed transport date of the material for review and approval by Antelope Valley Community College District prior to importing the material.

C. Product Data: Submit material source, technical information and test data for base materials. Gradation and quality certifications shall be dated within 30 days of the submittal.

D. Sample: Submit Sample of proposed base course material.

1.3 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works Construction, current edition.

B. Comply with the recommendations in the Geotechnical Report.

PART 2 - PRODUCTS

2.1 UNTREATED BASE MATERIALS

A. The following base materials shall conform with the requirements of Standard Specifications for Public Works Construction: Section 200 - Rock Materials.

1. Crushed Aggregate Base.

2. Crushed Miscellaneous Base.

B. Materials generated on site shall not be used as a base course material.

2.2 MATERIAL APPROVAL

A. Base material shall be inspected by the IOR for gradation and material content prior to installation. The owner may choose to have additional tests performed by a geotechnical engineer, retained by the Owner, before installation.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install base course material in layers not exceeding 4 inches in thickness, unless required otherwise. Grade and compact to indicated levels or grades, cut and fill, water and roll until the surface is hard and true to line, grade and required section. Provide a relative compaction of at least 95 percent, unless otherwise required.

B. Grade base course to elevations indicated on Drawings, ready to receive surfacing, in accordance with Section 02310: Grading.

3.2 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.3 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02505
DECOMPOSED GRANITE PAVING

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The requirements of the "General Provisions of the Contract" and of Division 1, "General Requirements", shall apply to all work of this Section with the same force and effect as though repeated in full herein.

1.2 SUMMARY

A. Work included: All labor, materials, equipment, and services necessary to provide decomposed granite paving, complete as shown, and as specified.

B. Related work:

1. Irrigation System - Section 02810.

2. Planting - Section 02900.

3. Landscape Maintenance and Plant Establishment - Section 02970.

1.3 REFERENCES

A. ASTM - American Society for Testing and Materials.

1.4 DEFINITIONS

A. Percent Compaction: ASTM D 1557, percentage of the maximum in-place dry density of the same material as determined by Soils Engineer.

1.5 SUBMITTALS

A. Product Data: Manufacturer's current catalog cuts and specifications for decomposed granite and stabilizer.

B. Samples: Half a pound for each size and color range of decomposed granite.

C. Mock-up: Six foot by six foot sample, full depth to match finish condition.

D. Test Reports: Certified copies of field tests of compressive strengths of decomposed granite paving.

1.6 QUALITY ASSURANCE

A. Qualifications: Submit certified documentation of successful experience of no less than three years in the installation of similar crushed stone paving.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect from contamination with foreign materials. Isolate stockpiles to prevent mixing of different aggregate grades. Prevent contamination of organic materials.

1.8 SITE CONDITIONS

A. Environmental Requirements: Do not install decomposed granite during rain or while subbase is wet from rain.

1.9 SEQUENCING

A. Acceptance: Do not install work under this section prior to acceptance of sub-grade preparation under another section.

B. Coordination: Coordinate with other trades to insure the following:

1. Irrigation Sleeving: To be placed prior to placement of aggregate base.

2. Trees in Paving: To be installed prior to headers and paving. Do not mix soil with decomposed granite.

1.10 MAINTENANCE

A. Service: Immediately repair all damage to the work as the result of weather or traffic conditions. Report all damage resulting from work of other trades after acceptance of decomposed granite work. Repair to match adjacent undisturbed work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Decomposed Granite:

1. 1/4" Minus Aggregate Surface:

Screen Size	Passing
3/8" (9.5 mm)	100
No. 4 (4.75 mm)	90
No. 8 (2.36 mm)	71
No. 16 (1.18 mm)	55
No. 30 (0.6 mm)	42
No. 50 (0.3 mm)	31
No. 100 (0.15 mm)	21
No. 200 (0.075 mm)	13

2. Color: California Gold unless otherwise noted on drawings.

B. Non-toxic organic binder is a colorless, odorless concentrated powder that naturally binds Crushed Aggregate Screenings (CAS).

2.2 EQUIPMENT

A. Mixing Equipment: Pug mill with a weight belt feeder.

B. Compaction Equipment: Power roller with weight between one to five tons.

2.3 ACCESSORIES

A. Water: Fresh, clean, potable water as available from the Owner. Transport as required.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Sub-grades shall have been rough graded to within one-tenth foot of finish grades less depth of decomposed granite paving.

B. Verify that concrete bands or adjacent paving and irrigation sleeving have been installed and accepted under another Section prior to commencement of work.

3.2 PREPARATION

A. Compaction: After completion of soil sterilization, compact sub-grade to minimum 90% compaction.

3.3 INSTALLATION

A. A. Stabilized Decomposed Granite Paving:

1. Lines and Levels:

a. Install stabilized decomposed granite work true to grade, properly coinciding with adjacent work and elevation. Install in maximum two-inch lifts.

b. Provide a finished surface uniform in texture and appearance. Do not permit finished work to vary more than eighth-inch in ten feet from true profile and cross section.

2. Mixing:

a. General: Paving shall consist of a mixture of decomposed granite, stabilizer, thoroughly and continuously mixed with a pug mill. A bucket mix or rototiller is not acceptable. Mix at a rate of twelve pounds (pedestrian loading) or fourteen pounds (vehicular loading) of stabilizer per ton of crushed aggregate screenings.

b. Water: Adjust quantity of water added to the mixture to permit maximum compaction of the materials after it is placed on the sub-grade. Moisture shall permeate full depth. After water application test with a minimum of one core sample per one thousand square feet; repair sample area to match adjacent section.

3. Depth: Decomposed granite shall be placed to a minimum three inches compacted depth (foot traffic) and four inches compacted depth (vehicular traffic) unless otherwise noted on drawing.

4. Compacting: Thoroughly compact each two-inch lift to a minimum ninety percent. Compact each area with at least four passes of the compacting equipment. After compacting, screed smooth. Do not use a wacker or vibratory roller to compact the decomposed granite.

5. Contaminated Areas: Do not permit mixture to contaminate planting areas. Clean up immediately all mixtures spilled on adjacent paving.

6. Grading: When surface areas have been rolled and it becomes necessary to add a thin layer of material to bring the surface to grade, the previously rolled or compacted area shall be raked to provide a bond with the added material.

7. Finish Paving Surface: Provide a uniform texture and color and without a cement mortar film on the exposed surface. Finished surface shall not vary more than two one-hundredths of a foot from the lower edges when measured with a ten-foot straightedge.

8. Curing: After installation, keep moist for a period of seven days. Apply water in a fine mist or spray and in such a manner that it will not damage the finished surface.

9. Damaged or Defective Installation: Repair and replace in accordance with these Specifications at no additional cost.

10. Replacement:

    a. If compression tests of samples fail to meet specified compressive strength, immediately remove and replace decomposed granite paving with material conforming to Specifications.

    b. Pay cost of all work required for removing and replacing the decomposed granite.

11. Keep decomposed granite off of adjacent paved areas.

3.4 FIELD QUALITY CONTROL

A. Tests: For each lift, have the testing laboratory verify the degree of compaction. Recompact filed areas until specified compaction is achieved. Testing to be paid by contractor.

3.5 PROTECTION

A. Protect the paving against traffic, injury or defacement, or damage (by rain) and subsequent construction operations until Final Acceptance.

END OF SECTION

SECTION 02510
SITE WATER DISTRIBUTION SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Site water distribution systems located at least 5 feet outside the building perimeter, extending to an existing water line or meter.

C. Related Sections:

1. Section 02315: Excavating, Backfilling and Compacting.

2. Section 02318: Excavating, Backfilling and Compacting for Utilities.

3. Section 02530: Site Sanitary Sewer.

4. Section 02765: Pavement Repair.

5. Section 02770: Site Concrete Work.

1.2 SUBMITTALS

A. Shop Drawings: Submit site plan indicating locations of lines, valves, and related appurtenances.

B. Product Data: Manufacturer's catalog data for materials. Include technical data for accessories, gaskets, joints and couplings.

C. Certificates: Certificates attesting that tests set forth in referenced publications have been performed, and the performance requirements have been satisfied.

1.3 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement:

1. ANSI:

a. ANSI B16.18 Cast Copper Alloy Solder Joint Pressure Fittings.

b. ANSI B18.5.2.1M Metric Round Head Short Square Neck Bolts.

2. ASME:

a. ASME B16.3 Malleable Iron Threaded Fittings.

b. ASME B16.4 Cast Iron Threaded Fittings.

c. ASME B16.22 Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

d. ASME B16.26 Cast Copper Alloy Fitting for Flared Copper Tubes.

e. ASME B18.2.2 Square and Hex Nuts (Inches Series).

f. ASME B18.5.2M Metric Round Head Square Neck Bolts.

3. ASTM:

a. ASTM A 47 Ferric Malleable Iron Castings.

b. ASTM A 48 Gray Iron Castings.

c. ASTM A 53 Pipe, Steel, Black and Hit-Dipped, Zinc-Coated Welded and Seamless.

d. ASTM A 307 Carbon Steel bolts and Studs, 60,000 psi Tensile Strength.

e. ASTM A 563 Ductile Iron Castings.

f. ASTM A 563 Carbon and Alloy Steel Nuts.

g. ASTM B 61 Steam or Valve Bronze Castings.

h. ASTM B 62 Composition Bronze or Ounce Metal Castings.

i. ASTM B 88 Seamless Copper Water Tube.

j. ASTM C 94 Ready-Mixed Concrete.

k. ASTM D 1527 Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40 and 80.

l. ASTM D 1785 Poly Vinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80 and 120.

m. ASTM D 2235 Solvent Cement for ABS Plastic Pipe, and Fittings.

n. ASTM D 2241 PVC Plastic Pipe Fittings, Schedule 40.

o. ASTM D 2282 ABS Plastic Pipe.

p. ASTM D 2466 PVC Plastic Pipe Fittings, Schedule 80.

q. ASTM D 2468 ABS Plastic Pipe Fittings, Schedule 40.

r. ASTM D 2564 PVC Plastic Piping Systems.

s. ASTM D 2774 Underground Installation of Thermoplastic Pressure Piping.

t. ASTM D 2855 Making Solvent-Cemented Joints with PVC Pipe and Fittings.

u. ASTM D 3139 Joints Pressure Pipes Using Flexible Elastomeric Seals.

v. ASTM F 402 Safe Handling Of Solvent Cements, Primer and Cleaners Used for Joining Thermoplastic Pipes and Fittings.

w. ASTM F 477 Elastomeric Seals for Joining Plastic Pipes.

4. American Water Works Association (AWWA) Standards:

a. AWWA C104/A21.4 Cement-Mortar Lining For Ductile-Iron Pipe and Fittings For Water

b. AWWA C110/A21.10 Ductile-Iron and Gray-Iron Fittings, 3 inches through 48 inches, for Water and Other Liquids.

c. AWWA C111/A21.11 Rubber-Gasket Joints for Ductile-Iron pressure Pipe and Fittings.

d. AWWA C153/A21.53 Ductile-Iron Compact Fittings, 3 inches through 16 inches, for Water and Other Liquids.

e. AWWA C500 Gate Valves for Water and Sewerage Systems.

f. AWWA C503 Wet- Barrel Fire Hydrants.

g. AWWA C508 Swing-Check Valves for Waterworks Service, 2 inches through 24 inches NPS.

h. AWWA C509 Resilient-wedge seated Gate Valves for Water and Sewerage Systems.

i. AWWA C511 Reduced-Pressure Principal Backflow-Prevention Assembly.

j. AWWA C600 Installation of Ductile-Iron Water Mains and Their Appurtenances.

k. AWWA C651 Disinfecting Water Mains.

l. AWWA C 800 Underground Service Line valves and Fittings.

m. AWWA C900 PVC Pressure Pipe, 4 inches through 12 inches, for Water Distribution.

n. AWWA M23 PVC Pipe - Design and Installation.

5. Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry:

a. MSS SP-80 Bronze Gate, Globe, Angle and Check Valves.

6. Uni-Bell PVC Pipe Association (UBPPA):

   a. UBPPA UNI-B-3 Installation of PVC Pressure Pipe.

   b. UBPPA UNI-B-8 Direct Tapping of PVC Pressure Water Pipe.

   c. UBPPA UNI-B-13 Standard Performance Specification on joined restrained devices for use with Poly Vinyl Chloride (PVC) Pipe.

7. Underwriters Laboratories Inc. (UL):

   a. UL 246 Hydrants for Fire-Protection Service.

   b. UL 262 Gate Valves for Fire-Protection Service.

   c. UL 312 Check Valves for Fire-Protection Service.

   d. UL 789 Indicator Posts for Fire-Protection Service.

B. Provide all valves from the same manufacturer.

1.4 PRODUCT HANDLING

A. Store items above ground on platforms, skids, or other required supports.

B. Protect materials from direct sunlight.

C. Protect coating and linings on piping, fittings, and accessories from damage. Repair and/or replace damaged coatings or linings.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe:

1. Pipe sizes up to 2.5 inches shall be copper water tubing, Type L hard, ANSI H23.1, ASTM B 88, IAPMO IS. Muller Brass, Cambridge-Lee Halstead, or equal.

2. If soil report indicates corrosive condition, an approved protective wrap shall be used to completely isolate and protect all underground copper tubing and extend past the surface a minimum 12 inches. The excess wrapping shall be trimmed down and taped to copper tubing with 10 mill PVC pipe tape at grade level of concrete or asphalt.

3. Underground pipe sizes 3 inches and larger shall be PVC water main pipe material complying with ASTM D 1784 Cell Class 12454B and AWWA C900. Piping shall be plain end or gasket bell end, pressure class 200 (DR14) with cast iron pipe equivalent OD.

B. Poly Vinyl Chloride (PVC) Water Main Fittings shall be gray-iron or ductile iron conforming to AWWA C110/A21.10 or AWWA C153/A21.53 and shall have cement mortar lining conforming to AWWA C104/A21.4, standard thickness unless otherwise indicated on Drawings. Fittings shall be mechanical joints.

C. PVC Joints and Jointing Materials:

1. Pipe joints shall be push on as specified in ASTM D 3139.

2. Joints between pipe and metal fittings, valves, and other accessories shall be mechanical joints as specified in AWWA C111/A21.11.

3. Provide each joint connection with an elastomeric gasket suitable for the bell or coupling installation.

4. Gaskets for push on joints for pipe shall conform to ASTM F 477.

5. Gaskets for push on joints and compression type joints or mechanical joints for connections between pipes and metal fittings, valves, and other accessories shall be as specified in AWWA C111/A21.11.

6. Sleeve-type mechanically coupled joints may be provided instead of push-on joints on plain-end PVC plastic joints. Comply with requirements of ASTM D 3139.

D. Gates Valves for PVC:

1. Non-rising stem type with resilient wedge gates or iron body bronze wedge gates and mechanical joint ends conform to AWWA C500.

2. Non-rising stem type with mechanical joints ends shall conform to AWWA C509.

3. Valves designed for a working pressure of 175 psi shall be inside-screw type with operating nut, and resilient wedge type gate. Valve shall be provided with mechanical joints as required for the pipe to which it is intended to connect.

4. Valves with UL listing of 262 shall conform to AWWA C500. Valves shall open by counter-clockwise rotation of valve stem.

5. Stuffing boxes shall be provided with O-ring stem seals and shall be bolted and constructed to permit easy removal of parts for repair.

6. Sleeve type mechanical couplings may be provided instead of mechanical and push on joint ends.

7. Valve ends and gaskets for connection to sleeve type mechanical couplings shall conform to specified requirements for the joint or coupling.

E. Gate Valves in Valve Pits:

1. Outside screw and yoke rising stem type valves with resilient wedge gates and flanged ends shall conform to AWWA C500.

2. Outside screw and yoke rising stem type valves with flanged ends shall conform to AWWA C509.

3. Outside screw and yoke type Valves with double disc gates or split-wedge type gate and flanged ended ends shall be designed for 175 psi and conform to UL 262.

4. Provide valves with hand wheels that open by counterclockwise rotation of the valve stem.

5. Stuffing boxes shall be provided with O-ring stem seals and shall be bolted and constructed to permit easy removal of parts for repair.

F. Check Valves for PVC:

1. Valves shall be swing-check type conforming to AWWA C508 or UL 312.

2. Valves shall be provided with cast iron or steel body and cover, flanged ends and clear port opening.

3. Valves shall be designed for a working pressure of 175 psi.

G. Fire Hydrants:

1. Before procurement, verify approval issued by the County of Los Angeles or Fire Department having jurisdiction.

2. Hydrants shall be wet barrel types conforming to AWWA C503 or UL 246.

3. Only 1¾ inch pentagonal nuts are to be provided on stems and protective caps.

4. Specified hydrants:

a.	Clow/Rich	# 850 or 860
b.	James Jones	#J3700 Fluted Barrel
c.	LB Ironworks	#702 Lido or 425

H. Valve Boxes: Valve boxes shall be cast iron and painted with bituminous paint. Shaft shall be adjustable with the word "WATER" cast on the valve box cap. Box shaft shall be 5-1/4 inches minimum diameter. Provide either pedestrian or vehicular traffic type as required. Valve boxes shall be as manufactured by Alhambra Foundry Company, or equal.

I. Mechanical Thrust Restraint:

1. Restraint shall be incorporated into the follower gland.

2. Restraint shall consist of individually actuated wedges that increase resistance to pull out as internal pressure or external forces increase.

3. Gland shall be ductile iron conforming to ASTM A 536.

4. Provide twist off nuts and tee-head bolts of the same size to ensure proper actuating of restraint devices.

5. Restraining device shall be provided with pressure rating equal to that of the pipe on which it is installed.

6. Restraining gland shall be UL listed.

7. Mechanical thrust restraint devices shall be EBAA Iron "Megalug", or equal.

J. Restraint Device Adapters:

1. Restrained flange adapters shall be provided instead of threaded or welded flange spool pieces on plain end of ductile iron or PVC pipe.

2. Flange adapters shall be manufactured of ductile iron conforming to ASTM A 536 and be provided with flange bolt circles compatible with ANSI/AWWA C115/A21.15.

3. Restraint of flange adapter shall consist of a multiple number of individually actuated gripping wedges to maximize restraint capability.

4. Torque limiting actuating screws shall be provided to insure proper initial set of gripping wedges.

1. Flange adapter shall be capable of deflection during assembly or permit lengths of pipe to be field cut to allow at least 0.6 inch of gap between end of pipe and mating flange without affecting integrity of seal.

5. Flange adapter shall be provided with a safety factor of at least 2:1 for rated pressure.

6. Restraint device adapters shall be EBAA Iron "Megaflange", or equal.

K. Tracer Wire for Nonmetallic Pipes: Tracer wires shall be electrically continuous #14 copper tracer wire, Type TW, blue plastic covered for domestic water and red for fire sprinkler. (Aluminum wire is prohibited). Provide in sufficient length to be continuous over each installed section of nonmetallic pipe.

L. Pipe markers shall be a concrete plaque inscribed with the word "WATER."

M. Water Service Line Materials:

1. Copper Tubing: Copper tubing shall conform to ASTM B 88, Type L.

2. Fittings for Copper Tubing: Fittings for solder-type joints shall conform to ANSI B16.18 or ASME/ANSI B16.22. Fittings for compression-type joints shall conform to ASME/ANSI B16.26, flared tube type.

3. Water Service Line Appurtenances:

a. Corporation stops shall be ground key type; manufactured of bronze conforming to ASTM B 61 or ASTM B 62; and suitable for the working pressure of the system. Ends shall be suitable for solder-joint or flared tube compression type joint connection. Threaded ends for inlet and outlet of corporation stops shall conform to AWWA C800; coupling nut for connection to flared copper tubing and shall conform to ASME/ANSI B16.26.

b. Goosenecks shall be type K copper tubing. Joint ends for goosenecks shall be as required for connecting to corporation stop and service line. Where multiple gooseneck connections are required for individual service, connect goosenecks to service line through brass or bronze branch connection; the total clear area of branches shall be at least equal to clear area of service line. Length of goosenecks shall be as indicated or required.

c. Curb or service stops shall be ground key, round way, inverted key type; bronze, conforming to ASTM B 61 or ASTM B 62; and rated at 150 psi. Ends shall be as required for connection to service piping. Arrow shall be cast into body of curb or service stop indicating direction of flow.

d. Gate valves 2.5 inches and larger shall be MSS SP-80, Class 150, solid wedge, or resilient wedge gate, and non-rising stem. Valves shall be provided with flanged end connections. Provide hand wheel operators if easily accessible. Provide operating nut if inside a vault, pit or valve box.

e. Gate valves in valve pits 2 inches, and smaller shall be MSS SP-80, Class 150, bronze, solid wedge, inside screw, rising stem. Valves shall be provided with flanged end connections or threaded end connections with union on one side of valve and hand wheel operator.

f. Valve boxes shall be provided at each gate valve. Valve boxes shall be as of size suitable for valve on which it is installed.

N. Water meter indicated on Drawings will be installed by water purveyor for the area, unless noted otherwise.

O. Strainers:

STR-1 Description: Wye type with monel or stainless steel strainer cylinder (manufacturer's standard mesh), and gasketed machine strainer cap. Where indicated on Drawings, provide with valved (globe valve) blow out piping, same size as blow out plug:

2" and smaller: C.M. Bailey #100-A, bronze, 250 lb., or ductile iron with fusion bonded epoxy coating.

2 1/2" and larger: Watts 77F-DI-FDA-125 lb., or other ductile iron fusion bonded epoxy coated flanged strainer, conforming to ASTM A-312 for the strainer body, and ASTM A-240 for the stainless steel strainer element. (No iron body strainer shall be used on potable water that is not fusion bonded epoxy coated inside and out.)

C.M.BAILEY ARMSTRONG WILKINS WATTS

STR-2 "Y" pattern, cast iron bodies, 125 psi, monel screen 16 sq. mesh. Open area at least twice the cross-sectional area of IPS pipe in which strainer is installed and may be woven wire or perforated type. Screwed ends for sizes up to 2", flanged ends for 2 ½" and larger perforations, in accordance with the following:

BAILEY #100 ARMSTRONG RP & C KECKLEY

STR-3 Bucket type, flange, semi-steel body, 125 psi, stainless steel screen with 1/8" diameter perforations (mounted above grade for water service). All sizes, (for mains serving fire sprinkler risers):

BAILEY #1 ZURN 150 Series RP 7 C WATTS 97FB-FSFE

STR-42" and larger: Watts 077-F-SS Stainless steel flange type strainer, or equal conforming to ASTM A-312 for strainer body, ASTM A-240 for the SS strainer element and ASTM A-36 for base flange material.

P. Backflow Preventer Assemblies:

1. Assembly shall be provided with flanged connections, ductile iron with fusion bonded epoxy coated construction, bronze, or stainless steel.

2. Backflow preventer shall be suitable for cold water working pressure of 175 psi.

3. Internal parts shall be designed for replacement without removing valves from line.

4. Double check backflow preventer assembly shall consist of two independently acting spring cam or poppet style check valves, 2 shut-off valves and 4 test cocks. Check valve shall be designed to provide drip tight closure against reverse flow, low pressure drop at maximum flow capacity. Spring-loaded checks shall cause valve to seal against a higher inlet pressure than outlet pressure when there is no flow.

5. Double check backflow preventer assembly shall meet AWWA Standard C510-89.
Assembly shall be:
Ames 2000ss Febco 850 Watts 709 Wilkins 350, or equal.

6. Reduced pressure backflow preventer assembly shall consist of two check valves located between two shut-off vales with an area of reduced pressure between two check valves and a relief device arranged to discharge to atmosphere.

a. Comply with AWWA Standard C511.

b. Fluctuation in piping pressure shall not cause cycling. Backflow preventer shall automatically maintain low pressure zone to positively prevent backflow of water into system. Assembly shall automatically indicated failure of any part vital to backflow prevention by the continuous discharge relief device.

c. Reduced pressure backflow preventer assembly shall be Cla-Val Model RP-4, or equal.

6. Backflow prevention assemblies (devices), shall be tested and certified by a certified backflow tester, and a test report shall be provided to the water agency having jurisdiction. Testing shall be performed in the presence of the IOR.

PART 3 - EXECUTION

3.1 EXCAVATION, BACKFILLING AND COMPACTING

A. Conform to requirements in Section 02318: Excavation, Backfilling and Compacting for Utilities or Section 02315: Excavating, Back-Filling and Compacting.

3.2 PIPE INSTALLATION

A. Project site water lines shall terminate approximately 5 feet from buildings, unless otherwise indicated on Drawings. Temporarily cap or plug terminals for future connection to building.

3.3 CLEARANCES OF WATER LINE

A. Building or Structures: 2 feet.

B. Parallel to Sewer Line:

1. Water line 4 inches or less in diameter shall not be installed in a common trench with the building sanitary drain unless the bottom of the water line is at least 12 inches above the top of the building sanitary drain or where the water line is installed on a solid shelf excavated on one side of the common trench with a minimum clear horizontal distance of 12 inches from the building sanitary drain.

2. Water mains 6 inches and larger in diameter shall be separated at least 12 inches from the Project site sanitary sewer, receiving more than one building sanitary drain or acid pipeline, in accordance with the requirement of the State of California, Human and Welfare Agency, Department of Health Services.

C. Crossing Sewer Line:

1. A water main shall be separated from sanitary sewer in accordance with the requirements of the State of California Administrative Code, Title 22, Section 64630(e)(2), unless modified herein.

2. Install water main a minimum of 12 inches clear, above or below a sanitary sewer.

3. A water main 6 inches or greater in diameter, crossing under a Project site sanitary sewer line, shall be installed with all their joints located at least 10 feet away from each side of the sanitary sewer line.

4. A water main 6 inches or greater in diameter, crossing over a Project site sanitary sewer line, shall be installed with all their joints located at least 4 feet away from each side of the sanitary sewer line.

D. Install all water mains no closer than 10 feet horizontally clear from the edge of sewage leach fields, seepage pits, and septic tanks.

3.4 PIPE INSTALLATION AND JOINING

A. Remove fins and burrs from pipe and fittings.

B. Clean piping, fitting, valves, and accessories before installing. Maintain items in a clean condition.

C. Provide proper facilities for lowering sections of pipe into trenches. Do not drop into piping, fittings, or other materials into trenches. Accurately cut pipe and install without springing or forcing. Replace any piping or fitting that does not provide sufficient space for proper installation of joining material.

D. Blocking or wedging between bells and spigots is not permitted. Install bell and spigot pipe with bell end pointing in the direction of flow.

E. Install piping to the lines and grades indicated or required. Low points and dips are not permitted. Support piping at proper elevation and grade with secure and uniform supports. Wood support blocking is not permitted. Where sand cement slurry will not be furnished for backfill, install piping so that full length of each section of pipe and each fitting will solidly rest on pipe bedding. Excavate recesses to accommodate bells, joints, and couplings. Provide anchors and supports where indicated or required for installation. Provide proper allowances and devices for expansion and contraction of piping and systems.

F. Maintain trenches free of standing water until pipe joints have been installed.

G. At the end of each day close open ends of pipe with temporary wood blocks or bulkheads.

H. Do not install piping when trench or weather conditions prevent proper installation.

3.5 INSTALLATION OF TRACER WIRE AND PIPE MARKERS

A. Tracer Wire: Install continuous length of tracer wire for full length of each run of nonmetallic pipe. Fasten wire to top of pipe in such a manner that it will not be displaced during construction operations. Wire shall be fastened to pipe at not greater than 20-foot intervals. Wire shall terminate above finished grade with a 12 inch lead taped around each riser. Provide a tracer wire to grade under a permanent marker where straight-line transitions of metallic to non-metallic pipe are installed.

B. Underground Pipe Markers: Provide markers at grade where non-metallic pipe is installed and for each horizontal change in direction.

3.6 CONNECTIONS TO EXISTING WATER LINES

A. After IOR has inspected installation, perform connections to servicing water lines. Schedule service shutdown for connecting new system at a time causing minimum disruption.

B. Use a tap or drilling machine with valve and mechanical joint type sleeves for connections to waterlines under pressure, only if all other means of scheduling a shutdown time have been unsuccessful, and with the approval of the responsible engineer, and IOR.

C. Bolt sleeves around mains; bolt valve conforming to AWWA C500 to branch. Open valve, attach drilling machine, perform tap, close valve, and remove drilling machine, without interruption of service. Notify the IOR in writing at least 5 days prior to the date of scheduled connections.

3.7 INSTALLATION OF PVC PLASTIC WATER MAINS

A. Unless otherwise indicated, install pipe and fittings as specified and in accordance with UBPPA UNI-B-3 and AWWA M23, Chapter 7, "Installation".

B. Jointing:

1. Provide push on joints with elastomeric gaskets specified for this type of joint, furnishing either elastomeric-gasket bell-end pipe or elastomeric-gasket couplings. For pipe-to-pipe push on joint connections, provide pipe with push on joint ends furnished with factory installed bevel; for push on joint connections to metal fittings, valves and other accessories, square cut spigot end off pipe end.

2. Provide push on joint lubricant recommended by manufacturer.

3. Install push on joints for pipe-to-pipe connections in accordance with UBPPA UNI-B-3 and AWWA M23, Chapter 7, "Installation."

4. Install push on joints for connection to fittings, valves, and other accessories in accordance with requirements of UBPPA Uni-B-3 and with applicable requirements of AWWA C600.

5. Compression-type joints/mechanical-joints with gaskets, glands, bolts, nuts and internal stiffeners shall be installed in accordance with the requirements of UBPPA UNI-B-3 and AWWA C600 and Appendix A to AWWA C 111/A21.11.

   a. Square cut spigot off end of pipe for compression-type joint/mechanical-joint connections and do not re-bevel.

6. Sleeve-type mechanical couplings shall be provided in strict accordance with coupling manufacturer's recommendations using internal stiffeners as specified for compression-type joints.

C. Provide mechanical thrust restraint devices for anchorage and piping unless thrust blocks are indicated on the Drawings. Thrust blocks shall be installed in accordance with the requirements of UBPPA UNI-B-3 except that size and location of blocks shall be as indicated. Thrust blocks shall be provided as specified in Section 02770: Site Concrete Work.

3.8 INSTALLATION OF VALVES

A. Provide gate valves conforming to AWWA C 500 and UL 262 in accordance with AWWA C600 for valve and fitting installation and with recommendations of AWWA C500 Appendix "Installation, Operation, and Maintenance of Gate Valves".

B. Provide gate valves conforming to AWWA C 600 in accordance with AWWA C 509 for valve and fitting installation and with recommendations of AWWA C 500 Appendix "Installation, Operation, and Maintenance of Gate Valves".

C. Provide gate valves on PVC mater mains in accordance with AWWA M23 Chapter 7, "Installation."

D. Provide check valves and fittings in accordance with applicable requirements of AWWA C600 unless noted otherwise on the Drawings.

E. Provide gate and check valve joints as specified for the type of joints between pipe and fittings.

3.9 INSTALLATION OF HYDRANTS

A. Install hydrants according to requirements of AWWA C 600 for hydrant installation and as indicated. Provide joints as specified for the type of joints between pipe and fittings.

B. Install hydrant with a 6-inch key gate valve between 4 and 10 feet from the hydrant.

3.10 INSTALLATION OF BACKFLOW PREVENTERS

A. Install in accordance with manufacturer's recommendations.

3.11 WATER SERVICE LINE CONNECTION TO WATER MAINS

A. Connect service line to main by corporation stop and gooseneck. Install service stop as indicated on the Drawings. Connect service lines to PVC plastic water mains in accordance with UBPPA UNI-B8 and AWWA M23, Chapter 9, "Service Connections".

B. Special Requirements for Plastic Piping: Unless otherwise indicated, install pipe and fittings in accordance with ASTM D 2774 and ASTM D 2855. Handle solvent cements for plastic pipe jointing in accordance with ASTM F 402. Install joints according to ASTM D 2855. Install other joints to materials other than pipe materials in accordance with plastic pipe manufacturer's recommendations.

C. Connect plastic pipe service lines to corporation stops and gate valves according to plastic pipe manufacture's recommendations.

3.12 INSTALLATION OF STRAINERS:

A. Strainers shall be installed on each water main downstream of the meter, above grade at the pressure regulating station. When a pressure regulating station (assembly) is not provided, "wye" type flange strainer shall be provided, with a shut off valve on the inlet and the outlet side.

B. If the water main is serving fire sprinkler risers or hydrants, then an approved fire service strainer shall be used: Watts 97DB-FSFE or equal.

3.13 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. When water piping has been installed and tested, sterilize system before use and/or Substantial Completion.

B. Inject solution of liquid chlorine or sodium hypochlorite and water containing at least 50 PPM of free chlorine into a system in a manner to ensure that entire system is completely filled with solution. During this procedure operate valves and test outlets for residual chlorine. Continue injection until outlets indicate at least 59 PPM of free chlorine.

C. After injection, isolate system and hold solution in retention for a period of at least 8 hours. Perform tests for residual chlorine after retention. If such tests indicate less than 50 PPM of residual chlorine, repeat entire procedure. After satisfactory sterilization has been verified, flush entire system until all traces of chlorine have been removed or until chlorine content is no greater than in existing water supply.

3.14 ELECTROLYSIS PREVENTION

A. A minimum 6 inch long brass nipple shall be installed at locations specified or as required. Flanges shall be provided with a complete insulating component consisting of; gasket bolt sleeves and bolt washers. Dielectric insulators shall be installed at locations indicated or as required. Dielectric fittings are prohibited.

B. Where steel or cast iron below grade connects to copper or brass piping above grade, the transition from steel or cast iron pipe to copper or brass pipe shall be installed in an above grade accessible location.

C. Underground connections between dissimilar metals shall be in accessible yard boxes.

D. Above ground dielectric connections shall be exposed.

3.15 ABANDONING WATER LINES AND STRUCTURES

A. Water lines and all appurtenances to be abandoned in place shall be cut and removed from all areas where new Work is being installed.

B. Cap or plug abandoned existing drain lines in a code recognized manner.

3.16 TESTS AND INSPECTIONS

A. Provide labor, equipment, materials, test equipment and incidentals required for performing required field tests.

B. Tests shall not be performed for 5 days after concrete thrust blocks have been installed.

C. Testing Procedure: Water mains and service lines shall be tested in accordance with applicable specified standard.

1. Test PVC plastic water system in accordance with UBPPA UNI-B-3 for pressure and leakage. The amount of leakage from PVC piping shall not exceed the amounts given in UBPPA UNI-B-3, except that no leakage is permitted for joints installed with sleeve type mechanical couplings.

2. Test water service lines in accordance with applicable requirements of AWWA C 600. No leakage is permitted.

4. Pressure testing: Before pressure test, fill portion of piping being tested with water for a minimum of 24 hours. Provide hydrostatic pressure of at least 50 psi greater than the maximum working pressure of tested system, but no less than 200 psi hydrostatic test pressure for system piping of 2 inches in diameter and larger. Provide and maintain hydrostatic test pressure for at least 2 hours to ensure no leakage of any portion of piping or appurtenances under pressure test.

3.17 CLEANING

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

3.18 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 02530
SITE SANITARY SEWER SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Site sanitary sewer systems 2 feet away from the building wall, unless noted otherwise, to existing public and/or Project site sanitary sewer.

C. Related Sections:

1. Section 02315: Excavating, Backfilling and Compacting.

2. Section 02318: Excavating, Backfilling and Compacting for Utilities.

3. Section 02765: Pavement Repair.

4. Section 02770: Site Concrete Work.

5. Division 15: Mechanical.

1.2 SUBMITTALS

A. Shop Drawings: Submit site plan denoting locations of lines, valves, and appurtenances.

B. Product Data: Manufacturer's catalog data for materials. Include technical data for accessories, gaskets, joints and couplings.

C. Certificates: Certificates attesting that tests set forth in referenced publication have been performed and the results required by design have been met.

1.3 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement:

1. Standard Specifications for Public Works construction, current edition.

2. California Plumbing Code, CPC, current edition.

3. California Administrative Code, Title 22, Section 64630(e)(2).

PART 2 – PRODUCTS

2.1 MATERIALS

A. Pipeline:

1. Acid pipeline from neutralizing tank to building sanitary drain or Project site sanitary sewer: See Division 15 for corrosive waste piping.

2. Building or Project site sanitary sewer:

   a. Acrylonitrile-Butadiene-Styrene Schedule 40 plastic drainpipe and fittings meeting the requirements of ASTM D 2661 and D 3311. Provide ABS solvent cement for piping and joint connections and install in accordance with IAMPO Standards IS 5, 9, and UPC Section 718.

B. Cleanout Assemblies: Cleanout plug shall be line size.

1. In covered concrete-paved floors: Iron body with UPC recognized plug, top, and adjustable sleeve, cut-off ferrule, polished brass/nickel/bronze, and secured scoriated cover:

Square:	SMITH	JOSAM	ZURN	
	4053	56030-2	Z-1400	
Round:	SMITH	JOSAM	WADE	ZURN
	4033	56010-2	W-6000	Z-1400

2. Outside covered concrete-paved floors: Secured cover, extra heavy-duty, adjustable sleeve, cut-off ferrule, UPC recognized brass type plug, scoriated tractor type cover:

SMITH	JOSAM-	ZURN	WADE
4233	56050-2	Z-1402-HD	W-7030-Y

3. In yard boxes: Raised threaded head brass plug.

   WADE 8590A, or equal.

C. Yard Boxes: Brooks No. 3-TL, or equal, with cast-iron locking cover with the word "SEWER," embossed on the cover in one inch high upper case lettering.

D. Concrete, Mortar and Related Materials: Conform to Section 02770: Site Concrete Work, unless noted otherwise.

E. Metal Covers, Frames and Accessories:

1. Conform to Section 206 – Miscellaneous Metal Items of the Standard Specifications for Public Works Construction.

2. Metal Covers and Frames: Vandal-resistant design and construction.

3. Hot-dip galvanize steel parts after fabrication and prior to assembly in accordance with Section 210 – Paint and Protective Coating of the Standard Specifications for Public Works Construction.

F. Bedding Materials: Conform to the requirements of Section 02315: Excavating, Backfilling and Compacting or Section 02318: Excavating, Backfilling and Compacting for Utilities, as required.

PART 3 – EXECUTION

3.1 SANITARY SEWER INSTALLATION

A. Install sanitary sewers in a uniform alignment and slope to the point of connection as indicated. Before trench excavation, verify size, material, depth, and location of the point of connection.

B. Unless indicated otherwise, pipe slope shall not be less than 1/4 inch per foot or 2 percent unless pipe inverts are indicated. Where invert elevations are indicated, install pipe at a uniform slope between inverts. Slope may be less upon the review of the Architect.

C. Join pipes and fittings as recommended by the manufacturer.

3.2 CLEARANCE OF SANITARY SEWERS

A. Buildings or Structures: 2 feet.

B. Parallel to Water Line:

1. Building sanitary drain, starting 2 feet from the building wall to Project site sanitary sewer or public sewer, is not permitted to be installed in a common trench with a potable water line unless the bottom of the water line is at least 12 inches above the top of the sanitary sewer.

2. In addition, the potable water line shall be installed on a solid shelf excavated on one side of the common trench with a minimum clear horizontal distance of 12 inches from the sanitary sewer or building sanitary drain.

3. Project site sanitary sewer, receiving more than one building sanitary drain or acid pipeline, shall be separated from a potable water line in accordance with the requirements of the State of California, Human and Welfare Agency, Department of Health Services.

C. Crossing Water Line:

1. Building sanitary drain shall be installed a minimum of 12 inches below the potable water line.

2. Project site sanitary sewer shall be separated from the potable water main in accordance with the requirements of the State of California Administrative Code, Title 22, Section 64630(e)(2).

3.3 MANHOLES

A. Provide manholes in accordance with the Standard Plans for Public Works Construction, unless otherwise indicated.

B. Adjust manholes in accordance with the sub-section 302-5.8 Manholes (and other structures) of the Standard Specifications for Public Works Construction.

3.4 CLEANOUTS

A. Provide cleanout at the upper terminal for each sanitary pipeline, at intervals not exceeding 100 feet in straight run and any fraction thereof and for each aggregate horizontal change in direction exceeding 135 degrees.

B. Install required cleanouts before back filling of horizontal pipelines.

C. In unpaved and asphalt-paved areas, install cleanouts in yard boxes 2 inches below the yard box cover.

D. In concrete-paved areas, extend cleanouts flush with finish grade.

E. In traffic areas, install countersunk cleanout plugs where raised heads protrude.

3.5 ABANDONED SEWERS AND STRUCTURES

A. Plug or cap every abandoned sanitary sewer within 5 feet of the property line in a code required manner.

B. Demolish abandoned sanitary structures such as cesspool, septic tank, sewage pit, and manholes to a minimum depth of 5 feet below the finish grade, including removal of sewage. Disconnect any piping. After inspection, completely fill with earth, sand, gravel, cement-sand slurry, or other required material.

3.6 TESTING

A. After installation, test each sanitary drain and/or sewer and each section between successive manholes for either infiltration or exfiltration. Test shall be conducted in accordance with Section 306 - Underground Conduit Construction of the Standard Specifications for Public Works Construction.

B. Where excessive ground water is encountered test the pipeline for infiltration.

C. When infiltration or exfiltration exceeds allowable amounts as set forth in the Section 306 formula, perform repairs or replacements as necessary to comply with the required limits.

3.7 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.8 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02630
STORM DRAINAGE SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Catch basins, grates and frames; culverts; curb inlets; drainage pipes; sub-surface drains; manhole covers and frames; surface run-off collection.

C. Related Sections:

1. Section 02318: Excavating, Backfilling and Compacting for Utilities.

2. Section 02765: Pavement Repair.

3. Section 02770: Site Concrete Work.

1.2 SUBMITTALS

A. Shop Drawings: Submit site plan denoting locations of lines, valves, and appurtenances.

B. Product Data: Manufacturer's catalog data for all required materials. Include technical data for accessories, information concerning gaskets, joints and couplings.

C. Certificates: Certificates attesting that tests set forth in referenced publication have been performed and the results required by design have been met.

1.3 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works Construction, current edition.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Storm Drain Pipe: Provide in conformance with Section 207 - Pipes and Section 208 - Pipe Joint Types and Materials of the Standard Specifications for Public Works Construction.

B. Perforated Subsurface Drain Pipe: Provide shop-perforated with perforations symmetrically located within a maximum arc of 160 degrees. Perforations shall provide a total open area of at least 0.3 square inches per linear foot of pipe, with a minimum of one perforation per linear foot, except for joint areas. Perforation shall be either holes or slots. Hole diameters of 1/4 inch minimum to 3/8 inch maximum. Width of slots of 3/16 inch minimum to 5/16 inch maximum with slot length not exceeding 4 inches.

C. Concrete, Mortar and Related Materials: Conform to Section 02770: Site Concrete Work.

D. Metal Covers, Grates, Frames and Accessories:

1. Conform to Section 206 - Miscellaneous Metal Items of the Standard Specifications for Public Works Construction.

2. Hot-dip galvanize steel parts after fabrication and before installation, in accordance with Section 210 - Paint and Protective Coating of the Standard Specifications for Public Works Construction.

3. Grates and Frames: Vandal-proof design and construction.

E. Bedding Material for Pipe: Conform to the requirements of Section 02315: Excavating, Backfilling and Compacting or Section 02318: Excavating, Backfilling and Compacting for Utilities, as required.

F. Filter Material for Subsurface Drain: Non-woven geotextile filter fabric, Mirafi 14ON, or equal.

G. Aggregate Around Perforated Pipe: 6 inches of gravel containing no particles finer than a 3/8 inch to 1/2 inch sieve opening size.

H. Manhole Brick Mortar, Grout, and Plaster: Conform to Standard Specifications for Public Works Construction, Section 202 - Masonry Materials.

PART 3 - EXECUTION

3.1 EXCAVATION, BACKFILLING AND COMPACTING

A. Conform to the requirements of Section 02315: Excavating, Backfilling and Compacting or Section 02318: Excavating, Backfilling and Compacting for Utilities, as required.

3.2 INSTALLATION OF PIPE

A. Conform to Section 306 - Underground Conduit Construction of the Standard Specifications for Public Works Construction.

B. Non-ferrous drainpipe installed with less than 12 inches of cover to finish grade shall be provided with a 4 inch thick concrete pipe encasement.

3.3 DRAINAGE APPURTENANCES

A. Catch basins, junction chambers, manholes, box culverts, outlet chambers and other drainage structures: Construct as indicated on Drawings and as specified in Section 02770: Site Concrete Work.

3.4 ABANDONED DRAINAGE LINES AND STRUCTURES

A. Cap or plug existing drain lines that are cut and abandoned and remove existing drainage structures that are abandoned.

3.5 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

3.6 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 02711
BITUMINOUS SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Paving for playground, parking areas, areas between buildings, synthetic track surfacing adjacent to planting and turf areas as indicated.

C. Related Sections:

1. Section 02310: Grading.

2. Section 02319: Base Course.

3. Section 02765: Pavement Repair.

4. Section 02765: Pavement Repair.

5. Section 02786: Seal for Bituminous Surfacing.

1.2 SUBMITTALS

A. Shop Drawings: Submit site plan indicating extent of paving and accessories.

B. Product Data: Manufacturer's technical data for materials and products.

1.3 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works Construction and the recommendations in the Geotechnical Report.

1.4 PROJECT CONDITIONS

A. Information on Drawings or in soils report does not constitute a guarantee of accuracy or uniformity of soil conditions over the Project site.

B A copy of the soils report is available for examination in the office of the Architect during regular office hours of the Architect.

PART 2 - PRODUCTS

2.1 BITUMINOUS MATERIALS

A. Provide materials of the class, grade, or type indicated on the Drawings, conforming to relevant provisions of Section 203 - Bituminous Materials of the Standard Specifications for Public Works Construction.

2.2 HEADERS AND STAKES

A. Concrete: Per specification Section 02770.

B. Redwood
1. Headers: Redwood, Construction Heart Grade, size 2 x 6, unless otherwise indicated.
2. Stakes: 2 x 4 redwood or 2 x 3 Douglas fir, Construction Grade.
3. Nails: Common, galvanized, 12d minimum.

PART 3 - EXECUTION

3.1 HEADERS

A. Install headers along edge of bituminous surfacing abutting turf, earth, or planting area, unless indicated otherwise.

B. Install headers so the bottom surface has continuous bearing on solid grade. Where excavation for headers is undercut, thoroughly tamp soil under the header. Compact backfill on both sides of header to the density of adjacent undisturbed earth.

C. Where redwood headers are indicated on drawing, fasten headers in place with redwood or Douglas fir stakes of length necessary to extend into solid grade a minimum of 12 inches. Stakes shall be of sound material, neatly pointed, driven vertically, and securely nailed to headers. Space stakes, not to exceed 4 feet on centers with top of stakes set one inch below top of header. Provide a minimum of 2-12d galvanized common nails through each stake.

D. Remove existing headers where new surfacing is installed adjacent to existing surfacing.

E. Install temporary headers at transverse joints of paving where continuous paving operations are not maintained.

F. Provide additional stakes and anchorage as required to fasten headers in place.

3.2 CONSTRUCTION OF ASPHALT CONCRETE PAVEMENT

A. Thickness of Surfacing: Unless otherwise indicated on Drawings or specified, install bituminous surfacing to a compacted thickness of 2 inches.

B. Provide surfacing material over base course as specified in Section 02319: Base Course.

C. Surfaces of walls, concrete, masonry, or existing bituminous surfacing indicated to be in direct contact with installed bituminous surfacing shall be cleaned, dried and uniformly coated with an asphaltic emulsion film.

D. Thicken edges of bituminous surfacing that do not abut walls, concrete, or masonry, and edges joining existing bituminous surfaces. Remove headers at existing bituminous surfacing where new bituminous surfacing is to be installed. Thicken edges an additional 2 inches and taper to the indicated or specified thickness 6 inches back from such edges.

E. At stairways, join surfacing to first tread or riser below first tread, at an elevation below first riser equal to height of risers of stairway.

F. Provide adequate protection for concrete, planting areas, and other finish Work adjacent to areas indicated to receive bituminous surfacing.

G. Placing:

1. Do not install bituminous surfacing when atmospheric temperature is below 40 degrees F; or when fog or other unsuitable weather conditions are present. Temperature of mixture at time of installation shall not be lower than 260 degrees F in warm weather or higher than 320 degrees F in cold weather.

2. Where 2-inch or 3-inch thick surfacing is indicated or specified, install surfacing in one course. Where surfacing is indicated or specified 4 inches or more in thickness, except for thickened edges, install bituminous surfacing in courses of approximately equal thickness, each course not exceeding 2-1/2 inches in thickness unless otherwise required by the Architect.

H. Stakes or Screeds: Provide grade or screed stakes spaced not more than 15 feet apart in flow lines with grades of less than one percent. Continuous screeds may be provided instead of stakes.

I. Spreading: Install bituminous surfacing in a manner to cause least possible handling of mixture. In open areas and wherever practicable, install by mechanical means with a self-propelled mechanical spreader. In confined or restricted areas, install mixture with hot shovels and rakes, and smooth with lutes.

J. Joints: Provide vertical joints between successive runs. Install joints true to line, grade, and cross section. Lapped joints are not permitted.

K. Rolling:

1. Finish roll with a self-propelled tandem roller weighing at least 8 tons. Break down roll with a self-propelled roller weighing between 1-1/2 tons and 8 tons.

2. Roll in a manner that preserves flow lines and the established finished grades. Break down roll in areas adjacent to flow lines parallel to flow lines. Break down roll after bituminous surfacing is installed without shoving or cracking of mixture under roller. Continue finish rolling until surfacing is unyielding, true to grade, and meets requirements for specified smoothness. Areas inaccessible to finish roller may be finish rolled with breakdown roller or tamped with hot tamping irons and smoothed with hot smoothing irons or hand roller.

3. Where bituminous surfacing abuts concrete, masonry, walks or paving, tamp joint smooth, if necessary, as described above to obtain a uniformly even joint, true to line and grade. Tamp and smooth to properly compact.

4. Compacted bituminous surfacing shall be provided with a bulk specific gravity of at least 2.31 when tested in accordance with ASTM D 1188.

3.3 TOLERANCE

A. Smoothness: Surface of bituminous surfacing after rolling, shall be even, smooth and uniform in texture with no voids or rock pockets, free of roller marks or other irregularities, and not varying by more than 0.03 foot, except at local depressions or raised areas as indicated, when a 10 foot straightedge is placed on surface.

B. Grade: Finished grade shall not vary more than 0.02 foot above or below required grade. Variations within prescribed tolerance shall be compensating so that average grade and cross-section are provided.

3.4 TESTING

A. After first coat of surface seal has been installed and after a 24 hour period, the flood test shall be completed of the bituminous surfacing in presence of the IOR. Repair areas of standing water or puddles and flood test locally; install surface seal and retest as necessary.

3.5 SURFACE SEALING

A. After bituminous surfacing has passed flood test, clear and allow to dry and provide one more coat of surface seal as specified in Section 02786: Seal for Bituminous Surfacing.

B. Where indicated, provide multiple coats of surface seal to existing bituminous surfacing.

C. Where new bituminous surfacing joins existing bituminous surfacing, overlap surface seal a minimum of 12 inches onto existing bituminous surfacing.

3.6 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.7 CLEANUP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02765
PAVEMENT REPAIR

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Bituminous Surfacing Repair: Areas removed for utility trenches, heaved by tree roots, cracked areas, protruding areas where pavement meets hard surfaces, depressed areas, holes and areas around new structures, and raveled bituminous pavement.

2. Concrete Pavement Repair: Areas heaved by tree roots, cracked areas, holes and trenches, and areas around new structures.

C. Related Sections:

1. Section 02310: Grading.

2. Section 02316: Excavating, Backfilling and Compacting for Pavement.

3. Section 02317: Excavating, Backfilling and Compacting for Structures.

4. Section 02318: Excavating, Backfilling and Compacting for Utilities.

5. Section 02319: Base Course.

6. Section 02711: Bituminous Surfacing.

7. Section 02770: Site Concrete Work.

8. Section 02786: Seal for Bituminous Surfacing.

1.2 SUBMITTALS

A. Shop Drawings: Submit Shop Drawings indicating areas to be repaired.

B. Product Data: Submit manufacturer's technical data for materials and products.

1.3 QUALITY ASSURANCE

A. Comply with Standard Specifications for Public Works Construction, current edition.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials specified in Section 02319: Base Course.

B. Materials specified in Section 02711: Bituminous Surfacing.

C. Materials specified in Section 02770: Site Concrete Work.

D. Materials specified in Section 02786: Seal for Bituminous Surfacing.

2.2 BITUMINOUS MATERIALS

A. Provide materials and products of the class, grade or type indicated, conforming to relevant provisions of Section 203 - Bituminous Materials of the latest Standard Specifications for Public Works Construction.

2.3 HEADERS AND STAKES

A. Headers: Redwood, Construction Heart Grade, size 2 x 6, unless otherwise indicated on Drawings.

B. Stakes: 2 x 4 redwood or 2 x 3 Douglas fir, Construction Grade.

C. Nails: Common, galvanized, 12d minimum.

2.4 SLURRY

A. Cement-sand slurry; minimum one sack of cement per cubic yard of mixture.

PART 3 - EXECUTION

3.1 PAVEMENT REMOVAL

A. Remove bituminous and concrete pavement in accordance with applicable provisions of Section 300 - Earthwork of the Standard Specifications for Public Works Construction.

B. Pavement Heaved By Roots: Remove pavement to limits of distortion and expose roots. Trim roots to provide at least 12 inches clearance to pavement.

C. Remove protruding bituminous surfaces flush with the surrounding grade using a suitable tool or equipment so that adjacent finishes are not blackened.

D. Remove raveled and depressed bituminous pavement to limits indicated or required.

E. Saw cut existing improvements, trim holes and trenches in bituminous and concrete pavement to permit mechanical hand tampers to compact the fill.

F. Remove broken concrete by saw cutting. If the required cut line is within 30 inches of a score or joint line or edge, cut and remove to the score, joint line, or edge.

3.2 EXCAVATING, BACKFILLING AND COMPACTING

A. Conform to requirements in Section 02316: Excavating, Backfilling and Compacting for Pavement; Section 02317: Excavating, Backfilling and Compacting for Structures; or Section 02318: Excavating, Backfilling and Compacting for Utilities, as required.

B. Where subgrade or base is deemed to be unstable or otherwise unsuitable, excavate such materials to firm earth, and replace with a required material. Install and compact fill materials in accordance with the requirements of related Specification sections.

3.3 HEADERS

A. Install headers along edge of bituminous surfacing abutting turf, earth, or planting area, unless indicated otherwise.

B. Install headers so the bottom surface has continuous bearing on solid grade. Where excavation for headers is undercut, thoroughly tamp soil under the header. Compact backfill on both sides of header to the density of the adjacent undisturbed grade.

C. Fasten headers in place with redwood or Douglas fir stakes of length necessary to extend into solid earth a minimum of 12 inches. Stakes shall be of sound material, neatly pointed, driven vertically, and securely nailed to headers. Space stakes, not to exceed 4 feet on centers with top of stakes set one inch below top of header. Provide a minimum of 2-12d galvanized common nails through each stake.

D. Remove existing headers where new surfacing is installed adjacent to existing surfacing.

E. Install temporary headers at transverse joints of paving where continuous paving operations are not maintained.

F. Provide additional stakes and devices as required to fasten headers.

3.4 BASE COURSE

A. Unless otherwise indicated, base course shall be crushed aggregate base, fine grade, 5 inches thick or equal to thickness of the existing base, whichever is greater.

B. Fill grade and compact as specified in Section 02310: Grading.

3.5 RESURFACING

A. Holes and Trenches: Remove loose dirt and backfill with cement-sand slurry allowing for surfacing one inch thicker than existing. Unless otherwise indicated on Drawings, resurface flush with existing adjoining pavement installing the same type of materials and section provided in existing improvements.

B. Other Areas: Other surface improvements damaged or removed shall be cut to a neat even line and excavated one inch below the bottom of the existing pavement. Resurface by following the original grades and installing the same type of materials provided in existing improvements.

C. Where bituminous surfacing abuts concrete, masonry, walks or paving, tamp joint smooth, if necessary, as described above to obtain a uniformly even joint, true to line and grade. Tamp and smooth materials before asphalt cools.

3.6 REPAIRING AND RESEALING EXISTING SURFACES

A. Preparation of Surfaces: Prior to filling cracks, clean existing bituminous surfacing of loose and foreign materials and coat with a film of asphalt emulsion.

B. Repair of Existing Surfacing:

1. Fill cracks 1/2 inch wide and less with RS-1 emulsion and silica sand or other required material. Cracks larger than 1/2 inch wide shall be filled with Type C2 Asphalt Concrete as specified. Cracks shall be filled to the level of adjacent surfacing.

2. Where low areas, holes, or depressions occur in existing surfacing, repair with emulsified asphalt. Install material, strike off the emulsified asphalt with a straightedge flush with adjoining surfacing. Finish with a steel trowel, and after dehydration, compact by rolling or tamping.

C. Testing: Flood test entire area in presence of the IOR. Entire area tested shall be free of standing water or puddles.

D. Surface Seal: After surface has been repaired and tested, install seal coat over entire area indicated. Surface seal shall be as specified in Section 02786: Seal For Bituminous Surfacing.

3.7 CLEANING

A. Remove all stains on the Project site and adjacent properties caused by or attributed to the Work of this section.

B. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

3.8 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 02770
SITE CONCRETE WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Portland cement concrete pavement, cement walks, curbs, gutters, trash pick-up area, ramps, mowing strips, fence post footings, sliding gate concrete tracks, catch basins, pipe bedding and encasements, thrust blocks, transition structures, flagpoles and light standard bases and footings, athletic equipment footings and equipment pads.

C. Related Sections:

1. Section 02310: Grading.

2. Section 02316: Excavating, Backfilling and Compacting for Pavement.

3. Section 02319: Base Course.

4. Section 02510: Site Water Distribution Systems.

5. Section 02530: Site Sanitary Sewer Systems.

6. Section 02630: Storm Drainage Systems.

7. Section 02765: Pavement Repair.

8. Section 03200: Concrete Reinforcement.

1.2 SUBMITTALS

A. Shop Drawings: Submit plans, elevations and details of concrete site Work.

B. Product Data: Submit mix designs and manufacturer's technical data for materials and products. Submit 3" x 3" concrete Sample of each specified color.

C. Material Sample: Submit one concrete bumper to the IOR for destructive testing.

1.3 QUALITY ASSURANCE

A. Comply with Standard Specifications For Public Works Construction.

B. Comply with the recommendation in the Geotechnical Report.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete, Mortar and Related Materials: Comply with applicable provisions of Standard Specifications for Public Works Construction, Section 201 - Concrete, Mortar and Related Materials:

1. Concrete: Type II with 28-day compressive strength 3,000 psi, unless specified otherwise.

2. Rebars as indicated in the drawings.

3. Expansion Joint Filler: Preformed expansion joint filler, bituminous type, complying with ASTM D 994.

B. Form Materials:

1. Side forms: Douglas fir, Construction Grade or Better or metal forms.

2. Stakes: Douglas fir, Construction Grade or Better or metal stakes.

PART 3 - EXECUTION

3.1 CONSTRUCTION OF FORMS FOR CAST-IN-PLACE STRUCTURES

A. Concrete Pavement: Install Portland cement concrete pavement in compliance with the Standard Specifications for Public Works Construction, Section 302- Roadway Surfacing.

B. Miscellaneous Exposed Concrete: Install concrete curbs, walks, gutters, cross gutters, access ramps, driveways, catch basins, yard boxes, vaults and similar structures, in compliance with the Standard Specifications for Public Works Construction, Section 303 - Concrete and Masonry Construction.

C. Exposed Concrete Bases: Install bases, such as for post, flagpole, light standards and similar bases, in compliance with the Standard Specifications for Public Works Construction, Section 303 - Concrete and Masonry Construction.

D. Post, flagpole, light standard footings below grade, underground conduit bedding, encasements, thrust blocks and similar structures may be placed \directly in excavations conforming to the required sizes.

E. Reinforcement installation and concrete placement, surface finishes, curing and removal of forms shall be performed in compliance with applicable provisions of Standard Specifications for Public Works Construction, Section 303 - Concrete and Masonry Construction. Provide heavy broom finish at slopes exceeding six (6) percent and medium broom finish at slopes up to six (6) percent.

3.2 CLEAN UP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

3.3 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 02786
SEAL FOR BITUMINOUS SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Surface sealer over bituminous surfacing.

C. Related Sections:

1. Section 02711: Bituminous Surfacing.

2. Section 02765: Pavement Repair.

3. Section 02788: Pavement Marking.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product information and application procedures for bituminous surfacing.

1.3 QUALITY ASSURANCE

A. Comply with the Standard Specifications For Public Works Construction, current edition.

B. Agitate bulk materials during transport.

1.4 MAINTENANCE

A. Extra Materials: Provide 10 gallons in unopened containers.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide one of the following surface seals:

Product Name	Manufacturer
Guard-Top	Industrial Asphalt
Over Kote	Diversified Asphalt Product
Park Top	Western Colloid Products
Sure Seal	Asphalt Coating Engineering

Super Drive Top. SAF– T Seal. Inc.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Thoroughly wash surfaces with water to remove dirt, debris, excessive oil and grease, or other foreign matter.

3.2 APPLICATION

A. Install seal coat in strict accordance with manufacturer's written directions and recommendations.

B. Install 2 coats of surface seal to new bituminous surfacing. First coat shall be installed before flood testing. Clean surface and allow to dry before installing second coat. Second coat shall be installed after bituminous surfacing has passed flood test.

C. Where new bituminous surfacing is installed adjacent to existing bituminous surfacing, overlap surface seal a minimum of 12 inches onto existing bituminous surfacing.

D. Where existing bituminous surfacing is indicated to be patched and sealed, install 2 coats of surface seal after patching. Refer to Section 02711: Bituminous Surfacing.

3.3 PROTECTION OF SURFACES

A. Protect sealed and unsealed surfaces from damage and traffic during performance of the Work of this section and until surface seal has thoroughly set and cured. Do not permit traffic of any kind for at least 24 hours after completion of installation.

B. Protect the Work of this section until Substantial Completion.

3.4 TESTING

A. Owner reserves the right to obtain samples, perform tests to ensure compliance with the Specifications, and to review weight slips and invoices of materials delivered to the Project site.

3.5 CLEAN UP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 02810
IRRIGATION SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. General Conditions and Supplementary Conditions apply to this section, including all requirements by Los Angeles County Health Department for the use of reclaimed water.

1.2 WORK INCLUDED

A. Supply material, pipe, pipefittings, automatic valves, wiring, and labor to install a fully automatic sprinkler system. Restore any existing landscaping disturbed during the installation.

1.3 RELATED SECTIONS

A. Section 02660 - Water Distribution

B. Section 02900 - Landscaping

C. Section 15400 - Plumbing

D. Section 16050 – Electrical

1.4 QUALITY ASSURANCE & REQUIREMENTS

A. Obtain and pay for any and all permits and inspections as required.

B. Follow manufacturer's directions and detailed drawings in all cases when the manufacturers of products used in this contract furnish directions covering points not included in the drawings and specifications.

C. All local, municipal and state laws, and rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these specifications, and their provisions shall be carried out by the Contractor. Anything contained in these specifications shall not be construed as conflicting with any such rules and regulations, or the requirements of the same. However, when these specifications and drawings call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by such rules and regulations, the provisions of these specifications and drawings shall take precedence.

D. Superintendent:

1. A superintendent satisfactory to the Owner's Representative shall be present on the site at all times during progress of the work.

2. Do not change the Superintendent except with the consent of the Architect.

3. The Superintendent shall be authorized to represent the Contractor.

E. Explanation of Drawings:

1. Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. Carefully investigate the structural and finish conditions affecting this work and plan work accordingly, furnishing such offsets, fittings, sleeves, etc., as may be required to meet site conditions. Drawings are generally diagrammatic and indicative of the work to be installed. Install the work in such a manner as to avoid conflicts between irrigation systems, planting and architectural features.

2. The word Architect as used herein refers to the Owner's authorized representative.

3. Furnish and install all work called for on the drawings by notes or details whether or not specifically mentioned in the specifications.

4. Do not install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Bring such obstructions or differences to the attention of the Architect. Failure to do so will mean the Contractor is responsible for any revisions necessary.

5. Do not purchase or install materials as noted in legend on drawing when it is obvious there is an oversight or discrepancy. Failure to obtain prior material approval may result in rejection by the Architect. The Contractor will be responsible for any revisions necessary due to his failure to bring material discrepancies to the attention of Architect, or failure to comply with material submittals.

6. Coordinate as necessary the work of this Section which is allied with the work of other trades.

7. It is the intent of the drawings and specifications to describe a complete irrigation system providing uniform water coverage. If the plans or specifications appear in any way to be incomplete, misleading, conflicting, or subject to misinterpretation, it is the Contractor's responsibility to bring these concerns to the Architect's attention before bidding. If the Contractor fails to do so, the Contractor must accept the Architect's interpretation and any potential related financial impact that may occur.

F. Electrical wiring, controls, motors, and devices shall be Underwriters Laboratories listed, and labeled U.L.

1.5 SUBMITTALS

A. Material List:

1. Furnish the articles, equipment, materials, or processes specified by name in the drawings and specifications. Substitution is allowed only with prior written approval of the Architect.

2. Submit complete material list prior to performing any work. Material list shall include the manufacturer name, model number and description of all proposed materials and equipment.

3. Equipment or materials installed or furnished without prior approval of the Architect may be rejected and the Contractor required to remove such materials from the site at the Contractor's own expense.

4. If equipment proposed for use is as specified, a material list ONLY is required, and it is UNNECESSARY to submit manufacturer descriptive catalogs with submittal.

B. Record Drawings:

1. Provide and maintain up to date and complete project record documents (set of bond prints). Update daily and show all changes from the original drawings and specifications, as well as exact "as-built" locations, and sizes and types of equipment. Prints for this purpose may be acquired from the Architect. Keep this set of drawings on site and use only for such recording.

2. These drawings shall also serve as work progress prints and shall be the basis for measurement and payment for work completed. Drawings must be available at all times for site reviews, in a location designated by the Architect. Should the record progress prints be unavailable for review or fail to be up to date at the time of any site reviews, it will be assumed no work has been completed and the Contractor will be assessed the cost of that site visit at the current billing rate of the Architect. No other inspections will take place until payment of that assessment.

3. Make neat and legible notations daily on the record progress prints as the work proceeds, showing the work as actually installed. Should equipment location differ from plan, indicate the new location in a graphic manner, matching the original symbols in the irrigation legend.

4. Before the final site review, transfer all information from the record prints to computer-generated reproducible drawings (or other approved method), and submit these reproducible drawings along with related CAD disk to the Architect for approval prior to preparing controller chart.

5. Dimension the following locations from two permanent points of reference (building corners, sidewalks, road intersections, etc.):

   a. connection to existing water lines

   b. connection to existing electrical power supply

   c. isolation valves

   d. sprinkler pressure line routing and directional turns (dimension maximum 100 feet along routing).

   e. automatic controller

   f. remote control valves

   g. control wire routing

   h. quick coupling valves

   i. master valve

   j. flow sensor

   k. lightning protection (rod, plate, etc.)

   l. backflow prevention units/strainers

m. tracer wires (main line routing)

n. irrigation water meters

o. electrical meters

6. On or before the date of the final site review, deliver the updated and completed reproducible drawings to the Architect. Delivery of these drawings does not relieve the Contractor of responsibility for furnishing any required information that may have been omitted from the prints.

C. Controller Charts:

1. Record drawings must be approved by the Architect before controller charts are prepared.

2. Provide two controller charts for each controller installed.

3. The chart shall show the area controlled by the automatic controller and shall be the maximum size controller door will allow.

4. The chart shall be based on a record drawing, reduced to the maximum size that will fit inside controller housing (printed on two sides if required for graphic clarity).

5. The chart shall be a photocopy or black line print with colors to differentiate areas of coverage for each hydrozone, using pastel or transparent colors.

6. When completed and approved, hermetically seal the chart between two pieces of plastic (thickness of each piece being minimum 10 mils).

7. These charts must be completed and approved prior to final acceptance of the irrigation system. Installation will not be accepted without charts.

D. Operation and Maintenance Manuals:

1. Prepare and deliver to the Architect within 10 calendar days prior to completion of construction two hardcover three ring binders containing the following information:

a. Index sheet stating Contractor's address and telephone number

b. List of equipment with names, addresses, and telephone numbers of local manufacturer representative

c. Catalog and parts sheets regarding material and equipment installed under this contract

d. Warranty statement

e. Complete operating and maintenance instruction on all major equipment

2. In addition to these maintenance manuals, instruct Owner's maintenance personnel regarding operation of major equipment and show written evidence to the Architect at the conclusion of the project that this service has been rendered.

E. Equipment to be Furnished:

1. Supply as part of this contract the following tools:

a. Two keys for each automatic controller

b. Two keys for opening valve boxes

c. One quick coupler key and matching hose swivel (per five quick coupling valves)

d. One remote hand-held radio control unit (transmitter and receiver) compatible with controller specified

e. Three irrigation bodies and nozzles per type as indicated on irrigation schedule.

f. Two Rain Bird pressure gauges, RBG-L160-D

Turn over this equipment to the General Manager's Representative at the conclusion of the project. Before final acceptance can occur, written evidence that the General Manager's Representative has received materials must be shown to the Project Manager.

F. Backflow Prevention Device Certification:

1. Submit two copies of certification from County Health Department to Project Manager at the final review. This certification shall be on County Health Department standard form.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Exercise care in handling, loading, unloading, and storing PVC. pipe and fittings. Transport PVC. pipe in a vehicle which allows the length of pipe to lie flat, to avoid undue bending or concentrated external load at any point. Any section of pipe dented or damaged must be discarded or, if installed, must be replaced with new piping.

B. Cover any pipe stored outdoors to protect it from sunlight.

1.7 SUBSTITUTIONS

A. To request substitution of any equipment or material in lieu of equipment or material listed on the irrigation drawings and in the specifications, provide the following information to the Architect for approval:

1. Statement indicating the reason for making the substitution, using a separate sheet of paper for each requested substitution

2. Descriptive catalog literature and performance charts (if available) for each requested substitution

3. Hydraulic calculations for proposed substitution, as applicable

4. Itemized list of proposed substitution(s), noting difference in material and labor costs between substitution and item originally specified

5. Written confirmation that Owner's Representative has received any credit resulting from approved substitution (with a copy sent to Project Manager)

B. Approval of any substitution or alternate will be based on information and/or samples provided by the Contractor.

C. Responsibility for the total performance of any substitution to equal or surpass the item originally specified in every respect rests with the Contractor.

D. If the Owner's Representative determines the substitution has proven to be unsatisfactory, it shall be removed and replaced with the originally specified item as part of the work of this contract (both materials and labor).

E. The Owner's Representative shall be solely responsible for accepting or rejecting any substitution as equal to equipment and materials listed on the irrigation drawings and in the specifications.

1.8 WARRANTY

A. The general and supplementary conditions of these specifications shall be filed with the Owner's Representative or his representative prior to acceptance of the irrigation system.

B. Manufacturer warranties do not relieve the Contractor of his liability under the warranty. Such warranties only supplement the warranty.

C. Include a copy of the warranty form in the Operations and Maintenance Manual.

D. The entire sprinkler irrigation shall be warranted to be free from defects in material and workmanship, and installed in accordance with this Notice to Contractors. The Contractor shall be required to repair or replace any defects in material or workmanship which may develop with one calendar year from the date of acceptance, ordinary wear and tear and unusual abuse or reflect expected. Further, the Contractor shall be required to make any necessary repairs within 24 hours of notification at no cost to the Owner. If the Contractor or his agent fail to make such repairs within the stipulated time, the Department shall make such repairs or have repairs made by a third party, and bill the Contractor for all expense that accrue from making such repairs.

E. If settlement occurs along main line, lateral lines, at valve boxes, or other irrigation related appurtenances within one calendar year from date of acceptance, and adjustments in pipes, valves, or sprinkler heads are required to bring system, sod, or paving to the level of the permanent grade, the Contractor shall make all adjustments without additional cost to the Owner, including complete restoration of any planting, paving, or other improvements damaged as a result of settlement.

F. If within one calendar year from the date of acceptance, settlement occurs along main lines, lateral lines, at valve boxes, or other irrigation related appurtenances, and adjustments in pipes, valves and sprinkler heads are required to bring the system, sod or paving to the level of the permanent grades, the Contractor shall make all adjustments without additional cost to the Owner, including complete restoration of any planting, paving or other improvements damaged as a result of settlement.

1.9 TEMPORARY REPAIRS

A. The Owner reserves the right to make temporary repairs as necessary to keep the sprinkler system equipment in operating condition. The exercise of this right by the Owner will not relieve the Contractor of responsibilities under the terms of the guarantee as herein specified.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use only new materials of manufacturer and type noted on drawings and as specified herein, or approved equal.

2.2 PIPE & FITTINGS

A. Pressure main line piping and fittings sizes 2 to 3 inch in size shall be PVC. class 315 solvent weld type.

B. Pressure main line piping and fittings up to 1-1/2 inch in size shall be PVC. Schedule 40.

C. Non-pressure lines (buried) shall be PVC Schedule 40. (1/2 inch pipe is not permitted.)

D. Sleeves or conduit lines shall be PVC. Schedule 40.

F. All PVC. pipe and fittings shall conform to following specific requirements:

1. PVC. (Solvent Weld)

a. Pipe shall be manufactured from virgin polyvinyl chloride compound in accordance with ASTM D 1784 or ASTM D 2241, cell classification 12454 B, hydrostatic design stress rating not less than 2,000 p.s.i.

b. Fittings (solvent weld or thread) shall be standard weight, Schedule 40, side gated, injection molded PVC., complying with ASTM D 1784, cell classification 13454 B, including threads when required.

2. PVC. nipples shall be Schedule 80, with molded threads.

3. All PVC. pipe must bear the following markings:

a. Manufacturer name

b. Nominal pipe size

c. Schedule or class

d. Date of extrusion

5. Solvent cement and primer for PVC. solvent-weld pipe and fittings shall be of type and installation method prescribed by the manufacturer.

6. Brass Pipe & Fittings:

a. Brass pipe shall be 85 percent red brass, American National Standard Institute (ANSI), Schedule 40 screwed pipe.

b. Fittings shall be medium brass, screwed 125 pound class.

7. Copper Pipe & Fittings:

a. Pipe shall be Type K, hard tempered.

b. Fittings shall be wrought copper, solder joint type.

c. Joints shall be soldered with silver solder, 45 percent silver, 15 percent copper, 16 percent zinc, 24 percent cadmium, solidus at 1125 F. and liquidus at 1145 F.

8. Capillary tubing shall be 1/8 inch i.d., flexible PVC.

2.3 TRACER WIRES

A. Install No. 14 polyethylene coated copper tracer wire with all non-metallic irrigation main lines, Paige P7079D or equal.

2.4 ELECTRICAL (HIGH VOLTAGE)

A. All high voltage electrical services required for automatic controller and other irrigation system equipment noted on drawing shall be provided by Electrical Contractor. The metered controller enclosure shall be double door design positioned front and back, vandal and weather resistant, manufactured entirely of stainless steel. The front section shall house a UL listed, E.U.S.E.R.C. approved 100 amp rated commercial meter socket with test block bypass provision. The back section shall be louvered upper and lower body to allow for cross flow ventilation. The back section shall have a stainless steel backboard provided for the purpose of mounting a controller. The backboard shall be mounted on four stainless steel bolts that will allow for removal of the backboard. The inside door area shall provide adequate storage for plans, operating instructions, and scheduling information. The enclosure shall have continuous stainless steel piano hinges on one side of each door, and a three point locking mechanism on the other side of each door. The handles controlling the locking mechanisms shall be located at the base of the doors and be concealed within the surface of the doors. The provision for padlocks shall be included with the locking mechanisms.

B. Electrical equipment installed outside building shall be NEMA 4 type.

C. All connections between electrical services and equipment shall be in rigid galvanized electrical conduit, with conduit and wiring sizes as required.

2.5 ELECTRICAL (LOW VOLTAGE)

A. Control wire connections shall be made with 3-M brand DBY or DBR direct burial splice kits, or approved equal. The splice kit shall consist of a one piece malleable plastic bulb body with internal locking fingers, filled with re-enterable gel sealant and a Scotchlok Electrical Spring Connector. Connector shall be flame retardant PVC. insulator with a steel spring and shell within. Tube material shall be polypropylene. Gel material shall be hixotropic calcium organic complex. Wire sizes and numbers or wires shall be as shown below.

CONNECTOR	COLOR	NO. AND SIZE OF WIRE
3 M Model DBY	Yellow	Max. 4 - 12 gauge UF wires
3M Model DBR	Red	Max. 3 - 14 gauge UF wires

B. Make connections between controller and remote control valves using direct burial 14 gauge, AWG-UF 600 volt copper wire. Color code wires as follows:

Controller Wire Color	Controller Stations	Controller Stations	Controller Stations	Controller Stations
Red	1	11	21	31
Yellow	2	12	22	32
Blue	3	13	23	33
Green	4	14	24	34
Orange	5	15	25	35
Tan	6	16	26	36
Purple	7	17	27	37
Pink	8	18	28	38
Brown	9	19	29	39
Gray	10	20	30	40

Controller	Tape Bundle Color
A	Red
B	Yellow
C	Blue
D	Green
E	White
F	Black

C. Wire shall be minimum #14 UF 600 volt underground wiring. Common wire shall be white, and all other wires red, yellow, blue, green, orange, tan, purple, pink, brown, or gray.

2.6 ISOLATION VALVES

A. Valves 3 inches and smaller shall be ASTM B 83 two piece forged brass body ball valve with a standard port and threaded ends with a 400PSIG WOG/150 PSIG/SWP.

2.7 QUICK COUPLING VALVES

A. Quick couplers shall be 1 inch i.p.s., two piece, brass construction equipped with a cover, unless otherwise specified on plans.

1. Coupler threads shall be lug type (acme type).

2. Provide with rubber-like vinyl hinge cover.

2.8 BACKFLOW PREVENTION UNITS

A. Backflow preventer shall be designed to operate on a "reduced pressure" principle and be equipped with gate valves and two field test cocks (supply and discharge sides).

B. Wye strainers at backflow prevention units shall be 125 pound class cast brass with 40 mesh monel screen, unless otherwise noted on drawing.

C. The backflow enclosure shall be of a vandal and weather resistant nature manufactured entirely of marine grade aluminum alloy 5052-H52, with a wall thickness of 1/8 inch. The mounting base shall be manufactured entirely of stainless steel. The main housing shall be of solid sheet construction punched on the sides with a rectangular pattern for viewing backflow operation.

The length of the enclosure shall be expandable to allow for site adjustment. The enclosure shall have a mounting lip on one end and a locking mechanism on the other end. The mounting base shall be submerged into the concrete a minimum of 2 inches. Position the enclosure 2-1/2 inches above the concrete for drainage purposes. The locking mechanism shall be full release type which allows for complete removal of the enclosure from its mounting base without the use of tools. The handle controlling the locking mechanism shall be concealed within the surface of the enclosure and provide for either a single or dual padlock system.

2.9 STRAINER ASSEMBLY

A. Strainer assembly shall be 125 pound class cast brass with 40 mesh monel screen, unless otherwise noted on drawing.

2.10 AUTOMATIC CONTROLLER

A. Controller shall be fully automatic and capable of operating the required number of stations, flow sensors, master valves, and moisture sensors. Controller shall be pedestal/wall mount type, in a housing with locking hinged cover. Fuse and chassis ground all controller components. Automatic controller shall include the following:

1. 117 volt pump starter relay for each controller being served.

2. Surge protection.

3. Copper clad lightning protection device (specific type to be coordinated with General Contractor).

4. Permanent connection outside controller housing for quick connection of remote hand-held radio controls.

5. Remote rain switch assembly mounted on the right hand side of enclosure, with interconnect wire harness pre-wired through a bypass switch into the controller and to the terminal strip.

6. Master valve relay assembly pre-wired to the terminal strip. If more than one controller is served off master valve, provide additional relays for each such controller.

B. Mount the controller inside a stainless steel, vandal-resistant enclosure with a stainless steel pre-drilled removable backboard, controller, terminal strip, and 120 volt outlet. Provide 120 volt duplex box with an on/off switch and 120 volt receptacle. Metal conduit shall run from the 120 volt supply to the controller housing. All power within the housing shall be properly phased. Provide a pre-wired terminal strip clearly indicating the proper points of connection of all appropriate wiring. Enclosure shall be a Rain Master enclosure as shown on the plans. Controller pad shall be per manufacturer recommendation, or shall conform to requirements of governing authority if these requirements exceed manufacturer recommendation.

C. Provide the controller assembly with a terminal strip clearly marking the positions for one rain sensor and four moisture sensing devices. Wire the terminal strip through five clearly marked on/off switches mounted on the face of the controller to provide sensing bypass capability

D. Controller assembly package shall be supplied and enclosure assembly shall carry a five year warranty on the entire assembly (including controller).

E. Each exterior controller enclosure shall be grounded as detailed on the controller installation detail.

2.11 REMOTE CONTROL VALVES

A. Valve shall be spring-loaded, packless diaphragm activated, normally closed type with brass body, equipped with flow control and pressure regulation capabilities when noted on drawing.

B. Valve solenoid shall be 24 volt a.c. 4.5 watt maximum, 500 mili-amp maximum surge, corrosion-proof, stainless steel construction, epoxy encapsulated to form a single integral unit.

C. When valves called for are not equipped with a flow control, provide a ball valve on discharge side of valve.

D. Valve shall be equipped with an internal/external bleeder to permit operation in the field without power at the controller.

2.12 SMALL SHRUB/GROUND COVER SPRINKLER HEADS

A. Sprinklers shall be similar in all respects to type shown on drawing.

B. Where noted, use pop-up type body with height per legend on drawing.

C. When noted, body shall be equipped with a built-in check valve.

D. Provide pressure compensating screens (pcs) as noted on drawing.

E. Provide variable arc nozzle as necessary

F. Use pressure regulating type heads where noted.

2.13 VALVE BOXES

A. Valve boxes shall be low pressure structural foam with locking covers. Valve boxes shall be the size and model as indicated on the plans. The cover shall be permanently embossed "GV" for gate valve, "RCV" for remote control valve, "QC" for quick coupling valve, "MV" for master valve, and "FM" for flow meter. Print is not acceptable. Install box per detail.

2.14 MASTER VALVE

A. Master valve shall be spring-loaded, packless diaphragm activated, normally open normally closed type, equipped with flow control and pressure regulation capabilities when noted on drawing.

B. Install normally open master valve with a Data Industrial Model 800 L.A.R.C. box, or equal.

2.15 FLOW SENSOR

A. Flow sensor size shall be based on the lowest flow demand through the sensor, with the piping size per dimensions noted in construction detail. Verify size of sensor with Manufacturer Representative.

B. Install sensor per manufacturer's recommendations. Retain a factory-trained representative to check installation and perform start-up services, including adjustment of all equipment. Provide General Manager's Representative with proof of compliance.

2.16 TREE IRRIGATORS/BUBBLER HEADS

A. Bubbler heads shall be similar in all respects to type shown in detail and sprinkler legend.

B. Provide assemblies as indicated on drawings (including vents) for tree well applications.

C. See drawing for construction detail regarding height and typical assembly of bubbler on fixed head riser.

D. Install head a minimum of 6 inches above finish grade unless otherwise noted.

E. Use Teflon tape on all threaded fittings.

F. Install bubbler head away from walkway to minimize pedestrian hazard and unsightly conditions whenever possible.

G. In slope areas, install bubbler head on uphill side of plant material.

H. Nozzles shall be as specified in legend.

I. Install check valve on riser as required for low head drainage.

J. Provide pressure compensating screens (pcs) as noted on drawing.

K. Refer to typical spacing of heads per drawing and adjust as required for actual field conditions.

PART 3 - EXECUTION

3.1 SITE CONDITIONS

A. All scaled dimensions are approximate. Check and verify all dimensions per Architect's approval prior to proceeding with work under this section.

B. Exercise extreme care in excavating and working near existing utilities. Coordinate excavations with underground service alert and utility companies. Damage to utilities caused by operations or neglect shall be repaired at Contractor's expense. Check existing utility drawings for locations.

C. Coordinate installation of sprinkler irrigation materials, including pipe, so there will be NO interference with utilities or other construction, or difficulty in planting trees, shrubs, and ground covers.

D. Carefully check all grades to ensure work on the sprinkler irrigation system may safely commence.

3.2 PREPARATION

A. Water Supply:

1. The General Manager's Representative will provide new meters and pay all costs incurred.

2. Connect sprinkler irrigation system to water supply points of connection as indicated on the drawings. Verify exact location on site.

3. Connections as shown on drawings are approximate. Minor deviations (plus or minus 20 feet) required by actual site conditions shall be a part of this contract.

4. Coordinate connection to meters, water outlets, etc. with General Contractor and other trades on site to ensure proper connection.

5. Coordinate pipe crossing hardscapes, walks, etc., with appropriate trades to minimize disturbance to finish product. If a preferable route is noted on site, contact Architect to discuss alternative and obtain approval of same.

B. Observation Schedule:

1. Notify the Owner's Representative in advance for the following observation meetings, according to the time indicated:

   a. Pre-job conference - 10 days

   b. Backflow assembly and automatic controller location - 72 hours

   c. Pressure supply line and control wire installation and testing - 72 hours

   d. Lateral line and sprinkler installation - 72 hours

   e. Coverage test - 72 hours

   f. Final site review - 10 days

2. When observations are conducted by other than the Architect, show evidence in writing when and by whom these observations were made.

3. Maintain a set of current and up to date plans on the job site at all times. No site observations will commence without record drawings and current plans. In the event the Contractor calls for a site visit without record drawings, without current plans, without completing previously noted corrections, or without preparing the system for said visit, he shall be responsible for reimbursing the Owner's Representative based on his current billing rates per hour (portal to portal, plus transportation costs) for the inconvenience. No subsequent site visits will be scheduled until this charge has been paid.

C. Piping Inspection:

1. Arrange for continuous inspection of piping by the Los Angeles County Health Department, (213) 881-4140, Cross Connection Program, 2525 Corporate Place, Room 150, Monterey Park, CA 91754.

D. Physical Layout:

1. All piping or equipment shown diagrammatically on drawings outside planting areas shall be installed inside planting area whenever possible, to exact dimensions noted in construction details unless otherwise approved.

2. Prior to installation, stake out all pressure supply line routing and sprinkler head locations.

3. Entire layout shall be approved by Owner's Representative prior to installation.

3.3 INSTALLATION

A. Piping:

1. Install all plastic pipe and fittings according to manufacturer instructions.

2. All lines shall have a minimum horizontal separation of 12 inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another. Pipe lines crossing each other shall be separated vertically a minimum of 3 inches.

3. Install concrete thrust blocks in accordance with pipe manufacturer recommendations for pressure supply piping 3 inches and larger.

4. Coordinate installation of piping shown through walls as required with General Contractor to avoid penetrating walls if possible. If penetration is necessary, coordinate and waterproof.

5. Scale of drawing may not permit indicating all sleeving required. Provide sleeves for all piping under paved areas. Refer to sections that pertain to sleeving material, size, etc.

6. All major plumbing work using copper pipe shall be performed by a licensed and bonded Plumbing Contractor. Irrigation Contractor shall obtain all permits required.

7. All outlets from main line shall be accomplished with line sized tees, with an outlet of the specified size. No Saddle tees are permitted.

8. Retainer gland bolts shall be tightened as specified in the manufacturer's instructions. All bolts shall be tightened using a torque wrench only. Tighten each "Megalug" wedge nut in an alternate sequence with torque wrench. The maximum torque on the on the "Megalug" wedge nuts shall be 30 ft./lbs. Verify the torque of the bolts with the Project Inspector using a torque wrench, and have a torque wrench available on site until job acceptance.

B. Trenching:

1. Excavate trenches to required depths. Follow approved layout for each system. Pipe layout as shown on irrigation plan is schematic. Route piping in the most expedient manner, consistent with the requirements set forth herein, including avoidance of tree roots. Adhere to as-built requirements stated herein.

2. Trench bottom shall be flat to ensure piping is supported continuously at prepared grade.

3. Where lines occur under paved areas, consider dimension to be below the subgrade.

4. Trenching shall pass no closer than 8 feet from base of any tree. Do not cut tree roots larger than 2 inches in diameter without approval of the Project Manager.

5. Maximum trench width is two and a half diameter of the pipe.

6. Provide minimum coverage as follows:

   a. Pressure supply lines (3 inches and smaller): 24 inches, unless otherwise noted on drawing.

   b. Pressure supply lines under paving (2 inches and smaller): 24 inches, unless otherwise noted on drawing.

c. Pressure supply lines under paving (2-1/2 inches and larger): 36 inches, unless otherwise noted on drawing.

d. Non-pressure lines: 12 inches, unless otherwise noted on drawing.

e. Non-pressure lines under paving: 18 inches, unless otherwise noted on drawing.

f. Control wire: 18 inches, unless otherwise noted on drawing.

C. Tracer Wires:

1. Carefully place tracer wire on bottom of trench under vertical projection of pipe, avoiding stress from backfilling and running wire continuously throughout the length of pipe.

2. Tracer wire shall follow main line pipe and branch lines, terminating in a yard box with a gate valve that controls these main irrigation lines. Provide sufficient wire to reach surface grade, bending back end of wire to form a loop, and attach a Dymo-Tape type plastic label noting "TRACER WIRE."

3. All splices shall be made using Scotchlok or equal, encased in epoxy resin to provide a permanent U.L. approved watertight connection.

4. Record locations of tracer wires and their termination points on record drawings.

D. Backfilling:

1. Buried pipe in trenches shall be center loaded only until all required tests are performed.

2. Pipe bedding shall surround pipe 1 foot above the top of the pipe. Place bedding in 6 inch lifts. Denify bedding by water jetting sufficient to thoroughly wet bedding material around the pipe. Place no rocks over 1/2 inch in largest dimension and nor organic matter in bedding material. Backfill shall be the material placed above the bedding. Place backfill in 1 foot lifts and densify by water jetting. Continue jetting until backfill collapses and water is forced to surface. Pipe trenches thoroughly densified by water jetting shall have a minimum relative compaction of 85 percent. Place no rocks over 2 inches in greatest dimension shall be subject to compaction tests as requested by the Owner. All such compaction tests shall be at the expense of the Contractor. Additional test may be required until the 85 percent, minimum compaction is achieved. Finished trenches shall match finish grades, flush with adjacent finish grades. The Contractor shall be responsible for maintaining the trenches flush and smooth until final acceptance of the project. Repair trenches in existing lawn to match finish condition.

3. If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, lawn, planting, etc. are necessary, make all such adjustments without cost to the Owner.

E. Trenching and Backfill Under Paving:

1. Where irrigation piping crosses a vehicular roadway or other paving having a width greater than 25 feet, provide a PVC. Schedule 40 sleeve a minimum of two pipe sizes larger than piping to pass through it. Jack under the paving at a minimum depth of 36 inches.

2. Where irrigation piping crosses a vehicular roadway or other paving having a width greater than 25 feet, provide a PVC. Schedule 40 sleeve a minimum of two pipe sizes larger than piping to pass through it. Repair trench in the existing paving with a like paving material, and joint the existing paving both horizontally and vertically.

3. All sleeves shall extend 3 feet minimum beyond edge of roadway.

4. Pressure test all piping under paving prior to the paving work.

5. Install piping under existing walks by jacking, boring or hydraulic driving. Cut or break sidewalk and/or concrete as necessary and replace paving as a part of the contract cost. Obtain permission from the Owner's Representative to cut or break sidewalks and/or concrete. No hydraulic driving will be permitted under asphaltic concrete paving.

6. Coordinate installation of piping and sleeves under paved areas with General Contractor.

F. Assemblies:

1. Routing of sprinkler irrigation lines as indicated on the drawings is diagrammatic. Install lines and various assemblies to conform with details on plans.

2. Install no multiple assemblies in plastic lines. Provide each assembly with its own outlet.

3. Perform all directional changes on pressure supply line using 45 degree elbows. No 90 degree elbows will be permitted without approval of Owner's Representative.

4. No more than one size may be used when reducing or increasing a fitting outlet, unless approved by Owner's Representative.

5. Install all assemblies specified herein in accordance with respective detail. In absence of detail drawings or specifications pertaining to specific items required to complete work, perform such work in accordance with best standard practice, with prior approval of the Owner's Representative.

6. Thoroughly clean PVC. pipe and fittings of dirt, dust and moisture before installation. Prior to application of PVC. solvent cement, prepare all surfaces to be solvent welded with tetrahydrofuran primer, tinted purple.

7. On PVC. to metal connections, work the metal connections first. Use Teflon tape or approved equal on all threaded PVC. to PVC. and on all threaded PVC. to metal joints, with only light wrench pressure. Where threaded PVC. connections are required, use threaded PVC. adapters into which the pipe may be welded.

8. Install backflow assemblies in shrub areas at minimum height permitted by local code, unless otherwise approved. Flush pressure supply line before installing backflow prevention unit as required to ensure piping is free of debris. Paint all backflow devices above ground with two coats of forest green enamel. Mask all identification tags prior to painting. After certification, remove all test cocks, replace with threaded brass plugs, and deliver test cocks to Owner's Representative.

9. Verify exact location of all major equipment with the Owner's Representative before installation.

10. Install remote control valves in shrub areas and perpendicular to hardscape unless otherwise approved.

11. Unless otherwise approved, locate quick coupling valves within 12 inches of hardscape or at separation between shrub and lawn areas.

12. Assemble pressure supply steel pipe and fittings using red lead and boiled linseed oil paste or an approved equivalent, applied to male threads only.

13. Locate hose bibbs in shrub areas within 12 inches of header or hardscape.

14. Locate tree irrigators at each tree. Install as indicated on drawings, including vents, strainers, etc.

G. Automatic Controller:

1. Install per manufacturer instructions. The foundation of the automatic controller shall be per details. Provide a separate 24 volt control wire from the automatic controller to each remote control valve. Connect remote control valves to controller in numerical sequence shown on the drawings.

2. Mount controller inside the electrical pedestal.

H. Flushing of System:

1. After all new sprinkler pipe lines and risers are in place and connected, all necessary diversion work has been completed, and prior to installation of sprinkler heads, open the control valves and flush out the system using adequate pressure.

2. Flushing shall occur in the presence of Owner's Representative. Start flushing at valve closet to the point of connection and proceed with each consecutive valve, toward valve farthest from the point of connection. Each lateral system shall have each riser capped during the flushing, commencing with the riser closest to the valve and proceeding to the farthest riser. After the entire irrigation system has been flushed, the system shall be pressure tested

3. Install sprinkler heads only after the system has been flushed to the complete satisfaction of the Owner's Representative.

I. Sprinkler Heads:

1. Install the sprinkler heads per the drawings and according to their respective detail.

2. Spacing of heads shall not exceed 5 percent of width of planting area. Refer to plan, and bring any discrepancies to the attention of Project Manager.

3. Irrigation plans are designed for head-to-head coverage as a minimum standard. Scale head locations from center of head symbol directly from the irrigation plan. Accuracy of placement shall be within plus or minus 2 feet for rotor heads having a throw 25 feet or greater, and within plus or minus 12 inches for all head types with a throw under 25 feet. Heads located adjacent to paving shall be placed within 3 inches of paving.

4. Install all plastic sprinkler heads on swing joint assemblies or flex pipe as shown on the details.

J. Valve Boxes:

1. Install all buried valves and equipment in the specified box.

2. Fill area under box with a minimum of 3 cubic feet of 3/4 inch gravel for remote control valves and two cubic feet for gate valves and quick coupling valves, before box is installed.

3. Attach identification tags to each remote control valve, showing number that corresponds with controller sequence. Tags shall be manufactured of polyurethane Behr Desopaid, yellow in color with black letters, 2-3/4 inches by 2-1/4 inches.

4. Brand sequence number of each valve in minimum 2 inch high numerals into box top.

5. Install valve boxes in shrub areas unless otherwise approved.

6. Install valve boxes square to one another and to edges of adjacent hardscape, unless otherwise approved by Owner's Representative.

7. Set boxes flush with finish grade, including sloped area. Compact all soil within 12 inches of the perimeter of box by water settlement, as indicated in trench repair section of this specification. Position boxes per construction detail.

K. Electrical Supply:

1. Place low voltage wiring in the same trench and along side of main lines unless otherwise approved. Do not tape wire to main line. If control wires run same trench as lateral lines or are "dead headed," maintain wire depth at 24 inches.

2. When more than one wire is placed in a trench, tape wires together at maximum 12 feet on center.

3. Provide a 12 inch expansion loop at each connection and directional change for low voltage wires and two feet for stub outs.

4. Use a continuous wire between controller and remote control valves. Except as otherwise approved, do not splice wire at any point. Enclose all approved splices in an U.L. approved junction box.

5. Provide each controller with separate ground wire.

6. Provide pull box for low voltage wires approximately every 200 feet along continuous lineal runs.

7. Where remote control wiring crossed under paving having a width of less than 25 feet, jack a 3 inch PVC. Class 315 sleeve under the paving at a minimum depth of 36 inches. All sleeves shall extend a minimum of 3 inches beyond edges of paving.

8. Where remote control wiring crosses under paving having a width of less than 25 feet, install a 3 inch PVC. Class 315 under the paving at a minimum depth of 36 inches. All sleeves shall extend a minimum of 3 inches beyond edges of paving.

9. When installing low voltage wire connectors (3-M Corporation DBY or DBR), strip control wires of 12 inch insulation, insert into electrical spring connector, and twist connector in clockwise direction until wires are tight. Insert completed splice into gel-filled tube, and check visually to confirm wire nut has been pushed past the fingers and is seated in the bottom of tube. Position wires in wire channels and close insulator cover.

10. Run two extra black control wires from automatic controller to the farthest valve on the system, or to the farthest valve at each end of the controller area, if farthest area extends in two directions from the controller.

11. Provide separate #14 gauge AWG-UF 600 volt white common wire for each ten consecutive stations on each automatic controller (common 1/Stations 1-10, Common 2/Stations 11-20, Common 3/Stations 21-30, Common 4/Stations 31-40).

3.4 FIELD QUALITY CONTROL

A. Adjustment of the System:

1. Set sprinkler heads in lawn areas flush with finish grade at initial installation, and protect during construction. Compact all soil 12 inches from the perimeter of the head of water jetting as indicated in these specifications, or set in sand as shown on details.

2. Adjust all sprinkler heads and valves for optimum performance and to minimize overspray onto walks and roadways. Spray on buildings and/or windows is not permitted.

3. If it is determined that adjustments in the irrigation equipment will provide proper or more adequate coverage, make such adjustments prior to planting. Adjustments may include changes in nozzle sizes or trajectory of spray or degrees of arc, as may be required. Use variable arc nozzles where required.

4. Set all sprinkler heads perpendicular to finish grades unless otherwise designated on the plans, and at height and distance from walks, buildings, etc, as noted or as directed by Owner's Representative.

5. When using master flow monitors sensors, determine exact flow rates and proper operating time to avoid water runoff for each control valve. Program this information into the controller, along with minimum flow of each valve and maximum flow for the largest valve. Provide a written copy of this data to Owner. Fault detection shall be 5 percent greater than actual flow. Show evidence in writing to the Owner's Representative at the conclusion of the project that this service has been rendered.

B. Protect all existing landscaping. Any existing landscaping removed or damaged shall be properly replaced, including sod, as directed by the Owner's Representative.

C. Testing of Irrigation System:

1. Pressure test irrigation main lines following the flushing of the complete system. Test main lines for 24 hours at 125 p.s.i. with all control valves in place and closed. During the test, provide pressure gauges downstream from the backflow device and upstream from the farthest remote control valve in the system. Air pressure testing of the irrigation system is acceptable if approved by Owner's Representative.

2. Testing of pressure main lines must occur prior to installation of electric control valves, quick couplers or any other equipment that might prevent a proper test from being performed.

3. Test all piping under paved areas under hydrostatic pressure of 150 pounds per square inch, and prove watertight prior to paving.

4. If leaks develop (more than 5 percent), replace joints and repeat test until entire system is proven watertight.

5. All hydrostatic tests shall be conducted only in the presence of the Project Manager or other duly authorized representative of the Owner's Representative. Do not completely backfill pipe until it has been inspected, tested and approved in writing.

6. Furnish necessary force pump and all other test equipment, if permanent connection is unavailable.

7. When the sprinkler irrigation system is completed, perform a coverage test in the presence of the Owner's Representative to confirm that water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from plans, or where the system has been willfully installed as indicated on the drawings when it is obviously inadequate without notifying the Project Manager. This test shall be accomplished before any planting occurs.

8. Provide handheld walkie-talkie or personnel as necessary to accomplish this task expeditiously.

9. Upon completion of each phase of work, test and adjust entire system to meet site requirements.

10. Test any low voltage wiring more than 50 feet long installed under paving for continuity prior to paving.

D. Final Observation Prior to Acceptance:

1. Operate each system in its entirety for the Architect at time of final observation. Any items deemed unacceptable by the Architect due to noncompliance with the specifications and drawings shall be corrected to the complete satisfaction of the Owner's Representative.

2. Operate automatic controller rain sensor moisture sensors at conclusion of maintenance period to confirm proper operation.

3. Evidence must be shown to the Owner's Representative that Owner has received all required equipment, charts, record drawings, etc. before final observation can occur.

E. Termination of Maintenance Period:

1. At end of maintenance period, submit written confirmation to Owner's Representative that the system is operating properly, as per final acceptance, and note any changes/adjustments made during maintenance period. Based on this, Architect may request additional site review.

3.5 FLOW SENSOR AND MASTER VALVE

A. Flow sensor and master valve shall be installed per construction detail on drawing and according to manufacturer recommendation.

3.6 MAINTENANCE

A. The entire sprinkler irrigation system shall be operated automatically for a period of fourteen days prior to any planting.

B. The Owner's Representative reserves the right to waive or shorten the operation period.

C. After maintenance period, demonstrate in presence of the Owner's Representative that the system is in proper operating order.

3.7 CLEANUP

A. Perform cleanup as each portion of the work progresses. Remove refuse and excess dirt from the site, and sweep or wash down all walks and paving. Repair any damage to the work of others and return to original condition.

3.8 OPERATING INSTRUCTIONS

A. Train Owner's maintenance personnel in proper operation of all major equipment, including recommended winterization procedures. Provide written confirmation of the person(s) so trained to the Owner's Representative.

B. During maintenance period, establish infiltration rate of soil in all areas (particularly slopes). Schedule automatic controller to not exceed saturation point, and program repeat cycles as required to meet landscape needs while avoiding runoff. At conclusion of maintenance period, provide a typed record of the watering schedules for each valve during maintenance, including various schedules due to seasonal changes.

3.10 EXISTING TREES

A. Where it is necessary to excavate adjacent to existing trees, use all possible care to avoid injury to trees and tree roots. Excavate by hand in areas where 2 inch and larger roots occur. Tunnel under all roots 2 inches and larger in diameter and heavily wrap with burlap, to prevent scarring or excessive drying. Where a ditching machine is run close to trees having roots smaller than 2 inches in diameter, hand trim the wall of the trench adjacent to the tree, making clean cuts through. Paint roots 1 inch and larger in diameter with two coats of Tree Seal, or equivalent. Close trenches adjacent to tree within 24 hours. Where this is not possible, shade the side of the trench adjacent to the tree with burlap or canvas.

3.11 SERVICES/DATA TO BE PROVIDED BY THE CONTRACTOR

A. Flow sensor cable test

B. Water schedules

C. Training of Owner's personnel in proper operation of all major equipment

END OF SECTION

SECTION 02900
LANDSCAPE PLANTING

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The requirements of the "General Provisions of the Contract" and of Division 1, "General Requirements", shall apply to all work of this Section with the same force and effect as though repeated in full herein.

1.2 SUMMARY

A. Work included: All labor, material, equipment and services necessary to provide all landscape planting, complete in place, as shown and specified herein, including soil preparation, planting, seeding, staking and clean-up.

B. Related Work:

1. Decomposed Granite Paving - Section 02505.

2. Portland Concrete Paving - Section 02614.

3. Landscape Irrigation System - Section 02810.

4. Landscape Maintenance and Plant Establishment - Section 02970.

C. Any plant deemed Not Available shall be noted in the bid. Failure to qualify availability of specified material shall make the Contractor responsible for all supplying of all material. Maintenance period may not begin until specified materials are installed.

1.3 SUBMITTALS

A. The Owner's Authorized Representative reserves the right to take and analyze samples of materials for compliance with these specifications at any time. The Contractor shall furnish samples upon request by the Owner's Authorized Representative. Rejected materials shall be immediately removed from the site at the Contractor's expense. Cost of testing of materials not meeting these specifications shall be paid by Contractor.

B. Provide soil tests as noted on the drawings. Planting recommendations may be revised based on soil test results.

C. Submit documentation to the Owner's Authorized Representative within forty-five (45) calendar days after date of award of Contract that all plant material is available. The Contractor shall be responsible for all material listed on plant list. Any and all substitutions due to availability shall be requested in writing prior to confirmation of ordering. All materials shall be subject to observation by the Owner's Authorized Representative at any time after confirmation of ordering.

D. Plants shall be subject to observation and preliminary acceptance by the Owner's Authorized Representative at place of growth or upon delivery for compliance with these specifications. Such observation shall not impair the right of observation and rejection during progress of the work. Tagging of plant material by the Owner's Authorized Representative is for design intent only and does not constitute the Owner's Authorized Representative's approval of the plant materials in regards to their health and vigor. The health and vigor of the plant materials is the sole responsibility of the Contractor. Submit written request for observation of plant material at

place of growth to the Owner's Authorized Representative. Written request shall state the place of growth and quantity of plants to be observed. The Owner's Authorized Representative reserves the right to refuse observation at this time if, in his judgment, a sufficient quantity of plants is not available for inspection.

E. The Contractor shall submit specifications of any item being used on site upon the request of the Owner's Authorized Representative.

F. The Contractor shall submit color photos of plant materials as noted on the drawings.

G. For contract-grown materials, Contractor shall submit contract growing nursery's name to Owner's Authorized Representative for approval prior to start of contract growing activity. It shall be the Contractor's responsibility to coordinate any contract growing activities so as to meet the approved construction schedule requirements. All cost associated with contract growing shall be the Contractor's responsibility.

1.4 QUALITY ASSURANCE

A. In all cases where observations are required, notify the Owner's Authorized Representative and the Owner at least four working days in advance of the time of observation.

B. Required observations are listed below:

1. Materials:

a. Specimen and box size plant materials shall be observed at source prior to delivery to site.

b. Upon delivery of plant material to site:

(1) All plant material shall be observed and approved by the Owner's Authorized Representative for quality, size and variety prior to installation. Such approval shall not impair the right of observation and rejection during the progress of work for size and condition of ball or root mass, latent effects, diseases, pests or injuries.

(2) A maximum of two observations for approval of plant material will be made by the Owner's Authorized Representative. For the first observation, the Contractor shall present not less than 50% of the total of required plant material. The Contractor shall submit the remainder at the second observation.

(3) If any defective or non-complying plants are found during observations, they will be rejected.

(4) All rejected plant material shall be removed from the site within a minimum of two working days.

2. Workmanship: Observation of site at critical stages of work.

a. Observation for approval of landscape finish grading and soil preparation before installation of plant material:

(1) During this observation the Owner's Authorized Representative may request that samples of the prepared soil be analyzed by an approved laboratory to assure its compliance with these Specifications.

(2) Notification of exception shall be for the Contractor to correct deficiencies in the soil preparation to render it in compliance with these specifications. Corrections shall be made prior to any planting, or, at the Owner's Authorized Representative's option, the installation of container sized plants may proceed if the corrections can be made later without affecting the quality of the work. The Contractor shall notify the Owner's Authorized Representative in writing when the deficiencies have been corrected.

b. Observation of tree and shrub placement and installation.

c. Observation of tree staking.

3. Material and Workmanship:

a. Observation by the Owner's Authorized Representative will be made at substantial completion of all materials, construction and installation work required by the Contract prior to commencement of the plant establishment period. The plant establishment period shall not commence until all deficiencies found by this observation have been corrected and written notice of start of commencement has been received from the Owner's Authorized Representative. All materials shall be installed prior to this observation with the following exceptions:

(1) Items waived by the Owner's Authorized Representative for this observation for reasons of substantiated unavailability, or in appropriate season or weather.

(2) Items which do not affect the health or growth of the plantings.

b. Periodic observation shall be made of the work of the Contract during plant establishment period. See Landscape Maintenance and Plant Establishment Specification Section 02970.

C. Certifications:

1. Submit a certificate if requested by the Owner's Authorized Representative of delivery slip with each delivery of material in containers or in bulk. Certificates shall state source, quantity, or weight, type and analysis and date of delivery. Materials which are not pre-packaged shall have analysis completed by an approved independent testing laboratory (see plans). Deliver all certificates to the Owner's Authorized Representative prior to installation, incorporation or application of the material.

a. Quantities of fertilizer.

b. Quantities of soil amendments.

1.5 DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver fertilizer to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name, trademark, and compliance with all applicable laws.

2. Deliver all plant blocks with legible identification labels.

a. State correct plant name and size indicated on plant list.

b. Use durable waterproof labels with water-resistant ink which will remain legible for at least 60 calendar days.

3. Protect plant material during delivery to prevent damage to rootball, trunk, crown, branches, leaves, and fronds.

4. The Contractor shall notify the Owner's Authorized Representative fourteen (14) calendar days in advance of delivery of all plant materials and shall submit an itemized list of the plants in each delivery.

B. Storage:

1. Store plant material in shade and protect from weather.

2. Maintain and protect plant material not to be planted within four (4) hours in a healthy, vigorous condition.

C. Handling: The Contractor shall exercise care in handling, loading, unloading and storing of plant materials. Plant materials that have been damaged in any way shall be discarded and if installed, shall be replaced with undamaged materials at the Contractor's expense.

1.6 PROJECT CONDITIONS

A. Perform actual planting only when weather and soil conditions are suitable and will not be detrimental to the plant material.

1.7 SCHEDULING

A. Prior to commencement of landscaping work, the Contractor shall arrange a conference at the site with the Owner's Authorized Representative. The conference shall include the Contractor, the Superintendent appointed to oversee the work of this Section and the Owner's Authorized Representative. At least eight (8) working days notice shall be given prior to the conference. The Contractor shall prepare a schedule of work items and this shall be reviewed at the conference.

1.8 WARRANTY

A. All plant material installed under the Contract shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship. Shrubs and groundcover shall be growth and health guaranteed by installer for a period of 90 days after completion of maintenance period. Trees shall be installer guaranteed to live and grow in upright position for a period of one year after completion of maintenance period.

B. Within 15 days after notification by Owner, remove and replace failed plantings. Replacement plantings shall be guaranteed as specified for original plantings.

PART 2 - PRODUCTS

2.1 MATERIALS

A. The following soil amendments and fertilizers are to be used for bid price basis only. Specific amendments and fertilizer specifications will be made after rough grading operations are complete and soil samples are tested by the Contractor.

B. All materials shall be of standard approved and first-grade quality and shall be in prime condition when installed and accepted. Any commercially processed or packaged material shall be delivered to the site in the original unopened container bearing the manufacturer's guaranteed analysis. The Contractor shall supply the Owner's Authorized Representative with a sample of all supplied materials within fourteen (14) days after award of contract, accompanied by analytical data from an approved laboratory source or bearing the manufacturer's guaranteed analysis. Amendments may be modified based on analysis provided.

C. Organic Amendment:

1. Type 1:

Nitrogen Fortified Wood Compost: Fir or Cedar sawdust, or from the bark of Fir or Pine treated with a non-toxic agent to absorb water quickly and comply with the following requirements:

GRADATION

Sieve Size	Percent Passing
1/4-inch	95% minimum
#8	80% minimum
#35	30% maximum
Nitrogen Content	%, Dry Weight
Redwood	0.4 - 0.6%
Fir	0.56 - 0.84%
Cedar	0.56 - 0.84%
Fir Bark	0.8 - 1.2%
Pine Bark	0.8 - 1.2%

Salinity: Maximum saturation extract conductivity 2.5 millimhos/centimeter at 25 degrees Celsius.

Wetability: When one teaspoon of tap water is applied to 4 cubic inches of the air-dried products, the material shall become completely damp in a period not exceeding 2 minutes. (Kellogg KRA, Sequoia Redwood/Cedar blend or white fir, Long Beach soil prep., Bandini #1201 Redwood Soil Builder or nitrogenized wood amendment.)

D. Soil Amendments:

1. Soil Sulfur: Agricultural grade sulfur containing a minimum of 99% sulfur (expressed as elemental).

2. Iron Sulfate: 20% Iron (expressed as metallic iron), derived from ferric and ferrous sulfate, 10% sulfur (expressed as elemental).

3. Calcium Carbonate Lime: 95% lime as derived from oyster shells.

4. Gypsum: Agricultural grade product containing 90% minimum calcium sulfate.

5. Dolamite Lime:

21% calcium
11% magnesium

E. Fertilizer:

1. Planting Fertilizer: Pelleted or granular form shall consist of the following percents by weight and shall be mixed by commercial fertilizer supplier:

   6% nitrogen
   20% phosphoric acid
   20% potash

2. Nitroform: 38-0-0 slow release organic nitrogen.

3. Single Super Phosphate: Commercial product containing 18 - 20% available Phosphoric Pentoxide, or equal.

4. DAP (Di-Ammonium Phosphate): 18-46-0

5. Planting Tablets:

   a. Shall be slow-released type with potential acidity of not more than 5% by weight containing the following percentages of nutrients by weight:

      20.0% nitrogen
      10.0% phosphoric acid
      5.0% potash
      2.6% combined calcium
      1.6% combined sulfur
      0.35% iron (elemental) from ferrous sulfate

   b. Shall be 21-gram tablets as manufactured by Agriform or approved equal, applied per manufacturer's instructions.

F. Import Top Soil: Silt plus clay content of the Import soil shall not exceed 20% by weight with a minimum 95% passing the 2.0 millimeter sieve. The sodium absorption ratio (SAR) shall not exceed 6 and the electrical conductivity (ECe) of the saturation extract of this soil shall not exceed 3.0 millimhos per centimeter at 25 degrees centigrade. The boron content shall be not greater than 1 part per million as measured on the saturation extract. In order to insure compliance with these specifications, samples of the import soil shall be submitted to an approved laboratory for analysis prior to, and following, backfilling.

G. Herbicide: Round-up.

H. Plant Material:

1. Plants shall be in accordance with the California State Department of Agriculture's regulation for nursery inspections, rules and rating. All plants shall have a normal habit of growth and shall be sound, healthy, vigorous and free of insect infestations, plant diseases, sunscalds, fresh abrasions of the bark, excessive abrasions, or other objectionable disfigurements. Tree trunks shall be sturdy and have well 'hardened' systems and vigorous and fibrous root systems which are not root or pot-bound. In case the sample plants inspected are found to be defective, the Owner's Authorized Representative reserves the right to reject the entire lot or lots of plants represented by the defective samples. Any plants rendered unsuitable for planting because of this inspection shall be considered as samples and shall be provided at the expense of the Contractor.

2. The size of the plants shall correspond with that normally expected for species and variety of commercially available nursery stock or as specified on drawings. The minimum acceptable size of all plants measured before pruning with the branches in

normal position, shall comply with the measurements, if any, specified on the drawings in the list of plants to be furnished. Plants larger in size than specified may be used with the approval of the Owner's Authorized Representative, but the use of larger plants shall not change the contract price.

3. All plants not in compliance with the requirements herein specified, will be considered defective and such plants, whether in place or not, shall be marked as rejected and immediately removed from the site of the work and replaced with new plants at the Contractor's expense. The plants shall be of the species, variety, size, and conditions specified herein or as shown on the drawings. Under no conditions shall there be any substitutions of plants or sizes listed on the accompanying plans, except with the express consent of the Owner's Authorized Representative.

4. Pruning: At no time shall trees or plant materials be pruned, trimmed or topped prior to delivery and any alteration of their shape shall be conducted only with the approval and when in the presence of the Owner's Authorized Representative.

5. Plant material shall be true to botanical and common name and variety as specified in "Sunset Western Garden Book" (current edition).

6. Nursery Grown and Collected Stock:

   a. Plants shall be grown under climatic conditions similar to those in locality of project.

I. Guying and Staking Materials:

1. Wood Tree Stakes: Lodge pole pine, 2" min. nominal size diameter x 10' long, no split stakes.

2. Pipe Tree Stakes: Sch. 40 steel pipe, 1-1/2" diameter x 10'6" long with cap primed and painted before installation with two coats flat black exterior enamel. Touch up in field to match shop condition.

3. Ties:

   a. 'Twist Brace' Nail-bracket style (lodgepole) or Bolt style (pipe) as noted on drawings.

Tree Size	Metal stake	Wood stake
5 - 15 g.	-	TB 18
24" box	TB 36	TB 24
30" box	TB 36	-
36" box	TB 42	-
42" box-larger	TB 42	-

Manufactured by V.I.T. Products, San Diego, CA, 760/480-6702.

4. Guying Hardware:

   a. "Duck Bill" anchoring system as manufactured by Foresight Products LLC, Commerce City, CO 80022, (303) 286-8955 or approved equal.

(1) For trees up to 3" (75 mm) diameter use:

Model 40 Duckbill Anchors with 12 feet (3.6 m) of cable attached to each anchor, 3 tree collars, and 3-1/16" (1.6 mm) cable clamps - all pre-assembled. Each anchor holds 300# (135 kg).

(2) For trees up to 6" (150 mm) diameter use:

Model 68 Duckbill Anchors with 13 feet (4.0 m) of cable attached to each anchor with a turnbuckle in line, 3 tree collars, and 6-1/8" (3.2 mm) cable clamps - all pre-assembled. Each anchor holds 1,100# (500 kg).

(3) For trees up to 11" (280 mm) diameter use:

Model 88 Duckbill Anchors with 15 feet (4.5 m) of cable attached to each anchor with a turnbuckle in line, 3 tree collars, and 6-3/16" (4.8 mm) cable clamps - all pre-assembled. Each anchor holds 3,000# (1,360 kg).

b. Wall Anchors (alternative): 1/2" dia. x 3" galv. eyebolts with expansion shield.

J. Water: Furnished by Owner; transport as required.

K. Mulch:

1. "Walk On-Bark" as supplied by Wickes Forest Industries, Kellogg Supply, Sequoia Forest Products, or equal.

2. The mulch shall consist of fibrous, woody bark mixture not derived from Redwood or Eucalyptus, of varied particle size such that:

Physical Properties:

Percent Passing	Sieve Size
90-100	25.4 mm (1")
80-100	12.7 mm (1/2")
20-60	6.35 mm (1/4")

L. Wood Headerboards:

1. Headerboards shall be 2" x 4" pressure treated Douglas Fir construction grade. Splices shall be made with 1" x 4" and shall not be less than 12" in length. Stakes shall be placed at intervals of not more than five (5) feet and shall be 1" x 3" x 16". All stakes shall be cut with level cut and set below top of headerboard.

2. On sharp turns and curves, four (4) 1/2" x 4" laminated boards or two (2) 1" x 4" laminated boards may be permitted.

3. Stakes and splices shall be nailed with galvanized common nails. Nail as required for solid installation.

4. Headerboards shall be furnished as shown on the drawings and herein specified. They shall be laid true to line and grade and in a workmanlike manner. Care shall be exercised in laying wood headers to protect adjacent improvements, shrubbery and other properties from damage. All stakes shall be placed on groundcover side of headerboard.

M. Metal Header:

1. Headers shall be 'Permaloc Aluminum Edging' 3/16" x 5 1/2", Black Anodized-electrically absorbed dyes into the outer layers of the aluminum, 16"-0" sections with stake loops every 24" along the section, 0.110" for 3/16" gauge wall thickness; and to include eight (8)-12" aluminum stakes (see drawings for lengths). Stakes are to be 6061 alloy, T-6 hardness. Manufactured by Permaloc Corp. 1-800-356-9660.

2. Headers shall be furnished as shown on the drawings and herein specified. They shall be laid true to line and grade and in a workmanlike manner. Care shall be exercised in laying headers to project adjacent improvements, shrubbery and other properties from damage. All stakes shall be placed on groundcover side of headers. Install per details and manufacturer's recommendations.

N. Soil Separator: Non-woven polypropylene fabric, "Mirafi 160N" manufactured by Mirafi 800/869-8905. Material shall be:

Property/Test method	Units	160N
1. Mechanical Properties		
Grab Tensille Strength		ASTM D 4632
Strength @ Ultimate	kN (lbs)	0.71 (160)
Elongation @ Ultimate	%	50
Mullen Burst Strength ASTM D 3786	kPa (psi)	2239 (325)
Trapezoidal Tear Strength ASTM D 4533	kN (lbs)	0.27 (60)
Puncture Strength ASTM D 4833	kN (lbs)	0.42 (95)
UV Resistance after 500 hrs. ASTM D 4355	5 strength	70
2. Hydraulic Properties		
Apparent Opening Size (AOS) ADTM D 4751	US Sieve mm	70 0.212
Permittivity ASTM D 4491	soc	1.5
Flow Rate ASTM D 4491	l/min/m' (gal/min/ft')	4889 (120)
3. Packaging		
Roll Width	m (ft)	4.6 (15.0)
Roll Length	m (ft)	91.5 (300)
Est. Gross Weight	kg (lbs)	93 (205)
Area	m' (yd')	418 (500)

O. Drainage Rock: Drainage rock to be 1/4" to 1/2" pea gravel and shall be clean, hard, sound, durable, uniform in quality, and free of any detrimental quantity of soft, friable, thin, elongated, or laminated pieces, disintegrated material, organic matter, oil, alkali, or other deleterious substance.

P. Drainage Mat: 'Enkadrain' - #3611R sub-surface drainage material. Cover butt joints with 12" min. width soil separator. Available from Colbond Inc., Enka, NC 28728 (800) 365-7391.

Q. Crushed Aggregate Base: Clean, washed, crushed stone or gravel-free from deleterious material, 3/4" maximum size. Gravel shall conform to ASTM D-1863.

R. Sub-Surface Drain Pipe: Perforated or non-perforated as indicated on plans, size noted, manufactured by LASCO, available from Advanced Drainage Systems, Inc., Madera, CA, 209/674-0903.

S. Planter Area Drains and Risers: Spee-D-Basin, color black, and sized per plan by Advanced Drainage Systems, Inc., Madera, CA, 209/674-0903.

T. Root Barrier: Barrier shall be Deep Root Barrier, manufactured by Deep Root Corporation, Westminster, CA, 714/898-0563.

U. Jute Mesh: Mesh shall be "Geojute Plus" by Pacific Soil Stabilization, 800/845-8753, or approved equal. Install per manufacturer's specifications and recommendations.

V. Trunk Guard: 'Trim Guard' TG4 by V.I.T. products.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor to obtain Owner's Certification that final grades to +/-0.10' have been established prior to commencing planting operations. Provide for inclusion of all amendments, settling, etc. Contractor shall be responsible for shaping all planting areas as indicated on plans or as directed by the Owner's Authorized Representative.

B. Inspect trees, shrubs and liner stock plant material for injury, insect infestation and trees and shrubs for improper pruning.

C. Do not begin planting of trees until deficiencies are corrected or plants replaced.

3.2 PREPARATION

A. Soil Preparation:

1. If live weeds exist on site, strip and remove and replace top 1" of soil.

2. After approximate finished grades have been established, soil shall be conditioned and fertilized in the following manner. Soil should be slightly damp, but not muddy during rototilling.

   a. Prior to amending, the surface soil shall be cross riped to a minimum nine (9) inch depth.

b. The following shall be uniformly broadcast and blended to a six (6) inch depth per 1,000 sq. ft.:

(1) Organic amendment - 6 cu. yds.

(2) Planting fertilizer - 15 lbs.

(3) Agricultural gypsum - 200 lbs.

(4) Soil sulfur - 20 lbs.

(5) Urea formaldehyde - 8 lbs.

3. At time of planting, the top two inches of all areas to be planted or seeded shall be free of stones, stumps, earth clods, or other deleterious matter 1" in diameter or larger, and shall be free from all plastic, wire, plaster, obvious foreign matter or similar objects that would be a hindrance to planting or maintenance. The top 12" of soil shall be free of all stones, stumps or other deleterious matter 3" in diameter or larger.

B. Final Grades:

1. Bring soil to grades as indicated on drawings, importing soils as necessary and anticipating the installation of soil amenders and settling and/or compaction.

2. Finish grading shall insure proper drainage of the site as determined by the Owner's Authorized Representative.

3. All areas shall be graded so that the final grades will be 1" below adjacent paved areas, sidewalks, valve boxes, headers, tree well grates, planter rims, clean-outs, drains, manholes, etc., or as indicated on plans for turf, and 1 1/2" for shrubs and groundcovers.

4. Surface drainage shall be away from all building foundations.

5. Eliminate all erosion scars prior to commencing maintenance period.

6. Compact all soil to final grades: min. 65%, max. 75%, unless otherwise required by soils report or for structural reasons.

C. Disposal of Excess Soil: Dispose of any unacceptable or excess soil at an off-site location approved by the Owner.

3.3 INSTALLATION

A. General:

1. Actual planting shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practice as approved by the Owner's Authorized Representative.

2. Only as many plants as can be planted on that same day shall be distributed in a planting area. All plants shall be watered within 2 hours of planting.

3. Containers shall be opened and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken and they shall be planted and watered as herein specified immediately after removal from the containers. Containers shall not be opened prior to placing the plants in the planting area.

B. Pre-Plant Weed Control:

1. After soil preparation, irrigate and fertilize all planting areas for approximately 7-14 calendar days to achieve weed germination.

2. If live weeds exist on site after irrigating and at the beginning of work, spray with a non-selective systemic contact herbicide, as recommended and applied by an approved licensed landscape pest control advisor and applicator. Leave sprayed plants intact for at least fifteen (15) days to allow systemic kill.

3. Clear and remove all weeds by grubbing off all plant parts at least 1/4" below the surface of the soil to be planted.

4. Repeat process as necessary or as directed by the Owner's Authorized Representative.

5. Do not plant until herbicide manufacturer indicates planting will not be affected by herbicide residue.

6. Maintain site weed-free at all times. Degree of acceptability shall be solely determined by Owner's Authorized Representative.

C. Layout of Major Plantings: Locations for container plants shall be spotted and outlines of groundcover areas to be planted shall be marked on the ground by the Contractor before any planting or excavation begins. All such locations shall be approved by the Owner's Authorized Representative. Layout shall be accomplished by setting container plants or grade stakes with plants identified in locations indicated on plans, and with gypsum lines for groundcover areas. If underground construction or utility lines are encountered in the excavation of planting areas, other locations for planting will be selected as approved by the Owner's Authorized Representative.

D. Planting of Trees and Shrubs:

1. Excavate planting pits at twice the diameter of rootball with roughened surfaces and one and one half times the depth.

2. The top of the rootball should be slightly above final grade.

3. Uniformly blend 2 lbs. of iron sulfate and 1/2 lb. planting fertilizer per cubic yard of backfill soil.

4. Organic material is not required in the backfill. A soil blend consisting of no more than 20% by volume organic matter shall be placed in the upper twelve (12) inches of backfill only. Soil below this depth shall not contain any organic matter.

5. Place slow release fertilizer tablets in the upper twelve (12) inches of backfill at manufacturer's recommended rates.

6. Construct a two (2") inch water berm on the outside edge of rootball.

7. Cover the rootball with a mulch.

8. Excess soil generated from the planting holes and not used as backfill or in establishing the final grades shall be removed from the site.

9. Install root barriers, as specified on plans.

10. Protect all areas from excessive compaction when trucking plants or other material to the planting site. Cross rip all compacted areas to a 12-inch minimum depth.

11. Center plant in pit or trench.

12. Face plants with fullest growth into prevailing wind or as directed by the Owner's Authorized Representative.

13. Set plant plumb and hold rigidly in position until soil has been placed firmly around ball or roots.

14. Container plants on-structure shall be backfilled with on structure planting mix.

15. All plants which settle deeper than the surrounding grade shall be raised to the correct level.

16. Box Removal: Remove bottom of plant boxes before planting. Remove sides of box without damage to rootball after positioning plant and partially backfilling.

17. Pruning: Pruning shall be limited to the minimum necessary to remove injured twigs and branches. Pruning may not be done prior to delivery of plants.

18. Staking and Guying: Staking and guying of trees as directed by the Owner's Authorized Representative shall be completed immediately after planting. All stakes shall be installed plumb and as indicated on the drawings.

E. Planting of Groundcovers:

1. Flat grown plants shall remain in those flats until transplanting. The flat's soil shall contain sufficient moisture so that it will not fall apart when lifting the plants.

2. Groundcover shall be planted in straight rows and evenly spaced, unless otherwise noted, and at intervals called out in the drawings. Triangular spacing shall be used unless otherwise noted on the drawings.

3. Each rooted plant shall be planted with its proportionate amount of flat soil. Plantings shall be immediately sprinkled after planting until the entire area is soaked to the full depth of each hole.

4. Care shall be exercised at all times to protect the plants after planting. Any damage to plants by trampling or other operations of this Contract shall be repaired immediately.

F. Drainline Installation:

1. Pipe laying shall start at the low end of each section and proceed upgrade. Pipes shall be laid in a bed prepared by hand work, dug true to line and grade, to furnish a true and firm bearing for the pipe throughout its entire length. Adjustments of pipes to line and grade shall be made by scraping away or filling in and tamping material under the body of the pipe throughout its entire length and not by blocking or wedging.

2. Pipes shall be laid in accurate conformity with the prescribed lines and grades, which alignment shall be obtained by plumbing and measuring from a tightly stretched wire or line running parallel with the flow line grade and supported over the centerline of the sewer by batterboards or bars accurately placed and firmly fastened in place across the trench. After each length of pipe has been laid to line and grade, it shall be joined to the preceding section; and after such jointing procedure has commenced, there shall be no movement of the pipe whatsoever in subsequent operations. Before each new length of pipe is placed, the interior of the preceding shall be carefully cleaned of all dirt and debris.

3. Place perforated drain pipe where shown in accordance with manufacturer's instructions.

G. Mulch Cover: All groundcover, perennial, and annual beds to be dressed with 3/4" deep layer of mulch.

H. Jute Mesh:

1. Clear away trash, large stones. Grade smoothly, eliminate footprints, tracks, ruts. Be sure Soil Saver is in complete contact with ground.

2. Confirm there is no tension on Soil Saver to prevent its contact with the soil.

3. Overlap Soil Saver at least 4" on sides and 18" on ends. Staples shall be inserted at intervals no greater than 3' along overlaps and down center of each jute mesh length.

4. Junction overlap: Joining two rolls shall be installed at the down-channel end of installed roll which should overlap up channel end of roll being installed. Overlap should be 18". Use five (5) staples on 12" centers.

5. Anchor Slot: (Top of slope) shall be installed by burying up channel end in trench 6" deep. Use five (5) staples on 12" centers.

6. On slopes less than six (6) feet in height, Soil Saver may be installed with roll width perpendicular to the contours.

7. Terminal fold shall be installed by bringing jute mesh down to level area before terminating. Turn ends under 6". Use five (5) staples across fold 12" centers.

3.4 CLEAN UP

A. The Contractor shall leave the site area broom-clean daily leaving the premises in a clean condition. All walks shall be left in a clean and safe condition.

B. After all planting operations have been completed, remove all trash, excess soil, empty plant containers and rubbish from the property. All scars, ruts or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site. The Contractor shall pick up all trash resulting from this work no less frequently than each Friday before leaving the site or the last working day of each week. All trash shall be removed completely from the site.

3.5 SCHEDULES

A. When observations are conducted by someone other than the Owner's Authorized Representative, the Contractor shall show evidence in writing of when and by whom these observations were made.

B. No site visits shall commence without all items noted in previous Observation Reports either completed or remedied unless such compliance has been waived by the Owner. Failure to accomplish punch list tasks or prepare adequately for desired observations shall make the Contractor responsible for reimbursing the Owner's Authorized Representative at his current billing rates per hour (plus transportation costs). No further observations shall be scheduled until this charge has been paid and received.

END OF SECTION

SECTION 02970
LANDSCAPE MAINTENANCE AND PLANT ESTABLISHMENT

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The requirements of the "General Provisions of the Contract" and of Division 1, "General Requirements", shall apply to all work of this Section with the same force and effect as though repeated in full herein.

1.2 SUMMARY

A. Work Specified in this Section: All labor, material, equipment and services required to maintain the landscape in an attractive condition as specified herein for a period of ninety (90) calendar days.

B. Related Work Specified in other Sections:

1. Decomposed Granite Paving - Section 02505.

2. Irrigation System - Section 02810.

3. Landscape Planting – Section 02900.

1.3 SYSTEM DESCRIPTION

A. Performance Requirements:

1. The Contractor shall continuously maintain all areas involved in this Contract during the progress of the work and during the maintenance period until final acceptance of the work by the Owner's Authorized Representative.

2. Improper maintenance or possible poor condition of any planting at the termination of the scheduled maintenance period may cause postponement of the final completion date of the Contract. Maintenance shall be continued by the Contractor until all work is acceptable to the Owner's Authorized Representative.

3. The Contractor will not be held responsible for damage arising from acts of God, vandalism, negligence, or inadequate maintenance by the Owner after the end of the plant establishment period, unless caused by the negligence of the Contractor.

4. In order to carry out the plant establishment work, the Contractor shall furnish sufficient personnel and adequate equipment to perform the work during the plant maintenance period.

5. Start of Maintenance Criteria: The maintenance period shall not start until all elements of construction, planting, and irrigation for the entire project are complete. Project will not be segmented into maintenance phases, unless specifically authorized in writing by the Owner's Authorized Representative.

6. The Contractor shall request a site review to begin the plant maintenance period after all planting and related work has been completed in accordance with the contract documents. A prime requirement is that all groundcover and lawn areas be planted and irrigation system be operating fully and automatically. If such criteria are met to the

satisfaction of the Owner's Authorized Representative, a field notification will be issued to the Contractor to establish the effective beginning date of the period.

7. Any day when the Contractor fails to adequately maintain plantings, replace unsuitable plants, control weeds, trash or other work as determined necessary by the Owner's Authorized Representative, will not be credited as one of the plant maintenance period days.

8. The Contractor's maintenance period will be extended if the provisions required within the plans and specifications are not met.

1.4 SUBMITTALS

A. Prior to being placed on maintenance, the Contractor shall submit a schedule of all activities planned during the maintenance period. This shall be accepted by the Owner's Authorized Representative prior to the start of the maintenance period. All schedule changes shall be documented and accepted by the Owner's Authorized Representative.

B. The field set of "As-Built" drawings shall be available for review at the beginning of maintenance site walk.

C. Prior to date of the final walk-through, the Contractor shall acquire from the Owner's Authorized Representative approved reproducible prints and shall produce the final record from the job record set of all changes made to all plans during construction, label said prints "As-Builts", and deliver to the Owner's Authorized Representative and as required to any Local Agency. Prior to the date of final inspection, the Contractor shall deliver to the Owner's Authorized Representative the "Landscape and Irrigation Guarantee" as required. Said Guarantee shall be on the Contractor's letterhead and dated the scheduled final acceptance date.

D. All turnover items noted in other specification sections shall be delivered prior to the final walk-through.

E. Supply a monthly record of all herbicides, insecticides, fertilizers, and disease control chemicals with rates and amounts used noted.

F. Soils Report may adjust fertilizer rates and frequencies as noted herein.

1.5 QUALITY ASSURANCE

A. Work Force: The Contractor's representative shall be experienced and knowledgeable in landscape maintenance.

1.6 SCHEDULING

A. Normal progress observation shall be requested by the Contractor from the Owner's Authorized Representative at least seven (7) calendar days in advance of an anticipated observation. Observations shall be as follows:

1. Commencement of maintenance. (Pre-maintenance.)

2. At thirty (30) calendar day intervals through maintenance period.

3. Completion of maintenance period - final walk through - ten (10) calendar days prior to end of maintenance period.

B. All conditions noted in the Landscape Planting Section shall apply herein.

1.7 RECORD DRAWING

A. The Contractor shall prepare on a reproducible sepia mylar of the planting plan a drawing recording each palm location with each palm identified by number. Drawing to be turned over to the Owner's Authorized Representative for approval prior to the start of maintenance.

1.8 WARRANTY

A. All plant material installed under the Contract shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship for a period of one year from the final date of acceptance. Any plant found to be dead or in poor condition due to faulty materials or workmanship, as determined by the Owner's Authorized Representative, shall be replaced by the Contractor at his expense.

B. Any materials found to be dead, missing, or in poor condition during the maintenance period shall be replaced immediately. The Owner's Authorized Representative shall be the sole judge as to the condition of material. Material to be replaced within the guarantee period shall be replaced by the Contractor within fifteen (15) calendar days of written notification by the Owner's Authorized Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials used shall either comply with the Landscape Planting specifications in other Sections or shall otherwise be acceptable to the Owner's Authorized Representative.

B. On-grade maintenance fertilizer shall consist of the following percentages by weight and shall be mixed by a commercial fertilizer supplier: Ammonium Nitrate:

34% nitrogen
0% phosphoric acid
0% potash

Unless otherwise noted in a project Soils Report.

C. On-structure Maintenance Fertilizer: Shall consist of the following percentages by weight and shall be mixed by a commercial fertilizer supplier:

21% nitrogen
7% phosphoric acid
14% potash

PART 3 - EXECUTION

3.1 APPLICATION

A. Tree and Shrub Care:

1. Watering: Maintain a large enough water basin around plants so that enough water can be applied to establish moisture through the major root zone. When hand watering, use a water wand to break the water force.

2. Pruning:

a. Trees:

(1) Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached which have vertical spacing of from 18" to 48" and radial orientation so as not to overlay one another; to eliminate diseased or damaged growth; to eliminate narrow V-shaped branch forks that lack strength; to reduce toppling and wind damage by thinning out crowns; to maintain growth within space limitations; to maintain a natural appearance; to balance crown with roots.

(2) No stripping of lower branches ("raising-up") of young trees shall be permitted. Lower branches shall be retained in a "tipped back" or pinched condition with as much foliage as possible to promote caliper trunk growth (tapered trunk). Lower branches can be cut flush with the trunk only after the tree is able to stand erect without staking or other support. Sucker growth shall be removed if deemed appropriate by the Owner's Authorized Representative.

(3) Evergreen trees shall be thinned out and shaped when necessary to prevent wind and storm damage. The primary pruning of deciduous trees shall be done during the dormant season. Damaged trees or those that constitute health or safety hazards shall be pruned at any time of the year as required to eliminate these conditions.

(4) Tree trunks shall be protected at all times from any damage by maintenance equipment. Do not allow weed whippers to touch tree trunks.

b. Shrubs:

(1) The objectives of shrub pruning are the same as for trees. Shrubs shall not be clipped into balled or boxed forms unless such is required by the design and directed by the Owner's Authorized Representative.

(2) All pruning cuts shall be made to lateral branches or buds or flush with the trunk. "Stubbing" will not be permitted.

3. Staking and Guying: Remove stakes and guys as soon as they are no longer needed. Stakes and guys are to be inspected to prevent girdling of trunks or branches and to prevent rubbing that causes bark wounds. Replace all broken stakes and ties with specified materials.

4. Weed Control: Keep basins and areas between plants free of weeds. Use recommended legally approved herbicides. Avoid frequent soil cultivation that destroys shallow roots. Use mulches to help prevent weed seed germination. All shrub and tree beds shall be kept weed-free.

5. Insect and Disease Control: Maintain a reasonable control with approved materials.

6. Fertilization:

a. Fertilize all on-grade planting areas except lawn areas with the following:

(1) At the end of the first 30 calendar days and at 30 calendar day intervals - 5 lb. per 1,000 square feet of on-grade maintenance fertilizer.

(2) After application, irrigate thoroughly.

b. Fertilize all on-structure planting areas with the following:

(1) At the end of the first 30 calendar days and at 30 to 60 calendar day intervals - 5 lbs. per 1,000 square feet of on-structure maintenance fertilizer.

(2) After application, irrigate thoroughly.

c. Avoid applying fertilizer to the rootball and base of main stem; rather, spread evenly under plant to drip line.

7. Replacement of Plants:

a. Replace dead, dying and missing plants with plants of a size, condition and variety acceptable to the Owner's Authorized Representative at Contractor's expense.

B. Ground Cover Care

1. Weed Control: Control weeds with chemical systemic spray or by hand or mechanical means, so as to cause minimal damage to planted materials. All planted areas shall be kept weed-free.

2. Watering: Water enough so that moisture penetrates throughout root zone and only as frequently as necessary to maintain healthy growth. Do not over water.

3. Fertilizing: Fertilize as specified under Tree and Shrub Care.

4. Remove trash weekly.

5. Edge groundcover to keep in bounds and trim top growth as necessary to achieve an overall even appearance, unless directed by the Owner's Authorized Representative.

6. Replace dead and missing plants at the Contractor's expense.

7. Repair all settlement conditions.

C. Irrigation System Care

1. The Contractor shall check weekly all systems for proper operation. Lateral lines shall be flushed out after removing the last sprinkler head or two at each end of the lateral. All heads are to be adjusted as necessary for unimpeded coverage.

2. Set and program automatic controllers for seasonal water requirements. Give the Owner's Authorized Representative a key to controllers and written instructions on seasonal programming for project and how to turn off system in case of emergency.

3. Repair all damages to irrigation system at the Contractor's expense. Repairs shall be made within one watering period.

3.2 SCHEDULES

A. All areas shall be kept free of debris and all planted areas shall be weeded and cultivated at intervals of not more than ten (10) calendar days. Watering, edging, trimming, fertilization, spraying and pest control, as may be required, shall be included within the debris/siltation removal program. All area drains and drain pipes are to remain free of silt and debris.

B. The Contractor shall be responsible for maintaining adequate protection of the area. Damaged areas shall be repaired at the Contractor's expense.

C. Between the 15th calendar day and the 20th calendar day of the maintenance period, the Contractor shall reseed or resod all spots or areas within the lawn where normal turf growth is not evident as determined by the Owner's Authorized Representative. After the 20th calendar day, all areas not acceptable to the Owner's Authorized Representative shall be sodded to match adjacent turf seed type.

END OF SECTION

SECTION 03100
CONCRETE FORMS AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section

B. Section Includes:

1. Formwork for cast-in-place concrete as indicated.

2. Installation of items to be embedded in concrete, such as anchor bolts, inserts, embeds, and sleeves.

C. Related Sections:

1. Section 01420: Testing and Inspection.

2. Section 03200: Concrete Reinforcement.

3. Section 03300: Cast-In-Place Concrete.

4. Section 03331: Hard Rock Lightweight Concrete Fill

1.2 SYSTEM DESCRIPTION

A. Regulatory Requirements: Except as otherwise specified herein, Work of this section shall be in accordance with CBC, Chapter 19A, Concrete, and ACI 318-05.

1.3 SUBMITTALS

A. Shop Drawings: Submit Shop Drawings indicating locations of: forms, joints, embedded items, and accessories. Review and approval will not include form strength and adequacy.

B. Product Data: Submit manufacturer's Product Data for form materials and accessories.

C. Record Document: Keep an accurate record of the dates of removal of forms, form shores and reshores, and furnish copies to the Architect.

1.4 QUALITY ASSURANCE

A. Construction of Forms shall comply with the following as a minimum requirement:

1. ACI 347, "Recommended Practice for Concrete Formwork"

2. CBC Section 1906A.

3. Tolerances shall conform to those as specified in ACI 301, "Specifications for Structural Concrete for Buildings", as applicable, unless exceeded by requirements of DSA or otherwise indicated or specified.

4. Plywood: Conform to tables for form design and strength in APA Form V 345.

B. Prior to construction of formwork for concrete beams and slabs above grade, Contractor shall conduct a meeting at the site to determine and define all camber, which may be required for the project. The Architect, Structural Engineer of record, Contractor and Contractor's formwork installer shall be in attendance at this meeting.

C. Mock-ups: Provide mock-ups for all exposed finishes; 100 square feet minimum size. Locate as required by the Architect, for review and approval prior to installation.

1.5 DELIVERY, STORAGE, AND HANDLING:

A. Deliver materials for forms in timely manner to ensure uninterrupted progress.

B. Store materials by methods that prevent damage and permit ready access for inspection and identification.

PART 2 - PRODUCTS

2.1 GENERAL

A. Form materials may be reused during progress of the Work provided they are completely cleaned and reconditioned, recoated for each use, capable of producing formwork of required quality, and are structurally sound.

B. Form Lumber: WCLIB Construction Grade or Better, WWPA No. 1 or Better.

C. Plywood: PS 1-95, Group I, Exterior Grade B-B Plyform or better, minimum 5-ply and 3/4 inch thick for exposed locations and at least 5/8 inch thick for unexposed locations, grade marked, not mill oiled. Furnished plywood with medium or high density overlay is permitted.

D. Coated Form Plywood: For exposed painted concrete, plastic overlaid plywood of grade specified above, factory coated with a form coating and release agent Noxcrete", or equal.

E. Tube Forms: Burke "SmoothTube," Sonoco "Seamless Sonotubes," or Alton Building Products "Sleek Seamless Standard Wall," of the type leaving no marks in concrete, one-piece lengths for required heights.

F. Joist Forms: Code recognized steel or molded plastic types as required.

G. Special Forms: For exposed integrally-colored concrete, plywood as above with high density overlay, plywood with integral structural hardboard facing or fibrous glass reinforced plastic facing, providing specified finish.

H. For Exposed Concrete Finish: Use form liners for Architectural concrete as specified in Section 03307.

1. Plywood: New, waterproof, synthetic resin bonded, exterior type Douglas fir or Southern pine plywood manufactured especially for concrete formwork and conforming to NIST PS 1, BB grade, class I.

2. Glass-Fiber-Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to structural tolerances and appearance of finished concrete surfaces.

3. Steel: Minimum 16 gage sheet, well matched, tight fitting, stiffened to support weight of concrete, without deflection detrimental to tolerances and appearances of finished concrete surfaces.

4. Plywood: "Finland Form" or "Combi Form" distributed by North American Plywood Corporation. The material shall be furnished with hard smooth birch face veneers with phenolic resin thermally fused onto panel sides. Edges shall be factory sealed.

I. Form Ties: Prefabricated rod, flat band, wire, internally threaded disconnecting type, not leaving metal within 1-1/2 inch of concrete surface.

J. Form Coating: Non-staining clear coating free from oil, silicone, wax, not grain-raising, "Formshield" by A.C. Horn, Inc., "Release" by Burke Concrete Accessories, or "Cast-Off" by Sonneborn Building Products. Where form liners are furnished, provide form coatings recommended by form liner manufacturer.

K. Form Liner: Rigid or resilient type by L.M. Scofield, Labrado Forms, Symons, Greenstreak, or equal, types shown or directed, matching approved Sample.

L. Void Forms: Manufactured by SureVoid Products, Inc, or equal. Forms shall be "WallVoid" for temporary support of concrete walls and grade beams spanning between supports, and "SlabVoid" for creating gaps between concrete slabs or steps and underlying soils. Void forms shall be fabricated of corrugated paper with moisture resistant exterior, and shall be capable of withstanding working load of 1,500 psf. Provide accessories as required.

PART 3 - EXECUTION

3.1 GENERAL

A. Rigidly construct forms to prevent mortar leakage, sagging, displacement or bulging between studs. Use clean, sound, approved form material, coated with specified materials only, not oil. Provide backing on all plywood joints.

B. Forms shall be constructed so as to shape final concrete structure conforming to shape, lines and dimensions of members required by Drawings and Specifications, and shall be sufficiently tight to prevent leakage of mortar. They shall be properly braced or tied together to maintain position and shape. Forms and their supports shall be designed so that previously placed structures will not be damaged. Forms shall be true to line within tolerances as permitted under section 1.4 above.

3.2 FORM ERECTION AND REMOVAL:

A. Conform to ACI 301 and ACI 347 except as exceeded by the requirements of Code, regulatory agencies, or herein.

B. Construction: Coat forms with the specified resin coating, not form oil. Construct forms to exact shapes, sizes, lines, and dimensions required to obtain level, plumb, and straight surfaces. Provide openings, offsets, keys, reglets, anchorages, recesses, moldings, chamfers, blocking, screeds, drips, bulkheads, and all other required features. Make forms easily removable without hammering or prying against concrete. Space forms apart with metal spreaders. Construct forms to accurate alignment, location and grades, and provide against sagging, leakage of concrete mortar, or displacement occurring during and after placing of concrete. Coordinate installation of inserts and anchors in forms according to Shop Drawings and requirements for work of other sections.

C. Camber: Place suitable jacks, wedges, or similar means to induce camber and to correct settlement in forms before and during concrete placing. Camber shall be as determined in pre-installation meeting specified above. In general, formwork shall be capable of accommodating camber of 1/8" per 10' of span plus 1/4". Provide Camber as noted on the Structural Drawings (if required).

D. Corners and Angles: Provide 3/4" by 3/4" beveled chamfer strips for all exposed concrete corners and angles unless otherwise indicated. Form concealed concrete corners and angles square unless otherwise indicated.

E. Reglets and Rebates: Form required reglets and rebates to receive frames, flashing, and other equipment. Obtain required dimensions, details, and precise positions for work to be installed under other sections and form concrete accordingly.

F. Form Joints: Fill joints to produce smooth surfaces, intersections, and arises. Use polymer foam or equivalent fillers at joints and where forms abut or overlap existing concrete to prevent leakage of mortar.

G. Recesses, Drips, and Profiles: Provide smooth milled wood or pre-formed rubber or plastic shapes of types shown and required.

H. Cleanouts and Cleaning: Provide temporary openings in all wall forms and other vertical forms for cleaning and inspection. Clean forms and surfaces to receive concrete prior to placing.

I. Re-Use: Clean and recondition form material before re-use.

J. Form Removal: Do not remove concrete forms until concrete attains sufficient strength to support its own weight and all superimposed loads as determined by testing field cured concrete cylinders, but not sooner than specified in ACI 347, paragraph 3.6.2.3, or CBC Section 1906A.2. Load supporting forms may be removed when concrete has attained 75 percent of required 28 day compressive strength, but no sooner than 3 days provided construction is reshored. Vertical formwork for cast-in-place concrete walls may be removed no sooner than 1 day following concrete placement, provided that contractor can demonstrate that no sloughing or sagging of concrete will occur.

1. Reshore structural members as specified per ACI 347R-94.

2. Remove formwork progressively so unbalanced loads are not imposed on the structure.

3. Avoid damage concrete surfaces during form removal.

4. Store reusable forms for exposed architectural concrete to prevent damage to contact surfaces.

5. Remove formwork in same sequence as concrete placement to achieve similar concrete surface coloration.

K. Reshoring:

1. Minimum reshoring shall be as per the requirements of ACI 347R-94.

2. Record: Maintain a form and shoring removal record.

3. Contractor shall submit shoring/reshoring plans and calculations for review and approval. Calculations and plans shall be stamped and signed by a licensed civil or structural engineer. Reshoring loads to the lower floors shall be consistent with the design loads

specified on the construction documents and with the acquired strength of the lower floors based on the time they have been allowed to cure before being loaded.

L. Shoring for Tributary Loads: Set temporary shoring for structural steel beams supporting cast-in-place concrete slabs. Such shoring is not required where beams are partially or totally encased with concrete nor for steel beams supporting concrete or masonry walls resting on the beams.

3.3 FORMWORK TOLERANCES:

A. Deflection: Limit deflection of forming surfaces from concrete pressure to L/240.

B. Finish Lines: Position formwork to maintain hardened concrete finish lines within following permissible deviations.

1. Variation from Plumb:

a.	In 10'-0"	1/4 inch
b.	In any story or 20'-0"	3/8 inch
c.	In 40'-0" or more	3/4 inch

2. Variation from Level or Grades Indicated

a.	In 10'-0"	1/4 inch
b.	In any bay or 20'-0" maximum	3/8 inch
c.	In 40'-0" or more	3/4 inch

3. 3. Cross-Sectional Dimensions

a.	Minus	1/4 inch
b.	Plus	1/2 inch

C. Building Lines: Variation of linear building lines from established position in plan and related position of columns, walls and partitions:

1.	In any bay or 10'-0" maximum	1/2 inch
2.	In 40'-0" or more	1 inch

D. Slab Openings: Variations in size and location of sleeves and slab openings shall not exceed 1/4 inch.

3.4 SURVEY AND ADJUSTMENT:

A. Check forms before and during placement of concrete, using an instrument, and make corrections as work proceeds.

3.5 EMBEDDED PIPING AND ROUGH HARDWARE:

A. Comply with CBC, Section 1906A.3. Where work of other sections require openings for passage of pipes, conduits, ducts, and other inserts in the concrete, obtain all dimensions and

other information. All necessary pipe sleeves, anchors, or other required inserts shall be accurately installed as part of the work of other sections, according to following requirements.

B. Conduits or Pipes: Locate so as not to reduce strength of concrete. In no case place pipes, other than conduits, in a slab 4-1/2" thick or less. Conduit buried in a concrete slab shall not have an outside diameter greater than 1/3 the slab thickness nor be placed below the bottom reinforcing steel or over top reinforcing steel.

C. Conduits and pipes of aluminum shall not be embedded in structural concrete unless coated or covered to prevent aluminum-concrete reaction or electrolytic action between aluminum and reinforcing steel.

D. Sleeves: Pipe sleeves may pass through slabs or walls if not exposed to rusting or other deterioration and are of uncoated or galvanized iron or steel. Provide sleeves of diameter large enough to pass any hub or coupling on pipe, including any insulation.

E. Conduits: Conduits may be embedded in walls only if the outside diameter does not exceed 1/3 the wall thickness, are spaced no closer than 3 diameters on centers, and do not impair the strength of the structure.

F. Clusters of Conduits:

1. Clusters of conduits embedded in a concrete slab shall not exceed 6 conduits per cluster and each conduit per cluster shall be individually spaced as per the above requirements. Conduit clusters exceeding this requirement shall be reviewed and approved by the structural engineer of record and DSA prior to the installation of the conduits.

2. If more than one conduit cluster is required in a specific area of the slab, routing and spacing of the clusters shall be reviewed and approved by the structural engineer of record and DSA prior to the installation of the conduits.

3. At no time shall the quantity and routing of clusters of conduits impair the strength of the concrete construction.

3.6 FIELD QUALITY CONTROL

A. Inspection: Obtain inspection and approval of forms before placing structural concrete.

3.7 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 03200
CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section

B. Section Includes:

1. Reinforcing bars for cast-in-place concrete

2. Reinforcing mesh for cast-in-place concrete

3. Accessories, including but not limited to chairs and tie wires

4. Reinforcing bars for masonry

5. Reinforcing bars for site-cast pre-cast concrete

6. Miscellaneous concrete work, including but not limited to areaways, cast-in-place valve boxes, pits, splash blocks, equipment bases, and other items as shown or required to complete all work.

C. Related Sections:

1. Section 01420: Testing and Inspection.

2. Section 03100: Concrete Formwork.

3. Section 03300: Cast-In-Place Concrete.

4. Section 03331: Hardrock Lightweight Concrete Fill.

5. Section 04820: Concrete Unit Masonry.

1.2 SYSTEM DESCRIPTION

A. Regulatory Requirements: Fabrication and placement of reinforcing shall be in accordance with requirements of CBC, Chapter 19A and ACI 318-05.

1.3 SUBMITTALS

A. Shop Drawings: Submit steel reinforcement Shop Drawings in accordance with ACI 315. Shop drawings should include complete layouts, sections, and details for congested conditions, typical bending diagrams and offsets, splice lengths and locations, proposed layout where vertical and horizontal bars intersect, and wherever welding is proposed, detailed to conform to AWS and CBC requirements. After approval of initial submission, subsequent submittals may be waived.

B. Contractor to prepare 3' x 3' sample mock-up on site for review and approval by Owner's Representative prior to installation. Sample will show all concrete finishes, joints and colors.

C. Certification: Submit copies of welding operator's certificate.

D. Chemical Analysis: Provide for bars to be welded, in accordance with CBC, 1903A.4.

E. LEED Documentation:

1. Provide documentation certifying the percentage of recycled content of metal materials based on material cost per weight.

2. Document metal materials plant location and determine if plant is within 500 miles of the Project.

F. Closeout Submittals: Record exact locations of reinforcing that vary from Shop Drawings.

1.4 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement:

1. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice.

2. American Welding Society (AWS).

3. American Concrete Institute (ACI).

4. CBC, Chapter 19A, Concrete.

B. Source Quality Control: Refer to Division 01 Sections & CBC Sections 1916A.2 and 1903A.4 for general requirements and to following paragraphs for specific procedures. Testing laboratory retained by the Owner shall perform following conformance testing, select test Samples of bars, ties, and stirrups from the material at the Project site or from the place of distribution, with each Sample consisting of not less than two 18 inch long pieces, and perform the following tests according to ASTM A 615 and/or ASTM A 706.

1. Identified Bars: If Samples are obtained from bundles as delivered from the mill, identified as to heat number, accompanied by mill analyses and mill test reports, and properly tagged with the identification certificate so as to be readily identified, perform one tensile and one bend test for each 10 tons or fraction thereof of each size of bars. Submit mill reports when Samples are selected.

2. Unidentified Bars: When positive identification of reinforcing bars cannot be performed and when random Samples are obtained, perform tests for each 2.5 tons or fraction thereof, one tensile and one bend test from each size of bars.

3. Testing to be per CBC Sections 1916A.2 and 1704A.4.2.

C. Certification of Welders: Shop and Project site welding shall be performed by certified welding operators.

1.5 DELIVERY, STORAGE AND HANDLING

A. Avoid exposure to dirt, moisture or conditions harmful to reinforcing.

B. Reinforcing steel bars, wire, and wire fabric shall be stored on the Project site to permit easy access for examination and identification of each shipment. Material of each shipment shall be separated for size and shape. Use metal tags indicating size, length and other marking shown on placement drawings. Maintain tags after bundles are broken.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide reinforcing of sizes, gages and lengths indicated, bent to indicated shapes.

2.2 MATERIALS

A. Steel Reinforcing Bars: ASTM A 615, or ASTM A 706 deformed grade 60 billet steel unless otherwise specified or indicated. Deformations to be per ASTM A-305.

B. Reinforcing Bars for welding: ASTM A706, Grade 60.

C. Reinforcing Mesh: ASTM A185, mesh size and gauge as shown, 60 ksi minimum tensile strength. Provide mesh in flat sheets only.

D. Tie Wire: ASTM A 82, fully annealed, copper-bearing steel wire, 16 gage minimum.

E. Chairs and similar support items:

1. Standard manufactured products conforming to CRSI Manual of Standard Practice and ACI 315.

2. Use dense precast concrete supports with embedded wire ties for reinforcement placed on grade. Elsewhere, use wire bar supports.

F. Welding electrodes: AWS D1.4, Table 5.1 and 5.3 low hydrogen electrodes, E9018 for Grade 60 steel.

G. Welded plain wire fabric shall conform to ASTM A-185. Welded deformed wire fabric shall conform to ASTM A-497.

2.3 FABRICATION OF REINFORCING BARS:

A. Comply with CRSI Manual of Standard Practice for Reinforced Concrete Construction for fabrication of reinforcing steel.

B. Bending and Forming: Fabricate bars of the indicated sizes and bend and form to required shapes and lengths by methods not injurious to materials. Do not heat reinforcement for bending. Bend bars No. 6 size and larger in the shop only. Bars with unscheduled kinks or bends are not permitted. Provide only tested and permitted bar materials.

C. Welding: Provide only ASTM A 706 steel where welding is indicated. Perform welding per CBC Section 1903A.4 by the direct electric arc process in accordance with AWS D1.4 and specified low-hydrogen electrodes. Preheat 6 inches each side of joint. Protect joints from drafts during the cooling process; accelerated cooling is not permitted. Do not tack weld bars. Clean metal surfaces to be welded of loose scale and foreign material. Clean welds each time electrode is changed and chip burned edges before placing welds. When wire brushed, the completed welds must exhibit uniform section, smooth welded metal, feather edges without undercuts or overlays, freedom from porosity and clinkers, and good fusion and penetration into the base metal. Cut out welds or parts of welds deemed defective, using chisel, and replace with proper welding. Prequalification of welds shall be in accordance with CBC requirements.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Bars shall be bent cold. Bars partially embedded in concrete shall not be field bent except as indicated on reviewed Shop Drawings. Before installation, and again before concrete is placed, clean reinforcing of loose scale, rust, oil, dirt and any coating that could reduce bond.

B. Securing in Place: Accurately place bars and wire tie in precise position where bars cross. Bend ends of wire ties away from the forms. Wire tie bars to corners of ties and stirrups. Support bars according to the current edition of "Recommended Practice for Placing Bar Supports" of Concrete Reinforcing Steel Institute, using approved accessories and chairs. Place precast concrete cubes with embedded wire ties to support reinforcing steel bars in concrete placed on grade and in footings. Use care not to damage vapor barriers where they occur. Accurately position, install, and secure reinforcing to prevent displacement during the placement of concrete.

C. Exposed Concrete Surfaces: Provide stainless steel or exterior quality vinyl plastic tipped chairs, bolsters, and accessories where exposed on exterior or interior concrete surfaces not to be painted or permanently covered. Provide metal chairs to hold reinforcement the required distance above form bottoms. In beams and slab construction, provide chairs under top slab reinforcement as well as under bottom reinforcement. Space chairs so that reinforcement will not be displaced during installation. Provide metal spacers to secure proper spacing. Stirrups shall be accurately and securely wired to bars at both top and bottom. At slabs, footings, and beams in contact with earth, provide concrete blocks to support reinforcement at required distance above grade.

D. Clearances: Maintain minimum clear distances between reinforcing bars and face of concrete as indicated on Structural Drawings.

E. Splices: Do not splice reinforcing bars at the points of maximum stress except where indicated. Lap splices as shown or required to develop the full strength or stress of bars. Stagger splices in horizontal wall bars at least 48" longitudinally in alternate bars and opposite faces.

F. Field Welding of Bars: As specified on plans for fabrication. All welding to be per CBC Section 1903A.4.

G. Maintaining Bars In Position: Take adequate precautions to assure that reinforcing position and spacing is maintained during placement of concrete.

H. Reinforcing Mesh: Lap one full mesh plus 2", or 9" whichever is greater, at splices, wire tie, and support the same as specified for bars.

3.2 FIELD QUALITY CONTROL:

A. Supervision: Perform Work to this Section under supervision of a capable superintendent.

B. Inspection: Obtain inspection per CBC Sections 1704A.4.2 & 1916A.2 and approval of reinforcing before concrete is placed.

C. Welding Inspection: Whether welding is done in the shop or at the site, perform welding of reinforcing bars under inspection of the Testing Laboratory Welding Inspector who is specially qualified and approved by DSA in accordance with CBC Section 1704A.4.2. The welding inspector shall make a systematic record of all welds.

1. This record shall include:

   a. Identification marks of welders.

   b. List of defective welds.

   c. Manner of correction of defects.

2. The welding inspector shall check the material, equipment details of construction, and procedures as well as the welds. The inspector shall also check the ability of the welder. The welder shall furnish the architect, structural engineer and the enforcement agency with a verified report that the welding which is required to be inspected is proper and has been done in conformity with the approved plans and specifications. The welding inspector shall use all means necessary to determine the quality of the weld. The inspector may use gamma ray, magnaflux, trepanning, sonics or any other aid to visual inspection, which the inspector may deem necessary to assure the adequacy of the welding.

3.3 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.4 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section

B. Section Includes:

1. Cast-in-place concrete placement and finishing.

C. Related Sections:

1. Section 01420: Testing and Inspection.

2. Section 03100: Concrete Forms and Accessories.

3. Section 03200: Concrete Reinforcement.

1.2 SUBMITTALS

A. Shop Drawings: Submit Shop Drawings indicating locations of cast-in-place concrete Work, dimensioned locations and types of construction and expansion joints, and accessory items such as vapor barriers. Include details and locations of reinforcing, embedded items, and interfacing with other Work.

B. Product Data:

1. Mix Design: Submit a concrete mix design for each mix that will be provided for the Work. Include intended locations for use, water/ cement ratio, size of coarse aggregate and amount of any admixture. Predict minimum compressive strength, maximum slump and air content percentage. Limit water content per cubic yard of mixed concrete to 285 pounds maximum.

2. Manufacturer of ready-mixed concrete shall deliver to the IOR a certificate with each mixer truck. Certificate shall bear the signature of representative of the testing laboratory, and shall state quantity of cement, water, fine and coarse aggregate and admixtures.

C. Material Samples: Contractor to provide 3' x 3' mock-up samples for each type of concrete color, finish and jointing for Owner's approval prior to installation.

D. Certificates: Submit a notarized certificate that each of following conforms to standards indicated:

1. Aggregates – ASTM Standards C33

2. Admixtures - ASTM Standards C260

3. Curing materials - ASTM Standards C171

1.3 QUALITY ASSURANCE

A. Concrete Manufacturer: Furnish concrete from licensed commercial ready-mix concrete plant conforming to DSA approved plans as well as ACI 318-05 as modified by CBC sections 1903A, 1904A, 1905A, and 1916A.

B. Allowable Tolerances: Construct concrete conforming to the tolerances specified in ACI 117 "Recommended Tolerances for Concrete Construction and Materials", as applicable, unless exceeded by requirements of regulatory agencies or otherwise indicated or specified.

C. Comply with the following American Concrete Institute (ACI) Publications as a minimum requirement:

1. ACI 211 - Recommended Practice for Selecting Proportions of Concrete.
2. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
3. ACI 305 - Recommended Practice for Hot Weather Concreting.
4. ACI 306 - Recommended Practice for Cold Weather Concreting.
5. ACI 308 - Recommended Practice for Curing Concrete.
6. ACI 309 - Recommended Practice for Consolidation of Concrete.

D. Comply with the following American Society for Testing and Materials (ASTM) Standards as a minimum requirement:

1. ASTM A 185 - Welded Steel Wire Fabric For Concrete Reinforcement.
2. ASTM C 31 - Making and Curing Concrete Test Specimens in the Field.
3. ASTM C 33 - Concrete Aggregates.
4. ASTM C 39 - Compressive Strength of Cylindrical Concrete Specimens.
5. ASTM C 88 - Soundness of Aggregates by use of Sulphate or Magnesium Sulphate.
6. ASTM C 94 - Ready-Mixed Concrete.
7. ASTM C 143 - Slump of Hydraulic Cement Concrete.
8. ASTM C 150 - Portland Cement.
9. ASTM C 171 - Sheet Materials for Curing Concrete.
10. ASTM C 172 - Sampling Freshly Mixed Concrete.
11. ASTM C 173 - Air Content of Freshly Mixed Concrete by the Volumetric Method.
12. ASTM C 227 - Potential Alkali Reactivity of Cement-Aggregate Combinations (Mortar-Bar Method).
13. ASTM C 231 - Air Content of Freshly Mixed Concrete by the Pressure Method.

14. ASTM C 260 - Air-Entraining Admixtures for Concrete.

15. ASTM C 289 - Potential Reactivity of Aggregates (Chemical Method).

16. ASTM D 1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).

E. Source Quality Control: Refer to the following paragraphs for specific procedures. Concrete materials which, by previous tests or actual service, have shown conformance may be used without testing when so approved by the Architect and DSA. Testing Laboratory shall perform following conformance testing.

1. Portland Cement: Furnish mill certificates in accordance with the CBC section 1916A.1 and acceptable to Architect and DSA, showing conformance with requirements specified.

2. Cementitious Material Test. The concrete supplier shall furnish to the enforcement agency certification from the cement manufacturer that the cement proposed for use on the project has been manufactured and tested in compliance with the requirements of ASTM C 150 for Portland cement and ASTM C 595 or ASTM C 1157 for blended hydraulic cement, whichever is applicable. When a mineral admixture or ground granulated blast-furnace slag is proposed for use, the concrete supplier shall furnish to the enforcement agency certification from the manufacturer that they have been manufactured and tested in compliance with ASTM C 618 or ASTM C 989, whichever is applicable. The concrete producer shall provide copies of the cementitious material supplier's certificate of compliance that represents the materials used by date of shipment for concrete. Cementitious materials without certification of compliance shall not be used per section 1916A.1 of the 2007 CBC.

3. Aggregates for Normal Weight Concrete: Test the aggregate before and after concrete mix is designed and whenever character of aggregate varies or source of material is changed in accordance with ASTM C33 and CBC section 1903A.3. Include a sieve analysis. Obtain samples of aggregates at the dry batching or ready-mix concrete plant in accordance with ASTM D75 and perform tests for the properties listed in the following table.

4. Aggregates for Lightweight Concrete: Test the lightweight aggregates before mix is designed and whenever the character of aggregate varies or source is changed in accordance ASTM C330 and CBC section 1903A.3 Include sieve analyses, report on unit weights, report on deleterious substances, unburned or under-burned lumps, loss on ignition, soundness, staining materials, and crushed particles in coarse aggregate. Splitting tensile strength (FSP); 5.5 minimum.

PHYSICAL PROPERTIES		
Physical Properties, units	Test Method	Minimum values
Sieve analysis	ASTM C136	
Organic impurities	ASTM C40	Fine aggregate not darker than reference standard color
Soundness	ASTM C88	Loss after 5 cycles not more than 8 percent of coarse aggregate, nor more than 10 percent of fine aggregate
Abrasion	ASTM C131	Weight loss not more than 10.5 percent after 100 revolutions, 42 percent after 500 revolutions
Deleterious materials	ASTM C33	
Materials finer than No. 200 sieve	ASTM C117	Not over 1 percent for gravel, 1.5 percent for crushed aggregate
Reactivity potential	ASTM C227, C289, C342	Ratio of silica released to reduction in alkalinity not to exceed 1.0.
Sand equivalent	ASTM D2419	California sand equivalent values operating range not below 71 percent

F. Concrete Batch Plant Inspections: Conform to CBC section 1704A.4.3. Continuous batch plant inspection is required for structural concrete, performed by a specially qualified inspector approved by DSA. As allowed by CBC section, 1704A.4.4, batch plant inspection may be waived provided all the requirements in CBC section 1704A.4.4 are satisfied. DSA approval will be required prior to the waiving batch plant inspection.

G. Compliance with Regulations: All materials shall comply with the current rules and regulations of the local air quality management district, with the rules regarding volatile organic compounds, and with FDA rules and regulations for dangerous substances in construction products.

1.4 CONCRETE MIX DESIGNS

A registered civil engineer with experience in concrete mix design shall select the relative amounts of ingredients to be used as basic proportions of the concrete mixes proposed for use under the provisions of ACI 318 Section 5.2 as modified by CBC section 1905A.2. Mixes shall be based on existing approved compressive strength test data for concrete mixes in accordance with ACI 318 Section 5.3.1.1 and requirements below:

A. Strength Requirements: Design mixes for structural concrete for minimum 28-day compressive strengths required by Drawings and Specifications. The trial batch strength for each mix shall exceed indicated or specified strength by 750 psi or a lesser amount based on the standard deviations of strength test records according to ACI 318.

B. Normal Weight Concrete Mix Design: Design all mixes for workability and durability of concrete. Control the mixes in accordance with ACI 318 Section 5.2, ACI 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete, and Chapter 4, ACI 318, Building Code Requirements for Reinforced Concrete. Make adjustments in cement content required for concrete strengths at Contractor's expense and do not exceed 0.60 (or as indicated on concrete general notes of approved plans) absolute water-cement or cement plus fly ash ratio by weight. Do not use calcium chloride or any admix containing such material. Admixtures containing a material releasing nitrates in solution are limited to 0.06 percent by weight for the chloride ion.

C. Maximum Aggregate Sizes: Not exceeding 3/4 of minimum clear space between bars and between bars and forms, nor larger than 1/5 of least dimensions between the forms.

D. Design the mixes with 1" maximum size, except maximum 1-1/2" size for foundations and maximum 3/8" size at congested reinforcing or thin sections, as submitted by the contractor and approved by the Architect and Structural Engineer of Record.

E. Light Weight Structural Concrete: Design mixes in accordance with ACI 318 Section 5.2 and Section 5.3.1.1, and control mix in accordance with ACI 211.2, Standard Practices for Selecting Proportions for Structural Light Concrete. Design for air-dry density of 110 pounds per cubic foot maximum. With each mix design submit test reports showing concretes covered by the mix designs meet shrinkage test requirements specified under Article "Field Quality Control" hereinafter or include certified test reports showing conformance as furnished by the ready-mix concrete manufacturer.

F. ACI 318 Section 5.3.1.1 with test records. Where a testing laboratory acceptable to the enforcement agency has records of compressive strength tests, a standard deviation shall be established. Test records from which a standard deviation is calculated shall:

1. Represent materials, quality control procedures and conditions similar to those expected, and changes in materials and proportions within the test records shall not have been more restricted than those for proposed work.

2. Represent concrete produced to meet a specified strength or strengths f' c within 1,000 psi of that specified for proposed work.

3. Must consist of at least 30 consecutive tests or two groups of consecutive tests totaling at least 30 tests as defined in ACI 318 Section 5.6.2.4, except as provided in ACI 318 Section 5.3.1.2.

1.5 DELIVERY, STORAGE AND HANDLING

A. Mixing and Placing Concrete: Refer to Section 01420: Testing and Inspection.

B. Ready-mix concrete shall be mixed and delivered in accordance with ASTM C 94. Each batch of concrete delivered to the Project site shall be accompanied by a time slip bearing departure time and signature of batch plant supervisor. Concrete shall be placed within 90 minutes after start of mixing. Deliver all materials in timely manner to ensure uninterrupted progress of the work.

C. Store cement and aggregate materials so as to prevent their deterioration or intrusion by foreign matter. Deteriorated or contaminated materials shall not be furnished.

1.6 JOB CONDITIONS

A. Cold Weather Requirements:

1. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. Surfaces, in which concrete is to come in contact with, shall be free from frost or ice. No frozen materials or materials containing ice shall be furnished.

2. When placing concrete during freezing or near-freezing weather the mix shall have a temperature of at least 50 degrees F., but not more than 90 degrees F. when cement is added. Concrete shall be maintained at a temperature of at least 50 degrees F. for at least 72 hours after placing or until it has thoroughly hydrated. When necessary, concrete

materials shall be heated before mixing. Special precautions shall be provided for protection of transit-mixed concrete.

B. Hot Weather Requirements: During hot weather, proper attention shall be provided for ingredients, production methods, handling, placing, protection and curing, to prevent excessive concrete temperatures or water evaporation which could impair required strength or durability.

PART 2 - PRODUCTS

2.1 GENERAL

A. Ready-Mixed Concrete: Mix and deliver in accordance with requirements of CBC Chapter 1905A.

2.2 MATERIALS

A. Portland cement: ASTM C-150, Type II, low alkali. Do not change brand without prior approval.

B. White Portland cement: ASTM C-150, Type 1, from one approved source.

C. Aggregates: ASTM C33 and C 227, from approved pits, free from vegetable matter and of opaline, feldspar, or siliceous magnesium substances; all washed, clean, hard, fine-grained sound crushed rock or gravel; not over 5 percent by weight of flat, thin, elongated, friable, or laminated pieces (pieces having major dimension over 5 times average dimension) or more than 2 percent by weight of shale or cherty material. Any suitable individual grading of coarse aggregate may be furnished, provided Grading of Combined Aggregate indicated in following table is obtained. Refer to Section 01420: Testing and Inspection.

GRADING OF COMBINED AGGREGATE

Sieve Number or	1-1/2"	1"	3/4"
Size in Inches	Maximum	Maximum	Maximum
Passing a 2"	——	------	-----
Passing a 1-1/2"	95-100	-----	-----
Passing a 1"	70-90	90-100	-----
Passing a 3/4"	50-80	70-95	90-100
Passing a 3/8"	40-60	45-70	55-75
Passing a No. 4	35-55	35-55	40-60
Passing a No. 8	25-40	27-45	30-46
Passing a No. 16	16-34	20-38	23-40
Passing a No. 30	12-25	12-27	13-28
Passing a No. 50	2-12	5-15	5-15
Passing a No. 100	0-3	0-5	0-5

D. Water: Water shall be potable and free from deleterious matter.

E. Pozzolan: ASTM C618, Class F or N Fly Ash, 100 pounds maximum per cubic yard, containing one percent or less carbon. Fly ash shall not be used in excess of 15 percent by weight of total cement quantity.

F. Admixtures: ACI 318 Section 3.6.5, Type A or D, manufactured by Grace or approved equal. Admixtures to be used in concrete shall be subject to prior approval by DSA.

G. Expansion Joint Fillers: Preformed strips, non-extruding and resilient bituminous type, of thickness indicated, conforming to ASTM D 1751 and ASTM D1752.

H. Construction Joint Materials: "Key-Kold" or "Kwik-Joint," of profiles indicated.

I. Curing Paper and Liquid Curing Compounds:

1. Curing Paper: Non-staining white type conforming to ASTM C 171.

2. Liquid Curing Compounds: A standard brand complying with Rule II 13 of the South Coast Air Quality Management District and Federal Air Quality Regulation 40 CFR 52.254, clear liquid conforming to ASTM C 309, Master Builders, Grace, Antihydro.

J. Underlayment: Latex underlayment for filling low spots in concrete shall be Tile-Tex by Flintkote Co., Webtex #60 or Fixallatex by Dowman Products Co.

K. Vapor Barrier: Vapor barrier shall be installed below all slabs poured on grade conforming to ASTM E 1745. Barrier shall have a permeance rating of 0.01 perms or less, an impact strength greater than 70 grams per mil, and must be resistant to deterioration. Provide minimum 2-inch wide waterproof plastic self-adhering tape for sealing edges and ends of sheeting.

L. Non-shrink grout:

1. For concealed areas: Master Builders "Embeco 885," or equal, non-gas-forming and free of oxidizing catalysts and inorganic accelerators, used as dry or damp pack, or mixed to a 20-second flow (CRC-C 611), without segregation or bleeding at any temperature between 45 degrees F and 100 degrees F. Working time 30 minutes or more.

2. For exposed areas: Master Builders "Masterflow 928," with same characteristics as specified for concealed areas.

M. Drypack: Field mixture of I part Portland cement to 2 parts fine aggregate mixed to a damp consistency such that a ball molded in the hands will stick together and hold its shape. In lieu of field mixing, Contractor may use factory mixed drypack material, such as Master Builders "Set Grout."

N. Epoxy Grout: Master Builders "Ceilcote 648," or equal.

O. Bonding Agent: "Weld-Crete," manufactured by Larsen Products Co., P.O. Box 2127, Rockville, MD 20852, Master Builders "Concresive," or equal.

P. Stair Strips and Nosing: Provide strips and nosings where indicated on the drawings.

1. Fabricated from 6063-T5 extruded aluminum, mill finish. Anti-slip filler shall contain at least 60 percent virgin grain aluminum oxide abrasive. Binder shall be fully cured resilient type epoxy, with binder-to-filler ratio of 13 percent. The epoxy-abrasive filler shall extend over the curved front edge of the nosing and shall be securely bonded to the extruded aluminum base.

2. Manufactured by Wooster Products Inc. American Safety Tread Co. Inc., or equal.

3. Nosing and strips for concrete casting shall be provided with Sure-Hold anchors, chevron shaped continuous full length of nosing or strip.

4. Nosings and anchors for attachment to hydrated concrete stairs shall be similar to those specified below, except they shall be provided with countersunk holes for screws and fasteners.

5. Colors: As selected by Architect to contrast with stair color. Colors shall extend uniformly through the filler.

6. Strip and Nosing Types:

   a. Nosings for sloped riser steel pan stairs: Type WP4J, 4-1/16 inches wide, 3/8 inch thick.

   b. Nosings for new concrete stairs: Type WP4C, 4-1/16 inches wide, 3/8 inch thick, nose projects down 1/4 inch.

   c. Nosings for square edged steel pan stairs: Type WP4SP, 4-1/16 inches wide, 3/8 inch thick nose.

   d. Strips for recessing into concrete stairs: Type WP1A, except 2-1/4 inches wide, 3/8 inch thick. American Safety Tread Co., Type 24, or equal.

2.3 CONCRETE MIXING

Furnish ready-mixed concrete from an approved commercial off-site plant. Conform to ASTM C 94, except materials, testing, and mix designs as specified herein. Use transit mixer trucks equipped with automatic devices for recording number of revolutions of drum. Comply with CBC Section, 1905A.

A. Admixtures: All approved admixtures shall be introduced into the concrete at the batch plant. Field additions are not acceptable.

B. Slump: Adjust quantity of water so concrete at point and time of placing does not exceed the slumps per plans when tested according to ASTM C143. Use the minimum water necessary for workability required by part of structure being cast.

PART 3 - EXECUTION

3.1 GENERAL

A. Time of Placing: Do not place concrete until reinforcement, conduits, outlet boxes, anchors, hangers, sleeves, bolts, and other embedded materials are securely fastened in place. Contact the IOR at least 24 hours before placing concrete; do not place concrete until inspected by the IOR.

B. Pouring Record: A record shall be kept on the Project site of time and date of placing concrete in each portion of structure. Such record shall be maintained on the Project site until Substantial Completion and shall be available for examination by the Architect and DSA.

3.2 PREPARATION

A. Moisture Barrier: Before installation of screeds and slab reinforcement, install a moisture barrier under slabs on grade. Place membrane in as large sheets as possible, lapped 12 inches at sides and ends, with top lap placed in the direction of the spreading of concrete. Extend membrane and lap at least 4 inches onto adjoining wall surfaces and seal with pressure-sensitive tape.

   1. Install moisture barrier on minimum 2-inch bed of sand, unless otherwise indicated, over gravel base as indicated on the Drawings.

2. Patch punctures and tears in moisture barrier.

B. Reglets and Rebates:

1. Form reglets and rebates in concrete to receive flashing, frames and other equipment as detailed and required. Coordinate dimensions and locations required with other related Work.

2. If concrete slabs on grade adjoin a wall or other perpendicular concrete surface, form a reglet in wall to receive and carry horizontal concrete Work. Reglet shall be full thickness of the slab and shall be 3/4 inch wide, unless otherwise indicated. Requirement does not apply to exterior walks, unless specifically indicated.

C. Screeds: Install screeds accurately and maintain at required grade or slab elevations after steel reinforcement has been installed, but before starting to place concrete. Install screeds adjacent to walls and in parallel rows not to exceed 8 feet on centers.

D. Screeds over Vapor Barrier: Use weighted pad or cradle type screeds and do not drive stakes through the vapor barrier. Check with an instrument level, transit, or laser.

E. Remove all free water from forms before concrete is deposited. Remove hardened concrete, debris, and foreign materials from interior surfaces of forms, exposed reinforcing, and from surfaces of mixing and conveying equipment.

F. Wetting: Wet wood forms sufficiently to tighten up cracks. Wet other materials sufficiently to reduce adsorption and to help maintain concrete workability.

G. Earth Subgrade: Dampen 24 hours before placing concrete, but do not muddy. Re-roll where necessary for smoothness and remove loose material.

H. Gravel Fill: Recompact disturbed gravel and bring to correct elevation.

I. Sand Beds or Subslab Drainage Fill: Recompact disturbed material and bring to correct elevation.

J. Metal Floor Decking: Verify that decking joints are sealed and there are no openings or voids that will permit concrete leakage.

K. Composite Steel Beams: Provide shores for tributary construction loads to floor and roof beams as required, or camber the beams as approved by Architect. All concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around reinforcement and embedded fixtures and into corners of forms.

3.3 INSTALLATION

A. Conveying and Placing:

1. Do not place concrete until reinforcing steel and forms or decks have been approved by the Inspector and other authorities having jurisdiction. Concrete shall be placed only under direct observation of the IOR. Do not place concrete outside of regular working hours, unless the IOR has been notified at least 48 hours in advance.

2. Comply with CBC Sections 1905A.9 and 1905A.10.

3. Concrete shall be conveyed from mixer to location of final placement by methods, which will prevent separation or loss of materials. Place concrete in horizontal layers not more than 18" thick within 90 minutes after water is first added to the batch.

4. Concrete shall be placed as nearly as practicable to its final position to avoid segregation due to re-handling or flowing. No concrete that has partially hydrated or has been contaminated by foreign materials shall be placed, nor shall re-tempered concrete or concrete which has been remixed after initial set be placed.

5. In placing concrete in columns, walls or thin sections, provide openings in forms, elephant trunks, tremies or other recognized devices, to prevent segregation and accumulation of partially hydrated concrete on forms or metal reinforcement above level of concrete being placed. Such devices shall be installed so that concrete will be dropped vertically. Unconfined vertical drop of concrete from end of such devices to final placement surface shall not exceed 5-feet for concealed concrete or over 3-feet for exposed concrete.

6. Concrete shall be placed as a continuous operation until placing of panel or section is completed. Top surfaces of vertically formed lifts shall be level.

7. Concrete shall be thoroughly consolidated during placement, and shall be worked around reinforcement and embedded fixtures with mechanical vibrators.

8. Where conditions make consolidation difficult, or where reinforcement is congested, batches of concrete adjusted to use smaller size aggregates than specified in the mix design shall be used as approved by the Architect, Structural Engineer and the Enforcement Agency.

9. Where new concrete is placed against or on old or existing concrete, apply bonding agent to surface of old concrete prior to placement of new concrete.

B. Compaction and Screeding:

1. Compacting: Compact each layer of the concrete as placed with mechanical vibrators or equivalent equipment. Transmit vibration directly to concrete and in no case through the forms unless approved. Accomplish thorough compaction. Supplement by rodding or spading by hand adjacent to forms. Compact concrete into corners and angles of forms and around reinforcement and embedded fixtures. Recompact deep sections with congestion due to reinforcing steel as required.

2. Operation of Vibrators: Do not horizontally transport concrete in forms with vibrators nor allow vibrators to contact forms or reinforcing. Push vibrators vertically into the preceding layers that are still plastic and slowly withdraw, producing maximum obtainable density in concrete without creating voids or segregation. In no case disturb concrete that has partially set. Vibrate at intervals not exceeding two-thirds the effective visible vibration diameter of the submerged vibrator. Avoid excessive vibration that causes segregation.

3. Tamp freshly placed concrete with a heavy tamper until at least 3/8 inch of mortar is brought to surface. Concrete shall then be tamped with a light tamper and screeded with a heavy straightedge until depressions and irregularities are eliminated, and surface is true to finish grades or elevations. Remove excess water and debris.

4. Where slabs are to receive separate cement finish or mortar setting bed, continued tamping to raise mortar to surface is not performed. Laitance shall be removed by brushing with a stiff brush or by light sandblasting to expose clean top surface of coarse aggregate.

C. Floating and Troweling:

1. When concrete has hydrated sufficiently, it shall be floated to a compact and smooth surface. After floating, wait until concrete has reached proper consistency before troweling. Top surfaces shall receive at least 2 troweling operations with steel hand

trowel. Prior to and during final troweling, apply a fine mist of water frequently with an atomizing type fog sprayer. Omit troweling for slabs to receive a separate cement finish.

2. Architectural finishes shall be as specified in Section 03307. Non-architectural vertical concrete surfaces shall be finished smooth and free from marks or other surface defects.

D. Joints: Comply with CBC Section 1906A.4. Locate joints in concrete only where shown or approved and obtain prior approval for points of stoppage of any pour. Clean and roughen surface of construction joints by removing entire surface and exposing 1/4" of clean coarse aggregate solidly embedded in mortar matrix by sandblasting, chipping, use of an approved retarder agent, or equal. Water and keep hardened concrete wet for not less than 24 hours before placing the next lift or abutting concrete. Cover the horizontal surfaces of existing or previously placed and hardened concrete with a 2" thick layer of fresh concrete of required mix less 50 percent of coarse aggregate just before balance of concrete is placed.

E. Vertical Elements: Stop placement of concrete in walls and columns 1-1/2" below bottom of beams or supported slabs. Stop placement at sills and heads of wall openings in the same manner. Allow concrete in vertical elements to be in place at least 2 hours and until vertical settlement has ceased before placing concrete for floor framing.

F. Correction of Segregation: Before placing next layer of concrete, and at the top of each placement for vertical elements, remove all concrete containing excess water or fine aggregate, or showing deficiency of coarse aggregate, and fill the space with compacted concrete of correct proportions. Comply with CBC Section, 1906A.4.

G. Curing:

1. All curing shall be per CBC Section 1905A.11. Keep forms containing concrete in a wet condition until removed. Keep concrete continuously moist for not less than 7 days after placement. Keep concrete above 50°F and moist with a fine fog water spray until protected by curing media.

2. Forms containing concrete, top of concrete between forms, and exposed concrete surfaces after removal of forms shall be maintained in a thoroughly wet condition for at least 7 consecutive days after placing. Use the water curing method, curing sheet material, or a clear liquid membrane-forming curing compound except as otherwise specified.

3. During times of dry or excessive winds, high ambient temperature, low humidity, or other ambient conditions causing rapid drying, use specified evaporation retardant and finishing aid material according to the manufacturers instructions and cure concrete with a fine fog spray of water, or equal, applied both during and after finishing and continued until final curing operations are started.

4. Within 24 hours after finishing, exterior slabs and paving, and interior slabs to receive cement topping or mortar setting beds, shall be covered with sand to a depth of 2 inches and kept thoroughly wet for 7 days.

   a. Instead of sand covering, exterior walks and paving where no other surface treatment is specified, may be cured with clear liquid curing compound immediately installed in accordance with manufacturer's directions.

H. Filling, Leveling and Patching:

1. Concrete slabs exhibiting high or low spots and indicated to receive resilient floor covering or soft floor covering, shall have surfaces repaired. High spots shall be honed, or ground with power-driven machines to required tolerances. Low spots shall be filled

with latex underlayment, installed in strict accordance with manufacturer's written recommendations.

2. Holes resulting from form ties or sleeve nuts shall be solidly packed, through exterior walls, by pressure grouting with cement grout, as specified. Grouted holes on exposed surfaces shall be screeded flush and finished to match adjoining surfaces.

I. Cement Base: Cement base shall be of the height, thickness, and shape detailed. Base shall be reinforced with one inch mesh, 18 gage, zinc-coated wire fabric. Base finish mixture shall be one part Portland cement, 2 parts of fine aggregate and one part pea gravel. Colored cement base shall include a chemically inert mineral oxide pigment in the mix.

3.4 GROUTING AND DRYPACKING

A. Install as indicated or required. Where grouting and drypacking is part of the work of other sections, it shall conform to the following requirements, as applicable.

B. Drypacking: Mix materials thoroughly with minimum amount of water. Install drypack by forcing and rodding to fill voids and provide complete bearing under plates. Finish exposed surfaces smooth and cure with damp burlap or liquid curing compound.

C. Non-Shrink Grouting:

1. Mixing: Mix the approved non-shrink grout material with sufficient water per manufacturers recommendations.

2. Application: Surfaces to receive the non-shrink grout shall be clean, and shall be moistened thoroughly immediately before placing the mortar. Before grouting, surfaces to be in contact shall be roughened and cleaned thoroughly, all loose particles shall be removed and the surface flushed thoroughly with neat cement grout immediately before the grouting mortar is placed. Place fluid grout from one side only and puddle, chain, or pump for complete filling of voids; do not remove the dams or forms until grout attains initial set. Finish exposed surfaces smooth, and cure as recommended by grout manufacturer.

3.5 FINISHING NON-ARCHITECTURAL CONCRETE

A. Soda and Acid Wash: Concrete surfaces to receive plaster, paint or other finish, and which have been formed by oil coated forms, shall be scrubbed with a solution of 1-1/2 pounds of caustic soda to one gallon of water. Surfaces where smooth wood or waste molds have been furnished shall be scrubbed with a solution of 20 percent muriatic acid. Wash with clean water after scrubbing.

B. Sacking: Exposed concrete curbs, and other similar surfaces shall be sacked by an application of Portland cement grout, floated, and rubbed. Sacking shall not be performed until patching and filling of holes has been completed. Entire sacking operation for any continuous area shall be started and completed within the same day.

1. Mix one part portland cement and 1-1/2 parts fine sand with sufficient water to produce a grout having consistency of thick paint. Wet surface of concrete sufficiently to prevent absorption of water from grout. Apply grout uniformly with a brush or spray gun, then immediately float surface with a cork or other suitable float, scouring wall vigorously.

2. While grout is still plastic, finish surface with a sponge-rubber float, removing excess grout. Allow surface to dry thoroughly, then rub vigorously with dry burlap to completely remove dried grout. No visible film or grout shall remain after rubbing with burlap.

C. Sandblasting: Exterior concrete surfaces to receive stucco dash coat finish, where plywood or other smooth forms have been furnished, shall be uniformly sand-blasted with sharp quartz sand under sufficient air pressure to remove dirt, form oil and other foreign materials, and roughen surface to provide a proper bond. Such surfaces shall be thoroughly washed with clean water after sandblasting.

D. Abrasive: Concrete stair treads, landings, ramps and steps on interior and exterior of buildings, and interior exposed concrete floors in shop buildings shall receive an abrasive finish. Abrasive grains in amount of 30 pounds per 100 square feet shall be evenly installed by dust-on method and embedded into surface during first troweling operation. Additional abrasive grains, in amount of 30 pounds per 100 square feet, shall then be evenly installed and embedded into surface during final troweling operation.

E. Floor Hardener: Exposed interior concrete floors throughout shall be treated with floor hardener, as specified. Install hardener after surface of concrete has reached the point where no excess moisture is present, but while it is still plastic. Hardener shall be installed as follows:

1. Colored Hardener: Install at rate of 40 pounds per 100 square feet of surface for initial application.

2. Gray (natural) Hardener: Install at rate of 20 pounds per 100 square feet of surface for initial application.

3. Hardener shall be evenly distributed and thoroughly floated into surface mortar with a wood float. An additional 20 pounds of hardener, colored or gray, specified as above, shall be installed over each 100 square feet, and troweled to an even surface having uniform color and texture.

F. Cement Grout and Dry-Pack Concrete: Cement grout shall be mixed at the Project site and shall be composed of one volume of portland cement and 2-1/2 volumes of fine aggregate. Materials shall be mixed dry with sufficient water added to make mixture flow under its own weight. When grout is used as a dry pack concrete, add sufficient water to provide a stiff mixture, which can be molded into a sphere.

3.6 FIELD QUALITY CONTROL

A. Comply with pertinent provisions of Section 01450.

B. Level of Floors: Continuously monitor concrete placing to maintain level floor by use of an instrument level, transit, or laser.

C. Continuous Inspection: Construct structural concrete under continuous inspection of Project Inspector. Obtain inspection and approval of forms and reinforcing by DSA as required and by the Inspector before placing structural concrete.

D. Testing/Evaluation of Concrete: Conform to ACI 318-05 Section 5.6.2 as modified by CBC Section 1905A.6.2. Testing Laboratory shall perform following tests. Samples for testing shall be obtained in accordance with ASTM C 172, and shall be taken from as close to point of placement as possible.

1. Compressive Strength Tests: Cast one set of three or more cylinders from each days placing and each 50 cubic yards, or fraction thereof, or not less than once for each 2,000 square feet of surface area for slabs and walls, of each strength of structural concrete. Additional samples for seven day compressive strength tests shall be taken for each class of concrete at the beginning of the concrete work or whenever the mix or aggregate is changed. Date cylinders, assign record number, and tag showing the location from

which sample was taken. Also record slump test result of sample. Do not make more than two series of tests from any one location or batch of concrete.

2. Test Cylinders: Samples will be made in accordance with ASTM C172. Cast cylinders according to ASTM C31; 24 hours later, store cylinders under moist curing conditions at about 70 F. Test according to ASTM C39 at 7 and 28 day ages. The remaining cylinder shall be kept in reserve in case tests are unsatisfactory.

3. Control Test Cylinders: Cast a set of two or more cylinders for each day's placing of concrete for slabs supported on shoring. Place test cylinders on slabs represented by cylinders and cure the same as slabs. Test cylinders to determine proper times for removal of shores and reshoring. A strength test shall be the average of the compressive strengths of 2 cylinders made from the same sample of concrete and tested at 28 days.

E. Core Tests: If tests show that compressive strength of any concrete falls below required minimum at 28 day age, coring and testing of concrete which unsatisfactory test reports represent may be directed. Testing Laboratory shall take and test drilled cores as directed in accordance with ASTM C42 and CBC Section 1917A.1. Contractor shall refill core holes with drypack concrete of the same compressive strength required for cored concrete. If core tests results are unsatisfactory, Contractor shall furnish required labor, equipment, and weights, and the Testing Laboratory shall conduct load testing on involved parts of building or structure as directed. Contractor shall bear additional curing and test costs, including Testing Laboratory costs, for concrete not meeting required compressive strength at 28 day age even if testing demonstrates that concrete has eventually attained required minimum compressive strength, and all costs for required corrections or removals and replacements as directed and required for approved construction.

3.7 EXPANSION AND CONSTRUCTION JOINTS

A. Construction Joints: Details and proposed location of construction joints shall be as indicated on the Drawings, located to least impair strength of structure, in accordance with the following:

1. Thoroughly clean contact surface by sand blasting entire surface not earlier than 5 days after initial placement.

2. A mix containing same proportion of sand and cement provided in concrete plus a maximum of 50 percent of coarse aggregate shall be placed to a depth of at least one inch on horizontal joints. Vertical joints shall be wetted and coated with a neat cement grout immediately before placing of new concrete.

3. Should contact surface become coated with earth, sawdust, or deleterious material of any kind after being cleaned, entire surface shall be re-cleaned before applying mix.

B. Expansion Joints: Provide expansion joints where indicated in walks and exterior slabs. Space approximately 20 feet apart (12 feet apart at traffic areas), unless otherwise indicated. Joints shall extend entirely through slab with joint filler in one piece for width of walk or slab. Joint filler shall be 3/8 inch thick, unless otherwise indicated.

C. Tooled Joints: Slabs, walks and paving shall be marked into areas as indicated with markings made with a V-grooving tool. Marks shall be round-edged, free from burrs or obstructions, with clean cut angles and shall be straight and true. Walks, if not indicated, shall be marked off into rectangles of not more than 12 square feet and shall have a center marking where more than 5 feet wide.

3.8 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

3.9 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 03331
HARD ROCK LIGHTWEIGHT CONCRETE FILL

PART 1 - GENERAL

1.1 SUMMARY

A. Provisions of Division 01 apply to this section

B. Section Includes:

1. Hard rock lightweight concrete fill as indicated.

C. Related Sections:

1. Section 03100: Concrete Forms and Accessories.

2. Section 03200: Concrete Reinforcement.

3. Section 03300: Cast-in-place Concrete

D. Comply with all relevant provisions of related sections noted above.

1.2 SUBMITTALS

A. Shop Drawings: Submit Shop Drawings indicating locations to receive lightweight concrete and accessories.

B. Mix Design: Submit a concrete mix design for each mix that will be provided for the Work. Include water/cement ratio, size of aggregate and types and amounts of admixtures. Predict minimum compressive strength, maximum slump and air content percentage.

C. Certificates:

1. Submit a notarized certificate that each of following conforms to standards indicated.

a. Aggregates - Refer to Section 01420: Testing and Inspection.

b. Admixtures - ASTM Standards.

c. Curing materials - ASTM Standards.

2. Manufacturer of ready-mixed concrete shall deliver to the IOR a certificate with each mixer truck. Certificate shall bear the signature of representative of the testing laboratory, and shall state quantity of cement, water, fine and coarse aggregate and admixture contained in load.

1.3 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement:

1. ASTM A 185 - Welded Steel Wire Fabric for Concrete Reinforcement.

2. ASTM C 33 - Concrete Aggregates.

3. ASTM C 171 - Sheet Materials for Curing Concrete.

4. ASTM C 260 - Air-Entraining Admixtures for Concrete.

5. ASTM C 330 - Lightweight Aggregates for Structural Concrete.

1.4 DELIVERY, STORAGE AND HANDLING

A. Each gradation of lightweight aggregates shall be stockpiled in separate bins or piles. Method of storage shall minimize segregation and prevent contamination. Aggregates shall remain dry. Do not presoak.

PART 2 - PRODUCTS

2.1 GENERAL

A. Designated mix shall be proportioned so as to provide concrete with a minimum compressive strength of 3000 psi at 28 days, and a maximum unit weight of 110 lbs. per cubic foot in the oven, dry condition, at 28 days.

2.2 MATERIALS

A. Portland Cement: Standard brand conforming to ASTM C 150.

B. Aggregates:

1. Coarse Aggregate: Lightweight aggregate conforming to ASTM C 330, and shall be sealed expanded shale such as "Rocklite", as produced by Lightweight Processing Company, or equal.

2. Fine Aggregate: Hardrock aggregate conforming to ASTM C 33, or lightweight aggregate conforming to ASTM C 330.

C. Water shall be clean and free from deleterious amounts of oils, acids, alkalis, salts, or organic materials.

D. Admixture: Air entraining agent shall conform to ASTM C 260.

E. Reinforcing Mesh: Conform to ASTM A 185. Welded wire fabric shall be 4x4 W1.4/1.4 furnished in flat sheets.

F. Tie Wire: Fully annealed, copper-bearing steel wire, 16 gage minimum.

G. Curing Paper: Standard brand conforming to ASTM C 171 Type 1, regular.

PART 3 - EXECUTION

3.1 PREPARATION

A. Screeds: Install screeds accurately to finish floor surfaces at 19 feet on center, maximum, in one direction. Screeds shall be properly secured to prevent movement. Screeds shall be centered on column centerlines.

3.2 INSTALLATION

A. Placing and Finishing:

1. Concrete shall be placed in its final position immediately after mixing is completed. Excessive handling of concrete for final placement shall be minimized to prevent segregation.

2. After placement, concrete shall be rodded following specified concrete placement process. Rodded concrete shall then be tamped with a grid tamper. Re-rod in see-saw method to finished elevations. After screeds and screed supports are removed, concrete in removal areas shall be re-tamped.

3. Immediately following above operation and while concrete is plastic, surface shall be bull floated to level out tamp marks and humps. After floating, wait until concrete has reached proper consistency to start steel troweling. To maintain surface in proper condition for troweling, a light film of moisture may be applied with a mist type fog sprayer. Final (second) troweling operation shall provide a hard, non-slip surface, free from defects and blemishes.

4. Finished surface shall be within a tolerance of 1/8 inch in 10 feet.

B. Curing:

1. Lightweight concrete floor fills shall be properly cured and protected against damage during construction operations.

2. Placement of curing paper shall immediately follow final troweling operation. If concrete surfaces start to dry due to high air temperatures or wind, spray concrete surface with a fine water mist.

3. Curing paper shall be lapped 3 inches and sealed. Edges shall be cemented to finish. Paper that is torn or otherwise damaged during curing period shall be immediately repaired or replaced. Paper shall remain in place for a minimum of 7 days.

4. After removal of curing paper, cement surface shall be thoroughly washed and mopped clean.

3.3 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.4 CLEAN UP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 03335
COLORED CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Colored architectural concrete topping on bridge.

B. Related work:

1. Division 2 for site concrete paving.

2. Division 3 for concrete reinforcing and cast-in-place concrete.

3. Division 7 for joint sealants.

1.2 REFERENCES

A. Design and Control of Concrete Mixtures – Thirteenth Edition; Portland Cement Association.

1.3 SUBMITTALS

A. Product data: List of products specified in this Section.

B. Shop drawings:

1. Submit shop drawings for accessories in accordance with ACI standards.

2. Paving jointing plan: Proposed layout of contraction, construction and isolation joints. Clearly delineate the three different joint types.

C. Statement of mix design: Submit mix design prepared by batch plant for each load delivered to Project. Mix design to contain following information:

1. Name, address, and telephone number of batch plant preparing statement of mix design.

2. Date of mix design.

3. Project location.

4. Contractor requesting load delivery.

5. Mix design number.

6. Integral color used.

7. Gradations for sand and aggregate.

8. Material weights, specific gravity, and absolute volumes.

9. Basis of testing.

10. Water/cement ratio.

11. PSI rating.

12. Signature of testing laboratory manager.

13. Signed stamp from registered Project structural engineer or architect.

D. Sample: 1 pound sample of surface-seeded aggregate.

1.4 QUALITY ASSURANCE

A. Quality control: Shall be maintained by licensed installers of Lithocrete throughout duration of project.

B. Testing: Testing agency designated by District. Testing personnel shall meet ASTM E 329 requirements.

C. Mockups:

1. Prior to construction, provide 4 ft. x 4 in. x 4 in. thick sample panel of colored concrete paving at a location approved by the Architect.

2. Ensure that mockup contains joint types specified, i.e. construction, contraction, and isolation.

3. Approved mockups will be the standard for future colored concrete paving.

4. Remove mockups from site upon completion of Work and approval.

1.5 HANDLING

A. Store materials in a dry and protected location.

B. Keep aggregate dry at all times prior to installation.

1.6 MAINTENANCE MATERIAL

A. One 100 lb. sealed bag of aggregate specified for use by District in future repairs of damaged colored concrete paving.

B. Washed concrete sand: One 50 lb. sealed bag of washed concrete sand similar to type used during installation of colored concrete paving.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT

A. Type II, ASTM C150.

B. Use same brand of cement from single source throughout entire project.

C. Cement complying with ASTM C 150, refer to Drawings for Type.

2.2 WASHED CONCRETE SAND

A. Clean, hard, and durable washed concrete sand, conforming to ASTM C33.

B. Use same sand from single source throughout entire Project.

2.3 COARSE AGGREGATE

A. Clean, hard, and durable coarse aggregate, conforming to ASTM C33.

B. Use same aggregate from single source throughout entire Project.

2.4 LITHOCRETE SURFACE-SEEDED AGGREGATE

A. Refer to Drawings for aggregate type, size, color, and distribution percentage.

B. Use same aggregate from same source for entire Project.

2.5 WATER

A. Potable and free from deleterious materials such as oils, acids, and organic matter.

2.6 ADMIXTURES

A. Integral concrete coloring admixture: Refer to Drawings for color type and manufacturer.

1. Acceptable manufacturers:

a. L.M. Scofield.

b. Colorfull by Admixtures, Inc.

c. QC.

B. Admixtures:

1. May be used only with the Architect and DSA approval.

2. Submit manufacturer's data for products proposed for use to the Architect in compliance with the requirements of Division One.

2.7 READY MIXED CONCRETE

A. Batched, mixed and transported in accordance with ASTM C 94.

B. Polypropylene fiber reinforcement: 100 percent virgin multifilament polypropylene fibers, complying with ASTM C 1116 - Type III.

1. Acceptable manufacturers:

a. Fibermesh Fibermix Stealth, 1/4 inch long.

b. Grace Construction Products MicroFiber.

2. Application rate: 1/2 lbs/cubic yard of mix.

2.8 ISOLATION JOINT MATERIALS

A. Refer to Section 07920.

2.9 DESIGN OF MIXES AND PROPORTIONING

A. Proportion and mix of cement, aggregate, admixture and water to attain required plasticity and strength in accordance with current edition of ACI Manual of Concrete Practice and PCA "Design and Control of Concrete Mixtures."

B. Concrete mixtures to be designed by an approved commercial testing laboratory, using approved materials to obtain specified minimum compressive strength.

C. Concrete Mix Criteria:

1. Slump: 5-inch, with a 1/2-inch slump differential between successive batches. Obtain approval from Architect if slump is outside these parameters.

2. Minimum psi at 28 days: 2,500.

3. Cement quantity per yard of mix:

a. Minimum: 6-sack.

b. Maximum: 7-sack.

4. Water/cement ratio: 0.65 to 0.67.

5. Sand: 70 percent of total mix.

6. Pea gravel: 30 percent of total mix.

7. Non-chloride accelerators: Do not use corrosive accelerators such as calcium chloride.

8. Concrete delivery: Use of concrete loads exceeding 90 minutes from time of batch plant must be approved by Architect.

9. Verify that batch plant guarantees single source supply for cement, sand, and aggregate for the entire project.

PART 3 - EXECUTION

3.1 LITHOCRETE SURFACE-SEEDED AGGREGATE INSTALLTION

A. Install in accordance with US Patents 4,748,788 and #6,016,635 to match approved mckups.

B. Lithocrete process incorporates use of following patented products:

1. Lithocrete Conditioner.

2. Lithocrete Etch Retarder.

3. Lithoseal paving sealer.

3.2 JOINTING

A. Refer to ACI 302 "Guide for Concrete Floor and Slab Construction" for work under this section.

B. Construction and Contraction Joints:

1. Sawcut construction and contraction joints in locations indicated on Drawings.

2. Perform jointing with a new diamond-tip circular saw.

3. Joint width: As indicated. Do not exceed 3/16 inch in width.

4. Depth of sawcuts: 1/4th depth of slab.

5. Sawcut joints in a straight line with no overcutting.

6. Use hand tool to sawcut up to vertical edges such as walls, steps, curbs and columns. No cutting into vertical surfaces will be allowed.

C. Isolation joint sealant: Install isolation joint sealant as specified in Section 07920.

3.3 CURING

A. After initial Lithocrete aggregate exposure; continuously sprinkle or fog paving with water for minimum 7 days.

3.4 SEALING

A. Seal surface of paving using Lithocrete Sealer. Follow Lithocrete Sealer directions.

END OF SECTION

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SECTION 03455
GLASS FIBER REINFORCED PRECAST CONCRETE (GFRC)

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Glass-fiber reinforced concrete (GFRC) wall panels and other shapes shown on Drawings.

2. Embedded hardware, loose connection hardware, integrated steel support framing.

3. Miscellaneous supports, including hardware, anchors, fasteners, inserts and bracing required to attach the panels to the structural frame (columns, beams, floors and roofs).

B. Work furnished but installed in other Sections:

1. Embeds to be cast in cast-in-place concrete.

C. Work installed but furnished in other Sections:

1. Items of other trades embedded in the precast elements.

D. Related work:

1. Division 3 for cast-in-place concrete.

2. Division 7 for water-repellent coating and joint sealers.

3. Division 5 for miscellaneous metals.

1.2 SUBMITTALS

A. Shop drawings: Erection drawings showing details of construction, reinforcement, anchorage, jointing and erection marks. Include the following.

1. Unit shapes (elevations and sections) and dimensions.

a. Thickness of facing and GFRC backing.

b. Finishes.

c. Joint and connection details.

d. Lifting and erection details.

e. Steel support-frame system.

f. Location and details for hardware attached to structure.

g. Size, location, and details of flex and gravity anchors.

h. Other items sprayed in units.

i. Sequence of erection for special conditions.

j. Relationship to adjacent materials.

k. Description of loose, cast-in, and field-applied hardware.

2. Test reports for each test board sample.

B. Preliminary samples: Before production of any precast elements, including sample panel specified below, submit four 12 by 12-inch samples showing preliminary finish, texture and color.

C. Data: Back-up test data on which GFRC design is based and data on GFRC insert and anchor tests.

D. Complete design calculations for all precast units and their connections, including loads used in design, signed by a California-licensed civil or structural engineer.

E. Certificates of compliance: Required for GFRC constituent materials and primary metal framing components to indicate compliance with specified and referenced requirements.

1. Submit before such materials are used.

F. Test and inspection reports:

1. Submit for GFRC mix designs before commencement of production work.

2. Submit for GFRC production work, and for structural welding, as work progresses and at intervals determined before commencement of Work.

G. Mix description: Detailed description of GFRC mix used for approved units.

H. Deferred approval:

1. The minimum "Design/Build" requirements for the Contractor to complete the design of deferred approval items. Contractor shall also comply with any additional requirement imposed by DSA.

2. This Section outlines the minimum information that is required for the deferred approval submittals in order to allow Architect and Engineers of Record to verify that the submittal is in conformance with the overall intent of the design and Contract Documents.

a. Contractor is responsible to revise Documents as needed to resolve all comments from the Architect and Engineers of Record prior to DSA submittal.

3. These submittals after review by Architect and Structural Engineer of Record shall be submitted to DSA by the Contractor for review and approval. DSA approval of submittal is required prior to fabrication and installation of materials and systems.

a. Contractor is responsible for participation in and completion of DSA review and approval process for all deferred approval items.

4. Engineering:

a. Accommodate all loads, thermal expansion (as may be anticipated) and building movement due to live load deflection, floor to floor shortening, and long term dead load deflection, without permanent damage to the GFRC panels and the main structure. Contractor shall obtain all necessary project data and make provisions in the system. The amount of movement that is anticipated by the Contractor shall be identified on the submittal.

b. Fasteners and connections are shown schematically. Engineer shall determine final types and sizes.

c. Connections to the structure shall not impose any eccentric loading or induce twisting or warping to the structural members.

d. Connections to the structure shall be able to accommodate misalignment of the steel structure within the limits allowed by AISC tolerances.

e. The general design concept shown shall be maintained without increasing or decreasing sizes of the mullions or altering profiles and alignments shown.

f. Change or redesign of the structure to accommodate the GFRC panel system shall be at the contractor's cost and be the responsibility of the contractor's engineer. These changes are subject to the Architect/Structural Engineer's and DSA approval.

1.3 QUALITY ASSURANCE

A. Manufacturer's qualifications:

1. Certified by the Precast/Prestressed Concrete Institute Plant Certification Program. Manufacturer shall be certified at time of bidding. Certification shall be in Group G.

2. When requested by the Architect, submit the following:

a. Written evidence of having experienced personnel, physical facilities, and established quality control procedures.

b. Evidence of compliance with Paragraph 1 above.

3. Erector qualifications: Regularly engaged for at least 5 years in erection of GFRC units similar to those required for the Project, and the present erection management capability sufficient to erect the required units without causing delays.

B. Welders qualification: In compliance with AWS D1.1 and D1.4.

C. Engineering: Contractor shall be responsible for the engineering of the units and their attachment to the building structural frame, and for obtaining DSA approval of same and paying costs and fees therefor. Engineer units for the following.

1. To accommodate all loads, and thermal, seismic, and building movements without permanent damage to the precast units, the supporting structure.

2. To permit noiseless movement of the precast units caused by temperature variations of 180 deg. F.

3. Fasteners and connections are shown schematically. Final types and sizes shall be determined by a California-licensed professional engineer employed by the Contractor.

   a. In no case shall the fasteners or connections conflict with or require revision of the finish profiles of the precast units or the supporting work.

   b. Connections to the structural frame shall not impose any eccentric loading, or induce twisting or warping.

   c. Connections to the structural frame shall be able to accommodate misalignment of the steel structure within limits allowed by the AISC tolerances.

   d. Maintain general design concept shown without increasing or decreasing sizes of members or altering profiles and alignment shown.

   e. Change or redesign of the structural support system to accommodate the precast concrete work shall be at the Contractor's cost and is the responsibility of the Contractor's engineer and are subject to DSA, Architect and Project Structural Engineer approval.

D. Testing: In compliance with testing provisions of PCI, Recommended Practice for Glass Fiber Reinforced Concrete Panels, Appendix A and MNL 128.

E. Testing agency: Capable of performing tests as indicated in section 1.2, E of the above standard, and in compliance with applicable ASTM standards.

F. Sample panel:

   1. After approval of preliminary samples, specified hereafter, provide where directed one full size sample section cast in actual mold showing all pertinent features of precast elements with specified finish.

   2. This sample will be inspected at the casting yard or the job site by the Architect and, after approval, shall become the standard for color, texture and workmanship.

   3. After approval the approved sample panel may be incorporated into the Work when properly identified for future reference.

G. Source quality control: The GFRC manufacturer shall have an established quality control program in effect prior to letting of the Contract. If requested, a copy of this program shall be submitted to the Architect.

   1. The quality control program shall, as a minimum, monitor glass content, spray rate, product physical properties, and curing period and conditions. Results of such quality control tests and evaluation of such tests shall be available to the Architect upon request.

   2. Testing of materials and inspection of production techniques shall be the manufacturer's responsibility.

   3. Preparation of test specimens and test procedures shall be in compliance with PCI-MNL 28, Recommended Practice for Glass Fiber Reinforced Concrete Panels, Chapter 8 "Quality Control, and Appendix A".

1.4 HANDLING

A. Transport: Transport and handle precast units using equipment which will protect units from staining and damage. Do not place precast units on ground.

B. Handling: Lift and support units at the designated lift points only.

C. Storage:

1. Store precast units to protect them from contact with soil and from other damage, in same position as transported, with non-staining, resilient supports located in same positions as when transported.

2. Store precast units on firm, level, and smooth surfaces. Place stored units so that identification marks are visible.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Clark Pacific (basis of design), Walters and Wolf Precast, or Willis Construction Inc.

2.2 MATERIALS

A. Glass fiber reinforced concrete:

1. Portland cement: ASTM C 150, Type I, II or III, of the color selected to match control sample on file in Architect's office.

a. For surfaces exposed to view in the Work use same brand, type, and source of supply throughout the GFRC production.

2. Aggregates:

a. Sand: Washed and dried silica sand or equal with a history of successful use in GFRC. All sand shall pass through a No. 20 sieve.

b. Facing aggregate (if used): Conform to ASTM C 33 except for gradation. Aggregates shall be clean, hard, strong, durable, inert, and free of staining or deleterious material. Match sample on file in Architect's Office.

3. Water: Free from deleterious matter that may interfere with the color, setting, or strength of the concrete.

4. Admixtures: Conforming to ASTM C 260, C 494 or C 618.

5. Coloring agent: Harmless to concrete set, strength and durability, stable at high temperature, and sunlight fast and alkali_resistant.

6. Glass fiber: Alkali-resistant fibers specifically formulated for compatibility with aggressive alkaline environment of Portland cement based composites and complying with PCI MNL-128.

B. Sprayed-in anchors and loose attachment hardware:

1. Materials:

a. Structural steel: ASTM A 36.

b. Anchor bolts: ASTM A 307 or A 325.

2. Finish:

a. Shop primer: FS TT-P-86, oil-base paint type 1.

b. Hot-dip galvanized: ASTM A 153.

C. Steel subframing system: ASTM A 36, galvanized or painted in compliance with manufacturer's standard.

1. General: Standard prefabricated light-gage structural framing components by Clark Western Cemco Angeles Metal Systems or Unimast, Inc.

2. Steel: ASTM A 570, Grade 50, 50,000 psi minimum yield strength.

3. Studs:

a. Type: Cee channel, punched web.

b. Size: 16-gage, depth as indicated, in single-length units only for full-panel height or width where used, unless otherwise indicated or approved.

c. For windows and doors: Provide support system as required. Coordinate with applicable Sections for requirements.

4. Runners (track):

a. Type: Open Cee channel, unpunched web.

b. Size: To match studs, in single-length units only for full-panel height or width where used, unless otherwise indicated or approved.

5. Finish: Manufacturer's standard factory-applied rust-inhibitive primer.

6. Welding electrodes: As recommended by framing manufacturer.

2.3 MIXES

A. Trial mix: Prepare trial mix to insure physical properties.

B. GFRC mix: Portland cement, water, glass fibers, sand, and admixtures.

C. Facing mix: Of sufficient thickness to achieve the desired finish without exposing glass fibers. Add coloring agent, not to exceed 10 percent of cement weight, in the proportion required to match approved sample.

2.4 FABRICATION

A. Forms:

1. Rigid and constructed of materials that will result in finished products conforming to the profiles, dimensions and tolerances specified.

2. Exposed surface of panels shown with a fractured rib finish shall be formed using the following form liner:

a. Pattern 16950, Adams's Rib by Fitzgerald Formlines, corrugations with 0.75 in. depth at 1.5 in. o.c. Use form constructed of Vac-U-Form polystyrene for single uses and Graylastic elastomeric urethane for multiple-uses bonded to 3/4 in. plywood formwork. Panels shall be a minimum of 10 ft. long x 4 ft. wide.

3. Apply release agents, which will not stain the concrete, and compatible with the panel finish and sealants used. Use according to manufacturer's instructions.

B. Proportioning and mixing:

1. Measure mix constituents carefully to achieve the desired mix proportions.

2. Measure the glass fiber and cement slurry to the spray head to achieve the desire mix proportion and glass content. Monitor in compliance with standard procedures of PCI, Recommended Practice for Glass Fiber Reinforced Concrete.

3. Maintain cleanliness of equipment and working procedure at all times.

C. Insert and embedments:

1. Embed inserts in GFRC bosses to develop their full strength.

2. Test inserts to establish test data for use in design.

3. Rigid embedded items bonded to the GFRC shall not create undesirable restraint to volume changes.

D. Finish of exposed surfaces: Medium sand blast matching approved sample panel.

E. Curing: In compliance with manufacturer's accepted method.

F. Allowable tolerances: Manufacture units so that each panel complies with the dimensional tolerances listed below. For dimensional tolerances not listed below, those listed in PCI MNL 117, Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products, apply.

1. Dimensional tolerances of finished units:

a. Overall height and width of units measured at the face adjacent to the form:

1) 10 feet or under: Plus 1/8 inch.

2) 10 to 20 feet: Plus 1/8 inch, minus 3/16 inch.

3) 20 to 30 feet: Plus 1/8 inch, minus 1/4 inch.

4) Each additional 10 feet: 1/16 inch/10 feet or plus 1/4 inch maximum.

b. Thickness:

1) Skin thickness: Plus 1/4 inch, minus 0 inch.

2) Side return thickness: Plus 3/8 inch, minus 0 inch.

3) Panel depth: Plus 3/8 inch, minus 1/8 inch.

c. Angular deviation of plane of side mold: 1/32 inch/3 inches depth or 1/16 inch total, whichever is greater.

d. Variation from square or designated skew (difference in length of the 2 diagonal measurements): 1/8 inch/6 feet or 1/4 inch total, whichever is greater.

e. Length and width of blockouts and opening within one unit: Plus 1/4 inch.

2. Position tolerances: For sprayed-in items measured from datum line locations as shown on the approved erection drawings.

a. Inserts bolts and pipe sleeves: Plus 3/8 inch.

b. Blockouts: Plus 1/4 inch.

c. Flashing reglets, at edge of panel: Plus 1/4 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions and measurements affecting the work of this Section at site.

B. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 ERECTION

A. Setting:

1. Lift GFRC units at designated points only. Use caution not to induce stresses in the units that would damage them.

2. Set GFRC units level, plumb, square and true, within allowable tolerances, and with joints of uniform width.

B. Supports and bracing: Provide temporary supports and bracing required to maintain position, stability and alignment before units are permanently connected.

C. Fastening:

1. Fasten GFRC units in place by bolting or welding, or both, as indicated on approved shop drawings.

2. Field welding shall be done by qualified welders using equipment and materials compatible with the base metal.

3. Protect units from damage caused by field welding or cutting operations by providing non-combustible shields as necessary during these operations.

D. Tolerances of erected units: Tolerances for installed GFRC units shall be non_cumulative and as listed below. For erection tolerances not listed below, those listed in PCI MNL-117, Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products, apply.

1. Face width of joint:

a. Panel dimension 10-foot or less: Plus 3/16 inch.

b. Panel dimension 10 to 20 feet: Plus 3/16 inch, minus 1/4 inch.

c. Panel dimension greater than 20 feet: Plus 1/4 inch, minus 5/16 inch.

2. Warpage: Maximum permissible warpage of one corner out of the plane of the other 3 shall be 1/16 inch/ft. distance from the nearest adjacent corner, or 1/8 inch total after installation.

3. Bowing: Not over L/360, where L is the panel length.

3.3 PATCHING

A. Patching will be permitted only, if in the Architect's opinion, the results are satisfactory; otherwise replace damaged panels with new ones.

3.4 CLEANING/PROTECTING

A. Cleaning methods shall be acceptable to the fabricator.

B. After installation, clean soiled GFRC surfaces with detergent and water, using fiber brush and sponge and rinse thoroughly with clean water.

C. Use extreme care to prevent damage to GFRC surfaces and adjacent materials.

D. Thoroughly rinse soiled surfaces with clean water immediately after using cleaner.

E. Protect installed units by covering with impermeable tarpaulins where they might be stained by subsequent work performed in close proximity to GFRC.

END OF SECTION

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SECTION 07110
WATERPROOFING MEMBRANE TYPE A

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Cementitious waterproofing on walls and floor of elevator pits.

B. Related work:

1. Division 7 for all other waterproofing membranes.

1.2 PERFORMANCE REQUIREMENTS

A. Provide waterproofing that prevents the passage of water thru waterproofed surfaces.

1.3 SUBMITTALS

A. Data: From waterproofing manufacturer for proposed products, and their installation method.

B. Shop drawings: Details for waterproofing construction joints and penetrations in waterproofed surfaces.

C. Warranty: Sample copies of warranty for assembly to be furnished under this Section, clearly defining terms, conditions, and time periods for the warranty.

D. Letter of acceptance: From the manufacturer to verify its acceptance of the applicator and acceptance of substrates as satisfactory to receive this work.

1.4 QUALITY ASSURANCE

A. Applicator's qualifications: Firm with a minimum of 3 consecutive years of experience in application of the waterproofing proposed for use on projects of similar size and scope.

B. Pre-installation meeting:

1. Prior to start of installation arrange a pre-installation meeting between the product manufacturer authorized representative, the Contractor, the Architect, and the installer to review Project conditions, the Drawings, Specifications and the manufacturer's data.

2. If more than one trade will be responsible for the successful performance of the work of this Section, these trades shall attend the meeting.

3. Record meeting minutes and distribute copy to all concerned, and the Architect, within 7 days after the meeting.

1.5 HANDLING

A. Limitation: Do not use materials past the manufacturer's recommended shelf life.

1.6 PROJECT CONDITIONS

A. Provide ventilation, heaters, humidifiers and water sprays as required to reach and maintain the surface and air temperatures, and humidity within the limits specified for the installation of the waterproofing materials.

B. Apply waterproofing only when air and concrete temperatures are above 40-degree F. Do not apply to frost-covered surfaces.

C. Provide sufficient light to properly perform this work.

1.7 WARRANTY

A. Warrant waterproofing against faulty materials and workmanship for 5 years after Substantial Completion.

B. Make repairs required during this period at no cost to the District.

PART 2 - PRODUCTS

2.1 MANUFACTURERS/SYSTEMS

A. Waterproofing materials: Basis of design is for Kóester American Corp. products. Other acceptable manufacturers/products include the following.

1. Hey'Di K-11 by Tamms Industries, Inc.

2. Permaquik Super 200 by American Permaquick Corp.

3. Planiseal 88 by Mapei.

4. Vandex Super by Vandex Sales & Services, Inc.

5. Xypex by Xypex Chemical Corp.

2.2 MATERIALS

A. Kóester SB Bonding Emulsion.

B. Waterproofing base: NB II White.

C. Accessory materials: KD 1 Base, KD 2 Blitz, and KD 3 Sealer.

D. Water: Potable and fresh.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions affecting the work of this Section at site.

B. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 APPLICATION

A. Comply with the waterproofing manufacturer's installation instructions.

3.3 PROTECTION/CURING

A. Maintain waterproofed areas above 50-degree.

B. During the curing period protect waterproofing from wind, rain, and other detrimental environmental conditions.

3.4 FIELD QUALITY CONTROL

A. Request the manufacturer's presence as required to review installation procedures and completed work and to issue warranty specified.

B. Unsatisfactory conditions disclosed by the manufacturer's visits to the site shall be promptly and satisfactorily repaired and the areas re-inspected by the manufacturer before work starts or resumes in affected areas.

C. After completing installation of waterproofing, plug drain and other outlets, and fill the pits with water. Let water stand undisturbed for 48 hours and monitor water level.

D. Repair leaks and retest the membrane until proven watertight.

END OF SECTION

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SECTION 07112
WATERPROOFING MEMBRANE TYPE B

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Sheet membrane waterproofing under standing seam metal roofing.

2. Primers, adhesives, sealants, and mastic.

B. Related work:

1. Division 7 for all other waterproofing membranes.

2. Division 5 for sheet waterproofing under copings.

1.2 SUBMITTALS

A. Data: List of proposed materials and manufacturer's data for each.

B. Shop drawings: Large scale details of reinforcement, terminations and penetrations through waterproofed surfaces.

C. Letter of acceptance: From the manufacturer to verify its acceptance of the applicator and acceptance of substrates as satisfactory to receive this work.

1.3 QUALITY ASSURANCE

A. Applicator qualifications: Firm with a minimum of 3 consecutive years of experience in application of similar waterproofing proposed for use on projects of similar size and scope.

B. Pre-installation meeting: Prior to start of installation, arrange a pre-installation meeting between the manufacturer of the waterproofing membrane and the trade responsible for their installation.

C. Manufacturer inspections:

1. Request the manufacturer's presence before start of this work to verify substrate acceptability, and as required thereafter to review installation procedures and completed work, and to issue warranty specified.

2. Unsatisfactory conditions disclosed by the manufacturer's visits to the site shall be promptly and satisfactorily repaired and the areas re-inspected by the manufacturer before work starts or resumes in affected areas.

D. Mockup: Provide waterproofing for the mock-up specified in Section 07610.

1.4 HANDLING

A. Storage: Store rolled goods on end.

1.5 WARRANTY

A. Warrant waterproofing against faulty materials and workmanship for 5 years after installation.

B. Make repairs required during the warranty period at no cost to the District.

1.6 JOB CONDITIONS

A. Apply waterproofing materials only in dry weather when the outside temperature is above 40 deg. F.

B. Do not apply waterproofing materials to damp, wet or frost covered surfaces.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Waterproofing membrane under standing seam metal roofing: One of the following.

1. Grace Ultra by WR Grace & Co.

2. CCW WIP 300HT by Carlisle Coatings & Waterproofing, Div. of Carlisle Companies Inc.

3. PW 100/40 by Protecto Wrap.

B. Mastic, sealant, primer and other miscellaneous materials required for installation of the membrane: As recommended by the membrane manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect surfaces to be waterproofed.

B. Make sure that conditions detrimental to the proper and timely completion of this work are corrected before proceeding with installation.

C. Check that areas to be waterproofed are clean, dry, and smooth.

3.2 INSTALLATION

A. Install in compliance with manufacturer's printed instructions and the following.

B. Install the membrane horizontally in longest length possible with lapped joints, minimum 2 in., to provide a continuous water barrier.

C. Lap membrane shingle fashion on or under metal flashings, as applicable.

D. Finish penetrations and terminations as indicated on the approved manufacturer's details, or recommended by the manufacturer's representative.

E. Roll membrane for complete adhesion to substrate as soon as possible after installation.

F. Seal membrane edges continuously.

G. Protection:

1. Keep traffic on completed membrane to a minimum.

2. Use caution not to damage the membrane.

3. Schedule installation to keep membrane exposed to UV rays for the shortest time possible and shall not exceed manufacturer's recommended exposure time.

END OF SECTION

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SECTION 07114
WATERPROOFING MEMBRANE TYPE C

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Waterproofing membrane on gypsum or plywood sheathing on all non-vertical exterior walls above grade, except where doors, louvers and windows occur, and elsewhere where indicated on the Drawings.

2. Waterproofing at window sills and other ledges.

3. Primers, liquid waterproofing, adhesives, sealants, and mastic.

B. Related work:

1. Division 7 for all other waterproofing membranes.

2. Division 7 for sheet waterproofing under copings.

1.2 SUBMITTALS

A. Data: List of proposed materials and manufacturer's data for each.

B. Shop drawings: Large scale details of reinforcement, terminations and penetrations through waterproofed surfaces.

C. Letter of acceptance: From the manufacturer to verify its acceptance of the applicator and acceptance of substrates as satisfactory to receive this work.

1.3 QUALITY ASSURANCE

A. Applicator qualifications: Firm with a minimum of 3 consecutive years of experience in application of similar waterproofing proposed for use on projects of similar size and scope.

B. Pre-installation meeting:

1. Prior to start of installation arrange a pre-installation meeting between the manufacturer of the waterproofing membrane and the trade responsible for their installation.

2. If more than one trade will be responsible for work of this Section, or the substrates over which the waterproofing materials will be applied to, or interfaced with, these trades shall attend the meeting.

C. Manufacturer inspections:

1. Request the manufacturer's presence before start of this work to verify substrate acceptability, and as required thereafter to review installation procedures and completed work, and to issue warranty specified.

2. Unsatisfactory conditions disclosed by the manufacturer's visits to the site shall be promptly and satisfactorily repaired and the areas re-inspected by the manufacturer before work starts or resumes in affected areas.

D. Mockup: Provide waterproofing for the mock-up specified in Section 09220.

1.4 HANDLING

A. Storage: Store rolled goods on end.

1.5 WARRANTY

A. Warrant waterproofing against faulty materials and workmanship for 5 years after installation.

B. Make repairs required during the warranty period at no cost to the District.

1.6 JOB CONDITIONS

A. Apply waterproofing materials only in dry weather when the outside temperature is above 40 deg. F.

B. Do not apply waterproofing materials to damp, wet or frost covered surfaces.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Waterproofing membrane on gypsum and plywood sheathing and at sills and ledges: One of the following.

1. Perm-A-Barrier Wall Membrane and Perm-A-Barrier Detail Membrane for walls and flashings by WR Grace & Co.

2. CCW-705 by Carlisle Coatings & Waterproofing.

3. Air-Shield by WR Meadows.

B. Mastic, sealant, primer and other miscellaneous materials required for installation of the membrane: As recommended by the membrane manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect surfaces to be waterproofed.

B. Make sure that conditions detrimental to the proper and timely completion of this work are corrected before proceeding with installation.

C. Check that areas to be waterproofed provide continuous backing and are prepared in accordance with manufacturer's requirements and recommendations and are clean, dry, and smooth.

3.2 INSTALLATION

A. Install in compliance with manufacturer's printed instructions and the following.

B. Prime gypsum sheathing when so recommended by the manufacturer.

C. Install the membrane horizontally in longest length possible with lapped joints, minimum 2 in., to provide a continuous water barrier. Lap membrane 2 in. over rubber sheeting.

D. Lap membrane shingle fashion on or under metal flashings, as applicable.

E. Finish penetrations and terminations as indicated on the approved manufacturer's details, or recommended by the manufacturer's representative.

F. Roll membrane for complete adhesion to substrate as soon as possible after installation.

G. Seal membrane edges continuously.

H. Protection:

1. Use caution not to damage the membrane.

2. Schedule installation to keep membrane exposed to UV rays for the shortest time possible and shall not exceed manufacturer's recommended exposure time.

END OF SECTION

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SECTION 07116
WATERPROOFING MEMBRANE TYPE D

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Hot, fluid-applied waterproofing membrane at between slab at bridge location.

2. Reinforcement and accessories.

B. Related work:

1. Division 7 for all other waterproofing.

1.2 SUBMITTALS

A. Data: Manufacturer instructions for waterproofing material installation, together with detailed instructions for all special conditions encountered.

B. Shop drawings: Indicate flashing conditions at penetrations in, corners and other points of stress, and terminations of the waterproofing membrane.

C. Letter of acceptance: Before proceeding with application, submit letter from the manufacturer to verify acceptance of applicator, and the substrates as satisfactory to receive this work.

D. Warranty: Sample copies of warranties for assemblies to be furnished under this Section, clearly defining terms, conditions, and time periods for the warranty.

1.3 QUALITY ASSURANCE

A. Applicator's qualifications: Firm acceptable to the waterproofing manufacturer and with a minimum of 3 consecutive years of experience in application of the waterproofing proposed for use on projects of similar size and scope.

B. Pre-installation meeting:

1. Prior to start of installation arrange a pre-installation meeting between the waterproofing manufacturer authorized representative, the Contractor, the Architect, and the installer to review Project conditions, the Drawings, Specifications and the manufacturer data.

2. If more than one trade will be responsible for the successful performance of the work of this Section, these trades shall attend the meeting.

3. Record meeting minutes and distribute copy to all concerned, and the Architect, within 7 days after the meeting.

1.4 HANDLING

A. Handling: Handle products to avoid damage to container and contamination.

B. Storage: Do not store for long periods in direct sunlight.

1.5 JOB CONDITIONS

A. Where natural ventilation is insufficient, provide positive ventilation during the application and drying periods.

B. Apply waterproofing only on dry, sound, frost-free surfaces.

C. Protect adjacent surfaces and flora from staining and other damages by covering with waterproof coverings lapped and securely taped.

1.6 WARRANTY

A. Warrant waterproofing to be free of defect in materials and workmanship for 10 years after Substantial Completion.

B. Make necessary repairs during this period at no cost to the District.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of design is American Hydrotech, Inc. Other manufacturers with similar acceptable systems include the following:

1. American Permaquik.

2. Bakelite Thermosets Ltd.

3. Carlisle Coatings & Waterproofing.

4. Monsey Bakor, Inc. (Henry Co.).

2.2 MATERIALS

A. Membrane: Liquid Membrane MM6125-EV by American Hydrotech, Inc.

1. Surface conditioner: Cut-back asphalt complying with ASTM D 41.

2. Reinforcement and flashings: Flex-Flash UN and F.

B. Protection course: Hydroflex 30.

C. Drainage board: Hydrodrain 300.

D. Other materials: As recommended by the membrane system manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be waterproofed for conditions that would adversely affect the execution, permanence and quality of the waterproofing membrane.

B. Verify that work performed by other trades complies with the waterproofing manufacturer's recommendations.

C. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 PREPARATION/APPLICATION

A. Prepare surfaces to be waterproofed and apply waterproofing in compliance with its manufacturer's instructions.

1. Establish membrane termination, where it would be visible, with masking tape. Install tape level, and at the same elevation in each area being waterproofed.

2. Prime surfaces to be waterproofed.

3. Reinforce cold joints, cracks, control joints, penetrations and terminations with EPDM/Butyl laminate embedded in and covered with fluid-applied membrane.

4. Completed membrane shall have an average thickness of 180 mils and a minimum thickness of 125 mils.

B. Protection: After inspections and tests are completed, cover the membrane with a layer of protection board embedded in the membrane. Lap seams 3 inches and seal with waterproofing membrane.

3.3 FIELD QUALITY CONTROL

A. Verify the wet film thickness of the waterproofing during application by numerous measurements taken with a wet film gage.

1. Inspect surfaces coated to insure that areas have not been missed.

2. Repair missed areas and holidays in the membrane.

B. After completing installation and just prior to installation of wearing surface over membrane but not before the membrane has cured, plug drains and other outlets, dam areas that cannot be otherwise partitioned, and test membrane in compliance with ASTM D 5957; in planters fill to top of waterproofing.

C. Monitor water level, repair leaks where they occur and retest the membrane until proven watertight.

3.4 PROTECTION

A. Use caution to avoid damage to the membrane at all times.

B. If any portion of membrane becomes damaged, repair such damaged area as approved by the Architect.

C. Protect membrane as necessary until wearing surfaces are installed.

END OF SECTION

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SECTION 07118
WATERPROOFING MEMBRANE TYPE E

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Trowel-applied waterproofing membrane under floor ceramic tile.

B. Related work:

1. Division 7 for all other waterproofing membranes.

1.2 REFERENCES

A. ANSI A118.10, Load Bearing, Bonded, Waterproof Membranes for Thinset Ceramic Tile and Dimensional Stone Installation.

1.3 SUBMITTALS

A. Data: List of proposed materials and manufacturer data for each.

B. Samples:

1. 12-inch samples of waterproofing membrane mounted on plywood.

2. Step the application to show the system components.

C. Shop drawings: Large scale details of reinforcement, terminations, and drain and other penetrations through waterproofed surfaces.

D. Certification: Letter from the manufacturer to verify its acceptance of the applicator and acceptance of substrates as satisfactory to receive this work.

E. Warranty: Sample copies of warranty for waterproofing membrane to be provided under this Section, clearly defining terms, conditions, and time periods for the warranty.

1.4 QUALITY ASSURANCE

A. Applicator's qualifications: Firm with a minimum of 3 consecutive years of experience in application of the waterproofing proposed for use on projects of similar size and scope.

B. Manufacturer's inspection: Request the manufacturer presence as required to review installation procedures and completed work, and to issue warranty specified.

1. If more than one trade will be responsible for the successful performance of the work of this Section, these trades shall attend the meeting.

2. Unsatisfactory conditions disclosed by the manufacturer's visits to the site shall be promptly and satisfactorily repaired and the areas re-inspected by the manufacturer before work starts or resumes in affected areas.

1.5 JOB CONDITIONS

A. Apply waterproofing materials only in dry weather when the temperature in the space to be waterproofed and the substrate to be waterproofed are above 40-degree F.

B. Do not apply waterproofing materials to damp, wet or frost covered surfaces.

C. Illuminate work areas during installation to provide the same or greater level of illumination required to properly perform this work, and as will occur in the room or space after the building is in operation.

1.6 WARRANTY

A. Warrant waterproofing against faulty materials and workmanship for 10 years after Substantial Completion.

B. Make repairs, including removal and re-installation of tile, required during the warranty period at no cost to the District.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Waterproofing membrane: One of the following provide the entire tile installation system, including the waterproofing membrane, is made of products manufactured by a single manufacturer, and that the warranty specified is provided.

1. Triple Flex by TEC Specialty Products/HB Fuller (basis of design).

2. PRP 315 (reinforced) by Mapei.

3. 9235 by Laticrete.

B. Membrane: TEC Triple Flex TA-324.

C. Reinforcement: TEC Waterproofing Mesh (Part C).

D. Other materials: Compatible with the membrane and as recommended by the membrane manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be waterproofed.

B. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 PREPARATION

A. Check that areas to be waterproofed slope to drain are clean and dry.

B. Fill voids and cracks with materials compatible with membrane components. Remove ridges and fins, leaving a smooth, clean surface.

C. Check that pipes, conduits and other penetrations of waterproofing membrane have been installed before beginning this work.

3.3 INSTALLATION

A. Application: Install membrane over the tile setting bed, in compliance with the membrane manufacturer instructions and the following.

B. Membrane application: Apply a continuous membrane at least 45 mils over the entire surface.

1. Using the flat side of a 3/16-inch V-notch trowel, "key in" a thin coat of membrane to fill all surface voids.

2. Immediately afterwards, apply additional material using the notched side of the trowel held at approximately a 45-degree angle to the substrate.

3. Again using the flat side of the trowel, flatten the ridges to form a smooth, continuous layer approximately 45 to 50 mils DFT (1/18 to 1/20 inch). Make sure there are no voids, bubbles or breaks in the membrane after curing; if any should appear, apply a second coat to fill the imperfections.

4. Periodically check membrane with a wet-film gage to verify film thickness.

C. Mesh application (flashing):

1. Construction details:

a. Flashing with TEC Waterproofing Mesh (Part C) at substrate joints - inside corners, outside corners, anywhere vertical surfaces meet horizontal surfaces such as curbs, bench seats, columns, etc., and where dissimilar materials meet.

b. Pre-coat the substrate intersections 4 inches on each side with Triple Flex membrane compound. Then fully embed Part C mesh 3 inches in both directions into the pre-coated areas, and trowel-on additional Triple Flex membrane to completely cover and saturate the mesh. The minimum thickness of the flashing shall be 3/32 inch. Allow the flashing to dry before full application of waterproof membrane.

c. Where 2 pieces of mesh meet, overlap the mesh 3 inches at the ends.

2. Drain details:

a. Extend Triple Flex membrane to the bottom drain flange, with sufficient coverage to channel water flow to and down the drain. Do not cover weep holes with membrane.

b. Install a continuous 45-mil thick membrane to cover the substrate and up to the drain opening, making sure to embed TEC Waterproofing Mesh (Part C) around the drain opening. The flange shall clamp down on the membrane, with the weep holes unobstructed.

3. Joint details:

a. Interior control joints: Verify that joint is clean and free from debris. Next, fill the joint with Triple Flex membrane compound and spread 4 inches on either side, embedding the waterproofing mesh over the joint. Install the membrane over the entire surface, ensuring a continuous 45 to 50-mil film as specified in "Membrane Application" above Place bond breaker tape over the joint and install tile without bridging the joint. After tile is set, fill joint with sealant.

3.4 FIELD QUALITY CONTROL

A. Request the manufacturer's presence as required to review installation procedures and completed work, and to issue warranty specified.

B. Unsatisfactory conditions disclosed by the manufacturer visits to the site shall be promptly and satisfactorily repaired and the areas re-inspected by the manufacturer before work starts or resumes in affected areas.

C. After completing installation of waterproofing, and just prior to installation of tile, plug drains and other outlets, dam areas that can not be otherwise partitioned, and test entire membrane area in compliance with ASTM D 5957.

D. Repair leaks and retest the membrane until proven watertight.

END OF SECTION

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SECTION 07181
MECHANICAL ROOM TRAFFIC COATING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Traffic coating in mechanical rooms and elevator equipment rooms.

1.2 DEFINITIONS

A. Adhesion: Adhesion is defined as tenacious gripping of traffic coating to substrate such that, upon attempt of its removal, the traffic coating fails cohesively and cannot be cleanly extracted from the substrate.

B. Cohesion: Cohesion is defined as the ability of the elements of the traffic coating to stick or hold together in a mass that resists separation from each other.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide installed traffic coating system and flashings that remain watertight; do not permit the passage of water; and resist foot traffic, thermally induced movement, and exposure to weather without failure.

B. Material compatibility: Provide traffic coating materials compatible with one another under conditions of service and application required, as demonstrated by manufacturer based on testing and field experience.

1.4 SUBMITTALS

A. Data: Submit manufacturer's data on coating proposed for use, together with details of flashing at penetrations, coves and corners, and preparation and installation instructions.

B. Samples: Submit 6-inch square, of the selected color of elastomeric coating mounted on plywood or hardboard.

C. Letter of acceptance: Submit letter from the manufacturer verifying its acceptance of the applicator and acceptance of substrates as satisfactory to receive this work.

D. Warranty: Submit sample copies of warranty for assembly to be furnished under this Section, clearly defining terms, conditions, and time periods for the warranty.

E. Closeout: Submit the following.

1. Recommendations for periodic inspections, and copy of care and maintenance recommendations.

2. Identify common causes of damage with instructions for temporary patching until permanent patching can be made.

1.5 QUALITY ASSURANCE

A. Applicator's qualifications: Firm acceptable to the coating manufacturer and with a minimum of 3 consecutive years of experience in application of the coating proposed for use on projects of similar size and scope.

B. Flame spread: Coating shall carry a Class I rating (NFPA Class A) when tested in accordance with ASTM A 84.

C. Coefficient of friction: Coefficient of friction of completed coating shall be not less than 0.6 for level surfaces and 0.8 for ramps, when tested in compliance with ASTM C 1028 (field test) or ASTM D 2047 (laboratory test).

1.6 JOB CONDITIONS

A. Environmental conditions:

1. Do not proceed with application when temperature of the surfaces to be coated is less than 50-degree F and when ambient temperature is, or will be, below 40-degree F before coating cures.

2. Do not start application unless surfaces to receive coating are clean and dry, within acceptable temperature limits.

B. Protection: Protect adjacent surfaces from overspray. Use drop cloths, masking or other appropriate form of protection, as required.

C. Lighting: Illuminate work areas during installation to provide the same or greater level of illumination required to properly perform this work, and as will occur in the room or space after the building is in operation.

1.7 WARRANTY

A. Warrant work of this Section against defective materials and workmanship for 5 years after Substantial Completion.

B. Replace or repair defective coating during the warranty period at no cost to the District.

C. Defective coating is defined as follows:

1. Loss of waterproofing integrity, including intrusion of water, oils, gasoline, grease into deck substrate.

2. Adhesive and/or cohesive failure.

3. Hardening beyond the Shore A hardness represented by the manufacturer's data.

4. Cracking or brittleness, other than caused by substrate movement.

5. Abrasion or tearing failure resulting from normal traffic.

PART 2 - PRODUCTS

2.1 MANUFACTURE/SYSTEM

A. Basis of design is "Solvent Free" Peda-Gard (70430) coating by the Neogard Corp.

B. Other acceptable systems/manufacturers include the following:

1. CCW-5413 by Carlisle Coating & Waterproofing.
2. Dura-Dek 900 by Pecora Corp.
3. Elasto Deck 6500 VT, 100 percent solids by Pacific Polymers.
4. Vulkem 350/351NF by Tremco, Inc.

2.2 MATERIALS

A. Primer: 70714/70715.

B. Sheet flashing: Uncured neoprene, 60 mils thick.

C. Coating: 70430, of the color selected by the Architect from the manufacturer's palette.

D. Incidental materials: As recommended by the coating manufacturer.

PART 3 - EXECUTION

3.1 COORDINATION/EXAMINATION/PREPARATION

A. Supervise the work of the concrete finisher to obtain finished concrete surfaces complying with the coating manufacturer's printed instructions.

B. Examine surfaces scheduled to receive coating for conditions that would adversely affect execution, permanence and quality of work of this Section.

C. Correct unsuitable conditions before proceeding with installation.

D. Mask adjoining surfaces not to be coated. Close off deck drains and other deck penetrations to prevent spillage and migration of liquid coatings.

3.2 APPLICATION

A. Prepare surfaces and apply coating in accordance with its manufacturer's instructions, except as modified in this Section.

B. Do not apply aggregates on vertical surfaces, and on top of equipment bases.

C. The finish coating system shall be waterproof, uniform in thickness, color and texture, seamless and free of holidays and ridges.

D. Minimum acceptable dry mil thickness is 30 dry mils (DFT).

3.3 FIELD QUALITY CONTROL

A. Request the manufacturer's presence as required to review installation procedures and completed work, and to issue warranty specified.

B. Unsatisfactory conditions disclosed by the manufacturer's visits to the site shall be promptly and satisfactorily repaired and the areas re-inspected by the manufacturer before work starts or resumes in affected areas.

C. Restore damaged areas to match adjacent areas as recommended by the manufacturer, and as approved by the Architect.

D. Protect traffic coating from damage and wear during remainder of construction period.

END OF SECTION

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SECTION 07190
WATER-REPELLENT COATING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Clear water-repellent coating on exposed surfaces of GFRC panels and exposed CMU.

B. Related work:

1. Division 9 for painting.

1.2 PERFORMANCE REQUIREMENTS

A. Provide water repellents with the following properties based on testing manufacturer's standard products, according to test methods indicated, applied to substrates simulating Project conditions using same materials and application methods to be used for Project.

1. Absorption: Minimum 90 percent reduction of absorption after 24 hours in comparison of treated and untreated specimens.

a. CMU: ASTM C 140.

b. Hardened concrete: ASTM C 642.

2. Water-vapor transmission: Maximum 10 percent reduction in rate of vapor transmission in comparison of treated and untreated specimens, ASTM E 96.

3. Water penetration and leakage through masonry: Maximum 90 percent reduction in leakage rate in comparison of treated and untreated specimens, ASTM E 514.

4. Durability: Maximum 5 percent loss of water repellency after 2500 hours of weathering in comparison to specimens before weathering, ASTM G 53.

5. Permeability: Minimum 80 percent breathable in comparison of treated and untreated specimens, ASTM D 1653.

6. Chloride-ion intrusion in concrete: Transportation Research Board, National Research Council's NCHRP Report 244, Series II tests.

a. Reduction of Water Absorption: 80 percent.

b. Reduction in Chloride Content: 80 percent.

B. Appearance: When compared visually to an untreated sample under same lighting conditions, the coating shall not change the color and sheen of the coated substrate, and shall be invisible after application and over the life of the building.

1.3 SUBMITTALS

A. Data: Manufacturer data of the proposed coating, including recommended coverage rates, include material test reports indicating and interpreting test results for compliance of water-repellent coating with criteria specified.

B. Samples: Of water-repellent coating applied to GFRC and CMU sample panels specified in Sections 03455 and 04220.

C. Coating manufacturer:

1. Letter from the coating manufacturer to verify its acceptance of the applicator and acceptance of substrates as satisfactory to receive water-repellent coating.

2. Duplicate copies of manufacturer affidavit with each shipment of materials delivered to the jobsite certifying that material furnished complies with specified requirements.

1.4 QUALITY ASSURANCE

A. Applicator's qualifications: Firm with a minimum of 3 consecutive years of experience in application of the coating proposed for use, or similar coatings, on projects of similar size and scope, and licensed or approved in writing by the coating manufacturer.

B. Samples: When requested by the coating manufacturer, or necessary to adjust coating formulation, provide coating manufacturer with sufficient samples of substrate to be coated to determine exact formulation and coverage rates.

C. Pre-installation meeting:

1. Prior to start of installation, arrange a pre-installation meeting between the water-repellent manufacturer, the applicator, and related trades whose work will be in contact with the treated surface, including but not limited to joint sealers, windows and doors.

2. Record minutes of the meeting, file in the Project file, and send a copy to the Architect.

D. Manufacturer's inspections:

1. Obtain materials only from manufacturer who will send a qualified technical representative to the Project site for the following.

2. Before start of this work to verify substrate acceptability, and as required thereafter to review installation procedures and completed work, and to issue warranty specified.

3. Unsatisfactory conditions disclosed by the manufacturer's visits to the site shall be promptly and satisfactorily repaired and the areas reinspected by the manufacturer before work starts or resumes in affected areas.

E. Mockup:

1. Apply water-repellent coating to the left half of the mockup specified in Sections 03455 and 04220; identify the coated side.

2. Do not proceed with application at the site until the Architect's approval of the coated mockup is obtained and test results are satisfactory.

F. Pre-installation testing:

1. Test mockups in accordance with ASTM E 514, modified for field use.

2. Report results of tests and apply additional coating, when appearance is unchanged, or re-formulate and re-apply coating, when test results are not satisfactory.

1.5 JOB CONDITIONS

A. Comply with manufacturer recommendations regarding environmental requirements, and temperature and conditions of surfaces to receive coating.

1.6 WARRANTY

A. Warrant coating against water penetration through treated surfaces, peeling, cracking, discoloration and other defects of the coating, caused by faulty materials and workmanship, for 5 years after Substantial Completion.

B. The warranty shall include repair of defects and failures in the coating during the warranty period, at no additional cost to the District.

C. Warranty does not include deterioration or failure of coating due to failure of substrate, formation of new joints and cracks in excess of 1/16-inch wide, fire, vandalism, or abuse by maintenance equipment.

PART 2 - PRODUCTS

2.1 COATING/MANUFACTURER

A. Manufacturers: The firms listed below make acceptable products for use on the Project. The Contractor shall, with the selected product manufacturer's cooperation; select the appropriate coating for the substrates which meets the criteria specified herein and will perform as specified within the warranty period.

1. SL-100 by ProSoCo (basis of design).

2. Harris Specialty Chemicals, Inc. (Hydrozo).

3. L&M Construction Chemicals, Inc.

4. Mapei.

5. Pecora Corp.

6. Sivento.

PART 3 - EXECUTION

3.1 EXAMINATION/PREPARATION

A. Verify that surfaces to be coated are clean, dry and free of dust, dirt, oil, grease and other foreign material which would affect the application and performance of the coating.

B. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 PROTECTION

A. Protect adjoining work, including sealant bond surfaces, from spillage or blow-over of water-repellent.

B. Cover adjoining and nearby surfaces where there is a possibility of water-repellent being deposited on these surfaces.

3.3 PHASING

A. Where feasible delay coating application until installation of sealants has been completed in joints adjoining surfaces to be coated.

B. Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water-repellent, and sealant materials identical to those used in the work.

3.4 APPLICATION

A. Test application:

1. Before performing water-repellent work, including bulk purchase and delivery of products, prepare a small application in an unobtrusive location and in a manner approved by Architect to demonstrate the final effect (visual, physical, and chemical) of planned application.

2. Proceed with work only after Architect review of test application.

B. Apply by manufacturer approved applicators using recommended methods and equipment. Do not exceed the application rate recommended by the manufacturer.

C. At the fabricator's option, coating may be applied at the fabrication yard before units are shipped to the site only if sealant adhesion tests show that sealants bond and longevity will not affected by the sealer or mask sealant bondsurfaces to prevent migration of coating onto joint surfaces.

3.5 FIELD QUALITY CONTROL

A. Provide services of a factory-authorized technical service representative, from the water-repellent manufacturer, to inspect and approve the substrates before application and to instruct the applicator on the product and application method to be used.

B. The District may employ a testing agency to test the in-place water-repellents in compliance with ASTM standards specified.

C. Cost of test(s) will be paid by the District, except, should the test disclose that the coating tested does not comply with these Specifications, the cost of the test and subsequent retests shall be paid by the Contractor.

D. In the event test shows that the coating is deficient, apply additional coating.

E. Repetition of the above procedure on all previously treated surfaces will be at Contractor's expense.

3.6 CLEANING

A. Clean water-repellent coating from adjoining and nearby surfaces immediately after spillage.

B. Comply with manufacturer's recommendations for cleaning.

END OF SECTION

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SECTION 07195
UNDERSLAB VAPOR RETARDER

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Vapor retarder and sand bed under concrete slabs-on-grade.

B. Related work:

1. Division 2 for grading and compacting subgrade to receive vapor retarder.

1.2 SUBMITTALS

A. Data: Submit manufacturer's product data, specifications, typical installation details and other data as necessary to demonstrate vapor retarder compliance with the specified requirements.

B. Samples: Submit 24-inch square samples of vapor retarder with a taped joint at third point.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide vapor retarders complying with ASTM E 1745 for the classifications listed below.

1. Class B vapor retarder: One of the following, or equal.

a. Griffolyn T-85 by Reef Industries, Inc.

b. Fiberweb 200 by Fiberweb Corp.

c. Moistop Ultra B by Fortifiber Corp.

2.2 MATERIALS

A. Aggregate: Clean sand, free from excessive dirt, debris, organic matter and fines smaller than No. 200 sieve size.

B. Vapor retarder: ASTM E 1745, Class B for installation without gravel bed.

2.3 ACCESSORIES

A. Sealing material: Mastic, adhesive or pressure-sensitive adhesive tape recommended by the vapor retarder manufacturer.

B. Repair tape: Self-adhesive tape of same materials as vapor retarder to repair holes in membrane by jobsite activities.

C. Pipe boots: Of sizes indicated, compatible with vapor retarder and adhesive materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions affecting the work of this Section at the site.

B. Verify below-grade work and items penetrating moisture retarder are complete.

C. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 MEMBRANE INSTALLATION

A. Comply with ASTM E 1643 and the following:

1. Layout to minimize running and side joints with long dimension parallel with the direction of the pour.

2. Spread sheeting over compacted grade, smooth and even; lap edge and end joints 6 inches; turn-up perimeters against concrete 2 to 3 inches.

3. Offset intermediate end joints in adjacent sheets 4 feet minimum.

4. Seal laps and perimeters using continuous beads or strips of sealing material applied to bottom layer or tape. When using sealing material, apply top layer and press sufficiently to assure complete contact.

B. Penetrations:

1. Cut sheeting to fit closely and neatly.

2. Slip sheeting over penetrations where possible, otherwise slit from penetration hole to nearest edge.

3. Seal pipe penetrations with prefabricated boots made from vapor retarder and seal tight with tape to the vapor retarder.

4. Seal edges continuously around penetrations.

5. For smaller penetrations, repair slits with 12-inch wide strips of sheeting set centered on slit and sealed on each side.

C. Cuts and accidental tears: Repair with tape, or if too large, with patches of the vapor retarder continuously taped.

3.3 SAND CUSHION

A. Cover vapor retarder with a 2-inch layer of damp sand prior to pouring concrete slab.

B. Spread over sheeting and work to fill voids; leave with finished surfaces reasonably uniform at established grade.

END OF SECTION

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SECTION 07210
BUILDING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Thermal insulation at following locations unless otherwise indicated or specified:

a. In all exterior soffits of air-conditioned spaces.

b. In all exterior walls above grade, except parapet walls, and where louvers, vision glass and doors occur.

2. Supplementary parts and components, such as clips, fasteners, supplementary framing, and other miscellaneous accessories required for a complete installation.

B. Related work:

1. Division 7 for roof insulation.

2. Division 7 for fire and smoke containment insulation systems.

3. Division 7 for firestopping.

4. Division 9 for acoustical insulation.

5. Division 15 for pipe and duct insulation.

1.2 SUBMITTALS

A. Data: For materials specified below.

B. Samples:

1. 24 inches square of each type of insulation.

2. 12 inches long samples of tape.

1.3 HANDLING

A. Packaging: Provide unopened containers and packages with labels bearing producers name and source of product and date of manufacture, with UL classification on package.

B. Storage:

1. Keep insulation protected while stored; keep dry during application.

2. Outdoors, store off ground on pallets, protected with breathing type covers.

3. Insulation shall be dry when installed.

4. Remove insulation that becomes wet or damp immediately from the job site.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Install insulation in dry weather, unless building is enclosed.

B. If insulation will be exposed to the elements after installation, cover with waterproof membrane each day.

PART 2 - PRODUCTS

2.1 THERMAL INSULATION

A. "R" value: Minimum of 13.

1. Type: Glass fiber or mineral wool batt or blanket insulation complying with ASTM C 665, Type III, Class A, flame spread 25 or less, formaldehyde-free by Johns Manville, Knauf, or equal.

2. Width: Batt width shall match the stud spacing and be sized for a friction-fit to be self-supporting.

2.2 INSTALLATION MATERIALS

A. Staples, zinc-coated wires and other devices for fastening insulation: As recommended by the insulation manufacturer.

B. Insulation tape: "FSK Copolymer" by Compac Corp., (800. 631.9347), General Purpose FSK Facing Tape by Venture Tape, (800.343.1076) or equal FSK-faced cold weather tape a minimum of 2 inches wide.

C. Supplementary metal framing where required for insulation support: As specified in Section 09100.

PART 3 - EXECUTION

3.1 EXAMINATION/PREPARATION

A. Examine conditions and measurements affecting the work of this Section at site.

B. Correct detrimental conditions before proceeding with installation.

C. Before installing insulation in stud walls, thoroughly clean space of debris. Also clean spandrel cavities of debris.

3.2 INSTALLATION

A. Install insulation where shown and specified. Cut to fit irregular spaces, butt edges into firm contact with each other and adjoining surfaces.

1. Hand pack around pipes, ducts, conduits, electrical boxes, and other penetrations as required to thoroughly fill all voids and spaces between framing members and to form a continuous thermal barrier.

2. Do not compress insulation more than 10 percent.

3. Where door and window frames occur in insulated assemblies, cut additional strips of insulation and hand-pack to fill all voids in and around the frames.

4. Comply with the California Electrical Code (CEC) for installation in proximity to light fixtures. Do not install insulation closer than recommended by CEC.

5. Install foil-faced insulation with foil facing the building interior.

B. Where insulation in stud walls is not self-supporting, hold it in place with wires spaced not more than 16 inches o.c. horizontally or by other methods acceptable to the Architect.

C. After installation is complete, tape penetrations and ruptures in vapor barrier under deck roof insulation, and tape joints between batts continuously.

3.3 FIELD QUALITY CONTROL

A. Prior to closing-in of insulated assemblies, or prior to Substantial Completion for insulation that will remain exposed in the building, refit, reinstall and/or replace wet, damaged and displaced insulation.

END OF SECTION

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SECTION 07220
ROOF INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Roof insulation under standing seam metal roofing and gypsum underlayment board.

B. Work installed but furnished in other Sections:

1. Zee purlins: Section 07600.

C. Related work:

1. Division 7 for thermal insulation.
2. Division 7 for fire and smoke insulation containment systems.
3. Division 7 for standing seamed metal roofing.
4. Division 9 for gypsum underlayment board.
5. Division 9 for acoustical insulation.

1.2 PERFORMANCE CRITERIA

A. Factory Mutual Research Corp. FM Class 1-90.

1.3 REFERENCES

A. National Roofing Contractors Association (NRCA), Roofing and Waterproofing Manual.

B. Underwriter's Laboratories (UL), Building Materials Directory.

C. Factory Mutual Systems (FM), Approval Guide.

D. FM, Loss Prevention Data for Roofing Contractors, Data Sheet 1-28.

1.4 SUBMITTALS

A. Data: Submit manufacturer's product data sheets and manufacturer's installation instructions for each permanent material proposed for use, and FM approval listings and installation instructions.

B. Samples: Submit the following.

1. Roof insulation: Each type, 12-inch square.
2. Fasteners: Each type.

1.5 QUALITY ASSURANCE

A. Installer's qualifications: Firm with a minimum of 3 years' experience in installation of roof insulation on projects of similar size and complexity.

1.6 HANDLING

A. Comply with PIMA "Handling Recommendations for Polyiso Roof Insulation".

1.7 ENVIRONMENTAL REQUIREMENTS

A. Install insulation only on dry substrates. Do not install insulation if moisture content of substrate is above that acceptable to roof insulation manufacturer.

B. Do not install insulation during inclement weather.

C. Cover installed insulation with gypsum underlayment board each day.

PART 2 - PRODUCTS

2.1 ROOF INSULATION

A. Description:

1. General: The following with a combined aged insulation R value of not less than 30, in compliance with RIC/TIMA conditioning procedures, and ASTM C 1289.

2. Bottom layers: Unless otherwise recommended by the roofing membrane manufacturer, provide Johns Manville E'NRG'Y 3, or equal polyisocyanurate insulation by Apache Products Co., Atlas Energy Products or Rmax, Inc., minimum 2-inch thick.

a. This Specification assigns a maximum "in-service" R value of 5.6 per inch of insulation for polyisocyanurate foam insulation. If proposed insulation is less than 5.6 R value/inch, increase thickness, with the Architect's approval, to obtain the required R value.

3. Top layer: ASTM C 728, Johns Manville Fesco Board or equal by US Intec or GAF Building Materials Corp., minimum 1/2-inch thick.

2.2 MISCELLANEOUS MATERIALS

A. Zee purlins : As specified in Section 07600.

B. Fasteners:

1. For pulins: Hot-dip galvanized self-tapping steel screws of sufficient length to penetrate a minimum of 1-inch or 3 full threads, whichever is less, into the steel deck.

2. For insulation: As recommended by the insulation manufacturer and complying with FM Standard 4470.

C. Primer: ASTM D 41.

D. Bitumen: Asphalt, ASTM D 312.

PART 3 - EXECUTION

3.1 PROTECTION OF OTHER WORK

A. Protect metal, glass, plastic and painted surfaces within wind-borne range of bitumen application.

B. Protect adjacent work, properties, cars and persons from spills and wind-borne bitumen.

3.2 ROOF PREPARATION

A. Examination:

1. Determine that deck is sufficiently rigid to support applicator and its equipment.

2. Limit deflection so as to not strain or rupture roof insulation components or deform deck.

3. Verify that roof penetrations and flashings are in place.

B. Roof deck:

1. Examine for holes, uneven areas, debris, bond breaking substances, moisture, unsound material, incomplete work, or other conditions unsuitable for proper installation or performance of roof insulation work.

2. Do not start insulation application until defective conditions are corrected.

C. Verify that surfaces to receive insulation are firm, dry, smooth and clean.

3.3 ROOF INSULATION - GENERAL

A. Install insulation system in accordance with FM instructions, as well as instructions furnished by the insulation, fastener and roofing manufacturer, to provide the R value specified.

1. Where instructions dissent, FM requirements take precedence unless manufacturer instructions are more stringent.

2. Where only manufacturer instructions dissent, the more stringent requirement takes precedence.

B. Install no more insulation than can be covered with gypsum underlayment board and be completed before the end of the working day, or before the onset of inclement weather.

C. Provide appropriate water cut-offs at the end of each day and remove prior to resuming work.

D. Stagger insulation joints between panels and layers.

E. Neatly cut boards and fit insulation boards around roof penetrations.

F. Fill board joints in excess of 1/4-inch with slivers of insulation or roofing cement. Scuff uneven board edges plane.

1. If insulation delaminates, then installation is not satisfactory and shall be repaired or replaced to the Architect's satisfaction.

3.4 OVER STEEL DECK

A. Install Zee-purlins parallel with deck edge, spaced at 24 in. o.c., perpendicular with slope of the roof. Purlins shall face the same direction, alternating with each strip of insulation.

B. Attach bottom layer with fasteners of type, size, length, number and spacing recommended by the insulation manufacturer to comply with criteria specified.

C. Mechanically attach bottom layer only; hot-mop additional layers to base layer.

D. Apply top layers of insulation in hot asphalt mopped to the back of panels and to the base layer. "Walk" boards in place while bitumen is still tacky to ensure full adhesion.

E. Step both layers of insulation in-place, or weight down until fully adhered.

F. Top of insulation shall be at the same plane as the top of the purlins.

G. Prior to installation of the underlayment board, test the adhesion of the insulation assembly by pulling panels at random after the asphalt has cooled off from at least 4 representative locations.

H. Attachments shall be sufficient to withstand wind uplift and other forces and shall meet standard specified.

3.5 PROTECTION

A. Protect insulation from foot traffic and construction damage.

B. Repair, or remove and replace damage and stains caused by this work.

END OF SECTION

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SECTION 07222
GYPSUM UNDERLAYMENT BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Gypsum underlayment board.

B. Related work:

1. Division 9 for gypsum board.

2. Division 9 for gypsum sheathing board.

1.2 SUBMITTALS

A. Data: Submit manufacturer's data for underlayment boards and recommended attachment method.

B. Samples: Submit the following.

1. Twelve-inch square samples of board.

2. Samples of fasteners.

1.3 QUALITY ASSURANCE

A. Comply with fire resistance ratings indicated and required by CBC.

B. Provide materials, accessories and application procedures listed by UL or tested in compliance with ASTM E 119 for the type of construction shown.

1.4 HANDLING

A. Storage:

1. Keep materials dry and under cover. Protect against contact with damp or wet surfaces. Provide air circulation under covering and around stacks of materials.

2. Do not overload roof with localized concentration of gypsum sheathing panels.

B. Handling: Handle materials to prevent breakage and damage to edges.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Gypsum panels: 1/2-inch minimum, Dens-Dek Gypsum Roof Board by G-P Gypsum Products – no substitution.

B. Screws: Size, type, material and finish recommended by the G-P Gypsum Products, except hot-dip galvanized.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing to support sheathing board and verify that the surface of supports does not vary more than 1/4-inch from the plane of faces of adjacent members.

B. Verify other conditions and measurements affecting the work of this Section at the site.

C. Correct detrimental conditions before proceeding with installation.

3.2 APPLICATION

A. General:

1. Use longest length available to minimize end joints.

2. Place long edges of boards perpendicular to steel deck flutes or framing.

3. Place short edges over a flute or framing member.

B. Butt joints between panels loosely. Do not force boards into place.

C. Attach to steel deck or framing as recommended by the board manufacturer. Drive fasteners to bear tight against and flush with the surface of the board. Locate fasteners not closer than 3/8-inch from the edge and the ends of the sheathing panels.

END OF SECTION

SECTION 07225
FIRE AND SMOKE CONTAINMENT INSULATION SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Fire containment insulation at curtain walls, and elsewhere as indicated.
2. Fire safing at slab edges and elsewhere as indicated or required.
3. Smoke sealing of voids in and adjacent to fire containment and fire safing insulation.

B. Related work:

1. Division 7 for thermal batt insulation locations other than curtain walls.
2. Division 7 for roof insulation.
3. Division 7 for firestopping, other than that specified herein.
4. Division 8 for curtain wall systems.
5. Division 9 for acoustical insulation in interior partitions.
6. Division 15 for insulation for mechanical systems.

1.2 SUBMITTALS

A. Manufacturer data and drawings:

1. Complete manufacturers' specifications and recommendations for insulation, anchors and other accessories. Submit complete list of materials proposed for use and manufacturer's brochures for each item.
2. Details of each installation condition.

B. Test reports: Certified copies of compliance with test reports specified here-inch.

C. Reports: Manufacturer current ICBO, California State License for Insulation and CSFM listing.

1.3 QUALITY ASSURANCE

A. Installer qualifications: Experienced firm with at least 3 installations in the past 5 years of fire containment installation systems similar to those specified.

B. Uniformity: All materials used for fire and smoke containment, except for stick pins and fasteners, shall be from a single manufacturer.

C. Mockup: Provide fire containment insulation system for the curtain wall mockup specified.

PART 2 - PRODUCTS

2.1 ACCEPTANCE

A. Materials and methods proposed for use shall have been tested and approved under positive pressure for a time period at least equal to the fire resistance rating of the floor assembly. The system used must be approved by the CSFM and DSA and include all components and accessories for a complete installation.

2.2 SYSTEMS/MANUFACTURERS

A. Products of USG and specified below to establish a standard of quality and performance.

B. Equivalent systems shall be demonstrated to have similar performance as a system similar to that specified herein and meet following:

1. Current California State License for Insulation Materials.

2. Recognized by DSA, OSHPD, CSFM and ORS for slab edge fire and smoke containment and have current CSFM listing for fire and smoke containment.

3. Smoke containment system has been tested to allow a gas volume rate of flow of no more than 0.80 standard cubic foot/minute under a pressure of 40 Pascals.

2.3 MATERIALS

A. Fire containment insulation:

1. USG FIRESPAN 90 Wall Insulation, semi-rigid blankets, 8 pounds per cubic foot, for use with Aluminum Mullion and GFRC systems.

2. Product shall be foil-faced, dark color for use with dark color glass spandrels, light color elsewhere, 3-inch thick, minimum R-11, unless higher insulation value is indicated or required.

3. Insulation shall be registered in State of California and have current CSFM listing for fire and smoke containment.

B. Lightweight fire containment insulation:

1. USG FIRESPAN 40 wall insulation, semi-rigid blankets, 4 pounds per cubic foot.

2. Product shall be foil-faced, 3-inch thick, for use with metal stud, gypsum sheathing assemblies, minimum R-11, unless higher insulation value is indicated or required.

3. Insulation shall be registered in State of California and have current CSFM listing for smoke and fire containment.

C. Safing insulation: USG Thermafiber Safing Insulation, 4-inch thick by 24-inch wide foil-faced blankets.

D. Impaling pins and shields: Galvanized steel spindle anchors designed for supporting fire containment insulation, 12-gage, as recommended by insulation manufacturer. Shields are required to fit pins.

E. Mechanical fasteners: Stainless steel or non-ferrous metal, self-tapping screws, or drilled anchors as required by the construction.

F. Zee clips: Thermafiber Safing Impaling Clips, 0.040 inch thick, galvanized clips designed for securing fire safing to slab edge.

G. Backing/reinforcement for safing insulation:

1. 4-inch wide in lengths to extend between mullions, minimum 20 gage galvanized sheet steel.

2. Use heavier gage where required to prevent bowing of fire containment insulation due to pressure applied from compression fit safing insulation, as successfully demonstrated on mockup.

H. Mullion protection: USG FIRESPAN 90, minimum 6-inch wide by 1-inch thick.

I. Smoke seal compound: USG Thermafiber Smoke Seal Compound.

J. Foil-backed insulation tape: Material approved by safing manufacturer, having flame spread of 25 maximum.

K. Firestopping compound: USG Firecode Compound.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, surfaces and supports under which the work of this Section will be installed.

B. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 FIRE CONTAINMENT INSULATION/ALUMINUM MULLION SYSTEMS

A. Comply with sections 708.5 of the CBC.

B. Install impaling pins on framing at spandrel areas, using mechanical fasteners.

1. Space pins at not over 12 inches o.c. each way. Impale insulation on pins, covering all areas, with foil side toward inside face of wall.

2. Slip shields over impaling pins and secure in place.

C. Protect vertical and horizontal mullions behind spandrels. Unless spandrel insulation extends over mullions, attach pins at 12-inch along mullions and install mullion protection, using shields as specified above.

D. Tape joints in fire containment insulation and mullion protection with foil-backed insulation tape.

3.3 SAFING INSULATION/ALUMINUM MULLION SYSTEMS

A. Install safing at all spaces between fire containment insulation and slab edges, and secure insulation with galvanized steel closures, clips, and ties at 12 inches o.c. maximum and according to CBC and UL approvals.

1. Use at least 2 clips per piece of safing insulation.

2. Include all penetrations through fire-rated construction that are not fire-safed under other sections. Safing insulation shall be installed 1/2-inch wider than gap.

B. Install backing/reinforcement within 4-inch of safing insulation at floor slab. Position the backing reinforcement horizontally in back of the fire containment insulation and attach mechanically at each mullion.

C. Where gaps are less than 2-inch between slab edge and fire containment insulation, use friction fit safing insulation between insulation and slab edge. Apply 1-inch thick layer of smoke seal compound over safing insulation.

D. Where gaps are between 2 and 7-1/2 inches between slab edge and fire containment insulation, use safing insulation not less than 1/2 inch wider than opening.

1. Attach Zee clips to slab edge with approved fasteners at not over 12 inches o.c.

2. Impale safing on Z clips with foil facing upward.

3. Use smoke seal compound to seal joints between fire containment insulation and safing, between safing insulation and slab edge, and between pieces of safing insulation.

E. In areas not to be clad with gypsum board above floor, use one inch of Firestopping Compound on top of safing in lieu of beads of Smoke Seal.

3.4 FIRE CONTAINMENT INSULATION AT METAL STUD/GYPSUM BOARD ASSEMBLIES

A. Comply with 708.5 of the CBC.

B. Friction-fit lightweight fire containment insulation between exterior metal studs.

C. Protect metal framing system on interior with minimum 5/8-inch Type X gypsum board or equivalent membrane. Type X gypsum board may be partially screw attached in areas adjacent to fire proofed beam.

3.5 SAFING INSULATION ON METAL STUD/GYPSUM BOARD ASSEMBLIES

A. Install safing insulation 1/2-inch wider than gap at spaces between sheathing and slab edges. Secure insulation with galvanized steel closures, clips, and ties at 12 inches o.c. maximum according to CBC and UL approvals.

B. Use at least 2 clips per piece of safing insulation.

C. Include penetrations through fire rated construction that are not fire-safed under other Sections.

D. Where gaps are between 2 and 7-1/2 inches between slab edge and sheathing, use safing insulation not less than 1/2 inch wider than opening. Attach Zee clips to slab edge with approved fasteners at not over 12 inches o.c. Impale safing on Zee clips with foil facing upward. Use smoke seal compound to seal joints between sheathing and safing, between safing insulation and slab edge, and between pieces of safing insulation.

E. In areas not to be covered with gypsum board on above floor, use one inch of Firestopping Compound on top of safing in lieu of beads of Smoke Seal.

END OF SECTION

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SECTION 07260
VAPOR CONTROL BARRIER

PART 1 - GENERAL

1.1 SUMMARY

A. Work includes:

1. Vapor control barrier applied to interior concrete slabs on grade and above grade concrete decks scheduled to receive floor finishes.

a. Option 1: Spray-applied surface treatment applied the day of the concrete pour, after the concrete has hardened sufficiently to sustain foot traffic. Provide 100 percent coverage for interior concrete slabs and decks. This option is applied before slab moisture testing as specified in related finish floor specification Sections.

1) Contingency for high moisture readings: After slab moisture testing of floors treated as specified for Option 1, floor areas that fail to meet the performance criteria specified in the related finish floor specification Sections shall receive remedial slab surface treatment as specified for Option 2.

b. Option Two: Surface treatments applied to fully cured concrete slabs, after slab preparation and cleaning. This option is applied after slab moisture testing as specified in related finish floor specification Sections and applied only as required to achieve the specified moisture criteria..

B. Related work:

1. Division 3 for cast-in-place concrete.

2. Division 9 for resilient flooring.

3. Division 9 for carpet and carpet tile.

1.2 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM):

1. ASTM F 1869-04: "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride".

1.3 SUBMITTALS

A. Product data: Manufacturer's specifications, data, and installation instructions.

1.4 QUALITY ASSURANCE

A. Performance criteria:

1. Vapor and moisture barrier shall reduce vapor transmissions from interior concrete slabs-on-grade and above-grade concrete and metal deck assemblies to 3 pounds or less per 1000-square feet in a 24-hour period when tested per ASTM F1869.

2. Alkalinity: Maximum pH of 10.

3. Vapor and moisture barrier shall be compatible with specified finish flooring systems, coatings and adhesives.

1.5 WARRANTY

A. Warrant against failure of materials and workmanship by the manufacturer against delamination and other deterioration of floor covering, due to vapor emission, installed over barrier for a period of 10 years. In the case of failure, remove defective materials and replace floor covering at no cost to District.

B. Manufacturer shall warrant the installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Option 1: Vapor Seal 309 Sealer by Floor Seal Technology, with solids content of no less than 25 percent.

B. Option 2: Tech MES100 by Floor Seal Technology, multi-part proprietary systems applied to fully cured and prepared slabs-on-grade.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and adjoining construction and conditions under which Work will be installed. Notify in writing deficiencies detrimental to proper or timely installation; do not proceed until corrected.

3.2 APPLICATION - OPTION ONE

A. Vapor and moisture system shall be applied to freshly-poured concrete slabs, after pouring, placing, bull-floating, final finishing, soft cutting, and the surface of the concrete has hardened sufficiently to sustain foot traffic. This shall replace standard concrete curing specified in Division 3.

B. Apply, finish and cure vapor and moisture system as instructed by manufacturer. Coordinate and schedule application of vapor and moisture system with concrete pour schedule as required to conform to vapor and moisture system manufacturer's written recommendations for same-day-as-pour applications.

C. Provide 100-percent coverage of interior floor slabs and concrete decks unless directed otherwise by the Architect.

3.3 APPLICATION - OPTION TWO

A. Prepare, clean, and scarify concrete surfaces not more than 14 days prior to moisture testing and installation of resilient flooring and carpeting.

1. Preparation: Grind down high spots and protrusions; clean concrete of debris and dust; and fill cracks, cavities, and low spots with an epoxy or cement-based compound. Gypsum based underlayment and filler materials not permitted.

2. Concrete surface: Shot or bead-blast to scarify surface (machine sand with open grit sandpaper to scarify surface).

B. Apply vapor and moisture system per manufacturer's instructions.

1. Pre-Sealer: Provide in areas where moisture tests indicate vapor emissions greater than specified levels per 1,000 square feet per 24 hours.

2. Membrane: Apply, finish, and cure components as recommended by manufacturer. Remove roughness and irregularities in finish membrane surface by sanding.

3.4 TESTING

A. Floors may be tested by the District to verify vapor emission rates. Vapor emission shall not exceed specified criteria or remedial surface treatments shall be required until vapor emissions are within specified criteria.

END OF SECTION

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SECTION 07412
ALUMINUM WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Open-joints, aluminum plate panels, their support system, special shapes, and all other panel elements for the building.

2. Supplementary parts and components such as gaskets, inserts, clips, fasteners, anchors, bracing, and other miscellaneous supports and accessories required for a complete installation.

B. Related work:

1. Division 5 for steel stud framing.

2. Division 7 for waterproofing membrane beneath metal panels.

3. Division 7 for other flashing and sheet metal.

4. Division 7 for sealants.

5. Division 8 for curtain wall.

1.2 CODES AND STANDARDS

A. Reference standards:

1. AAMA 501.83, Methods of Test for Metal Curtain Walls.

2. AAMA 605.2, Voluntary Guide Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.

3. AAMA 610.1, Voluntary Guide Specification for Cleaning and Maintenance of Painted Aluminum Extrusions and Panels.

4. American National Standards Institute (ANSI).

5. ASTM B 209, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

6. ASTM B 210, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.

7. ASTM B 211, Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire.

8. ASTM E 283, Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.

9. ASTM E 330, Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

10. ASTM E 331, Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

11. AWS D1.1-8, Structural Welding Code - Steel.

12. AWS D1.2-8, Structural Welding Code - Aluminum.

1.3 PERFORMANCE REQUIREMENTS

A. Structural performance: Provide wall cladding assemblies capable of withstanding the effects of load and stresses from dead loads, wind loads and normal thermal movement without evidence of permanent defects of assemblies or components.

1. Dead load: As required by CBC.

2. Live Load: As required by CBC.

3. Wind Load: Uniform pressure of 28 lb/sq ft. at walls and soffits, and 76 lb/sq ft. at parapet walls, acting inward or outward.

4. Thermal Movements: Provide assemblies that allow for thermal movements resulting from the following maximum changes (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components and other detrimental effects:

a. Temperature range: 120 deg F., ambient; 180 deg F, material surfaces.

B. Sealed joints shall allow free and silent movement of panels during expansion and contraction while preventing uncontrolled penetration of moisture.

C. Manufacturing, installation, and sealing shall prevent deformation of exposed surfaces.

D. Design panel system to accommodate substructure tolerance of +0 to -1/8 inch.

E. Not Permitted: Vibration harmonics; wind whistles; noises caused by thermal movement; thermal movement transmitted to other building elements; loosening, weakening or fracturing of attachments or components of system.

F. Metal panel system to withstand code imposed design loads. Maximum allowable deflection of span: L/180.

G. Air Infiltration: Panel system shall not have air infiltration rate more than 0.06 cfm per sq. ft. of fixed wall area when tested in accordance with ASTM E283 at static air pressure differential of 1.57 psf.

H. Water Penetration: Panel system shall have no water penetration as defined by in test method when tested in accordance with ASTM E331 at inward static pressure differential of not less than 6.24 psf and not more than 12.0 psf.

1.4 SUBMITTALS

A. Shop drawings: Submit dimensioned shop drawings for the wall panel system, including design and detailing of the panel support framing elements and their attachment to the structural frame. Coordinate drawings and their submittal with the curtain wall system and other exterior wall components.

1. Show in detail the panel layouts, support framing system, panel attachment members, secondary water control, jointing, dimensions, sizes and locations of cut-outs, relation to work of other trades, and other pertinent data and information.

2. Indicate and dimension adjoining, abutting and penetrating work, which will be performed by other trades.

3. Number each panel to correspond to the markings shown on the fabrication drawings. Mark the identification number on the back of each panel.

4. The drawings and calculations shall bear the seal of a California-registered professional engineer. The engineer shall also perform and submit structural calculations to document all panel conditions.

B. Samples:

1. Prior to fabrication, submit 12-inch square preliminary samples panels showing corners, special shapes, or other conditions and finishes, as may be required by the Architect, at the jobsite for review and approval.

2. Samples will serve as the control for limiting acceptable range of appearance.

C. Data:

1. Submit manufacturer's data sheet or equivalent printed literature indicating product information for panel anchorages, setting accessories and other related materials.

2. Data shall substantiate that the materials comply with the specified requirements.

D. Calculations: Calculations stamped and certified by a California-registered professional engineer, to demonstrate structural adequacy of panels and anchorage system. Coordinate calculations submitted with shop drawing submittals.

E. Manufacturer's instructions: Submit manufacturer's instructions for care, repair and replacement procedures, and samples showing repaired panels.

1.5 QUALITY ASSURANCE

A. Fabricator/installer's qualifications:

1. Single firm with a minimum of 5 years successful experience in the fabrication and erection of panel systems of similar sizes, shapes and finishes required for this Project, and which has ample production facilities to produce, furnish and supply the panels as required for installation without delay to the Work.

2. Firm must be regularly engaged in the engineering, fabrication, finishing and installation, of similar work.

B. Fasteners and connections are shown schematically. Final types and sizes shall be determined by a California-licensed Civil or Structural engineer employed by the Contractor.

1. In no case shall the fasteners or connections conflict with or require revision of the finish profiles of the siding or the supporting work.

2. Connections to the structural frame shall not impose any eccentric loading, or induce twisting or warping.

3. Connections to the structural frame shall be able to accommodate misalignment of the steel structure within limits allowed by the AISC tolerances.

1.6 DRAWINGS AND SPECIFICATIONS

A. The Drawings and Specifications establish performance for the design, fabrication and installation of the metal panels.

1. The Contractor is responsible for the engineering, and design of all components and materials as well as the fabrication, installation and performance of the panel system.

2. Contractor shall obtain necessary approvals and permits, and pay costs therefore from public authorities having jurisdiction.

B. Drawings are diagrammatic:

1. The details shown are intended to establish basic profiles and dimensions, and interfacing requirements of the metal panels to and with other work.

2. Contractor is responsible for the design and engineering of the metal panels within these parameters.

3. Drawings are not engineered design, or do not purport to be adequate to meet the engineering design requirements.

4. The details indicated are incomplete. The Contractor's shall develop conditions not detailed during the engineering and shop drawing process to reflect the level of aesthetics of the Project, and to comply with performance criteria specified. The Contractor, by accepting a Contract for the Work, acknowledges this and agrees that the Architect shall have the final say as to all matters whether detailed or not in the Drawings.

1.7 HANDLING

A. Delivery:

1. After fabrication, protect panels with strippable plastic film.

2. Deliver panels to ensure that there will be no damage or staining.

3. Deliver other materials, except bulk materials, in manufacturer's unopened containers with name, brand, type, grade and color fully indicated thereon. Store bulk materials as required to avoid any deleterious effects of weather, soiling or contamination.

4. Delivered items shall be properly boxed or crated. Mark containers with installation location, fabrication/piece numbers, shop drawings reference, etc., as applicable.

B. Storage:

1. Store above grade on suitable surfaces using polyethylene film to separate panels from supporting or protecting members.

2. Protect from weather, soiling and damage of every kind.

3. Crate panels to prevent accumulation of moisture between panels.

1.8 WARRANTY

A. Warrant that wall panels and their support system elements will meet the specified performance criteria specified and will be free from defects in materials and workmanship for 5 years after Substantial Completion, except where longer warranties are specified below.

1. Certify in writing that installed work is in accordance with the Contract Documents and authorized alterations and/or additions thereto and that, should defect develop during the warranty period due to improper workmanship or materials installed as a part of this Section, such defects will upon written request, be repaired or replaced at no additional cost to the District.

2. If exploratory work is required to determine the cause of the defects, the cost of such work shall be borne by the Contractor when his work is found to be at fault.

B. Further warrant the District in writing that wall panels will not evidence delamination of any type for 10 years after Substantial Completion.

C. Warrant finish as specified in Section 05082.

D. Defective materials and workmanship are hereby defined to include evidence of abnormal deterioration or aging or weathering or work, structural failure of components resulting from exposure to normal load and forces, sealant failures, deterioration or discoloration of finishes in excess of normal weathering and aging, delamination, and failure to fulfill other specified performance requirements. Refer to Section 05082 for definition of defects in finishes.

E. The warranty, the enforcement or lack of enforcement thereof, shall not deprive the District of other actions, rights or remedies available to him. Warranty shall be in form approved by District.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Aluminum Plate Wall Panel System, UnaClad Series 2500 by Firestone Metal Products.

2.2 MATERIALS

A. Aluminum panels: Flat plate system fabricated of a minimum 1/8-inch thick aluminum plate with extruded or formed aluminum stiffeners attached to the back of the face.

1. Aluminum plate: ASTM B 209, AA 3003-H14.

B. Clips, pins and fasteners: 300 series stainless steel. Use for attachment to substructure of sizes required to meet performance criteria. Secure clips in the manufacturer's facility to the greatest degree possible. Pop rivet attachment of clips and accessories will not be accepted.

C. Flashings, closure strips or metal trim: Of materials to match that of panel sheets in thicknesses as required to fulfill performance criteria.

D. Metal panel support system:

1. Aluminum Extrusions: ASTM B 221, alloy 6063-T6 and/or 6061-T6

2. Aluminum extrusion panel retention members, clips, angles or panel hangers: Design to fulfill performance criteria specified.

3. Subgrits: Provide G90 galvanized steel of gauge and spacing required for panel system structural requirements, as recommended by panel manufacture and in accordance with approved shop drawings. To avoid galvanic reaction, separate dissimilar metals.

E. Waterproofing: As specified in Section 07114.

F. Sound-deadening compound: 3M or equal. Install to interior of panels, which require sound deadening.

2.3 FABRICATION

A. Manufacture panels under controlled environment in fabricator's plant in conformance with accepted shop drawings and calculations so tolerances, as stated herein, are not exceeded. Field fabrication of panels is not permitted.

B. Weld inside surfaces of seams, such as the panel returns at corners, to prevent intrusion of water.

C. Fabricate panels for control of condensation and provisions for breathing, venting, weeping and draining.

D. Clean surfaces in compliance with the sealant manufacturer's recommendations, and apply sealant to inside surfaces of seams, such as the panel returns at corners, to prevent intrusion of water.

E. Install sound deadening/impact resistant panel core to back of all flat panels and formed returns.

1. Panels within 8 ft. of a walking surface in pedestrian areas shall receive sound deadening treatment.

2. Overspray of laminating adhesive, which may create smoke and flame spread, is not acceptable.

F. Grind and polish exposed welds to match adjacent surface finish and to be invisible in the finish work.

G. Fabrication tolerances:

1. Panel bow: Maximum 0.2 percent of width or length, whichever is greater.

2. Width or length: Plus 0.064 to 48-inch; Plus 0.032 to 144-inch

3. Thickness: Plus 0.008-inch

4. Squareness: 0.1875-inch difference between diagonals.

5. Camber: 0.062-inch maximum.

6. Radius of exterior bent corners: 1/16-inch maximum.

2.4 FINISHING

A. Finish panel as specified for aluminum surfaces in Section 05082.

1. MP-1: Silversmith (Mica) 439RZ1541M by Valspar.

2. MP-3: Regal White (Mica) 431R444 by Valspar.

B. Paint surfaces within panel cavity exposed to air or moisture.

C. Panels shall be flat with no embossed or textured design.

D. For uniformity finish all panels for an entire elevation at the same time.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine structure that will support the metal panel framing system. Verify elevation, tolerances, embedments, offset lines, and other conditions, which would affect the satisfactory installation and performance of the panels.

B. Correct unsuitable conditions before proceeding with erection.

3.2 PREPARATION

A. Examine framework to receive panels. Make certain framework is secure and properly aligned and prepared to receive panels.

B. Do not begin installation of panels until Architect has accepted secondary air/ water barrier.

C. Prepare surfaces to be in contact with panels and panel surfaces in compliance with materials manufacturers' recommendations and those of panel fabricator prior to installation of panels to framework.

3.3 INSTALLATION

A. Install panels and panel support members in compliance with approved shop drawings, calculations, and fabricator's published instructions. Install panels so that in their final location and position joints are uniform, perfectly aligned, with flush joints, and panels are not twisted out of plane. Adjust work to conform to the following tolerances (maximum variations).

1. Face width of joints: Plus 1/32-inch.

2. Joint taper: 1/100-inch/ft length, with a maximum length of tapering in one direction of 6 feet.

3. Jog in alignment of edge: Plus 1/16-inch.

4. Rough opening dimension: Plus 1/16-inch at head, Plus 1/16-inch at sill, and Plus 1/16-inch at jamb.

5. Deviation from plumb, 1/16-inch maximum per one story height and a maximum of 1/8-inch in a 45 feet. run.

6. Deviation from horizontal: 1/8-inch maximum in a 30 feet. run.

B. Where aluminum materials come in contact with dissimilar materials, an isolation shim or tape shall be installed at fastening locations.

3.4 SEALANTS

A. Comply with the requirements of Section 07920 for sealants, backer rods, and their installation.

3.5 CLEANING AND PROTECTION

A. Leave protective coatings or films on panels in place as long as possible where doing so will not produce discoloration or other undesirable visual defects.

B. Remove protective coatings or films when, and in the manner, recommended by materials manufacturers published instructions.

C. Clean panels in accordance with material manufacturers' published recommendations.

D. Protect panels from damage. Repair or replace any damaged panels to Architect's satisfaction.

3.6 ACCEPTANCE

A. Each and every panel will be subject to the Architect's approval or rejection.

B. Panel or panels may be rejected after having been installed.

C. Carefully remove rejected panels and replace with new panels without delay and without cost to the District.

D. Remove panel or panels damaged in the removal of defective or rejected panels, and replace with new panels.

END OF SECTION

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SECTION 07531
THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Fully adhered, single ply, thermoplastic membrane (TPA) roofing system.
2. Roof insulation.
3. Membrane roof flashing.
4. Accessories such as primers, adhesives, sealants and walkways.
5. All other materials and supplementary parts and components, such as clips, fasteners and other miscellaneous accessories required for a complete installation.

B. Related Work

1. Division 6 for wood nailers and blockings.
2. Division 7 for other building insulation.
3. Division 7 for other flashings and sheet metalwork.
4. Division 7 for other joint sealants.
5. Divisions 15 and 16 for utilities protruding through roofing.

1.2 PERFORMANCE REQUIREMENTS

A. General: Install a watertight, single-ply roofing and base flashing system with compatible components that will not permit the passage of liquid water and will withstand wind loads, thermally induced movement, and exposure to weather without failure.

B. FM Listing: Provide built-up roofing underlayment, single ply roofing, base flashings, and component materials that comply with requirements of FM 4450 and FM 4470 and FM 1-49 Loss Prevention Data Sheet as part of a roofing system and that are listed in FM's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM markings.

1. Roofing system shall comply with the following:

a. Fire/Windstorm Classification: FM Class 1A-90.

b. FM 1-49 Loss Prevention Data Sheet

c. FM 1-28 Loss Prevention Data Sheet

d. FM 1-29 Loss Prevention Data Sheet

e. ASCE 7 – Section 6

1.3 SUBMITTALS

A. Product Data:

1. Submit latest edition of manufacturer's roofing and flashing specifications including a list of materials proposed for use, installation procedures, and data sheets for all products comprising roof system assembly as required, to demonstrate compliance with specified requirements.

2. Submit complete material list and installation procedures for all items not furnished by roofing manufacturer proposed to be furnished and installed under this section.

3. The roofing manufacturer's recommended methods of installation (unless superseded by the specification) will become the basis for inspecting and acceptation or rejection of the actual installation procedures used on this work.

4. Certified test reports indicating compliance with performance requirements and regulatory requirements specified herein.

B. Shop Drawings:

1. Submit installation details of insulation, roofing and flashing, including seam layout, roof slopes, flashing details, penetration details and accessories.

2. Submit shop drawings detailing roof configuration and sheet layout, details at perimeter, and special conditions.

3. Submit flashing details for each flashing condition. Roofing manufacturer's standard pre-printed details are not acceptable as shop drawings.

4. Submit design of custom logo showing colors and size of logo.

C. Samples:

1. Submit 12 in. square samples of roofing membrane with welded splice joint.

2. Submit the following:

a. Each type of fastener, termination fastener.

b. 12 in. square of each type of insulation board.

c. Other samples as may be requested by Architect.

D. Certificates:

1. Submit certification that materials and components furnished are products of single manufacturer or products acceptable to roofing manufacturer.

2. Submit certification that all materials furnished are compatible with one another and specific decking and are suitable for their intended use.

3. Upon completion of work, submit manufacturer's certificate of Final Inspection.

4. Submit authorized roofing contractor's Statement of Qualifications.

E. Roofing manufacturer's reports:

1. Submit review and approval of project shop drawings.

2. Submit manufacturer's acceptance of warranty conditions.

3. Submit manufacturer approval that installer is an authorized applicator.

4. Submit manufacturer's field quality control, inspection reports.

F. Warranty: Submit roofing manufacturer's and installer's warranties.

G. Maintenance Data: Submit to the District, manufacturer's recommended maintenance procedures for roofing system, including precautions and warnings to prevent damage and deterioration.

1.4 QUALITY ASSURANCE

A. Roofing installer's qualifications:

1. Firm experienced in installation of systems similar in complexity to those required for this project.

2. Authorized by the roofing manufacture to install their product.

3. Successful completion of a minimum 5 projects of comparable scale and complexity.

4. Maintain full-time supervisor/foreman, not workman/foreman, on job site during times that roofing work is in progress. Supervisor must have minimum of three years experience in roofing work similar to the nature and scope specified.

B. Product / Material Qualifications:

1. Test Reports: UL Class A Fire Hazard Classification

2. Roof insulation: Approved in writing by roofing manufacturer as acceptable substrate for this Project and listed by UL for required fire rating.

3. Use only those materials and methods of installation specifically approved by roofing manufacturer.

C. Pre-installation conference:

1. At least one week prior to the start of roofing membrane installation, arrange a pre-installation meeting between the Contractor, Architect, roofing inspector, roofing membrane manufacturer's representatives, roofing installer to review system application and coordination with other trades.

2. If more than one trade will be responsible for the work of this Section, these trades shall attend the meeting.

3. Review the Drawings, Specifications, roofing membrane manufacturer's installation instructions, the surfaces and substrates to receive roofing membrane and the conditions under which the roofing membrane will be installed.

4. Review the procedures to be followed to provide proper protection of the roofing membrane during and after application.

5. Record minutes of the meeting, decisions made, and corrective measures to be taken before application starts. Send copy of the minutes to the Architect no later than 3 days following the meeting.

D. Roofing installer shall provide Manufacturer's Technical Services Inspection services. The Technical Services inspections are to verify and confirm the materials and installation procedures are performed in a manner to comply with the manufacturer's warranty.

1.5 DELIVERY, STORAGE AND HANDLING

A. Materials shall be delivered in the original, unopened containers.

B. All products shall be delivered to the job site with the manufacturer's labels on each roll or container. When required, the label shall also indicate the specified code/insurance approvals.

C. All materials shall be stored flat, elevated from the roof or deck, protected with waterproof covers as necessary to keep the materials dry. Plastic wrap on TPA membrane rolls is not a waterproof cover.

D. Adhesive shall be stored at temperatures above 40 deg. F. All flammable materials shall be stored in a cool, dry area away from spark and open flames.

E. All materials shall be provided from one manufacturer to assure compatibility.

F. All materials shall be protected from damage.

G. Do not overload roof structure or decking when storing material on the roof.

1.6 PROJECT CONDITIONS

A. Environmental requirements:

1. Do not install roofing membrane under adverse weather conditions, or when temperature, humidity or other environmental requirements are beyond manufacturer's recommended limits.

2. Proceed with the installation only when forecasted weather conditions are favorable and within ranges acceptable to the roofing membrane manufacturer.

3. Install only as much roofing as can be made weathertight each day, including all flashing and detail work.

4. Install uninterrupted waterstops at the end of each day's work, and completely remove them before proceeding with the next day's work.

B. All areas contaminated by dirt, debris, and dust shall be cleaned from surfaces by vacuuming, sweeping or power blowing.

C. The roofing contractor shall take measures necessary to avoid damage to the roofing membrane during construction. The roofing installer shall advise the Contractor concerning potential damage to roofing assembly and the measures taken to avoid such damage during construction.

1.7 SEQUENCING AND SCHEDULING

A. Perform roofing and flashing work as a single integrated unit of work, without division of responsibility between separate installers.

B. Install membrane roofing system immediately after insulation installation.

C. All insulation shall be covered with membrane roofing at the end of each work day.

D. In the event of unforeseen inclement weather, installed insulation shall be covered with temporary waterproofing covers.

E. Installer shall complete roofing work on a daily basis with each section completed before progressing to the next day's work, unless specifically directed otherwise by the Architect.

F. Completion of work shall be defined as the installation of all specified roof preparation, insulation, field membrane, flashing, counter flashing, sheet metal, fasteners, and caulking.

1.8 WARRANTY

A. Manufacturer's Warranty: The warranties specified in this Article shall not deprive the District of other rights the District may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents. Warranty shall include inspections by the manufacturer during the 2nd, 5th and 10th years with written reports of the conditions submitted to the District.

1. Type: Manufacturers "Quality Assurance Plus"

2. Warranty Period: 15 years.

3. Warranty shall be no dollar limit.

4. Warranty shall contain no exclusion for "gale" force winds.

5. Warranty shall contain no exclusion for ponding water.

6. Roof System Warranty shall include all flashings, penetrations, underlayment, and seals.

B. Labor and installation warranty: Roofing installer shall issue a 3 year warranty covering labor and installation of specified system and components.

C. Replace or repair roofing membrane defects during the warranty period at no cost to the District. Defects include the following:

1. Loss of waterproofing integrity, including intrusion of water, oils, gasoline, grease, salt, chemicals or acids into deck substrate.

2. Adhesive and/or cohesive failure.

3. Abrasion or tearing failure resulting from normal traffic.

D. Roofing manufacturer shall offer the District an optional maintenance program to maintain the roof membrane, flashings, debris removal, and clean and wash the roof once a year.

1. 15 Year TremCare Platinum Service Agreement by Tremco.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of design is for "TPA Single Ply System", 80 mils, fully-adhered, fleece backed, single-ply roofing membrane by Tremco Inc. or equal meeting or exceeding the following requirements.

1. Tremco Contact: Bill Calagna (323) 587-3014 or (818) 429-2584.

2.2 ROOFING MEMBRANE

A. The membrane shall be TPA, a tri-polymer alloy polyester reinforced roofing membrane supplied by Tremco, Inc. The sheet shall conform to the properties listed below.

1.	Color:	White (top) / Gray (bottom).
2.	Roll Size:	76 ft. wide.
3.	Weight:	8.0 oz. / sq. ft (nominal).
4.	Thickness (ASTM D 751):	80 mils (nominal), fleeced backed.
5.	Breaking Strength (ASTM D 751):	350 lbs. x 325 lbs.
6.	Seam Strength (ASTM D 638):	90%
7.	Elongation @ fabric Break (ASTM D 751):	17% x 19%
8.	Heat Aging (ASTM D 3045):	80% x 80%
9.	Tear Strength (ASTM D 751):	100 lbs x 100 lbs
10.	Low Temperature Bend (ASTM D 2136):	Pass (-40 deg. F.)
11.	Permeance (ASTM D 96):	0.003 Perms
12.	Dimensional Change (ASTM D 1204):	0.3%
13.	Hydrostatic Resistance (ASTM D 751):	400 psi
14.	Ozone Resistance (ASTM D 1149):	Pass
15.	EMMAQUA Test (ASTM E 838):	Pass (2.7 million Langleys)

B. The TPA membrane shall be fully adhered directly to compatible insulation or substrates that exhibit sufficient tensile and peel resistance.

2.3 INSULATION

A. Rigid closed-cell polyisocyanurate insulation board by Atlas or equal acceptable to roofing membrane manufacturer. Provide minimum insulation R-19.

B. Provide a combination of flat and tapered boards, sloped at 1/4 in. per foot to provide drainage and crickets as shown on Drawings.

C. Insulation adhesive: FM approved.

1. Primer for metal decks: "Water Base Primer".

2. Adhesive for decking and insulation: "Fas-N-Free Insulation Adhesive".

3. Membrane flashing adhesive: "TPA Bonding Adhesive".

2.4 FLASHING MATERIALS

A. Flashing materials shall be supplied by the roofing manufacturer. Flashing materials shall be the same material as the roofing membrane or membrane coated metal unless specified differently.

1. Tremco TPA-FB Membrane Flashing and/or TPA membrane.

2. Tremco TPA Prefabricated Flashing: Pipe boots, inside corners, outside corners.

B. Surface mounted counterflashings and accessories: 24 gauge sheet metal with 70% Kynar finish.

2.5 FASTENERS

A. Mechanical Termination: Approved metal plates and screws.

B. Sheet Metal Fasteners: Galvanized ring shank nails, min. 1 in. penetration into wood.

2.6 RELATED MATERIALS

A. Wood Nailers: Treated wood nailers, specified in Section 06105, installed at all perimeter locations and other locations as required.

1. Wood nailers shall be treated for fire and rot resistance, #2 quality or better lumber. Creosote or asphaltic-treated wood is not acceptable.

2. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49.

3. All wood nailers shall have a maximum moisture content of 19 percent by weight on a dry basis.

B. Sealants: Tremseal S and GP.

C. Night Seal: Roofing cement or asphalt (ASTM D-312, Type III - Steep).

D. Foam Rod Stock: Polyethylene or Neoprene in shapes and sizes as needed.

E. Roof Traffic Pads: Tremfast Walkpads.

F. Static Vents: Galvanized metal vents having metal deck flange for securing to substrate. Dampers are not required if after installation, water cannot retreat back through vent.

PART 3 - EXECUTION

3.1 EXAMINATION OF SURFACES

A. The roofing installer shall inspect the roof deck and surfaces to receive roofing system prior to commencement of the roofing work, and shall notify the Contractor and Architect in writing of any defects observed. Roofing work shall not proceed until any such defects are corrected to the satisfaction of the roofing installer. Materials shall not be installed over rough, uneven or improperly prepared surfaces.

B. Commencement of work by roofing installer shall constitute acceptance of the existing conditions as suitable for the successful completion of the work.

C. Installation shall not proceed until all nailers and blocking are in place, all openings in the roof deck are permanently supported with steel framing, all curbs, smoke vents, and similar equipment are on the project site ready for installation, and all work of other trades on the roof is completed to the extent practical.

D. Perform pull tests on decking and nailers using proposed fasteners. Perform a minimum of 5 tests for each condition of installation (field, perimeter, and corner), for each 20,000 sq. ft. of roof or portion thereof, and for each distinct roof area (and building). Perform additional tests necessary to isolate and rectify failures.

3.2 PREPARATION

A. Coordinate with work specified in other Sections to assure proper and timely phasing.

B. Install and prepare vents, drains, curbs, supports, and other projections through roof deck. Protect adjacent surfaces not designated to receive roofing.

C. Surfaces scheduled to receive roofing shall be dry, clean and smooth, free of sharp projections and depressions, free of any water, frost, snow, loose debris or other unacceptable materials.

D. Seal cracks, joints, and mating surfaces with recommended material and sealant. Use proper depth-width ratio as recommended by the sealant manufacturer.

E. All required nailers and metal flashings shall be securely installed prior to roofing.

F. All surfaces must be free of physical contact with any bituminous surfaces and materials.

G. Coordinate installation so each area is made 100 percent watertight at the end of each work period.

3.3 WOOD NAILERS

A. Install continuous treated wood nailers at the perimeter of the entire roof and around roof projections and penetrations as shown on approved shop drawings.

B. Nailers shall be anchored to resist a minimum force of 200 pounds per linear foot in any direction.

C. A 1/2 inch space shall be provided between nailer lengths. Nailer lengths shall not be less than 3 feet long.

D. Nailer attachment shall conform to current Factory Mutual Loss Prevention Data Sheet 1-49.

E. Thickness shall be as required to match substrate or insulation height to all allow for a smooth, flush condition.

3.4 INSULATION INSTALLATION

A. Adhesively attach insulation to substrate with primer and adhesive or fasteners recommended by the insulation manufacturer and the roofing membrane manufacturer, in compliance with Factory Mutual Technical Bulletin 1-28 for fastening rates and patterns, so that insulation boards rest evenly on the substrate.

B. Use at least 2 layers of insulation if required. Stagger all joints at least 12 inches between layers.

C. Apply primer and adhesive per manufacturer's written instructions.

D. Install each insulation board tightly against the adjacent boards on all sides.

E. Install second layer of insulation perpendicular to first layer but with staggered joints between layers and not less than 6 in.

F. Do not install more insulation board than can be covered with membrane by the end of the day or the onset of inclement weather.

G. Develop tapered insulation system as indicated on project drawings and approved shop drawings.

H. Joints in insulation boards shall not exceed 1/4 inch in width.

3.5 FLASHINGS

A. All flashing shall be fabricated with TPA membrane or TPA-FB membrane. Flashings shall be a minimum 24 gage sheet steel, hot-dipped galvanized to G-90 per ASTM A 123.

B. Fabricate and install TPA flashing to comply with details and project drawings and the recommendations of SMACNA Sheet Metal Manuals for fabrication and Factory Mutual Loss Prevention Data Sheet I-49.

C. All metal work shall be completed in conjunction with the roofing and flashing operation so as to provide a daily watertight condition.

D. Metal shall be installed to provide adequate resistance to bending and to allow for normal thermal expansion and contraction. Allow for minimum ¼ in. space between metal joints.

E. Perimeter edge metal flashing shall have a 5 in. minimum nailing flange and hemmed metal edge. Metal flashing shall be fastened to solid wood blocking with annular ring nails, 4 in. o.c. Fasteners shall penetrate the wood a minimum of 1 -1/4 in.

F. Continuous metal cleats are required on all metal fascias or coping caps. Each cleat shall be fastened 12 in. o.c. into wood blocking. Hook strips should be continuous, minimum 22 gage, secured with annular threaded nails long enough to penetrate the wood 1-1/4 in. Nail head shall be 3/16" diameter minimum. When screws are used, they shall be minimum No. 8, long enough to penetrate wood ¾ in. or metal 3/8 in. Screws shall be spaced at 24 in. o.c. in Zone 1 and 16 in. o.c. in Zone 2 (refer to FM I-49). Screws shall be corrosion-resistant steel.

G. All gravel stops and drip edges shall be installed using a continuous 22 gauge hook strip fastened 12 in. o.c. using galvanized annular ring nails.

H. Fasten metal flashings 4 in. o.c. to treated wood nailers using galvanized annular ring nails.

I. Install TPA flashings prior to the installation of the roofing membrane. Flange of flashing component shall be at the same level as the insulation or other substrate to which the membrane will be applied.

J. Install adjacent pieces of coated metal flashing with ¼ in. gap. Apply a 2 in. wide continuous strip of foil tape over the gap to act as a bond breaker. Hot air weld a 6 in. strip of C3 membrane, over the foil tape, to each piece of flashing to form a watertight splice.

K. Fasten the top of TPA coated metal base flashing 8 in. o.c. using fasteners appropriate for the underlying substrate.

3.6 MEMBRANE INSTALLATION

A. Placement:

1. TPA membrane shall be fully adhered and properly installed over the prepared substrate surface. The surface shall be clean, dry, smooth, and free from contamination.

2. The membrane shall be cut to fit neatly around all penetrations and roof projections.

3. The roofing membrane shall be unrolled and positioned with a minimum 3 ft. overlap. Laps shall be shingled with, or run parallel to, the slope of the roof.

B. Attachment:

1. Begin installation at low point of deck. Position roll of elastomeric sheeting, square to roof edge in a manner, which provides sufficient material to facilitate flashing.

2. Avoid wrinkles. Reposition when necessary. Do not stretch material unevenly.

3. Install second and succeeding rolls in same manner. Overlap seams and end laps minimum 4 in.

4. Seal edges in accordance with manufacturer's recommendations.

5. Apply TPA Bonding Adhesive to insulation substrate per manufacturer's recommendations.

6. Membrane attachment at metal:

a. Mechanical fasteners shall be installed in true and straight rows and columns.

b. Mechanical fasteners shall extend ½ in. beyond the deck. Excess screw length will be trimmed to ½ in. length.

7. Membrane Seaming:

a. All edge surfaces to be seamed by hot air welding. Surfaces must be wiped with solvent using clean rags.

b. Heat weld laps with approved welding equipment. Adjust welding speed and temperature base upon ambient conditions and material.

3.7 FLASHING

A. Elastomeric base flashings:

1. Ensure proper cants are installed and secure.

2. Install base flashing adhesive

3. Clean top edge of membrane with solvent cleaner

4. Apply flashing tape along top edge.

5. Clean and prime pressure bar.

6. Install pressure bar with mechanical fasteners at 6 inches on center.

7. Provide pressure bar closures at ends of base flashing where exposed.

8. Caulk and seal top edge of pressure bar receiver. Tool neatly to shed water.

9. Install metal counter flashing.

B. Elastomeric roof jacks:

1. Ensure no sharp edges or detrimental materials remain that would disrupt the quality of the roof system

2. Field fabricate TPA roof jacks to fit snugly around penetration.

3. Heat weld seams.

4. Caulk and tool neatly after securing with stainless steel drawbands.

C. Laps and Joints:

1. Over the properly installed and prepared surface, approved bonding adhesives shall be applied using approved solvent-resistant roller, or sprayed. The adhesive shall be applied to the substrate only, in a smooth even coating with no globs, puddles, voids or similar irregularities. Only areas that can be completely covered in the same day shall be coated with adhesive. The surface with adhesive coating shall be allowed to become tacky prior to installing the roof membrane.

2. Drying time of the adhesive increases with the presence of higher humidity or cooler temperatures.

3. When the surface is ready, TPA membrane (field and perimeter sheets) shall be unrolled and set in proper position. Adjacent sheets shall be overlapped a minimum of 3 in.

4. No bonding adhesive shall be applied to lap (seam) areas that are to be welded to flashings or adjacent membrane sheets by means of hot air and/or solvent welding procedures.

5. Secure the membrane with fasteners and plated around curbs and other penetrations with the same fastener spacing used to secure the perimeter sheets.

6. Position all perimeter sheets parallel to the edges of the area to be roofed.

7. Position and secure the edge of each field sheet prior to welding the adjacent sheet to it.

8. Secure the membrane at all angel changes in the substrate using the same spacing used for the perimeter sheets. This procedure is required regardless of the cause of the angle change.

D. Membrane termination and securement:

1. The TPA membrane shall be secured at all termination's at the perimeter of each roof level, roof section, curb flashing, expansion joint, rising wall, penthouse.

2. Securement shall be provided at all angle changes in the deck (changes in roof plane) or insulation taper with inside angles more than 1 in. per foot from the plane of the roof, ridge angles that exceed 1 in. per foot total angle change.

3. Securement shall be achieved using TPA coated metal flashing, adequately fastened to treated wood nailers, or Tremco fasteners (and plates) spaced according to deck type.

4. All termination's and fasteners shall be sealed within a lap or covered with a strip of TPA membrane, its perimeter continuously welded to the field sheet

3.8 MECHANICAL CURBS

A. Install rigid insulation on new metal curbs. Secure to frame using screws and plates or solvent free insulation adhesive.

B. At wooden curbs (platforms): After installing TPA base flashing, install TPA membrane across top of platform and seal to base flashing. Install 24 gauge galvanized metal cover and secure to platform along vertical sides.

3.9 SCUPPERS / DRAINS

A. Fabricate new scuppers using TPA coated metal. Fabricate to shapes and sizes indicated.

B. Scupper shall extend 2 in. minimum beyond face of exterior wall, and shall have a face plate set in full bed of sealant prior to fastening to wall.

3.10 MEMBRANE FLASHING

A. All flashings shall be installed as shown on the detail drawings and manufacturers standard details. All TPA membrane or TPA-FB flashings shall be installed concurrently with the roof membrane as the project progresses. No temporary flashings shall be allowed. If any water is allowed to enter under the new roofing due to incomplete flashings, the affected area shall be removed and replaced at Contractors expense.

B. Flashings shall not be applied over existing thru-wall flashings or weep holes. All flashings shall extend a minimum of 8-inches above roof level unless previously accepted by Architect and an authorized roofing manufacturer's representative.

C. Membrane base flashings can be TPA or TPA-FB membrane.

1. The TPA membrane shall be fully adhered to a dry, smooth solvent-resistant and compatible substrate using approved Bonding Adhesive.

2. Over the properly installed and prepared substrate, approved Bonding Adhesive shall be applied using approved solvent resistant rollers, squeegee or sprayed. The adhesive shall be applied at a rate of approximately 1-1/2 gallons per 100 square feet, depending upon substrate material. The adhesive shall be applied in a smooth even coat with no globs, puddles, or voids. The substrate with the adhesive coating shall be allowed to become tacky, before installing the TPA membrane.

3. Drying time of adhesive increases with presence of humidity or cooler temperatures.

4. When the TPA membrane has been cut to correct width and length, embed the flashing into the substrate adhesive, taking care to avoid wrinkles.

5. Care should be taken to ensure that the flashing does not bridge where there is a change of direction.

6. The top of the installed flashing shall be fastened under metal counterflashings, coping cap, or through metal scupper. The maximum distance between fasteners for TPA flashings shall be 6 in. through flat bar.

3.11 CLOSEOUT AND CLEANUP

A. Contractor to verify that all work is completed in accordance with contract documents prior to calling for manufacturer's acceptance inspection.

B. All punch list items are to be completed before delivery of Manufacturers Warranty.

C. Remove all stray marks, debris and trash from the job site on a daily basis. Sweep clean membrane and install metal drain covers.

END OF SECTION

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SECTION 07600
METAL FLASHINGS AND SHEET METALWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Aluminum copings.

2. Prefabricated counterflashing assemblies.

3. Prefabricated curbs.

4. All other flashings and sheet metal items shown or required to make the building weathertight and not specified in other Sections.

B. Furnish the following for installation in other Sections:

1. Metal roof purlins: Section 07220.

C. Related work:

1. Division 5 for fluoropolymer coating on extruded aluminum copings.

2. Division 7 for sheet metal and flashings associated with metal siding and standing seam metal roofing.

3. Division 7 for sheet metal and flashings associated with installation of roofing membrane.

4. Division 8 for flashings in connection with skylights and curtain walls.

5. Division 9 for finish painting flashings and sheet metalwork.

6. Division 15 for mechanical sheet metal work, and flashings and collars for mechanical and electrical work, except as specified herein for roof drains.

1.2 PERFORMANCE REQUIREMENTS

A. General: Install the work of this Section to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Thermal movements:

1. Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.

2. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements.

3. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

4. Temperature change (range) of 120-degree F ambient; 180-degree F, material surfaces.

C. Water infiltration: Provide sheet metalwork and flashings that do not allow water infiltration to building interior, and to damage materials, such as insulation, in exterior walls.

1.3 SUBMITTALS

A. Data: Printed specifications, installation instructions and general recommendations for installation of prefabricated assemblies.

B. Shop drawings:

1. Show typical and atypical details, material weight, methods of joining and attachment, and relationship with adjacent materials and supports.

2. Detail interface with adjacent materials. For interface between flashings with different profiles and conditions difficult to illustrate in 2-dimension, furnish isometric drawings.

C. Samples: Assembled samples of the following. Make samples at least 6 inches long, except as otherwise specified. Mount on plywood and include all components to be installed under this Section for each sample.

1. Coping complete, including a corner condition, with legs at least 12 inches long, with typical moving and non-moving joints.

2. Counterflashing with receiver.

1.4 HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Sheet steel: Commercial quality carbon steel sheets complying with ASTM A 653, lock-forming grade, galvanized with a G90 zinc coating, 24-gage minimum unless otherwise indicated.

B. Copper: ASTM B 370, cold-rolled, 16 oz./square-foot, CDA 2B finish].

C. Aluminum extrusions: ASTM B 229.

D. Nails for attaching sheet steel to wood: Large flat head "stronghold" type roofing nails with barbed point, formed of hot-dip galvanized steel of sufficient length to penetrate a minimum of 1-inch into the wood nailer.

E. Hot dip galvanized self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

1. Fasteners for flashing and trim: Blind fasteners or self-drilling screws, gasketed with hex washer head.

2. Blind fasteners: High-strength aluminum or stainless-steel rivets.

F. Fasteners for copper: Copper or bronze nails, rivets and bolts.Solder and flux:

1. For galvanized sheet metal: 50-50 lead/tin solder complying with ASTM B 32, used with a non-corrosive flux.

2. For copper: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.

H. Sealing tape:

1. Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing.

2. Provide permanently elastic, nonsag, non-toxic, non-staining tape.

I. Expansion-joint sealant: For hooked-type expansion joints, which must be free to move, provide non-setting, non-hardening, non-migrating, heavy-bodied polyisobutylene sealant.

J. Bituminous coating:

1. Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat.

2. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

K. Flexible flashing (for use under copings): 9-inch wide self-adhering (peel and stick) flexible modified bitumen flashings by one of the following.

1. CCW-705-TWF by Carlisle Coatings & Waterproofing.

2. Fast Flash by Protecto Wrap Co.

3. Sealtight Air-Shield by WR Meadows, Inc.

4. Seam Seal Tape by SafSeal Innovations (800.898.4842 - butyl).

5. Vycor Weather Barrier Strips by Grace Construction Products.

2.2 PREFABRICATED ASSEMBLIES

A. Counterflashing assemblies: Formed of 24-gage galvanized sheet steel, of the profiles shown on the Drawings, complete with factory-formed internal and external corners, and end closures by one of the following.

1. Basis of design is for Fry Reglet Corp.

2. Keystone Flashing Co.

3. CF Cheney Flashing Co.

4. MM Systems Corp.

B. Extruded aluminum copings:

1. Custom extrusions formed to the profiles and dimensions indicated in the longest possible length.

2. Miter and weld corners with adjacent joints a minimum of 2-foot from the corner. Make all joints with concealed splice plates.

3. Fabricate so that when assembled the fasteners will be concealed from public spaces.

4. Prefinish copings at the factory with Fluoropolymer coating as specified in Section 05082.

C. Sheet metal curbs:

1. Of the sizes and profiles indicated, by Thybar Corp., Pate Co. or Custom Curb, Inc., with an 18-gage galvanized steel shell and base plate fully welded, factory installed insulation, and continuous wood nailer.

2. Reinforce curb as required to safely support the equipment thereon.

2.3 FABRICATION

A. General:

1. Shop fabricate flashings and sheet metal work to comply with profiles and sizes indicated on the Drawings and standard Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) detail plates of the "Architectural Sheet Metal Manual".

2. Form sheet metal on bending brake with straight, sharp edges. Shape, trim, and hand seam sheet metal on bench; keep job site forming to a minimum.

3. Comply with metal producers' recommendations for tinning, soldering, and cleaning flux from metal.

4. Fabricate with joints and corners accurately machined, filed and fitted, and rigidly framed together and connected.

B. Fabricate in as long length as possible to minimize field joints.

C. Prefabricate intersections, including counterflashings, with mitered, riveted joints. Make corners and intersections with legs a minimum of 24-inch long extending in each direction.

D. Tinning and soldering:

1. Tin edges on both sides of sheet steel to be soldered.

2. Perform soldering slowly, thoroughly heating seams and completely sweating solder through full width of seams.

E. Exposed edges: Neatly double back sheet metal 1/2 inch to stiffen edges and to provide a finished appearance.

F. Provisions for attachment to structure: Furnish supports, hangers, bracing, anchors and other devices shown, specified or necessary for reinforcement and proper attachment of flashings and sheet metal to building.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions and measurements affecting the work of this Section at site.

B. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 GENERAL REQUIREMENTS

A. In addition to the assemblies listed above, provide required sheet metal flashings, counterflashings, transitional and interface flashings required to achieve a properly weatherproofed, flashed and counterflashed building envelope, including sheet metal flashings in the angles formed where exterior waterproofed decks abut walls, and as well at curbs, platforms, ventilators, pipes, roof hatches, and other vertical and horizontal surfaces, where indicated and necessary to make the Work weatherproof.

B. Comply with manufacturer's installation instructions, where applicable, and applicable SMACNA and NRCA details, except as indicated and specified.

C. Install counterflashing assemblies at a constant height above the roof.

1. Anchor counterflashing securely into reglet by friction, or provide lead wedges spaced 2-foot o.c. maximum.

2. Use manufacturer's standard splice plates and preformed corners for a weathertight assembly.

D. Coordinate this work with other trades whose work penetrates, intersects and adjoins flashings and sheet metal work, to permit the correct sequencing and the watertightness of the assemblies.

E. Isolate copper from dissimilar metals and pressure-treated wood.

3.3 INSTALLATION

A. General:

1. Install sheet metal work in accordance with the approved shop drawings.

2. Slope copings and sills with a minimum slope of 10 percent to drain away form walls and building interior.

3. Attach work securely to supporting construction, plumb, level, with tight, flush joints allowing for thermal movements.

4. Install work with lines, arises, and angles sharp and true.

5. Fold exposed edges neatly to form a 1/2-inch hem on the concealed side; hem all exposed edges, unless otherwise indicated.

6. Assemble work so that face of metal in contact has hairline joints, except where required for expansion or fitting. Provide back-up plates at joints.

7. Conceal fastenings and reinforcement where they would be visible by the public and the building occupants.

8. Finish work shall be straight, smooth and continuous, without dimples, dents and other damage.

B. Soldering: Solder all joints not intended for expansion and contraction.

1. Clean material and tin prior to soldering.

2. Solder slowly. Heat the seams thoroughly, and completely fill with solder.

3. Make exposed soldering on finish surfaces neatly, full flowing and smooth.

4. Wash acid flux with a soda solution after soldering and remove soldering flux on exposed surfaces.

C. Nailing:

1. Confine nailing of sheet metal generally to sheet metal having a maximum width of 18 inches. Nailing of flashings shall be confined to one edge only.

2. Space nails evenly not over 12 inches o.c., and approximately 2 inches from the edge.

3. Face nailing is not permitted. Do not nail sheet metal assemblies on horizontal surfaces.

4. Where sheet metal is applied to surfaces other than wood, furnish detailed shop drawings showing locations of required sleepers and nailing strips specified in Section 06105.

D. Bolts, rivets, and screws:

1. Install bolts, rivets, and screws where indicated or required.

2. Provide compatible washers to protect surface of sheet metal and to provide a watertight connection.

E. Dissimilar material protection:

1. Protect sheet metal in contact with dissimilar metals, concrete, masonry and plaster with a heavy coating of bituminous paint, approved separation tape, or building felt or paper.

2. Set sheet metal assemblies supported by pressure-treated wood on building paper or felt attached to the wood nailer, except set copings on flexible flashing specified. Lap on vertical surfaces at least 2 inches.

F. Seams - general: Make seams straight, and uniform in width and height with no solder showing on the face.

1. Flat-lock seams: Finish not less than 3/4 inch wide made in the direction of water flow.

2. Lap seams: Finish soldered seams not less than 1 inch wide. Overlap seams not soldered at least 3 inches.

3. Loose-lock expansion seams: No less than 3-inch wide, designed to provide minimum 1 inch movement within the joint. Fill joint completely with sealant applied at not less than 1/8 inch thick bed.

4. Standing seams: Not less than 1 inch high, double locked without solder.

G. Expansion and contraction:

1. Provide for thermal and building movement without over-stressing the material, breaking connections or producing wrinkles and distortion in finished surfaces. Make sheet metal installations weathertight at all locations.

2. Provide expansion and contraction joints at not more than 40-foot intervals, except that where the distance between the last expansion joint and the end of the continuous run is more than half the required interval spacing, provide an additional joint. Where expansion and contraction joints are exposed to view, their location is subject to the Architect's approval.

3. Exposed surfaces shall be free from visible wave, warp, and buckle.

H. Flexible flashing: Install under all parapet caps. Lap joints 2 inches. Carry flexible flashing down wall as far as the edge of the coping; overlap wall weather barrier at least 2 inches.

I. Install curbs level and square with tight, waterproof joints; attach securely to deck.

J. Completed work: Completed flashings and sheet metal work shall be watertight, free of tool marks, dents, scratches and other damages, with joints and corners accurately machined, filed and fitted, and rigidly framed together and connected.

END OF SECTION

SECTION 07610
STANDING SEAM METAL ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Factory-finished standing seam metal roofing (SSMR) with continuous interlocking field formed seams.

2. Reinforcement, anchors, clips, fasteners and necessary closures and flashings to ensure a weathertight installation.

3. Reinforcement, anchors, clips, fasteners and necessary closures and flashings adjacent to SSMR to ensure a weathertight installation.

B. Related work:

1. Division 5 for fluororpolymer coating.

2. Division 5 for metal fabrications.

3. Division 7 for roof insulation.

4. Division 7 for metal siding.

5. Division 7 for all other flashings and sheet metal.

1.2 REFERENCES

A. Aluminum Association:

1. 2005 edition of the Aluminum Design Guide

B. American Society for Testing and Materials (ASTM):

1. ASTM B 209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

2. ASTM E 1680 Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.

3. ASTM E 1646 Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference

4. ASTM E 1592 Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.

C. Factory Mutual Global Group

1. FM 4471, August 1995: Approval Standard for Class 1 Panel Roofs

1.3 SYSTEM DESCRIPTION

A. Design requirements:

1. Design criteria shall be in accordance with CBC.

2. Wind-uplift resistance: Provide clips, fasteners, and clip spacings with capability to sustain, without failure, a load equal to 300 percent the design negative uplift pressure of 56 lbs/sq. ft.

3. Thermal movement:

a. Provide sheet metal roofing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.

b. Provide clips that resist rotation and avoid shear stress as a result of sheet metal roofing thermal movements.

c. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

d. Temperature change (range): 150 deg F, ambient; 200 deg F, material surfaces.

B. Structural requirements:

1. Panel structural properties are to be determined in accordance with latest edition of Aluminum Association's "Aluminum Design Manual- Specifications and Guidelines for Aluminum Structures".

2. Metal roof system must be tested in accordance with ASTM E-1592 "Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference" for determination of negative (uplift) load capacity.

C. Environmental requirements:

1. Resistance to air infiltration: Maximum of 0.024 cfm per square foot when tested in accordance with ASTM E 1680 at static test pressure differential of 6.24 psf.

2. Resistance to water infiltration: No leakage through panel joints when tested in accordance with ASTM E 1648 at static test pressure differential of 12 psf.

1.4 SUBMITTALS

A. Data: Copies of manufacturer's data including specifications, standard details, and installation manual.

B. Shop drawings: Show fabrication and installation layouts of sheet metal roofing, including plans, elevations, and keyed references to termination points. Distinguish between shop- and field-assembled work. Include the following.

1. Details for forming sheet metal roofing, including seams and dimensions.

2. Details for joining and securing sheet metal roofing, including layout of fasteners, clips, and other attachments. Include pattern of seams.

3. Details of termination points and assemblies, including fixed points.

4. Details of expansion joints, including showing direction of expansion and contraction.

5. Details of roof penetrations.

6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings.

7. Details of special conditions.

8. Details of connections to adjoining work.

9. Details of flashings and trim, at a scale of not less than 1-1/2-inch.

C. Samples:

1. For Architect's approval, submit a minimum of one 4-foot square metal sample with a minimum of one seam, closure piece, ridge and eave detail, finish and color. Mount on underlayment/plywood substrate.

2. Provide nominal 12 inches long by actual panel width of translucent roofing panel.

3. Modify sample panel when requested by the Architect, until the Architects approval is obtained.

4. Approved sample panel will serve as Architect's control sample for the metal roof assembly.

5. Submit sample of panel clip and gable clip.

D. Test reports:

1. Submit copies of design test reports for each of the performance testing standards listed in Article 1.2 of this specification.

2. Test reports shall be performed by an independent, accredited testing laboratory, and shall bear the seal of a registered professional engineer.

E. Calculations:

1. Submit engineering calculations defining cladding loads for all roof areas based on design criteria listed in Article 1.2 of this specification

2. Calculation shall clearly indicate clip type, spacing of clips by roof zones, and fastener requirements.

3. Uplift load capacity of roof panel system shall be determined by ASTM E 1592 testing. Extrapolation of uplift capacities is not acceptable. Uplift capacity calculation by "section property" method is not acceptable.

4. Compute uplift loads on clip fasteners with recognition of prying forces and eccentric clip loading

5. Calculate pullout/shear strength of fasteners in accordance with test data published by the fastener manufacturer, utilizing applicable material safety factors.

6. Compute thermal calculation for expansion/contraction forces due to total temperature differential of 150 degrees F.

7. Compute panel fixed point attachment forces and required fasteners.

8. Compute in-plane clip forces and indicate required attachment fasteners.

F. Warranty: Provide unexecuted specimen warranty documents as required in Article 1.6.

G. Certification:

1. Submit manufacturer's certification that materials and finishes meet specification requirements.

2. Submit applicator's certification that installer of products meets specified qualifications

1.5 QUALITY ASSURANCE

A. Design:

1. Attachment of metal roofing to substrate shall be designed by a California-registered professional engineer to resist positive and negative wind loads prescribed by Code, but not less than UL 90 design.

2. Submit calculations signed and sealed by the engineer to verify compliance with this criteria.

B. Manufacturer's qualifications: 10 years minimum experience in fabrication of standing seam roofs.

C. Applicator qualifications:

1. 3 years minimum experience in application of structural field-formed concealed clip roofing systems

2. Applicator must be an approved installer, certified by the manufacturer prior to beginning installation of the standing seam roof.

D. Pre-installation meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, and manufacturer's installation instructions.

1.6 HANDLING

A. Deliver metal roof system to jobsite properly packaged to provide protection against transportation damage

B. Exercise extreme care in unloading, storing, and erecting metal roof system to prevent bending, warping, twisting, and surface damage.

C. Store sheet bundles above ground with one end elevated and allow for air circulation and drainage.

D. Store sheet bundles under tarpaulin cover to protect from rain and prevent accumulation of dirt and condensation.

E. When storing on roof, ensure that the load bearing capacity of the substructure is sufficient. Secure sheets and packages against wind uplift and sliding.

F. Prolonged storage of bundled sheets is not recommended.

G. Avoid direct contact with alkali-bearing material such as lime based cement, concrete/mortar.

1.7 WARRANTY

A. Furnish manufacturer's standard 20-year warranty stating panel material will not fail due to corrosion, ruptures or perforations.

B. Furnish written warranty signed by applicator for 2 year period from date of substantial completion of the building covering repairs required to maintain roof and flashings in watertight conditions.

C. Repair or replace defective materials and workmanship during this period at no cost to the District.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Kalzip 65/400 by KALZIP Inc. (basis of design) or equal.

2.2 MATERIALS

A. Panels:

1. Aluminum alloy sheet, ASTM B 209, aluminum alloy 3004 in accord with manufacturer's standard to suit forming operations and finish specified

2. Thickness: 0.047 in. minimum

3. Fabricated vertical leg standing seam panel with integral continuous overlapping seams suitable for continuous zipping or crimping by mechanical means during installation.

4. Panel seam design shall allow for mechanical "unzipping" without compromise of panel structural integrity.

5. Panels shall be 15.75 in. wide with a minimum vertical standing leg height of 2-1/2 in.

B. Clip/fastener assemblies: "E" Clip, one piece reinforced polyamide clip designed to freely accommodate thermal movement for panel lengths beyond 130 ft.

C. Accessories:

1. Provide manufacturer's standard accessories and other items essential to completeness of standing seam roof installation.

2. Gutters and downspouts to be fabricated to the same gauge and specification as panel.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners:

1. All self tapping/self drilling fasteners, bolts, nuts, rivets shall be designed to withstand specified design loads.

2. All fasteners to be manufactured from series 304 austenitic stainless steel. Rivet style fasteners to be manufactured from aluminum or stainless steel.

3. Provide neoprene washers under the heads of all exposed fasteners.

4. Use proper torque settings to obtain controlled uniform compression for a positive seal without rupturing the neoprene washer.

B. Accessories:

1. Sealants as specified in Section 07920.

2. Sealant tape may be used for metal-to-metal joints.

3. Provide all other components required per the approved shop drawings for a complete metal roof system to include panels, clips, gable clips, fasteners, trims/flashings, closures, fillers, sealants and any other required items.

2.4 FABRICATION

A. Panels:

1. Provide factory formed panel widths of 12 in. or 15.75 in. as shown on Drawings, with 2.5 in. tall standing seam.

2. Panels are to be fabricated full length with absolutely no end lap conditions allowed.

B. Trim/flashing:

1. Fabricate trims/flashings from same material and gauge as roof panel system.

2. Fabricate trims/flashings in accordance with approved shop drawings and applicable standards.

2.5 FINISH

A. Two-Coat Fluoropolymer Finish: MICA metallic appearing coating, 0.25 mil primer with 0.75 mil 70 percent PFCF fluoropolymer color coat containing pearlescent flakes. Refer to Section 05082.

1. Color: Silversmith (439RZ1541M Classic 2) by Valspar.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine the alignment and placement of the building structure and substrate. Correct any objectionable warp, waves or buckles in the substrate before proceeding with installation of the pre-formed metal roofing. The installed roof panels will follow the contour of the structure and may appear irregular if not corrected.

B. Do not proceed with installation until discrepancies have been resolved.

3.2 INSTALLATION

A. Install roofing and flashings in accordance with approved shop drawings and manufacturer's product data, within specified erection tolerances.

B. Install metal roof system so that it is weathertight, so that it is without waves, warps, buckles, fastener stresses or distortion.

C. Install metal roof system with allowance for thermal expansion and contraction.

D. Anchor roof panels securely in place using clips and fasteners spaced in accordance with manufacturer's recommendations.

E. Where exposed fasteners are unavoidable for edge flashings, they shall be prefinished to match the roofing panels.

F. Seal all joints, except those inherently waterproof because of assembly technique, with sealant specified in Section 07920; when sealants will be visible, select one matching the color of the panel. Assemblies shall finish water and weathertight.

G. Do not allow panels or trim to come in contact with dissimilar materials such as copper, fire retardant treated timber, concrete/mortar. Water runoff from dissimilar materials is also prohibited

3.3 PROTECTION/REPAIRS

A. Protect finish from damage. Do not allow traffic on completed roof.

B. Repairs:

1. Touchup only minor scratches and abrasions (not exceeding 1/2 in. in length), when the results are acceptable to the Architect with zinc-rich paint.

2. Otherwise replace damaged materials to the Architect's satisfaction.

3.4 CLEANING

A. Clean exposed surfaces of excess material and debris promptly after completion of installation.

B. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance.

C. Protect work as required to ensure roofing will be without damage at time of final completion.

D. Replace products having damage other than minor finish damage.

E. Repair products having minor damage to finish in accordance with panel manufacturer's recommendations.

END OF SECTION

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SECTION 07810
SPRAYED FIREPROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Sprayed cementitious fireproofing on all structural steel beams, columns and their connections, and steel deck unless otherwise indicated.

B. Related work:

1. Division 7 for firesafing/firestopping.

1.2 SUBMITTALS

A. Data: Submit the following.

1. Manufacturer's data for the proposed fireproofing material together with proof of acceptance by regulatory agencies.

2. Table showing thickness, density and UL design number to be used for each condition, including W/D ratio for beams and columns; submit test reports used in this table which are not included in the UL Fire Resistance Directory.

B. Test reports: Submit the following from a qualified independent testing agency employed and paid by Contractor or manufacturer, except for field density.

1. Reports indicating that physical properties of proposed fireproofing products comply with specified requirements based on comprehensive testing of current product formulations.

C. Certificate: Submit the following.

1. Product certificate from fireproofing manufacturers that proposed fireproofing product complies with specified requirements including those for fire-test response characteristics and compatibility with adhesives, where applicable, and other surface coatings on substrates indicated to be fireproofed.

2. Certify the fireproofed areas, application thickness, UL design number, and UL rating.

3. Certify that cured material will not flake, peel, spall, soften, delaminate, or produce larger than hairline cracks.

1.3 QUALITY ASSURANCE

A. Requirements of regulatory agencies:

1. Provide materials and application procedures that have been tested and listed by UL, and are acceptable to authorities having jurisdiction for the assemblies shown.

2. Provide fireproofing complying with the requirements of authorities having jurisdiction for the fire resistance ratings and thicknesses indicated.

B. Applicator's qualifications: Experienced firm, certified, licensed, or otherwise qualified by the fireproofing manufacturer as having the necessary experience, staff, and training to install manufacturer's products as specified.

C. Asbestos: Provide fireproofing products containing no detectable asbestos as determined according to the method specified in 40 CFR Part 763, Subpart F, Appendix A, Section 1, Polarized Light Microscopy.

1.4 HANDLING

A. Delivery: In packages bearing the UL label listing the design numbers for which they qualify.

B. Storage:

1. Inside, under cover, above ground, so they are kept dry until ready for use.

2. Use materials with limited shelf life within period indicated. Remove from Project site and discard materials whose shelf life has expired.

3. Remove from Project site and discard materials that have deteriorated.

1.5 JOB CONDITIONS

A. Comply with the fireproofing manufacturer's recommendations for ambient temperature requirements before, during and after the installation of the fireproofing.

B. Do not apply fireproofing on frost-covered surfaces.

C. In confined areas, provide natural or mechanical ventilation to properly dry this work during and after its application.

1.6 SEQUENCING

A. Sequence and coordinate application of fireproofing with related work to comply with the following:

B. Provide temporary enclosures to prevent deterioration of fireproofing exposed to unfavorable environmental conditions.

C. Avoid unnecessary exposure of fireproofing to abrasion and other damage during construction operations after its application.

D. Do not apply fireproofing on steel deck until completion of the concrete work thereon.

1. Do not apply fireproofing to the underside of roof deck until roofing membrane is watertight and roof top equipment has been installed; limit roof traffic during and for 30 days after application and drying of fireproofing to a minimum.

E. Do not begin application of fireproofing until clips, hangers, supports, sleeves, and other items penetrating fireproofing are in place.

F. Defer installing ducts, piping, and other items that would interfere with the application of fireproofing until fireproofing is completed.

G. Do not install enclosing or concealing construction until after fireproofing is applied, inspected, tested, and corrections are made to defective fireproofing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fireproofing:

1. One of the following factory-mixed cementitious fireproofing, complying with these Specifications, and specifically manufactured and tested for fireproofing of steel members:

a. Carboline Co., Fireproofing Products Div. Pyrolite 15.

b. Isolatek International Cafco 300.

c. WR Grace Monokote Type MK-6/HY (basis of design).

2. Material selected must fit within the space allocated on the Drawings, provide the fire resistance required and have the following characteristics. Unless otherwise specified, values specified are minimum acceptable

a. Standard fire test method, ASTM E 119 (UL 263): UL tested or tested by another laboratory acceptable by Regulatory Agencies.

b. Surface burning characteristics, ASTM E 84: Flame spread 0; smoke developed 0.

c. Dry density, ASTM E 605: 15 pcf average with minimum individual samples not less than 14 pcf.

d. Bond strength, ASTM E 736: 200 psf minimum.

e. Deflection, ASTM E 759: No cracks, spalls or delamination.

f. Bond impact, ASTM E 760: No cracks or delamination on bond impact.

g. Compressive strength, ASTM E 761: 1,200 psf with no deformation exceeding 10 percent.

h. Air erosion, ASTM E 859: 0.000 g/square foot in 24 hours. Sample shall not be purged before testing.

i. Corrosion resistance, ASTM E 937: Does not promote corrosion of steel as tested.

j. Indentation hardness ASTM C 569: 0.15-inch maximum.

B. Water: Potable, fresh, free of deleterious substances.

2.2 MIXING

A. Mix fireproofing in accordance with its manufacturer's instructions in clean machine(s) free of particles from previously mixed batches.

B. Mix water in calibrated equipment. Use mechanical mixing equipment, except that hand-mixing may be used for small applications covering less than one square foot of area.

C. Do not use caked and lumpy materials, nor materials that have partially set.

PART 3 - EXECUTION

3.1 EXAMINATION/PREPARATION

A. Examine surfaces to be fireproofed.

B. Clean steel of foreign matter, including loose mill scales, which would prevent the proper adhesion of the fireproofing to the substrate.

C. Do not apply fireproofing if substrate temperature is less then 40-degree F.

D. Correct conditions that would prevent proper and timely completion of this work before proceeding with installation.

3.2 PROTECTION

A. Protect surfaces not to be fireproofed from being damaged by the application, overspray, fallout and dusting-off of fireproofing material.

B. Provide temporary enclosures, as required, to confine operations and insure adequate ambient conditions.

C. Remove excess and spillage promptly.

D. Surfaces not scheduled to be fireproofed shall be free of fireproofing residue.

3.3 APPLICATION

A. Comply with the fireproofing manufacturer's instructions and recommendations for mixing, handling and machine application of fireproofing.

B. On steel deck, apply a spatter coat of fireproofing before applying fireproofing.

C. Apply fireproofing full thickness over required substrates as required to obtain the required fire resistance.

1. Spray material completely into inverted corners.

2. On roof decks, apply a discontinuous textured spray (ER Grace SpatterKote Type SK-3) before applying fireproofing.

3. Cover substrates in a monolithic blanket of uniform density, texture and thickness necessary to achieve the required fire protection.

4. Troweling of the finish material is not required.

D. Where indicated fill space between top of partitions and steel deck completely with fireproofing.

3.4 CLEANING

A. Upon completion of each floor or area, promptly remove fireproofing from surfaces not scheduled to receive it to leave these surfaces free of fireproofing material residue.

3.5 FIELD QUALITY CONTROL

A. Tests and inspections: As this work progresses, the Owner's Testing Laboratory will take measurements and verify the thickness, density and adhesion of the material in place for compliance with Specification requirements, in compliance with applicable UBC standard 7.6, ASTM E 605 and ASTM E 736, as required by authorities having jurisdiction.

B. Corrective work:

1. Apply additional fireproofing materials or replace defective materials where tests indicate non-compliance with the Contract Documents.

2. Evaluate values resulting from tests based on fireproofing manufacturer's published data in recognized tests.

3. After all attachments to fireproofed surfaces are made and just before enclosing the fireproofing, or before Substantial Completion for fireproofing to remain exposed in the building, inspect the fireproofing and patch damaged areas to maintain the integrity of the fireproofing.

END OF SECTION

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SECTION 07842
PENETRATION FIRESTOP SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Protection of penetrations through fire-resistive construction, including both empty openings and the annular space of openings containing cables, pipes, ducts, conduits, and other penetrating items.

2. Penetrations through smoke barriers and construction enclosing compartmentalized areas involving both empty openings and openings containing penetrating items.

3. Joint sealants used in fire-resistive construction.

B. Related work:

1. Divisions 7 for all other sealants.

2. Division 7 for firesafing insulation.

1.2 REFERENCES

1. ASTM E 84, Test Method for Surface Burning Characteristics of Building Materials.

2. ASTM E 119, Standard Method of Fire Tests of Building Construction and Materials.

3. ASTM E 814, Fire Tests of Through-Penetration Fire Stops.

4. UL 1479, Fire Tests of Through-Penetration Firestops.

5. UL Building Materials directory: Through-Penetration Firestops Systems (XHEZ), and Fill, Void or Cavity Materials (XHHW).

1.3 DEFINITIONS

A. Fire-resistive construction: Construction that is designed and tested to resist, for a prescribed period of time, the passage of fire specifically at occupancy separations, area separations, shafts, exit enclosures, smoke barriers, corridor construction and other construction assemblies as prescribed by Code.

B. F-rating: Time period the firestop system limits the passage of fire through the penetration when tested in accordance with ASTM E 814.

C. T-rating: Time period the firestop system, including the penetrating item, limits the maximum temperature rise to 325 deg. F above its initial temperature through the penetration on the non-fire side, when tested in accordance with ASTM E 814.

1.4 SYSTEM DESCRIPTION

A. General: Provide penetration firestop systems manufactured and installed to resist the spread of flame and the passage of smoke and other gases in compliance with Code and the following:

1. F-rated penetration firestop systems: Provide penetration firestop systems with an F rating, determined in compliance with ASTM E 814, equaling or exceeding the fire-resistance rating of the fire-resistive wall construction penetrated, but not less than 1-hour.

2. T-rated penetration firestop systems: Provide penetration firestop systems with a T rating, in addition to an F rating determined in compliance with ASTM E 814, where systems protect items penetrating fire-resistive floor construction that will be exposed to contact with adjacent materials in occupied floor areas. T-rated assemblies are required where the following conditions exist:

a. Where firestop systems protect floor penetrations located outside of wall cavities.

b. Where firestop systems protect floor penetrations located outside fire-resistive shaft enclosures.

c. Where firestop systems protect penetrations located in fire-resistive construction containing doors required to have a temperature-rise rating.

d. Where firestop systems protect penetrating items larger than a 4-inch diameter nominal pipe or 16 square inches in overall cross-sectional area.

3. Fire-resistive joint sealants: Provide joint sealants with a fire-resistance rating, determined in compliance with ASTM E 119, equaling or exceeding the fire-resistance rating of the construction penetrated, but not less than 1-hour.

B. For firestopping exposed to view, traffic, moisture, or physical damage: Provide products that will not deteriorate when exposed to these conditions.

1. For plumbing and wet-pipe sprinkler system piping penetrations provide moisture-resistant penetration firestop systems.

2. For floor penetrations with annular spaces exceeding 4 inches or more in any dimension, and for penetrations exposed to possible loading and traffic: Provide penetration firestop system capable of supporting the floor load involved without damage to the firestop system.

3. For penetrations with insulated piping: Provide penetration firestop systems not requiring removal of piping insulation.

C. For firestopping exposed to view: Provide products with a flame-spread rating of than 25 or less and a smoke-developed value of 450 or less, as determined in compliance with ASTM E 84.

1.5 SUBMITTALS

A. Data: Submit manufacturer's product data and installation instructions for materials and prefabricated devices.

B. Shop drawings: Submit large scale drawings indicating materials, installation methods, and interfaces with adjoining construction for each penetration firestop system.

1. Include qualified testing and inspecting agency's penetration firestop design designation evidencing compliance with requirements for each condition indicated.

2. Include qualified testing and inspecting agency's applicable illustrations showing each penetration firestop configuration at every construction assembly penetrated for each type of penetrating item.

3. Where Project conditions require modification of qualified testing and inspecting agency's tested assembly to suit a particular penetration firestop condition, obtain acceptance of authorities having jurisdiction for the modification prior to submitting shop drawings.

C. Test reports: Submit certified laboratory test report demonstrating the material or combination of materials proposed for use meets the requirements specified in ASTM E 814, are so classified in UL Building Materials Directory and are approved by the authorities having jurisdiction.

D. Certificates: Submit product certificates signed by firestopping product manufacturers certifying their products comply with specified requirements.

1.6 QUALITY ASSURANCE

A. Uniformity: Obtain firestopping materials and components from a single manufacturer for each kind of penetration and construction condition indicated.

B. Compatibility: Provide firestop systems compatible with one another, and with the assemblies into which they are installed, under conditions of application and service as demonstrated by their manufacturer and based on testing and field experience.

C. Installer's qualifications: Firm and individuals authorized by the firestopping material manufacturer with a minimum of 3 consecutive years experience in the installation of specified products and firestop systems on projects similar in material, design, complexity and extent to this Project, and whose work has resulted in applications with a record of successful in-service performance.

D. Regulatory requirements: Materials proposed for use shall be approved by the authorities having jurisdiction for their intended use.

1.7 HANDLING

A. Deliver products to the Project site in manufacturer's original, unopened containers bearing correct UL labeling.

B. Store materials in a manner to prevent deterioration or damage.

C. Do not install damaged and contaminated materials.

D. Do not use materials whose shelf life has expired.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide materials from one or a combination of the following, as selected by the manufacturer, depending on the condition of use:

1. Grace Construction Products FlamSafe.

2. 3M Fire Protection Products.

3. Bio Fireshield, Inc.

4. General Electric Co.

5. Hevi-Duty/Nelson.

6. Hilti Construction Chemicals, Inc.

7. Specified Technologies, Inc.

8. Tremco Inc.

9. United States Gypsum Co. (USG).

2.2 MATERIALS

A. Ceramic-fiber and mastic coating: Ceramic fibers in bulk form formulated for use with mastic coating, and ceramic fiber manufacturer's mastic coating.

B. Ceramic-fiber sealant: Single-component formulation of ceramic fibers and inorganic binders.

C. Endothermic, latex compound sealant: Single-component, endothermic, latex formulation.

D. Intumescent, latex sealant: Single-component, intumescent, latex formulation.

E. Intumescent putty: Non-hardening, dielectric, water-resistant putty containing no solvents, inorganic fibers, or silicone compounds.

F. Intumescent wrap strips: Single-component, elastomeric sheet with aluminum foil on one side.

G. Job-mixed vinyl compound: Prepackaged vinyl-based powder product for mixing with water at the Project site to produce a paintable compound, passing ASTM E 136, with flame-spread and smoke-developed ratings of zero per ASTM E 84.

H. Mortar: Prepackaged dry mix composed of a blend of inorganic binders, fillers, and lightweight aggregate formulated for mixing with water at the Project site to form a non-shrinking, homogenous mortar.

I. Silicone foam: 2-component, silicone-based liquid elastomer that, when mixed, expands and cures in place to produce a flexible, non-shrinking foam.

J. Silicone sealant: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealant.

K. Solvent-release-curing intumescent sealant: Solvent release curing, single-component, synthetic polymer based sealant.

L. Color: Where firestopping/firesafing material is exposed to view, provide material color selected by the Architect from the manufacturer's palette, unless the material will be field painted.

2.3 ACCESSORIES

A. Provide accessories as required to install fill materials and complying with the system description above.

1. General: As specified by the firestopping manufacturer and approved by the qualified testing and inspecting agency for the designated fire-resistive assembly.

2. Permanent forming/damming/backing materials:

a. Semi-refractory fiber (mineral wool) insulation.

b. Ceramic fiber.

c. Sealants used in combination with other forming/damming materials to prevent leakage of fill materials in liquid state.

d. Fire-rated form board.

e. Joint fillers for joint sealants.

3. Temporary forming materials:

a. Substrate primers.

b. Collars.

c. Steel sleeves.

2.4 MIXING

A. For products that require field mixing prior to application, comply with firestopping manufacturer's directions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which penetration firestop systems will be installed.

B. Verify surfaces to be in contact with firestopping materials are clean of dirt, grease, oil, loose materials, rust, and other substances that may affect proper fitting or the required fire resistance.

C. Correct conditions detrimental to the proper and timely completion of this work before proceeding with installation.

3.2 INSTALLATION

A. General: Install materials in conformance with their manufacturer's instructions and to comply with UL Fire Resistance Directory.

B. Surface cleaning: Clean openings and joints immediately prior to installing firestopping in accordance with the recommendations of firestopping manufacturer and the following:

1. Remove foreign materials from surfaces of opening and joint substrates and from penetrating items that could interfere with adhesion of firestopping materials.

2. Clean opening and joint substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.

3. Remove laitance and form release agents from concrete.

C. Priming: Prime substrates where recommended by the firestopping manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

D. Masking tape:

1. Use masking tape to prevent firestopping from contacting adjoining surfaces that will remain exposed and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestopping materials.

2. Remove tape as soon as it is possible to do so without disturbing firestopping's seal with substrates.

3.3 INSTALLING PENETRATION FIRESTOP SYSTEMS

A. Forming/damming materials and accessories:

1. Install as required to support fill materials during their application to produce the cross-sectional shapes and depths required to achieve fire ratings of firestop systems.

2. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.

B. Install fill materials for penetration firestop systems to produce the following results:

1. Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.

2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.

3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 INSTALLING FIRE-RESISTIVE JOINT SEALANTS

A. Install joint fillers to provide support of sealants during application, produce the cross sectional shapes and depths of installed sealants for optimum sealant movement capability, and develop fire-resistance rating required.

B. Install sealants so they will directly contact and fully wet joint substrates. Completely fill recesses provided for each joint configuration, and provide uniform, cross- sectional shapes and depths relative to joint width. Install sealants at the same time joint fillers are installed.

C. Tool non-sag sealants immediately after sealant application and before skinning or curing begins; form smooth, uniform beads. Eliminate air pockets to ensure contact and adhesion of sealants with sides of joint.

1. Remove excess sealant from surfaces adjacent to joint.

2. Do not use tooling agents that will discolor sealants or adjacent surfaces, or that are not approved by the sealant manufacturer.

3.5 FIELD QUALITY CONTROL

A. Examine penetration firestop systems to ensure proper installation prior to concealing or enclosing firesafed and firestopped areas.

B. Repair damaged areas and restore the integrity of the assembly.

C. Keep areas of work accessible until inspection and approval by applicable authorities having jurisdiction.

3.6 CLEANING

A. Clean-up spills of liquid components.

B. Cut and trim excess materials neatly, flush with adjacent surfaces.

END OF SECTION

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SECTION 07920
JOINT SEALERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Exterior joints in vertical surfaces and non-traffic horizontal surfaces as indicated below:

a. Control and expansion joints in unit masonry.

b. Control and expansion joints in GFRC panels.

c. Control and expansion joints in Portland cement plaster.

d. Joints between different materials listed above.

e. Perimeter joints between materials listed above and frames of doors and glazed assemblies.

f. Control and expansion joints in ceiling and overhead surfaces.

g. Other joints as indicated and required to make the building weathertight.

2. Exterior joints in horizontal traffic surfaces as indicated below:

a. Control, expansion, and isolation joints in cast-in-place concrete slabs.

b. Joints between different materials listed above.

c. Other joints as indicated and required to make the building weathertight.

3. Interior joints in vertical surfaces and horizontal non-traffic surfaces as indicated below:

a. Perimeter joints of exterior openings where indicated.

b. Tile control and expansion joints.

c. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.

d. Perimeter joints of toilet fixtures.

e. Other joints as indicated.

4. Interior joints in horizontal traffic surfaces as indicated below:

a. Control and expansion joints in cast-in-place concrete slabs.

b. Control and expansion joints in tile flooring.

c. Other joints as indicated.

B. Related work:

1. Division 3 for preformed compressible expansion joint fillers for concrete slabs.

2. Division 7 for firestopping sealants.

3. Division 8 for storefronts, curtain wall and glazing sealants.

4. Division 9 for acoustical sealants.

5. Division 15 for duct sealants.

1.2 SYSTEM DESCRIPTION

A. Joint sealants are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, with recognized limitations of wear and aging as indicated for each application.

1.3 DEFINITIONS

A. Substrates:

1. M type substrates: Concrete, concrete masonry units, brick, mortar, natural stone. The term "masonry" means brick, stone, and concrete masonry work.

2. G type substrates: Glass and transparent plastic glazing sheets.

3. A type substrates: Metals, porcelain, glazed tile, and smooth plastics.

4. O type substrates: Wood, unglazed tile; substrates not included under other categories.

1.4 SUBMITTALS

A. Data:

1. Data sheets and published instructions for each type of sealant, backing, bond breaker, and other accessory materials, together with statement that the proposed materials comply with these Specifications.

2. Include manufacturers' recommendations for surface preparation and priming for all substrates to be in contact with sealant on the Project.

B. Certification: Sealant manufacturer certification that sealants, backing rods, and other materials proposed for use in the application of sealants, are chemically compatible with the materials which will come in contact with the sealants and will not cause deterioration, premature aging and staining of adjacent materials, or the sealants.

C. Samples: Cured samples of the various types and colors of materials proposed for use, approximately 12 inches long, mounted on hardboard backing.

1.5 QUALITY ASSURANCE

A. Uniformity: All sealants used in or on the exterior walls of the building shall be made by the same manufacturer.

B. Installer's qualifications: Firm with a minimum 5 years of experience with joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.

C. Color selection:

1. Final color selection of sealants to be used for exterior locations will be made by the Architect from job-applied samples on in-place materials.

2. The Architect will select locations and extent of these samples, but length of sealant joints will not exceed 20-foot for vertical surfaces and 10-foot for horizontal surfaces.

1.6 HANDLING

A. Storage:

1. Store sealant containers in a protected location in compliance with their manufacturer's instructions until their use. Do not store at temperature higher than 80-degree F.

2. Do not use sealants whose shelf life has expired.

1.7 JOB CONDITIONS

A. Do not install sealants under adverse weather conditions, or when temperatures are beyond manufacturer's recommended limits.

B. Proceed with the installation only when forecasted weather conditions are favorable for proper sealant cure and development of early bond strength.

1.8 WARRANTY

A. Warrant sealants against defective materials and workmanship for 10 years after Substantial completion.

B. Warranty shall further state that installed sealants are warranted against the following:

1. Water leakage through exterior sealed joints.

2. Adhesive or cohesive failure of sealant.

3. Staining of adjacent surfaces caused by migration of sealants or primer.

4. Chalking or visible color change of the cured sealants.

C. Make repairs during the warranty period at no cost to the District.

PART 2 - PRODUCTS

2.1 SEALANTS

A. Colors: Match sealant color to color of adjacent materials as closely as possible using colors selected from the manufacturer's standard palette, as approved by the Architect.

B. Compatibility: Provide joint sealers, joint fillers and other related materials as follows:

1. That will not cause staining, degradation and premature aging of the adjacent surfaces and the sealant itself, when in contact with these surfaces.

2. Compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

C. Bulk sealants:

1. Suitability for contact with food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

2. For interior and exterior horizontal application subject to pedestrian or vehicular traffic: Multi-component pourable urethane sealant.

a. Type and grade: M (multicomponent) and P (pourable).

b. Class: 25.

c. Use related to exposure: T (traffic).

d. Uses related to joint substrates: M, A, and, as applicable to joint substrates indicated, O.

e. Products:

1) Pecora Corp.: Urexpan NR-200.

2) Sika Corp., Inc.: Sikaflex 1CSL.

3) Tremco: THC-900.

4) Tremco: Vulkem 245.

3. For exterior plastered walls receiving elastomeric paint finish: One of the following paintable, low-modulus, non-sag elastomeric sealant with a cured Shore A hardness of 20 minimum.

a. Sika: Sikaflex-15 LM.

b. Pacific Polymers: Elasto-Thane 230 LM.

c. Equal.

4. For all other exterior applications:

   a. Type and grade: S (single component) and NS (nonsag), neutral- and basic-curing silicone sealant.

   b. Class: 100/50.

   c. Use related to exposure: NT (non-traffic).

   d. Uses related to joint substrates: M, G, A, and, as applicable to joint substrates indicated, O.

   e. Products:

      1) Dow Corning 795, 790, 756 SM.

      2) General Electric - Silpruf, Silpruf LM, Silpruf NB.

5. For interior damp, wet and semi-wet locations, other than floors, such as toilet rooms where a mildew-resistant sealant is required: Provide white sealant, unless otherwise noted. Single-component mildew-resistant neutral-curing silicone sealant:

   a. Type and Grade: S (single component) and NS (nonsag).

   b. Class: 25.

   c. Use related to exposure: NT (non-traffic).

   d. Uses related to joint substrates: M, G, A, and, as applicable to joint substrates indicated, O.

   e. Products:

      1) Pecora Corp.: 898.

      2) General Electric Corp.: 1700.

      3) Dow Corning Corp.: 786.

6. For all other interior vertical applications: Latex sealant complying with ASTM C 834, Type P, Grade NF.

   a. Products:

      1) Pecora Corp.: AC-20+.

      2) Schnee-Morehead, Inc.: SM 8200.

      3) Sonneborn, Division of ChemRex Inc.: Sonolac.

      4) Tremco: Tremflex 834 or Acrylic Latex 384.

D. Tape sealants:

   1. Norton Specialties Plastics Div.: Norseal 730 or 770.

2. Protective Treatments, Inc.: PTI 606.

3. Or equal.

2.2 JOINT CLEANER, PRIMER AND SEALER

A. As recommended by the sealant manufacturer, for the surfaces to be cleaned, primed or sealed.

2.3 BOND BREAKER TAPE

A. Polyethylene or other plastic tape recommended by the sealant manufacturer to prevent 3-sided adhesion where backer rod cannot be used.

B. Use self-adhering tape wherever possible.

2.4 BACKER ROD

A. General:

1. Provide size, density and shape of rod which will control the joint depth for sealant placement, break bond of sealant at bottom of joint, form optimum shape of sealant bead on back, and provide a highly compressible backer to minimize the possibility of sealant extrusion when joint is compressed.

B. Type: ASTM C 1330, of type indicated below:

1. Type C: Closed-cell material with a surface skin, Nomaco SOF ROD/Dual Rod, or equal.

2. For fillet and cove joints, Nomaco HBR 1/4-inch Round.

C. Elastomeric tubing sealant backings:

1. Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, non-absorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F.

2. Provide products with low compression set.

2.5 MASKING TAPE

A. Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions and measurements affecting the work of this Section at site.

B. Correct detrimental conditions before proceeding with installation.

3.2 JOINT PREPARATION

A. Clean out joints immediately before installing sealants to comply with recommendations of joint sealant manufacturer and the following.

B. Remove foreign material from joint substrates that could interfere with adhesion of sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), oil, grease, waterproofing, water-repellents, water, surface dirt, and frost.

C. Clean concrete, masonry, unglazed surfaces of ceramic tile, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants.

1. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

D. Remove laitance and form release agents from concrete.

E. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other non-porous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

F. Do not proceed with sealant installation over surfaces that have been painted, waterproofed or treated with water-repellent or other coating unless specifically approved in writing by the sealant manufacturer.

G. Use masking tape or other protection to limit coverage of sealant to joints to be sealed. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION

A. Comply with sealant manufacturer's instructions and ASTM C 1193, except where more stringent requirements are specified herein. At the Architect's option, ASTM C 1193 may also be used for rejection of unacceptable installations.

B. Prime or seal surfaces when recommended by the sealant manufacturer; when the manufacturer's instructions on priming are optional, prime the surface. Do not allow primer/sealer to spill or migrate onto adjacent surfaces.

C. Install backer rod for all sealants, except (1) for exterior sealants subject to traffic (verify that joint filler in paving is installed at the proper depth), (2) where the size of joint prevents the insertion of a backer rod, and (3) where recommended otherwise by the sealant manufacturer.

1. Install backer rods with blunt or rounded tools to avoid puncturing the material.

2. Do not twist, stretch or braid the backer rod.

D. Install bond breaker tape where space limitation does not permit use of a backer rod.

E. In no case shall sealant have 3-sided adhesion.

F. Employ only proven installation techniques that will ensure that sealants are installed in uniform, continuous ribbons without gaps or air pockets and with complete "wetting" of the rabbet surfaces equally on opposite sides.

1. Fill concave joints to the configuration shown on Figure 8A of ASTM C 1193.

2. Provide flush joints to the configuration shown on Figure 8B of ASTM C 1193.

3. Provide recessed joints configuration as shown on Figure 8C of ASTM C 1193, unless otherwise indicated or required to match adjacent non-moving joint.

4. Where horizontal joints occur between horizontal and vertical surfaces, fill joints to form a slight cove to prevent trapping moisture and dirt.

5. Immediately after sealant application and prior to beginning of skinning or curing, tool sealant using tooling agents that will not discolor sealants or adjacent surfaces and are approved by sealant manufacturer.

G. Do not allow sealant or other compound to overflow, spill or migrate into voids of adjacent construction.

H. Remove excess sealant spillage promptly as this work progresses. Clean adjacent surfaces by recommended means to remove sealant, but not damage the surfaces.

3.4 CURING/PROTECTING

A. Cure sealants in compliance with their manufacturer's instructions to obtain high early bond strength, internal cohesive strength and durability. Do not disturb seals until completely cured.

B. Protect sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion.

END OF SECTION

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