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3847 Westside Ave. | Los Angeles | CA 90008 | P: 323 481-1645 | natof2014@gmail.com

Design and Construction – OSHPD Central Plant Expansion by 2,000 tons of Chilled Water & 1.5MW of Emergency Power & Distribution UCI Medical Center

•UCI Medical Center (UCIMC) in looking toward the future has developed a Long Range Development Plan to accommodate future growth. To efficiently absorb the planned growth, it has been determined that the infrastructure needs to be modernized. Part of this infrastructure upgrade includes expanding the existing central energy plant so that it can service all of the current and future OSHPD buildings at the medical center. FCSI managed for UCIMC, the development of the design build program to accomplish the expansion. Currently the central energy plant only handles the main hospital building (Douglas Hospital)

•The program increases the existing plant's chilled water capacity output from 2,000 tons to 4,000 tons and its emergency power capability from 6,000KW to 7,500KW. The work included consolidated all of its existing OSHPD buildings into the expanded OSHPD central plant.

•All of its Non OSHPD buildings are being placed under a separate Non OSHPD Energy Central Plant. The design build program for this plant was also developed by FCSI.

•The program included not only the central plant but the distribution lines for chilled water, 12KV normal and emergency power as well as communication pathways and medical oxygen to it's OSHPD buildings that were not serviced by the existing central plant.

•As the existing central plant is already operational and serving the main Douglas Hospital, the planning had to be accomplished so as not to disrupt ongoing operation of the not only the main hospital, but also the operations of the other 35 buildings that comprise the medical center.

•The program was developed as a concept by GHD Engineering under the management of FCSI. The design build firms participating in the competition were given the latitude to alter the concept as long the intent and performance goals are met.

•The overall budget for the project is $29,650,000 and the schedule is 18 months.

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Design Build Program – OSHPD Central Plant Expansion by 2,000 tons of Chilled Water & 1.5MW of Emergency Power & Distribution
UCI Medical Center

UNIVERSITY OF CALIFORNIA IRVINE
MEDICAL CENTER
OSHPD CENTRAL ENERGY PLANT EXPANSION

GENERAL NOTES

1. ALL IMPROVEMENTS SHOWN, INCLUDING ELEVATIONS, SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION.

2. IF THERE IS ANY QUESTION REGARDING THESE PLANS OR FIELD STAKES, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION BEFORE DOING ANY WORK BY CALLING THE PROJECT RESIDENT ENGINEER AT UCI MEDICAL CENTER.

3. LOCATIONS OF ALL EXISTING IMPROVEMENTS AND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE.

UNDERGROUND UTILITIES

AT LEAST TWO (2) WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR SHALL REQUEST A MARKOUT OF UNDERGROUND UTILITIES BY CALLING THE BELOW LISTED REGIONAL NOTIFICATION CENTER FOR AN INQUIRY IDENTIFICATION NUMBER.

UNDERGROUND SERVICE ALERT (U.S.A.) 811

CONTRACTOR'S RESPONSIBILITIES

CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WATER POLLUTION CONTROL NOTES:

THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS NOTED IN THE GREENBOOK - WATER POLLUTION CONTROL. PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP), AND PROTECT ALL EXISTING STORM DRAIN INLET STRUCTURES FROM SEDIMENTATION, CONTAMINATION FROM RUNOFF, ROCK WASHING RUNOFF, OR ANY OTHER PROJECT SITE RUNOFF BY PLACING EROSION CONTROL DEVICES AS APPROVED BY THE PROJECT RESIDENT ENGINEER AT UCI MEDICAL CENTER.

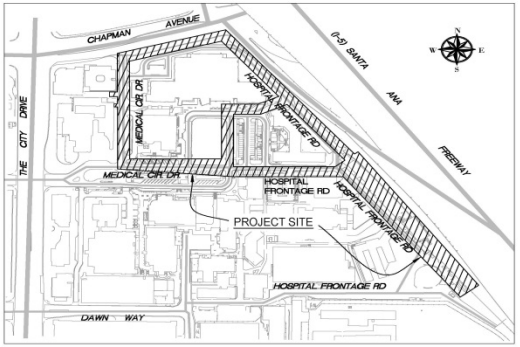
BENCHMARK

ORANGE COUNTY PUBLIC WORKS.
ORANGE COUNTY SURVEY DESIGNATION: SA-341-09
DESCRIBED BY OCS 2009 FOUND 4" OCS ALUMINUM BENCHMARK DISK STAMPED "SA-341-09" SET IN THE NORTHWESTERLY CORNER OF A 4 FT. BY 12 FT. CONCRETE CATCH BASIN. MONUMENT IS LOCATED IN THE NORTHWESTERLY CORNER OF THE INTERSECTION OF CHAPMAN AVENUE AND STATE COLLEGE/THE CITY DR. 69 FT. WESTERLY OF THE CENTERLINE OF CHAPMAN AVE. MONUMENT IS SET LEVEL WITH THE SIDEWALK.

ELEVATION = 135.077 (NAVD88)

BASIS OF BEARINGS

"THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM, CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "CNPP" AND "TRAK", NAD 83/NSRS2007) AS SHOWN HEREON. ALL BEARINGS SHOWN ON THIS MAP ARE GRID. QUOTED BEARINGS AND DISTANCES FROM REFERENCE MAPS OR DEEDS ARE AS SHOWN PER "RHAT RECORD REFERENCE. ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS SPECIFIED OTHERWISE. GRID DISTANCES, MAY BE OBTAINED BY MULTIPLYING THE GROUND DISTANCE BY A COMBINATION FACTOR OF 1.00009047. CALCULATIONS ARE MADE AT PT. #1 WITH COORDINATES OF:
N. 2233717.99, E. 6992916.78, USING AN ELEVATION OF 132.43. CONVERGENCE ANGLE AT PT #1= -0°54'07.30"



VICINITY MAP
N.T.S.

DRAWING LIST

DWG No.	DRAWING TITLE
T 1-0	TITLE SHEET
C 1-0	DEMOLITION PLAN
C 2-0	SITE PLAN
C 3-0	DISTRIBUTION PLAN
M 1-0	CHILLER PLANT INTERCONNECTION PIPING
M 2-0	PACKAGED CHILLED WATER SYSTEM DIAGRAM
M 3-0	CONDENSER WATER SYSTEM DIAGRAM
M 4-0	CHILLER PLANT YARD LAYOUT
M 5-0	COOLING TOWER YARD
M 6-0	CENTRAL ENERGY PLANT 3D RENDERING
E 1-0	ELECTRICAL SITE PLAN
E 2-0	ENLARGED PLAN
E 3-0	SINGLE LINE DIAGRAM - NORMAL POWER
E 4-0	SINGLE LINE DIAGRAM - EMERGENCY POWER
E 5-0	BUILDINGS 1A, 3 AND 31 PARTIAL PLANS

EXISTING STRUCTURES

WATER VALVE		SEWER	S
WATER METER		WATER	W
FIRE HYDRANT	OR	ELECTRIC	E
SEWER MANHOLE		COMMUNICATION	C
STORM DRAIN INLET		GAS	G
GAS VALVE		STORMDRAIN	SD
STREET LIGHT		FIRE WATER	FW
STREET SIGN		CHILLED WATER	CHW
ELECTRIC POLE			
TELE. PEDESTAL			
ELECTRIC VAULT/ TRANSFORMER			

ABBREVIATIONS

AC	ASPHALT CONCRETE	NAT	NATIVE
AP	ANGLE POINT	NTS	NOT TO SCALE
BC	BEGIN CURVE	PG	PROFILE GRADE
BCR	BEGIN CURB RETURN	PKWY	PARKWAY
BEG	BEGIN	PROP	PROPOSED
CATV	CABLE TV	POC	POINT OF COMPOUND CURVE
CB	CURB	PRC	POINT OF REVERSE CURVE
CL	CENTERLINE	RC	RELATIVE COMPACTION
CTB	CEMENT TREATED BASE	RT	RIGHT
CY	CURB INLET	R/W	RIGHT OF WAY
CONC	CONCRETE	SHT	SHEET
CR	CURB RETURN	SDWK	SIDEWALK
DRWY	DRIVEWAY	SS	STAINLESS STEEL
DSJU	DRAINAGE SYSTEM JX	SW	SIDEWALK
DWT	DETECTABLE WARNING TILES	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
E	EAST		
EG	EXISTING GROUND	SWR	SEWER
EL, ELEV	ELEVATION	S	SOUTH
ELEC	ELECTRIC	TC	TOP OF CURB
ETW	EDGE TRAVELED WAY	TEL	TELEPHONE
EX.	EXIST. EXISTING	TYP	TYPICAL
FF	FINISH FLOOR	VAR	VARIES
FS	FINISH SURFACE	VERT	VERTICAL
HP	HIGH POINT	W	WEST
L	LENGTH		
LT	LEFT		
N	NORTH		

CONCEPTUAL PLANS

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Manager	Date

Plot Date: 26 September 2016 - 10:35 AM Plotted by: Vince Cruz Cad File No: G:\94\1144205-CADD\Drawings\Civil\OSHPD Central Energy Plant Expansion\94-11637- T01_OSHPD.dwg

UC Irvine Health

GHD Inc.
175 Technology Drive Suite 200
Irvine California USA 92618
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E irvmail@ghd.com W www.ghd.com

Drawn V.CRUZ	Designer V.CRUZ	Client	UNIVERSITY OF CALIFORNIA IRVINE MEDICAL CENTER
Drafting Check V. CRUZ	Design Check S.FARJO	Project	OSHPD CENTRAL ENERGY PLANT EXPANSION
Approved (Project Manager) S.FARJO		Title	TITLE SHEET
Date			
Scale AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed For Construction	Original Size	Arch D Drawing No: T 1-0

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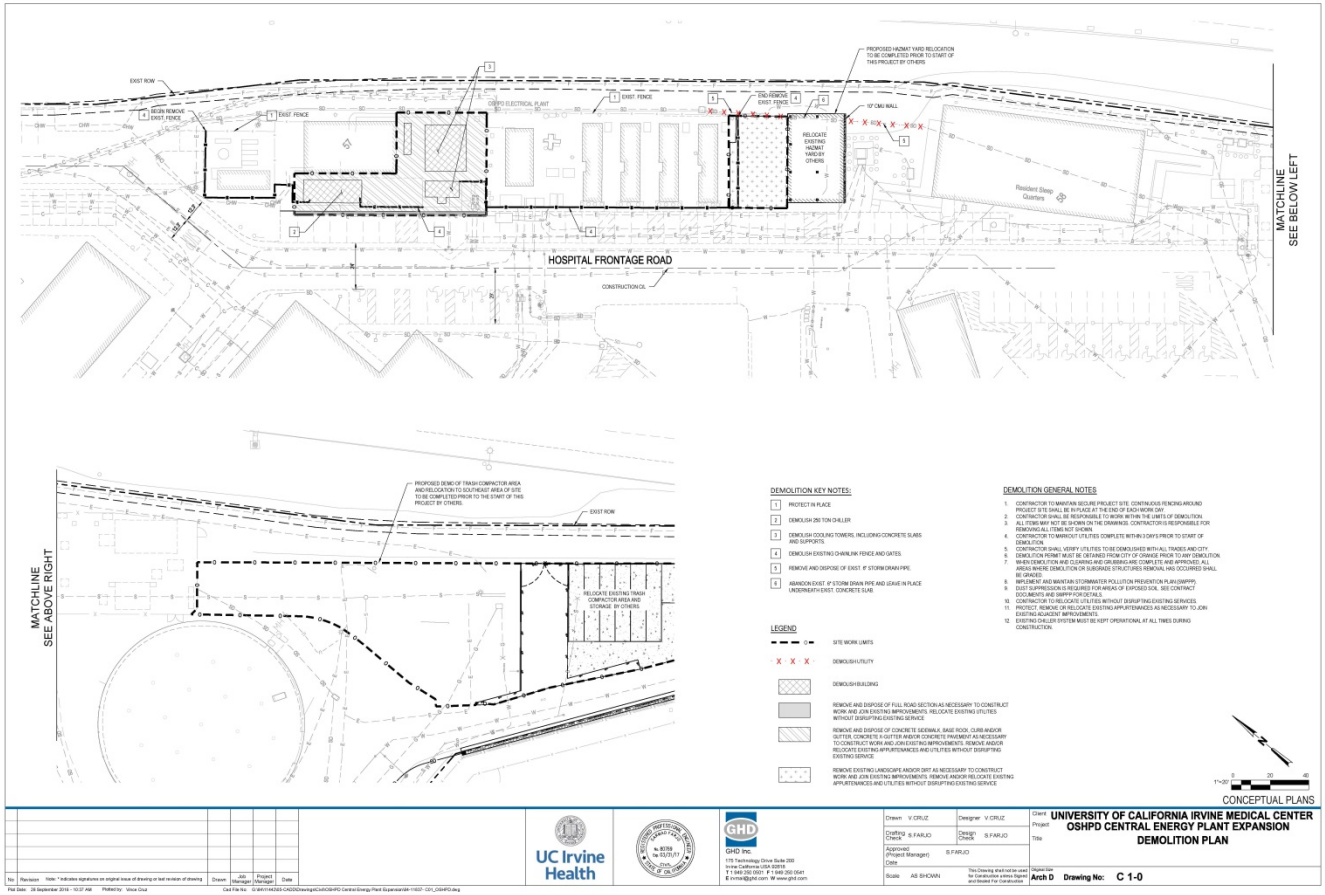
UCI Medical Center



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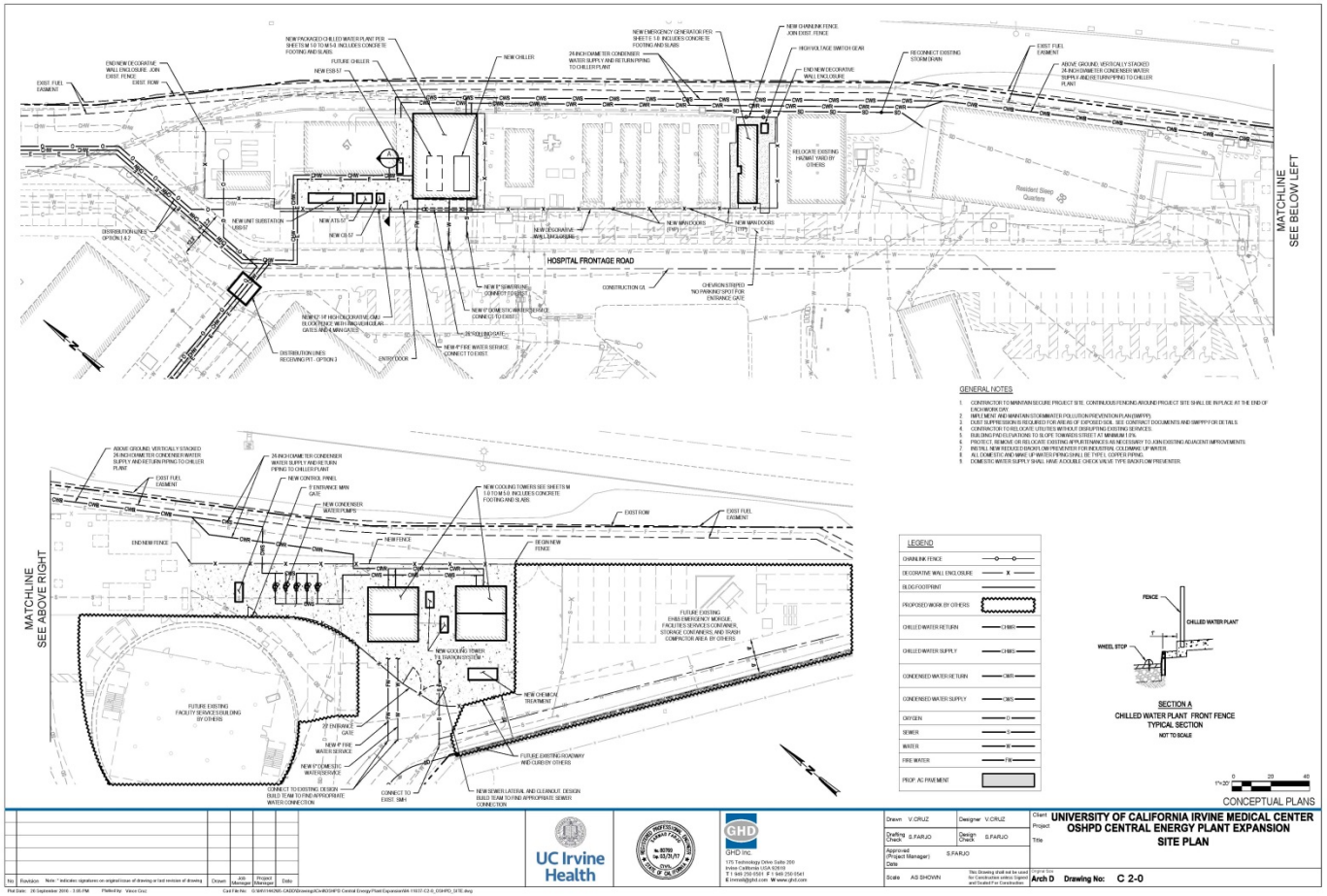

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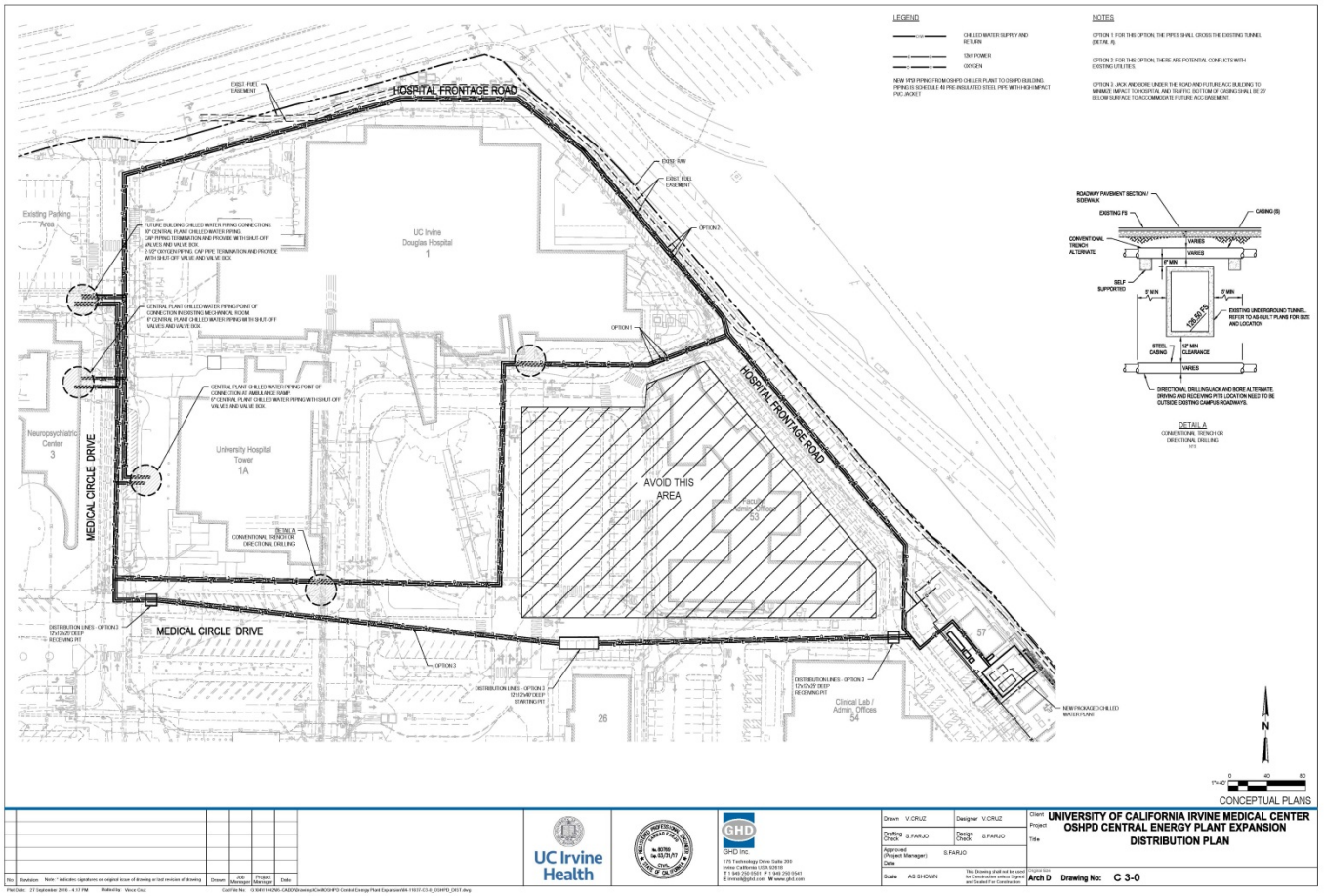

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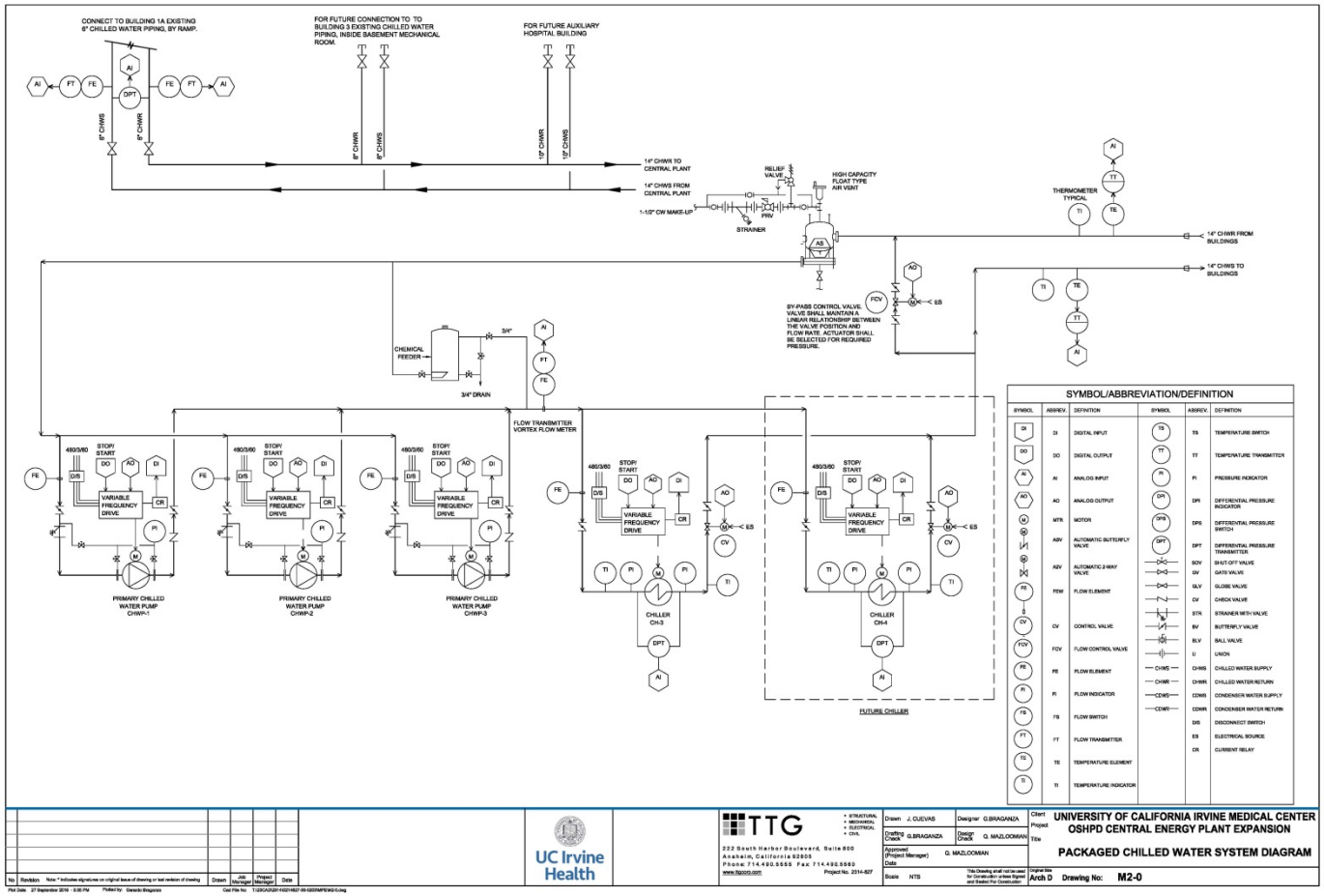

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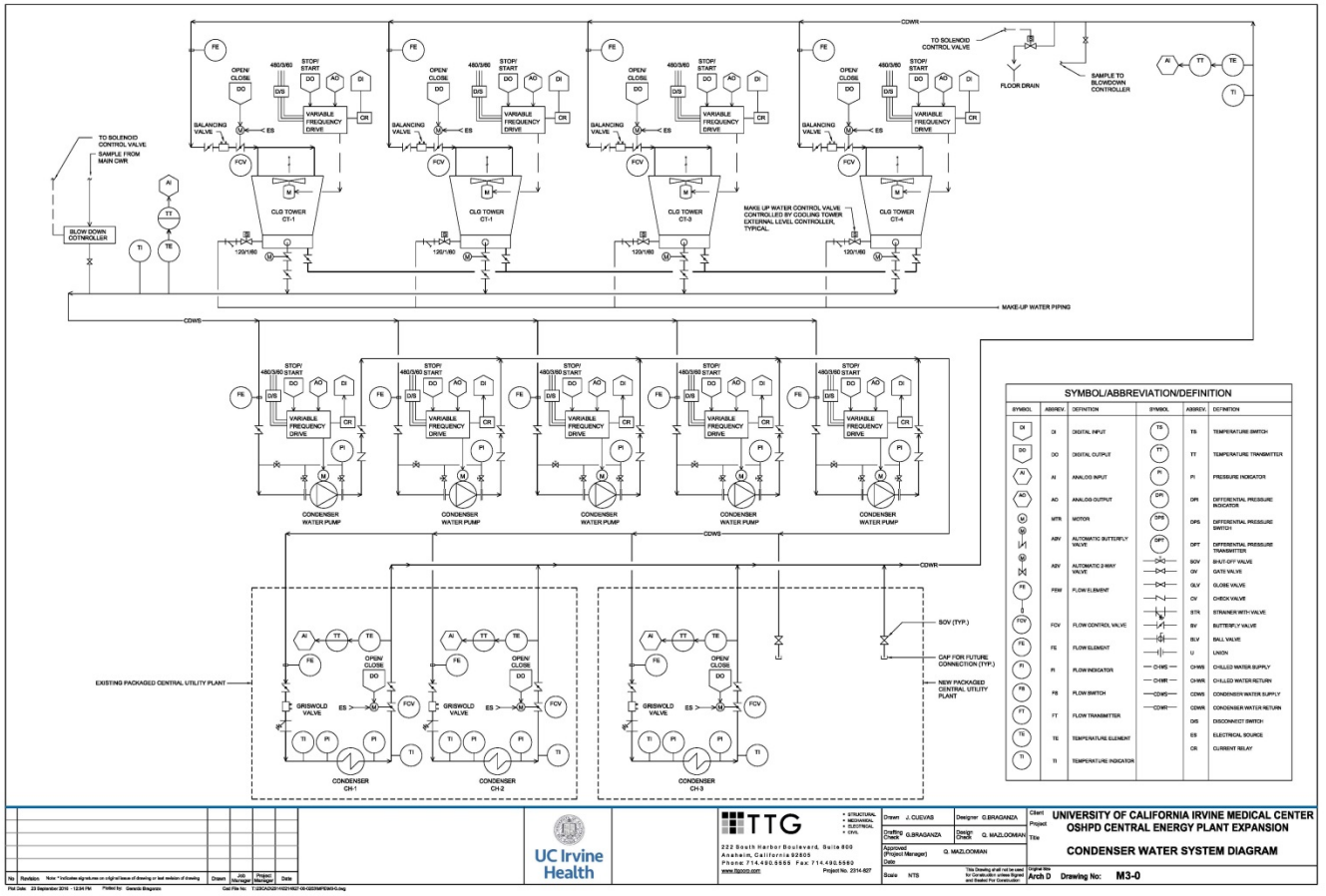

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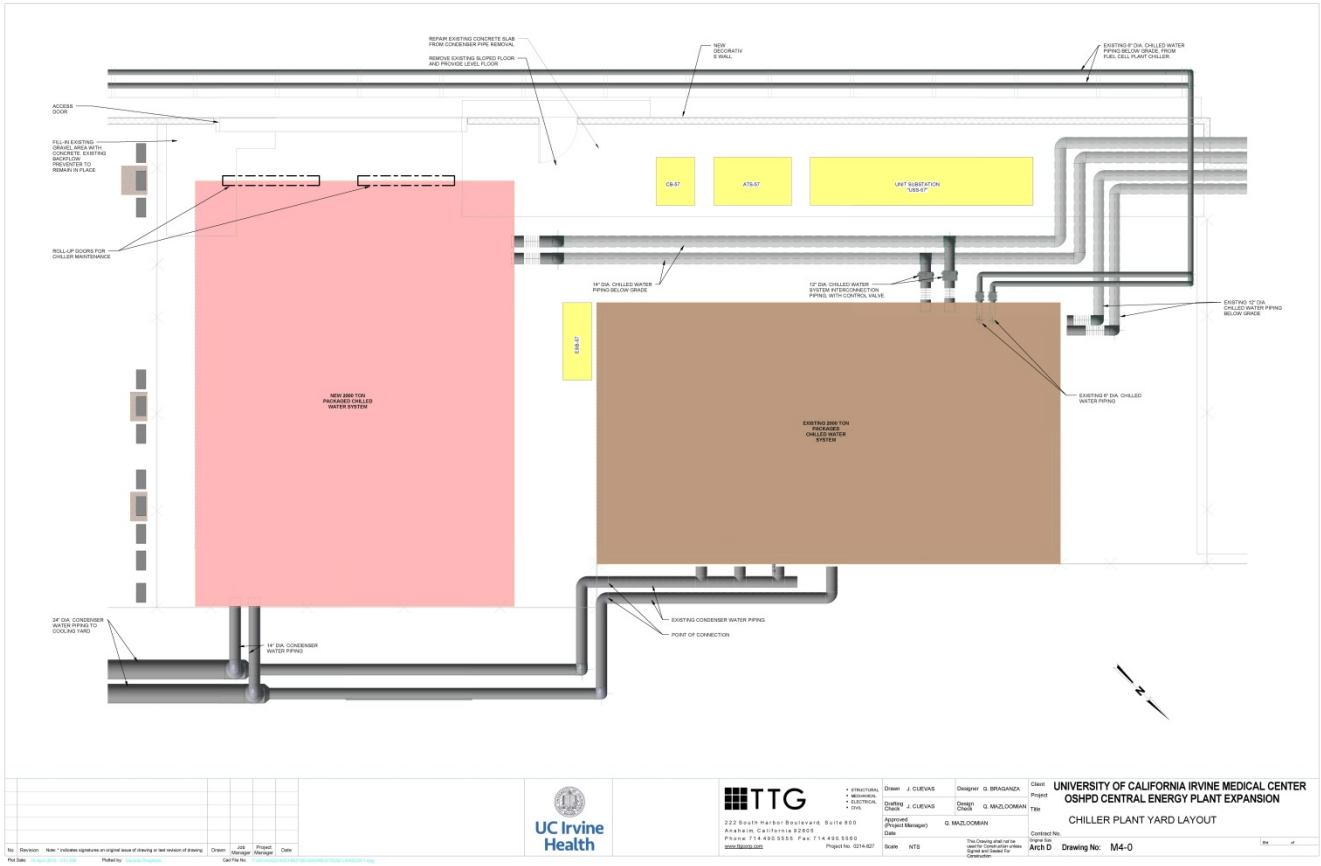

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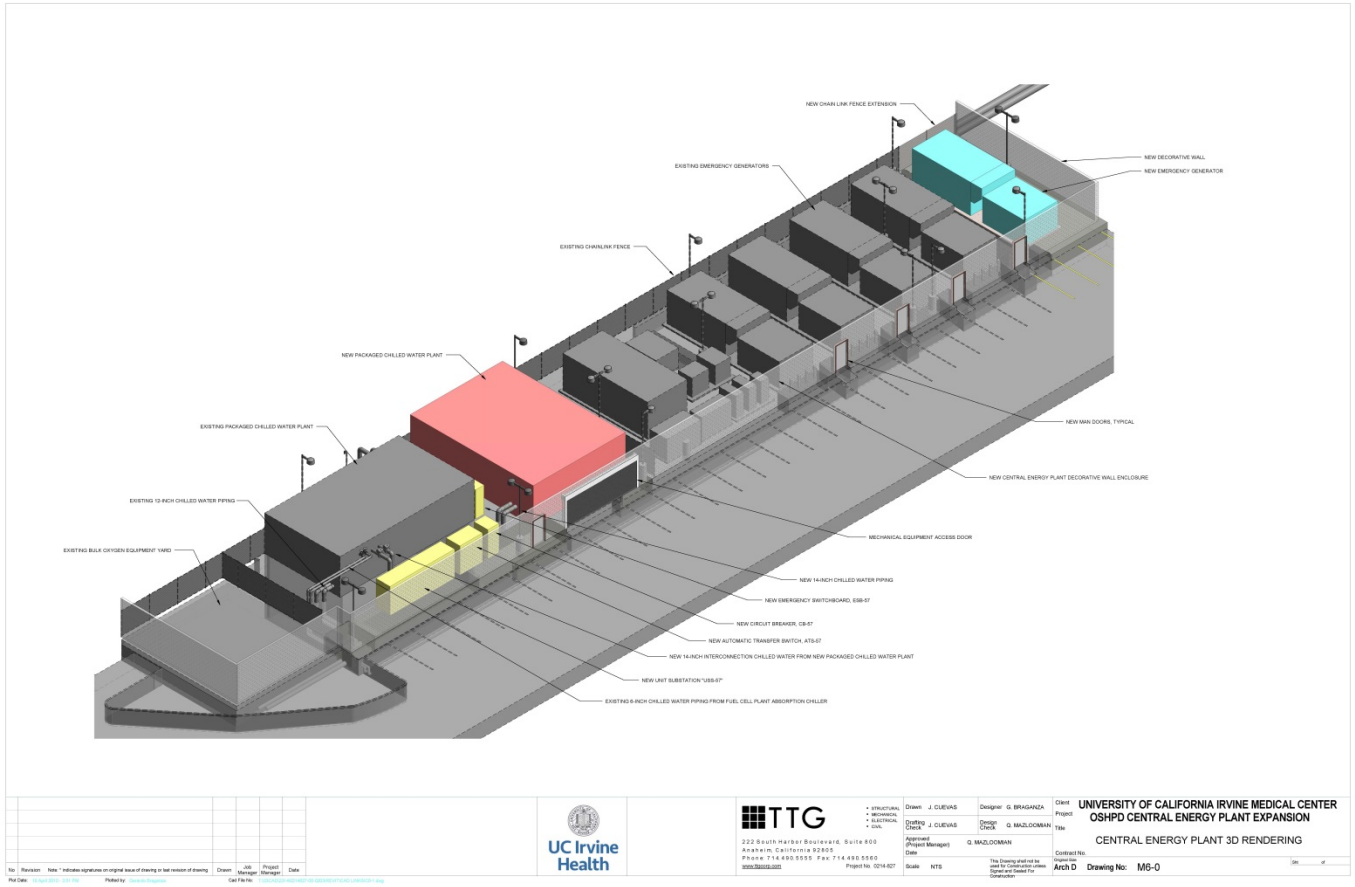

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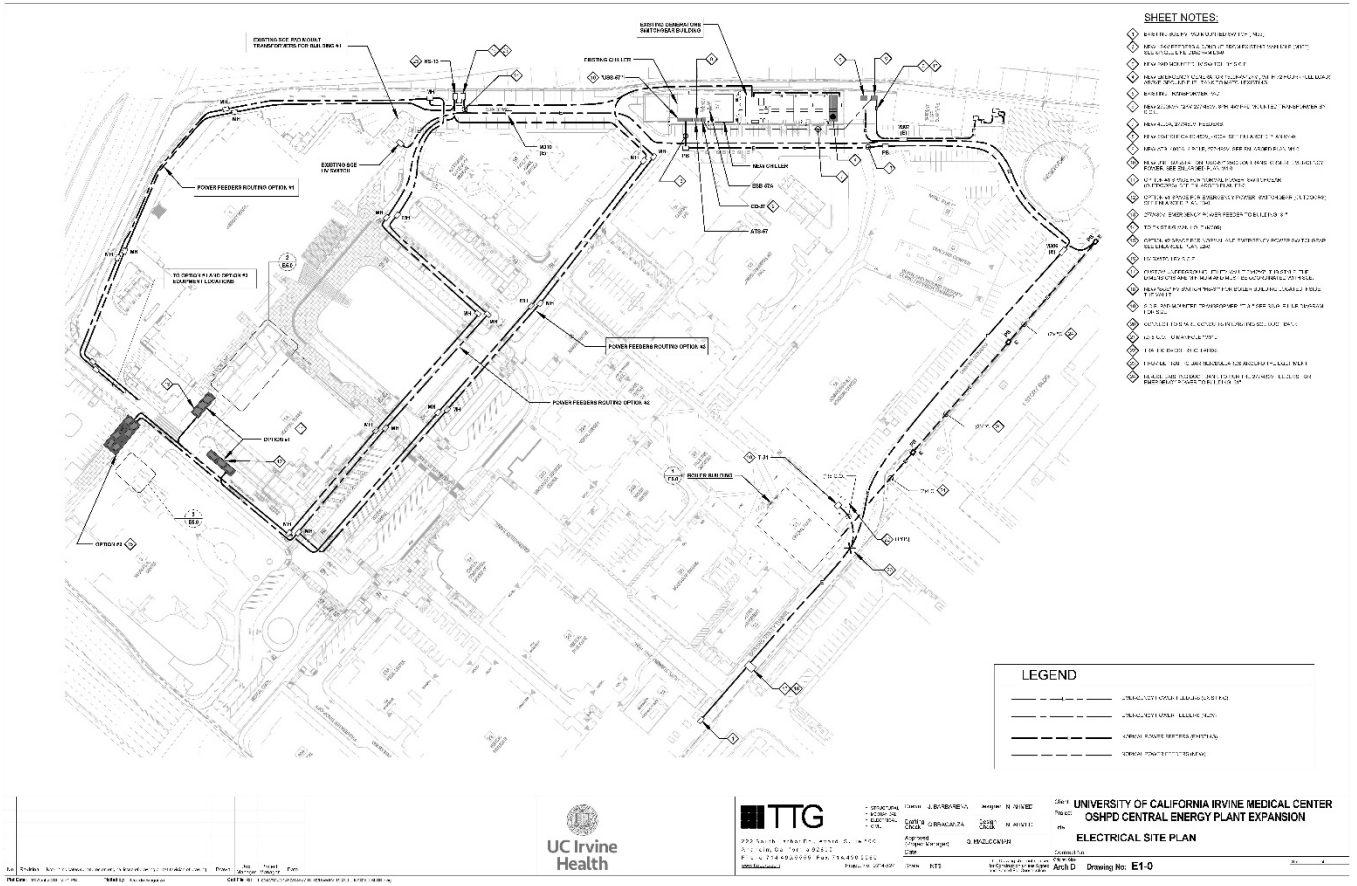

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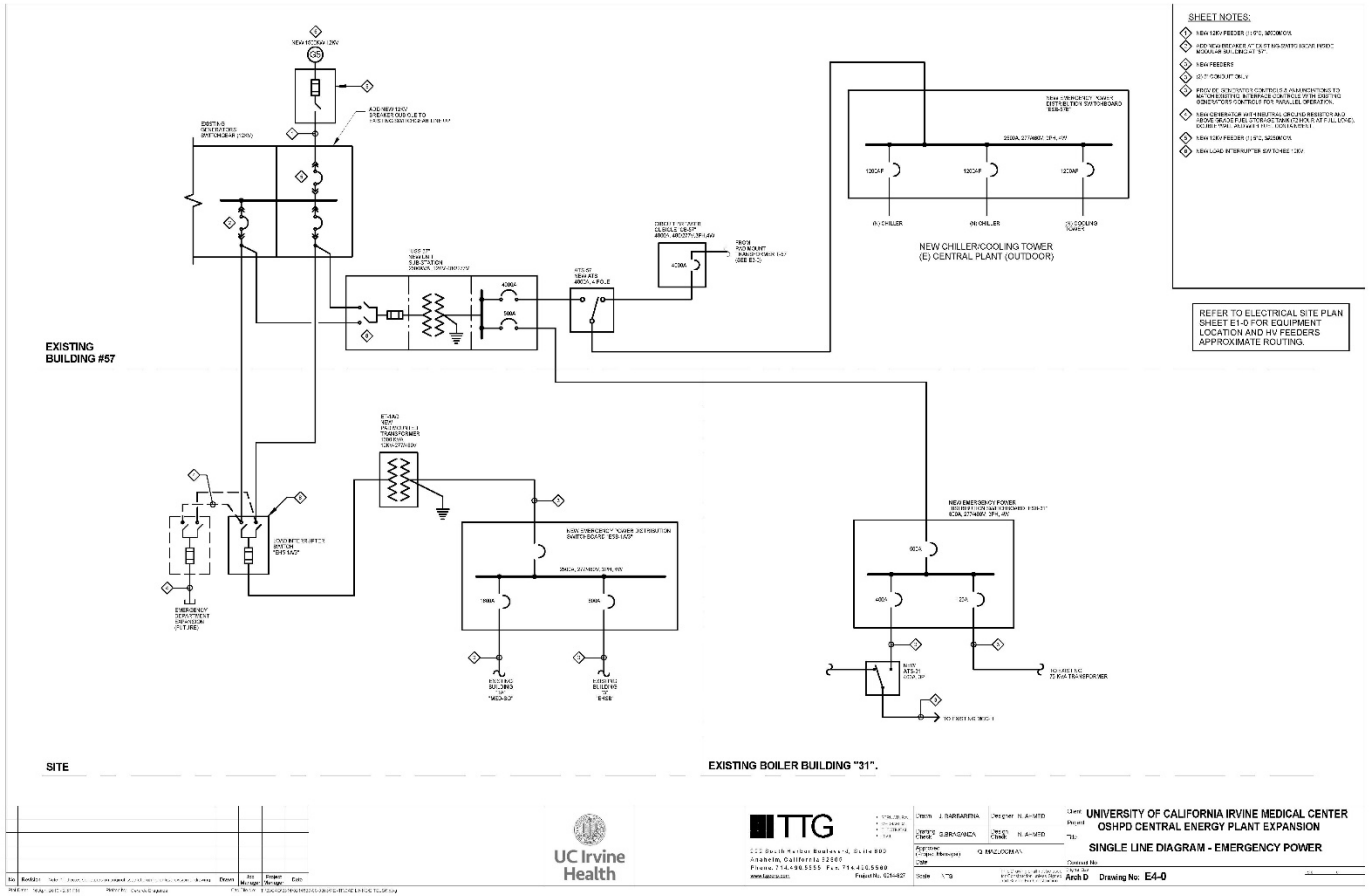

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Appendices

Appendix A – Conceptual Plans

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1. Introduction

1.1 Division 00 – Procurement and Contracting Requirements

1.1.1 00 30 00 Available Information

As part of the overall campus master plan, UCIMC plans to consolidate utilities for all Office of Statewide Health Planning and Development (OSHPD) buildings to be served from a central utility plant. The existing chiller plant and emergency generators, currently serving Douglas Hospital will be expanded to provide services to the existing Medical Center Building 1A, Neuropsychiatric Center Building 3 and future 300,000 sq. ft. Emergency Department Expansion Building (EDEB). The chillers shall be of the modular "chiller in a box" type similar to the existing modules located in Building 57. New cooling towers to serve the existing and new modular chillers shall be constructed at the south east corner of the site just south of the fuel cell area. New condenser water pipes and pumps shall be constructed to connect the cooling towers with the chillers. The existing cooling towers inside Building 57 shall be demolished. The existing 250 -ton modular chiller unit shall be demolished. The new modular chiller shall be in the same area as the demolished cooling towers. The electrical equipment shall be in the area of the demolished 250-ton modular chiller. A new emergency generator will also be installed at the South end of the existing building 57 emergency generator yard. The entire facility yard including the Oxygen tank, chiller yard, electrical generator yard shall be surrounded by a simple decorative screening fence 12-14 feet high. The new cooling towers area shall also be surrounded by a simple decorative screening fence 8-10 feet high. The fence materials need to be durable but allow airflow where needed. Possible fence construction shall consist of metal louvered fence or decorative concrete masonry units (CMU) wall. New chilled water piping (supply and return) shall be constructed from the new chiller plant to Buildings 1A and 3. The chilled water piping (supply and return) shall be connected to Buildings 1A and 3.
New 12kV normal and emergency power supply line shall be constructed, installed and connected to serve Buildings 1A and 3. New 5kV emergency power supply line shall be constructed and installed to serve Building 31.

The work must be conducted in such a way as to always keep the buildings and their systems in operation so that services provided by the medical center are not disrupted.

The major elements of design are listed below. They are not meant to be all inclusive but are to serve as a check list for the design builder and where noted to describe the type of materials and or system required.

1.2 Division 1 – General Requirements

1.2.1 01 00 00 General Requirements

- 2013 California Building Standards Administrative Code, Part 1 Title 24, California Code of Regulations (CCR)
- California Code of Regulations (CCR) Part 4 and Part 6
- California Fire Code, 2013 Part 9, Title 24,
- CCR (2006 IFC and 2010 California Amendments)
- California Building Code, 2013 Part 2, Title 24, CCR. (2012 IBC and 2010 2013 California Amendments)
- California Energy Commission, Title 24, 2007 (AB970)

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