CONTRACT FOR DESIGN AND CONSTRUCTION
(GOVERNMENT CODE § 4217.10 ET SEQ.)

THIS CONTRACT is entered into and effective _____, 20_____ ("**Contract**"), by and between ENGIE Services U.S. Inc. ("**Designer/Builder**") and Mountain View Whisman School District ("**District**" or "**Customer**") (individually, a "**Party**", and collectively, the "**Parties**").

RECITALS

WHEREAS, District owns and/or operates certain public facilities specifically described as:

	School Site Name	Address
1	Benjamin Bubb ES	525 Hans Ave., Mountain View, CA 94040
2	Crittenden MS	1701 Rock St., Mountain View, CA 94043
3	Edith Landels ES	115 West Dana St., Mountain View, CA 94041
4	Frank L Huff ES	253 Martens Ave., Mountain View, CA 94040
5	Graham MS	1175 Castro St., Mountain View, CA 94040
6	Gabriela Mistral - Mariano Castro ES	505 Escuela Ave., Mountain View, CA 94040
7	Monta Loma ES	460 Thompson Ave., Mountain View, CA 94043
8	Stevenson ES – District Office	750 San Pierre Way, Mountain View, CA 94043
9	Theuerkauf ES	1625 San Luis Ave, Mountain View, CA 94043
10	Vargas ES	220 N. Whisman Road, Mountain View, CA 94043

("**Facilities**" or "**School Site(s)**" or "**Premises**") and District wants to reduce its Facilities' energy costs and improve the Facilities' energy quality/reliability by contracting to procure and to implement certain new and upgraded energy system related equipment and materials; and

WHEREAS, Designer/Builder is a full-service energy services company with the technical capabilities to provide services to the District including, but not limited to, energy and energy system auditing, engineering, design, procurement, construction management, installation, construction, financing, training, monitoring and verification, maintenance, operation, and repair; and

WHEREAS, District desires that Designer/Builder design, install, construct, maintain and operate, and Designer/Builder desires to design, install, construct, maintain and operate, solar systems to be located on the School Sites;

WITNESSETH, that for and in consideration of the mutual covenants herein contained, the Parties hereto agree as follows:

CONTRACT

1. Contract Price.

a. The Designer/Builder shall furnish the Services or Work described herein to the District for a total price of the following amounts ("**Contract Price**"):

ITEM	COST
Solar PV System and data acquisition system at School Sites	**$8,864,616**
Operations & Maintenance (**Exhibit B**) **FIRST YEAR COST ONLY** • This is the first year amount • Paid annually, in arrears, per Exhibit B,	**$43,736**

• Anticipated **25-year** cost at an annual 3% escalation rate = **$1,594,589**	
Performance Guarantee (Exhibit G) **FIRST YEAR COST ONLY**	**$16,000**
• This is the first year amount • Paid annually per Exhibit G, • Anticipated **25-year** cost at an annual 3% escalation rate = **$583,357**	
GRAND TOTAL (including first year of O&M and Performance Guarantee)	**$8,924,352**

b. **Scope of Work.** The Contract Price shall be Designer/Builder's total compensation to perform the following services ("**Services**" or "**Work**"). Designer/Builder's performance of all of the Services as further described in this Contract and Exhibits is the "**Project**," and is generally described as follows:

i. **The assessment, engineering, design, permitting, procurement, construction management, installation, construction, training, monitoring, verification, maintenance, operation, and repair, of PV systems with Expected Energy Production of 2.54 Million kilowatt-hours (2,535,893 kWh) of energy in year one of system operation, produced through the following systems:**

Site	System Size (kWdc)	System Type (e.g., Parking, Shade, etc.)	Expected 1st year PV Output (kWh) ("Expected Energy")
1. Benjamin Bubb ES	118.4	Shade Canopy	185,411
2. Crittenden MS – Main	N/A	N/A	N/A
3. Crittenden MS - Secondary	173.9	Parking Canopy & Roof	285,911
4. Edith Landels ES	121.4	Shade Canopy	187,632
5. Frank L Huff ES	109.6	Shade Canopy	171,912
6. Graham MS – Main	275.5	Parking Canopy & Shade Canopy	445,065
7. Graham MS - Secondary	71.4	Parking Canopy	115,614
8. Gabriela Mistral - Mariano Castro ES	98.3	Parking Canopy & Shade Canopy	157,661
9. Monta Loma ES - Main	75.6	Roof	120,156
10. Monta Loma ES - Secondary	71.4	Shade Canopy	115,870
11. Stevenson ES - District Office	166.3	Parking Canopy & Shade Canopy	269,672
12. Theuerkauf ES	224.3	Shade Canopy & Roof	356,654
13. Vargas ES	83.2	Shade Canopy	124,335
TOTAL	**1,589.3**		**2,535,893**

ii. A data acquisition system with monitoring capability with password-protected internet access via **www.utilityvision.com.**

iii. Educational Services.

2. **Contract Time.** Work shall be completed within the time specified in **Exhibit C** ("**Contract Time**") from the date specified in the District's Notice(s) to Proceed, as indicated in the Schedule in **Exhibit C,** attached hereto and incorporated herein by this reference.

3. **Liquidated Damages for Non-Production**. Designer/Builder agrees that if the Work is not completed within the Contract Time and/or pursuant to the Project schedule, construction schedule, or project milestones developed pursuant to provisions of the Contract, including the Schedule in **Exhibit C,** it is understood, acknowledged, and agreed that the District will suffer damage related to non-production of energy that is not capable of being calculated. Pursuant to Government Code section 53069.85, Designer/Builder shall forfeit to the District, as fixed and liquidated damages for these incalculable damages, the sum of **One Thousand Dollars ($1,000.00)** per MWdc per day for each and every calendar day of delay beyond the date of the "Designer/Builder Requests Permission to Operate Letter From Utility" specified in **Exhibit C** for each Site, provided that Designer/Builder's submission of a Request for Permission to Operate Letter From Utility shall not be effective under this paragraph unless the Project or portion thereof is presently in the condition reasonably necessary to obtain the Permission to Operate Letter From Utility. (*For example, if Designer/Builder requests "Permission to operate letter(s)" for all but the "X" Site and the "Y" Site, the total liquidated damages amount during that time that these two (2) sites are not operating shall be $_____ per calendar day [$_____ + $_____])*. These liquidated damages apply only to the Construction portion of this Contract and not to the Operations & Maintenance Contract, as described in **Exhibit B,** or the Contract for Performance Guarantee, as described in **Exhibit G**. These liquidated damages shall be the District's sole remedy for a delay in the production of energy from the Generating Facilities pursuant to this subsection.

4. **Schedule of Values.** Designer/Builder shall prepare a detailed schedule of values for all of the Work that must include quantities and prices of items by site aggregating the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. This schedule of values must be approved by the District prior to it being used as a basis for payment.

5. **Insurance & Bonds.** The Designer/Builder shall not commence the Work under this Contract until the Designer/Builder has submitted and the District has approved the certificates and endorsements of insurance required under the Terms and Conditions and the District has issued a Notice(s) to Proceed. The Designer/Builder shall not commence the procurement, installation, and construction portions of the Work under this Contract until the Designer/Builder has submitted and the District has approved the performance bond and the payment (labor and material) bond(s).

6. **CEQA.** The District is performing its compliance with the California Environmental Quality Act ("**CEQA**"). The Parties acknowledge that construction of the Project shall not commence until the District's Board of Education has approved the Project as satisfying the requirements under CEQA. Therefore, the District reserves its right to suspend and/or terminate the Project as allowable herein if the District's Board of Education does not approve the Project under CEQA and/or exempts the Project from CEQA. The District's issuance of Notice(s) to Proceed shall be conditioned upon satisfaction of this aforementioned condition precedent. See **Exhibit C** for information regarding the Project's Schedule and the intended timing of the District's issuance of a Notice(s) to Proceed.

7. **Terms & Conditions.** This Contract incorporates by this reference the Terms and Conditions attached hereto. The Designer/Builder, by executing this Contract, agrees to comply with all the Terms and Conditions.

8. **Contract Documents.** The Contract includes only the following documents ("**Contract Documents**"), as indicated:

X	Terms and Conditions to Contract	X	**Exhibit D** (**RESERVED**)
X	Noncollusion Declaration	X	**Exhibit E** (Schedule of Values)
X	Certifications to be Completed by Designer/Builder	X	**Exhibit F** (Specifications)
X	Insurance Certificates and Endorsements	X	**Exhibit G** (Performance Guarantee Parameters and Energy Output Data)
X	Performance Bond (District's Form)	X	**Exhibit H** (Warranties)

- X Payment Bond (District's Form)
- X **Exhibit A** (Scope of Work)
- X **Exhibit B** (Operations & Maintenance Contract)
- X **Exhibit C** (Detailed Construction Schedule or Project Schedule for Each Site)
- X **Exhibit I** (Additional Contract Documents)
- X **Exhibit J** (Educational Services)

9. **DSA & Inspector.** Designer/Builder hereby acknowledges that the Division of the State Architect ("**DSA**") and the District's DSA Project Inspector(s) ("**Inspector**" or "**IOR**") have authority to approve and/or stop Work if the Designer/Builder's Work does not comply with the requirements of the Contract, Title 24 of the California Code of Regulations, and all applicable laws. The Designer/Builder shall be liable for any delay caused and extra work required by its non-compliant Work. Designer/Builder shall not be liable for delay caused solely by the District.

10. **Project Management.** Inspection and acceptance of the Work shall be performed by the District's Project Inspector with whom the District will contract. In addition, the Chief Business Official of the District, and/or his/her designee or the District's construction manager ("**Construction Manager**") shall be the point of contact for the Designer/Builder. Designer/Builder recognizes that the District has obtained the services of a Construction Manager for this Project. The Construction Manager is authorized to give Designer/Builder Services authorizations, and issue written approvals and notices on behalf of District. The District reserves the right to designate a different Construction Manager at any time. Any task, including, but not limited to, reviews or approvals that the District may perform pursuant to this Contract may be performed by the Construction Manager, unless that task indicates it shall be performed by the governing board of the District.

11. **Designer/Builder Staff & Subconsultants.** The following personnel and subcontractors/subconsultants from Designer/Builder shall perform the Services for this Project and Designer/Builder shall comply with the "Designer/Builder Staff" provisions as indicated in **Exhibit A** related to these individuals or firms:

Name	**Title**
Emily Douglas	Program Development Manager
John Paul Jewell	Program Development Manager
Mariana de Brito, PE	Lead Project Manager
Shira Zingman-Daniels, PE	Project Manager
Douglas Ledbetter, PE	Senior Electrical Engineer
David Yung Lei, PE	Solar Procurement Manager
Sarah Kopytko	Project Engineer
Jamal Aboueljoud, CEM	Director of Performance Assurance
Carrie Dixon	Operations & Maintenance Manager
Edward Jakimzak	Report Team Manager
Caren Perlmutter	Education Manager
Firm Name	**Discipline**
MBL Energy	Structural and Mechanical Engineer
BEI Construction	Electrical Contractor

Blymyer Engineers, Inc	Engineering Consultant
GeoTech Utility Locating	Underground Utility Consultant
BSK Associates	Geotechnical Engineering

12. **Guarantee.** Unless otherwise indicated herein for a longer period of time, the Designer/Builder shall guarantee all labor and material used in the performance of this Contract for a period of one year from the date of Completion of the Work.

13. **Standard of Care/Qualification.** Designer/Builder shall perform all Work related to its design to the standard of care of professionals performing similar work for California school districts in or around the same geographic area of the District, and all Work related to its installation and construction to the standard of care of contractors performing similar work for California school districts in or around the same geographic area of the District. Designer/Builder represents and warrants that it is fully experienced in projects of the nature and scope of Work, and that it is properly qualified, licensed and equipped to supply and perform the Work. The Work completed herein must meet the requirements of this Contract and the reasonable approval of the District and shall be subject to the District's general right of inspection and supervision to secure the satisfactory completion thereof.

14. **Certification.** By signing this Contract, each Party certifies, under penalty of perjury, that all the information provided in the Contract is true, complete, and correct, to the best of its knowledge.

15. **Information regarding Designer/Builder**:

Type of Business Entity:	**Fed. ID (FEIN) #: 46-5545462**
__xx__ Corporation	NOTE: United States Code, title 26, sections 6041 and 6109 require non-corporate recipients of $600 or more to furnish their taxpayer identification number to the payer. The United States Code also provides that a penalty may be imposed for failure to furnish the taxpayer identification number. In order to comply with these rules, the District requires your federal tax identification number or Social Security number, whichever is applicable.

ACCEPTED AND AGREED on the date indicated below:

Dated: _____, 20___

Mountain View Whisman School District

Signature: _____

Print Name: _____

Print Title: _____

Address: 1400 Montecito Ave., Mountain View, CA 94043

Telephone: _____

E-Mail: _____

Dated: _____, 20___

ENGIE Services U.S. Inc.

Signature: _____

Print Name: _____

Print Title: _____

Cal. Contractor License No.: 995037

Civil Engineer License: _____

Address: 500 12th Street, Suite 300, Oakland, CA 94607

Telephone: (415) 735-9125

E-Mail: _____

Notice. Any notice required or permitted to be given under this Contract shall be deemed to have been given, served, and received if given in writing and either personally delivered or sent by overnight delivery service addressed to the above individuals. Any notice personally given shall be effective upon receipt. Any notice sent by overnight delivery service shall be effective the business day next following delivery thereof to the overnight delivery service.

TERMS AND CONDITIONS TO CONTRACT

1. **NOTICE(S) TO PROCEED:** District shall provide Notice(s) to Proceed to Designer/Builder pursuant to the Contract at which time Designer/Builder shall proceed with the Work. The District reserves the right to issue multiple Notices to Proceed related to the Project, either by scope and/or by Site.

2. **SITE EXAMINATION:**

   2.1. The District will provide all information available to it to the extent the information relates to Designer/Builder's scope of work. This information includes:

      2.1.1. Physical characteristics;

      2.1.2. Legal limitations and utility locations for the Project site(s);

      2.1.3. Written legal description(s) of the Project site(s);

      2.1.4. Grades and lines of streets, alleys, pavements, and adjoining property and structures;

      2.1.5. Adjacent drainage;

      2.1.6. Rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, and boundaries and contours of the Project site(s);

      2.1.7. Locations, dimensions and necessary data with respect to existing buildings, other improvements and trees;

      2.1.8. Information concerning available utility services and lines, mechanical and other services, both public and private, above and below grade, including inverts and depths;

      2.1.9. Surveys, reports, as-built drawings;

      2.1.10. Subsoil data, chemical data, and other data logs of borings;

      2.1.11. DSA Numbers for all buildings, as necessary to obtain DSA approval of plans to be submitted by Designer/Builder under the contracted scope of work.

      2.1.12. The location and physical characteristics of existing utility lines, telephone, water, sewage, storm drains and other lines on or around or relating to the Project.

   2.2. Designer/Builder has Visually Verified the existence of the conditions identified by this information to the extent determinable by the documents provided by the District ("**Site Examination**"). Designer/Builder has relied on its Site Examination in defining its scope of Work or Services.

   2.3. "**Visually Verified**" (or "**Verify**" or "**Visual Verification**") means confirmed by diligent physical inspection without any destructive or invasive action.

   2.4. If there are any variations to the scope of Work or Services resulting from conditions not determinable from Visually Verified information, the Designer/Builder shall submit to the District a proposed change order ("**PCO**") based on those conditions, with a detailed explanation based on the current Scope of Work and how it requires a revision based on Designer/Builder's Visual Verification and Site Examination.

   2.5. No claim for allowance of time or money will be allowed as to any other undiscovered condition on the Site that reasonably could and reasonably should have been discovered through the Site Examination and/or Visual Verification. Notwithstanding the aforementioned, should the Designer/Builder discover any latent or unknown conditions, or any other condition which could not reasonably have been discovered during the Site Investigation and/or Visual Verification, which will materially affect the performance of the Work hereunder, Designer/Builder shall immediately inform the District of that fact in writing and shall not proceed until written instructions are received from the District. This written notice may take the form of a PCO.

3. **EQUIPMENT AND LABOR:** The Designer/Builder shall furnish all tools, equipment, apparatus, facilities, transportation, labor, and material necessary to furnish the Services herein described, and the Services to be performed at times and places as directed by and subject to the approval of the authorized District representative indicated in the Work specifications attached hereto.

4. **SUBCONTRACTORS:** Subcontractors, if any, engaged by the Designer/Builder for any Service or Work under this Contract shall be subject to the approval of the District, which shall not be unreasonably withheld. Designer/Builder agrees to bind every subcontractor by the terms of the Contract as far as those terms are applicable to subcontractor's work, including, without limitation, all indemnification, insurance, bond, and warranty requirements. If Designer/Builder shall subcontract any part of this Contract, Designer/Builder shall be fully responsible to the District for acts and omissions of its subcontractor and of persons either directly or indirectly employed by itself. Nothing contained in the Contract shall create any contractual relations between any subcontractor and the District.

5. **TERMINATION / SUSPENSION:**

5.1. If Designer/Builder fails to perform Designer/Builder's material duties as required by this Contract, or if Designer/Builder fails to fulfill in a timely and professional manner Designer/Builder's material obligations under this Contract, or if Designer/Builder shall violate any of the material terms or provisions of this Contract, and any such failure is not excused by the terms of this Contract, the District shall have the right to terminate this Contract, in whole or in part, unless either

5.1.1. Such failures and violations are caused by the District or

5.1.2. Such failures and violations are cured by Design/Builder to the District's reasonable satisfaction within thirty (30) days of written notice by the District thereof to the Designer/Builder; provided, that if a cure cannot be effected within such thirty (30) days and Design-Builder has commenced a cure within such period of time and continues diligent pursuit of such cure, the Design/Builder shall have a reasonable period to complete such cure to the District's reasonable satisfaction.

In the event of a termination pursuant to this subdivision, Designer/Builder may invoice District for all Services performed until the notice of termination, but District shall have the right to withhold payment and deduct any amounts equal to the District's actual costs because of Designer/Builder's actions, errors, or omissions that caused the District to terminate the Designer/Builder. In the event of termination, Designer/Builder shall provide the District with all documents produced maintained or collected by Designer/Builder pursuant to this Agreement, whether or not such documents are final or draft documents; provided that Designer/Builder shall have no liability relating to the use of such documents without Designer/Builder's prior written consent to the use of the documents.

5.2. District shall have the right in its sole discretion to terminate the Contract, in whole or in part, for its own convenience. In the event of a termination for convenience, Designer/Builder may invoice District and District shall pay all undisputed invoice(s) for recoverable costs for Work performed until the date of termination, reasonable demobilization costs, and rental costs for equipment and restocking fees that Designer/Builder cannot mitigate with diligent efforts. In the event that District terminates this Contract as provided in this subsection and there are no known potential claims related to Designer/Builder's Work, District shall, within fourteen (14) Days after the date of termination, release the Performance and Payment Bonds, although the Surety on Performance and Payment Bonds shall remain liable as indicated herein for all Designer/Builder's Work performed until the date of termination.

5.3. Except as indicated in this Article, termination shall have no effect upon any of the rights and obligations of the Parties arising out of any transaction occurring prior to the effective date of such termination.

5.4. The Designer/Builder has the right to terminate this Contract if the District does not fulfill its material obligations under this Contract unless either:

5.4.1. Such failures and violations are caused by the Designer/Builder or

5.4.2. Such failures and violations are cured by District within thirty (30) days of written notice by the Designer/Builder thereof to the District; provided, that if a cure cannot be effected within such thirty (30) days and District has commenced a cure within such period of time and continues diligent pursuit of such cure, the District shall have a reasonable period to complete such cure.

Designer/Builder may invoice District and District shall pay all undisputed invoice(s) for Services performed until the Designer/Builder's notice of termination.

5.5. **Suspension.** The District has the right to suspend, in whole or in part, the Project. If the District suspends the Project for more than one hundred and twenty (120) consecutive days, the Designer/Builder shall be compensated for Services performed prior to notice of that suspension. When the Project is resumed, the Project Schedule shall be adjusted and the Designer/Builder's compensation shall be equitably adjusted to provide for documented expenses (e.g., demobilization, remobilization, labor rates, etc.) incurred associated with the suspension and in the resumption of the Designer/Builder's Services. This suspension provision, when applicable, supplants the "Changes in Time" provision for Proposed Change Orders, which would still be operative for any delay less than 120 consecutive days. If the District suspends the Project for more than one (1) year, the Designer/Builder may terminate this Contract by giving written notice.

6. SAFETY AND SECURITY:

6.1. Designer/Builder is responsible for maintaining safety in the performance of this Contract. Designer/Builder shall be responsible to ascertain from the District the rules and regulations pertaining to safety, security, and driving on school grounds, particularly when children are present, as per **Exhibit I.** In the event that the aforementioned rules conflict with the terms of this Contract, the terms of this Contract shall prevail. All persons at the Project Site(s) while Work is being performed will comply with applicable safety requirements.

6.2. Designer/Builder shall comply with current and future federal, state, and local statutes, rules, regulations, ordinances, directives, orders, construction site protocols, or any other applicable law(s) regulating COVID-19 construction site safety, cleanliness, and the health of individuals at the Sites. Designer/Builder shall not seek any adjustment to the Contract Price for any future costs referenced herein, unless the cost impact was not reasonably foreseeable at the time of the execution of the Contract.

7. CHANGE IN SCOPE OF WORK:

7.1. **Change Orders.** A change order ("**Change Order**") is a written instrument prepared and issued by the District and signed by the District (as authorized by the District's governing board) and the Designer/Builder, and approved by the Project Inspector (if necessary) and DSA (if necessary), stating their agreement regarding all of the following:

7.1.1. A description of a change in the Work or Services;

7.1.2. The amount of the adjustment in the Contract Price, if any; and

7.1.3. The extent of the adjustment in the Contract Time, if any.

7.2. There shall be no change whatsoever in the Services or Work, or any architectural enhancements, without an executed Change Order or Construction Change Directive as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Services or Work except pursuant to a Change Order or Construction Change Directive. Except as provided elsewhere in this Contract, no extension of time for performance of the Work shall be allowed hereunder unless duly adjusted in writing in the Change Order. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Work or Services.

7.3. Designer/Builder shall perform all Work that has been authorized by a fully executed Change Order in the timeframe set forth therein.

7.4. Should any Change Order result in an increase in the Contract Price, the cost of that Change Order shall be agreed to in the Change Order. Except as provided elsewhere in this Contract, if Designer/Builder proceeds with any change in Work without a Change Order, Designer/Builder waives any claim of additional compensation or time for that additional work.

7.5. Designer/Builder understands, acknowledges, and agrees that the reason for District authorization is so that District may have an opportunity to analyze the Work and decide whether the District shall proceed with the Change Order or alter the Project so that a change in Work becomes unnecessary.

7.6. **Price Request.** A price request is a written request prepared by the District requesting the Designer/Builder to submit to the District an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time. A price request shall contain adequate information, including any necessary Work or Services, to enable Designer/Builder to provide the cost breakdowns required herein.

7.7. **Proposed Change Order.** A proposed change order ("**PCO**") is a written request prepared by the Designer/Builder requesting that the District issue a Change Order based upon a proposed change to the Work or Services. A PCO shall include breakdowns pursuant to the revisions herein to validate any change in Contract Price.

7.7.1. Changes in Time. A PCO shall also include any changes in time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Project Schedule as defined in the Contract Documents. If Designer/Builder fails to request a time extension in a PCO, then the Designer/Builder is thereafter precluded from requesting time and/or claiming a delay, except as otherwise provided in this Contract.

7.7.2. Unknown and/or Unforeseen Conditions. If Designer/Builder submits a PCO requesting an increase in Contract Price and/or Contract Time that is based at least partially on Designer/Builder's assertion that Designer/Builder has encountered condition(s) on the Project that it could not have discovered in performing its "Site Examination" duties herein, then Designer/Builder shall base the PCO on visually verifiable information that demonstrates that the hitherto unknown and/or unforeseen condition(s) actually exist. If not, the District may deny the PCO and the Designer/Builder shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

7.8. **Format for Proposed Change Order.** The following format shall be used as applicable by the District and the Designer/Builder (e.g. Change Orders, PCO's) to communicate proposed additions and deductions to the Contract, supported by attached documentation.

	SUBCONTRACTOR PERFORMED WORK	ADD	DEDUCT
(a)	**Material** (attach itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully encumbered)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**SUBTOTAL**		
(e)	**Add Subcontractor's overhead and profit,** not to exceed ten percent (10%) of **item (d)**		
(f)	**SUBTOTAL**		
(g)	**Add Designer/Builder's fee, overhead, profit & general conditions**, not to exceed ten percent (10.0%) of the sum of **item (f)**		
(h)	**SUBTOTAL**		
(i)	**Add Bond and Insurance,** not to exceed one and one half percent (1.5%) of **Item (h)**		
(j)	**TOTAL**		

(k)	**Time**	**_____ Days**

	DESIGNER/BUILDER PERFORMED WORK	ADD	DEDUCT
(a)	**Material** (attach itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully encumbered)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**SUBTOTAL**		
(e)	**Add Designer/Builder's fee, overhead, profit & general conditions**, not to exceed fifteen percent (15.0%) of the sum of **item (d)**		
(f)	**SUBTOTAL**		
(i)	**Add Bond and Insurance,** not to exceed one and one half percent (1.5%) of **item (f)**		
(j)	**TOTAL**		
(k)	**Time**	**_____ Days**	

7.9. **Change Order Certification.** All Change Orders and PCOs must include the following certification by the Designer/Builder: *The undersigned Designer/Builder approves the foregoing as to the changes, if any, and the Contract Price specified for each item and as to the extension of time allowed, if any, for Project Completion, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Designer/Builder knows are false are at the sole risk of Designer/Builder and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by District staff with delegated authority, and will be ratified by the governing board of the District. It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Designer/Builder's costs and expenses, both direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Any costs, expenses, damages, or time extensions not included are deemed waived.*

7.10. **Determination of Change Order Cost.** The amount of the increase or decrease in the Contract Price from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation and at the District's discretion:

7.10.1. District acceptance of a PCO;

7.10.2. By amounts contained in Designer/Builder's schedule of values, if applicable;

7.10.3. By agreement between District and Designer/Builder.

7.11. **Construction Change Directives / Unilateral Change Orders.** A Construction Change Directive (or Unilateral Change Order) is a written order prepared and issued by the District and signed by the District, directing a change in the Work. The District may as provided by law, by Construction Change Directive and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. The District may only issue a Construction Change Directive in the absence of agreement on the terms of a Change Order, and the Designer/Builder shall track its time and material costs that it may use as the basis for dispute or a claim pursuant to the "Disputes" provisions herein. Designer/Builder has the option to refuse to perform work under a Construction Change Directive, which refusal must be provided to the District in writing and must be based on expressly stated and reasonable grounds. If Designer/Builder refuses to perform work under a Construction Change Directive, District may hire others to perform the work specified in the refused Construction Change Directive.

8. TRENCH SHORING: If this Contract is in excess of Twenty Five Thousand Dollars ($25,000) and is for the excavation of any trench deeper than five (5) feet, Designer/Builder must submit and obtain District

acceptance and approval, in advance of excavation, of a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If the plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.

9. **EXCAVATIONS OVER FOUR FEET**: If this Contract includes excavations over four (4) feet, Designer/Builder shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any: (1) Material that the Designer/Builder believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law; (2) Subsurface or latent physical conditions at the site differing from those indicated; or (3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract. The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Designer/Builder's cost of, and/or the time required for, performance of any part of the Work shall issue a change order under the procedures described in the Contract. In the event that a dispute arises between the District and the Designer/Builder whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Designer/Builder's cost of, or time required for, performance of any part of the work, the Designer/Builder shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all Work to be performed under the contract. The Designer/Builder shall retain any and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the Parties.
10. **LEAD-BASED PAINT:** Pursuant to the Lead-Safe Schools Protection Act (Education Code Section 32240 et seq.) and other applicable law, no lead-based paint, lead plumbing and solders, or other potential sources of lead contamination shall be utilized on this Project, and only trained and state-certified contractors, inspectors and workers shall undertake any action to abate existing risk factors for lead. District shall be responsible for all costs related to testing and abating existing lead-based paint and other sources of existing lead contamination, unless Designer/Builder agrees to perform lead-based abatement work.
11. **WORKERS:** Designer/Builder shall at all times enforce strict discipline and good order among its employees and the employees of its subcontractors and shall not employ or work any unfit person or anyone not skilled in work assigned to him or her. Any person in the employ of the Designer/Builder or a subcontractor whom the District may deem incompetent or unfit shall be dismissed from the Site and shall not again be employed at Site without written consent from the District.
12. **CORRECTION OF ERRORS:** Designer/Builder shall perform, at its own cost and expense and without reimbursement from the District, any work necessary to correct errors or omissions which are caused by the Designer/Builder's failure to comply with the Contract requirements and the standard of care required herein.
13. **SUBSTITUTIONS:** No substitutions of material from those specified in the approved final design shall be made without the prior written approval of the District, which the District shall complete as diligently as possible and which the District shall not unreasonably withhold. Notwithstanding the above, all requests for substitution shall be deemed granted if not objected to within fourteen (14) calendar days.
14. **DESIGNER/BUILDER SUPERVISION:** Designer/Builder shall provide competent supervision of personnel employed on the job Site, use of equipment, and quality of workmanship.
15. **CLEAN UP:** Debris shall be removed from the Premises by the Designer/Builder. The Site shall be in order at all times when work is not actually being performed and shall be maintained in a reasonably clean condition.
16. **ACCESS TO WORK:** District shall provide to Designer/Builder uninterrupted access to the Premises and to a reasonably sufficient staging area, as further detailed in **Exhibit I**. District representatives shall at all times have access to the Work wherever it is in preparation or in progress. Designer/Builder shall provide safe and proper facilities for such access. Without diminishing the District's obligation to provide access as required herein, the Parties acknowledge that Designer/Builder intends to install the Generating Facilities at the Sites in accordance with the Project Schedule and within the parameters as further detailed in **Exhibit I** and that the Contract Price and Contract Time are based on those parameters.

17. **PROTECTION OF WORK AND PROPERTY:** The Designer/Builder shall erect and properly maintain at all times, as required by conditions and progress of the Work, all necessary safeguards, signs, barriers, lights, and security persons for protection of workers and the public, and shall post danger signs warning against hazards created by the Work. In an emergency affecting life and safety of life or of Work or of adjoining property, Designer/Builder, without special instruction or authorization from District, is permitted to act at his discretion to prevent such threatened loss or injury.

18. **CONTINUOUS UTILITY SERVICE WHILE SCHOOL IN SESSION**: Contractor shall ensure that school facilities are not without any utilities, including water, power, internet, etc., at any time while school or school-related activities are in session and, if any shutdown or interruption occurs, it shall diligently take actions to bring those facilities back on-line. All work must be closely coordinated with operations staff at the District to ensure continuity of all utility service while the school facilities are in use.

19. **OTHER CONTRACTS/CONTRACTORS**: District reserves the right to let other contracts, and/or to perform work with its own forces, in connection with other work at the School Sites. Designer/Builder shall afford other contractors reasonable opportunity for introduction and execution of their work, if necessary, and Designer/Builder shall properly coordinate and connect Designer/Builder's Work with the work of other contractors. In addition to Designer/Builder's obligation to protect its own Work, Designer/Builder shall not interfere with or damage the work or materials of any other contractor that Designer/Builder encounters while working on the Project. Nothing herein contained shall be interpreted as granting to Designer/Builder exclusive occupancy of the Site, the Premises, or of the Project. Designer/Builder shall not cause any unnecessary hindrance or delay to the use and/or school operation(s) of the Premises and/or to District or any other contractor working on the Project. If simultaneous execution of any contract or school operation is likely to cause interference with performance of Designer/Builder's Contract, Designer/Builder shall coordinate with those contractor(s), person(s), and/or entity(s) and shall submit to the District a PCO based on such coordination if that coordination is different than as indicated in **Exhibit I**.

20. **ASSIGNMENT OF CONTRACT:** The Designer/Builder shall not assign or transfer in any way any or all of its rights, burdens, duties, or obligations under this Contract without the prior written consent of the District which shall not be unreasonably withheld or delayed. This provision shall not limit the Designer/Builder's right to subcontract portions of its Work to other entities and assign this Contract and all related contracts without the consent of the District (i) to a direct affiliate of Designer/Builder; (ii) to an entity that is controlled by, controls, or is under common control with Designer/Builder; or (iii) pursuant to a merger, consolidation, transfer of substantially all its assets, or by operation of law. This Contract will be binding on, enforceable by, and inure to the benefit of, the Parties and their respective successors and permitted assigns. Any assignment made in contravention of this clause shall be void and unenforceable.

21. **COMPLETION:**

    21.1. **Walk-Through as Prerequisite to Determination of Completion**. When the Designer/Builder believes that the Work is complete except for minor corrective items, it shall so notify the District in writing. Promptly thereafter, but in no event later than ten (10) days following receipt of the written notice, the District shall schedule a final walk-through of the Project by the Designer/Builder, the Inspector and the District to determine whether and to what extent the Work is complete. Any erroneous claims of completion by the Designer/Builder resulting in a premature walk-through shall be at the Designer/Builder's sole cost and expense, and the District shall be entitled to reduce its payments to the Designer/Builder under the Contract by an amount equal to any costs incurred by the District due to the erroneous claims by the Designer/Builder that the Project is complete. Minor corrective (or "**punch-list**") items shall be identified in the final walk-through of the Project. Notwithstanding the provisions listed prior, the District shall accept as complete the different scope of work as each is completed, at different dates, as opposed to waiting for the entire Work to be completed prior to issuance of its Acceptance of Work.

    21.2. **District's Acceptance of Work**. The District, in its sole and reasonable discretion, may either (a) accept the Work as complete notwithstanding the need to complete minor corrective items (as distinguished from incomplete items), if the Work has otherwise been completed to the satisfaction of the District and the Inspector; (b) accept the Work as complete for some Sites only and/or to

stagger its acceptance, based on the status of the Work for each School Site; or (c) refrain from accepting the Work as complete until the entire Work and all portions thereof, including all punch-list items, have been completed to the satisfaction of the District and the Inspector. The Work shall only be accepted as complete by an action of the District's School Board ("**Completion**").

21.3. **Notice of Completion**. Once the District has accepted the Work as indicated herein, the District shall thereafter cause a Notice of Completion to be recorded in the County Recorder's Office.

21.4. **Designer/Builder's Failure to Correct Punch-List Items**. If the Designer/Builder fails to complete the minor corrective items prior to the expiration of the thirty-five (35) day period immediately following recording of the Notice of Completion, the District shall withhold from the final payment owing to the Designer/Builder under the Contract an amount equal to 150% the estimated cost, as reasonably determined by the District, of each item until such time as the item is completed.

21.5. **Time Is of the Essence:** Time is of the essence in the performance of and compliance with each of the provisions and conditions of this Contract.

22. BENEFICIAL USE: District reserves the right to receive beneficial use of the Work at any Project Site before formal Contract Completion and upon receipt of Permission to Operate Letter and/or Permission to Interconnect from the Utility. Beneficial use shall not constitute final acceptance or approval of any part of the Work covered by this Contract, nor shall beneficial use extend the date specified for Completion of the Work. The Parties may mutually agree that the date that the Generating Facilities begin producing power can be deemed the date of system start up for sake of the Performance Guarantee.

23. FORCE MAJEURE CLAUSE:

23.1. The term "Force Majeure" shall mean those events caused beyond the control of the affected Party and which by the exercise of due diligence such Party could not reasonably avoid and which it has been unable to overcome, including acts of God and public enemy; fire; epidemics, landslides, volcanic activity, terrorism, strike; loss or shortage of transportation facilities; lock-out; commandeering of materials, product, plant, or facilities by the government; relocation or construction of transmission facilities or the shutdown of such facilities for the purpose of necessary repairs; work by local utility directly impacting the Project; flood; earthquake; tornado; severe storm; civil disobedience; sabotage; restraint by court order or public authority (whether valid or invalid); which is beyond the control of the affected Party and which by the exercise of due diligence such Party could not reasonably have been expected to avoid and which it has been unable to overcome. Any delay associated with COVID-19, or any derivative or similar strain thereof, or any federal, state, or local order relating thereto, shall be considered a Force Majeure Event if it renders Contractor's performance of the Work impossible, and that event was not reasonably foreseeable at the time of the execution of the Contract.

23.2. Neither party shall be considered to be in default in the performance of any material obligation hereunder during the time and to the extent that it is prevented from obtaining delivery or performing by a Force Majeure event. Neither Party shall be relieved of its obligation to perform if such failure is due to causes arising out of its own negligence or due to removable or remediable causes which it fails to remove or remedy with the exercise of diligent efforts within a reasonable time period. Either Party rendered unable to fulfill any of its obligations under this Contract by reason of an event of Force Majeure shall give prompt written notice of such fact to the other Party. Notwithstanding a Force Majeure event, the party claiming such an event must provide satisfactory evidence that the event caused the delay or lack of performance and was not due to the fault or neglect of the party claiming a Force Majeure event.

23.3. Designer/Builder is aware that governmental agencies and utilities, including, without limitation, the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies ("**Review Agencies**") may have to approve Designer/Builder -prepared drawings or approve a proposed installation. Designer/Builder has included in the Project Schedule, time for possible review of its drawings and for reasonable delays and damages that may be caused by such agencies. Designer/Builder is entitled to additional time in

the Project Schedule for review of Designer/Builder's drawings or other approvals from the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies, if all of the following conditions have been satisfied:

23.3.1. The time for this review is in excess of the time expressly allocated for this review in the Project Schedule;

23.3.2. Designer/Builder has diligently pursued approval from the Review Agencies;

23.3.3. Designer/Builder's drawings and proposed installation are consistent with IR 16-8 as of the date of this Contract; and

23.3.4. Designer/Builder's drawings and proposed installation are consistent with Designer/Builder's pre-check(ed) ("**PC**") design as of the date of this Contract, where applicable, except as modified at the District's request.

24. INDEMNIFICATION / HOLD HARMLESS CLAUSE: To the furthest extent permitted by California law, Designer/Builder shall defend, indemnify, and hold harmless the District, its trustees, members, agents, representatives, officers, consultants, employees, and volunteers (the "**indemnified parties**") from any and all demands, losses, liabilities, claims, suits, and actions (the "**claims**") of any kind, nature, and description, including, but not limited to, attorneys' fees and costs, directly or indirectly arising from personal or bodily injuries, death, property damage, or otherwise arising out of, connected with, or resulting from the performance of this Contract to the extent the claims are caused by the negligence, recklessness, or willful misconduct of Designer/Builder. The District shall have the right to accept or reject any legal representation that Designer/Builder proposes to defend the District. However, such acceptance shall not be unreasonably withheld. This indemnification, defense, and hold harmless obligation includes any failure or alleged failure by Designer/Builder to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract in strict accordance with their terms, and without limitation, any stop notice actions or liens, including liens by the California Department of Labor Standards Enforcement.

25. PAYMENT:

25.1. On a monthly basis, Designer/Builder shall submit an application for payment based upon the estimated value for materials delivered or Services performed under the Contract as of the date of submission ("**Application for Payment**") and consistent with the information in **Exhibit D.** Design/Builder will submit one invoice, broken down for each School Site.

25.2. Within fourteen (14) days after receipt of Design-Builder's Application for Payment, District shall notify Design-Builder in writing, if the District disputes any portion of the Application for Payment and the basis for its dispute. The District may deduct from any payment an amount necessary to protect the District from loss because of: (1) liquidated damages which have accrued as of the date of the application for payment; (2) any sums expended by the District in performing any of Designer/Builder's obligations under the Contract which Designer/Builder has failed to perform or has performed inadequately after written notice thereof and an opportunity to cure; (3) defective Work not remedied within a reasonable time after written notice thereof; (4) stop payment notices as allowed by state law; (5) reasonable doubt based on the Schedule of Values and Contract Schedule that the Work can be completed for the unpaid balance of the Total Contract price or by the scheduled completion date; (6) reasonable belief of unsatisfactory prosecution of the Work by Designer/Builder; (7) unauthorized deviations from the Contract; (8) failure of the Designer/Builder to maintain or submit on a timely basis proper and sufficient documentation as required by the Contract during the prosecution of the Work; (9) erroneous or false estimates by the Designer/Builder of the value of the Work performed; (10) any sums representing expenses, losses, or damages, as determined and documented by the District, incurred by the District for which Designer/Builder is liable under the Contract; and (11) any other sums which the District is entitled to recover from Designer/Builder under the terms of the Contract or pursuant to state law, including section 1727 of the California Labor Code. The failure by the District to deduct any of these sums from a progress payment shall not constitute a waiver of the District's right to such sums. The District shall retain 5% from all amounts owing as retention. Retention shall be paid pursuant to Public Contract Code

sections 7107 and 7200.

25.3. Within thirty (30) days after District's receipt of the Application for Payment, Designer/Builder shall be paid a sum equal to ninety-five percent (95%) of the undisputed value of the Work performed (Assuming the value of the Work performed is verified by Inspector and certified by Designer/Builder) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld.

25.4. Payment for material stored on or off the School Sites is allowed at the sole discretion of the District. If allowed, proof of off-site material purchases (invoices and checks and/or bills of lading) and appropriate insurance coverage will be required. The Designer/Builder shall furnish to the District written consent from the Surety approving the advanced payment for materials stored off site. The maximum prepayment allowed by the District shall be one hundred (100%) percent of the actual value of the item being considered, less retention as indicated above. The District shall be the sole judge of fair market value. The Designer/Builder shall protect stored materials from damage. Damaged materials, even though paid for, shall not be incorporated into the Work.

25.5. For its Application for Payment to be due, owing and payable, the Designer/Builder must submit an updated Project Schedule with its Application for Payment.

25.6. **Allowances.** For any allowances identified herein, Designer/Builder shall be permitted to charge its time, materials, and other items in the identical structure as a Change Order. Designer/Builder shall invoice only for components of the Work encompassed by the allowance description. Any unused allowance or unused portion thereof shall be deducted from the Contract Price. However, if Designer/Builder's costs exceed the allowance, the District shall reimburse Designer/Builder for such excess if approved in advance in a Change Order.

26. PERMITS, APPROVALS, AND LICENSES:

26.1. The Designer/Builder and all of its employees, agents, and subcontractors shall secure and maintain in force, at Designer/Builder's sole cost and expense, all licenses and permits as are required by law, in connection with the furnishing of materials, supplies, or Services herein listed with the exception of any mitigation measures required to obtain or maintain CEQA compliance.

26.2. Designer/Builder is responsible for obtaining on behalf of the District and at Designer/Builder's expense, all permits and approvals (including DSA approval), required for the building, installation, and start-up of the Work hereunder which are required to complete the Project.

26.3. Designer/Builder is responsible for maintaining time of use (TOU) grandfathering through the interconnection agreement process with the local electric Utility (PG&E).

26.4. District will cooperate fully with and assist Designer/Builder's obtaining all permits and approvals required under this Contract.

26.5. The District is responsible for obtaining any CEQA related approvals and exemptions as applicable.

26.6. The District, at its own expense, is responsible for all project inspectors and any required special inspections and lab fees.

27. INDEPENDENT CONTRACTOR STATUS: While engaged in carrying out the Services of this Contract, the Designer/Builder is an independent contractor, and not an officer, employee, agent, partner, or joint venture of the District. Designer/Builder shall be solely responsible for its own Worker's Compensation insurance, taxes, and other similar charges or obligations. Designer/Builder shall be liable for its own actions, including its negligence or gross negligence, and shall be liable for the acts, omissions, or errors of its agents or employees.

28. [RESERVED]

29. [RESERVED]

30. PAYMENT BOND AND PERFORMANCE BOND: The Designer/Builder shall not commence the Work until it has provided to the District, in a form acceptable to the District, a Payment (Labor and Material) Bond and a

Performance Bond, each in an amount equivalent to one hundred percent (100%) of the Contract Price issued by a surety admitted to issue bonds in the State of California and otherwise acceptable to the District All performance bond liability will cease one (1) year from the completion date of the work of this Contract. The balance of any warranty or guarantee beyond one year required by District shall continue to be guaranteed solely by Designer/Builder. The payment bond liability will cease at the termination of any time required by law. Notwithstanding anything to the contrary in the Contract, the Payment (Labor and Material) Bond and the Performance Bond are not applicable to the Performance Guarantee.

31. DESIGNER/BUILDER'S INSURANCE: Designer/Builder has in force, and during the term of this Contract shall maintain in force with the minimum indicated limits, the following insurance. All policies shall contain waivers of subrogation against the District. All of Designer/Builder's insurance shall be with **admitted** insurance companies with an A.M. Best rating of no less than **A: VII.**

31.1. **Commercial General Liability Insurance.** Coverage to be written on an occurrence form. Coverage to be at least as broad as ISO form CG 002 (07/98), without endorsements that limit the policy terms with respect to: (1) the definition of an Insured Contract, (2) provisions for severability of interest, (3) explosion, collapse, underground hazard:

- $2,000,000 per occurrence for Bodily Injury and Property Damage
- $4,000,000 General Aggregate - other than Products/Completed Operations
- $2,000,000 Products/Completed Operations Aggregate
- $1,000,000 Personal & Advertising Injury
- $500,000 Fire Damage

31.2. **Automobile Liability.** Coverage to be written on an occurrence form. Coverage for any auto, including all owned, hired and non-owned vehicles: combined single limit of $1,000,000;

31.3. **Excess Liability Insurance**. Coverage to be written on an occurrence form. Coverage terms and limits to apply excess of the per occurrence and/or aggregate limits provided for Commercial General Liability, Auto Liability and Professional Liability. Coverage terms and limits to also apply in excess of those required for Employers Liability:

- $10,000,000 each occurrence
- $10,000,000 aggregate

31.4. **Professional Liability insurance.** Coverage to be written on an occurrence-made form:

- $1,000,000 per occurrence
- $2,000,000 aggregate

31.5. **Workers Compensation**: Statutory limits; and

31.6. **Employers' Liability**: $1,000,000.

- Bodily Injury by accident $1,000,000 each accident
- Bodily Injury by disease $1,000,000 each employee
- Bodily Injury by disease $1,000,000 policy limit

Commercial General Liability, Automobile Liability, Workers Compensation, and Employer's Liability limits may be reached through a combination of primary and umbrella/excess policies. The Designer/Builder shall provide to the District certificate(s) of insurance and endorsements satisfactory to the District. The policy(ies) shall not be amended or modified and the coverage amounts shall not be reduced without thirty (30) days written notice to the District prior to cancellation. Except for worker's compensation insurance and professional liability insurance, the District, shall be named as an additional insured on all policies. The Designer/Builder's policy(ies) shall be primary; any insurance carried by the District shall only be secondary and supplemental. The Designer/Builder shall not allow any subcontractor, employee, or agent to commence work on this Contract or any subcontract until the insurance required of the Designer/Builder of the subcontractor, or agent has been

obtained.

31.7. **Builder's Risk Insurance: Builder's Risk "All Risk" Insurance.** Designer/Builder shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work included within the Contract Documents. Coverage is to insure against all risks of accidental physical loss and shall include without limitation the perils of vandalism and/or malicious mischief (both without any limitation regarding vacancy or occupancy), sprinkler leakage, civil authority, theft, sonic disturbance, collapse, wind, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the design and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof. The District may require the Designer/Builder to include coverage for "earthquake(s)" and/or "flood" and Contractor shall provide the price for those additional coverages for the District's consideration prior to including or charging the District for those coverages.

32. WARRANTY/QUALITY: Unless a longer warranty is called for elsewhere in the Contract, the Designer/Builder, manufacturer, or their assigned agents shall guarantee the workmanship, product or service performed against defective workmanship, defects or failures of materials for a minimum period of one (1) year from date when District achieves Beneficial Use.

33. CONFIDENTIALITY: To the extent permitted by applicable law, the Parties shall maintain the confidentiality of all information, documents, programs, procedures, and all other items that the Parties encounter during the Project and/or pursuant to the Contract. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes all student, parent, and disciplinary information.

34. CONFLICT OF INTEREST: Designer/Builder understands that its professional responsibility is solely to the District. Designer/Builder warrants that it and its employees and/or subcontractors presently have no interest and will not acquire any direct or indirect interest that would conflict with its performance under this Contract, including, without limitation, any direct and/or indirect interest with: (an) entity(ies) performing construction in the same discipline and in competition with any contractor on a District project; (b) entity(ies) connected or related to a trade union or joint labor management committee; (c) the District.

35. COMPLIANCE WITH LAWS: Designer/Builder shall give all notices and comply with all laws, ordinance, rules and regulations bearing on conduct of the Work as indicated or specified, including all "Interpretation(s) of Regulations" issued by DSA on or before the date of this Contract. If Designer/Builder observes that any of the Work required by this Contract is at variance with any such laws, ordinance, rules or regulations, Designer/Builder shall notify the District, in writing, and, at the sole option of the District, any necessary changes shall be made and this Contract shall be appropriately amended in writing, or this Contract shall be terminated effective upon Designer/Builder's receipt of a written termination notice from the District. If Designer/Builder performs any work that is in violation of any laws, ordinances, rules or regulations, without first notifying the District of the violation, Designer/Builder shall bear all costs arising therefrom.

36. DISTRICT'S RIGHT TO AUDIT: District retains the right to review and audit, and the reasonable right of access to Designer/Builder's and any sub-consultant's premises during regular working hours with advance written notice to review and audit the Designer/Builder's compliance with the provisions of this Contract ("**District's Right**"). The District's Right includes the right to inspect, photocopy, and to retain copies, outside of the Designer/Builder's premises, of any and all Project-related records and other information with appropriate safeguards, if such retention is deemed necessary by the District in its sole discretion. The District shall keep this information confidential, as allowed by applicable law.

36.1. The District's Right includes the right to examine any and all books, records, documents and any other evidence of procedures and practices that the District reasonably determines are necessary to verify that the Designer/Builder is in compliance with all requirements of this Contract.

36.2. If there is a claim for additional compensation or for extra Services, the District's Right includes the

right to examine books, records, documents, and any and all other evidence and accounting procedures and practices that the District reasonably determines are necessary to verify all direct and indirect costs, which are claimed to have been incurred, or anticipated to be incurred.

36.3. The Designer/Builder shall maintain complete and accurate records in accordance with generally accepted accounting practices in the industry. The Designer/Builder shall make available to the District for review and audit, all Project-related accounting records and documents, and any other financial data. Upon District's request, the Designer/Builder shall submit exact duplicates of originals of all requested records to the District.

36.4. The Designer/Builder shall include audit provisions in any and all of its subcontracts, and shall ensure that these sections are binding upon all sub-consultants.

36.5. The Designer/Builder shall retain all Project-related records and other information with appropriate safeguards during the Term of this Contract and for a minimum of five (5) years thereafter.

36.6. Designer/Builder shall comply with these provisions within fifteen (15) days of the District's written request to review and audit any or all of Designer/Builder's Project-related records and information.

37. DISPUTES/CLAIMS: Public Contract Code § 9204. Claims between the District and the Designer/Builder shall be resolved in accordance with the procedures established in Public Contract Code § 9204.

37.1. **Claim**. The term "Claim" means a written demand by the Designer/Builder sent by registered mail or certified mail with return receipt requested for:

37.1.1. An extension of the Contract Time, including relief from damages or penalties assessed by the District for delay;

37.1.2. Payment of money or damages arising from work done by, or on behalf of, the Designer/Builder pursuant to the Contract and payment that is not otherwise expressly provided for in the Contract Documents or to which the Designer/Builder is not otherwise entitled; or

37.1.3. Payment of an amount that is disputed by the District.

37.2. **Submission of Claim**. A Claim arises upon the District's rejection of a request by the Designer/Builder for a Change Order. The Designer/Builder shall submit the Claim by registered mail or certified mail with return receipt requested to the District's Director of construction and Modernization, with a copy to the Project Manager/Construction Manager. The Designer/Builder shall submit its Claim in writing, together with all Supporting Documentation no later than the earlier of either: (1) thirty (30) days after the date the Claim arises; or (2) sixty (60) days after the date of Completion. It is the intent of the District to evaluate and resolve Claims with the Designer/Builder as close to the events giving rise to such Claims as possible and to avoid stale or late Claims, including late notice and documenting of Claims, and to timely mitigate the issue, event, condition, circumstance and/or cause of the Claim and any adverse impacts or damages related thereto.

37.3. **Contents of Claim**. A Claim must include all Supporting Documentation and a statement identifying it as a Claim signed by an authorized agent or officer of the Designer/Builder under penalty of perjury and including the following language immediately above or before the Designer/Builder's signature: "I declare under penalty of perjury under the laws of the State of California that the information provided and statements made in this Claim are true and correct, substantiated and of merit." The Designer/Builder recognizes and acknowledges that this requirement is not a mere formality but is intended to ensure that the Designer/Builder only submits Claims that it believes are true and correct, substantiated and have merit.

37.4. **Subcontractor Claims**. Pursuant to Public Contract Code § 9204(d)(5), a Subcontractor may request in writing, either on its own behalf or on behalf of a lower tier Subcontractor, that the

Designer/Builder submit to the District a claim for work which was performed by the Subcontractor or by a lower tier Subcontractor on behalf of the Subcontractor. The Subcontractor requesting that the claim be submitted to the District shall furnish reasonable documentation to support the claim. Regardless of whether or not the Designer/Builder decides to submit the Subcontractor's claim to the District, Designer/Builder shall provide a copy of the Subcontractor's written request, including all supporting documentation, to the Project Manager/Construction Manager within ten (10) days of Designer/Builder's receipt of the request. In the event the Designer/Builder agrees to submit a Subcontractor's claim to the District, the Designer/Builder shall submit such claim as a request for a Change Order, unless such claim was previously submitted to the District as a request for a Change Order. Within forty-five (45) days of receipt of the Subcontractor's written request, the Designer/Builder shall notify the Subcontractor in writing as to whether the Designer/Builder submitted the claim to the District and, if the Designer/Builder did not submit the claim, the Designer/Builder shall provide the Subcontractor with a written statement of the reasons for not having done so and shall concurrently provide a copy of such written statement to the Project Manager/Construction Manager. In the event the Designer/Builder includes supporting documentation with such written statement, the Designer/Builder shall concurrently provide a copy of such supporting documentation to the Project Manager/Construction Manager. If the Designer/Builder submits a Claim on behalf of a Subcontractor, the Claim shall include a statement in writing and signed by an authorized agent or officer of the Designer/Builder under penalty of perjury that includes the following language immediately above or before the Designer/Builder's signature: "I declare under penalty of perjury under the laws of the State of California that [insert name of Designer/Builder] has thoroughly evaluated the claim of [insert name of Subcontractor] and determined that the information provided and statements made in the claim are true and correct, substantiated and of merit."

37.5. **District Review of Claim**. Upon receipt of a Claim, the District shall review the Claim and, within a period not to exceed forty-five (45) days, shall provide Designer/Builder a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and the Designer/Builder may, by mutual written agreement, extend the forty-five (45) day time period. The District shall process and make payment of any undisputed portion of a Claim within sixty (60) days after the District issues its written statement. Failure by the District to provide a written statement in response to a Claim from the Designer/Builder within the forty-five (45) day time period, or within an agreed upon extended time period, shall result in the Claim being deemed rejected in its entirety. A Claim that is rejected by reason of the District's failure to respond, or failure to timely respond, to the Claim shall not constitute an adverse finding regarding the merits of the Claim or the claimant's responsibility or qualifications.

37.6. **Meet and Confer Meeting**. If the Designer/Builder disputes the District's written response, or if the District fails to respond within the time frame prescribed above, the Designer/Builder, within fifteen (15) days of the District's written response or, if the District fails to respond, within fifteen (15) days after the District's response was due, may demand, in a writing sent to the District's Superintendent by registered mail or certified mail, return receipt requested, with a copy to the District's Director of Construction and Modernization, and Project Manager/Construction Manager, an informal conference to meet and confer for settlement of the issues in dispute. The District shall schedule a meet and confer conference within thirty (30) days of its receipt of the Designer/Builder's written demand.

37.7. **Mediation**. Within ten (10) business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the District shall provide the Designer/Builder a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) days after the District issues its written statement. Any disputed portion of the Claim, as identified by the Designer/Builder in writing, shall be submitted to

nonbinding mediation. The expenses and fees of the mediator and the administrative fees shall be divided among the parties equally. Each party shall pay its own legal fees, witness fees, and other expenses. The District and the Designer/Builder shall mutually agree to a mediator within ten (10) business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. The foregoing notwithstanding, pursuant to Public Contract Code § 9204(f), the parties may mutually agree in writing to waive mediation.

37.8. Pending resolution of the dispute, Designer/Builder agrees it will neither rescind the Contract nor stop the progress of the Work but will allow determination by the court of the State of California, in the county in which the District's administration office is located, having competent jurisdiction of the dispute.

37.9. Nothing in this Article shall prevent the Parties from resolving any disputes or claims pursuant to Public Contract Code section 20104, et seq., if applicable.

37.10. Nothing in this Contract, waives, modifies or tolls the Designer/Builder's obligation to present a timely claim under Government Code § 910, et seq.

38. LABOR, WAGE & HOUR, APPRENTICE AND RELATED PROVISIONS

38.1. Designer/Builder & Subcontractor Registration

38.1.1. Designer/Builder shall comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including furnishing its CPRs to the Labor Commissioner of California and complying with any applicable enforcement by the Department of Industrial Relations. Labor Code section 1771.1(a) states the following:

> "A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded."

38.1.2. Designer/Builder acknowledges that, for purposes of Labor Code section 1725.5, all or some of the Work is a public work to which Labor Code section 1771 applies. Designer/Builder shall comply with Labor Code section 1725.5, including without limitation the registration requirements. Additionally, all Contractor's Subcontractors shall comply with Labor Code section 1725.5 to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of the Contract. Designer/Builder represents that all of its Subcontractors are registered pursuant to Labor Code section 1725.5.

38.1.3. The Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Designer/Builder shall post job site notices, as prescribed by regulation. Designer/Builder shall comply with all requirements of Labor Code section 1771.4, except the requirements that are exempted by the Labor Commissioner for the Project.

38.2. Wage Rates, Travel and Subsistence

38.2.1. Pursuant to the provisions of article 2 (commencing at section 1770), chapter 1, part 7, division 2, of the Labor Code of California, the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification, or type of worker needed to execute

this Contract are on file at the District's principal office and copies will be made available to any interested party on request. Designer/Builder shall obtain and post a copy of these wage rates at the job site.

38.2.2. Holiday and overtime work, when permitted by law, shall be paid for at a rate of at least one and one-half times the above specified rate of per diem wages, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

38.2.3. Designer/Builder shall pay and shall cause to be paid each worker engaged in Work on the Project not less than the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations ("**DIR**") ("**Director**"), regardless of any contractual relationship which may be alleged to exist between Designer/Builder or any Subcontractor and such workers.

38.2.4. If during the period this bid is required to remain open, the Director determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the Contract is to be performed, such change shall not alter the wage rates in the Notice to Bidders or the Contract subsequently awarded.

38.2.5. Pursuant to Labor Code section 1775, Designer/Builder shall, as a penalty to District, forfeit the statutory amount, (currently not to exceed two hundred dollars ($200) for each calendar day, or portion thereof), for each worker paid less than the prevailing rates, as determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Designer/Builder or by any Subcontractor under it.

38.2.5.1. The amount of the penalty shall not be less than forty dollars ($40) for each calendar day, or portion thereof, unless the failure of Designer/Builder was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of Designer/Builder.

38.2.5.2. The amount of the penalty shall not be less than eighty dollars ($80) for each calendar day or portion thereof, if Designer/Builder has been assessed penalties within the previous three (3) years for failing to meet prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned.

38.2.5.3. The amount of the penalty may not be less than one hundred twenty dollars ($120) for each calendar day, or portion thereof, if the Labor Commissioner determines the Designer/Builder willfully violated Labor Code section 1775.

38.2.5.4. 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 Designer/Builder.

38.2.6. Any worker employed to perform Work on the Project, which Work is not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by him, and such minimum wage rate shall be retroactive to time of initial employment of such person in such classification.

38.2.7. Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by section 3093, and similar purposes.

38.2.8. Designer/Builder shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any,

from unpaid wages actually earned. In addition, Designer/Builder shall post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

38.3. **Hours of Work**

38.3.1. As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by Designer/Builder or by any Subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract shall be limited and restricted by Designer/Builder to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, Work performed by employees of Designer/Builder in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

38.3.2. Designer/Builder shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by Designer/Builder in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

38.3.3. Pursuant to Labor Code section 1813, Designer/Builder shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty five dollars ($25)) for each worker employed in the execution of this Contract by Designer/Builder or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code.

38.3.4. Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District and in compliance with all requirements and restrictions of the local jurisdiction (e.g., City ordinances, County ordinances and orders, etc.).

38.4. **Payroll Records**

38.4.1. If requested by the District, Designer/Builder shall provide to the District and shall cause each Subcontractor performing any portion of the Work to provide the District an accurate and certified payroll record ("**CPR(s)**"), 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 the Designer/Builder and/or each Subcontractor in connection with the Work.

38.4.1.1. In addition to any other requirements pursuant to Labor Code sections 1770, et seq., the CPRs enumerated hereunder shall be certified.

38.4.2. All CPRs shall be available for inspection at all reasonable hours at the principal office of Designer/Builder on the following basis:

38.4.2.1. A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or his/her authorized representative on request.

38.4.2.2. CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the Department of Industrial Relations.

38.4.2.3. CPRs shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made

through either the District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records reimburse the costs of preparation by Designer/Builder, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Designer/Builder.

38.4.3. The form of certification for the CPRs shall be as follows:

I, _____ (Name-Print), the undersigned, am the _____ _____ (Position in business) with the authority to act for and on behalf of _____ (Name of business and/or Designer/Builder), certify under penalty of perjury that the records or copies thereof submitted and consisting of _____ (Description, number of pages) are the originals or true, full, and correct copies of the originals which depict the payroll record(s) of actual disbursements by way of cash, check, or whatever form to the individual or individual named, and (b) we have complied with the requirements of sections 1771, 1811, and 1815 of the Labor Code for any work performed by our employees on the Project.

Date: _____ Signature: _____

(Section 16401 of Title 8 of the California Code of Regulations)

38.4.4. Designer/Builder and all Subcontractors shall file a certified copy of the CPRs with the entity that requested the records within ten (10) days after receipt of a written request.

38.4.5. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or 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 Designer/Builder awarded Contract or performing Contract shall not be marked or obliterated.

38.4.6. Designer/Builder shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) working days, provide a notice of change of location and address.

38.4.7. In the event of noncompliance with the requirements of this section, Designer/Builder shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Designer/Builder must comply with this section. Should noncompliance still be evident after the ten (10) day period, Designer/Builder shall, as a penalty to District, forfeit one hundred dollars ($100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of Division of Apprenticeship Standards or Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

38.4.8. It shall be the responsibility of Designer/Builder to ensure compliance with the provisions of Labor Code section 1776.

38.5. **Apprentices**

38.5.1. Designer/Builder acknowledges and agrees that, if this Contract involves a dollar amount greater than or a number of working days greater than that specified in Labor Code section 1777.5, then this Contract is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of Designer/Builder to ensure compliance with this Article and with Labor Code section 1777.5 for all apprenticeship occupations.

38.5.2. Apprentices of any crafts or trades may be employed and, when required by Labor Code section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

38.5.3. Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he/she is employed, and shall be employed only at the work of the craft or trade to which she/he is registered.

38.5.4. Only apprentices, as defined in section 3077 of the Labor Code, who are in training under apprenticeship standards and written apprentice agreements under chapter 4 (commencing at section 3070), division 3, of the Labor Code, are eligible to be employed. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he/she is training.

38.5.5. Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Designer/Builder and any Subcontractors employing workers in any apprenticeable craft or trade in performing any Work under this Contract shall apply to the applicable joint apprenticeship committee for a certificate approving the Designer/Builder or Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

38.5.6. Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Designer/Builder and any Subcontractor may be required to make contributions to the apprenticeship program.

38.5.7. If Designer/Builder or Subcontractor willfully fails to comply with Labor Code section 1777.5, then, upon a determination of noncompliance by the Administrator of Apprenticeship, it shall:

38.5.7.1. Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

38.5.7.2. Forfeit as a penalty to District the full amount as stated in Labor Code section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council and under the authority of the Chief of the Division of Apprenticeship Standards.

38.5.8. Designer/Builder and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

38.5.9. Designer/Builder shall become fully acquainted with the law regarding apprentices prior to commencement of the Work. Special attention is directed to sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and title 8, California Code of Regulations, section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California 94102.

38.5.10. Designer/Builder shall ensure compliance with all certification requirements for all workers on the Project including, without limitation, the requirements for electrician certification in Labor Code sections 108, et seq.

38.6. **Non-Discrimination**

38.6.1. It is the policy of the District that in connection with all work performed under contracts there be no discrimination against any employee engaged in the work because of race, national origin, ancestry, religion, age, physical or mental disability, sex, or sexual orientation of such person, and therefore the Designer/Builder agrees to comply with applicable Federal and California laws including, but not limited to the California Fair Employment Practice Act beginning with Government Code Section 12900 and Labor Code Section 1735. In addition, the Designer/Builder agrees to require like compliance by all its subcontractor(s).

38.6.2. Special requirements for Federally Assisted Construction Contracts: During the performance of this Contract, Designer/Builder agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Volume 33 No. 104 of the Federal Register dated May 28, 1968.

38.7. **Labor First Aid**. Designer/Builder shall maintain emergency first aid treatment for its workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.) the California Occupational Safety and Health Act of 1973, and all related regulations, including without limitation section 330 et seq. of Title 8 of the California Code of Regulations.

39. ANTI-TRUST CLAIM: Designer/Builder and its subcontractor(s) agree to assign to the District 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. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Contract or a subcontract. This assignment shall be made and become effective at the time the District tenders final payment to the Designer/Builder, without further acknowledgment by the Parties.

40. GOVERNING LAW: This Contract shall be governed by and construed in accordance with the laws of the State of California with venue of any action in a County in which the District administration office is located.

41. PROVISIONS REQUIRED BY LAW DEEMED INSERTED: Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and this Contract shall be read and enforced as though it were included therein.

42. BINDING CONTRACT: This Contract shall be binding upon the Parties and upon their successors and assigns, and shall inure to the benefit of said parties and their successors and assigns.

43. WAIVER: A Party's waiver of any term, condition, covenant or waiver of a breach of any term, condition or covenant shall not constitute the waiver of any other term, condition or covenant or the waiver of a breach of any other term, condition or covenant.

44. INVALID TERM: If any provision of this Contract is declared or determined by any court of competent jurisdiction to be illegal, invalid or unenforceable, the legality, validity or enforceability of the remaining parts, terms and provisions shall not be affected thereby, and said illegal, unenforceable or invalid part, term or provision will be deemed not to be a part of this Contract.

45. ENTIRE CONTRACT: This Contract sets forth the entire Contract between the Parties and fully supersedes any and all prior agreements, understanding, written or oral, between the Parties pertaining to the subject matter thereof. This Contract may be modified only by a writing upon mutual consent.

46. OWNERSHIP OF CERTAIN PROPRIETARY PROPERTY RIGHTS: District shall not, by virtue of this Contract, acquire any interest in any formulas, patterns, devices, secret inventions or processes, copyrights, patents, other intellectual or proprietary rights, or similar items of property which are or may be used in connection with the equipment. Designer/Builder shall grant to District a perpetual, irrevocable royalty-free license for any and all software or other intellectual property rights necessary for District to continue to operate, maintain, and repair the equipment in a manner that will yield maximum energy production and/or energy consumption reductions.

47. OWNERSHIP OF ANY EXISTING EQUIPMENT: Ownership of any equipment and materials presently existing at the Facilities at the time of execution of this Contract shall remain the property of the District even if it is replaced or its operation made unnecessary by work performed by Designer/Builder pursuant to this Contract. If applicable, Designer/Builder shall advise District in writing of all equipment and materials that will be replaced at the Facilities and District shall, within five (5) business days of Designer/Builder' notice, designate in writing to Designer/Builder which replaced equipment and materials that should not be disposed of off-site by Designer/Builder (the "**Retained Items**"). It is understood and agreed to by both Parties that District shall be responsible for and designate the location and storage for the Retained Items. Designer/Builder shall be responsible for the disposal of replaced equipment and materials, except for the Retained Items. Designer/Builder shall use commercially reasonable efforts to remove the Retained Items in such a manner as to avoid damage thereto, or if it is unreasonable to avoid damage altogether, to minimize the damage done.

48. UTILITY WORK: District expressly understands and agrees that the definition "Force Majeure" above also includes any Interconnection Facilities work that may need to be performed by the local Utility ("**Utility**") in order for Designer/Builder to fully implement the Project. "Interconnection Facilities" shall mean any distribution or transmission lines and other facilities that may be required to connect equipment supplied

under this Contract to an electrical distribution/transmission system owned and maintained by the Utility. Any Interconnection Facilities work that may be required will be performed by the Utility under a separate contract between District and the Utility. Designer/Builder shall prepare all Interconnection Facilities documentation, and collect all Interconnection Facilities information in a time frame to ensure maximum benefit to the District and to comply with all requirements. Designer Builder shall also cooperate and assist the District in facilitating the Interconnection Facilities work.

49. ENERGY CREDITS: District shall own all right, title, and interest associated with or resulting from the development, construction, installation and ownership of the any facilities installed on the Project ("**Generating Facilities**"). This ownership includes the production, sale, purchase or use of the energy output including, without limitation:

49.1. All Environmental Incentives associated in any way with the Generating Facilities. "Environmental Incentives" means all rights, credits (including tax credits), rebates, benefits, reductions, offsets and allowances and entitlements of any kind, howsoever entitled or named (including carbon credits and allowances), whether arising under federal, state or local law, international treaty, trade association membership or the like arising from the Generating Facilities or the energy produced or otherwise from the development, construction, installation or ownership of the Generating Facilities or the production, sale, purchase, consumption or use of the energy produced from the Generating Facilities. Without limiting the forgoing, "Environmental Incentives" includes green tags, renewable energy credits, tradable renewable certificates, portfolio energy credits, the right to apply for (and entitlement to receive) incentives under the California Solar Initiative or other incentive programs offered by the State of California and the right to claim federal income tax credits under Section 45 or 48 of the Code as such credits are available arising from the Environmental Attributes of the Generating Facilities or the energy produced from the Generating Facilities or the production, sale, purchase, consumption or use of the energy produced from the Generating Facilities.

49.2. All reporting rights and the exclusive rights to claim that the District is responsible for the delivery of the energy from the Generating Facilities.

49.3. The District is responsible for the reductions in emissions of pollution and greenhouse gases resulting from the generation of the energy and the delivery thereof to each Energy Delivery Point.

49.4. The District is entitled to all credits, certificates, registrations, etc., evidencing or representing any of the foregoing.

49.5. District shall be the owner of and shall be entitled to all: (i) carbon reduction tonnes as defined under the California Action Reserve or such similar definition as enacted by the State of California or the U.S. Federal Government; and (ii) "renewable energy credits," as such term is defined in Section 399.12(h)(2) of the California Public Utilities Code, associated with the Generating Facilities, and Designer/Builder shall take such steps as District shall reasonably request to confirm District's ownership of such renewable energy credits.

49.6. Design/Builder is not responsible for compliance, certification, reporting, or other requirements associated with the sale, ownership, rights, or certifications for these energy credits, but Design/Builder will provide advice and consultation to the District as requested.

49.7. Design/Builder shall use data collection, monitoring and reporting system components capable of meeting Western Renewable Energy Generation Information System (WREGIS) compliant reporting requirements.

50. REBATE PROGRAMS: On behalf of the District, Designer/Builder shall prepare and submit to the applicable agencies all applications and documentation necessary for all available energy production and/or energy efficiency rebate(s), incentive(s), and/or loan program(s) ("**Incentive Funds**"). This shall include actions necessary to ensure compliance with the Utility's net metering program and all interconnection agreements and related documents for the District's participation and utilization of the benefits of that program. While Designer/Builder has extensive experience in assisting with procuring Incentive Funds for school districts, Designer/Builder cannot guarantee that these Incentive Funds will be received by the District. Procurement, or lack thereof, of these Incentive Funds will not alter the Contract Amount of this Contract, or payment

timeline associated with standard progress invoicing and payments.

51. RESPONSIBILITIES OF THE DISTRICT

51.1. The District shall examine the documents submitted by the Designer/Builder and shall render decisions so as to avoid unreasonable delay in the process of the Designer/Builder's Services.

51.2. The District shall in writing advise the Designer/Builder if the District becomes aware of any fault or defect in the Project, including any errors, omissions or inconsistencies in the Designer/Builder's documents. Failure to provide such notice shall not relieve Designer/Builder of its responsibility therefore, if any.

51.3. Unless the District and the Designer/Builder agree that a hazardous materials consultant shall be a consultant of the Designer/Builder, the District shall furnish the services of a hazardous material consultant or other consultants when such services are requested in writing by Designer/Builder and deemed necessary by the District or are requested by the District. These services shall include: asbestos and lead paint survey; abatement documentation; and specifications related to said matters which are to be incorporated into bid documents prepared by Designer/Builder. If the hazardous materials consultant is furnished by the District and not a consultant of the Designer/Builder, the specifications shall include a provision to the effect that they are included in the Designer/Builder's bid documents for the District's convenience and have not been prepared or reviewed by the Designer/Builder. The provision shall also direct questions about the specifications to its preparer. Design/Builder shall not perform or be responsible for any hazardous material testing or abatement, unless otherwise agreed to by District and Designer/Builder.

51.4. District personnel and/or its designated representatives shall coordinate with Designer/Builder as may be requested and desirable for the coordination or management of work related to the Project.

51.5. The District shall provide to the Designer/Builder all relevant information it possesses regarding the Project that the Designer/Builder needs to perform its Services. The District shall provide this information and its decisions required under this Contract in a timely manner and to avoid unreasonable delay in the Project.

51.6. The District will pay for all fees associated with any rebate programs for programs the District wishes to participate in.

52. LIABILITY OF PARTIES

52.1. Other than as provided in this Contract, District's financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, arising out of or in connection with this Contract for the Services performed in connection with this Contract.

52.2. District shall not be responsible for any damage to persons or property as a result of the Designer/Builder's use, misuse or failure of any equipment used by Designer/Builder, or by its employees, even though such equipment be furnished or loaned to Designer/Builder by District.

52.3. Except with respect to (1) Liquidated Damages; (2) any claim covered by Designer/Builder's insurance required pursuant to this Contract (up to the applicable limits set forth herein); (3) Designer/Builder's indemnification obligations under this Contract from claims of third party(ies); (4) the Performance Guarantee; and (5) any damage due to Designer/Builder's gross negligence or willful misconduct pursuant to this Contract, neither Designer/Builder, nor its directors, officers, shareholders, partners, members, agents and employees subcontractors or suppliers shall be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, arising out of or in connection with this Contract for the Services performed in connection with this Contract.

53. PERFORMANCE GUARANTEE. Designer/Builder hereby guarantees to District guaranteed energy output from each System as indicated in the attached **Exhibit G** (Performance Guarantee Parameters and Energy Output Data) ("**Performance Guarantee**"). The Performance Guarantee is only excused by the terms of **Exhibit G** and pursuant to its obligations under the Operations & Maintenance Contract, attached hereto as **Exhibit B.**

NONCOLLUSION DECLARATION
(Public Contract Code § 7106)

The undersigned declares:

I am the _____ [**PRINT YOUR TITLE**]

of _____ [**PRINT FIRM NAME**],

the party making the foregoing Contract.

The Contract is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Contract is genuine and not collusive or sham. The Designer/Builder has not directly or indirectly induced or solicited any other entity to put in a false or sham bid or proposal. The Designer/Builder has not directly or indirectly colluded, conspired, connived, or agreed with any other designer/builder or anyone else to put in a sham bid or proposal, or to refrain from proposing. The Designer/Builder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Contract Price of the Designer/Builder or any other entity, or to fix any overhead, profit, or cost element of the Contract Price, or of that of any other entity. All statements contained in the Contract are true. The Designer/Builder has not, directly or indirectly, submitted his or her Contract Price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid or proposal, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a Designer/Builder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Designer/Builder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on the following date:

Date: _____
Proper Name of Designer/Builder: _____
Signature: _____
Print Name: _____
Title: _____

(ATTACH NOTARIAL ACKNOWLEDGMENT FOR THE ABOVE SIGNATURE)

CERTIFICATIONS TO BE COMPLETED BY DESIGNER/BUILDER

THE UNDERSIGNED MUST CHECK EACH BOX AND EXECUTE THIS FORM AND HEREBY CERTIFIES TO THE GOVERNING BOARD OF THE DISTRICT THAT:

- He/she is a representative of the Designer/Builder,
- He/she is familiar with the facts herein certified and acknowledged,
- He/she is authorized and qualified to execute this Agreement and these certifications on behalf of Designer/Builder and that by executing this Agreement he/she is certifying the following items.

☐ **Labor Code Sections 1860-1861 (Workers' Compensation).** In accordance with Labor Code section 3700, every contractor will be required to secure the payment of compensation to his or her employees. I acknowledge and certify under penalty of perjury that I am aware of the provisions of Section 3700 of the Labor Code which 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 the work of this contract.

☐ **Government Code Sections 8355-8357 (Drug-Free Workplace).** I acknowledge and certify under penalty of perjury that I will provide a drug-free workplace by doing all of the following:

(1) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace and specifying the actions that will be taken against employees for violations of the prohibition.
(2) Establishing a drug-free awareness program to inform employees about all of the following:
(A) The dangers of drug abuse in the workplace.
(B) The person's or organization's policy of maintaining a drug-free workplace.
(C) Any available drug counseling, rehabilitation, and employee assistance programs.
(D) The penalties that may be imposed upon employees for drug abuse violations.
(3) Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I also acknowledge that this Contract may be subject to suspension of payments under the contract or grant or termination of the contract or grant, or both, and the contractor or grantee thereunder may be subject to debarment, in accordance with the requirements of the above-referenced statute, if the contracting or granting agency determines that any of the following has occurred:

(1) The contractor or grantee has made a false certification under Section 8355.
(2) The contractor or grantee violates the certification by failing to carry out the requirements of subdivisions (a) to (c), inclusive, of Section 8355.

I also acknowledge that the Department of General Services shall establish and maintain a list of individuals and organizations whose contracts or grants have been canceled due to failure to comply with the above-referenced statute. This list shall be updated monthly and published each month. No state agency shall award a contract or grant to a person or organization on the published list until that person or organization has complied with the above-referenced statute.

☐ **Tobacco-Free Environment**. Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400

et seq., Health & Safety Code section 104350 et seq. and District Board Policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school owned vehicles and vehicles owned by others while on District property.

I acknowledge and certify under penalty of perjury that I am aware of the District's policy regarding tobacco-free environments at District sites, including the Project site and acknowledge and certify that I will adhere to the requirements of that policy and not permit any of my firm's employees, agents, subcontractors, or my firm's subcontractors' employees or agents to use tobacco and/or smoke on the Project site. The District also prohibits electronic cigarettes, "vaping" or similar product uses on District sites.

☐ **No Hazardous Materials.** I acknowledge and certify under penalty of perjury that no Asbestos, or Asbestos-Containing Materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations ("**New Hazardous Material**"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Designer/Builder's work on the Project for District. I have instructed our employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

(i) Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (.1%) asbestos shall be defined as asbestos-containing material. Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Designer/Builder if the material is found to be New Hazardous Material.

(ii) All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing "New Hazardous Material," will be immediately rejected and this Work will be removed at Designer/Builder's expense at no additional cost to the District.

The Designer/Builder must immediately notify the District within two (2) Business Days, if the Designer/Builder finds and before it disturbs, any material that the Designer/Builder believes may be hazardous waste, as defined in section 25117 of the Health and Safety Code, and requires removal to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law

I acknowledge and certify under penalty of perjury that this certification provides notice to the Designer/Builder that:

(1) The Designer/Builder's work may disturb lead-containing building materials.
(2) The Designer/Builder must notify the District if any work may result in the disturbance of lead-containing building materials.

☐ **Lead as a Health Hazard**. Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburses when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Designer/Builder and its employees will be providing services for the District, and because the Designer/Builder's work may disturb lead-containing building materials, **Designer/Builder is hereby notified** of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to 1993 are presumed to contain some lead-based paint until sampling proves otherwise.

(i) **Overview of California Law**

Education Code section 32240 et seq. is known as the Lead Safe Schools Protection Act. Under this act, the Department of Health Services ("DHS") is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

Any school that undertakes any action to abate existing risk factors for lead is required to utilize trained and state-certified contractors, inspectors, and workers. (Ed. Code, § 32243, subd. (b).) Moreover, 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. (Ed. Code, § 32244.)

Both the Federal Occupational Safety and Health Administration ("Fed/OSHA") and the California Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead.

The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to that regulation. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. It includes, but is not limited to, the following:

a. Demolition or salvage of structures where lead or materials containing lead are present;

b. Removal or encapsulation of materials containing lead;

c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;

d. Installation of products containing lead;

e. Lead contamination/emergency cleanup;

f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and

g. Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Designer/Builder, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532. 1).

The Designer/Builder must notify the District if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials must be coordinated through the District. A signed copy of this Certification must be on file prior to beginning Work on the Project, along with all current insurance certificates.

(ii) **Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act**

In 2008, the U.S. Environmental Protection Agency, issued a rule pursuant to the authority of Section 402(c)(3) of the Toxic Substances Control Act, requiring lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint (Renovation, Repair and Painting Rule). Renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with accredited training, and following the work practice requirements to reduce human exposures to lead.

Designer/Builder, its workers and subcontractors must fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The requirements apply to all contractors who disturb lead-based paint in a six-square-foot area or greater indoors or a 20-square-foot area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

(iii) **Designer/Builder's Liability**

If the Designer/Builder fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Designer/Builder will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Designer/Builder to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Designer/Builder to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Designer/Builder shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Designer/Builder.

I acknowledge and certify under penalty of perjury, that:

1. I have received notification of potential lead-based materials on the District's property;
2. I am knowledgeable regarding and will comply with all applicable laws, rules, and regulations governing work with, and disposal of, lead.

☐ **Imported Materials.** All soils, aggregate, or related materials ("**Fill**") that Designer/Builder, a Subcontractor, agent or supplier, in any way, provides or delivers and/or supplies to the Project Site shall be free of any and all

hazardous material as defined in section 25260 of the Health and Safety Code, shall satisfy the requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, sections 21000 et seq. of the Public Resources Code ("CEQA"), and shall comply with the requirements of sections 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control. I acknowledge that, to the furthest extent permitted by California law, the indemnification provisions in the Contract Documents apply to, without limitation, any claim(s) connected with providing, delivering, and/or supplying Fill.

☐ **Roofing Contract Financial Interest Certification (Public Contract Code § 3006)**

I, _____ [**Your Name**], _____ [**Firm Name**] certify that I have not offered, given, or agreed to give, received, accepted, or agreed to accept, any gift, contribution, or any financial incentive whatsoever to or from any person in connection with a roof project contract or subcontract on the Project. As used in this certification, "person" means any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

I, _____ [**Your Name**], _____ [**Firm Name**] certify that I do not have, and throughout the duration of the Contract, I will not have, any financial relationship in connection with the performance of the Contract with any architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor that is not disclosed below.

I, _____ [**Your Name**], _____ [**Firm Name**] have the following financial relationships with an architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor, or other person in connection with the following roof project contract:

Name of firm ("Firm"): _____
Mailing address: _____
Address of branch office used for this Project: _____
If subsidiary, name and address of parent company: _____

For Projects without substantive roofing components, check the following box and execute this certification:

☐ The Work on the Contract (1) does not include the replacement or repair of a roof or (2) is a repair of twenty five percent (25%) or less of the roof, (3) or is a repair project that has a total cost of twenty one thousand dollars ($21,000) or less.

☐ **Iran Contracting Act Certification (Public Contract Code § 2204)**

Pursuant to Public Contract Code (PCC) section 2204, an Iran Contracting Act certification is required for solicitations of goods or services of one million dollars ($1,000,000) or more.

Designer/Builder shall complete **ONLY ONE** of the following three paragraphs.

☐ 1. Designer/Builder's Contract Price is less than one million dollars ($1,000,000).

OR

☐ 2. Designer/Builder's Contract Price is one million dollars ($1,000,000) or more,

but Designer/Builder is **not** on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code § 2203(b), and Designer/Builder is not a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

OR

☐ 3. Designer/Builder's Contract Price is one million dollars ($1,000,000) or more, but the District has given prior written permission to Designer/Builder to submit a proposal pursuant to PCC 2203(c) or (d). **A copy of the written permission from the District is included with the Agreement**.

I certify that I am duly authorized to legally bind the Designer/Builder to this certification, that the contents of this certification are true, and that this certification is made under the laws of the State of California.

☐ **Criminal Background Investigation / Fingerprinting Certification**

The undersigned does hereby certify to the governing board of the District that he/she is a representative of the Designer/Builder, is familiar with the facts herein certified, is authorized and qualified to execute this certificate on behalf of Designer/Builder; and that the information in this Criminal Background Investigation / Fingerprinting Certification is true and correct.

1. **Education Code.** Designer/Builder has taken at least one of the following actions with respect to the Project (check all that apply):

☐ The Designer/Builder has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Designer/Builder's employees and all of its subcontractors' employees who may have contact with District pupils in the course of providing services pursuant to the Contract, and the California Department of Justice ("**DOJ**") has determined (per the DOJ process for Applicant Agencies described more fully on its website, located at:) that none of those employees have been convicted of a felony, as that term is defined in Education Code section 45122.1. A complete and accurate list of Designer/Builder's employees and of all of its subcontractors' employees who may come in contact with District pupils during the course and scope of the Contract is attached hereto; and/or

☐ Pursuant to Education Code section 45125.2, Designer/Builder has installed or will install, prior to commencement of work, a physical barrier at the Project site, that will limit contact between Designer/Builder's employees and District pupils at all times; and/or

☐ Pursuant to Education Code section 45125.2, Designer/Builder certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Designer/Builder who the California Department of Justice has ascertained has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Designer/Builder's employees and its subcontractors' employees is:
Name: _____ **Title:** _____

☐ The Work on the Contract is at an unoccupied school site and no employee and/or

subcontractor or supplier of any tier of Contract shall come in contact with the District pupils.

2. **Megan's Law (Sex Offenders).** I have verified and will continue to verify that the employees of Designer/Builder that will be on the Project site and the employees of the Subcontractor(s) that will be on the Project site are **not** listed on California's "Megan's Law" Website (http://www.meganslaw.ca.gov/).

I acknowledge and certify under penalty of perjury that I am duly authorized to legally bind the Designer/Builder to all provisions and items included in these certifications, that the contents of these certifications are true, and that these certifications are made under the laws of the State of California.

Date: _____

Proper Name of Designer/Builder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

PERFORMANCE BOND
(100% of Contract Price)

(Note: Designer/Builder must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("**Board**") of the **Mountain View Whisman School District** ("**District**") and **ENGIE Services U.S. Inc.** ("**Principal**") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

_____ (Project Name)
("**Project**" or "**Contract**")

which Contract dated _____, 20___, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof, and

WHEREAS, said Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract;

NOW, THEREFORE, the Principal and _____ ("**Surety**") are held and firmly bound unto the Board of the District in the penal sum of _____ _____ DOLLARS ($_____), lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents, to:

- Perform all the work required to complete the Project; and

- Pay to the District all damages the District incurs as a result of the Principal's failure to perform all the Work required to complete the Project.

The condition of the obligation is such that, if the above bounden Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on his or its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warrantees of materials and workmanship for one (1) year from the completion date of the work of this Contract, and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for one (1) year from the completion date of the work of this Contract, during which time Surety's obligation shall continue if Designer/Builder shall fail to make full, complete, and satisfactory repair, replace and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. Nothing herein shall limit the District's rights or the Designer/Builder's or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15 during the bond term.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work or to the specifications.

Any claims under this bond may be addressed to the Surety at the following address. This cannot be the Designer/Builder's broker for this bond, but must be an employee of the Surety or the Surety's legal counsel:

_____

_____

Attention: _____

Telephone No.: (_____) _____-_____

Fax No.: (_____) _____-_____

E-mail Address: _____

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20___.

(Affix Corporate Seal)

_____**, Inc.**_____
Principal

_____
By

_____
Surety

_____
By

_____
Name of California Agent of Surety

_____
Address of California Agent of Surety

_____
Telephone Number of California Agent of Surety

Designer/Builder must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

PAYMENT BOND
Contractor's Labor & Material Bond
(100% of Contract Price)

(Note: Designer/Builder must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("**Board**") of the Mountain View Whisman School District ("**District**") and **ENGIE Services U.S. Inc.** ("**Principal**") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to

_____ (Project Name)
("**Project**" or "**Contract**")

which Contract dated _____, 20___, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof, and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to 100 percent (100%) of the Contract price, to secure the claims to which reference is made in sections 3179 through 3214 and 3247 through 3252 of the Civil Code of California, and division 2, part 7, of the Labor Code of California.

NOW, THEREFORE, the Principal and_____, ("**Surety**") are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of _____ _____ Dollars ($_____), lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the Principal or any of his or its subcontractors, of the heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, provender, or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the Court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under sections 3179 through 3214 and 3247 through 3252 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and affect.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of Contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20___.

(Affix Corporate Seal)

_____**, Inc.**
Principal

_____
By

_____
Surety

_____
By

_____
Name of California Agent of Surety

_____
Address of California Agent of Surety

_____
Telephone Number of California Agent of Surety

Designer/Builder must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

Exhibit A

SCOPE OF WORK

Article 1. **ASSESSMENT**. Designer/Builder shall prepare an analysis of the site and suggest the best option, in its professional opinion, for photovoltaic (PV) panel design and installation at the Sites.

Article 2. **DESIGN SERVICES**

2.1. During the Design and Construction Phases of the Project, Designer/Builder will meet with District to review equipment, scope of work, and installation plans that relate to the design and construction of the Project.

2.2. During the course of the Work, and at least weekly, Designer/Builder will provide reports to the District of the general status and progress of the Work.

2.3. Although the Parties acknowledge that the Designer/Builder's Services are not completely severable between design, procurement, installation, construction, commissioning, and training, the following scopes of services will be generally referred to as the Services that the Designer/Builder shall perform during the design phase of the Work for the scopes of work for which Designer/Builder is designing the Project, which are the following portions of the Project:

Design, Installation, and Construction of a 1,589.3 kWdc (first year energy production of 2,535,893 kilowatt hours) Photovoltaic Entire System at the Sites, as further described herein below, and similar in size, appearance, and structure as indicated in Exhibit F:

Benjamin Bubb Elementary School

System Size (DC kW): 118.4 kWdc Site Total

System Size (AC kW): 96.0 kWac Site Total

System Location: Playground at the center of the Benjamin Bubb Elementary School campus, shade structure south and east of school buildings.

Modules: [manufacturer and model number] LG 420N2W-V5; two hundred eighty-two (282)

Expected Energy: Year 1 Total = 185,411 kWh
25-Year Total = 4,367,533 kWh

Inverter: Chint Power Systems: One (1) SCA36KTL-DO/US-480 and one (1) SCA60KTL-DO/US-480, or equivalent

Structure: Two (2) fixed tilt dual-cantilever carport DSA pre-checked structures or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) seven (7) exposed concrete bollards above grade; (iii) 180 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Provide and install five (5) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies, one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

Point of Interconnection: Main Electrical Meter # 1006731962 ("**Delivery Point**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot immediately adjacent to the main switchgear. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.

To the extent that any tree trimming is necessary to install the solar arrays or EV Charging Stations, Designer/Builder is responsible for the cost of the initial trimming.

Crittenden Middle School

System Size (DC kW): 173.9kWdc Site Total

System Size (AC kW): 146.0kWac Site Total

System Locations: Parking lot at Crittenden Middle School, shade structure north of the Auditorium building along Rock St; and rooftops of Auditorium and Library/Classrooms buildings.

Modules: LG 420N2W-V5; four hundred fourteen (414) PV modules or better

Expected Energy: Year 1 Total = 285,911 kWh
25-Year Total = 6,734,905 kWh

Inverter: [manufacturer and model number]

- Fronius International: One (1) Symo Advanced 24.0-3 480, or equivalent
- Chint Power Systems: Two (2) SCA36KTL-DO/US-480 and one (1) SCA50KTL-DO/US-480, or equivalent

Carport Structure: One (1) fixed tilt single-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) seven (7) exposed concrete bollards above grade; (iii) 181 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Rooftop: Two (2) fixed-tilt rooftop arrays. Expected characteristics: (i) 181 degree azimuth; and (ii) up to 10 degree tilt.

Provide and install six (6) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

Point of Interconnection: Main Electrical Meter # 1009536784 ("**Delivery Point**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot north of the Auditorium building underneath the carport structure C2. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.

Remove two (2) light poles and demolish light pole bases as required. Bases shall be taken to 6" below grade and patched to match the surrounding areas.

Remove nine (9) small trees from the vicinity of Array C2, as clouded in the layout below. In place of the trees that are being removed, Designer/Builder will plant nine (9) new trees in a location to be mutually agreed upon by the District and Designer/Builder. District will be responsible for maintaining the new trees.

To the extent that any tree trimming is necessary to install the solar arrays or EV Charging Stations, Designer/Builder is responsible for the cost of the initial trimming.

Edith Landels Elementary School

System Size (DC kW): 121.4kWdc Site Total

System Size (AC kW): 100.0kWac Site Total

System Locations: Playground at the center of the Edith Landels Elementary School campus, shade structures south and east of school buildings.

Modules: LG 420N2W-V5; two hundred eighty-nine (289) PV modules or better

Expected Energy: Year 1 Total = 187,632 kWh
25-Year Total = 4,419,852 kWh

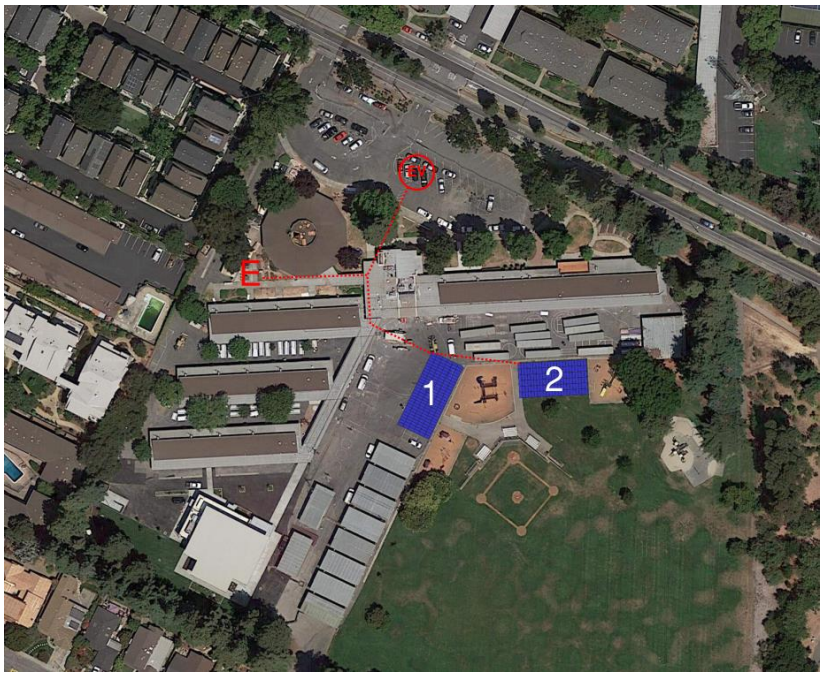
Inverter: Chint Power Systems: Two (2) SCA50KTL-DO/US-480, or equivalent

Two (2) fixed tilt dual-cantilever carport DSA pre-checked structures or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) eight (8) exposed concrete bollards above grade; (iii) 115 and 177 degree azimuths; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Provide and install six (6) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

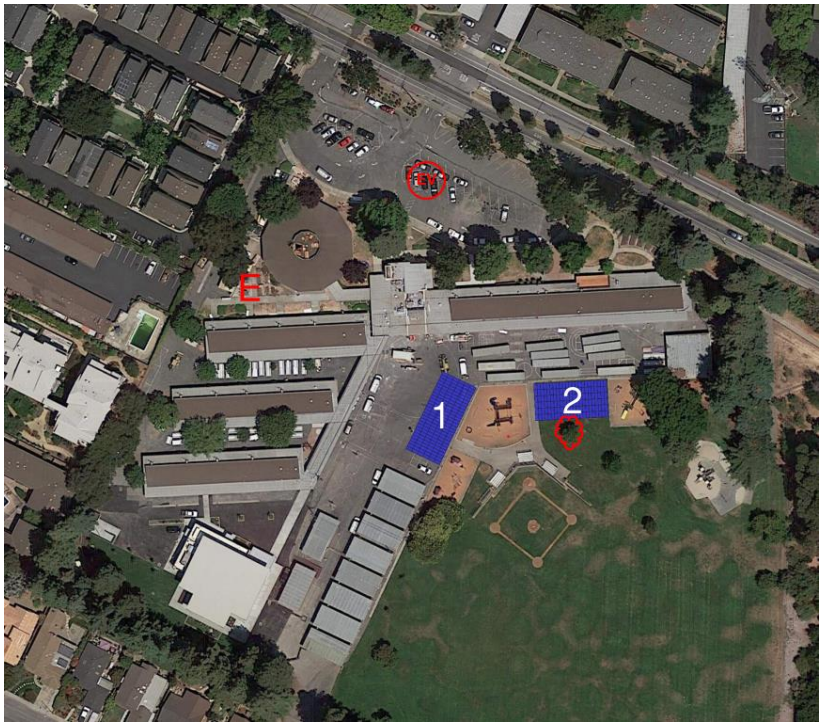
Point of Interconnection: Main Electrical Meter # 1009543242 ("**Delivery Point**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the front parking lot northeast of the main school entrance. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.



Remove one (1) small tree south of Array 2, as clouded in the layout below. In place of the tree that is being removed, Designer/Builder will plant one (1) new tree in a location to be mutually agreed upon by the District and Designer/Builder. District will be responsible for maintaining the new tree.

To the extent that any tree trimming is necessary to install the solar arrays or EV Charging Stations, Designer/Builder is responsible for the cost of the initial trimming.



Frank L. Huff Elementary School

System Size (DC kW): 109.6kWdc Site Total

System Size (AC kW): 86.0kWac Site Total

System Locations: Playground at the center of the Frank L. Huff Elementary School campus, shade structures south and east of school buildings.

Modules: [manufacturer and model number] LG 420N2W-V5; two hundred sixty-one (261) PV modules or better

Expected Energy: Year 1 Total = 171,912 kWh
25-Year Total = 4,049,550 kWh

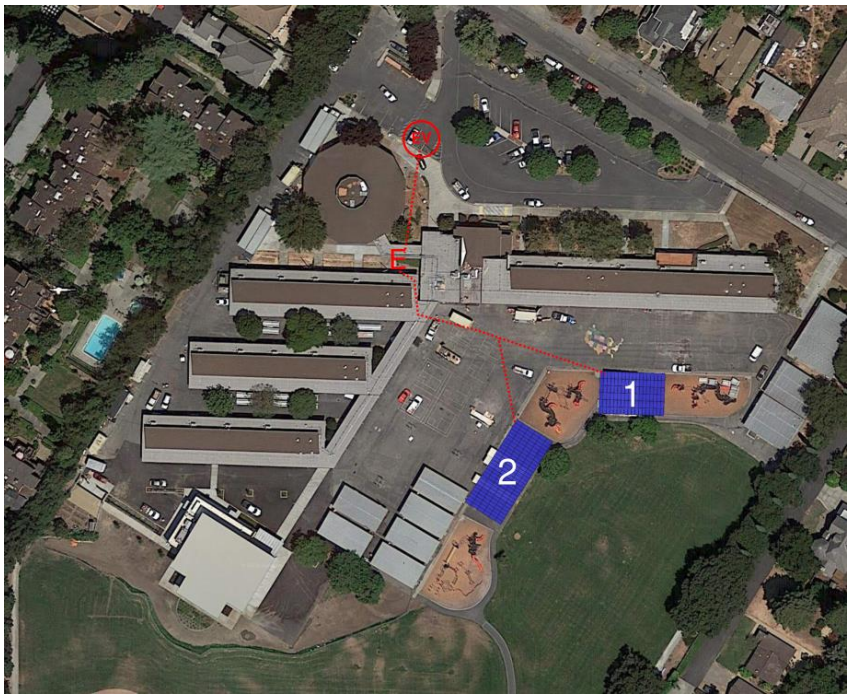
Inverter: Chint Power Systems: One (1) SCA36KTL-DO/US-480 and one (1) SCA50KTL-DO/US-480, or equivalent

Two (2) fixed tilt dual-cantilever carport DSA pre-checked structures or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) seven (7) exposed concrete bollards above grade; (iii) 182 and 122 degree azimuths; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Provide and install five (5) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

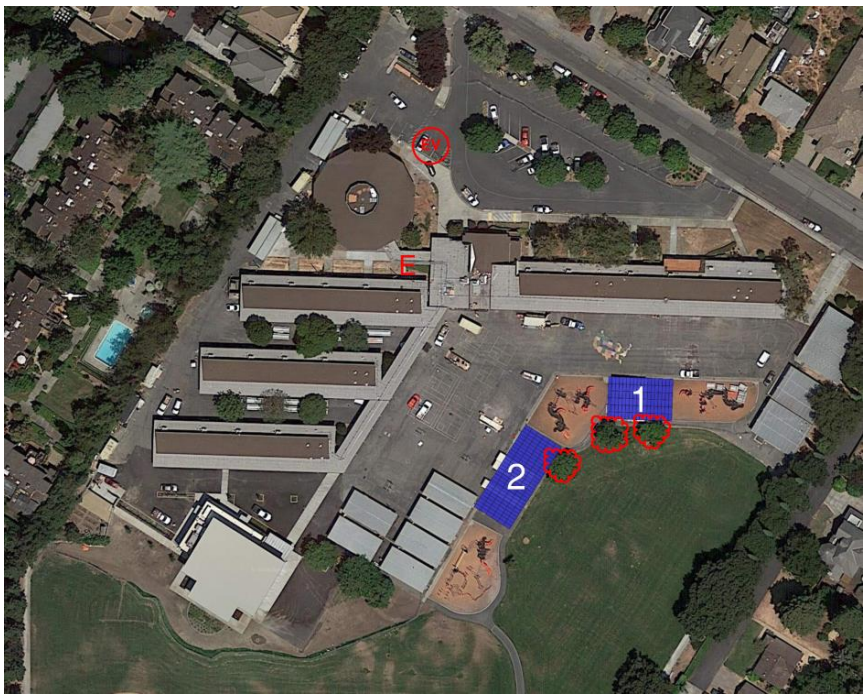
Point of Interconnection: Main Electrical Meter # 1009543262 ("**Delivery Point**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the front parking lot northwest of the main school entrance. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.



Remove three (3) trees from south of Array 1 and east of Array 2, as clouded in the layout below. In place of the trees that are being removed, Designer/Builder will plant three (3) new trees in a location to be mutually agreed upon by the District and Designer/Builder. District will be responsible for maintaining the new trees.

To the extent that any tree trimming is necessary to install the solar arrays or EV Charging Stations, Designer/Builder is responsible for the cost of the initial trimming.



Graham Middle School

System Size (DC kW): 346.9kWdc Site Total

- 275.5kWdc Main Meter
- 71.4kWdc Secondary Meter

System Size (AC kW): 300.0kWac Site Total

- 240.0kWac Main Meter
- 60.0kWac Secondary Meter

System Locations: Parking lots and playground at Graham Middle School campus, with shade structures in the parking lot north of Unit 11 classroom building, in the parking lot north of Unit 17, in the District Corp Yard parking lot, and in the playground area north of the track to the east of Unit 14 classroom building.

Modules: LG 420N2W-V5; eight hundred twenty-six (826) PV modules or better

Expected Energy: Year 1 Total = 560,679 kWh Total

- 445,065 kWh Main Meter
- 115,614 kWh Secondary Meter

25-Year Total = 13,207,325 kWh Total

- 10,483,926 kWh Main Meter
- 2,723,399 kWh Secondary Meter

Inverter: Chint Power Systems: Five (5) SCA60KTL-DO/US-480, or equivalent

Main Meter

One (1) fixed tilt single-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) eight (8) exposed concrete bollards above grade; (iii) 201 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

One (1) fixed tilt dual-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) four (4) exposed concrete bollards above grade; (iii) 232 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Two (2) fixed tilt dual-cantilever carport DSA pre-checked structures or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) eight (8) exposed concrete bollards above grade; (iii) 185 degree azimuth; (iv) up to 7 degree tilt; and (v) 14 foot clearance.

Secondary Meter

One (1) fixed tilt dual-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) four (4) exposed concrete bollards above grade; (iii) 200 degree azimuth; (iv) up to 7 degree tilt; and (v) 14 foot clearance.

Provide and install nineteen (19) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

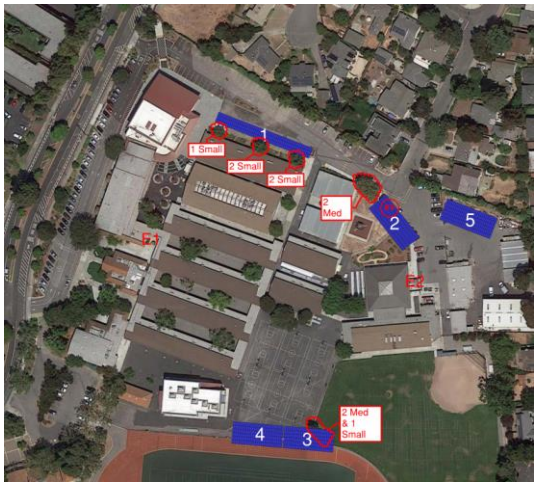
Point of Interconnection: Electrical Meter #s 1004576491 (Main) and 1009543239 (Secondary) ("**Delivery Points**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot by the Unit 17 structure underneath Array 2. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.

Remove one (1) light pole and demolish light pole base as required. Base shall be taken to 6" below grade and patched to match the surrounding areas.

Remove six (6) small trees from south of Array 1 and north of Array 4, and four (4) medium trees from northwest of Array 2 and north of Array 4, as clouded in the layout below. In place of the trees that are being removed, Designer/Builder will plant ten (10) new trees in a location to be mutually agreed upon by the District and Designer/Builder. District will be responsible for maintaining the new trees.

To the extent that any tree trimming is necessary to install the solar arrays or EV Charging Stations, Designer/Builder is responsible for the cost of the initial trimming.



Gabriela Mistral / Mariana Castro Elementary School

System Size (DC kW): 98.3kWdc Site Total

System Size (AC kW): 86.0kWac Site Total

System Locations: Parking lot and playground at the Gabriela Mistral / Mariana Castro Elementary School campus, with shade structures in Parking Lot A and in the playground area southwest of the Library.

Modules: LG 420N2W-V5; two hundred thirty-four (234) PV modules or better

Expected Energy: Year 1 Total = 157,661 kWh
25-Year Total = 3,713,855 kWh

Inverter: Chint Power Systems: One (1) SCA36KTL-DO/US-480 and one (1) SCA50KTL-DO/US-480, or equivalent

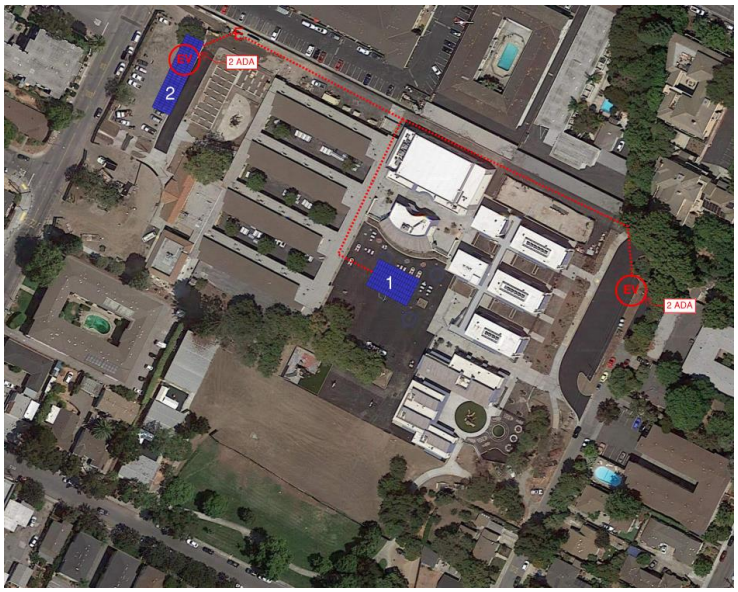
One (1) fixed tilt single-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) five (5) exposed concrete bollards above grade; (iii) 115 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

One (1) fixed tilt dual-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) three (3) exposed concrete bollards above grade; (iii) 207 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Provide and install six (6) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

Point of Interconnection: Electrical Meter # 1010282516 ("**Delivery Point**")

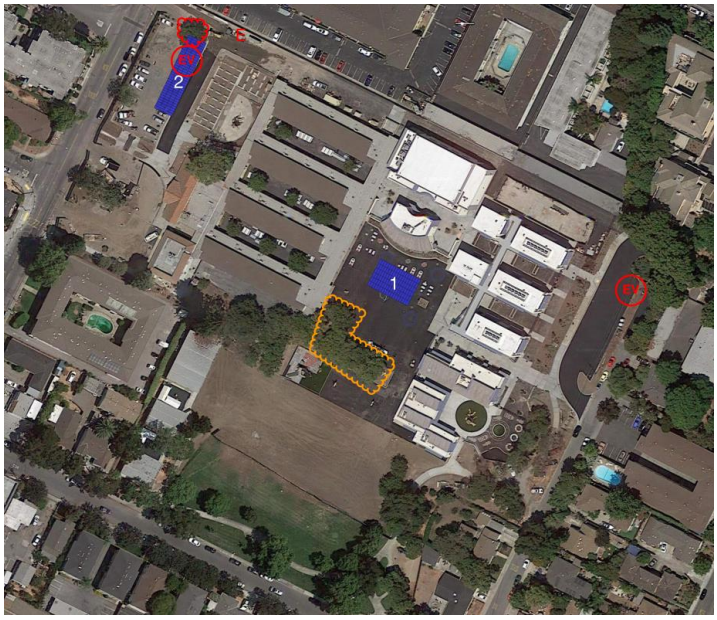
Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in Parking Lot A underneath Array 2 and one (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in Parking Lot C. EV charging stations shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.



Remove four (4) light poles and demolish light pole bases as required. Bases shall be taken to 6" below grade and patched to match the surrounding areas.

Remove one (1) tree from north of Array 2, as clouded in red in the layout below. In place of the tree that is being removed, Designer/Builder will plant one (1) new tree in a location to be mutually agreed upon by the District and Designer/Builder. District will be responsible for maintaining the new tree.

In order to maintain trees as much as possible and ensure maximum and guaranteed solar photovoltaic system generation, District will be responsible for regular tree trimming and maintenance of the trees southwest of Array 1, as clouded in orange in the layout below, to not grow above 30 feet in height. However, Designer/Builder is responsible for any initial trimming required at the time of array or EV Charging installation.



Monta Loma Elementary School

System Size (DC kW): 147.0kWdc Site Total

- 75.6kWdc Main Meter
- 71.4kWdc Secondary Meter

System Size (AC kW): 120.0kWac Site Total

- 60.0kWac Main Meter
- 60.0kWac Secondary Meter

System Locations: Playground at Monta Loma Elementary School, shade structure south of Classroom Building N; and rooftops of the Classroom Building L and Classroom Building N buildings.

Modules: LG 420N2W-V5; three hundred fifty (350) PV modules or better

Expected Energy: Year 1 Total = 236,026 kWh Total

- 120,156 kWh Main Meter
- 115,870 kWh Secondary Meter

25-Year Total = 5,559,819 kWh Total

- 2,830,390 kWh Main Meter
- 2,729,429 Secondary Meter

Inverter: Chint Power Systems: Two (2) SCA60KTL-DO/US-480, or equivalent

Main Meter
Rooftop: Two (2) fixed-tilt rooftop arrays. Expected characteristics: (i) 206 and 217 degree azimuths; and (ii) up to 5 degree tilt.

Secondary Meter
Carport Structure: One (1) fixed tilt dual-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) four (4) exposed concrete bollards above grade; (iii) 185 degree azimuth; (iv) up to 7 degree tilt; and (v) 14 foot clearance.

Provide and install three (3) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

Point of Interconnection: Main Electrical Meter #s 1009537883 (Main) and 1006733596 (Secondary) ("**Delivery Points**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot north of Admin Building E. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.

Remove two (2) small trees from south of Rooftop Array 1 and four (4) medium trees from south of Canopy Array 1, as clouded in the layout below. In place of the trees that are being removed, Designer/Builder will plant six (6) new trees in a location to be mutually agreed upon by the District and Designer/Builder. District will be responsible for maintaining the new trees.

To the extent that any tree trimming is necessary to install the solar arrays or EV Charging Stations, Designer/Builder is responsible for the cost of the initial trimming.

Stevenson Elementary School / District Office

System Size (DC kW): 166.3kWdc Site Total

System Size (AC kW): 133.0kWac Site Total

System Locations: Parking lot and playground at the Stevenson Elementary School / District Office campus, with shade structures in the parking lot south of Classroom Building D and west of Building E, and in the playground area between Classroom Buildings B and C.

Modules: [manufacturer and model number] LG 420N2W-V5; three hundred ninety-six (396) PV modules or better

Expected Energy: Year 1 Total = 269,672 kWh
25-Year Total = 6,352,380 kWh

Inverter:

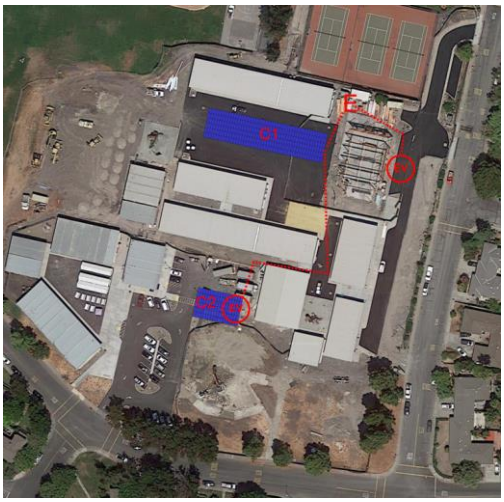
- SMA Solar: One (1) SMA STP 33-US-41, or equivalent
- Chint Power Systems: Two (2) SCA50KTL-DO/US-480, or equivalent

Two (2) fixed tilt dual-cantilever carport DSA pre-checked structures or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) ten (10) exposed concrete bollards above grade; (iii) 192 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Provide and install eight (8) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

Point of Interconnection: Electrical Meter # 101026302 ("**Delivery Point**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot south of Classroom Building D and west of Building E under Array 2, and one (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot east of the MUR Building F under Array 3. EV charging stations shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.



Remove two (2) light poles and demolish light pole bases as required. Bases shall be taken to 6" below grade and patched to match the surrounding areas.

To the extent that any tree trimming is necessary to install the solar arrays or EV Charging Stations, Designer/Builder is responsible for the cost of the initial trimming.

Theuerkauf Elementary School

System Size (DC kW): 224.3kWdc Site Total

System Size (AC kW): 203.0kWac Site Total

System Locations: Playground at Theuerkauf Elementary School, with a shade structure south of the classroom buildings; and rooftops on various classroom buildings.

Modules: LG 420N2W-V5; five hundred thirty-four (534) PV modules or better

Expected Energy: Year 1 Total = 356,654 kWh
25-Year Total = 8,401,325 kWh

Inverter: [manufacturer and model number]

- SMA Solar: One (1) STP12000LT-US-10, or equivalent
- Fronius International: One (1) Symo Advanced 15.0-3 480 and one (1) Symo Advanced 20.0-3 480, or equivalent
- Chint Power Systems: One (1) SCA36KTL-DO/US-480 and two (2) SCA60KTL-DO/US-480, or equivalent

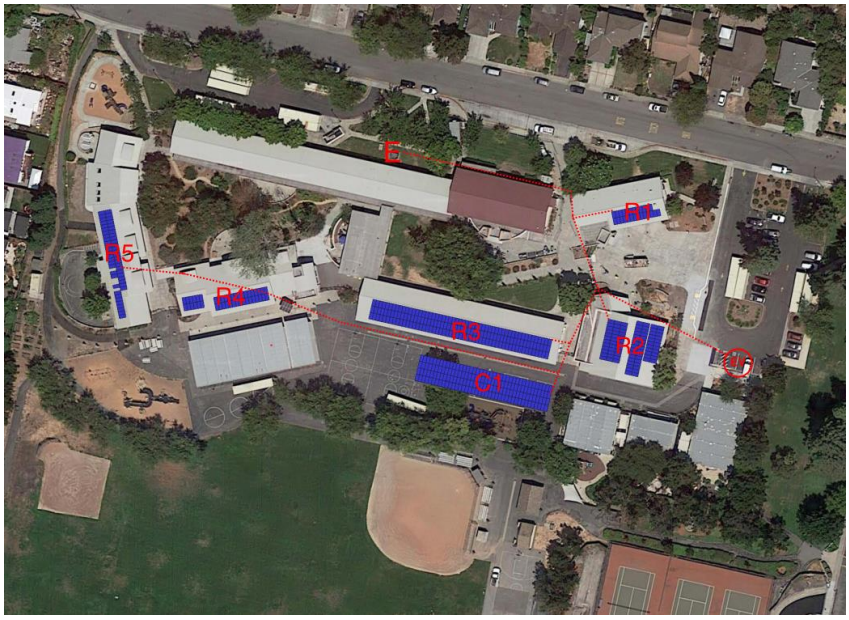
Carport Structure: One (1) fixed tilt single-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) six (6) exposed concrete bollards above grade; (iii) 193 degree azimuth; (iv) up to 7 degree tilt; and (v) 12 foot clearance.

Rooftop: Five (5) fixed-tilt rooftop arrays. Expected characteristics: (i) 103, 168, 169, 193, 260, and 282 degree azimuths; and (ii) up to 5 degree tilt.

Provide and install five (5) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

Point of Interconnection: Main Electrical Meter # 1010108179 ("**Delivery Point**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot on the east side of campus. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.



Remove three (3) small trees from east of Canopy Array C1, five (5) medium trees from east of Rooftop Array R2 and west of Rooftop Array R5, and four (4) large trees from west of Rooftop Array R5 and south of Canopy Array C1, as clouded in red in the layout below. In place of the tree that is being removed, Designer/Builder will plant twelve (12) new trees in a location to be mutually agreed upon by the District and Designer/Builder. District will be responsible for maintaining the new trees.

In order to maintain trees as much as possible and ensure maximum and guaranteed solar photovoltaic system generation, District will be responsible for regular tree trimming and maintenance of the trees south of Canopy Array C1, as clouded in orange in the layout below, to not grow above 20 feet in height. District will also be responsible for regular tree trimming and maintenance of the three (3) redwood trees west of Rooftop Array R5, as clouded in orange in the layout below, to not grow above 30 feet in height. However, Designer/Builder is responsible for any initial trimming required at the time of array or EV Charging Station installation.

Vargas Elementary School

System Size (DC kW): 83.2kWdc Site Total

System Size (AC kW): 66.0kWac Site Total

System Locations: Playground at the Vargas Elementary School campus, with a shade structure in the playground area west of MUR Building C.

Modules: LG 420N2W-V5; one hundred ninety-eight (198) PV modules or better

Expected Energy: Year 1 Total = 124,335 kWh
25-Year Total = 2,928,830 kWh

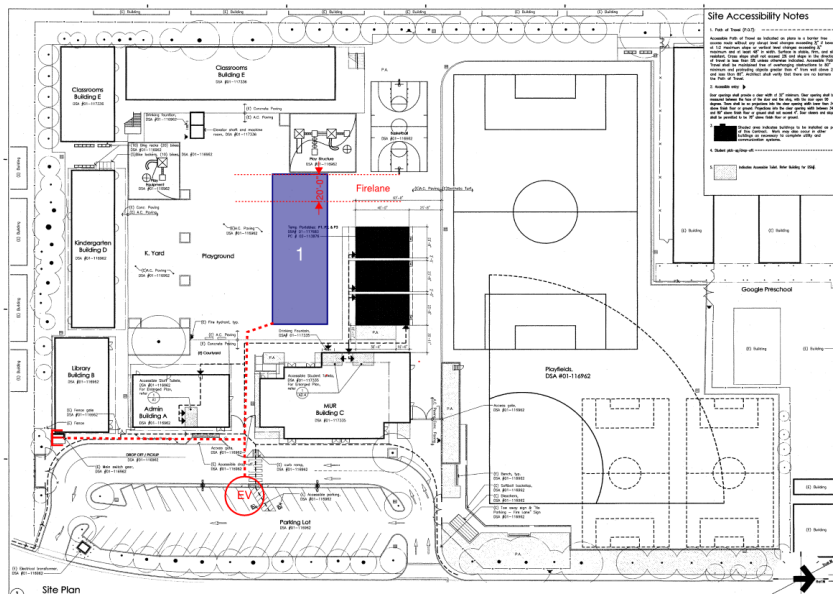
Inverter: SMA Solar: Two (2) STP 33-US-41, or equivalent

One (1) fixed tilt dual-cantilever carport DSA pre-checked structure or better. Expected characteristics: (i) 8 feet depth piers with no de-watering, benching, shoring, or casing; (ii) five (5) exposed concrete bollards above grade; (iii) 195 degree azimuth; (iv) up to 7 degree tilt; and (v) 14 foot clearance.

Provide and install four (4) new LED light fixtures (RAB PRT42N or equivalent) underneath the canopies one per bay, to be controlled by photocells, provided there is also a timer to override, for example to shut off lights at midnight or another predetermined time.

Point of Interconnection: Main Electrical Meter # TBD ("**Delivery Point**")

Electric Vehicle Charging Station: One (1) bollard style commercial dual-port Level 2 electric vehicle charging station installed in the parking lot on the east side of campus. EV charging station shall be mounted to existing hardscape. In the event a charging station is placed in a location without existing hardscape, Designer/Builder will be responsible for installing pad or pier for mounting at no additional cost to the District.



2.4. **Electrical Vehicle Charging Stations Scope of Work.** Designer/Builder shall:

2.4.1. Install electric vehicle charging stations with tie-ins to existing electrical panels. Quantities and locations are provided per site below.

2.4.2. Follow DSA requirements for accessibility and ADA standards pertaining to the footprint of the immediate parking stalls and tying into existing paths of travel. Prepare and submit design drawings to DSA for Access approval.

2.4.3. Aluminum wire will be used from the charging station to the point of connection at the site's electrical panel.

2.4.4. Provide As-Built drawings and Operations & Maintenance manuals upon project completion.

2.4.5. Start-up, test, and commission the systems in accordance with design plan, with manufacturer recommendations and requirements, and with applicable standards.

2.4.6. Establish and set up for the District, with the District's cooperation and approval, an ongoing network services for the charging stations with a 3rd party provider.

2.4.7. Establish and set up for the District, with the District's cooperation and approval, a billing structure to allow the District to capture revenue associated with the charging stations.

2.4.8. There may be rebate or incentive programs available for charging stations in the future. Therefore, Designer/Builder shall use good faith efforts to identify and apply to relevant rebate or incentive programs on behalf of the District.

2.4.9. Any and all ongoing network fees are the responsibility of the District, and are excluded from Designer/Builder's Scope of Work.

2.5. **Scope, Responsibilities, and Services of Designer/Builder**

2.5.1. Designer/Builder shall provide Services that shall comply with professional architectural and engineering standards, recognized industry standards for professional skill and judgment, and applicable requirements of federal, state, and local law.

2.5.2. **Storm Water.** Designer/Builder acknowledges that all California school districts are now obligated to develop and implement storm water requirements and Designer/Builder will comply with all applicable storm water requirements as indicated in Exhibit I.

2.5.3. Designer/Builder shall contract for or employ at Designer/Builder's expense, consultant(s) to the extent deemed necessary for completion of its Services on the Project including, but not limited to, architects, mechanical, electrical, structural, civil engineers, landscape architects, low voltage, data, and telephone consultants as necessary, licensed as required by the State of California. Nothing in the foregoing procedure shall create any contractual relationship between the District and any consultant employed by the Designer/Builder under terms of the Contract.

2.5.4. The District shall provide to Design/Builder information and documentation that the District currently has related to the School Sites including geotechnical reports, topographic surveys, and related items. If Designer/Builder determines that the information or documentation the District provides is insufficient for purposes of design or if the Designer/Builder believes it needs additional information, including a topographical survey; geotechnical report; structural, mechanical, and/or chemical tests; tests for air and/or water pollution; test borings; test pits; determinations of soil bearing values; determinations of the location of all subsurface utilities; percolation tests; ground corrosion tests; resistivity tests; and/or tests for anticipating subsoil conditions, the Designer/Builder shall procure those items, at its expense, that it determines are required to complete the Project.

2.5.5. Designer/Builder shall coordinate with District personnel and/or its designated representatives as may be requested and desirable, including with other professionals employed by the District for the design, coordination or management of other work on the School Sites.

2.5.6. Designer/Builder shall identify the regulatory agencies that have jurisdiction over essential building and design elements and coordinate with and implement the requirements of the regulatory agencies or their authorized agents, including, without limitation, California Department of Education (CDE), the Office of Public School Construction (OPSC), the Department of General Services (DGS), DSA Fire/Life Safety, DSA Access Compliance Section, DSA Structural Safety, State Fire Marshal, County and City Health Inspectors and any regulatory office or agency that has authority for review and supervision of school district construction projects.

2.5.6.1. Construction Documents must be reviewed and approved by the DSA. Designer/Builder shall be responsible for obtaining all DSA approvals and shall account for DSA requirements in their system designs, project pricing, and schedule. Designer/Builder represents to the District that it has a complete and accurate understanding of DSA requirements.

2.5.7. Designer/Builder shall be held solely responsible for obtaining approvals from the District, including revising designs as necessary until they are given approval by the District and all other required entities and organizations. System design shall comply with all applicable laws, statutes, ordinances, codes, rules, and regulations for construction projects of jurisdictions with authority over the District. Designer/Builder is responsible for providing designs approved by professionals of all necessary disciplines, each duly licensed in the State of California. Designer/Builder's designs shall conform to the District's determination of aesthetics, and the designs must not conflict with any current District operations.

2.5.8. Designer/Builder shall provide Services required to obtain local agencies' approval for off-site work related to the Project including review by regulatory agencies having jurisdiction over the Project, if applicable.

2.5.9. Designer/Builder shall coordinate with the District's DSA Project Inspector(s) and special testing laboratories, both to be selected and hired directly by the District.

2.5.10. Designer/Builder shall provide pictures downloaded to computer files, updated as requested by the District that the District may use on its website. Pictures shall be limited to Designer/Builder's Project scope.

2.5.11. As part of the basic Services pursuant to this Contract, Designer/Builder is NOT responsible for the following, however, it shall coordinate and integrate its work with any of the following information and/or services provided by District:

2.5.11.1. Ground or building contamination or hazardous material analysis, testing, design, or abatement

2.5.11.2. Any asbestos and/or lead testing, design, or abatement.

2.5.11.3. Compliance with the California Environmental Quality Act ("**CEQA**"), except that Designer/Builder agrees to coordinate its work with that of any CEQA consultants retained by the District, to provide current elevations and schematic drawings for use in CEQA compliance documents at no additional cost to the District. If the District and/or its CEQA consultant does not provide mitigation measures to the Designer/Builder when reasonably required for incorporation into the Project design, the Designer/Builder may invoice the District for the work required to incorporate those mitigation measures as a change order.

2.5.11.4. Historical significance report.

2.5.11.5. Re-zoning: it is assumed that the proposed locations are zoned for solar electric installations and no delays will occur due to zoning issues.

2.5.11.6. Easement adjustments: it is assumed that no roads, bridges, utility power lines, local CC&R's, etc., will be of such a nature as to disrupt the solar installation and no delays will occur due to easement issues.

2.5.11.7. As-built drawings for existing rooftop structures. If District does not have sufficient documentation available to meet DSA's requirements, Designer/Builder shall notify the District. If agreed to by the Parties and only for a District-approved amount, the Designer/Builder will create these documents as an extra Service.

2.6. **Designer/Builder Staff**

2.6.1. The Designer/Builder has been selected to perform the Services herein because of the skills and expertise of key individuals.

2.6.2. The Designer/Builder shall not change any of the key personnel without prior written approval by District, unless said personnel cease to be employed by Designer/Builder. In either case, District shall be allowed to interview and approve replacement personnel. Such approval shall not be unreasonably withheld.

2.6.3. If any designated lead or key person fails to perform to the reasonable satisfaction of the District, then upon written notice the Designer/Builder shall have five (5) days to remove that person from the Project and replace that person with one reasonably acceptable to the District.

2.6.4. Designer/Builder shall comply with Education Code section 17302(a) and agrees that any plans and/or specifications included in the Services shall be prepared under the supervision of licensed personnel, and that licensed personnel shall be in "responsible charge" of persons who observe the construction.

2.7. **Ownership of Data**

2.7.1. Pursuant to Education Code section 17316, this Contract creates a non-exclusive and perpetual license for District to use, at its discretion, all plans, including, but not limited to, record drawings, specifications, and estimates that the Designer/Builder or its consultants, prepares or causes to be prepared pursuant to this Contract, limited to this Work.

2.7.2. The Designer/Builder retains all rights to all copyrights, designs and other intellectual property embodied in the plans, record drawings, specifications, estimates, and other documents that the Designer/Builder or its consultants prepares or causes to be prepared pursuant to this Contract.

2.7.3. The Designer/Builder shall perform the Services and prepare all documents under this Contract with the assistance of Computer Aided Design Drafting (CADD) (e.g., AutoCAD) Technology. The Designer/Builder shall deliver to the District, on request, by tape, "thumb" drive, compact disc and/or Box file hosting service (at the District's option), and compatible with AutoCAD and/or Adobe Portable Document Format (at the District's option).

2.7.4. Following the termination of this Contract, for any reason whatsoever, the Designer/Builder shall promptly deliver to the District upon written request the following items (hereinafter "**Instruments of Service**") in electronic format (Microsoft Word), unless otherwise indicated, assuming the District has made all payments to Designer/Builder as required by the termination provisions in this Contract.

2.7.4.1. One set of the Contract, including the bidding requirements, specifications, and

all existing cost estimates for the Project, in hard copy, reproducible format.

2.7.4.2. One set of fixed image CADD files in DXF format of the drawings that are part of the Contract.

2.7.4.3. One set of non-fixed image CADD drawing files in DXF and/or DWG format of the site plan, floor plans (architectural, plumbing, structural mechanical and electrical), roof plan, sections and exterior elevations of the Project.

2.7.4.4. All finished or unfinished documents, studies, reports, calculations, drawings, maps, models, photographs, technology data and reports prepared by the Designer/Builder under this Contract.

2.7.5. In the event the District changes or uses any fully or partially completed documents without the Designer/Builder's knowledge or participation, the District agrees to release Designer/Builder of responsibility for such changes, and shall indemnify, defend and hold the Designer/Builder harmless from and against any and all claims, liabilities, suits, demands, losses, costs and expenses, including, but not limited to, reasonable attorneys' fees, on account of any damages or losses to property or persons, including injuries or death, or economic losses, arising out of that change or use except to the extent the Designer/Builder is found to be liable in a forum of competent jurisdiction. In the event District uses any fully or partially completed documents without the Designer/Builder's full involvement, the District shall remove all title blocks and other information that might identify the Designer/Builder and the Designer/Builder's consultants.

2.8. **Certificate of Designer/Builder.** Designer/Builder certifies that the Designer/Builder is properly certified and licensed under the laws and regulations of the State of California to provide the professional Services that it has herein agreed to perform.

Article 3. DESIGN SERVICES BY PHASE

3.1. **Early Design Phase(s).** Designer/Builder agrees to provide the services described below:

3.2. Designer/Builder shall be responsible for the professional quality and technical accuracy of all studies, reports, projections, master plans, designs, drawings, specifications and other services furnished by Designer/Builder under the Contract as well as coordination with all Master plans, studies, reports and other information provided by District. Designer/Builder shall, without additional compensation, correct or revise any errors or omissions in its studies, reports, projections, master plans, design, drawings, specifications and other services.

3.3. The District shall provide all information available to it to the extent the information relates to Designer/Builder's scope of work. This information shall include, if available,

3.3.1. Physical characteristics;

3.3.2. Legal limitations and utility locations for the Project site(s);

3.3.3. Rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, and boundaries and contours of the Project site(s);

3.3.4. Information concerning available utility services and lines, mechanical and other services, both public and private, above and below grade, including inverts and depths;

3.3.5. Surveys, reports, as-built drawings;

3.3.6. Subsoil data, chemical data, and other data logs of borings;

3.3.7. DSA Numbers for all buildings, as necessary to obtain DSA approval of plans to be submitted by Designer/Builder under the contracted scope of Work.

3.4. **Schematic Design / Design Development Phase.** The Designer/Builder shall prepare for the District's

review a design report, containing the following items if applicable to the Project scope, as follows:

3.4.1. Prepare and review with District staff a scope of work list and work plan identifying specific tasks including, but not limited to: concepts and schematic design preparation and estimating that are part of the work of the Project. Also identified will be specific task responsibilities of the Designer/Builder, required completion times necessary for the review and approval by the District and by pertinent regulatory agencies and additional definition of deliverables.

3.4.2. Solar structure layout at the School Sites.

3.4.3. **Structural**

3.4.3.1. Structural drawing with all major members located and sized.

3.4.3.2. Layout structural and identify structural systems

3.4.3.3. Identify foundation requirement (including fill requirement, piles) with associated soil pressure, water table and seismic center.

3.4.4. **Landscape and Hardscape**

3.4.4.1. Trees to be removed within the construction area will be identified in a layout during this phase. Designer/Builder will assist the District in identifying other potential trees it may be required to remove to prevent shading that will impact power generation of the System(s) in areas outside the construction area

3.4.5. **Presentation**

3.4.5.1. Designer/Builder shall present and review with the District the detailed design information and deliverables for this phase.

3.5. **Construction Documents Phase.** Upon District's acceptance of Designer/Builder's work in the previous Phase and assuming District has not delayed or terminated the Contract, the Designer/Builder shall prepare from the accepted deliverables from the previous design phase a set of 90% complete construction documents for submission to DSA and for review by the District, and which will consist of the following for each proposed System within Designer/Builder's scope of work:

3.5.1. **Architectural**

3.5.1.1. Completed Site plan.

3.5.1.2. Architectural details completed.

3.5.1.3. Site utility plans completed.

3.5.1.4. Fixed equipment details and identification completed.

3.5.2. **Structural**

3.5.2.1. Structural calculations completed.

3.5.3. **Mechanical**

3.5.3.1. Complete energy production calculations and report.

3.5.4. **Landscape and Hardscape**

3.5.4.1. Unless agreed to in writing in advance by the District, Designer/Builder shall indicate for areas under and around each new structure, fencing, and parking lot, the Work it will perform to return each Site to its practical, presentable and functional condition(s), consistent with the surrounding area. This includes, unless inappropriate, paving where surrounding areas are paved and planting

where surrounding areas have planting, but excludes replanting of trees and plants removed to allow construction of the System.

3.5.4.2. Beyond what is identified in the Scope of Work, Designer/Builder shall identify trees and plants within the construction area and trees outside the construction area that may need to be removed, and shall notify the District in advance of the trees and plants that Designer/Builder intends to be removed so the District can determine whether it wishes Designer/Builder to replace the tree(s) or plant(s) at a one to one ratio (1:1).

3.5.5. **Deliverables and Numbers of Copies**

3.5.5.1. Designer/Builder shall provide to the District a copy of the following items produced in this phase, as follows:

3.5.5.1.1. One electronic copy of reproducible copies of working drawings;

3.5.5.1.2. **One** hard copy of final drawing set.

3.5.5.1.3. One electronic copy of engineering calculations;

3.5.5.1.4. One electronic copy and one hard copy of statement of requirements for testing and inspection of service for compliance with applicable codes;

3.5.5.1.5. One electronic copy of DSA file including all correspondence, meeting, back check comments, checklists to date, as applicable.

3.5.5.1.6. Any electronic copies of documents shall be delivered to the District through a shareable document service such as DropBox, and organized into folders in a readily understandable manner that best enables the easiest retrieval and access to the documents. No file dumps, please.

3.5.6. **Record Drawings.** During construction, Designer/Builder shall incorporate all information on all As-Builts, sketches, details, and clarifications, and prepare one set of final Record Drawings for the District. The Record Drawings shall incorporate onto one set of electronic drawings, all changes from all As-Builts, sketches, details, and clarifications. The Designer/Builder shall deliver the Record Drawings to the District at completion of the construction and it shall be a condition precedent to the District's approval of the Designer/Builder's final payment.

3.5.7. **O&M Manuals / Warranties.** Designer/Builder shall review equipment, operation and maintenance manuals, and a complete set of warranty documents for all equipment and installed systems, to ensure that they meet the requirements of the plans and specifications. The Designer/Builder shall deliver the O&M Manuals / Warranties to the District at completion of the construction and it shall be a condition precedent to the District's approval of the Designer/Builder's final payment.

Article 4. DESCRIPTION OF WORK AND SERVICES BY SCOPE

4.1. **General.** Designer/Builder shall design, install, and construct the Work at the School Sites. The Entire System shall be installed to conform to Title 24, all Division of the State Architect ("**DSA**") requirements, the latest adopted (as of the date of this Contract) versions of the International Building Code (IBC), National Electrical Code (NEC), the Utility's Interconnection Requirements, and all other federal, state, and local jurisdictions having authority. Designer/Builder's Work shall include:

4.1.1. Meetings and discussions with DSA, Fire Department, Utility and others as needed to achieve project approval.

4.1.2. Criteria for beneficial use as defined in the Contract.

4.1.3. Installation of elevated solar structures allowing parking below and traffic circulation between canopies, that shall provide a minimum of twelve (12) feet clearance beneath each canopy. Structures shall be limited to the areas generally indicated on the site plans provided in **Exhibit F,** unless changes to locations are mutually agreed upon by the District and Designer/Builder.

4.1.4. Installation of electrical equipment pad and utility tie-ins shall be limited to the areas generally indicated on the site plans at or before the Design Development Phase, subject to approval by the District. To the extent practical, the selection of the final location will consider methods to block the view of the electrical equipment from offsite public areas.

4.1.5. Removal of light standards in areas with solar structure(s) and replacement with lighting attached to the underside of the solar structure(s). Existing lighting circuits can be re-used for PV Array support structures lighting system and those existing circuits have ample current carrying capacity to provide required lighting at PV Array support structures. New lighting circuit installation is excluded from this proposal as well as any required timing circuit reconfiguration. Lighting design and/or installation beyond the PV Array support structures is not included in this agreement.

4.2. **Utility Requirements.**

4.2.1. Designer/Builder shall ensure that all Work shall comply with all requirements of the Utility.

4.2.2. Even though there are no California Solar Initiative rebates available to the District, the Utility may institute a rebate or incentive program in the future. Therefore, Designer/Builder shall use good faith efforts to ensure that all of the Work, as required, complies with all requirements, including the metering and monitoring requirements, outlined in the California Solar Initiative Program Handbook.

4.3. **DSA Approvals & Permits**

4.3.1. Designer/Builder, its designers and contractors shall provide documentation required for all approvals by DSA.

4.3.2. Designer/Builder shall notify the District and the District's Project Inspector(s) of required inspections and shall provide reasonable access and accommodations for inspections.

4.4. **Protection of Existing Structures and Utilities**

4.4.1. The School Sites have above-grade and below-grade structures, utility lines, and other installations that are known or believed to exist in the area of the Work. Designer/Builder shall locate these existing installations before proceeding with excavation and other operations that could damage same; maintain them in service, where appropriate; and repair damage to them caused by the performance of the Work. Should damage occur to these existing installations, the costs of repair shall be at the Designer/Builder's expense and made to the District's satisfaction. All repairs and locations shall be in the same manner (e.g., underground) as they were when discovered. If Designer/Builder proposes relocating an underground installation to be above ground, it must receive the District's prior approval, which shall not be unreasonably withheld.

4.4.2. Designer/Builder shall be alert to the possibility of the existence of additional structures and utilities. If Designer/Builder encounters additional structures and utilities, Designer/Builder will immediately report to the District for disposition of same as indicated in the Contract Documents.

4.4.3. Landscape and Hardscape

4.4.3.1. Designer/Builder shall perform all landscape and hardscape work at each site

for areas under and adjacent to each new structure, fencing, and parking lot areas as necessary to return sites to practical, presentable and functional condition(s), consistent with the surrounding area. This includes, unless inappropriate, paving where surrounding areas are paved and planting where surrounding areas have planting. Planting includes re-seeding grass or re-planting trees, as indicated in the approved plans and specifications.

4.4.4. Designer/Builder shall ensure that none of the underground power lines it installs will create the potential for electrolytic corrosion of any other underground utilities near such power lines.

4.5. **Site Access**

4.5.1. No new access roads are planned; however, should the need arise, District and Designer/Builder shall agree upon reasonable accommodations and compensation. Designer/Builder shall return existing surfaces to a preconstruction condition.

4.5.2. District and Designer/Builder shall provide 24/7 unrestricted access to existing electric utility meter and the utility lockable disconnect location.

4.5.3. District to permit using on site water and power as available for construction and post-construction services at no charge to Designer/Builder, with the exception of fire hydrants.

4.5.4. If required, District to permit use of a temporary diesel generator onsite during construction activities, subject to local ordinances.

4.5.5. District to provide Designer/Builder with appropriate laydown/storage areas, as well as a reasonable number of parking spaces at all sites.

4.5.6. Designer/Builder's pricing assumes continuous construction of all sites, as no re-mobilization costs are included.

4.6. **Specific Requirements:**

4.6.1. **General Considerations.** All documentation and components furnished by Designer/Builder shall be developed, designed, and/or fabricated using high quality design, materials, and workmanship meeting the requirements of the District and all applicable industry codes and standards. Designer/Builder shall perform the Work in accordance with all standards within these Specific Requirements. The installations shall comply with at least, but not limited to, the latest adopted (as of the date of this Contract) versions of the International Building Code (IBC), California Electrical Code (CEC), the Utility's Interconnection Requirements, and all other federal, state, and local jurisdictions having authority.

4.6.2. **Electrical Design Standards.** All Work shall comply with at least, but not limited to, the most current version of the following electrical industry standards, wherever applicable:

4.6.2.1. Electronic Industries Association (EIA) Standard 569

4.6.2.2. Illumination Engineering Society of North America (IESNA) Lighting Standards

4.6.2.3. Institute of Electrical and Electronics Engineers (IEEE) Standards

4.6.2.4. National Electrical Manufacturers Association (NEMA)

4.6.2.5. California Electric Code (CEC)

4.6.2.6. Insulated Power Cable Engineers Association (IPCEA)

4.6.2.7. Certified Ballast Manufacturers Association (CBMA)

4.6.2.8. Underwriters Laboratories, Inc. (UL)

4.6.2.9. National Fire Protection Association (NFPA)

4.6.2.10. Pacific Gas and Electric Utility Requirements

4.6.2.11. American National Standards Institute (ANSI)

4.6.2.12. Occupational Health and Safety Administration (OSHA)

4.6.2.13. Americans with Disabilities Act (ADA)

4.6.2.14. American Society for Testing and Materials (ASTM)

4.6.2.15. National Electrical Contractors Association (NECA)

4.6.2.16. National Electrical Testing Association (NETA)

4.6.2.17. International Building Code (IBC)

4.6.2.18. All other authorities having jurisdiction

4.6.3. **Modules.** The District has facilities located in and around residential areas, including Crittenden Middle School. Although the majority of the proposed systems' locations do not appear to be within a direct line of sight from the surrounding residential areas, Designer/Builder shall submit either (1) an analysis of the glare from installed modules, showing the extent that glare is likely to reach adjacent residential structures at all times throughout the year or (2) documentation to the District demonstrating that the tilt and direction of the panels could not result in glare reaching immediately adjacent residential structures. In addition to other applicable standards, the PV modules provided by Designer/Builder shall comply with at least, but not limited to, the following:

4.6.3.1. IEEE 1262 "Recommended Practice for Qualifications of Photovoltaic Modules".

4.6.3.2. Modules shall be new, undamaged, fully warranted without defect.

4.6.3.3. Modules shall comply with the State of California SB1 Guidelines for Eligibility, listed at: http://www.gosolarcalifornia.org/equipment/pv_modules.php

4.6.3.4. Modules shall have minimum maintenance requirements and high reliability, have a minimum 25-year design life, and be designed for normal, unattended operation.

4.6.3.5. Acceptable mounting methods for unframed modules provided by the manufacturer. Tek screw connections shall utilized and are designed to prevent twisting over the 25-year design life of the PV system. Tek screws are mechanically galvanized and should not corrode of the design life of the PV system.

4.6.3.6. The environmental impact of any hazardous material in the PV modules must be disclosed to the District, including any special maintenance requirements and proper disposal/recycling of the modules at the end of their useful life.

4.6.4. **Inverters.** In addition to other applicable standards, inverters provided by Designer/Builder must comply with at least, but not limited to the following:

4.6.4.1. Inverters shall be suitable for grid interconnection and shall be compliant with all current Utility interconnection requirements.

4.6.4.2. Inverters shall comply with the State of California SB1 Guidelines for Eligibility, listed at: http://www.gosolarcalifornia.org/equipment/inverters.php

4.6.4.3. IEEE 929-2000 – "Recommended Practice for Utility Interface of Photovoltaic Systems".

4.6.4.4. Inverters must automatically reset and resume normal operation after a power limiting operation.

4.6.4.5. The inverter shall be capable of continuous operation into a system with voltage variation of plus or minus 10% of nominal. The inverter shall operate in

an ambient temperature range of -20°C to +50°C.

4.6.4.6. Inverters shall include all necessary self-protective features and self-diagnostic features to protect the inverter from damage (in the event of component failure or from parameters beyond normal operating range due to internal or external causes). The self protective features shall not allow the inverters to be operated in a manner which may be unsafe or damaging.

4.6.4.7. Inverters shall be sized to provide maximum power point tracking for voltage and current range expected from PV array for temperatures and solar insolation conditions expected for Project conditions.

4.6.4.8. Isolation transformers shall be provided as needed.

4.6.4.9. Inverters shall be UL 1741 and IEEE 1547 compliant.

4.6.4.10. Inverters shall have a THD < 5%.

4.6.4.11. Enclosures shall be rated NEMA 3R within an appropriate shelter.

4.6.4.12. Power factor shall be 0.99 or higher.

4.6.4.13. Inverter selection shall take into account anticipated noise levels produced and minimize interference with District activities.

4.6.5. **Mounting Systems.** The mounting systems shall be designed and installed with reliable components proven in similar projects, and the PV modules may be fixed or tracking. The mounting systems shall be designed to resist dead load, live load, corrosion UV degradation, wind loads, and seismic loads appropriate to the geographic area over the expected 25-year lifetime. Designer/Builder shall submit an analysis of each structure impacted by the Project, and Designer/Builder shall submit all supporting evidence, calculations, and documentation. The analysis shall demonstrate that existing structures are not compromised or adversely impacted by the installation of PV systems, equipment, or other activity related to the Work. Mounting systems must also meet the following requirements at a minimum:

4.6.5.1. All structural components, including array structures, shall be designed in a manner commensurate with attaining a minimum 25-year design life. Design of structural components shall account for the prevention of corrosion at the connections between dissimilar metals.

4.6.5.2. Thermal loads caused by fluctuations of component and ambient temperatures shall be accounted for in the design and selection of mounting systems such that neither the mounting system nor the surface on which it is mounted shall degrade or be damaged over time.

4.6.5.3. Final coating and paint colors shall be reviewed and approved by the District during Design Review.

4.6.5.4. Painting or other coatings must not interfere with the grounding and bonding of the array.

4.6.6. **Corrosion Control.**

4.6.6.1. Each PV system and associated components must be designed and selected to withstand the environmental conditions of the Site (e.g., temperatures, winds, rain, flooding, etc.) to which they will be exposed.

4.6.6.2. Particular attention shall be given to the prevention of corrosion at the connections between dissimilar metals.

4.6.6.3. A Corrosion control plan for any metal components in contact with ground or

underground must be submitted by Designer/Builder during the Schematic Design / Design Development Phase for District approval which will include at a minimum the analysis of the corrosion risk and mitigation measures.

4.6.7. **Roofing Requirements.** The installation of PV modules, inverters and other equipment shall provide adequate room for access and maintenance of the existing building and existing fixtures. A minimum of three feet of clearance will be provided between PV equipment and existing mechanical equipment and other equipment mounted on the roof. Minimum clearances shall adhere to California Fire Code requirements. Clearance guidelines of the DSA as well as the local fire marshal shall be followed. The installation of solar systems of roof tops will be reviewed by the DSA for code compliance by adherence to the State Fire Marshal Solar Photovoltaic Installation Guideline. The PV equipment shall not be installed in a way that obstructs air flow into or out of building systems or equipment. Proposed roof top mounted systems may be ballasted or penetrating systems, as long as they comply with all DSA requirements, and must meet or exceed the following requirements:

4.6.7.1. Systems shall not exceed the ability of the existing structure to support the entire solar system and withstand increased wind uplift and seismic loads. The capability of the existing structure to support proposed solar systems shall be verified by Designer/Builder prior to design approval. No roof or building structural upgrades, except for necessary blocking for PV attachments, are included in the price or scope of work. If required, Design/Builder will present the additional cost to District.

4.6.7.2. All racking systems shall allow for the District staff to perform roof inspection, cleaning, and maintenance operations with minimal obstructions from the racking; maintenance activities include, but are not limited to, leak identification, or repair once the solar system is installed.

4.6.7.3. Roof penetrations, if part of the mounting solution, shall be kept to a minimum.

4.6.7.4. Designer/Builder shall perform all work so that existing roof warranties shall not be voided, reduced, or otherwise negatively impacted. District will provide Designer/Builder with the warranty agents' contact information. Designer/Builder shall copy the District on all communications between Designer/Builder and roof warranty agent. Designer/Builder is not an agent or representative of the District through this provision. Designer/Builder is not authorized to modify or otherwise change any existing roof warranty.

4.6.7.5. No work shall compromise roof drainage, cause damming or standing water or cause excessive soil build-up.

4.6.7.6. All materials and/or sealants must be chemically compatible.

4.6.7.7. Thermal movement that causes scuffing to the roof must be mitigated as part of the mounting solution.

4.6.7.8. All roof penetrations shall be waterproofed.

4.6.7.9. The Designer/Builder shall not create a roof penetration until, as part of system design review and approval, Designer/Builder submits detail(s) for the sealing of that roof penetrations, and the detail(s) are approved in writing by the District and the manufacturer of the existing roofing system. The District will make available the roofing manufacturer for each building for consultation with Designer/Builder as part of the design process.

4.6.7.10. All roofing work shall be performed by a licensed roofing contractor who is certified by the roofing materials manufacturer for the specific materials or

systems comprising each roof upon which a solar system will be installed. The roofing contractor shall also be safety prequalified by the District.

4.6.7.11. As part of the design submittals, Designer/Builder shall include signed certificates from the roofing manufacturer stating:

4.6.7.11.1. The roofing contractor is certified installer of the complete roofing system.

4.6.7.11.2. The manufacturer's Technical Representative is qualified and authorized to approve the complete roofing system.

4.6.7.11.3. Project plans and specifications meet the requirements of the warranty of the complete roofing system for a minimum twenty-five (25) year period.

4.6.7.11.4. Existing warranty incorporates the new roofing work and flashing work.

4.6.7.12. Any damage to roofing material during installation of PV systems must be remedied by the Designer/Builder.

4.6.7.13. The installation of PV modules, inverters and other equipment on building roofs will be designed to minimize visibility of the equipment from the ground.

4.6.7.14. The installation of PV modules, inverters and other equipment on building roofs will be designed and installed to meet requirements in the California Fire Code.

4.6.8. **Shade Structure Requirements.** Designer/Builder is responsible for incorporating the following elements in the design and construction of the Project:

4.6.8.1. Minimum height: all shade structures shall be designed to have a minimum clear height of twelve (12) feet.

4.6.8.2. Shade structures located in parking lots shall have a protective concrete surround / base installed on support posts, at a minimum of 30" above grade.

4.6.8.3. Shade structure columns, beams shall be galvanized and then painted or finished to match Site colors or to a finish of the District's approval.

4.6.8.4. Shade structures and all attached equipment shall be designed and installed so as to minimize the ability to climb structures.

4.6.8.5. Shade structures shall be installed such that the finished height of the array is uniform and is subject to the District's approval at design submittal.

4.6.9. **Ancillary Equipment Enclosures.** Designer/Builder will be responsible for incorporating the following elements in the design and construction of the Project:

4.6.9.1. All ancillary equipment be grouped to a single location per meter per site and shall be surrounded by a fence to prevent students, vandals, and trespassers from gaining access. The fence shall be a six (6) foot high chain link fence with vinyl privacy slats.

4.6.9.2. All ancillary equipment shall be located in a manner that minimizes its impact to normal District operations and minimizes resulting visual impacts.

4.6.10. **Wiring and Cabling Runs**

4.6.10.1. Designer/Builder shall layout and install all AC conductors in conduit.

4.6.10.2. Conduit buried underground shall be suitable for the application and compliant

with all applicable codes. PVC shall be constructed of a virgin homopolymer PVC compound and be manufactured according to NEMA and UL specifications. All PVC conduit feeders shall contain a copper grounding conductor sized per NEC requirements and continuity shall be maintained throughout conduit runs and pullboxes. Pullboxes shall be traffic rated with lockable lids. Minimum conduit size shall be 1/2". A tracing/caution tape must be installed in the trench over all buried conduit. All underground conduits placed in trenches, buried under roadways, or swales shall be encased with red dyed concrete slurry cap.

4.6.10.3. Conduit installed using horizontal directional boring (HDB), shall include tracer tape or traceable conduit. The minimum depth of the conduit shall be per NEC 2011 Article 300.5. The Designer/Builder is responsible for demonstrating that all conduits installed utilizing horizontal boring meets the minimum depth requirement and is solely responsible for any remediation costs and schedule impacts if the specification is not met. Designer/Builder must provide documentation of final depth and routes of all conduit installed in horizontal bores.

4.6.10.4. Conduit installed on building roofs shall not be installed near roof edges or parapets to reduce visibility. Any conduit penetrations through roof surfaces shall not be made within five (5) feet of the roof edge to reduce visibility. If conduit is installed on the exterior face of any building, it shall be painted to match the existing building color. In all cases, the visible impact of conduit runs shall be minimized and the design and placement of conduit shall be reviewed and approved by the District as part of Design Review.

4.6.10.5. Electro-metallic tubing (EMT) shall be used for wiring or cabling indoors, above grade locations, and where conduit needs to be protected from damage such as below canopies and on roofs. EMT shall not be installed underground or embedded in concrete. EMT shall be cold-rolled zinc coated steel and be manufactured to UL and ANSI standards. Fittings shall be watertight and malleable gripping ring compression type. Pressure cast material for nuts of compression ring type fittings and set-screw type connections are not acceptable.

4.6.10.6. Galvanized Rigid Conduit (GRC) shall be used where exposed to weather or where subject to physical damage in exposed areas. GRC shall not be used below canopies or on roofs. GRC shall be continuous hot-dipped galvanized manufactured per UL and ANSI requirements. Rigid aluminum conduit is not acceptable. Conduit bodies for use with steel conduit, rigid or flexible, shall be manufactured per UL requirements and shall be cast metal with gasketed closures. Fittings for GRC conduit shall be malleable iron or forged steel with cadmium or zinc coating. Union couplings for joining rigid conduit at intermediate runs shall be of the same material as the conduit. Couplings shall be threaded concrete-tight to permit completing conduit runs when neither conduit can be turned and to permit breaking the conduit run at the union. Set screw connectors are not acceptable.

4.6.10.7. Minimum conduit size shall be 1/2".

4.6.10.8. All conduits, boxes, enclosures, etc. shall be secured per NEC 690 requirements.

4.6.10.9. Copper wiring will be utilized for all DC wiring. Aluminum wiring will be used to the point of interconnection to improve cost effectiveness for the District for

systems with long bore shots to the point of interconnection.

4.6.10.10. All items shall be U.L. listed and shall bear the U.L. label.

4.6.10.11. All spare conduits shall be cleaned, mandrelled, and provided with a pullwire. Spare conduits shall be provided as per specifications. Spare conduits may be provided for security cameras at an additional cost.

4.6.10.12. All feeders and branch circuits shall be sized to minimize voltage drop and losses and shall be in compliance with NEC requirements.

4.6.10.13. Designer/Builder shall furnish, install, and connect combiners and recombiners as necessary to complete the System. Enclosures for combiners and recombiners shall be NEMA 4 or 4X rated.

4.6.10.14. All systems, conduit, boxes, components, etc. shall be grounded and bonded per NEC requirements and in accordance with Section 1.3.6.14.

4.6.10.15. Designer/Builder will be responsible for locating, identifying and protecting existing underground utilities conduits, piping, substructures, etc. and ensuring that no damage is inflicted upon existing infrastructure.

4.6.10.16. Designer/Builder shall install the exposed string cable homeruns along the beams or structure where the combiner box is installed.

4.6.10.17. All exposed string wiring must be installed above the lower surface of the structural purlins and beams. Wire loops under framing members are not acceptable.

4.6.11. **Grounding and Bonding**

4.6.11.1. Module ground wiring splices shall be made with irreversible crimp connectors.

4.6.11.2. All exposed ground wiring must be routed above the lower surface of any structural framing.

4.6.11.3. For shade structure installations, grounding electrode conductors shall be bonded to structure columns either just below grade or below the top surface of concrete bollards.

4.6.12. **System Security Requirements**

4.6.12.1. Designer/Builder shall utilize a top down mechanical PV module to rack attachment method for all PV module mounting.

4.6.12.2. Designer/Builder shall utilize tamper-resistant fasteners for all electrical fittings, pull boxes and other enclosures.

4.6.13. **Meters**

4.6.13.1. Designer/Builder shall supply and install a Utility approved Net Generation Output Meter (NGOM) for each PV system.

4.6.13.2. Generation Meters shall use Internet Protocol (IP) communication and shall not require a custom network for connection.

4.6.13.3. Generation Meters shall have the capability to store metered data (including instantaneous kW, kWh, voltage, current, and phase information) in fifteen (15) minute intervals and retain such information for at least seven (7) days.

4.6.14. **Shade Structure Lighting**

4.6.14.1. Installation of shade structure PV systems in all locations shall include and the

installation of new security high efficiency lighting. Installation of shade structure PV systems shall include the removal of existing security light poles, foundations, and fixtures that are no longer effective.

4.6.14.2. Lighting shall be LED lighting or other similar energy efficient lighting system.

4.6.14.3. New parking lot fixtures shall be installed to provide parking lot illumination compliant with IESNA requirements or recommendations for illumination and safety.

4.6.14.4. Minimum horizontal illuminance of one (1) foot-candle shall be maintained at ground level with a uniformity ratio (maximum to minimum) of 15:1.

4.6.14.5. The new lighting is required to illuminate the entire area and adjacent pedestrian walkways affected by the removal of existing lights, not just the area under the PV modules.

4.6.14.6. A photometric illumination plot must be submitted for each parking lot showing all proposed new SSS canopy lighting.

4.6.14.7. Submit California Title 24 Outdoor Lighting calculations with all lighting drawings which shall be compliant with Title 24.

4.6.15. Photocell controls shall be used in conjunction with a lighting control system for all new exterior lighting and energize lighting when ambient lighting levels fall below a specific setpoint. The lighting control system shall also be able to function based on time clock control adjustable by District staff to the extent existing system functions. The District shall be provided with a wireless remote to manually control the sensors for the new exterior lights. Replacement parking lot lighting shall be served from an existing parking lot lighting circuit and any existing circuits and existing control function shall be maintained, or if replaced, done so at the approval of the District.

4.6.16. **Monitoring System, DAS, and Reporting.** Designer/Builder shall design, build, activate and ensure proper functioning of Data Acquisition Systems (DAS) that enable the District to track the performance of the PV Systems as well as environmental conditions through an online web-enabled graphical user interface and information displays. Designer/Builder shall provide equipment to connect the DAS via existing Wi-Fi network or cellular data network at all locations. The means of data connection will be determined during design. The District will pay for the cost of cellular data service if needed, but not for the modem or other equipment needed to connect to the cellular network.

4.6.16.1. DAS shall provide District access to all data through an open data exchange protocol (FTP Push or API) at no additional cost to District or District's third-party designee. This data shall, at a minimum, include PV production data, energy consumption data, inverter production data, inverter AC power data, inverter current data, inverter voltage data, weather station and/or satellite data, and alarm status readings. All data shall be available over multiple timescales, ranging from 15-min intervals to annual intervals and shall include both real-time and historic data.

4.6.16.2. The DAS(s) shall provide access to at least the following data:

4.6.16.2.1. Inverter and System Level Instantaneous AC system output (kW)

4.6.16.2.2. Inverter and System Level PV System production (kWh) over pre-defined intervals that may be user configured

4.6.16.2.3. Inverter and System Level AC and DC voltage

4.6.16.2.4. Horizontal and in-plane irradiance, with sufficient sensors to

provide this information.

4.6.16.2.5. Ambient and back-of-cell temperature, with sufficient sensors to provide this information.

4.6.16.2.6. Inverter status flags and general system status information

4.6.16.2.7. System availability

4.6.16.2.8. Site Load and Consumption data. Available load data for the meter the system is connected to shall be collected by the solar monitoring solution as part of the DAS.

4.6.16.3. Environmental data (temperatures, and irradiance) shall be collected via an individual weather station installed for three systems at the District.

4.6.16.4. Data collected by the DAS shall be presented in an online web interface, accessible from any computer through the Internet with appropriate security (e.g., password controlled access). The user interface shall allow visualization of the data at least in the following increments: 15 minutes, hour, day, week, month, and year. The interface shall access data recorded in a server that may be stored on-site or remotely with unfettered access by the District for the term of the Performance Guarantee. The online interface shall enable users to export all available data in Excel or ASCII comma-separated format for further analysis and data shall be downloadable in at least 15 minute intervals for daily, weekly, monthly and annual data.

4.6.16.5. The Monitoring system shall enable for the diagnoses potential problems and perform remediating action. The monitoring system shall provide alerts when the system is not functioning within acceptable operating parameters. These parameters shall be defined during the design phase of the Project and specified in the DAS design document.

4.6.16.6. Additionally, Designer/Builder shall provide the following reports for the term of the Performance Guarantee:

4.6.16.6.1. Monthly Production report shall be available online to the District personnel.

4.6.16.6.2. Annual Performance report shall be sent electronically to the District personnel.

4.6.16.6.3. System performance data shall be made available electronically to the District in a format and at a frequency to be determined during the Design Review process.

4.6.16.6.4. Additional reports shall be made available to the District to assist the District in reconciling system output with utility bills and the production guarantee, as determined in the Design Review process.

4.6.16.7. A Monitoring Manual shall be provided to the District in printed or online form that describes how to use the monitoring system, including the export of data and the creation of custom reports.

4.6.17. **Other Considerations**

4.6.17.1. All Balance of Systems (wiring, components, conduits, and connections) must be suited for conditions for which they are to be installed.

4.6.17.2. Local DC and AC disconnects shall be located in accessible locations near inverters and/or other existing electrical equipment.

4.6.17.3. Outdoor enclosures shall be rated NEMA 3R, NEMA 4, or NEMA 4X.

4.6.18. **Federal Aviation Administration (FAA) Requirements (IF APPLICABLE).** Designer/Builder shall be responsible to submit the appropriate FAA Form 7460-1, along with any other required forms and documentation, for all proposed PV systems within the approach or takeoff paths or on the property of airports as defined by the Code of Federal Regulations Title 14 Part 77.9.

4.6.19. **Interconnection.** Designer/Builder is responsible for obtaining all necessary Utility interconnection approvals for each PV system being installed. Designer/Builder must comply with all interconnection requirements, such as California Public Utilities Commission (CPUC) rules for the Utility service territory. Designer/Builder is responsible for the proper planning and scheduling of interconnection approvals and any potential interconnection study. Systems installed as part of this Project will take advantage of Net Energy Metering (NEM). Designer/Builder shall be responsible for ensuring the system design and interconnection qualifies for NEM.

4.6.20. **Production Modeling.** Production modeling of the PV systems shall be performed using PVSYST or equivalent modeling software using TMY3 weather data for the nearest local International Airport. The simulations shall accurately simulate energy production for proposed system layouts, sizes, and orientation. It is critical that PV production models are accurate with all methodology and assumptions described. The District will independently verify production models are accurate to the designed systems and utilize simulation results for economic evaluations. Designer/Builder shall be responsible for updating the production models each time changes are made to the proposed system designs that will impact production.

4.6.21. **Shading**

4.6.21.1. Designer/Builder shall adhere to the following requirements in order to avoid excessive shading on modules. For any object near an array that is higher than the lowest point of that array by height “H”, whenever possible Designer/Builder shall locate the array farther from the object than:

4.6.21.1.1. 3H to the North of the object

4.6.21.1.2. 3H to the East or West of the object

4.6.21.1.3. 3H to any non-cardinal direction of the object

4.6.21.2. Any Designer/Builder whose system design does not adhere to these rules shall perform a shading analysis justifying the basis for their design, including any proposed tree removal, and explaining why shading does not create an adverse performance and/or economic impact.

4.6.21.3. Any trees that are in the footprint of systems to be installed by the Designer/Builder shall be removed by the Designer/Builder at their expense, subject to the approval of the District. A tree shall be considered to be in the footprint of a system if its canopy would extend over any part of the system, including structural components or modules. The District will remove or prune, as requested and as needed to prevent shading and maintain system performance as required by the Performance Guarantee , trees planted outside of the work area that shade PV systems (at present time or in the foreseeable future), provided the Designer/Builder identifies these trees during the design process. The Designer/Builder shall be responsible for any required tree remediation efforts resulting from tree removal, including compliance with all applicable tree removal ordinances, laws and regulations.

4.6.21.4. **Weather Station – Data Collection**. Installation of Data Acquisition System (DAS) that displays historical meteorological and production data over an Internet connection and consists of hardware located on-site, including a "weather station" at three District Sites and software housed on Designer/Builder's DAS provider's server. The DAS shall measure and log, at a minimum, the following parameters on a 15-minute average basis at the Sites:

4.6.21.4.1. Actual AC electricity production of the System at each School Site (in kWh),

4.6.21.4.2. Solar irradiance (in W/m^2 and/or $W/feet^2$), at the District's option

4.6.21.4.3. Temperature (in °C and/or Fahrenheit, at the District's option), and

4.6.21.4.4. Wind speed (in meters or feet per second, at the District's option).

4.6.21.5. Pass through manufacturer warranties as indicated in **Exhibit H.**

4.7. **Maintenance, Operations, and Repair**. The Designer/Builder shall perform all work and services as indicated in the Operations & Maintenance Contract, attached hereto as **Exhibit B**.

Exhibit B

Operations & Maintenance Contract

This Operations and Maintenance Contract ("O&M Contract") is made and entered into by and between the ***Mountain View Whisman School District*** *("**District**" or "**Customer**") and* ***Engie Services U.S., Inc.*** *("**Operator**") (collectively, "**Parties**"). The Customer and the Operator entered into a Solar Contract for Design and Construction ("**Solar Contract**") pursuant to which Operator is obligated to provide operations and maintenance services for the* system that was constructed pursuant to that Solar Contract ("**System**").

	School Site Name	Address
1	Benjamin Bubb ES	525 Hans Ave., Mountain View, CA 94040
2	Crittenden MS	1701 Rock St., Mountain View, CA 94043
3	Edith Landels ES	115 West Dana St., Mountain View, CA 94041
4	Frank L Huff ES	253 Martens Ave., Mountain View, CA 94040
5	Graham MS	1175 Castro St., Mountain View, CA 94040
6	Gabriela Mistral - Mariano Castro ES	505 Escuela Ave., Mountain View, CA 94040
7	Monta Loma ES	460 Thompson Ave., Mountain View, CA 94043
8	Stevenson ES – District Office	750 San Pierre Way, Mountain View, CA 94043
9	Theuerkauf ES	1625 San Luis Ave, Mountain View, CA 94043
10	Vargas ES	220 N. Whisman Road, Mountain View, CA 94043

NOW, THEREFORE, the Parties agree as follows:

1. ***Services****. The Operator shall provide the services as described herein, as may be modified as permitted herein ("**Services**" or "**Work**").*

During the Term, and for the Annual Fees, Operator shall perform the following services on each System:

Operations and Maintenance

Service Description	***Service Frequency***
1. Customer Service Support: *a. Provide Technical support contact 24 hours per day, 7 days per week.)* *b. Support technicians specialized in remote troubleshooting and providing step-by-step diagnosis instructions*	*Continuous*
2. Preventative Maintenance, Inspections & Testing: *a. Array* *i. Inspect photovoltaic (PV) modules for damage, discoloration or de-lamination* *ii. Inspect mounting system for damage or corrosion* *iii. Spot check 25% of structural bolts for torque* *b. Inverter* *i. Clean all filters and fans* *ii. Inspect inverter pad and container* *iii. Tighten wire terminations inside inverter* *iv. All other preventive maintenance required by original equipment manufacturer (OEM) warranty* *c. Electrical Balance of System (BOS)*	*Annual*

Service Description	*Service Frequency*
i. Inspect ground braids, electrodes and conductors for damage *ii. Perform thermo-graphic analysis of combiner boxes, inverters, transformers, and conductor connections to buses, breakers or disconnects* *iii. Test and record all circuits, open circuit voltage and short circuit current and repair any fault circuits* *iv. Inspection of all terminal connections for torque* *d. Meteorological Station (if present)* *i. Inspect weather measurement equipment for damage* *ii. Clean pyranometers and reference cells* *e. Site Conditions* *i. Inspect drainage conditions* *ii. Inspect vegetation for array shading or fire hazards* *iii. Inspect safety conditions and proper signage* *f. Maintenance Reporting* *i. Record results of all inspections* *ii. Take photographs of any damage or defects identified* *iii. Inform Owner and warranty providers of all deficiencies identified* *iv. Provide Owner with recommendations for corrective action* *g. Sensor Calibration* *i. Every twenty-four (24) months, O&M Operator will have the pyranometer calibrated by the manufacturer of each sensor.* *ii. Field comparison of pyranometers and reference cells to calibrated sensor* *iii. Adjust field sensor to within ±3% of calibrated sensor and record changed parameters* *iv. O&M Operator may replace pyranometers in lieu of field calibration*	*Annual*
3. Module Cleaning *a. Annually, in June or July* *b. As needed, at Operator's discretion, to meet Performance Guarantee* *c. Surface washing of all modules* *d. Pressure washer settings not to exceed 1,500 PSI or manufacturer's recommendation, whichever is less* *e. Before and after photographs shall be provided*	*Annual/As needed*
4. Corrective Maintenance includes: *a. On-site troubleshooting & diagnostics of all system components* *b. Inverter and Data Acquisition System resets* *c. Processing of original equipment manufacturer (OEM) warranty claims on behalf of Customer and verification of replaced equipment, during the term of the applicable OEM Warranty .*	*As needed*
5. **EV Charging Station.** *Provide the following Maintenance Services:* *a. <u>Inspection</u>:* *i. Check outside unit for any damage* *ii. Check casing of charger* *iii. Check cable plug of charger* *iv. Fully extend and test retractor mechanism* *v. Check Led ring* *vi. Open and check internal components of charger* *vii. Check clamps to hold components to dinrails*	*Annual*

Service Description	*Service Frequency*
viii. *Check CCID for rust caused by condensation* ix. *Check connection of Power Supply to terminal block* x. *Check connections in PCB* b. *Testing:* i. *Measure Power Quality, Voltage, Amperage on Electrical Vehicle Charging station on an annual basis.*	

Monitoring and Performance Reporting

Service Description	*Service Frequency*
1. *Performance Monitoring Website:* a. *Separate PV production and consumption meters to measure PV system production and on-site consumption of electricity (separate from net consumption).* b. *Customer website updated every 15 minutes with operational performance from the beginning of operation.* c. *Cellular data connection or other data connection maintained by the Operator. System may not use Customer's internet connection.* d. *Internet-based monitoring and reporting portal with full data access to Customer, including weather parameters.* e. *Synchronized clock intervals for all site meters, including production and consumption meter. Clock intervals shall be synchronized with utility meters where feasible.* f. *All site data must be able to be downloaded to Customer's computer in Microsoft Excel format* g. *Customer will be provided with login credentials for use during the term of the O&M Agreement*	*Continuous*
2. *Daily Performance Monitoring and Notification:* a. *Continuous monitoring of Customer's System via experienced solar monitoring technicians* b. *Operational status (inverter and system on/off) and performance alerts (actual vs. expected performance) continuously monitored by O&M Operator* c. *Monitoring technicians identify and respond to system alerts including contacting Customer's system administrator*	*Daily (During business hours)*
3. *Performance Review and Reports:* a. *Actual vs. expected performance of the System for the period* b. *Environmental benefits will be estimated and included* c. *Weather adjustment calculations* d. *Optional custom reports can be supplied, upon Customer request* e. *Review of the following System performance data with an O&M Operator performance engineer and proposal of a recommended action plan where applicable:* i. *Expected vs. Actual system production (kWh)* ii. *System Availability* iii. *Recoverable Degradation*	*Annual*

Service Description	*Service Frequency*
iv. Performance Index *v. Operation and Maintenance Records* *vi. Safety, Accidents and Environmental Reporting* *vii. Proposal of Recommended Actions* *f. Annual Performance Review Report provided to Customer within sixty (60) days of each anniversary of the Performance Guarantee Start Date* *g. Operation and Maintenance Records must be provided to Customer upon request*	

A. ***Excluded Services***

a. Any installation of additional monitoring equipment that may be required if site conditions change for reasons beyond Operator's control.

b. Parts or equipment that were not installed by Operator or its Subcontractors.

c. In the event that any manufacturer of the solar specific equipment including any modules, inverters, racking, combiner boxes or monitoring equipment relating to a material component of the Generating Facilities is not able or willing to honor its warranty to District and District does not remedy by replacement at its own expense and Operator uses its best efforts to assist the District in its attempts to oblige the manufacturer to comply with its warranty obligations, Operator shall not be responsible for the costs of any such manufacturer's components, but Operator will remain responsible to perform all labor related to procuring, installing and maintaining those components or acceptable replacement components, at no additional cost to the District.

d. Repair of damage due to damage from third parties including damage associated with baseball field activities.

2. ***Term****. Operator shall commence providing services under this O&M Contract on the Performance Guarantee Start Date. The initial term of the O&M Contract shall be five (5) years. The initial term shall automatically renew for an additional five (5) year term ("renewal term") unless the District provides written notice of termination prior to the end of the initial term. A minimum of three (3) additional five (5) year terms shall be offered at the conclusion of the renewal term, with the District having the option at the end of each successive term to (1) Terminate this O&M Contract or (2) extend this O&M Contract for a subsequent five (5) year term, provided that such option may only be exercised for a total of twenty-five (25) years. Documentation of the Start Date for each system will be as noted on the first invoice submitted to the Utility by the third party monitoring provider required.*

3. ***Submittal of Documents****. The Operator shall not commence the Work under this O&M Contract until the Operator has submitted and the District has approved the certificate(s) and affidavit(s), and the endorsement(s) of insurance required as indicated below:*

X	*Signed O&M Contract*
X	*Workers' Compensation Certification*
X	*Fingerprinting/Criminal Background Investigation Certification*
X	*Insurance Certificates and Endorsements*
X	*W-9 Form*

4. ***Compensation***. *Compensation to Operator for the Work shall be paid annually within thirty (30) days of receipt of Operator's invoice, for Work actually completed and after the District's written approval of the Work. The fee for the annual Services is set forth in the Table below.*

Year	O&M Fee
1	$43,736.19
2	$45,048.28
3	$46,399.73
4	$47,791.72
5	$49,225.47
6	$50,702.23
7	$52,223.30
8	$53,790.00
9	$55,403.70
10	$57,065.81
11	$58,777.79
12	$60,541.12
13	$62,357.35
14	$64,228.07
15	$66,154.92
16	$68,139.56
17	$70,183.75
18	$72,289.26
19	$74,457.94
20	$76,691.68
21	$78,992.43
22	$81,362.20
23	$83,803.07
24	$86,317.16
25	$88,906.67
Total	**$1,594,589.40**

4.1. Payment for Work that requires additional payment shall be made for all undisputed amounts in monthly installment payments within thirty (30) days after the Operator submits an invoice to the District for Work actually completed and after the District's written approval of the Work, or the portion of the Work for which payment is to be made.

4.2. Invoices furnished by Operator under this O&M Contract must be in a form acceptable to the District. All amounts paid by District shall be subject to audit by District.

4.3. The granting of any payment by District, or the receipt thereof by Consultant, shall in no way lessen the liability of Operator to correct unsatisfactory work, although the unsatisfactory character of that work

may not have been apparent or detected at the time a payment was made. Work, which does not conform to the requirements of this O&M Contract, may be rejected by District and in that case must be replaced by Operator without delay.

5. ***Notice**. Any notice required or permitted to be given under this O&M Contract shall be as indicated in the Solar Contract.*

6. ***Termination**.*

6.1. ***Without Cause by District**. District may, at any time, with or without reason, terminate this O&M Contract and compensate Operator only for services satisfactorily rendered to the date of termination. Written notice by District shall be sufficient to stop further performance of services by Operator. Notice shall be deemed given when received by the Operator or no later than three days after the day of mailing, whichever is sooner. In addition, if District terminates this O&M Contract without cause, Operator shall no longer be obligated to provide the Performance Guarantee as defined and as set forth in the Solar Contract and that guarantee shall be immediately terminated and be of no further force and effect.*

6.2. ***With Cause by Operator**. Operator may terminate this O&M Contract with cause. Cause shall include:*

6.2.1. *Upon thirty (30) days of Operator's notice of material violation of this O&M Contract by the District;*

6.2.2. *Upon thirty (30) days of Operator's notice of any act by District exposing the Operator to liability to others for personal injury or property damage; or*

6.2.3. *Upon Operator's notice to District if District is adjudged a bankrupt, District makes a general assignment for the benefit of creditors or a receiver is appointed on account of District 's insolvency.*

Written notice by Operator shall contain the reasons for such intention to terminate for cause. District shall have thirty (30) calendar days after that notice to cure Operator's reasons for such intention to terminate for cause, to the reasonable satisfaction of Operator, which shall not be unreasonably withheld. In the event of this termination with cause by Operator, the District may secure the required services from another contractor. If Operator terminates this O&M Contract with cause as permitted in this provision Operator shall no longer be obligated to provide the Performance Guarantee set forth in the Solar Contract and said guarantee shall be immediately terminated and be of no further force and effect. If the District disputes the validity of the termination for cause, the District may seek resolution of said dispute pursuant to the dispute resolution procedures established in the Solar Contract. If a determination is made that the termination was invalid, the Performance Guarantee shall be reinstated and shall be retroactive to the date of termination.

6.3. ***With Cause by District**. District may terminate this O&M Contract upon giving of written notice of intention to terminate for cause. Cause shall include:*

6.3.1. *Upon thirty (30) days of District's notice material violation of this O&M Contract by the Operator; or*

6.3.2. *Upon thirty (30) days of District's notice of any act by Operator exposing the District to liability to others for personal injury or property damage; or*

6.3.3. *Upon District's notice to Operator if Operator is adjudged a bankrupt, Operator makes a general assignment for the benefit of creditors or a receiver is appointed on account of Operator's insolvency.*

Written notice by District shall contain the reasons for such intention to terminate for cause. Operator

shall have twenty (20) calendar days after that notice to cure District's reasons for such intention to terminate for cause, to the reasonable satisfaction of District, which shall not be unreasonably withheld. In the event of this termination with cause, the District may secure the required services from another operator. If the expense, fees, and/or costs to the District exceeds the cost of providing the services pursuant to this O&M Contract, the Operator shall immediately pay the excess expenses, fees, and/or costs to the District upon the receipt of the District's notice of the expenses, fees, and/or costs, provided that the aggregate amount of those expenses, fees and costs shall not exceed twice (two times) the total not-to-exceed compensation amount indicated herein. The foregoing provisions are in addition to and not a limitation of any other rights or remedies available to District. If District terminates this O&M Contract with cause as permitted in this provision, Operator shall remain obligated to provide the Performance Guarantee set forth in the Solar Contract; provided that a substitute operator is engaged without hiatus and has consistently been performing Operator's obligations at least to the standard and in the scope set forth in the O&M Contract entered into by Operator. If the Operator disputes the validity of the termination for cause, the Operator may seek resolution of said dispute pursuant to the dispute resolution procedures established in the Solar Contract. If a determination is made that the termination was invalid, then, at the District's discretion, (1) the termination shall be deemed to be a termination without cause by the District pursuant to the provisions herein above or (2) this O&M Contract shall be reinstated.

7. ***Right to Hire***. *If Operator fails to perform any of its material obligations ("a Material Breach") under this O&M Contract, the District shall notify the Operator in writing, and if after 30 days upon receiving such notice Operator hasn't corrected the Material Breach, the District shall have the right to hire other contractor(s) to correct the Material Breach at the sole cost and expense of Operator, which Operator shall pay within thirty (30) days of District's invoicing to Operator, provided that the District shall seek fair pricing when selecting such other contractors.*

8. ***Indemnification***. *To the furthest extent permitted by California law, Operator shall defend, indemnify, and hold free and harmless the District, its agents, representatives, officers, consultants, employees, trustees, and volunteers ("the indemnified parties") from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage or injury of any kind, in law or equity ("Claim"), to property or persons, including personal injury and/or death, to the extent that any of the above arise out of, pertain to, or relate to the negligence, recklessness, errors or omissions, or willful misconduct of Operator, its officials, officers, employees, subcontractors, consultants, or agents directly or indirectly arising out of, connected with, or resulting from the performance of the Services, the Project, or this O&M Contract. The District shall have the right to accept or reject any legal representation that Operator proposes to defend the indemnified parties.*

9. ***Insurance***.

   9.1. The Operator shall procure and maintain at all times it performs any portion of the Services the following insurance with minimum limits equal to the amount indicated below.

   9.1.1. ***Commercial General Liability and Automobile Liability Insurance***. *Commercial General Liability Insurance and any Auto Automobile Liability Insurance that shall protect the Operator, the District, and the State from all claims of bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising performing any portion of the Services. (Form CG 0001 and CA 0001, or forms substantially similar, if approved by the District.)*

   9.1.2. ***Workers' Compensation and Employers' Liability Insurance***. *Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees performing any portion of the Services. In accordance with provisions of section 3700 of the California Labor Code, the Operator shall be required to secure workers' compensation coverage for its employees. If any class of employee or employees engaged in performing any portion of the Services under this O&M Contract are not protected under the Workers' Compensation Statute, adequate insurance coverage for the protection of any employee(s) not otherwise protected must be obtained before any of those*

employee(s) commence performing any portion of the Services.

9.1.3. ***Professional Liability (Errors and Omissions)***. *Professional Liability (Errors and Omissions) Insurance as appropriate to the Operator's profession.*

Type of Coverage	***Minimum Requirement***
Commercial General Liability Insurance*, including Bodily Injury, Personal Injury, Property Damage, Advertising Injury, and Medical Payments*	
Each Occurrence	*$ 2,000,000*
General Aggregate	*$ 4,000,000*
Automobile Liability Insurance - Any Auto	
Each Occurrence	*$ 1,000,000*
General Aggregate	*$ 1,000,000*
Professional Liability	*$ 1,000,000*
Workers Compensation	*Statutory Limits*
Employer's Liability	*$ 1,000,000*

9.2. ***Proof of Carriage of Insurance***. *The Operator shall not commence performing any portion of the Services until all required insurance has been obtained and certificates indicating the required coverage have been delivered in duplicate to the District and approved by the District. Certificates and insurance policies shall include the following:*

9.2.1. *A clause stating: "This policy shall not be canceled or reduced in required limits of liability or amounts of insurance until notice has been mailed to the District, stating date of cancellation or reduction. Date of cancellation or reduction shall not be less than thirty (30) days after date of mailing notice."*

9.2.2. *Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.*

9.2.3. *An endorsement stating that the District and the State and their agents, representatives, employees, trustees, officers, consultants, and volunteers are named additional insured under all policies except Workers' Compensation Insurance, Professional Liability, and Employers' Liability Insurance. An endorsement shall also state that Operator's insurance policies shall be primary to any insurance or self-insurance maintained by District.*

9.2.4. *All policies shall be written on an occurrence form.*

9.3. ***Acceptability of Insurers***. *Insurance shall be with* ***admitted*** *insurance companies with an A.M. Best rating of no less than* ***A: VII,*** *unless otherwise acceptable to the District.*

10. ***Assignment / Subcontracting***. *Operator may subcontract the Work of this O&M Contract or any part of it only upon prior approval of the District, which shall not be unreasonably withheld. Neither party shall, on the basis of this O&M Contract, contract on behalf of or in the name of the other party. An agreement made in violation of this provision shall confer no rights on any party and shall be null and void.*

11. ***Compliance with Laws***. *Operator shall observe and comply with all rules and regulations of the governing board of the District and all federal, state, and local laws, ordinances and regulations. Operator shall give all notices required by any law, ordinance, rule and regulation bearing on conduct of the Work as indicated or specified. If Operator observes that any of the Work required by this O&M Contract is at variance with any*

laws, ordinance, rules or regulations, Operator shall notify the District, in writing, and, at the sole option of the District, any necessary changes to the scope of the Work shall be made and this O&M Contract shall be appropriately amended in writing, or this O&M Contract shall be terminated effective upon Operator's receipt of a written termination notice from the District. If Operator performs any work that is in violation of any laws, ordinances, rules or regulations, without first notifying the District of the violation, Operator shall bear all costs arising therefrom.

12. ***Certificates/Permits/Licenses**. Operator and all Operator's employees or agents shall secure and maintain in force all certificates, permits and licenses as are required by law in connection with the furnishing of Services pursuant to this O&M Contract.*

13. ***Employment with Public Agency**. Operator, if an employee of another public agency, agrees that Operator will not receive salary or remuneration, other than vacation pay, as an employee of another public agency for the actual time in which services are actually being performed pursuant to this O&M Contract.*

14. ***Drug-Free / Smoke Free Policy**. No drugs, alcohol and/or smoking are allowed at any time in any buildings and/or grounds on District property. No students, staff, visitors, consultants or contractors are to use drugs on these sites.*

15. ***Anti-Discrimination**. It is the policy of the District that in connection with all work performed under contracts there be no discrimination against any employee engaged in the work because of race, color, ancestry, national origin, religious creed, physical disability, medical condition, marital status, sexual orientation, gender, or age and therefore the Operator agrees to comply with applicable Federal and California laws including, but not limited to the California Fair Employment and Housing Act beginning with Government Code Section 12900 and Labor Code Section 1735 and District policy. In addition, the Operator agrees to require like compliance by all its subcontractor(s).*

16. ***Labor Code Requirements.** The Operator shall comply with all applicable provisions of the California Labor Code, Division 3, Part 7, Chapter 1, Articles 1-5, including, without limitation, the payment of the general prevailing per diem wage rates for public work projects of more than one thousand dollars ($1,000). Copies of the prevailing rate of per diem wages are on file with the District. Operator specifically acknowledges and understands that the District and/or the State monitors and enforces compliance with Labor Code requirements through statutorily-authorized programs and the Operator shall perform the Work of the Project while complying with all the applicable provisions of those programs. The Operator and each subcontractor shall comply with Chapter 1 of Division 2, Part 7 of the California Labor Code, beginning with Section 1720, and including Section 1735, 1777.5 and 1777.6, forbidding discrimination, and Sections 1776, 1777.5 and 1777.6 concerning the employment of apprentices by Operator or subcontractors. Willful failure to comply may result in penalties, including loss of the right to bid on or receive public works contracts. **Registration:** The Operator and its subcontractors shall comply with the registration and qualification requirements pursuant to sections 1725.5 and 1771.1 of the California Labor Code. **Certified Payroll Records**: Operator and its subcontractor(s) shall keep accurate certified payroll records of employees and shall make them available to the District immediately upon request.*

17. ***Fingerprinting of Employees**. The Fingerprinting/Criminal Background Investigation Certification must be completed and attached to this Contract prior to Operator's performing of any portion of the Services.*

18. ***No Rights in Third Parties.** This O&M Contract does not create any rights in, or inure to the benefit of, any third party except as expressly provided herein.*

19. ***Limitation of Liability**. Other than as provided in this O&M Contract, District's financial obligations under this O&M Contract shall be limited to the payment of the compensation provided in this O&M Contract. Notwithstanding any other provision of this O&M Contract, in no event, shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages,*

including, but not limited to, lost profits or revenue, arising out of or in connection with this O&M Contract for the services performed in connection with this O&M Contract.

19.1. District shall not be responsible for any damage to persons or property as a result of the Operator's use, misuse or failure of any equipment used by Operator, or by its employees, even though such equipment be furnished or loaned to Operator by District.

19.2. Except with respect to (1) any claim covered by Operator's insurance required pursuant to this O&M Contract (up to the applicable limits set forth herein); (2) Operator's indemnification obligations under this O&M Contract from claims of third party(ies); (3) the Performance Guarantee; and (4) any damage due to Operator's gross negligence or willful misconduct pursuant to this O&M Contract, neither Operator, nor its directors, officers, shareholders, partners, members, agents and employees subcontractors or suppliers shall be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, arising out of or in connection with this O&M Contract for the Services performed in connection with this O&M Contract.

20. ***Conflict of Interest.*** *Through its execution of this O&M Contract, Operator acknowledges that it is familiar with the provisions of section 1090 et seq. and Section 87100 et seq. of the Government Code of the State of California, and certifies that it does not know of any facts which constitute a violation of said provisions. In the event Operator receives any information subsequent to execution of this O&M Contract, which might constitute a violation of said provisions, Operator agrees it shall notify District of this information.*

21. Integration/Entire Contract of Parties*. This O&M Contract constitutes the entire agreement between the Parties related to the Work of this O&M Contract and supersedes all prior discussions, negotiations, and agreements, whether oral or written. This O&M Contract may be amended or modified only by a written instrument executed by both Parties.*

22. California Law*. This O&M Contract shall be governed by and the rights, duties and obligations of the Parties shall be determined and enforced in accordance with the laws of the State of California. The Parties further agree that any action or proceeding brought to enforce the terms and conditions of this O&M Contract shall be maintained in the county in which the District's administrative offices are located.*

23. Disputes*: In the event of a dispute between the parties as to performance of Work, O&M Contract interpretation, or payment, the Parties shall attempt to resolve the dispute by negotiation and/or mediation, if agreed to by the Parties. Pending resolution of the dispute, Operator shall neither rescind the Contract nor stop Work.*

24. Waiver*. The waiver by either party of any specific breach of any term, covenant, or condition herein contained shall not be deemed to be a waiver of that term, covenant, condition, or any subsequent breach of the same or any other term, covenant, or condition herein contained.*

25. Severability*. If any term, condition or provision of this O&M Contract is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force and effect, and shall not be affected, impaired or invalidated in any way.*

26. Authority to Bind Parties. *Neither party in the performance of any and all duties under this O&M Contract, except as otherwise provided in this O&M Contract, has any authority to bind the other to any agreements or undertakings.*

27. Attorney Fees/Costs. *Should litigation be necessary to enforce any terms or provisions of this O&M Contract, then each party shall bear its own litigation and collection expenses, witness fees, court costs and attorney's fees.*

28. Captions and Interpretations. *Paragraph headings in this O&M Contract are used solely for convenience, and*

shall be wholly disregarded in the construction of this O&M Contract. No provision of this O&M Contract shall be interpreted for or against a party because that party or its legal representative drafted that provision, and this O&M Contract shall be construed as if jointly prepared by the Parties.

29. ***Calculation of Time.*** *For the purposes of this O&M Contract, "days" refers to calendar days unless otherwise specified.*

30. ***Signature Authority.*** *Each party has the full power and authority to enter into and perform this O&M Contract, and the person signing this O&M Contract on behalf of each Party has been properly authorized and empowered to enter into this O&M Contract.*

31. ***Counterparts.*** *This O&M Contract and all amendments and supplements to it may be executed in counterparts, and all counterparts together shall be construed as one document.*

32. ***Incorporation of Recitals and Exhibits****. The Recitals and each exhibit attached hereto are hereby incorporated herein by reference.*

IN WITNESS WHEREOF, the Parties hereto have executed this O&M Contract on the date indicated below.

Dated: _____, 20___	*Dated: _____, 20___*
Mountain View Whisman School District	***Engie Services U.S., Inc.***
By: _____	*By:* _____
Print Name: _____	*Print Name:* _____
Print Title: _____	*Print Title:* _____

WORKERS' COMPENSATION CERTIFICATION

Labor Code Section 3700 in relevant part provides:

Every employer except the State shall secure the payment of compensation in one or more of the following ways:

- *By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.*
- *By securing from the Director of Industrial Relations a certificate of consent to self-insure, 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 its employees.*

I am aware of the provisions of Section 3700 of the Labor Code which 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 the Work of this O&M Contract.

Date: _____

Name of Operator or Company: ***Engie Services U.S., Inc***

Signature: _____

Print Name and Title: _____

(In accordance with Article 5 – commencing at Section 1860, Chapter 1, part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the District prior to performing any Work under this O&M Contract.)

FINGERPRINTING/CRIMINAL BACKGROUND INVESTIGATION CERTIFICATION

The undersigned does hereby certify to the governing board of the District that:

(1) He/she is a representative of the Operator,
(2) He/she is familiar with the facts herein certified,
(3) He/she is authorized and qualified to execute this certificate on behalf of Operator; and
(4) That the information in this Criminal Background Investigation / Fingerprinting Certification is true and correct.

1. ***Education Code.*** *Operator has taken at least one of the following actions with respect to the Project (check all that apply):*

_____ *The Operator has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Operator's employees and all of its subcontractors' employees who may have contact with District pupils in the course of providing services pursuant to the Contract, and the California Department of Justice ("DOJ") has determined (per the DOJ process for Applicant Agencies described more fully on its website, located at: http://oag.ca.gov/fingerprints/agencies) that none of those employees have been convicted of a felony, as that term is defined in Education Code section 45122.1. A complete and accurate list of Operator's employees and of all of its subcontractors' employees who may come in contact with District pupils during the course and scope of the Contract is attached hereto; and/or*

_____ *Pursuant to Education Code section 45125.2, Operator has installed or will install, prior to commencement of work , a physical barrier at the Project site, that will limit contact between Operator's employees and District pupils at all times; and/or*

_____ *Pursuant to Education Code section 45125.2, Operator certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Operator who the California Department of Justice has ascertained has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Operator's employees and its subcontractors' employees is:*

Name: _____

Title: _____

~~_____ *The Work on the Contract is at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of Contract shall come in contact with the District pupils.*~~

2. ***Megan's Law (Sex Offenders).*** *I have verified and will continue to verify that the employees of Operator that will be on the Project site and the employees of the Subcontractor(s) that will be on the Project site are* ***not*** *listed on California's "Megan's Law" Website (http://www.meganslaw.ca.gov/).*

Date: _____
Proper Name of Operator: ***Engie Services U.S., Inc***
Signature: _____
Print Name: _____
Title: _____

Exhibit C

Detailed Construction Schedule for Each Site

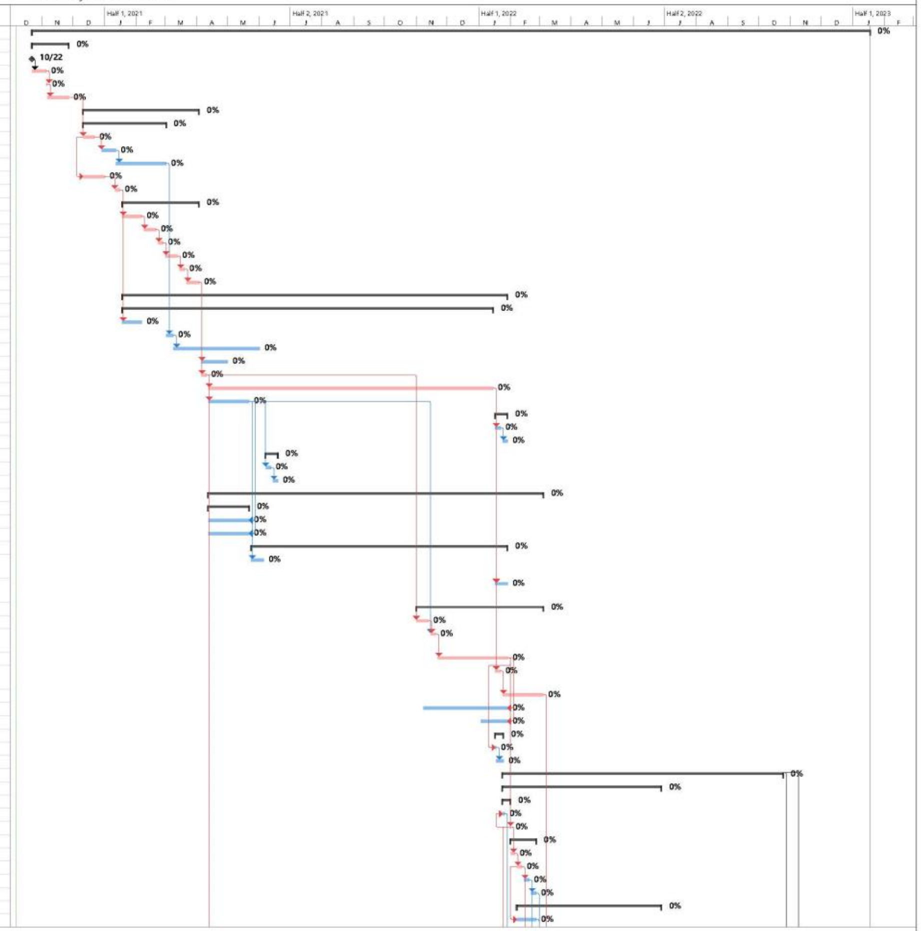
Designer/Builder acknowledges the District's Instructional Calendar that has already been provided and shall coordinate its work to not disrupt, in any way, District activities, including testing, at each Site. At the time of execution of this Contract, the District's school site test calendars with the exact dates of testing activities are still being prepared. Those will be provided to Designer/Builder as soon as they are ready.

Designer/Builder shall include in its construction schedule at least fifteen (15) weekdays at elementary school sites and at least twenty (20) weekdays at intermediate school sites and high school sites when Designer/Builder shall not be permitted to perform any work at the site.

At the time of the execution of this Contract, the Parties preliminary schedule is as follows:

MVWSD Project Schedule 10.05.2020

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Mountain View Whisman School District**	**584 days**	**Thu 10/22/20**	**Tue 1/17/23**	
2		**Contract Administration**	**26 days**	**Thu 10/22/20**	**Thu 11/26/20**	
3		Public Hearing & Board Approval to Negotiate Contract	0 days	Thu 10/22/20	Thu 10/22/20	
4		Final Contract Reviews	10 days	Thu 10/22/20	Wed 11/4/20	3
5		MVWSD & ESUS Execute Design Build Agreement	1 day	Thu 11/5/20	Thu 11/5/20	4
6		MVWSD provides Notice to Proceed	15 days	Fri 11/6/20	Thu 11/26/20	5
7		**Final Engineering**	**81 days**	**Fri 12/11/20**	**Fri 4/2/21**	
8		**Conduct Detailed Site Audits**	**57 days**	**Fri 12/11/20**	**Mon 3/1/21**	
9		Utility locator conducts site surveys	7 days	Fri 12/11/20	Mon 12/21/20	6FS+10 days
10		Geotechnical Engineer conducts drilling for soil testing	10 days	Tue 12/29/20	Mon 1/11/21	9FS+5 days
11		Soils analysis and report creation	35 days	Tue 1/12/21	Mon 3/1/21	10
12		Schematic Layouts to District for Review	15 days	Fri 12/11/20	Thu 12/31/20	9SS
13		Architectural/Electrical Site Walks	5 days	Mon 1/11/21	Fri 1/15/21	12FS+6 days
14		**Architectural/Electrical/Structural Design**	**55 days**	**Mon 1/18/21**	**Fri 4/2/21**	
15		Complete Single Line Diagrams for Utility submittal	15 days	Mon 1/18/21	Fri 2/5/21	13
16		Complete 60% Schematic Design	10 days	Mon 2/8/21	Fri 2/19/21	15
17		MVWSD review of 60% Schematic Design	5 days	Mon 2/22/21	Fri 2/26/21	16
18		Complete 90% Design Drawings	10 days	Mon 3/1/21	Fri 3/12/21	17
19		MVWSD reviews and comments on drawing package	5 days	Mon 3/15/21	Fri 3/19/21	18
20		Finalize 100% Drawings	10 days	Mon 3/22/21	Fri 4/2/21	19
21		**Permitting**	**270 days**	**Mon 1/18/21**	**Fri 1/28/22**	
22		**DSA & CGS Reviews**	**260 days**	**Mon 1/18/21**	**Fri 1/14/22**	
23		Complete Site Plans	15 days	Mon 1/18/21	Fri 2/5/21	13
24		Complete CGS Applications	5 days	Tue 3/2/21	Mon 3/8/21	11
25		CGS Review	60 days	Tue 3/9/21	Mon 5/31/21	24
26		Architect of Record obtains local Fire Authority Approval	20 days	Mon 4/5/21	Fri 4/30/21	20
27		DSA Submittal	5 days	Mon 4/5/21	Fri 4/9/21	20
28		DSA Plan Review for Rooftop Structures	200 days	Mon 4/12/21	Fri 1/14/22	27
29		DSA Over the Counter Reviews for Canopies	30 days	Mon 4/12/21	Fri 5/21/21	27
30		**Submit DSA Construction Start Forms (Rooftop Sites)**	**10 days**	**Mon 1/17/22**	**Fri 1/28/22**	
31		Submit DSA 5-PI and 102-IC for Construction start	5 days	Mon 1/17/22	Fri 1/21/22	28
32		DSA opens DSA Box for Construction start	5 days	Mon 1/24/22	Fri 1/28/22	31
33		**Submit DSA Construction Start Forms (Canopy-Only Sites)**	**10 days**	**Mon 6/7/21**	**Fri 6/18/21**	
34		Submit DSA 5-PI and 102-IC for Construction start	5 days	Mon 6/7/21	Fri 6/11/21	29FS+10 days
35		DSA opens DSA Box for Construction start	5 days	Mon 6/14/21	Fri 6/18/21	34
36		**Pre-Construction**	**235 days**	**Mon 4/12/21**	**Fri 3/4/22**	
37		**MVWSD & ESUS Pre-Construction Tasks**	**30 days**	**Mon 4/12/21**	**Fri 5/21/21**	
38		MVWSD & ESUS meet with Site Principals	30 days	Mon 4/12/21	Fri 5/21/21	29FF
39		MVWSD to hire IOR/Testing Lab	30 days	Mon 4/12/21	Fri 5/21/21	29FF
40		**ESUS Completed Construction Documents including BOM to District**	**180 days**	**Mon 5/24/21**	**Fri 1/28/22**	
41		ESUS provides digital and hard copies of DSA approved canopy drawings to District, IOR, Testing Lab, etc.	10 days	Mon 5/24/21	Fri 6/4/21	29
42		ESUS provides digital and hard copies of DSA approved rooftop drawings to District, IOR, Testing Lab, etc.	10 days	Mon 1/17/22	Fri 1/28/22	28
43		**Equipment/Material Procurement**	**90 days**	**Mon 11/1/21**	**Fri 3/4/22**	
44		District/Sage Material Submittal Review/Approval	10 days	Mon 11/1/21	Fri 11/12/21	27FS+145 days
45		ENGIE to Provide Vendor/Subs NTP for Material Orders for canopies	5 days	Mon 11/15/21	Fri 11/19/21	29,44
46		Procure steel for canopy array structures	50 days	Mon 11/22/21	Fri 1/28/22	45
47		ENGIE to Provide Vendor/Subs NTP for Material Orders for rooftops	5 days	Mon 1/17/22	Fri 1/21/22	28
48		Procure steel for rooftop structures	30 days	Mon 1/24/22	Fri 3/4/22	47
49		Order PV Modules & Inverters	60 days	Mon 11/8/21	Fri 1/28/22	46FF
50		Order Electrical BOM and Lights	20 days	Mon 1/3/22	Fri 1/28/22	46FF
51		**Pre-Construction Notices and Meetings**	**6 days**	**Mon 1/17/22**	**Mon 1/24/22**	
52		Construction Kick-Off meeting	1 day	Mon 1/17/22	Mon 1/17/22	46FS-10 days
53		Final Notice to Sites with Construction Updates	5 days	Tue 1/18/22	Mon 1/24/22	52
54		**Construction**	**196 days**	**Mon 1/24/22**	**Mon 10/24/22**	
55		**Frank L. Huff Elementary School Construction**	**111 days**	**Mon 1/24/22**	**Mon 6/27/22**	
56		**Site Preparation**	**6 days**	**Mon 1/24/22**	**Mon 1/31/22**	
57		Remove trees	2 days	Mon 1/24/22	Tue 1/25/22	58SS-5 days
58		Install temporary fencing	1 day	Mon 1/31/22	Mon 1/31/22	46
59		**Structural Installation**	**19 days**	**Tue 2/1/22**	**Fri 2/25/22**	
60		Demo/Mobilize/Locate/Layout	4 days	Tue 2/1/22	Fri 2/4/22	58
61		Drill-Set-Pour Foundations	5 days	Mon 2/7/22	Fri 2/11/22	60
62		Steel Erection	5 days	Mon 2/14/22	Fri 2/18/22	61
63		Mount Modules	5 days	Mon 2/21/22	Fri 2/25/22	62
64		**Electrical Installation**	**101 days**	**Mon 2/7/22**	**Mon 6/27/22**	
65		Install underground conduits & boring	15 days	Mon 2/7/22	Fri 2/25/22	61SS



Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

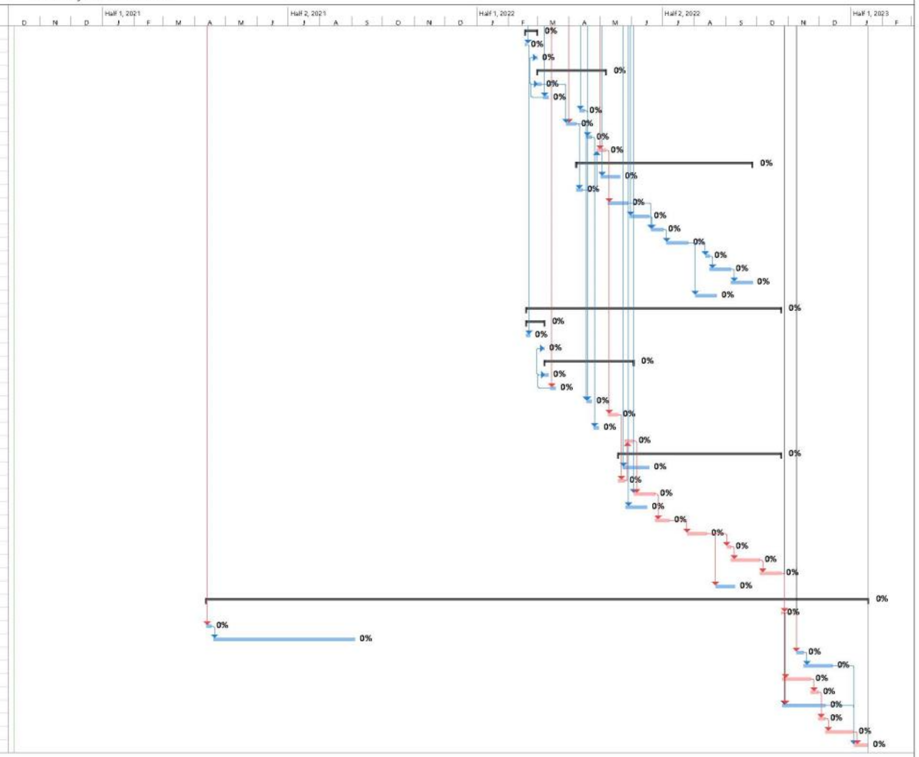
Page 1

MVWSD Project Schedule 10.05.2020
Task Name
Duration
Start
Finish
Predecessors
Half 1, 2021
Half 2, 2021
Half 1, 2022
Half 2, 2022
Half 1, 2023
Page 2

MVWSD Project Schedule 10.05.2020
Task Name
Duration
Start
Finish
Predecessors
Electrical Installation 111 days Mon 3/21/22 Mon 8/22/22
Install underground conduits & boxing 15 days Mon 3/21/22 Fri 4/8/22 118
Install canopy conduits & inverters 15 days Mon 4/18/22 Fri 5/6/22 119
Install AC panelboard conduit/wiring 10 days Mon 5/9/22 Fri 5/20/22 136
Pull wire, prepare for Shutdown, Commissioning 15 days Mon 5/23/22 Fri 6/10/22 137
Electrical Shutdown for Tie-in 2 days Fri 7/8/22 Mon 7/11/22 138FS+19 days
Schedule Float Days 15 days Tue 7/12/22 Mon 8/1/22 139
Request Permission to Operate from Utility 15 days Tue 8/2/22 Mon 8/22/22 140
Install Electric Vehicle Charging Station 15 days Mon 6/13/22 Fri 7/1/22 138
Gabriela Mistral / Mariana Castro Elementary School Construction 154 days Wed 2/2/22 Mon 9/5/22
Site Preparation 154 days Wed 2/2/22 Mon 9/5/22
Remove trees 2 days Wed 2/2/22 Thu 2/3/22
Install temporary fencing 1 day Mon 2/21/22 Mon 2/21/22
Structural Installation 25 days Tue 2/22/22 Fri 4/1/22
Install underground conduits/layout 4 days Tue 2/22/22 Fri 2/25/22 149SS-4 days
Drill Soil Pour Foundations 5 days Mon 2/28/22 Fri 3/4/22 114
Steel Erection 5 days Mon 3/21/22 Fri 3/25/22 132
Mount Modules 5 days Mon 3/28/22 Fri 4/1/22 133
Electrical Installation 111 days Mon 4/4/22 Mon 9/5/22
Install underground conduits & boxing 15 days Mon 4/4/22 Fri 4/22/22 100
Install canopy conduits & inverters 15 days Mon 4/18/22 Fri 5/6/22 101
Install AC panelboard conduit/wiring 10 days Mon 5/9/22 Fri 5/20/22 154
Pull wire, prepare for Shutdown, Commissioning 15 days Mon 6/13/22 Fri 7/1/22 155FS+15 days
Electrical Shutdown for Tie-in 2 days Fri 7/22/22 Mon 7/25/22 156FS+14 days
Schedule Float Days 15 days Tue 7/26/22 Mon 8/15/22 157
Request Permission to Operate from Utility 15 days Tue 8/16/22 Mon 9/5/22 158
Install Electric Vehicle Charging Station 20 days Tue 7/5/22 Mon 8/1/22 156FS+1 day
Stevenson Elementary School / District Office Construction 256 days Mon 2/7/22 Mon 9/12/22
Site Preparation 11 days Mon 2/7/22 Mon 2/21/22
Remove trees 2 days Mon 2/7/22 Tue 2/8/22
Install temporary fencing 1 day Mon 2/21/22 Mon 2/21/22
Structural Installation 54 days Tue 2/22/22 Fri 4/8/22
Install underground conduits/layout 4 days Tue 2/22/22 Fri 2/25/22 165SS-4 days
Drill Soil Pour Foundations 5 days Mon 2/28/22 Fri 3/4/22 131
Steel Erection 5 days Mon 3/28/22 Fri 4/1/22 150
Mount Modules 5 days Mon 4/4/22 Fri 4/8/22 151
Electrical Installation 111 days Mon 4/11/22 Mon 9/12/22
Install underground conduits & boxing 15 days Mon 4/11/22 Fri 4/29/22 135
Install canopy conduits & inverters 15 days Mon 5/9/22 Fri 5/27/22 136
Install AC panelboard conduit/wiring 10 days Mon 5/30/22 Fri 6/10/22 172
Pull wire, prepare for Shutdown, Commissioning 15 days Mon 6/13/22 Fri 7/1/22 173
Electrical Shutdown for Tie-in 2 days Fri 7/29/22 Mon 8/1/22 174FS+19 days
Schedule Float Days 15 days Tue 8/2/22 Mon 8/22/22 175
Request Permission to Operate from Utility 15 days Tue 8/23/22 Mon 9/12/22 176
Install Electric Vehicle Charging Station 20 days Tue 7/5/22 Mon 8/1/22 174FS+1 day
Theaterhouse Elementary School Construction 169 days Wed 2/9/22 Mon 10/3/22
Site Preparation 14 days Wed 2/9/22 Mon 2/28/22
Remove trees 6 days Wed 2/9/22 Wed 2/16/22 153
Install temporary fencing 1 day Mon 2/28/22 Mon 2/28/22 184SS-1 day
Structural Installation 42 days Tue 3/1/22 Wed 4/27/22
Install underground conduits/layout 4 days Tue 3/1/22 Fri 3/4/22 185SS-4 days
Drill Soil Pour Foundations 5 days Mon 3/7/22 Fri 3/11/22 149
Steel Erection 5 days Mon 3/21/22 Fri 3/25/22 168
Mount Modules 5 days Mon 4/4/22 Fri 4/8/22 169
Set Roof Flashing 16 days Mon 3/7/22 Mon 3/28/22 180-4d
Mount Modules - Canopy 5 days Mon 4/11/22 Fri 4/15/22 169,186
Mount Modules - Roof 14 days Fri 4/8/22 Wed 4/27/22 182
Electrical Installation 135 days Tue 3/29/22 Mon 10/3/22
Install underground conduits & boxing 20 days Mon 4/25/22 Fri 5/20/22 153
Install rooftop string wiring 8 days Tue 3/29/22 Thu 4/7/22 187
Install rooftop conduits & inverters 20 days Thu 4/28/22 Wed 5/25/22 189
Install canopy conduits & inverters 10 days Mon 5/9/22 Fri 5/20/22 154
Install AC panelboard conduit/wiring 10 days Thu 5/26/22 Wed 6/8/22 193,194
Pull wire, prepare for Shutdown, Commissioning 20 days Mon 7/4/22 Fri 7/29/22 195,156
Schedule Float Days 15 days Tue 8/23/22 Mon 9/12/22 197
Electrical Shutdown for Tie-in 2 days Fri 8/19/22 Mon 8/22/22 196FS+14 days
Request Permission to Operate from Utility 15 days Tue 8/2/22 Mon 9/12/22 197
Install Electric Vehicle Charging Station 15 days Tue 9/13/22 Mon 10/3/22 198
Monta Loma Elementary School Construction 238 days Thu 2/17/22 Mon 9/26/22 196FS+1 day
Critical
Critical Split
Critical Progress
Task
Split
Task Progress
Manual Task
Start-only
Finish-only
Duration-only
Baseline
Baseline Split
Baseline Milestone
Milestone
Summary Progress
Summary
Manual Summary
Project Summary
External Tasks
External Milestone
Inactive Task
Inactive Milestone
Inactive Summary
Deadline
Page 3

MVWSD Project Schedule 10.05.2020

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
202		**Site Preparation**	**8 days**	**Thu 2/17/22**	**Mon 2/28/22**	
203		Remove trees	1 day	Thu 2/17/22	Thu 2/17/22	181
204		Install temporary fencing	1 day	Mon 2/28/22	Mon 2/28/22	206SS-1 day
205		**Structural Installation**	**49 days**	**Tue 3/1/22**	**Fri 5/6/22**	
206		Demo/Mobilize/Locate/Layout	4 days	Tue 3/1/22	Fri 3/4/22	207SS-4 days
207		Drill-Set-Pour Foundations	5 days	Mon 3/7/22	Fri 3/11/22	167
208		Steel Erection	5 days	Mon 4/11/22	Fri 4/15/22	186
209		Set Roof Racking	8 days	Tue 3/29/22	Thu 4/7/22	206,187
210		Mount Modules - Canopy	5 days	Mon 4/18/22	Fri 4/22/22	188,208
211		Mount Modules - Roof	7 days	Thu 4/28/22	Fri 5/6/22	214,189
212		**Electrical Installation**	**122 days**	**Fri 4/8/22**	**Mon 9/26/22**	
213		Install underground conduits & boring	15 days	Mon 5/2/22	Fri 5/20/22	171
214		Install rooftop string wiring	4 days	Fri 4/8/22	Wed 4/13/22	209
215		Install rooftop conduits & inverters	15 days	Mon 5/9/22	Fri 5/27/22	211
216		Install canopy conduits & inverters	15 days	Mon 5/30/22	Fri 6/17/22	172
217		Install AC panelboard conduit/wiring	10 days	Mon 6/20/22	Fri 7/1/22	215,216
218		Pull wire, prepare for Shutdown, Commissioning	15 days	Tue 7/5/22	Mon 7/25/22	217FS+1 day
219		Electrical Shutdown for Tie-In	2 days	Fri 8/12/22	Mon 8/15/22	218FS+13 days
220		Schedule Float Days	15 days	Tue 8/16/22	Mon 9/5/22	219
221		Request Permission to Operate from Utility	15 days	Tue 9/6/22	Mon 9/26/22	220
222		Install Electric Vehicle Charging Station	15 days	Tue 8/2/22	Mon 8/22/22	218FS+5 days
223		**Crittenden Middle School Construction**	**177 days**	**Fri 2/18/22**	**Mon 10/24/22**	
224		**Site Preparation**	**12 days**	**Fri 2/18/22**	**Mon 3/7/22**	
225		Remove trees	2 days	Fri 2/18/22	Mon 2/21/22	203
226		Install temporary fencing	1 day	Mon 3/7/22	Mon 3/7/22	228SS-1 day
227		**Structural Installation**	**63 days**	**Tue 3/8/22**	**Thu 6/2/22**	
228		Demo/Mobilize/Locate/Layout	4 days	Tue 3/8/22	Fri 3/11/22	229SS-4 days
229		Drill-Set-Pour Foundations	5 days	Mon 3/14/22	Fri 3/18/22	185
230		Steel Erection	5 days	Mon 4/18/22	Fri 4/22/22	208,209
231		Set Roof Racking	8 days	Mon 5/9/22	Wed 5/18/22	211
232		Mount Modules - Canopy	5 days	Mon 4/25/22	Fri 4/29/22	210
233		Mount Modules - Roof	7 days	Wed 5/25/22	Thu 6/2/22	236
234		**Electrical Installation**	**113 days**	**Thu 5/19/22**	**Mon 10/24/22**	
235		Install underground conduits & boring	20 days	Mon 5/23/22	Fri 6/17/22	191
236		Install rooftop string wiring	4 days	Thu 5/19/22	Tue 5/24/22	231
237		Install rooftop conduits & inverters	15 days	Fri 6/3/22	Thu 6/23/22	193,233
238		Install canopy conduits & inverters	15 days	Thu 5/26/22	Wed 6/15/22	193
239		Install AC panelboard conduit/wiring	10 days	Fri 6/24/22	Thu 7/7/22	237
240		Pull wire, prepare for Shutdown, Commissioning	15 days	Mon 7/25/22	Fri 8/12/22	239FS+11 days
241		Electrical Shutdown for Tie-In	2 days	Fri 9/2/22	Mon 9/5/22	240FS+14 days
242		Schedule Float Days	20 days	Tue 9/6/22	Mon 10/3/22	241
243		Request Permission to Operate from Utility	15 days	Tue 10/4/22	Mon 10/24/22	242
244		Install Electric Vehicle Charging Station	15 days	Mon 8/22/22	Fri 9/9/22	240FS+5 days
245		**Project Closeout**	**462 days**	**Mon 4/12/21**	**Tue 1/17/23**	
246		Achieve COD at All Sites	1 day	Tue 10/25/22	Tue 10/25/22	243
247		ESUS Submits Testing and Commissioning Plan	5 days	Mon 4/12/21	Fri 4/16/21	27
248		MVWSD Approves Testing and Commissioning Plan	100 days	Mon 4/19/21	Fri 9/3/21	247
249		Conduct Punchlist Walks	5 days	Wed 11/9/22	Tue 11/15/22	246FS+10 days,54FS+10 days
250		Address Punchlist Items	20 days	Wed 11/16/22	Tue 12/13/22	249
251		Conduct Final Commissioning	20 days	Wed 10/26/22	Tue 11/22/22	246
252		Testing and Commissioning results submitted to MVWSD	5 days	Wed 11/23/22	Tue 11/29/22	251
253		Submit Forms for DSA Closeout	30 days	Wed 10/26/22	Tue 12/6/22	246,54
254		Conduct On-Site O&M Training for Facilities Staff	5 days	Wed 11/30/22	Tue 12/6/22	252
255		Submit Training, O&M, Warranty and As-builts	20 days	Wed 12/7/22	Tue 1/3/23	254
256		Final Completion	10 days	Wed 1/4/23	Tue 1/17/23	255,253,250



Critical | Task | Manual Task | Duration-only | Baseline Milestone | Summary | External Tasks | Inactive Milestone
Critical Split | Split | Start-only | Baseline | Milestone | Manual Summary | External Milestone | Inactive Summary
Critical Progress | Task Progress | Finish-only | Baseline Split | Summary Progress | Project Summary | Inactive Task | Deadline

Page 4

Exhibit D (RESERVED)

Exhibit E

SCHEDULE OF VALUES

The following schedule of values for all of the Work shall serve as the basis for progress payments during construction.

BENJAMIN BUBB ELEMENTARY SCHOOL			
Schedule of Values			
Activity Name		**Percent of Total**	**Price**
Pre-Contract Work	Labor, Insurance, Bonds	3%	$ 18,566
Preconstruction Work	Design Development	3%	$ 18,566
	100% Design Completed	4%	$ 24,754
	DSA Approval	3%	$ 18,566
	PV Module Procurement	5%	$ 30,943
	Management Labor	1%	$ 6,189
Construction	Foundations	5%	$ 30,943
	Structural Install	15%	$ 92,828
	PV Module Delivery	10%	$ 61,886
	BOS Equipment Delivery	10%	$ 61,886
	Electrical installation	23%	$ 142,337
	Interconnection	3%	$ 18,566
	Commissioning	3%	$ 18,566
	Testing	3%	$ 18,566
	ADA Upgrades	3%	$ 18,566
	Management Labor	3%	$ 18,566
Final Completion	Training	1%	$ 6,189
	Punch List	1%	$ 6,189
DSA Close out	DSA Certification	1%	$ 6,189
		100%	**$ 618,855**

CRITTENDEN MIDDLE SCHOOL			
Schedule of Values			
Activity Name		**Percent of Total**	**Price**
Pre-Contract Work	Labor, Insurance, Bonds	3%	$ 29,139
Preconstruction Work	Design Development	3%	$ 29,139
	100% Design Completed	4%	$ 38,852
	DSA Approval	3%	$ 29,139
	PV Module Procurement	5%	$ 48,566
	Management Labor	1%	$ 9,713
Construction	Foundations	5%	$ 48,566

	Structural Install	15%	$	145,697
	PV Module Delivery	10%	$	97,131
	BOS Equipment Delivery	10%	$	97,131
	Electrical installation	24%	$	233,115
	Interconnection	3%	$	29,139
	Commissioning	3%	$	29,139
	Testing	3%	$	29,139
	ADA Upgrades	2%	$	19,426
	Management Labor	3%	$	29,139
Final Completion	Training	1%	$	9,713
	Punch List	1%	$	9,713
DSA Close out	DSA Certification	1%	$	9,713
		100%	**$**	**971,312**

EDITH LANDELS ELEMENTARY SCHOOL				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	21,122
Preconstruction Work	Design Development	3%	$	21,122
	100% Design Completed	4%	$	28,162
	DSA Approval	3%	$	21,122
	PV Module Procurement	5%	$	35,203
	Management Labor	1%	$	7,041
Construction	Foundations	5%	$	35,203
	Structural Install	15%	$	105,609
	PV Module Delivery	10%	$	70,406
	BOS Equipment Delivery	9%	$	63,365
	Electrical installation	22%	$	154,893
	Interconnection	3%	$	21,122
	Commissioning	3%	$	21,122
	Testing	3%	$	21,122
	ADA Upgrades	5%	$	35,203
	Management Labor	3%	$	21,122
Final Completion	Training	1%	$	7,041
	Punch List	1%	$	7,041
DSA Close out	DSA Certification	1%	$	7,041
		100%	**$**	**704,058**

FRANK L. HUFF ELEMENTARY SCHOOL				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	18,922
Preconstruction Work	Design Development	3%	$	18,922
	100% Design Completed	4%	$	25,230
	DSA Approval	3%	$	18,922
	PV Module Procurement	5%	$	31,537
	Management Labor	1%	$	6,307
Construction	Foundations	5%	$	31,537
	Structural Install	15%	$	94,611
	PV Module Delivery	10%	$	63,074
	BOS Equipment Delivery	9%	$	56,767
	Electrical installation	22%	$	138,763
	Interconnection	3%	$	18,922
	Commissioning	3%	$	18,922
	Testing	3%	$	18,922
	ADA Upgrades	5%	$	31,537
	Management Labor	3%	$	18,922
Final Completion	Training	1%	$	6,307
	Punch List	1%	$	6,307
DSA Close out	DSA Certification	1%	$	6,307
		100%	**$**	**630,739**

GABRIELA MISTRAL / MARIANA CASTRO ELEMENTARY SCHOOL				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	22,321
Preconstruction Work	Design Development	3%	$	22,321
	100% Design Completed	4%	$	29,762
	DSA Approval	3%	$	22,321
	PV Module Procurement	5%	$	37,202
	Management Labor	1%	$	7,440
Construction	Foundations	5%	$	37,202
	Structural Install	12%	$	89,285
	PV Module Delivery	7%	$	52,083
	BOS Equipment Delivery	8%	$	59,524
	Electrical installation	31%	$	230,654
	Interconnection	3%	$	22,321

	Commissioning	3%	$	22,321
	Testing	3%	$	22,321
	ADA Upgrades	3%	$	22,321
	Management Labor	3%	$	22,321
Final Completion	Training	1%	$	7,440
	Punch List	1%	$	7,440
DSA Close out	DSA Certification	1%	$	7,440
		100%	**$**	**744,044**

GRAHAM MIDDLE SCHOOL				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	51,473
Preconstruction Work	Design Development	3%	$	51,473
	100% Design Completed	4%	$	68,631
	DSA Approval	3%	$	51,473
	PV Module Procurement	5%	$	85,788
	Management Labor	1%	$	17,158
Construction	Foundations	6%	$	102,946
	Structural Install	16%	$	274,522
	PV Module Delivery	10%	$	171,576
	BOS Equipment Delivery	10%	$	171,576
	Electrical installation	22%	$	377,468
	Interconnection	3%	$	51,473
	Commissioning	3%	$	51,473
	Testing	3%	$	51,473
	ADA Upgrades	2%	$	34,315
	Management Labor	3%	$	51,473
Final Completion	Training	1%	$	17,158
	Punch List	1%	$	17,158
DSA Close out	DSA Certification	1%	$	17,158
		100%	**$**	**1,715,763**

MONTA LOMA ELEMENTARY SCHOOL				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	23,993
Preconstruction Work	Design Development	3%	$	23,993

	100% Design Completed	4%	$	31,990
	DSA Approval	3%	$	23,993
	PV Module Procurement	5%	$	39,988
	Management Labor	1%	$	7,998
Construction	Foundations	5%	$	39,988
	Structural Install	15%	$	119,963
	PV Module Delivery	10%	$	79,975
	BOS Equipment Delivery	10%	$	79,975
	Electrical installation	24%	$	191,941
	Interconnection	3%	$	23,993
	Commissioning	3%	$	23,993
	Testing	3%	$	23,993
	ADA Upgrades	2%	$	15,995
	Management Labor	3%	$	23,993
Final Completion	Training	1%	$	7,998
	Punch List	1%	$	7,998
DSA Close out	DSA Certification	1%	$	7,998
		100%	**$**	**799,753**

STEVENSON ELEMENTARY SCHOOL / DISTRICT OFFICE				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	28,698
Preconstruction Work	Design Development	3%	$	28,698
	100% Design Completed	4%	$	38,264
	DSA Approval	3%	$	28,698
	PV Module Procurement	5%	$	47,830
	Management Labor	1%	$	9,566
Construction	Foundations	5%	$	47,830
	Structural Install	14%	$	133,923
	PV Module Delivery	10%	$	95,659
	BOS Equipment Delivery	10%	$	95,659
	Electrical installation	23%	$	220,016
	Interconnection	3%	$	28,698
	Commissioning	3%	$	28,698
	Testing	3%	$	28,698
	ADA Upgrades	4%	$	38,264
	Management Labor	3%	$	28,698
Final Completion	Training	1%	$	9,566

	Punch List	1%	$	9,566
DSA Close out	DSA Certification	1%	$	9,566
		100%	**$**	**956,593**

THEUERKAUF ELEMENTARY SCHOOL				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	36,921
Preconstruction Work	Design Development	3%	$	36,921
	100% Design Completed	4%	$	49,228
	DSA Approval	3%	$	36,921
	PV Module Procurement	5%	$	61,535
	Management Labor	1%	$	12,307
Construction	Foundations	5%	$	61,535
	Structural Install	15%	$	184,605
	PV Module Delivery	10%	$	123,070
	BOS Equipment Delivery	9%	$	110,763
	Electrical installation	25%	$	307,675
	Interconnection	3%	$	36,921
	Commissioning	3%	$	36,921
	Testing	3%	$	36,921
	ADA Upgrades	2%	$	24,614
	Management Labor	3%	$	36,921
Final Completion	Training	1%	$	12,307
	Punch List	1%	$	12,307
DSA Close out	DSA Certification	1%	$	12,307
		100%	**$**	**1,230,700**

VARGAS ELEMENTARY SCHOOL				
Schedule of Values				
Activity Name		**Percent of Total**	**Price**	
Pre-Contract Work	Labor, Insurance, Bonds	3%	$	14,784
Preconstruction Work	Design Development	3%	$	14,784
	100% Design Completed	4%	$	19,712
	DSA Approval	3%	$	14,784
	PV Module Procurement	5%	$	24,640
	Management Labor	1%	$	4,928
Construction	Foundations	5%	$	24,640

	Structural Install	14%	$	68,992
	PV Module Delivery	10%	$	49,280
	BOS Equipment Delivery	9%	$	44,352
	Electrical installation	26%	$	128,127
	Interconnection	3%	$	14,784
	Commissioning	3%	$	14,784
	Testing	3%	$	14,784
	ADA Upgrades	2%	$	9,856
	Management Labor	3%	$	14,784
Final Completion	Training	1%	$	4,928
	Punch List	1%	$	4,928
DSA Close out	DSA Certification	1%	$	4,928
		100%	**$**	**492,798**

Exhibit F
INITIAL LAYOUT AND STAGING DOCUMENTS AND LIST OF PLANS AND SPECIFICATIONS

PLANS / DRAWINGS

Benjamin Bubb Elementary School,
Edith Landels Elementary School,
Frank Huff Elementary School,
Gabriela Mistral / Mariana Castro Elementary School,
Graham Middle School,
Stevenson Elementary School / District Office, and
Vargas Elementary School

GENERAL	
G-001	TITLE SHEET
G-100	GENERAL SITE PLAN
G-100F	FIRE AUTHORITY SITE PLAN
G-100A	ACCESSIBILITY PLAN
G-101A	ACCESSIBILITY DETAILS
ARCHITECTURAL	
A-2.0	SOLAR STRUCTURE LAYOUT
A-3.0	DIMENSIONED ARRAYS
ELECTRICAL	
E-002	ELECTRICAL SYMBOLS
E-003	ELECTRICAL SPECIFICATIONS
E-100	ELECTRICAL SITE PLAN
E-101	PV ARRAY PLAN
E-111	PV CANOPY LIGHTING PLAN
E-501	ELECTRICAL DETAILS
E-502	GROUNDING DETAILS
E-503	TITLE -24 OUTDOOR LIGHTING COMPLIANCE
E-600	SINGLE LINE DIAGRAM
E-700	WARNING LABELS
E-800	EQUIPMENT DATA SHEETS
STRUCTURAL	
S0.0	STRUCTURE SPECIFICATIONS
S0.1	STANDARD STRUCTURAL NOTES
S0.2	STRUCTURE PART DETAILS
S1.0	6 HIGH FULL STRUCTURE DETAILS
S2.0	4 HIGH STRUCTURE DETAILS
S3.0	ALTERNATE DETAILS
S3.1	ALTERNATE MODULE MOUNTING DETAILS
S4.0	EQUIPMENT PAD AND ANCHORAGE DETAILS
S5.0	EQUIPMENT PAD FENCE AND ANCHORAGE DETAILS

S6.0	BEACON UL2703 INSTALLATION GROUNDING MANUAL
S7.0	ELECTRICAL DETAILS

Crittenden Middle School,
Monta Loma Elementary School, and
Theuerkauf Elementary School

GENERAL	
G-001	TITLE SHEET
G-100	GENERAL SITE PLAN
G-100F	FIRE AUTHORITY SITE PLAN
G-100A	ACCESSIBILITY PLAN
G-101A	ACCESSIBILITY DETAILS
ARCHITECTURAL	
A-2.0	SOLAR STRUCTURE LAYOUT
A-3.0	DIMENSIONED ARRAYS
A-4.0	SOLAR ROOF MOUNT LAYOUT
A-5.0	DIMENSIONED ARRAYS
ELECTRICAL	
E-002	ELECTRICAL SYMBOLS
E-003	ELECTRICAL SPECIFICATIONS
E-100	ELECTRICAL SITE PLAN
E-101	PV ARRAY PLAN
E-111	PV CANOPY LIGHTING PLAN
E-501	ELECTRICAL DETAILS
E-502	GROUNDING DETAILS
E-503	TITLE -24 OUTDOOR LIGHTING COMPLIANCE
E-600	SINGLE LINE DIAGRAM
E-700	WARNING LABELS
E-800	EQUIPMENT DATA SHEETS
STRUCTURAL	
S0.0	PRE-CHECK SPECIFICATIONS
S0.1	STANDARD PC STRUCTURAL NOTES
S0.2	STRUCTURE PART DETAILS
S1.0	6 HIGH FULL STRUCTURE DETAILS
S2.0	4 HIGH TILT UP STRUCTURE DETAILS
S3.0	ALTERNATE DETAILS
S3.1	ALTERNATE MODULE MOUNTING DETAILS
S4.0	EQUIPMENT PAD AND ANCHORAGE DETAILS
S5.0	EQUIPMENT PAD FENCE AND ANCHORAGE DETAILS
S6.0	BEACON UL2703 INSTALLATION GROUNDING MANUAL

S7.0	ELECTRICAL DETAILS
ROOF STRUCTURAL	
RS1.0	SITE PLAN
RS2.0	EXISTING ROOF FRAMING PLAN SOLAR MODULE & RACKING LAYOUT
RS3.1	NORTH & SOUTH ELEVATIONS
RS3.2	EAST & WEST ELEVATIONS
RS3.3	SECTION-A
RS4.0	CONNECTION DETAILS
RS4.1	MANUFACTURER'S CUTSHEETS

SPECIFICATIONS

Specification Description	Specification Number
General Electrical	26 00 00
Photovoltaic System Electrical	26 60 00
Solar Photovoltaic Canopy Structures	05 90 02
Solar Photovoltaic Roof Mounting	05 09 04

SPECIFICATION SECTION 26 00 00: GENERAL ELECTRICAL

PART 1 - GENERAL

1.01 RELATED SPECIFICATIONS

A. Section 26 60 00: Photovoltaic System Specification.

B. Section 05 90 02: Solar PV Canopy Structure Specification.

C. Section 05 90 04: Solar PV Roof-Mount Specification.

D. Other relevant District Specifications.

NOTE: Where this specification and other specifications or bridging-documents are in conflict, the more stringent shall apply. Contractor shall identify conflicts and confirm recommended equipment or procedures with the District.

1.02 CODES & REFERENCES

A. The design and installation shall conform to all requirements as defined by the applicable codes, laws, rules, regulations and standards of applicable code enforcing authorities (Latest Edition as of the date of this contract, unless otherwise noted). The following are key standards that shall be followed. The Architect/Engineer of Record and Contractor shall ensure all applicable codes are followed:

1. ASTM International (ASTM) (www.astm.org), including:
    a. E3010, Standard Practice for Installation, Commissioning, Operation, and Maintenance Process (ICOMP) of Photovoltaic Arrays
2. American National Standards Institute (ANSI)
3. California Building Code (CBC), with State of California Amendments
4. California Energy Commission Title 24 Building Energy Efficiency Requirements
5. California Department of Forestry and Fire Protection, Office of the State Fire Marshal – Solar Photovoltaic Installation Guidelines
6. DSA IR-16-8 (most recent) Guidelines
7. DSA PL-07-02 (most recent) Guidelines
8. Institute of Electrical and Electronics Engineers (IEEE)
9. International Electrical Testing Association (NETA)
10. Local Fire Permit Requirements
11. National Electrical Manufacturers Association (NEMA)
12. National Fire Protection Association (NFPA), California Electrical Code
13. District Specifications and Requirements
14. Underwriters Laboratory (UL), including:
    a. UL 2703 – Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for use with Flat-Plate Photovoltaic Modules.
15. Utility company standards and requirements
16. All other applicable Codes and Ordinances

1.03 GENERAL

A. This specification defines the general electrical work required for complete and fully functioning photovoltaic systems at each site. The design and installation shall conform to all requirements as defined by the applicable codes, laws, rules, regulations and standards as specified in the Agreement.

B. The Contractor shall include all items and all work reasonably inferred by these specifications and the Contract Documents, including any design-build bridging documents. If the Contractor is in doubt as to the intent of any portion of these specifications or the Contract Documents, or necessary information is

omitted, the Contractor shall notify the District in writing for clarifications or corrections to be provided by addendum.

C. All design documents, cut sheets, and technical specifications shall be submitted, reviewed and accepted by the District per the guidelines specified in the Contract.

1.04 WORK INCLUDED

A. The work shall include the design of the electrical system, materials, equipment, fabrication, installation and tests in conformity with applicable codes and professionally recognized standards.

B. The electrical design shall be fully developed, including but not limited to the following:

1. Description and supportive calculations for all power and grounding systems.
2. Evaluation of existing switchgear and Utility transformers for interconnection compatibility.
3. Location and layout of all system equipment.
4. Site plans, equipment elevations, schedules, equipment arrangement and detailed drawings
5. Single line diagrams including local utility system tie-ins.
6. All other drawings, calculations, details, and schedules required for the system design.

C. All required construction documents and compliance documentation.

D. Temporary power and lighting as required for construction.

E. All required incidental work directly related to the construction of the System, such as excavating, directional boring, backfilling, roof flashing, fire stopping, waterproofing, pavement repair, striping, and testing.

F. Any other electrical work as might reasonably be implied as required to fulfill the contracted scope, even though not specifically mentioned herein or shown on the drawings

G. Design and construction coordination with all other disciplines and trades.

H. All other utilities, labor, materials, apparatus, tools, equipment, transportation, and special or occasional services as required to fulfill the contracted scope.

1.05 CONDITIONS AT SITE

A. Contractor is responsible for familiarizing themselves with all discernible site conditions. No extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not, only if those conditions were reasonably determinable by Visual Verification and/or the reports, studies, drawings, and other materials provided by the District.

B. Lines of other services that are damaged as a result of this work shall promptly be repaired at no expense to the District and to the complete satisfaction of the District.

1.06 QUALITY ASSURANCE

A. GENERAL

1. Construction Documents shall be designed and signed by a validated, registered professional engineer in the State of California.

B. CONFORMANCE

1. All equipment and accessories to be the product of a manufacturer regularly engaged in its manufacture.
2. Supply all new equipment and accessories free from defects and listed by Underwriter's Laboratories, Inc., or bearing its label or label of a Nationally Recognized Testing Laboratory (NRTL).

3. All items of a given type shall be the products of the same manufacturer on a given site, or equal.

4. If after contract is awarded, minor changes and additions are required by aforementioned authorities that do not materially impact the Contract Price, they shall be included at Contractor's expense.

C. COORDINATION

1. Contractor shall become familiar with the conditions at each job site and plan the installation of the electrical work to conform with the existing conditions so as to provide the commercially reasonable assembly of the combined work of all trades within the Contractor's scope.

D. COORDINATION DRAWINGS FOR ELECTRICAL INSTALLATION

1. Prepare Coordination Drawings, to scale. Detail major elements, components and systems of electrical equipment and materials in relation to each other and to other systems, installations, and building components. Indicate locations and space requirements for installation, access and working clearances. Show where sequence and coordination of installations are important to the efficient flow of the Work. Indicate the following:

a. Plans, equipment elevations and details including the following:

i) Clearances to meet safety requirements and for servicing and maintaining equipment, including space for equipment disassembly required for periodic maintenance.
ii) Equipment support details.
iii) Exterior wall, roof and foundation penetrations of cable and raceway; and their relation to other penetrations and installations.
iv) Fire-rated wall and roof penetrations by electrical installations.
v) Sizes and locations of required concrete pads and bases.
vi) Grounding system details.

1.07 DELIVERY, STORAGE AND HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all trades.

B. Delivery and Storage: Deliver all materials to the job site in their original containers with all labels intact and legible at time of use. Store in strict accordance with approved manufacturers' recommendations. All deliveries are to be made to the Contractor's job trailer or approved storage location. Under no circumstances shall District be responsible for accepting deliveries.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the District and at no additional cost to the District.

D. Contractor shall personally, or through an authorized representative, check all materials upon receipt at jobsite for conformance with approved shop drawings and/or plans and specifications.

1.08 SCHEDULING/SEQUENCING

A. Contractor shall coordinate all schedules and sequencing of electrical work with District.

B. Place orders for all equipment in time to prevent any delay in construction schedule or completion of project. If any materials or equipment are not ordered in time, additional charges made by equipment manufacturers to complete their equipment in time to meet the construction schedule, together with any special handling charges, shall be borne by the Contractor.

1. Contractor shall coordinate production and delivery schedule for all District-supplied equipment with the equipment suppliers to ensure that all District-supplied equipment is delivered to site in coordination with the construction schedule and in such a manner as to cause no delays in completion of the Contract as scheduled.

1.09 WIND LOADING AND SEISMIC DESIGN

A. Comply with all applicable codes and standards and provide wind load restraints for all equipment installed under this contract that requires restraint. The electrical equipment wind loading restraint shall be designed as required by the Authorities Having Jurisdiction (AHJs).

B. The electrical system shall be designed for the appropriate seismic zone and to meet all seismic design requirements of the AHJs. Where applicable, the electrical equipment shall be designed to accommodate lateral displacement in the event of an earthquake based on a nonlinear response-history seismic analysis for the appropriate seismic zone.

1.10 PERMITS AND INSPECTIONS

A. Contractor shall obtain all required permits and arrange for all required inspections, including utility company requirements, inspections, and sign-offs.

B. Do not allow or cause any of the work to be covered or enclosed until it has been tested and/or inspected.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials of the same type or classification, used for the same purpose, shall be the product of the same manufacturer on a given Site, or equal.

2.02 POSTED OPERATING INSTRUCTIONS

A. Furnish approved operating instructions for systems and equipment where indicated in the technical sections for use by operation and maintenance personnel. The operating instructions shall include wiring diagrams, control diagrams, and control sequence for each principal system and equipment. These shall be provided in accordance with the O&M manual requirements.

2.03 CATALOGED PRODUCTS / SERVICE AVAILABILITY

A. Materials and equipment shall be current products by manufacturers regularly engaged in the production of such products. Specified product lines shall have been in satisfactory commercial or industrial use for a minimum of 2 years prior to design. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The 2-year period shall be satisfactorily completed by a product for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6,000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished. The equipment items shall be supported by service organizations which are reasonable convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

2.04 ACCEPTABLE MANUFACTURERS

A. Materials shall be of make mentioned elsewhere in this specification, or equal. All materials shall be new and approved by the Underwriters' Laboratories or an NRTL approved by District.

2.05 BASIC ELECTRICAL EQUIPMENT AND MATERIALS

A. Inverters and PV Modules – See Specification 26 60 00.

B. AC Panelboards:

1. As manufactured by Cutler-Hammer, Square D, General Electric, Siemens, IEM, or to match existing equipment at each Site, wherever possible. Similar products may be submitted for considerations and

formal approval. Equipment shall at a minimum be NEMA 3R outdoors or NEMA 1 for surface mount in unfinished interior locations and flush mounted in finished and occupied spaces. Provide housekeeping pads for all floor or slab mounted equipment.

2. Enclosures: code gauge galvanized sheet steel with welded full flange end pieces, stretcher-leveled steel trim, back pan and door or painted steel or powder-coated steel. All surface mounted panels to have enclosures painted in gray enamel. All flush mounted panels to have cover painted to match adjacent surface, where District will provide matching paint.
3. Phase and ground bussing of aluminum.
4. Trims on surface-mounted cabinets secured with nickel-plated screws with cup washers, bottom of all trims to have lugs for resting on cabinet flange.
5. Panels shall be 20 inches minimum in width, provided with approved gutter space, barriers and adjustable supports. Doors mounted with concealed hinges provided with standard locking mechanism provided by panel manufacturers. Doors and trims and surface mounted cabinets primed and finished with standard primer provided by manufacturer and factory.
6. Each panel shall be equipped with a aluminum ground bus.
7. All panels shall be fully bussed to accept future circuit breakers.

C. Distribution Low Voltage Dry-Type Transformers (120/208V and 277/480V):

1. Ventilated type, NEMA 3R where used outdoors.
2. Transformer shall be 3-phase, 60 Hertz. Primary winding shall be Delta connected and secondary winding shall be Wye connected. The temperature rise at rated voltage and full load shall not exceed 150 degrees C with a 220 degrees C U.L. Component Recognized Insulation System. The windings shall be Aluminum or Copper.
3. The higher voltage winding shall have quantity (6) 2.5% taps - (2) FCAN and (4) FCBN. Set secondary voltage for 120/208V.
4. Transformer terminals shall be front connected for ease of installation and maintenance.
5. Where the transformers are installed outdoors provide weatherproof drip cover, rodent screen and a NEMA 3R rating of the enclosure.
6. Transformers shall be suitable to carry the PV load characteristics and in the direction of power flow required for the PV system power production.

D. Circuit Breakers:

1. Circuit breakers shall be molded case rated 250 or 480 volt, multiple or single pole with amperage ratings as required for each circuit. All breakers to be bolt on, manually operated with "de-ion" arc chutes. Plug-in breakers are not acceptable.
2. Circuit breakers shall be rated to interrupt the available short circuit current at the point of application.

E. Raceways and Conduit Bodies: Only the raceways specified below shall be utilized on these projects. Substitutions shall be pre-approved in writing:

1. Rigid Type - hot dip galvanized or sherardized steel, to be used at all exterior locations, below grade, or in concrete slab, and to 18" on either side of structural expansion joints in floor slabs, with completely watertight, threaded fittings throughout.
    a. All rigid steel conduit couplings and elbows in soil or concrete or under membrane to be ½ lap wrapped with Scotch #50 tape and threaded ends coated with T&B #S.C.40 rust inhibitor prior to installation of couplings.

b. ½ lap wrap all rigid steel conduit stub-ups from slab or grade to 6" above finished grade level with Scotch #50 tape.
c. In lieu of rigid steel conduit for power and control raceways and branch circuit conduits in soil or concrete slabs, "Schedule 40" PVC with Schedule 80 PVC conduit elbows and stub-ups may be used with code size (minimum No. 12) ground wire. A “stub-up” is considered to terminate 6" above the finished surface.

i) Schedule 80 PVC conduit shall be used in all concrete footings or foundations and to 18" of either side of footings or foundation walls.
ii) Schedule 80 PVC conduit shall be used in all concrete masonry unit (CMU) walls or columns.

2. Provide a minimum cover of 36 inches for all conduits in ground outside of buildings, unless otherwise noted.

3. Conduit installed using horizontal directional boring (HDB) shall include tracer tape or traceable conduit. Minimum depth of the conduit shall be per NEC Table 300.5 or per District Requirements, whichever is more stringent. The Contractor is responsible for demonstrating that all conduits installed utilizing horizontal boring meets the minimum depth requirement and is solely responsible for any remediation costs and schedule impacts if the specification is not met. Contractor shall provide documentation of final depth and routes of all conduit installed in horizontal bores.

4. Conduit buried underground shall be suitable for the application and compliant with all applicable codes. PVC shall be constructed of a virgin homopolymer PVC compound and be manufactured according to NEMA and UL specifications. All PVC conduit feeders shall contain an appropriate copper grounding conductor sized per NEC requirements and continuity shall be maintained throughout conduit runs and pull boxes. Minimum conduit size shall be ¾”. A metallic tracing/caution tape shall be installed in the trench over all buried conduit. All underground conduits placed in trenches, buried under roadways, or swales shall be encased with red dyed concrete slurry cap.

5. All conduit runs in concrete floor slabs (where allowed) shall be installed to comply with all applicable UBC and structural codes to maintain the structural integrity of the floor slab. Where conflicts occur, alternate routing shall be provided at no additional cost to the District.

6. Electrical Metallic Tubing (EMT) shall only be exposed in electrical and mechanical rooms and in unfinished spaces and in concealed and furred spaces, made up with steel watertight or steel set screw type fittings and couplings. Set screws shall have hardened points. Cast fittings are unacceptable. EMT may be used in exterior installations where allowed by NEC, DSA or AHJ requirements and any other applicable code. All exterior fittings shall be watertight. EMT may not be installed in areas subject to severe physical damage, including in any carport location with potential for vehicle strike or within 8’ of grade. EMT shall be used to run lighting and inverter circuits along canopy purlins.

7. All exposed conduits on sides of buildings, or in other visible areas, shall be painted to match adjacent finishes, after complete installation.

8. Fasten conduits securely to boxes with locknuts and bushings to provide good electrical continuity.

9. To facilitate pulling of conductors, install junction boxes as required.

10. If any empty conduits are provided as part of the projects, they shall be provided with a minimum of two sufficiently rated pull strings or wires inside conduit for future wire pull.

11. If conduits are to pass through structural expansion joints in floor slab, rigid galvanized conduit shall be used 18" on either side of joint, complete with Appleton expansion couplings and bonding jumpers, or equal. All above grade expansion joint crossings shall also utilize expansion joint couplings or flex conduit transitions as required for each particular installation. No solid conduits shall be allowed to cross expansion joints without proper provisions for building and seismic movement. Expansion joints only refer to contiguous structures, not the overhead space between

adjacent, separate canopies. Under no circumstance shall conduits/conductors pass overhead between separate canopies.

12. Provide thermal expansion fittings or provisions, per NEC 300.7(b), for all raceways subject to high temperatures in direct exposure to sunlight. Provide expansion provisions where more than 0.25" of expansion is calculated.10.

13. Provide and install exterior wall conduit seals and cable seals in the locations listed below. Coordinate installation and scheduling with other trades:

    a. Conduit seals through exterior wall or slab (below grade): O.Z. Gedney series “FSK" in new cast in concrete locations, series "CSM" in cored locations.
    b. Conduit seals through exterior wall or slab (above grade): O.Z. Gedney series "CSMI."
    c. Cable seals at first interior conduit termination after entry through exterior wall or slab: O.Z. Gedney series "CSBI." Coordinate quantity of conductors at each location.

F. Function Boxes / Pull Boxes:

1. One-piece steel knockout type drawn j-boxes, unless otherwise noted, sized as required for conditions at each location.

2. J-boxes for wet locations, cast aluminum FS or FD type with cast aluminum gasketed spring lid cover. Weatherproof “Bell” type boxes are not acceptable.

3. Pull boxes to be NEMA 1 (indoor) or NEMA 3R (outdoor), sized per code, with grey enamel finish, steel construction, and screw-on covers.

4. All connectors from conduit to junction or outlet boxes shall have insulated throats. Connectors shall be manufactured with insulated throats as integral part. Insertable insulated throats are unacceptable.

5. Conduit Bodies: Malleable iron type, with lubricated spring steel clips over edge of conduit body, O-Z/Gedney type EW, or equal.

G. Site Pull boxes: All site pull boxes shall be flush in-ground concrete, with engraved covers identifying service use (i.e. electrical, communications, etc.). Boxes shall be NEMA 250, Type 6, outside flanged, with recessed cover for flush mounting, by Christy or equal, with required depth to provide box and conduit depths shown or required.

1. Provide concrete covers for all boxes in planted or paved areas (up to available concrete cover size).

2. Provide galvanized steel covers for all larger boxes (when concrete is not available), or in traffic areas. No cast iron covers.

3. Provide bolted covers and slab bottoms (with grouted perimeter) or vault type boxes for all electrical distribution and signal system pull boxes used for site distribution, to prevent rodent entry. No collar type boxes with dirt or gravel bottoms.

4. Provide drain hole at bottom of all vault type boxes, with loose aggregate base below, for proper drainage.

5. All covers to be completely flush with finished adjacent surfaces.

6. Provide galvanized steel H20 rated covers and installation of box rated for H20 in all traffic areas.

H. Wire and Cable:

1. 600 or 1,000-volt class (as required for system design), insulation color coded, minimum No. 12 AWG for DC string circuits or AC circuits.

2. Copper wiring will be utilized for all DC wiring. Aluminum wiring shall be used to the point of interconnection to improve cost effectiveness for the District for systems with long bore shots to the point of interconnection.

3. Insulation type:

   a. Standard locations: Conductors shall be Type PV or THWN or THWN-2 or RHH, RHW-2, USE-2 for wet and dry locations. All AC wire sizes used shall be based on a 75-degree insulation rating, unless specifically used with 90-degree rated devices. For wires/cables with 90 deg C insulation, the 90 deg C ampacity ratings shall be used for cable sizing before conditions of use de-rates are applied per NEC. All DC wire sizes shall be based on 90-degree insulation rating, when used with 90-degree rated PV equipment and components.
   b. All conductors shall be stranded.
   c. Install all wiring (low voltage and line voltage) in conduit, except PV string wiring at modules, which may be run outside of raceway.
   d. Do not pull conductors into conduit until raceways and boxes have been thoroughly cleaned and swabbed as necessary to remove water and debris.
   e. Approximately balance all AC circuits about the neutral conductors in AC collector panels.
   f. All wire and cable shall bear the Underwriters' Label or equivalent NRTL label, brought to the job in unbroken packages.
   g. The equipment grounding conductor shall be insulated or bare copper; where it is insulated, the insulation shall be colored green.
   h. Install all circuits in one continuous section unless splices are approved by Purchaser. Exercise care in pulling to avoid damage or disarrangement of conductors, using approved grips. No cable shall be bent to smaller radius allowed by NEC code or manufacturer recommendations. Color code feeder cables at terminals. Provide identifying linen tags in each pull box

I. Fire stopping: as manufactured by 3M Fire Protection Products or equal.

1. Fire-rated and smoke barrier construction: Maintain barrier and structural ceiling fire and smoke resistance ratings including resistance to cold smoke at all penetrations, connections with other surfaces or types of construction, at separations required to permit building movement and sound vibration absorption, and at other construction gaps.

2. Systems or devices listed in the UL Fire Resistance Directory under categories XHCR and XHEZ may be used, providing that it conforms to the construction type, penetration type, annular space requirements and fire rating involved in each separate instance, and that the system be symmetrical for wall penetrations. Systems or devices must be asbestos free.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which the work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 FIELD QUALITY CONTROL

A. All workmanship shall be first class and carried out in a manner satisfactory to and approved by the District.

B. This Contractor shall personally, or through an authorized and competent representative, constantly supervise the work and, as much as possible, keep the same foreman and workmen on the job throughout.

3.03 INSTALLATION/APPLICATION/ERECTION

A. All cutting, repairing and structural reinforcing for the installation of this work shall be done by the General Contractor in conformance with the District's requirements.

B. Excavate and trench or directional bore as necessary for the electrical installation, and when the work has been installed, inspected and approved, backfill all excavations with clean earth from excavation, or imported sandy soil in maximum 8" (eight-inch) layers, moisten and machine tamp to 95% compaction, and restore the ground and/or paving or floor surfaces to their original condition.

C. Floor Mounted Inverter Installation: Provide mounting channels for grouting into floor or slab. Channels shall be properly drilled to receive the equipment placed flush in floor, leveled and secured in place prior to pouring of floor, of length as required for switchboard. Bolt or weld switchboard to channels.

D. Furnish and install all disconnect switches as required by code (AC and DC).

3.04 EARTHQUAKE RESISTANT INSTALLATION & FASTENING:

A. All electrical equipment and raceways shall be designed to withstand forces generated by earthquake motions. As a minimum, equipment and equipment frames shall be designed to withstand a force of 25% of the weight of the equipment and frame acting at its center of gravity. Anchorage of the equipment and/or frame to the structure shall be for a force of 50% gravity also acting at the center of gravity.

B. For floor mounted inverters and switchboards / distribution panels, the above values shall be doubled. Design stresses in either case may be increased 1/3 over normal allowable stresses but never beyond yield.

3.05 ADJUSTING AND CLEANING

A. All electrical equipment, including existing equipment not "finish painted" under other sections, shall be touched up where finished surface is marred or damaged.

B. All equipment shall be left in clean condition, with all shipping and otherwise unnecessary labels removed there from.

3.06 IDENTIFICATION

A. Inverters, combiner boxes, pull boxes, switchboards, panel boards, distribution circuit breakers, disconnect switches, and related electrical enclosures shall be properly identified by means of engraved laminated plastic descriptive nameplates mounted on apparatus using stainless steel screws or permanent epoxy adhesive where set screws are not feasible. Standard adhesives alone are not acceptable. Nameplates shall have white letters with black background. Cardholders in any form are not acceptable.

B. Provide all required safety and identification placards as required by code.

3.07 PAINTING OF EQUIPMENT

A. Factory Applied: Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test, except equipment specified to meet requirements of ANSI C37.20 shall have a finish as specified in ANSI C37.20.

B. Field Applied: Paint electrical equipment as required to match finish or meet safety criteria.

3.08 TESTING

A. General:

1. All inspections and tests shall be in accordance with the International Electrical Testing Association - Acceptance Testing Specifications ATS-2009 (referred to herein as NETA ATS-2009).

2. Final test and inspection may be conducted in presence of District: Tests shall be conducted at the expense of and by the Contractor at a mutually agreed time. Submit written test reports.
3. The electrical installation shall be inspected and tested to ensure safety to building occupants, operating personnel, conformity to code authorities, and final Construction Shop Drawings.
4. Final Inspection Certificates: Prior to final payment approval, deliver to the District, with a copy to the District, signed certificates of final inspection by the appropriate inspection authority.
    a. Grounding System:
        i) All ground connections shall be checked, and the entire system shall be checked for continuity. The resistance of the ground system at each site shall be measured using a 3-point fall-of-potential method. The maximum ground resistance shall be three ohms.
        ii) Ground tests shall meet the requirements of the National Electric Code, Article 250.
        iii) All PV system grounding shall meet the requirements of NEC Article 690.

END OF SPECIFICATION SECTION 26 00 00

SPECIFICATION SECTION 26 60 00: PHOTOVOLTAIC SYSTEM

PART 1 - GENERAL

1.01 RELATED SPECIFICATIONS

A. The Contract and any design-build bridging documents.

B. Section 26 00 00: General Electrical Specifications.

C. Section 05 90 02: Solar PV Canopy Structure Specification.

D. Section 05 90 04: Solar PV Roof-Mount Specification.

E. Other relevant District Specifications.

NOTE: Where this specification and other specifications or bridging-documents are in conflict, the more stringent shall apply. Contractor shall identify conflicts and confirm recommended equipment or procedures with the District.

1.02 CODES & REFERENCES

A. The design and installation shall conform to all requirements as defined by the applicable codes, laws, rules, regulations and standards of applicable code enforcing authorities (Latest Edition as of the Date of this Contract, unless otherwise noted). The following are key standards that shall be followed. The Architect/Engineer of Record and Contractor shall ensure all applicable codes are followed:

1. ASTM International (ASTM) (www.astm.org), including:
   a. E3010, Standard Practice for Installation, Commissioning, Operation, and Maintenance Process (ICOMP) of Photovoltaic Arrays
2. American National Standards Institute (ANSI)
3. California Building Code (CBC), with State of California Amendments
4. California Energy Commission Title 24 Building Energy Efficiency Requirements
5. California Department of Forestry and Fire Protection, Office of the State Fire Marshal – Solar Photovoltaic Installation Guidelines
6. DSA IR-16-8 (most recent) Guidelines
7. DSA PL-07-02 (most recent) Guidelines
8. Institute of Electrical and Electronics Engineers (IEEE)
9. International Electrotechnical Commission (IEC), including:
   a. 62446-1 Photovoltaic (PV) systems – Requirements for testing, documentation and maintenance. Part 1: Grid connected systems – Documentation, commissioning tests and inspection
10. International Electrical Testing Association (NETA)
11. Local Fire Permit Requirements
12. National Electrical Manufacturers Association (NEMA)
13. National Fire Protection Association (NFPA),
14. Current California Electrical Code
15. District Specifications and Requirements
16. Underwriters Laboratory (UL), including:
   a. UL 2703 – Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for use with Flat-Plate Photovoltaic Modules.
17. Utility company standards and requirements
18. All other applicable Codes and Ordinances

1.03 GENERAL

A. The project includes the design and construction of complete Photovoltaic Systems (PV), including all AC and DC components. The design and installation shall conform to all requirements as defined by the applicable codes, laws, rules, regulations and standards as specified in the Contract.

B. The Contractor shall include all items and all work reasonable required to complete the System in accordance with the Agreement. If the Contractor is in doubt as to the intent of any portion of these specifications, or necessary information is omitted, the Contractor shall notify the District in writing for clarifications or corrections to be provided by addendum.

C. All design documents, cut sheets, and technical specifications shall be submitted, reviewed and accepted by the District per the guidelines specified in the Contract and any bridging documents.

1.04 WORK INCLUDED

A. The work shall include the design, engineering, materials, labor, equipment, installation, testing, services, and incidentals necessary to install complete Photovoltaic (PV) Systems in conformity with applicable codes and professionally recognized standards.

B. PV systems shall consist of arrays of framed photovoltaic modules, mounting hardware, terminal boxes, combiner boxes, quick-connect electrical connectors, DC wiring, DC disconnects, utility interactive inverters, AC disconnects, AC feeders, AC circuit breakers, AC panel boards / switchgear, and complete data acquisition and monitoring systems.

C. The PV systems shall be utility grid connected. The Contractor shall be responsible for all required utility company coordination, applications, inspections, permits, and final approval for the complete interconnection of the PV systems with the utility company grid, including bi-directional utility meters at each location.

D. The Contractor shall ensure adequate clearance and equipment space within the allotted areas and existing building and site conditions. All equipment and sizes / clearances shall be coordinated with the District prior to rough-in.

E. The Contractor shall provide for the disconnection, disposition, and proper disposal of all existing equipment to be replaced.

1.05 QUALITY ASSURANCE

A. All equipment shall be listed to Underwriters' Laboratories (UL) standards as applicable.

B. Installer Qualifications – The installing contractor shall be familiar with the equipment to be installed and have the necessary training to install in the equipment.

1.06 MATERIALS, DELIVERY, STORAGE, AND HANDLING

A. All materials shall be delivered new, undamaged and without defects.

B. All equipment and panels shall be handled with care so as not to damage the delivered products. All equipment shall be installed in new and neat condition.

C. Appropriate protective clothing shall be worn when handling the equipment.

D. All materials stored on the roof shall be distributed so as not to overload the roof at any point. All materials stored on roof shall follow the guidelines of the roofing system manufacturer including protection boards, pallets and/or mats to prevent damage to the roof system and insulation assemblies. All roof top construction, construction related traffic and staging areas shall have protection boards in place to prevent damage to the roofing system and insulation assemblies.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Acceptable system manufacturers/vendors shall be as specified in other sections of this RFP. Manufacturers shall provide their latest line of equipment, meeting all current industry standards and all performance criteria set forth in this RFP. The District seeks equipment from proven, industry leading manufacturers in solid financial standing, producing tier-one equipment.

B. Contractor proprietary products shall have an ICC report or a testing report stamped and signed by a licensed California engineer.

2.02 EQUIPMENT AND MATERIALS

A. PV MODULES SHALL MEET THE FOLLOWING:

1. Module manufacturer that has produced no less than 250MW of modules in the prior year.
2. Modules are from a field-tested product line that has been commercially available for no less than three years.
3. Module manufacturer shall provide a 25-year warranty on the solar modules with at least 80 percent power output guaranteed at 25 years.
4. Have a minimum 25-year design life, designed for normal, unattended operation.
5. UL 1703 listed.
6. UL listed for the specified voltage (typically 1000 V-DC).
7. Meet IEC 61215 (crystalline silicon PV modules) or IEC 61646 (thin film PV modules) standards.
8. Meet California SB1 Guidelines for Eligibility.

B. INVERTERS SHALL MEET THE FOLLOWING:

1. String-type inverters.
2. Integrated AC and DC disconnects
3. Include a 10-year warranty.
4. Manufacturer produced no less than 250 MW of inverters in the prior fiscal year.
5. Field-tested product line that is commercially available for no less than 2 fiscal years.
6. Comply with the following:
    a. UL 1741 listed, inclusive of UL 1741-SA requirements.
    b. IEEE 1547, including testing to IEEE 1547.1 and IEEE C62.45.
    c. IEEE C62.41.2 and CSA107.1-01.1.
    d. California Rule 21, CEC approved and utility line interactive type.
7. Incorporate disconnect switch for main DC power disconnect in compliance with applicable codes and utility requirements.
8. Sized as required to support the PV module production load within the rating of the equipment, together with all other components. Sizing shall not exceed 1.35 DC:AC ratio without approval by District.
9. Meet the following requirements:
    a. Nominal AC Voltage (Three-phase, + 10%): 208, 240, or 480 VAC (as required per site)
    b. Nominal AC Frequency (+ 0.5 Hz): 60 Hz
    c. Line Power Factor (Above 20% rated power): >0.99

d. AC Current Distortion (At rated power): <5% THD
e. Maximum Open Circuit Voltage DC: 1,000 VDC
f. Maximum Ripple Current (% of rated current): <5%
g. Minimum Inverter Efficiency: >96%
h. Temperature Range Ambient: -4º F to 122º F (-20º C to 50º C)
i. Enclosure Environmental Rating (minimum): NEMA 3R
j. Relative Humidity (non-condensing): 0-95%
k. Sound level: <85 dBa
l. Capable of producing reactive power to operate between a power factor of 0.9 lagging to 0.9 leading (as adjusted on the inverter equipment).
m. Protective Functions: Standard wakeup voltage, wakeup time delay, shutdown power, shutdown time delay, AC over / under voltage and time delays, AC over / under frequency and time delays, ground over current, over-temperature, AC and DC over current, DC over voltage
n. User Display: Standard-LCD with on/off capability
o. DC Disconnect: 1,000 VDC load break rated
p. Isolation Transformer (if applicable): High-efficiency type, supplied by the manufacturer of the Inverter Systems, mounted within same enclosure or directly adjacent, with factory-designated wiring provisions.
q. Zone 4 Seismic Rating (free standing) or wall mounted
r. Internal combiner panel option to allow connections of sub-arrays at the Inverter without the use of additional equipment.

C. All equipment costs shall include all known and future duties, tariffs, export tariffs, customs, demurrage, and shipping costs.

D. No substitution for contracted equipment shall be made without the written consent of District. Such consent will not to be unreasonably conditioned, delayed, or withheld.

E. Upon connection of the new PV systems, provide a placard on the respective Main Switchboard to identify the two sources of power feeding the equipment.

F. Combiner boxes (where used) shall be NEMA 3R rated (minimum) and shall include fuses for string inputs and a bus bar to combine the strings into sub-arrays, for input into the Inverter system. Minimum combiner box output bus ampacity shall be 156% of the rated short circuit current available to be carried on the bus (the sum from all strings to the bus).]

G. All AC interconnecting feeders shall be sized to NEC Table 310.16 (75 degree column) based on associated disconnect amperage. Conduit fill to 40% max. Include temperature derating as required for the ambient temperatures and roof conditions per NEC. Provide equipment grounding conductor in each conduit.

H. All roof and exterior mounted raceways shall be designed and installed to accommodate expansion and contraction due to heating affects, including adequate cable length and listed expansion couplings. All expansion couplings or installations shall include grounding bonding jumpers as required by code.

I. All AC circuits to be 3-wire or 4-wire + ground. All grounding per NEC 690, Part V.

J. All DC circuits and feeders sized to NEC table 310.16 (90-degree column) based on associated disconnect amperage. Minimum ampacity shall be 156% of the rated short circuit current available to be carried on the specific conductor. Conduit fill to 40% max. Include temperature derating as required for the ambient temperatures and roof conditions per NEC. Provide equipment grounding conductor in each conduit.

K. All DC circuits to be 2-wire + ground.

L. All AC and DC wiring in conduit to be RHW-2, PVWIRE, THWN-2, or XHHW-2 (90 degree) wet rated for use with 90 degree listed terminals on PV equipment.

M. All exposed DC wiring to be USE-2, PVWIRE, or SE (90 degree) wet rated and sunlight resistant or PV Wire.

N. Above ground exposed conduit shall be rigid galvanized steel with threaded fittings except where DSA and other applicable codes specifically allow for the use of EMT conduit. All conduit shall meet NEC Code, DSA Guidelines and any applicable standards. Exterior installations shall have watertight fittings. All conduit shall be rated for exposed installation and a minimum design life equivalent to the solar panels. Paint all visible exposed raceways and boxes to match adjacent surface finish after installation. Colors to be selected and approved by the District, such approval not to be unreasonably conditioned, delayed, or withheld.

O. All conduits and stub-ups under array canopies shall be encased within concrete caissons or piers or, protected from parking traffic with appropriately sized bollards if protection is required by electrical engineer.

P. All interior conduit to be EMT with steel set-screw fittings (no cast fittings).

2.03 WIRE MANAGEMENT

A. All inter-array wiring methods must meet or exceed current industry standards for wire management, strain relief and fastening.

B. All inter-array wire management shall use stainless steel or galvanized steel cable clips, Heyco or similar. UV rated cable ties shall be used minimally and only in locations where the use of cable clips is impossible.

C. Where exposed, wires, cables and conductors shall be managed in a neat and orderly manner. Where exposed to environmental conditions (e.g., sunlight, rain, wind, etc.) and visible from below, wires shall be fastened in a uniform and discrete fashion.

D. All conductors and conduits between separate arrays shall be routed underground. Wiring shall be routed down columns, encased in piers/caissons, routed underground between arrays or carports, and up the nearest column on the adjacent array. Under no circumstance shall circuits, conduits, or chaseways be mounted overhead between separate structures, including seismic gaps.

E. Strain relief and drip loops shall be utilized at all entrances to and from conduit bodies, junction boxes, weather heads, switchgear, inverters and panelboards etc. Conductors shall be strapped with strain relief as not to stress panel leads, home runs or mechanically crimped connections within the array.

2.04 MISC. SYSTEM REQUIREMENTS

A. All exterior equipment to be sunlight and UV resistant as well as rated for elevated temperatures at which they are expected to operate (on roofs in hot sunlight).

B. No dissimilar metals are allowed to contact each other (use plastic or rubber washers) with the exception of anodized aluminum module frames in contact with galvanized carport purlins. Best practices shall be used to avoid corrosion.

C. No aluminum in contact with concrete or masonry materials.

D. Bolted connections shall be non-corrosive and include locking devices designed to prevent twisting over the design life of the PV system.

E. Environmental impact of system equipment containing hazardous materials shall be disclosed, as well as maintenance and disposal instructions for equipment at the end of its useful life.

2.05 SYSTEM ELECTRICAL

A. The modules shall be interconnected using cable assemblies. The pigtails shall be quick-connect electrical wiring connections rated for the application (90 degree rated).

B. Raceway system shall be installed in a manner that prevents water from draining into electrical equipment.

C. Full specifications of the inverter shall be supplied as part of the system submittal.

D. All major components of the systems and the installation procedures shall meet California Electrical Code requirements, including Article 690.

E. The PV system shall be designed to automatically drop offline when normal utility power is lost to avoid unintentional islanding effects as required by the local utility. Exceptions may be made by District where PV system is part of an emergency power/battery backup allowed by Utility and AHJ.

F. All electrical system equipment shall be properly rated to withstand and interrupt (in the case of over current protection devices) the available fault current at the point of use.

G. All required overcurrent protection and electrical bussing sizes per NEC 690.

H. Means of system grounding to be approved by professional Electrical Engineer of record and GFCI protection shall be in accordance with latest NEC requirements.

2.06 MONITORING

A. DAS - A Data Acquisition and Monitoring System (DAS) shall be provided for all points of interconnect. The system shall include, but not be limited to, the measurement, calculation, display, and reporting of the following items:

1. PV production in 15-min reporting intervals.
2. Energy consumption in 15-min reporting intervals.
3. Weather data in 15-min reporting intervals
4. System electrical functions (instantaneous and accumulated power output (kW and kWh), AC and DC system voltage and amperage, and peak value tracking with associated time stamps).
5. Pounds of CO_2 emissions avoided from the generation of PV energy at the site (compared to local utility fuel mix electric carbon content).
6. DAS shall be capable of outputting data in the Western Renewable Energy Generation Information System (WREGIS) format sufficient for registering Renewable Energy Credits (RECs) from each system.
7. Lifetime logging and access to data reported by DAS.
8. DAS shall provide District access to all data through an open data exchange protocol (FTP Push or API) at no additional cost to District or District's third-party designee. This data shall, at a minimum, include PV production data, energy consumption data, inverter production data, inverter AC power data, inverter current data, inverter voltage data, weather station and/or satellite data, and alarm status readings. All data shall be available over multiple timescales, ranging from 15-min intervals to annual intervals and shall include both real-time and historic data.

B. Cellular data shall be used for communications with the DAS and metering systems. In the absence of cellular service availability, the District may, at its own discretion, provide internet connections on a site by site basis.

C. Separate consumption meters shall be provided for each utility account. Consumption meters shall include a web-enabled interface and 15-min reporting intervals to be synced with PV meter production intervals. Consumption meter standard assumption is 480V POI, assumption for anything above 480V POI without a storage component will be monitored at additional cost.

D. Contractor shall load software (as applicable) on District provided computers and train District in operation and maintenance of software or cloud-based systems and related monitoring functions.

E. WEATHER STATIONS

1. A weather station shall be provided at three sites in the District's portfolio of Systems, located at Graham Middle School, Vargas Elementary School, and Theuerkauf Elementary School.

a. Data from the weather station at Graham Middle School shall be used for Graham Middle School, Benjamin Bubb Elementary School, Frank L. Huff Elementary School, and Gabriela Mistral / Mariana Castro Elementary School.

b. Data from the weather station at Vargas Elementary School shall be used for Vargas Elementary School and Edith Landels Elementary School.

c. Data from the weather station at Theuerkauf Elementary School shall be used for Theuerkauf Elementary School, Crittenden Middle School, Monta Loma Elementary School, and Stevenson Elementary School / District Office.

2. The stations shall provide at a minimum: solar irradiation (coplanar and horizontal), ambient temperature, wind speed and any other data relevant to weather correction of solar PV system performance.

3. Alternatively, satellite weather may be utilized in lieu of on-site weather stations. If utilized in place of a weather station, satellite weather information shall be made available on the same interval as PV production at no additional cost to District per Item A above.

PART 3 - EXECUTION

3.01 REQUIRED PLACARDS

A. All placards shall be machine generated phenolic type with red background and white lettering, affixed to equipment with stainless steel screws or with permanent adhesive where set screws are not feasible. Minimum lettering size to be 1/4" unless otherwise noted or required for legibility.

B. Provide a placard clearly visible at each main service panel to identify both sources of power, with the following wording in 1/4" high lettering per NEC 690.64(B)(4): “Warning - This Service Is Fed by Two Sources Of Power – The Utility Service Main Disconnect And The PV System Main Disconnect – Both Services Must Be Disconnected To Remove Power From The Switchboard”.

C. Provide a placard on each PV system input circuit breaker (where used) at the main panel with the following wording in 1/4" high lettering per NEC 690.64(B)(7): “Warning – Inverter Output Connection – Do Not Relocate This Overcurrent Device”.

D. Provide a placard on all disconnects with the following wording in 1/4" high lettering per NEC 690.17: "Warning - Electric Shock Hazard - Do Not Touch Terminals - Terminals On Both The Line and Load Sides May Be Energized In The Open Position".

E. Provide a placard on the Main PV System Disconnect (adjacent to each main service panel) with the following information in 1/4" high lettering per NEC 690.53: "Photovoltaic Power Source Disconnect - Operating Current: X Amps; Operating voltage: XX VAC; Maximum System Voltage: XX VAC; Short-Circuit Current: XXX Amps", where X is the operating current, XX is the system voltage, and XXX is the maximum short circuit current contribution of the generating facility at the point of interconnection with the utility system.

F. Provide a placard at each Main Switchboard with the following information in 1/4" High lettering per NEC 690.54: "Caution - Possible Backfeed From Photovoltaic Power System – X VAC, XX Amps", where X is the system voltage and XX is the maximum AC amperes of the installed system.

G. Provide a placard on each PV System Inverter with the following information in 1/4" high lettering: "Photovoltaic Power Source Inverter Rating - Operating Current: XX Amps; Operating voltage: XXX VDC; Maximum System Voltage: 1,000 VDC; Short-Circuit Current: XXXX Amps", where XX is the maximum DC amperes of the installed system, XXX is the operating voltage DC, and XXXX is the short circuit current that the Inverter can provide (from all strings in parallel).

H. Provide utility-required System Directory placard and utility safety switch Identification placard as required by local utility company, to identify all system components.

I. Provide a placard for all Combiner Boxes to read: "DC Combiner Box [XXX]– [*System Voltage*] VDC Maximum".

3.02 UTILITY INTERCONNECTION

A. The Contractor shall complete the submissions for the utility interconnection agreement with the District's approval. The Contractor shall submit the required authorization form with the utility to act on behalf of the District. In the event that the District has already submitted interconnection applications, the Contractor shall take all responsibility for the interconnect process upon contract execution.

B. The PV system at each Site shall not be interconnected with the Utility's distribution facilities until written authorization from the Utility Company has been obtained. Unauthorized interconnections may result in injury to persons and damage to equipment or property for which the installing contractor may be liable.

3.03 INSTALLATION STANDARDS

A. System Installation shall conform to the equipment manufacturers Installation Manual(s) and requirements or guidelines.

B. All Local, State, and NEC codes shall be observed, including all industry standards related to the installation, operation, and maintenance of photovoltaic power systems.

3.04 TESTING

A. Photovoltaic modules shall be tested in the factory for design performance and results shall be included in the Operation and Maintenance manuals.

B. Inverters shall be factory tested for performance and the results, if available, will be included in the Operation and Maintenance manuals.

C. System testing of the installed photovoltaic array shall be performed on all system strings and recorded in commissioning documentation and the Operation and Maintenance manuals.

D. Commissioning of PV Systems shall adhere to IEC 62446-1 requirements and shall include the following at a minimum:

1. CONDUCTORS

    a. AC & DC conductor inspection / megger testing
    b. Wire management check
    c. DC string Voc/sc testing and recording
    d. Confirm all conduits & junction boxes are installed properly/watertight

2. Inspection of DC fusing and disconnects

3. Inspection of AC components: AC Disconnect, Main Switch Board, AC Combiner Panel Boards, Breakers, Fuses, Terminations, Phasing, OCPD operation, etc.

4. Grounding & bonding system inspection and continuity testing

5. INVERTERS

    a. Inverter inspections and tests per manufacturer instructions
    b. Inverter start-up and confirm proper inverter settings
    c. Inverter output tests - Confirm PV system AC output as expected based on design, insolation and inverter readings

6. IV Curve Trace, Performance testing and recording

7. THERMAL IMAGING

a. Check all electrical components while systems are energized
b. Spot check, Modules, Inverters, Disconnects, AC system, etc.

8. Torque spot check on mechanical and electrical terminations
9. Inspection of corrosion control measures
10. Confirm signage and placards meet plans
11. Workmanship evaluation
12. Inspection of DAS / CT metering and monitoring equipment
13. Weather station component inspection and performance audit
14. Confirm web-based monitoring interface operations
15. LIGHTING CONTROLS
    a. Confirm canopy lighting levels match photometric design, if provided
    b. Verify component installations
    c. Confirm lighting controls function as specified
16. Commissioning of any other major electrical infrastructure installed on the project per manufacturer requirements
17. Medium voltage equipment tested to ANSI/NETA requirements

E. Testing to be performed per CPUC Electric Rule 21 testing procedures and requirements. All testing to be done on "no-cloud" days to avoid system fluctuation by passing clouds. Contractor to provide all testing and certification / commissioning.

F. System start-up procedure shall be as outlined by the Manufacturer's Installation Manual(s).

3.05 DOCUMENTATION

A. All commissioning and testing reports shall be provided to the District within 30 days of completion of testing.

B. The Contractor shall submit to the District a comprehensive and well-organized digital copy of an Operations and Maintenance (O&M) Manual with details for each system. The document shall be a well-organized, comprehensive and custom document created with details for each site. The document shall include at a minimum the following:

1. System description and overview
2. Simplified site plan that shows array naming convention, inverter locations, and disconnects
3. Safety Details, including shut down procedures
4. Contact information for the system installer and maintenance personnel
5. Monitoring system login and operation details
6. Standard procedures for both District and O&M personnel
7. Maintenance information, including schedules and responsibilities for ongoing maintenance
8. Troubleshooting and repair, including responses to typical issues and responsible parties
9. Summary of Performance Guarantee on a site-by-site basis if applicable, inclusive of COD for each site, reporting dates and true-up dates.
10. Summary table with the following details for each site: Site, System Size, Permission-to-Operate (PTO), Commercial Operation Date (COD), Final Completion Date, DSA/AHJ Closeout Date

11. Any other information that may be required for the District to easily and safely interact with, confirm performance, troubleshoot, maintain and/or service the materials and equipment installed under this Contract.

12. O&M Attachments shall include:

    a. Permission-to-Operate (PTO) notice and any other pertinent Utility documentation
    b. As-built Record Drawings in both AutoCAD and PDF (single compiled file for each site), provided as separate files. The updated as-built drawings shall also include the following details:

        i) DC string maps with corresponding inverter nomenclature (ID), locations, azimuth, and tilt.
        ii) Data logger make, model
        iii) Include all horizontal/directional boring logs and column footing depths

    c. Serial numbers of all equipment
    d. Performance Guarantee (PeGu) with as-built details
    e. Performance Data, Modeled As-built, including expected production over time. Electronic 8760 production and insolation data shall also be provided in spreadsheet format.
    f. Material List - List of all items furnished and installed, including the following as applicable: PV Modules, inverters, combiner boxes, panelboards, switch gear, optimizers, rapid shutdown device, disconnects, and metering and DAS equipment
    g. All warranties, cut sheets and manuals for major equipment
    h. System testing and commissioning documentation

END OF SPECIFICATION SECTION 26 60 00

SPECIFICATION SECTION 05 90 02: SOLAR PHOTOVOLTAIC CANOPY STRUCTURES

PART 1 - GENERAL

1.01 RELATED SPECIFICATIONS

A. The Contract and any design-build bridging documents.

B. Section 26 00 00: General Electrical Specifications.

C. Section 26 60 00: Photovoltaic System Specifications.

D. Other relevant District Specifications.

NOTE: Where this specification and other specifications or bridging-documents are in conflict, the more stringent shall apply. Contractor shall identify conflicts and confirm recommended equipment or procedures with the District.

1.02 CODES & REFERENCES

A. The design and installation shall conform to all requirements as defined by the applicable codes, laws, rules, regulations and standards of applicable code enforcing authorities (Latest Edition as of the date of this Contract, unless otherwise noted). The following are key standards that shall be followed. The Architect/Engineer of Record and Contractor shall ensure all applicable codes are followed:

1. Aluminum Association (AA) (www.aluminum.org) - Aluminum Standards and Data
2. ASTM International (ASTM) (www.astm.org), including:
    a. A6, Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
    b. A36, Standard Specification for Carbon Structural Steel
    c. A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
    d. A653, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
    e. E3010, Standard Practice for Installation, Commissioning, Operation, and Maintenance Process (ICOMP) of Photovoltaic Arrays
3. AISC Manual of Steel Construction
4. AISI Specifications for the Design of Cold Formed Steel Members
5. American National Standards Institute (ANSI)
6. American Society of Civil Engineers (ASCE), Minimum Design Loads and Associated Criteria for Buildings And Other Structures (7-16)
7. California Building Code (CBC), with State of California Amendments
8. California Energy Commission Title 24 Building Energy Efficiency Requirements
9. California Department of Forestry and Fire Protection, Office of the State Fire Marshal – Solar Photovoltaic Installation Guidelines
10. Local and State Fire Code
11. District Specifications and Requirements
12. DSA IR-16-8 (most recent) Guidelines
13. DSA PL-07-02 (most recent) Guidelines
14. Institute of Electrical and Electronics Engineers (IEEE)
15. National Electrical Manufacturers Association (NEMA)
16. National Fire Protection Association (NFPA), CA Electrical Code
17. Occupational Safety and Health Administration (CAL_OSHA)
18. Research Council on Structural Connections (RCSC)
19. Underwriters Laboratory (UL), including:
    a. UL 2703 – Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for use with Flat-Plate Photovoltaic Modules.

20. Utility company standards and requirements
21. All other applicable Codes and Ordinances

1.03 WORK INCLUDED

A. The work shall include the design and construction of the structural systems for solar PV canopies, in conformity with applicable codes and professionally recognized standards.

B. The structural design shall be fully developed, including descriptions and calculations for all structural components. The site, plans, equipment elevations, schedules and detail drawings must be sufficiently developed to reflect the overall design per the Contract and as described in Section 26 60 00, Photovoltaic System Specifications. Clear-height of canopy above grade shall be clearly noted on the drawings for the low side of canopies. For any requested deviations from minimum clearance, provide clearance heights at corners and at the minimum clear location between corners. The minimum clearance shall be adhered to unless approved by District in writing.

C. Contractor shall provide all materials, labor, equipment, services, and incidentals necessary to install the structures at each Site as shown on the design drawings and as specified hereinafter.

D. Contractor shall provide temporary power and lighting as required for construction.

E. Contractor responsible for location of all underground utilities and infrastructure with the use of Ground Penetrating Radar (GPR) or equivalent technology.

F. Contractor shall be responsible for prompt removal and disposal of spoils from all related construction activities.

1.04 DESIGN PROCEDURE & REQUIREMENTS

A. Engineering calculations, drawings and specifications shall be prepared and signed by a Structural Engineer, registered in the State of California and regularly employed in the design of photovoltaic canopy systems. For projects under the jurisdiction of the California Division of the State Architect (DSA), the Engineer and Architect of Record shall be regularly employed in the design of DSA canopy projects. Structural Engineer shall be the Engineer of Record as required by code-enforcing authorities. The Engineer of Record shall provide required statements and certifications.

B. All structural system components shall be designed and constructed to withstand the environmental conditions of the site to which they will be exposed. The mounting systems shall be designed and installed to resist dead load, live load, corrosion UV degradation, wind loads, and seismic loads appropriate to the geographic area over the expected life of the PV system, a minimum 25-years.

C. For California projects under the purview of DSA, Canopies shall be Pre-Check (PC) structures. If the canopies are not PC structures, the District and Designer/Builder shall reasonably agree to revisions to the Contract Price and Construction Schedule, if the Contract Price and Construction Schedule were based on PC structures.

D. All canopies shall be designed to meet ADA requirements per the relevant AHJ(s). Contractor shall be responsible for all ADA improvements within the footprint of the canopy. Design of path-of-travel to the canopies shall be the responsibility of the Contractor for design-build projects. The cost to construct path-of-travel improvements shall be the responsibility of the District, except where the scope of such improvements have been identified in any bridging documents or designs.

E. GEOTECHNICAL STUDY AND ANALYSIS

1. A geotechnical analysis shall be provided and directed by the Contractor and performed by a licensed geotechnical engineering firm at the locations where the structures are to be installed. The results of the analysis shall be used when designing the foundations for the structures on the Site.

2. At a minimum, the following should be included in the analysis:

a. Review available geotechnical information. This may include past geotechnical reports, soils and geologic maps/literature, photographs, groundwater reports, water well data, etc.
b. Coordination and mobilization of the geotechnical services team for subsurface exploration of the site. This shall include coordinating local utilities to mark any existing underground utilities.
c. Study the site to determine the presence of faults, ground fissures, and other potential geologic hazards that could affect the structural design and construction of the facility.
d. Drilling or digging of exploratory borings and pits. The amount and depth shall be determined by the Engineer of Record.
e. Performance of cone penetration tests as required. The amount and depth shall be determined by the Designer/Builder.
f. Laboratory testing of collected soil samples from the borings and test pits. An evaluation of the in-place moisture content and dry density, gradation, plasticity, consolidation characteristics, collapse potential, expansivity, and shear strength will be done based on the results of the geotechnical exploration and necessary tests to complete the system design. An evaluation of resistivity, chloride content, sodium sulfate content, and solubility potential (total salts) should be conducted if a site is flagged for potential corrosivity based on the measured resistivity of the soils and if the sulfate screening provides an indicator for the need for special cement due to high sulfate content.
g. Analyze the corrosivity of the soil upon determination of a professional engineer. Include a general recommendation for corrosion protection for underground steel, including rigid metal conduit (such as the need for polyvinyl chloride [PVC] coating).
h. A detailed report shall be provided outlining the tasks performed and the results of the testing. Included in the report should be any recommendations for the foundation designs, structural support designs, corrosion protection, pile drive frequency, minimum pile size, and any geologic conditions that may prevent the development of the project.

1.05 PERMITS AND INSPECTIONS

A. Contractor shall obtain all required permits and arrange for all required inspections, including utility company requirements, inspections, and sign-offs.

B. Do not allow or cause any of the work to be covered or enclosed until it has been tested and/or inspected.

PART 2 - PRODUCTS

2.01 SOLAR CANOPY STRUCTURES

A. The PV Canopies shall consist of interconnected structural steel columns and beams, purlins attached to cross beams and solar modules mechanically fastened to the purlins. Canopies shall have a single row of columns along the long axis of the canopy. In parking areas, columns shall be located between parking stall spaces with beams cantilevered to either one or both sides of the column for both dual entry (aisle) and single entry (perimeter) parking structures.

B. COATINGS AND CORROSION CONTROL

1. Each canopy system and associated components must be designed and selected to withstand the environmental conditions of the site (e.g., temperatures, winds, rain, flooding, etc.) to which they will be exposed. The design life shall be a minimum of 25-years.

2. All structural members and racking installed outdoors shall be hot dipped galvanized steel.

a. All galvanized structural components shall be hot-dipped galvanized in compliance with ASTM 123.
b. All purlin framing members shall meet ASTM A653, minimum G90. If structure is in close proximity to a marine environment (within 1 mile), G120 or higher shall be installed per Engineer/Architect of Record's specification.

c. Field cuts of galvanized materials shall be kept to a minimum. All galvanized materials cut during construction shall be field coated with a long-lasting rust inhibiting coating, color matched and intended for coating hot-dipped galvanized metal in outdoor settings.

3. All canopy bolts, nuts and washers, unless otherwise noted, shall be hot dip galvanized or stainless steel.

4. Particular attention shall be given to the prevention of corrosion at the connections between dissimilar metals.

C. All materials shall conform to the requirements, tolerances, etc. of the latest editions of the AISC Manual of Steel Construction, AISI Specifications, ASTM Standard Specifications.

D. All framing material shall be drained or have provisions to prevent water pooling on or within the framing member (weep holes).

E. FOUNDATIONS AND COLUMNS

1. In parking areas, concrete column foundations shall extend a minimum height of 30 inches above grade.

2. All column anchor bolts shall be torqued per Engineer of Record requirements and marked once torqued. Nuts shall then be double nutted or 'staked' (threading irreversibly altered) to protect from structural compromise and vandalism.

3. All structural connections at the flanged base of columns shall be outfitted with metal pole skirts coated to match columns. Pole skirts shall have rounded corners. Alternatively, flange bases may be grouted at the approval of the District.

F. CANOPY

1. All canopies shall have a minimum clear height above grade of 12-feet at the lowest point of any structure. Contractor is responsible for determining grade elevations under canopies and ensuring clear-heights are achieved. For any requested deviations from minimum clearance, provide clearance heights at corners and at the minimum clear location between corners. The minimum clearance shall be adhered to unless approved by District in writing.

2. All canopies to be co-planer and in alignment horizontally and vertically with adjacent arrays. Installations with slopes on the long axis or stair-stepping between adjacent arrays shall only be approved in writing by District. Top of column heights shall be shown in design drawings.

3. Canopies shall have a minimum tilt of five degrees (5°) and maximum tilt of seven degrees (7°).

4. Canopies placed in parking lots shall be clearly labeled with max clearance for vehicles at the low points. Labels shall be rated for long-term UV exposure with lifetime to match warranties specified for PV panels in Section 26 60 00. Minimum labeling along the long axis of the low-side of the carport shall be every 50 feet of canopy or 3 labels, whichever is greater. Labeling shall also include the exterior low-side corner of each canopy within a parking lot. Label should be easily visible from a vehicle.

G. ELECTRICAL CONDUITS

1. Electrical conduits extending from the canopy to grade are to be encased in the foundations, not mounted on the outside of finished piers.

2. All electrical connections between separate structures shall be underground. Overhead "jumpers" between structures greater than seismic gap distances and in excess of four (4) 1" conduits shall not be permitted without the written consent of the District. Structures are considered separate wherever a gap exists between structural crossmembers that is not spanned by purlins.

2.02 EV CHARGING SPARES

A. For canopies located in parking lots, a minimum of one two-inch (2") spare conduits shall be installed from the main electrical service to one canopy that includes ADA parking stalls. Conduits shall originate at the main service cabinet and terminate at the point designated on the bridging or design documents.

B. In the absence of a designated termination point, conduit shall originate at the main service and terminate at the closest ADA stall that is adjacent to a standard parking stall. The spare conduit shall terminate in a Christy box (hand hole). Spare conduit shall include a minimum of two sufficiently rated pull strings or wires inside conduit for future wire pull.

C. Additional spare conduits may be required as specified in the bridging documents.

2.03 LIGHTING SYSTEMS

A. Canopy lighting systems shall be designed to meet the Illuminating Engineering Society of North America (IESNA) requirements for parking lot areas, to meet or exceed minimum values and maximum uniformity ratios as listed in the IESNA criteria.

B. Lighting shall meet all Title 24 requirements for installations in California.

C. All lighting sources shall be LED type.

D. Lighting control system shall be connected to the existing lighting controls in each area. If tie-in with existing circuits is not feasible, Contractor shall establish new circuit and controls.

E. Lighting design on canopies shall insure cut-off light control to limit spill light or glare to adjoining areas as-needed. Design and install custom shielding or other mitigation measures to avoid light pollution and glare to neighbors.

F. Lighting temperature or Kelvin Rating shall be consistent with District Standards and approved during design phase. Contractor shall obtain written approval from District of temperature rating prior to ordering fixtures.

G. Existing pole mounted lighting in areas of new carport canopies shall be removed. Modify other existing lighting to coordinate with the new work and design, including reconnection of any existing downstream circuiting and controls to remain. Foundations of existing pole mount lighting are to be completely removed a minimum of 6-inchs below grade, with grade restored to surrounding condition and demo'd material removed and disposed of by Contractor.

H. New design shall cover all areas of the parking lots (in the area of the work) to leave no dark spots and meet IESNA requirements for all areas previously covered by light standards removed under this contract. Contractor shall install wallpacks or additional canopy lighting and provide sufficient lighting in all areas previously covered by removed or altered light standards. Existing fixtures may remain, if not in direct conflict with canopies or causing shading of new canopies.

PART 3 - EXECUTION

3.01 SITE PREPARATION AND INSPECTION

A. Contractor shall direct, oversee and inspect all site work related to structural installation. Site preparation shall be in accordance with final drawings and specifications provided by manufacturer.

3.02 INSTALLATION

A. Erect/stand structural steel with proper equipment and qualified installers.

B. Actively cooperate with other trades and provide incidental welding, connections, etc. for securement of work of others to structural steel framing.

C. Erect/stand temporary flooring, planking, and scaffolding necessary in connection with erection of structural steel or support of erection machinery. Use of temporary floors shall be as required by municipal or state laws and governing safety regulations. Hoist metal deck onto structural frame.

D. After erection, clean connections and abrasions to shop coat and spot paint with same primer used in shop.

E. Installation of the structural system and all components shall be in strict accordance with manufacturer's recommendations.

F. Post installation, Contractor shall provide the materials and labor to grout the base of the column to produce a finished joint.

3.03 ERECTION TOLERANCES

A. Erection tolerances for structural steel work shall be in accordance with latest AISC "Code of Standard Practice for Steel Buildings and Bridges".

3.04 BOLTING

A. High strength steel bolts shall be used where indicated. Fabrication and erection shall be in strict accordance with the latest edition of "Specifications for Assembly of Structural Joints Using High-Strength Steel Bolts", as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation. Load indicator washer shall be used. Use beveled washers on sloping surfaces.

3.05 WELDING

A. Welding and welded joints shall be in accordance with AWS standards. Work shall be performed by operators who have been qualified by test in accordance with AWS D1.1, "Structural Welding Code – Steel", to perform type of work required for this project.

B. All methods, sequence, qualifications and procedures, including preheating, post heating, etc. shall be detailed in writing and submitted for review by the testing laboratory and results provided to District. Provisions shall be made in detailing of lengths of members for dimensional changes as a result of shrinkage stresses so as to provide specified finished dimensions.

C. Remove all runoff tabs, and bottom backing bars. Top backup bars to be removed or have continuous fillet weld to column.

3.06 ANCHOR BOLTS

A. Provide at site, for others to install, all anchor bolts, bearing plates, and templates to be embedded in concrete.

B. Provide necessary steel or wood templates and diagrams for setting and securing of such anchor bolts in concrete forms.

C. Be jointly responsible with others for proper locating and installing, and make good any deficiencies and errors.

D. Setting of anchor bolts in hardened concrete necessitates drilled holes solidly grouted in place with epoxy grout. Submit materials and methods for review and approval.

END OF SPECIFICATION SECTION 05 09 02

SPECIFICATION SECTION 05 90 04: SOLAR PHOTOVOLTAIC ROOF MOUNTING

PART 1 - GENERAL

1.01 RELATED SPECIFICATIONS

A. The Contract and any design-build bridging documents.

B. Section 26 00 00: General Electrical Specifications.

C. Section 26 60 00: Photovoltaic System Specifications.

D. Other relevant District Specifications.

NOTE: Where this specification and other specifications or bridging-documents are in conflict, the more stringent shall apply. Contractor shall identify conflicts and confirm recommended equipment or procedures with the District.

1.02 CODES & REFERENCES

A. The design and installation shall conform to all requirements as defined by the applicable codes, laws, rules, regulations and standards of applicable code enforcing authorities (Latest Edition as of the date of this Contract, unless otherwise noted). The following are key standards that shall be followed. The Contractor shall ensure all applicable codes are followed:

1. Aluminum Association (AA) (www.aluminum.org) - Aluminum Standards and Data, 2003 Edition.
2. ASTM International (ASTM) (www.astm.org):
    a. A484/A484M-16 – Standard Specifications for General Requirements for Stainless Steel Bars, Billets, and Forgings.
    b. A554-16 – Standard Specification for Welded Stainless Steel Mechanical Tubing.
    c. A555/A555M-16 – Standard Specification for General Requirements for Stainless Steel Wire and Wire Rods.
    d. B85-03 - Standard Specification for Aluminum-Alloy Die Castings.
    e. E2766-13 - Standard Practice for Installation of Roof Mounted Photovoltaic Arrays on Steep-Slope Roofs
    f. E3010-15 - Standard Practice for Installation, Commissioning, Operation, and Maintenance Process (ICOMP) of Photovoltaic Arrays
    g. F836M-02 (2015) – Standard Specification for Style 1 Stainless Steel Metric Nuts (Metric).
    h. F880-12 – Standard Specification for Stainless Steel Socket, Square Head, and Slotted Headless-Set Screws.
3. American National Standards Institute (ANSI)
4. American Society of Civil Engineers (ASCE), Minimum Design Loads and Associated Criteria For Buildings And Other Structures (7-16)
5. California Building Code (CBC), with State of California Amendments
6. California Energy Commission Title 24 Building Energy Efficiency Requirements
7. California Department of Forestry and Fire Protection, Office of the State Fire Marshal – Solar Photovoltaic Installation Guidelines
8. Local and State Fire Code
9. District Specifications and Requirements
10. DSA IR-16-8 (most recent) Guidelines
11. DSA PL-07-02 (most recent) Guidelines
12. Factory Mutual (FM)
13. Institute of Electrical and Electronics Engineers (IEEE)
14. National Electrical Manufacturers Association (NEMA)
15. National Fire Protection Association (NFPA), CA Electrical Code
16. Occupational Safety and Health Administration (CAL_OSHA)

17. Underwriters Laboratory (UL), including:
    a. UL 2703 – Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for use with Flat-Plate Photovoltaic Modules.
18. Utility company standards and requirements
19. All other applicable Codes and Ordinances

1.03 GENERAL

A. This section describes requirements for solar photovoltaic system mounting on roofs, including design requirements.

B. The Contractor shall include all work reasonable inferred by these specifications and the design-build bridging documents, to comply with applicable codes, and to provide complete PV mounting systems acceptable to Authorities Having Jurisdiction (AHJs).

C. The Contractor shall coordinate with the respective utility company for the installation of each PV system and incorporate all related utility requirements into the design of the system.

D. The Contractor shall prepare complete drawings and specifications and all final approvals necessary to commence the work. Provide all engineering design services and complete coordination with other disciplines, trades, utility companies, labor, materials, apparatus, tools, equipment, transportation, temporary construction and power and special or occasional services as required to provide complete PV mounting systems at each location.

E. The structural mounting designs shall be fully developed. Locate, layout and identify means of attachment for all equipment. The site, plans, elevations, schedules and detail drawings must be sufficiently developed to reflect the overall system design. Provide arrangement of equipment, including attachment details and structural calculations for all roof mounted PV modules, inverters and any other balance-of-system items mounted on the roof, and conduit/conductor routing.

F. Ballasted systems shall not be allowed without written approval by the District.

G. EXCLUSIONS AND SUBSTITUTIONS

1. The Contractor shall be allowed freedom to pursue a DSA, Fire, and any other AHJ approved design toward the District's benefit with respect to cost and performance.

2. Base design shall be based on the general systems described herein and in any bridging documents. The Contractor may offer alternatives, substitutions, or exclusions in any area of the work, provided that each case is clearly described with the benefits noted and that all other applicable District specifications are met. This applies to systems, methods, equipment and material for which such alternatives or substitutions would, in the Contractor's opinion, be beneficial to the projects and the District, so far as safety, health, and comfort of occupants are satisfied and the requirements of Codes are met.

3. Burden of proof of equality of any substitution for a specified product is the responsibility of the Contractor.

1.04 WORK INCLUDED

A. The scope of work shall include the design of the roof mounted PV system, means of attachment, materials, equipment, fabrication, installation and tests in conformity with applicable codes, professionally recognized standards and authorities having jurisdiction.

B. Provide all required construction documents and compliance documentation.

C. Provide all materials, labor, equipment, services, power, lighting, and incidentals necessary to install the PV mounting systems as shown on the drawings and as specified hereinafter.

D. Provide coordination with roofer/roof warranty holder. Ensure all work maintains roof warranty, inclusive of having roof warranty holder provide waterproofing where required by the warranty. The District will provide the Contractor with the warranty agents' contact information. Designer/Builder shall copy the District on all communications between Designer/Builder and roof warranty agent. Designer/Builder is not an agent or representative of the District through this provision. Designer/Builder is not authorized to modify or otherwise change any existing roof warranty.

E. Include all required incidental work, such as pull tests, blocking, lashing, sealing, fire stopping, waterproofing, roof repair, commissioning, and testing.

F. Include any other electrical, roof attachment or PV support structure work as might reasonably be implied as required, even though not specifically mentioned herein or shown on the drawings.

1.05 DESIGN PROCEDURE & REQUIREMENTS

A. Engineering calculations, drawings and specifications shall be prepared and signed by a Structural Engineer, registered in the State of California and regularly employed in the design of photovoltaic electrical systems on roofs for DSA projects. Structural Engineer shall be the Engineer of Record as required by code-enforcing authorities. The Engineer of Record shall provide required statements and certifications.

B. Structural design shall be complete and comply with all requirements specified, including materials, workmanship and performance. System shall be designed such that it does not negatively affect the structural integrity of the roof given dead loads, wind loads, and seismic loads.

C. The design and installation of solar systems on roofs shall adhere to the California State Fire Marshal Solar Photovoltaic Installation Guideline.

D. Design of racking structures and the subsequent installation of the PV system and all ancillary equipment shall provide adequate room for access to and inspection/maintenance of existing equipment on the building roofs. Minimum clearance shall adhere to the California Fire Code requirements. Clearance guidelines of the DSA as well as the local fire marshal shall be followed. The installation of solar systems of roof tops will be reviewed by the DSA for code compliance by adherence to the State Fire Marshal Solar Photovoltaic Installation Guideline. In the event of conflicting requirements, the greater clearance requirement shall be used.

E. ROOF PENETRATIONS

1. Penetrations should be minimized within code requirements. All penetrations shall be waterproofed. Work shall be performed by an experienced and licensed roofer, who regularly engaged in the waterproofing of roof penetrations for the type of roof and is subject to approval by the District. Contractor shall perform all work so that existing roof warranties shall not be voided, reduced, or otherwise negatively impacted.

2. Detail(s) for the sealing of any roof penetrations shall be approved in writing by the District/District's Representative, as well as the manufacturer of the existing roofing system, as part of system design review and approval – prior to Design-Builder proceeding with work.

F. The PV equipment shall not be installed in a way that obstructs air flow into or out of building systems or equipment.

G. No work shall compromise roof drainage, cause damming or standing water or cause excessive soil build-up.

H. All materials and/or sealants must be chemically compatible. Special attention shall be paid to avoiding dissimilar metal contact and minimizing corrosion.

I. Designs shall account for thermal movement and any thermal/seismic joints on buildings. Thermal movement that causes scuffing to the roof must be mitigated as part of the mounting solution.

J. Flat and low slope roofs

1. Shall have a minimum of a 6-inch standoff. District may consider shorter stanchions.
2. Design shall minimize interrow shading.
3. Panel tilt shall be a minimum of 10 degrees for flat roofs. For sloped roofs, the panel tilt shall match the tilt of the roof.

K. The installation of PV modules, inverters and other equipment on building roofs will be designed to minimize visibility of the equipment from the ground as feasible.

L. Coordinate design with Drawings and other design engineers and disciplines to ensure completely coordinated construction documents. Lay out equipment in a manner to provide code compliant and manufacturer recommended access for servicing, maintenance, inspection, and testing of PV system and for other equipment, vents, etc. in the vicinity of the system

M. Conditions at Site: Contractor is responsible for familiarizing themselves with all discernible site conditions and no extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not with the exception of agreed upon modifications. All dimensions, partitions, etc. are to be verified at site by the Contractor. Before ordering any material or closing in any work, Contractor is responsible for verifying all measurements at each project site. Any differences found between dimensions on the drawings and actual measurements shall be brought to the District's attention for consideration before proceeding.

N. DEAD LOAD, WIND LOADING AND SEISMIC DESIGN

1. Systems shall not exceed the ability of the existing structure to support the entire solar system and withstand increased wind uplift and seismic loads. The capability of the existing structure to support proposed solar systems shall be verified by a licensed structural engineer prior to design approval. <u>The roofs have been assumed to be structurally sound and able to withstand the additional loading due to roof-mounted solar PV systems. Except for blocking for PV attachments, no roof or building structural upgrades have been included in the scope of work.</u>
2. Comply with all applicable codes and standards and provide wind load restraints for all equipment installed under this contract that requires restraint. The photovoltaic array wind loading restraint shall be designed as required by wind tunnel data and DSA requirements.
3. The photovoltaic array shall be designed to accommodate lateral displacement in the event of an earthquake based on a nonlinear response-history seismic analysis for the appropriate seismic zone.

O. PERMITS AND INSPECTIONS

1. The Contractor shall obtain all required permits and arrange for all required inspections including utility requirements, inspections, and sign-offs.
2. Contractor shall not allow or cause any of the work to be covered or enclosed until it has been tested and/or inspected.

1.06 SUBMITTALS

A. Submit each item in this Article according to the Conditions of the Contract.

B. Design Drawings: For design-build projects, prepare working drawings that shall include but not be limited to the following:

1. Complete racking and module layout designs, inclusive of roof plans showing locations of photovoltaic attachment devices on roof with attachment details and spacing.
2. Equipment mounting details

3. Inverter and any other balance of system mounting details and layout, inclusive of conduit/conductor routing.
4. Equipment space layouts and clearances
5. Details of waterproofing for any penetrations

C. Roofing Warranty: Signed certificates from the roofing manufacturer/warranty holder stating:

1. Roofing contractor is certified installer of Complete Roofing System.
2. Manufacturer's Technical Representative is qualified and authorized to approve project.
3. Project plans and specs meet the requirements of the warranty of the Complete Roofing System for the specified period.
4. Existing warranty incorporates the new roofing work and flashing work.

D. Shop Drawings: Submit shop drawings indicating profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners accessories. Include erection drawings, elevation and details where applicable.

E. PRODUCT DATA

1. Complete material list of all items proposed to be furnished and installed under this Section, including but not limited to the following items: Stanchions, stanchion hardware including; means of structural attachment to building framing and racking systems, flashing, PV rails, PV module attachment hardware, WEEBS, etc.
2. Manufacturers' specifications and other data required to demonstrate compliance with the specified requirements.
3. Manufacturers' recommended installation procedures which shall become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.
4.

F. Test Results: In-situ pull-test or other testing results where required by AHJ.

G. AS-BUILTS

1. Maintain "as-built" records at all times, showing the exact location of racking system, including concealed conduits and feeders installed under this contract.
2. Upon completion of work and before acceptance can be considered, the Contractor must forward to the District, a corrected set of plans to show the mounting system work as installed in both PDF and CAD format.
3. Comply with additional "As-built" requirements in other sections of the Specifications.

PART 2 - PRODUCTS

2.01 MANUFACTURER QUALIFICATIONS:

A. All equipment shall be from a manufacturer specializing in production of roof attachment products and racking materials of the type specified with a minimum of 5 years documented experience.

B. Supply all new equipment and accessories free from defects and listed by Underwriter's Laboratories, Inc., or bearing its label or label of a Nationally Recognized Testing Laboratory (NRTL).

C. All items of a given type shall be the products of the same manufacturer.

2.02 All racking and attachment materials shall be aluminum or stainless steel, suitable for marine environments. Where no alternative to steel exists, product shall be hot-dipped galvanized with no field cuts wherever feasible.

2.03 All standing-seam and penetrating attachments shall be approved by DSA. Building attachment methodologies will be determined pending final design and As-Built documentation. Attachment systems will be designed to achieve permit approval from DSA and be cost efficient.

2.04 Ballasted products shall not be allowed without written approval by the District.

2.05 CUSTOM FABRICATION

A. MATERIALS

1. Steel Sections: ASTM A36.
2. Steel Pipe: ASTM A53, Type E or S, Grade. B.
3. Steel Bolts, Nuts, and Washers: ASTM A307.
4. Welding Materials: AWS D1.1; type required for materials being welded.
5. Galvanizing: Hot-dip process ASTM A123 typical and ASTM A153 for threaded fasteners performed after fabrication into largest practical section as produced by individual manufacturers. Where damaged, repair surface with one coat of hot process galvanizing repair compound, "Galvalloy," Galvweldalloy," or approved equal.
6. Primer: Tnemec Company "Series V10 Red Primer," Sherwin-Williams "Steel Spec Universal Primer," or approved equal.
7. Dissimilar Materials: Separate dissimilar surfaces in contact with or in close proximity to non-compatible metals, concrete masonry, or plaster with neoprene gasket; or other approved means.

B. FABRICATION

1. Verify dimensions on site prior to shop fabrication.
2. Fabricate items with joints tightly fitted and secured.
3. Fit and shop assemble in largest practical sections, for delivery to jobsite.
4. Grind exposed welds flush and smooth adjacent finished surfaces. Ease exposed edges to small uniform radius.
5. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of structure, except where specifically noted otherwise.
6. Make exposed joints butt tight, flush and hairline.
7. Supply components required for anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication, except where specifically noted otherwise.

C. FINISH

1. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
2. Do not prime surfaces in direct contact bond with concrete or where field welding is required.
3. Prime paint interior items with one coat unless scheduled to be galvanized.

PART 3 - EXECUTION

3.01 ROOFING

A. Contractor shall perform all work such that existing roof warranties shall not be voided, reduced, or otherwise negatively impacted.

B. Waterproofing shall be performed by the entity holding the roof warranty or approved by that entity. Contractor shall coordinate and ensure adherence to this requirement.

C. Contractor shall document condition of roofing with roofing representative and District prior to beginning work.

D. Any damage to roofing material during installation of solar systems shall be remedied by Contractor and approved by roof warranty holder and District.

3.02 INSTALLER QUALIFICATIONS:

A. Installer to be certified in solar PV roof attachment products and racking installation with a minimum of 5 years documented experience.

B. Where manufacturer certifies installers, installer shall possess certification from the manufacturer's products being installed.

3.03 STANDING SEAM ATTACHMENT

A. Examination: Prior to beginning installation, verify that:

1. Panel seaming or fastening is complete.
2. Roof panel attachment is sufficient to withstand loads applied by the photovoltaic attachment system, photovoltaic system and associated components.
3. Where required, ensure pull tests have been completed and pass requirements.
4. Installation will not impede roof drainage.

B. PREPARATION

1. Clean areas to receive attachments; remove loose and foreign matter that could interfere with installation or performance.

C. INSTALLATION

1. Install system in accordance with manufacturer's instructions and approved Shop Drawings.
2. Place clamps as required by PV layout and in-service loads.
3. Install with careful consideration of aesthetics to ensure alignment of modules and fasteners. Place clamps in straight, aligned rows.
4. Tighten set screws to manufacturer's recommended torque. Verify set screw torque using calibrated torque wrench.

3.04 PENETRATING ATTACHMENT

A. PREPARATION

1. Prior to beginning installation, verify that installation will not impede roof drainage.
2. Locate mount placements per design over rafter, blocking or designated attachment points.
3. Clean areas to receive attachments; remove loose and foreign matter that could interfere with installation or performance.

4. Utilize certified roofer approved by roof warranty holder to expose attachment points.

B. INSTALLATION

1. Using the base as a template, mark the penetration points.
2. Drill pilot holes perpendicular and centered on rafter or designated attachment with appropriate size bit. Fill pilot holes with a sealant compatible with roofing materials.
3. Attach base to roof with specified lag bolts or other approved fastening method.
4. Attach any hardware to the top of the post/attachment. Seal top of post/attachment from weather exposure
5. After inspection of attachment, install appropriate waterproofing in accordance with roof warranty requirements. Utilize certified roofer approved by roof warranty holder.

3.05 CUSTOM FABRICATED PENETRATING ATTACHMENTS

A. PREPARATION

1. Follow preparation requirements per Penetrating Attachment listed above.
2. Obtain District's Representative approval prior to site cutting or making adjustments not scheduled.
3. Clean and strip primed steel items to bare metal where site welding is scheduled.
4. Make provision for erection loads with temporary bracing. Keep work in alignment.
5. Supply items required to be cast into concrete with setting templates, for installation under appropriate Sections.

B. INSTALLATION

1. Install items plumb and level, accurately fitted, free from distortion or defects.
2. After installation, touch-up field welds, scratched or damaged surfaces with primer, except repair exposed galvanized work (not to be painted) with hot process field galvanizing, in accord with manufacturer's published directions.
3. After inspection of attachment, install appropriate waterproofing in accordance with roof warranty requirements. Utilize certified roofer approved by roof warranty holder.

3.06 RACKING

A. Follow manufacturer instructions for installation. Utilize a calibrated torque wrench and verify torque of fasteners to manufacturers requirements.

B. Perform and obtain approval for all required field testing of attachment devices and racking as required by manufacturer, AHJ and building codes.

END OF SPECIFICATION SECTION 05 09 04

Exhibit G
PERFORMANCE GUARANTEE

Contract for Performance Guarantee and Parameters and Energy Output Data for School Sites

*This Contract for Performance Guarantee and Parameters and Energy Output Data for School Sites ("**PeGu Contract**") dated [_____] ("**Effective Date**"), is entered into by and between **ENGIE Services U.S. Inc. ("Provider"),** and Mountain View Whisman School District, a California school district ("**District**" or "**Customer**"). In this PeGu Contract, Provider and Customer are referred to individually as a "**Party**" and collectively as the "**Parties**."*

Recitals

*WHEREAS, The Customer and the Provider entered into a Solar Contract for Design and Construction ("**Solar Contract**") pursuant to which to which Provider has designed and constructed a System for the production of energy for the District's use; and*

WHEREAS, Provider and Customer desire to enter into an agreement pursuant to which Provider will guarantee annual energy generation by the System;

NOW, THEREFORE, FOR GOOD AND VALUABLE CONSIDERATION, the receipt and adequacy of which is hereby acknowledged, Provider and Customer agree as follows:

1. Defined Terms.

1.1. ***Actual Generation*** *means, for each Guarantee Year during the Term, the System's alternating current or "AC" electricity production in kilowatt-hours ("kWh") as measured pursuant to the provisions and formulas herein under "Guaranteed Payment."*

1.2. ***Avoided Energy Price per kWh*** *means the amount that the Customer will be paid for each Kilowatt-hour as set out in* ***Attachment A****: Avoided Energy Price.*

1.3. ***Commissioning Date*** *means the date the System is capable of commercial deliveries of energy to the full extent of its designed capacity and commences delivery of energy for sale or use.*

1.4. ***Customer Responsibilities*** *shall have the meaning set forth herein.*

1.5. ***Data Acquisition System or DAS*** *means Provider's system that displays historical meteorological and production data over an Internet connection and consists of hardware located on-site and software housed on Provider's DAS server. The DAS measures and logs, at a minimum, the following parameters on a 15-minute average basis at the Sites: actual AC electricity production of the System (in kWh), and for Project Sites with weather stations, temperatures and solar irradiance (in W/m^2).*

1.6. ***Expected Energy*** *means, for the System in a specified Guarantee Year, the kilowatt hours set forth in the Attachments A and B of this PeGu Contract for each Site.*

1.7. ***Force Majeure*** *means the same as that term is defined in the Solar Contract.*

1.8. ***Guaranteed Level*** *means ninety-five percent (95%) of the Expected Energy for a Guarantee Year for specified System(s).*

1.9. ***Guarantee Year*** *means each successive 12-month period during the Term commencing on the first day of the Term.*

1.10. ***Kilowatt-hour or kWh*** *means electrical energy expressed in kilowatt-hours and recorded from the kWh interval records of the Revenue Meter.*

1.11. ***Operations & Maintenance Contract*** *(or "O&M" Contract) means that certain Operations & Maintenance Contract of even date herewith between Provider and District.*

1.12. ***PVSyst*** *means the software program utilized by Provider to predict the amount of energy a Solar Power System will produce in an average year which uses either measured data or typical meteorological year files from NREL.*

1.13. ***Revenue Meter*** *means the principal meter of a given System from which energy output is read and documented.*

1.14. ***SEMMY*** *or Simulated Energy in a Measured Meteorological Year, means, with respect to any Guarantee Year, Year 1 AC Energy output of the System simulated by PVSyst using measured average hourly irradiance, wind speed, and air temperature as recorded by the Data Acquisition System, holding all other inputs equal to those used in calculating SETMY.*

1.15. ***SETMY*** *or Simulated Energy for a Typical Meteorological Year, means the Year 1 AC Energy output of the System simulated by PVSyst using average hourly irradiance, wind speed, and air temperature data contained within the Weather File.*

1.16. ***Site*** *means the real estate where the System and any support structure are located including any building and building roof that touch or support the System.*

1.17. ***Start Date*** *means the date that the Performance Guarantee begins, which shall be the first day of the month immediately following the date that the Project (all Sites) have been accepted by the District. The Parties shall agree on the Start Date when the Project has reach Completion and shall indicate it herein.*

1.18. ***System*** *means Customer's photovoltaic system located at the Site(s) and purchased from Provider as more particularly identified in the Solar Contract.*

1.19. ***Subcontractor*** *means, any person or firm who contracts with Provider or with any contractor of any tier operating under a contract with Provider to provide or furnish any supplies, materials, equipment, or services of any kind, whether design, construction, service, or otherwise, for the System.*

1.20. ***Term:*** *The term is for* ***twenty-five (25)*** *years and begins on the Start Date. The termination provisions in the Operations & Maintenance Contract shall alter the enforceability of the Performance Guarantee, as indicated in those termination provisions.*

1.21. ***True-up Period*** *means each successive* ***two (2) year*** *period during the Term commencing on the first day of the Term.*

1.21.1. *At the end of the Term, the final True-up Period shall be the final one (1) year of the Term (Year 25).*

1.21.2. *If the PeGu Contract is terminated prior the end of the Term, the final True-up Period shall be the final Guarantee Year or final two Guarantee Years which were not included in a True-up Period prior to termination*

1.22. ***Weather Adjustment*** *means the method for reconciling expected kWh during a typical weather year with the actual meteorological conditions measured on-site, pursuant to the provisions and formulas herein under "Guaranteed Output Calculations."*

1.23. ***Weather File*** *means the following typical meteorological year data set, which contains average hourly values of measured solar radiation, temperature, and wind speed:* **San Jose Intl AP *NREL TMY3***.

2. *Guaranteed Output Calculations.*

2.1. *Provider shall calculate the Annual Deficit for each Guarantee Year during the Term:*

Annual Deficit = ((Expected Energy x Guarantee Level) x Weather Adjustment) - Actual Generation

2.2. *Where "Weather Adjustment" means the following ratio:*

$$\frac{\boldsymbol{Simulated\ Energy\ in\ a\ Measured\ Metorlogical\ Year}\ (\boldsymbol{SEMMY})}{\boldsymbol{Simulated\ Energy\ for\ a\ Typical\ Metorlogical\ Year}\ (\boldsymbol{SETMY})}$$

2.3. *For each Guarantee Year, Provider shall calculate the Annual Deficit.*

3. *Guarantee Payment.*

3.1. *At the end of each True-up Period:*

3.1.1. *if the ∑ Annual Deficits > 0, then Provider shall pay to Customer an amount equal to the product of (i) the Annual Deficit and (ii) the Avoided Energy Price per kWh for each Guarantee Year, with each product then aggregated for the Guarantee Years comprising such True-Up Period (a "Guarantee Payment");*

3.1.2. *Provider shall, by invoice, promptly notify Customer of any Guarantee Payment due. A Guarantee Payment shall be payable within thirty (30) days of the date of such invoice.*

3.1.3. *Provider shall provide Customer with a report detailing the calculations set forth in the "Guaranteed Output Calculations" and the "Guarantee Payment" Sections. This report shall contain sufficient information for the Customer to be able to determine the accuracy of Provider's conclusion as the amount, if any, of Guarantee Payment.*

4. *Actual Generation Measurement.* *The process for measuring Actual Generation for each Guarantee Year shall be:*

*4.1. **Initial Output Data Collection**. During the Term, Provider will collect energy output data using its Data Acquisition System. For each Guarantee Year, Provider will sum the daily kWh output provided by the DAS to calculate the Actual Generation for such Guarantee Year.*

4.2. Provider shall maintain and ensure the DAS operates in compliance with the "Monitoring System, DAS, and Reporting" section of the Solar Contract, including that the District has unfettered access to the Data for the term of the Performance Guarantee and the Provider shall provide the required reports in that section.

*4.3. **Equipment Calibration and Replacement**. Provider may request to have the meteorological equipment independently calibrated or replaced at its own expense every eighteen to thirty months. Provider shall notify the other party of the scheduled calibration date and time no less than 30 days prior, and shall provide the Customer written proof of calibration or replacement.*

*4.4. **Contingency for Equipment Failure**. In the event of hardware, communication, or other failure affecting the DAS, Provider will make commercially reasonable efforts to resolve the failure in a timely manner. In the event that data is lost, Actual Generation shall be adjusted to compensate for such lost data, which shall be Provider's sole liability, and Customer's exclusive remedy, for any Guaranteed Output arising from any equipment failure or lost data relating to the DAS:*

4.4.1. In lieu of lost meteorological data, Provider will utilize such data obtained from a nearby meteorological station that Provider monitors and selects for such purpose.

4.4.2. In lieu of lost electricity data, Provider will utilize the cumulative data from System meter readings to calculate the electricity generated during the missing interval. In the event that data from the System meter is inaccurate or missing, Provider will simulate electricity production during the missing interval utilizing measured meteorological data and PVSyst. The simulated electricity production during the missing interval will be added to the Actual Generation for the subject Guarantee Year.

5. <u>Guarantee.</u>

5.1. Provider guarantees to Customer that the Actual Generation of the System during any Guarantee Year, subject to the limitations, terms and conditions stated in the Solar Contract, into which this Performance Guarantee Standard Terms ("PeGu Contract") is incorporated, shall be not less than the product of the Guaranteed Level and the Expected Energy, as adjusted for measured metrological conditions per the Weather Adjustment as defined herein.

5.2. Performance Guarantees should have the following characteristics:

5.2.1. General

5.2.1.1. Provided on a site-by-site basis, not in aggregate.

*5.2.1.2. **Start Date is _____, 20____.** Each year of the Performance Guarantee shall begin on the anniversary of that date.*

5.2.1.3. Guarantee shall be adjusted for Force Majeure events which impact performance. Force Majeure shall be as defined in the Contract.

5.2.2. Performance

5.2.2.1. The following minimum Performance Guaranteed shall be provided with the Contract.

True-up Period	***Minimum Guarantee***
Two Years	*95%*

5.2.2.2. No greater than 0.50% degradation loss per year.

5.2.2.3. Provider shall provide annual reporting of System performance on a site-by-site basis. Reporting shall include annual totals by site and true-up period totals clearly indicating performance under this agreement. The report shall be delivered within sixty (60) days of each anniversary of the Start Date.

5.2.2.4. If Performance Guarantee is weather-adjusted, weather adjustment calculations shall be clearly shown in annual reporting.

5.2.2.5. Overproduction credit may carry forward into subsequent years during each true up period. Overproduction credit shall not carry forward into subsequent true up periods.

5.2.2.6. Adjustment of the annual guaranteed kWh site production for years where system performance at that site is less than anticipated due to factors outside of Provider's control.

6. <u>Customer Responsibilities.</u>

6.1. Throughout the Term, and as conditions to the obligations of Provider hereunder, Customer shall:

6.1.1. maintain an Operations & Maintenance Contract with Provider for the System and allow repairs in a timely fashion as may be recommended from time to time by Provider;

6.1.2. not be in breach of any Customer obligations under the Solar Contract;

6.1.3. grant reasonable access to the System by Provider personnel and representatives;

6.1.4. insure that Primary and Secondary Contacts have the capability to resolve any failures of DAS communications, and

6.1.5. not modify, alter, damage, service, shade, or repair, without Provider's prior written approval, any part of the System, the supporting structure for the System (including building roof, if applicable), or the associated wiring.

*6.2. **Compensation**. Compensation to Provider for the Performance Guarantee shall be paid annually within thirty (30) days of receipt of Operator's invoice. The fee for the Performance Guarantee is set forth in the Table below.*

Year	PeGu Fee
1	$16,000.24
2	$16,480.24
3	$16,974.65
4	$17,483.89
5	$18,008.41
6	$18,548.66
7	$19,105.12
8	$19,678.27
9	$20,268.62
10	$20,876.68
11	$21,502.98
12	$22,148.07
13	$22,812.51
14	$23,496.89
15	$24,201.79
16	$24,927.85
17	$25,675.68
18	$26,445.95
19	$27,239.33
20	$28,056.51
21	$28,898.21
22	$29,765.15
23	$30,658.11
24	$31,577.85
25	$32,525.19
Total	**$583,356.83**

7. Customer's Failure to Uphold Responsibilities.

7.1. Provider's obligations under this PeGu Contract shall be suspended for the duration of Customer's failure to satisfy one or more of Customer Responsibilities as indicated herein. Provider shall promptly notify Customer of any such failures ("Out of Compliance Letter"), but in no case later than seventy-two (72) hours after notice of any alleged failure of Customer to satisfy one or more of Customer Responsibilities. Upon Customer's cure of all failures described in an Out of Compliance Letter, Provider will notify Customer ("In Compliance Letter") that Customer is complying with Customer Responsibilities. For any period between the issuance of an Out of Compliance Letter and of an In Compliance Letter (a "Noncompliance Period"), Provider shall have no liability under this PeGu Contract. Each month in which there is a Noncompliance Period and any Actual Generation in such month(s) shall be disregarded in the calculation of Annual Deficits or Annual Surpluses as indicated herein and the Expected kWh for any Guarantee Year in which there is a Noncompliance Period shall be reduced by an amount proportionate to the period so disregarded and to the actual or reasonably estimated meteorological data during such period.

7.2. Any dispute as to whether Customer in fact has failed to satisfy one or more of Customer Responsibilities shall be resolved pursuant to the Dispute provisions below.

8. Adjustment of Expected Energy.

8.1. If, and to the extent, any of the following events results in a change in the production of electricity by the System, Expected Energy shall be adjusted correlatively for the period of such change:

8.1.1. There is structural failure in a building supporting the System;

8.1.2. There is any failure of the System to perform caused by legislative, administrative or executive action, regulation, order or requisition of any federal, state or local government, local utility or public utilities commission;

8.1.3. There is an event of Force Majeure; or

8.1.4. There is any change in usage of or structures on any of the Sites, or buildings at or near any of the Sites, after the Start Date, which causes additional shading, soiling, or otherwise reduced performance of the System.

9. Notification of Changes to Expected Energy.

If either Party determines that any changes to Expected Energy are required based on an event or events described herein that, then that Party shall notify the other Party in writing of the basis for its determination and shall either provide revised definitions of Expected Energy in Attachments. The Parties shall negotiate in good faith whether to revise the Expected Energy and, if mutually agreed to by the Parties, the Parties shall revise this PeGu Contract pursuant to the terms of this PeGu Contract.

10. Additional Provisions.

*10.1. **Notices**. All notices, certificates or other communications hereunder shall be sufficiently given and shall be deemed to have been received as indicated below and to the persons indicated below. If notice is given by personal delivery thereof, it shall be considered delivered on the day of delivery. If notice is given by overnight delivery service, it shall be considered delivered on (1) day after date deposited, as indicated by the delivery service.*

If to District:	***If to Provider:***
Mountain View Whisman School District	***_____ Corporation***
_____	_____
_____	_____
_____, CA 9_____	_____, CA 9_____
Attention: _____	*Attention:* _____
Telephone: ( ) ___-_____	*Telephone: ( ) ___-_____*

*10.2. **Disputes.** Disputes between the parties arising out of this PeGu Contract shall be resolved by the following processes:*

*10.2.1. **Negotiation.** The parties shall first attempt in good faith to resolve any controversy or dispute arising out of or relating to this PeGu Contract by negotiation.*

10.2.2. ***Mediation.*** *Within 30 days, but no earlier than 15 days, following the earlier of (1) receipt of notice by one party by the other party of a demand for mediation, the parties shall submit the dispute to non-binding mediation administered by the AAA (or other agreed upon rules) under its construction industry mediation rules, unless waived by mutual stipulation of both parties.*

10.2.3. ***Litigation.*** *Disputes arising from this PeGu Contract that cannot be settled through negotiation or mediation (after those processes have been exhausted) shall be litigated in the California Superior Court in the county in which the Project that is the subject of this PeGu Contract is located.*

10.3. ***Amendments.***

This PeGu Contract may not be amended, supplemented or otherwise modified except by a written instrument specifically referring to this PeGu Contract and signed by both parties, or as specifically allowed under the terms and conditions outlined in this PeGu Contract

10.4. ***Severability.***

If any part of this PeGu Contract shall be invalid or unenforceable under any applicable law, such invalidity or unenforceability shall not affect the enforceability of any other part hereof.

10.5. ***Counterparts.***

This PeGu Contract may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument.

10.6. ***Successors and Assigns.***

Except as provided herein, no party may assign this PeGu Contract without the prior written consent of the other party. Such consent shall not be unreasonably withheld. Either party may assign the PeGu Contract without consent to a parent or subsidiary, an acquirer of assets, or a successor by merger. Nothing in this PeGu Contract, expressed or implied, is intended to confer any rights, remedies, obligations or liabilities under or by reason of this PeGu Contract upon any person or entity other than the parties.

IN WITNESS WHEREOF, the Parties hereto have executed this Contract for Performance Guarantee and Parameters and Energy Output Data for School Sites on the date indicated below.

Dated: _____, *20___*	*Dated:* _____, *20___*
Mountain View Whisman School District	***ENGIE Services U.S. Inc.***
By: _____	*By:* _____
Print Name: _____	*Print Name:* _____
Print Title: _____	*Print Title:* _____

Attachment A: Avoided Energy Price

Guarantee Year	*Utility Avoided Cost Rate*	*Avoided Energy Price ($/kWh)*
1	*$0.270*	*$0.221*
2	*$0.282*	*$0.231*
3	*$0.295*	*$0.241*
4	*$0.308*	*$0.252*
5	*$0.322*	*$0.264*
6	*$0.336*	*$0.275*
7	*$0.354*	*$0.257*
8	*$0.370*	*$0.269*
9	*$0.387*	*$0.281*
10	*$0.404*	*$0.293*
11	*$0.422*	*$0.306*
12	*$0.441*	*$0.320*
13	*$0.461*	*$0.335*
14	*$0.482*	*$0.350*
15	*$0.503*	*$0.365*
16	*$0.526*	*$0.382*
17	*$0.550*	*$0.399*
18	*$0.574*	*$0.417*
19	*$0.600*	*$0.436*
20	*$0.627*	*$0.455*
21	*$0.656*	*$0.476*
22	*$0.685*	*$0.497*
23	*$0.716*	*$0.520*
24	*$0.748*	*$0.543*
25	*$0.782*	*$0.568*

Attachment B: Expected Energy

Benjamin Bubb Elementary School

Guarantee Year	*Annual kWh*	*Guarantee kWh*
1	*185,411*	*176,140*
2	*184,484*	*175,260*
3	*183,562*	*174,383*
4	*182,644*	*173,512*
5	*181,730*	*172,644*
6	*180,822*	*171,781*
7	*179,918*	*170,922*
8	*179,018*	*170,067*
9	*178,123*	*169,217*
10	*177,232*	*168,371*
11	*176,346*	*167,529*
12	*175,465*	*166,691*
13	*174,587*	*165,858*
14	*173,714*	*165,029*
15	*172,846*	*164,203*
16	*171,981*	*163,382*
17	*171,122*	*162,566*
18	*170,266*	*161,753*
19	*169,415*	*160,944*
20	*168,568*	*160,139*
21	*167,725*	*159,338*
22	*166,886*	*158,542*
23	*166,052*	*157,749*
24	*165,221*	*156,960*
25	*164,395*	*156,176*
Total	***4,367,533***	***4,149,156***

Crittenden Middle School

Guarantee Year	*Annual kWh*	*Guarantee kWh*
1	*285,911*	*271,615*
2	*284,481*	*270,257*
3	*283,059*	*268,906*
4	*281,644*	*267,562*
5	*280,236*	*266,224*
6	*278,834*	*264,893*
7	*277,440*	*263,568*
8	*276,053*	*262,250*
9	*274,673*	*260,939*
10	*273,299*	*259,634*
11	*271,933*	*258,336*
12	*270,573*	*257,045*
13	*269,220*	*255,759*
14	*267,874*	*254,481*

15	*266,535*	*253,208*
16	*265,202*	*251,942*
17	*263,876*	*250,682*
18	*262,557*	*249,429*
19	*261,244*	*248,182*
20	*259,938*	*246,941*
21	*258,638*	*245,706*
22	*257,345*	*244,478*
23	*256,058*	*243,255*
24	*254,778*	*242,039*
25	*253,504*	*240,829*
Total	***6,734,905***	***6,398,160***

Edith Landels Elementary School

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*187,632*	*178,250*
2	*186,694*	*177,359*
3	*185,760*	*176,472*
4	*184,832*	*175,590*
5	*183,907*	*174,712*
6	*182,988*	*173,838*
7	*182,073*	*172,969*
8	*181,163*	*172,104*
9	*180,257*	*171,244*
10	*179,355*	*170,388*
11	*178,459*	*169,536*
12	*177,566*	*168,688*
13	*176,679*	*167,845*
14	*175,795*	*167,005*
15	*174,916*	*166,170*
16	*174,042*	*165,340*
17	*173,171*	*164,513*
18	*172,306*	*163,690*
19	*171,444*	*162,872*
20	*170,587*	*162,057*
21	*169,734*	*161,247*
22	*168,885*	*160,441*
23	*168,041*	*159,639*
24	*167,201*	*158,841*
25	*166,365*	*158,046*
Total	***4,419,852***	***4,198,856***

Frank L. Huff Elementary School

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*171,912*	*163,316*
2	*171,052*	*162,500*

3	*170,197*	*161,687*
4	*169,346*	*160,879*
5	*168,499*	*160,074*
6	*167,657*	*159,274*
7	*166,819*	*158,478*
8	*165,985*	*157,685*
9	*165,155*	*156,897*
10	*164,329*	*156,112*
11	*163,507*	*155,332*
12	*162,690*	*154,555*
13	*161,876*	*153,782*
14	*161,067*	*153,014*
15	*160,262*	*152,248*
16	*159,460*	*151,487*
17	*158,663*	*150,730*
18	*157,870*	*149,976*
19	*157,080*	*149,226*
20	*156,295*	*148,480*
21	*155,513*	*147,738*
22	*154,736*	*146,999*
23	*153,962*	*146,264*
24	*153,192*	*145,533*
25	*152,426*	*144,805*
Total	***4,049,550***	***3,847,071***

Graham Middle School – Main Meter

Guarantee Year	*Annual kWh*	*Guarantee kWh*
1	*445,065*	*422,812*
2	*442,840*	*420,698*
3	*440,625*	*418,594*
4	*438,422*	*416,501*
5	*436,230*	*414,419*
6	*434,049*	*412,347*
7	*431,879*	*410,285*
8	*429,719*	*408,233*
9	*427,571*	*406,192*
10	*425,433*	*404,161*
11	*423,306*	*402,141*
12	*421,189*	*400,130*
13	*419,083*	*398,129*
14	*416,988*	*396,139*
15	*414,903*	*394,158*
16	*412,828*	*392,187*
17	*410,764*	*390,226*
18	*408,711*	*388,275*
19	*406,667*	*386,334*
20	*404,634*	*384,402*

21	*402,610*	*382,480*
22	*400,597*	*380,568*
23	*398,594*	*378,665*
24	*396,601*	*376,771*
25	*394,618*	*374,888*
Total	***10,483,926***	***9,959,735***

Graham Middle School – Secondary Meter

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*115,614*	*109,833*
2	*115,036*	*109,284*
3	*114,461*	*108,738*
4	*113,888*	*108,194*
5	*113,319*	*107,653*
6	*112,752*	*107,115*
7	*112,189*	*106,579*
8	*111,628*	*106,046*
9	*111,070*	*105,516*
10	*110,514*	*104,989*
11	*109,962*	*104,464*
12	*109,412*	*103,941*
13	*108,865*	*103,422*
14	*108,320*	*102,904*
15	*107,779*	*102,390*
16	*107,240*	*101,878*
17	*106,704*	*101,369*
18	*106,170*	*100,862*
19	*105,639*	*100,357*
20	*105,111*	*99,856*
21	*104,586*	*99,356*
22	*104,063*	*98,860*
23	*103,542*	*98,365*
24	*103,025*	*97,873*
25	*102,510*	*97,384*
Total	***2,723,399***	***2,587,228***

Gabriela Mistral / Mariana Castro Elementary School

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*157,661*	*149,778*
2	*156,873*	*149,029*
3	*156,088*	*148,284*
4	*155,308*	*147,542*
5	*154,531*	*146,805*
6	*153,759*	*146,071*
7	*152,990*	*145,340*

8	*152,225*	*144,614*
9	*151,464*	*143,891*
10	*150,707*	*143,171*
11	*149,953*	*142,455*
12	*149,203*	*141,743*
13	*148,457*	*141,034*
14	*147,715*	*140,329*
15	*146,976*	*139,628*
16	*146,241*	*138,929*
17	*145,510*	*138,235*
18	*144,783*	*137,544*
19	*144,059*	*136,856*
20	*143,338*	*136,172*
21	*142,622*	*135,491*
22	*141,909*	*134,813*
23	*141,199*	*134,139*
24	*140,493*	*133,468*
25	*139,791*	*132,801*
Total	***3,713,855***	***3,528,162***

Monta Loma Elementary School – Main Meter

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*120,156*	*114,148*
2	*119,555*	*113,577*
3	*118,957*	*113,010*
4	*118,363*	*112,445*
5	*117,771*	*111,882*
6	*117,182*	*111,323*
7	*116,596*	*110,766*
8	*116,013*	*110,212*
9	*115,433*	*109,661*
10	*114,856*	*109,113*
11	*114,282*	*108,568*
12	*113,710*	*108,025*
13	*113,142*	*107,485*
14	*112,576*	*106,947*
15	*112,013*	*106,412*
16	*111,453*	*105,880*
17	*110,896*	*105,351*
18	*110,341*	*104,824*
19	*109,790*	*104,300*
20	*109,241*	*103,779*
21	*108,694*	*103,260*
22	*108,151*	*102,743*
23	*107,610*	*102,230*
24	*107,072*	*101,718*
25	*106,537*	*101,210*

Total	***2,830,390***	***2,688,869***

Monta Loma Elementary School – Secondary Meter

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*115,870*	*110,077*
2	*115,291*	*109,526*
3	*114,714*	*108,978*
4	*114,141*	*108,434*
5	*113,570*	*107,891*
6	*113,002*	*107,352*
7	*112,437*	*106,815*
8	*111,875*	*106,281*
9	*111,316*	*105,750*
10	*110,759*	*105,221*
11	*110,205*	*104,695*
12	*109,654*	*104,171*
13	*109,106*	*103,651*
14	*108,560*	*103,132*
15	*108,018*	*102,617*
16	*107,477*	*102,104*
17	*106,940*	*101,593*
18	*106,405*	*101,085*
19	*105,873*	*100,580*
20	*105,344*	*100,077*
21	*104,817*	*99,576*
22	*104,293*	*99,078*
23	*103,772*	*98,583*
24	*103,253*	*98,090*
25	*102,737*	*97,600*
Total	***2,729,429***	***2,592,957***

Stevenson Elementary School / District Office

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*262,438*	*249,316*
2	*261,126*	*248,070*
3	*259,820*	*246,829*
4	*258,521*	*245,595*
5	*257,228*	*244,367*
6	*255,942*	*243,145*
7	*254,663*	*241,929*
8	*253,389*	*240,720*
9	*252,122*	*239,516*
10	*250,862*	*238,319*
11	*249,607*	*237,127*
12	*248,359*	*235,941*

13	*247,118*	*234,762*
14	*245,882*	*233,588*
15	*244,653*	*232,420*
16	*243,429*	*231,258*
17	*242,212*	*230,102*
18	*241,001*	*228,951*
19	*239,796*	*227,806*
20	*238,597*	*226,667*
21	*243,948*	*231,751*
22	*242,728*	*230,592*
23	*241,515*	*229,439*
24	*240,307*	*228,292*
25	*239,106*	*227,150*
Total	***6,352,380***	***6,034,760***

Theuerkauf Elementary School

Guarantee Year	***Annual kWh***	***Guarantee kWh***
1	*356,654*	*338,821*
2	*354,871*	*337,127*
3	*353,096*	*335,442*
4	*351,331*	*333,764*
5	*349,574*	*332,096*
6	*347,826*	*330,435*
7	*346,087*	*328,783*
8	*344,357*	*327,139*
9	*342,635*	*325,503*
10	*340,922*	*323,876*
11	*339,217*	*322,256*
12	*337,521*	*320,645*
13	*335,834*	*319,042*
14	*334,154*	*317,447*
15	*332,484*	*315,859*
16	*330,821*	*314,280*
17	*329,167*	*312,709*
18	*327,521*	*311,145*
19	*325,884*	*309,589*
20	*324,254*	*308,042*
21	*322,633*	*306,501*
22	*321,020*	*304,969*
23	*319,415*	*303,444*
24	*317,818*	*301,927*
25	*316,229*	*300,417*
Total	***8,401,325***	***7,981,258***

Vargas Elementary School

Guarantee Year	*Annual kWh*	*Guarantee kWh*
1	*124,335*	*118,118*
2	*123,713*	*117,528*
3	*123,095*	*116,940*
4	*122,479*	*116,355*
5	*121,867*	*115,774*
6	*121,258*	*115,195*
7	*120,651*	*114,619*
8	*120,048*	*114,046*
9	*119,448*	*113,475*
10	*118,851*	*112,908*
11	*118,256*	*112,343*
12	*117,665*	*111,782*
13	*117,077*	*111,223*
14	*116,491*	*110,667*
15	*115,909*	*110,113*
16	*115,329*	*109,563*
17	*114,753*	*109,015*
18	*114,179*	*108,470*
19	*113,608*	*107,928*
20	*113,040*	*107,388*
21	*112,475*	*106,851*
22	*111,912*	*106,317*
23	*111,353*	*105,785*
24	*110,796*	*105,256*
25	*110,242*	*104,730*
Total	***2,928,830***	***2,782,389***

Attachment C: Typical Solar Insolation and AC Energy

Benjamin Bubb Elementary School

Time Range	Daylight Hours	Gh ($kWh/m^2/day$)	Ipoa ($kWh/m^2/day$)	AC Energy (kWh)
Jan	265	2.25	4.96	7,924
Feb	296	2.95	6.30	9,046
Mar	359	3.45	6.98	10,935
Apr	374	6.07	12.12	18,177
May	410	7.31	14.66	22,422
Jun	420	8.10	16.06	23,561
Jul	428	7.72	15.41	23,429
Aug	385	6.93	14.12	21,501
Sep	350	5.67	11.91	17,801
Oct	322	4.07	8.84	13,741
Nov	291	2.70	5.98	9,137
Dec	286	2.17	4.90	7,737
Year 1	**4,186**	**59.39**	**122.24**	**185,411**

Crittenden Middle School

Time Range	Daylight Hours	Gh (kWh/m2/day)	Ipoa (kWh/m2/day)	AC Energy (kWh)
Jan	265	2.25	8.01	12,701
Feb	296	2.95	10.10	14,383
Mar	359	3.45	11.04	17,201
Apr	374	6.07	19.10	28,535
May	410	7.31	22.39	33,994
Jun	420	8.10	24.44	35,638
Jul	428	7.72	23.49	35,454
Aug	385	6.93	21.66	32,628
Sep	350	5.67	18.41	27,153
Oct	322	4.07	13.80	21,117
Nov	291	2.70	9.68	14,637
Dec	286	2.17	7.97	12,470
Year 1	**4,186**	**59.39**	**190.09**	**285,911**

Edith Landels Elementary School

Time Range	Daylight Hours	Gh ($kWh/m^2/day$)	Ipoa ($kWh/m^2/day$)	AC Energy (kWh)
Jan	265	2.25	4.79	7,886

Feb	*296*	*2.95*	*6.15*	*9,147*
Mar	*359*	*3.45*	*6.91*	*11,231*
Apr	*374*	*6.07*	*12.03*	*18,775*
May	*410*	*7.31*	*14.40*	*22,821*
Jun	*420*	*8.10*	*15.86*	*24,085*
Jul	*428*	*7.72*	*15.13*	*23,825*
Aug	*385*	*6.93*	*13.80*	*21,739*
Sep	*350*	*5.67*	*11.54*	*17,791*
Oct	*322*	*4.07*	*8.49*	*13,599*
Nov	*291*	*2.70*	*5.77*	*9,109*
Dec	*286*	*2.17*	*4.69*	*7,624*
Year 1	***4,186***	***59.39***	***122.25***	***187,632***

Frank L. Huff Elementary School

Time Range	*Daylight Hours*	*Gh (kWh/m²/day)*	*Ipoa (kWh/m²/day)*	*AC Energy (kWh)*
Jan	*265*	*2.25*	*4.90*	*7,248*
Feb	*296*	*2.95*	*6.29*	*8,389*
Mar	*359*	*3.45*	*7.04*	*10,275*
Apr	*374*	*6.07*	*12.25*	*17,106*
May	*410*	*7.31*	*14.72*	*20,844*
Jun	*420*	*8.10*	*16.20*	*21,977*
Jul	*428*	*7.72*	*15.47*	*21,768*
Aug	*385*	*6.93*	*14.12*	*19,982*
Sep	*350*	*5.67*	*11.83*	*16,399*
Oct	*322*	*4.07*	*8.72*	*12,535*
Nov	*291*	*2.70*	*5.91*	*8,375*
Dec	*286*	*2.17*	*4.81*	*7,014*
Year 1	***4,186***	***59.39***	***119.57***	***171,912***

Graham Middle School – Main Meter

Time Range	*Daylight Hours*	*Gh (kWh/m²/day)*	*Ipoa (kWh/m²/day)*	*AC Energy (kWh)*
Jan	*265*	*2.25*	*2.54*	*19,114*
Feb	*296*	*2.95*	*3.24*	*21,853*
Mar	*359*	*3.45*	*3.61*	*26,652*
Apr	*374*	*6.07*	*6.28*	*44,668*
May	*410*	*7.31*	*7.44*	*53,793*
Jun	*420*	*8.10*	*8.14*	*56,587*
Jul	*428*	*7.72*	*7.82*	*56,218*

Aug	*385*	*6.93*	*7.15*	*51,149*
Sep	*350*	*5.67*	*6.01*	*42,081*
Oct	*322*	*4.07*	*4.44*	*32,300*
Nov	*291*	*2.70*	*3.07*	*22,011*
Dec	*286*	*2.17*	*2.51*	*18,639*
Year 1	***4,186***	***59.39***	***62.27***	***445,065***

Graham Middle School – Secondary Meter

Time Range	*Daylight Hours*	*Gh (kWh/m²/day)*	*Ipoa (kWh/m²/day)*	*AC Energy (kWh)*
Jan	*265*	*2.25*	*2.56*	*4,994*
Feb	*296*	*2.95*	*3.26*	*5,698*
Mar	*359*	*3.45*	*3.62*	*6,928*
Apr	*374*	*6.07*	*6.30*	*11,591*
May	*410*	*7.31*	*7.44*	*13,933*
Jun	*420*	*8.10*	*8.15*	*14,645*
Jul	*428*	*7.72*	*7.83*	*14,569*
Aug	*385*	*6.93*	*7.17*	*13,274*
Sep	*350*	*5.67*	*6.04*	*10,940*
Oct	*322*	*4.07*	*4.47*	*8,415*
Nov	*291*	*2.70*	*3.09*	*5,751*
Dec	*286*	*2.17*	*2.54*	*4,877*
Year 1	***4,186***	***59.39***	***62.46***	***115,614***

Gabriela Mistral / Mariana Castro Elementary School

Time Range	*Daylight Hours*	*Gh (kWh/m²/day)*	*Ipoa (kWh/m²/day)*	*AC Energy (kWh)*
Jan	*265*	*2.25*	*2.46*	*6,652*
Feb	*296*	*2.95*	*3.16*	*7,702*
Mar	*359*	*3.45*	*3.57*	*9,485*
Apr	*374*	*6.07*	*6.22*	*15,883*
May	*410*	*7.31*	*7.38*	*19,152*
Jun	*420*	*8.10*	*8.13*	*20,242*
Jul	*428*	*7.72*	*7.76*	*20,010*
Aug	*385*	*6.93*	*7.07*	*18,218*
Sep	*350*	*5.67*	*5.90*	*14,879*
Oct	*322*	*4.07*	*4.33*	*11,345*
Nov	*291*	*2.70*	*2.96*	*7,665*
Dec	*286*	*2.17*	*2.41*	*6,428*
Year 1	***4,186***	***59.39***	***61.35***	***157,661***

Monta Loma Elementary School – Main Meter

Time Range	Daylight Hours	Gh ($kWh/m^2/day$)	Ipoa ($kWh/m^2/day$)	AC Energy (kWh)
Jan	265	2.25	2.45	5,034
Feb	296	2.95	3.15	5,809
Mar	359	3.45	3.56	7,209
Apr	374	6.07	6.22	12,119
May	410	7.31	7.41	14,610
Jun	420	8.10	8.14	15,384
Jul	428	7.72	7.81	15,305
Aug	385	6.93	7.10	13,953
Sep	350	5.67	5.92	11,392
Oct	322	4.07	4.33	8,648
Nov	291	2.70	2.95	5,810
Dec	286	2.17	2.41	4,883
Year 1	**4,186**	**59.39**	**61.44**	**120,156**

Monta Loma Elementary School – Secondary Meter

Time Range	Daylight Hours	Gh ($kWh/m^2/day$)	Ipoa ($kWh/m^2/day$)	AC Energy (kWh)
Jan	265	2.25	2.58	5,029
Feb	296	2.95	3.28	5,739
Mar	359	3.45	3.63	6,953
Apr	374	6.07	6.31	11,614
May	410	7.31	7.44	13,928
Jun	420	8.10	8.15	14,647
Jul	428	7.72	7.82	14,551
Aug	385	6.93	7.17	13,283
Sep	350	5.67	6.05	10,960
Oct	322	4.07	4.49	8,455
Nov	291	2.70	3.11	5,798
Dec	286	2.17	2.55	4,914
Year 1	**4,186**	**59.39**	**62.60**	**115,870**

Stevenson Elementary School / District Office

Time Range	Daylight Hours	Gh ($kWh/m^2/day$)	Ipoa ($kWh/m^2/day$)	AC Energy (kWh)
Jan	265	2.25	5.10	11,780
Feb	296	2.95	6.48	13,406

Mar	*359*	*3.45*	*7.19*	*16,197*
Apr	*374*	*6.07*	*12.49*	*26,803*
May	*410*	*7.31*	*14.82*	*32,277*
Jun	*420*	*8.10*	*16.22*	*33,874*
Jul	*428*	*7.72*	*15.58*	*33,756*
Aug	*385*	*6.93*	*14.27*	*30,986*
Sep	*350*	*5.67*	*12.03*	*25,685*
Oct	*322*	*4.07*	*8.92*	*19,849*
Nov	*291*	*2.70*	*6.15*	*13,544*
Dec	*286*	*2.17*	*5.04*	*11,515*
Year 1	***4,186***	***59.39***	***124.29***	***269,672***

Theuerkauf Elementary School

Time Range	*Daylight Hours*	*Gh ($kWh/m^2/day$)*	*Ipoa ($kWh/m^2/day$)*	*AC Energy (kWh)*
Jan	*265*	*2.25*	*4.98*	*14,911*
Feb	*296*	*2.95*	*6.37*	*17,240*
Mar	*359*	*3.45*	*7.16*	*21,334*
Apr	*374*	*6.07*	*12.49*	*35,974*
May	*410*	*7.31*	*14.82*	*43,592*
Jun	*420*	*8.10*	*16.28*	*46,070*
Jul	*428*	*7.72*	*15.61*	*45,584*
Aug	*385*	*6.93*	*14.22*	*41,227*
Sep	*350*	*5.67*	*11.90*	*33,611*
Oct	*322*	*4.07*	*8.75*	*25,538*
Nov	*291*	*2.70*	*6.00*	*17,170*
Dec	*286*	*2.17*	*4.89*	*14,402*
Year 1	***4,186***	***59.39***	***123.48***	***356,654***

Vargas Elementary School

Time Range	*Daylight Hours*	*Gh ($kWh/m^2/day$)*	*Ipoa ($kWh/m^2/day$)*	*AC Energy (kWh)*
Jan	*265*	*2.25*	*2.33*	*5,215*
Feb	*296*	*2.95*	*2.96*	*5,951*
Mar	*359*	*3.45*	*3.29*	*7,197*
Apr	*374*	*6.07*	*5.72*	*11,925*
May	*410*	*7.31*	*7.18*	*15,158*
Jun	*420*	*8.10*	*7.86*	*15,905*
Jul	*428*	*7.72*	*7.56*	*15,850*
Aug	*385*	*6.93*	*6.92*	*14,575*

Sep	*350*	*5.67*	*5.83*	*12,109*
Oct	*322*	*4.07*	*4.32*	*9,342*
Nov	*291*	*2.70*	*2.81*	*6,011*
Dec	*286*	*2.17*	*2.31*	*5,096*
Year 1	***4,186***	***59.39***	***59.11***	***124,335***

Exhibit H

WARRANTIES

The following warranties are the standard warranties from the manufacturers of components of the System. Designer/Builder is assigning these warranties to the District and these warranties shall not, in any way, reduce or limit the Performance Guarantee and/or any additional warranty terms or durations indicated in the Contract.

Photovoltaic Module Warranty
25-year

Inverter Warranty
10-year

Electric Vehicle Charging Station Warranty
3-year

Exhibit I
ADDITIONAL CONTRACT DOCUMENTS
TO
CONTRACT FOR DESIGN AND CONSTRUCTION

Mountain View Whisman School District
and
ENGIE Services U.S. Inc.

- Coordination and Project Meetings
- Construction Schedule - Network Analysis
- Submittals
- Regulatory Requirements
- Testing Laboratory Services
- Temporary Facilities and Controls
- Site Standards
- Temporary Tree and Plant Protection
- Storm Water Pollution Prevention Plan – Construction
- Materials and Equipment
- Delivery, Storage and Handling
- Contract Closeout and Final Cleaning
- Field Engineering
- Cutting and Patching
- Operation and Maintenance Data
- Warranties
- Record Documents
- Commissioning

COORDINATION AND PROJECT MEETINGS

1. GENERAL

1.1. SECTION INCLUDES

1.1.1. Coordination Responsibilities of the Designer/Builder
1.1.2. Field Engineering Responsibilities of the Designer/Builder
1.1.3. Preconstruction Conference.
1.1.4. Progress Meetings.
1.1.5. Pre-Installation Conferences.
1.1.6. Post Construction Dedication.

1.2. COORDINATION RESPONSIBILITIES OF THE DESIGNER/BUILDER

1.2.1. Coordinate scheduling, submittals, and Work of the Specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
1.2.2. Prior to commencement of a particular type or kind of work examine relevant information, contract documents, and subsequent data issued to the Project.
1.2.3. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
1.2.4. Closing up of holes, backfilling, and other covering up operations shall not proceed until all enclosed or covered work and inspections have been completed. Verify before proceeding.
1.2.5. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
1.2.6. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
1.2.7. In locations where several elements of mechanical and electrical work must be sequenced and positioned with precision in order to fit into available space, prepare coordination drawings showing the actual conditions required for the installation. Prepare coordination drawings prior to purchasing, fabricating, or installing any of the elements required to be coordinated.
1.2.8. Closing up of walls, partitions or furred spaces, backfilling, and other covering up operations shall not proceed until all enclosed or covered work and inspections have been completed. Verify before proceeding.
1.2.9. Coordinate completion and clean up of Work of separate sections in preparation for completion and for portions of work designated for District's occupancy.
1.2.10. After District occupancy of Project, coordinate access to Site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of District's activities.
1.2.11. Coordinate all utility company work in accordance with the Contract Documents.

1.3. PRECONSTRUCTION CONFERENCE

1.3.1. Project Manager, Construction Manager, or Project Engineer will schedule a conference immediately after receipt of fully executed Contract Documents prior to Project mobilization.
1.3.2. Mandatory Attendance: Construction Manager, Project Engineer, Inspector of Record, District, Designer/Builder, Designer/Builder's Project Manager, Designer/Builder's Project Engineer, and Designer/Builder's Job/Project Superintendent.
1.3.3. Optional Attendance: District's consultants, subcontractors, and utility company representatives.
1.3.4. Designer/Builder shall preside at conference.

1.3.5. Construction Manager shall prepare and record minutes and distribute copies.

1.3.6. Agenda will include the following items, including those items that will be finalized at subsequent meetings, but which will be discussed initially at this meeting:

1.3.6.1. Execution of District-Designer/Builder Contract.

1.3.6.2. Issue Notice to Proceed.

1.3.6.3. Submission of executed bonds and insurance certificates.

1.3.6.4. Distribution of Contract Documents.

1.3.6.5. Submission of preliminary list of Subcontractors, list of Products, Schedule of Values, and Progress Schedule.

1.3.6.6. Designation of responsible personnel representing the parties.

1.3.6.7. Procedures for processing Construction Directives and Change Orders.

1.3.6.8. Procedures for Request for Information.

1.3.6.9. Procedures for testing and inspecting.

1.3.6.10. Procedures for processing applications for payment.

1.3.6.11. Procedures for Project closeout.

1.3.6.12. Use of Premises.

1.3.6.13. Work restrictions.

1.3.6.14. District's occupancy requirements or options.

1.3.6.15. Responsibility for temporary facilities and controls.

1.3.6.16. Construction waste management and recycling.

1.3.6.17. Parking availability.

1.3.6.18. Office, work and storage areas.

1.3.6.19. Equipment deliveries and priority.

1.3.6.20. Security.

1.3.6.21. Progress cleaning.

1.4. PROGRESS MEETINGS

1.4.1. Designer/Builder Project Manager shall schedule and administer meetings throughout progress of the Work at a minimum of every week.

1.4.2. Designer/Builder Project Manager or Project Engineer will make arrangements for meetings, prepare agenda, and Construction Manager will co-preside at meetings and Construction Manager shall record minutes, and distribute copies for review and comment.

1.4.3. Attendance Required: Job Superintendent, Construction Manager, Designer/Builder Project Manager, Designer/Builder Project Engineer, Project Inspector (Inspector of Record), District, Subcontractors, and suppliers as appropriate to agenda topics for each meeting.

1.4.4. Agenda may include, as appropriate:

1.4.4.1. Review minutes of previous meetings. (Field Reports)

1.4.4.2. Review of Work progress.

1.4.4.3. Field observations, problems, and decisions.

1.4.4.4. Identification of problems which impede planned progress.

1.4.4.5. Review of submittals schedule and status of submittals.

1.4.4.6. Review of off-site fabrication and delivery schedules.

1.4.4.7. Maintenance of construction schedule.

1.4.4.8. Corrective measures to regain projected schedules.

1.4.4.9. Planned progress during succeeding work period.

1.4.4.10. Coordination of projected progress.

1.4.4.11. Maintenance of quality and work standards.

1.4.4.12. Effect of proposed changes on progress schedule and coordination.

1.4.4.13. Other business relating to Work.

1.4.5. District has authority to schedule meetings other than those listed, as necessary.

1.5. PRE-INSTALLATION CONFERENCES

1.5.1. When required in individual specification section, Designer/Builder shall convene a pre-

installation conference prior to commencing work of the section. Refer to individual specification section for timing requirements of conference.

1.5.2. Designer/Builder shall require his/her subcontractors and suppliers directly affecting, or affected by, work of the specific section to attend.

1.5.3. Notify the Construction Manager, Project Engineer, Inspector of Record, and District two (2) business days in advance of meeting date.

1.5.4. The pre-installation conference may coincide with a regularly scheduled progress meeting.

1.5.5. Designer/Builder shall prepare agenda, preside at conference, record minutes, and distribute copies within two (2) business days after conference to participants.

1.5.6. The purpose of the meeting will be to review Contract Documents, conditions of installation, preparation and installation procedures, and coordination with related work and manufacturer's recommendations.

1.5.7. Pre-installation Schedule: As a minimum, Work being installed under the Contract Documents technical sections will require pre-installation conferences. Designer/Builder shall review the technical specifications and add all additional requirements for pre-installation meetings contained in those sections.

1.6. POST CONSTRUCTION DEDICATION ("Ribbon-Cutting" or "Grand Opening")

1.6.1. Suggested attendance: Project Superintendent, Designer/Builder, Project Manager, major subcontractors, Construction Manager, Project Engineer, Inspector of Record, and District Board Members, Superintendent and CBO.

1.6.2. Preparation prior to Dedication: Designer/Builder and appropriate subcontractors and suppliers shall:

1.6.2.1. Assist District in operation of mechanical devices and systems.

1.6.2.2. Verify operation and adjust controls for communication systems.

1.6.2.3. Assist District in operation of lighting systems.

END OF DOCUMENT

CONSTRUCTION SCHEDULE - NETWORK ANALYSIS

1. GENERAL

1.1. REFERENCES

1.1.1. Construction Planning and Scheduling Manual - A Manual for General Designer/Builders and the Construction Industry, The Associated General Contractors of America (AGC).

1.1.2. CSI - Construction Specifications Institute MP-2-1 Master Format.

1.1.3. U.S. National Weather Service - Local Climatological Data (NOAA.gov).

1.1.4. Designer/Builder shall utilize MS Project or approved alternative scheduling software for Project and construction planning and scheduling.

1.2. PERFORMANCE REQUIREMENTS

1.2.1. Ensure adequate scheduling during construction activities so Work may be prosecuted in an orderly and expeditious manner within stipulated Contract Time.

1.2.2. Ensure coordination of Designer/Builder and subcontractors at all levels.

1.2.3. Ensure coordination of submittals, fabrication, delivery, erection, installation, and testing of Products, materials and equipment.

1.2.4. Ensure on-time delivery of District furnished Products, materials and equipment.

1.2.5. Ensure coordination of jurisdictional reviews.

1.2.6. Prepare applications for payment.

1.2.7. Monitor progress of Work.

1.2.8. Prepare proper requests for changes to Contract Time.

1.2.9. Prepare proper requests for changes to Construction Schedule.

1.2.10. Detect potential schedule delays and identification of corrective actions.

1.3. QUALITY ASSURANCE

1.3.1. Perform scheduling work in accordance with Construction Planning and Scheduling Manual published by the AGC.

1.3.2. Maintain one copy of Construction Planning and Scheduling Manual on Site.

1.3.3. In the event of discrepancy between the AGC publication and the Contract Documents, provisions of the Contract Documents shall govern.

1.4. SUBMITTALS

1.4.1. Submission of submittals pursuant to the Construction Documents in a format pre-approved by the District (e.g., Autodesk or similar format, where applicable).

1.4.2. Submit Short Interval Schedule at each Construction Progress Meeting.

1.4.3. Submit Time Adjustment Schedule within five (5) days of commencement of a claimed delay.

1.4.4. Submit Recovery Schedules as required for timely completion of Work or when demanded by the District.

1.4.5. Submit one (1) reproducible and two (2) copies of each schedule.

1.5. REVIEW AND EVALUATION

1.5.1. Designer/Builder shall participate in joint review of Construction Schedule and Reports with District and Construction Manager.

1.5.2. Within seven (7) days of receipt of District and Construction Manager's comments provide satisfactory revision to Construction Schedule or adequate justification for activities in question.

1.5.3. In the event that an activity or element of Work is not detected by District or Construction Manager review, such omission or error shall be corrected by next scheduled update and shall not affect Contract Time.

1.5.4. Acceptance by District of corrected Construction Schedule shall be a condition precedent to making any progress payments. Such acceptance shall not be unreasonably withheld.

1.5.5. Schedule of Values shall be basis for determining progress payments and shall be in a format acceptable to the District.

1.5.6. Review and acceptance by District and Construction Manager of Preliminary Work

Schedule or Construction Schedule does not constitute responsibility whatsoever for accuracy or feasibility of schedules nor does such acceptance expressly or impliedly warrant, acknowledge or admit reasonableness of activities, logic, duration, manpower, cost or equipment loading stated or implied on schedules.

1.6. FORMAT

1.6.1. **Listings**: Reading from left to right, in ascending order for each activity.

1.6.2. **Diagram Size**: 11X17, or as appropriate for information being displayed.

1.6.3. **Scale and Spacing**: To allow for legible notations and revisions.

1.6.4. Illustrate order and interdependence of activities and sequence of Work.

1.6.5. Illustrate complete sequence of construction by activity.

1.6.6. Full MS Project Schedule will have all predecessors and successors shown for review.

1.6.7. Provide legend of symbols and abbreviations used.

1.7. COST AND SCHEDULE REPORTS

1.7.1. **Activity Analysis**: Tabulate each activity of network diagram and identify for each activity in the full MS Project schedules:

1.7.1.1. Description.

1.7.1.2. Interface with outside contractors or agencies.

1.7.1.3. Number.

1.7.1.4. Preceding and following number.

1.7.1.5. Duration.

1.7.1.6. Earliest start date, earliest finish date.

1.7.1.7. Actual start date, actual finish date.

1.7.1.8. Latest start date, latest finish date.

1.7.1.9. Total and free float.

1.7.1.10. Identification of critical path activity.

1.7.1.11. Percentage complete.

1.7.1.12. Variance positive or negative.

1.7.2. **Required Sorts**: List activities in sorts or groups in the full MS Project schedules:

1.7.2.1. By activity number.

1.7.2.2. By amount of float time in order of early start.

1.7.2.3. By responsibility in order of earliest start date.

1.7.2.4. In order of latest start dates.

1.7.2.5. In order of latest finish dates.

1.7.2.6. Listing of activities on critical path.

1.7.3. Listing of basic input data which generates schedule.

1.8. CONSTRUCTION SCHEDULE

1.8.1. Designer/Builder shall develop and submit a preliminary schedule of construction (or Preliminary Construction Schedule) as required by this Document and the Contract Documents. It shall be submitted in computer generated network format and shall be organized by Activity Codes representing the Designer/Builder's intended sequencing of the Work, and with time scaled network diagrams of activities. The Preliminary Construction Schedule shall include activities such as mobilization, preparation of submittals, specified review periods, procurement items, fabrication items, milestones, and all detailed construction activities.

1.8.2. Upon District's acceptance of the Preliminary Construction Schedule, Designer/Builder shall update the accepted Preliminary Construction Schedule until Designer/Builder's Construction Schedule is fully developed and accepted. Once approved by District, this shall become the Construction Schedule. This schedule shall include and identify all tasks that are on the Project's critical path with a specific determination of the start and completion of each critical path task, all contract milestones and each milestone's completion date(s) as may be required by the District, and the date of Project Completion. Updates to the Project's Construction Schedule, in addition to an updated Schedule of Value, are required to process payment to Designer/Builder. Therefore,

submittal and acceptance of the Construction Schedule and updates shall be a condition precedent to making of monthly payments, as indicated in the Contract and the Schedule of Values.

1.8.3. Failure to submit an adequate or accurate Preliminary Construction Schedule, Construction Schedule, updates thereto or failure to submit on established dates, will be considered a breach of Contract.

1.8.4. Failure to include any activity shall not be an excuse for completing all Work by required Completion Date.

1.8.5. Activities of long intervals shall be broken into increments no longer than fourteen (14) days or a value over $20,000.00 unless approved by the District or it is non-construction activity for procurement and delivery.

1.8.6. The Construction Schedule shall comply with the following and include the following:

1.8.6.1. A description of the Designer/Builder's approach to mobilization, procurement, and construction during the first thirty (30) calendar days including crew sizes, equipment and material delivery, Site access, submittals, and permits.

1.8.6.2. Shall designate critical path or paths.

1.8.6.3. Procurement activities to include mobilization, shop drawings and sample submittals.

1.8.6.4. Identification of key and long-lead elements and realistic delivery dates.

1.8.6.5. Construction activities in units of whole days limited to fourteen (14) days for each activity except non-construction, procurement and delivery. If Designer/Builder needs to include any activity longer than 14 days, Designer/Builder shall explain the need for that longer duration for the District's approval, which shall not be unreasonably withheld.

1.8.6.6. Duration of each activity.

1.8.6.7. Shall contain seasonal weather considerations.

1.8.6.8. Indicate a date for Project Completion that is no later than Completion Date subject to any time extensions processed as part of a Change Order.

1.8.6.9. Conform to mandatory dates specified in the Contract Documents.

1.8.6.10. Designer/Builder shall allow for inclement weather in the Proposed Baseline Schedule by incorporating an activity titled "Rain Day Impact Allowance" as the last activity prior to the Completion Milestone. No other activities may be concurrent with it. The duration of the Rain Day Impact Allowance activity will be calculated from the Notice to Proceed until the Completion.

1.8.6.11. Level of detail shall correspond to complexity of work involved.

1.8.6.12. Indicate procurement activities, delivery, and installation of District furnished material and equipment.

1.8.6.13. Designate critical path or paths.

1.8.6.14. As developed shall show sequence and interdependence of activities required for complete performance of Work.

1.8.6.15. Shall be logical and show a coordinated plan of Work.

1.8.6.16. Show order of activities and major points of interface, including specific dates of completion.

1.8.6.17. Duration of activities shall be coordinated with subcontractors and suppliers and shall be best estimate of time required.

1.8.6.18. Shall show description, duration and float for each activity.

1.8.7. **Activity.** An activity shall meet the following criteria:

1.8.7.1. Any portion or element of Work or action that is precisely described, readily identifiable, and is a function of a logical sequential process.

1.8.7.2. Descriptions shall be clear and concise. Beginning and end shall be readily verifiable. Starts and finishes shall be scheduled by logical restraints.

1.8.7.3. Responsibility shall be identified with a single performing entity wherever possible.

1.8.7.4. Activities labeled start, continue or completion are not allowed.

1.8.8. **Equipment and Materials.** For major equipment and materials show a sequence of activities including:

1.8.8.1. Preparation of shop drawings and sample submissions.

1.8.8.2. Review of shop drawings and samples.

1.8.8.3. Finish and color selection.

1.8.8.4. Fabrication and delivery.

1.8.8.5. Erection or installation.

1.8.8.6. Testing.

1.8.9. Include a minimum of fifteen (15) days prior to Completion Date for punch lists and clean up. No other activities shall be scheduled during this period.

1.9. SHORT INTERVAL SCHEDULE

1.9.1. The Three-Week Rolling Schedule shall be based on the most recent District Accepted Construction Schedule or Update. It shall include weekly updates to all construction, submittal, fabrication/procurement, and separate Work Contract activities. Designer/Builder shall ensure that it accurately reflects the current progress of the Work.

1.9.2. Shall be fully developed horizontal bar-chart-type schedule directly derived from Construction Schedule or within an Excel format, as pre-approved by the District.

1.9.3. Prepare schedule on sheet of sufficient width to clearly show data.

1.9.4. Provide continuous heavy vertical line identifying first day of week.

1.9.5. Provide continuous subordinate vertical line identifying each day of week.

1.9.6. Identify activities by same activity number and description as Construction Schedule.

1.9.7. Show each activity in proper sequence.

1.9.8. Indicate graphically sequences necessary for related activities.

1.9.9. Indicate activities completed or in progress for previous two (2) week period.

1.9.10. Indicate activities scheduled for succeeding two (2) week period.

1.9.11. Further detail may be added if necessary to monitor schedule.

1.10. REQUESTED TIME ADJUSTMENT SCHEDULE

1.10.1. Updated Construction Schedule shall not show a Completion Date later than the Contract Time, subject to any time extensions processed as part of a Change Order, unless delays are caused by the AHJ, utility, or other third party outside of the control of the Design/Builder, as allowed under section 23.3.

1.10.2. If an extension of time is requested, a separate schedule entitled "Requested Time Adjustment Schedule" shall be submitted to District and Construction Manager.

1.10.3. Indicate requested adjustments in Contract Time which are due to changes or delays in completion of Work.

1.10.4. Extension request shall include forecast of Project Completion date and actual achievement of any dates listed in Contract Documents.

1.10.5. To the extent that any requests are pending at time of any Construction Schedule update, Time Adjustment Schedule shall also be updated.

1.10.6. Schedule shall be a time-scaled network analysis.

1.10.7. Accompany schedule with formal written time extension request and detailed impact analysis justifying extension.

1.10.8. Time impact analysis shall demonstrate time impact based upon date of delay, and status of construction at that time and event time computation of all affected activities. Event times shall be those as shown in latest Construction Schedule.

1.10.9. Activity delays shall not automatically constitute an extension of Contract Time.

1.10.10. Failure of subcontractors shall not be justification for an extension of time.

1.10.11. Float is not for the exclusive use or benefit of any single party. Float time shall be apportioned according to needs of project, as determined by the District.

1.10.12. Float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity durations, or imposed dates shall be apportioned according to benefit of Project.

1.10.13. Extensions will be granted only to extent that time adjustments to activities exceed total positive float of the critical path and extends Completion date.

1.10.14. District shall not have an obligation to consider any time extension request unless requirements of Contract Documents, and specifically, but not limited to these requirements are complied with.

1.10.15. District shall not be responsible or liable for any construction acceleration due to failure of District to grant time extensions under Contract Documents should requested adjustments in Contract Time not substantially comply with submission and justification requirements of Contract for time extension requests.

1.10.16. In the event a Requested Time Adjustment Schedule and Time Impact Analysis are not submitted within ten (10) days after commencement of a delay it is mutually agreed that delay does not require a Contract Time extension.

1.11. RECOVERY SCHEDULE

1.11.1. When activities are behind Construction Schedule a supplementary Recovery Schedule shall be submitted.

1.11.2. Designer/Builder shall prepare and submit to the District a Recovery Schedule at any time requested by the District, at no cost to the District.

1.11.3. Form and detail shall be sufficient to explain and display how activities will be rescheduled to regain compliance with Construction Schedule and to complete the Work by the Completion Date.

1.11.4. Maximum duration shall be one (1) month and shall coincide with payment period.

1.11.5. Ten (10) days prior to expiration of Recovery Schedule, Designer/Builder shall have to show verification to determine if activities have regained compliance with Construction Schedule. Based upon this verification the following will occur:

1.11.5.1. Supplemental Recovery Schedule will be submitted to address subsequent month.

1.11.5.2. Construction Schedule will be resumed.

1.12. UPDATING SCHEDULES

1.12.1. Review and update schedule at least ten (10) days prior to submitting an Application for Payment.

1.12.2. Maintain schedule to record actual prosecution and progress.

1.12.3. Identify approved Change Orders which affect schedule as separate new activities.

1.12.4. Change Orders of less than $5,000.00 value or less than three (3) days duration need not be shown unless critical path is affected.

1.12.5. No other revisions shall be made to schedule unless authorized by District.

1.12.6. **Written Narrative Report**: At District's reasonable request, Designer/Builder shall include a written report as required to explain the Monthly Schedule Update. The narrative shall, at a minimum include the following headings with appropriate discussions of each topic, to the extent the schedule has been impacted or Designer/Builder expects an impact to the schedule:

1.12.6.1. Activities or portions of activities completed during previous reporting period.

1.12.6.2. Actual start dates for activities currently in progress.

1.12.6.3. Deviations from critical path in days ahead or behind.

1.12.6.4. List of major construction equipment used and any equipment idle.

1.12.6.5. Number of personnel by craft engaged on Work during reporting period.

1.12.6.6. Progress analysis describing problem areas.

1.12.6.7. Current and anticipated delay factors and their impact.

1.12.6.8. Proposed corrective actions and logic revisions for Recovery Schedule.

1.12.6.9. Proposed modifications, additions, deletions and changes in logic of

Construction Schedule.

1.12.6.10. In updating the Schedule, Designer/Builder shall not modify Activity ID numbers, schedule calculation rules/criteria, or the Activity Coding Structure required.

1.12.7. Schedule update will form basis upon which progress payments will be made.

1.12.8. District will not be obligated to review or process Application for Payment until updated Construction Schedule and Progress Report have been submitted.

1.13. DISTRIBUTION

1.13.1. Following joint review and acceptance of updated schedules distribute copies to District, Construction Manager, and all other concerned parties.

1.13.2. Instruct recipients to promptly report in writing any problem anticipated by projections shown in schedule.

2. PRODUCTS

2.1. SCHEDULING SOFTWARE

Designer/Builder shall utilize a District-approved equivalent scheduling software such as MS Project to employ the Critical Path Method (CPM) in the development and maintenance of the Construction Schedule. The scheduling software shall be capable of being resource loaded with manpower, costs and materials. It shall also be capable of generating time-scaled logic diagrams, resource histograms and profiles, bar charts, layouts and reports with any and/or all activity detail.

2.2. ELECTRONIC DATA

Provide electronic copy of the Construction Schedule via email as needed. The electronic MS Project files shall be saved in a readable type format, showing logical ties and links.

END OF DOCUMENT

SUBMITTALS

1. GENERAL

1.1. SUBMITTAL PROCEDURES – USE A PRE-APPROVED PROGRAM

1.1.1. DESIGNER/BUILDER SHALL USE A DISTRICT-APPROVED PROGRAM/SOFTWARE FOR THE SUBMITTAL PROCESS

1.1.2. Designer/Builder shall transmit each submittal in conformance with requirements of this Document. For each submittal, Designer/Builder shall:

1.1.2.1. Sequentially number the transmittal forms. Resubmitted submittals must have the original number with an alphabetic suffix;

1.1.2.2. Identify Project and District's project number, Designer/Builder, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate;

1.1.2.3. Apply Designer/Builder's stamp as applicable or required (e.g., design documents being submitted to DSA), signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

1.1.3. Coordinate preparation and processing of submittals with performance of Work. Transmit each submittal sufficiently in advance of performance of Work to avoid delay.

1.1.3.1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

1.1.3.2. Coordinate transmittal of different types of submittals for related parts of Work so processing will not be delayed because of the need to review submittals concurrently for coordination.

1.1.3.3. District reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

1.1.4. Comply with Contract Documents for list of submittals and time requirements for scheduled performance of Work.

1.1.5. No extension of Contract Time will be authorized because of failure to transmit submittals to the District sufficiently in advance of the Work to permit processing.

1.1.6. District shall review as diligently as possible and return all submittals in a timely fashion to not cause any delay to the Project Schedule.

1.1.7. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.

1.1.8. Provide space for review stamps/signatures as required.

1.1.9. Revise and resubmit submittals as required, identify all changes made since previous submittal.

1.1.10. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.2. SHOP DRAWINGS

1.2.1. 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 a shop drawing.

1.2.2. Do not use or allow others to use Shop Drawings which have been submitted and have been rejected.

1.3. ELECTRONIC SUBMITTAL PROCESS

1.3.1. Submittal Procedure for Large Format shop drawings.

1.3.1.1. Designer/Builder shall provide paper copies of the Shop Drawings directly to the District and the Construction Manager (CM) and Designer/Builder will upload/post an electronic transmittal (with a detailed description of the

submittal including the subject, specification number and number of drawings) on pre-approved program.

1.3.1.2. Designer/Builder shall verify that the Schedule of Submittals and all submittal log(s) on pre-approved program are accurate and up to date.

1.3.1.3. The District and Construction Manager will review and markup each Submittal and provide changes to Designer/Builder for Designer/Builder's incorporation into the Submittal.

1.3.1.4. This process will continue until the Designer/Builder has provided a Submittal that is acceptable to the District and the Construction Manager.

1.3.1.5. Once a Submittal is accepted, the District will provide a final accepted Submittal to the Designer/Builder and the Designer/Builder will closeout that one Submittal.

1.3.1.6. Designer/Builder shall send one (1) copy of the completed record submittal of the documents to a vendor for scanning and posting on pre-approved program.

1.3.2. Product Data, Calculations and Small Format Drawings

1.3.2.1. Designer/Builder shall upload/post one (1) electronic copy (from manufacturer's website or pre-scanned) of the product literature, data, calculations, and/or small format shop drawings on pre-approved program with a Transmittal (with a detailed description of the submittal) directly to the CM.

1.3.2.2. The District and Construction Manager will review and markup each Submittal and provide changes to Designer/Builder for Designer/Builder's incorporation into the Submittal.

1.3.2.3. This process will continue until the Designer/Builder has provided a Submittal that is acceptable to the District and the Construction Manager.

1.3.2.4. Once a Submittal is accepted, the District will provide a final accepted Submittal to the Designer/Builder and the Designer/Builder will closeout that one Submittal.

1.3.3. Sample Submittal Procedure – (Product / Assembly Samples)

1.3.3.1. Designer/Builder shall provide physical samples directly to the District and the CM and Designer/Builder will upload/post an electronic transmittal (with a detailed description of the submittal including the subject, specification number and number of drawings) on.

1.3.3.2. The District and Construction Manager will review and markup each Submittal and provide changes to Designer/Builder for Designer/Builder's incorporation into the Submittal.

1.3.3.3. This process will continue until the Designer/Builder has provided a Submittal that is acceptable to the District and the Construction Manager.

1.3.3.4. Once a Submittal is accepted, the District will provide a final accepted Submittal to the Designer/Builder and the Designer/Builder will closeout that one Submittal.

1.4. PRODUCT DATA

In addition to the above requirements, mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.

1.5. SAMPLES

Designer/Builder shall provide photographs of other installations that are similar to the finished Project, as required.

1.6. MANUFACTURER'S INSTRUCTION

1.6.1. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data, as part of the project closeout package.

1.6.2. Identify conflicts between manufacturers' instructions and Contract Documents.

1.7. MANUFACTURER'S CERTIFICATES

1.7.1. When specified in individual specification Sections, submit manufacturers' certificate to Construction Manager for review, in quantities specified for Product Data.

1.7.2. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.

1.7.3. Certificates may be recent or previous test results on material or Product, but must be acceptable to District.

1.8. MOCK-UP

Not Required for this Contract.

1.9. DEFERRED APPROVAL REQUIREMENTS

1.9.1. Installation of deferred approval items shall not be started until detailed plans, specifications, and engineering calculations have been accepted and signed by the Architect or Engineer in general responsible charge of design and signed by a California registered Architect or professional engineer who has been delegated responsibility covering the work shown on a particular plan or specification and approved by the Division of the State Architect (DSA). Deferred approval items for this Project are as indicated in the Contract Documents

1.9.2. Deferred approval drawings and specifications become part of the approved documents for the Project when they are submitted to and approved by DSA.

1.9.3. Submit material using electronic submittal process as defined above.

1.9.4. Identify and specify all supports, fasteners, spacing, penetrations, etc., for each of the deferred approval items, including calculations for each and all fasteners.

1.9.5. Submit documents to District for review prior to forwarding to the DSA.

1.9.6. Documents shall bear the stamp and signature of the Structural, Mechanical, or Electrical Engineer licensed in California who is responsible for that work.

1.9.7. District and its subconsultants will review the documents only for conformance with general design concept. The Designer/Builder will then forward the Submittal to DSA for approval.

1.9.8. Designer/Builder shall respond to review comments made by DSA and revise and resubmit submittal to DSA for final approval.

END OF DOCUMENT

REGULATORY REQUIREMENTS

1. GENERAL

1.1. DESCRIPTION

This section covers the general requirements for regulatory requirements pertaining to the Work and is supplementary to all other regulatory requirements mentioned or referenced elsewhere in the Contract Documents.

1.2. REQUIREMENTS OF REGULATORY AGENCIES

1.2.1. All statutes, ordinances, laws, rules, codes, regulations, standards, and the lawful orders of all public authorities having jurisdiction of the Work as of the date of this Contract, are hereby incorporated into the Contract Documents as if repeated in full herein and are intended to be included in any reference to Code or Building Code, unless otherwise specified, including, without limitation, the references in the list below. Designer/Builder shall make available at the Site copies of all the listed documents applicable to the Work as the District and/or Construction Manager may request, including, without limitation, applicable portions of the California Code of Regulations (C.C.R.).

1.2.2. This Project shall be governed by applicable regulations, including, without limitation, the State of California's Administrative Regulations for the Division of the State Architect-Structural Safety (DSA/SS), Chapter 4, Part 1, Title 24, C.C.R., and the most current version on the date the Contract is executed and as it pertains to school construction including, without limitation:

1.2.2.1. Test and testing laboratory pursuant to Section 4-335 (District shall pay for the testing laboratory).

1.2.2.2. All special inspections pursuant to Section 4-333(d).

1.2.2.3. Designer/Builder shall submit verified reports pursuant to Section 4-336 & 4-343(c).

1.2.2.4. Administration

1.2.2.4.1. Duties of Architect and Engineers working for Designer/Builder shall be pursuant to Section 4-341.

1.2.2.4.2. Duties of Designer/Builder shall be pursuant Section 4-343.

1.2.2.4.3. Verified Reports shall be pursuant to Section 4-336.

1.2.2.5. Designer/Builder shall keep and make available a copy of Part 1 and 2 of the most current version of C.C.R., Title 24 at the Site during construction.

1.2.2.6. Designer/Builder shall notify the Division of State Architect (DSA) upon the start of construction pursuant to Section 4-331.

1.2.2.7. Addenda and Change Orders shall be pursuant to Section 4-338.

1.2.3. Items of deferred approval shall be clearly marked on the first sheet of the Designer/Builder's and/or Engineer's approved Drawings. All items later submitted for approval shall be pursuant to Title 24 requirements to the DSA.

1.2.3.1. Building Standards Administrative Code, C.C.R., Title 24, Part 1.

1.2.3.2. California Building Code (CBC), C.C.R., Title 24, Part 2.; (Uniform Building code volumes 1-3 and California Amendments).

1.2.3.3. California Electrical Code (CEC), C.C.R., Title 24, Part 3.

1.2.3.4. California Mechanical Code (CMC), C.C.R., Title 24, Part 4; (Uniform Mechanical Code and California Amendments).

1.2.3.5. California Plumbing Code (CPC), C.C.R., Title 24, Part 5; (Uniform Plumbing Code and California Amendments).

1.2.3.6. California Fire Code (CFC), C.C.R., Title 24, Part 9; (Fire Plumbing Code and California Amendments).

1.2.3.7. California Referenced Standards Code, C.C.R., Title 24, Part 12.

1.2.3.8. State Fire Marshal Regulations, C.C.R., Title 19, Public Safety.

1.2.3.9. Partial List of Applicable NFPA Standards:

1.2.3.9.1. NFPA 13 - Automatic Sprinkler System.

1.2.3.9.2. NFPA 14 - Standpipes Systems.
1.2.3.9.3. NFPA 17A - Wet Chemical System
1.2.3.9.4. NFPA 24 - Private Fire Mains.
1.2.3.9.5. (California Amended) NFPA 72 - National Fire Alarm Codes.
1.2.3.9.6. NFPA 253 - Critical Radiant Flux of Floor Covering System.
1.2.3.9.7. FPA 2001 - Clean Agent Fire Extinguishing Systems.
1.2.3.10. California Division of the State Architect Interpretation of Regulations Manual.

END OF DOCUMENT

TESTING LABORATORY SERVICES

1. GENERAL

1.1. REFERENCES

1.1.1. ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

1.1.2. ASTM E329 - Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

1.1.3. CBC - California Building Code.

1.1.4. UBC - Uniform Building Code.

1.1.5. Title 24, Parts 1 and 2, of the California Code of Regulations. Designer/Builder shall keep a copy of these available at the job Site for ready reference during construction

1.1.6. DSA - Division of the State Architect, Office of Regulation Services, Structural Safety Section. DSA shall be notified at or before the start of construction.

1.2. OBSERVATION AND SUPERVISION

1.2.1. The District and Construction Manager or their appointed representatives will review the Work and the Designer/Builder shall provide facilities and access to the Work at all times as required to facilitate this review. Administration by the Designer/Builder and any consulting Structural Engineer will be in accordance with applicable regulations, including, without limitation, 24 C.C.R. §4-341.

1.2.2. One or more Project Inspector(s) approved by DSA and employed by or in contract with the District ("Project Inspector"), will observe the Work in accordance with 24 C.C.R. §§4-333(b) and 4-342:

1.2.3. Project Inspector shall have access to the Work wherever it is in preparation or progress for ascertaining that the Work is in accordance with the Contract Documents and all applicable code sections. Designer/Builder shall provide facilities and access as required and shall provide assistance for sampling or measuring materials.

1.2.3.1. Project Inspector will notify District and Construction Manager and inform Designer/Builder of any observed failure of Work or material to conform to Contract Documents.

1.2.3.2. The Project Inspector shall observe and monitor all testing and inspection activities required.

1.2.4. Designer/Builder shall conform with all applicable laws as indicated in the Contract Documents, including, without limitation, to 24 C.C.R. §4-343. Designer/Builder shall supervise and direct the Work and maintain a competent superintendent on the Project who is authorized to act in all matters pertaining to the Work. The Designer/Builder shall inspect all materials, as they arrive, for compliance with the Contract Documents. Designer/Builder shall reject defective Work or materials immediately upon delivery or failure of the Work or material to comply with the Contract Documents. The Designer/Builder shall submit verified reports as indicated in the Contract Documents, including, without limitation, the Specifications and as required by 24 C.C.R. §4-336.

1.3. TESTING LABORATORIES AND AGENCIES

1.3.1. Testing agencies and tests shall be in conformance with the Contract Documents and the requirements of 24 C.C.R. §4-335.

1.3.2. Testing and inspection in connection with earthwork shall be under the direction of the District's consulting soils engineer ("Soils Engineer").

1.3.3. Testing and inspection of construction materials and workmanship shall be performed by a qualified laboratory ("Testing Laboratory" or "Laboratory"). The Testing Laboratory shall be under direction of an engineer registered in the State of California, shall conform to requirements of ASTM E329, and shall be employed by or in contract with the District.

1.4. TESTS AND INSPECTIONS

1.4.1. Designer/Builder shall be responsible for notifying District and Project Inspector of all

required tests and inspections. Designer/Builder shall notify District and Project Inspector forty-eight (48) hours in advance of performing any Work requiring testing or inspection.

1.4.2. Designer/Builder shall provide access to Work to be tested and furnish incidental labor, equipment, and facilities to facilitate all inspections and tests.

1.4.3. District will pay for first inspections and tests required by the Title 24 and other inspections or tests that District and/or Construction Manager may direct to have made, including, but not limited to, the following principal items:

1.4.3.1. Tests and observations for earthwork and pavings.

1.4.3.2. Tests for concrete mix designs, including tests of trial batches.

1.4.3.3. Tests and inspections for structural steel work.

1.4.3.4. Field tests for framing lumber moisture content.

1.4.3.5. Additional tests directed by District that establish that materials and installation comply with the Contract Documents.

1.4.3.6. Test and observation of welding and expansion anchors.

1.4.3.7. Factory observation of components and assembly of modular prefabrication structures and buildings.

1.4.4. District may at its discretion, pay and back charge Designer/Builder for:

1.4.4.1. Retests or reinspections, if required, and tests or inspection required due to Designer/Builder error or lack of required identifications of material.

1.4.4.2. Uncovering of work in accordance with Contract Documents.

1.4.4.3. Testing done on weekends, holidays, and overtime will be chargeable to Designer/Builder for the overtime portion, if overtime schedule is mutually agreed upon by both parties prior to the work taking place.

1.4.5. Testing and inspection reports and certifications:

1.4.5.1. If initially received by Designer/Builder, Designer/Builder shall provide to each of the following a copy of the agency or laboratory report of each test or inspection or certification: District; Construction Manager, if any; Consulting Engineer, if any; Other Engineers on the Project, as appropriate; and; Project Inspector.

1.4.5.2. When the test or inspection is one required by the Title 24, a copy of the report shall also be provided to the DSA.

1.5. SELECTION AND PAYMENT

1.5.1. District will hire and pay for services of an independent Testing Laboratory to perform specified inspection and testing as specified by District's Testing Laboratory.

1.5.2. District's hiring of Testing Laboratory shall in no way relieve Designer/Builder of its obligation to perform work in accordance with requirements of Contract Documents.

1.6. DISTRICT'S TESTING LABORATORY RESPONSIBILITIES

1.6.1. Test samples of mixes submitted by Inspector.

1.6.2. Perform specified inspection, sampling, and testing of Products in accordance with specified standards.

1.6.3. Notify Designer/Builder of observed irregularities or non-conformance of Work or Products.

1.6.4. Attend preconstruction conferences and progress meetings when requested by Designer/Builder.

1.7. LABORATORY REPORTS

1.7.1. After each inspection and test, District shall then submit one copy of laboratory report to Designer/Builder Reports of test results of materials and inspections found not to be in compliance with the requirements of the Contract Documents shall be forwarded immediately.

1.7.2. Each Testing Laboratory shall submit a verified report covering all of the tests which were required to be made by that agency during the progress of the Project. Such report shall be furnished each time that Work is suspended, covering the tests up to that time

and at the Completion of the Project, covering all tests.

1.8. LIMITS ON TESTING LABORATORY AUTHORITY

1.8.1. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.

1.8.2. Laboratory may not approve or accept any portion of the Work.

1.8.3. Laboratory may not assume any duties of Designer/Builder.

1.8.4. Laboratory has no authority to stop the Work.

1.9. DESIGNER/BUILDER RESPONSIBILITIES

1.9.1. Submit proposed items for testing as required herein and/or as further required in the Contract Documents for review in accordance with applicable specifications.

1.9.2. Cooperate with Laboratory personnel and provide access to the Work and to manufacturer's facilities.

1.9.3. Notify Construction Manager, District, and Testing Laboratory 48 hours prior to expected time for operations requiring inspection and testing services.

1.9.4. When tests or inspections cannot be performed after such notice, reimburse District for Laboratory personnel and travel expenses incurred due to the Designer/Builder's negligence.

1.9.5. Designer/Builder shall notify District a sufficient time in advance of the manufacture of material to be supplied by Designer/Builder pursuant to the Contract Documents, which must by terms of the Contract be tested, in order that the District may arrange for the testing of same at the source of supply.

1.9.5.1. Any material shipped by the Designer/Builder from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice that such testing and inspection will not be required shall not be incorporated in the Work.

1.9.6. Contract and pay for services of District's Testing Laboratory to perform additional inspections, sampling and testing required when initial tests indicate Designer/Builder's work and/or materials does not comply with Contract Documents.

1.10. SCHEDULE OF INSPECTIONS AND TESTS PER DSA APPROVED T&I SHEET

To the extent the following scopes of work are part of the Project, the Testing Laboratory shall perform tests and inspections for the following in conformance with the (CBC) California Building Code (International Building Code with State of California Amendments), California Code of Regulations, Title 24, Part 2:

- Structural Tests and Special Inspections (Chapter 17A)
  - Special Inspections (§ 1704A)
- Soils and Foundations (Chapter 18A)
  - Geotechnical Investigations (§ 1803A)
- Concrete (Chapter 19A)
  - Specifications for Tests and Materials (§)
  - Concrete Quality, Mixing and Placing (§)
  - Concrete Reinforcement and Anchor Testing Inspection (§ 1916A)
- Masonry (Chapter 21A)
  - Masonry Construction Materials (§ 2103A)
  - Masonry Quality (§ 2103A)
  - Quality Assurance (§ 2105A)
- Structural Steel (Chapter 22A)
  - Structural Steel (§ 2205A)
  - Identification & Protection of Steel for Structural Purposes (§ 2203A)
  - Inspection and Tests of Structural Steel (§ 2212A)
- Wood (Chapter 23)
  - Minimum Standards and Quality (§ 2303)
  - Wood Construction (§ 1704A.6)

- Exterior Walls (Chapter 14)
    - Masonry Units (§ 1404.4)
    - Masonry Construction Materials (§ 2103A)
    - Exterior Insulation and Finish Systems (§ 1408)
- Roof Assemblies and Roofing Structures (Chapter 15)
    - Materials (§ 1506)
- Aluminum (Chapter 20)
    - Materials (§ 2002.1)
    - Inspection (§ 2003.1)

1.10.1. **Plumbing (where applicable)**

Testing as required including, but not limited to: Sterilization, soil waste and vent, water piping, source of water, gas piping, downspouts and storm drains.

1.10.2. **Automatic Fire Sprinklers (where applicable)**

Testing as required including, but not limited to: hydrostatic pressure.

1.10.3. **Heating, Ventilating and Air Conditioning (where applicable)**

Testing as required including, but not limited to: Ductwork tests, cooling tower tests, boiler tests, controls testing, piping tests, water and air systems, and test and balance of heating and air conditioning systems.

1.10.4. **Electrical (where applicable)**

Testing as required including, but not limited to: Equipment testing, all electrical system operations, grounding system and checking insulation after cable is pulled.

1.11. **PROJECT INSPECTOR'S ACCESS TO SITE**

1.11.1. A Project Inspector employed by the District in accordance with the requirement of State of California Code of Regulations, Title 24, Part 1 will be assigned to the Work. Project Inspector's duties are specifically defined in 24. C.C.R. §4-342, and as indicated in the Contract.

1.11.2. District and Construction Manager 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 Designer/Builder shall at all times maintain proper facilities and provide safe access for such inspection.

1.11.3. The Work in all stages of progress shall be subject to the personal continuous observation of the Inspector. Inspector shall have free access to any or all parts of the Work at any time. Designer/Builder shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep Inspector fully informed respecting the progress and manner of the Work and the character of the materials. Inspection of the Work shall not relieve the Designer/Builder from any obligation set forth in the Contract Documents.

1.11.4. The Inspector is not authorized to change, revoke, alter, enlarge or decrease in any way any requirement of the Contract Documents, drawings, specifications or subsequent change orders.

1.11.5. Whenever there is insufficient evidence of compliance with any of the provisions of Title 24 or evidence that any material or construction does not conform to the requirements of Title 24, the Division of the State Architect may require tests as proof of compliance. Test methods shall be as specified herein or by other recognized and accepted test methods determined by the Division of the State Architect. All tests shall be performed by a testing laboratory accepted by the Division of the State Architect.

END OF DOCUMENT

TEMPORARY FACILITIES AND CONTROLS

1. GENERAL

1.1. **TEMPORARY UTILITIES**

1.1.1. Electric Power and Lighting

1.1.1.1. Designer/Builder will furnish and pay for power during the course of the work to the extent power is not in the building(s) or on the Site. Designer/Builder shall be responsible for providing temporary facilities required on the Site to point of intended use. This excludes temporary power outages during utility shutdowns for interconnections, where no temporary power will be provided by the Designer/Builder. These shutdowns shall be coordinated with the District ahead of time to take place in a timeframe to ensure no impacts to site and occupants.

1.1.1.2. Designer/Builder shall furnish, wire for, install, and maintain temporary electrical lights wherever it is necessary to provide illumination for the proper performance and/or observation of the Work: a minimum of 20 foot-candles for rough work and 50 foot-candles for finish work.

1.1.1.3. Designer/Builder shall be responsible for maintaining existing lighting levels in the Project vicinity should temporary outages or service interruptions occur, excluding utility shutdowns for interconnection

1.1.2. Heat and Ventilation

1.1.2.1. Designer/Builder shall provide temporary heat to maintain environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation and curing of materials, and to protect materials and finishes from damage due to improper temperature and humidity conditions. Portable heaters shall be standard units complete with controls.

1.1.2.2. Designer/Builder shall provide forced ventilation and dehumidification, as required, of enclosed areas for proper installation and curing of materials, to disperse humidity, and to prevent accumulations of dust, fumes, vapors, and gases.

1.1.2.3. Designer/Builder shall pay the costs of installation, maintenance, operation, and removal of temporary heat and ventilation, including costs for fuel consumed, required for the performance of the Work.

1.1.3. Water

1.1.3.1. District will furnish and pay for water during the course of the work.

1.1.3.2. Designer/Builder shall make potable water available for human consumption.

1.1.4. Sanitary Facilities

1.1.4.1. Designer/Builder shall provide sanitary temporary facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The facilities shall be maintained in a sanitary condition at all times and shall be left at the Site until removal is directed by the Project Inspector or Designer/Builder completes all Work.

1.1.4.2. Use of toilet facilities in the Work shall not be permitted except by consent of the Project Inspector and District.

1.1.5. Telephone Service [Not applicable]

1.1.6. Fire Protection:

1.1.6.1. Designer/Builder shall provide and maintain fire extinguishers and other equipment for fire protection. Such equipment shall be designated for use for fire protection only and shall comply with all requirements of the California Fire, State Fire Marshall and/or its designee.

1.1.6.2. Where on-site welding and burning of steel is unavoidable, Designer/Builder shall provide protection for adjacent surfaces.

1.1.7. Trash Removal:

Designer/Builder shall provide trash removal on a timely basis from all Site Offices and the Site.

1.2. CONSTRUCTION AIDS

1.2.1. No District tools or equipment shall be used by Designer/Builder for the performance of the Work.

1.3. BARRIERS AND ENCLOSURES

1.3.1. Designer/Builder shall obtain District's written permission for locations and types of temporary barriers and enclosures, including fire-rated materials proposed for use, prior to their installation.

1.3.2. Designer/Builder shall provide a six (6) foot high, chain link perimeter fence with posts as a temporary barrier around construction area. Designer/Builder shall provide and maintain temporary enclosures to prevent public entry and to protect persons using other buildings and portions of the Site and/or Premises. Designer/Builder shall remove temporary fence, barriers and enclosure upon Completion of the Work.

1.3.3. Designer/Builder shall provide site access to existing facilities for persons using other buildings and portions of the Site, the public, and for deliveries and other services and activities.

1.4. SECURITY

Designer/Builder shall secure all construction equipment, machinery and vehicles, park and store only within fenced area whenever possible, and render inoperable during non-work hours. Designer/Builder is responsible for insuring that no construction materials, tools, equipment, machinery or vehicles can be used for unauthorized entry or other damage or interference to activities and security of existing facilities adjacent to and in the vicinity of the Project Site.

1.5. TEMPORARY CONTROLS

1.5.1. Noise Control

1.5.1.1. Designer/Builder acknowledges that adjacent facilities may remain in operation during all or a portion of the Work, and it shall take all reasonable precautions to minimize noise as required by applicable laws and the Contract Documents.

1.5.1.2. Notice of proposed noisy operations, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to District a minimum of forty-eight (48) hours in advance of their performance.

1.5.2. Noise and Vibration

1.5.2.1. Equipment and impact tools shall have intake and exhaust mufflers as applicable.

1.5.2.2. Designer/Builder shall cooperate with District to minimize and/or cease the use of noisy and vibratory equipment if that equipment becomes objectionable by its longevity.

1.5.3. Dust and Dirt

1.5.3.1. Designer/Builder shall conduct demolition and construction operations to minimize the generation of dust and dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulating in the Work and adjacent areas including, without limitation, occupied facilities.

1.5.3.2. As needed, Designer/Builder shall periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.

1.5.3.3. As needed, Designer/Builder shall ensure that all hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins, and as otherwise required by local and state ordinance.

1.5.3.4. Designer/Builder shall prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.

1.5.4. Water

Designer/Builder shall not permit surface and subsurface water, and other liquids, to accumulate in or about the vicinity of the Premises. Should accumulation develop, Designer/Builder shall

control the water or other liquid, and suitably dispose of it by means of temporary pumps, piping, drainage lines, troughs, ditches, dams, or other methods.

1.5.5. Pollution

1.5.5.1. No burning of refuse, debris, or other materials shall be permitted on or in the vicinity of the Premises.

1.5.5.2. Designer/Builder shall comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of the Work including, without limitation, demolition, construction, and disposal operations.

1.5.6. Lighting

If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.

1.6. PUBLICITY RELEASES

Designer/Builder shall not release any information, story, photograph, plan, or drawing relating information about the Project to anyone, including press and other public communications medium, including, without limitation, on website(s).

END OF DOCUMENT

SITE STANDARDS

1. GENERAL

1.1. REQUIREMENTS OF THE DISTRICT

1.1.1. Drug-Free Schools and Safety Requirements:

1.1.1.1. No drugs, alcohol, smoking or the use of tobacco products are allowed at any time in any buildings, Designer/Builder-owned vehicles or vehicles owned by others while on District property. No students, staff, visitors, or contractors are to use drugs on these sites.

1.1.1.2. Designer/Builder shall post: "Non-Smoking Area" in a highly visible location on Site. Designer/Builder may designate a smoking area outside of District property within the public right-of-way, provided that this area remains quiet and unobtrusive to adjacent neighbors. This smoking area must be kept clean at all times.

1.1.1.3. Designer/Builder shall ensure that no alcohol, firearms, weapons, or controlled substances enter or are used at the Site. Designer/Builder shall immediately remove from the Site and terminate the employment of any employee(s) found in violation of this provision.

1.1.2. **Language**: Unacceptable and/or loud language will not be tolerated, "Cat calls" or other derogatory language toward students or public will not be allowed.

1.1.3. Disturbing the Peace (Noise and Lighting):

1.1.3.1. Designer/Builder shall observe the noise ordinance of the Site at all times including, without limitation, all applicable local, city, and/or state laws, ordinances, and/or regulations regarding noise and allowable noise levels.

1.1.3.2. District reserves the right to prohibit the use of radios at the Site, except for handheld communication radios.

1.1.3.3. If portable lights are used after dark, the lights must be located so as not to direct light into neighboring properties.

1.1.4. **Traffic**:

1.1.4.1. Driving on the Premises shall be limited to periods when students and public are not present. If driving or deliveries must be made during the school hours, a ground guide shall lead the vehicle across the area of travel. In no case shall driving take place across playgrounds or other pedestrian paths during recess, lunch, and/or class period changes. The speed limit on-the Premises shall be five (5) miles per hour (maximum) or less if conditions require.

1.1.4.2. All paths of travel for deliveries, including without limitation, material, equipment, and supply deliveries, shall be reviewed and approved by District in advance.

1.1.4.3. District shall designate a construction entry to the Site. If Designer/Builder requests, District determines it is required, and to the extent possible, District shall designate a staging area so as not to interfere with the normal functioning of school facilities. Location of gates and fencing shall be approved in advance with District and at Designer/Builder's expense.

1.1.4.4. Parking areas shall be reviewed and approved by District in advance. No parking is to occur under the drip line of trees or in areas that could otherwise be damaged.

1.1.4.5. All of the above shall be observed and complied with by the Designer/Builder and all workers on the Site. Failure to follow these directives could result in individual(s) being suspended or removed from the work force at the discretion of the District. The same rules and regulations shall apply equally to delivery personnel, inspectors, consultants, and other visitors to the Site.

END OF DOCUMENT

TEMPORARY TREE AND PLANT PROTECTION

DESIGNER/BUILDER SHALL ENSURE THE PRESERVATION OF TREES AND COMPLIANCE WITH THE MIGRATORY BIRD TREATY ACT. IF AN ARBORIST IS NEEDED OR IS REQUIRED, AS INDICATED HEREIN, DESIGNER/BUILDER SHALL BE REQUIRED TO HIRE AN ARBORIST IF AND WHEN NEEDED, TO PERFORM THE REQUIRED SERVICES, AT NO COST TO THE DISTRICT.

1. GENERAL

1.1. SUMMARY

This Document includes the protection and trimming of existing trees that interfere with, or are affected by, execution of the Work, whether temporary or permanent construction.

1.2. DEFINITIONS

Tree Protection Zone: Area surrounding individual trees or groups of trees to remain during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.3. SUBMITTALS

1.3.1. Product Data: For each type of product indicated.

1.3.2. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

1.3.3. Qualification Data: For tree service firm.

1.3.4. Certification: From arborist (if required), certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

1.3.5. Maintenance Recommendations: From tree service firm, for care and protection of trees affected by construction during and after completing the Work.

1.4. QUALITY ASSURANCE

1.4.1. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of tree protection and trimming.

1.4.2. Arborist Qualifications: An arborist (if required) must be certified by ISA (International Society of Arboriculture) or licensed in the jurisdiction where Project is located.

1.4.3. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."

1.4.3.1. Before tree protection and trimming operations begin, meet with District to review tree protection and trimming procedures and responsibilities.

1.5. TREE PRUNING

1.5.1. Prune trees to remain that are affected by temporary and permanent construction.

1.5.2. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period .

1.5.3. Pruning Standards: Prune trees according to ANSI A300 (Part 1).

1.5.4. Adjust pruning requirements per arborist's recommendations.

1.5.5. Cut branches with sharp pruning instruments; do not break or chop.

1.5.6. Modify below to specific project requirements.

1.5.7. Chip removed tree branches and dispose of or spread over areas identified by District.

1.6. TREE REPAIR AND REPLACEMENT

1.6.1. Immediately, and in no case more than 24 hours, repair trees damaged by construction operations if the damage is sufficiently severe to risk the tree's survival or poses a hazard or emergency situation. All other repairs to trees damaged by construction operations shall be performed within 72 hours. Treat damaged trunks, limbs, and roots according to an arborist's written instructions, if required.

1.6.2. Remove and replace trees indicated to remain that die or are damaged during

construction operations or that are incapable of restoring to normal growth pattern.

1.6.2.1. Provide new trees of 6-inch (150-mm) caliper size when damaged trees more than 6 inches (150 mm) in caliper size, measured 12 inches (300 mm) above grade, are required to be replaced.

1.6.2.2. **Plant and maintain new trees as specified in Contract Documents.**

1.7. DISPOSAL OF WASTE MATERIALS

1.7.1. Burning is not permitted.

1.7.2. Disposal: Remove excess excavated material and displaced trees from Site.

END OF DOCUMENT

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) – CONSTRUCTION

THE DESIGNER/BUILDER AND ITS CIVIL ENGINEER EACH DETERMINED THAT THE CONSTRUCTION OF THIS PROJECT IS NOT ANTICIPATED TO APPROACH OR EXCEED THE ONE-ACRE DISTURBANCE THRESHOLD THAT WOULD NECESSITATE ENROLLMENT UNDER THE CGP. HOWEVER, IF PRIOR TO CONSTRUCTION THE PROJECT DESIGN IS MODIFIED AND WILL RESULT IN ONE OR MORE ACRES OF DISTURBANCE, THE DESIGNER/BUILDER SHALL COMPLY WITH THE REQUIREMENTS *ITALICIZED* BELOW IN THIS "SWPPP – CONSTRUCTION" SECTION TO OBTAIN PERMIT COVERAGE FROM THE STATE WATER BOARD.

Designer/Builder shall implement erosion control and storm water best management practices (BMPs) on the Project site to avoid or minimize any potential impacts associated with storm water runoff and sedimentation.

***GENERAL**. The Clean Water Act and Porter Cologne Water Quality Act prohibit the discharge of any water containing pollutants from certain construction sites unless a National Pollutant Discharge Elimination System permit is first obtained and followed. The National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction Storm Water Permit) Order No. 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ (NPDES No. CAS000002) issued by the California State Water Resources Control Board (State Water Board) authorizes the discharge of storm water and certain non-storm water from construction sites if certain conditions and measures are taken. The District has determined that the construction of this Project requires enrollment in the Construction Storm Water Permit.*

***SUBMITTAL**. All submittals shall be made in a form conducive for the District to electronically upload the approved submittals to the Storm water Multi-Application Reporting and Tracking System (SMARTS).*

RISK ASSESSMENT

Concurrent with the Schedule of Submittals as indicated in the Contract, Designer/Builder shall prepare and submit a proposed "Risk Assessment" as set forth in the Construction Storm Water Permit.

The District's Qualified SWPPP Designer/Builder ("QSD") will review the Designer/Builder's proposed Risk Assessment for compliance with the Construction Storm Water Permit. If changes to the proposed Risk Assessment are required to comply with the Construction Storm Water Permit, the District QSD will identify such changes to the Designer/Builder

Designer/Builder shall make the changes specified by the District's QSD and shall submit the revised Risk Assessment to the District within seven (7) days of receipt of the changes identified by the District's QSD. If the changes had been acceptably made, the District's QSD will approve the Risk Assessment and provide the Contract with a copy within seven (7) days of receipt of the revised Risk Assessment.

SITE MAPS

Concurrent with the Schedule of Submittals as indicated in the Contract, Designer/Builder shall prepare and submit proposed "Site Maps" as described in Attachment B of the Construction Storm Water Permit.

The District's QSD will review the Designer/Builder's proposed Site Maps for compliance with the Construction Storm Water Permit. If changes to the proposed Site Maps are required to comply with the Construction Storm Water Permit, the District QSD will identify such changes to the Designer/Builder

Designer/Builder shall make the changes specified by the District's QSD and shall submit the revised Site Maps to the District within seven (7) days of receipt of the changes identified by the District's QSD. If the changes had been acceptably made, the District's QSD will approve the Site Maps and provide the Contract with a copy within seven (7) days of receipt of the revised SWPPP.

SWPPP

Concurrent with the Schedule of Submittals as indicated in the Contract, Designer/Builder shall prepare and submit to the District a proposed SWPPP for the Work.

The District's Qualified SWPPP Designer/Builder ("QSD") will review the Designer/Builder's proposed SWPPP for compliance with the Construction Storm Water Permit. If changes to the proposed SWPPP are required to comply with the Construction Storm Water Permit, the District QSD will identify such changes to the Designer/Builder

Designer/Builder shall make the changes specified by the District's QSD and shall submit the revised SWPPP to the District within seven (7) days of receipt of the changes identified by the District's QSD. If the changes had been acceptably made, the District's QSD will approve the SWPPP and provide the Contract with a copy within seven (7) days of receipt of the revised SWPPP.

RAIN EVENT ACTION PLAN (REAP)

If Designer/Builder determines that Site is a Risk Level 1, concurrent with the Schedule of Submittals as indicated in the Contract, Designer/Builder shall prepare and submit to the District a proposed REAP for the Work.

The District's QSD will review the Designer/Builder's proposed REAP for compliance with the Construction Storm Water Permit. If changes to the proposed REAP are required to comply with the Construction Storm Water Permit, the District QSD will identify such changes to the Designer/Builder

Designer/Builder shall make the changes specified by the District's QSD and shall submit the revised REAP to the District within seven (7) days of receipt of the changes identified by the District's QSD. If the changes had been acceptably made, the District's QSD will approve the REAP and provide the Contract with a copy within seven (7) days of receipt of the revised REAP.

ACTIVE TREATMENT SYSTEM (ATS)

If Designer/Builder determines that Site requires an ATS under the Construction Storm Water Permit, concurrent with the Schedule of Submittals as indicated in the Contract, Designer/Builder shall prepare and submit to the District a proposed ATS for the Work.

The District's QSD will review the Designer/Builder's proposed ATS for compliance with the Construction Storm Water Permit. If changes to the proposed ATS are required to comply with the Construction Storm Water Permit, the District QSD will identify such changes to the Designer/Builder

Designer/Builder shall make the changes specified by the District's QSD and shall submit the revised ATS to the District within seven (7) days of receipt of the changes identified by the District's QSD. If the changes had been acceptably made, the District's QSD will approve the ATS and provide the Contract with a copy within seven (7) days of receipt of the revised ATS.

***RECORDS**. All electronic and hardcopy records required by the Construction Storm Water Permit shall be submitted to the District within seven (7) days of Completion of the Project.*

***PERMIT REGISTRATION DOCUMENTS**. Prior to any activities on Site that disturb the Site's surface, the Permit Registration Documents (PRDs) required by the Construction Storm Water Permit must be filed with the Regional Water Quality Control Board. The District shall file the PRDs with the Regional Water Quality Control Board to activate coverage under the Construction Storm Water Permit.*

IMPLEMENTATION REQUIREMENTS

Designer/Builder shall not conduct any activities that may affect the Site's construction runoff water quality until the District provides Designer/Builder with the Waste Discharger Identification Number (WDID) assigned to this Project by the State Water Board.

Designer/Builder shall keep a copy of the approved SWPPP at the job site. The SWPPP shall be made available when requested by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests from the public shall be directed to the District for response.

Designer/Builder shall designate in writing to the District a Qualified SWPPP Practitioner (QSP) who shall be responsible for implementing the SWPPP, REAP (if applicable), ATS (if applicable), conducting non-storm water and storm water visual observations, and for ensuring that all best management practices (BMPs) required by the SWPPP and General Permit are properly implemented and maintained.

All measures required by the SWPPP shall be implemented concurrent with the commencement of construction. Pollution practices and devices shall be followed or installed as early in the construction schedule as possible with frequent upgrading of devices as construction progresses.

Designer/Builder shall ensure that all measures are properly maintained and repaired to protect the water quality of discharges.

***INSPECTION, SAMPLING, ANALYSIS, AND RECORD KEEPING REQUIREMENTS**. The Designer/Builder's QSP shall conduct all required visual observations, sampling, analysis, reporting, and record keeping required by the SWPPP and the Construction Storm Water Permit.*

***REPORTING REQUIREMENTS**. Designer/Builder shall prepare and provide all the reports, which include, but are not limited to the Annual Report and any NEL Violation Reports or NAL Exceedance Reports, all of which are required by the SWPPP and the Construction Storm Water Permit.*

***ANNUAL REPORT**. By August 1 of each year (defined as July 1 to June 30) that had at least one continuous three (3) month period coverage under the General Permit, Designer/Builder shall complete and submit to the District an Annual Report, as required by the General Permit. If the Project is complete prior to August 1, Designer/Builder*

shall submit the report prior to acceptance of the Project.

COMPLETION OF WORK

Clean-up shall be performed as each portion of the work progresses. All refuse, excess material, and possible pollutants shall be disposed of in a legal manner off-site and all temporary and permanent SWPPP devices shall be in place and maintained in good condition.

At Completion of Work, Designer/Builder shall inspect installed SWPPP devices, and present the currently implemented SWPPP with all backup records to the District.

***NOTICE OF TERMINATION (NOT)**. A Notice of Termination (NOT) must be submitted by the Designer/Builder to the District for electronic submittal by the Legally Responsible Person via SMARTS to terminate coverage under the General Permit. The NOT must include a final Site Map and representative photographs of the Project site that demonstrate final stabilization has been achieved. The NOT shall be submitted to the District on or before the Designer/Builder submits its final application for payment. If the Regional Water Board rejects the NOT for any reason, the Designer/Builder shall revise the NOT as many times as necessary to get the Regional Water Board's approval. The Regional Water Board will consider a construction site complete when the conditions of the General Permit, Section II.D have been met.*

QUALITY ASSURANCE

Before performing any of the obligations indicated herein, the Designer/Builder's QSP shall meet the training and certification requirements in the Construction Storm Water Permit.

Designer/Builder shall perform the Work in strict compliance with the approved SWPPP, REAP, ATS, and the Construction Storm Water Permit.

Designer/Builder shall conduct at least a one-hour training session on the requirements of the SWPPP for each employee before an employee conducts any construction on the Site. Designer/Builder shall maintain documentation of this employee training at the site for review by the District or any regulatory agency.

PERFORMANCE REQUIREMENTS

The Storm Water Pollution Prevention Plan is a minimum requirement. Revisions and modifications to the SWPPP are acceptable only if they maintain levels of protection equal to or greater than originally specified.

Read and be thoroughly familiar with all of the requirements of the SWPPP.

Inspect and monitor all work and storage areas for compliance with the SWPPP prior to any anticipated rain.

Complete any and all corrective measures as may be directed by the regulatory agency.

***Penalties**: Designer/Builder shall pay any fees and any penalties that may be imposed by the regulatory agency for non-compliance with SWPPP during the course of Work.*

***Costs**: Designer/Builder to pay all costs associated with the implementation of the requirements of the SWPPP in order to maintain compliance with the Permit. This includes installation of all Housekeeping BMPs, General Site and Material Management BMPs, Inspection requirements, maintenance requirements, and all other requirements specified in the SWPPP.*

***MATERIALS**. All temporary and permanent storm water pollution prevention facilities, equipment, and materials as required by or as necessary to comply with the SWPPP as described in the BMP Handbook.*

END OF DOCUMENT

MATERIALS AND EQUIPMENT

1. GENERAL

1.1. MATERIAL AND EQUIPMENT

1.1.1. Only items approved by the District and/or Construction Manager shall be used.

1.1.2. Designer/Builder shall submit lists of Products and other Product information in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

1.2. MATERIAL AND EQUIPMENT COLORS

1.2.1. The Designer/Builder shall comply with all schedule(s) of colors provided by the District and/or Construction Manager.

1.2.2. No individual color selections will be made until after approval of all pertinent materials and equipment and after receipt of appropriate samples in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

1.2.3. Designer/Builder shall request priority in writing for any item requiring advance ordering to maintain the approved Construction Schedule.

1.3. DELIVERY, STORAGE, AND HANDLING

1.3.1. Designer/Builder shall deliver manufactured materials in original packages, containers, or bundles (with seals unbroken), bearing name or identification mark of manufacturer.

1.3.2. Designer/Builder shall deliver fabrications in as large assemblies as practicable; where specified as shop-primed or shop-finished, package or crate as required to preserve such priming or finish intact and free from abrasion.

1.3.3. Designer/Builder shall store materials in such a manner as necessary to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt, or from any other cause will not be accepted.

1.3.4. Materials are not acceptable that have been warehoused for long periods of time, stored or transported in improper environment, improperly packaged, inadequately labeled, poorly protected, excessively shipped, deviated from normal distribution pattern, or reassembled.

1.3.5. Designer/Builder shall store material so as to cause no obstructions of sidewalks, roadways, and underground services. Designer/Builder shall protect material and equipment furnished pursuant to the Contract Documents.

1.3.6. Designer/Builder may store materials on Site with prior written approval by the District, all material shall remain under Designer/Builder's control and Designer/Builder shall remain liable for any damage to the materials. Should the Project Site not have storage area available, the Designer/Builder shall provide for off-site storage at no cost to District.

1.3.7. When any room in Project is used as a shop or storeroom, the Designer/Builder shall be responsible for any repairs, patching, or cleaning necessary due to that use. Location of storage space shall be subject to prior written approval by District.

2. PRODUCTS

2.1. MANUFACTURERS

2.1.1. Manufacturers listed in various sections of Contract Documents are names of those manufacturers that are believed to be capable of supplying one or more of items specified therein.

2.1.2. The listing of a manufacturer does not imply that every product of that manufacturer is acceptable as meeting the requirements of the Contract Documents.

2.2. FACILITIES AND EQUIPMENT

Designer/Builder shall provide, install, maintain, and operate a complete and adequate facility for handling, the execution, disposal, and distribution of material and equipment as required for proper and timely performance of Work.

2.3. MATERIAL REFERENCE STANDARDS

Where material is specified solely by reference to “standard specifications” and if requested by District, Designer/Builder shall submit for review data on actual material proposed to be incorporated into Work, listing name and address of vendor, manufacturer, or producer, and trade or brand names of those materials, and data substantiating compliance with standard specifications.

3. EXECUTION

3.1. WORKMANSHIP

3.1.1. Where not more specifically described in any other Contract Documents, workmanship shall conform to methods and operations of best standards and accepted practices of trade or trades involved and shall include items of fabrication, construction, or installation regularly furnished or required for completion (including finish and for successful operation, as intended).

3.1.2. Work shall be executed by tradespersons skilled in their respective field of work. When completed, parts shall have been durably and substantially built and present a neat appearance.

3.2. COORDINATION

3.2.1. Designer/Builder shall coordinate installation of materials and equipment so as to not interfere with installation of other work. Adjustment or rework because of Designer/Builder’s failure to coordinate will be at no additional cost to District.

3.2.2. Designer/Builder shall examine in-place materials and equipment for readiness, completeness, fitness to be concealed or to receive Work, and compliance with Contract Documents. Concealing or covering work constitutes acceptance of additional cost which will result should in-place materials and equipment be found unsuitable for receiving other work or otherwise deviating from the requirements of the Contract Documents.

3.3. COMPLETENESS

Designer/Builder shall provide all portions of the Work, unless clearly stated otherwise, installed complete and operational with all elements, accessories, anchorages, utility connections, etc., in manner to assure well-balanced performance, in accordance with manufacturer's recommendations and in accordance with Contract Documents. For example, electric water coolers require water, electricity, and drain services; roof drains require drain system; sinks fit within countertop, etc. Terms such as “installed complete,” “operable condition,” “for use intended,” “connected to all utilities,” “terminate with proper cap,” “adequately anchored,” “patch and refinish,” “to match similar,” should be assumed to apply in all cases, except where completeness of functional or operable condition is specifically stated as not required.

3.4. APPROVED INSTALLER OR APPLICATOR

Designer/Builder shall ensure that all installations are only performed by a manufacturer’s approved installer or applicator.

3.5. MANUFACTURER'S RECOMMENDATIONS

All installations shall be in accordance with manufacturer's published recommendations and specific written directions of manufacturer's representative. Should Contract Documents differ from recommendations of manufacturer or directions of manufacturer’s representative, Designer/Builder shall analyze differences, make recommendations to the District and the Construction Manager in writing, and shall not proceed until interpretation or clarification has been issued by the District and/or the Construction Manager.

END OF DOCUMENT

DELIVERY, STORAGE AND HANDLING

1. GENERAL

1.1. PRODUCTS

1.1.1. Products are as defined in the Contract.

1.1.2. Designer/Builder shall not use and/or reuse materials and/or equipment removed from existing Premises, except as specifically permitted by the Contract Documents.

1.1.3. Designer/Builder shall provide interchangeable components of the same manufacturer, for similar components.

1.2. TRANSPORTATION AND HANDLING

1.2.1. Designer/Builder shall transport and handle Products in accordance with manufacturer's instructions.

1.2.2. Designer/Builder shall promptly inspect shipments to confirm that Products comply with Contract requirements, are of correct quantity, and are undamaged.

1.2.3. Designer/Builder shall provide equipment and personnel to properly handle Products to prevent soiling, disfigurement, or damage.

1.3. STORAGE AND PROTECTION

1.3.1. Designer/Builder shall store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Designer/Builder shall store sensitive Products in weather-tight, climate controlled enclosures as needed.

1.3.2. Designer/Builder shall place fabricated Products that are stored outside, on above-ground sloped supports as needed.

1.3.3. Designer/Builder shall provide off-site storage and protection for Products when Site does not permit on-site storage or protection as needed.

1.3.4. Designer/Builder shall cover Products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation as needed.

1.3.5. Designer/Builder shall store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter as needed.

1.3.6. Designer/Builder shall provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage as needed.

1.3.7. Designer/Builder shall arrange storage of Products to permit access for inspection and periodically inspect to assure Products are undamaged and are maintained under specified conditions as needed.

END OF DOCUMENT

CONTRACT CLOSEOUT AND FINAL CLEANING

1. GENERAL

1.1. CLOSEOUT PROCEDURES

Designer/Builder shall comply with all closeout provisions as indicated in the Contract.

1.2. FINAL CLEANING

1.2.1. Designer/Builder shall execute final cleaning prior to final inspection.

1.2.2. Delete

1.2.3. Designer/Builder shall clean equipment and fixtures to a clean condition as needed.

1.2.4. Delete

1.2.5. Designer/Builder shall clean debris from roofs, gutters, down spouts, and drainage systems as applicable.

1.2.6. Designer/Builder shall clean Site, sweep paved areas, and rake clean landscaped surfaces as needed.

1.2.7. Designer/Builder shall remove waste and surplus materials, rubbish, and construction facilities from the Site.

1.3. ADJUSTING

Designer/Builder shall adjust operating products and equipment to ensure smooth and unhindered operation.

1.4. RECORD DOCUMENTS AND SHOP DRAWINGS

Designer/Builder shall legibly mark each item to record actual construction, including:

1.4.1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permit surface improvements, where available.

1.4.2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work, where available.

1.4.3. Field changes of dimension and detail.

1.4.4. Details not on original Contract Drawings.

1.4.5. Changes made by modification(s).

1.4.6. References to related Shop Drawings and modifications.

1.4.7. Designer/Builder will provide one electronic set of Record Drawings to District.

1.4.8. Designer/Builder shall submit all required documents to District and/or Construction Manager prior to or with its final Application for Payment.

1.5. INSTRUCTION OF DISTRICT PERSONNEL

1.5.1. Before final inspection, at agreed upon times, Designer/Builder shall instruct District's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems as applicable.

1.5.2. Designer/Builder shall use operation and maintenance manuals as basis for instruction. Designer/Builder shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance as needed.

1.5.3. Designer/Builder shall prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

1.6. SPARE PARTS AND MAINTENANCE MATERIALS

1.6.1. Designer/Builder shall provide products, spare parts, maintenance, and extra materials in quantities specified in the Specifications, this Contract, and in Manufacturer's recommendations.

1.6.2. Designer/Builder shall provide District all required Operation and Maintenance Data at project closeout.

END OF DOCUMENT

FIELD ENGINEERING – (AS REQUIRED FOR THE PROJECT OR EACH SITE)

THE DESIGNER/BUILDER HAS DETERMINED THAT FIELD ENGINEERING WILL NOT BE REQUIRED OR USED ON THE PROJECT. HOWEVER, IF FIELD ENGINEERING BECOMES REQUIRED FOR THE PROJECT, THE DESIGNER/BUILDER SHALL COMPLY WITH THE REQUIREMENTS BELOW.

1. GENERAL

1.1. REQUIREMENTS INCLUDED

1.1.1. Designer/Builder shall provide and pay for field engineering services by a California-registered engineer, required for the Project, including, without limitations:

1.1.1.1. Survey work required in execution of the Project.

1.1.1.2. Civil or other professional engineering services specified, or required to execute Designer/Builder's construction methods.

1.2. QUALIFICATIONS OF SURVEYOR OR ENGINEERS

Designer/Builder shall only use a qualified licensed engineer or registered land surveyor, to whom District makes no objection.

1.3. SURVEY REFERENCE POINTS

1.3.1. Existing basic horizontal and vertical control points for the Project are those designated on the Drawings.

1.3.2. Designer/Builder shall locate and protect control points prior to starting Site Work and preserve all permanent reference points during construction. In addition, Designer/Builder shall:

1.3.2.1. Make no changes or relocation without prior written notice to District and Construction Manager.

1.3.2.2. Report to District and Construction Manager when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

1.3.2.3. Require surveyor to replace Project control points based on original survey control that may be lost or destroyed.

1.4. RECORDS

Designer/Builder shall maintain a complete, accurate log of all control and survey work as it progresses.

1.5. SUBMITTALS

1.5.1. Designer/Builder shall submit name and address of Surveyor and Professional Engineer to District and Construction Manager prior to its/their work on the Project.

1.5.2. On request of District and Construction Manager, Designer/Builder shall submit documentation to verify accuracy of field engineering work, at no additional cost to the District.

1.5.3. Designer/Builder shall submit a certificate signed by registered engineer or surveyor certifying that elevations and locations of improvements are in conformance or nonconformance with Contract Documents.

2. EXECUTION

2.1. COMPLIANCE WITH LAWS

Designer/Builder is responsible for meeting all applicable codes, OSHA, safety and shoring requirements.

2.2. NONCONFORMING WORK

Designer/Builder is responsible for any re-surveying required by correction of nonconforming work.

END OF DOCUMENT

CUTTING AND PATCHING

1. GENERAL

1.1. CUTTING AND PATCHING, if applicable

1.1.1. Designer/Builder shall be responsible for all cutting, fitting, and patching, including associated excavation and backfill, required to complete the Work or to:

1.1.1.1. Make several parts fit together properly.

1.1.1.2. Uncover portions of Work to provide for installation of ill-timed Work.

1.1.1.3. Remove and replace defective Work.

1.1.1.4. Remove and replace Work not conforming to requirements of Contract Documents.

1.1.1.5. Remove Samples of installed Work as specified for testing.

1.1.1.6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

1.1.1.7. Attaching new materials to existing remodeling areas – including painting (or other finishes) to match existing conditions.

1.1.2. In addition to Contract requirements, upon written instructions from District, Designer/Builder shall uncover Work to provide for observations of covered Work in accordance with the Contract Documents; remove samples of installed materials for testing as directed by District; and remove Work to provide for alteration of existing Work.

1.1.3. Designer/Builder shall not cut or alter Work, or any part of it, in such a way that endangers or compromises the integrity of the Work, the Project, or work of others.

1.1.4. Designer/Builder shall not cut and patch operating elements and safety related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:

1.1.4.1. Primary operational systems and equipment.

1.1.4.2. Air or smoke barriers.

1.1.4.3. Fire-suppression systems.

1.1.4.4. Mechanical systems piping and ducts.

1.1.4.5. Control systems.

1.1.4.6. Communication systems.

1.1.4.7. Conveying systems.

1.1.4.8. Electrical wiring systems.

1.1.5. Designer/Builder shall not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing capacity to perform as intended, or that results in increased maintenance or decreased operational life of safety. Miscellaneous elements include the following:

1.1.5.1. Water, moisture or vapor barriers.

1.1.5.2. Membranes and flashings.

1.1.5.3. Exterior curtain-wall construction.

1.1.5.4. Equipment supports.

1.1.5.5. Piping, ductwork, vessels and equipment.

1.1.5.6. Noise and vibration control elements and systems.

1.1.5.7. Shoring, bracing and sheeting.

1.2. SUBMITTALS

1.2.1. If required, Designer/Builder shall submit written notice to District pursuant to the applicable notice provisions of the Contract Documents, requesting consent to proceed with the cutting or alteration (Request) at least ten (10) days prior to any cutting or alterations that may affect the structural safety of Project, or work of others, including the following:

1.2.1.1. The work of the District or other trades.

1.2.1.2. Structural value or integrity of any element of Project.
1.2.1.3. Integrity or effectiveness of weather-exposed or weather-resistant elements or systems.
1.2.1.4. Efficiency, operational life, maintenance or safety of operational elements.
1.2.1.5. Visual qualities of sight-exposed elements.

1.2.2. If required, Contractor's Request shall also include:
1.2.2.1. Identification of Project.
1.2.2.2. Description of affected Work.
1.2.2.3. Necessity for cutting, alteration, or excavations.
1.2.2.4. Affects of Work on District, other trades, or structural or weatherproof integrity of Project.
1.2.2.5. Description of proposed Work:
1.2.2.5.1. Scope of cutting, patching, alteration, or excavation.
1.2.2.5.2. Trades that will execute Work.
1.2.2.5.3. Products proposed to be used.
1.2.2.5.4. Extent of refinishing to be done.
1.2.2.6. Alternates to cutting and patching.
1.2.2.7. Cost proposal, when applicable.
1.2.2.8. The scheduled date the Designer/Builder intends to perform the Work and the duration of time to complete the Work.
1.2.2.9. Written permission of other trades whose Work will be affected.

1.3. QUALITY ASSURANCE

1.3.1. Designer/Builder shall ensure that cutting, fitting, and patching shall achieve security, strength, weather protection, appearance for aesthetic match, efficiency, operational life, maintenance, safety of operational elements, and the continuity of existing fire ratings.

1.3.2. Designer/Builder shall ensure that cutting, fitting, and patching shall successfully duplicate undisturbed adjacent profiles, materials, textures, finishes, colors, and that materials shall match existing construction. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the District's decision shall be final.

1.4. PAYMENT FOR COSTS

1.4.1. Cost caused by ill-timed or defective Work or Work not conforming to Contract Documents, including costs for additional services of the District, its consultants, including but not limited to the Construction Manager, the Project Inspector(s), Engineers, and Agents, will be paid by Designer/Builder and/or deducted from the Contract by the District.

1.4.2. District shall only pay for cost of Work if it is part of the original Contract Price or if a change has been made to the contract in compliance with the provisions of the Contract. Cost of Work performed upon instructions from the District, other than defective or nonconforming Work, will be paid by District on approval of written Change Order.

2. PRODUCTS

2.1. MATERIALS

2.1.1. Designer/Builder shall provide for replacement and restoration of Work removed. Designer/Builder shall comply with the Contract Documents and with the Industry Standard(s), for the type of Work, and the Specification requirements for each specific product involved. If not specified, Designer/Builder shall first recommend a product of a manufacturer or appropriate trade association for approval by the District.

2.1.2. Materials to be cut and patched include those damaged by the performance of the Work.

3. EXECUTION

3.1. INSPECTION

3.1.1. Designer/Builder shall inspect existing conditions of the Site and the Work, including elements subject to movement or damage during cutting and patching, excavating and backfilling. After uncovering Work, Designer/Builder shall inspect conditions affecting installation of new products.

3.1.2. Designer/Builder shall report unsatisfactory or questionable conditions in writing to District as indicated in the Contract and shall proceed with Work as indicated in the Contract.

3.2. PREPARATION

3.2.1. Designer/Builder shall provide shoring, bracing and supports as required to maintain structural integrity for all portions of the Project, including all requirements of the Project.

3.2.2. Designer/Builder shall provide devices and methods to protect other portions of Project from damage.

3.2.3. Designer/Builder shall, provide all necessary protection from weather and extremes of temperature and humidity for the Project, including without limitation, any work that may be exposed by cutting and patching Work. Designer/Builder shall keep excavations free from water.

3.3. ERECTION, INSTALLATION AND APPLICATION

3.3.1. With respect to performance, Designer/Builder shall:

3.3.1.1. Execute fitting and adjustment of products to provide finished installation to comply with and match specified tolerances and finishes.

3.3.1.2. Execute cutting and demolition by methods that will prevent damage to other Work, and provide proper surfaces to receive installation of repairs and new Work.

3.3.1.3. Execute cutting, demolition excavating, and backfilling by methods that will prevent damage to other Work and damage from settlement.

3.3.1.4. Designer/Builder shall employ original installer or fabricator to perform cutting and patching for:

3.3.1.5. Weather-exposed surfaces and moisture-resistant elements such as roofing, sheet metal, sealants, waterproofing, and other trades.

3.3.1.6. Sight-exposed finished surfaces.

3.3.2. Designer/Builder shall execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes as shown or specified in the Contract Documents including, without limitation, the Drawings and Specifications.

3.3.3. Designer/Builder shall fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Designer/Builder shall conform to all Code requirements for penetrations or the Drawings and Specifications, whichever calls for a higher quality or more thorough requirement. Designer/Builder shall maintain integrity of both rated and non-rated fire walls, ceilings, floors, etc.

3.3.4. Designer/Builder shall restore Work which has been cut or removed. Designer/Builder shall install new products to provide completed Work in accordance with requirements of the Contract Documents and as required to match surrounding areas and surfaces.

3.3.5. Designer/Builder shall refinish all continuous surfaces to nearest intersection as necessary to match the existing finish to any new finish.

END OF DOCUMENT

OPERATION AND MAINTENANCE DATA

1. GENERAL

1.1. QUALITY ASSURANCE

1.1.1. Designer/Builder shall prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.1.2. The provisions in this “Operations and Maintenance Data” document only apply to activities that the Designer/Builder does not perform as the Operator under a separate O&M Contract. Any conflict between this Section and the O&M Contract will be resolved in favor of the O&M Contract.

1.2. FORMAT

1.2.1. Designer/Builder shall prepare data in the form of an instructional manual entitled “OPERATIONS AND MAINTENANCE MANUAL & INSTRUCTIONS” (“Manual”).

1.2.2. Binders: Designer/Builder shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers. When multiple binders are used, Designer/Builder shall correlate data into related consistent groupings.

1.2.3. Cover: Designer/Builder shall identify each binder with typed or printed title "OPERATION AND MAINTENANCE MANUAL & INSTRUCTIONS"; and shall list title of Project and identify subject matter of contents.

1.2.4. Designer/Builder shall arrange content by systems process flow under section numbers and sequence of Table of Contents of the Contract Documents.

1.2.5. Designer/Builder shall provide tabbed fly leaf for each separate section

1.2.6. Text: The content shall include Manufacturer's printed or typewritten data.

1.2.7. Drawings: Designer/Builder shall provide; folding larger drawings to size of text pages.

1.3. CONTENTS, EACH VOLUME

1.3.1. Table of Contents: Designer/Builder shall provide title of Project; names, addresses, and telephone numbers of any engineers, subconsultants, Subcontractor(s), and Designer/Builder with name of responsible parties; and schedule of Products and systems, indexed to content of the volume.

1.3.2. For Each Product or System: Designer/Builder shall list names, addresses, and telephone numbers of Subcontractor(s) and suppliers, including local source of supplies and replacement parts.

1.3.3. Product Data: Designer/Builder shall mark each sheet to clearly identify specific Products and component parts, and data applicable to installation. Delete inapplicable information.

1.3.4. Drawings: Designer/Builder shall supplement Product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Designer/Builder shall not use Project Record Documents as maintenance drawings.

1.3.5. Text: The Designer/Builder shall include any and all information as required to supplement Product data. Designer/Builder shall provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

1.4. MANUAL FOR MATERIALS AND FINISHES

1.4.1. Building Products, Applied Materials, and Finishes: Where applicable, Designer/Builder shall include Product data, with catalog number, size, composition, and color and texture designations. Designer/Builder shall provide information for re-ordering custom manufactured Products.

1.4.2. Instructions for Care and Maintenance: Designer/Builder shall include Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance, as available.

1.4.3. Moisture Protection and Weather Exposed Products: Where applicable, Designer/Builder shall include Product data listing applicable reference standards, chemical composition, and details of installation. Designer/Builder shall provide recommendations for inspections, maintenance, and repair.

1.4.4. Additional Requirements: Designer/Builder shall include all additional requirements as specified in the Specifications.

1.4.5. Designer/Builder shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.5. MANUAL FOR EQUIPMENT AND SYSTEMS

1.5.1. Each Item of Equipment and Each System: Where applicable, Designer/Builder shall include description of unit or system, and component parts and identify function, normal operating characteristics, and limiting conditions. Designer/Builder shall include performance curves, with engineering data and tests, and complete nomenclature, and commercial number of replaceable parts.

1.5.2. Panelboard Circuit Directories: Where applicable, Designer/Builder shall provide electrical service characteristics, controls, and communications.

1.5.3. Where applicable, Designer/Builder shall include color coded wiring diagrams as installed.

1.5.4. Operating Procedures: Where applicable, Designer/Builder shall include start-up, break-in, and routine normal operating instructions and sequences. Designer/Builder shall include regulation, control, stopping, shut-down, and emergency instructions. Designer/Builder shall include summer, winter, and any special operating instructions.

1.5.5. Maintenance Requirements: Where applicable, Designer/Builder shall include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

1.5.6. Where applicable, Designer/Builder shall provide servicing and lubrication schedule, and list of lubricants required.

1.5.7. Where applicable, Designer/Builder shall include manufacturer's printed operation and maintenance instructions.

1.5.8. Where applicable, Designer/Builder shall include sequence of operation by controls manufacturer.

1.5.9. Where applicable, Designer/Builder shall provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

1.5.10. Where applicable, Designer/Builder shall provide control diagrams by controls manufacturer as installed.

1.5.11. Where applicable, Designer/Builder shall provide Designer/Builder's coordination drawings, with color coded piping diagrams as installed.

1.5.12. Where applicable, Designer/Builder shall provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

1.5.13. Where applicable, Designer/Builder shall provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

1.5.14. Additional Requirements: Designer/Builder shall include all additional requirements as specified in Specification(s).

1.5.15. Designer/Builder shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.6. SUBMITTAL

1.6.1. Concurrent with the Schedule of Submittals as indicated in the Contract, Designer/Builder shall submit to the District for review one copy of a preliminary draft of proposed formats and outlines of the contents of the Manual.

1.6.2. For equipment, or component parts of equipment put into service during construction and to be operated by District, Designer/Builder shall submit draft content for that portion of the Manual at project closeout.

1.6.3. On or before the Designer/Builder submits its final application for payment, Designer/Builder shall submit two (2) copies of a complete Manual in final form, one physical and one electronic. The District will provide comments to Designer/Builder and Designer/Builder must revise the content of the Manual as required by District prior to District's approval of Designer/Builder's final Application for Payment.

1.6.4. Designer/Builder must submit two (2) copies of revised Manual in final form within ten (10) business days after receiving District's comments, notwithstanding any delays in obtaining additional information from third parties: one copy shall be physically delivered to the District in "hardcopy form"; and the other copy shall be submitted to the District by means of the Box file hosting service. Failure to do so will be a basis for the District withholding funds sufficient to protect itself for Designer/Builder's failure to provide a final Manual to the District.

END OF DOCUMENT

WARRANTIES

1. GENERAL

1.1. The provisions in this "Warranties" document only applies to warranties for any part of the Generating Facilities not including the inverter(s) or the solar panels, which are detailed in other areas of the Contract. **ANY CONFLICT BETWEEN THIS SECTION AND THE CONTRACT SHALL BE RESOLVED IN FAVOR THE CONTRACT.**

1.2. FORMAT

1.2.1. Binders: Designer/Builder shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers.

1.2.2. Cover: Designer/Builder shall identify each binder with typed or printed title "WARRANTIES" and shall list title of Project.

1.2.3. Table of Contents: Designer/Builder shall provide title of Project; name, address, and telephone number of Designer/Builder and equipment supplier, and name of responsible principal. Designer/Builder shall identify each item with the number and title of the specific Specification, document, provision, or section in which the name of the Product or work item is specified.

1.2.4. Designer/Builder shall separate each warranty with index tab sheets keyed to the Table of Contents listing, providing full information and using separate typed sheets as necessary. Designer/Builder shall list each applicable and/or responsible Subcontractor(s), supplier(s), and/or manufacturer(s), with name, address, and telephone number of each responsible principal(s).

1.3. PREPARATION

1.3.1. Designer/Builder shall obtain warranties, executed by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s), within thirty (30) days after Project Completion. Except for items put into use with District's permission, Designer/Builder shall leave date of beginning of time of warranty until the date of completion is determined.

1.3.2. Designer/Builder shall verify that warranties are in proper form, contain full information, and are notarized, when required.

1.3.3. Designer/Builder shall co-execute submittals when required.

1.3.4. Designer/Builder shall retain warranties until time specified for submittal.

1.4. TIME OF SUBMITTALS

1.4.1. For equipment or component parts of equipment put into service during construction with District's permission, Designer/Builder shall submit a draft warranty for that equipment or component at project closeout.

1.4.2. On or before the Designer/Builder submits its final application for payment, Designer/Builder shall submit all warranties and related documents in final form. The District will provide comments to Designer/Builder and Designer/Builder must revise the content of the warranties as required by District prior to District's approval of Designer/Builder's final Application for Payment.

1.4.3. For items of Work that are not completed until after the date of Completion, Designer/Builder shall provide an updated warranty for those item(s) of Work within ten (10) business days after acceptance, listing the date of acceptance as start of warranty period.

END OF DOCUMENT

RECORD DOCUMENTS

1. RECORD DRAWINGS

1.1. GENERAL

1.1.1. "Record Drawings" may also be referred to in the Contract as "As-Built Drawings."

1.1.2. As indicated in the Contract Documents, District will provide Designer/Builder with one set of reproducible plans of the original Contract Drawings.

1.1.3. Designer/Builder shall maintain at each Project Site one (1) set of marked-up plans and shall transfer all changes and information to those marked-up plans, as often as required in the Contract Documents. The As-Builts shall be available at the Project Site. The Designer/Builder shall submit electronic copies at the conclusion of the Project following review of the blueline prints.

1.1.4. Label and date each Record Drawing "RECORD DOCUMENT" in legibly printed letters.

1.1.5. All deviations in construction, including but not limited to pipe and conduit locations and deviations caused by without limitation Change Orders, Construction Directives, RFI's, and Addenda, shall be accurately and legibly recorded by Designer/Builder

1.1.6. Locations and changes shall be done by Designer/Builder in a neat and legible manner and, where applicable, indicated by drawing a "cloud" around the changed or additional information.

1.2. RECORD DRAWING INFORMATION

1.2.1. Designer/Builder shall record the following information:

1.2.1.1. Locations of Work buried under or outside each building, including, without limitation, all utilities, plumbing and electrical lines, and conduits.

1.2.1.2. Actual numbering of each electrical circuit.

1.2.1.3. Locations of significant Work concealed inside each building whose general locations are changed from those shown on the Contract Drawings.

1.2.1.4. Locations of all items, not necessarily concealed, which vary from the Contract Documents.

1.2.1.5. Deviations from the sizes, locations, and other features of installations shown in the Contract Documents.

1.2.1.6. Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, etc.

1.2.1.7. Sufficient information to locate Work concealed in each building with reasonable ease and accuracy, where applicable.

1.2.2. In some instances, this information may be recorded by dimension. In other instances, it may be recorded in relation to the spaces in the building near which it was installed.

1.2.3. Designer/Builder shall provide additional drawings as necessary for clarification.

1.2.4. Designer/Builder shall provide reproducible record drawings, made from final Shop Drawings marked "No Exceptions Taken" or "Approved as Noted."

2. RECORD SPECIFICATIONS

Designer/Builder shall mark each section legibly to record manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.

3. MAINTENANCE OF RECORD DOCUMENTS

3.1. Designer/Builder shall store Record Documents digitally.

3.2. Designer/Builder shall not use Record Documents for construction purposes.

END OF DOCUMENT

COMMISSIONING

4. GENERAL

4.1. SUMMARY

4.1.1. Commissioning is a process for validating and documenting that the facility and its systems are constructed and perform in conformity with the Contract Documents.

4.1.2. The objective of the commissioning process is to verify that the performance of the facility and its systems meet or exceed the design intent.

4.1.3. Commissioning includes special facility start-up processes used to bring the facility to a fully operational state, free of deficiencies in an efficient and timely manner.

4.1.4. Training on related systems and equipment operation and maintenance shall be scheduled to commence only after start-up is complete and systems are verified to be 100% complete and functional.

4.2. DESCRIPTION

4.2.1. **Designer/Builder Startup**: Sub-phase of Designer/Builder's work ending with Acceptance of Work, during which Designer/Builder performs a pre-planned program of activities including starting, testing, inspecting, adjusting balancing, correcting deficiencies and other similar activities.

4.2.1.1. The District, Construction Manager and the Inspector shall be reasonably notified, at least 48 hours in advance, and given the opportunity to be present to observe, inspect and identify deficiencies in building systems operations.

4.2.2. The completion of startup means the entire Construction Project startup has been performed to the requirements of the Contract Documents and is verified in writing by the District and Construction Manager.

4.3. DEFINITION OF TERMS

4.3.1. **Contractor's Pre-Commissioning Checklists**: Includes installation and start-up items as specified to be completed by the appropriate contractors prior to operational verification through the functional testing process.

4.3.2. **Installation Verification Process**: Includes the on-site inspection and review of related system components for conformance to Contract Documents. The Designer/Builder shall verify systems readiness for functional testing procedures prior to the start of functional testing. Deficiencies will be documented by the Inspector for future resolution.

4.3.3. **Functional Performance Testing Process**: Includes the documented testing of system parameters, under actual or simulated operating conditions. Final performance commissioning of systems will begin only after the appropriate Designer/Builder certifies that systems are 100% complete and ready for functional testing. The Designer/Builder will be required to schedule, coordinate and perform device tests, calibration and functional performance test procedures.

4.3.4. **Deficiencies and Resolutions List:** Includes a list of noted deficiencies discovered as a result of the commissioning process. This list also includes the current disposition of issues, and the date of final resolution as confirmed by the Construction Manager and Inspector. Deficiencies are defined as those issues where products execution or performance does not satisfy the Project Contract Documents and/or the design intent.

4.4. COMMISSIONING SCHEDULE

4.4.1. Provide schedules for Designer/Builder Start-Up work.

4.4.2. Incorporate in overall construction schedule.

4.5. SUBMITTALS

4.5.1. Submit Draft and Final Designer/Builder Start-up Template Forms as described in this Document. Submit Draft Report Template for Construction Manager's review and comment prior to Final Submission. Submit Final Report Template not later than twenty weeks before scheduled date of Acceptance of Work.

4.5.2. Prepare and submit one copy of report form to be used in preparation of reports for each electrical system that is part of the Generating Facilities.

4.5.3. Each System Report shall be submitted including the following:

4.5.3.1. Project Name

4.5.3.2. Name of System

4.5.3.3. Index of report's content

4.5.3.4. Adjacent to list of equipment, columns to indicate status of equipment operation, to date and to sign off equipment start-up.

4.5.3.5. Space to record equipment and operational problems which cannot be corrected with scheduled Designer/Builder Start-Up program and which may delay Acceptance of Work.

4.5.3.6. Manufacturer's equipment start-up reports.

4.5.3.7. Systems' testing, balancing, and adjusting reports.

4.5.3.8. Equipment Report Forms shall include the following: Project name, name of equipment, starting and testing procedures to be performed and observations and test results to be recorded.

4.6. COMMISSIONING DUTIES AND RESPONSIBILITIES

4.6.1. Designer/Builder Duties and Responsibilities:

4.6.1.1. Assure the participation and cooperation of Subcontractors and Suppliers under their jurisdictions as required to complete the commissioning process.

4.6.1.2. Complete Commissioning Report Forms. Reports are to be completed in a neat easily readable condition.

4.6.1.3. Complete the respective start-up and check out procedures and insure readiness of equipment and systems prior to the start of the functional performance testing. Written confirmation of system readiness for performance testing is required.

4.6.1.4. Provide qualified representatives for the functional performance commissioning process.

4.6.1.5. Assure that all subcontractors, suppliers, test and balance, controls, etc. include in their respective contracts cost necessary to participate in and complete the commissioning process.

4.6.2. **Duties and Responsibilities of Others for Commissioning**: The commissioning process requires the active participation of the Construction Manager, District, and any other related consultants on the project.

4.7. SYSTEM FAILURES

After a second failure of a system to successfully meet the criteria as set for in the functional performance testing process, the Designer/Builder shall reimburse the District for cost associated with any additional retesting required due to uncorrected deficiencies. Costs shall include salary, benefits, overhead, travel costs and per diem lodging costs if applicable.

END OF DOCUMENT

Exhibit J

EDUCATIONAL SERVICES

SERVICES PROVIDED

From the Contract Effective Date through December 2023, ENGIE Services U.S. will provide the following educational services at Mountain View Whisman School District. If the District's distance learning or virtual learning impacts the ability to provide these services, the Parties agree to cooperate to provide these same services in a virtual or distance method, at the District's reasonable discretion.

I. Educational Services Provided

ENGIE Services U.S. will provide the following:

STEAM Literacy Support: ENGIE will provide a library of grade appropriate STEAM books for grades K-5. Books will include fiction, nonfiction, read aloud/picture books, etc. to engage students in science through reading. Books topics may include electricity, renewable energy, natural resources, climate change, sustainability, creative thinking, problem solving, engineering, computer science, etc.

- A library set of at least twenty (20) books
- Provide this set of books for each of nine (9) elementary sites

Summer School Program Support: ENGIE will partner with MVWSD to develop a summer school program featuring hands-on STEAM activities. The district can offer this program as a stand-alone one-week science program, or use it to supplement existing programming for a longer summer school engagement. Program elements can also be offered virtually with reduced activity hours.

- Fifteen (15) hours of activities for grades 1-2
    - Materials kits for 2 classes of 25 students each
- Fifteen (15) hours of activities for grades 3-4
    - Materials kits for two (2) classes of 25 students each
- Fifteen (15) hours of activities for grade 5
    - Materials kit for one (1) class of 25 students

STEAM Lab Support: ENGIE will support the STEAM teachers and labs at the nine (9) elementary sites with developmentally appropriate solar lessons as follows. Some activities can also be adapted to be offered virtually by District:

- One (1) solar energy lesson/set of hands on activities for grades K-1
    - Nine (9) related materials kits with enough consumable materials for 250 students
- One (1) solar energy lesson/set of hands on activities for grades 2-3
    - Nine (9) related materials kits with enough consumable materials for 250 students
- One (1) solar energy lesson/ set of hands on activities for grades 4-5
    - Nine (9) related materials kits with enough consumable materials for 250 students

Professional Development: Sessions are designed to enable program facilitators to set up and deliver the activities developed for these programs. Sessions are customized to the goals of the District. Sessions can also be offered virtually, accompanied by electronic resources.

- One (1) session of four (4) hours in length to review the three (3) STEAM Lab solar lessons for up to twenty (20) teachers
- Two (2) sessions of up to six (6) hours in length to review summer school activities for up to ten (10) teachers