SAN GORGONIO
MEMORIAL HEALTHCARE
DISTRICT

AGENDA

REGULAR MEETING OF THE BOARD OF DIRECTORS
Tuesday, October 6, 2020
6:00 PM

IN AN EFFORT TO PREVENT THE SPREAD OF COVID-19 (CORONAVIRUS), AND IN ACCORDANCE WITH THE GOVERNOR'S EXECUTIVE ORDER N-29-20, THERE WILL BE NO PUBLIC LOCATION FOR ATTENDING THIS BOARD MEETING IN PERSON. MEMBERS OF THE PUBLIC MAY JOIN THE MEETING BY FOLLOWING THE INSTRUCTIONS BELOW:

Meeting Information

Meeting link: https://sangorgoniomemorialhospital-ajd.my.webex.com/sangorgoniomemorialhospital-ajd.my/j.php?MTID=m57e4aac68c8d37e9245f51a4a918c7ba
Meeting number: 126 808 5479
Password: 1234

More ways to join

Join by video system
Dial 1268085479@ webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join by phone
+1-510-338-9438 USA Toll
Access code: 126 808 5479
Password: 1234

Emergency phone number if WebEx tech difficulties
951-846-2846
code: 3376#

THE TELEPHONES OF ALL MEMBERS OF THE PUBLIC LISTENING IN ON THIS MEETING MUST BE "MUTED".

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Administration Office at (951) 769-2160. **Notification 48 hours prior to the meeting** will enable the Healthcare District to make reasonable arrangements to ensure accessibility to this meeting. [28 CFR 35.02-35.104 ADA Title II].

TAB

I. Call to Order — D. Tankersley, Chair

San Gorgonio Memorial Healthcare District
Board of Directors Regular Meeting
October 6, 2020

II. Public Comment

Members of the public who wish to comment on any item on the agenda may speak during public comment or submit comments by emailing publiccomment@sgmh.org on or before 1:00 PM on Tuesday, October 6, 2020, which will become part of the board meeting record.

A five-minute limitation shall apply to each member of the public who wishes to address the Healthcare District Board of Directors on any matter under the subject jurisdiction of the Board. A thirty-minute time limit is placed on this section. No member of the public shall be permitted to "share" his/her five minutes with any other member of the public. (Usually, any items received under this heading are referred to staff for future study, research, completion and/or future Board Action.) (PLEASE STATE YOUR NAME AND ADDRESS FOR THE RECORD.)

On behalf of the Healthcare District Board of Directors, we want you to know that the Board acknowledges the comments or concerns that you direct to this Board. While the Board may wish to occasionally respond immediately to questions or comments if appropriate, they often will instruct the Hospital CEO, or other Hospital Executive personnel, to do further research and report back to the Board prior to responding to any issues raised. If you have specific questions, you will receive a response either at the meeting or shortly thereafter. The Board wants to ensure that it is fully informed before responding, and so if your questions are not addressed during the meeting, this does not indicate a lack of interest on the Board's part; a response will be forthcoming.

NOTE: ALL MEMBERS OF THE SAN GORGONIO MEMORIAL HOSPITAL BOARD OF DIRECTORS ARE INVITED PARTICIPANTS AND MAY ADDRESS THE SAN GORGONIO MEMORIAL HEALTHCARE DISTRICT BOARD OF DIRECTORS AT ANY TIME DURING THIS MEETING.

OLD BUSINESS

III.	*** Proposed Action - Approve Minutes** • September 1, 2020 regular meeting	All	A

NEW BUSINESS

IV.	Healthcare District Board Chair monthly report	D. Tankersley	verbal
V.	***Proposed Action – Approve Energy Services Agreement with Siemens for HVAC and Lighting Improvement** ▪ **ROLL CALL**	V. Delpidio	B
VI.	*** Proposed Action - Approve August 2020 Financial report** ▪ **ROLL CALL**	M. Kammer	C
	• Informational: Measure A funds report – August 2020		D
VII.	ICU and ED Ice Machine Quotes/Invoices (Informational)		E

VIII.	Appoint Ad Hoc Nomination Committee	D. Tankersley	verbal
IX.	General Information		F
***	**ITEMS FOR DISCUSSION/APPROVAL IN CLOSED SESSION**	D. Tankersley	

- Proposed Action – Approve Medical Staff Credentialing
  (Health & Safety Code §32155; and Evidence Code §1157)

X. **ADJOURN TO CLOSED SESSION**

RECONVENE TO OPEN SESSION

***	**REPORT ON ACTIONS TAKEN DURING CLOSED SESSION**	D. Tankersley	
XI.	Future Agenda Items		
XII.	Adjournment	D. Tankersley	

***Action Required**

In accordance with The Brown Act, *Section 54957.5*, all public records relating to an agenda item on this agenda are available for public inspection at the time the document is distributed to all, or a majority of all, members of the Board. Such records shall be available at the Healthcare District Administration office located at 600 N. Highland Springs Avenue, Banning, CA 92220 during regular business hours, Monday through Friday, 8:00 am - 4:30 pm.

I certify that on October 2, 2020 I posted a copy of the foregoing agenda near the regular meeting place of the Board of Directors of San Gorgonio Memorial Healthcare District, and on the San Gorgonio Memorial Hospital website, said time being at least 72 hours in advance of the regular meeting of the Board of Directors (*Government Code Section 54954.2*).

Executed at Banning, California on October 2, 2020

Ariel Whitley

Ariel Whitley, Executive Assistant

TAB A

MINUTES: Not Yet Approved By Board

REGULAR MEETING OF THE
SAN GORGONIO MEMORIAL HEALTHCARE DISTRICT
BOARD OF DIRECTORS

September 1, 2020

The regular meeting of the Board of Directors of the San Gorgonio Memorial Healthcare District was held on Tuesday, September 1, 2020. In an effort to prevent the spread of COVID-19 (coronavirus), and in accordance with the Governor's Executive Order N-29-20, there was no public location for attending this board meeting in person. Board members and members of the public participated via WebEx.

Members Present: Phillip Capobianco III, Estelle Lewis, Lanny Swerdlow, Dennis Tankersley (Chair)

Absent: None

Required Hospital: Steve Barron (CEO), Pat Brown (CNO), Holly Yonemoto (CBDO), Annah Karam (CHRO), Karan Singh, MD (CQO), Margaret Kammer (Controller), Ariel Whitley (Executive Assistant)

AGENDA ITEM	DISCUSSION	ACTION / FOLLOW-UP
Call To Order	Chair Dennis Tankersley called the meeting to order at 6:02 pm.	
Public Comment	Members of the public who wished to comment on any item on the agenda were encouraged to submit comments by emailing publiccomment@sgmh.org prior to this meeting. We received two public comments via email. Sharon Geiser stated, "I support Donna McNeese-Smith for SGMHD Board of Directors. She is a professor emeritus from the UCLA School of Nursing with a PhD in Education and a Master's Degree in Nursing. In these desperate times, the SGMHD needs the insights and new ideas from someone outside the SGMH framework." Todd Stellhorn stated, "I am writing to urge you to appoint Donna McNeese-Smith to the SGMHD board. She brings an amazing lifetime of experience to this position as a nurse as well as an educator, including being a Fulbright scholar. She is by far the most qualified person for this position – Any hospital board would be honored to have her as a member. I consider it your duty and your responsibility to the community to appoint the very best person for this position and that person is Donna McNeese-Smith.	

<table>
<tr><th>AGENDA ITEM</th><th>DISCUSSION</th><th>ACTION / FOLLOW-UP</th></tr>
<tr><td></td><td>Sylvia Carrillo spoke to urge the Healthcare District Board to appoint Donna McNeese-Smith as the new Healthcare District Board member, replacing Lynn Baldi's seat. She mentioned that women should be on the Board and this would not be so with the appointment of the male candidate. She also stated that Donna is an extremely qualified candidate.

Mr. Foreman spoke about Donna McNeese-Smith and the experience and expertise she brings to the Board. It was recommended by Mr. Foreman that Donna be added to the Board without delay.</td><td></td></tr>
<tr><td colspan="3">OLD BUSINESS</td></tr>
<tr><td>Proposed Action - Approve Minutes

August 4, 2020 regular meeting</td><td>Chair Tankersley asked for any changes or corrections to the minutes of the August 4, 2020 regular meeting.

There were none.</td><td>The minutes of the August 4, 2020 regular meeting.</td></tr>
<tr><td colspan="3">NEW BUSINESS</td></tr>
<tr><td>Committee report:</td><td></td><td></td></tr>
<tr><td>Ad Hoc Nomination Committee

Proposed Action – Approve proposed new board member</td><td>Chair Tankersley reported that the Ad Hoc Nomination Committee is presenting proposed new board member, Ehren Ngo, for approval by the Board.

It is noted that this vacancy was created by the resignation of Lynn Baldi.

It was noted that the term for this seat will take effect immediately, expires December 2022 and the candidate must run for a full four year term in December 2022 should he choose to remain on the board.

BOARD MEMBER ROLL CALL:

<table>
<tr><td>Capobianco</td><td>Abstain</td><td>Lewis</td><td>Yes</td></tr>
<tr><td>Swerdlow</td><td>No</td><td>Tankersley</td><td>Yes</td></tr>
</table>
Motion carried.

Hospital Executive Assistant, Ariel Whitley, performed the swearing in of new Healthcare District board member, Ehren</td><td>M.S.C., (Lewis/Tankersley), the SGMHD Board of Directors approved Ehren Ngo as a new Healthcare District board member effective immediately.</td></tr>
</table>

<table>
<tr><th>AGENDA ITEM</th><th>DISCUSSION</th><th>ACTION / FOLLOW-UP</th></tr>
<tr><td></td><td>Ngo.</td><td></td></tr>
<tr><td>Healthcare District Board Chair monthly report</td><td>Chair Tankersley reminded everyone to stay safe, wear a mask, and remember that the members of the Board are role models for the community.</td><td></td></tr>
<tr><td>Medical Clinic monthly report</td><td>Holly Yonemoto noted that the written monthly report for the Medical Clinic was included on the board tablets. She also mentioned that the clinic will have the last patients seen on September 10th and the premises will be vacated by September 18th.</td><td></td></tr>
<tr><td>Proposed Action – Approve July 2020 Financial Report</td><td>Margaret Kammer reviewed the July 2020 Finance Report as included on the board tablets.

There were no questions.

BOARD MEMBER ROLL CALL:

<table><tr><td>Capobianco</td><td>Yes</td><td>Lewis</td><td>Yes</td></tr><tr><td>Ngo</td><td>Yes</td><td>Swerdlow</td><td>Yes</td></tr><tr><td>Tankersley</td><td>Yes</td><td></td><td></td></tr></table>Motion carried.</td><td>M.S.C., (Swerdlow/Lewis), the SGMHD Board of Directors approved the July 2020 Financial report as presented.</td></tr>
<tr><td>• Informational - Measure A expenditures – July 2020</td><td>Chair Tankersley noted that a copy of the Measure A funds and expenditures - July 2020 were included on the board tablets.</td><td></td></tr>
<tr><td>Proposed Action – Approve the sale of District Property (Medical Clinic Furniture)</td><td>A COVID testing research company would like to buy the exam furniture that is currently utilized in the medical clinic. The company, Velocity Clinical Research, offered $12,000 for the furniture.

BOARD MEMBER ROLL CALL:

<table><tr><td>Capobianco</td><td>Yes</td><td>Lewis</td><td>Yes</td></tr><tr><td>Ngo</td><td>Yes</td><td>Swerdlow</td><td>Yes</td></tr><tr><td>Tankersley</td><td>Yes</td><td></td><td></td></tr></table>Motion carried.</td><td>M.S.C., (Tankersley/Lewis), the SGMHD Board of Directors approved the sale of the District’s Medical Clinic furniture for $12,000.</td></tr>
<tr><td>Adjourn to Closed Session</td><td>Chair Tankersley reported the items to be reviewed and discussed and/or acted upon during Closed Session will be:</td><td></td></tr>
</table>

AGENDA ITEM	DISCUSSION	ACTION / FOLLOW-UP
	➢ Proposed Action – Approve Medical Staff Credentialing The meeting adjourned to Closed Session at 7:16 pm.	
Reconvene to Open Session	The meeting reconvened to Open Session at 7:22 pm. At the request of Chair Tankersley, Ariel Whitley reported on the actions taken/ information received during closed session as follows: ➢ Approved Medical Staff Credentialing	
General Information	None	
Future Agenda Items	Director Capobianco would like to add COVID and the Constitution as a discussion item at the next Healthcare District Board meeting.	
Adjournment	The meeting was adjourned at 7:22 pm.	

In accordance with The Brown Act, *Section 54957.5*, all reports and handouts discussed during this Open Session meeting are public records and are available for public inspection. These reports and/or handouts are available for review at the Healthcare District Administration office located at 600 N. Highland Springs Avenue, Banning, CA 92220 during regular business hours, Monday through Friday, 8:00 am - 4:30 pm.

Minutes respectfully submitted by Ariel Whitley, Executive Assistant

TAB B

District Agenda Report

From:

Subject: Energy Services Agreement with Siemens for HVAC and Lighting Improvements

Date: October 6, 2020

Facts

1. Siemens conducted a financial and engineering analysis of upgrading the HVAC and Lighting systems at the hospital. Based on that analysis, Siemens proposed an agreement whereby Siemens would complete the upgrades.
2. The Hospital will save significant amounts through reduced energy costs after paying Siemens, and will save significant maintenance and repair costs for a number of years because of replacing outdated equipment and fixtures with new equipment and fixtures.
3. The improvements are projected to save enough energy so the project is budget neutral, including debt service costs.

Options

1. Do nothing. Do not enter into the agreement with Siemens, although this likely means repaying Siemens, per the Letter of Intent, for the estimated $48,500 cost of conducting the engineering analysis.
2. Enter into the agreement with Siemens to complete the HVAC and lighting improvements to our facilities, with the financed costs repaid over fifteen years from the energy savings of the improvements. (Financing is considered in a separate agenda item.)
3. Repay the cost for conducting the financial and engineering analysis, and budget and contract for the HVAC and lighting improvements in some other manner.

Analysis and Conclusions

Option 1 provides no benefit to the Hospital or the District, and likely leaves the District paying Siemens for the cost of the financial and engineering analysis per the Letter of Intent.

Option 2 follows through on the project, improves outdated and inefficient HVAC and lighting systems with no net out-of-pocket expenses, and provides significant operating efficiencies for Facilities staff. This agreement includes guaranteed energy savings sufficient to offset all payments over the 15-year period, and additional savings for years after that. It allows the Hospital to have upgraded equipment without negatively impacting expenses.

Option 3 would provide some of the same operating and efficiency benefits of Option 2, but without the benefit of the Siemens engineering analysis, or the Siemens performance guarantee.

Fiscal Impact

If the District enters into the agreement with Siemens, the costs to repay Siemens over the 15-year period will come from energy savings, guaranteed by Siemens. The District will save the cash flow that would have been needed to complete these deferred maintenance and modernization projects out of the budget. In addition, the Hospital will be able to benefit from the energy cost savings after Siemens has been repaid. We are working through the Siemens

program because they are proven experts in this field; plan financed costs through the generated energy savings; and guarantee those energy savings to be more than enough to pay all project costs

Recommendation

1. Approve and execute an agreement with Siemens to implement the HVAC / Lighting improvements identified in the plan, and approve the companion financing
2. Approve companion financing in accordance with the recommendation of our Financial Advisor.

Attachment

Siemens Agreement

ENERGY SERVICES AGREEMENT

Between

SAN GORGONIO MEMORIAL HEALTHCARE DISTRICT

and

SIEMENS INDUSTRY, INC.

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EXHIBITS

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Exhibit B - Schedule of Values and Payment Schedule
Exhibit C – Project Schedule
Exhibit D – Project Owner Requirements
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Exhibit G – Request for Information Form
Exhibit H – Form of Change Order
Exhibit I – Form of Application for Payment
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Exhibit K – Payment Bond
Exhibit L – Performance Bond
Exhibit M – Escrow Agreement for Security Deposit In Lieu of Retention
Exhibit N – Waiver and Release Forms
Exhibit O – Certification Regarding Claim

COVER PAGE

This Energy Service Agreement **("Agreement")** is entered into by and between the following parties:

Siemens Industry, Inc., Smart Infrastructure , CSLB 758796 (**"Contractor")**	San Gorgonio Memorial Healthcare District **("Owner")**
Attn: Vincent Delpidio	Attn: Steven Barron, CEO
6141 Katella Ave	600 N. Highland Springs Ave
Cypress, CA, 90630	Banning, CA 92220
Phone No.: 858-265-8361	Phone No.: 951-769-2102
FAX No.: 714-826-3945	FAX No.: 951-845-2836
Email Address: Vincent.delpidio@siemens.com	Email Address: SBarron@sgmh.org

<table>
<tr><td>A. The "Effective Date":
Start date: 30 days after the Effective Date</td><td>B. The "Completion Date":
365 days after the Start Date</td></tr>
<tr><td colspan="2">C. "Required License" (see Agreement, § 1): In accordance with Public Contract Code section 3300, Contractor shall have, throughout the Contract Term, the following license classification issued by the California Contractors State License Board (state license classification(s)):
A, C10, C20</td></tr>
<tr><td>D. "Contract Price" to be paid to Contractor:
The "Contract Price" is the full and complete amount to be paid to the Contractor for the performance of all obligations required by the Contract Documents for all Sites, in the total amount of: $2,163,286.</td><td>F. "LD Rate" (see Section 4.8(e)):
$800 per day but not to exceed 15% of the Contract Price
G. :</td></tr>
<tr><td colspan="2">G. Contractor Required Insurance:
See Section 0</td></tr>
<tr><td colspan="2">H. "Project Sites" or "Sites":
See Exhibit A</td></tr>
</table>

ENERGY SERVICES AGREEMENT

This Energy Services Agreement ("Agreement") is made between San Gorgonio Memorial Healthcare District, a public agency organized and existing under the laws of the State of California ("Owner"), and Siemens Industry, Inc., a Delaware Corporation and contractor licensed by the State of California ("Contractor").

RECITALS:

WHEREAS, Government Code section 4217.10, *et seq*., authorizes the Owner, as a public agency, to enter into an energy services agreement wherein the Contractor provides energy and utility conservation services to the Owner on terms that its governing body determines are in the best interest of the Owner;

WHEREAS, pursuant to Government Code section 4217.11(d), "conservation services" include electrical, thermal, or other energy or utility savings resulting from conservation measures;

WHEREAS, through this Agreement, the Owner intends to contract for implementation, including engineering, system design, fabrication and installation, of energy conservation measures ("ECMs") that will result in energy and utility savings to the Owner (collectively, the "Project") at various sites owned or controlled by Owner (the "Project Sites" or "Sites", and each individually a "Site"), consistent with the terms of Government Code section 4217.10, *et seq*.;

WHEREAS, the Owner's governing body, after holding a hearing at a regularly scheduled public hearing and after having provided two weeks advance notice of such hearing, made all findings required by Government Code section 4217.12 for the Owner to enter into this Agreement;

WHEREAS, the Contractor shall engineer, design, and construct the Project pursuant to this Agreement, including all Exhibits and other Contract Documents (as that term is defined in the General Definitions), which Contract Documents are incorporated into the Agreement by this reference;

NOW, THEREFORE, in consideration of the covenants hereinafter contained, including all recitals and Exhibits incorporated herein by this reference, the Owner and Contractor agree as follows:

GENERAL TERMS AND CONDITIONS

ARTICLE ONE

1. GENERAL DEFINITIONS

1.1 Interpretation As used in this Agreement, the terms "herein", "herewith", "hereof" are references to this Agreement, taken as a whole, the terms "includes" or "including" shall mean "including, without limitation", and references to a "Section", "Article" or "Exhibit" shall mean a Section, Article, or Exhibit of this Agreement, as the case may be, unless in any such case the context requires otherwise. All references to a given Exhibit, agreement, instrument or other document shall be a reference to that agreement, instrument or other document as modified, amended, supplemented and restated through the date as of which such reference is made. A reference to a Person includes its permitted successors and permitted assigns. The singular shall include the plural, the masculine shall include the feminine and neuter, and vice versa.

1.2 Defined Terms Capitalized terms used in this Agreement without other definition shall have the meanings specified in this Section 1.2 unless the context requires otherwise.

"**Additional Insured"** has the meaning set forth in Section 0.

"Affiliate" shall mean, with respect to any Person, any other Person (other than an individual) that, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, such person. For this purpose, "control" means the direct or indirect ownership of fifty percent (50%) or more of the outstanding capital stock or other equity interests having ordinary voting power.

"**Agreement"** has the meaning set forth in the preamble and shall include the Cover Page and all Exhibits hereto. The Agreement represents the entire and integrated contract between the Parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Agreement shall not be construed to create any kind of contractual relationship other than between the Owner and Contractor.

"Annual Performance Assurance Report" shall mean the document prepared by Contractor and submitted to the Owner as part of the Performance Assurance Service Program, which identifies the Savings achieved for the applicable Annual Period.

"Annual Period" shall mean a twelve (12) month period beginning on the Guarantee Date or on any anniversary date thereof.

"Annual Realized Savings" shall mean the actual Savings achieved by the Owner during an Annual Period, calculated as the sum of the Measured & Verified Savings plus the Stipulated Savings.

"Applicable Law" shall mean, with respect to any Governmental Authority, any constitutional provision, law, statute, rule, regulation, ordinance, treaty, order, decree, judgment, decision, certificate, injunction, registration, license, permit, authorization, guideline, governmental approval, act, code, ruling, proclamation, resolution, declaration, requirement or interpretive or advisory opinion or letter of such Governmental Authority, as construed from time to time by any Governmental

Authority, in each case, applicable to the Work, the Site, the Project, the Parties or any other matter in question (as applicable).

"**Application for Payment**" has the meaning set forth in Section 0.

"Assessment" shall mean the investment grade audit conducted by the Contractor under a separate agreement.

"Baseline" shall mean the measurements of Facility energy usage taken prior to the Effective Date of this Agreement, and the Facility operating practices in effect prior to the Effective Date, as set forth in the Performance Guarantee, Exhibit E.

"Baseline Period" shall mean the period of time from which data is provided to Contractor to derive the Baseline measurements. The Baseline Period is set forth in the Performance Guarantee, Exhibit E.

"**Builders All Risk Insurance**" has the meaning set forth in Section 0.

"Business Day" shall mean any day except a Saturday, Sunday, or a Federal Reserve Bank holiday and shall be between the hours of 8:00 a.m. and 5:00 p.m. local time for the relevant Party's principal place of business.

"Change Order" or "CO" shall mean a written instrument prepared by the Owner and the Contractor pursuant to Section 0 stating their agreement upon all of the following: (A) A change in the Work; (B) the amount of the adjustment in the Contract Price, if any; and (C) the extent of the adjustment in the Project Schedule.

"Completion Date" shall be the date set forth in the Cover Page by which Contractor is guaranteeing Final Completion will be achieved, as may be adjusted from time to time in accordance herewith.

"Construction Change Directives" or "CCD" shall mean a written order prepared by the Owner, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Price or Contract Schedule, or both.

"Consultant" shall mean any Person performing or providing expert or professional advice.

"Contract Documents" shall mean this Agreement and all Drawings, Specifications, surveys, plans, models, reports and designs, addenda thereto (whether or not attached due to their size), the Governmental Approvals, Engineering Documents, Payment Bond, Performance Bond, required insurance certificates, additional insured endorsement and declarations page, list of accepted Subcontractors and Consultants, Non-collusion Declaration, and other documents referred to in the Agreement, and written modifications issued after execution of the Agreement.

"Contract Price" shall mean the amount set forth in the Cover Page, which is the total payable by Owner for the Work under this Agreement, as the same may be modified from time to time in accordance with the terms hereof.

"Contracted Baseline" shall mean the post-FIM-implementation Facility operating profile based on parameters described in Exhibit E, which the Owner shall maintain throughout the Performance Guarantee Period and are relied upon by Contractor for the calculation of Guaranteed Savings as provided in the Performance Guarantee, Exhibit E. The Contracted Baseline also includes stipulated hours of operation and plug-loads for all Facilities, and stipulated blended, or non-blended, utility rates.

"Contractor" shall have the meaning set forth in the preamble and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representatives.

"Contractor's Pre-existing Intellectual Property" shall mean any Intellectual Property: (i) that has been conceived or developed by an employee or Subcontractor of Contractor before Contractor performs any Work under this Agreement; (ii) that is conceived or developed by such employee or Subcontractor at any time wholly independently of Contractor performing the Work under this Agreement; or, (iii) if developed while performing the Work under this Agreement, where the development of Intellectual Property for the benefit of the Owner is not expressly identified as a FIM or part of a FIM. Contractor's Pre-existing Property is included in all reports, notes, calculations, data, drawings, estimates, specifications, manuals, documents, all computer programs, codes and computerized materials prepared by or for Contractor.

"Contractor Event of Default" shall have the meaning set forth in Section 0.

"Day" shall mean a calendar day unless it is specified that it means a Business Day.

"Deliverables" shall mean collectively, (a) any Equipment and any Software Product deliverable to Owner from Contractor under or in connection with the Work, and (b) any Work Product Deliverables.

"Dollar" and **"$"** shall mean the lawful currency of the United States of America.

"Drawings" shall mean graphic and pictorial portions of the Contract Documents prepared for the Project and approved changes thereto, wherever located and whenever issued, showing the design, location, and scope of the Work, generally including plans, elevations, sections, details, schedules, and diagrams as drawn by Contractor or its Subcontractor or Consultants.

"Effective Date" shall mean the date on which the Agreement shall become effective as set forth in the Cover Page.

"Energy Conservation Measure" or "**ECM"** shall mean the Equipment and/or software as installed by Contractor at the Facilities for the purpose of improving the efficiency of utility consumption.

"Equipment" shall mean (a) all materials, supplies, apparatus, machinery, equipment, parts, tools, components, instruments, appliances, spare parts and appurtenances thereto that are required to be provided by Contractor by the terms of this Agreement, the Contract Documents, and all Legal Requirements to complete the Work and to be incorporated into the Project, and (b) all materials, supplies, apparatus, machinery, equipment, parts, tools, components, instruments, appliances, spare parts and appurtenances thereto described in or required by the terms of the Agreement, the Contract Documents and all Legal Requirements.

"Equipment Documentation" shall mean copies or originals of manufacturer's cut sheets, including model numbers and operation and maintenance manuals.

"Equipment Warranties" shall mean the product warranty from any Supplier for the Equipment incorporated into the Project.

"Engineering Documents" shall mean all documents including Drawings, diagrams, plans, Equipment Documentation, Equipment Warranties, Shop Drawings, Assessments, addenda, reports calculations, performance models and other models, designs schedules, and other documents prepared or furnished by Contractor pursuant to this Agreement in respect of the design, engineering and construction of the Work.

"Environmental Law" shall mean all Laws related to health, safety, the protection of the environment or regulation or prohibition of the environmental pollution or contamination, including laws relating to land use, emission and pollution, discharges into or pollution of water, and Hazardous Materials.

"Escalation Rate" shall mean an annual percentage increase to be applied to the previous Annual Period's energy savings, operational savings and service pricing, beginning and occurring on dates outlined in the Performance Guarantee, Exhibit E.

"Escrow Agreement" has the meaning set forth in Section 3.4

"Exhibits" shall mean the Exhibits comprising part of this Agreement referenced and listed in the Table of Contents.

"Facility" or "Facilities" shall mean the building(s) or structure(s) where Work will be installed or implemented.

"Facility Improvement Measures" or **"FIMs"** shall mean the (i) Instruments, know-how and Intellectual Property, including but not limited to methods and techniques for energy conservation, owned or licensed by Contractor and employed by Contractor to perform the Work under this Agreement; and, (ii) the installation of Equipment and Software Products with the intent of generating net savings or efficiencies at or in connection with the operation of the Facilities. A FIM may include one or multiple ECMs as well as any non-conservation-related activities, means or methods.

"FEMP" shall mean the Federal Energy Management Program managed by the United States Department of Energy.

"FEMP Guidelines" shall mean the FEMP M&V Guidelines v. 3.0 published by FEMP as M&V Guidelines; Measurement and Verification for Federal Energy Management Projects.

"Final Completion" shall mean "Final Completion" of a phase of the Project (with the Project containing a Non-OSHPD Phase and the OSHPD Phase, as these terms are defined below), or the entire Project in accordance with Section 0.

"Final Completion Certificate" has the meaning set forth in Section 0.

"Final Completion Date" shall mean the actual date on which the Final Completion of a phase of the Project has occurred, as set forth in the Final Completion Certificate.

"Force Majeure Event" shall mean, when used in connection with the performance of a Party's obligations under this Agreement, any act or event (to the extent not caused by the fault or negligence of such Party or its agents or employees) which is unforeseeable, or being foreseeable, unavoidable (including by taking prudent protective and preventative measures) and outside the control of the Party which invokes it, and which renders said Party unable to comply totally or partially with its material obligations under this Agreement including natural disasters, acts of God, drought, flood, earthquake, storm, fire, explosion, lightning, epidemic, war, riot, civil disturbance, sabotage, terrorism or threat of terrorism, and strikes, lockouts or other labor disturbances or disputes of a national or regional scope. Notwithstanding the foregoing to the contrary, Force Majeure Events shall not include any of the following:

(a) mechanical or equipment failures (except to the extent any failure is itself caused by a Force Majeure Event);

(b) any condition of the Site for which the affected Party is responsible under this Agreement, other than (1) the discovery of pre-existing Hazardous Materials at the Site so long as the condition was unknown and should not reasonably have been known as of the Effective Date and (2) any Hazardous Materials released at the Site other than by the Contractor, any Subcontractor or Persons acting on behalf of the Contractor;

(c) increases in the cost of performance of a Party's obligations under this Agreement (except to the extent any such increase is itself caused by a Force Majeure Event);

(d) any delay or other problems associated with the issuance of any Governmental Approval or for the application therefor, other than the failure of the Governmental Authority to issue its approval to start construction of the Project on or before the date specified therefor in the Project Schedule, through no fault of the Party claiming the Force Majeure Event and despite the Party's best efforts which shall constitute a Force Majeure Event; and

(e) strikes, walkouts, lockouts or other labor disturbances or disputes specific to the Project or such Party claiming a Force Majeure Event.

Notwithstanding the foregoing, each of (x) economic hardship of either Party or (y) increases in the cost of performance of a Party's obligations, shall not constitute Force Majeure Events under this Agreement.

"Governmental Approval" shall mean each and every national, autonomic, regional and local license, approval, authorization, certification, registration, exemption, filing, recording, permit or other approval with or of any Governmental Authority, including each and every construction or operating permit and any agreement, consent or approval from or with any other Person that is required by any Applicable Law or that is otherwise necessary for the performance of the Work.

"Governmental Authority" shall mean any national, autonomic, regional, provincial, town, city, local or municipal government, authority, body, agency, ministry, court, judicial or administrative body, taxing authority or other governmental organization having jurisdiction over the Work, the Site, the Project, the Parties or any other matter in question (as applicable).

"Guarantee Date" shall mean the first day of the month following the date on which the Owner executes, or is deemed to have executed, the Final Completion Certificate.

"Guaranteed Annual Savings" shall mean the Guaranteed Measured & Verified Savings plus the Stipulated Savings that Contractor guarantees will be achieved in an Annual Period of the Performance Guarantee Period.

"Guaranteed Measured & Verified Savings" shall mean the Measured & Verified Savings that Contractor guarantees will be achieved, as described in the Performance Guarantee, Exhibit E.

"Guaranteed Savings" shall mean the amount of Savings that Contractor guarantees will be achieved at the Facility during the Performance Guarantee Period. as identified in the Performance Guarantee, Exhibit E as subject to the limitation identified in Section 7.8.

"Hazardous Material" shall mean oil or petroleum and petroleum products, asbestos and any asbestos containing materials, radon, polychlorinated biphenyls ("PCBs"), urea formaldehyde insulation, lead paints and coatings, and all of those chemicals, substances, materials, controlled substances, objects, conditions and waste or combinations thereof which are now or become in the future listed, defined or regulated in any manner by any federal, state or Applicable Law.

"Incentives" shall mean subsidies, rebates, credits, reductions, allowances or other financial incentives which the Contractor shall apply for on behalf of the Owner as specified in Exhibit D.

"Industry Standards" shall mean those standards of care and diligence practiced or approved by reasonably prudent contractors of the energy services industry in engineering, designing, constructing, installing and operating energy efficiency and/or renewable energy generation projects with equipment similar to the Project in the United States and in accordance with good engineering and design practices, sound construction procedures, Governmental Approvals, the Contract Documents and other standards established for such Work. Industry Standards are not intended to be limited to optimum practice, methods, equipment specifications or acts to the exclusion of all others, but rather to be a spectrum of reasonable and prudent practices and methods generally accepted within the energy services industry to accomplish the desired results and must take into consideration the conditions specific to any given facility, including to the extent such conditions would require a person to (a) perform its duties in good faith and as a reasonably prudent operator, (b) perform its duties in compliance with the Contract Documents, (c) exercise such care, skill and diligence as a reasonably prudent business company of established reputation engaged in the energy services business would exercise in the conduct of its business and for the advancement or protection of its own interests, (d) perform the duties in accordance with applicable energy efficiency and/or renewable energy generation project standards, (e) use sufficient and properly trained and skilled personnel, and (f) use parts and supplies that meet the specifications set forth in the Contract Documents, in all cases with respect to (a) through (f) herein, taking into account all of the costs, expenses and benefits of operation of the Work.

"Instruments" shall mean all know-how, tools and related documentation owned or licensed by Contractor and used by Contractor to install or commission Equipment and Software Products for operation at the Facility, including but not limited to tools for installing any Software Products in Equipment, performing diagnostics on Equipment as installed in the Facility as well as any reports, notes, calculations, data, drawings, estimates, specifications, manuals, documents, all computer programs, codes and computerized materials prepared by or for Contractor and used by Contractor to provide an ECM or a FIM. Instruments excludes Work Product Deliverables.

"Intellectual Property Rights" or **"Intellectual Property"** shall mean all trade secrets, patents and patent applications, trademarks (whether registered or unregistered and including any goodwill acquired in such trademarks), services marks, trade names, internet domain names, copyrights (including rights in computer software), moral rights, database rights, design rights, rights in know-how, rights in inventions (whether patentable or not) including, but not limited to, any and all renewals or extensions thereof, and all other proprietary rights (whether registered or unregistered, and any application for the foregoing), and all other equivalent or similar rights which may subsist anywhere in the world, including, but not limited to, any and all renewals or extensions thereof.

"IPMVP" shall mean the International Performance Measurement and Verification Protocol, Volume 1, EVO 10000-1.2007 as prepared by the Efficiency Valuation Organization.

"LD Rate" shall have the meaning set forth in Section 0.

"Legal Requirement" shall mean the requirement of any Applicable Law, including any Environmental Law or any Governmental Approval.

"Liquidated Damages" shall have the meaning set forth in Section 0..

"Maintenance Services Program" or **"MSP"** shall mean the services performed by Contractor to maintain the Equipment in good working order. If applicable, the MSP is more fully described in the Scope of Work and Services, Exhibit A.

"Material Change" shall mean a measurable deviation in the Contracted Baseline such that there is an adverse impact on the Annual Realized Savings which results or will result in a Savings Shortfall.

"Measured & Verified Savings" shall mean those Savings that can be calculated and ascertained by the methodology set forth in the Performance Guarantee, Exhibit E.

"Notice to Proceed to Procurement and Construction" shall mean the written notice Owner may give Contractor authorizing Contractor to proceed with Contractor's obligations under Section 0.

"Operational Savings" shall mean Savings derived from reduced operational expenses, including but not limited to, deferred equipment maintenance. Operational Savings can only be expressed in monetary value and are Stipulated Savings.

"OSHPD" shall mean the Office of State Health Planning and Development of the State of California.

"Owner" shall have the meaning set forth in the preamble and is referred to throughout the Contract Documents as if singular in number. The term "Owner" means the Owner or the Owner's authorized representative.

"Party" shall mean, individually, each of the parties to this Agreement.

"Performance Assurance" shall mean the process of ascertaining whether the FIMs are performing at the level necessary to achieve the Guaranteed Savings.

"Performance Assurance Services Program" or **"PASP"** shall mean the services required to monitor the operation of the FIMs so that Contractor can provide the Annual Performance Assurance Report detailing the Annual Realized Savings and comparing the same to the Annual Guaranteed Savings based upon the calculations agreed to by the Parties in the Performance Guarantee, Exhibit E. The services provided under the PASP are described in the Scope of Work, Exhibit A.

"Performance Guarantee" shall mean the guarantee that Contractor makes to the Owner which is reconciled and confirmed through the Performance Assurance process set forth in the Performance Guarantee, Exhibit E.

"Performance Guarantee Period" shall mean the timeframe from the Guarantee Date to the last day of the final Annual Period as described in Table 1.1 of the Performance Guarantee, Exhibit E, or the period from the Guarantee Date until the termination of this Agreement, whichever occurs earlier.

"Person" shall mean any individual, corporation, partnership, company, joint venture, association, trust, unincorporated organization or Governmental Authority or other entity.

"Price and Performance Ratios" shall mean those ratios which establish the baseline for comparisons of the Project to other projects and provide a means of determining whether changes to the Contract Price are warranted based on the impact of approved Change Orders on the Project's internal rate of return.

"**Progress Payment"** shall mean a payment made in accordance with the terms of each Progress Payment Milestone.

"Progress Payment Milestones" shall mean the schedule of separately identifiable major portions of the Work, together with the portion of the Contract Price allocable to each such portion of the Work, set forth in Section 0.

"Project" shall mean the engineering, design, total construction and completion of the Work performed in accordance with the Contract Documents.

"Project Phases" shall mean the schedule of separately identifiable major portions of the Work as set forth in Section 0.

"Project Manual" shall mean the volume assembled for the Work which shall include, without limitation, Contract Documents, Governmental Approvals, Equipment Documentation, Equipment Warranties, results of the Start Up and Operational Tests and other test conducted under the Testing and Commissioning Plan, Engineering Documents including As-Built Drawings, an O&M manual and all other documents as required with specific instructions and in sufficient scope and detail to permit Owner to safely operate, monitor and maintain the Equipment at its tested performance level in the ordinary course of business and to ensure that the Warranties and other obligations hereunder remain valid. The Project Manual shall include a table of contents in a format agreed upon by the Contractor and Owner, which agreement will not be unreasonably withheld, conditioned or delayed.

"Project Owner Requirements" shall mean the specific requirements of the Work required by the Owner and that includes the Site Procedures and other elements set forth in Exhibit D, as may be altered from time to time by the Owner.

"Project Schedule" shall mean the schedule for prosecution of the Work, including all engineering, permitting, mobilization, construction, Equipment procurement, testing and commissioning in connection with the Project, as set forth in Exhibit C.

"Punchlist" shall mean the list of Work uncompleted upon the achievement of the Construction Phase, the lack of which or the failure of which to complete (considered individually or in the aggregate) does not or will not, in the reasonable opinion of Owner, adversely affect the performance or reliability of the Equipment or the ability of the Owner to safely operate, monitor and maintain the Work in the ordinary course of business. The Punchlist must be agreed upon by Owner, which agreement will not be unreasonably withheld.

"Recovery Plan" shall mean a plan prepared by Contractor, and submitted to the Owner, demonstrating to the Owner's reasonable satisfaction, the measures that Contractor has taken or will take in order to (i) remedy a delay in completing a portion of the Work by the scheduled dates for such Work as provided in the Project Schedule including achievement of Final Completion by the Completion Date.

"Release" shall mean the discharging, depositing, injecting, dumping, spilling, leaking, placing, pumping, pouring, emitting, emptying, escaping, leaching, disposing, or discarding of any Hazardous Materials into the environment so that such Hazardous Materials or any constituent thereof may enter the environment, or be emitted into the air or discharged into any waters, including ground waters.

"Request for Information" shall mean a written request prepared by the Contractor asking the Owner to provide additional information above and beyond that which is available in the Contract Documents and all reference standards, regarding fulfilling the obligations under the Agreement.

"Request for Proposal" shall mean a written request prepared by the Owner asking the Contractor to submit to the Owner an estimate of the effect of a proposed change on the Contract Price and the Project Schedule.

"Safety Plan" shall mean a plan prepared by Contractor that includes the elements required by Owner and otherwise includes all matters relating to safety as required by Applicable Law and the Contract Documents.

"Samples" shall mean physical examples furnished by Contractor to illustrate materials, equipment, or quality.

"Savings" shall mean the result from implementing all FIMs. Savings can be derived from reductions in energy or utility consumption, reductions in operating expenses, a changed utility rate classification or a combination thereof. The Savings that are achieved from reduced energy or utility consumption are converted to a dollar figure based upon the calculation in Article 7.1 and as detailed in the Performance Guarantee, Exhibit E. When converted to a dollar figure, these Savings become energy cost savings. Operational Savings are only expressed in a dollar figure.

"Savings Shortfall" shall mean the Annual Realized Savings less the Guaranteed Annual Savings for the Annual Period resulting in an amount less than zero.

"Schedule of Values" shall mean the list of prices to be used for invoicing and the labor and equipment rates for time and material based Change Orders as set forth in Exhibit E.

"Scope of Work" shall mean the scope of the Work set forth in Section 0 and Exhibit A.

"Shop Drawings" shall mean drawings, diagrams, schedules, and other data, which are prepared by Contractor, Subcontractors, manufacturers, Suppliers, or distributors illustrating some portion of the Work. The Contractor shall obtain and submit with the Shop Drawings all calculations and all product data from Equipment manufacturers. Shop Drawings shall: establish the actual detail of all manufactured or fabricated items, indicate proper relation to adjoining work, amplify design details of mechanical and electrical systems and equipment in proper relation to physical spaces in the structure, and incorporate minor changes of design or construction to suit actual conditions.

"Site" or **"Sites"** shall have the meaning set forth in the third recital and is more fully described in Exhibit A hereto.

"Site Procedures" shall mean the duly authorized procedures developed and implemented by Contractor and approved by Owner as part of the Safety Plan including procedures addressing access, safety, working hours, security, compliance with legal requirements, environmental compliance, the permit to work system, lock-out procedures, tag-out/tag-in procedures and all other standing orders applicable to work carried out on the Site.

"Software Product" shall mean any software that is owned or licensed by Contractor or its Affiliates and that is either separately deliverable for use in the Equipment or for use in a computer system owned by the Owner or delivered as firmware embedded in the Equipment.

"Specifications" shall mean that portion of the Contract Documents consisting of the written requirements for material, equipment, construction systems, instructions, quality assurance standards, workmanship, and performance of related services.

"Start Up and Operational Tests" shall mean a test of the Work, as more particularly described in Exhibit F.

"Stipulated Savings" shall mean a sub-category of Guaranteed Savings that do not require post-FIM implementation measurement and verification because they are agreed upon by the Parties based upon representations made to Contractor by the Owner and through the application of generally accepted analytical formulae. As such, Stipulated Savings are agreed upon in advance by the Parties and cannot be changed. When used as a methodology for representing a FIM's energy savings, such methodology is not recognized as a measurement and verification methodology under IPMVP. Therefore, where the IPMVP measurement methodologies are required, a methodology other than Stipulated Savings must be used to calculate energy savings.

"Subcontract" shall mean any contract, subcontract, purchase order, or other agreement whereby a Subcontractor undertakes (a) to perform or provide any portion of the Work or (b) to provide all or a portion of the Equipment required by any Person performing or providing any portion of the Work.

"Subcontractor" shall mean (a) any Person, other than Contractor, performing or providing any portion of the Work, whether retained by Contractor, any Affiliate of Contractor or any Person hired by Contractor or any of its Affiliates and including every tier of Subcontractors, sub-Subcontractors and so forth, and (b) any Supplier.

"Substantial Completion" shall mean satisfaction or waiver of all of the conditions set forth in Section 0.

"Substantial Completion Certificate" shall have the meaning set forth in Section 0.

"Superintendent" shall have the meaning set forth in Section 0.

"**Supplemental Instruction" or "SI"** shall mean a written instrument prepared by the Owner and submitted to the Contractor requesting a minor change to the Work that does not impact the Contract Price or Project Schedule.

"Suppliers" shall mean any Person providing or supplying all or a portion of the Equipment required by any Person performing or providing any portion of the Work to perform or provide the Work, including any materialman, vendor or supplier.

"Testing and Commissioning Plan" shall mean a plan prepared by Contractor that includes the elements set forth in Exhibit F and otherwise includes all matters relating to testing and commissioning as required by the Contract Documents.

"Total Guaranteed Savings" shall mean the sum of the Savings that are guaranteed for all Annual Periods during the Performance Guarantee Period. The Total Guaranteed Savings are reflected in Tables 1.1 and 1.2 in the Performance Guarantee, Exhibit E.

"Warranties" shall mean, collectively, the warranties provided by Contractor to the Owner hereunder, as described in Section 0.

"Warranty Period" shall have the meaning set forth in Section 0 .

"Work" shall mean (a) complete engineering and design of the Project including As-Built Drawings (b) the procurement, installation, construction and erection, commissioning, start-up and testing, and all other services, including all labor, materials' storage, services, demolition, Site preparation, equipping, verification, training, manuals and other things and actions in connection therewith, as necessary for the Contractor to fulfill all of its obligations pursuant to this Agreement, the Contract Documents, any Change Orders, and the requirements of the Governmental Approvals, and any other Legal Requirement, (c) the provision of Equipment (d) transportation and storage of the Equipment; and (e) all of the foregoing that Contractor performs through any Subcontractor or Consultant.

"Work Product Deliverable" shall mean the tangible form of a report or drawing specifically developed for, commissioned by and deliverable to the Owner in connection with the Work to be performed by Contractor under this Agreement.

ARTICLE TWO

2. CONTRACTOR'S OBLIGATIONS

2.1 Scope of Work.

The Contractor agrees to furnish all project development, engineering, system designs, supervision, labor, equipment and materials, tools, utilities, communications, implements, appliances and transportation, to procure all Governmental Approvals, to facilitate completion and execution of any

Incentive related documents, to erect, install, start-up, test and commission the Project, to perform all obligations set forth in the Contract Documents, to perform related activities for the successful completion of the Work and the delivery of the Project in compliance with the Contract Documents and to perform all the Work in a good and workmanlike manner, free from any and all liens and claims from mechanics, material suppliers, Subcontractors, artisans, machinists, teamsters, freight carriers, and laborers required for the Project as defined by the Contract Documents, all in strict compliance with the objectives, descriptions and specifications of Owner, the Contract Documents, Industry Standards, Legal Requirements and quality control and inspections relating thereto and so that the Project (i) meets or exceeds all requirements of Legal Requirements and the Project is installed in accordance with manufacturer's specifications or by methods otherwise approved by the manufacturer; (ii) meets or exceeds the warranties and guarantees set forth in the Contract Documents; (iii) is safe and adequate for the purpose and conditions specified in the Scope Of Work; (iv) is free from defects in materials and workmanship; (v) is comprised of equipment which is new (unless otherwise mutually agreed) and of the agreed quality when installed, designed and manufactured and of a grade in accordance with generally accepted national standards for the design, manufacture and quality of such equipment; and (vi) meets or exceeds all requirements for any applicable federal, state or other rebates and Incentives. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures, and coordinating all portions of the Work under the Agreement, unless Contract Documents give other specific instructions concerning these matters. The Scope of Work is more fully and specifically defined in Exhibit A hereto.

2.2 **Performance of the Work**

Contractor shall perform the Work in accordance with requirements of the Contract Documents, the Scope of Work and the Specifications, the Project Owner Requirements, Industry Standards, Legal Requirements and the Safety Plan. To the extent that any portion of the Work is provided with the Contractor's own forces, any reference to Subcontractors or Consultants shall be equally applicable to the Contractor. If any of the Work is performed by contractors retained directly by the Owner, Contractor shall assist the Owner in coordination and sequencing of the Work of those other contractors so as to avoid any impact on the Project Schedule.

2.3 **Contractor Personnel**

(a) Competency Contractor agrees to use and agrees that it shall require each Subcontractor to use, only personnel who are qualified and properly trained and who possess every license, permit, registration, certificate or other approval required by Applicable Law or any Governmental Authority to perform the Work. The Contractor and each Subcontractor shall: furnish a competent and adequate staff as necessary for the proper administration, coordination, supervision, and superintendence of its portion of the Work; organize the procurement of all materials and equipment so that the materials and equipment will be available at the time they are needed for the Work; and keep an adequate force of skilled workers on the job to complete the Work in accordance with all requirements of the Contract Documents. Owner shall have the right, but not the obligation, to require the removal from the Project of any Superintendent, staff member, agent, or employee of any Contractor, Subcontractor, material or equipment supplier, etc., for cause.

(b) Superintendent Contractor shall require that Subcontractors provide competent superintendents and assistants as necessary, all of whom shall be reasonably proficient in speaking, reading and writing English, and, who shall be in attendance at the Project Site(s) during performance of the Work by their trades (the "Superintendents"). Contractor will be represented by

a project manager ("PM"), and communications given to the Project Manager shall be binding as if given to Contractor.

(c) Prevailing Wage The Project is a public work, the Work shall be performed as a public work and pursuant to the provisions of Section 1770 *et seq.* of the Labor Code of the State of California, which are hereby incorporated by reference and made a part hereof, the Director of Industrial Relations has determined the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which the work is to be performed, for each craft, classification or type of worker needed to execute this Agreement. Per diem wages shall be deemed to include employer payments for health and welfare, pension, vacation, apprenticeship or other training programs, and similar purposes. Copies of the rates are on file at the Owner's principal office. The rate of prevailing wage for any craft, classification or type of workmanship to be employed on this Project is the rate established by the applicable collective bargaining agreement which rate so provided is hereby adopted by reference and shall be effective for the life of this Agreement or until the Director of the Department of Industrial Relations determines that another rate be adopted. It shall be mandatory upon the Contractor and on any Subcontractor to pay not less than the said specified rates to all workers employed in the execution of this Agreement.

(d) Penalties The Contractor and any Subcontractor under the Contractor as a penalty to the Owner shall forfeit not more than Two Hundred Dollars ($200.00) for each Day or portion thereof for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed. The difference between such stipulated prevailing wage rates and the amount paid to each worker for each Day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

(e) Debarment A Contractor or Subcontractor shall not be qualified to enter into, or engage in the performance of, any contract of public work (as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code) unless currently registered and qualified under Labor Code section 1725.5 to perform public work. Contractor shall post all required job site notices pursuant to the Labor Code and related regulations.

(f) Working Time Limits In accordance with the provisions of Sections 1810 to 1815, inclusive, of the Labor Code of the State of California, which are hereby incorporated and made a part hereof, the time of service of any worker employed by the Contractor or a Subcontractor doing or contracting to do any part of the Work contemplated by this Agreement is limited and restricted to 8 hours during any one Day and 40 hours during any one calendar week, provided, that work may be performed by such employee in excess of said 8 hours per Day or 40 hours per week provided that compensation for all hours worked in excess of 8 hours per Day, and 40 hours per week, is paid at a rate not less than 1½ times the basic rate of pay. The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each Day and each calendar week by each worker employed by them in connection with the Work. The Contractor and every Subcontractor shall keep the records open at all reasonable hours to inspection by representatives of the Owner and the Division of Labor Law Enforcement. The Contractor shall as a penalty to the Owner forfeit $25.00 for each worker employed in the execution of this Agreement by the Contractor or by any Subcontractor for each Day during which such worker is required or permitted to work more than 8 hours in any one Day, and 40 hours in any one calendar week, except as herein provided.

(g) Apprentices The Contractor agrees to comply with Chapter 1, Part 7, Division 2, Sections 1777.5 and 1777.6 of the California Labor Code, which are hereby incorporated and made a part hereof. These sections require that contractors and subcontractors employ apprentices in occupations and trades with apprentice programs in a ratio of not less than 1 hour of apprentice's work for each 5 hours of work performed by a journeyman (unless an exemption is granted in accordance with Section 1777.5) and that contractors and subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public works solely on the ground of sex, race, religious creed, national origin, ancestry or color. Only apprentices as defined in Labor Code Section 3077, who are in training under apprenticeship standards and who have signed written apprentice agreements, will be employed on public works in the occupations and trades with apprentice programs. The responsibility for compliance with these provisions is fixed with the Contractor for all occupations and trades with apprentice programs.

(h) Employment List The Contractor and each Subcontractor shall keep or cause to be kept an accurate record for work on this Project showing the names, addresses, social security numbers, work classification, straight time and overtime hours worked and occupations of all laborers, workers and mechanics employed by them in connection with the performance of this Agreement or any subcontract thereunder, and showing also the actual per diem wage paid to each of such workers, which records shall be open at all reasonable hours to inspection by the Owner, its officers and agents and to the representatives of the Division of Labor Law Enforcement of the State Department of Industrial Relations.

(i) Payroll Records Pursuant to Labor Code section 1776 Contractor and all Subcontractors shall maintain weekly certified payroll records, showing the names, addresses, Social Security numbers, work classifications, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by them in connection with the Work under this Agreement. Contractor shall certify under penalty of perjury that records maintained and submitted by Contractor are true and accurate. Contractor shall also require Subcontractor(s) to certify weekly payroll records under penalty of perjury. In accordance with Labor Code section 1771.4, the Contractor and each Subcontractor shall furnish the certified payroll records directly to the Department of Industrial Relations ("DIR") on the specified interval and format prescribed by the DIR, which may include electronic submission. Contractor shall comply with all requirements and regulations from the DIR relating to labor compliance monitoring and enforcement. The requirement to submit certified payroll records directly to the Labor Commissioner under Labor Code section 1771.4 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Section 1771.4. In the event of noncompliance with the requirements of this Section, the Contractor shall have ten (10) calendar days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this Section. Should noncompliance still be evident after such 10-day period, the Contractor shall pay a penalty of one hundred dollars ($100.00) to the Owner for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payment then due.

(j) Compliance Monitoring; Stop Orders This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. It shall be the Contractor's sole responsibility to evaluate and pay the cost of complying with all labor compliance requirements under the Contract Documents and applicable law. Any stop orders issued by the Department of Industrial Relations against Contractor or any Subcontractor that affect Contractor's performance of

Work, including any delay, shall be Contractor's sole responsibility. Any delay arising out of or resulting from such stop orders shall be considered Contractor-caused delay subject to any applicable liquidated damages and shall not be compensable by the Owner. Contractor shall defend, indemnify and hold the Owner, its officials, officers, employees and agents free and harmless from any claim or liability arising out of stop orders issued by the Department of Industrial Relations against Contractor or any Subcontractor.

Contractor and Subcontractor Registration Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work. Notwithstanding the foregoing, the contractor registration requirements mandated by Labor Code Sections 1725.5 and 1771.1 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Sections 1725.5 and 1771.1.

2.4 **Contractor Responsibility**

The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors, material and Equipment suppliers, and their agents, employees, invitees, and other persons performing portions of the Work under direct or indirect contract with the Contractor or any of its Subcontractors. The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents by tests, inspections, or approvals required or performed by persons other than the Contractor. Contractor shall be responsible for inspection of Work already performed under the Contract Documents to determine that such portions are in proper condition to receive subsequent work.

2.5 **Subcontractors and Other Contracts for Portions of the Work** Subcontractors shall be selected by Contractor and presented to Owner pursuant to the Agreement. Subcontractor substitution shall be handled in accordance with the Agreement. Any substitutions of Subcontractors shall not result in any increase in the Contract Price or the granting of any extension of time for the Project Schedule. By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all obligations and responsibilities, which the Contractor, by the Contract Documents, assumes toward the Owner. Contractors or Subcontractors may not perform work on a public works project with a Subcontractor who is ineligible to perform work on a public project pursuant to Labor Code section 1777.1 or 1777.7. Any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract. Any public money that is paid, or may have been paid to a debarred subcontractor by a contractor on the project shall be returned to the Owner. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to perform Work.

2.6 **Supply and Procurement of Equipment**

(a) Except as expressly provided to the contrary in the Scope of Work, Contractor, at its expense, shall purchase, transport and deliver all Equipment and shall inspect, unload, store, construct and install all Equipment required to complete the Project. Contractor shall maintain all

Equipment Warranties, obtain required extended warranties if the Scope of Work, Exhibit A so specifies, and, upon the expiration of the Warranty Period, cause any such remaining Equipment Warranties to be assigned and passed through to Owner. Contractor shall at all times perform the Work in a manner consistent with all such Equipment Warranties and will not perform any actions that may violate such warranties.

(b) Contractor agrees that all materials and Equipment to be supplied or used by Contractor or any Subcontractor in the performance of its obligations under this Agreement shall be new, unless otherwise specified or mutually agreed and fit for the use(s) specifically described in the Scope of Work. Such materials and Equipment shall at all times be maintained, inspected and operated by Contractor pursuant to Industry Standards and as required by Applicable Law until Final Completion. Contractor further agrees that all licenses, permits, registrations and certificates or other approvals required by Applicable Law or any Governmental Authority will be procured and maintained for such materials and Equipment at all times during the use of the same by Contractor or any Subcontractor in the performance of any of Contractor's or such Subcontractor's obligations under this Agreement.

2.7 **Utilities** Reserved.

2.8 **Utility Rate Changes** Reserved.

2.9 **Incentives**

Contractor shall provide such assistance to the Owner as may be reasonably requested to secure any subsidies, rebates or other incentives that may be available to Owner from any Governmental Authority or the Utility in connection with or relating to the installation and operation of the Project or otherwise. Contractor acknowledges that it shall have no right or interest in any such subsidies, rebates or other incentives.

2.10 **Permits and Approvals**

(a) Contractor shall obtain, maintain and pay for all Governmental Approvals and governmental fees, licenses, and inspections necessary for development, construction, ownership and operation of the Project and the completion of the Work and which are legally required by any Governmental Authority for the Project. Notwithstanding the foregoing, the Owner shall be responsible for any fees charged by Inspector of Records ("IOR") in connection with the Project and any fees charged by third parties pursuant to Testing Inspection and Observation program ("TIO Program"). In order to assist Contractor to obtain all required Governmental Approvals, Owner shall provide Contractor with such reasonable assistance as Contractor may request. Copies of all Governmental Approvals shall be provided to Owner five (5) Business Days or less after they are obtained or completed, in all cases before a Notice to Proceed to Procurement and Construction will be issued. Owner will review and approve the documents prior to commencement of construction.

(b) If applicable, the Contractor shall file a Notice of Intent to comply with the terms of the general permit to discharge storm water associated with construction activity prior to the start of any construction activity.

(c) Contractor is required to obtain all approvals from any Governmental Authority, including, but not limited to: Incentive program guidelines, and, if applicable, approvals relating to

fire safety, California Occupational Safety and Health Administration ("OSHA") and other codes and best practices.

2.11 **Testing and Inspection**

Contractor shall at its own expense conduct the Start Up and Operational Tests described in Exhibit F and such other tests described in the Scope of Work and shall be responsible for all fees for and coordination with any Governmental Authority for the approval of the Project, with the exception of any IOR and TIO fees described in Section 2.10(a). Contractor shall verify that the systems are functioning as expected within acceptable parameters. Contractor will notify Owner no less than five (5) days prior to the commencement of testing and Owner or its representative will have the right to observe all such tests. Tests, inspections, and approvals of portions of the Work required by the Contract Documents will comply with Title 24 to the extent applicable, and with all other Legal Requirements. The following shall apply to the testing and inspection of the Project:

(a) Testing Off-Site Any material shipped by Contractor from the source of supply, prior to having satisfactorily passed testing and inspection requirements per Exhibit A, Applicable Law or the requirements of any Governmental Authority shall not be incorporated in the Project.

(b) Responsibility for Errors and Omissions If at any time prior to the completion of the requirements under the Contract Documents, through no fault of its own, the Owner is required to provide or secure additional professional services for any reason by any negligent act or omission of the Contractor, the Contractor shall pay the Owner for any actual costs incurred for any such additional services, which costs may, among other remedies, be withheld from the progress payments and/or retention.

(c) Additional Testing or Inspection, and Costs Related Thereto

(i) If the Owner or Governmental Authority determines that any portion of the Work on the Project require additional testing, inspection, or approval, the Contractor will, upon Owner's written authorization, arrange for such additional testing, inspection, or approval. Owner shall bear such costs except in paragraph (ii), below.

(ii) If the testing or inspection of Work on the Project reveals that the Work does not comply with the Contract Documents, Contractor shall bear all costs arising from such failure, including those of re-testing, re-inspection, approval, or re-approval, including, but not limited to, compensation for services and expenses of the testing laboratory and any other professionals or entities retained by Owner. Any such costs shall be paid for by Owner, and Owner shall then invoice to Contractor and Contractor shall make payment thereof within 30 Days after Contractor receives the invoice; if Contractor fails to do so, Owner shall have the right to withhold the amount from any payment due or to be due to Contractor under the Contract.

(d) Costs for Premature Test If Contractor requests any test or inspection for any portion of the Project and that portion is not ready for the inspection, Owner shall have the right to invoice Contractor for all costs and expenses relating to the testing or inspection, including, but not limited to, compensation for services and expenses of the testing laboratory, and any other professionals or entities retained by Owner. Any such costs shall be paid for by Owner, and Owner shall then invoice to Contractor and Contractor shall make payment thereof within 30 Days after Contractor

receives the invoice; if Contractor fails to do so, Owner shall have the right to withhold the amount from any payment due or to be due to Contractor under the Agreement.

(e) Covered Work If a portion of the Work is covered contrary to the request of any Governmental Authority, the Owner's request, or to requirements specifically expressed in the Contract Documents, it must, if required by the Governmental Authority or the Owner, be uncovered for the Governmental Authority, or the Owner's observation and be replaced at the Contractor's expense without change in the Contract Price or Project Schedule.

(f) Tests and Inspections Not to Delay Work Tests and inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work on the Project.

(g) Independent Testing Laboratory When required by the scope of the Project, Owner will select an independent testing laboratory to conduct all required tests and inspections, and, except as specifically provided otherwise in the Contract Documents, pay for all associated costs. Selection of the materials required to be tested shall be made by the laboratory or Owner and not by Contractor.

2.12 Local and General Conditions

(a) Contractor has conducted a full and complete visual examination of the Site, and acknowledges and agrees that it has satisfied itself as to the general and local conditions and circumstances affecting the Work that could be reasonably ascertained and has identified and conducted all Assessments, at its own cost, required to ensure that the Project can be built according to all Applicable Laws and Industry Standards, including but not limited to the following, to the extent applicable: (i) geotechnical studies, (ii) atmospheric corrosion studies, (iii) environmental assessments, (iv) shading studies, (v) real property surveys of the Site including an ALTA survey, (vi) title reports, (vii) all staging, storage, delivery, and other areas necessary to perform the Work, (viii) ingress to and egress from the Site for all supplies, personnel and Equipment, (ix) anticipated site layout (x) technical information and requirements, (xi) conditions affecting transportation, disposal, handling and storage of materials, including Hazardous Materials at the Site (excluding pre-existing Hazardous Materials), (xii) availability and conditions of roads, buildings, climatic conditions and seasons, (xiii) existing electrical service and equipment suitability, (xiv) physical conditions at the Site, including topography, flood control requirements and ground surface materials to be encountered, (xv) underground utility surveys, (xvi) Legal Requirements and (xvii) all other matters which a prudent contractor should have discovered upon reasonable investigation and due diligence review, and Contractor accepts the risk of the matters referred to immediately above.

(b) The ECMs that Contractor and Owner have agreed to be incorporated into the Project are described in Exhibit A.

(c) Unless specifically stated in writing by Owners, the Contractor may not rely upon the accuracy of any utility services or site survey information that the Owner may provide.

2.13 Safety Precautions and Programs

(a) Contractor shall have responsibility for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Agreement.

Subcontractors have the responsibility for participating in, and enforcing, the safety and loss prevention programs established by the Contractor for the Project including the Safety Plan, which shall cover all Work performed by the Contractor and its Subcontractors. Subcontractors shall promptly report in writing and by phone to the Contractor all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or off the Site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. The Contractor will provide and maintain at the Site first-aid supplies for minor injuries.

(b) Prior to beginning construction, Contractor shall provide Owner with a copy of Contractor's Safety Plan, as well as an evaluation and appropriate documentation of the safety record of any licensed Subcontractor that will be performing Work on the Project. The Safety Plan shall include the location of emergency utility shutoffs (both manual and electronic shutoffs). Contractor shall review the emergency shut off and evacuation plan with Owner prior to start of construction.

(c) The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury, or loss to: (i) Employees on the Work and other persons who may be affected thereby; (ii) the Work, material, and Equipment to be incorporated therein, whether in storage on or off the Site, under the care, custody, or control of the Contractor or the Contractor's Subcontractors; and (iii) other property at the Site or adjacent thereto such as trees, shrubs, lawns, walks, pavement, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction. The Contractor shall give notices and comply with Legal Requirements, ordinances, rules, regulations, and lawful orders of Governmental Authorities bearing on the safety of persons or property or their protection from damage, injury, or loss.

(d) Contractor shall erect and maintain, as required by existing conditions and performance of the contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

(e) Contractor shall have mandatory pre-job safety briefing for all employees and Subcontractor employees on their first day on site. Hard hat stickers shall be issued as a proof of briefing attendance.

(f) Safety meetings will be held once a week during construction with all Contractor employees and Subcontractors employees attending. Printed names will be taken of those attending the meeting. No individual will start work on the Site without having attended a safety briefing on the dangers and protocols of the Site. Records of this training will be kept and provided to Owner. No individual will operate a piece of equipment on which they have not had certification training. Certification shall be carried on the operator at all times.

(g) When use or storage of explosives, other hazardous materials or equipment, or unusual methods are necessary for execution of the work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Contractor shall notify the Owner any time that explosives or hazardous materials are expected to be stored on Site. Location of storage shall be coordinated with the Owner and local fire authorities.
Pursuant to Labor Code section 6705, if the Contract Price exceeds $25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, submit to the Owner or a registered civil or structural engineer employed by the

Owner a detailed plan showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the Safety Plan, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Safety Plan or Applicable Law.

(h) Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the Owner or any of its employees.

2.14 **Protection of Work and Property**

Contractor and Subcontractors shall continuously protect and secure the Work, materials and Equipment, the Owner's property, and the property of others, from damage, injury, or loss arising in connection with operations under the Contract Documents. The Contractor and Subcontractors shall make good any such damage, injury, or loss, except such as may be solely due to, or caused by, agents or employees of the Owner or third parties. The following shall apply to the protection of Work and property:

(a) Contractor shall at all times comply with the requirements of the Project Owner Requirements, Legal Requirements and the Safety Plan with respect to the use, occupancy and condition of the Site, including the location and maintenance of storage and laydown areas used by Contractor.

(b) Contractor will be responsible for receiving of all freight at the Project Site(s) in a secure manner to be approved by Owner, such approval not to be unreasonably withheld or delayed.

(c) Contractor will be allowed to store materials on the Project site, with Contractor and Owner jointly determining the storage location.

(d) Reserved.

(e) The Contractor and the Subcontractors shall use only those ingress and egress routes designated by the Owner, observe the boundaries of the Site designated by the Owner, park only in those areas designated by the Owner, which areas may be on or off the Site, and comply with any parking control program established by the Owner such as furnishing license plate information and placing identifying stickers on vehicles.

(f) The Contractor shall keep the Site and surrounding area free from accumulation of waste material or rubbish caused by operations under the Agreement. The Site shall be maintained in a safe, neat, and orderly condition. If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so, upon prior reasonable notice to the Contractor, and the cost thereof shall be invoiced to the Contractor and withheld from Progress Payments and/or retention. Upon completion of the Project, Contractor and Subcontractor shall dismantle temporary structures, if any, and remove from the Site all construction and installation equipment, fences, scaffolding, surplus materials, rubbish, and supplies belonging to Contractor or Subcontractor.

2.15. **Emergencies**

In an emergency affecting the safety of persons or property, the Contractor shall take any action necessary, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be

determined as provided in Section 0 and requested in accordance with Section 0. The Contractor shall promptly report in writing to the Owner all accidents arising out of or in connection with the Work, which caused death, personal injury, or property damage, giving full details, and statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner.

2.16 **Hazardous Materials**

In the event the Contractor encounters or suspects the presence on the Site of material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or any other material defined as being hazardous by section 25249.5 of the California Health and Safety Code, which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner in writing, whether or not such material was generated by the Contractor or the Owner. Contractor will be accountable for costs or penalties associated with the presence of Hazardous Materials and with delays due to the presence of Hazardous Materials where the presence of such Hazardous Materials is attributable to Contractor's negligent acts or omissions. To the extent Owner is aware of the presence of any Hazardous Materials at any Site, Owner shall be responsible for informing Contractor of the location of such Hazardous Materials and shall bear responsibility for reasonable damages for personal injury or property damage caused by its failure to disclose the presence of such Hazardous Materials known to it to Contractor. If Contractor is required to stop work because of the presence of Hazardous Materials, and the presence of such Materials is not attributable to Contractor's acts or omissions, then the resulting delay shall be considered "Excusable Delay," as defined in Section 4.8. In no event shall the Work under this Agreement include, directly or indirectly, performing or arranging for the detection, testing, handling storage, removal, treatment, transportation, disposal, monitoring, abatement or remediation of any contamination of any Facility where Work hereunder is performed by Contractor, except for such Hazardous Materials which are present at the Facility because of acts or omissions of Contractor.

2.17 **Changes and Extra Work**

(a) Based upon the services Contractor will have provided in preparing its response to Owner's request for proposals for the Work, and Contractor's duties and responsibilities regarding the engineering and design of the Project, Contractor and Owner intend and expect that Contractor will not submit any Change Order requests during the construction of the Project based upon alleged errors or omissions in the Engineering Documents for the Project – including those prepared and provided by Owner and/or Owner's Consultants. Rather, the parties intend and expect that Change Order requests will only be submitted for Owner-requested changes in the Scope of Work of the Project, errors and omissions in any Owner provided plans and specifications, or for changes in the work of the Project due to unforeseen conditions of the Site, all in accordance with this Agreement and the Contract Documents of the Project.

(b) The Parties recognize that pursuant to Government Code section 4217.11, et seq., the total cost of the Project should not exceed the Savings. Accordingly, no party shall propose a Change Order unless the Party reasonably believes that the Contract Price, as adjusted by all Change Orders previously issued, plus the proposed Change Order shall be equal to or lower than the Savings.

(c) Notwithstanding any other provision of this Agreement or the Contract Documents, in the event a Change Order is caused by, or necessitated as a result of wrongful acts or omissions on the part of Contractor, or as a result of any errors or omissions in the Engineering Documents for the Project – including those prepared and provided by Owner and/or Owner's Consultants, or the Owner otherwise incurs costs or damages as a result of wrongful acts or omissions on the part of Contractor, or as a result of any errors or omissions in the plans, specifications, Drawings, or designs for the Project, the Contractor shall be responsible for the cost of the following:

(i) The reasonable costs of all engineering, design, labor, and materials necessary to fully correct the wrongful acts or omissions on the part of Contractor, or the error or omission in the Engineering Documents for the Project;

(ii) Any other reasonable costs or damages which the Owner incurs as a result of wrongful acts or omissions on the part of Contractor, or of errors or omissions in the Engineering Documents for the Project, including but not limited to any delay damages the Owner incurs; and

(iii) The reasonable costs of any third-party engineer, contractor or consultant that the Owner, in the Owner's sole discretion, must retain or consult with to ensure the proper rectification of wrongful acts or omissions on the part of Contractor, or of errors or omissions in the Engineering Documents for the Project.

(d) The Owner may backcharge, and withhold payment from, the Contractor for these costs and damages, and may seek reimbursement for any amount which exceeds any retention of the Agreement amount at the time of collection. When Owner so backcharges and withholds, upon Contractor's request Owner and Contractor shall meet and confer in good faith in an effort to reach agreement on (a) whether a wrongful act or omission occurred or whether there was an error or omission in the Engineering Documents for the Project, (b) whether it caused the Change Order expense, (c) what damages have been incurred by Owner, and (d) what portion of the damages are attributable to Contractor as described above. If Owner and Contractor do not reach agreement on all four of these items when meeting and conferring, then either Owner or Contractor can initiate a court action to resolve the dispute.

(e) Subject to Section 2.17(b), the Owner reserves the right to make such alterations, deviations, additions to, or deletions from the Engineering Documents, as may be deemed by the Owner to be necessary or advisable for the proper completion or construction of the Work contemplated, and the right to require Contractor to perform such work. If such Owner-directed change would increase the costs or extend the time of performance, Contractor shall promptly provide the Owner with a proposed Change Order detailing the anticipated costs and additional time, and the parties, acting in good faith, will negotiate the terms of the Change Order in accordance with sections 2.17(m) and (n) hereof. If the Parties cannot reach an agreement on the terms of a Change Order, then, subject to the Parties' ability to reasonably ascertain that the condition set forth in Section 2.17(b) is satisfied, Owner may direct Contractor to proceed with change order work, without prejudice to Contractor's right to submit a claim for resolution pursuant to Section 6.7 of this Agreement. There shall be no change whatsoever in the Engineering Documents, or in the Work without an executed Change Order, Construction Change Directive, or order by the Owner for a minor change in the Work as herein provided. Owner shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Engineering Documents unless the same shall have been authorized by and the cost thereof approved in writing by Change Order or executed Construction Change Directive. No extension of

time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted in writing in the Change Order.

(f) A Supplemental Instruction (SI) can order changes in the work that does not affect the Contract Price and/or Project Schedule. A SI can be made in a Request for Information response by issuing a formal SI document or by written letter from the Owner. Contractor shall promptly advise the Owner if it reasonably believes that the SI affects the Contract Price and/or Project Schedule. If the Parties, acting in good faith, cannot reach an agreement on the terms of the changes in the work pursuant to the SI, then, subject to the Parties' ability to reasonably ascertain that the condition set forth in Section 2.7(b) is satisfied, the Owner may direct the Contractor to proceed with changes, without prejudice to the Contractor's right to submit a claim for resolution pursuant to Section 6.7 of this Agreement,

(g) All Requests for Information should be substantially in the form of Exhibit G and shall reference all the applicable Contract Documents including specification section, detail, page numbers, drawing numbers, and sheet numbers, etc. The Contractor shall make suggestions and/or interpretations of the issue raised by the RFI. An RFI cannot modify the Contract Price, Project Schedule, or the Contract Documents. Prior to issuing an RFI the Contractor, Subcontractor, material suppliers and the like shall thoroughly review the Contract Documents and refer to all reference standards for the information sought. The Owner and Contractor agree that an adequate time period for the Owner to respond to an RFI is generally fourteen (14) Days after the Owner's receipt of an RFI, unless the Owner and Contractor agree otherwise in writing. However, in all cases, the Owner shall take such time, whether more or less than 14 Days, as is necessary in the professional judgment of Owner and the Owner's representatives to permit adequate review and evaluation of the RFI. The Contractor shall be invoiced by the Owner for any costs incurred for professional services, which shall be withheld from progress payments and/or retention, if an RFI requests an interpretation or decision of a matter where the information sought is equally available to the party making such request. The Contractor shall make efforts to coordinate the work in a timely fashion, so as to alleviate priority RFI's. If the RFI is considered a priority, the Contractor shall state the word "Priority" on the document, and the Contractor shall provide weekly RFI Priority Schedules.

(h) The RFI Priority Schedule shall include a listing of pending requests, including the most current request, and rank the RFI's in order of priority. The Owner shall endeavor to respect the Contractor's requested order of priorities and requested response dates. The Owner's response to the RFI shall be considered a Supplemental Instruction ("SI") in which the Contract Price and/or Project Schedule is not altered. If the RFI response alters the Contract Price and/or Project Schedule, a Change Order may be issued for the changed condition(s).

(i) The Owner will have authority to order minor changes in the Work provided that there is: (i) no adjustment in the Contract Price, (ii) no extension of the Project Schedule, or (iii) any other change which is inconsistent with the intent of the Contract Documents. Such changes shall be effected by written Change Order and shall be binding on the Owner and the Contractor. The Contractor shall carry out such written orders promptly. Contractor shall promptly advise the Owner if it reasonably believes that the Change Order issued under this Section affects the Contract Price and/or Project Schedule. If the Parties cannot reach an agreement on the terms of the Change Order, then, subject to the Parties' ability to reasonably ascertain that the condition set forth in Section 2.7(b) are satisfied, the Owner may direct the Contractor to proceed with Change Order work,

without prejudice to Contractor's right to submit a claim for resolution pursuant to Section 6.7 of this Agreement.

(j) To request a Change Order, Owner or Contractor shall prepare and submit a draft Change Order in the form of Exhibit H for review by the other Party.

(k) Each Change Order request, whether proposed by Contractor or Owner, shall include: (i) a detailed statement of the reason for and a description of the change; (ii) the estimated price of the proposed change, including the proposed change in the Contract Price and any costs or savings for carrying out the change including a complete itemized cost breakdown of all labor and material showing actual quantities, hours, unit prices, wage rates, required for the change; (ii) the projected effect of such proposed change on the Project Schedule including the relevant scheduled completion dates and deadlines; (iii) the projected effect of such proposed change on Contractor's ability to comply with any of its obligations hereunder, including the Warranties; (iv) a calculation showing the satisfaction of the condition set forth in Section 2.7(b); (iv) and shall be accompanied by supporting documentation necessary to evidence the costs or savings and schedule adjustments requested therein.

(l) When the Contractor is requesting a Change Order, notice thereof must be provided to the Owner within ten (10) Days after the occurrence of the event giving rise to the claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property, in which case the Contractor shall proceed in accordance with Section 0 hereof. No notice shall be considered unless made in accordance with this Section; however, the mere presentation of such claim shall not establish the validity of the cause giving rise to such claim, or of the extension of the Project Schedule, and/or the increase in the Contract Price. Subject to the Parties' ability to reasonably ascertain that the condition set forth in Section 2.17(b) is satisfied, the Contractor shall proceed to execute the Work even though the adjustment has not been agreed upon, and Contractor's claim, if any, shall be resolved in accordance with the provisions of Section 6.7 hereof . Any change in the Contract Price or extension of the Project Schedule resulting from such claim shall be authorized by a Change Order.

(m) Within ten (10) Days after receipt of a Change Order request from Contractor or Owner, the receiving Party shall either (i) accept such Change Order request by execution thereof and deliver an executed copy to the initiating Party or (ii) reject such Change Order request and provide appropriate written explanation of the reasons therefor (which may include a request for additional information, documentation or cost detail).

(n) The amount of the increase or decrease in the Contract Price resulting from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation: (A) Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation; (B) unit prices stated in the Contractor's original bid, the Contract Documents, or subsequently agreed upon between the Owner and the Contractor; (C) cost to be determined in a manner agreed upon by the Parties and a mutually acceptable fixed or percentage fee; or (D) by cost of material and labor and percentage of overhead and profit in accordance with the rates specified in the Schedule of Values, Exhibit B. If the Change Order is performed by a Subcontractor, or by the Contractor and a Subcontractor, Contractor may mark up the costs of such work by 20% , which will be Contractor's and Subcontractor's combined mark-up for overhead, bond and insurance premiums, and profit. If the Change Order is performed by the Contractor without any Subcontractors, Contractor may mark up its own total costs by 15%. It is expressly understood that the value of such extra work or changes, as determined by any of the

aforementioned methods, expressly includes any and all of Contractor'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 or expenses not included are deemed waived. For purposes of determining the cost, if any, of any change, addition, or omission to the Project, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to Contractor, and Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omissions in the Project as provided herein.

(o) The Owner may by means of a Construction Change Directive (CCD), without invalidating the Agreement, order changes in the Work within the general scope of the Agreement consisting of additions, deletions, or other revisions, with the Contract Price and Project Schedule being adjusted accordingly. A CCD shall be used in the absence of agreement on the terms of a Change Order. Contractor shall promptly advise the Owner if it reasonably believes that the CCD issued under this Section affects the Contract Price and/or Project Schedule. In that case, Contractor shall have no obligation to proceed with the CCD unless the Parties reach an agreement on an adjustment to the Contract Price and/or Project Schedule and reasonably ascertain that the condition set forth in Section 2.7(b) is satisfied.

(p) With respect to portions of the Work performed by COs and CCDs on a time-and-materials, unit-cost, or similar basis, the Contractor shall keep and maintain cost-accounting records satisfactory to the Owner, which shall be available to the Owner on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents.

(q) A Request for Proposal issued by the Owner shall contain adequate information, including any necessary Drawings and specifications, to enable Contractor to provide the cost breakdowns required by Section 0. The Contractor shall not be entitled to any additional compensation for preparing a response to a Request for Proposal, whether ultimately accepted or not.

2.5 **Manuals and Drawings**

(a) Submittal Contractor shall obtain and shall submit to Owner all required Engineering Documents and Samples in accordance with the Project Schedule and as required in the Contract Documents with such promptness as to cause no delay in its own Work or in that of any other contractor. Owner shall have the right, but not the obligation, to review all Engineering Documents and may direct Contractor to make such changes to the design and engineering of the Project as Owner reasonably believes are necessary and as are requested within a reasonable time after the Engineering Documents are submitted, so long as any such changes are within the Scope of Work (or, if not, a Change Order has been executed with respect to such changes), provided however, that no such review or requested changed shall impose any liability on Owner (other than to make payment in accordance with any applicable Change Order) or relieve Contractor of any of its responsibility for the design, engineering and performance of the Project as provided in this Agreement. Any submission, which in Owner’s opinion is incomplete, contains numerous errors, or has been checked only superficially by Contractor, will be returned unviewed by the Owner for resubmission by the Contractor. Contractor shall not commence any portion of the Work requiring an Engineering Document or Sample submission until the Owner has approved the submission.

(b) Samples Where Samples are requested by the Owner, and Work is approved based on the Samples, all Work shall be in accordance with the approved Samples.

(c) Extent of Review In reviewing Engineering Documents, the Owner will not verify dimensions and field conditions. The Owner will review and approve Engineering Documents, product data, and Samples for aesthetics and for conformance with the design concept of the Work and the information given in the Contract Documents. The Owner's review shall not relieve the Contractor from responsibility for any deviations from the requirements of the Contract Documents unless the Owner has given specific written approval. Contractor and Subcontractors shall be solely responsible for determining any quantities, whether or not shown on the Engineering Documents.

(d) Substitution Unless the Contract Documents state that no substitution is permitted, whenever in the Contract Documents any specific brand or trade name is specified such specification shall be deemed to be followed by the words "or equal." The Owner may consider an untimely substitution request if the product specified is no longer commercially available.

(e) Project Manual A Project Manual shall be assembled by Contractor and provided to Owner as a requirement for achieving Final Completion.
Documents and Samples at the Site The Contractor shall maintain at the Site for the Owner one applicable copy of Titles 19 and 24 and a record copy of the Drawings, specifications, Addenda, Change Orders, and other modifications, in good order and marked currently to record changes and selections made during construction. In addition, the Contractor shall maintain at the Site approved Shop Drawings, Engineering Documents, Samples, and similar required submittals.

2.19 **Warranties**

(a) Contractor Warranties Contractor warrants that, throughout and until the end of the Warranty Period:

(i) The Project will be designed, engineered and constructed to satisfy all applicable Legal Requirements, the requirements of the Contract Documents, and all descriptions set forth herein, applicable construction codes and standards and all other requirements of this Agreement.

(ii) All Equipment installed as part of the ECMs shall conform in all respects to the requirements of the Contract Documents, Legal Requirements, the requirements of the Owner, and all other requirements of this Agreement and shall be new, unused (unless otherwise mutually agreed in writing) and undamaged at the time it is put into service upon, and will be installed in accordance with the Equipment Documentation (including all requirements necessary to preserve and maintain in effect any and all Equipment Warranties) and all Equipment Warranties are in effect.

(iii) The Work, including all workmanship and materials incorporated therein, will be of suitable grade of their respective kinds for their intended use as specified herein, will be free from defects in design, engineering, materials, construction, and workmanship, and shall conform in all respects with all Legal Requirements, requirements of the Owner, the requirements of the Contract Documents, and all descriptions set forth herein, applicable construction codes and standards and all other requirements of this Agreement;

(b) Subcontractor and Supplier Warranties. Contractor shall, for the protection of Owner, use commercially reasonable efforts to obtain from all Suppliers and Subcontractors from

which Contractor procures machinery, equipment or materials or services, warranties and guarantees with respect to such machinery, equipment, materials or services, which shall be made available to Owner to the full extent of the terms thereof. At all times during performance of Work under the Contract Documents Contractor shall perform the Work in a manner consistent with all such warranties and shall not perform any actions that may violate or void such warranties. Contractor shall assign all remaining Equipment Warranties to the Owner upon expiration of the Warranty Period. Contractor shall deliver to Owner promptly following execution or receipt of the applicable agreement copies of all warranties and guarantees received from any Subcontractor or Suppliers, together with copies of such agreements (redacting confidential information as required thereunder).

(c) Independent Warranties Contractor's Warranties under Section 0 are separate and independent of one another. Contractor's failure to meet any of the foregoing warranties shall be deemed a breach of the Warranties.

(d) Warranty Period. Contractor shall remedy any breach of the Warranties set forth in this Section 019(a). The Warranty Period for the Equipment and labor included in the Non-OSHPD Phase of the Project shall commence upon Final Completion Date of that Phase and end twelve (12) months thereafter. The Warranty Period for the Equipment and labor included in the OSHPD Phase of the Project shall commence upon Final Completion Date of the entire Project and end twelve (12) months thereafter.

(e) Remedies

(i) If any Warranty set forth in Section 0 is breached or a defect or deficiency is discovered during the Warranty Period, Contractor shall, upon written notice from Owner of a Warranty claim prior to the expiration of the Warranty Period, at Contractor's sole option, re-perform, repair, replace and/or correct the applicable Work and resulting damage to the other property caused by such defective Work on a reasonably expedited basis while minimizing any impact of the failure on the availability functionality of the Work. Contractor shall have reasonable access to the Work as necessary to perform its Warranty obligations hereunder. All costs of or incidental to Contractor's performance of its Warranty obligations shall be borne by Contractor, including, where required, revising or re-engineering any deficient systems, the removal, replacement and reinstallation of all equipment necessary to gain access to defective Work, the repair of any and all damage to any part of the Work or the Site, and the cost of conducting all tests to confirm that all necessary corrective action has occurred. If the Project Warranties failure has the effect of voiding any Equipment Warranty, then Contractor will at its own expense correct and condition as required in order to ensure that the Equipment Warranty is reinstated by the manufacturer on such item, or that a replacement item with full Equipment Warranty is provided and installed.

(ii) Should Contractor fail to begin to perform such necessary repairs, replacement, or correction within ten (10) Days of notice of a Warranty claim or such shorter period as necessary in the event of an emergency (but not less than twenty-four (24) hours) and thereafter diligently pursue such correction, Owner shall have the right to perform such repair, replacement or correction, and Contractor shall be liable for all reasonable costs, charges and expenses incurred by Owner in connection with such repair or replacement and shall forthwith pay to Owner an amount equal to such costs, charges and expenses upon receipt of invoices certified by Owner. Owner's action in correcting defects in accordance with this Section shall not void Contractor's Warranty obligations hereunder, except in the

case of Owner's or its agent's (other than Contractor or any Subcontractor) gross negligence or willful misconduct.

(f) Warranty Exclusions. The Warranty obligations of Contractor do not extend to Work that is damaged by (i) gross negligence or willful misconduct of Owner (ii) the failure of Owner to maintain (to the extent that maintenance obligations have not been contractually transferred to Contractor) and operate the Equipment materially in accordance with all written instructions, practices and procedures which were provided to the Owner by Contractor (except if such failure is caused by Contractor or any Subcontractor), (iii) normal wear and tear or Force Majeure Events not caused by Contractor or any Subcontractor or a defect or deficiency in the Work or (iv) any alteration, repair or replacement made by a Person other than Contractor or any Subcontractor without the prior written approval of Contractor (excluding alterations, repairs or replacements made pursuant to Section 0); provided that Contractor's Warranty obligations shall continue for all but the portion of the Work so altered.

THE EXPRESS WARRANTIES PROVIDED ABOVE ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, STATUTORY, EXPRESS, OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED. THE LIMITED EXPRESS WARRANTIES AND REPRESENTATIONS SET FORTH IN THIS AGREEMENT MAY ONLY BE MODIFIED OR SUPPLEMENTED IN A WRITING EXECUTED BY A DULY AUTHORIZED SIGNATORY OF EACH PARTY.

2.20 **Insurance**

(a) Required Coverage At all times commencing no later than commencement of the Work and to remain in effect for the entire term of this Agreement including any extensions of time, Contractor shall, at its expense, obtain and maintain, and shall cause its Subcontractors to obtain and maintain, with insurers of recognized responsibility authorized to do business in the California as admitted carriers having a rating not lower than "A-" or X or better as rated by A.M. Best Company, Inc. or other independent rating companies, the following insurance which shall include the minimum coverages and limits set forth below:

(i) Commercial General Liability Insurance Commercial general liability insurance on an "occurrence" basis arising out of claims for bodily injury (including death) and property damage, as will protect the Contractor, which may arise out of or result from the Contractor's operations under the Agreement and for which the Contractor may be legally liable, whether such operations are by the Contractor, by a Subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Such insurance shall protect the Contractor and Owner against loss from liability imposed for damages (1) on account of bodily or personal injuries, including death, disease and sickness, accidentally suffered or alleged to have been suffered by any person or persons that may be caused directly or indirectly by the performance of this Agreement, and (2) on account of injury to or destruction of property, resulting from acts of commission or omission by the Contractor, or otherwise resulting directly or indirectly from the Contractor's operations in the performance of this Agreement. This insurance, evidenced by insurance certificates with appropriate endorsements, shall be subject to the approval of Owner, and Owner's approval shall not be unreasonably withheld and shall be in amounts not less than Five Million Dollars general aggregate, Five Million Dollars personal and advertising injury aggregate, with a per occurrence limit of Five Million Dollars (total limits

required may be satisfied with an excess or umbrella policy). The comprehensive or commercial general liability policy shall also include a severability of interest clause and cross liability if the policy has multiple insureds. The policy shall stipulate that the insurance afforded the additional insureds shall apply as primary insurance and that any other insurance carried by Owner or other Persons identified in this Agreement will be excess only and will not contribute with this insurance;

(ii) Automobile Liability. Automobile liability insurance, for Contractor's liability arising out of claims for bodily injury and property damage covering all owned (if any), non-owned, leased, hired or borrowed automobiles of Contractor, with a minimum limit of not less than One Million Dollars ($1,000,0000) per accident for combined bodily injury and property damage and containing appropriate no-fault insurance provisions or other endorsements in accordance with Applicable Law;

(iii) Worker's Compensation Insurance All engineers, experts, Consultants and Subcontractors the Contractor intends to employ shall have taken out workers' compensation insurance with an insurance carrier satisfactory to the Owner for all persons whom they may employ in carrying out the work contemplated under this Agreement in accordance with the Workers' Compensation Laws of the State of California. If the Contractor employs any engineer, expert, Consultant or Subcontractor which it did not intend to employ prior to commencement of services, it must furnish such proof of workers' compensation insurance to the Owner immediately upon employment. If the Contractor is self-insured, the Contractor shall furnish a Certificate of Permission to Self-Insure and a Certificate of Self-Insurance satisfactory to the Owner.

(iv) Employer's Liability Insurance All engineers, experts, Consultants and Subcontractors the Contractor intends to employ shall have taken out employer's liability insurance with an insurance carrier satisfactory to the Owner. During the course of Contractor's services, if Contractor ever intends to employ additional or different Engineers, experts, Consultants or Subcontractors, before so employing them Contractor shall furnish such satisfactory proof of insurance to the Owner. If the Contractor is self-insured, the Contractor shall furnish a Certificate of Permission to Self-Insure and a Certificate of Self-Insurance satisfactory to the Owner.

(v) Errors and Omissions Insurance Errors and omissions insurance on an occurrence basis with limits of at least One Million Dollars ($1,000,000) and Contractor will maintain such coverage for a period of five (5) years following the Final Completion Date.

(vi) Builder's All-Risk Contractor shall maintain Builder's Risk/Course-of-Construction insurance, issued on a completed value basis on all insurable Work included under the Contract Documents. This insurance, as evidenced by insurance certificates with appropriate endorsements, shall be subject to the approval of Owner, and Owner's approval shall not be unreasonably withheld. This insurance shall insure against all risks, including but not limited to the following perils: vandalism, theft, malicious mischief, fire, sprinkler leakage, civil authority, sonic boom, explosion, collapse, flood, wind, hail, lightning, smoke, riot or civil commotion, debris removal (including demolition) and reasonable compensation for the Owner's costs and expenses required as a result of such insured loss. This insurance shall provide coverage in an amount not less than the full cost to repair, replace, or reconstruct the Work. Such insurance shall include the Owner, the Owner's designated

representative, and any other person or entity with an insurable interest in the Work as an additional named insured.

(vii) Other Insurance Contractor shall provide all other insurance required to be maintained under Applicable Laws, ordinances, rules, and regulations. Such insurance shall be subject to the approval of Owner, and Owner's approval shall not be unreasonably withheld.

(b) Consultants If not covered by Contractor's coverage, each of Contractor's Consultants shall carry coverage and limits proportionate to each such Consultant's scope of work, and Contractor shall include such provisions in its contracts with them. If any policy carried by any of the Consultants offers 50% or less of the limits required of the Contractor hereunder for an analogous policy, the Contractor shall notify the Owner of the proposed coverage to be carried by such Consultant, and the Owner shall have the right in its reasonable discretion to approve or reject the proposed coverage in each such case.

(c) Occupancy Owner may partially or fully occupy and/or use the Project before acceptance of the entire Project by the Owner. All of Contractor's required insurance must allow such occupancy and/or use without prior consent from insurer.

(d) Additional Insured; Primary and Non-Contributory; Waiver of Subrogation The Contractor shall name the Owner and the Owner's designated representative as additional insureds on Contractor's commercial general liability (using ISO CG 20 10 and CG 20 37 or exact equivalents), automobile liability, and excess/umbrella policies. The additional insured endorsement(s) included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the additional insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurer's liability shall not be reduced by the existence of such other insurance. The coverage provided the additional insureds on Contractor's commercial general liability, automobile liability, and excess/umbrella policies shall apply on a primary and non-contributory basis. The Contractor's commercial general liability, automobile liability, excess/umbrella, and workers' compensation/employer's liability policies shall be endorsed to include a waiver of subrogation in favor of Owner and the Owner's designated representatives. Any excess/umbrella policies provided by Contractor shall include a follow form endorsement or schedule of underlying coverage showing that such policies sit in excess of and shall follow the form of the underlying policies set forth herein, which Contractor intends the excess/umbrella policy to supplement.

(e) Proof of Carriage of Insurance The Contractor shall not commence Work nor shall it allow any Subcontractor or Consultant to commence Work under this Agreement until all required insurance certificates, additional insured endorsements and declarations pages have been obtained for the period covered by this Agreement and delivered in duplicate to the Owner for approval, and such approval shall not be unreasonably withheld.

(f) Notice of Cancellation or Non-Renewal The Contractor shall provide or shall obligate its insurance carriers or brokers/representatives to provide for thirty (30) Days written notice to the Owner of cancellation.

(g) Project Schedule Changes At the time of making application for any extension of time pursuant to the Contract Documents, Contractor shall submit evidence that insurance policies will be in effect during the requested additional period of time.

(h) Compliance If the Contractor fails to maintain such insurance or fails to cure any defects in coverage required herein within five (5) Days of receiving written notice of the defect(s), the Owner may, but shall not be required to, take out such insurance to cover any damages accrued for which the Owner might be held liable on account of the Contractor's failure to pay such damages, and deduct and retain the amount of the premiums from any sums due the Contractor under this Agreement.

(i) No Limitation of Liability; Subcontractors and Consultant Obligations Nothing contained in this Agreement shall be construed as limiting, in any way, the extent to which the Contractor may be held responsible for the payment of damages resulting from the Contractor's operations. Each of Contractor's Consultants and Subcontractors shall comply with all insurance obligations under this Section, and Contractor shall include such provisions in its contracts with them.

2.21 **Performance and Payment Bonds** Unless otherwise specified in the Contract Documents, prior to commencing any portion of the Work, the Contractor shall apply for and furnish Owner a separate Payment Bond in substantially the same form as Exhibit K and Performance Bond in substantially the same form as Exhibit L for the Work which shall cover 100% faithful performance of and payment of all obligations arising under the Contract Documents and guaranteeing the payment in full of all claims for labor performed and materials supplied for the Work, provided, however, that such Bonds will solely apply to the Work performed during the construction period, i.e., the period from the start of construction through Final Completion. The Performance and Payment bonds will not apply to any of the obligations included in the Performance Guarantee, Exhibit E. Only bonds executed by admitted Surety insurers as defined in Code of Civil Procedure section 995.120 shall be accepted. The surety insurers must, unless otherwise agreed to by Owner in writing, at the time of issuance of the bonds, have a rating not lower than "A" as rated by A.M. Best Company, Inc. or other independent rating companies. Owner reserves the right to approve or reject the surety insurers selected by Contractor and to require Contractor to obtain bonds from surety insurers satisfactory to the Owner. Notwithstanding anything to the contrary in the Contract Documents, the liability of the surety on the performance bond will cease one (1) year after the Final Completion Date. Any warranty or guarantee required of Contractor by the Contract Documents shall be the sole obligation of Contractor after termination of the surety's performance bond liability. The liability of the surety on the payment bond shall continue only so long as required by law. Any guarantee of performance hereunder shall not be deemed to be covered by the terms of the Payment Bond or the Performance Bond.

2.22 **Owner's Right to Stop the Work** If the Contractor fails to correct Work, which is not in accordance with the requirements of the Contract Documents, or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may order the Contractor, in writing, to stop the Work or any portion thereof, until the cause for such order has been eliminated.

2.23. **Owner's Right To Carry Out The Work** If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails (within a thirty-Day period after receipt of written notice or the time period expressly stated in the written notice from the Owner) to commence and continue correction of such default or neglect with diligence and promptness, the Owner may correct such deficiencies by whatever reasonable method the Owner may deem

expedient without prejudice to other remedies the Owner may have, and may withhold for the cost of such correction from any sums due the Contractor under this Agreement.

ARTICLE 2A

2A. OWNER'S RESPONSIBLITIES

The Owner, without cost to Contractor, shall:

a. Designate a contact person with authority to make decisions for the Owner regarding the Work and provide Contractor with information sufficient to contact such person in an emergency;

b. With Contractor's assistance, reasonably coordinate the work of other contractors under Owner's sole control so as not to disrupt the Work proceeding in an efficient manner;

c. Provide or arrange for reasonable access to the Facilities and locations where Work is to be performed so that Work may proceed in an efficient manner;

d. Permit Contractor to reasonably control and/or operate all building controls, systems, apparatus, equipment and machinery necessary to perform the Work;

e. Furnish Contractor with any contingency plans, safety programs and other policies, plans or programs related to any Facility where Work is to be performed; and

f. To the extent that service and maintenance obligations have not been contractually transferred to Contractor, maintain and service, as well as operate and store the installed Equipment in accordance with all written instructions, practices and procedures which were provided to Owner by Contractor.

ARTICLE THREE

3. PRICE AND PAYMENT

3.1 **Contract Price and Escrow** As full and complete compensation for Contractor's obligations under the Contract Documents, Owner shall pay to Contractor in installments in accordance with the Progress Payment Milestones as specified in Exhibit B and Contractor shall accept as payment in full by Owner for the delivery of the Project and its other obligations under the Contract Documents, the Contract Price and as may only be adjusted by Change Orders in accordance with the provisions of this Agreement. Except as otherwise provided in this Agreement, the Contractor shall assume the risk of all costs in excess of the Contract Price in the performance the Work and to provide a fully completed and successfully operational Project, complete in every detail according to the provisions of the Contract Documents and shall not be entitled to additional payments because of such excess costs. Should the Contractor believe that it is entitled to additional compensation, whether money or time, it must request such compensation pursuant to the Section 0 for Change Orders and Section 0 for Claims.

The funds in the amount of the Contract Price shall be deposited in an Escrow Account and shall be disbursed to Contractor out of that Account. All expenses to establish the Escrow Account shall be

the responsibility of the Owner, and the Owner will receive all interest earnings from the Escrow Account. The Owner shall be responsible for submitting the necessary documents to the Escrow Agent to allow for timely disbursements from the Escrow Account. The funding of the Escrow Account in an amount equal to or greater than the Contract Price shall be a condition precedent to Contractor's obligations under this Agreement. If the Escrow Account is not funded within sixty (60) days of the execution of this Agreement (or such other period as established by mutual written agreement of the Parties), this Agreement shall be null and void.

3.2 **Allowances** The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities against whom the Contractor makes reasonable and timely objection.

3.3 **Material Storage** As the Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from Owner, to assure that there will be no delays, Contractor shall be allowed to invoice Owner for materials relating to lighting upgrade and retrofit as soon as these materials are received on Site. If payments are to be made for materials and equipment that are not incorporated in the Work on the Project but delivered and suitably stored at a Project Site or at some other location agreed upon in writing by Owner, the payments shall be conditioned upon submission by Contractor, Subcontractor, or Supplier of bills of sale, bills of lading and such other documents satisfactory to Owner to establish Owner's title to such materials or equipment free of all liens and encumbrances, and otherwise protect Owner's interest, including, without limitation, provision of applicable insurance and transportation to the Project Site. All stored items shall be inventoried, specified by identification numbers (if applicable), released to Owner by the sureties and Subcontractors, and, if stored off the Project Site, stored only in a bonded warehouse.

3.4 **Retention** The Owner shall, at Contractor's discretion, either retain an amount equal to 5% of each Progress Payment, or, in lieu of said retention, offer to enter into an Escrow Agreement for Security Deposits in Lieu of Retention ("Escrow Agreement") with Contractor, in the form attached as Exhibit M, as set forth in California Public Contract Code section 22300. Release of the retention or funds deposited with Escrow Agent ("Escrow Funds") pursuant to an Escrow Agreement between the parties, and the final Progress Payment shall be made in the manner described in Section **Error! Reference source not found.**.

3.5 **Payment Schedule** The Progress Payment Milestones defined in Exhibit B shall be used as the basis for preparation of progress invoices. Subject to the schedule set forth in Exhibit B and except as provided in the Agreement, Owner shall pay to Contractor the applicable Progress Payment set forth in the Progress Payment Milestones (on a per Site basis where applicable) when:

(i) Contractor has completed the Work associated with such payment in accordance with the Progress Payment Milestones;

(ii) Following submittal of the supporting documentation required by Section 0 for the respective Progress Payment Milestones to the satisfaction of the Owner;

(iii) Following submittal of an Application for Payment; and

(iv) Subject to Retention as provided in Section 3.4.

Contractor shall be entitled to payment and in the amount specified for each Progress Payment Milestone.

3.6 **Application for Payment** Except as provided in Section 0, Contractor shall submit to Owner an invoice (an "Application for Payment"), substantially in the form of Exhibit I, requesting payment five (5) Business Days prior the anticipated achievement of a Progress Payment Milestone. Together with each Application for Payment, Contractor shall deliver (i) an updated progress schedule for the Work (as compared to the Project Schedule); (ii) a monthly progress report ; and (iii) any other supporting documentation that Owner may reasonably request. Each monthly progress report shall be certified by Contractor as being true and correct as of the date of such Application for Payment. The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment.

3.7 **Review Of Progress Payment** The Owner will, within seven (7) Days after receipt of the Contractor's Application for Payment, either approve such payment or notify the Contractor in writing of the Owner's reasons for withholding approval in whole or in part. The review of the Contractor's Application for Payment by the Owner is based on the Owner's observations at the Site and the data comprising the Application for Payment whether the Work has progressed to the point indicated and whether, to the best of the Owner's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. Owner will pay Contractor the amount Owner approves pursuant to Section 0 within thirty (30) after the Application for Payment was properly submitted.

3.8 **Decisions to Withhold Payment** The Owner may decide to withhold payment in whole, or in part, to the extent reasonably necessary to protect the Owner. In addition, the Owner may withhold payment, in whole, or in part, to such extent as may be necessary to protect the Owner from loss because of any acts or omissions by Contractor, including any rights to withhold mentioned in the Contract Documents.

3.9 **Progress Payment Milestones** Progress Payments shall be made in accordance with Exhibit B.

3.10 **Payments and Information to Subcontractors** No later than seven (7) Days after Contractor receives payment from Owner, pursuant to Business and Professions Code section 7108.5, Contractor shall pay to each Subcontractor, out of the amount paid to Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to Contractor on account of such Subcontractor's portion of the Work. Contractor shall, by appropriate Subcontract with each Subcontractor, require each Subcontractor to make payments to sub-Subcontractors in a similar manner. Owner has no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by Applicable Law. Owner will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by Contractor, and action taken thereon by Owner, on account of portions of the work done by such Subcontractor.

3.11 **Waivers and Releases** Within fifteen (15) Days after receipt of each progress payment and the Final Payment, Contractor shall provide (and shall cause its Suppliers and Subcontractors, and their Subcontractors to provide) to Owner an unconditional lien waiver and release (related to the Progress Payment as applicable) in a form substantially similar to the forms attached hereto as Exhibit N.

3.12 **Progress Payment Terms** The obligation of the Owner to pay Progress Payments hereunder shall constitute a current expense of the Owner and shall not in any way be construed to be a debt of the Owner in contravention of any applicable constitutional or statutory limitations or requirements concerning the creation of indebtedness by the Owner, nor shall anything contained herein constitute a pledge of the general tax revenues, funds, or moneys of the Owner.

3.13 **Completion of Work** Upon receipt of the Contractor's signed Final Completion Certificate, the Owner will make an inspection to determine whether the Work, or designated portion thereof, is complete. If the Owner's inspection discloses any item which is not completed in accordance with the requirements of the Contract Documents, the Contractor shall, before Owner's issuance of the signed Final Completion Certificate and the Final Payment, diligently complete or correct such item.

3.14 **Partial Occupancy or Use** Owner may occupy or use any completed or partially completed portion of the Work at any stage without accepting that Work and without waiving rights to claim damages as to that Work. The Owner and the Contractor shall agree in writing to the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents.

3.15 **Acceptance, Final Completion Certificate and Final Payment** If the Owner's representatives find the Work, or the designated Phase thereof, fully performed under the Contract Documents, they shall so notify Contractor, who shall then submit to the Owner its final Application for Payment for that Phase. After the Owner's representatives find the Work fully performed, the Owner's governing body should accept the Work for that Phase as fully complete. After completion of both Phases of the Work, the Owner may record a Final Completion Certificate with the County Recorder in accordance with Civil Code section 9204. Contractor shall, upon receipt of Final Payment from Owner, pay the amounts due Subcontractors. Owner shall pay the retainage pursuant to Public Contract Code section 7107. Any application for Final Payment shall be accompanied by the same details required for regular progress payments. Acceptance of the Final Payment shall constitute a waiver of Claims except for those previously identified in writing and identified by that payee as unsettled at the time of final payment.

3.16 **Substitution of Securities** In accordance with section 22300 of the Public Contract Code, the Owner will permit the substitution of securities for any monies withheld by the Owner to ensure performance under the Agreement. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the Owner, or with a state or federally chartered bank as the escrow agent, who shall then pay such monies to the Contractor. Upon completion of the Agreement, the securities shall be returned to the Contractor. Securities eligible for investment under this Section shall include those listed in Government Code section 16430, bank or savings and loan certificates of deposit, interest-bearing, demand-deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the Owner. The Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon. Any escrow agreement used shall be substantially similar to the form set forth in Public Contract Code section 22300.

3.17 **Taxes** Contractor will pay all applicable Federal, State, and local taxes on all materials, labor, or services furnished by it, and all taxes arising out of its operations under the Contract Documents. Owner is exempt from Federal Excise Tax, and a Certificate of Exemption shall be provided upon request.

3.18 **Right To Suspend Work**. In the event that the Owner fails to pay Contractor's invoices which are not subject to bona fide dispute when due and fails to cure such default within thirty (30) days of Contractor's written notice thereof, Contractor may suspend the Work until payment is received, and the Contractor will be granted an extension of time equal to the duration of such suspension.

ARTICLE FOUR

4. COMMENCEMENT AND SCHEDULE

4.1 **Project Schedule** Time is of the essence in this Agreement, and, subject to the terms of the Contract Documents, the date for Final Completion of both phases of the Project shall be the Completion Date as set forth on the Cover Page, and Contractor shall design, install and commission the Project and perform all Work hereunder in accordance with the Project Schedule, Exhibit C. The Project Schedule shall be in the form of a tabulation, chart, or graph and shall be in sufficient detail to show the chronological relationship of all activities of the Project (on a per Site basis where applicable) including but not limited to all applicable anticipated dates for achievement of the Project Phases including the issuance of the Notice to Proceed to Design, the anticipated dates for 90% and 100% Engineering Documents submittal including adequate time for Owner review where required by Section 0, the anticipated attainment of each Governmental Approval, the anticipated issuance of the Notice to Proceed to Procurement and Construction, the anticipated award and delivery dates of major pieces of Equipment, the start and completion dates for construction and testing and commissioning, and the Completion Date. The Project Schedule shall include early and late dates and reasonable float for each and shall clearly illustrate the critical path. The Project Schedule will separately identify those milestones or events that must be completed before other portions of the work can be accomplished.

4.2 **Project Phases And Notice to Proceed** The date of commencement of the Work is the date established in the Notice to Proceed to Design delivered by the Owner. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for which the Contractor is responsible. The Work on the Project shall be performed in accordance with the following phases as more fully set forth in the Scope of Work, Exhibit A:

(a) Design Phase Upon Owner's issuance of a written Notice to Proceed to Design, Contractor shall prepare 90% Engineering Documents, and any inspections required by the date specified for each Site in the Project Schedule. Contractor shall deliver 90% Engineering Documents to Owner for review and approval, which approval shall not be unreasonably withheld. Owner shall diligently review and respond to each submission by Contractor by the date specified in the Project Schedule. Contractor shall incorporate Owner's comments and requested changes unless Contractor can demonstrate that such requested changes would materially impact the Contract Price, the Project Schedule, or any other material requirement of the Contract Documents in which case Contractor shall submit a Change Order in accordance with Section 0. Upon resolution of the provision hereinabove set forth, Contractor shall complete and submit the 90% Engineering Documents by the date specified in the Project Schedule. No work shall be performed until Owner's issuance of the Notice to Proceed to Design.

(b) Governmental Approval Phase Upon Owner's written approval of the 90% Engineering Documents, Contractor shall submit and seek approval of 100% Construction Documents to any Governmental Authority with jurisdiction. Contractor shall exercise all

reasonable diligence to ensure that all necessary Governmental Approvals are received by the date specified in the Project Schedule. Owner shall not unreasonably withhold its consent to any modifications to the Engineering or Construction Documents that may be requested by any Governmental Authority or quasi-governmental agency with jurisdiction over the Project or the Work, excepting any changes that materially affect the Contract Price, or that materially affect the sitting of the Project and its impact on Owner's operations. The receipt and approval of the 100% Construction Documents and copies of all Governmental Approvals thereof by the Owner shall constitute the completion of the Governmental Approval Phase.

(c) Construction Phase. Within fifteen (15) Business Days of receipt and approval of the 100% Engineering Documents and copies of all Governmental Approvals by the Owner necessary to begin construction of the Project, Owner shall issue a Notice to Proceed to Procurement and Construction. Upon receipt of the Notice to Proceed to Procurement and Construction, Contractor shall facilitate, or cooperate with Owner in its efforts to facilitate, a kick-off meeting with Owner, any Owner representatives, Contractor, and any other relevant Party to this Agreement. Following the kick-off meeting, Contractor shall commence the construction of the Project in accordance with the 100% Engineering Documents and all other Contract Documents.

When Contractor believes it has achieved Substantial Completion of the Project , Contractor shall notify Owner of the same certifying completion of the Construction Phase of the Project . Within ten (10) Business Days after Contractor's submission or Owner's independent receipt of all items required for Substantial Completion, Owner shall either (i) acknowledge and agree in a writing delivered to Contractor that the Construction Phase for the Project has been satisfactorily completed, or (ii) advise Contractor by written notice that Substantial Completion has not been achieved and identify any missing items or defects or deficiencies in the Work for which Contractor is responsible or any other reason why the requirements of Substantial Completion have not been met. Completion of the Construction Phase requires that:

(i) The Project has been built in conformance with the terms and conditions of the Contract Documents;

(ii) The Project complies with all applicable Legal Requirements and has passed all required inspections by any applicable Governmental Authority and all applicable Governmental Approvals have been received and copies thereof have been delivered to the Owner;

(iii) Submission of a written request to schedule the Utility permission to operate inspection and a copy thereof provided to the Owner.

(iv) Contractor shall have delivered a true, correct, and complete certification of Substantial Completion for the Project signed by Contractor.

(d) Commissioning Phase During the construction phase of the work on the Project and before the Completion Date, Contractor shall conduct all commissioning tests in accordance with the Contractor's Testing and Commissioning Plan for the Project which shall include but is not limited to the Start Up and Operational Tests in Exhibit F. Contractor shall provide notice to Owner of any scheduled test(s) of installed Equipment, and Owner or its designees shall have the right to be present at any or all such tests conducted by Contractor, any Subcontractor, manufacturers of the Equipment. Contractor shall be responsible for correcting or adjusting all deficiencies in the Work and Equipment operations that Contractor provided and installed that may be observed during

Equipment commissioning procedures. Completion of the Commissioning Phase of each Phase of the Project requires that:

(i) The Start Up and Operational Tests and all other related tests have been completed to the Owner's satisfaction and the results provided to the Owner;

(ii) All Work has been completed other than the Work solely required for Final Completion (including the Work set forth in the Punchlist);

(e) Final Completion When Contractor believes it has achieved Final Completion of the Project Contractor shall deliver to Owner the written Final Completion Certificate, in substantially the form of Exhibit J, which certificate shall certify the Final Completion Date and the Contractors achievement of Final Completion for the Project . Within ten (10) Business Days after Contractor's submission or Owner's independent receipt of all items required for Final Completion, Owner shall either (i) deliver such certificate to Contractor, acknowledged and agreed by Owner, and confirming the Final Completion Date (the "Final Completion Certificate"). The Project may only be accepted as complete by action of the Owner's governing body. Completion of Final Completion requires that:

(i) Contractor has received all local, state and federal Governmental Approvals and other approvals as may be required by Law for the operation and maintenance of the Project, including approvals, if any, required under the California Environmental Quality Act for the Project;

(ii) Owner has received from Contractor the final Project Manual (electronic and hardcopy format) including two (2) sets of full size as-built drawings approved and stamped by the Engineer of Record (as built drawings shall also be provided to Owner in PDF and native file format) - (Project Manual shall be provided upon Final Completion of the entire Project);

(iii) Contractor has provided training to the Owner in the operation, emergency shut-down procedures, and recommended operation and maintenance of the Project and has provided Owner will two (2) sets of keys to all locks, equipment, and boxes that are part of the Project;

(iv) All Contractor's materials and wastes have been removed from the Site and properly disposed of, except upon Final Completion of the either the OSHPD or Non-OSHPD Phase, Contractor may continue to store on the Site materials relating to the incomplete Phase;

(v) All Punchlist Work with respect to the relevant Phase of the Project and the Site has been completed to the Owner's reasonable satisfaction;

(vi) A final walkthrough of the Project and Site has been conducted with Contractor and Owner to determine completion of the terms of the Agreement.

(vii) Contractor shall have delivered a true, correct, and complete Final Completion Certificate signed by Contractor.

4.3 **Hours of Work**

(a) Sufficient Forces Contractors and Subcontractors shall furnish sufficient forces to ensure the prosecution of the Work in accordance with the Project Schedule.

(b) Performance During Work Hours Work shall be performed during working hours set forth in Exhibit A, Scope of Work. In the event of an emergency or when required to complete the Work in accordance with job progress, Work may be performed outside of working hours set forth in Exhibit A with the advance written consent of the Owner.

4.4 **Progress and Completion** Time limits stated in the Contract Documents are of the essence of the Agreement. By executing the Agreement, the Contractor confirms that the Project Schedule is a reasonable period for performing the Work. The Contractor shall not knowingly, except by agreement or instruction of the Owner, in writing, commence operations on the Site or elsewhere prior to the effective date of insurance required by Section 0 to be furnished by the Contractor. The date of commencement of the Work shall not be changed by the effective date of such insurance. The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Project Schedule.

4.5 **Contractor Schedules and Report Updates** Contractor shall prepare and submit to Owner updated Project Schedules and progress reports on a regular basis (no less than monthly and in each case with the Contractor's Application for Payment hereunder) in such detail as Owner may reasonable request as well as such other reports relating to the Work as Owner shall reasonably request from time to time. Contractor shall provide the Project Schedule, and updates and revisions thereto in electronic format as well as hard copy. The Project Schedule provided by Contractor shall not exceed time limits current under the Contract Documents and shall comply with all of the scheduling as required by the Contract Documents. In addition to any remedies that Owner may have, Contractor's failure to provide proper Project Schedules as required by this Section may, at Owner's reasonable discretion: (a) constitute grounds to withhold, in whole or in part, Progress Payments to Contractor or (b) constitute a breach of the Agreement entitling Owner to actual damages, in addition to any other remedies provided under Agreement, including, in Owner's discretion, termination of the Agreement pursuant to the terms hereof.

Contractor shall submit its daily logs for the monthly period with the updated schedule. Float is not for the exclusive use or benefit of either Party but it is a jointly owned expiring Project resource available to both Parties as needed to meet the Project Schedule.

4.6 **Progress Meetings** Unless otherwise stated in the Contract Documents and subject to change by Owner, the Parties shall meet, in person or via teleconference, at least biweekly during the performance of Contractor's work to, among other things, review work performed to date and to be performed. Contractor shall organize the meeting, prepare, and distribute meeting notes. Minute notes shall be taken in satisfactory written form and include 3 week look-ahead schedule, RFI log, and Change Order log. Meeting minutes shall be updated during the meeting and distributed at the end of the meeting and Owner shall have five (5) Business Days after Owner's receipt of such minutes to object to them in writing and provide corrections in writing. A quorum of meeting attendees will be named at the first meeting. The named quorum shall be in attendance in all Project meetings.

4.7 **Conformity with Project Schedule** Contractor shall prosecute the Work, and shall cause each Subcontractor to prosecute the Work, so that the portion of the Work completed at any point in time shall be not less than as is required by the Project Schedule. If the rate of progress is such that

the total amount of Work and/or the degree of completion of the Work accomplished by Contractor within any time period required by the Project Schedule and/or the Contract Documents is less than the amount therein specified to be completed within such time, and it reasonably appears that Contractor will be unable to complete any portion of the Work by the corresponding scheduled date or deadline, Contractor shall so notify Owner within seven (7) Days of Contractor's knowledge of the delay, or Owner may notify Contractor of the same. Contractor shall, within seven (7) Days of Contractor's knowledge of such delay or receipt of any such notice from Owner, submit a Recovery Plan to Owner. The Recovery Plan must include a revised schedule that would recover the lost time and still complete the Work on the Project by the Completion Date. If Owner directs Contractor to implement the Recovery Plan, then Contractor shall do so immediately. If Owner, acting reasonably, does not agree that Contractor has demonstrated in the proposed Recovery Plan its ability to recapture lost time, meet interim milestones and complete the relevant portion of the Work by the applicable scheduled date or deadline, and the reasons therefor are not an Excusable Delay as outlined in Section 0, Owner may, without prejudice to any other right or remedies it may have, take one or more of the following actions: (a) require Contractor to employ such extraordinary measures as are necessary to bring the Work into conformity with the Project Schedule, including, without limitation, requiring Contractor to increase its work force, work overtime, and/or extra shifts (at Contractor's sole cost and expense); and/or (b) withhold progress payments due under Section 0, or portions thereof, until such time as the Work is in conformity with the Project Schedule. . If the cause for Contractor's inability to meet the Completion Date are as a result of an Excusable Delay as outlined in Section 0, then the terms of Section 0 shall dictate.

4.8 **Extensions of Time – Liquidated Damages**

(a) Excusable Delay The Contractor shall not be charged for liquidated damages, as set forth in the Agreement, because of any delays in completion of the Work due to Force Majeure, acts of the Owner or anyone employed by it, acts of another contractor in performance of a contract (other than this Agreement) with the Owner, or delays of Subcontractors due to Force Majeure (collectively "Excusable Delay"). Contractor has the burden of proving that any delay is excusable.

(b) Notice by Contractor Required The Contractor shall within ten (10) Days of beginning of any Excusable Delay (unless Owner grants in writing a further period of time to file such notice prior to the date of final Progress Payment under the Agreement) notify the Owner in writing of causes of delay. Owner will then ascertain the facts and extent of the delay and grant an extension of time for completing the Work if , in its judgment, the findings of fact justify such an extension. Extensions of time shall apply only to that portion of the Work affected by the delay and shall not apply to other portions of the Work not so affected.

(c) Conditions for Extension of Time If the Contractor is delayed at any time in progress of the Work by an act or neglect of the Owner, an employee of Owner, or of a separate contractor employed by the Owner, by changes ordered in the Work, by Force Majeure, unusual delay in deliveries, or unavoidable casualties, by delay authorized by the Owner pending arbitration, or by other causes which the Owner determines may justify delay, then the Project Schedule shall be extended by Change Order for such reasonable time as the Owner may determine. Claims relating to time extensions shall be made in accordance with applicable provisions of Section 0.

(d) Early Completion If Contractor submits a revised schedule showing an earlier completion date for the Project, Owner's acceptance of this revised schedule shall not entitle Contractor to any additional compensation or Claim due to any such revised schedule. Regardless of the cause therefore, the Contractor may not maintain any Claim or cause of action against the Owner

for damages incurred as a result of its failure or inability to complete the Work or the Project in a shorter period than established in the Contract Documents.

(e) Liquidated Damages If Contractor fails to cause Final Completion to occur on or prior to the Completion Date, as may be extended in accordance with the terms of this Agreement, Contractor shall pay Owner as its sole and exclusive remedy therefore, as liquidated damages and not as a penalty, in an amount equal to the LD Rate (the "Liquidated Damages"), provided, however, that the total amount of Liquidated Damages payable to the Owner under this Agreement shall not exceed fifteen percent (15%) of the Contract Price.

The actual occurrence of damages and the actual amount of the damages which the Owner would suffer if the Work were not completed within the specified times set forth are dependent upon many circumstances and conditions which could prevail in various combinations and it is impracticable and extremely difficult to fix the actual damages. Damages that the Owner would suffer in the event of delay include, but are not limited to, loss of the use of the Project and each individual Site, and the energy savings afforded by the Project and each individual Site, disruption of activities, costs of administration, supervision and the loss suffered by the public.

Accordingly, the Parties agree that the following Dollar figures shall be the amount of damages which the Owner shall directly incur upon failure of the Contractor to cause Final Completion to occur on or prior to the Completion Date shall be the Dollar amount specified in Section F of the Cover Page for each Day by which the Work, or portion thereof, is delayed beyond the Completion Date multiplied by the total nameplate capacity for each Site or the Project, as applicable, that has not achieved Final Completion by the Completion Date (the "LD Rate"). For the avoidance of doubt, if Contractor fails to complete the Work at more than one Site within the time set forth above, Owner may assess liquidated damages cumulatively, taking into account all Sites at which Work has not been timely completed, but in no case shall liquidated damages assessed with respect to one Site be greater than the LD Rate calculated using the total nameplate capacity required by the Contract Documents to be installed at that Site and by the number of Days by which completion of the Work at that Site is delayed beyond the applicable Completion Date.

If the Contractor becomes liable under this Section, the Owner, in addition to all other remedies provided by law, shall have the right to withhold any and all retained percentages of payments, and to collect the interest thereon, which would otherwise be or become due the Contractor until the liability of the Contractor under this Section has been finally determined. If the retained percentage is not sufficient to discharge all liabilities of the Contractor incurred under this Section, the Contractor and its sureties shall continue to remain liable to the Owner for such liabilities until all such liabilities are satisfied in full.

If the Owner accepts any Work or makes any Progress Payment under this Agreement after a default by reason of delays, the payment or payments shall not constitute a waiver or modification of any Agreement provisions regarding time of completion and Liquidated Damages.

4.9 Government Approvals Neither Contractor nor Owner shall be liable for any delays or damages related to the time required to obtain Government Approvals, provided that neither party contributed to the delay in obtaining such Government Approvals through its negligent acts or omissions. In particular, the Project Schedule assumes that OSHPD approval for 100% Construction Drawings will be secured by Contractor no later than within 120_ days of their submittal. If, for reasons other than negligence of Contractor, OSHPD approval takes longer than 120 days, this should constitute an Excusable Delay.

4.10 **Delays Due to Project Site Activities** Owner shall not be liable for any damages or compensation to Contractor resulting from, arising out of, or related to any delays caused by scheduled activities at Project Sites where Contractor was notified in writing of such scheduled activities prior to signing this Agreement, including Owner's construction projects and other events which would require access to Project Site(s). Where Owner did not inform Contractor in writing of such scheduled activities, or required activities arise during the Project that were not scheduled prior to Agreement signing and that impact the Project Schedule, Contractor shall request reasonable additional time for the Project Schedule in accordance with Section 2.17.

If any part of Contractor's Work depends for proper execution or results upon work of any other contractor, the Contractor shall inspect and promptly report to Owner in writing any defects in such work that render it unsuitable for such proper execution and results. Contractor will be held liable for damages to Owner for that work which it failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute its acceptance of the other contractor's work as fit and proper for reception of its work, except as to defects which may develop in the other contractors' work after execution of Contractor's work.

To ensure proper execution of its subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the Owner in writing any discrepancy between executed work and Contract Documents.

It is the obligation of Contractor to ascertain to its own satisfaction the scope of the Project and nature of any other contracts that have been or may be awarded by Owner in prosecution of the Project to the end that Contractor may perform its Agreement in the light of such other contracts, if any.

Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy of the Project. Contractor shall not cause any unnecessary hindrance or delay to any other contractor working on the Project. If simultaneous execution of any contract for the Project is likely to cause interference with performance of some other contract or contracts, Owner shall decide which contractor shall cease work temporarily and which contractor shall continue or whether work can be coordinated so that contractors may proceed simultaneously. If Owner directs Contractor to cease Work temporarily due to the work of another contractor, Contractor shall be entitled to submit a change order request, together with documentation of actual, reasonable costs, but such costs shall not include overhead, profit for the period of time during which Work has ceased. Similarly, if Contractor is delayed by acts or omissions of Owner, its employees or agents, or contractors, Contractor shall be entitled to submit a change order request together with documentation of actual, reasonable costs, but such costs shall not include overhead or profit for the period of time during which Work was delayed. Change order requests will be resolved in a manner consistent with Sections 2.17(l), (m) and (n) hereof.

If the Project is split into phases and/or separate contracts, then Contractor has made allowances for any delays or damages which may arise from coordination with contractors for other phases or contracts. If any delays should arise from a contractor working on a different phase or contract, Contractor's sole remedy for damages, including delay damages, shall be against the contractor who caused such damage and not the Owner. Contractor shall provide access to contractors for other phases or contracts as necessary to prevent delays and damages to contractors working on other phases or contracts.

ARTICLE FIVE

5. REPRESENTATIONS AND WARRANTIES

5.1 **Representations and Warranties of Contractor.** Contractor represents and warrants to the Owner that:

(a) Contractor is duly organized, validly existing and in good standing as a contractor and licensed contractor under the laws of the State of California;

(b) Contractor has full power, authority and legal right to enter into and perform its obligations under this Agreement, and the execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate actions on the part of Contractor and do not require any further approvals or consents;

(c) The execution, delivery, and performance of this Agreement do not and will not result in any breach of or constitute a default under any indenture, mortgage, contract, agreement, or instrument to which Contractor is a party by which it or its property is bound;

(d) There is no pending or, to the knowledge of Contractor, threatened action, or proceeding before any court or administrative agency that will materially adversely affect the ability of Contractor to perform its obligations under this Agreement.

5.2 **Representations and Warranties of the Owner** The Owner represents and warrants that:

(a) It has all requisite corporate power and/or statutory authority to enter into this Agreement, and that its execution hereof has been duly authorized and does not and will not constitute a breach or violation of any of the Owner's organizational documents, any Applicable Law, or any agreements with third parties;

(b) It has done and will continue to do all things necessary to preserve and keep in full force and effect its existence and the Agreement;

(c) This Agreement is the legal, valid and binding obligation of the Owner, in accordance with its terms, and all requirements have been met and procedures have been followed by the Owner to ensure the enforceability of the Agreement;

(d) To the Owner's best knowledge, there is no pending or threatened, suit, action, litigation or proceeding against or affecting the Owner that affects the validity or enforceability of this Agreement.

ARTICLE SIX

6. BREACH AND TERMINATION

6.1 **Termination by the Owner for Cause** Contractor agrees that Owner shall be entitled to terminate this Agreement upon the occurrence of any of the following circumstances, each of which shall constitute an event of default hereunder (each, a **"**Contractor Event of Default**"**): (A) refuses or fails to supply personnel in accordance with Section 0 or materials in accordance with Section 0

and Exhibit A; (B) fails to make payment to Subcontractors for materials or labor in accordance with Public Contract Code section 10262 or Business and Professions Code section 7108.5, as applicable; (C) disregards Applicable laws, ordinances, rules, regulations, or orders of a Governmental Authority; or (D) otherwise is in substantial breach of a provision of the Contract Documents.

Owner's authority to terminate this Agreement for cause shall be contingent upon providing written notice to Contractor of the Contractor Event of Default. Where the Contractor Event of Default can be cured, Contractor shall take action and cure the Contractor Event of Default within fifteen (15) Days after the date of Owner's written notice. In the event the Contractor Event of Default cannot be cured within fifteen (15) Days, Contractor shall provide written notice to Owner of the requirement of a longer cure period with a timeline for cure and shall commence actions necessary to cure the Contractor Event of Default within fifteen (15) Days and diligently and timely proceed to complete the cure.

When any Contractor Event of Default exists and Contractor fails to cure the same pursuant to the procedure set forth above, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, written notice of seven (7) Days, terminate the Agreement and may, subject to any prior rights of the surety, (A) take possession of the Site and of all material and Equipment, thereon, (B) accept assignment of Subcontracts, and (C) complete the Work by whatever reasonable method the Owner may deem expedient.

If the unpaid balance of the Contract Price exceeds costs of completing the Work, including compensation for professional services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This payment obligation shall survive completion of the Project and termination or expiration of this Agreement.

6.2 **Suspension or Termination by the Owner for Convenience** The Owner may, without cause, order the Contractor in writing to suspend, delay, or interrupt the Work in whole or in part for such period of time as the Owner may determine. An adjustment shall be made for increases in the cost of performance of the Agreement, including profit on the increased cost of performance caused by suspension, delay, or interruption. No adjustment shall be made to the extent (A) that performance is, was, or would have been so suspended, delayed, or interrupted by another cause for which the Contractor is responsible; or (B) that an equitable adjustment is made or denied under another provision of this Contract. Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

The Owner may, at any time, terminate the Agreement for the Owner's convenience and without cause upon fifteen (15) Days written notice to Contractor. Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall (1) cease operations as directed by the Owner in the notice; (2) take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and (3) except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing Subcontracts and purchase orders and enter into no further Subcontracts and purchase orders. In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

6.3 **Termination by the Contractor**. Contractor may not terminate for convenience. Contractor may only terminate for cause if the Work is stopped by others for a period of one hundred eighty (180) consecutive Days through no act or fault of the Contractor, a Subcontractor of any tier, their agents or employees, or any other persons performing portions of the Work for whom the Contractor is contractually responsible, and the Work was stopped by others for one of the following reasons: (A) Issuance of an order of a court or other public authority having jurisdiction which requires Owner to stop all Work; or (B) an act of government, such as a declaration of national emergency, making material unavailable which requires Owner to stop all Work. If such grounds exist, the Contractor may serve written notice of such belief on Owner and demand a meet-and-confer conference to negotiate a resolution in good faith within fourteen (14) Days of receipt of such notice. If such conference does not lead to resolution and Contractor believes the grounds for termination still exist, Contractor may terminate the Agreement and recover from the Owner payment for Work executed and for reasonable verified costs with respect to materials, equipment, tools, construction equipment, and machinery, including reasonable overhead, profit, and damages for the Work executed, but excluding overhead (field and home office) and profit for (i) Work not performed and (ii) the period of time that the Work was stopped. In addition, Contractor may terminate this Agreement for cause if the Owner: (i) fails to pay any undisputed amount when due hereunder and fails to remedy such breach within thirty (30) days of receipt of written notice thereof: (ii) commits any other material breach of its obligations under this Agreement and fails to cure such breach within thirty (30) days of written notice thereof.

6.4 **Not a Waiver** Any suspension or termination by Owner for convenience or cause under this Section 0 shall not act as a waiver of any claims by Owner against Contractor or others, or by Contractor against Owner for damages based on breach of contract, negligence or other grounds.

6.5 **Early Termination** Notwithstanding any provision herein to the contrary, if for any fiscal year of this Agreement the governing body of the Owner fails to appropriate or allocate funds for future periodic payments under the Agreement after exercising reasonable efforts to do so, the Owner may upon thirty (30) Days' notice, order work on the Project to cease. The Owner will remain obligated to pay for the Work already performed but shall not be obligated to pay the balance remaining unpaid beyond the fiscal period for which funds have been appropriated or allocated and for which the work has not been done.

6.6 **Indemnification**

(a) Contractor represents and warrants that Contractor has the legal right to license any and all copyrights, designs and other intellectual property embodied in plans, specifications, studies, Drawings, estimates or other documents that Contractor or its Subcontractors or Consultants prepares or causes to be prepared pursuant to this Agreement. Contractor shall indemnify, defend and hold the Owner harmless against claims brought by a party other than the Owner pursuant to this Section for any breach of this representation due to Contractor's negligence, recklessness or willful misconduct. The Owner will promptly give Contractor written notice of a suit or proceeding asserting claims within the scope of this Section and the full authority needed to defend against such claims. Owner shall not make any admissions that may be prejudicial to Contractor and shall not enter into a settlement without Contractor's prior written consent. If the Work, or any part thereof, as a result of any suit or proceeding so defended is held to constitute infringement, or its use by the Owner is enjoined, Contractor will, at its option and expense, either: (i) procure for the Owner the right to continue using said Work; or (ii) replace it with substantially equivalent non-infringing Work. Contractor shall have no obligations to defend and indemnify under this Section if the Work is (i) modified by the Owner or its contractors after delivery and the claim arises by reason of such

modification; (ii) combined by the Owner or its contractors with devices, methods, systems or processes not furnished hereunder and the claim arises by reason of such combination.

(b) Contractor shall defend, indemnify, and hold harmless the Owner, and its officers, agents and employees against claims arising out of, pertaining to, or relating to negligence, recklessness or willful misconduct of the Contractor, the Contractor's officers, employees, or Consultants in performing or failing to perform any work, services, or functions provided for, referred to, or in any way connected with any work, services, or functions to be performed under this Agreement, except to the extent such claims are due to the negligence or willful misconduct of the Owner or its officers, agents or employees. For purposes of this Section only, "claims" means any and all claims, demands, actions and suits brought by a party other than the Owner for any and all losses, liabilities, costs, expenses, damages and obligations. If the Contractor fails to fulfill its defense obligations hereunder, then its obligations shall include payment of the Owner's reasonable attorneys' fees, experts' fees, and litigation costs incurred in defense of a claim. This indemnification shall be in addition to the other indemnification provisions contained in the Contract Documents. The only limitations on this provision shall be those imposed by Civil Code Sections 2782 and 2782.8.

(c) Contractor will indemnify, hold harmless, release and defend Owner from and against any and all claims arising from an allegation, charge, assertion or accusation by a third party that Contractor and/or Owner has violated California Government Code Section 1090 or any other conflict-of-interest law in the procurement, execution or performance of this Agreement. This indemnification obligation will continue to bind Contractor after the termination or expiration of this Agreement.

(d) The Owner will promptly give Contractor written notice of a suit or proceeding asserting claims within the scope of Sections 6.6 (b) or (c) and the full authority needed to defend against such claims. Owner shall not make any admissions that may be prejudicial to Contractor and shall not enter into a settlement without Contractor's prior written consent.

6.7 **Claims Generally** A Claim is a demand or assertion by Contractor seeking, as a matter of right, adjustment, or interpretation of Agreement terms, payment of money, extension of time, or other relief with respect to the terms of the Agreement. Claims must be made by written notice. The responsibility to substantiate Claims shall rest with the Contractor. Contractor may only submit a Claim after having complied with the requirements in Section 0, as applicable, for the same matters.

Claims shall be submitted to the Owner and the Owner's designated representative. A timely decision by the Owner shall be provided. Claims must be made by written notice prior to the final Progress Payment. An additional Claim made after the initial Claim has been implemented by Change Order will not be considered. The failure of the Contractor to make a Claim within the specified time shall constitute an express waiver of any right to assert such Claim, whether affirmatively or defensively. Despite submission or rejection of a Claim, the Contractor shall proceed diligently with performance of the Agreement, and the Owner shall continue to make any undisputed payments in accordance with the Agreement. When any excavation or trenching extends greater than four feet below the surface, Public Contract Code section 7104 shall apply.

The Contractor shall make a certification at the time of submission of a Claim, substantially in the form attached as Exhibit O. Contractor understands and agrees that any Claim submitted without this certification does not meet the terms of the Contract Documents, that Owner, or Owner's representatives, may reject the Claim on that basis and that unless Contractor properly and timely

files the Claim with the certification, Contractor cannot further pursue the Claim in any forum. A condition precedent will not have been satisfied.

(a) Claims for Concealed or Unknown Conditions

(i) Trenches or Excavations Less Than Four Feet Below the Surface

If Contractor encounters conditions at the Site which are subsurface or otherwise concealed physical conditions, which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the Contractor shall be given to the Owner promptly before conditions are disturbed and in no event later than ten (10) Days after first observance of the conditions. The Owner will promptly investigate such conditions, and if they differ materially and cause an increase or decrease in the Contractor's cost of, time required for, or performance of any part of the Work, will recommend an equitable adjustment in the Contract Price, Project Schedule, or both. If the Owner determines that the conditions at the Site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Agreement is justified, the Owner shall so notify the Contractor in writing, stating the reasons. In the event a dispute arises between the Owner and the Contractor regarding whether the conditions materially differ, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract Documents, but shall proceed with all the work to be performed under the Contract Documents. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

(ii) Trenches or Excavations Greater Than Four Feet Below the Surface

Pursuant to Public Contract Code section 7104, when any excavation or trenching extends greater than four feet below the surface:

(1) The Contractor shall promptly, and before the following conditions are disturbed, notify the public entity, in writing, of any:

(A) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, which is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law.

(B) Subsurface or latent physical conditions at the Site differing from those indicated by information about the Site made available to bidders prior to the deadline for submitting bids.

(C) 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 Agreement.

(2) The public entity 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 Contractor's cost of, or the time required for, performance of any part of the Work shall issue a Change Order under the procedures described in the Agreement.

(3) In the event that a dispute arises between the public entity and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the Agreement, but shall proceed with all work to be performed under the Agreement. The Contractor shall retain any and all rights provided either by Agreement or by law which pertain to the resolution of disputes and protests between the contracting parties.

6.8 **Statutory Claim Procedures** In addition to any other requirements set forth in the Agreement, all Claims shall be filed in accordance with the statutory claim resolution procedures set forth in Public Contract Code sections 9204 and 20104 *et seq.*, the implementation of which is set forth in this Section. The failure to timely submit a notice of delay or notice of change, or to timely request a change in price or time, or to timely provide any other notice or request required herein shall constitute a waiver of the right to further pursue the claim under the Agreement or at law.

(a) Intent Effective January 1, 1991, Section 20104 et seq., of the California Public Contract Code prescribes a process utilizing informal conferences, non-binding judicial supervised mediation, and judicial arbitration to resolve disputes on construction claims of $375,000 or less. Effective January 1, 2017, Section 9204 of the Public Contract Code prescribes a process for negotiation and mediation to resolve disputes on construction claims. The intent of this Section is to implement Sections 20104 et seq. and Section 9204 of the California Public Contract Code. This Section shall be construed to be consistent with said statutes.

(b) Supporting Documentation The Contractor shall submit all claims in the following format:

(i) Summary of claim merit and price, reference Contract Document provisions pursuant to which the claim is made
  (1) Specifications
  (2) Drawings
  (3) Clarifications (Requests for Information)
  (4) Schedules
  (5) Other

(ii) Chronology of events and correspondence

(iii) Analysis of claim merit

(iv) Analysis of claim cost

(v) Time impact analysis in CPM format

(c) Owner's Response Upon receipt of a claim pursuant to this Section, Owner shall conduct a reasonable review of the claim and, within a period not to exceed 45 Days, shall provide the Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. Any payment due on an undisputed portion of the claim will be processed and made within 60 Days after the Owner issues its written statement.

(i) If the Owner needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the claim, and the Owner's governing body does not meet within the 45 Days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the Owner shall have up to three Days following the next duly publicly noticed meeting of the Owner's governing body after the 45-Day period, or extension, expires to provide the Contractor a written statement identifying the disputed portion and the undisputed portion.

(ii) Within 30 Days of receipt of a claim, the Owner may request in writing additional documentation supporting the claim or relating to defenses or claims the Owner may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of Owner and the Contractor. The Owner's written response to the claim, as further documented, shall be submitted to the Contractor within 30 Days (if the claim is less than $15,000, within 15 Days) after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

(d) Meet and Confer If the Contractor disputes the Owner's written response, or the Owner fails to respond within the time prescribed, the Contractor may so notify the Owner, in writing, either within 15 Days of receipt of the Owner's response or within 15 Days of the Owner's failure to respond within the time prescribed, respectively, and demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand, the Owner shall schedule a meet and confer conference within 30 Days for settlement of the dispute.

(e) Mediation Within 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 Owner shall provide the Contractor 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 60 Days after the Owner issues its written statement. Any disputed portion of the claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the Owner and the Contractor sharing the associated costs equally. The Owner and Contractor shall mutually agree to a mediator within 10 business Days after the disputed portion of the claim has been identified in writing, unless the parties agree to select a mediator at a later time.

(i) 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.

(ii) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(iii) Unless otherwise agreed to by the Owner and the Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code Section 20104.4 to mediate after litigation has been commenced.

(iv) The mediation shall be held no earlier than the date the Contractor completes the Work or the date that the Contractor last performs Work, whichever is earlier. All unresolved claims shall be considered jointly in a single mediation, unless a new unrelated claim arises after mediation is completed.

(f) Procedures After Mediation If following the mediation, the claim or any portion remains in dispute, the Contractor must file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code prior to initiating litigation. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference.

(g) Civil Actions The following procedures are established for all civil actions filed to resolve claims of $375,000 or less:

(i) Within 60 Days, but no earlier than 30 Days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties or unless mediation was held prior to commencement of the action in accordance with Public Contract Code section 9204 and the terms of this Agreement. The mediation process shall provide for the selection within 15 Days by both parties of a disinterested third person as mediator, shall be commenced within 30 Days of the submittal, and shall be concluded within 15 Days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.

(ii) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1114.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration. In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party.

(h) Government Code Claims In addition to any and all Agreement requirements pertaining to notices of and requests for compensation or payment for extra Work, disputed Work, construction claims and/or changed conditions, the Contractor must comply with the claim procedures set forth in Government Code Sections 900, et seq. prior to filing any lawsuit against the Owner. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those matters that remain unresolved after all procedures pertaining to extra Work, disputed Work, construction claims, and/or changed conditions have been followed by Contractor. If no such Government Code claim is submitted, or if the prerequisite contractual requirements are not satisfied, no action against the Owner may be filed. A Government Code claim

must be filed no earlier than the date the Work is completed or the date the Contractor last performs Work on the Project, whichever occurs first. A Government Code claim shall be inclusive of all unresolved claims unless a new unrelated claim arises after the Government Code claim is submitted.

(i) Non-Waiver The Owner's failure to respond to a claim from the Contractor within the time periods described in this Section or to otherwise meet the time requirements of this Section shall result in the claim being deemed rejected in its entirety.

6.9 Limitation of Liability.

UNLESS CONTRARY TO APPLICABLE LAW AND NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, IN NO EVENT SHALL THE OWNER OR CONTRACTOR BE LIABLE UNDER THIS AGREEMENT FOR SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES, INCLUDING COMMERCIAL LOSS, LOSS OF USE, OR LOST PROFITS, HOWEVER CAUSED.

UNLESS CONTRARY TO APPLICABLE LAW AND NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, THE CONTRACTOR'S LIABILITY ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, WHETHER BASED IN CONTRACT, NEGLIGENCE STRICT LIABILITY, AGENCY, WARRANTY, TRESPASS, INDEMNITY OR ANY OTHER THEORY OF LIABILITY, SHALL NOT EXCEED THE TOTAL COMPENSATION RECEIVED OR PAYABLE TO THE CONTRACTOR BY THE OWNER UNDER THIS AGREEMENT. THIS LIMIT SHALL NOT APPLY TO LIQUIDATED DAMAGES WHICH ARE SUBJECT TO A SEPARATE LIMIT SET FORTH IN SECTION 4.8(E)

THE LIMITATIONS OF LIABILITY SET FORTH IN THE PRECEDING PARAGRAPHS SHALL NOT APPLY TO LIABILITY (i) FOR BODILY OR PERSONAL INJURY, WRONGFUL DEATH OR TANGIBLE PROPERTY DAMAGE, (ii) CONTRACTOR'S DEFENSE AND INDEMNITY OBLIGATIONS ARISING OUT OF A THIRD-PARTY CLAIM FOR MISAPPROPRIATION OF INTELLECTUAL PROPERTY RIGHTS; (iii) GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF THE CONTRACTOR, INCLUDING ITS EMPLOYEES, AGENTS AND SUBCONTRACTORS.

ARTICLE SEVEN

7. PERFORMANCE GUARANTEE

7.1 The Annual Realized Savings generated during each Annual Period will be no less than the Guaranteed Annual Savings as shown in Tables 1.1 and 1.2 of the Performance Guarantee, Exhibit E, subject to the limits in Section 7.8. The measurement and verification calculation methodology for determining the Savings is set forth in the Performance Guarantee, Exhibit E. Except as otherwise provided, energy savings will be calculated for each month of each Annual Period as the product of (a) "units of energy saved" (kWh, Therms, GJ, etc.) multiplied by (b) "cost of energy."

(a) Units of energy saved are calculated by 1) assuming the Contracted Baseline has been maintained per Section 7.3 below, and 2) subtracting the then current period measured units of energy consumed from the Baseline units of energy defined in Article 5 of Exhibit E.

(b) Costs of energy are defined in Article 6 of Exhibit E – Utility Rate Structures and Escalation Rates.

7.2 Any future Escalation Rates to be applied to utility, energy or other costs are set forth in Exhibit E. Contractor and the Owner agree that the Baseline data set forth in Exhibit E is a full and accurate reflection of the existing Facility, equipment, operation, business use and energy usage, and that such Baseline data will be the basis on which all future energy use will be compared in order to determine the Annual Realized Savings.

7.3 Contractor and the Owner agree that the Contracted Baseline fully described in Exhibit E will represent the new operating and/or equipment profile of the Facility resulting from the FIM implementation. The Performance Guarantee is dependent upon and is subject to the express condition that the Owner operates and maintains its Facilities within the Contracted Baseline parameters, as may be adjusted in accordance with the terms herein, during the entire term of the Performance Guarantee Period.

7.4 The Owner agrees to notify Contractor prior to or within thirty (30) days of Owner's knowledge of any Material Change.

7.5 Within thirty (30) days of notice of a Material Change, or Contractor's discovery of a Material Change and with prompt notice to Owner, Contractor will either:

(a) Require an adjustment to the Performance Assurance and the Performance Guarantee as a result of the Material Change; or,

(b) Where a commercially reasonable adjustment to the Performance Guarantee is unavailable, terminate both the Performance Assurance and the Performance Guarantee.

7.6 Performance Guarantee Period savings reconciliation as identified in Section 7.1 will be performed at the end of each Annual Period as follows:

(a) At the conclusion of each Annual Period, Contractor will calculate the Annual Realized Savings and compare the calculated amount to the applicable Guaranteed Annual Savings amount.

(b) Where the Annual Realized Savings are less than the Guaranteed Annual Savings, a Savings Shortfall shall be recorded for the applicable Annual Period.

(c) A Savings Shortfall shall be paid by Contractor within sixty (60) days following the Owner's acceptance of the reconciliation and once paid Contractor shall have fulfilled its obligations under the Performance Guarantee for the applicable Annual Period.

(d) As the mutual goal of the Parties is to maximize Savings, if Contractor can correct a Savings Shortfall through an operational improvement at no expense or material inconvenience to the Owner and without future operational expenses, the Owner shall allow Contractor reasonable access to the Facility to correct the Savings Shortfall.

7.7 The Owner may retain an independent third party with experience and expertise in measurement and verification of energy savings under the IPMVP to review Contractor's performance of the PASP, including the measurements and calculation of the Annual Realized

Savings performed by the Contractor. If this third party reasonably determines that the Contractor's measurement and calculation of the Annual Realized Savings contains material errors which, if corrected, would result in a Savings Shortfall, then the Contractor shall be liable for reasonable fees incurred by the Owner for the third-party services. Any disputes concerning the performance of the Contractor's PASP shall be resolved in accordance with Section 6.8 of this Agreement.

7.8 The Performance Guarantee is dependent upon and is subject to the express condition that the Owner maintains the PASP during the entire Performance Guarantee Period. If the Owner fails to maintain, breaches, cancels or otherwise causes the termination of the PASP then the Performance Guarantee shall terminate immediately and be void and of no force or effect.

7.9 The payments and credits based on Savings Shortfalls, if any, are the sole remedy of the Owner under this Performance Guarantee.

7.10 The Owner represents that all existing equipment that is not installed by Contractor under this Agreement but is deemed necessary to achieve the Performance Guarantee, is in satisfactory working condition. Prior to the beginning of the Performance Guarantee Period, Contractor will have inspected all such existing equipment and reported any deficiencies to the Owner. If Owner agrees with Contractor's assessment of such existing equipment, Owner will remediate the deficiencies prior to the Guarantee Date. If, however, Owner does not agree with Contractor's assessment of such existing equipment, Owner and Contractor agree to obtain a neutral third party opinion the cost of which shall be borne by the party that inaccurately characterized the condition of the existing equipment. To the extent that deficiencies identified by Contractor and either agreed to by Owner or determined by a neutral third party opinion to exist are not remedied by the Owner prior to the Guarantee Date, the adverse effect on the ability of the Project to attain the necessary Guaranteed Savings shall be factored into the Annual Performance Assurance Report and, if necessary, the Performance Guarantee shall be adjusted accordingly.

7.11 If the Equipment or the existing equipment is altered or moved by any person (including the Owner) other than Contractor or a person authorized by Contractor, the Owner shall notify Contractor in writing, and Contractor may, with Owner's approval, perform a reacceptance test on, or if necessary a re-commissioning of, the system at the Owner's expense in order to determine if a Material Change has occurred. If it is deemed that a Material Change has not occurred, any payment made by Owner for the reacceptance test on, or if necessary a re-commissioning of, the system will be refunded by Contractor.

7.12 Contractor will have no liability or obligation to continue providing PASP Services or any Guaranteed Savings under the Performance Guarantee in the event that the Owner fails to:

(a) Authorize a re-acceptance test or re-commissioning that is reasonably necessary in order to determine if a Material Change has occurred;

(b) Provide reasonable access to any Facility where Work is to be performed;

(c) To the extent that service and/or maintenance obligations have not been contractually transferred to Contractor, service and maintain all Equipment in accordance with all written instructions, practices and procedures which were provided to the Owner by Contractor; or,

(d) Provide Contractor with accurate Facility operating information reasonably available to the Owner upon request, including energy usage and cost, executed preventive maintenance and repair records, building or equipment additions, and occupancy levels during each Annual Period.

7.13 Should the Owner decide to discontinue the PASP before the end of the Performance Guarantee Period, the Owner will give Contractor thirty (30) days prior written notice. Contractor will be paid for services performed prior to the receipt of the notice.

7.14 Unless expressly contrary to Applicable Law, any disputes concerning the calculation of the Annual Realized Savings or changes to the Contracted Baseline that are not resolved by negotiation between the Parties within thirty (30) days of the notice of the dispute, will be resolved by a third-party professional engineering firm which is reasonably acceptable to both Contractor and the Owner. The determination of such firm will be final and binding upon the Owner and Contractor. Contractor and the Owner will each be responsible for half of the fees of such firm.

ARTICLE EIGHT

8. MISCELLANEOUS

8.1 **Representatives** The Owner may provide administration of the Agreement as described in the Contract Documents and may designate one or several agents, representatives, or Consultants to provide administration upon written notice of such to Contractor. When such written notice is provided, except as otherwise provided in the Contract Documents or when direct communications are warranted by special circumstances, the Owner and the Contractor shall communicate through the Owner's selected representative.

8.2 **Access** When applicable, Owner will issue necessary keys to Contractor to access Project Site(s). Contractor shall return keys to Owner upon Final Completion or at any time upon request by Owner. Contractor shall reimburse Owner for the cost of re-keying all of Owner's locks, if keys are not returned to Owner. The Contractor shall provide the Owner and the Owner's designees, access to the Work in preparation and progress wherever located.

8.3 **Ownership and Use of Drawings, Data, Reports and Other Documents**

(a) All Work Product Deliverables shall become the property of the Owner. The Contractor may retain one contract record set. If any Instruments are provided to the Owner under this Agreement, such Instruments shall remain Contractor's property, including the Intellectual Property in the Instruments. All Contractor's Pre-Existing Intellectual Property that may be included in the Deliverables provided to the Owner under this Agreement shall also remain Contractor's property, including Contractor's Pre-Existing Intellectual Property included or incorporated into the Work Product Deliverables.

(b) Contractor further agrees to grant and hereby grants to Owner a perpetual, fully paid-up, irrevocable, world-wide, non-transferable except to an assignee of this Agreement, non-exclusive, royalty-free license to use Contractor's Pre-Existing Intellectual Property and Instruments solely as included or incorporated in the Deliverables and Contractor's Intellectual Property solely as incorporated into the Instruments provided to the Owner under this Agreement. Under such license, the Owner and its employees and authorized agents shall have a non-exclusive, non-transferable, limited license right to: (i) use, in object code form only, the Software Products

included in the Deliverables; (ii) make and retain archival and emergency copies of such Software Products included in the Deliverables, except if the Software Product is imbedded in the Equipment; and (iii) use all such Deliverables and such Instruments, provided , however, that use of the Deliverables and Instruments on any other project or for purposes other than those described in the Contract Documents shall be at the Owner's or user's own risk and without liability to Contractor.

(c) In consideration of the license described in the preceding paragraph, the Owner agrees, unless contrary to the Applicable Law, not to reverse-engineer any Equipment or Software Products for the purpose of reconstructing or discovering any source code, object code firmware, underlying ideas or algorithms of such Equipment or Software Products.

(d) Nothing contained in this Agreement shall be interpreted or construed to convey to the Owner the Pre-Existing Intellectual Property rights of any third party incorporated into the Deliverables. The Owner agrees to take delivery of any Software Products incorporated into the Deliverables subject to any applicable third-party end-user license agreement (EULA) accompanying such Software Products, or, if no EULA or third-party license accompanies such Software Product, the EULA posted at www.usa.siemens.com/btcpseula (SIEMENS' EULA web site) for such Software Product. Notwithstanding the foregoing, in the event of any inconsistency between the terms of this Agreement and the EULA for such Software Product, the terms of the Agreement shall govern over the EULA except for the use of metric restrictions set forth in the EULA for such Software Product shall take precedence and supersede the terms of this Agreement.

8.4 **Royalties and Patents**
The Contractor shall pay all royalties and license fees incurred by Contractor in performing the Work of this Agreement. The Contractor shall defend suits or claims of infringement of patent rights and shall hold the Owner harmless and indemnify them from loss on account thereof.

8.5 **Assignment of Antitrust Claims** Pursuant to Government Code section 4552, in entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or Subcontractor offers and agrees to assign to the Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act, (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 [commencing with § 16700] of Part 2 of Division 7 of the Bus. & Prof. Code), arising from the purchase of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the Parties.

8.6 **Audit** Contractor's Agreement books, records, and files shall be subject to audit and examination under Government Code section 8546.7 and any amendments thereto.

8.7 **Construction** In this Agreement, unless a clearly contrary intention appears (a) the singular number includes the plural number and vice versa; (b) reference to any Person includes such Person's successors and assigns but, if applicable, only if such successors and assigns are permitted by this Agreement, and reference to a Person in a particular capacity excludes such Person in any other capacity; (c) reference to any gender includes each other gender; (d) reference to any contract (including this Agreement), document or instrument means such contract, document or instrument (together with all schedules, exhibits, appendices and attachments thereto) as amended or modified or restated and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (e) reference to any Article, Section, Schedule or Exhibit means such Article, Section, Schedule or Exhibit to this Agreement, and references in any Article, Section, Schedule,

Exhibit or definition to any clause means such clause of such Article, Section, Schedule, Exhibit or definition, unless otherwise expressly set forth herein; (f) "hereunder," "hereof," "hereto," "herein," "herefrom" and words of similar import are references to this Agreement as a whole and not to any particular Section, Article or other provision hereof, unless otherwise expressly set forth herein; (g) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including;" (h) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (i) reference to any law (including statutes and ordinances) means such law as amended, modified, codified or reenacted, in whole or in part, and in effect from time to time, including rules and regulations promulgated thereunder.

8.8 **Severability/Governing Law** If a court of competent jurisdiction shall hold any provision of the Contract Documents invalid or unenforceable, such holding shall not invalidate or render unenforceable any other provision hereof. The laws of the State of California shall govern the Contract Documents and venue shall be in Riverside County.

8.9 **Notices and Filings** Any notices or filings required to be given or made under this Agreement shall be served, given, or made in writing upon the Owner or Contractor, as the case may be, by personal delivery or commercial overnight courier (with a copy sent via fax or regular mail) to the respective addresses given below, or at such address as such party may provide in writing from time to time.

Owner:	San Gorgonio Memorial Health Care District 600 N. Highland Springs Ave. Banning, CA 92220 Attention: CEO Telephone: 951-769-2102 Facsimile: 951-845-2836 Email: SBarron@sgmh.org
with a copy to:	Arent Fox LLP 555 W. Fifth Street, 48th Floor Los Angeles, CA 90013 Attention: Thomas E. Jeffry, Jr. Telephone: 213.629.7400Facsimile: 213.629.7401 Email: thomas.jeffry@arentfox.com
Contractor:	Siemens Industry, Inc. 6141 Katella Ave. Cypress, CA 90630 Attention: Vincent Delpidio Telephone: 858-265-8361 Facsimile: 714-826-3945 Email:Vincent.delpidio@siemens.com
with a copy to:	Siemens Industry, Inc. 1000 Deerfield Parkway Buffalo Grove, IL 60089

8.10 **Binding Effect** Each Party, by execution of this Agreement, acknowledges that it has read this Agreement and the other Contract Documents, understands them, and agrees to be bound by their terms and conditions. The Contract Documents shall inure to the benefit of and shall be binding upon the Contractor and the Owner and their respective successors and assigns.

8.11 **Amendments** The terms of the Contract Documents shall not be waived, altered, modified, supplemented, or amended in any manner whatsoever except by written agreement signed by the parties and approved or ratified by the Owner's governing body.

8.12 **Headings** The captions or headings in this Agreement are for convenience only and in no way define, limit or describe the scope or intent of any provisions or Sections of this Agreement.

8.13 **Execution in Counterparts** This Agreement may be executed in counterparts such that the signatures may appear on separate signature pages. A copy, or an original, with all signatures appended together, shall be deemed a fully executed Agreement.

8.14 **Term and Termination** The term of this Agreement begins on the Effective Date that is indicated on the Cover Page of this Agreement and, unless otherwise terminated in accordance with this Agreement, shall terminate upon the expiration of the Performance Guarantee Period. All of the covenants, representations and warranties set forth in the Contract Documents, including indemnification obligations, that are intended to bind the Parties after the completion of the Project or termination of the Contract Documents will survive such completion or termination for the periods provided for in the Contract Documents or otherwise allowed by law. The Owner or Contractor may terminate the Contract Documents only as provided in the Contract Documents.

8.15 **Exhibits Incorporated** All Recitals, Exhibits and Attachments attached to this Agreement are hereby incorporated into the Agreement by this reference, along with any subsequent Contract Documents, as if set forth in full.

8.16 **Entire Agreement** This Agreement, and all incorporated Exhibits, recitals and documents, including, but not limited to the Contract Documents, constitute the entire agreement between the Parties, and supersedes any prior or contemporaneous agreement between the Parties, oral or written, including the Owner's award of the Project to Contractor, unless such agreement is expressly incorporated herein. The Owner makes no representations or warranties, express or implied, not specified in the Contract Documents. The Contract Documents are intended as the complete and exclusive statement of the parties' agreement pursuant to California Code of Civil Procedure section 1856. Notwithstanding any provision to the contrary in the Contract Documents, it is understood and agreed that in the event of a conflict between any term or provision of this Agreement and any other Contract Document, the terms of this Agreement shall govern.

8.17 **Execution, Correlation, and Intent** The Contract Documents are complementary and are intended to include all items required for the proper execution and completion of the Work. Any item of Work mentioned in the Specifications and not shown on the Drawings or shown on the Drawings and not mentioned in the Specifications, shall be provided by Contractor as if shown or mentioned in both. In the event of conflicting provisions between any of the Contract Documents, the provisions shall govern in the following priority: first, duly executed amendments to this

Agreement (to the extent not superseded by a subsequent amendment), second, this Agreement and third, the other Contract Documents. Subject to the foregoing, the several instruments forming part of this Agreement are to be taken as mutually explanatory of one another. Each and every provision of law required by law to be inserted in this Agreement shall be deemed to be inserted herein, and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon application of either Party the Agreement shall be amended in writing to make such insertion or correction.

8.18 **Successors And Assigns** The Contractor binds itself, its partners, successors, assigns, and legal representatives to the Owner and to partners, successors, assigns, and legal representatives of the Owner in respect to covenants, agreements, and obligations contained in the Contract Documents. The Contractor shall not assign the Agreement as a whole or in part without written consent of the Owner. If the Contractor attempts to make such an assignment without such consent, the Contractor shall nevertheless remain legally responsible for all obligations under the Agreement. The Owner may assign its rights, duties and obligations, in whole or in part, in its sole reasonable discretion without the consent of Contractor.

8.19 **Rights and Remedies; No Waiver** Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law. No action or failure to act by a Party shall constitute a waiver of a right or duty afforded to that Party under the Contract Documents, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

8.20 **Execution of Other Documents** The parties to this Agreement shall cooperate fully in the execution of any and all other documents and in the completion of any additional actions that may be necessary or appropriate to give full force and effect to the terms and intent of the Contract Documents.

In consideration of the covenants, conditions, and stipulations set forth in this Agreement and for good and valuable consideration, the Parties, intending to be legally bound, agree as set forth in, and execute, this Agreement. Each person executing this Agreement on behalf of a Party represents that he or she is authorized to execute on behalf of, and to commit and bind, the Party to this Agreement.

SAN GORGONIO MEMORIAL HEALTH CARE DISTRICT

By: _____
Print Name: [Dennis Tankersley]
Title: [Chairman]

SIEMENS INDUSTRY, INC

By:
_____
Print Name: [ ]
Title: [

By:

_____
Print Name:
Title:]

Article 1: Scope of Work

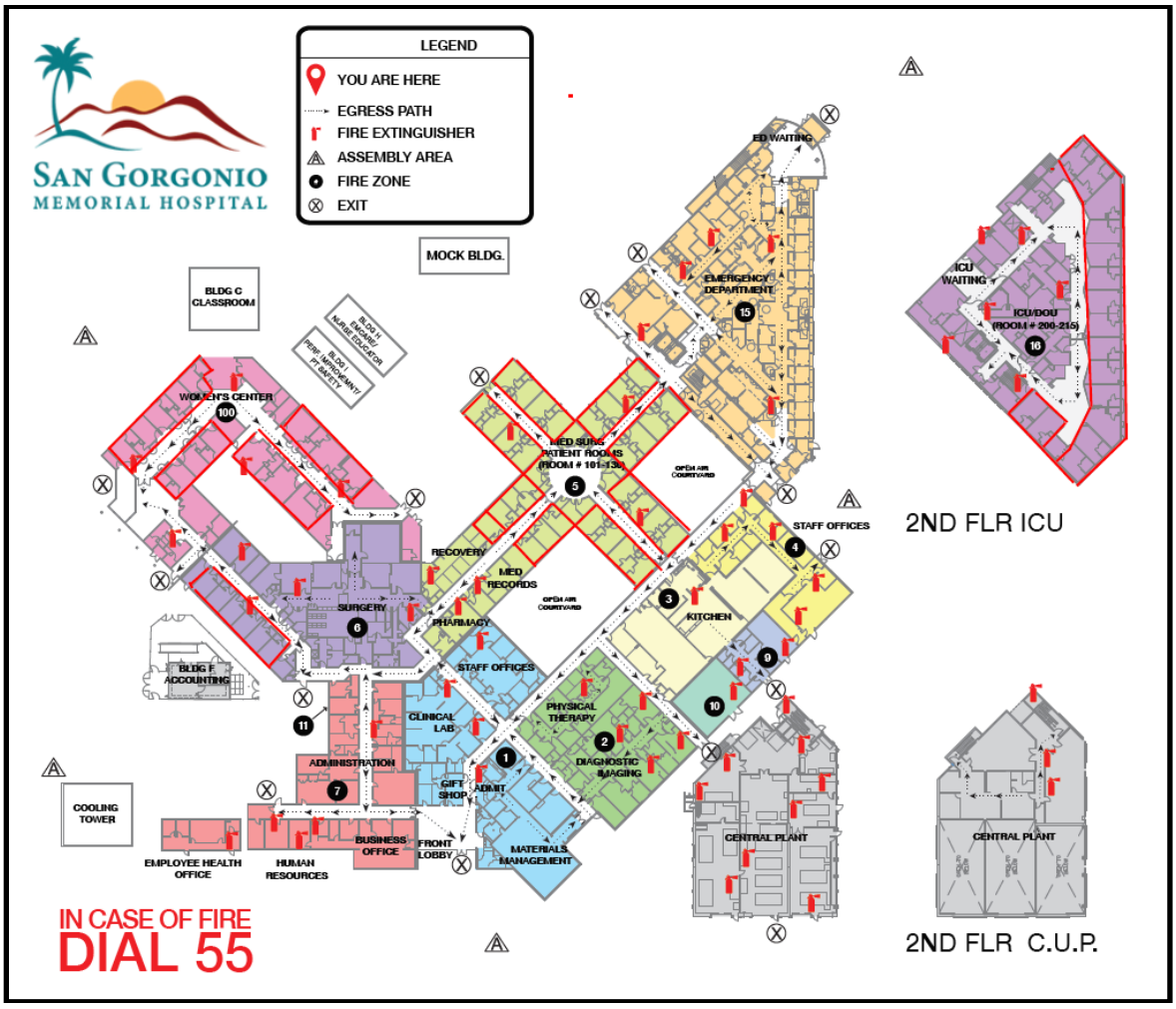
1.1 Description: Except as otherwise expressly provided herein, SIEMENS shall implement the facility improvement measures ("FIMs") listed below at the CLIENT's hospital campus located at 600 N. Highland Springs Ave, Banning, CA 92220. The facilities where SIEMENS will be performing work are: Main Hospital and Central Utility Plant.

1.2 Specific Elements: The Work shall include the following FIMs, which are further described below:

- FIM#1: **Lighting Upgrade and Retrofit**
- FIM#2: **Demand Flow**
- FIM#3: **Control Optimization of Material Management AHU, ED/ICU AHU1 and ED/ICU AHU2**

1.2.1 FIM#1: **Lighting Upgrade and Retrofit**

1. The work consists of retrofitting existing interior and exterior light fixtures with high efficiency LED retrofit. During the engineering assessment of the hospital Siemens installed various lighting mockups at the following locations: Hallway outside the director of infectious disease office (4000 K type B T LED without dimming), the director of Infectious Disease Office (3000 k with dimming system)and business office (3000 K type B T LED without dimming system), which were approved by the Hospital. The installation of the lighting system will be an expansion/continuation of the approved lighting mockups throughout the hospital as shown in Appendix A.
2. Disposal: Includes containers and disposal pickup with proper certification of removed lamps, ballast and fixtures.
3. Assumptions are that Siemens contractor will have on site storage availability, ability to work full day/week, crew able to use customer's restrooms, no-charge parking, and local power available in area where lifts will be stored for lift recharging. Assuming 80% work to be done during first shift and 20% work to be done during second shift Monday through Friday. Work will be coordinated and scheduled with SGMH to ensure minimal impact to hospital operations.
4. Refer to marked-up evacuation plan shown below. Areas inside the red lines are excluded from this project.
5. Provide necessary supporting documents for rebates to the City of Banning Utility Department. Coordinate with rebate providers prior to installation for rebate pre-inspection if required.
6. Prevailing wages for county of Riverside is included. Certified Payroll is included.
7. Siemens has included an allowance for replacement of (100) lenses for 2x42x4 and 2x22x2 fixtures as necessary.



1.2.1.1 **Exclusions**

1. Design of lighting fixture layouts, lighting distribution or electrical
2. Title-24 compliance and/or documentations.
3. No permit is anticipated and permit fees are not included.
4. The scope for this FIM is based on the lighting retrofits described above and as shown in Appendix A. SIEMENS has noted some areas which currently have low light levels and which still may not meet necessary lighting standards post-FIM implementation. For these and other such areas identified during the Construction Period, SIEMENS will provide recommendations to CLIENT for addressing light level issues and provide pricing in the form of a change order(s) to scope of work and savings calculations for the proposed additional work on a time-and-material basis. Post-implementation lighting levels will be documented after Acceptance, with the results provided to CLIENT for further consideration
5. SIEMENS shall not be responsible for repairs to existing damaged ceiling tiles or walls. Repairs or upgrades to existing drop ceilings or fixture supports to bring them up to local building codes are not included.
6. SIEMENS' scope is limited to replacing the fixtures identified in Appendix A or working inside the fixtures identified therein. Correction of any pre-existing

defects or non-conformities with the applicable Codes in the electrical wiring to the fixture is not included.

7. Since the incentives are paid for by a third party, SIEMENS cannot guarantee the incentives, but will provide work necessary in a timely manner to help to secure the funds. The CLIENT acknowledges that: (i) any incentive that may be available to the CLIENT to pay the costs of the work will be granted by a third party outside the control of SIEMENS; (ii) lack of availability of such incentives shall not relieve the CLIENT of its payment obligations under this Agreement.
8. Entire scope was priced as universal voltage (120/277V), 480V fixtures/drivers are not included in the scope
9. Scope assumes 1 for 1 retrofit and/or replacement only, any change in layout or not reasonably foreseeable electrical issues are not included in the scope.
10. SIEMENS shall not be responsible for repairs or calibration of existing, non-functioning sensors not identified for replacement in the scope of Work.
11. Design services i.e. CAD drawings/reflective ceilings plans are not included in the scope of work.
12. Replacement of existing cracked or discolored fixture lenses beyond the allowance of (100) is not included.
13. Any extra or spare parts are not included.
14. Lighting retrofits in areas not covered in Appendix A are not included
15. Disposal of PCB ballasts (if any) is not included
16. Repair, maintenance or replacement of non functioning electrical circuit, wiring and equipment is not included
17. Any work related to OSHPD and/or bringing existing systems up to code is not included
18. Existing LED fixtures will not be upgraded to match color temperature with new LED retrofit kits.
19. Provision of containment equipment if required by infectious controls is not included

1.2.2 FIM#2: **Demand Flow® Sensors**

1. Temperature sensors at the chillers
   a. Replace existing temperature sensors in the entering and leaving condenser and evaporator water piping for each of the (2) chillers with high accuracy thermowell chilled water temperature sensors with display (Qty. 8), using existing gage ports.
   b. Wire sensors back to new Siemens control panel for the central plant.
   c. Perform point to point checkout of these (8) new sensors.

2. Temperature sensors around chilled water “de-coupler”
   a. Provide new hot taps and install high accuracy thermowell chilled water temperature sensors (without displays) (Qty. 4) in the main primary and secondary chilled water supply and return piping around the “de-coupler”.
   b. Exact location of hot taps shall be provided by the Siemens Demand Flow Project Developer or delegate.
   c. Wire sensors back to new Siemens control panel for the central plant.
   d. Perform point to point checkout on these (4) new sensors.

3. Differential pressure sensors at the chillers

a. Provide and install new industrial grade differential pressure sensors per Demand Flow Material Standards (Qty. 4) for each chillers' condenser and evaporator barrels per Siemens Demand Flow COC Installation Guidelines.
b. It is assumed that the existing gage ports can accommodate these new sensors.
c. Supporting material to install DP's:
    i. Provide and install flushing valves and piping, with ports pointing down to floor.
    ii. Piping material from the taps to the DP sensor will be brass, copper or stainless steel with a minimum outside diameter of 3/8".
    iii. Provide and install brass fittings and ½" or ¾" ball valves for isolation at taps.
    iv. Provide and install adequate sensor manifold support, ensuring display readability.
    v. Pipe high pressure pipe side to manifold port side labeled "+".
    vi. Pipe low pressure pipe side to manifold port side labeled "-".
d. Wire sensors back to new Siemens control panel for the central plant.
e. Perform point to point checkout on these (4) new sensors.

4. Outside air sensor (near cooling towers)
    a. Provide a Visalia (or other Demand Flow Project Developer approved) outside air sensor capable of sensing dry bulb temperature, wet bulb temperature and relative humidity.
    b. Sensor shall be placed in a suitable location near the existing cooling towers.
    c. Wire sensor back to new Siemens control panel for the central plant.
    d. Setup points in the Desigo CC system.
    e. Perform point to point checkout of new sensor.

5. Low flow cut-off sensors
    a. Provide and install adjustable flow safety switches IFM Effector (or other Demand Flow Project Developer approved) (Qty. 4) on each chiller's evaporator and condenser barrels.
    b. Low flow cut-off sensors shall be wired back directly to each chiller's own controls.

Variable Frequency Drives

1. Primary chilled water pump VFD's
    a. Provide, install and startup variable frequency drives (Qty. 3) for three 7.5 hp primary chilled water pumps (pumps located in chiller room).
    b. Siemens to coordinate and define installation location according to authority having jurisdiction requirements.
    c. Supports
    d. NEMA 12 enclosures
    e. Provide necessary line, load and signal wiring.
    f. Enable communication with Siemens DDC system.
        i. Start
        ii. Stop
        iii. Status
        iv. Speed Command
        v. Speed Feedback (actual)
        vi. Alarm

vii. Power (kW or HP)

g. Perform point to point testing

2. Condenser water pump VFD's
   a. Provide and install variable frequency drives (Qty. 3) for three 25 hp condenser water pumps (pumps located at cooling towers).
   b. Siemens to coordinate and define installation location according to authority having jurisdiction requirements.
   c. Supports
   d. NEMA 3R enclosures
   e. Provide necessary line, load and signal wiring.
   f. Enable communication with Siemens DDC system.
      i. Start
      ii. ii. Stop
      iii. iii. Status
      iv. iv. Speed Command
      v. v. Speed Feedback (actual)
      vi. Alarm
      vii. Power (kW or HP)
   g. Perform point to point testing

3. Secondary chilled water pump VFD's
   a. Enable communication/integration between the existing secondary chilled water pump variable frequency drives (VFDs) and the Siemens DDC system (control panel).
   b. Siemens shall provide all necessary coordination between Siemens Automation Team and the incumbent controls service provider to ensure communication between existing VFD's and the Siemens DDC system.
   c. Required points from existing VFD's for integration include (but are not limited to):
      i. Start
      ii. Stop
      iii. Status
      iv. Speed Command
      v. Speed Feedback (actual)
      vi. Alarm
      vii. Power (kW or HP)
   d. Perform point to point testing.

Power Meters

1. Chiller power monitoring
   a. Provide and install (2) Siemens MDC power meters to measure power (kW) and real-time amperage.
   b. Any shutdowns and/or lockout tagout process procedures per SGMH or authority having jurisdiction requirements, to install these power meters shall be coordinated by the Siemens Manager.
   c. Wire sensors back to new Siemens control panel for the central plant.
   d. Assumed new power meters shall be placed in an existing enclosure.
   e. Perform point to point checkout on these (2) new meters.
   f. Create Trend View on Desigo CC to monitor power readings.

Controls Engineering (Demand Flow Only)

1. Siemens shall create documentation package which shall include (but is not limited to) the following:
    a. Process and instrumentation drawings for the equipment in the Central Plant (only)
    b. Panel layout drawings for Siemens control panels under this scope of work
    c. Bill of materials
    d. Valve schedule
    e. System riser diagram (Siemens DDC system only)
2. Siemens shall provide a submittal (including BOM) to the Demand Flow Project Developer and Siemens for review and approve prior to material ordering.

Demand Flow Panel

1. Provide and install Siemens Demand Flow Panel (DXR).
    a. Associated necessary IP address(es) shall be coordinated and obtained by Siemens.
2. Provide integration between Siemens Control Panel and Siemens Demand Flow Panel (BACnet).
    a. Associated necessary IP address(es) shall be coordinated and obtained by Siemens.

Integration to Existing Controls (Demand Flow Only)

1. Provide integration between Siemens DDC system and Carrier control system in coordination with Carrier controls contractor to allow the Siemens DDC system to monitor the following points (for the purpose of integrating the points into the Demand Flow Program):
    a. All AHU's valve commands
    b. All AHU's supply air temperatures
    c. All AHU's supply air temperature setpoints
    d. All AHU's status points
    e. Chiller status points
    f. Chiller start/stop command points
    g. Chiller alarm points
    h. Chiller chilled water supply temperature setpoint
    i. Chiller kilowatt
    j. Chiller refrigerant temperatures
    k. Chiller refrigerant pressures
    l. Chiller approach temperatures
    m. Secondary chilled water loop differential pressure values
    n. Secondary chilled water loop differential pressure setpoints

Programming/Commissioning/Start-Up

1. Programming of the system shall be per the Siemens Demand Flow National Standards.
2. Programming shall be completed by a Siemens National Demand Flow resource.
3. Commissioning shall be completed by Siemens Demand Flow Project Developer.
4. Local Branch Project Manager shall complete the Demand Flow Site Readiness Checklist prior to coordinating Commissioning with the Demand Flow Project Developer.

Demand Flow Graphics

1. Provide Desigo CC Graphics per the Demand Flow Standard Template (to be used by Demand Flow Project Developer in commissioning and then by plant operators).

Cloud Data Archiving (Navigator)

1. Siemens shall provide a list of all points to be trended to the Siemens Branch Automation Team in a singular request using Siemens Energy Services Trend Request Form.
2. Siemens Specialist shall configure trending on the Desigo CC workstation per Siemens and Demand Flow Project Developer request.
3. Trends shall be configured to push automatically to the Siemens Navigator (Cloud Data Historian) either through the Siemens Navigator proxy script or Siemens MISB solution.
4. Coordination with SGMH IT Department for the purpose of data transfer to the Siemens Navigator (Cloud Data Historian) shall be the responsibility of Siemens.

Turn-Over (Demand Flow Only)

1. (1) day of training shall be provided to the SGMH plant operators by the Siemens Demand Flow Project Developer.
    a. Siemens Project Manager shall coordinate training with SGMH.
2. Turn-over package for the project shall include the following:
    a. Approved final controls submittal package
    b. Demand Flow commissioning report

Other Work Required for Demand Flow (to be completed by Siemens Subcontractors)

1. Upgrade the Carrier chiller software to the latest revision, which shall accommodate integration.
2. Expose all chiller points and provide support in point mapping of Carrier chiller points to Siemens DDC system. Communication cards installed by others, as required.
3. Close existing manual bypass valves on air handler chilled water coil control valves.
4. Clean existing strainers on all chilled water and condenser water pumps.
5. Replace all existing 3-way valves on the chilled water system with 2-way DDC control valves and integrate to existing Carrier controls system.
6. Replace all existing pneumatically controlled valves with DDC control valves and integrate to existing Carrier controls system.
7. Loop tuning of existing chilled water valves on the existing DDC control system shall be done prior to commissioning of Demand Flow by others.
8. Provide the following points to the Siemens DDC system from the Carrier control system:
    a. All AHU's valve commands
    b. All AHU's supply air temperatures
    c. All AHU's supply air temperature setpoints
    d. All AHU's status points
9. Additional two (2) EOLDPs to appropriate air handlers (as indicated by Demand Flow Team) and integrate back to Siemens DDC Control System.
10. Siemens to provide IP addresses as requested by the Siemens Branch Automation Team.

11. Siemens to provide the Siemens Branch Automation Team ethernet drops prior to execution.
12. Siemens to coordinate obtaining layout BACnet instance numbers from SGMH to provide BACnet ID structure, to the Siemens Branch Automation Team.

Material Change with respect to Demand Flow shall include, but not be limited to: (i) operator interventions which impede the proper operations; (ii) power interruptions which impede the proper operations; (iii) failure or defects in the existing equipment; and (iv) implementation of higher than recommended (per original calculations/recommendations by the Demand Flow Project Developer) minimum flow or pumps speed settings

Central Plant Automation Scope of Work

Control Panels

1. Migrate existing 3rd party controllers to PXC BACnet Modular (listed below)
    a. CP-1
        i. Replace (1) existing control panel with Siemens BACnet PXCM
        ii. Install AI/AO/DI/DO point modules with local override capability
        iii. Replace (4) existing temp sensors
        iv. Replace (2) existing DP sensors
        v. Provide (6) current switches w/relay
    b. CP-2
        i. Replace (1) existing control panel with Siemens BACnet PXCM
        ii. Install AI/AO/DI/DO point modules with local override capability
        iii. Replace (5) existing temp sensors
        iv. Replace (2) existing DP sensors
        v. Provide (3) current switches w/relay
    c. Provide controller startup and checkout
    d. Existing I/O currently under control of the existing panels (CP-1 and CP-2) will be transferred to the new PXCM or new BUS Interface Modules as required.
2. Provide pre-work activities
    a. Siemens Project Manager to coordinate ethernet drops completed prior to execution provided by SGMH (utilize existing)
    b. Siemens Project Manager to coordinate obtaining layout of BACnet instance numbers (SGMH to provide BACnet ID structure)
    c. Open each point and edit (slope/intercept) to match new sensor/device configuration
    d. Create new BACnet address for each point
3. Provide Execution (Cutover)
    a. Perform the following to create the new panel:
        i. Add the BACnet BLN
        ii. Configure new panel and verify connectivity
    b. Remove and replace existing 3rd party controllers (identified above, serving the Central Plant) with BACnet PXC modulars
    c. Re-terminate hardwired points
    d. Re-terminate FLN buses
4. Post Work
    a. Create equipment rotation schedules in accordance with Demand Flow Standards and coordinated with Siemens/SGMH.

5. Upgrade Scope above includes:
    a. Remove existing hardware from the panel and turn it over to SGMH Facilities with the exception of the 24VAC service box which is to be used to power the new controllers (utilize existing)
    b. Re-terminate associated hardwired points
    c. Run new FLN bus
    d. Startup panel and perform panel commissioning
    e. Write new PPCL (completed by Demand Flow National COC resource)
    f. Panel cutover field labor
6. Proposal includes new PCXM panels for existing 3rd party controllers to be installed in the same locations as the existing panels.
    a. Existing enclosures and 120V power to be re-used.
    b. All existing I/O currently under control of the existing panels will be transferred to the new PXCM or new BUS Interface Modules as required.
    c. Ethernet backbone must be provided by SGMH and coordinate by Siemens PM.
    d. SGMH will provide and install UPS's at panels if desired (work by other, not in scope).
    e. Siemens is not responsible for repairing any failed devices found prior to or during the upgrade.

Down Time Prep for Hospital

- Siemens Project Manager shall coordinate project schedule with Branch Automation Team and SGMH to ease the disturbance of panel downtime.
- Siemens and SGMH should assume a full day of downtime per panel.
- Siemens Project Manager shall be responsible to coordinate with SGMH to run the equipment in hand as necessary during controls cutover.

Desigo CC Scope of Work

Desigo CC Server/Database (For Central Plant Controls/Demand Flow Only)

1. Provide, install and configure new DESIGO CC System
    a. Provide (1) Desigo CC compatible server
    b. Provide (4) User licenses
    c. Connect CUP Panel Networks to DESIGO CC
    d. Connect CUP Panel Controllers to DESIGO CC
    e. Connect FLN Devices to DESIGO CC
    f. Add DESIGO CC point licenses for 1000 building automation points
    g. Create up to (5) User Accounts for DESIGO CC
    h. Create up to (10) DESIGO CC scalable vector graphics
    i. Provide DESIGO CC Documentation for customer reference
    j. Provide Siemens Datamate Advanced software on new server
    k. Test for proper operation
    l. Provide DESIGO CC documentation for customer reference
    m. Provide DESIGO CC training for (1) person (3-day course)

Clarifications

1. SGMH is responsible for entire building operation (comfort, lighting, clocks etc.) during install.
2. Siemens to coordinate with SGMH to provide existing project plans and CAD drawings if available for existing infrastructure.

3. The Siemens server must be able to use the SGMH's SMTP server to send emails
4. Siemens to coordinate with SGMH a list of names and email addresses to which the alarms will be sent before the start of the project.
5. Siemens Branch Automation Team will require a meeting with SGMH IT and facilities personnel to review networking/integration process before project execution. Access to SGMH IT department before starting and during project execution shall be coordinated by Siemens Project Manager.
6. Siemens shall be responsible for obtaining IP addresses from SGMH and providing them to the Siemens Branch Automation Team in advance of scheduled work execution.
7. Data drops and ethernet backbone must be provided by SGMH and coordinate by Siemens Project Manager.
8. SGMH to provide access to building and all rooms. Siemens recommends (1) SGMH Facility Staff to accompany Siemens specialist.
9. (As stated above) Siemens Project Manager shall coordinate with other Controls contractors for the existing DDC system (Carrier) to make available points for the Siemens DDC system with the purpose of completing Demand Flow per Demand Flow National Standards (as directed by the Demand Flow Project Developer). Some of these specific points are outlined above.
10. Siemens Project Manager shall be responsible for coordination between all sub-contractors on this project including the Siemens Branch Automation Team.
11. All work is estimated to be done during regular working hours. Work will be coordinated and scheduled with SGMH to ensure minimal impact to hospital operations.
12. Existing wiring that is to be reused is assumed to be in good condition and usable.
13. SGMH will provide and install UPS's at panels if desired (work by other, not in scope).

It is assumed that equipment in the plant and buildings connected to the chilled water loops are operating properly as designed as necessary for the proper operation of the Demand Flow solution. These items include (but are not limited to) properly operating existing DDC system, air handlers, oil control valves, cooling towers, fans, pumps, drives, valves (butterfly, triple-duty, strainers, isolation, modulating), dampers, sensors, drives, etc. Any necessary maintenance or changes to restore these systems to correct operation is required prior to Demand Flow implementation.

Exclusions

1. Providing and installing UPS's at controls panels.
2. Repair of any failed existing devices found prior to or during the project.
3. Any existing equipment performance shortfalls or issues.
4. Network IP address assignments (subnet mask and default gateway)
5. Ethernet network, cabling, switches, routers or other equipment associated with the network backbone.
6. Fire Life Safety system and any subsequent coordination or integration
7. Loop tuning existing systems.
8. Abatement or containment of hazardous materials.
9. All repairs or replacement of existing wiring to be reused.
10. Equipment, control and labor to provide temporary cooling and/or heating, if required by SGMH during cutover or project execution.
11. Graphics upgrade beyond the Siemens Demand Flow Standard.

1.2.3.3 FIM#3: **Control Optimization of Material Management AHU, ED/ICU AHU1 and ED/ICU AHU2AHU2**

1. Provide labor for point to point functional testing and perform point to point test.
2. Develop deficiency list and present to the Owner for correction in accordance with Section 7.10 of the Energy Services Agreement. Alternatively, the repair/replacement of the items on the deficiency list may be performed via a change order pursuant to Section 2.17 of the Energy Services Agreement.
3. Baseline data is based on collected trend data from May 9, 2018 to May 20, 2018.
4. Provide minimum 14 days post implementation trend data of selected point list (SAT, RAT, SAT StPt, position of chilled water control valve actuator, position of hot water actuator control valve (if available) "Position of dampers for OSA, Return Air and Mixed Air", discharge air temperature for heating and cooling coils in AHU, Mixed Air Temperature, CFM (if available), Static Pressure (if available), RH (if available)) after implementation of RCx. Calibration of existing AHU sensors/end physical points used for calculation of savings and monitoring.
5. Match field readings with readings on the BAS system graphic panel.
6. Remote monitoring of selected points and integration with Siemens Navigator
7. Implement upgraded sequence of operation developed based on baseline trend data to capture energy savings.
8. Provide remote monitoring and fine tuning of new sequence of operation
9. Work to be done 80% during first shift and 20% during second shift Hours. Work will be coordinated and scheduled with SGMH to ensure minimal impact to hospital operations.

1.2.3.4 Exclusions

1. Siemens is not responsible for the fire life safety system.
2. Air / Water Balancing of any equipment not described in this scope of Work is excluded.
3. Any instructor-led training/workshop is excluded.
4. Provision of containment equipment if required by infectious controls is excluded.
5. Rendering service of OSHPD IOR is excluded
6. Rendering services of any/all third party testing/inspection agency required by OSHPD is excluded
7. The Work does not include responsibility for system design deficiencies, including but not limited to poor air distribution, water flow imbalances, system equipment and component obsolescence, electrical failures, unserviceable equipment, and operating the system(s).

1.3 Technical Specifications, Drawings, and Exhibits*:* The Work shall be performed in accordance with the following specifications, drawings and other attachments hereto, which are specifically incorporated herein and made part hereof: **N/A**

Article 3: Scope of Services-Performance Assurance Services Program (Siemens Navigator Remote Monitoring System)

3.1 Performance Assurance Services shall be performed annually during the Performance Guarantee Period unless terminated by CLIENT in accordance with terms and conditions of this Agreement. Five years of performance assurance is incorporated into this program.

3.2 The PASP will provide the CLIENT with an Annual Performance Assurance Report within ninety (90) days of the end of each Annual Period.

3.3 Performance Assurance Services are all labor activities, site visits, monitoring and analyses necessary to calculate the Annual Realized Savings achieved by the Project, and to prepare and present the Annual Performance Assurance Report for the respective Annual Period.

3.4 Each Annual Performance Assurance Report shall include:

3.4.1 The Measured and Verified Savings for the respective Annual Period, including supporting documentation required to complete the Measurement and Verification Plan outlined in Article 4, Exhibit E of this Agreement.

3.4.2 The Annual Realized Savings achieved by the Project for each respective Annual Period.

3.4.3 A comparison of the Annual Realized Savings and Guaranteed Annual Savings to determine whether there is a Savings Shortfall for the respective Annual Period, pursuant to Article 4 of the Performance Contracting Agreement.

3.4.4 Summary of annual site inspection of facility improvement measures.

Article 4: Scope of Services-Maintenance Services Program

(Please check one box only)

☐ CLIENT has elected to self-implement maintenance, including but not limited to the responsibilities listed in Section 1.4.1 above but excluding the specific tasks listed below. CLIENT agrees that it will maintain the equipment per manufacturer specifications, that it will operate the Equipment in accordance with the Contracted Baseline described in Article 7 of Exhibit C, and that it will perform all the other maintenance responsibilities listed in Section 1.4.1. If CLIENT fails to properly maintain or operate the Equipment, SIEMENS shall have the right to modify the Performance Guarantee pursuant to Article 4 of the Agreement.

☒ CLIENT has elected to enter into a maintenance service agreement with SIEMENS for the following categories:

1. Provide Carrier i-Vu Software updates once a year.
2. Provide up to 16 hours per year integration consultation for Measurement and Verification fact finding issues.
3. Provide up to 24 hours per year calibration of central plant Carrier temperature sensors, differential pressure flow sensors, flow meter and BTU meter as related to CPECS. Quote any necessary repairs.
4. Provide pneumatic system verification for (8) pneumatic control chilled water AHUs. Provide deficiency list. Quote any necessary repairs.

By signing below, this Exhibit is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT:	**San Gorgonio Memorial Healthcare District**	**SIEMENS:**	**Siemens Industry, Inc.**
Signature:		Signature:	
Printed Name:		Printed Name:	
Title:		Title:	
Date:		Date:	
		Signature:	
		Printed Name:	
		Title:	
		Date:	

Article 1: Payment for Scope of Work

1.1 **Price:** As full consideration of the Work as described in Exhibit A, Article 1: Scope of Work, the CLIENT shall pay to SIEMENS **$2,163,286** (plus taxes, if applicable). The Schedule of Values for the Project is attached as Table B.4 in Attachment 1 hereto.

1.2 **Escrow:** The CLIENT has agreed to deposit the Price into an Escrow Account at a financial institution satisfactory to both the CLIENT and SIEMENS. All expenses to establish the Escrow Account shall be the complete responsibility of the CLIENT and the CLIENT will receive all interest earnings from the Escrow Account. SIEMENS will submit periodic invoices to the CLIENT based on the Payment Schedule in Table B.1 below. The CLIENT shall be responsible for submitting the necessary documents to the Escrow Agent to allow for timely disbursements from the Escrow Account. The funding of the Escrow Account in an amount equal to or greater than the Price stated in Article 1.1 above shall be a condition precedent to SIEMENS obligation to perform or to continue the performance of the Work. If the Escrow Account is not funded within sixty (60) days of the execution of this Agreement, this Agreement shall be null and void. This sixty (60) day funding period may be extended as mutually agreed in writing by the Parties. In the event that the Agreement becomes null and void as described in this paragraph and CLIENT has previously authorized SIEMENS to proceed with the Work, the CLIENT shall be obligated to reimburse SIEMENS either: (i) for the Work performed to date; or (ii) for the Work specifically authorized by the CLIENT.

1.3 **Timely Payments:** The CLIENT agrees to pay SIEMENS per Table B.1 below. CLIENT agrees to pay all invoices submitted by SIEMENS per Article 3 of the Agreement.

Table B.1 – FIM Work Payment Schedule

Milestone	Payments
Mobilization	$ 175,000
Design/Submittals Complete	$ 470,029
Ordering of Equipment	$ 402,884
Lighting Complete	$ 221,442
Electrical Complete	$ 198,375
CHW Complete	$ 205,398
Demand Flow Complete	$ 215,891
Integration Complete	$ 180,864
Construction Complete	$ 93,403
Total	$ 2,163,286

Article 1 of Exhibit B is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT:	**San Gorgonio Memorial Healthcare District**	**SIEMENS:**	**Siemens Industry, Inc.**
Signature:		Signature:	
Printed Name:		Printed Name:	
Title:		Title:	
Date:		Date:	
		Signature:	
		Printed Name:	
		Title:	
		Date:	

Article 2: Payment for Performance Assurance Services Program (PASP)

2.1 **Price:** As full consideration of the Services as described in Exhibit A, Article 3, the CLIENT shall pay to SIEMENS the amounts identified in Table B.2 plus taxes, if applicable, on the dates identified therein.

2.2 **Performance Assurance Services Program Term:** The term of the PASP shall commence on the Guarantee Date and shall extend for either: (a) the term of the Performance Guarantee Period where multi-year obligations are allowed; or (b) for twelve (12) month periods corresponding to the term of each Annual Period.

2.3 **Automatic Renewal:** Where the PASP term is limited to an Annual Period, the PASP shall automatically renew for successive Annual Periods beginning on the anniversary date of Guarantee Date. Either party may request to amend the PASP at the end of an Annual Period by giving the other party at least sixty (60) days prior written notice of such amendments and such amendment shall be mutually negotiated by the Parties and effective upon a written amendment signed by both Parties prior to commencement of the next Annual Period. Each automatic renewal shall be and remain subject to the terms and conditions of this Agreement. SIEMENS obligations under the Performance Guarantee are dependent upon and subject to the express condition that the CLIENT maintains the PASP during the entire Performance Guarantee Period.

2.4 **Termination**: See Sections 7.8 and 7.13 of the Agreement.

Table B.2 – Performance Assurance Program Payment Schedule

Date	*Annual Payments ($)	Notes
Annual Period 1	$18,868	Billed at project acceptance
Annual Period 2	$19,434	Billed at 1st anniversary of project acceptance
Annual Period 3	$20,017	Billed at 2nd anniversary of project acceptance
Annual Period 4	$20,618	Billed at 3rd anniversary of project acceptance
Annual Period 5	$21,236	Billed at 4th anniversary of project acceptance

*3% escalation annually is included

Article 2 of Exhibit B is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT:	**San Gorgonio Memorial Healthcare District**	**SIEMENS:**	**Siemens Industry, Inc.**
Signature:	_____	Signature:	_____
Printed Name:	_____	Printed Name:	_____
Title:	_____	Title:	_____
Date:	_____	Date:	_____
		Signature:	_____
		Printed Name:	_____
		Title:	_____
		Date:	_____

Article 3: Payment for Maintenance Services Program (MSP)

3.1 **Price:** As full consideration of the Services as described in Exhibit A, Article 4, the CLIENT shall pay to SIEMENS the amounts identified in Table B.3 plus taxes, if applicable, on the dates identified therein.

3.2 **Maintenance Services Program Term:** The initial or first term of the MSP shall commence on the Guarantee Date and shall have duration of twelve (12) months and shall extend thereafter for the term as identified in Table B.3 and in accordance with Section 3.3 below.

3.3 **Automatic Renewal:** Where multi-year obligations are disallowed, the Maintenance Services Program shall automatically renew for successive twelve (12) month periods beginning on the ending anniversary date of the initial or first term as set forth in Article 3.2 above, and each twelve (12) month period thereafter as identified in Table B.3. Either party may request not to renew or to amend the Maintenance Services Program at the end of the initial term or at the end of a renewal term by giving the other party at least Sixty (60) days prior written notice of such amendments or intent not to renew. Each renewal shall be and remain subject to the terms and conditions of this Agreement.

Table B.3 – Maintenance Services Program Payment Schedule

Date	*Annual Payments ($)	Notes
Annual Period 1	$22,140	Billed at project acceptance
Annual Period 2	$22,804	Billed at 1st anniversary of project acceptance
Annual Period 3	$23,488	Billed at 2nd anniversary of project acceptance
Annual Period 4	$24,193	Billed at 3rd anniversary of project acceptance
Annual Period 5	$24,919	Billed at 4th anniversary of project acceptance

*3% escalation annually is included

Article 3 of Exhibit B is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT:	**San Gorgonio Memorial Healthcare District**	**SIEMENS:**	**Siemens Industry, Inc.**
Signature:	_____	Signature:	_____
Printed Name:	_____	Printed Name:	_____
Title:	_____	Title:	_____
Date:	_____	Date:	_____
		Signature:	_____
		Printed Name:	_____
		Title:	_____
		Date:	_____

ATTACHMENT 1

Table B.4 – Schedule of Values

Project Phase	Payments ($)
Mobilization	$175,000
General Conditions	$390,000
Bond	$8,430
Demand Flow	$625,000
Electrical	$135,000
Engineering/Architect	$174,056
Lighting	$525,000
OSHPD	$130,800
PROJECT TOTAL:	$2,163,286

EXHIBIT C

PROJECT SCHEDULE

Article 2: Work Implementation Period

2.1 Commencement of Work (select **one**):

2.1.1 ☒ SIEMENS shall commence the Work (30) calendar days from the Effective Contract Date, and shall perform the Work diligently and shall complete the Work no later than (365)calendar days from the day of commencement, Siemens time line could be extended beyond (365) calendar days subject to delay in OSHPD plan check approval process, which is not in control of Siemens.

2.2 *Milestones*: Specific scheduling milestones and coordination requirements are as follows: To be determined by the Parties after execution of Agreement:

San Gorgonio Hospital
"Draft Only Schedule" September 2020

ID	Task Name	Duration	Start	Finish
1	**San Gorgonio Hospital**	**311 days**	**Tue 9/8/20**	**Tue 12/14/21**
2	**Contract-Procurement**	**53 days**	**Tue 9/8/20**	**Thu 11/19/20**
3	Final Contract Delivery/Customer Review	21 days	Tue 9/8/20	Tue 10/6/20
4	Board Decision	2 days	Wed 10/7/20	Thu 10/8/20
5	Customer/Siemens Signed Contract	5 days	Fri 10/9/20	Thu 10/15/20
6	**Owner Contract Signed**	**0 days**	**Thu 10/15/20**	**Thu 10/15/20**
7	Write Sub-Contracts Issue P.O.'s	25 days	Fri 10/16/20	Thu 11/19/20
8	**Sub-Contracts-P.O.'s Executed**	**0 days**	**Thu 11/19/20**	**Thu 11/19/20**
9	**Submittal Eng/Process**	**127 days**	**Fri 10/16/20**	**Mon 5/10/21**
10	Lighting Fixtures	5 days	Fri 10/16/20	Thu 10/22/20
11	OSHPD Drawings Base	15 days	Fri 10/16/20	Thu 11/5/20
12	OSHPD Electrical Drawings	20 days	Fri 11/6/20	Thu 12/10/20
13	OSHPD Structural Drawings	20 days	Fri 11/6/20	Thu 12/10/20
14	BAS/Demand Flow Submittals	12 days	Fri 11/6/20	Mon 11/30/20
15	Architect Submitts OSHPD Drawings	2 days	Fri 12/11/20	Mon 12/14/20
16	**OSHPOD Reviews Drawings**	**90 days**	**Tue 12/15/20**	**Mon 5/10/21**
17	**Design and Submittals Complete**	**0 days**	**Mon 5/10/21**	**Mon 5/10/21**
18	**Equipment Ordering & Delivery**	**30 days**	**Tue 5/11/21**	**Mon 6/21/21**
19	Lighting Fixture Equipment	30 days	Tue 5/11/21	Mon 6/21/21
20	BAS/Demand Flow	10 days	Tue 5/11/21	Mon 5/24/21
21	Condensing Boiler Replacement	30 days	Tue 5/11/21	Mon 6/21/21
22	**Equipment Ordering Complete**	**0 days**	**Mon 6/21/21**	**Mon 6/21/21**
23	**Start Construction**	**126 days**	**Tue 6/22/21**	**Tue 12/14/21**
24	**Project Start**	**123 days**	**Tue 6/22/21**	**Thu 12/9/21**
25	Lighting Fixture Install	40 days	Tue 6/22/21	Mon 8/16/21
26	Hams Scope	35 days	Tue 6/22/21	Mon 8/9/21
27	PI CHW Valves AHU-1-3-5-9	18 days	Tue 8/10/21	Thu 9/2/21
28	PI CHW Valves for 8 Existing DDC AHU's	18 days	Fri 9/3/21	Tue 9/28/21
29	Demand Flow Chilled Water System Opt	18 days	Wed 9/29/21	Fri 10/22/21
30	Chilled Water Valve Monitoring Demand Flow	18 days	Wed 10/6/21	Fri 10/29/21
31	Carrier Automation DDC Upgrade	18 days	Mon 11/1/21	Wed 11/24/21
32	Integration for 70 Points	5 days	Thu 11/25/21	Wed 12/1/21
33	Commissioning	5 days	Thu 12/2/21	Wed 12/8/21
34	**Substantial Completion**	**1 day**	**Thu 12/9/21**	**Thu 12/9/21**
35	**Construction Complete**	**0 days**	**Thu 12/9/21**	**Thu 12/9/21**
36	**Project Closeout**	**3 days**	**Fri 12/10/21**	**Tue 12/14/21**
37	Owner Training	3 days	Fri 12/10/21	Tue 12/14/21
38	O & M /Record Drawings	3 days	Fri 12/10/21	Tue 12/14/21
39	Warranty Letters	2 days	Fri 12/10/21	Mon 12/13/21
40	**Final Acceptance Letter**	**0 days**	**Tue 12/14/21**	**Tue 12/14/21**

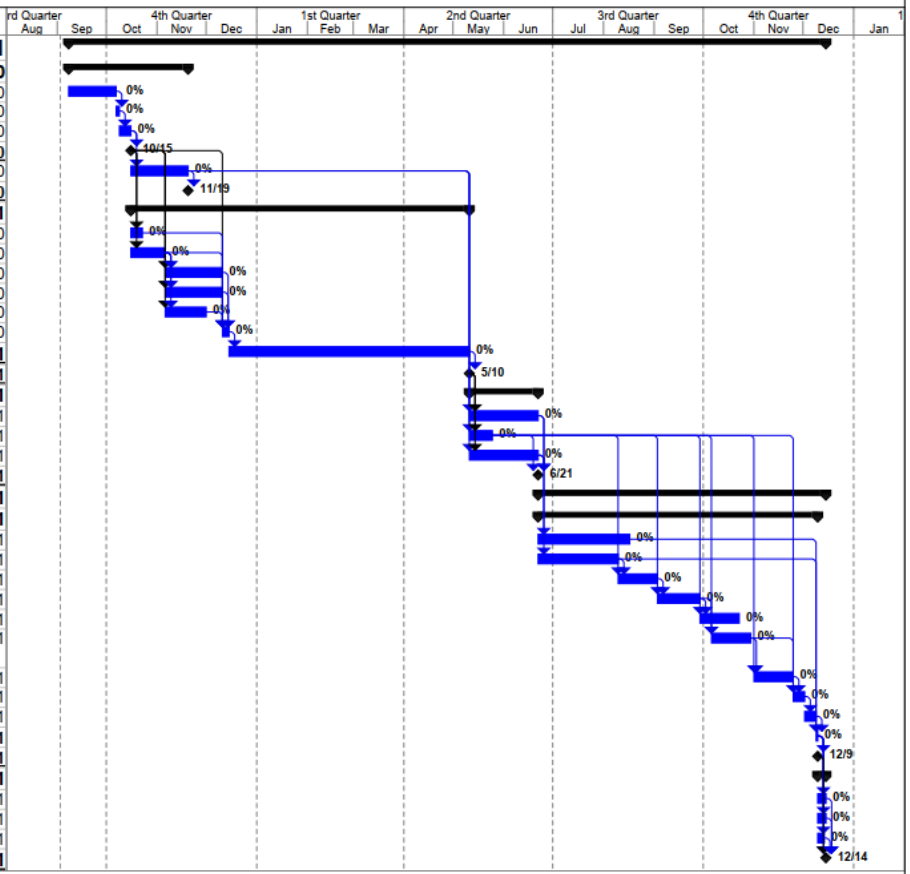


EXHIBIT D

PROJECT OWNER REQUIREMENTS

The Project Owner Requirements identified herein may be altered by Owner from time to time as a ministerial matter.

[This section reserved for site specific procedures from San Gorgonio Memorial Healthcare District. These can include access procedures, safety requirements, etc.]

Incentives

Siemens will assist San Gorgonio Memorial Healthcare District in submitting applications for potential incentives offered by the City of Banning Electric Utility through the B.E.E.F. program. Any such incentives are subject to funding available by the utility company and cannot be guaranteed by Siemens.

Articles and Tables

The following Articles and Tables are hereby included and made part of this Exhibit E:

This Exhibit E provides the methodology to be used to determine the Annual Realized Savings and the reconciliation of these calculated Savings with the Guaranteed Annual Savings for each Annual Period of the Performance Guarantee Period. The Scope of Services for the Performance Assurance Service Program is provided in Article 3 of Exhibit A.

Article 1: Total Guaranteed Savings

Table 1.1 – Total Guaranteed Savings (Units)

Performance Period	Electric Energy Saved (kWh)	Electric Power Saved (kW)	Natural Gas Saved (Therms)	No. 2 Fuel Oil Saved (Gallons)	Water Saved (Gallons)
Construction	**255,051**				
Annual Period 1		**1,247,492**	**41,898**		

1.1 Only Annual Period 1 is shown as the energy/utility unit Savings will remain constant for each Annual Period of the Performance Guarantee Period as the CLIENT will operate the Facility in accordance with the Contracted Baseline identified in Article 7.

Table 1.2 – Total Guaranteed Savings (Cost)

Performance Period	Energy/Utility Savings	Operational Savings	Total Savings
Construction	$31,021		$31,021
Annual Period 1	$157,886	$15,611	$173,497
Annual Period 2	$162,622	$16,079	$178,702
Annual Period 3	$167,501	$16,562	$184,063
Annual Period 4	$172,526	$17,059	$189,585
Annual Period 5	$177,702	$17,570	$195,272
Annual Period 6	$183,033		$183,033
Annual Period 7	$188,524		$188,524
Annual Period 8	$194,180		$194,180
Annual Period 9	$200,005		$200,005
Annual Period 10	$206,005		$206,005

Annual Period 11	$212,185		$212,185
Annual Period 12	$218,551		$218,551
Annual Period 13	$225,107		$225,107
Annual Period 14	$231,861		$231,861
Annual Period 15	$238,816		$238,816
Annual Period 16	$245,981		$245,981
TOTALS	**$3,213,505**	**$82,881**	**$3,296,386**

1.2 Table 1.2 shows the CLIENT'S guaranteed cost Savings for each Annual Period that are extrapolated from the guaranteed energy/utility unit Savings shown in Table 1.1 by multiplying the energy/utility Savings by the Baseline energy/utility rates including the stipulated Escalation Rates found in Article 6.

1.3 SIEMENS cannot and does not predict fluctuations in utility rates or the cost of energy. Therefore, the CLIENT and SIEMENS agree that the energy/utility cost Savings for each Annual Period will be calculated by multiplying the verified units of energy/utility Savings by the Annual Period's stipulated energy/utility rate and Escalation Rates and not the Annual Period's actual utility rate.

1.4 The determination of energy/utility Savings will follow current best practice, as defined in the IPMVP, or the FEMP Guidelines where required, unless otherwise agreed to by the Parties.

1.5 The Performance Guarantee does not operate to guarantee the Savings per-FIM. Rather, the calculation of Savings is based on aggregate performance of all of the FIMs contained in the Project. The projected value of such aggregate performance is contained in Table 1.2 above representing the Total Guaranteed Savings as monetized.

This Exhibit E, comprising of 28 pages for exhibit E, 18 pages for Appendix A for lighting, 13 pages for Appendix B for Demand Flow and 17 pages for Appendix C for air handling units, is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT: **San Gorgonio Memorial Healthcare District**

Signature: _____
Printed Name: _____
Title: _____
Date: _____

SIEMENS: **Siemens Industry, Inc.**

Signature: _____
Printed Name: _____
Title: _____
Date: _____

Signature: _____
Printed Name: _____
Title: _____
Date: _____

Article 2: Measurement and Verification Options

2.1 Measurement and Verification Options: There are five measurement and verification options to measure and verify energy/utility Savings: Option A - Retrofit Isolation: Key Parameter Measurement; Option B - Retrofit Isolation: All Parameter Measurement; Option C - Whole Facility; and, Option D – Calibrated Simulation. Options A through and including D are part of the IPMVP. Option E-Stipulated is based on industry accepted engineering standards and is the Option used for purposes of calculating Operational Savings.

Option A - Retrofit Isolation: Key Parameter Measurement. Savings are determined by field measurement of the key performance parameter(s) which define the energy use of the FIM's affected system(s) and/or the success of the Project. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the measured parameter and the length of the reporting period. Parameters not selected for field measurement are estimated. Estimates can be based on historical data, manufacturer's specifications, or engineering judgment. Documentation of the source or justification of the estimated parameter is required. The plausible savings error arising from estimation rather than measurement is evaluated. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option B – Retrofit Isolation: All Parameter Measurement. Savings are determined by field measurement of the energy use of the FIM-affected system. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the savings and the length of the reporting period. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option C - Whole Facility: Savings are determined by measuring energy use at the whole Facility or sub-Facility level. Continuous measurements of the entire Facility's energy use are taken throughout the reporting period. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option D - Calibrated Simulation: Savings are determined through simulation of the energy use of the whole Facility, or of a sub-Facility. Simulation routines are demonstrated to adequately model actual energy performance measured in the Facility. This Option usually requires considerable skill in calibrated simulation. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option E – Stipulated: This Option is the method of measurement and verification applicable to FIMS consisting either of Operational Savings or where the end use capacity or operational efficiency; demand, energy consumption or power level; or manufacturer's measurements, industry standard efficiencies or operating hours are known in advance, and used in a calculation or analysis method that will stipulate the outcome. Both CLIENT and SIEMENS agree to the stipulated inputs and outcome(s) of the analysis methodology. Based on the established analytical methodology the Savings stipulated will be achieved upon completion of the FIM and no further measurements or calculations will be performed

during the Performance Guarantee Period. If applicable, the methodology and calculations to establish Savings value will be defined in Section 4.6 of this Exhibit E.

2.2 Table 2.1 below summarizes the first Annual Period's Guaranteed Savings (See Article 1, Tables 1.1 and 1.2) utilizing the applicable Measurement and Verification Options as applied to the referenced FIMs valued pursuant to the agreed upon amounts identified in Article 6 hereof.

Table 2.1 – Savings for First Annual Period by Option

FIM	Energy/Utility Savings $						Operational Savings $	Total Savings $
	Measurement and Verification Options							
	A Retrofit Isolation: Key Parameter Measurement	B Retrofit Isolation: All Parameter Measurement	C Whole Facility	D Calibrated Simulation	E Stipulated	Total Energy/Utility Savings	E Stipulated	
Lighting LED Retrofit	$77,552						$15,611	$93,163
Demand Flow		$39,651						$39,651
DDC Control Optimzation of (3) AHU	$40,683							$40,683
TOTALS	$118,235	$39,651					$15,611	$173,497

2.3 Table 2.2 identifies the source of Operational Savings defined and quantified by the Parties. The Parties affirm that such amounts are Stipulated Savings for purposes of calculating Annual Realized Savings and acknowledge that the Guaranteed Savings identified herein have been based on CLIENT'S affirmation. **OPERATIONAL SAVINGS SHALL NOT BE MEASURED OR MONITORED DURING THE PERFORMANCE GUARANTEE PERIOD.**

Table 2.2 - Source of Operational Savings

Account/'Vendor	Description	Annual Cost $	# of Annual Periods Savings Are Applied	Annual Period Savings Begin
Material for lighting	Avoided cost of replacement T8 T12 MH	$15,611	5	1

2.4 SIEMENS has explained to the CLIENT and the CLIENT has satisfied itself as to how Operational Savings are incorporated into the Annual Realized Savings.

2.5 The Escalation Factor applicable to the Operational Savings is 3%.

BY SIGNING BELOW, THE PARTIES CONFIRM THAT THEY HAVE REVIEWED THE INCLUDED MEASUREMENT AND VERIFICATION OPTIONS AND THEIR APPLICATION TO BE USED IN CALCULATING SAVINGS UNDER THE AGREEMENT.

CLIENT:	**San Gorgonio Memorial Healthcare District**
Signature:	
Printed Name:	
Title:	
Date:	

SIEMENS:	**Siemens Industry, Inc.**
Signature:	
Printed Name:	
Title:	
Date:	
Signature:	
Printed Name:	
Title:	
Date:	

Article 3:

The Project Owner Requirements identified herein may be altered by Owner from time to time as a ministerial matter.

1.2.1 Client's Maintenance Responsibilities during Performance Guarantee period

a. CLIENT is responsible for cleaning all chilled water coils in every AHU and Fan coil. No labor and material is included to clean all of the chilled water coils in every AHU and Fan coil. Savings could be degraded if the coils are not clean.
b. CLIENT is responsible for cleaning all strainers in the chilled water system and the condenser water system. No labor and material is included to clean all strainers in the chilled water system and the condenser water system. Savings could be degraded if the strainers are not clean.
c. CLIENT is responsible for maintaining the chillers to operate properly. This includes but is not limited to refrigerant level, cleanliness of the tubes, excess oil in the refrigerant and proper operation of the VSDs. The chillers are expected to operate at or close to design (capacity and efficiency). Savings could be degraded if the chillers are not operating properly.
d. CLIENT is responsible for maintaining the cooling towers to operate properly. The cooling towers are expected to operate at or close to design (capacity and efficiency). Savings could be degraded if the cooling towers are not operating properly.
e. CLIENT is responsible for on-going maintenance of tower fill to maintain design approach. Any changes to water treatment or leak. On-going maintenance to keep condenser tubes clean to allow chillers to perform at design condition.
f. CLIENT is responsible NOT to override the system in any way. NOT to bypass valves or adjust flow setters.
g. CLIENT is responsible NOT to manually override any control points
h. CLIENT is responsible NOT to set manual mode of operation and/or any manual operation of end devices such as valves, differential pressure set points, re-setting of flow setters.
i. CLIENT is responsible NOT to disregard Demand Flow/Carrier/ Navigator event logs indicating lack of set point performance.
j. The CLIENT will provide a representative at each Facility to coordinate work and provide required data described below.
k. The CLIENT will provide SIEMENS with accurate Facility operating information as defined below and in the Contracted Baseline article of this Exhibit E during each Annual Period, within thirty (30) days of any Material Change that may increase or decrease energy usage.
l. If applicable, the CLIENT will provide SIEMENS with copies of utility bills within thirty (30) days of receipt by the CLIENT or provide access to utility vendor information to allow SIEMENS to include a utility bill analysis in the Annual Performance Assurance Report. The utility bill analysis does not take the place of the Measurement and Verification Plan identified in Article 4 of this Exhibit E and is not used to measure the Project's performance.

m. If required for the Work, CLIENT will provide telephone/data remote access, through SIEMENS Insight® software package or otherwise, as SIEMENS reasonably requests. All charges related to telephone/data line installation, activation and communication services are the responsibility of the CLIENT.

n. If required for the Work, CLIENT will provide and coordinate utility meter upgrade for interface with SIEMENS metering and data collection. All charges related for these upgrades are the responsibility of the CLIENT.

1.2.2 Client's Responsibility During Construction

o. CLIENT is responsible to render services of OSHPD IOR.
p. CLIENT is responsible to render services of any/all third party testing/inspection agencies requested by OSHPD in order to field testing/inspection and generating report.
q. CLIENT is responsible to have maintenance responsibilities as outlined under section 1.2.1 in full effect as of the first date of start of performance guarantee period
r. CLIENT is responsible for any fixing/repair/replacement of hardware as identified on the deficiency list as described under Exhibit A, section 1.2.3.3. Failure to remedy any deficiency item that prohibits the implementation of supply air temperature reset or economizing as described in Exhibit E sections 4.2.2, 4.2.3, or 4.2.4 will relieve SIEMENS from that portion of the savings guarantee.

Article 4: Measurement and Verification Plan

The following information is applicable to this Agreement:

Article 4.1 General Overview
Article 4.2 Option A - Retrofit Isolation: Key Parameter Measurement
Article 4.3 Option B - Retrofit Isolation: All Parameter Measurement
Article 4.4 Option C - Whole Facility
Article 4.5 Option D - Calibrated Simulation
Article 4.6 Option E – Stipulated-Energy/Utility Savings

4.1 General Overview –

The purpose of the Measurement and Verification (M&V) Plan is to identify the methods, measurements, procedures and tools that will be used to verify the Savings for each FIM which has energy/utility Savings. Savings are determined by comparing prior usage, consumption or efficiencies (defined as the "Baseline") against the post-FIM implementation usage, consumption or efficiencies. The Baseline usage, consumption or efficiencies are described in this Exhibit E, Article 5. The post-FIM implementation usage, consumption or efficiencies is defined as the Contracted Baseline and are described in this Exhibit E, Article 7.

4.2 Option A - Retrofit Isolation: Key Parameter Measurement

4.2.1 FIM#1 Lighting Upgrade and Retrofit

Location(s): San Gorgonio Memorial Healthcare District

Overview:

SIEMENS will retrofit the existing fixtures, lamps, and/or ballasts with more energy-efficient fixtures, lamps, and/or ballasts. SIEMENS will also install occupancy sensor controls in selected locations as per [Appendix A]. Verification of electric energy Savings (kWh) achieved by the lighting retrofit shall be based upon a one-time measurement of the lighting power capacity under existing conditions, a one-time measurement of the lighting power capacity upon completion of the lighting retrofit project and agreed-upon annual operating hours. Spot wattage measurements of a random sample of baseline and post-installation fixture types or fixture circuits will be used to establish demand. Sample size for wattage measurements will be determined based on FEMP guidelines for sample size determination. Manufacturer's specified wattage will be used for all other fixture types.

Pre-Retrofit Measurement\Calculations:

$kWh_{pre} = (kW_{pre} * Quantity_{pre} * AOHrs_{pre})_{\text{fixture type "n",}}$ summed across all fixture types

Where:

kWh_{post} = pre-retrofit annual electric consumption (kWh/yr)
kW_{pre} = Instantaneous kW based on random sample of existing lighting-fixture types

$Quantity_{pre}$ = Count of each fixture-type based on as-built survey
$AOHrs_{pre}$ = Pre-Retrofit Annual Operating Hours, stipulated per Appendix A

Post-Retrofit Measurement\Calculations:

$kWh_{post} = (kW_{post} * Quantity_{post} * AOHrs_{pre})_{fixture\ type\ "n",}$ summed across all fixture types

Where:

kWh_{post} = post-retrofit annual electric consumption (kWh/yr)
kW_{post} = Instantaneous kW based on random sample of the installed/retrofitted lighting-fixture types
$Quantity_{post}$ = Count of each fixture-type based on as-built survey

Savings Calculations:

Energy Savings (kWh/yr):

$kWh_{S,\ Interior\ Fixture} = (kWh_{pre} - kWh_{post})_{fixture\ type\ "n",}$ summed across all interior fixture types

$kWh_{S,\ Exterior\ Fixture} = (kWh_{pre} - kWh_{post})_{fixture\ type\ "n",}$ summed across all exterior fixture types

$kWh_{S,\ Controls\ =} (kWh_{post} * CF)_{fixture\ type\ "n",}$ summed across all fixture types with controls

$kWh_S = kWh_{S,\ Interior\ Fixture} + kWh_{S,\ Exterior\ Fixture} + kWh_{S,\ Controls}$

Where:

kWh_S = annual post-retrofit kilowatt-hour savings from lighting and controls retrofit
$kWh_{S,\ Interior\ Fixture}$ = annual post-retrofit kilowatt-hour savings from the interior lighting retrofit
$kWh_{S,\ Exterior\ Fixture}$ = annual post-retrofit kilowatt-hour savings from the exterior lighting retrofit
$kWh_{S,\ Controls}$ = annual post-retrofit kilowatt-hour savings from the Controls retrofit
CF = controls factor, stipulated per Appendix A

Cost Savings ($/yr):

$\$_S = (kWh_{S,\ Interior\ Fixture} * \$/kWh_{,\ blended}) + (kWh_{S,\ Exterior\ Fixture} * \$/kWh_{,\ off\text{-}peak}) + (kWh_{S,\ Controls} * \$/kWh_{,\ off\text{-}peak})$

Where:

$/kWh = unit price for electricity at each location as per Article 6 of this Exhibit E.
$\$_S$ = Total annual cost savings

4.2.2 **FIM#3 Carrier Control Optimization of ED/ICU AHU1**

Location(s): San Gorgonio Memorial Healthcare District

Overview:

Electric energy savings (kWh) and thermal (therms) energy savings are achieved by the implementation of supply air temperature reset and economizing. Supply air temperature reset is an automated control strategy to reduce energy and fuel consumption by constantly adjusting the cooling and heating coil temperatures to match load requirements. Economizing is an automated control strategy to reduce energy and fuel consumption by modulating the outdoor air damper based on outdoor air temperature. Energy savings will be verified by continuously trending the post-retrofit supply air temperature and outdoor air damper position in conjunction with outdoor air temperature.

If the Contracted Baseline operation for this equipment, as established in Article 7 of this Exhibit E, is modified by the CLIENT and results in a loss of energy savings, the Guaranteed Savings for this FIM will be deemed achieved as if the Contracted Baseline was followed.

Pre-Retrofit Measurement\Calculations:

$Fuel_{pre}$ = Pre-retrofit ventilation heating requirement = (HC_{pre} /100,000) * Eff_h = 62,482 therms

kWh_{pre} = Pre-retrofit electricity usage = (CC_{pre} /12,000) * Eff_c = 264,362 kWh

Where:

HC_{pre} = Total heating coil heating requirements per Table 4.2.2.2 = 7,527,939,576 BTU

Eff_h = Efficiency of the existing boiler per Table 4.2.2.1 = 83%

CC_{pre} = Total coiling coil cooling requirements per Table 4.2.2.2 = 4,406,025,536 BTU

Eff_c = Efficiency of the existing chiller per Table 4.2.2.1 = 0.72 kW/ton

Table 4.2.2.1 – Bin Calculation Parameters

Unit	Equipment	Efficiency (EFF)
AHU1	Chiller	0.72 (kW/ton)
	Boiler	83%

Table 4.2.2.2 – Pre-Retrofit Bin Calculation Parameters

Outside Air Temp (OAT)	Annual Operating Hours (AOH)	Total Supply (TCFM)	OA Damper Position (OA)	Volume of Outside Air (OACFM)	Return Air Temp (RAT)	Mixed Air Temp (MAT)	Supply Air Temp (SAT_{pre})	Heating Coil Output Temp (HCO_{pre})	Cooling Coil (CCpre, BTU/year)	Heating Coil (HCpre, BTU/year)
105	8	21,690	14%	2,970	72	76	45	56	5,854,502	1,959,644
100	56	21,690	14%	2,970	71	75	45	58	39,824,855	16,509,997
95	184	21,690	14%	2,970	71	74	45	59	127,131,394	59,060,772
90	342	21,690	14%	2,970	71	73	45	59	229,527,446	110,616,057
85	432	21,690	14%	2,970	70	72	45	59	281,561,321	145,725,736
80	501	21,690	14%	2,970	70	72	45	60	317,042,712	181,687,871

75	695	21,690	14%	2,970	70	71	44	61	426,942,176	269,446,780
70	855	21,690	14%	2,970	70	70	44	63	509,767,100	362,664,493
65	1,131	21,690	14%	2,970	70	69	44	79	654,351,820	918,081,567
60	1,413	21,690	100%	21,690	70	60	44	87	519,197,293	1,412,892,098
55	1,222	21,690	100%	21,690	70	55	44	93	306,497,746	1,379,957,536
50	866	21,690	14%	2,970	70	67	44	103.5	457,380,806	1,201,279,136
45	589	21,690	14%	2,970	70	66	44	103.5	301,689,969	817,000,985
40	326	21,690	14%	2,970	70	66	44	103.5	161,920,561	452,083,420
35	134	21,690	14%	2,970	70	65	44	105	64,534,217	190,451,210
30	6	21,690	14%	2,970	70	64	44	105	2,801,619	8,522,274
Total									**4,406,025,536**	**7,527,939,576**

Post-Retrofit Measurement\Calculations:

$SAT_{post,\ n}$ = average supply temperature at each OAT 'n', trended continuously via EMS

$OA_{post,\ n}$ = average damper position from 30 to 60 OAT bins, trended continuously via EMS. Damper position will be trended continuously, but it is assumed that the economizer control strategy only modulates the damper between 30 and 60 degree bins. Damper position will not be calculated for other bins

$Fuel_{post,\ n} = \Sigma\{((1.08\ ^{BTUH\ *\ Min}/_{ft3\ *\ °F} * TCFM_n * (HCO_{post,\ n} - SAT_{post,\ n}) * AOH_n)/100{,}000) * Eff_h\}$ $_{'n' \le 65}$

$kWh_{post,\ n} = \Sigma\{((1.08\ ^{BTUH\ *\ Min}/_{ft3\ *\ °F} * TCFM_n * (MAT_n - SAT_{post\ n}) * AOH_n)/12{,}000) * Eff_c\}$ $_{'n'}$

Where:

$Fuel_{post,\ n}$ = calculated post-retrofit ventilation heating requirement
$kWh_{post,\ n}$ = calculated post-retrofit ventilation cooling requirement
$HCO_{post,\ n}$ = average heating coil temperature at each OAT 'n', per Table 4.2.2.3
$TCFM_n$ = Total supply air flow at each OAT 'n' per Table 4.2.2.2 (CFM)
AOH_n = Annual hours of operation at each OAT 'n' per Table 4.2.2.2 (hrs)
MAT_n = Mixed air temperature at each OAT 'n' = ((OAT * $OACFM_{post}$)+(RAT * (TCFM – $OACFM_{post}$)))/TCFM
OAT = outdoor air bin temperature, per Table 4.2.2.3
$OAFCM_{post,n}$ = volume of outside air from 30 to 60 OAT 'n' = OA_{post} * TCFM, the other bins are stipulated per Table 4.2.2.3

Table 4.2.2.3 – Post-Retrofit Bin Calculation Parameters

Outside Air Temp (OAT)	Total Supply (TCFM)	OA Damper Position (OA_{post})	Volume of Outside Air ($OACFM_{post}$)	Return Air Temp (RAT_{post})	Mixed Air Temp (MAT_{post})	Supply Air Temp (SAT_{post})	Heating Coil Output Temp (HCO_{post})
105	21,690	14%	2,970	72	Calculated	Measured	54

100	21,690	14%	2,970	71	Calculated	Measured	56
95	21,690	14%	2,970	71	Calculated	Measured	56
90	21,690	14%	2,970	71	Calculated	Measured	57
85	21,690	14%	2,970	70	Calculated	Measured	57
80	21,690	14%	2,970	70	Calculated	Measured	58
75	21,690	14%	2,970	70	Calculated	Measured	58
70	21,690	14%	2,970	70	Calculated	Measured	60
65	21,690	14%	2,970	70	Calculated	Measured	77
60	21,690	Measured	Calculated	70	Calculated	Measured	87
55	21,690	Measured	Calculated	70	Calculated	Measured	96
50	21,690	Measured	Calculated	70	Calculated	Measured	97
45	21,690	Measured	Calculated	70	Calculated	Measured	96
40	21,690	Measured	Calculated	70	Calculated	Measured	96
35	21,690	Measured	Calculated	70	Calculated	Measured	98
30	21,690	Measured	Calculated	70	Calculated	Measured	99

Savings Calculations:

Energy Savings (kWh/yr):

$kWh_S = kWh_{pre} - kWh_{post}$

Where:

kWh_S = annual post-retrofit kilowatt-hour savings

Energy Savings (Therms/yr):

$Fuel_S = Fuel_{pre} - Fuel_{post}$

Where:

$Fuel_S$ = annual post-retrofit therms savings

Cost Savings ($/yr):

$\$_S = kWh_S * \$/kWh_{,x} + Fuel_S * \$/Therms_{,x}$

Where:

$/kWh = Weighted annual electric rate for electricity at each location as per Article 6 of this Exhibit E

$\$/Therms_x$ = unit price for natural gas (Therms) at location 'x' as per Article 6 of this Exhibit E

$\$_S$ = Total annual cost savings

4.2.3 **FIM#3 Carrier Control Optimization of ED/ICU AHU2**

Location(s): San Gorgonio Memorial Healthcare District

Overview:

Electric energy savings (kWh) and thermal (therms) energy savings are achieved by the implementation of supply air temperature reset and economizing. Supply

air temperature reset is an automated control strategy to reduce energy and fuel consumption by constantly adjusting the cooling and heating coil temperatures to match load requirements. Economizing is an automated control strategy to reduce energy and fuel consumption by modulating the outdoor air damper based on outdoor air temperature. Energy savings will be verified by continuously trending the post-retrofit supply air temperature and outdoor air damper position in conjunction with outdoor air temperature.

If the Contracted Baseline operation for this equipment, as established in Article 7 of this Exhibit E, is modified by the CLIENT and results in a loss of energy savings, the Guaranteed Savings for this FIM will be deemed achieved as if the Contracted Baseline was followed.

Pre-Retrofit Measurement\Calculations:

$Fuel_{pre}$ = Pre-retrofit ventilation heating requirement = (HC_{pre} /100,000) * Eff_h = 19,012 therms

kWh_{pre} = Pre-retrofit electricity usage = (CC_{pre} /12,000) * Eff_c = 73,239 kWh

Where:

HC_{pre} = Total heating coil heating requirements per Table 4.2.3.2 = 2,290,594,745 BTU

Eff_h = Efficiency of the existing boiler per Table 4.2.3.1 = 83%

CC_{pre} = Total coiling coil cooling requirements per Table 4.2.3.2 = 1,220,648,657 BTU

Eff_c = Efficiency of the existing chiller per Table 4.2.3.1 = 0.72 kW/ton

Table 4.2.3.1 – Bin Calculation Parameters

Unit	Equipment	Efficiency (EFF)
AHU1	Chiller	0.72 (kW/ton)
	Boiler	83%

Table 4.2.3.2 – Pre-Retrofit Bin Calculation Parameters

Outside Air Temp (OAT)	Annual Operating Hours (AOH)	Total Supply (TCFM)	OA Damper Position (OA)	Volume of Outside Air (OACFM)	Return Air Temp (RAT)	Mixed Air Temp (MAT)	Supply Air Temp (SAT_{pre})	Heating Coil Output Temp (HCO_{pre})	Cooling Coil (CCpre, BTU/year)	Heating Coil (HCpre, BTU/year)
105	8	19,350	33%	6,453	71	82	62	62	3,417,435	0
100	56	19,350	33%	6,453	71	80	62	62	21,977,696	0
95	184	19,350	33%	6,453	70	79	62	62	65,823,842	0
90	342	19,350	33%	6,453	70	77	61	61	110,472,051	0
85	432	19,350	33%	6,453	70	75	61	61	124,544,354	0
80	501	19,350	33%	6,453	70	74	61	61	127,041,845	0
75	695	19,350	33%	6,453	70	72	61	61	152,104,890	0

70	855	19,350	33%	6,453	70	70	61	61	157,435,749	0
65	1,131	19,350	33%	6,453	70	68	61	75	168,988,139	325,852,723
60	1,413	19,350	33%	6,453	70	67	61	75	162,062,935	408,694,381
55	1,222	19,350	33%	6,453	70	65	61	80	97,727,791	482,515,573
50	866	19,350	33%	6,453	70	63	61	85	39,189,153	433,412,002
45	589	19,350	33%	6,453	70	62	61	90	6,203,634	356,989,510
40	326	19,350	33%	6,453	70	60	61	90	-7,885,319	197,954,612
35	134	19,350	33%	6,453	70	58	61	90	-7,893,762	81,519,065
30	6	19,350	33%	6,453	70	56	61	90	-561,776	3,656,878
Total									**1,220,648,657**	**2,290,594,745**

Post-Retrofit Measurement\Calculations:

$SAT_{post,\ n}$ = average supply air temperature at each OAT 'n', trended continuously via EMS

$OA_{post,\ n}$ = average damper position between 45 and 65 OAT bins, trended continuously via EMS. Damper position will be trended continuously, but it is assumed that the economizer control strategy only modulates the damper between the 45 and 65 degree bins. Damper position will not be calculated for other bins.

$$Fuel_{post,\ n} = \Sigma\{((1.08\ ^{BTUH\ *\ Min}/_{ft3\ *\ °F} * TCFM_n * (HCO_{post,\ n} - SAT_{post,\ n}) * AOH_n)/100{,}000) * Eff_h\}_{'n' \le 65}$$

$$kWh_{post,\ n} = \Sigma\{((1.08\ ^{BTUH\ *\ Min}/_{ft3\ *\ °F} * TCFM_n * (MAT_{post,\ n} - SAT_{post,\ n}) * AOH_n)/12{,}000) * Eff_c\}_{'n' \ge 65}$$

Where:

$Fuel_{post,\ n}$ = calculated post-retrofit ventilation heating requirement
$kWh_{post,\ n}$ = calculated post-retrofit ventilation cooling requirement
HCO_{post} = average heating coil temperature at each OAT 'n', per Table 4.2.3.3
$TCFM_n$ = Total supply air flow at each OAT 'n' per Table 4.2.3.1 (CFM)
AOH_n = Annual hours of operation at each OAT 'n' per Table 4.2.3.1 (hrs)
MAT_n = Mixed air temperature at each OAT 'n' = ((OAT * $OACFM_{post}$)+(RAT * (TCFM – $OACFM_{post}$)))/TCFM
OAT = outdoor air bin temperature, per Table 4.2.3.3
$OAFCM_{post,n}$ = volume of outside air at the 45 to 65 degree bins OAT 'n' = OA_{post} * TCFM, the other bins are stipulated per Table 4.2.3.3

Table 4.2.3.3 – Post-Retrofit Bin Calculation Parameters

Outside Air Temp (OAT)	Total Supply (TCFM)	OA Damper Position (OA_{post})	Volume of Outside Air ($OACFM_{post}$)	Return Air Temp (RAT_{post})	Mixed Air Temp (MAT_{post})	Supply Air Temp (SAT_{post})	Heating Coil Output Temp (HCO_{post})
105	19,350	33%	6,453	71	Calculated	Measured	62
100	19,350	33%	6,453	71	Calculated	Measured	62

95	19,350	33%	6,453	70	Calculated	Measured	62
90	19,350	33%	6,453	70	Calculated	Measured	61
85	19,350	33%	6,453	70	Calculated	Measured	61
80	19,350	33%	6,453	70	Calculated	Measured	61
75	19,350	33%	6,453	70	Calculated	Measured	61
70	19,350	33%	6,453	70	Calculated	Measured	61
65	19,350	Measured	Calculated	70	Calculated	Measured	72
60	19,350	Measured	Calculated	70	Calculated	Measured	69
55	19,350	Measured	Calculated	70	Calculated	Measured	76
50	19,350	Measured	Calculated	70	Calculated	Measured	83
45	19,350	Measured	Calculated	70	Calculated	Measured	89.5
40	19,350	33%	6,453	70	Calculated	Measured	90
35	19,350	33%	6,453	70	Calculated	Measured	90.5
30	19,350	33%	6,453	70	Calculated	Measured	90

Savings Calculations:

Energy Savings (kWh/yr):

$kWh_S = kWh_{pre} - kWh_{post}$

Where:

kWh_S = annual post-retrofit kilowatt-hour savings

Energy Savings (Therms/yr):

$Fuel_S = Fuel_{pre} - Fuel_{post}$

Where:

$Fuel_S$ = annual post-retrofit therms savings

Cost Savings ($/yr):

$\$_S = kWh_S * \$/kWh_{,x} + Fuel_S * \$/Therms_{,x}$

Where:

$/kWh = Weighted annual electric rate at each location as per Article 6 of this Exhibit E

$\$/Therms_x$ = unit price for natural gas (Therms) at location 'x' as per Article 6 of this Exhibit E

$\$_S$ = Total annual cost savings

4.2.4 **FIM#3 Carrier Control Optimization of Material Management AHU1**

Location(s): San Gorgonio Memorial Healthcare District

Overview:

Electric energy savings (kWh) and thermal (therms) energy savings are achieved by the implementation of supply air temperature reset and economizing. Supply air temperature reset is an automated control strategy to reduce energy and fuel

consumption by constantly adjusting the cooling and heating coil temperatures to match load requirements. Economizing is an automated control strategy to reduce energy and fuel consumption by modulating the outdoor air damper based on outdoor air temperature. Energy savings will be verified by continuously trending the post-retrofit supply air temperature and outdoor air damper position in conjunction with outdoor air temperature.

If the Contracted Baseline operation for this equipment, as established in Article 7 of this Exhibit E, is modified by the CLIENT and results in a loss of energy savings, the Guaranteed Savings for this FIM will be deemed achieved as if the Contracted Baseline was followed.

Pre-Retrofit Measurement\Calculations:

$Fuel_{pre}$ = Pre-retrofit ventilation heating requirement = (HC_{pre} /100,000) * Eff_h = 13,619 therms

kWh_{pre} = Pre-retrofit electricity usage = (CC_{pre} /12,000) * Eff_c = 66,697 kWh

Where:

HC_{pre} = Total heating coil heating requirements per Table 4.2.4.2 = 1,640,850,897 BTU
Eff_h = Efficiency of the existing boiler per Table 4.2.4.1 = 83%
CC_{pre} = Total coiling coil cooling requirements per Table 4.2.4.2 = 1,111,621,942 BTU
Eff_c = Efficiency of the existing chiller per Table 4.2.4.1 = 0.72 kW/ton

Table 4.2.4.1 – Bin Calculation Parameters

Unit	Equipment	Efficiency (EFF)
AHU1	Chiller	0.72 (kW/ton)
	Boiler	83%

Table 4.2.4.2 – Pre-Retrofit Bin Calculation Parameters

Outside Air Temp (OAT)	Annual Operating Hours (AOH)	Total Supply (TCFM)	OA Damper Position (OA_{pre})	Volume of Outside Air ($OACFM_{pre}$)	Return Air Temp (RAT_{pre})	Mixed Air Temp (MAT_{pre})	Supply Air Temp (SAT_{pre})	Heating Coil Output Temp (HCO_{pre})	Cooling Coil (CCpre, BTU/year)	Heating Coil (HCpre, BTU/year)
105	8	5,400	25%	1,350	75	83	47	54	1,645,744	314,372
100	56	5,400	25%	1,350	74	81	47	55	10,964,007	2,428,525
95	184	5,400	25%	1,350	73	79	47	55	34,216,012	8,183,514
90	342	5,400	25%	1,350	73	77	47	56	60,270,738	18,566,419
85	432	5,400	25%	1,350	72	75	47	57	71,974,124	25,152,330
80	501	5,400	25%	1,350	71	73	46	58	78,700,190	34,040,572
75	695	5,400	25%	1,350	70	72	46	59	102,629,638	51,921,072
70	855	5,400	25%	1,350	70	70	46	59	118,292,479	64,630,270

65	1131	5,400	25%	1,350	69	68	46	61	146,059,498	99,634,762
60	1413	5,400	25%	1,350	68	66	46	85	169,606,539	323,374,785
55	1222	5,400	25%	1,350	68	65	46	95	135,674,826	351,846,109
50	866	5,400	25%	1,350	67	63	46	102	88,439,112	285,308,069
45	589	5,400	25%	1,350	67	61	45	103	54,967,486	197,872,611
40	326	5,400	25%	1,350	66	60	45	110	27,588,084	123,027,649
35	134	5,400	25%	1,350	66	58	45	112	10,188,226	52,208,973
30	6	5,400	25%	1,350	66	57	45	112	405,240	2,340,864
Total									**1,111,621,942**	**1,640,850,897**

Post-Retrofit Measurement\Calculations:

$SAT_{post,\ n}$ = average supply air temperature at each OAT 'n', trended continuously via EMS

$OA_{post,\ n}$ = average damper position from the 35 to 65 OAT bins, trended continuously via EMS. Damper position will be trended continuously, but it is assumed that the economizer control strategy only modulates the damper from the 35 to 65 degree bins. Damper position will not be calculated for other bins.

$$Fuel_{post,\ n} = \Sigma\{((1.08\ ^{BTUH\ *\ Min}/_{ft3\ *\ °F} * TCFM_n * (HCO_{post,\ n} - SAT_{post,\ n}) * AOH_n)/100{,}000) * Eff_h\}_{\text{'n'} \le 60}$$

$$kWh_{post,\ n} = \Sigma\{((1.08\ ^{BTUH\ *\ Min}/_{ft3\ *\ °F} * TCFM_n * (MAT_{post,\ n} - SAT_{post,\ n}) * AOH_n)/12{,}000) * Eff_c\}_{\text{'n'}}$$

Where:

$Fuel_{post,\ n}$ = calculated post-retrofit ventilation heating requirement
$kWh_{post,\ n}$ = calculated post-retrofit ventilation cooling requirement
HCO_{post} = average heating coil temperature at each OAT 'n', per Table 4.2.4.3
$TCFM_n$ = Total supply air flow at each OAT 'n' per Table 4.2.4.1 (CFM)
AOH_n = Annual hours of operation at each OAT 'n' per Table 4.2.4.1 (hrs)
MAT_n = Mixed air temperature at each OAT 'n' = ((OAT * $OACFM_{post}$)+(RAT * (TCFM – $OACFM_{post}$)))/TCFM
OAT = outdoor air bin temperature, per Table 4.2.4.3
$OAFCM_{post,n}$ = volume of outside air from the 35 and 65 degree bins OAT 'n' = OA_{post} * TCFM, the other bins are stipulated per Table 4.2.4.3

Table 4.2.4.3 – Post-Retrofit Bin Calculation Parameters

Outside Air Temp (OAT)	Total Supply (TCFM)	OA Damper Position (OA_{post})	Volume of Outside Air ($OACFM_{post}$)	Return Air Temp (RAT_{post})	Mixed Air Temp (MAT_{post})	Supply Air Temp (SAT_{post})	Heating Coil Output Temp (HCO_{post})
105	5,400	25%	1,350	76	Calculated	Measured	53
100	5,400	25%	1,350	76	Calculated	Measured	54
95	5,400	25%	1,350	76	Calculated	Measured	54

90	5,400	25%	1,350	75	Calculated	Measured	54
85	5,400	25%	1,350	75	Calculated	Measured	56
80	5,400	25%	1,350	74	Calculated	Measured	57
75	5,400	25%	1,350	74	Calculated	Measured	58
70	5,400	25%	1,350	73	Calculated	Measured	58
65	5,400	Measured	Calculated	73	Calculated	Measured	55
60	5,400	Measured	Calculated	72	Calculated	Measured	79
55	5,400	Measured	Calculated	71	Calculated	Measured	89
50	5,400	Measured	Calculated	71	Calculated	Measured	98
45	5,400	Measured	Calculated	70	Calculated	Measured	99
40	5,400	Measured	Calculated	70	Calculated	Measured	108
35	5,400	Measured	Calculated	70	Calculated	Measured	112
30	5,400	25%	1,350	68	Calculated	Measured	114

Savings Calculations:

Energy Savings (kWh/yr):

$kWh_S = kWh_{pre} - kWh_{post}$

Where:

kWh_S = annual post-retrofit kilowatt-hour savings

Energy Savings (Therms/yr):

$Fuel_S = Fuel_{pre} - Fuel_{post}$

Where:

$Fuel_S$ = annual post-retrofit therms savings

Cost Savings ($/yr):

$\$_S = kWh_S * \$/kWh_{,x} + Fuel_S * \$/Therms_{,x}$

Where:

$/kWh = Weighted annual electric rate at each location as per Article 6 of this Exhibit E

$\$/Therms_x$ = unit price for natural gas (Therms) at location 'x' as per Article 6 of this Exhibit E

$\$_S$ = Total annual cost savings

4.3 Option B - Retrofit Isolation: All Parameter Measurement

4.3.1 FIM #2 Demand Flow

Location(s): San Gorgonio Memorial Healthcare District

Overview:

Electric savings resulting from chiller plant efficiency improvements will be realized by varying the flow of both the evaporator and condenser sections of the chiller system in an effort to operate the chillers at near design temperature conditions. Additionally, chilled and condenser water set points will be controlled to efficiently respond to changes in weather conditions and building loads.

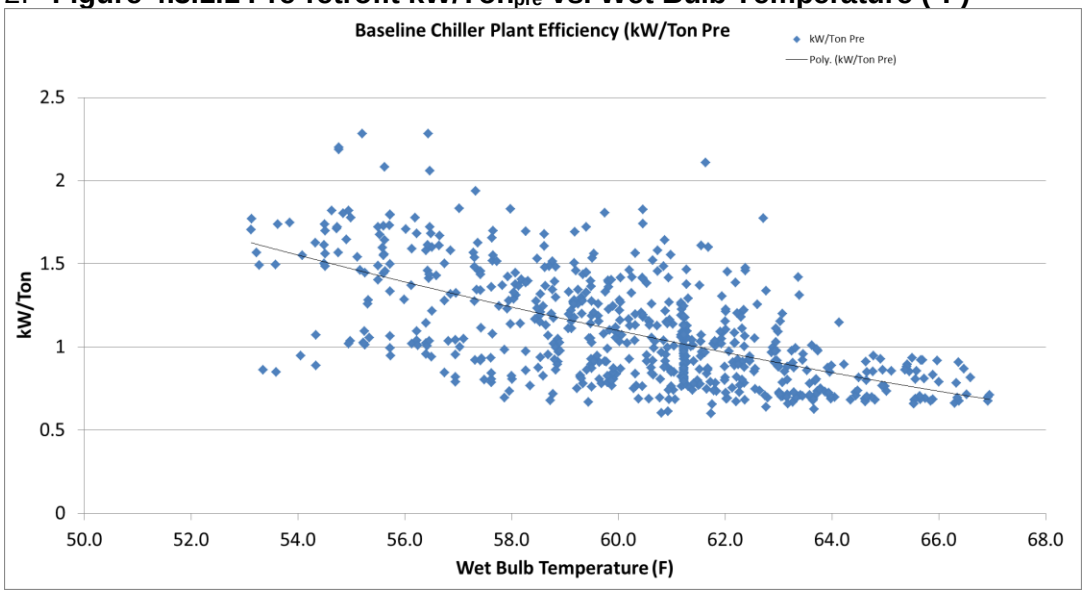
The post-retrofit chiller plant efficiency (kW/Ton_{post}) will be calculated from continuously trended chiller plant electric demand (kW_{post}) and plant tonnage ($Tons_{post}$). This post-retrofit efficiency will be compared to the pre-retrofit chiller plant efficiency (kW/Ton_{pre}), which will be normalized for wet bulb temperature (WBT_{post}), to determine energy savings.

Changes in equipment performance from their design performance will affect the realized savings. Extreme system degradation due to lack of maintenance, equipment lifespan, or other potential factors may result in higher than expected energy consumption. This may result in the need for a baseline modification to reflect the changes in the plant performance.

Changes in Facility use due to new construction, extended/modified operating schedules, occupancy, or changes in functionality will change energy consumption and may constitute a Material Change, and thus require a baseline adjustment.

Pre-retrofit measurements/calculations:

1. Pre-retrofit chiller plant efficiency (kW/ton_{pre}) will be calculated for each et bulb temperature (WBT) bin based on the relationship shown in Figure 4.3.1.1 to determine the energy the pre-retrofit chiller system would have consumed under post-retrofit cooling loads and weather conditions.
2. **Figure 4.3.1.1 Pre-retrofit kW/Ton_{pre} vs. Wet Bulb Temperature (°F)**



3. $TonHrs_{pre}$ (pre-retrofit Ton-Hours) vs. dry bulb temperature bin, as per Table 4.3.1.1

Table 4.3.1.2 – Pre-Retrofit Chilled Water Load by Wetbulb Temperature Bin

Dry Bulb Temp Range	Average Wet Bulb Temp	Operating Hours (Ohrs)	Average Tons	Pre-Retrofit Ton Houts (Ton $Hours_{pre}$)
110-115	75.3	33	306	10,109
105-110	73.2	297	289	85,899
100-105	71.0	449	288	129,186
95-100	69.1	528	274	144,757
90-95	67.6	453	227	102,944
85-90	65.1	801	188	150,793
80-85	62.1	903	180	162,236
75-80	59.2	817	151	123,119
70-75	56.5	778	136	105,527
65-70	53.4	908	122	110,925
60-65	50.2	1094	115	125,953
55-60	47.2	798	77	61,753
50-55	43.8	585	56	32,639
45-50	39.4	235	34	8,038
40-45	35.9	78	13	984

Post-retrofit measurements/calculations:

1. $Tons_{post}$ = Post-retrofit cooling loads at each DBT bin, calculated continuously through EMS trending of chilled water flow rate (GPM), Supply Temperature (ST), and Return Temperature (RT) = GPM * (ST-RT) * 8.33 lb/gal * 60 $^{min}/_{hr}$ / 12,000 $^{BTU}/_{Ton}$)
2. kW_{post} = Average power draw (kW) post retrofit of the chilled water system (chillers, chilled water pumps, cooling tower fans and condenser water pumps) at each DBT bin, continuously monitored through the EMS trending
3. $TonHrs_{post}$ = Post-retrofit ton hours at each WBT bin = $Tons_{post}$ * OHrs
4. OHrs = Operating hours of chilled water system at each DBT bin, continuously monitored through EMS trending
5. WBT_{post} = Average wet bulb temperature post-retrofit, monitored continuously through EMS trending
6. kW/Ton_{post} = kW_{post} divided by $Tons_{post}$, calculated for each DBT bin

Savings Calculations:

Electric Savings (kWh/yr):

$kWh_S = [(kW/Ton_{pre} – kW/Ton_{post}) * TonHrs]$, summed across all DBT bins

Where:

TonHrs = The annual $TonHrs_{post}$ for each dry bulb temperature bin calculated through the DDC trending will be compared to the annual

$TonHrs_{pre}$ (per Table 4.3.1.2), and the greater of these two values will be used to calculate energy savings for each Annual Period

Cost Savings ($/yr):

$\$_S = kWh_S * \$/kWh_{,x}$

Where:

kWh_S = Total annual realized electric energy savings (kWh/yr)

$\$_S$ = Annual realized cost savings

$\$/kWh_{,x}$ = Weighted annual electric rate as defined in Article 6 of this Exhibit E

4.4 **Option C - Whole Facility** – **N/A**

4.5 **Option D – Calibrated Simulation – N/A**

4.6 **Option E - Stipulated-Energy/Utility Savings**

Article 5: Baseline Data

5.1 The year(s) selected as the Baseline Period starts on 1/1/2017 and ends on 12/31/2017. Table 5.1 outlines the utility consumption that occurred during this Baseline Period. This Baseline Period's Facility utility consumption will be used as the reference for comparing the Facility's utility consumption during the Performance Guarantee Period in order to determine the Annual Realized Savings.

Table 5.1 Baseline Utility consumption

Account 223407-17344 Rate TOU	Building Meter 16049E	Month	KWH	KW_MAX
		Jan	240,300	414
		Feb	242,400	408
		Mar	223,200	429
		Apr	250,800	426
		May	240,600	453
		June	257,700	468
		July	265,500	483
		Aug	278,700	486
		Sept	270,300	483
		Oct	248,700	456
		Nov	253,200	444
		Dec	246,000	438
Account 23407-55096 Rate TOU	CP Meter 16068E	Month	KWH	KW_MAX
		Jan	147,000	228
		Feb	147,900	252
		Mar	138,900	258
		Apr	161,100	324
		May	169,200	381
		June	212,700	435
		July	258,600	465
		Aug	274,200	471
		Sept	271,500	516
		Oct	206,400	327
		Nov	204,000	321
		Dec	162,600	303
Account 08048382819 Rate GN10	Boiler Meter 10842523	Month	THERMS	
		Jan	37,344	
		Feb	20,732	
		Mar	17,554	
		Apr	18,782	
		May	15,957	
		June	14,661	
		July	15,512	
		Aug	15,274	
		Sept	16,579	
		Oct	19,838	
		Nov	19,128	
		Dec	21,129	

5.2 The operating practices during the Baseline Period determine the utility consumption shown in Table 5.1. This data indicates the operating characteristics that were in effect during the Baseline Period. The Guaranteed Savings provided under this Agreement are based on the efficiencies gained by implementing the Work and implementing the Contracted Baseline in Article 7 of this Exhibit E.

Table 5.2.1

Day of Week	Occupied Run Hours	Unoccupied Run Hours
Monday	24	0
Tuesday	24	0
Wednesday	24	0
Thursday	24	0
Friday	24	0
Saturday	24	0
Sunday	24	0
Holiday	24	0

Table 5.2.2

Day of Week	Occupied Heating Range (deg F)	Occupied Cooling Range (deg F)
Monday	68-72	70-76
Tuesday	68-72	70-76
Wednesday	68-72	70-76
Thursday	68-72	70-76
Friday	68-72	70-76
Saturday	68-72	70-76
Sunday	68-72	70-76
Holiday	68-72	70-76

Table 5.2.3

Baseline Central Chiller Plant Operation		
Chilled water supply temperature set point	42 deg F	Fixed
Condenser Water Supply Temperature	73 deg F	Fixed
One primary Chilled Water Pump per one Chiller	Manually selected by operator	
One Cooling Tower Cell per one Chiller	Manually selected by operator	
One Condenser Water Pump per one Chiller	Manually selected by operator	
Secondary chilled water loop pumps controlled by VFD to a set supply pressure of 60 psi, at the main chilled water supply pipe header in the chiller plant at all time, and the differential pressure gages are disconnected.	60 psi	Fixed

Table 5.2.4

Baseline Selected Air Handling Units Operation	
EDI/ICU AHU1	Content of Table 4.2.2.1, under Article 4 of Exhibit E
EDI/ICU AHU1	Content of Table 4.2.2.2, under Article 4 of Exhibit E
EDI/ICU AHU2	Content of Table 4.2.3.1, under Article 4 of Exhibit E
EDI/ICU AHU2	Content of Table 4.2.3.2, under Article 4 of Exhibit E
Material Management AHU1	Content of Table 4.2.4.1, under Article 4 of Exhibit E
Material Management AHU1	Content of Table 4.2.4.2, under Article 4 of Exhibit E

Table 5.2.5 Equipment Summer/Winter Operating Parameters

Day of Week	Occupied	Occupied	Unoccupied	Unoccupied
Monday	24	24	0	0
Tuesday	24	24	0	0
Wednesday	24	24	0	0
Thursday	24	24	0	0
Friday	24	24	0	0
Saturday	24	24	0	0
Sunday	24	24	0	0
Holiday	24	24	0	0

5.3 Applicable codes - Federal, State, County or Municipal codes or regulations are applicable to the use and operation of the Facility. SIEMENS will maintain the current level of Facility compliance relative to applicable codes unless specifically outlined to the contrary below. Unless specifically set forth in the Scope of Work, Exhibit A, nothing herein should be construed as to require SIEMENS to provide additional work or services in the event that the current applicable code or regulation is modified.

Article 6: Utility Rate Structures and Escalation Rates

6.1 Utility costs used for Savings calculations will be based on the utility rates and Escalation Rates, as provided in the table(s) below. Each Escalation Rate will be applied annually to the utility rate beginning in the first Annual Period.

Table 6.1.1 Electricity

Tariff Number or Designation:	TOU
Utility Name:	City of Banning Electrical Department
Baseline Year Blended Rate:	$0.135 per kWh
Baseline Year Off-peak Rate:	$0.070 per kWh
Weighted Annual Rate (less demand):	$0.096 per kWh
Escalation Rate:	3.0 % per Annual Period

2020 rate is the same as during the base year

Note: Baseline Year Blended Rate is used for interior lighting calculations
Baseline Year Off-peak Rate is used for exterior lighting calculations
Weighted Annual Rate (less demand) is used for all other calculations

Account 223407-17344 Rate TOU	Building Meter 16049E	MONTH	PERIOD	PERIOD	DAYS	KWH	KW_MAX	BILL AMOUNT		
		1	1/1/2017	2/1/2017	31	240,300	414	$33,823		
		2	2/1/2017	3/1/2017	31	242,400	408	$34,010		
		3	3/1/2017	3/31/2017	28	223,200	429	$32,071		
		4	4/1/2017	4/30/2017	31	250,800	426	$30,061		
		5	5/1/2017	6/1/2017	30	240,600	453	$29,784		
		6	6/1/2017	7/1/2017	31	257,700	468	$37,249		
		7	7/1/2017	8/1/2017	30	265,500	483	$41,011		
		8	8/1/2017	9/1/2017	31	278,700	486	$42,961		
		9	9/1/2017	10/1/2017	31	270,300	483	$41,255		
		10	10/1/2017	11/1/2017	30	248,700	456	$29,226		
		11	11/1/2017	12/1/2017	31	253,200	444	$30,698		
		12	12/1/2017	12/29/2017	30	246,000	438	$29,577		Blended rate
										$/kWh
					365	3,017,400		$411,726		$0.1365

Account 23407-55096 Rate TOU	CP Meter 16068E	MONTH	PERIOD	PERIOD	DAYS	KWH	KW_MAX	BILL AMOUNT		
		1	1/1/2017	2/1/2017	31	147,000	228	$19,989		
		2	2/1/2017	3/1/2017	31	147,900	252	$20,398		
		3	3/1/2017	3/31/2017	28	138,900	258	$19,471		
		4	4/1/2017	4/30/2017	31	161,100	324	$19,436		
		5	5/1/2017	6/1/2017	30	169,200	381	$21,270		
		6	6/1/2017	7/1/2017	31	212,700	435	$31,247		
		7	7/1/2017	8/1/2017	30	258,600	465	$38,365		
		8	8/1/2017	9/1/2017	31	274,200	471	$41,002		
		9	9/1/2017	10/1/2017	31	271,500	516	$40,357		
		10	10/1/2017	11/1/2017	30	206,400	327	$22,930		
		11	11/1/2017	12/1/2017	31	204,000	321	$23,595		
		12	12/1/2017	12/29/2017	30	162,600	303	$19,220		Blended rate
										$/kWh
					365	2,354,100		$317,280		$0.1348

Baseline Year 2017	**Summer**	**Winter**
	$/kWh	**$/kWh**
City of Banning Energy Charge OFF Peak	$ 0.0698	$ 0.0748
Additional Charges per kWh (Public Benefit Program)	$ 0.0285	$ 0.0285
TOTAL (Less Demand Charges)	$ 0.0983	$ 0.1033
2017 weighted average (less demand) used for calculation	**$0.096 /kWh**	

Table 6.1.2 Natural gas

Tariff Number or Designation: GN10

Utility Name: Southern California Gas

Rate Structure: $0.52 $ per Therm

Escalation Rate: 3.0 % per Annual Period

Account 08048382819 Rate GN10	Boiler Meter 10842523	MONTH	PERIOD	PERIOD	DAYS	THERMS	BILL AMOUNT	Recalculated Bill at 2020 Rate	
		1	1/9/2017	2/7/2017	29	37,344	$22,772	$ 18,249	
		2	2/7/2017	3/9/2017	30	20,732	$12,307	$ 10,668	
		3	3/9/2017	4/7/2017	29	17,554	$10,237	$ 9,217	
		4	4/7/2017	5/8/2017	31	18,782	$10,865	$ 9,779	
		5	5/8/2017	6/7/2017	30	15,957	$9,639	$ 8,489	
		6	6/7/2017	7/7/2017	30	14,661	$8,999	$ 7,897	
		7	7/7/2017	8/7/2017	31	15,512	$9,022	$ 8,286	
		8	8/7/2017	9/6/2017	30	15,274	$8,833	$ 8,177	
		9	9/6/2017	10/5/2017	29	16,579	$9,277	$ 8,772	
		10	10/5/2017	11/7/2017	33	19,838	$10,652	$ 10,261	
		11	11/7/2017	12/7/2017	30	19,128	$10,423	$ 9,936	Blended rate
		12	12/7/2017	1/9/2018	33	21,129	$11,807	$ 10,851	at 2020 rates
									$/therm
					365	232,490	$134,833	$120,582	$0.52

Article 7: Contracted Baseline Data

7.1 The following tables detail the Facility operating parameters that are required to be implemented on the Guarantee Date or on such time as agreed upon by the Parties. This specific configuration of Facility operating parameters is the Contracted Baseline and failure of the CLIENT to maintain the Contracted Baseline may result in a Material Change which may require a modification of the Performance Guarantee pursuant to Article 7 of the Agreement.

Table 7.2.1

Day of Week	Occupied Run Hours	Unoccupied Run Hours
Monday	24	0
Tuesday	24	0
Wednesday	24	0
Thursday	24	0
Friday	24	0
Saturday	24	0
Sunday	24	0
Holiday	24	0

Table 7.2.2

Day of Week	Occupied Heating Range (deg F)	Occupied Cooling Range (deg F)
Monday	68-72	70-76
Tuesday	68-72	70-76
Wednesday	68-72	70-76
Thursday	68-72	70-76
Friday	68-72	70-76
Saturday	68-72	70-76
Sunday	68-72	70-76
Holiday	68-72	70-76

Table 7.2.3

Contracted Baseline Central Chiller Plant Operation		
Chilled water supply temperature set point	Calculated by Demand Flow system	Variable
Condenser water supply temperature setpoint	Calculated by Demand Flow system	Variable
Primary chilled water pumps	Controlled by Demand Flow system	
Cooling towers	Controlled by Demand Flow system	
Condenser water pumps	Controlled by Demand Flow system	
Secondary chilled water pumps	Controlled by Demand Flow system	
Secondary chilled water differential pressure setpoint	Calculated by Demand Flow system	Variable

Table 7.2.4

Contracted Baseline Selected Air Handling Unit Operation		
EDI/ICU AHU1 Supply air temperature setpoint	Calculated by Building Automation System	Variable 54-58 degrees
EDI/ICU AHU1 Outdoor Air	Calculated by Building Automation System	Variable 14-100%
EDI/ICU AHU2 Supply air temperature setpoint	Calculated by Building Automation System	Variable 56-62 degrees
EDI/ICU AHU2 Outdoor air	Calculated by Building Automation System	Variable 33-100%
Material Management AHU1 Supply air temperature setpoint	Calculated by Building Automation System	Variable 53-58 degrees
Material Management AHU1 Outdoor air	Calculated by Building Automation System	Variable 25-100%

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Existing							Retrofit			
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
1.0	SAN GORGONIO HOS	-			-		-			-		-
2.0	600 N HIGHLAND	-			-		-			-		-
3.0	SPRINGS AVE	-			-		-			-		-
4.0	BANNING, CA 92220	-			-		-			-		-
5.0	FRONT LOBBY	-			-		-			-		-
6.0	FRONT LOBBY	20	PAR8D8	8" CAN PAR	1	I-PAR 38	75		C8R24940UNVW	1	*LED	24
7.0	GIFT SHOP	2	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
8.0	GIFT SHOP	8	PAR2	SPOT FLOOD	1	I-PAR 20	40			1	PAR30L-11-940-35D-DIM	13
9.0	GIFT SHOP STORAGE	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
10.0	GIFT SHOP BACK RM	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
11.0	GIFT SHP BCK RM RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
12.0	FOUNDATION OFFICE	4	MTF8	2X2X2 SUR 6"U	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-830-DE-BYP	18
13.0	MEDITATION ROOM	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
14.0	ADMIT	-			-		-			-		-
15.0	REGISTRATION	3	TA8	2X2X2 REC	2	F17T8	33			2	T8-9-24G-840-DE-BYP	18
16.0	REGISTRATION	3	H2JD8	8" CAN HPL	2	CFL 26 HPL	66		C8R24940UNVW	1	*LED	24
17.0	BUSINESS OFFICES	-			-		-			-		-
18.0	PATIENT FINANCIAL	19	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
19.0	PATIENT FINANCIAL	1	TF8D	2X2X2 REC	2	FB32/T8	59		REM 4' RPT-P-LEDBARKIT-J-20W-2FT-2L-830	1	*LED	20
20.0	242 CONSTRUCTION	4	A38D	2X4X3 REC	3	F32T8	90		REM 4' RPT-P-LEDBARKIT-J-40W-4FT-3L-830	1	*LED	40
21.0	PAT FINANCIAL 235	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
22.0	CHIEF FINAC OFFICER	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
23.0	RECRUITER	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
24.0	SERVER ROOM	2	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
25.0	HUMAN RESOURCES	-			-		-			-		-
26.0	HR SUPERVISOR	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
27.0	HR OFFICE	4	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
28.0	ADMINISTRATION	-			-		-			-		-
29.0	CONFERENCE RM B	8	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
30.0	CONF RM B STRG	8	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
31.0	ADMIN CONF.	3	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
32.0	ADMIN CONF.	8	I1PD7	6" CAN ISC	1	I-65 SC	65		C6R12940UNVW	1	*LED	12
33.0	ADMIN OFFICE 1	4	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
34.0	ADMIN OFFICE 2	4	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
35.0	ADMIN OFFICE 2	12	I1PD6	6" CAN ISC	1	I-65 SC	65		C6R12940UNVW	1	*LED	12
36.0	ADMIN OFFICE 2 RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
37.0	ADMIN RECEPTION	4	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
38.0	ADMIN OFFICE 3 RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
39.0	ADMIN OFFICE 3	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
40.0	SURGERY	-			-		-			-		-
41.0	DIALYSIS STORAGE	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
42.0	RESTROOM	1	K1JD6	6" CAN SC	1	CFL 26 SC	33		C6R12940UNVW	1	*LED	12
43.0	SLEEP ROOM	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
44.0	SURGICAL STORAGE	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
45.0	SURGICAL STORAGE	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
46.0	STORAGE CLOSET	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
47.0	CODE CART	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
48.0	CODE CART SM RM	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
49.0	MARKETING	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
50.0	MARKETING SM RM	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
51.0	INFECTION CTRL	4	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
52.0	INFECTION CTRL SM	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
53.0	DOCTOR SLEEP RM 2	4	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
54.0	DOCTOR SLEEP RM 1	4	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
55.0	STORAGE	2	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
56.0	CARD. REHAB EXCR	8	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
57.0	CARDIAC REHAB	4	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
58.0	CARD REHAB OFFICE	4	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
59.0	PRE OP HOLDING	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
60.0	PRE OP HOLDING RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
61.0	PRE OP HOLDING RR	2	K2JSM	SUR INT CANO	2	CFL 26 SC	66		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
62.0	PRE OP HOLDING RR	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
63.0	UTILITY ROOM	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
64.0	SURG HALL 2 WC	5	WJ8	1X4X4 WRA	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
65.0	OR ROOM 2	4	RH8OR	OR ROOM 1X4	2	F32T8	59		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Existing							Retrofit			
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
65.1	OR ROOM 2	4	LEDD6		-		-			-		-
66.0	OR ROOM 3	4	RH8OR	OR ROOM 1X4	2	F32T8	59		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
66.1	OR ROOM 3	4	LEDD6		-		-			-		-
67.0	OR ROOM 1	11	RH8OR	OR ROOM 1X4	2	F32T8	59		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
67.1	OR ROOM 1	4	LEDD6		-		-			-		-
68.0	OR 1 HALL	2	WH2	1X4X2 WRA	2	F40SS	72			2	T8-10.5-48G-840-DE-BYP	24
69.0	DISINFECT AREA	1	M48	2X4X4 SUR	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
69.1	DISINFECT AREA	1	I1P	6" 1 INC 65W SU	1	I-65 SC	65			1	A19-9-E26-940-DIM	9
70.0	EVS CLOSET	1	K1JJM	JELLY JAR	1	CFL 26 SC	33			1	A19-9-E26-940-DIM	9
71.0	PRE OP HOLDING	4	RH8	1X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
71.1	PRE OP HOLDING	4	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
72.0	HALL NEAR PRE OP	3	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
73.0	SPECIAL PROCED.	4	RH8	1X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
73.1	SPECIAL PROCED.	4	LEDD6		-		-			-		-
74.0	HALL NEAR OR 3 & 2	5	WJ8	1X4X4 WRA	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
74.1	HALL NEAR OR 3 & 2	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
74.2	HALL NEAR OR 3 & 2	2	I1PM6	SPOT FLOOD	1	I-PAR 20	40			1	PAR30L-11-940-35D-DIM	13
75.0	MED SUPPLY	13	A42D	2X4X4 REC	4	F40SS	144		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
76.0	STORAGE AREA	2	A42	2X4X4 REC	4	F40SS	144			4	T8-10.5-48G-840-DE-BYP	48
77.0	BOOK ROOM	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
78.0	DIRECTOR OF SURG	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
79.0	LOCKER / RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
80.0	CLEANING ROOM	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
81.0	DECONTAMI. ROOM	4	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
82.0	DECONTAM. ROOM	3	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
83.0	OFFICE 1	1	WH8D	1X4X2 WRA	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
84.0	EVS ROOM	1	K2JM	SUR ROUND SC	2	CFL 26 SC	66			2	A19-9-E26-940-DIM	18
85.0	OFFICE 2	1	RH8D	1X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
86.0	NURSE LOUNGE	4	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
87.0	WOMEN LOCKER	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
87.1	WOMEN LOCKER	-	K1J	12" RD CFL	2	CFL 26 PL	66		FULHAM TKM 013 40 RT	1	*LED	13
88.0	DOC LOUNGE	3	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
89.0	DOC RR	2	RH8	1X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
89.1	DOC RR	-	K1J	12" RD CFL	2	CFL 26 PL	66		FULHAM TKM 013 40 RT	1	*LED	13
90.0	DOC HALL	3	RF8	1X3X3 REC	3	F25T8	66			3	T8-12-36G-840-DE-BYP	36
91.0	RECOVERY AREA	10	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
92.0	RECOVERY RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
93.0	MED CART	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
94.0	RECOVERY STRG	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
95.0	RECOVERY WRK RM	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
96.0	OFFICE AREA	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
97.0	WOMENS CENTER	-			-		-			-		-
98.0	INFOSERVICES	6	TF8	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-840-DE-BYP	18
99.0	INFO SERV. OFFICE	1	TF8D	2X2X2 REC	2	FB32/T8	59		REM 4' RPT-P-LEDBARKIT-J-20W-2FT-2L-830	1	*LED	20
100.0	INFO SERV. OFFICE	1	H2JD	SQ CAN 2L HPL	2	CFL 26 HPL	66		FULHAM TKM 013 40 RT	1	*LED	13
101.0	INFO SERVICES	8	H2JD	SQ CAN 2L HPL	2	CFL 26 HPL	66		FULHAM TKM 013 40 RT	1	*LED	13
102.0	MENS RR	2	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
103.0	MENS RR	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
104.0	WOMENS RR	2	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
105.0	WOMENS RR	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
106.0	LOBBY	15	H2JD	SQ CAN 2L HPL	2	CFL 26 HPL	66		FULHAM TKM 013 40 RT	1	*LED	13
107.0	LOBBY	5	TF8P	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-830-DE-BYP	18
108.0	LOBBY ELEC. RM	2	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
109.0	STORAGE 161	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
110.0	SITS BATH	1	K3JSM	SUR INT CANO	3	CFL 26 SC	99		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
111.0	STORAGE 159	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
112.0	STORAGE 160	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
113.0	STORAGE 158	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
114.0	STORAGE 157	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
115.0	HALLWAY	18	TF8P	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-830-DE-BYP	18
116.0	STORAGE 156	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
117.0	STORAGE 155	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
118.0	KITCHEN	2	W48	2X4X4 WRP	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
119.0	KITCHEN	3	SG2	1X4X1 STR	1	F40SS	43			1	T8-10.5-48G-840-DE-BYP	12
120.0	GOWNING ROOM 154	1	TF8	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-840-DE-BYP	18

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Existing							Retrofit		
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
121.0	STORAGE 1	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
122.0	STORAGE 2	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
123.0	STORAGE 3	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
124.0	STORAGE 4	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
125.0	DOC LOUNGE ROOM	2	A38D	2X4X3 REC	3	F32T8	90		REM 4' RPT-P-LEDBARKIT-J-40W-4FT-3L-830	1	*LED	40
126.0	DOC LOUNGE ROOM	1	SD8	1X3X1 STR	1	F25T8	26			1	T8-12-36G-840-DE-BYP	12
127.0	DOC LOUNGE HALL	1	TF8P	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-830-DE-BYP	18
128.0	DOC LOUNGE HALL	1	SD8	1X3X1 STR	1	F25T8	26			1	T8-12-36G-840-DE-BYP	12
129.0	NURSE LOUNGE	4	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
130.0	NURSE LOUNGE	4	TF8	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-840-DE-BYP	18
131.0	NURSE LOUNGE HALL	1	TF8P	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-830-DE-BYP	18
132.0	NURSE LOUNGE HALL	1	SD8	1X3X1 STR	1	F25T8	26			1	T8-12-36G-840-DE-BYP	12
133.0	DOCTORS RR	1	K3JSM	SUR INT CANO	3	CFL 26 SC	99		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
134.0	DOCTORS RR	1	SD8	1X3X1 STR	1	F25T8	26			1	T8-12-36G-840-DE-BYP	12
135.0	SURGERY EQUIP. RM	2	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
136.0	NURSE RR	1	K3JSM	SUR INT CANO	3	CFL 26 SC	99		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
137.0	NURSE RR	1	SD8	1X3X1 STR	1	F25T8	26			1	T8-12-36G-840-DE-BYP	12
138.0	GOWNING ROOM	1	TF8	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-840-DE-BYP	18
139.0	NURSERY STORAGE	2	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
140.0	NURSERY	1	TF8	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-840-DE-BYP	18
141.0	NURSERY	4	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
142.0	NURSE WORK ROOM	9	MR6D4	4" CAN PL	1	I-MR16	50			1	MR16-8-940-35D-DIM	7
143.0	NURSE WORK ROOM	4	TF8P	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-830-DE-BYP	18
144.0	NURSE STORAGE	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
145.0	DELIVERY 1-4	16	TA8I	2X2X2 REC	2	F17T8	34			2	T8-9-24G-840-DE-BYP	18
146.0	DELIVERY 1-4	4	K3JM	SUR ROUND SC	3	CFL 26 SC	99			3	A19-9-E26-940-DIM	27
147.0	SOILED	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
147.1	SOILED	-	SD8	1X3X1 STR	1	F25T8	26			1	T8-12-36G-840-DE-BYP	12
148.0	CLEAN	2	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
149.0	OB OFFICE	5	TF8D	2X2X2 REC	2	FB32/T8	59		REM 4' RPT-P-LEDBARKIT-J-20W-2FT-2L-830	1	*LED	20
150.0	PUMP/NITROUS	4	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
151.0	MECH ROOM #10	5	NH8	1X4X2 IND	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
152.0	BOILER ROOM	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
153.0	MED RECORDS	-			-		-			-		-
154.0	MED REC OPEN AREA	8	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
155.0	MED REC OFFICE 1	1	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
156.0	MED REC OFFICE 2	4	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
157.0	MED REC OPEN AREA	8	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
158.0	MED REC OPEN AREA	1	V1JD6D	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
159.0	PHARMACY	-			-		-			-		-
160.0	PHARMACY OFFICE 1	1	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
161.0	PHARMACY OFFICE 2	1	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
162.0	PHARMACY STORAGE	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
163.0	PHARMACY MAIN	7	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
164.0	PHARMACY MAIN	10	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
165.0	PHARMACY RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
166.0	MED SURG	-			-		-			-		-
167.0	MED SURG HALLS	24	A38P	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
168.0	MED SURG HALLS	8	TF8P	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-830-DE-BYP	18
169.0	MED SURG HALLS	1	M38P	2X4X3 SUR	3	F32T8	89			3	T8-10.5-48G-840-DE-BYP	36
170.0	SURG DIREC. OFFICE	2	WH8D	1X4X2 WRA	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
171.0	SURG OPEN OFFICE	4	WH8D	1X4X2 WRA	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
172.0	MED ROOM 1	2	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
173.0	MED ROOM 2	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
174.0	WHEEL CHAIR STRG.	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
175.0	HOUSE SUPERVISOR	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
176.0	UTILITY ROOM	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
177.0	CLEAN DIRTY ROOM	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
178.0	COPIER ROOM	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
179.0	IDF	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
180.0	IDF	1	K2JSM	SUR INT CANO	2	CFL 26 SC	66		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
181.0	KITCHEN STAFF	1	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
182.0	STAFF RR	1	TF8	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-840-DE-BYP	18
183.0	EMERGENCY DEPT.	-			-		-			-		-
184.0	H-140 RESP. STRG	2	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

			Existing						Retrofit			
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
185.0	H-138 DIAG.IMAGING	5	TA8	2X2X2 REC	2	F17T8	33			2	T8-9-24G-840-DE-BYP	18
186.0	H-138 DIAG.IMAGING	7	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
187.0	H-138B EQUIP. RM	2	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
188.0	H-139 CT SCAN	6	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
189.0	H-139 CT SCAN	10	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
190.0	H-139 CT SCAN	2	TA8	2X2X2 REC	2	F17T8	33			2	T8-9-24G-840-DE-BYP	18
191.0	H-141 PHYS. OFFICE	4	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
192.0	H-141 PHYS. OFF. RR	4	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
193.0	MEN'S RR	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
194.0	MEN'S RR	2	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
195.0	MEN'S RR	1	WG8	1X4X1 WRA	1	F32T8	31			1	T8-10.5-48G-840-DE-BYP	12
196.0	WOMEN'S RR	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
197.0	WOMEN'S RR	2	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
198.0	WOMEN'S RR	1	WG8	1X4X1 WRA	1	F32T8	31			1	T8-10.5-48G-840-DE-BYP	12
199.0	H-144	2	PH8	1X4X2 PEN	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
200.0	H-144	2	MR16	MR FIX	1	I-MR16	50			1	MR16-8-940-35D-DIM	7
201.0	H-144	6	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
202.0	H-145 OFFICE	1	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
203.0	H-145 OFFICE	1	SG5D	1X4X1 STR	1	F54T5HO	62		REM 4' RPT-P-LEDBARKIT-J-20W-4FT-1L-830	1	*LED	20
204.0	H-197	5	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
205.0	H-197	2	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
206.0	H-146 STAFF LOUNGE	6	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
207.0	H-148 DIR. OFFICE	4	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
208.0	H-148 DIR. OFFICE	1	SG5D	1X4X1 STR	1	F54T5HO	62		REM 4' RPT-P-LEDBARKIT-J-20W-4FT-1L-830	1	*LED	20
209.0	H-149 OFFICE	2	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
210.0	H-149 OFFICE	1	SG5D	1X4X1 STR	1	F54T5HO	62		REM 4' RPT-P-LEDBARKIT-J-20W-4FT-1L-830	1	*LED	20
211.0	H-150	10	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
212.0	H-150	1	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
213.0	H-153A REG.	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
214.0	H-153A REG.	2	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
215.0	H-101 SECURITY	3	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
216.0	H-LOBBY	3	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
217.0	H-LOBBY	5	C2JM	WALL SCONCE	2	CFL 26 PL	66		FULHAM TKM 013 40 RT	1	*LED	13
218.0	H-LOBBY	3	LEDA19	LED A19 SC	-	LED 10	-		NO WORK-ALREADY LED	-		-
219.0	H-LOBBY	21	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
220.0	H-LOBBY	4	MR16	MR FIX	1	I-MR16	50			1	MR16-8-940-35D-DIM	7
221.0	H-LOBBY MENS RR	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
222.0	H-LOBBY MENS RR	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
223.0	LOBBY WOMENS RR	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
224.0	LOBBY WOMENS RR	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
225.0	H-EXAM 105	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
226.0	H-EXAM 105	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
227.0	H-EXAM 105	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12
228.0	H-EXAM 106	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
229.0	H-EXAM 106	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
230.0	H-EXAM 106	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12
231.0	H-EXAM 107	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
232.0	H-EXAM 107	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
233.0	H-EXAM 107	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12
234.0	H-EXAM 108	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
235.0	H-EXAM 108	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
236.0	H-EXAM 108	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12
237.0	H-EXAM 109	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
238.0	H-EXAM 109	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
239.0	H-EXAM 109	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12
240.0	H-110 EVA	1	TF8	2X2X2 REC	2	FB32/T8	59	2X2 REFL		2	T8-9-24G-840-DE-BYP	18
241.0	H-EXAM 112	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
242.0	H-EXAM 112	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
243.0	H-EXAM 112	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12
244.0	H-EXAM 113	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
245.0	H-EXAM 113	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
246.0	H-EXAM 113	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12
247.0	H-EXAM 114	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
248.0	H-EXAM 114	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
249.0	H-EXAM 114	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17		C6R12940UNVW	1	*LED	12

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

			Existing						Retrofit			
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
250.0	H-EXAM 115	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
251.0	H-EXAM 115	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
252.0	H-EXAM 115	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17	C6R12940UNVW		1	*LED	12
253.0	H-EXAM 116	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
254.0	H-EXAM 116	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
255.0	H-EXAM 116	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17	C6R12940UNVW		1	*LED	12
256.0	H-EXAM 117	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
257.0	H-EXAM 117	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
258.0	H-EXAM 117	2	V1ED6	6" CAN VPL	1	CFL 13 VPL	17	C6R12940UNVW		1	*LED	12
259.0	H-127 EQUIP. RM	3	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
260.0	H-128 IDF ROOM	2	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
261.0	H-126 OFFICE	1	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830		1	*LED	36
262.0	H-125 OFFICE	1	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830		1	*LED	36
263.0	H-120 MECHANICAL	1	V1JJ	JELLY JAR	1	CFL 26 VPL	33			1	A19-9-E26-940-DIM	9
264.0	H-122 COUNSELING	2	RH8	1X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
265.0	H-131 RESTROOM	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW		1	*LED	12
266.0	H-131 RESTROOM	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
267.0	H-132 MAJOR TREAT.	8	A28P	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
268.0	H-132 MAJOR TREAT	2	V1JD6	6" CAN VPL	1	CFL 26 VPL	33	C6R12940UNVW		1	*LED	12
269.0	H-137 ELEC. RM	2	NH8	1X4X2 IND	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
270.0	H-194 DRESSING RM	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW		1	*LED	12
271.0	H-194 DRESSING RM	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
272.0	H-176 RESTROOM	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW		1	*LED	12
273.0	H-176 RESTROOM	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
274.0	H-172	3	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
275.0	H-168 MED ROOM	2	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
276.0	H-120	4	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW		1	*LED	12
277.0	E EXAM ROOM	16	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
278.0	E EXAM ROOM	16	V1JD6	6" CAN VPL	1	CFL 26 VPL	33	C6R12940UNVW		1	*LED	12
279.0	E EXAM ROOM	16	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
280.0	E HALL SQUARE	5	DECLED	DÉCOR LED	-	LED 26	-	NO WORK-ALREADY LED		-		-
281.0	E HALL 2X4	70	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
282.0	E HALL 8"	10	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
283.0	E HALL SCONE	12	V2JM	WALL SCONCE	2	CFL 26 VPL	66	FULHAM TKM 013 40 RT		1	*LED	13
284.0	E HALL MR16	12	MR6D4	4" CAN PL	1	I-MR16	50			1	MR16-8-940-35D-DIM	7
285.0	E HALL 6" H	2	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW		1	*LED	12
286.0	E HALL 6"	8	V1ED6	6" CAN VPL	1	CFL 13 VPL	17	C6R12940UNVW		1	*LED	12
287.0	ICU/IDU	-			-		-			-		-
288.0	H-220	9	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
289.0	H-220	2	MR6D4	4" CAN PL	1	I-MR16	50			1	MR16-8-940-35D-DIM	7
290.0	H-220	4	V2JC	WALL SCONCE	2	CFL 26 VPL	66	FULHAM TKM 013 40 RT		1	*LED	13
291.0	H-220A RESTROOM	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW		1	*LED	12
292.0	H-220A RESTROOM	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
293.0	H-220B RESTROOM	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW		1	*LED	12
294.0	H-220B RESTROOM	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
295.0	H-221 RECEPTION	3	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
296.0	H-221 RECEPTION	2	MR6D4	4" CAN PL	1	I-MR16	50			1	MR16-8-940-35D-DIM	7
297.0	H-238 PAT. MONITOR	2	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830		1	*LED	36
298.0	H-238 PAT. MONITOR	2	H1JD8D	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
299.0	H-242 HALL	9	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
300.0	H-242 HALL	1	TA8	2X2X2 REC	2	F17T8	33			2	T8-9-24G-840-DE-BYP	18
301.0	H-219 RESP THERAPY	9	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
302.0	H-219A OFFICE	2	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830		1	*LED	36
303.0	H-219B EVS	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
304.0	H-218 STORAGE	7	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
305.0	H-218 STORAGE	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
306.0	H-262B STORAGE	1	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
307.0	H-217 OFFICE	1	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830		1	*LED	36
308.0	H-216 IDF ROOM	2	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
309.0	H-240	2	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
310.0	H-261B HALL	3	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
311.0	H-261B HALL	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33	C8R24940UNVW		1	*LED	24
312.0	H-245 SOILED UTIL	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
313.0	H-241 DIR. OFFICE	2	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830		1	*LED	36
314.0	H-328 HALL	3	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Existing							Retrofit		
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
315.0	H-328 HALL	1	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
316.0	H-235 SOILED	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
317.0	H-237 PHARMACY	4	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
318.0	H-237 PHARMACY RR	2	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
319.0	H-237 PHARMACY RR	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
320.0	H-22A CONF. RM	6	PH8	1X4X2 PEN	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
321.0	H-22A CONF. RM	4	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
322.0	H-223 OFFICE	2	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
323.0	H-226 WOMENS RR	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
324.0	H-226 WOMENS RR	2	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
325.0	H-226 WOMENS RR	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
326.0	H-226 MENS RR	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
327.0	H-226 MENS RR	2	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
328.0	H-226 MENS RR	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
329.0	H-2HALL	38	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
330.0	H-2HALL	22	MR6D4	4" CAN PL	1	I-MR16	50			1	MR16-8-940-35D-DIM	7
331.0	H-2HALL	4	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
332.0	H-2HALL	9	H1J8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
333.0	H-265 STORAGE	1	V1JD6	6" CAN VPL	1	CFL 26 VPL	33		C6R12940UNVW	1	*LED	12
334.0	H-231 EVS RM	1	RH8	1X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
335.0	H-243 NOURISHMENT	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
336.0	H-243 NOURISHMENT	1	SA8	1X2X1 STR	1	F17T8	20			1	T8-9-24G-830-DE-BYP	9
337.0	H-244 PAT SHOWER	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
338.0	H-247 CLEAN UTILITY	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
339.0	H-246	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
340.0	H-246	1	SA5	1X2X1 STR	1	F24T5HO	27			1	11.5T5HO/2F/840/BYP	12
341.0	ICU ROOF ELEC. RM	2	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
342.0	ICU ROOF ELEV. RM	4	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
343.0	ICU ROOF LIGHTS	-			-		-			-		-
344.0	EXT ICU ROOF JELLY	5	V1JJ	JELLY JAR	1	CFL 26 VPL	33			1	A19-9-E26-940-DIM	9
345.0	EXT ICU ROOF WP	2	H2JW	WALL SCONCE	2	CFL 26 HPL	66		RAB SLIM12 LED 12W WALL PACK	1	*LED	26
346.0	STAFF OFFICES NEAR K	-			-		-			-		-
347.0	COORD RECEP	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
348.0	COORD. OFFICE	1	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
349.0	MEDICAL STAFF	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
350.0	MED STAFF OFFICE	2	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
351.0	MED STAFF OFFICE RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
352.0	STAFF LOUNGE	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
353.0	STF LOUNGE HALL	1	MH8	1X4X2 SUR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
354.0	STF LOCKER RM	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
355.0	STF LOUNGE RR	1	RH8	1X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
356.0	STF LOUNGE EVS	1	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
357.0	A011 CASE MANG.	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
358.0	A009 HOSPITALIST	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
359.0	A010 CASE MANG	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
360.0	A008 SOCIAL SERV.	1	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
361.0	A007 INPAT. CARE	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
362.0	A006 OFFICE	2	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
363.0	A005 OFFICE	2	A38D	2X4X3 REC	3	F32T8	90		REM 4' RPT-P-LEDBARKIT-J-40W-4FT-3L-830	1	*LED	40
364.0	A004 OFFICE	2	A28D	2X4X2 REC	2	F32T8	60		REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
365.0	A003 STORAGE	1	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
366.0	A002 OFFICE	2	A38D	2X4X3 REC	3	F32T8	90		REM 4' RPT-P-LEDBARKIT-J-40W-4FT-3L-830	1	*LED	40
367.0	A001 OFFICE	2	A38D	2X4X3 REC	3	F32T8	90		REM 4' RPT-P-LEDBARKIT-J-40W-4FT-3L-830	1	*LED	40
368.0	A031 LOW VOLT.	1	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
369.0	A032 EQUIP. RM	4	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
370.0	A032 EQUIP. RM	1	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
371.0	A029 EQUIP RM	8	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
372.0	A030 ELECTRICAL	7	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
373.0	A039 HALL	12	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
374.0	KITCHEN	-			-		-			-		-
375.0	CLASSROOM D	6	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
376.0	CAFÉ. LUNCH AREA	20	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
377.0	CAFÉ.LUNCH AREA	7	I1P8	8" CAN ISC	1	I-65 SC	65		C8R24940UNVW	1	*LED	24
378.0	KITCHEN OFFICE 1	1	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
379.0	KITCHEN OFFICE 2	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Existing							Retrofit		
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-		-		-
380.0	160 MECH. ROOM	1	SH8	1X4X2 STR	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
381.0	WOMEN'S RR	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW	1	*LED	12
382.0	WOMEN'S RR	1	SA5	1X2X1 STR	1	F24T5HO	27		1	11.5T5HO/2F/840/BYP	12
383.0	MEN'S RR	1	H1JD6	6" CAN HPL	1	CFL 26 HPL	33	C6R12940UNVW	1	*LED	12
384.0	MEN'S RR	1	SA5	1X2X1 STR	1	F24T5HO	27		1	11.5T5HO/2F/840/BYP	12
385.0	LOCKERS	1	RH8	1X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
386.0	LOCKERS WOMENS	1	RH8	1X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
387.0	A024 WATER STRG.	1	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
388.0	KITCHEN	43	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
389.0	DIAGNOSTIC IMAGING	-			-		-		-		-
390.0	STORAGE/SERVER	2	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
391.0	MENS RR	1	RH8	1X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
392.0	WOMENS RR	1	RH8	1X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
393.0	RADIO.WAIT RM	3	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
394.0	MAMMOGRAPHY	1	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
395.0	RADIO. OFFICE 1	2	A48D	2X4X4 REC	4	F32T8	112	REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
396.0	RADIO. OFFICE 1	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
397.0	READING ROOM	2	A48D	2X4X4 REC	4	F32T8	112	REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
398.0	EMP. LOUNGE RR 1	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
399.0	EMP. LOUNGE RR 2	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
400.0	RADIO. MANAGER	1	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
401.0	IMAG. FRNT OFFICE	3	A48D	2X4X4 REC	4	F32T8	112	REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
402.0	RADIO 1	5	A48D	2X4X4 REC	4	F32T8	112	REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
403.0	RADIO 1	3	I1PD8	8" CAN ISC	1	I-65 SC	65	C8R24940UNVW	1	*LED	24
404.0	RADIO 2	5	A48D	2X4X4 REC	4	F32T8	112	REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
405.0	RADIO 2	3	I1PD8	8" CAN ISC	1	I-65 SC	65	C8R24940UNVW	1	*LED	24
406.0	RADIO 2 RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65	RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
407.0	RADIO RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65	RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
408.0	STORAGE RADIO	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
409.0	PACS ROOM	2	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
410.0	THYROID UPTAKE	4	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
411.0	ULTRASOUND	2	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
412.0	NUCLEAR MED	6	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
413.0	NUCLEAR MED	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65	RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
414.0	RADIOLOGY HALL	5	MH8	1X4X2 SUR	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
415.0	EQUIPMENT ROOM	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65	RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
416.0	EVS CLOSET	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65	RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
417.0	PHYSICAL THERAPY	-			-		-		-		-
418.0	PT-OFFICE	1	A22D	2X4X2 REC	2	F40SS	72	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
419.0	PT- LOUNGE/RR	1	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
420.0	PT- LOUNGE/RR	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
421.0	PT-HALL	5	MH8	1X4X2 SUR	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
422.0	PT- WAIT ROOM	1	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
423.0	PT- WHIRL POOL	3	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
424.0	PT-WORK ROOM	2	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
425.0	PT- REHAB DEPT	2	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
426.0	PT-OFFICE	2	A48D	2X4X4 REC	4	F32T8	112	REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
427.0	PT RR	1	RH8	1X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
428.0	PT REHAB DEPT 2	1	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
429.0	PT OFFICE	1	A48D	2X4X4 REC	4	F32T8	112	REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
430.0	PT-GYM	7	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
431.0	MATERIAL MANAGEMENT	-			-		-		-		-
432.0	B200 EQUIP. STRG	4	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
433.0	B201 MAIL ROOM	2	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
434.0	B106 CLOSET MAIL	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
435.0	B203 BUYER OFF.	2	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
436.0	B204 DIR. OFFICE	2	A28D	2X4X2 REC	2	F32T8	60	REM 4' RPT-P-LEDBARKIT-J-36W-4FT-2L-830	1	*LED	36
437.0	CENTRAL SUP. RM	28	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
438.0	B211 CLEAN LINEN	6	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
439.0	B210 EVA DIR.	2	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
440.0	B209 EVA SUPP.	4	A28	2X4X2 REC	2	F32T8	60		2	T8-10.5-48G-840-DE-BYP	24
441.0	STAFF OFFICES NEAR C	-			-		-		-		-
442.0	ST-LOUNGE	1	A48	2X4X4 REC	4	F32T8	112		4	T8-10.5-48G-840-DE-BYP	48
443.0	ST- CLOSET	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
444.0	ST-RR	1	K1JKEY	KEYLESS	1	CFL 26 SC	33	RAB KLED6R12YHC CEILING MOUNT	1	*LED	12

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Existing							Retrofit		
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
445.0	ST-OFFICE	1	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
446.0	ST-RR	1	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
447.0	ST-OFFICE	1	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
448.0	ST-UTILITY	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
449.0	ST-LOCKERS	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
450.0	CLINICAL LAB	-			-		-			-		-
451.0	LAB OPEN AREA	28	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
452.0	LAB STORAGE	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
453.0	LAB BREAK ROOM	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
454.0	BREAK ROOM RR	1	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
455.0	WAITING AREA RR 1	1	I1PD8	8" CAN ISC	1	I-65 SC	65		C8R24940UNVW	1	*LED	24
456.0	WAITING AREA RR 2	2	I1PD8	8" CAN ISC	1	I-65 SC	65		C8R24940UNVW	1	*LED	24
457.0	LAB WAITING AREA	3	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
458.0	LAB WAITING AREA	2	I1PD8	8" CAN ISC	1	I-65 SC	65		C8R24940UNVW	1	*LED	24
459.0	LAB OFFICE 2	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
460.0	EKG/ECHO	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
461.0	CENTRAL PLANT 1ST FL	-			-		-			-		-
462.0	STAIR 1	3	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
463.0	STAIR 1	2	A28	2X4X2 REC	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
464.0	107 STORAGE	4	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
465.0	106 ELECTRICAL	4	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
466.0	105 ELECTRICAL	6	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
467.0	104 GENERATOR	10	V8LH	HIGHBAY 8L VPL	8	CFL 42 VPL	384		CB2-LED-18000-DIM-MVOLT-WD-50K-85-MS	1	*LED	135
468.0	101 MECH ROOM	10	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
469.0	153 MECHANICAL	8	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
470.0	102 CHILLER	10	V8LHL	HIGHBAY 8L VPL	8	CFL 42 VPL	384		CB2-LED-18000-DIM-MVOLT-WD-50K-85-MS	1	*LED	135
471.0	102A PUMP ROOM	2	NI8L	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
472.0	103 MECH. ROOM	9	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
473.0	103 MECH. ROOM	10	V8LH	HIGHBAY 8L VPL	8	CFL 42 VPL	384		CB2-LED-18000-DIM-MVOLT-WD-50K-85-MS	1	*LED	135
474.0	103 MECH. ROOM	1	SH8	1X4X2 STR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
475.0	CENTRAL PLANT 2ND FL	-			-		-			-		-
476.0	CUP 201 STORAGE	9	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
477.0	CUP 210 FIRE EQUP.	1	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
478.0	CUP 202 COMM.	13	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
479.0	CUP STAIR 2	4	WH8	1X4X2 WRA	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
480.0	CUP OPEN OFFICE	18	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
481.0	CUP OPEN OFFICE	4	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
482.0	CUP RR	4	H1JD8	8" CAN HPL	1	CFL 26 HPL	33		C8R24940UNVW	1	*LED	24
483.0	CUP 209 HALLWAY	5	NI8	1X4X3 IND	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
484.0	HALLWAYS	-			-		-			-		-
485.0	HALL H1	16	MH8	1X4X2 SUR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
486.0	HALL H2	16	MH8	1X4X2 SUR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
487.0	HALL H3	22	MH8	1X4X2 SUR	2	F32T8	60			2	T8-10.5-48G-840-DE-BYP	24
488.0	HALL H4	5	WJ8	1X4X4 WRA	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
489.0	TUNNEL	-			-		-			-		-
490.0	TUNNEL	35	WI8	1X4X3 WRA	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
491.0	BASEMENT	-			-		-			-		-
492.0	BASE. TRANS. RM 1	2	SH8B	1X4X2 STR	2	F32T8	59			2	T8-10.5-48G-840-DE-BYP	24
493.0	BASE. TRANS. RM 2	2	I1PSUR	SUR 12" CANO SC	1	I-65 SC	65		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
494.0	OLD BOILER ROOM	5	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
495.0	OLD AIR MECH	4	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
496.0	BUILDING C	-			-		-			-		-
497.0	CLASSROOM C	12	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
498.0	EHE	-			-		-			-		-
499.0	OFFICE 1	1	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
500.0	OFFICE 2	2	A48D	2X4X4 REC	4	F32T8	112		REM 4' RPT-P-LEDBARKIT-J-60W-4FT-4L-830	1	*LED	40
501.0	HALL	3	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
502.0	CONFERENCE	4	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
503.0	BREAK ROOM	2	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
504.0	RESTROOM	1	A48	2X4X4 REC	4	F32T8	112			4	T8-10.5-48G-840-DE-BYP	48
505.0	COOLING TOWER	-			-		-			-		-
506.0	COOLING TOWER	8	C1LY	FLOOD	1	CFL 42 PL	48		RAB PIP20/D10 20W FLOOD	1	*LED	20
507.0	BUILDING H & I	-			-		-			-		-
508.0	OFFICE	15	A38	2X4X3 REC	3	F32T8	90			3	T8-10.5-48G-840-DE-BYP	36
509.0	CENTRAL PLANT ROOF	-			-		-			-		-

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Existing							Retrofit			
LINE_NO	LOCATION	Fixture Quantity	Fixture Style	Fixture Type	Number of Lamps	Lamp Type	Fixture Watts	Kit	Fixture	Number of Lamps2	Lamp Type3	Fixture Watts4
-	**TOTALS**	**2,284**			-		-			-		-
510.0	CUP ROOF WP	4	LM15W	MH EXT WA	1	MH150	195		RAB SLIM57/PC2 57W WALL PACK W/PHOTOCELL	1	*LED	57
511.0	EXTERIOR LIGHTING	-			-		-			-		-
512.0	EXTERIOR CENTRAL PLA	-			-		-			-		-
513.0	WALL PACK 1	22	H2JW	WALL SCONCE	2	CFL 26 HPL	66		RAB SLIM12 LED 12W WALL PACK	1	*LED	26
514.0	SQUARE	9	LEDDEC	DÉCOR LED	-	LED 10	-		NO WORK-ALREADY LED	-		-
515.0	8" CAN	2	LH15D8	8" CAN HPS	1	HPS 150W	195		C9.5R20/25/329FAUNVW	1	*LED	25
516.0	FLOOD 1	1	LM15Y	MH EXT YO	1	MH150	195		RABLED52 LED 52W FLOOD	1	*LED	52
517.0	STEP LIGHT	10	H1EST	STEP LIGHT HPL	1	CFL 13 HPL	17			1	A19-9-E26-940-DIM	9
518.0	EXTERIOR BACK DOCK	-			-		-			-		-
519.0	DOCK AREA 12" CAN	12	LM15D2	12" CAN MH	1	MH 150W	195		GC AD9.5-LEM-9035-DIM010-UNV-MD-ADR9.5-C	1	*LED	32
520.0	DOCK AREA TOP HAT	2	LM15T	MH EXT P/	1	MH150	195			1	RAB HID-45-EX39-840-BY	45
521.0	EXTERIOR AMBULANCE	-			-		-			-		-
522.0	CAN	29	LM70D6	6" CAN MH	1	MH 70W	95		C6R12940UNVW	1	*LED	12
523.0	FLOOD	3	LM40R	MH EXT TR	1	MH400	458		RAB FXLED150 FLOOD W/SENSOR	1	*LED	154
524.0	EXTERIOR NEW WING	-			-		-			-		-
525.0	SURFACE CAN	14	V1JMD6	6" CAN SUR	1	CFL 26 VPL	33			1	PLC-9-H-840-BYP	9
526.0	GROUND LIGHTS	22	PAR3G	GROUND PAR	1	I-PAR 30	100			1	PAR30L-11-940-35D-DIM	13
527.0	GROUND FLOOD	2	H2JY	GROUND FLOOD	2	CFL 26 HPL	66		RAB PIP15/D10 15W FLOOD	1	*LED	15
528.0	BCK EM FLAG FLOOD	1	LM15Y	MH EXT YO	1	MH150	195		RABLED52 LED 52W FLOOD	1	*LED	52
529.0	BENCH STEP LIGHT	24	C1EST	STEP LIGHT	1	CFL 13 PL	17			1	PLC-9-V-840-BYP	6
530.0	BCK EM FLAG FLOOD	2	LM15Y	MH EXT YO	1	MH150	195		RABLED52 LED 52W FLOOD	1	*LED	52
531.0	ER PARKING LOT	6	LM25P	MH EXT PO	1	MH250	295		RAB IVAT4LPA740GU/WS2 100W W/SENSOR	1	*LED	100
532.0	EXT BOLLARDS	44	C1JBOL	BOLLARD PL	1	CFL 26 PL	33			1	PLC-9-H-840-BYP	9
533.0	EXTERIOR ER	2	H1JD6	6" CAN HPL	1	CFL 26 HPL	33		C6R12940UNVW	1	*LED	12
534.0	EXTERIOR AROUND WOME	-			-		-			-		-
535.0	BACK AREA FLOOD	1	LM70Y	MH EXT YO	1	MH70	90		RAB PIP30/D10 30W FLOOD	1	*LED	30
536.0	PORT. POLE LIGHT	1	LM15S	MH EXT SL	1	MH150	195		RAB LED YBLED26 /ARM 26W LED	1	*LED	1
537.0	CANOPY	8	K1JD	SQ DOWN	1	CFL 26 SC	33		RAB VAN1LED12W 12W LED CANOPY MT.	1	*LED	12
538.0	FLOOD	1	LM40Y	MH EXT YO	1	M300QT	300		RAB PIPXL70T/D10	1	*LED	70
539.0	PORTABLE I WP	2	C1JW	WALL SCONCE	1	CFL 26 PL	33		RAB SLIM12 LED 12W WALL PACK	1	*LED	13
540.0	COURT YARD AREA	1	NH2	1X4X2 IND	2	F40SS	72			2	T8-10.5-48G-840-DE-BYP	24
541.0	ADMIN BACK CFL	2	K1JKEY	KEYLESS	1	CFL 26 SC	33		RAB KLED6R12YHC CEILING MOUNT	1	*LED	12
542.0	EXTERIOR COOLING TOW	-			-		-			-		-
543.0	COOLING TOWER	2	LH15Y	HPS EXT Y	1	CFL42	48		RAB PIP45/D10 45W LED FLOOD	1	*LED	45
544.0	EXTERIOR FRONT LOBBY	-			-		-			-		-
545.0	FRONT LOBBY	12	LM15D2	12" CAN MH	1	MH 150W	195		GC AD9.5-LEM-9035-DIM010-UNV-MD-ADR9.5-C	1	*LED	32
546.0	EXTERIOR PARKING ARE	-			-		-			-		-
547.0	TOP HAT	68	LM15T	MH EXT P/	1	MH150	195			1	RAB HID-45-EX39-840-BY	45
548.0	SHOE BOX	13	LM25P	MH EXT PO	1	MH250	295		RAB IVAT4LPA740GU/WS2 100W W/SENSOR	1	*LED	100
549.0	ADD REPLACEMENT LENS	100	LENS	BROKEN LENS	-		-		REPLACE FOR BROKEN 2X2, 2X4 LENS	-		-
550.0	ROOF ROUND LIGHT	2	C1JROU	ROUND CEIL	1	CFL 26 PL	33		FULHAM TKM 013 40 RT	1	*LED	13
551.0	ROOF ROUND LIGHT	2	C1JROU	ROUND CEIL	1	CFL 26 PL	33		FULHAM TKM 013 40 RT	1	*LED	13
552.0	ADD FLOOD	3	ADDFL	ADD NEW FLOOD	-		-		RAB PIP15/D10 15W FLOOD	1	*LED	-
553.0	ADD CEILING MOUNT	3	ADDCM	ADD NEW CEIL MT	-		-		RAB KLED6R12YHC CEILING MOUNT	1	*LED	-
554.0	ADD EMER BATTERY	36	ADDEM	ADD EMER BATT	-		-		EMERGENCY BATTERY BACKUP	-		-

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Electric Rate								Energy				Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
1.0	SAN GORGONIO HOS	-	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
2.0	600 N HIGHLAND	-	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
3.0	SPRINGS AVE	-	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
4.0	BANNING, CA 92220	-	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
5.0	FRONT LOBBY	-	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
6.0	FRONT LOBBY	8,760	0.135	1.500	0.480	1.020	13,140	4,205	8,935	$ 1,773.90	$ 567.65	$ 1,206.25	I	1,000	$ 2.00	8.76	$ 350.40
7.0	GIFT SHOP	2,540	0.135	0.120	0.048	0.072	305	122	183	$ 41.15	$ 16.46	$ 24.69	F	20,000	$ 7.00	0.13	$ 3.56
8.0	GIFT SHOP	2,540	0.135	0.320	0.104	0.216	813	264	549	$ 109.73	$ 35.66	$ 74.07	I	1,000	$ 2.00	2.54	$ 40.64
9.0	GIFT SHOP STORAGE	2,540	0.135	0.112	0.048	0.064	284	122	163	$ 38.40	$ 16.46	$ 21.95	F	20,000	$ 7.00	0.13	$ 3.56
10.0	GIFT SHOP BACK RM	2,540	0.135	0.112	0.048	0.064	284	122	163	$ 38.40	$ 16.46	$ 21.95	F	20,000	$ 7.00	0.13	$ 3.56
11.0	GIFT SHP BCK RM RR	2,540	0.135	0.065	0.012	0.053	165	30	135	$ 22.29	$ 4.11	$ 18.17	I	1,000	$ 2.00	2.54	$ 5.08
12.0	FOUNDATION OFFICE	3,712	0.135	0.236	0.072	0.164	876	267	609	$ 118.26	$ 36.08	$ 82.18	F	20,000	$ 7.00	0.19	$ 10.39
13.0	MEDITATION ROOM	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
14.0	ADMIT		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
15.0	REGISTRATION	3,712	0.135	0.099	0.054	0.045	367	200	167	$ 49.61	$ 27.06	$ 22.55	F	20,000	$ 7.00	0.19	$ 7.80
16.0	REGISTRATION	3,712	0.135	0.198	0.072	0.126	735	267	468	$ 99.22	$ 36.08	$ 63.14	C	8,000	$ 6.00	0.46	$ 16.70
17.0	BUSINESS OFFICES		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
18.0	PATIENT FINANCIAL	3,712	0.135	2.128	0.760	1.368	7,899	2,821	5,078	$ 1,066.38	$ 380.85	$ 685.53	F	20,000	$ 7.00	0.19	$ 98.74
19.0	PATIENT FINANCIAL	3,712	0.135	0.059	0.020	0.039	219	74	145	$ 29.57	$ 10.02	$ 19.54	F	20,000	$ 7.00	0.19	$ 2.60
20.0	242 CONSTRUCTION	3,712	0.135	0.360	0.160	0.200	1,336	594	742	$ 180.40	$ 80.18	$ 100.22	F	20,000	$ 7.00	0.19	$ 15.59
21.0	PAT FINANCIAL 235	3,712	0.135	0.224	0.080	0.144	831	297	535	$ 112.25	$ 40.09	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
22.0	CHIEF FINAC OFFICER	3,712	0.135	0.224	0.080	0.144	831	297	535	$ 112.25	$ 40.09	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
23.0	RECRUITER	3,712	0.135	0.224	0.080	0.144	831	297	535	$ 112.25	$ 40.09	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
24.0	SERVER ROOM	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
25.0	HUMAN RESOURCES		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
26.0	HR SUPERVISOR	3,712	0.135	0.224	0.080	0.144	831	297	535	$ 112.25	$ 40.09	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
27.0	HR OFFICE	3,712	0.135	0.448	0.160	0.288	1,663	594	1,069	$ 224.50	$ 80.18	$ 144.32	F	20,000	$ 7.00	0.19	$ 20.79
28.0	ADMINISTRATION		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
29.0	CONFERENCE RM B	3,120	0.135	0.896	0.384	0.512	2,796	1,198	1,597	$ 377.40	$ 161.74	$ 215.65	F	20,000	$ 7.00	0.16	$ 34.94
30.0	CONF RM B STRG	3,712	0.135	0.720	0.288	0.432	2,673	1,069	1,604	$ 360.81	$ 144.32	$ 216.48	F	20,000	$ 7.00	0.19	$ 31.18
31.0	ADMIN CONF.	3,120	0.135	0.336	0.144	0.192	1,048	449	599	$ 141.52	$ 60.65	$ 80.87	F	20,000	$ 7.00	0.16	$ 13.10
32.0	ADMIN CONF.	3,120	0.135	0.520	0.096	0.424	1,622	300	1,323	$ 219.02	$ 40.44	$ 178.59	I	1,000	$ 2.00	3.12	$ 49.92
33.0	ADMIN OFFICE 1	3,120	0.135	0.448	0.160	0.288	1,398	499	899	$ 188.70	$ 67.39	$ 121.31	F	20,000	$ 7.00	0.16	$ 17.47
34.0	ADMIN OFFICE 2	3,120	0.135	0.240	0.144	0.096	749	449	300	$ 101.09	$ 60.65	$ 40.44	F	20,000	$ 7.00	0.16	$ 8.74
35.0	ADMIN OFFICE 2	3,120	0.135	0.780	0.144	0.636	2,434	449	1,984	$ 328.54	$ 60.65	$ 267.88	I	1,000	$ 2.00	3.12	$ 74.88
36.0	ADMIN OFFICE 2 RR	3,120	0.135	0.065	0.012	0.053	203	37	165	$ 27.38	$ 5.05	$ 22.32	I	1,000	$ 2.00	3.12	$ 6.24
37.0	ADMIN RECEPTION	3,120	0.135	0.448	0.192	0.256	1,398	599	799	$ 188.70	$ 80.87	$ 107.83	F	20,000	$ 7.00	0.16	$ 17.47
38.0	ADMIN OFFICE 3 RR	3,120	0.135	0.065	0.012	0.053	203	37	165	$ 27.38	$ 5.05	$ 22.32	I	1,000	$ 2.00	3.12	$ 6.24
39.0	ADMIN OFFICE 3	3,120	0.135	0.224	0.080	0.144	699	250	449	$ 94.35	$ 33.70	$ 60.65	F	20,000	$ 7.00	0.16	$ 8.74
40.0	SURGERY		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
41.0	DIALYSIS STORAGE	4,368	0.135	0.112	0.048	0.064	489	210	280	$ 66.04	$ 28.30	$ 37.74	F	20,000	$ 7.00	0.22	$ 6.12
42.0	RESTROOM	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
43.0	SLEEP ROOM	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
44.0	SURGICAL STORAGE	2,912	0.135	0.224	0.096	0.128	652	280	373	$ 88.06	$ 37.74	$ 50.32	F	20,000	$ 7.00	0.15	$ 8.15
45.0	SURGICAL STORAGE	2,912	0.135	0.112	0.048	0.064	326	140	186	$ 44.03	$ 18.87	$ 25.16	F	20,000	$ 7.00	0.15	$ 4.08
46.0	STORAGE CLOSET	1,040	0.135	0.033	0.012	0.021	34	12	22	$ 4.63	$ 1.68	$ 2.95	C	8,000	$ 6.00	0.13	$ 0.78
47.0	CODE CART	3,120	0.135	0.224	0.096	0.128	699	300	399	$ 94.35	$ 40.44	$ 53.91	F	20,000	$ 7.00	0.16	$ 8.74
48.0	CODE CART SM RM	3,120	0.135	0.033	0.012	0.021	103	37	66	$ 13.90	$ 5.05	$ 8.85	C	8,000	$ 6.00	0.39	$ 2.34
49.0	MARKETING	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
50.0	MARKETING SM RM	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
51.0	INFECTION CTRL	3,712	0.135	0.448	0.192	0.256	1,663	713	950	$ 224.50	$ 96.22	$ 128.29	F	20,000	$ 7.00	0.19	$ 20.79
52.0	INFECTION CTRL SM	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
53.0	DOCTOR SLEEP RM 2	4,368	0.135	0.448	0.160	0.288	1,957	699	1,258	$ 264.18	$ 94.35	$ 169.83	F	20,000	$ 7.00	0.22	$ 24.46
54.0	DOCTOR SLEEP RM 1	4,368	0.135	0.448	0.160	0.288	1,957	699	1,258	$ 264.18	$ 94.35	$ 169.83	F	20,000	$ 7.00	0.22	$ 24.46
55.0	STORAGE	4,368	0.135	0.066	0.024	0.042	288	105	183	$ 38.92	$ 14.15	$ 24.77	C	8,000	$ 6.00	0.55	$ 6.55
56.0	CARD. REHAB EXCR	4,368	0.135	0.896	0.384	0.512	3,914	1,677	2,236	$ 528.35	$ 226.44	$ 301.92	F	20,000	$ 7.00	0.22	$ 48.92
57.0	CARDIAC REHAB	4,368	0.135	0.448	0.192	0.256	1,957	839	1,118	$ 264.18	$ 113.22	$ 150.96	F	20,000	$ 7.00	0.22	$ 24.46
58.0	CARD REHAB OFFICE	3,120	0.135	0.448	0.160	0.288	1,398	499	899	$ 188.70	$ 67.39	$ 121.31	F	20,000	$ 7.00	0.16	$ 17.47
59.0	PRE OP HOLDING	4,380	0.135	0.224	0.096	0.128	981	420	561	$ 132.45	$ 56.76	$ 75.69	F	20,000	$ 7.00	0.22	$ 12.26
60.0	PRE OP HOLDING RR	4,380	0.135	0.065	0.012	0.053	285	53	232	$ 38.43	$ 7.10	$ 31.34	I	1,000	$ 2.00	4.38	$ 8.76
61.0	PRE OP HOLDING RR	4,380	0.135	0.132	0.024	0.108	578	105	473	$ 78.05	$ 14.19	$ 63.86	C	8,000	$ 6.00	0.55	$ 13.14
62.0	PRE OP HOLDING RR	4,380	0.135	0.033	0.012	0.021	145	53	92	$ 19.51	$ 7.10	$ 12.42	C	8,000	$ 6.00	0.55	$ 3.29
63.0	UTILITY ROOM	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
64.0	SURG HALL 2 WC	8,760	0.135	0.560	0.240	0.320	4,906	2,102	2,803	$ 662.26	$ 283.82	$ 378.43	F	20,000	$ 7.00	0.44	$ 61.32
65.0	OR ROOM 2	4,368	0.135	0.236	0.144	0.092	1,031	629	402	$ 139.16	$ 84.91	$ 54.25	F	20,000	$ 7.00	0.22	$ 12.23

Appendix A

San Gorgonio Memorial Hospital

Lighting Line by Line

			Electric Rate					Energy						Material Maintenance Cost				
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
65.1	OR ROOM 2	4,368	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
66.0	OR ROOM 3	4,368	0.135	0.236	0.144	0.092	1,031	629	402	$ 139.16	$ 84.91	$ 54.25	F	20,000	$ 7.00	0.22	$ 12.23
66.1	OR ROOM 3	4,368	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
67.0	OR ROOM 1	4,368	0.135	0.649	0.396	0.253	2,835	1,730	1,105	$ 382.70	$ 233.51	$ 149.19	F	20,000	$ 7.00	0.22	$ 33.63
67.1	OR ROOM 1	4,368	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
68.0	OR 1 HALL	4,368	0.135	0.144	0.048	0.096	629	210	419	$ 84.91	$ 28.30	$ 56.61	F	20,000	$ 7.00	0.22	$ 6.12
69.0	DISINFECT AREA	8,760	0.135	0.112	0.048	0.064	981	420	561	$ 132.45	$ 56.76	$ 75.69	F	20,000	$ 7.00	0.44	$ 12.26
69.1	DISINFECT AREA	4,380	0.135	0.065	0.009	0.056	285	39	245	$ 38.43	$ 5.32	$ 33.11	I	1,000	$ 2.00	4.38	$ 8.76
70.0	EVS CLOSET	8,760	0.135	0.033	0.009	0.024	289	79	210	$ 39.03	$ 10.64	$ 28.38	C	8,000	$ 6.00	1.10	$ 6.57
71.0	PRE OP HOLDING	4,380	0.135	0.240	0.096	0.144	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.22	$ 12.26
71.1	PRE OP HOLDING	3,120	0.135	0.132	0.048	0.084	412	150	262	$ 55.60	$ 20.22	$ 35.38	C	8,000	$ 6.00	0.39	$ 9.36
72.0	HALL NEAR PRE OP	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
73.0	SPECIAL PROCED.	8,760	0.135	0.240	0.096	0.144	2,102	841	1,261	$ 283.82	$ 113.53	$ 170.29	F	20,000	$ 7.00	0.44	$ 24.53
73.1	SPECIAL PROCED.	8,760	0.135	-	-	-	-	-	-	$ -	$ -	$ -					
74.0	HALL NEAR OR 3 & 2	8,760	0.135	0.560	0.240	0.320	4,906	2,102	2,803	$ 662.26	$ 283.82	$ 378.43	F	20,000	$ 7.00	0.44	$ 61.32
74.1	HALL NEAR OR 3 & 2	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
74.2	HALL NEAR OR 3 & 2	5,292	0.135	0.080	0.026	0.054	423	138	286	$ 57.15	$ 18.57	$ 38.58	I	1,000	$ 2.00	5.29	$ 21.17
75.0	MED SUPPLY	3,712	0.135	1.872	0.520	1.352	6,949	1,930	5,019	$ 938.10	$ 260.58	$ 677.51	F	20,000	$ 7.00	0.19	$ 67.56
76.0	STORAGE AREA	3,120	0.135	0.288	0.096	0.192	899	300	599	$ 121.31	$ 40.44	$ 80.87	F	20,000	$ 7.00	0.16	$ 8.74
77.0	BOOK ROOM	3,712	0.135	0.065	0.012	0.053	241	45	197	$ 32.57	$ 6.01	$ 26.56	I	1,000	$ 2.00	3.71	$ 7.42
78.0	DIRECTOR OF SURG	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
79.0	LOCKER / RR	8,760	0.135	0.065	0.012	0.053	569	105	464	$ 76.87	$ 14.19	$ 62.68	I	1,000	$ 2.00	8.76	$ 17.52
80.0	CLEANING ROOM	4,368	0.135	0.112	0.048	0.064	489	210	280	$ 66.04	$ 28.30	$ 37.74	F	20,000	$ 7.00	0.22	$ 6.12
81.0	DECONTAMI. ROOM	8,760	0.135	0.448	0.192	0.256	3,924	1,682	2,243	$ 529.80	$ 227.06	$ 302.75	F	20,000	$ 7.00	0.44	$ 49.06
82.0	DECONTAM. ROOM	4,368	0.135	0.180	0.072	0.108	786	314	472	$ 106.14	$ 42.46	$ 63.69	F	20,000	$ 7.00	0.22	$ 9.17
83.0	OFFICE 1	2,912	0.135	0.060	0.036	0.024	175	105	70	$ 23.59	$ 14.15	$ 9.43	F	20,000	$ 7.00	0.15	$ 2.04
84.0	EVS ROOM	8,760	0.135	0.066	0.018	0.048	578	158	420	$ 78.05	$ 21.29	$ 56.76	C	8,000	$ 6.00	1.10	$ 13.14
85.0	OFFICE 2	3,120	0.135	0.060	0.036	0.024	187	112	75	$ 25.27	$ 15.16	$ 10.11	F	20,000	$ 7.00	0.16	$ 2.18
86.0	NURSE LOUNGE	8,760	0.135	0.240	0.096	0.144	2,102	841	1,261	$ 283.82	$ 113.53	$ 170.29	F	20,000	$ 7.00	0.44	$ 24.53
87.0	WOMEN LOCKER	8,760	0.135	0.112	0.048	0.064	981	420	561	$ 132.45	$ 56.76	$ 75.69	F	20,000	$ 7.00	0.44	$ 12.26
87.1	WOMEN LOCKER		0.135	-	-	-	-	-	-	$ -	$ -	$ -	C	8,000	$ 6.00	-	$ -
88.0	DOC LOUNGE	3,120	0.135	0.336	0.120	0.216	1,048	374	674	$ 141.52	$ 50.54	$ 90.98	F	20,000	$ 7.00	0.16	$ 13.10
89.0	DOC RR	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
89.1	DOC RR	8,760	0.135	-	-	-	-	-	-	$ -	$ -	$ -	C	8,000	$ 6.00	1.10	$ -
90.0	DOC HALL	8,760	0.135	0.198	0.108	0.090	1,734	946	788	$ 234.15	$ 127.72	$ 106.43	F	20,000	$ 7.00	0.44	$ 27.59
91.0	RECOVERY AREA	8,760	0.135	1.120	0.480	0.640	9,811	4,205	5,606	$ 1,324.51	$ 567.65	$ 756.86	F	20,000	$ 7.00	0.44	$ 122.64
92.0	RECOVERY RR	4,368	0.135	0.065	0.012	0.053	284	52	232	$ 38.33	$ 7.08	$ 31.25	I	1,000	$ 2.00	4.37	$ 8.74
93.0	MED CART	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
94.0	RECOVERY STRG	4,368	0.135	0.033	0.012	0.021	144	52	92	$ 19.46	$ 7.08	$ 12.38	C	8,000	$ 6.00	0.55	$ 3.28
95.0	RECOVERY WRK RM	8,760	0.135	0.112	0.048	0.064	981	420	561	$ 132.45	$ 56.76	$ 75.69	F	20,000	$ 7.00	0.44	$ 12.26
96.0	OFFICE AREA	3,120	0.135	0.224	0.080	0.144	699	250	449	$ 94.35	$ 33.70	$ 60.65	F	20,000	$ 7.00	0.16	$ 8.74
97.0	WOMENS CENTER		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
98.0	INFOSERVICES	3,120	0.135	0.354	0.108	0.246	1,104	337	768	$ 149.10	$ 45.49	$ 103.62	F	20,000	$ 7.00	0.16	$ 13.10
99.0	INFO SERV. OFFICE	3,120	0.135	0.059	0.020	0.039	184	62	122	$ 24.85	$ 8.42	$ 16.43	F	20,000	$ 7.00	0.16	$ 2.18
100.0	INFO SERV. OFFICE	3,120	0.135	0.066	0.013	0.053	206	41	165	$ 27.80	$ 5.48	$ 22.32	C	8,000	$ 6.00	0.39	$ 4.68
101.0	INFO SERVICES	3,120	0.135	0.528	0.104	0.424	1,647	324	1,323	$ 222.39	$ 43.80	$ 178.59	C	8,000	$ 6.00	0.39	$ 37.44
102.0	MENS RR	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
103.0	MENS RR	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
104.0	WOMENS RR	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
105.0	WOMENS RR	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
106.0	LOBBY	5,824	0.135	0.990	0.195	0.795	5,766	1,136	4,630	$ 778.38	$ 153.32	$ 625.06	C	8,000	$ 6.00	0.73	$ 131.04
107.0	LOBBY	5,824	0.135	0.295	0.090	0.205	1,718	524	1,194	$ 231.94	$ 70.76	$ 161.18	F	20,000	$ 7.00	0.29	$ 20.38
108.0	LOBBY ELEC. RM	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
109.0	STORAGE 161	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
110.0	SITS BATH	3,712	0.135	0.099	0.012	0.087	367	45	323	$ 49.61	$ 6.01	$ 43.60	C	8,000	$ 6.00	0.46	$ 8.35
111.0	STORAGE 159	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
112.0	STORAGE 160	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
113.0	STORAGE 158	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
114.0	STORAGE 157	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
115.0	HALLWAY	8,760	0.135	1.062	0.324	0.738	9,303	2,838	6,465	$ 1,255.92	$ 383.16	$ 872.76	F	20,000	$ 7.00	0.44	$ 110.38
116.0	STORAGE 156	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
117.0	STORAGE 155	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
118.0	KITCHEN	5,742	0.135	0.224	0.096	0.128	1,286	551	735	$ 173.64	$ 74.42	$ 99.22	F	20,000	$ 7.00	0.29	$ 16.08
119.0	KITCHEN	5,742	0.135	0.129	0.036	0.093	741	207	534	$ 100.00	$ 27.91	$ 72.09	F	20,000	$ 7.00	0.29	$ 6.03
120.0	GOWNING ROOM 154	4,368	0.135	0.059	0.018	0.041	258	79	179	$ 34.79	$ 10.61	$ 24.18	F	20,000	$ 7.00	0.22	$ 3.06

Appendix A

San Gorgonio Memorial Hospital

Lighting Line by Line

		Electric Rate					Energy						Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
121.0	STORAGE 1	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
122.0	STORAGE 2	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
123.0	STORAGE 3	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
124.0	STORAGE 4	2,000	0.135	0.033	0.012	0.021	66	24	42	$ 8.91	$ 3.24	$ 5.67	C	8,000	$ 6.00	0.25	$ 1.50
125.0	DOC LOUNGE ROOM	3,120	0.135	0.180	0.080	0.100	562	250	312	$ 75.82	$ 33.70	$ 42.12	F	20,000	$ 7.00	0.16	$ 6.55
126.0	DOC LOUNGE ROOM	3,120	0.135	0.026	0.012	0.014	81	37	44	$ 10.95	$ 5.05	$ 5.90	F	20,000	$ 7.00	0.16	$ 1.09
127.0	DOC LOUNGE HALL	8,760	0.135	0.059	0.018	0.041	517	158	359	$ 69.77	$ 21.29	$ 48.49	F	20,000	$ 7.00	0.44	$ 6.13
128.0	DOC LOUNGE HALL	8,760	0.135	0.026	0.012	0.014	228	105	123	$ 30.75	$ 14.19	$ 16.56	F	20,000	$ 7.00	0.44	$ 3.07
129.0	NURSE LOUNGE	8,760	0.135	0.360	0.144	0.216	3,154	1,261	1,892	$ 425.74	$ 170.29	$ 255.44	F	20,000	$ 7.00	0.44	$ 36.79
130.0	NURSE LOUNGE	8,760	0.135	0.236	0.072	0.164	2,067	631	1,437	$ 279.09	$ 85.15	$ 193.95	F	20,000	$ 7.00	0.44	$ 24.53
131.0	NURSE LOUNGE HALL	8,760	0.135	0.059	0.018	0.041	517	158	359	$ 69.77	$ 21.29	$ 48.49	F	20,000	$ 7.00	0.44	$ 6.13
132.0	NURSE LOUNGE HALL	8,760	0.135	0.026	0.012	0.014	228	105	123	$ 30.75	$ 14.19	$ 16.56	F	20,000	$ 7.00	0.44	$ 3.07
133.0	DOCTORS RR	4,368	0.135	0.099	0.012	0.087	432	52	380	$ 58.38	$ 7.08	$ 51.30	C	8,000	$ 6.00	0.55	$ 9.83
134.0	DOCTORS RR	4,368	0.135	0.026	0.012	0.014	114	52	61	$ 15.33	$ 7.08	$ 8.26	F	20,000	$ 7.00	0.22	$ 1.53
135.0	SURGERY EQUIP. RM	3,120	0.135	0.120	0.048	0.072	374	150	225	$ 50.54	$ 20.22	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
136.0	NURSE RR	8,760	0.135	0.099	0.012	0.087	867	105	762	$ 117.08	$ 14.19	$ 102.89	C	8,000	$ 6.00	1.10	$ 19.71
137.0	NURSE RR	8,760	0.135	0.026	0.012	0.014	228	105	123	$ 30.75	$ 14.19	$ 16.56	F	20,000	$ 7.00	0.44	$ 3.07
138.0	GOWNING ROOM	4,368	0.135	0.059	0.018	0.041	258	79	179	$ 34.79	$ 10.61	$ 24.18	F	20,000	$ 7.00	0.22	$ 3.06
139.0	NURSERY STORAGE	3,712	0.135	0.180	0.072	0.108	668	267	401	$ 90.20	$ 36.08	$ 54.12	F	20,000	$ 7.00	0.19	$ 7.80
140.0	NURSERY	8,760	0.135	0.059	0.018	0.041	517	158	359	$ 69.77	$ 21.29	$ 48.49	F	20,000	$ 7.00	0.44	$ 6.13
141.0	NURSERY	8,760	0.135	0.360	0.144	0.216	3,154	1,261	1,892	$ 425.74	$ 170.29	$ 255.44	F	20,000	$ 7.00	0.44	$ 36.79
142.0	NURSE WORK ROOM	8,760	0.135	0.450	0.063	0.387	3,942	552	3,390	$ 532.17	$ 74.50	$ 457.67	I	1,000	$ 2.00	8.76	$ 157.68
143.0	NURSE WORK ROOM	8,760	0.135	0.236	0.072	0.164	2,067	631	1,437	$ 279.09	$ 85.15	$ 193.95	F	20,000	$ 7.00	0.44	$ 24.53
144.0	NURSE STORAGE	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
145.0	DELIVERY 1-4	8,760	0.135	0.544	0.288	0.256	4,765	2,523	2,243	$ 643.33	$ 340.59	$ 302.75	F	20,000	$ 7.00	0.44	$ 98.11
146.0	DELIVERY 1-4	8,760	0.135	0.396	0.108	0.288	3,469	946	2,523	$ 468.31	$ 127.72	$ 340.59	C	8,000	$ 6.00	1.10	$ 78.84
147.0	SOILED	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
147.1	SOILED	3,712	0.135	-	-	-	-	-	-	$ -	$ -	$ -	F	20,000	$ 7.00	0.19	$ -
148.0	CLEAN	4,368	0.135	0.120	0.048	0.072	524	210	314	$ 70.76	$ 28.30	$ 42.46	F	20,000	$ 7.00	0.22	$ 6.12
149.0	OB OFFICE	3,120	0.135	0.295	0.100	0.195	920	312	608	$ 124.25	$ 42.12	$ 82.13	F	20,000	$ 7.00	0.16	$ 10.92
150.0	PUMP/NITROUS	3,712	0.135	0.240	0.096	0.144	891	356	535	$ 120.27	$ 48.11	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
151.0	MECH ROOM #10	3,712	0.135	0.300	0.120	0.180	1,114	445	668	$ 150.34	$ 60.13	$ 90.20	F	20,000	$ 7.00	0.19	$ 12.99
152.0	BOILER ROOM	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
153.0	MED RECORDS		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
154.0	MED REC OPEN AREA	3,120	0.135	0.896	0.320	0.576	2,796	998	1,797	$ 377.40	$ 134.78	$ 242.61	F	20,000	$ 7.00	0.16	$ 34.94
155.0	MED REC OFFICE 1	3,120	0.135	0.112	0.040	0.072	349	125	225	$ 47.17	$ 16.85	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
156.0	MED REC OFFICE 2	3,120	0.135	0.448	0.160	0.288	1,398	499	899	$ 188.70	$ 67.39	$ 121.31	F	20,000	$ 7.00	0.16	$ 17.47
157.0	MED REC OPEN AREA	3,120	0.135	0.896	0.320	0.576	2,796	998	1,797	$ 377.40	$ 134.78	$ 242.61	F	20,000	$ 7.00	0.16	$ 34.94
158.0	MED REC OPEN AREA	3,120	0.135	0.033	0.012	0.021	103	37	66	$ 13.90	$ 5.05	$ 8.85	C	8,000	$ 6.00	0.39	$ 2.34
159.0	PHARMACY		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
160.0	PHARMACY OFFICE 1	6,388	0.135	0.112	0.040	0.072	715	256	460	$ 96.59	$ 34.50	$ 62.09	F	20,000	$ 7.00	0.32	$ 8.94
161.0	PHARMACY OFFICE 2	6,388	0.135	0.112	0.040	0.072	715	256	460	$ 96.59	$ 34.50	$ 62.09	F	20,000	$ 7.00	0.32	$ 8.94
162.0	PHARMACY STORAGE	6,388	0.135	0.224	0.096	0.128	1,431	613	818	$ 193.17	$ 82.79	$ 110.38	F	20,000	$ 7.00	0.32	$ 17.89
163.0	PHARMACY MAIN	6,388	0.135	0.784	0.336	0.448	5,008	2,146	2,862	$ 676.11	$ 289.76	$ 386.35	F	20,000	$ 7.00	0.32	$ 62.60
164.0	PHARMACY MAIN	6,388	0.135	0.600	0.240	0.360	3,833	1,533	2,300	$ 517.43	$ 206.97	$ 310.46	F	20,000	$ 7.00	0.32	$ 44.72
165.0	PHARMACY RR	6,388	0.135	0.065	0.012	0.053	415	77	339	$ 56.05	$ 10.35	$ 45.71	I	1,000	$ 2.00	6.39	$ 12.78
166.0	MED SURG		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
167.0	MED SURG HALLS	8,760	0.135	2.160	0.864	1.296	18,922	7,569	11,353	$ 2,554.42	$ 1,021.77	$ 1,532.65	F	20,000	$ 7.00	0.44	$ 220.75
168.0	MED SURG HALLS	8,760	0.135	0.472	0.144	0.328	4,135	1,261	2,873	$ 558.19	$ 170.29	$ 387.89	F	20,000	$ 7.00	0.44	$ 49.06
169.0	MED SURG HALLS	8,760	0.135	0.089	0.036	0.053	781	315	465	$ 105.37	$ 42.57	$ 62.80	F	20,000	$ 7.00	0.44	$ 9.20
170.0	SURG DIREC. OFFICE	3,120	0.135	0.120	0.072	0.048	374	225	150	$ 50.54	$ 30.33	$ 20.22	F	20,000	$ 7.00	0.16	$ 4.37
171.0	SURG OPEN OFFICE	3,120	0.135	0.240	0.144	0.096	749	449	300	$ 101.09	$ 60.65	$ 40.44	F	20,000	$ 7.00	0.16	$ 8.74
172.0	MED ROOM 1	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
173.0	MED ROOM 2	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
174.0	WHEEL CHAIR STRG.	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
175.0	HOUSE SUPERVISOR	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
176.0	UTILITY ROOM	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
177.0	CLEAN DIRTY ROOM	4,368	0.135	0.060	0.024	0.036	262	105	157	$ 35.38	$ 14.15	$ 21.23	F	20,000	$ 7.00	0.22	$ 3.06
178.0	COPIER ROOM	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
179.0	IDF	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
180.0	IDF	3,712	0.135	0.066	0.012	0.054	245	45	200	$ 33.07	$ 6.01	$ 27.06	C	8,000	$ 6.00	0.46	$ 5.57
181.0	KITCHEN STAFF	5,742	0.135	0.060	0.024	0.036	345	138	207	$ 46.51	$ 18.60	$ 27.91	F	20,000	$ 7.00	0.29	$ 4.02
182.0	STAFF RR	8,760	0.135	0.059	0.018	0.041	517	158	359	$ 69.77	$ 21.29	$ 48.49	F	20,000	$ 7.00	0.44	$ 6.13
183.0	EMERGENCY DEPT.		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
184.0	H-140 RESP. STRG	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40

Appendix A
San Gorgonio Memorial Hospital
Lighting Line by Line

		Electric Rate					Energy						Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
185.0	H-138 DIAG.IMAGING	8,760	0.135	0.165	0.090	0.075	1,445	788	657	$ 195.13	$ 106.43	$ 88.70	F	20,000	$ 7.00	0.44	$ 30.66
186.0	H-138 DIAG.IMAGING	8,760	0.135	0.231	0.084	0.147	2,024	736	1,288	$ 273.18	$ 99.34	$ 173.84	C	8,000	$ 6.00	1.10	$ 45.99
187.0	H-138B EQUIP. RM	3,712	0.135	0.180	0.072	0.108	668	267	401	$ 90.20	$ 36.08	$ 54.12	F	20,000	$ 7.00	0.19	$ 7.80
188.0	H-139 CT SCAN	8,760	0.135	0.360	0.144	0.216	3,154	1,261	1,892	$ 425.74	$ 170.29	$ 255.44	F	20,000	$ 7.00	0.44	$ 36.79
189.0	H-139 CT SCAN	8,760	0.135	0.330	0.120	0.210	2,891	1,051	1,840	$ 390.26	$ 141.91	$ 248.35	C	8,000	$ 6.00	1.10	$ 65.70
190.0	H-139 CT SCAN	8,760	0.135	0.066	0.036	0.030	578	315	263	$ 78.05	$ 42.57	$ 35.48	F	20,000	$ 7.00	0.44	$ 12.26
191.0	H-141 PHYS. OFFICE	3,712	0.135	0.132	0.048	0.084	490	178	312	$ 66.15	$ 24.05	$ 42.09	C	8,000	$ 6.00	0.46	$ 11.14
192.0	H-141 PHYS. OFF. RR	8,760	0.135	0.132	0.048	0.084	1,156	420	736	$ 156.10	$ 56.76	$ 99.34	C	8,000	$ 6.00	1.10	$ 26.28
193.0	MEN'S RR	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
194.0	MEN'S RR	8,760	0.135	0.066	0.024	0.042	578	210	368	$ 78.05	$ 28.38	$ 49.67	C	8,000	$ 6.00	1.10	$ 13.14
195.0	MEN'S RR	8,760	0.135	0.031	0.012	0.019	272	105	166	$ 36.66	$ 14.19	$ 22.47	F	20,000	$ 7.00	0.44	$ 3.07
196.0	WOMEN'S RR	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
197.0	WOMEN'S RR	8,760	0.135	0.066	0.024	0.042	578	210	368	$ 78.05	$ 28.38	$ 49.67	C	8,000	$ 6.00	1.10	$ 13.14
198.0	WOMEN'S RR	8,760	0.135	0.031	0.012	0.019	272	105	166	$ 36.66	$ 14.19	$ 22.47	F	20,000	$ 7.00	0.44	$ 3.07
199.0	H-144	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
200.0	H-144	8,760	0.135	0.100	0.014	0.086	876	123	753	$ 118.26	$ 16.56	$ 101.70	I	1,000	$ 2.00	8.76	$ 35.04
201.0	H-144	3,712	0.135	0.198	0.072	0.126	735	267	468	$ 99.22	$ 36.08	$ 63.14	C	8,000	$ 6.00	0.46	$ 16.70
202.0	H-145 OFFICE	3,712	0.135	0.060	0.036	0.024	223	134	89	$ 30.07	$ 18.04	$ 12.03	F	20,000	$ 7.00	0.19	$ 2.60
203.0	H-145 OFFICE	3,712	0.135	0.062	0.020	0.042	230	74	156	$ 31.07	$ 10.02	$ 21.05	F	20,000	$ 7.00	0.19	$ 1.30
204.0	H-197	8,760	0.135	0.300	0.120	0.180	2,628	1,051	1,577	$ 354.78	$ 141.91	$ 212.87	F	20,000	$ 7.00	0.44	$ 30.66
205.0	H-197	8,760	0.135	0.066	0.048	0.018	578	420	158	$ 78.05	$ 56.76	$ 21.29	C	8,000	$ 6.00	1.10	$ 13.14
206.0	H-146 STAFF LOUNGE	8,760	0.135	0.360	0.144	0.216	3,154	1,261	1,892	$ 425.74	$ 170.29	$ 255.44	F	20,000	$ 7.00	0.44	$ 36.79
207.0	H-148 DIR. OFFICE	3,712	0.135	0.240	0.144	0.096	891	535	356	$ 120.27	$ 72.16	$ 48.11	F	20,000	$ 7.00	0.19	$ 10.39
208.0	H-148 DIR. OFFICE	3,712	0.135	0.062	0.020	0.042	230	74	156	$ 31.07	$ 10.02	$ 21.05	F	20,000	$ 7.00	0.19	$ 1.30
209.0	H-149 OFFICE	3,712	0.135	0.120	0.072	0.048	445	267	178	$ 60.13	$ 36.08	$ 24.05	F	20,000	$ 7.00	0.19	$ 5.20
210.0	H-149 OFFICE	3,712	0.135	0.062	0.020	0.042	230	74	156	$ 31.07	$ 10.02	$ 21.05	F	20,000	$ 7.00	0.19	$ 1.30
211.0	H-150	8,760	0.135	0.600	0.240	0.360	5,256	2,102	3,154	$ 709.56	$ 283.82	$ 425.74	F	20,000	$ 7.00	0.44	$ 61.32
212.0	H-150	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
213.0	H-153A REG.	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
214.0	H-153A REG.	3,712	0.135	0.066	0.024	0.042	245	89	156	$ 33.07	$ 12.03	$ 21.05	C	8,000	$ 6.00	0.46	$ 5.57
215.0	H-101 SECURITY	8,760	0.135	0.099	0.036	0.063	867	315	552	$ 117.08	$ 42.57	$ 74.50	C	8,000	$ 6.00	1.10	$ 19.71
216.0	H-LOBBY	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
217.0	H-LOBBY	8,760	0.135	0.330	0.065	0.265	2,891	569	2,321	$ 390.26	$ 76.87	$ 313.39	C	8,000	$ 6.00	1.10	$ 65.70
218.0	H-LOBBY	8,760	0.135	-	-	-	-	-	-	$ -	$ -	$ -	L				
219.0	H-LOBBY	8,760	0.135	0.693	0.252	0.441	6,071	2,208	3,863	$ 819.54	$ 298.02	$ 521.53	C	8,000	$ 6.00	1.10	$ 137.97
220.0	H-LOBBY	8,760	0.135	0.200	0.028	0.172	1,752	245	1,507	$ 236.52	$ 33.11	$ 203.41	I	1,000	$ 2.00	8.76	$ 70.08
221.0	H-LOBBY MENS RR	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
222.0	H-LOBBY MENS RR	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
223.0	LOBBY WOMENS RR	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
224.0	LOBBY WOMENS RR	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
225.0	H-EXAM 105	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
226.0	H-EXAM 105	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
227.0	H-EXAM 105	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
228.0	H-EXAM 106	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
229.0	H-EXAM 106	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
230.0	H-EXAM 106	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
231.0	H-EXAM 107	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
232.0	H-EXAM 107	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
233.0	H-EXAM 107	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
234.0	H-EXAM 108	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
235.0	H-EXAM 108	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
236.0	H-EXAM 108	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
237.0	H-EXAM 109	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
238.0	H-EXAM 109	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
239.0	H-EXAM 109	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
240.0	H-110 EVA	8,760	0.135	0.059	0.018	0.041	517	158	359	$ 69.77	$ 21.29	$ 48.49	F	20,000	$ 7.00	0.44	$ 6.13
241.0	H-EXAM 112	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
242.0	H-EXAM 112	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
243.0	H-EXAM 112	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
244.0	H-EXAM 113	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
245.0	H-EXAM 113	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
246.0	H-EXAM 113	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
247.0	H-EXAM 114	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
248.0	H-EXAM 114	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
249.0	H-EXAM 114	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14

Appendix A

San Gorgonio Memorial Hospital

Lighting Line by Line

			Electric Rate					Energy					Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
250.0	H-EXAM 115	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
251.0	H-EXAM 115	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
252.0	H-EXAM 115	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
253.0	H-EXAM 116	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
254.0	H-EXAM 116	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
255.0	H-EXAM 116	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
256.0	H-EXAM 117	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
257.0	H-EXAM 117	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
258.0	H-EXAM 117	8,760	0.135	0.034	0.024	0.010	298	210	88	$ 40.21	$ 28.38	$ 11.83	C	8,000	$ 6.00	1.10	$ 13.14
259.0	H-127 EQUIP. RM	3,712	0.135	0.180	0.072	0.108	668	267	401	$ 90.20	$ 36.08	$ 54.12	F	20,000	$ 7.00	0.19	$ 7.80
260.0	H-128 IDF ROOM	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
261.0	H-126 OFFICE	3,712	0.135	0.060	0.036	0.024	223	134	89	$ 30.07	$ 18.04	$ 12.03	F	20,000	$ 7.00	0.19	$ 2.60
262.0	H-125 OFFICE	3,712	0.135	0.060	0.036	0.024	223	134	89	$ 30.07	$ 18.04	$ 12.03	F	20,000	$ 7.00	0.19	$ 2.60
263.0	H-120 MECHANICAL	3,712	0.135	0.033	0.009	0.024	122	33	89	$ 16.54	$ 4.51	$ 12.03	C	8,000	$ 6.00	0.46	$ 2.78
264.0	H-122 COUNSELING	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
265.0	H-131 RESTROOM	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
266.0	H-131 RESTROOM	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
267.0	H-132 MAJOR TREAT.	8,760	0.135	0.480	0.192	0.288	4,205	1,682	2,523	$ 567.65	$ 227.06	$ 340.59	F	20,000	$ 7.00	0.44	$ 49.06
268.0	H-132 MAJOR TREAT	8,760	0.135	0.066	0.024	0.042	578	210	368	$ 78.05	$ 28.38	$ 49.67	C	8,000	$ 6.00	1.10	$ 13.14
269.0	H-137 ELEC. RM	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
270.0	H-194 DRESSING RM	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
271.0	H-194 DRESSING RM	3,712	0.135	0.027	0.012	0.016	100	43	58	$ 13.53	$ 5.76	$ 7.77	F	20,000	$ 7.00	0.19	$ 1.30
272.0	H-176 RESTROOM	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
273.0	H-176 RESTROOM	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
274.0	H-172	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
275.0	H-168 MED ROOM	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
276.0	H-120	8,760	0.135	0.132	0.048	0.084	1,156	420	736	$ 156.10	$ 56.76	$ 99.34	C	8,000	$ 6.00	1.10	$ 26.28
277.0	E EXAM ROOM	8,760	0.135	0.960	0.384	0.576	8,410	3,364	5,046	$ 1,135.30	$ 454.12	$ 681.18	F	20,000	$ 7.00	0.44	$ 98.11
278.0	E EXAM ROOM	8,760	0.135	0.528	0.192	0.336	4,625	1,682	2,943	$ 624.41	$ 227.06	$ 397.35	C	8,000	$ 6.00	1.10	$ 105.12
279.0	E EXAM ROOM	8,760	0.135	0.528	0.384	0.144	4,625	3,364	1,261	$ 624.41	$ 454.12	$ 170.29	C	8,000	$ 6.00	1.10	$ 105.12
280.0	E HALL SQUARE	8,760	0.135	-	-	-	-	-	-	$ -	$ -	$ -	L				
281.0	E HALL 2X4	8,760	0.135	4.200	1.680	2.520	36,792	14,717	22,075	$ 4,966.92	$ 1,986.77	$ 2,980.15	F	20,000	$ 7.00	0.44	$ 429.24
282.0	E HALL 8"	8,760	0.135	0.330	0.240	0.090	2,891	2,102	788	$ 390.26	$ 283.82	$ 106.43	C	8,000	$ 6.00	1.10	$ 65.70
283.0	E HALL SCONE	8,760	0.135	0.792	0.156	0.636	6,938	1,367	5,571	$ 936.62	$ 184.49	$ 752.13	C	8,000	$ 6.00	1.10	$ 157.68
284.0	E HALL MR16	8,760	0.135	0.600	0.084	0.516	5,256	736	4,520	$ 709.56	$ 99.34	$ 610.22	I	1,000	$ 2.00	8.76	$ 210.24
285.0	E HALL 6" H	8,760	0.135	0.066	0.024	0.042	578	210	368	$ 78.05	$ 28.38	$ 49.67	C	8,000	$ 6.00	1.10	$ 13.14
286.0	E HALL 6"	8,760	0.135	0.136	0.096	0.040	1,191	841	350	$ 160.83	$ 113.53	$ 47.30	C	8,000	$ 6.00	1.10	$ 52.56
287.0	ICU/IDU		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
288.0	H-220	8,760	0.135	0.297	0.216	0.081	2,602	1,892	710	$ 351.23	$ 255.44	$ 95.79	C	8,000	$ 6.00	1.10	$ 59.13
289.0	H-220	8,760	0.135	0.100	0.014	0.086	876	123	753	$ 118.26	$ 16.56	$ 101.70	I	1,000	$ 2.00	8.76	$ 35.04
290.0	H-220	8,760	0.135	0.264	0.052	0.212	2,313	456	1,857	$ 312.21	$ 61.50	$ 250.71	C	8,000	$ 6.00	1.10	$ 52.56
291.0	H-220A RESTROOM	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
292.0	H-220A RESTROOM	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
293.0	H-220B RESTROOM	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
294.0	H-220B RESTROOM	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
295.0	H-221 RECEPTION	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
296.0	H-221 RECEPTION	8,760	0.135	0.100	0.014	0.086	876	123	753	$ 118.26	$ 16.56	$ 101.70	I	1,000	$ 2.00	8.76	$ 35.04
297.0	H-238 PAT. MONITOR	8,760	0.135	0.120	0.072	0.048	1,051	631	420	$ 141.91	$ 85.15	$ 56.76	F	20,000	$ 7.00	0.44	$ 12.26
298.0	H-238 PAT. MONITOR	8,760	0.135	0.066	0.048	0.018	578	420	158	$ 78.05	$ 56.76	$ 21.29	C	8,000	$ 6.00	1.10	$ 13.14
299.0	H-242 HALL	8,760	0.135	0.540	0.216	0.324	4,730	1,892	2,838	$ 638.60	$ 255.44	$ 383.16	F	20,000	$ 7.00	0.44	$ 55.19
300.0	H-242 HALL	8,760	0.135	0.033	0.018	0.015	289	158	131	$ 39.03	$ 21.29	$ 17.74	F	20,000	$ 7.00	0.44	$ 6.13
301.0	H-219 RESP THERAPY	8,760	0.135	0.540	0.216	0.324	4,730	1,892	2,838	$ 638.60	$ 255.44	$ 383.16	F	20,000	$ 7.00	0.44	$ 55.19
302.0	H-219A OFFICE	3,712	0.135	0.120	0.072	0.048	445	267	178	$ 60.13	$ 36.08	$ 24.05	F	20,000	$ 7.00	0.19	$ 5.20
303.0	H-219B EVS	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
304.0	H-218 STORAGE	3,712	0.135	0.420	0.168	0.252	1,559	624	935	$ 210.47	$ 84.19	$ 126.28	F	20,000	$ 7.00	0.19	$ 18.19
305.0	H-218 STORAGE	3,712	0.135	0.033	0.024	0.009	122	89	33	$ 16.54	$ 12.03	$ 4.51	C	8,000	$ 6.00	0.46	$ 2.78
306.0	H-262B STORAGE	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
307.0	H-217 OFFICE	8,760	0.135	0.060	0.036	0.024	526	315	210	$ 70.96	$ 42.57	$ 28.38	F	20,000	$ 7.00	0.44	$ 6.13
308.0	H-216 IDF ROOM	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
309.0	H-240	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
310.0	H-261B HALL	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
311.0	H-261B HALL	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
312.0	H-245 SOILED UTIL	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
313.0	H-241 DIR. OFFICE	3,120	0.135	0.120	0.072	0.048	374	225	150	$ 50.54	$ 30.33	$ 20.22	F	20,000	$ 7.00	0.16	$ 4.37
314.0	H-328 HALL	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40

Appendix A

San Gorgonio Memorial Hospital

Lighting Line by Line

		Electric Rate					Energy						Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
315.0	H-328 HALL	8,760	0.135	0.033	0.024	0.009	289	210	79	$ 39.03	$ 28.38	$ 10.64	C	8,000	$ 6.00	1.10	$ 6.57
316.0	H-235 SOILED	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
317.0	H-237 PHARMACY	3,712	0.135	0.132	0.048	0.084	490	178	312	$ 66.15	$ 24.05	$ 42.09	C	8,000	$ 6.00	0.46	$ 11.14
318.0	H-237 PHARMACY RR	8,760	0.135	0.066	0.024	0.042	578	210	368	$ 78.05	$ 28.38	$ 49.67	C	8,000	$ 6.00	1.10	$ 13.14
319.0	H-237 PHARMACY RR	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
320.0	H-22A CONF. RM	3,712	0.135	0.360	0.144	0.216	1,336	535	802	$ 180.40	$ 72.16	$ 108.24	F	20,000	$ 7.00	0.19	$ 15.59
321.0	H-22A CONF. RM	3,712	0.135	0.132	0.048	0.084	490	178	312	$ 66.15	$ 24.05	$ 42.09	C	8,000	$ 6.00	0.46	$ 11.14
322.0	H-223 OFFICE	3,712	0.135	0.120	0.072	0.048	445	267	178	$ 60.13	$ 36.08	$ 24.05	F	20,000	$ 7.00	0.19	$ 5.20
323.0	H-226 WOMENS RR	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
324.0	H-226 WOMENS RR	8,760	0.135	0.066	0.024	0.042	578	210	368	$ 78.05	$ 28.38	$ 49.67	C	8,000	$ 6.00	1.10	$ 13.14
325.0	H-226 WOMENS RR	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
326.0	H-226 MENS RR	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
327.0	H-226 MENS RR	8,760	0.135	0.066	0.024	0.042	578	210	368	$ 78.05	$ 28.38	$ 49.67	C	8,000	$ 6.00	1.10	$ 13.14
328.0	H-226 MENS RR	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
329.0	H-2HALL	8,760	0.135	2.280	0.912	1.368	19,973	7,989	11,984	$ 2,696.33	$ 1,078.53	$ 1,617.80	F	20,000	$ 7.00	0.44	$ 233.02
330.0	H-2HALL	8,760	0.135	1.100	0.154	0.946	9,636	1,349	8,287	$ 1,300.86	$ 182.12	$ 1,118.74	I	1,000	$ 2.00	8.76	$ 385.44
331.0	H-2HALL	8,760	0.135	0.132	0.048	0.084	1,156	420	736	$ 156.10	$ 56.76	$ 99.34	C	8,000	$ 6.00	1.10	$ 26.28
332.0	H-2HALL	8,760	0.135	0.297	0.216	0.081	2,602	1,892	710	$ 351.23	$ 255.44	$ 95.79	C	8,000	$ 6.00	1.10	$ 59.13
333.0	H-265 STORAGE	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
334.0	H-231 EVS RM	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
335.0	H-243 NOURISHMENT	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
336.0	H-243 NOURISHMENT	8,760	0.135	0.020	0.009	0.011	175	79	96	$ 23.65	$ 10.64	$ 13.01	F	20,000	$ 7.00	0.44	$ 3.07
337.0	H-244 PAT SHOWER	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
338.0	H-247 CLEAN UTILITY	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
339.0	H-246	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
340.0	H-246	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
341.0	ICU ROOF ELEC. RM	2,340	0.135	0.120	0.048	0.072	281	112	168	$ 37.91	$ 15.16	$ 22.74	F	20,000	$ 7.00	0.12	$ 3.28
342.0	ICU ROOF ELEV. RM	2,340	0.135	0.240	0.096	0.144	562	225	337	$ 75.82	$ 30.33	$ 45.49	F	20,000	$ 7.00	0.12	$ 6.55
343.0	ICU ROOF LIGHTS		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
344.0	EXT ICU ROOF JELLY	8,760	0.135	0.165	0.045	0.120	1,445	394	1,051	$ 195.13	$ 53.22	$ 141.91	C	8,000	$ 6.00	1.10	$ 32.85
345.0	EXT ICU ROOF WP	8,760	0.135	0.132	0.052	0.080	1,156	456	701	$ 156.10	$ 61.50	$ 94.61	C	8,000	$ 6.00	1.10	$ 26.28
346.0	STAFF OFFICES NEAR K		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
347.0	COORD RECEP	3,712	0.135	0.112	0.048	0.064	416	178	238	$ 56.13	$ 24.05	$ 32.07	F	20,000	$ 7.00	0.19	$ 5.20
348.0	COORD. OFFICE	3,712	0.135	0.112	0.040	0.072	416	148	267	$ 56.13	$ 20.04	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
349.0	MEDICAL STAFF	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
350.0	MED STAFF OFFICE	3,712	0.135	0.120	0.072	0.048	445	267	178	$ 60.13	$ 36.08	$ 24.05	F	20,000	$ 7.00	0.19	$ 5.20
351.0	MED STAFF OFFICE RR	3,712	0.135	0.065	0.012	0.053	241	45	197	$ 32.57	$ 6.01	$ 26.56	I	1,000	$ 2.00	3.71	$ 7.42
352.0	STAFF LOUNGE	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
353.0	STF LOUNGE HALL	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
354.0	STF LOCKER RM	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
355.0	STF LOUNGE RR	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
356.0	STF LOUNGE EVS	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
357.0	A011 CASE MANG.	3,120	0.135	0.120	0.048	0.072	374	150	225	$ 50.54	$ 20.22	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
358.0	A009 HOSPITALIST	3,120	0.135	0.120	0.048	0.072	374	150	225	$ 50.54	$ 20.22	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
359.0	A010 CASE MANG	3,120	0.135	0.120	0.048	0.072	374	150	225	$ 50.54	$ 20.22	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
360.0	A008 SOCIAL SERV.	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
361.0	A007 INPAT. CARE	3,120	0.135	0.120	0.048	0.072	374	150	225	$ 50.54	$ 20.22	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
362.0	A006 OFFICE	3,120	0.135	0.120	0.072	0.048	374	225	150	$ 50.54	$ 30.33	$ 20.22	F	20,000	$ 7.00	0.16	$ 4.37
363.0	A005 OFFICE	3,712	0.135	0.180	0.080	0.100	668	297	371	$ 90.20	$ 40.09	$ 50.11	F	20,000	$ 7.00	0.19	$ 7.80
364.0	A004 OFFICE	3,712	0.135	0.120	0.072	0.048	445	267	178	$ 60.13	$ 36.08	$ 24.05	F	20,000	$ 7.00	0.19	$ 5.20
365.0	A003 STORAGE	3,712	0.135	0.090	0.036	0.054	334	134	200	$ 45.10	$ 18.04	$ 27.06	F	20,000	$ 7.00	0.19	$ 3.90
366.0	A002 OFFICE	3,120	0.135	0.180	0.080	0.100	562	250	312	$ 75.82	$ 33.70	$ 42.12	F	20,000	$ 7.00	0.16	$ 6.55
367.0	A001 OFFICE	3,120	0.135	0.180	0.080	0.100	562	250	312	$ 75.82	$ 33.70	$ 42.12	F	20,000	$ 7.00	0.16	$ 6.55
368.0	A031 LOW VOLT.	3,712	0.135	0.090	0.036	0.054	334	134	200	$ 45.10	$ 18.04	$ 27.06	F	20,000	$ 7.00	0.19	$ 3.90
369.0	A032 EQUIP. RM	3,712	0.135	0.240	0.096	0.144	891	356	535	$ 120.27	$ 48.11	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
370.0	A032 EQUIP. RM	3,712	0.135	0.090	0.036	0.054	334	134	200	$ 45.10	$ 18.04	$ 27.06	F	20,000	$ 7.00	0.19	$ 3.90
371.0	A029 EQUIP RM	3,712	0.135	0.720	0.288	0.432	2,673	1,069	1,604	$ 360.81	$ 144.32	$ 216.48	F	20,000	$ 7.00	0.19	$ 31.18
372.0	A030 ELECTRICAL	3,712	0.135	0.630	0.252	0.378	2,339	935	1,403	$ 315.71	$ 126.28	$ 189.42	F	20,000	$ 7.00	0.19	$ 27.28
373.0	A039 HALL	8,760	0.135	0.720	0.288	0.432	6,307	2,523	3,784	$ 851.47	$ 340.59	$ 510.88	F	20,000	$ 7.00	0.44	$ 73.58
374.0	KITCHEN		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
375.0	CLASSROOM D	2,540	0.135	0.672	0.288	0.384	1,707	732	975	$ 230.43	$ 98.76	$ 131.67	F	20,000	$ 7.00	0.13	$ 21.34
376.0	CAFÉ. LUNCH AREA	8,760	0.135	2.240	0.960	1.280	19,622	8,410	11,213	$ 2,649.02	$ 1,135.30	$ 1,513.73	F	20,000	$ 7.00	0.44	$ 245.28
377.0	CAFÉ.LUNCH AREA	8,760	0.135	0.455	0.168	0.287	3,986	1,472	2,514	$ 538.08	$ 198.68	$ 339.41	I	1,000	$ 2.00	8.76	$ 122.64
378.0	KITCHEN OFFICE 1	5,742	0.135	0.060	0.024	0.036	345	138	207	$ 46.51	$ 18.60	$ 27.91	F	20,000	$ 7.00	0.29	$ 4.02
379.0	KITCHEN OFFICE 2	5,742	0.135	0.120	0.048	0.072	689	276	413	$ 93.02	$ 37.21	$ 55.81	F	20,000	$ 7.00	0.29	$ 8.04

Appendix A

San Gorgonio Memorial Hospital

Lighting Line by Line

			Electric Rate								Energy				Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
380.0	160 MECH. ROOM	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
381.0	WOMEN'S RR	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
382.0	WOMEN'S RR	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
383.0	MEN'S RR	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57
384.0	MEN'S RR	8,760	0.135	0.027	0.012	0.016	237	101	136	$ 31.93	$ 13.60	$ 18.33	F	20,000	$ 7.00	0.44	$ 3.07
385.0	LOCKERS	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
386.0	LOCKERS WOMENS	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
387.0	A024 WATER STRG.	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
388.0	KITCHEN	5,742	0.135	4.816	2.064	2.752	27,653	11,851	15,802	$ 3,733.22	$ 1,599.95	$ 2,133.27	F	20,000	$ 7.00	0.29	$ 345.67
389.0	DIAGNOSTIC IMAGING		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
390.0	STORAGE/SERVER	3,412	0.135	0.066	0.024	0.042	225	82	143	$ 30.40	$ 11.05	$ 19.35	C	8,000	$ 6.00	0.43	$ 5.12
391.0	MENS RR	3,412	0.135	0.060	0.024	0.036	205	82	123	$ 27.64	$ 11.05	$ 16.58	F	20,000	$ 7.00	0.17	$ 2.39
392.0	WOMENS RR	3,412	0.135	0.060	0.024	0.036	205	82	123	$ 27.64	$ 11.05	$ 16.58	F	20,000	$ 7.00	0.17	$ 2.39
393.0	RADIO.WAIT RM	3,412	0.135	0.336	0.144	0.192	1,146	491	655	$ 154.77	$ 66.33	$ 88.44	F	20,000	$ 7.00	0.17	$ 14.33
394.0	MAMMOGRAPHY	3,412	0.135	0.112	0.048	0.064	382	164	218	$ 51.59	$ 22.11	$ 29.48	F	20,000	$ 7.00	0.17	$ 4.78
395.0	RADIO. OFFICE 1	3,412	0.135	0.224	0.080	0.144	764	273	491	$ 103.18	$ 36.85	$ 66.33	F	20,000	$ 7.00	0.17	$ 9.55
396.0	RADIO. OFFICE 1	3,412	0.135	0.033	0.012	0.021	113	41	72	$ 15.20	$ 5.53	$ 9.67	C	8,000	$ 6.00	0.43	$ 2.56
397.0	READING ROOM	3,412	0.135	0.224	0.080	0.144	764	273	491	$ 103.18	$ 36.85	$ 66.33	F	20,000	$ 7.00	0.17	$ 9.55
398.0	EMP. LOUNGE RR 1	3,412	0.135	0.033	0.012	0.021	113	41	72	$ 15.20	$ 5.53	$ 9.67	C	8,000	$ 6.00	0.43	$ 2.56
399.0	EMP. LOUNGE RR 2	3,412	0.135	0.033	0.012	0.021	113	41	72	$ 15.20	$ 5.53	$ 9.67	C	8,000	$ 6.00	0.43	$ 2.56
400.0	RADIO. MANAGER	3,412	0.135	0.060	0.036	0.024	205	123	82	$ 27.64	$ 16.58	$ 11.05	F	20,000	$ 7.00	0.17	$ 2.39
401.0	IMAG. FRNT OFFICE	3,412	0.135	0.336	0.120	0.216	1,146	409	737	$ 154.77	$ 55.27	$ 99.49	F	20,000	$ 7.00	0.17	$ 14.33
402.0	RADIO 1	3,412	0.135	0.560	0.200	0.360	1,911	682	1,228	$ 257.95	$ 92.12	$ 165.82	F	20,000	$ 7.00	0.17	$ 23.88
403.0	RADIO 1	3,412	0.135	0.195	0.072	0.123	665	246	420	$ 89.82	$ 33.16	$ 56.66	I	1,000	$ 2.00	3.41	$ 20.47
404.0	RADIO 2	3,412	0.135	0.560	0.200	0.360	1,911	682	1,228	$ 257.95	$ 92.12	$ 165.82	F	20,000	$ 7.00	0.17	$ 23.88
405.0	RADIO 2	3,412	0.135	0.195	0.072	0.123	665	246	420	$ 89.82	$ 33.16	$ 56.66	I	1,000	$ 2.00	3.41	$ 20.47
406.0	RADIO 2 RR	3,412	0.135	0.065	0.012	0.053	222	41	181	$ 29.94	$ 5.53	$ 24.41	I	1,000	$ 2.00	3.41	$ 6.82
407.0	RADIO RR	3,412	0.135	0.065	0.012	0.053	222	41	181	$ 29.94	$ 5.53	$ 24.41	I	1,000	$ 2.00	3.41	$ 6.82
408.0	STORAGE RADIO	3,412	0.135	0.033	0.012	0.021	113	41	72	$ 15.20	$ 5.53	$ 9.67	C	8,000	$ 6.00	0.43	$ 2.56
409.0	PACS ROOM	3,412	0.135	0.224	0.096	0.128	764	328	437	$ 103.18	$ 44.22	$ 58.96	F	20,000	$ 7.00	0.17	$ 9.55
410.0	THYROID UPTAKE	3,412	0.135	0.448	0.192	0.256	1,529	655	873	$ 206.36	$ 88.44	$ 117.92	F	20,000	$ 7.00	0.17	$ 19.11
411.0	ULTRASOUND	3,412	0.135	0.224	0.096	0.128	764	328	437	$ 103.18	$ 44.22	$ 58.96	F	20,000	$ 7.00	0.17	$ 9.55
412.0	NUCLEAR MED	3,412	0.135	0.672	0.288	0.384	2,293	983	1,310	$ 309.54	$ 132.66	$ 176.88	F	20,000	$ 7.00	0.17	$ 28.66
413.0	NUCLEAR MED	3,412	0.135	0.065	0.012	0.053	222	41	181	$ 29.94	$ 5.53	$ 24.41	I	1,000	$ 2.00	3.41	$ 6.82
414.0	RADIOLOGY HALL	3,412	0.135	0.300	0.120	0.180	1,024	409	614	$ 138.19	$ 55.27	$ 82.91	F	20,000	$ 7.00	0.17	$ 11.94
415.0	EQUIPMENT ROOM	3,412	0.135	0.065	0.012	0.053	222	41	181	$ 29.94	$ 5.53	$ 24.41	I	1,000	$ 2.00	3.41	$ 6.82
416.0	EVS CLOSET	3,412	0.135	0.065	0.012	0.053	222	41	181	$ 29.94	$ 5.53	$ 24.41	I	1,000	$ 2.00	3.41	$ 6.82
417.0	PHYSICAL THERAPY		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
418.0	PT-OFFICE	3,120	0.135	0.072	0.036	0.036	225	112	112	$ 30.33	$ 15.16	$ 15.16	F	20,000	$ 7.00	0.16	$ 2.18
419.0	PT- LOUNGE/RR	3,712	0.135	0.112	0.048	0.064	416	178	238	$ 56.13	$ 24.05	$ 32.07	F	20,000	$ 7.00	0.19	$ 5.20
420.0	PT- LOUNGE/RR	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
421.0	PT-HALL	3,712	0.135	0.300	0.120	0.180	1,114	445	668	$ 150.34	$ 60.13	$ 90.20	F	20,000	$ 7.00	0.19	$ 12.99
422.0	PT- WAIT ROOM	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
423.0	PT- WHIRL POOL	3,712	0.135	0.336	0.144	0.192	1,247	535	713	$ 168.38	$ 72.16	$ 96.22	F	20,000	$ 7.00	0.19	$ 15.59
424.0	PT-WORK ROOM	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
425.0	PT- REHAB DEPT	3,712	0.135	0.224	0.096	0.128	831	356	475	$ 112.25	$ 48.11	$ 64.14	F	20,000	$ 7.00	0.19	$ 10.39
426.0	PT-OFFICE	3,120	0.135	0.224	0.080	0.144	699	250	449	$ 94.35	$ 33.70	$ 60.65	F	20,000	$ 7.00	0.16	$ 8.74
427.0	PT RR	3,712	0.135	0.060	0.024	0.036	223	89	134	$ 30.07	$ 12.03	$ 18.04	F	20,000	$ 7.00	0.19	$ 2.60
428.0	PT REHAB DEPT 2	3,712	0.135	0.112	0.048	0.064	416	178	238	$ 56.13	$ 24.05	$ 32.07	F	20,000	$ 7.00	0.19	$ 5.20
429.0	PT OFFICE	3,120	0.135	0.112	0.040	0.072	349	125	225	$ 47.17	$ 16.85	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
430.0	PT-GYM	3,712	0.135	0.784	0.336	0.448	2,910	1,247	1,663	$ 392.88	$ 168.38	$ 224.50	F	20,000	$ 7.00	0.19	$ 36.38
431.0	MATERIAL MANAGEMENT		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
432.0	B200 EQUIP. STRG	3,712	0.135	0.240	0.096	0.144	891	356	535	$ 120.27	$ 48.11	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
433.0	B201 MAIL ROOM	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
434.0	B106 CLOSET MAIL	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
435.0	B203 BUYER OFF.	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
436.0	B204 DIR. OFFICE	3,712	0.135	0.120	0.072	0.048	445	267	178	$ 60.13	$ 36.08	$ 24.05	F	20,000	$ 7.00	0.19	$ 5.20
437.0	CENTRAL SUP. RM	3,712	0.135	3.136	1.344	1.792	11,641	4,989	6,652	$ 1,571.51	$ 673.51	$ 898.01	F	20,000	$ 7.00	0.19	$ 145.51
438.0	B211 CLEAN LINEN	3,712	0.135	0.360	0.144	0.216	1,336	535	802	$ 180.40	$ 72.16	$ 108.24	F	20,000	$ 7.00	0.19	$ 15.59
439.0	B210 EVA DIR.	3,712	0.135	0.120	0.048	0.072	445	178	267	$ 60.13	$ 24.05	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
440.0	B209 EVA SUPP.	3,712	0.135	0.240	0.096	0.144	891	356	535	$ 120.27	$ 48.11	$ 72.16	F	20,000	$ 7.00	0.19	$ 10.39
441.0	STAFF OFFICES NEAR C		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
442.0	ST-LOUNGE	3,712	0.135	0.112	0.048	0.064	416	178	238	$ 56.13	$ 24.05	$ 32.07	F	20,000	$ 7.00	0.19	$ 5.20
443.0	ST- CLOSET	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
444.0	ST-RR	8,760	0.135	0.033	0.012	0.021	289	105	184	$ 39.03	$ 14.19	$ 24.83	C	8,000	$ 6.00	1.10	$ 6.57

Appendix A

San Gorgonio Memorial Hospital

Lighting Line by Line

		Electric Rate								Energy				Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
445.0	ST-OFFICE	4,368	0.135	0.112	0.040	0.072	489	175	314	$ 66.04	$ 23.59	$ 42.46	F	20,000	$ 7.00	0.22	$ 6.12
446.0	ST-RR	3,712	0.135	0.033	0.012	0.021	122	45	78	$ 16.54	$ 6.01	$ 10.52	C	8,000	$ 6.00	0.46	$ 2.78
447.0	ST-OFFICE	3,712	0.135	0.112	0.040	0.072	416	148	267	$ 56.13	$ 20.04	$ 36.08	F	20,000	$ 7.00	0.19	$ 5.20
448.0	ST-UTILITY	3,712	0.135	0.112	0.048	0.064	416	178	238	$ 56.13	$ 24.05	$ 32.07	F	20,000	$ 7.00	0.19	$ 5.20
449.0	ST-LOCKERS	8,760	0.135	0.112	0.048	0.064	981	420	561	$ 132.45	$ 56.76	$ 75.69	F	20,000	$ 7.00	0.44	$ 12.26
450.0	CLINICAL LAB		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
451.0	LAB OPEN AREA	8,760	0.135	2.520	1.008	1.512	22,075	8,830	13,245	$ 2,980.15	$ 1,192.06	$ 1,788.09	F	20,000	$ 7.00	0.44	$ 257.54
452.0	LAB STORAGE	3,120	0.135	0.112	0.048	0.064	349	150	200	$ 47.17	$ 20.22	$ 26.96	F	20,000	$ 7.00	0.16	$ 4.37
453.0	LAB BREAK ROOM	8,760	0.135	0.112	0.048	0.064	981	420	561	$ 132.45	$ 56.76	$ 75.69	F	20,000	$ 7.00	0.44	$ 12.26
454.0	BREAK ROOM RR	8,760	0.135	0.065	0.012	0.053	569	105	464	$ 76.87	$ 14.19	$ 62.68	I	1,000	$ 2.00	8.76	$ 17.52
455.0	WAITING AREA RR 1	8,760	0.135	0.065	0.024	0.041	569	210	359	$ 76.87	$ 28.38	$ 48.49	I	1,000	$ 2.00	8.76	$ 17.52
456.0	WAITING AREA RR 2	8,760	0.135	0.130	0.048	0.082	1,139	420	718	$ 153.74	$ 56.76	$ 96.97	I	1,000	$ 2.00	8.76	$ 35.04
457.0	LAB WAITING AREA	8,760	0.135	0.336	0.144	0.192	2,943	1,261	1,682	$ 397.35	$ 170.29	$ 227.06	F	20,000	$ 7.00	0.44	$ 36.79
458.0	LAB WAITING AREA	8,760	0.135	0.130	0.048	0.082	1,139	420	718	$ 153.74	$ 56.76	$ 96.97	I	1,000	$ 2.00	8.76	$ 35.04
459.0	LAB OFFICE 2	8,760	0.135	0.224	0.080	0.144	1,962	701	1,261	$ 264.90	$ 94.61	$ 170.29	F	20,000	$ 7.00	0.44	$ 24.53
460.0	EKG/ECHO	2,540	0.135	0.224	0.096	0.128	569	244	325	$ 76.81	$ 32.92	$ 43.89	F	20,000	$ 7.00	0.13	$ 7.11
461.0	CENTRAL PLANT 1ST FL		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
462.0	STAIR 1	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
463.0	STAIR 1	8,760	0.135	0.120	0.048	0.072	1,051	420	631	$ 141.91	$ 56.76	$ 85.15	F	20,000	$ 7.00	0.44	$ 12.26
464.0	107 STORAGE	8,760	0.135	0.360	0.144	0.216	3,154	1,261	1,892	$ 425.74	$ 170.29	$ 255.44	F	20,000	$ 7.00	0.44	$ 36.79
465.0	106 ELECTRICAL	8,760	0.135	0.360	0.144	0.216	3,154	1,261	1,892	$ 425.74	$ 170.29	$ 255.44	F	20,000	$ 7.00	0.44	$ 36.79
466.0	105 ELECTRICAL	8,760	0.135	0.540	0.216	0.324	4,730	1,892	2,838	$ 638.60	$ 255.44	$ 383.16	F	20,000	$ 7.00	0.44	$ 55.19
467.0	104 GENERATOR	8,760	0.135	3.840	1.350	2.490	33,638	11,826	21,812	$ 4,541.18	$ 1,596.51	$ 2,944.67	C	8,000	$ 6.00	1.10	$ 525.60
468.0	101 MECH ROOM	8,760	0.135	0.900	0.360	0.540	7,884	3,154	4,730	$ 1,064.34	$ 425.74	$ 638.60	F	20,000	$ 7.00	0.44	$ 91.98
469.0	153 MECHANICAL	8,760	0.135	0.720	0.288	0.432	6,307	2,523	3,784	$ 851.47	$ 340.59	$ 510.88	F	20,000	$ 7.00	0.44	$ 73.58
470.0	102 CHILLER	8,760	0.135	3.840	1.350	2.490	33,638	11,826	21,812	$ 4,541.18	$ 1,596.51	$ 2,944.67	C	8,000	$ 6.00	1.10	$ 525.60
471.0	102A PUMP ROOM	8,760	0.135	0.180	0.072	0.108	1,577	631	946	$ 212.87	$ 85.15	$ 127.72	F	20,000	$ 7.00	0.44	$ 18.40
472.0	103 MECH. ROOM	8,760	0.135	0.810	0.324	0.486	7,096	2,838	4,257	$ 957.91	$ 383.16	$ 574.74	F	20,000	$ 7.00	0.44	$ 82.78
473.0	103 MECH. ROOM	8,760	0.135	3.840	1.350	2.490	33,638	11,826	21,812	$ 4,541.18	$ 1,596.51	$ 2,944.67	C	8,000	$ 6.00	1.10	$ 525.60
474.0	103 MECH. ROOM	8,760	0.135	0.060	0.024	0.036	526	210	315	$ 70.96	$ 28.38	$ 42.57	F	20,000	$ 7.00	0.44	$ 6.13
475.0	CENTRAL PLANT 2ND FL		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
476.0	CUP 201 STORAGE	8,760	0.135	0.810	0.324	0.486	7,096	2,838	4,257	$ 957.91	$ 383.16	$ 574.74	F	20,000	$ 7.00	0.44	$ 82.78
477.0	CUP 210 FIRE EQUP.	8,760	0.135	0.090	0.036	0.054	788	315	473	$ 106.43	$ 42.57	$ 63.86	F	20,000	$ 7.00	0.44	$ 9.20
478.0	CUP 202 COMM.	8,760	0.135	1.170	0.468	0.702	10,249	4,100	6,150	$ 1,383.64	$ 553.46	$ 830.19	F	20,000	$ 7.00	0.44	$ 119.57
479.0	CUP STAIR 2	8,760	0.135	0.240	0.096	0.144	2,102	841	1,261	$ 283.82	$ 113.53	$ 170.29	F	20,000	$ 7.00	0.44	$ 24.53
480.0	CUP OPEN OFFICE	8,760	0.135	1.620	0.648	0.972	14,191	5,676	8,515	$ 1,915.81	$ 766.32	$ 1,149.49	F	20,000	$ 7.00	0.44	$ 165.56
481.0	CUP OPEN OFFICE	8,760	0.135	0.360	0.144	0.216	3,154	1,261	1,892	$ 425.74	$ 170.29	$ 255.44	F	20,000	$ 7.00	0.44	$ 36.79
482.0	CUP RR	8,760	0.135	0.132	0.096	0.036	1,156	841	315	$ 156.10	$ 113.53	$ 42.57	C	8,000	$ 6.00	1.10	$ 26.28
483.0	CUP 209 HALLWAY	8,760	0.135	0.450	0.180	0.270	3,942	1,577	2,365	$ 532.17	$ 212.87	$ 319.30	F	20,000	$ 7.00	0.44	$ 45.99
484.0	HALLWAYS		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
485.0	HALL H1	8,760	0.135	0.960	0.384	0.576	8,410	3,364	5,046	$ 1,135.30	$ 454.12	$ 681.18	F	20,000	$ 7.00	0.44	$ 98.11
486.0	HALL H2	8,760	0.135	0.960	0.384	0.576	8,410	3,364	5,046	$ 1,135.30	$ 454.12	$ 681.18	F	20,000	$ 7.00	0.44	$ 98.11
487.0	HALL H3	8,760	0.135	1.320	0.528	0.792	11,563	4,625	6,938	$ 1,561.03	$ 624.41	$ 936.62	F	20,000	$ 7.00	0.44	$ 134.90
488.0	HALL H4	8,760	0.135	0.560	0.240	0.320	4,906	2,102	2,803	$ 662.26	$ 283.82	$ 378.43	F	20,000	$ 7.00	0.44	$ 61.32
489.0	TUNNEL		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
490.0	TUNNEL	8,760	0.135	3.150	1.260	1.890	27,594	11,038	16,556	$ 3,725.19	$ 1,490.08	$ 2,235.11	F	20,000	$ 7.00	0.44	$ 321.93
491.0	BASEMENT		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
492.0	BASE. TRANS. RM 1	8,760	0.135	0.118	0.048	0.070	1,034	420	613	$ 139.55	$ 56.76	$ 82.78	F	20,000	$ 7.00	0.44	$ 12.26
493.0	BASE. TRANS. RM 2	8,760	0.135	0.130	0.024	0.106	1,139	210	929	$ 153.74	$ 28.38	$ 125.36	I	1,000	$ 2.00	8.76	$ 35.04
494.0	OLD BOILER ROOM	8,760	0.135	0.165	0.060	0.105	1,445	526	920	$ 195.13	$ 70.96	$ 124.17	C	8,000	$ 6.00	1.10	$ 32.85
495.0	OLD AIR MECH	8,760	0.135	0.132	0.048	0.084	1,156	420	736	$ 156.10	$ 56.76	$ 99.34	C	8,000	$ 6.00	1.10	$ 26.28
496.0	BUILDING C		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
497.0	CLASSROOM C	2,540	0.135	1.344	0.576	0.768	3,414	1,463	1,951	$ 460.86	$ 197.51	$ 263.35	F	20,000	$ 7.00	0.13	$ 42.67
498.0	EHE		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
499.0	OFFICE 1	3,120	0.135	0.112	0.040	0.072	349	125	225	$ 47.17	$ 16.85	$ 30.33	F	20,000	$ 7.00	0.16	$ 4.37
500.0	OFFICE 2	3,120	0.135	0.224	0.080	0.144	699	250	449	$ 94.35	$ 33.70	$ 60.65	F	20,000	$ 7.00	0.16	$ 8.74
501.0	HALL	8,760	0.135	0.270	0.108	0.162	2,365	946	1,419	$ 319.30	$ 127.72	$ 191.58	F	20,000	$ 7.00	0.44	$ 27.59
502.0	CONFERENCE	3,120	0.135	0.448	0.192	0.256	1,398	599	799	$ 188.70	$ 80.87	$ 107.83	F	20,000	$ 7.00	0.16	$ 17.47
503.0	BREAK ROOM	8,760	0.135	0.224	0.096	0.128	1,962	841	1,121	$ 264.90	$ 113.53	$ 151.37	F	20,000	$ 7.00	0.44	$ 24.53
504.0	RESTROOM	8,760	0.135	0.112	0.048	0.064	981	420	561	$ 132.45	$ 56.76	$ 75.69	F	20,000	$ 7.00	0.44	$ 12.26
505.0	COOLING TOWER		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
506.0	COOLING TOWER	3,712	0.135	0.384	0.160	0.224	1,425	594	831	$ 192.43	$ 80.18	$ 112.25	C	8,000	$ 6.00	0.46	$ 22.27
507.0	BUILDING H & I		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
508.0	OFFICE	3,120	0.135	1.350	0.540	0.810	4,212	1,685	2,527	$ 568.62	$ 227.45	$ 341.17	F	20,000	$ 7.00	0.16	$ 49.14
509.0	CENTRAL PLANT ROOF		0.135	-	-	-	-	-	-	$ -	$ -	$ -					

Appendix A

San Gorgonio Memorial Hospital

Lighting Line by Line

			Electric Rate							Energy				Material Maintenance Cost			
LINE_NO	LOCATION	Annual Burn Hours	$/kWh	Existing kW	Proposed kW	Savings kW	Existing kWh	Proposed kWh	Savings kWh	Existing Cost	Proposed Cost	Cost Savings	Lamp Type2	Lamp Life (hrs)	Cost per lamp	Fraction per year	Total cost
-	**TOTALS**	**3,079,760**	**0.135**	**173.779**	**62.174**	**111.606**	**1,076,763**	**391,140**	**685,623**	**$ 133,239**	**$ 49,850**	**$ 83,389**					**$ 15,611.99**
510.0	CUP ROOF WP	4,368	0.135	0.780	0.228	0.552	3,407	996	2,411	$ 459.95	$ 134.45	$ 325.50	M	10,000	$ 18.00	0.44	$ 31.45
511.0	EXTERIOR LIGHTING		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
512.0	EXTERIOR CENTRAL PLA		0.135	-	-	-	-	-	-	$ -	$ -	$ -					
513.0	WALL PACK 1	4,368	0.070	1.452	0.572	0.880	6,342	2,498	3,844	$ 443.96	$ 174.89	$ 269.07	C	8,000	$ 6.00	0.55	$ 144.14
514.0	SQUARE	4,368	0.070	-	-	-	-	-	-	$ -	$ -	$ -	L				
515.0	8" CAN	4,368	0.070	0.390	0.050	0.340	1,704	218	1,485	$ 119.25	$ 15.29	$ 103.96	H	2,400	$ 18.00	1.82	$ 65.52
516.0	FLOOD 1	4,368	0.070	0.195	0.052	0.143	852	227	625	$ 59.62	$ 15.90	$ 43.72	M	10,000	$ 18.00	0.44	$ 7.86
517.0	STEP LIGHT	4,368	0.070	0.170	0.090	0.080	743	393	349	$ 51.98	$ 27.52	$ 24.46	C	8,000	$ 6.00	0.55	$ 32.76
518.0	EXTERIOR BACK DOCK		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
519.0	DOCK AREA 12" CAN	4,368	0.070	2.340	0.378	1.962	10,221	1,651	8,570	$ 715.48	$ 115.58	$ 599.90	M	10,000	$ 18.00	0.44	$ 94.35
520.0	DOCK AREA TOP HAT	4,368	0.070	0.390	0.090	0.300	1,704	393	1,310	$ 119.25	$ 27.52	$ 91.73	M	10,000	$ 18.00	0.44	$ 15.72
521.0	EXTERIOR AMBULANCE		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
522.0	CAN	4,368	0.070	2.755	0.348	2.407	12,034	1,520	10,514	$ 842.37	$ 106.40	$ 735.96	M	10,000	$ 18.00	0.44	$ 228.01
523.0	FLOOD	4,368	0.070	1.374	0.462	0.912	6,002	2,018	3,984	$ 420.11	$ 141.26	$ 278.85	M	10,000	$ 18.00	0.44	$ 23.59
524.0	EXTERIOR NEW WING		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
525.0	SURFACE CAN	5,292	0.070	0.462	0.126	0.336	2,445	667	1,778	$ 171.14	$ 46.68	$ 124.47	C	8,000	$ 6.00	0.66	$ 55.57
526.0	GROUND LIGHTS	5,292	0.070	2.200	0.286	1.914	11,642	1,514	10,129	$ 814.97	$ 105.95	$ 709.02	I	1,000	$ 2.00	5.29	$ 232.85
527.0	GROUND FLOOD	5,292	0.070	0.132	0.030	0.102	699	159	540	$ 48.90	$ 11.11	$ 37.78	C	8,000	$ 6.00	0.66	$ 15.88
528.0	BCK EM FLAG FLOOD	5,292	0.070	0.195	0.052	0.143	1,032	275	757	$ 72.24	$ 19.26	$ 52.97	M	10,000	$ 18.00	0.53	$ 9.53
529.0	BENCH STEP LIGHT	5,292	0.070	0.408	0.144	0.264	2,159	762	1,397	$ 151.14	$ 53.34	$ 97.80	C	8,000	$ 6.00	0.66	$ 95.26
530.0	BCK EM FLAG FLOOD	5,292	0.070	0.390	0.104	0.286	2,064	550	1,514	$ 144.47	$ 38.53	$ 105.95	M	10,000	$ 18.00	0.53	$ 19.05
531.0	ER PARKING LOT	5,292	0.070	1.770	0.600	1.170	9,367	3,175	6,192	$ 655.68	$ 222.26	$ 433.41	M	10,000	$ 18.00	0.53	$ 57.15
532.0	EXT BOLLARDS	5,292	0.070	1.452	0.396	1.056	7,684	2,096	5,588	$ 537.88	$ 146.69	$ 391.18	C	8,000	$ 6.00	0.66	$ 174.64
533.0	EXTERIOR ER	5,292	0.070	0.066	0.024	0.042	349	127	222	$ 24.45	$ 8.89	$ 15.56	C	8,000	$ 6.00	0.66	$ 7.94
534.0	EXTERIOR AROUND WOME		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
535.0	BACK AREA FLOOD	5,292	0.070	0.090	0.030	0.060	476	159	318	$ 33.34	$ 11.11	$ 22.23	M	10,000	$ 18.00	0.53	$ 9.53
536.0	PORT. POLE LIGHT	5,292	0.070	0.195	0.001	0.194	1,032	5	1,027	$ 72.24	$ 0.37	$ 71.87	M	10,000	$ 18.00	0.53	$ 9.53
537.0	CANOPY	5,292	0.070	0.264	0.096	0.168	1,397	508	889	$ 97.80	$ 35.56	$ 62.23	C	8,000	$ 6.00	0.66	$ 31.75
538.0	FLOOD	5,292	0.070	0.300	0.070	0.230	1,588	370	1,217	$ 111.13	$ 25.93	$ 85.20	M	10,000	$ 18.00	0.53	$ 9.53
539.0	PORTABLE I WP	5,292	0.070	0.066	0.026	0.040	349	138	212	$ 24.45	$ 9.63	$ 14.82	C	8,000	$ 6.00	0.66	$ 7.94
540.0	COURT YARD AREA	5,292	0.070	0.072	0.024	0.048	381	127	254	$ 26.67	$ 8.89	$ 17.78	F	20,000	$ 7.00	0.26	$ 3.70
541.0	ADMIN BACK CFL	3,120	0.070	0.066	0.024	0.042	206	75	131	$ 14.41	$ 5.24	$ 9.17	C	8,000	$ 6.00	0.39	$ 4.68
542.0	EXTERIOR COOLING TOW		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
543.0	COOLING TOWER	5,292	0.070	0.096	0.090	0.006	508	476	32	$ 35.56	$ 33.34	$ 2.22	C	8,000	$ 6.00	0.66	$ 7.94
544.0	EXTERIOR FRONT LOBBY		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
545.0	FRONT LOBBY	5,292	0.070	2.340	0.378	1.962	12,383	2,000	10,383	$ 866.83	$ 140.03	$ 726.80	M	10,000	$ 18.00	0.53	$ 114.31
546.0	EXTERIOR PARKING ARE		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
547.0	TOP HAT	5,292	0.070	13.260	3.060	10.200	70,172	16,194	53,978	$ 4,912.03	$ 1,133.55	$ 3,778.49	M	10,000	$ 18.00	0.53	$ 647.74
548.0	SHOE BOX	5,292	0.070	3.835	1.300	2.535	20,295	6,880	13,415	$ 1,420.64	$ 481.57	$ 939.07	M	10,000	$ 18.00	0.53	$ 123.83
549.0	ADD REPLACEMENT LENS		0.070	-	-	-	-	-	-	$ -	$ -	$ -					
550.0	ROOF ROUND LIGHT	5,292	0.070	0.066	0.026	0.040	349	138	212	$ 24.45	$ 9.63	$ 14.82	C	8,000	$ 6.00	0.66	$ 7.94
551.0	ROOF ROUND LIGHT	5,292	0.070	0.066	0.026	0.040	349	138	212	$ 24.45	$ 9.63	$ 14.82	C	8,000	$ 6.00	0.66	$ 7.94
552.0	ADD FLOOD			-	-	-	-	-	-	$ -	$ -	$ -					
553.0	ADD CEILING MOUNT			-	-	-	-	-	-	$ -	$ -	$ -					
554.0	ADD EMER BATTERY			-	-	-	-	-	-	$ -	$ -	$ -					

Appendix B
SAN GORGONIO MEMORIAL HOSPITAL
SIEMENS DEMAND FLOW SOLUTION - CHILLED WATER SYSTEM OPTIMIZATION

SUMMARY
San Gorgonio Memorial Hospital (SGMH) maintains and operates a chilled water system serving a distributed campus cooling load. The system is a conventional primary-secondary system with constant flow primary chilled water pumps and constant flow condenser water pumps. The secondary chilled water pumps and cooling tower fans are variable speed. The chilled water system serves sixteen air handling units with chilled water cooling coils. The air handlers serve hospital space conditioning loads.

The chilled water system has expanded and adapted over sixty years. The current central plant was constructed in 2010 and houses two water-cooled Carrier centrifugal chillers with motor variable frequency drives (VFDs), three constant velocity chilled water primary pumps, and two chilled water secondary pumps on variable frequency drives. The chiller condensers are served by three constant velocity condenser water pumps dedicated to three evaporative cooling towers with fan VFDs. The cooling towers and condenser pumps are located about 400 feet from the chillers. See Equipment Table.

System capacity is sufficient; system control, efficiency and visibility are insufficient. Many air handler cooling coil valves are non-functioning, which results in constant chilled water flow, over-cooling and excessive reheat. The secondary chilled water distribution is inefficient due to the air handlers' coil valve operation and the resultant control strategy of over-flowing. These conditions are causing the chilled water system to exhibit degraded temperature differentials, excessive pumping energy and poor system efficiency.

Siemens Building Technologies (BT) has conducted preliminary site visits, interviews and data analysis which substantiate chilled water system operational issues. San Gorgonio Memorial Hospital has provided historical BAS operating trend and utility data, design and mechanical information, and access to the site to allow for this analysis and proposed Demand Flow Solution.

EQUIPMENT AND OPERATION

Primary Loop

The SGMH chilled water system has expanded and adapted as more sections have been added to the main hospital. The chilled water system at San Gorgonio Memorial Hospital is currently rated at 700 ton capacity and is piped in a traditional primary-secondary scheme. Two 350-ton Carrier centrifugal chillers with VFDs (installed 2010) are piped in parallel and operated in manual control. Three Marley cooling towers with variable speed fans each have dedicated constant speed condenser water pumps, which are then piped in a common header to the chillers. The triple-duty valves from the condenser pumps appear throttled to 20% flow. Three parallel constant speed primary chilled water pumps and two parallel variable speed secondary chilled water pumps serve the campus. The primary-secondary bypass has an open manual valve and is located in the chiller room. Chilled water supply and return temperature sensors are located immediately after this bypass on the secondary side. The central chiller system is being controlled by a third-party building automation system (BAS) with a front work station in the plant. See Equipment Table.

Condenser Loop

It was observed one chiller running at 25% load with a single condenser pump and dedicated cooling tower. There are actuated valves on the cooling tower inlets; manual valves on the cooling tower outlets, which lead immediately to the inlets of the dedicated condenser water pumps. Condenser water pump outlet valves (triple-duty) were throttled to 20% flow. There is a tower equalizing line; the two fill valves on the inactive towers were observed lightly filling. The pump throttling may be intended to minimize excess tower filling, or, to be able to run all three pumps and towers with only two chillers.

The cooling tower fan appeared barely spinning despite VFD speed readings of 48-56 hertz. This may be for the reduced condenser water flow. Warm and cold deck basins were relatively clean. Warm deck water depth was less than one inch. Spray nozzles were clean and of a propeller type. Condenser water supply and return temperature sensors are located on the headers inside the central plant afore the chiller condenser barrel tees. There is no condenser-side bypass of the cooling towers due to the pumps' remote location.

Equipment Table: Chilled Water System

Make	Equipment	hp	Notes
Carrier Chiller	CH1	VFD	350 ton VFD; 0.548 kW/ton; 54/42/699 CHW; 89.2/80/1050 CW
Carrier Chiller	CH2	VFD	350 ton VFD; 0.548 kW/ton; 54/42/699 CHW; 89.2/80/1050 CW
Bell & Gossett Pump	PCHWP1	7.5	Primary CHW Pump - constant velocity (CV)
Bell & Gossett Pump	PCHWP2	7.5	Primary CHW Pump - constant velocity (CV)
Bell & Gossett Pump	PCHWP3	7.5	Primary CHW Pump - constant velocity (CV)
Bell & Gossett Pump	SCHWP1	60	Secondary CHW Pump - VFD
Bell & Gossett Pump	SCHWP2	60	Secondary CHW Pump - VFD
Marley Cooling Tower	CTF1	20	Cooling Tower Fan - VFD
Marley Cooling Tower	CTF2	20	Cooling Tower Fan - VFD
Marley Cooling Tower	CTF3	20	Cooling Tower Fan - VFD
Bell & Gossett Pump	CWP1	25	Condenser Water Pump - constant velocity (CV)
Bell & Gossett Pump	CWP2	25	Condenser Water Pump - constant velocity (CV)
Bell & Gossett Pump	CWP3	25	Condenser Water Pump - constant velocity (CV)

Secondary Loop

Control is *flow-based* from 24/7 operation and disabled open cooling coil valves. This strategy overrides the benefits of variable speed systems and modulating flows that provide *demand-based* cooling power. Despite sufficient system capacity, some areas are under limited comfort parameters, with the use of window shades and screens to keep room temperatures cool enough. It appears outside ventilation air may be limited in hot months to also improve cooling effect. Secondary chilled water flow is increased in an attempt to deliver more cooling power.

Secondary loop pumps are controlled by a VFD with a signal from a pressure gage in the system. Staff reported that the secondary loop is controlled to a set supply pressure of 60 psi, and the differential pressure gages are disconnected. This static pressure setpoint provides enough flow regardless of coil valves' positions. It was reported of a differential pressure (dP) gage located at the end of the underground utility tunnel; and another dP gage was observed roof-top by the large York air handlers. These sensors need to be checked, potentially upgraded, and initialized into the control system.

Air Handlers

The air handling units are of various age, condition and control. Many are older pneumatically controlled units, wherein the control is disabled, manual or static. Five air handlers have open three-way bypass valves. Additional air handlers have disabled two-way coil valves, resulting in continuous and uncontrolled full cooling with associated reheat energy. There is also an open primary loop bypass. Consequently, one chiller, one primary pump, one secondary pump, one condenser water pump and one cooling tower each run 8,760 hours per year. See *SGMH CHW Air Handlers 032818.docx* for more air handler information.

MODELING AND RESULTS

A detailed performance and energy evaluation was completed to ascertain and identify the potential for improvements. The chilled water system was modeled with a bin-based, mass flow analysis methodology. Please see the additional modeling methodology documents for reviewers at the end of this proposal.

Poor chiller efficiencies are resulting from loading and staging issues, constant velocity pumping, and not fully leveraging ambient conditions with the cooling towers.

The following design criteria and trend log evaluation dates were used in the energy evaluation.

Equipment Count	CHILLERS	PCHP	CWP	SCHP	CT
	2	2	2	2	3
Loop Count	1				

Units/Hz
US
60

EVALUATION DATES			
BASELINE START	5/10/2018	M&V START	
BASELINE END	6/11/2018	M&V END	

Device	Calculation Method	Refrigerant Type	Capacity Cooling tons	EVAPORATOR			CONDENSER			COMPRESSOR				Compressor Heat Ratio	Efficiency kW/ton
				Supply T°F	Return T°F	Flow Rate GPM	Supply T°F	Return T°F	Flow Rate GPM	Voltage	FLA/RLA	Power Factor	Power kW		
Chiller 1	KW	R-134A	350.0	42.0	54.0	700.0	80.0	89.2	1050.0	460.0	257.0	0.93	190.4	1.15	0.54
Chiller 2	KW	R-134A	350.0	42.0	54.0	700.0	80.0	89.2	1050.0	460.0	257.0	0.93	190.4	1.15	0.54
AVERAGES			350.0	42.0	54.0	700.0	80.0	89.2	1050.0	460.0	257.0	0.9	190.4		
TOTALS			700			1400			2100		514		381		

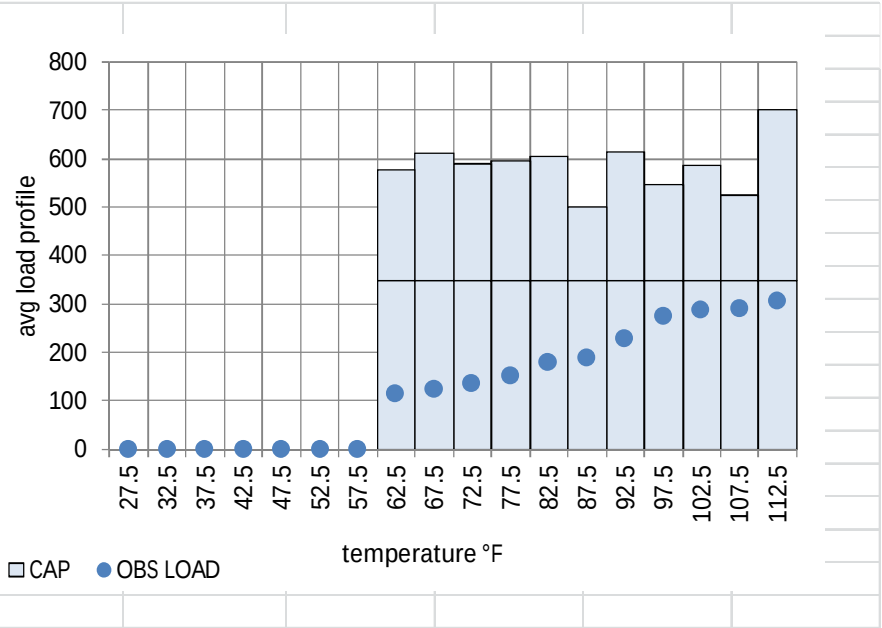
Device	PCHP			CWP			SCHP			CT	
	HP	FT	GPM	HP	FT		HP	FT	GPM	HP	GPM
Auxiliary 1	7.5	25.0	700.0	25.0	60.0	1050.0	60.0	80.0	2100.0	20.0	1050.0
Auxiliary 2	7.5	25.0	700.0	25.0	60.0	1050.0	60.0	80.0	2100.0	20.0	1050.0
Auxiliary 3										20.0	1050.0
TOTALS	15.0	50.0	1400.0	50.0	120.0	2100.0	120.0	160.0	4200.0	60.0	3150.0

The following one-hour interval trend points were used in the energy evaluation.

Unit Tag	CH POWER	CHWST	CHWRT	CWST	CWRT	SCHWP SPD	CTF SPD	SCHWST
1	CH2 Line KW	CH2 Chilled Water Out F	CH2 Chilled Water In F	CH2 Condenser Water In F	CH2 Condenser Water Out F	CHW Pump 5 Ramp 0 to 60 Hz	Tower 1 Ramp 0 to 60 Hz	Secondary Loop CHW Supply Temp F
2	CH3 Line KW	CH3 Chilled Water Out F	CH3 Chilled Water In F	CH3 Condenser Water In F	CH3 Condenser Water Out F	CHW Pump 6 Ramp 0 to 60 Hz	Tower 2 Ramp 0 to 60 Hz	Secondary Loop CHW Supply Temp F
3							Tower 3 Ramp 0 to 60 Hz	

The following load profile was established from observed data. Please see the modeling methodology narrative at the end of this document.

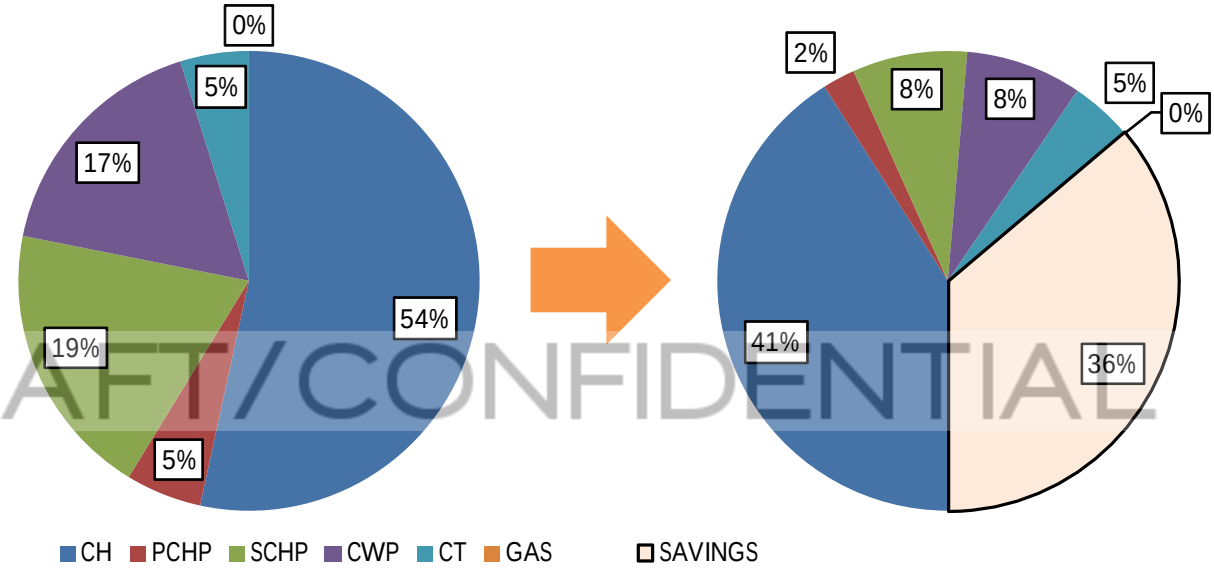
BIN	CAP	% LOAD
112.5	700	44%
107.5	525	55%
102.5	587	49%
97.5	547	50%
92.5	613	37%
87.5	501	38%
82.5	604	30%
77.5	595	25%
72.5	591	23%
67.5	611	20%
62.5	578	20%
57.5	0	0%
52.5	0	0%
47.5	0	0%
42.5	0	0%
37.5	0	0%
32.5	0	0%
27.5	0	0%



SUBSYSTEM BREAKDOWN

There are not necessarily savings in each individual subsystem; depending on baseline conditions, energy may increase for individual components once DF sequences are applied. However, overall system energy use will be reduced. All savings are listed in kWh (gas savings is converted to an equivalent kWh cost basis, if applicable)

	CH	PCHP	SCHP	CWP	CT
BASE	813,311	81,259	295,059	259,515	73,460
DF	624,041	34,702	123,091	124,480	65,577



EXISTING OPERATIONS **DF OPERATIONS**

Savings are generated from the following optimization actions.

1. Varying and optimizing condenser water flow
2. Varying and optimizing active cooling tower cells
3. Varying and optimizing cooling tower fan speed
4. Fully leveraging ambient conditions to optimize condenser water setpoint
5. Varying and optimizing primary chilled water flow
6. Varying and optimizing secondary chilled water flow
7. Minimizing chiller lift
8. Maximizing cooling power and capacity
9. Minimizing pump speeds and motor heat
10. Optimizing the control strategy of the central plant

MODEL METHODOLOGIES

DEMAND FLOW CHILLER MODELING METHODOLOGY

Introduction

A generalized method for modeling the performance of chillers under various operating conditions is required to determine the impact of various control strategies on chiller energy usage. Chiller part load submittals provided by manufacturer's can be a guide, but unless it is a brand new chiller, it cannot be used as a substitute for modeling performance. Chiller performance varies over time depending on maintenance and time of service.

It is proposed that the chiller energy can be modeled with accuracy with a very simplified empirical model derived from pump equations that treats the chiller compressor as a refrigerant pump. Detailed part load submittals from a vendor will be used to demonstrate the efficacy of this modeling approach.

Derivation

In a chiller, as in a pump, power is related to mass flow rate and the pressure across the compressor:

$$P \sim \dot{m}\Delta p$$

This equation can be re-written with an equals sign by adding a conversion constant, k.

$$P = k\dot{m}\Delta p \text{ (eq. 1)}$$

The mass flow rate of refrigerant is also related to the cooling output of the chiller, along with the enthalpy change of the refrigerant as it moves through the evaporator.

$$\dot{Q} = \dot{m}\Delta h \text{ (eq. 2)}$$

The enthalpy of refrigerant entering the evaporator is the same as the enthalpy of refrigerant exiting the condenser. The enthalpy at this state will depend on the saturation pressure of the condenser and the amount of subcooling of the refrigerant. This can be calculated with the known temperatures of the condenser water as well as some assumptions regarding approach temperatures. The standard assumption used is that the refrigerant approach temperature is 2 deg and that the heat exchanger effectiveness is 75%, i.e.

$$\frac{T_{c,o} - T_{ref,o}}{T_{c,o} - T_{c,i}} = 0.75$$

This means that, if the entering and leaving condenser water temperatures are 85 and 95, respectively, the assumed saturation temperature of the refrigerant is (95 + 2) = 97 deg and the assumed subcooling temperature is 95 – (95 – 85) * 0.75= 87.5 deg. The same assumptions are made for the conditions at the evaporator outlet.

For a constant speed pump, the pressure drop at any given mass flow rate is a fixed value. Therefore, the pressure drop can be rewritten as a function of the mass flow rate, i.e. we can rewrite eq. 1 as:

$$P = \dot{m} f(\dot{m})$$

When rewritten in this fashion, as mass flow rate approaches zero, the value of the function here approaches infinity. For empirical and visualization reasons, it is more convenient if the value of the function approaches zero as mass flow rate approaches zero. Because the function is arbitrary, we can arbitrarily rewrite this formula as:

$$P = \frac{\dot{m}}{f(\dot{m})}$$

This function is derived empirically from observed data sets in which the power and mass flow rate of refrigerant are known or can be calculated from known information and assumptions stated above.

For a variable speed machine, the pressure drop is not fixed at any given mass flow rate. From affinity laws, for a variable frequency drive it is known that

$$\dot{m}_2 = \frac{s_2}{s_1}\dot{m}_1 \qquad p_2 = \left(\frac{s_2}{s_1}\right)^2 p_1$$

These formulas can be combined and rewritten as:

$$\dot{m}_2 = \sqrt{\frac{p_2}{p_1}}\dot{m}_1$$

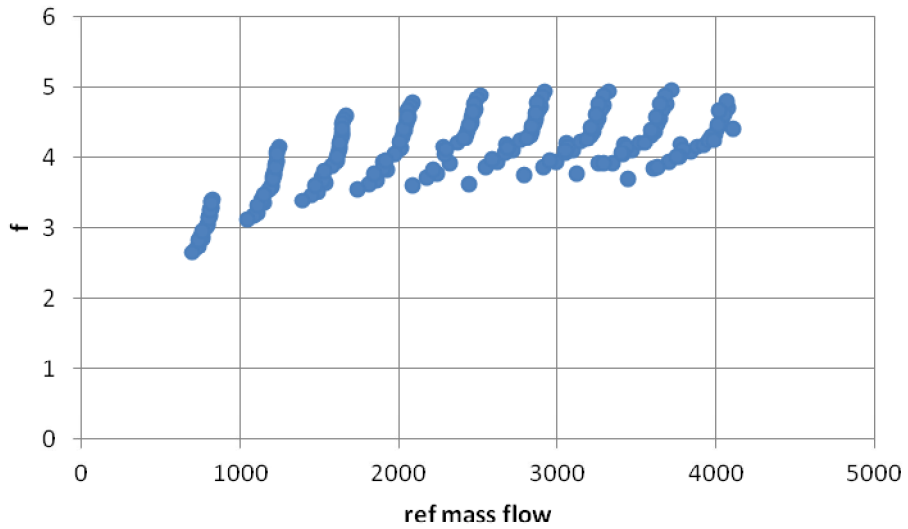
Thus, our formula for a VFD chiller becomes slightly modified:

$$P = \frac{\dot{m}}{f(\dot{m})}\left(\frac{p}{p_{design}}\right)^n$$

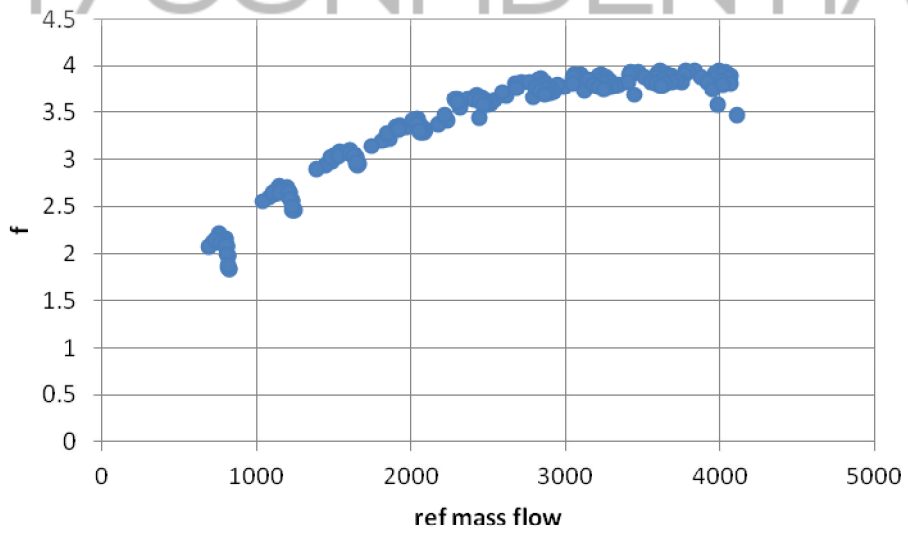
For any load above 50%, n = 0.5. The exponent then ramps down to 0 as the load approaches 0. This reflects the fact that, at very low loads, the chiller begins to behave like a constant speed chiller.

Empirical testing

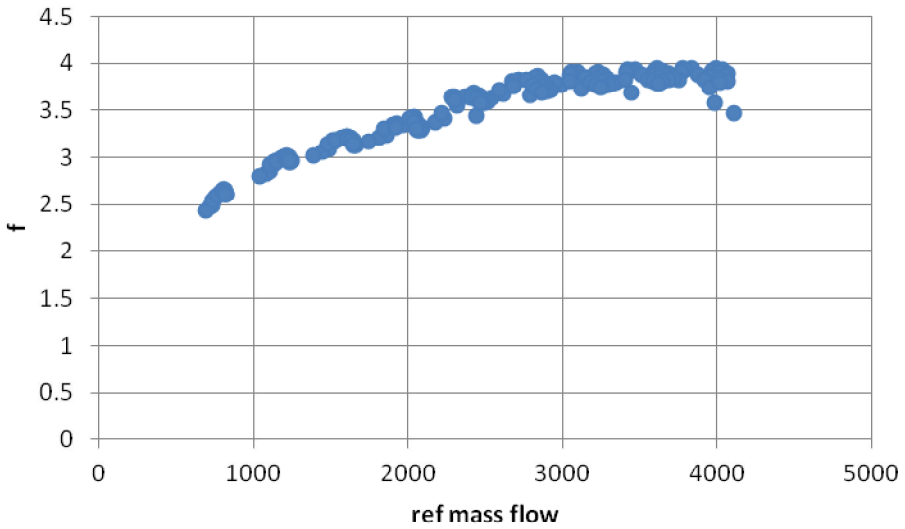
We will test this empirically using a large data set for a variable speed machine consisting of 72 individual operating points. Given the measured power and estimated mass flow rate for the chiller at each of the design points, we first calculate the curve using the constant speed formula, i.e. ignoring the impact of lift changes.



The chiller clearly shows multiple curves, each of which represent different compressor speeds, which in turn is a function of lift. We now correct this curve by adding the lift factor, but leaving the exponent at a constant 0.50 through the entire operating range.



Through much of the operating range the data now fit into a neat curve, with the exception of low loads. We take the final step of correcting the exponent so that it is 0.50 above 50% load (defined as 50% of the mass flow rate at design conditions), and then drops to 0 linearly below 50% load.



These data show that we have a good empirical model for chiller performance.

Multiple compressor machines

For chillers with multiple compressors (such as a Multistack chiller), a "double curve" may become apparent. This is because the load on the individual compressor approaches 100% near 50% load and then when the second compressor starts, the compressor drops down near 50% load. For these types of machines it may be necessary to track how many compressors are operating to accurately model them using this methodology.

DEMAND FLOW PUMP MODELING PROCESS

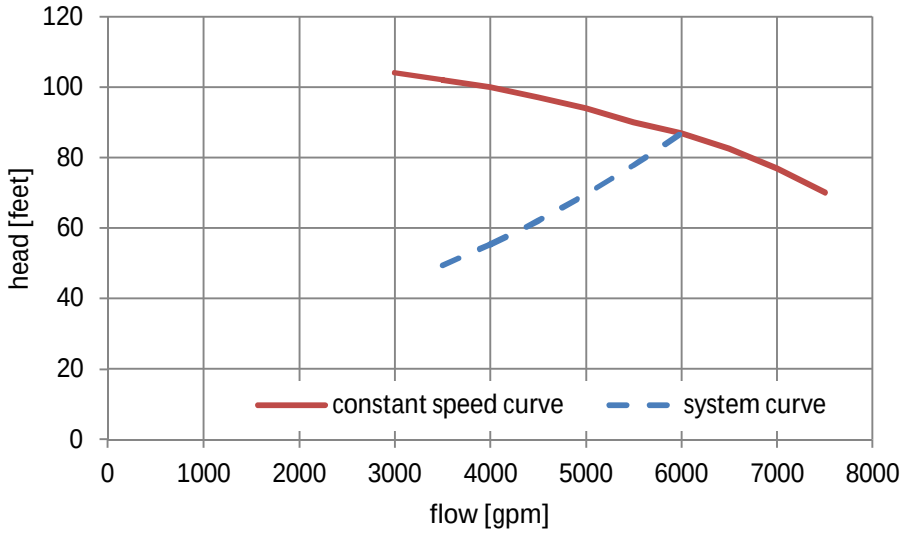
Introduction

This document outlines the calculation method used to calculate the performance of a variable speed pump. This applies to both constant-speed to variable-speed conversions, as well as modified performance of an existing variable-speed pump through sequence modifications.

Siemens models pump energy, flow, and performance by adapting published pump and motor efficiency equations based on available data. Adaptation is necessary as information is often incomplete or contradictory based on field measurements. Calibration is also sometimes necessary when there is a variation between modeled and measured performance.

Basic analysis

This analysis assumes that varying the speed of the pumps will move them along a variable system curve, i.e.:



The system curve will terminate on the y-axis at a fixed head, h_f. This fixed head is zero for closed loop systems with no control devices such as primary pumping loops. For open loop systems, such as condenser water pumps, the fixed head will be the height between the surface of the pump intake sump and the tower discharge. For closed loop systems with varying control devices such as distribution pumping loops, the "fixed" head may be variable over time, i.e. the system curve may be dynamic.

First, we will establish basic well-accepted formulas of pump operation. Water horsepower is calculated as:

$$hp_w = \frac{Fh}{3960}$$

Where F is the flow of water measured in GPM and h is the head pressure delivered by the pump measured in feet.

Brake horsepower is measured at the motor output shaft, and includes the efficiency of the pump.

$$hp_b = \frac{Fh}{\eta_p 3960} = \frac{hp_w}{\eta_p}$$

Motor horsepower is measured at the motor input, and includes the efficiency of the motor.

$$hp_m = \frac{Fh}{\eta_m \eta_p 3960} = \frac{hp_b}{\eta_m} = \frac{hp_w}{\eta_m \eta_p}$$

For a variable speed motor, this will also include the efficiency of the VFD

$$hp_v = \frac{Fh}{\eta_v \eta_m \eta_p 3960} = \frac{hp_m}{\eta_v} = \frac{hp_b}{\eta_v \eta_m} = \frac{hp_w}{\eta_v \eta_m \eta_p}$$

Finally, we will relate the nameplate horsepower of the motor to the delivered horsepower of the motor at the selected design criteria as follows:

$$k = \frac{hp_{v,d}}{hp_N}$$

The value *k* is the pump selection safety factor.

Motor efficiency is calculated using the following equation[1]:

$$\eta_m = \eta_{m,d}(1 - e^{-0.0904x})$$

$$x = \frac{hp_w}{hp_{w,d}} = \frac{Fh}{F_d h_d}$$

VFD efficiency is calculated through interpolation of the following table based on nameplate motor horsepower and operating speed[2]:

Variable Speed Drive hp Rating	Percent of Full Operating Speed (% torque)			
	25% (1.6%)	50% (12.5%)	75% (42%)	100% (100%)
1	9.4%	44.2%	70.5%	82.5%
5	29.6%	74.7%	83.3%	92.4%
10	35.3%	79.0%	90.3%	93.5%
25	35.6%	79.4%	90.6%	93.8%
50	43.3%	83.5%	92.1%	94.4%
100	54.8%	89.1%	95.0%	96.6%
200	61.2%	91.3%	96.1%	97.3%

Table 1. VFD Efficiency (in percent) as a function of Percentage of Full Operating Speed

Design conditions

Nameplate motor horsepower is generally available from pump motor nameplates.

Design GPM is sometimes found on pump assembly nameplates. If it is not available, reasonable assumptions can typically be made from context, such as design GPM of equipment served (i.e. chillers or boilers); or design GPM of similar pumps. For this analysis, it is assumed that pump design GPM is known.

Nameplate motor efficiency is generally available from pump motor nameplates. When it is not known, an assumption of 95% is used.

Design VFD efficiency is ignored for constant speed pumps. For VFD-equipped pumps, it is assumed that the pump will run at 60Hz at design conditions, and the efficiency can then be calculated as shown above.

Pump design head is sometimes found on pump assembly nameplates, but when it is not found it is not easily assumed from other field data. Pump efficiency is generally not found in the field. Both values can be found on pump selection curves. If such curves are not available, the following assumptions are made:

$$k = 0.85$$

$$\eta_{p,d} = 0.70$$

$$h_d = 3960(hp_N)kh\,\eta_{m,d}\,\eta_{v,d}\,\eta_{p,d}$$

Operating pump head

In this analysis method, once the design conditions are known, operating pump head in a system where flow is controlled by a VFD can be calculated using affinity laws as follows:

$$h = \left(\frac{F}{F_d}\right)^2 (h_d - h_f) + h_f$$

[1] "Pump Energy and Variable Frequency Drives", M. Bernier and B. Bourret, ASHRAE Journal, December 1999

[2] "Energy Efficiency of Variable Speed Drive Systems", J. Rooks and A. Wallace

where h_f is that portion of the head pressure on the pump that is fixed, i.e. not related to flow (i.e. height difference between water intake and water discharge in an open-loop system).

For closed loop systems, a fixed head may also be applied if control sequences operate to maintain a specified end-of-loop pressure setpoint, such as in chilled water distribution loops.

Pump efficiency curves

Any component of a constant-speed pump curve can be represented as a third-order polynomial[3]:

$$\eta_p = \eta_{p,d}(aF^3 + bF^2 + cF + d)$$

A simplifying assumption is made that, when operating a pump along its variable-speed system curve, this same polynomial is a close approximation of the efficiency on this curve as well. This assumption will break down at very low speeds and flows, but in the typical operating region of a variable speed pump (>50% speed) it is contended that this is a reasonable approximation.

While these coefficients can be calculated for all individual pumps based on their pump curves, a default set of values is used as a representative curve in early evaluations:

$$a = 0.0161$$

$$b = -0.9524$$

$$c = 1.8367$$

$$d = 0.0992$$

Operating data calibration

In a case where all design AND operating data is known, there may be disagreement (this disagreement may also arise if assumptions made slightly miss the mark). Consider for example a constant speed pump operating at design head and producing 2800 GPM against a design of 3000 GPM. In this case we will calculate a calibration factor, *cf* as follows:

$$cf = \frac{F_{actual}}{F_{calculated}}$$

This correction factor will then be used to modify the design flow used in the calculations:

$$F_{d,calibrated} = (cf)\, F_d$$

Such a calibration methodology is necessary to accurately model changes in performance. Using basic affinity laws the problem becomes clear. In the above situation, without using a calibration factor, an engineer might calculate speed as follows:

$$Hz = 60\left(\frac{F}{F_d}\right) = 60\left(\frac{2500}{3000}\right) = 50$$

Using the calibration factor we find:

$$cf = \frac{2800}{3000} = 0.933$$

$$Hz = 60\left(\frac{F}{cf\ F_d}\right) = 60\left(\frac{2500}{0.93 * 3000}\right) = 53.6$$

DEMAND FLOW COOLING TOWER MODELING PROCESS

Introduction

This document outlines the calculation method used to calculate the performance of a variable speed cooling tower. This applies to both constant-speed to variable-speed conversions, as well as modified performance of an existing variable-speed pump through sequence modifications.

Siemens models cooling tower energy and performance with the energy-balance methodology outlined below. Calibration is also sometimes necessary when there is a variation between modeled and measured performance.

Energy balance

For this analysis, it is assumed that energy rejected by the condenser water is equal to energy absorbed by air flowing through the tower, i.e.

$$\dot{Q}_a = \dot{Q}_w$$

All other sources and sinks of heat (i.e. conduction through tower, makeup water, sunlight) are ignored. Each side of this heat balance is calculated as follows:

$$\dot{Q}_a = kF\Delta h$$

where F is the air flow rate through the tower, Δh is the change in enthalpy of the air through the tower, and k is a unit conversion factor; and

$$\dot{Q}_w = cq(\mathrm{T_L} - \mathrm{T_E})$$

where q is the flow rate of condenser water into the tower, ΔT is the temperature change of the water, and c is a unit conversion factor.

In this analysis, mass flow rate and temperature change of the water are known, as is the enthalpy of the air entering the tower based on outdoor air conditions. To calculate leaving enthalpy, we assume that air leaves the tower at the midpoint of T_L and T_E with a relative humidity of 100%. Based on this assumption we can calculate the airflow through the tower at any condition as follows:

$$F = \frac{cq(\mathrm{T_L} - \mathrm{T_E})}{k\Delta h}$$

Fan speed

The speed of the fan is calculated from the first order affinity law based on flow, i.e.

$$Hz = \frac{F}{F_d}$$

Where F_d is the air flow rate at design conditions. This can be rewritten as

$$Hz = \frac{\frac{cq(\mathrm{T_L} - \mathrm{T_E})}{k\Delta h}}{\frac{cq_d(\mathrm{T_{L,d}} - \mathrm{T_{E,d)}})}{k\Delta h_\mathrm{d}}} = \frac{q(\mathrm{T_L} - \mathrm{T_E})\Delta h_\mathrm{d}}{q_d(\mathrm{T_{L,d}} - \mathrm{T_{E,d)}})\Delta h}$$

Calibration

Cooling tower performance can vary over time and from moment to moment based on a host of secondary factors, including but not limited to fouling, wind speed, sunshine, and entrainment. If the speed of the fan is known from log data, then a calibration is performed by adjusting the above formula to solve for q_d. Design flow rate, tower size, and approach temperature are all inter-related. Adjusting the design flow rate is the same as adjusting the design approach temperature of the tower. Therefore, the assumption is that secondary factors may, for a given moment in time, adjust the apparent approach temperature of the tower. This modified design flow rate is then used when estimating the speed of the tower given a new leaving temperature setpoint.

Fan energy

Once the speed of the fan is known, the horsepower is calculated as:

$$P_n = P_o \left(\frac{Hz_n}{Hz_o}\right)^3 \left(\frac{n_{v,o}}{n_{v,n}}\right)$$

where P_n is the new (post-implementation) fan power; P_o is the old (pre-implementation) fan power; and n_v is the VFD efficiency. VFD efficiency is calculated from an interpolation of the following table[4]:

Variable Speed Drive hp Rating	Percent of Full Operating Speed (% torque)			
	25% (1.6%)	50% (12.5%)	75% (42%)	100% (100%)
1	9.4%	44.2%	70.5%	82.5%
5	29.6%	74.7%	83.3%	92.4%
10	35.3%	79.0%	90.3%	93.5%
25	35.6%	79.4%	90.6%	93.8%
50	43.3%	83.5%	92.1%	94.4%
100	54.8%	89.1%	95.0%	96.6%
200	61.2%	91.3%	96.1%	97.3%

Table 1. VFD Efficiency (in percent) as a function of Percentage of Full Operating Speed

If the base case power is not known or the fan is a constant speed fan, then the design HP and a VFD efficiency = 1 are used.

Appendix C

San Gorgonio Memorial Hospital

Air Handlers Control Optimization

APPENDIX C						
Following Air Handle Units (air side) are targetted for additional energy savings as part of guaranteed energy savings agreement.						
Targeted Air Handler Units	Serving	~Yr Built	Location	Type of Control	SF and/or RF	Source" Eqpt Sch Dwg
					hp/kW	Baseline Supply Air (CFM)
						CFM values willl be used for energy savings calculation
AHU1-mtl mgmt	Material Management	2013	Roof	DDC	13hp	6000X.90=5,400
AHU1-ED ICU	1/2 of ED ICU first & second floor	2007	Roof	DDC	50hp	24100X.90=21,690
AHU2-ED ICU	1/2 of ED ICU first & second floor	2007	Roof	DDC	47.5hp	21,500X.90=19,350

Electrical Energy Charge (less demand charge) Summer	$0.0983	$/kWh
Electrical Energy Charge (less demand charge) Winter	$0.1033	$/kWh
Chiller Plant Average Efficiecny (Post CPECS Optimization Efficiecny is used to account for interaction between FIMs)	0.72	kW/Ton
Central Boiler Plant Efficiency	0.83	83%
Natural Gas Blended Rate	$0.58	$/Therm

Chilled Water Air Handlers Description

Selected Air Handler Units for Control Optimization at SGMH							
Selected Chilled Water AHU	~Yr Built	Location	Type of Control	Supply&Return Fan (hp)	Area Served	Type	Critical Area
AHU1	2013	Roof	DDC	13	Material Management	DDC	yes
AHU1	2010	Roof	DDC	50	ED/ICU	DDC	yes
AHU2	2010	Roof	DDC	47.5	ED/ICU	DDC	yes

Summary Energy Savings

							Nat Gas	Electrical
	AHU	AHU	AHU	AHU	AHU	AHU	Utility	Utility
	Baseline	Baseline	Post-FIM	Post-FIM	Saved	Saved	Saved	Saved
	Therm/yr	Ton-hr	Therm/yr	Ton-hr	Therm/yr	Ton-hr	Therm/yr	kWh/yr
AHU1 Material Mgmt	16,409	92,635	8,761	34,813	7,648	57,822	7,832	35,387
AHU1 ED/ICU	75,279	367,169	43,009	113,972	32,270	253,197	33,048	154,956
AHU2 ED/ICU	22,906	101,721	19,354	71,027	3,552	30,694	3,637	18,785
	TOTAL						44,517	209,128

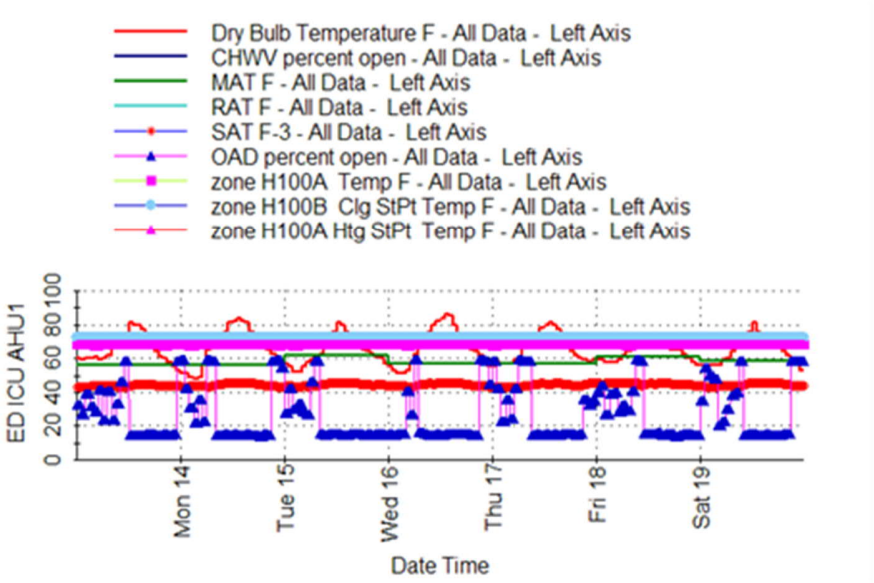
Baseline Trend Data and Calculation for Selected Air Handlers

ED ICU AHU1-DDC

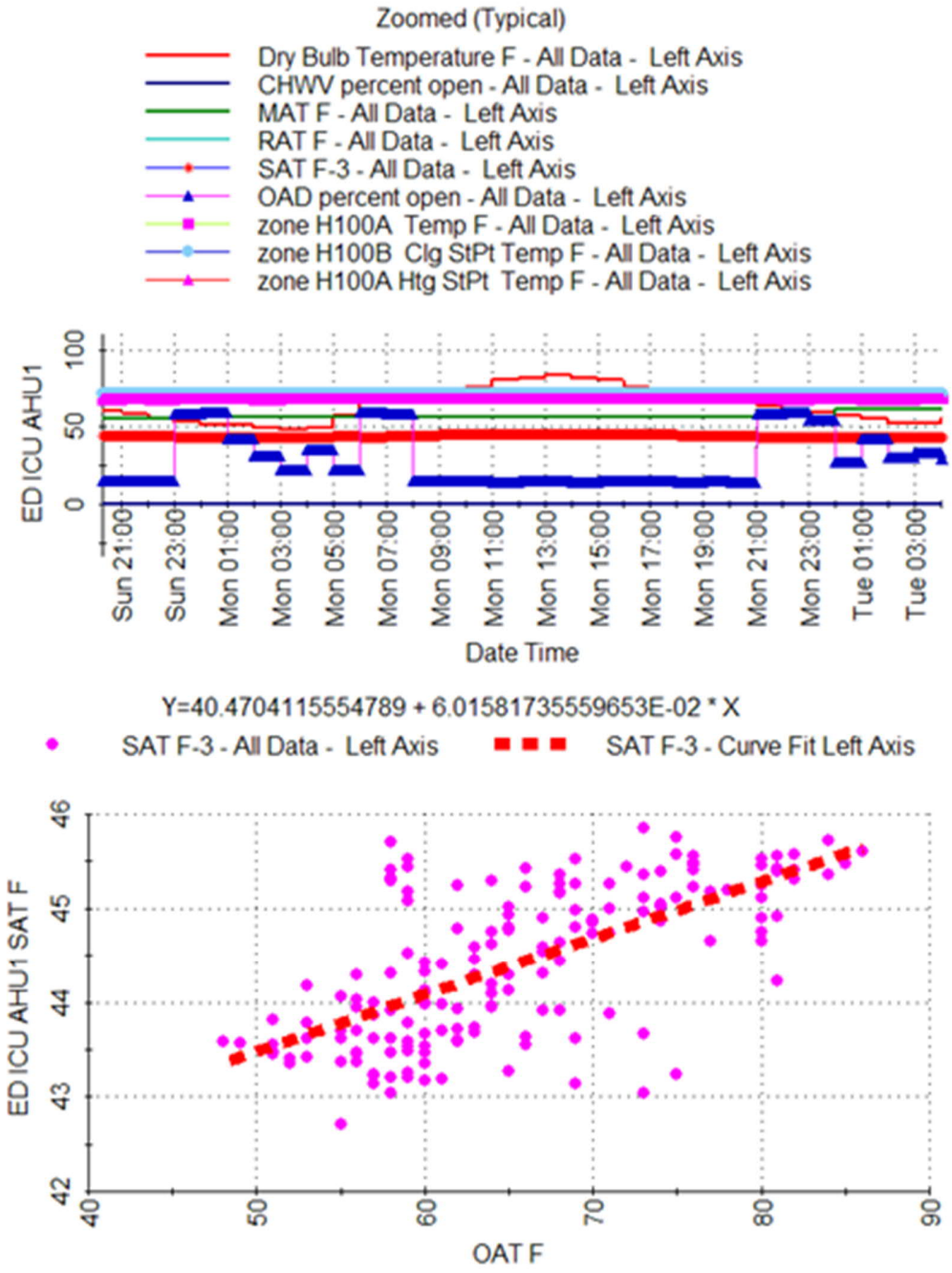
Field notes are shown below.

ED ICU AHU1
CAV, SD, RA, RF VFD, SF VFD, Multi Zone, DDC, CC, Economizer
Raw trend data (DDC Carrier by TMC) May 9, 2018 through May 20, 2018

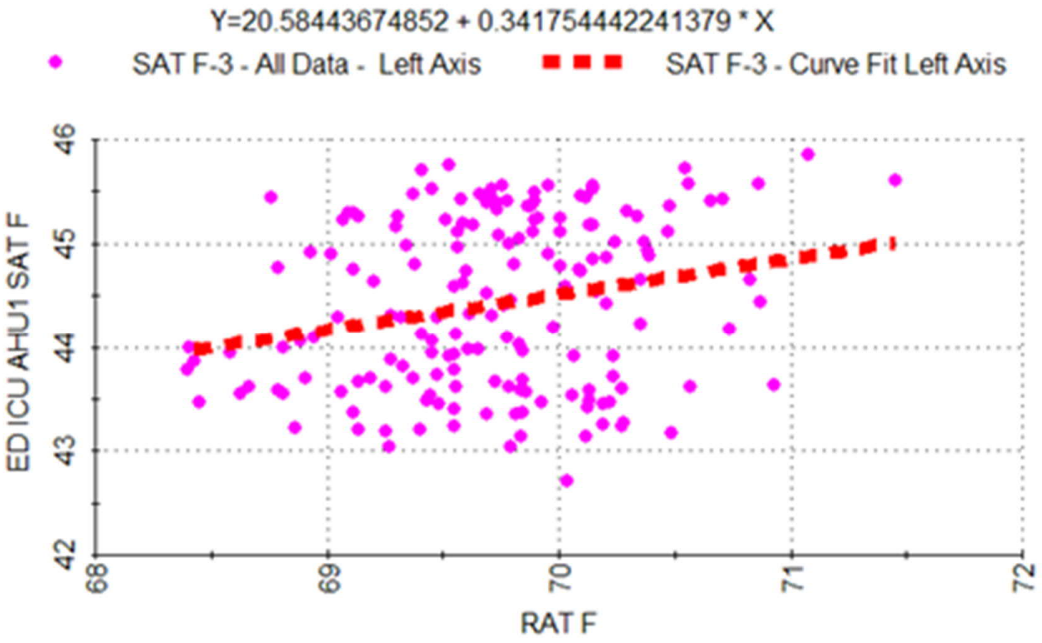
Observation: This unit (~2010) serves half the first and second floor of ED/ICU. Some rooms have humidistat. Multi reheat zones with live steam humidification to selected rooms located below ceiling. Raw trend data indicates that SAT varies from 43 F to 46 F and valve open position is shown as 0.01 which is misleading and an indication that chilled water valve is locked in 100% open position as it relates to SAT. All reheat coils below ceiling are making up for this condition in order to maintain zone temperature. Zone set points are 72 F for cooling and 68 F for heating. Zone temperature varies from 68 to 71 F. Excessive cooling and heating energy is being wasted. RAT varies from 68 F to 72 F which is an indication of good control however, same control accuracy could be achieved by adding reset function to SAT by modulating CHWV and reduce cooling and reheat energy. There is not a reset function for the SAT since chilled water valve is locked in 100% open position. There is no heating coil in the air handler unit. It was observed that economizer function is being used properly as it relates to OSA damper.
Zone or return air temperature. Recommended control strategy is to reset supply air temperature based on zone temperature or return air temperature. Supply air temperature may modulate to maintain a zone temperature dead band between 68 F and 72 F cooling and 68 F to 72 F heating. Allow three degree of reset minimum not to exceed 58 F SAT for Cooling.
To calculate the energy savings we could consider that baseline is operating as fixed SAT of 50 F (when CHWV is 100% open SAT drops below 50 F) and for proposed condition to operate SAT at fixed 55 F.

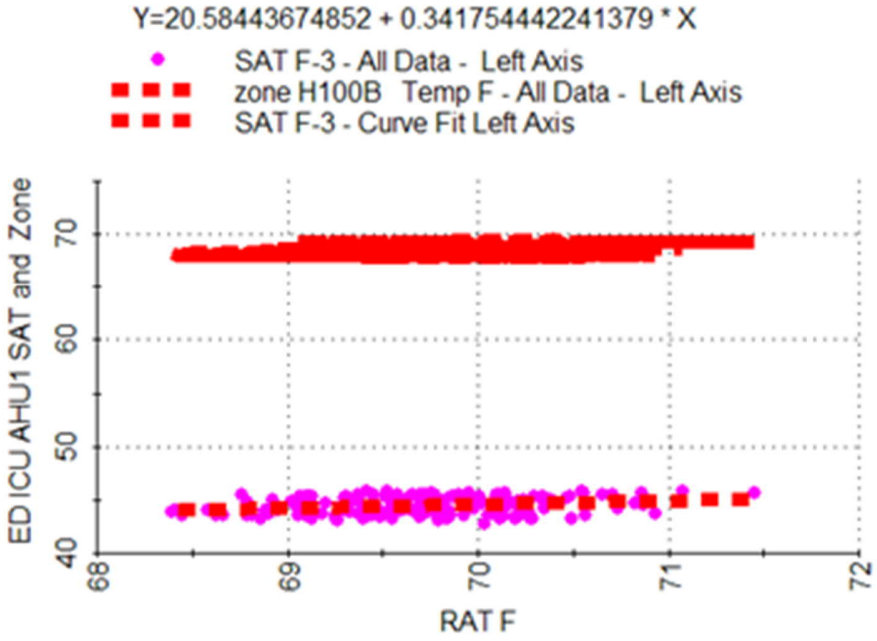


ED ICU AHU1-DDC

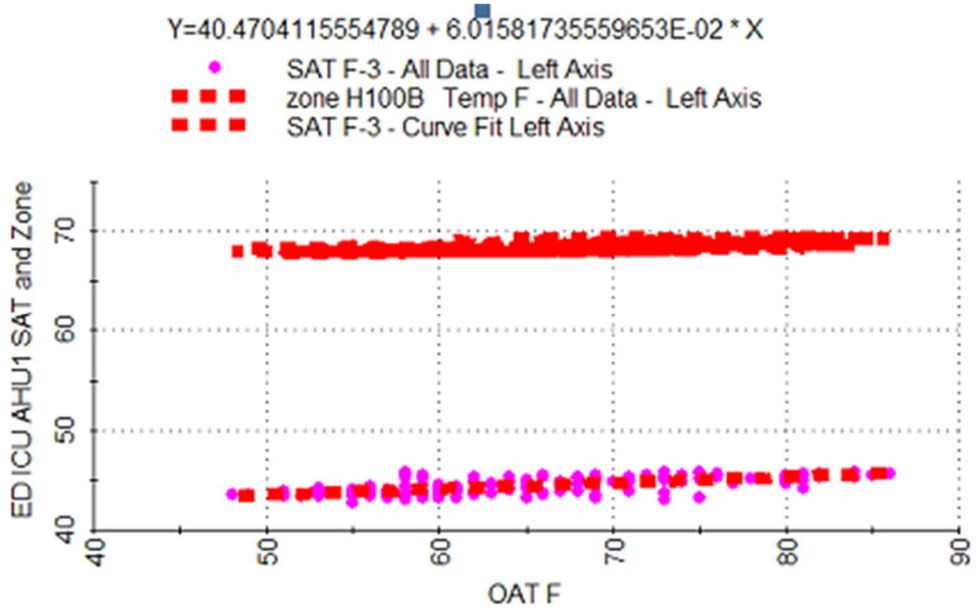


ED ICU AHU1-DDC

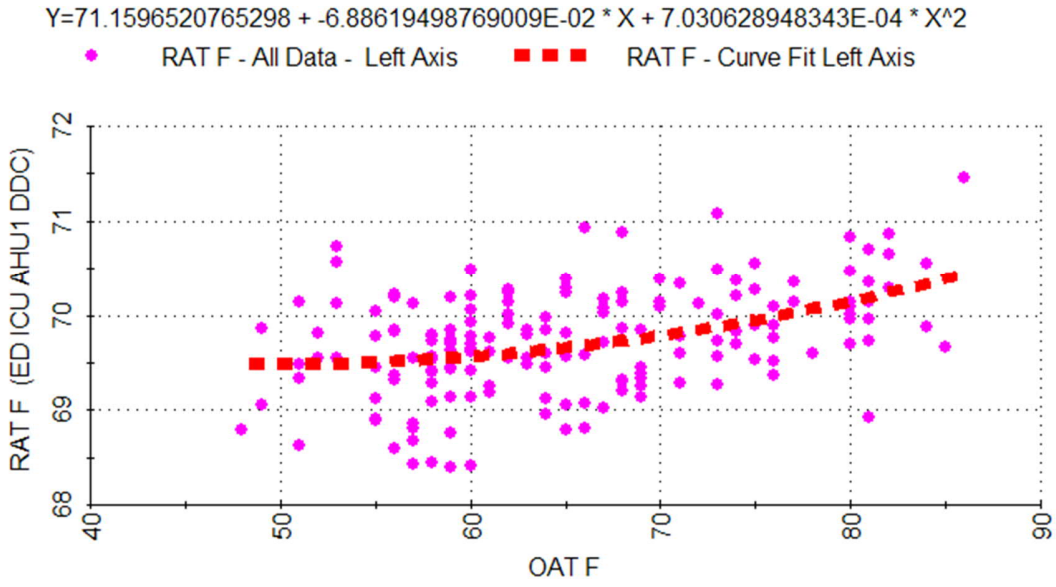




ED ICU AHU1-DDC



RAT vs OAT (ED ICU AHU1 DDC roof)



ED ICU AHU1-DDC

Data for spreadsheet below

Fan max kW	23.20
Max cfm	21690
Min OA	14%
Return Fan kW	5.80

BASELINE (Occupied)

Avg in Bin	Bin hrs / yr	Bin WB Deg.F	Volume Reset % CFM	Total Supply CFM	% cold air of total	Cold Deck CFM	Hot Deck CFM	% OA Dmpr open	Volume OA CFM	% kW from lookup	Fan kW	Fan KWhr per yr	Return Air deg F	Mix air deg F	Coil cold out	Sensible BTU per year	Grains at Disc Temp.	Grain at Bin WB..F	Delta Grains @ Dist. F	Latent BTU per year	Heating Coil deg F out	Heating coil BTU/yr	Tons cooling	Tons Total	Tons Heat	True Load	Return Air CFM	% kW from Lookup	Return Fan kW	Return Fan kWh
105	8	67	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	195	72	76	45	5854502	44	37	53	872,344	56	1953644	61	70	-20	50	100%	105%	6	49
100	56	66	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	1,364	71	75	45	39,824,855	42	93	51	5,674,223	58	16509397	59	68	-25	43	100%	105%	6	341
95	184	65	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	4,482	71	74	45	127,131,394	42	93	51	19,301,018	59	53060772	58	66	-27	40	100%	105%	6	1121
90	342	64	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	8,331	71	73	45	229,527,446	42	90	48	33,747,758	59	110616057	56	64	-27	37	100%	105%	6	2083
85	432	64	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	10,523	70	72	45	281,561,321	42	87	45	39,942,062	59	145725736	54	62	-28	34	100%	105%	6	2651
80	501	62	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	12,204	70	72	45	317,042,712	42	81	39	40,090,078	60	161687871	53	59	-30	29	100%	105%	6	3051
75	695	60	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	16,930	70	71	44	426,942,176	42	75	33	47,257,476	61	269446780	51	57	-32	25	100%	105%	6	4232
70	855	58	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	20,827	70	70	44	509,767,100	42	70	27	48,211,083	63	362664433	50	54	-35	19	100%	105%	6	5207
65	1131	56	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	27,551	70	69	44	654,351,820	42	64	22	50,644,027	79	918081567	48	52	-68	-16	100%	105%	6	6888
60	1413	53	100%	21,690	100%	21,690	21690	100%	21,690	1.05	24	34,420	70	60	44	519197293	42	58		-	87	1412892098	31	31	-83	-53	100%	105%	6	8605
55	1222	50	100%	21,690	100%	21,690	21690	100%	21,690	1.05	24	29,767	70	55	44	306437746	42	52		-	93	1379357536	21	21	-94	-73	100%	105%	6	7442
50	866	46	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	21,095	70	67	44	457360806	42	44			103.5	1201279136	44	44	-116	-72	100%	105%	6	5274
45	589	41	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	14,348	70	66	44	301689969	42	38			103.5	817000985	43	43	-116	-73	100%	105%	6	3587
40	326	37	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	7,941	70	66	44	161920561	42	32			103.5	452083420	41	41	-116	-74	100%	105%	6	1985
35	134	32	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	3,264	70	65	44	64534217	42	26			105	190451210	40	40	-118	-78	100%	105%	6	816
30	6	29	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	146	70	64	44	2801619	42	23			105	8522274	39	39	-118	-79	100%	105%	6	37
8760												213,390				4,406,025,536				285,940,068		7,527,339,576								53,347

Baseline
Occupied Total Fan kWh **266,737** kWh
Unoccupied Total Fan kWh - kWh
(see next sheet) **266,737**

Baseline
Occupied Cooling **367,169** Ton hours
Heating **75,279** Therms

Match Proposed Load to Existing by tweaking Supply Air Flow

PROPOSED (Occupied)

Avg in Bin	Bin hrs / yr	Bin WB Deg.F	Volume Reset % CFM	Total Supply CFM	% cold air of total	Cold Deck CFM	Hot Deck CFM	% OA Dmpr open	Volume OA CFM	% kW from lookup	Fan kW	Fan KWhr per yr	Return Air deg F	Mix air deg F	Coil cold out	Sensible BTU per year	Grains at Disc Temp.	Grain at Bin WB..F	Delta Grains @ Dist. F	Latent BTU per year	Reheat deg F out	Reheat coil BTU/yr	Tons cooling	Tons Total	Tons Heat	True Load	Return Air CFM	% kW from Lookup	Return Fan kW	Return Fan kWh
105	8	66.5	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	195	72	76	54	4213441	60	97	37	606,992	54	0	44	50	0	50	100%	105%	6	49
100	56	65.8	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	1,364	71	75	56	25,544,938	64	93	29	3,366,649	56	0	38	43	0	43	100%	105%	6	341
95	184	65	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	4,482	71	74	56	78,846,214	67	93	26	9,933,808	56	0	36	40	0	40	100%	105%	6	1121
90	342	64.5	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	8,331	71	73	57	134,334,226	67	90	23	16,448,487	57	0	33	37	0	37	100%	105%	6	2083
85	432	63.5	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	10,523	70	72	57	156,098,895	67	87	20	18,090,351	57	0	30	34	0	34	100%	105%	6	2651
80	501	61.6	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	12,204	70	72	58	164,694,904	70	81	11	11,840,075	58	0	27	29	0	29	100%	105%	6	3051
75	695	59.7	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	16,930	70	71	58	206,336,938	72	75	3	4,034,175	58	0	25	25	0	25	100%	105%	6	4232
70	855	57.7	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	20,827	70	70	58	237,231,063	72	70	0	-	60	0	23	23	-4	19	100%	105%	6	5207
65	1131	55.5	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	27,551	70	69	58	232,642,178	72	64			77	503384123	22	22	-37	-16	100%	105%	6	6888
60	1413	52.9	100%	21,690	100%	21,690	21690	14%	2,970	1.05	24	34,420	70	60	58	66,139,615	72	58		-	87	959894420	4	4	-57	-53	100%	105%	6	8605
55	1222	49.7	100%	21,690	100%	21,690	21690	100%	21,690	1.05	24	29,767	70	55	58	(65,876,783)	72	52		-	93	987583007	-6	-6	-67	-73	100%	105%	6	7442
50	866	45.6	100%	21,690	100%	21,690	21690	50%	10,845	1.05	24	21,095	70	60	58	35,500,831	72	44			97	781019593	3	3	-75	-72	100%	105%	6	5274
45	589	41.2	100%	21,690	100%	21,690	21690	30%	6,507	1.05	24	14,348	70	62	58	57,331,824	72	38			100	572593876	8	8	-81	-73	100%	105%	6	3587
40	326	37.3	100%	21,690	100%	21,690	21690	30%	6,507	1.05	24	7,941	70	61	58	20,504,312	72	32			99	309282916	5	5	-73	-74	100%	105%	6	1985
35	134	32.4	100%	21,690	100%	21,690	21690	30%	6,507	1.05	24	3,264	70	59	58	3,889,977	72	26			99	128638049	2	2	-80	-78	200%	105%	6	816
30	6	29	100%	21,690	100%	21,690	21690	30%	6,507	1.05	24	146	70	58	58	(25,580)	72	23			99	5692324	0	0	-79	-79	300%	105%	6	37
8760												213,390				1,400,067,052				64,380,537		4,246,148,307								53,347

Proposed
Occupied Total Fan kWh **266,737** kWh
Unoccupied Total Fan kWh **#DIV/0!** kWh
(see next sheet) **#DIV/0!**

Baseline
Occupied Cooling **116,672** Ton hours
Heating **42,481** Therms

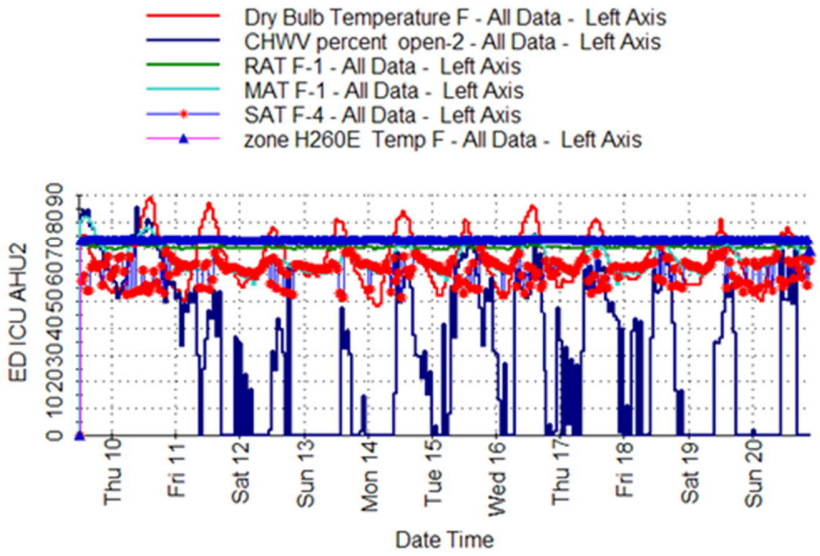
				Efficiency	Utility saved		Blended rate		Utility cost Saved/yr	
Savings	250,497	Ton hours	68%	0.72	180,358		$0.135		$24,348	
	32,798	Therms	44%	0.83	39,516		$0.580		$22,919	
									$47,267	TOTAL

ED ICU AHU2-DDC

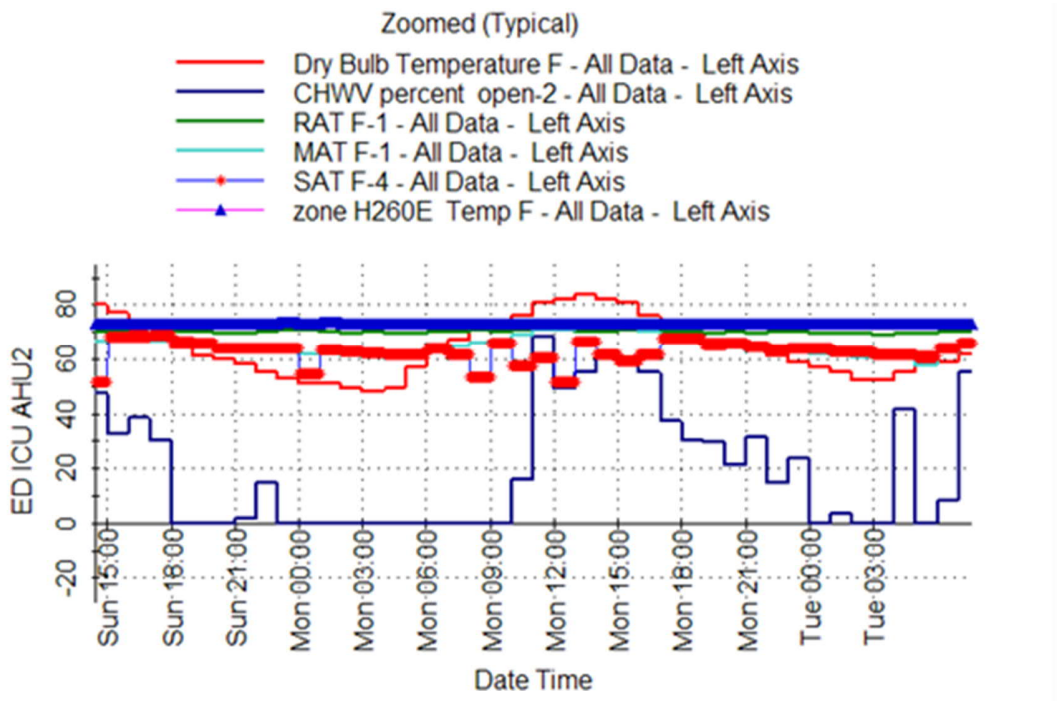
Field notes are shown below.

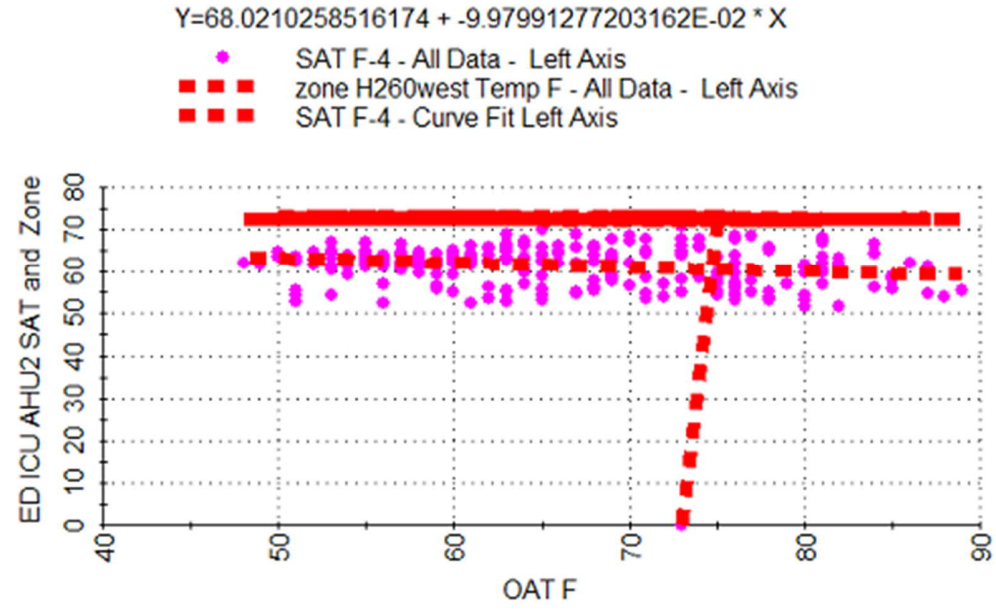
ED ICU AHU2
CAV, SD, RA, RF VFD, SF VFD, Multi Zone, DDC, CC, Economizer
Raw trend data (DDC Carrier by TMC) May 9, 2018 through May 20, 2018

Observation: This unit (~2010) serves half the first and second floor of ED/ICU. Some rooms have humidistat. Multi reheat zones with live steam humidification to selected rooms located below ceiling. Raw trend data indicates good control. SAT varies from 50 F to 70 F and chilled water valve control shows proper modulation. All reheat coils are below ceiling. Zone set points are 72 F for cooling and 68 F for heating. Zone temperature is controlled closely at 70 to 72 F. RAT varies from 68 F to 72 F which is an indication of good control. There is no heating coil in the air handler unit. Trend data indicates that OSA damper is fixed at 40%. Raw trend data indicates that economizer function is not enabled and is fixed at 40% position as it relates to OSA damper. There is an opportunity to apply air side economizer free cooling by opening OSA damper to 100% when SAT is 55 F (which will not add to dehumidification) and close the damper when OAT is at 60 F.
There is no reset opportunity for this unit.
Enable Air side Economizer. Open OSAD when OSAT is 55 F and close the damper when OSAT at 60 F.

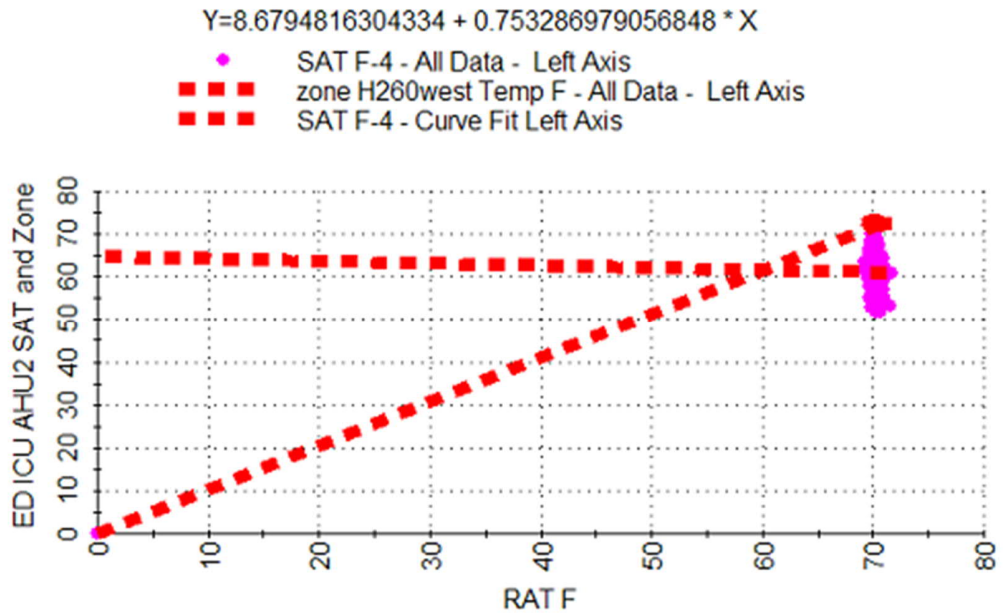


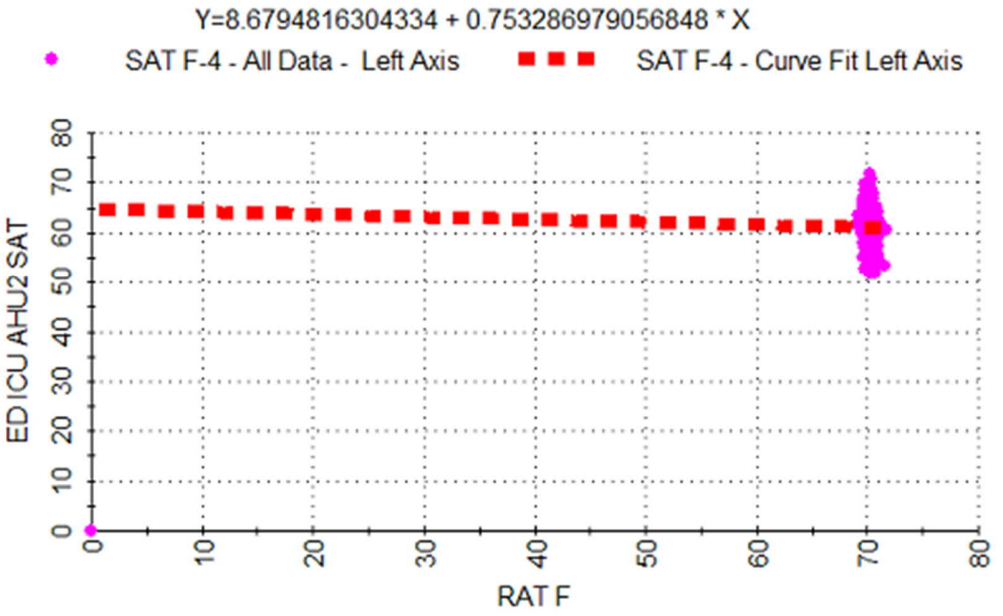
ED ICU AHU2-DDC



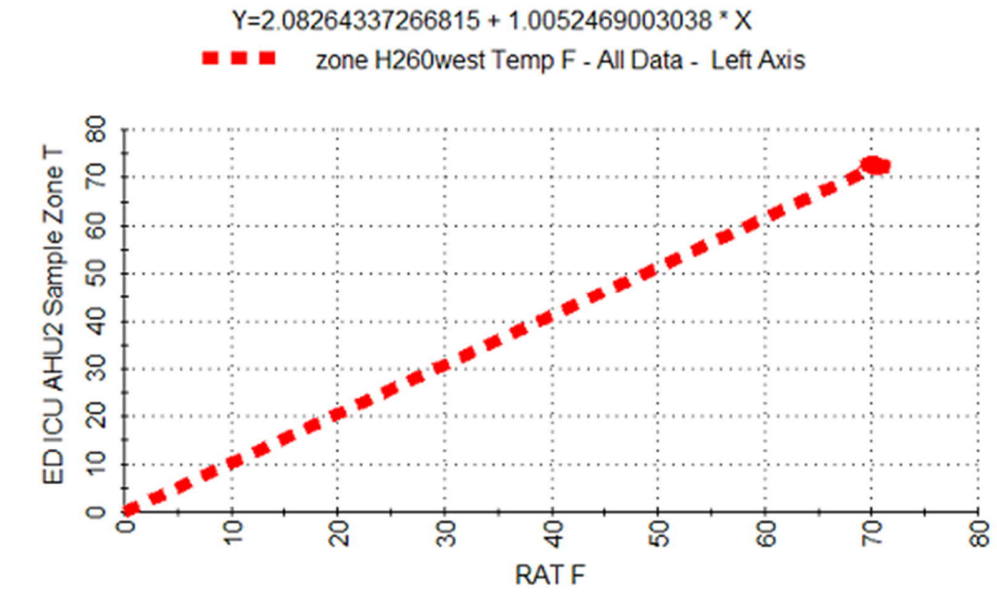


ED ICU AHU2-DDC

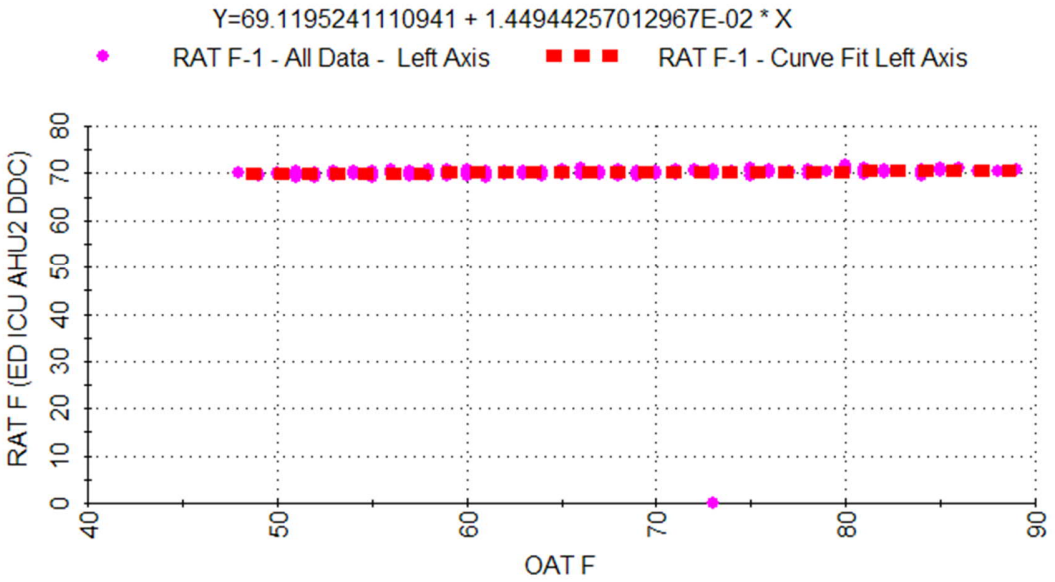




ED ICU AHU2-DDC



RAT vs OAT (ED ICU AHU2 DDC roof)



ED ICU AHU2-DDC

Data for spreadsheet below

Fan max kW	23.20
Max cfm	19350
Min OA	33%
Return Fan kW	4.35

BASELINE (Occupied)

Avg in Bin	Bin hrs/ yr	Bin WB Deg F	Volume Reset % CFM	Total Supply CFM	% cold air of total	Cold Deck CFM	Hot Deck CFM	% OA Dmpr open	Volume OA CFM	% kW from lookup	Fan kW	Fan KWhr per/yr	Return Air deg F	Mix air deg F	Coil cold out	Sensible BTU per year	Grains at Disc Temp.	Grains at Bin W/B. F	Delta Grains @ Dist. F	Latent BTU per year	Heating Coil deg F out	Heating coil BTU/yr	Tons cooling	Tons Total	Tons Heat	True Load	Return Air CFM	% kW fr Lookup	Return Fan kW	Return Fan kWh
105	8	67	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	195	71	82	62	3417435	81	97	16	562,123	62	0	36	41	0	41	100%	105%	5	37
100	56	66	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	1,364	71	80	62	21,977,696	81	93	12	3,026,818	62	0	33	37	0	37	100%	105%	5	256
95	184	65	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	4,482	70	79	62	65,823,842	81	93	12	9,945,260	62	0	30	34	0	34	100%	105%	5	840
90	342	64	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	8,331	70	77	61	110,472,051	81	90	9	13,863,909	61	0	27	30	0	30	100%	105%	5	1562
85	432	64	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	10,523	70	75	61	124,544,354	81	87	6	11,674,871	61	0	24	26	0	26	100%	105%	5	1973
80	501	62	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	12,204	70	74	61	127,041,845	81	81	0	-	61	0	21	21	0	21	100%	105%	5	2288
75	695	60	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	16,930	70	72	61	152,104,890	81	75			61	0	18	18	0	18	100%	105%	5	3174
70	855	58	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	20,827	70	70	61	157,435,749	81	70			61	0	15	15	0	15	100%	105%	5	3905
65	1131	56	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	27,551	70	68	61	168,988,139	81	64			75	325852723	12	12	-24	-12	100%	105%	5	5166
60	1413	53	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	34,420	70	67	61	162062935	81	58	-		75	408694381	10	10	-24	-15	100%	105%	5	6454
55	1222	50	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	29,767	70	65	61	97727791	81	52	-		80	482515573	7	7	-33	-26	100%	105%	5	5581
50	866	46	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	21,095	70	63	61	39189153	81	44			85	433412002	4	4	-42	-38	100%	105%	5	3955
45	589	41	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	14,348	70	62	61	6203634	78	38			90	356389510	1	1	-51	-50	100%	105%	5	2690
40	326	37	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	7,941	70	60	61	-7885319	78	32			90	197954612	-2	-2	-51	-53	100%	105%	5	1489
35	134	32	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	3,264	70	58	61	-7893762	78	26			90	81519065	-5	-5	-51	-56	100%	105%	5	612
30	6	29	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	146	70	56	61	-561776	78	23			90	3656878	-8	-8	-51	-59	100%	105%	5	27
	8760											213,390				1,220,648,657				39,072,982		2,290,594,745								39,371

Baseline
Occupied Total Fan kWh **252,761** kWh
Unoccupied Total Fan kWh - kWh
(see next sheet) **252,761**

Baseline
Occupied Cooling **101,721** Ton hours
Heating **22,906** Therms

Match Proposed Load to Existing by tweaking Supply Air

PROPOSED (Occupied)

Avg in Bin	Bin hrs/ yr	Bin WB Deg F	Volume Reset % CFM	Total Supply CFM	% cold air of total	Cold Deck CFM	Hot Deck CFM	% OA Dmpr open	Volume OA CFM	% kW from lookup	Fan kW	Fan KWhr per/yr	Return Air deg F	Mix air deg F	Coil cold out	Sensible BTU per year	Grains at Disc Temp.	Grains at Bin W/B. F	Delta Grains @ Dist. F	Latent BTU per year	Reheat deg F out	Reheat coil BTU/yr	Tons cooling	Tons reheat	Tons Heat	True Load	Return Air CFM	% kW fr Lookup	Return Fan kW	Return Fan kWh
105	8	66.5	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	195	71	82	62	3417435	81	97	16	562,123	62	0	36	41	0	41	100%	105%	5	37
100	56	65.75	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	1,364	71	80	62	21,977,696	81	93	12	3,026,818	62	0	33	37	0	37	100%	105%	5	256
95	184	65.02	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	4,482	70	79	62	65,823,842	81	93	12	9,945,260	62	0	30	34	0	34	100%	105%	5	840
90	342	64.48	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	8,331	70	77	61	110,472,051	81	90	9	13,863,909	61	0	27	30	0	30	100%	105%	5	1562
85	432	63.52	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	10,523	70	75	61	124,544,354	81	87	6	11,674,871	61	0	24	26	0	26	100%	105%	5	1973
80	501	61.64	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	12,204	70	74	61	127,041,845	81	81			61	0	21	21	0	21	100%	105%	5	2288
75	695	59.67	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	16,930	70	72	61	152,104,890	81	75			61	0	18	18	0	18	100%	105%	5	3174
70	855	57.74	100%	19,350	100%	19,350	19350	33%	6,386	1.05	24	20,827	70	70	61	157,443,104	81	70			61	0	15	15	0	15	100%	105%	5	3905
65	1131	55.53	100%	19,350	100%	19,350	19350	100%	19,350	1.05	24	27,551	70	65	61	89,496,343	81	64			72	254945809	7	7	-19	-12	100%	105%	5	5166
60	1413	52.95	100%	19,350	100%	19,350	19350	100%	19,350	1.05	24	34,420	70	60	60	-	78	58		-	69	250995429	0	0	-15	-15	100%	105%	5	6454
55	1222	49.66	100%	19,350	100%	19,350	19350	59%	11,436	1.05	24	29,767	70	61	61	-	81	52		-	76	380636385	0	0	-26	-26	100%	105%	5	5581
50	866	45.65	100%	19,350	100%	19,350	19350	45%	8,611	1.05	24	21,095	70	61	61	-	81	44			83	398046444	0	0	-38	-38	100%	105%	5	3955
45	589	41.22	100%	19,350	100%	19,350	19350	35%	6,831	1.05	24	14,348	70	61	61	-	81	38			89.5	350577473	0	0	-50	-50	100%	105%	5	2690
40	326	37.33	100%	19,350	100%	19,350	19350	33%	6,424	1.05	24	7,941	70	60	60	-	75	32			90	20553898	0	0	-53	-53	100%	105%	5	1489
35	134	32.39	100%	19,350	100%	19,350	19350	33%	6,386	1.05	24	3,264	70	58	58	-	72	26			90.5	90474862	0	0	-56	-56	200%	105%	5	612
30	6	29	100%	19,350	100%	19,350	19350	33%	6,453	1.05	24	146	70	56	56	-	67	23			90	4218654	0	0	-59	-59	300%	105%	5	27
	8760											213,390				852,321,560				39,072,982		1,935,433,974								39,371

Proposed
Occupied Total Fan kWh **252,761** kWh
Unoccupied Total Fan kWh **#DIV/0!** kWh
(see next sheet) **#DIV/0!**

Baseline
Occupied Cooling **71,027** Ton hours
Heating **19,354** Therms

				Efficiency	Utility saved		Blended rate		Utility cost Saved/yr	
Savings	30,694	Ton hours	30%	0.72	22,100		$0.135		$2,983	
	3,552	Therms	16%	0.83	4,279		$0.580		$2,482	
									$5,465	TOTAL

AHU1-DDC-Material Management

Field notes are shown below.

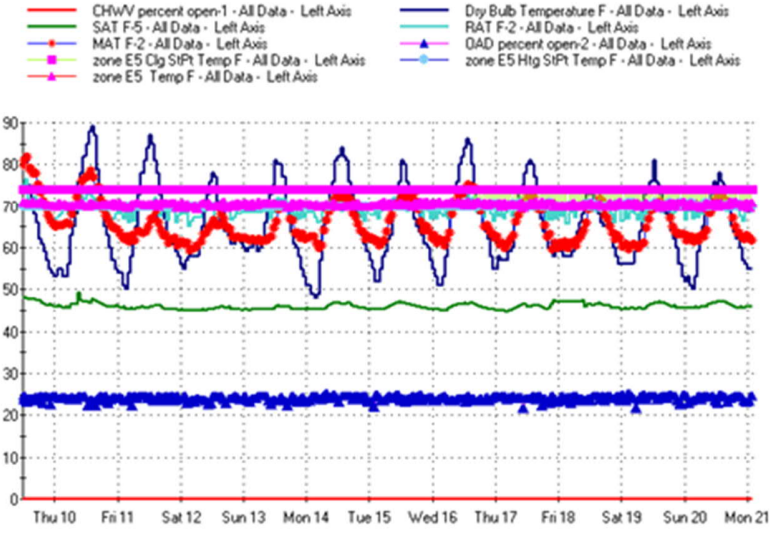
AHU1 (also shown as AHU2)
CAV, SD, RA RF VFD, SF VFD, SZ, DDC, CC, Economizer
Raw trend data (DDC Carrier by TMC) May 9, 2018 through May 20, 2018

Observation: This unit (~2013) serves multi-reheat zones at material management. There is no humidistat. Raw trend data indicates that SAT varies from 45 F to 47 F and valve open position is shown as 0.0 which is misleading and an indication that chilled water valve is locked in 100% open position as it relates to SAT. All reheat coils below ceiling are making up for this condition in order to maintain zone temperature. Zone set points are 74 F for cooling and 70 F for heating. Zone temperature varies from 65 to 70 F. Excessive cooling and heating energy is being wasted. RAT varies from 65 F to 77 F. There is not a reset function for the SAT since chilled water valve is locked in 100% open position. There is no heating coil in the air handler unit. It was also observed that economizer function is not being used since the controller is commanding 25% position for the OSA damper. OSA damper is fixed at approximately 25%. There is an opportunity to apply air side economizer free cooling by opening OSA damper to 100% when SAT is 55 F (which will not add to dehumidification) and close the damper when OAT is at 60 F.

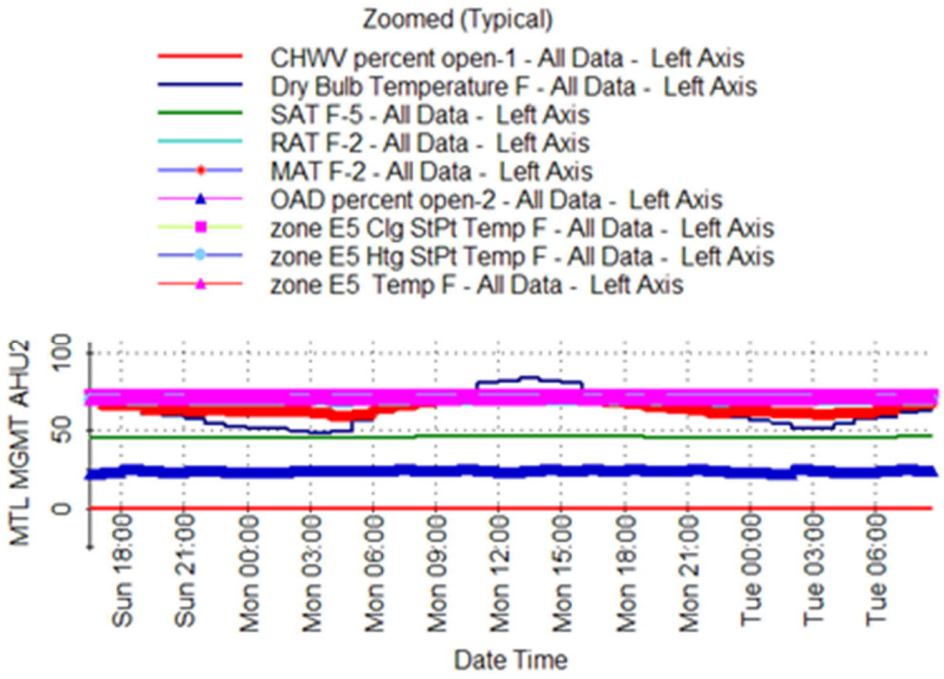
Zone or return air temperature. Recommended control strategy is to reset supply air temperature based on zone temperature or return air temperature. Supply air temperature may modulate to maintain a zone temperature dead band between 68 F and 72 F cooling and 68 F to 72 F heating. Allow three degree of reset minimum not to exceed 58 F SAT for Cooling.

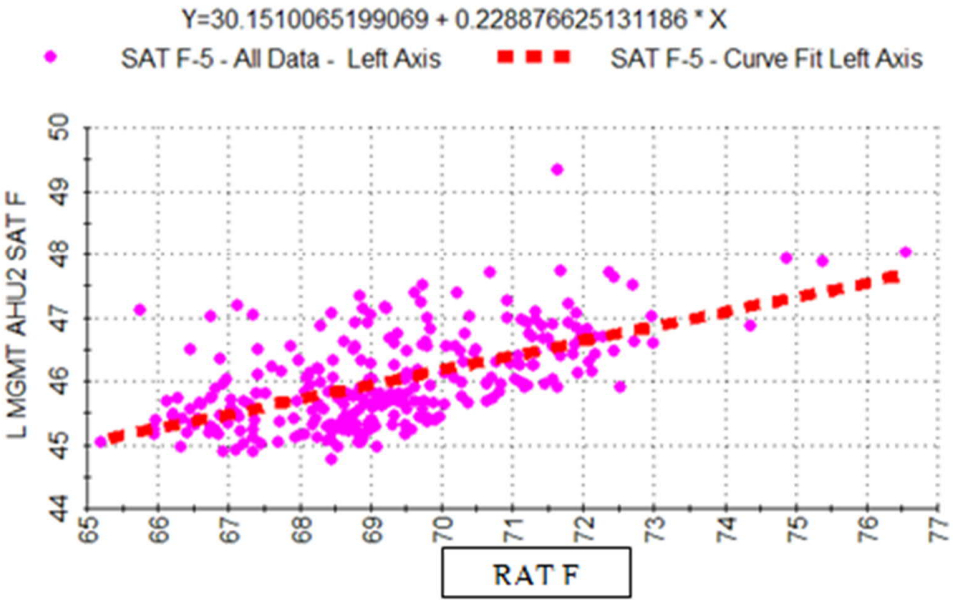
To calculate the energy savings we could consider that baseline is operating as fixed SAT of 50 F (when CHWV is 100% open SAT drops below 50 F) and for proposed condition to operate SAT at fixed 55 F.

Enable Air side Economizer. Open OSAD when OSAT is 55 F and close the damper when OSAT at 60 F.

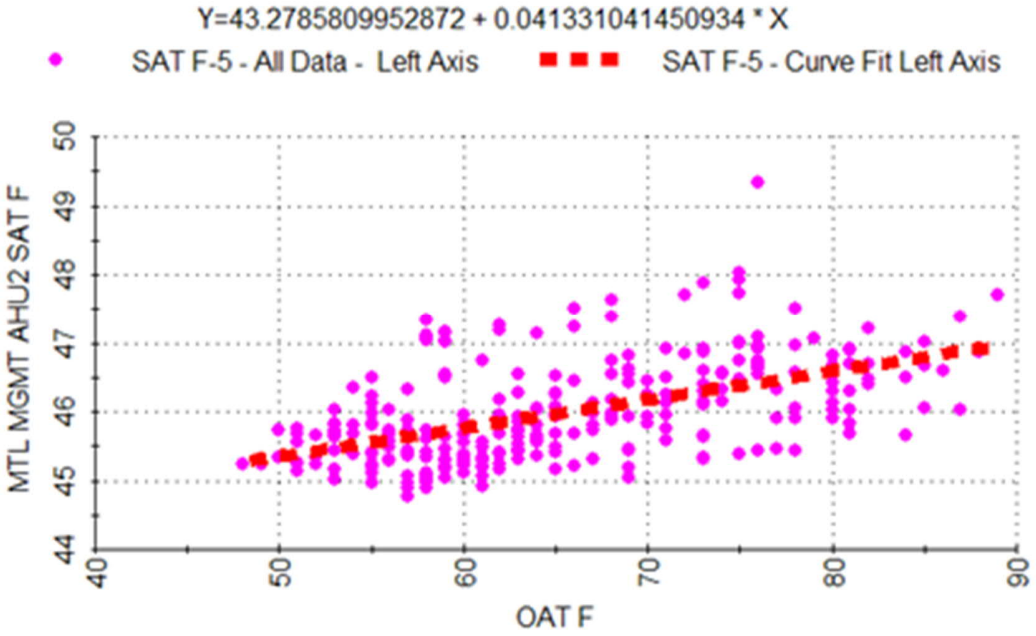


AHU1-DDC-Material Management

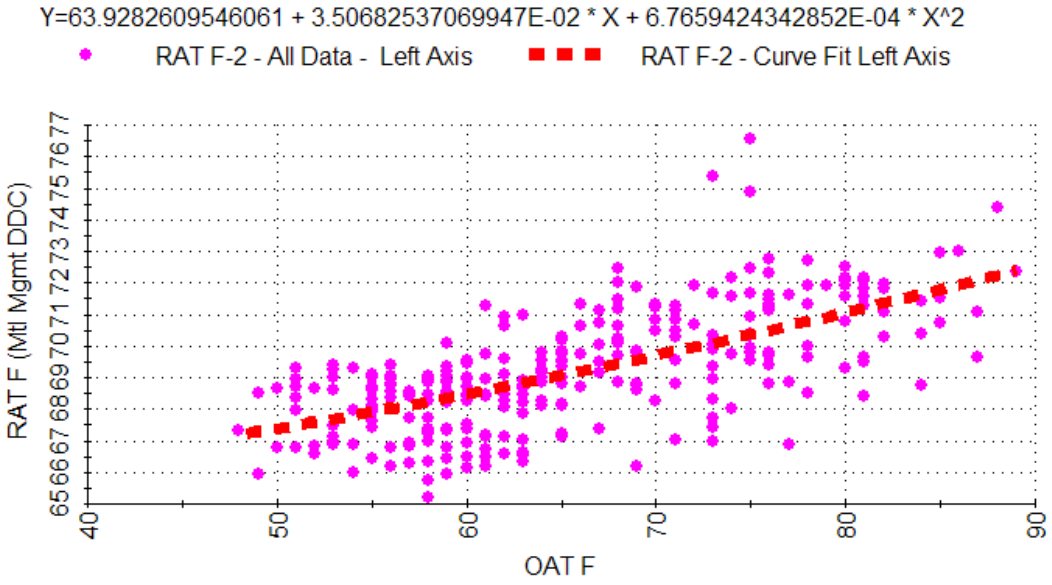




AHU1-DDC-Material Management



RAT vs OAT (Mtl Mgmt DDC roof)



AHU1-DDC-Material Management

Data for spreadsheet below

Fan max kW	5.80
Max cfm	5400
Min OA	25%
Return Fan kW	1.74

BASELINE (Occupied)

Avg in Bin	Bin hrs / yr	Bin WB Deg.F	Volume Reset % CFM	Total Supply CFM	% cold air of total	Cold Deck CFM	Hot Deck CFM	% OA Dmpr open	Volume OA CFM	% kW from lookup	Fan kW	Fan KWhr per/yr	Return Air deg F	Mix air deg F	Coil cold out	Sensible BTU per year	Grains at Disc Temp.	Grain at Bin WB..F	Delta Grains @ Dist. F	Latent BTU per year	Heating Coil deg F out	Heating coil BTU/yr	Tons cooling	Tons Total	Tons Heat	True Load	Return Air CFM	% kW from Lookup	Return Fan kW	Return Fan kWh
105	8	67	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	49	75	83	47	1645744	48	97	49	366,366	54	314372	17	21	-3	18	100%	105%	2	15
100	56	66	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	341	74	81	47	10,964,007	48	93	45	2,374,596	55	2428525	16	20	-4	16	100%	105%	2	102
95	184	65	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	1,121	73	79	47	34,216,012	46	93	47	8,149,010	55	8183514	15	19	-4	15	100%	105%	2	336
90	342	64	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	2,083	73	77	47	60,270,738	46	90	44	14,173,730	56	18566419	15	18	-5	14	100%	105%	2	625
85	432	64	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	2,631	72	75	47	71,974,124	46	87	41	16,690,018	57	25152330	14	17	-5	12	100%	105%	2	789
80	501	62	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	3,051	71	73	46	78,700,190	46	81	35	16,523,231	58	34040572	13	16	-6	10	100%	105%	2	915
75	695	60	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	4,232	70	72	46	102,629,638	46	75	29	19,123,036	59	51921072	12	15	-6	8	100%	105%	2	1270
70	855	58	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	5,207	70	70	46	118,232,479	46	70	24	19,013,729	59	64630270	12	13	-6	7	100%	105%	2	1562
65	1131	56	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	6,888	69	68	46	146,059,438	44	64	20	21,314,826	61	99634762	11	12	-7	5	100%	105%	2	2066
60	1413	53	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	8,605	68	66	46	169606539	44	58		-	85	323374785	10	10	-19	-9	100%	105%	2	2582
55	1222	50	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	7,442	68	65	46	135674826	44	52		-	95	351846109	9	9	-24	-15	100%	105%	2	2233
50	866	46	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	5,274	67	63	46	88433112	44	44			102	285308069	9	9	-27	-19	100%	105%	2	1582
45	589	41	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	3,587	67	61	45	54967486	44	38			103	197872611	8	8	-28	-20	100%	105%	2	1076
40	326	37	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	1,985	66	60	45	27588084	44	32			110	123027649	7	7	-31	-24	100%	105%	2	596
35	134	32	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	816	66	58	45	10188226	44	26			112	52208973	6	6	-32	-26	100%	105%	2	245
30	6	29	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	37	66	57	45	405240	44	23			112	2340864	6	6	-33	-27	100%	105%	2	11
	8760											53,347				1,111,621,942				117,734,543		1,640,850,837								15

Baseline
Occupied Total Fan kWh **53,362** kWh
Unoccupied Total Fan kWh - kWh
(see next sheet) **53,362**

Baseline
Occupied Cooling **92,635** Ton hours
Heating **16,409** Therms

Match Proposed Load to Existing by tweaking Supply Air Flow

PROPOSED (Occupied)

Avg in Bin	Bin hrs / yr	Bin WB Deg.F	Volume Reset % CFM	Total Supply CFM	% cold air of total	Cold Deck CFM	Hot Deck CFM	% OA Dmpr open	Volume OA CFM	% kW from lookup	Fan kW	Fan KWhr per/yr	Return Air deg F	Mix air deg F	Coil cold out	Sensible BTU per year	Grains at Disc Temp.	Grain at Bin WB..F	Delta Grains @ Dist. F	Latent BTU per year	Reheat deg F out	Reheat coil BTU/yr	Tons cooling	Tons Total	Tons Heat	True Load	Return Air CFM	% kW from Lookup	Return Fan kW	Return Fan kWh
105	8	66.5	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	49	76	83	53	1411344	60	97	37	275,905	53	0	15	18	0	18	100%	105%	2	15
100	56	65.8	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	341	76	82	54	9,144,576	62	93	31	1,635,833	54	0	14	16	0	16	100%	105%	2	102
95	184	65	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	1,121	76	81	54	28,705,104	62	93	31	5,374,879	54	0	13	15	0	15	100%	105%	2	336
90	342	64.5	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	2,083	75	79	54	49,364,964	62	90	28	9,023,465	54	0	12	14	0	14	100%	105%	2	625
85	432	63.5	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	2,631	75	78	56	54,167,616	67	87	20	8,222,887	56	0	10	12	0	12	100%	105%	2	789
80	501	61.6	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	3,051	74	76	57	54,053,832	70	81	11	5,381,852	57	0	9	10	0	10	100%	105%	2	915
75	695	59.7	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	4,232	74	74	58	65,865,150	72	75	3	1,833,716	58	0	8	8	0	8	100%	105%	2	1270
70	855	57.7	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	5,207	73	72	58	71,055,630	72	70	-3	(2,255,866)	58	0	7	7	0	7	100%	105%	2	1562
65	1131	55.5	100%	5,400	100%	5,400	5400	100%	5,400	1.05	6	6,888	73	65	55	65,959,920	64	64			55	0	5	5	0	5	100%	105%	2	2066
60	1413	52.9	100%	5,400	100%	5,400	5400	100%	5,400	1.05	6	8,605	72	60	58	16,481,232	72	58		-	79	173052936	1	1	-10	-9	100%	105%	2	2582
55	1222	49.7	100%	5,400	100%	5,400	5400	80%	4,320	1.05	6	7,442	71	58	58	1,425,341	72	52		-	89	220927824	0	0	-15	-15	100%	105%	2	2233
50	866	45.6	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	5,274	71	66	58	33,141,468	72	44			105	237374064	4	4	-23	-19	100%	105%	2	1582
45	589	41.2	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	3,587	70	64	58	19,751,526	72	38			105	161447256	3	3	-23	-20	100%	105%	2	1076
40	326	37.3	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	1,985	70	63	58	8,555,544	72	32			112	102666528	2	2	-26	-24	100%	105%	2	596
35	134	32.4	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	816	70	61	58	2,539,836	72	26			114	43763328	2	2	-27	-26	200%	105%	2	245
30	6	29	100%	5,400	100%	5,400	5400	25%	1,350	1.05	6	37	68	59	58	17,496	72	23			114	1959552	0	0	-27	-27	300%	105%	2	11
	8760											53,347				487,640,639				29,492,671		941,191,488								16,004

Proposed
Occupied Total Fan kWh **69,352** kWh
Unoccupied Total Fan kWh **#DIV/0!** kWh
(see next sheet) **#DIV/0!**

Baseline
Occupied Cooling **40,637** Ton hours
Heating **9,412** Therms

				Efficiency	Utility saved	Blended rate	Utility cost Saved/yr
Savings	51,998	Ton hours	56%	0.72	37,439	$0.135	$5,054
	6,997	Therms	43%	0.83	8,430	$0.580	$4,889
							$9,943 TOTAL

END

EXHIBIT F

START UP AND OPERATIONAL TESTS

Functional Performance Test
Demand Flow®, Chilled Water Optimization

Date(s)/Time(s) of Test: _____

Demand Flow COE: _____

Witness: _____

Operator/PM: _____

System Description: Primary/Secondary/Tertiary; Dedicated PCHPs; Headered CDWPs.
The chilled water plant serving San Gorgonio Memorial Healthcare District consists of (2) 350-ton Carrier chillers with motor variable speed drives, (3) headered primary chilled water pumps, (2) headered secondary chilled water pumps, (3) headered condenser water pumps, and (3) headered cooling towers with inlet control valves and manual outlet valves. The secondary chilled water pumps and cooling tower fans are variable speed. The chilled water system serves (16) air handling units with chilled water cooling coils. The revisions to the central plant include the addition of Variable Frequency Drives (VFDs) to primary chilled water and condenser water pumps, as well as replacement of the chilled water valves at the air handling units. All open decouplers will be closed.

Pre-Test Checklist:

- ❑ Confirm site contact in case of unforeseen or emergency issue arises during testing.

  Site Contact: _____

  Contact No: _____

- ❑ Point to Point testing has been completed.
- ❑ Verify installation and location of all sensors per recommendations/SOW.
- ❑ Take Snapshot Log documenting current readings of key points prior to testing.
- ❑ Confirm all equipment can be placed in Hand / OPER during testing/commissioning, if necessary.
- ❑ Confirm trending is in place for critical control points.

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
----The following steps are performed with Demand Flow Mode OFF---			
Chiller Selection Test (Plant Off)			
1	Verify all chiller start stop, system start, and lockout points are off in NONE priority.	Chiller **Next to Start** should show the chiller with the lowest runtime.	
2	Command the chiller's lockout point on for the chiller shown to be next to start in step 1.	Chiller **Next to Start** should change to show the chiller with the next lowest runtime.	
3	Command the chiller's start / stop point off in OPER priority for the chiller shown to be next to start in step 2.	Chiller **Next to Start** should change to show the chiller with the next lowest runtime.	
4	Command the chiller's system start point off in OPER priority for the chiller shown to be next to start in step 3.	Chiller **Next to Start** should change to show the chiller with the next lowest runtime.	
5	Release all points commanded in steps 1 – 4 and command all chiller lockout points off.	Chiller **Next to Start** should show the chiller with the lowest runtime.	
PCHW Pump Selection Test (Plant Off)			
1	Verify all pump start stop and lockout points are off in NONE priority.	Pump **Next to Start** should show the pump with the lowest runtime.	
2	Command the pump's lockout point on for the pump shown to be next to start in step 1.	Pump **Next to Start** should change to show the pump with the next lowest runtime.	
3	Command the pump's start / stop point off in OPER priority for the pump shown to be next to start in step 2.	Pump **Next to Start** should change to show the pump with the next lowest runtime.	
4	Release all points commanded in steps 1 – 4 and command all pump lockout points off.	Pump **Next to Start** should show the pump with the lowest runtime.	
CW Pump Selection Test (Plant Off)			
1	Verify all pump start stop and lockout points are off in NONE priority.	Pump **Next to Start** should show the pump with the lowest runtime.	
2	Command the pump's lockout point on for the pump shown to be next to start in step 1.	Pump **Next to Start** should change to show the pump with the next lowest runtime.	
3	Command the pump's start / stop point off in OPER priority for the pump shown to be next to start in step 2.	Pump **Next to Start** should change to show the pump with the next lowest runtime.	
4	Release all points commanded in steps 1 – 4 and command all pump lockout points off.	Pump **Next to Start** should show the pump with the lowest runtime.	
Cooling Tower Selection Test (Plant Off)			
1	Verify all cell isolation valve commands, cell enable points, and cell lockout points are in NONE priority. Set cells required to 0 in OPER.	All cells will close. Cell **Next to Open** should show the cell with the highest closed time.	

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
2	Command the cell lockout point on for the cell shown to be next to open in step 1.	Cell **Next to Open** should change to show the cell with the next highest runtime.	
3	Command the cell's spray valve point off in OPER priority for the cell shown to be next to open in step 2.	Cell **Next to Open** should change to show the cell with the next highest runtime.	
4	Command the cell's basin valve point off in OPER priority for the cell shown to be next to open in step 3.	Cell **Next to Open** should change to show the cell with the next highest runtime.	
5	Command the cell's enable point off in OPER priority for the cell shown to be next to open in step 4.	Cell **Next to Open** should change to show no cells available.	
6	Release all points commanded in steps 1 – 6 and command all cell lockout points off.	Cell **Next to Open** should show the cell with the highest closed time. One cell will open.	
7	Verify all fan start / stop commands, are in NONE priority.	Fan **Next to Start** should match the cell that is currently open.	
8	Command the fan start / stop point off in OPER for the fan shown to be next to start in step 7.	Fan **Next to Start** should change to no fans available.	
9	Release the fan start stop.	Fan **Next to Start** should match the cell that is currently open.	
SCHW Pump Selection Test (Plant Off)			
1	Verify all pump start stop and lockout points are off in NONE priority.	Pump **Next to Start** should show the pump with the lowest runtime.	
2	Command the pump's lockout point on for the pump shown to be next to start in step 1.	Pump **Next to Start** should change to show the pump with the next lowest runtime.	
3	Command the pump's start / stop point off in OPER priority for the pump shown to be next to start in step 2.	Pump **Next to Start** should change to show no pumps available.	
4	Release all points commanded in steps 1 – 4 and command all pump lockout points off.	Pump **Next to Start** should show the pump with the lowest runtime.	
Plant startup			
1	Create (2) dynamic plots / online trends for the following points for each chiller, 1 plot for CHW points and 1 plot for CW points: CHILLER CHW FLOW SETPOINT CHILLER CHW FLOW CHILLER CHW FLOW CTRL LOOP OUTPUT CHILLER CW FLOW SETPOINT CHILLER CW FLOW CHILLER CW FLOW CTRL LOOP OUTPUT		

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
2	Command the Plant Enable point on.	The **Chillers Required** point will change from 0 to 1. The **System Start** point of the chiller that is indicated to be the next to start will be commanded on. The chillers CHW and CW isolation valves will be commanded open. (1) CHW and CW pump will start according to their respective Next to Start points. Cooling tower cells will open according to the CW flow and the cell Next to Open point. Fans in all open cells will start. The chiller will be commanded to start.	
3	Allow the system to stabilize and verify the running chiller's flow control loops are stable. Raise the CHW system differential setpoint by 3 psi from its current value.	The running chiller's CHW flow setpoint will increase to meet the new differential pressure setpoint, and the CHW pump will increase speed to meet the new flow setpoint quickly and without hunting.	
4	Release CHW system differential pressure setpoint.	The CHW system differential pressure setpoint will return to its normal value, the chiller's flow setpojnt will ramp down, and the CHW pumps will slow down to meet the new CHW flow setpoint without hunting.	
5	Command the running chiller's CW flow setpoint 100-200 GPM above its current value in OPER.	The CW pump will increase speed to meet the new flow setpoint quickly and without hunting.	
6	Release the chiller's CW flow setpoint.	The CW pump will decrease speed to meet the new flow setpoint quickly and without hunting.	
Chiller Add and Subtract			
1	Command the **Chillers required** point to 2 in OPER.	The chiller **System Enable** point of the chiller that is shown to start next will turn on. (1) additional CHW and CW pump may start depending on the flow requirements. The chiller's CHW and CW isolation valves will modulate open. The chiller will be commanded to start.	

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
2	Allow system to stabilize and observe CHW and CW flow control by using the two dynamic plots / online trends created earlier.	Pumps and chiller isolation valves should modulate to control CHW and CW flow at their respective setpoints without hunting while keeping the flows between their minimum and maximum values.	
3	Command the chillers required point to 1 in OPER, then release it.	The chiller **System Enable** point of the chiller that is shown to stop next will turn off. The chiller will be commanded off. Three minutes after the chiller shuts down, its CHW and CW isolation valves will close. Once the chillers isolation valves are closed, (1) CHW and CW pumps may shut down depending on the flow requirements.	
4	Allow system to stabilize and observe CHW and CW flow control by using the two dynamic plots / online trends created earlier.	Pumps should modulate to control CHW and CW flow at their respective setpoints without hunting while keeping the flows between their minimum and maximum values.	
SCHW – Pump Staging			
1	Command the SCHW differential pressure setpoint up to speed up the SCHW pumps.	When the SCHW pump(s) are running more than 54Hz for more than 5 minutes, an additional pump will start.	
2	Release the SCHW differential pressure setpoint.	When the SCHW pump(s) are running less than 35Hz for more than 5 minutes, the additional pump will stop.	
Equipment Rotation and Selection.			
1	Verify the CHW pump required point is in NONE priority, the CHW pump next to start point shows one of the offline pumps is next to start, and the CHW pump next to stop point shows one of the online pumps is next to stop. Command the CHW pump rotate point on.	The CHW pump rotate point will turn itself off. The CHW pump required point will increase by 1 and the CHW pump indicated to be next to start will start. After 60 seconds, the CHW pump required point will decrease by 1 and the CHW pump that is indicated to be next to stop will stop.	

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
2	Verify the CW pump required point is in NONE priority, the CW pump next to start point shows one of the offline pumps is next to start, and the CW pump next to stop point shows one of the online pumps is next to stop. Command the CW pump rotate point on.	The CW pump rotate point will turn itself off. The CW pump required point will increase by 1 and the CW pump indicated to be next to start will start. After 60 seconds, the CW pump required point will decrease by 1 and the CW pump that is indicated to be next to stop will stop.	
3	Verify the cooling tower cell required point is in NONE priority, the cell next to open point shows one of the offline cells is next to open, and the cell next to close point shows one of the online cells is next to close. Command the cell rotate point on.	The cell rotate point will turn itself off. The cooling tower cell required point will increase by 1 and the cell indicated to be next to open will open and its fan will start. After 60 seconds, the cooling tower cell required point will decrease by 1 and the cell that is indicated to be next to close will close and its fan will stop.	
4	Verify the Chiller required point is in NONE priority, the Chiller next to start point shows one of the offline chillers is next to start, and the Chiller next to stop point shows one of the online chillers is next to stop. Make not of the chiller next to start and stop points and record their values. Command the Chiller rotate point on.	The Chiller rotate point will turn itself off. The Chiller required point will increase by 1 and the Chiller indicated to be next to start will begin its startup sequence. After 3 minutes, and after all chillers are producing CHW within 4 deg of their setpoint, the Chiller required point will decrease by 1 and the Chiller that was originally indicated to be next to stop will shut down according to its shutdown procedure.	
5	Verify the SCHW pump required point is in NONE priority, the SCHW pump next to start point shows one of the offline pumps is next to start, and the SCHW pump next to stop point shows one of the online pumps is next to stop. Command the SCHW pump rotate point on.	The SCHW pump rotate point will turn itself off. The SCHW pump required point will increase by 1 and the SCHW pump indicated to be next to start will start. After 60 seconds, the SCHW pump required point will decrease by 1 and the SCHW pump that is indicated to be next to stop will stop.	
Chiller Staging			
1	Verify no chillers have started or stopped in the past 45 minutes. Simulate an increase in load to cause the chiller %RLA to increase above 90% for 5 minutes.	The chiller required point will increase by one and an additional chiller will start.	

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
2	After the additional chiller starts, simulate a decrease in load so that the system tonnage is less than 80% of the rated tonnage of the running machines – 1.	45 minutes after the additional chiller starts in step 1, the chiller required point will decrease by 1 and a chiller will be shut down.	
----Turn on Demand Flow Mode for at least ½ hour before continuing----			
Demand Flow Operation – Chilled Water Temperature Reset.			
1	Initiate a chilled water supply temperature setpoint increase by commanding the chiller required point to bring on additional chillers so that the total of the running chillers minimum flow exceeds the total flow of the secondary systems.	Once the CHW minimum flow bypass valve begins to open, the chilled water temperature setpoint resets up slowly until it reaches its maximum value or the CHW minimum flow bypass valve closes.	
2	Command the chiller required back to its original value and release it to NONE priority.	Chilled water temperature setpoint decrements slowly to its minimum value after the CHW minimum flow bypass valve modulates closed.	
Demand Flow Operation – Condenser Water Temperature Reset.			
1	Command the CW supply temperature setpoint down in NONE priority enough to make the cooling tower fans speed up to 60Hz.	Within 5 minutes, the CW supply temperature setpoint will begin to reset up by 0.25 deg every 5 minutes.	
2	Command the CW supply temperature setpoint up in NONE priority enough to make the cooling tower fans slow down below 48 Hz.	Within 5 minutes, the CW supply temperature setpoint will begin to reset down by 0.25 deg every 5 minutes.	
3	With the CW supply temperature setpoint at the same value as in step 2, and the fans below 48Hz, simulate a chiller approaching low lift condition by commanding on the point ...CH#.REF.DP.FLG in OPER for the chiller that is running.	Within 5 minutes, the CW supply temperature setpoint will stop resetting down and hold its current value.	
4	With the CW supply temperature setpoint at the same value as in step 3, and the fans below 48Hz, simulate a chiller low lift condition by commanding on the point ...CH#.REF.DP.FLG1 in OPER for the chiller that is running.	Within 5 minutes, the CW supply temperature setpoint will begin to reset up by 0.25 deg every 5 minutes.	
5	Release the point commanded in steps 3 & 4 to NONE priority.	The CW supply temperature setpoint will begin to reset according to the normal sequence of operations.	
Demand Flow Operation – Condenser Water Flow Control			

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
1	Ensure the point ....CH#_CW_DT is calculating correctly for the chiller that is running. Command the value of ...CH#_CW_DT_SP 2 deg F above the value of ....CH#_CW_DT in OPER priority.	The chiller's CW flow setpoint will decrease until the chiller's CW delta T is within 0.5 deg of setpoint.	
2	Command the value of ...CH#_CW_DT_SP 2 deg F below the value of ....CH#_CW_DT in OPER priority.	The chiller's CW flow setpoint will increase until the chiller's CW delta T is within 0.5 deg of setpoint.	
3	Release the point CH#_CW_DT_SP to NONE priority.	The chiller's CW flow setpoint will reset until the chiller's CW delta T is within 0.5 deg of setpoint.	
4	Ensure the point ....CH#_REF_DP is calculating correctly for the chiller that is running. Command the value of ...CH#_REF_DP_SP 2 PSI above the value of ....CH#_REF_DP in OPER priority.	The chiller's CW flow setpoint will decrease until the chiller's refrigerant differential pressure is within 1 PSI of setpoint.	
5	Release the point ...CH#_REF_DP_SP to NONE priority.	The chiller's CW flow setpoint will increase until the chiller's CW delta T is within 0.5 deg of setpoint.	
Demand Flow Operation – SCHW Differential Pressure Reset			
1	Command the secondary CHW delta T setpoint to 20 in OPER priority.	The SCHW differential pressure setpoint will start to reset down 0.25 psi every 4 minutes.	
2	Command the secondary CHW delta T setpoint to 2 in OPER priority.	The SCHW differential pressure setpoint will start to reset up 0.25 psi every 4 minutes.	
3	Command the secondary CHW deltaT setpoint to 10 in OPER.	The SCHW differential pressure setpoint will hold its current value.	
4	Release the secondary CHW deltaT setpoint to NONE priority	The SCHW differential pressure setpoint will reset to keep the delta T setpoint within its setpoint range.	
Demand Flow Operation – CHW N+1 pumping			
1	Command open the CHW minimum flow bypass valve in OPER to cause the CHW flow setpoint at the chiller(s) to increase and the pump to speed up.	When the CHW pump(s) are running more than 54Hz for more than 5 minutes, an additional pump will start.	
2	Release the CHW minimum flow bypass valve to NONE priority to cause the CHW flow setpoint at the chiller(s) to decrease and the pump to slow down.	When the CHW pump(s) are running less than 35Hz for more than 5 minutes, the additional pump will stop.	
Demand Flow Operation – CW N+1 pumping			

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
1	Command the running chiller's CW flow setpoint up in OPER priority	When the CW pump(s) are running more than 54Hz for more than 5 minutes, an additional pump will start.	
2	Release the running chiller's CW flow setpoint to NONE priority.	When the CW pump(s) are running less than 35Hz for more than 5 minutes, the additional pump will stop.	

Notes:

Functional Performance Test
Control Optimization of Material Management AHU, ED/ICU AHU1, and ED/ICU AHU2

Date(s)/Time(s) of Test: _____

Witness: _____

Operator/PM: _____

Pre-Test Checklist:

Item # Item Text Response

Record Unit Data:

- ❑ Unit Tag: _____
- ❑ Manufacturer: _____
- ❑ Model Number: _____
- ❑ Record Setpoints: _____
- ❑ SA Temp- Occupied _____
- ❑ SA Temp- Unoccupied _____
- ❑ SA low temp alarm _____
- ❑ SA high temp alarm _____
- ❑ Fan Failure Timer _____
- ❑ Trends have been set up prior to starting testing. Yes No
- ❑ All trends have the correct intervals & durations and are saving properly Yes No
- ❑ Point to Point checkouts and Application checkouts have been completed and available to Commissioning Team Yes No
- ❑ Unit is ready for testing Yes No

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
Occupied Mode			
1	Set unit to occupied mode	Supply air fan ON	
2	Override the supply air temp setpoint to 8 degrees below the current space temperature	System calls for cooling	
		Heating valve/hot deck closed	
		Cooling valve/cold deck opened and modulates for new set point	
		OA damper is at minimum	
		RA damper is open	
Cooling Mode			
1	Allow system to stabilize in cooling mode	Control loops achieve stability within a reasonable amount of time	
2	Override outside air temperature to drive the system into economizer mode	OA damper modulates open	
		Cooling valve/cold deck modulates closed	
3	Allow system to stabilize in economizer mode	Control loops achieve stability within a reasonable amount of time	
4	Release all overridden points and allow the system to stabilize	Verify system is in normal occupied mode with no alarms active	
Heating Mode			
1	Override the supply air temp setpoint to 8 degrees above the current space temperature	System calls for heating	
		Cooling valve/cold deck closed	
		Heating valve/hot deck opens	
		Supply air fan ON	
		OA damper is at minimum	
		RA damper is open	
2	Allow system to stabilize in heating mode	Control loops achieve stability within a reasonable amount of time	
3	Release all overridden points and allow the system to stabilize	Verify system is in normal occupied mode with no alarms active	
Heating valve fail			
1	Fail power to the heating valve/hot deck	Valve deck remains open	
		Alarm is activated and shows at BMS front end	
2	Restore power to the heating valve/hot deck	Valve/deck remains open, continues modulating based on system demand	

Step	Test Procedure	Expected Response Note	Pass Y/N Initial
		Alarm is cleared at BMS front end	
3	Release all overridden points and allow the system to stabilize	Verify system is in normal occupied mode with no alarms active	
Supply air temperature reset			
1	Override outside air temperature to drive the system into discharge air temperature reset	Discharge air temperature setpoint adjusts within prescribed range	
		OA damper, cooling valve/cold deck, and heating valve/hot deck modulate with no overlap to maintain discharge temperature setpoint	
2	Allow system to stabilize	Control loops achieve stability within a reasonable amount of time	
3	Release all overridden points and allow the system to stabilize	Verify system is in normal occupied mode with no alarms active	

Notes:

EXHIBIT G

REQUEST FOR INFORMATION FORM

PROJECT_____ PROJECT NO._____

CONTRACTOR_____ CONTRACT NO._____

DATE_____

REQUEST FOR INFORMATION NO. _____

FROM: (Name, Co.)	TO: (Name, Co.)

FROM CONTRACTOR:

Subject:

Question:

Suggestion:

Estimated Cost (if known): ($000.00 or N/A)

REPLY TO CONTRACTOR	**DATE ANSWERED:**

Per the Contract Documents, Contractor shall not proceed with additive or deductive Work which has change order implications as a result of this RFI without prior written approval from Owner.

Copies to:
- Project Manager
- Owner

EXHIBIT H

FORM OF CHANGE ORDER

San Gorgonio Memorial Healthcare District
600 N. Highland Springs Ave.
Banning, CA 92220

CONTRACT CHANGE ORDER NO. __

Date: [INSERT]

To: [CONTRACTOR NAME]

[ADDRESS]

[ADDRESS]

Attn: [CONTRACTOR REP]

Project: [INSERT]

This Change Order covers changes to the contract as described herein. The Contractor shall construct, furnish equipment and materials, and perform all work as necessary or required to complete the Change Order items for the amount agreed upon between the Contractor and San Gorgonio Memorial Healthcare District ("Owner") and set forth herein.

Item No.	Description of Changes	Increase/ (Decrease) in Contract Amount	Contract Time Extension, Days
1			
2			
	Totals	**$**	

Original Contract Amount:	$XX.00
Change by Previous Change Order(s):	$XX.00
Contract Price Prior to this Change Order:	$XX.00
Current Change Order Amount:	$XX.00
Revised Contract Amount including this Change Order:	$XX.00

The Contract Price and Contract Time shall be adjusted as set forth above. The undersigned Contractor approves the foregoing Change Order as to the changes, if any, in the contract price specified for each item including any and all supervision costs and other miscellaneous costs relating to the change in work, and as to the extension of time allowed, if any, for completion of the entire work on account of said Change Order. The Contractor agrees to furnish all labor and materials and perform all other necessary work, inclusive of the directly or indirectly related to the approved time extension, required to complete the Change order items. This document will become a supplement of the contract and all provisions will apply hereto. It is understood that the Change Order shall be effective when approved by the Owner.

Contractor accepts the terms and conditions stated above as full and final settlement of any and all claims arising out of or related to the subject of this Change Order and acknowledges that the compensation (time and cost) set forth herein comprises the total compensation due for the work or change defined in the Change Order, including all impact on any unchanged work. By signing this Change Order, the Contractor acknowledges and agrees that the stipulated compensation includes payment for all Work contained in the Change Order, plus all payment for any acceleration or interruption of schedules, extended overhead costs, delay, and all impact or cumulative impact on all Work under this Contract. The signing of this Change Order acknowledges full mutual accord and satisfaction for the change and that the stated time and/or cost constitute the total equitable adjustment owed the Contractor as a result of the change. The Contractor hereby releases and agrees to waive all rights, without exception or reservation of any kind whatsoever, to file any further claim or request for equitable adjustment of any type, for any reasonably foreseeable cause that shall arise out of, or as a result of, this Change Order and/or its impact on the remainder of the Work under the Contract.

Accepted:

Recommended:	(Signature) Contractor's Authorized Representative	Date
Approved:	(Signature) [**INSERT NAME, TITLE**]	Date
	(Signature) [**INSERT NAME, TITLE**]	Date

This Contract Change Order consists of **2 pages** and any exhibits attached to this Contract Change Order shall not be part of the Contract Change Order unless specifically initialed by or on behalf of both the Contractor and the San Gorgonio Memorial Healthcare District.

Contract Change Order #

EXHIBIT I

FORM OF APPLICATION FOR PAYMENT

[OWNER TO INSERT OWNER'S STANDARD APPLICATION FOR PAYMENT FORM]

EXHIBIT J

FORM OF FINAL COMPLETION CERTIFICATE

RECORDING REQUESTED BY AND WHEN RECORDED, RETURN TO:
San Gorgonio Memorial Healthcare District
600 N. Highland Springs Ave.
Banning, CA 92220

- above for recorders use only -

NOTICE OF COMPLETION

1) The date of completion of the hereinafter described works of improvement is:

2) The name and address of the owner of the hereinafter described works of improvement is: San Gorgonio Memorial Healthcare District, 600 N. Highland Springs Ave., Banning, CA 92220

3) That the nature of the interest of the undersigned is as a [INSERT OWNERSHIP INTEREST IN PROJECT SITE; e.g., fee simple owner, joint tenant, tenant in common] in the above-described real property.

4) The hereinafter described works of improvement lie within the boundaries of the San Gorgonio Memorial Healthcare District and generally in [INSERT DESCRIPTION OF SITE], County of Riverside, State of California.

5) The name of the original contractor for the hereinafter described works of improvement is: [INSERT CONTRACTOR NAME]

6) The following is a general statement of the kind of work done pursuant to the contract:

7) The name of the surety company is:

DATED:_____

SAN GORGONIO MEMORIAL HEALTHCARE DISTRICT

By:_____
[INSERT NAME]
[INSERT TITLE]

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s) ☐ Limited ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

EXHIBIT K

KNOW ALL MEN BY THESE PRESENTS That

WHEREAS, the San Gorgonio Memorial Healthcare District (hereinafter designated as the "Owner"), by action taken or a resolution passed _____ , 20_____, has awarded to _____ hereinafter designated as the "Principal," a contract for the work described as follows: **Contract No.**_____ (the "Project"); and

WHEREAS, said Principal is required to furnish a bond in connection with said contract; providing that if said Principal or any of its Subcontractors shall fail to pay for any materials, provisions, provender, equipment, or other supplies used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of said Principal and its Subcontractors with respect to such work or labor the Surety on this bond will pay for the same to the extent hereinafter set forth.

NOW THEREFORE, we, the Principal and _____ as Surety, are held and firmly bound unto the Owner in the penal sum of _____ Dollars ($_____) lawful money of the United States of America, 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.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Civil Code Section 9100, fail to pay for any materials, provisions 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 amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of the contractor and his subcontractors pursuant to Revenue and Taxation Code Section 18663, with respect to such work and labor the Surety or Sureties will pay for the same, in an amount not exceeding the sum herein above specified, and also, in case suit is brought upon this bond, all litigation expenses incurred by the Owner in such suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 9100 so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described, or pertaining or relating to the furnishing of labor, materials, or equipment therefore, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement herein above described, nor by any rescission or attempted rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to

those for whose benefit such bond has been given, by reason of any breach of contract between the owner or Owner and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Civil Code Section 9100, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned, including but not limited to the provisions of sections 2819 and 2845 of the California Civil Code.

By their signatures hereunder, Surety and Principal hereby confirm under penalty of perjury that surety is an admitted surety insurer authorized to do business in the State of California.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

(Corporate Seal)

_____
Contractor/ Principal

By_____

Title_____

(Corporate Seal)

_____
Surety

By _____
Attorney-in-Fact

(Attach Attorney-in-Fact Certificate)

Title_____

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s)
  - ☐ Limited
  - ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

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Signature of Notary Public

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- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s)
  - ☐ Limited
  - ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

EXHIBIT L

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the San Gorgino Memorial Healthcare District, (hereinafter referred to as "Owner") has awarded to _____, (hereinafter referred to as the "Contractor") an agreement for **Contract No.**_____, (hereinafter referred to as the "Project").

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract Documents for the Project dated _____, (hereinafter referred to as "Contract Documents"), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, the Contractor is required by said Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, we, _____, the undersigned Contractor and _____ as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held and firmly bound unto the Owner in the sum of _____ DOLLARS, ($_____), said sum being not less than one hundred percent (100%) of the total amount of the Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Contractor, 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 Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations including the one (1) year guarantee of all materials and workmanship; and shall indemnify and save harmless the Owner, its officials, officers, employees, and authorized volunteers, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees including reasonable attorney's fees, incurred by Owner in enforcing such obligation.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the work by Owner, during which time if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the Owner from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the Owner's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure Section 337.15.

Whenever Contractor shall be, and is declared by the Owner to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at the Owner's option:

1. Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or

2. Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a Contract between such bidder, the Surety and the Owner, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by the Owner under the Contract and any modification thereto, less any amount previously paid by the Owner to the Contractor and any other set offs pursuant to the Contract Documents.

3. Permit the Owner to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by the Owner under the Contract and any modification thereto, less any amount previously paid by the Owner to the Contractor and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that the Owner may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Contractor.

Surety shall not utilize Contractor in completing the Project nor shall Surety accept a bid from Contractor for completion of the Project if the Owner, when declaring the Contractor in default, notifies Surety of the Owner's objection to Contractor's further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project to be performed thereunder shall in any way affect its obligations 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 Documents or to the Project.

By their signatures hereunder, Surety and Contractor hereby confirm under penalty of perjury that surety is an admitted surety insurer authorized to do business in the State of California.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20___.

(Corporate Seal)

_____
Contractor/ Principal

By_____

Title_____

(Corporate Seal)

_____
Surety

By _____
Attorney-in-Fact

(Attach Attorney-in-Fact Certificate)

Title_____

The rate of premium on this bond is _____ per thousand. The total amount of premium charges is $_____.
(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety) _____
_____
_____

(Name and Address of Agent or Representative for service of process in California, if different from above) _____
_____
_____

(Telephone number of Surety and Agent or Representative for service of process in California) _____

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STATE OF CALIFORNIA
COUNTY OF _____

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appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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WITNESS my hand and official seal.

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Signature of Notary Public

OPTIONAL

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CAPACITY CLAIMED BY SIGNER

- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s)
  - ☐ Limited
  - ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

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STATE OF CALIFORNIA
COUNTY OF _____

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appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____

Signature of Notary Public

OPTIONAL

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CAPACITY CLAIMED BY SIGNER

- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s)
  - ☐ Limited
  - ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of Attorney to local representatives of the bonding company must also be attached.

EXHIBIT M

ESCROW AGREEMENT FOR SECURITY DEPOSIT IN LIEU OF RETENTION

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into, as of Month and Day, Year by and between the [INSERT OWNER NAME] whose address is [INSERT ADDRESS], hereinafter called "Owner," ___, [INSERT CONTRACTOR NAME], whose address is [INSERT ADDRESS], hereinafter called "Contractor" and ___, whose address is ___, hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the Owner and Contractor for __ in the amount of , dated , (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agency shall notify the Owner within ten (10) days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of the Owner, and shall designate the Contractor as the beneficial owner.

(2) The Owner shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in Escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the

Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) The Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the Owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.

(8) Upon receipt of written notifications from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less Escrow fees and charges of the Escrow Account. The Escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notification from the Owner and the Contractor pursuant to Sections (5) to (8), inclusive, of this Agreement and the Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as set forth on the following page.

On behalf of Owner: [INSERT OWNER NAME]	On behalf of Contractor: [INSERT CONTRACTOR NAME]
_____ Title	_____ Title
_____ Name	_____ Name
_____ Signature	_____ Signature

On behalf of Escrow Agent:
[INSERT ESCROW AGENT NAME]

Title	Title
Name	Name
Signature	Signature

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

Owner: [INSERT OWNER NAME]	Contractor: [INSERT CONTRACTOR NAME]
Title	Title
Name	Name
Signature	Signature

Escrow Agent:
[INSERT ESCROW AGENT NAME]

Title

Name

Signature

EXHIBIT N

WAIVER AND RELEASE FORMS

[CONDITIONAL AND UNCONDITIONAL WAIVER AND RELEASE FORMS INSERTED BEHIND THIS PAGE]

CONDITIONAL **WAIVER** AND RELEASE ON PROGRESS PAYMENT

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S **LIEN**, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information

Name of Claimant: .....

Name of Customer: .....

Job Location: .....

Owner: .....

Through Date: .....

Conditional Waiver and Release

This document waives and releases **lien**, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment

from the financial institution on which the following check is drawn:

Maker of Check: .....

Amount of Check: $ .....

Check Payable to: .....

Exceptions

This document does not affect any of the following:

(1) Retentions.

(2) Extras for which the claimant has not received payment.

(3) The following progress payments for which the claimant has previously given a conditional **waiver** and release but has not received payment:

Date(s) of **waiver** and release: .....

Amount(s) of unpaid progress payment(s): $ .....

(4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Signature

Claimant's Signature: .....

Claimant's Title: .....

Date of Signature: .....

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant:_____

Name of Customer:_____

Job Location:_____

Owner:_____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect the following:

Disputed claims for extras in the amount of: $_____

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

EXHIBIT O

CERTIFICATION REGARDING CLAIM

The Contractor shall make a certification at the time of submission of a Claim, substantially in the form below. Contractor understands and agrees that any Claim submitted without this certification does not meet the terms of the Contract Documents, that Owner, or Owner's representatives, may reject the Claim on that basis and that unless Contractor properly and timely files the Claim with the certification, Contractor cannot further pursue the Claim in any forum. A condition precedent will not have been satisfied.

The Certification Regarding Claim accompanying every Claim submitted by Contractor shall be in the following format on Contractor's letterhead:

I,_____, BEING THE DULY AUTHORIZED _____ (OFFICER) OF _____ (CONTRACTOR), DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA AND DO PERSONALLY CERTIFY AND ATTEST THAT: I HAVE THOROUGHLY REVIEWED THE ATTACHED CLAIM FOR ADDITIONAL COMPENSATION AND/OR EXTENSION OF TIME, AND KNOW ITS CONTENTS, AND DO HEREBY CERTIFY THAT SAID CLAIM IS MADE IN GOOD FAITH; THE SUPPORTING DATA INCLUDED WITH SAID CLAIM IS TRUTHFUL AND ACCURATE; THAT THE AMOUNT REQUESTED ACCURATELY REFLECTS THE CONTRACT ADJUSTMENT FOR WHICH THE CONTRACTOR BELIEVES THE OWNER IS LIABLE; AND, FURTHER, THAT I AM FAMILIAR WITH CALIFORNIA PENAL CODE SECTION 72 AND CALIFORNIA GOVERNMENT CODE SECTION 12650-12655, *ET SEQ.*, PERTAINING TO FALSE CLAIMS, AND FURTHER KNOW AND UNDERSTAND THAT SUBMISSION OR CERTIFICATION OF A FALSE CLAIM MAY LEAD TO FINES, IMPRISONMENT AND/OR OTHER SEVERE LEGAL CONSEQUENCES.

[INSERT CONTRACTOR NAME]

By:_____

Its:_____

Dated:_____

TAB C

SAN GORGONIO
MEMORIAL HEALTHCARE
DISTRICT

August 2020 Unaudited Financial Report

FY 2021

Presented by:

M. Kammer

SAN GORGONIO MEMORIAL DISTRICT
BANNING, CALIFORNIA

8/31/20

FY 2021	ACT CUR 08/31/20	BUD CUR 08/31/20	PRIOR YR 08/31/19	ACT YTD 08/31/20	BUD YTD 08/31/20	Prior YTD 08/31/19
Gross Patient Revenue						
Inpatient Routine Revenue	$0	$0	$0	$0	$0	$0
Inpatient Ancillary Revenue	0	0	0	0	0	0
Outpatient Revenue	0	0	0	0	0	0
Long Term Care Revenue	0	0	0	0	0	0
Home Health Revenue	0	0	0	0	0	0
Total Gross Patient Revenue	0	0	0	0	0	0
Discounts and Allowances	0	0	0	0	0	0
Bad Debt Expense (Governmental Provic	0	0	0	0	0	0
Prior Year Settlements	0	0	0	0	0	0
Charity Care	0	0	0	0	0	0
Total Deductions From Revenue	0	0	0	0	0	0
Net Patient Revenue	0	0	0	0	0	0
Other Operating Revenue	$0	$2,833	$0	0	51,228	0
Clinic Revenues	$0	$17,500	$31,307	9,018	55,506	61,461
Tax Subsidies Measure D	$188,750	$208,333	$175,000	377,500	410,455	350,000
Tax Subsidies Advelorum	$113,740	$120,833	$105,000	227,480	246,643	210,000
Other Non-Operating Revenue - Grants	$0	$16,667	$67,145	0	32,500	139,179
	302,490	**366,167**	**378,451**	**613,998**	**796,332**	**760,640**
EXPENSES						
Salaries and Wages	$0	$0	$0	0	0	0
Fringe Benefits	$0	$0	$0	0	0	0
Contract Labor	$0	$0	$0	0	0	0
Physicians Fees	$0	$0	$0	0	0	0
Purchased Services	$6,077	$35,433	$34,421	6,077	94,265	35,153
Supply Expense	$0	$0	$99	0	0	235
Utilities	$2,295	$1,917	$2,926	4,297	10,000	8,970
Repairs and Maintenance	$9,665	$0	$6,557	16,097	50,000	13,091
Insurance Expense	$0	$0	$0	0	0	0
All Other Operating Expenses	($3,847)	$9,599	$6,732	(2,559)	15,554	6,757
IGT Expense	$0	$0	$0	0	0	0
Leases and Rentals	$0	$0	$0	0	0	0
Clinic Expenses	$63,364	$60,400	$80,724	143,428	199,634	139,850
	77,554	**107,349**	**131,459**	**167,340**	**369,453**	**204,057**
EBIDA	**224,936**	**258,818**	**246,993**	**446,658**	**426,879**	**556,583**
Depreciation	$494,658	$483,333	$494,513	989,316	1,000,000	1,062,101
Interest Expense (Non-Governmental Pr	$379,690	$465,290	$400,680	758,700	782,224	799,835
	874,348	**948,623**	**895,193**	**1,748,016**	**1,782,224**	**1,861,936**
Contributions	$11,182	$16,667	$22,908	11,690	33,333	22,908
Tax Subsidies for GO Bonds - M-A	$597,442	$666,667	$585,613	1,194,883	1,333,333	1,171,225
Total Non Operating Revenue/(Expens	**608,624**	**683,333**	**608,520**	**1,206,573**	**1,366,667**	**1,194,133**
NET INCOME	($40,788)	($6,472)	($39,681)	($94,785)	**$11,322**	($111,221)

Balance Sheet - Assets

SAN GORGONIO MEMORIAL HEALTHCARE DISTRICT
BANNING, CALIFORNIA

8/31/20

	Current Month 08/31/2020	Prior Month 07/31/2020	ASSETS Positive/ (Negative) Variance	Percentage Variance	Prior Year 06/30/2019
ALL CASH (Healthcare System)	$10,383,844	$10,281,544			$10,281,544
Current Assets -DISTRICT ONLY					
Cash and Cash Equivalents	$2,699,873	$936,775	$1,763,099	188.21%	$3,109,902
Gross Patient Accounts Receivable	$227,641	$0	$227,641	0.00%	$0
Less: Bad Debt and Allowance Reserve	($177,608)	$0	($177,608)	0.00%	$0
Net Patient Accounts Receivable	$50,033	$0	$50,033	0.00%	$0
Interest Receivable	$2,665,590	$3,223,767	($558,177)	-17.31%	$566,680
Other Receivables	$5,143	$0	$5,143	0.00%	$0
Inventories	$0	$0	$0	0.00%	$0
Prepaid Expenses	$72,875	$116,590	($43,715)	-37.49%	$263,423
Due From Third Party Payers	$0	$0	$0	0.00%	$0
Due From Affiliates/Related Organization	$0	$0	$0	0.00%	$0
Other Current Assets	$0	$0	$0	0.00%	$0
Total Current Assets	**5,543,548**	**4,277,132**	**1,266,416**	**29.61%**	**3,940,006**
Assets Whose Use is Limited					
Cash			$0	0.00%	
Investments	$5,289,275	$7,475,698	($2,186,423)	-29.25%	$8,854,421
Bond Reserve/Debt Retirement Fund	$0	$0	$0	0.00%	$0
Trustee Held Funds	$0	$0	$0	0.00%	$0
Funded Depreciation	$0	$0	$0	0.00%	$0
Board Designated Funds	$0	$0	$0	0.00%	$0
Other Limited Use Assets	$0	$0	$0	0.00%	$0
Total Limited Use Assets	**5,289,275**	**7,475,698**	(7,475,698)	**-100.00%**	**8,854,421**
Property, Plant, and Equipment					
Land and Land Improvements	$6,686,845	$4,820,671	$1,866,174	38.71%	$4,820,671
Building and Building Improvements	$127,399,218	$129,283,884	($1,884,666)	-1.46%	$129,283,884
Equipment	$26,338,357	$25,869,670	$468,688	1.81%	$25,586,875
Construction In Progress	$8,399,129	$8,391,329	$7,800	0.09%	$8,390,249
Capitalized Interest	$0	$0	$0	0.00%	$0
Gross Property, Plant, and Equipmen	$168,823,549	$168,365,553	$457,996	0.27%	$168,081,679
Less: Accumulated Depreciation	($78,148,495)	($74,087,997)	($4,060,497)	5.48%	($71,114,751)
Net Property, Plant, and Equipment	**90,675,054**	**94,277,556**	(3,602,501)	**-3.82%**	**96,966,928**
Other Assets					
Unamortized Loan Costs	$1,446,356	$1,459,634	($13,278)	-0.91%	$12,419,080
Assets Held for Future Use	$0	$0	$0	0.00%	$0
Investments in Subsidiary/Affiliated Org.	$12,844,511	$12,153,974	$690,538	5.68%	$0
Other	$0	$0	$0	0.00%	$0
Total Other Assets	**14,290,867**	**13,613,607**	**677,260**	**4.97%**	**12,419,080**
TOTAL UNRESTRICTED ASSETS	**115,798,744**	**119,643,993**	(3,845,249)	**-3.21%**	**122,180,435**
Restricted Assets	$0	$0	$0	0.00%	$0
TOTAL ASSETS	**$115,798,744**	**$119,643,993**	($3,845,249)	**-3.21%**	**$122,180,435**

Balance Sheet - Liabilities and Net Assets

SAN GORGONIO MEMORIAL HEALTHCARE DISTRICT

BANNING, CALIFORNIA

8/31/20

	Cur Month 08/31/2020	Prior Month 07/31/2020	Positive/ (Negative) Variance	Percentage Variance	Prior Year 06/30/2019
Current Liabilities					
Accounts Payable	$133,002	$267,680	($134,678)	-50.31%	$89,989
Notes and Loans Payable	$0	$0	$0	0.00%	$0
Accounts Payable- Construction	$0	$0	$0	0.00%	$0
Accrued Payroll Taxes	$0	$0	$0	0.00%	$0
Accrued Benefits	$0	$0	$0	0.00%	$0
Accrued Pension Expense (Current Portion)	$0	$0	$0	0.00%	$0
Other Accrued Expenses	$0	$0	$0	0.00%	$0
Accrued GO Bond Interest Payable	$386,404	$2,020,229	($1,633,825)	-80.87%	$2,049,304
Property Tax Payable	$0	$0	$0	0.00%	$0
Due to Third Party Payers	$0	$0	$0	0.00%	$0
Advances From Third Party Payers	$0	$0	$0	0.00%	$0
Current Portion of LTD (Bonds/Mortgages)	$2,335,000	$2,335,000	$0	0.00%	$2,095,000
Current Portion of LTD (Leases)	$0	$0	$0	0.00%	$0
Other Current Liabilities	$0	$0	$0	0.00%	$0
Total Current Liabilities	**2,854,406**	**4,622,909**	**1,768,504**	**38.26%**	**4,234,293**
Long Term Debt					
Bonds/Mortgages Payable	$105,847,317	$108,308,339	($2,461,022)	-2.27%	$110,761,547
Leases Payable	$0	$0	$0	0.00%	$0
Current Portion	$0	$0	$0	0.00%	$0
Total Long Term Debt	**105,847,317**	**108,308,339**	**(2,461,022)**	**-2.27%**	**110,761,547**
Other Long Term Liabilities					
Deferred Revenue	$0	$0	$0	0.00%	$0
Accrued Pension Expense (Net of Currer	$0	$0	$0	0.00%	$0
Other	$0	$0	$0	0.00%	$0
Total Other Long Term Liabilities	**0**	**0**	**0**	**0.00%**	**0**
TOTAL LIABILITIES	**108,701,723**	**112,931,248**	**4,229,525**	**3.75%**	**114,995,840**
Net Assets:					
Unrestricted Fund Balance	$7,191,807	$7,297,586	($105,779)	-1.45%	$6,320,219
Temporarily Restricted Fund Balance	$0	$0	$0	0.00%	$0
Restricted Fund Balance	$0	$0	$0	0.00%	$0
Net Revenue/(Expenses)	(94,785)	(584,841)	490,056	-83.79%	864,375
TOTAL NET ASSETS	**7,097,022**	**6,712,745**	**(384,276)**	**-5.72%**	**7,184,594**
TOTAL LIABILITIES AND NET ASSETS	**$115,798,744**	**$119,643,993**	**$3,845,249**	**3.21%**	**$122,180,435**
	$0.00	$0.00			$0.00

TAB D

San Gorgonio Memorial Healthcare District

Measure A analysis of Project Funds Paid by General Category

8/31/2020

	Measure A	Current Month-Measure A	District Funds
	Project-to-Date	08/31/2020 UPDATE	08/31/2020 UPDATE
Computer Equipment	$ 5,311,028	$ -	
Radiology Equipment	$ 1,526,641	$ -	
Legal/Regulatory/Bonds	$ 3,143,910	$ -	
Architechtural (HDR)-ALL PHASE 1 PROJE	$ 11,756,851	$ -	
Construction Management-ALL PHASE 1 F	$ 12,875,601	$ -	
Contractors 1-A (HELIPAD/COOLING TOW	$ 7,814,103	$ -	
Other	$ 3,021,460	$ -	
Contractors 1-B (CENTRAL PLANT)	$ 20,800,201	$ -	
Contractors 1-C (ED/ICU)	$ 28,157,355	$ -	
Contractors 1-E Dietary Remodel	$ 5,225,946	$ -	
Contractors 1-Medley Project	$ 4,796,620	$ -	
Previous Expenditures for Measure A-Phase 1	$ 104,429,717	$ -	
Contractors, Architect, Mgmt - 2-A Patient Facility prior to 9/	$ 7,015,575		
Expenditures prior to 9/01/14 all phases	$ 111,445,293		
Project expenditures using District Funds			
TCU Coversion 0001	$0.00	$0.00	$ 108,612
Medical Records Conversion 0004	$0.00	$0.00	$ 13,618
Pharmacy Conversion 0005	$0.00	$0.00	$ 50,447
CIP Patient Care Facility-0008	$0.00	$0.00	$ 2,100
Project Expenditures using Measure A funds			
TCU Coversion 0001	$ 539,852.53	$0.00	
Medical Records Conversion 0004	$0.00	$0.00	
Pharmacy Conversion 0005	$0.00	$0.00	
CIP Patient Care Facility-0008	$1,329,536.28	$0.00	$0.00
OR Electrical Conversion	$0.00	$0.00	$39,751.00
Other Construction Costs	$150,247.92	$0.00	
Other Non-Construction Costs	$193,576.42	$0.00	$5,955.22
Total Expenditures	$ 113,658,506	$ -	$ 220,483

Measure A Project General Obligation Funds
Statement of Funds Flows

PROCEEDS SUMMARY:		
Initial Project Fund transfer from sale of General Obligation Bonds 2006 A to FSA a		25,200,349
Initial Project Fund Transfer from sale of General Obligation Bonds 2006 B (08/08/2(		24,876,964.91
Initial Project Fund from sale of General Obligation Bonds 2006 C (08/14/2009)		57,800,000
Planholder Checks project to date and refunds for overpayments		24,072
HDR Returned payments		139,979
Initial Proceeds		108,041,365
Investment Income		
FSA Inc. (Series 2006 A)		1,762,060
BB&T GIC (Series 2008 B)		1,461,176
Bank of Hemet Series A		1,001
City National Money Market		81
GE Capital (Series 2009 C)		2,638,823
Security Bank Money Market		38,715
Interest Income SUBTOTAL		5,901,857
Total Proceeds Available for Measure A:	$	113,943,221

Projected Interest by end of Project>		5,912,351
Total Projected Proceeds Available for Measure A:	$	113,953,716

FUND FLOWS:		
Total Measure A Funds Initial Proceeds (from above)		108,041,364.81
Add:	Rate	Interest Income
FSA Inc. (Series 2006 A), FY 07	5.27%	1,030,536.43
FSA Inc. (Series 2006 A), FY 08	5.27%	635,706.73
FSA Inc. (Series 2006 A), FY 09	5.27%	95,817.32
BB&T GIC (Series 2008 B) FY 09	4.94%	680,384
BB&T GIC (Series 2008 B) FY 10	4.94%	648,151
BB&T GIC (Series 2008 B) FY 11	4.94%	132,640
GE Capital (Series 2009 C) FY 10	1.75%	688,722
GE Capital (Series 2009 C) FY 11	1.75%	956,529
GE Capital (Series 2009 C) FY 12	1.75%	591,104.24
GE Capital (Series 2009 C) FY 13	1.75%	293,402.39
GE Capital (Series 2009 C) FY 14	1.75%	109,065.59
Bank of Hemet Series A		1,001
City National Money Market		81
Security Bank Construction funds		1,126
Security Bank Construction Money Market		37,589
Total Interest Income earned	$	5,901,857
Project Expenditures (from above)	$	113,658,506
Total Consolidated Funds available:	$	284,715.62
spent to date		100%

MEASURE A BALANCES:			
	Balances as of 08/31/2020		
Bank of Hemet Series A	4310		-
Security Bank of California Construction Fu	1812		4,870
Security Bank of California Money Market	2509		279,846
Total Balances		$	284,716
VARIANCE		$	(0.00)

TAB E

09/16/2020 1728385

Quote

To: KLH Marketing- Anaheim
Tom Bartel
2120 E. Winston Rd.
Anaheim, CA 92806-5534
(714)999-0100

From: KLH Marketing- Anaheim
Jacob Jordan
2120 E. Winston Rd.
Anaheim, CA 92806
(714) 999-0100
7149990100 208 (Contact)

Project: San Gorgonio Memorial Hospital ER
Department
Banning, CA

DISCOUNT QUOTED: Final Net

Item	Qty	Description	Sell	Sell Total
1	1 ea	**ICE & WATER DISPENSER** Scotsman HID540A-1 Meridian™ Ice & Water Dispenser, Touchfree® IR dispensing, H2 Nugget Ice, air cooled, production capacity up to 500 lb/24 hours at 70°/50° (365 lb AHRI certified at 90°/70°), 40 lb bin storage capacity, sealed maintenance-free bearings, removable bin, removable air filter, removable spouts and sink, enlarged 0.8" sink drain, recessed utility chase, stainless evaporator and auger, enlarged 11" dispensing area, USB software upgrade port, unit specific QR code, stainless exterior, AgION™ antimicrobial protection, R-404a refrigerant, includes 7.5' power cord with NEMA 5-15P plug, 115V/60/1, 9.0 amps, cULus, NSF, CE, engineered and assembled in USA	$5,292.63	$5,292.63
	1 ea	NOTE: Sale of this product must comply with Scotsman's MSRP Policy; contact your Scotsman representative for details		
	1 ea	3 year parts & labor warranties		
	1 ea	5 year parts on compressor & condenser		
	1 ea	HST21B-A Machine Stand for HID525 & HID540, 21-1/2"W x 23-3/4"D x 32"H, stainless steel, 6" adjustable legs	$492.94	$492.94
	1 ea	1 year parts & labor warranty		
			Extended Total:	**$5,785.57**

Item	Qty	Description	Sell	Sell Total
2	1 st	**ACCESSORIES** Scotsman 02-4731-01 Packed 1 st 2020 PRICING 6" legs, set of 4. Stainless steel, adjustable height, 3 hole flanged foot. 5/8-11 thread, fits all current commercial self-contained bins except CU50, CU0515, B230P and all BH Bins	$212.34	$212.34

Extended Total: **$212.34**

Total $5,997.91

Manufacturer Summary

Mfr	FOB	ZIP	Class	Weight	Good Until	Terms	Notes
Scotsman	Fairfax	29827	92.5	295			
Scotsman	Vernon Hills	60061	92.5				
Scotsman	Vernon Hills	60061					

NOTE: PLEASE COMPARE THIS QUOTATION TO YOUR REQUIRED EQUIPMENT SPECIFICATIONS.

NOTE: IT IS THE RESPONSIBILITY OF THE DEALER TO VERIFY ALL MEASUREMENTS, DIRECTION OF OPERATION, VOLTAGES AND UTILITY SPECIFICATION PRIOR TO ORDERING

NOTE: IT IS THE RESPONSIBILITY OF THE DEALER TO VERIFY QUANTITIES PER SPECS AND DRAWINGS.

NOTE: EQUIPMENT OR ACCESSORIES NOT SHOWN ON THIS QUOTATION WILL NOT BE INCLUDED.

NOTE: PRICES QUOTED ABOVE ARE BASED OFF CURRENT LIST PRICES. PRICES ARE VALID THROUGH 12/31/2020

NOTE: DISCOUNTS QUOTED ABOVE ARE STANDARD DEALER NET. PLEASE REFER TO THE STANDARD DEALER NET STRUCTURE NOTE

Acceptance: _____ Date: _____

Printed Name: _____

Project Grand Total: $5,997.91

MARKETING, INC.

08/14/2020 1728071

Quote

To: KLH Marketing- Anaheim
Tom Bartel
2120 E. Winston Rd.
Anaheim, CA 92806-5534
(714)999-0100

From: KLH Marketing- Anaheim
Jacob Jordan
2120 E. Winston Rd.
Anaheim, CA 92806
(714) 999-0100
7149990100 208 (Contact)

Project: San Gorgonio Memorial Hospital
Attn: Daniel Mares
600 N Highland Springs Ave
Banning, CA

DISCOUNT QUOTED: Scotsman - Final Net

** Rev #1 Added Flanged Feet per Dealer's Request (J.Jordan) 8/14/2020 **

NOTE: THIS QUOTE IS INTENDED FOR BUDGET PURPOSES ONLY, FULL WRITTEN SPEC AND DRAWING NOT AVAILABLE AT TIME OF QUOTE, THEREFORE, KLH MARKETING, INC. IS NOT RESPONSIBLE FOR MODELS, FINISHES OR OPTIONS NOT QUOTED BELOW

Item	Qty	Description	Sell	Sell Total

8-14-20

Initial: _____

sealed maintenance-free bearings, removable bin, removable air filter, removable spouts and sink, enlarged 0.8" sink drain, recessed utility chase, stainless evaporator and auger, enlarged 11" dispensing area, USB software upgrade port, unit specific QR code, stainless exterior, AgION™ antimicrobial protection, R-404a refrigerant, includes 7.5' power cord with NEMA 5-15P plug, 115V/60/1, 9.0 amps, cULus, NSF, CE, engineered and assembled in USA

1 ea NOTE: Sale of this product must comply with Scotsman's MSRP Policy; contact your Scotsman representative for details

1 ea 3 year parts & labor warranties

1 ea 5 year parts on compressor & condenser

1 ea HST21B-A Machine Stand for HID525 & HID540, 21-1/2"W x 23-3/4"D x 32"H, stainless steel, 6" adjustable legs $492.94 $492.94

1 ea 1 year parts & labor warranty

Extended Total: **$5,785.57**

2 1 st **ACCESSORIES** $212.34 $212.34

Scotsman 02-4731-01 Packed 1 st
2020 PRICING 6" legs, set of 4. Stainless steel, adjustable height, 3 hole flanged foot. 5/8-11 thread, fits all current commercial self-contained bins except CU50, CU0515, B230P and all BH Bins

Extended Total: **$212.34**

Total $5,997.91

Manufacturer Summary

Mfr	FOB	ZIP	Class	Weight	Good Until	Terms	Notes
Scotsman	Fairfax	29827	92.5	295			
Scotsman	Vernon Hills	60061	92.5				
Scotsman	Vernon Hills	60061					

NOTE: Please verify all electrical specifications, field dimensions, door hinging, gas type and elevation from sea level on all models prior to ordering.

NOTE: Only the equipment and accessories shown on this quotation may be purchased at the quoted price. Items are limited to the price and quantity shown.

NOTE: Equipment, options and accessories not shown on this quotation will not be included.

NOTE: Please refer to quote # when placing order.

NOTE: KLH Marketing, Inc. and their manufacturers are not responsible for errors or omissions due to vague or faulty specifications, or when an equipment schedule only has been provided.

****

PRICE PROTECTION: PRICES ARE VALID FOR ORDERS PLACED WITHIN 30 DAYS FROM THE QUOTE DATE CALLING FOR IMMEDIATE SHIPMENT.

Acceptance: _____ Date: _____

Printed Name: _____

Project Grand Total: $5,997.91

TAB F

Record Gazette - September 18, 2020

NOTICE OF PUBLIC HEARING ON INTENTION OF SAN GORGONIO MEMORIAL HEALTHCARE DISTRICT TO CONSIDER ENTERING INTO AN ENERGY SERVICES CONTRACT

NOTICE IS HEREBY GIVEN of the intention of the San Gorgonio Memorial Healthcare District (District) to consider entering into an energy services contract ("Agreement") pursuant to the terms of Government Code section 4217.12.

The time and place set for the public hearing on the intention of San Gorgonio Memorial Healthcare District to consider entering into the Agreement is October 6, 2020 at 6:00 p.m., or as soon thereafter as practicable, at a virtual meeting in an effort to prevent the spread of covid-19 (coronavirus), and in accordance with the governors executive order n-29-20. There will be no public location for attending this board meeting in person. Members of the public may join the meeting by following the instructions included in the agenda located at https://sgmh.org/board-minutes-agendas-bylaws/#1516656130101-953922be-d08e. At such time the testimony of all interested persons for or against the proposed Agreement will be heard. Any protest pertaining to the regularity or sufficiency of the proceedings shall be in writing and shall clearly set forth the irregularities and defects to which the objection is made. Any written protest shall be filed with the District on or before the time [redacted] hearing. The District may waive any irregularities in the form or content of any written notice and at the hearing may correct minor defects in the proceedings. Written protests may be withdrawn, in writing, at any time before the conclusion of the hearing.

DATED: September 14, 2020

Dennis Tankersley DMSc, PA-C
Board Chair San Gorgonio Memorial Healthcare District Board
Director at Large San Gorgonio Memorial Hospital Board

Published in
The Record Gazette
No. 178146
09/18/2020

Record Gazette
10/2/2020
&
10/9/2020

NOTICE OF VACANCY
BOARD OF DIRECTORS
OF SAN GORGONIO ME-
MORIAL HEALTHCARE
DISTRICT

NOTICE IS HEREBY GIVEN that a vacancy will exist on the Board of Directors of the San Gorgonio Memorial Healthcare District effective September 22, 2020 due to the resignation of Director Lanny Swerdlow.

The Healthcare District Board intends to fill the vacancy at its regular meeting on November 3, 2020. The appointee must be a registered voter residing within the boundaries of the Healthcare District and be prepared to hold office until the end of the existing term (December 2022).

Interested persons should submit their letter of interest to:

San Gorgonio Memorial Healthcare District Board of Directors
Attention: Ariel Whitley, Executive Assistant
600 North Highland Springs Avenue
Banning, CA 92220

Letters of interest must be received not later than October 16, 2020.

The appointee must file a Fair Political Practices Act Disclosure Statement Form 700 in accordance with the provisions of the Political Reform Act, and implementing regulations of the Fair Political Practices Commission. The Board may select any duly qualified person within its discretion.

Dated: September 29, 2020
Ariel Whitley,
Executive Assistant
San Gorgonio Memorial
Healthcare District
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