GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, TOOLS, EQUIPMENT, TESTING, AND SERVICES NECESSARY FOR A COMPLETE AND OPERABLE ELECTRICAL SYSTEM. THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO POWER, CONTROL AND GROUNDING CABLE DISCONNECTIONS, LOW AND MEDIUM VOLTAGE EQUIPMENT REMOVAL, RESETTING OF NEW LOW AND MEDIUM VOLTAGE EQUIPMENT, CONNECTION OF POWER, CONTROL INSTRUMENTATION AND GROUNDING CABLE, TAGGING AND TESTING, AND LEVELING ANCHORING AND SEISMIC BRACING OF NEW EQUIPMENT.
2. THE CONTRACTOR SHALL PROVIDE THE MAJOR LONG-DELIVERY, ENGINEERED EQUIPMENT FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PICKING UP THIS EQUIPMENT (OR ACCEPTING DELIVERY) AND INSTALLING AT THE JOB SITE. ALL OTHER EQUIPMENT NOT SPECIFICALLY PROVIDED BY THE OWNER SHALL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL INCIDENTAL ITEMS NOT ACTUALLY SHOWN OR SPECIFIED, BUT WHICH ARE REQUIRED BY STANDARDS, CODES, REGULATIONS AND GOOD PRACTICE TO PROVIDE COMPLETE FUNCTIONAL SYSTEMS.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, FREE FROM DEFECTS, OF CURRENT MANUFACTURE, AND OF THE QUALITY SPECIFIED OR SHOWN, AND SHALL BE LISTED AND LABELED BY THE UNDERWRITERS LABORATORIES, INC. (UL) FOR THE PURPOSE FOR WHICH IT IS TO BE USED WHERE SUCH LISTING HAS BEEN ESTABLISHED BY UL. EACH TYPE OF MATERIAL SHALL BE OF THE SAME MANUFACTURE AND QUALITY THROUGHOUT THE WORK. SELECTED MANUFACTURER SHALL HAVE A MINIMUM OF 5 YEARS OF CUSTOMER REFERRALS FOR PRODUCT BEING CONSIDERED.
4. THE CONTRACTOR SHALL OBTAIN, PAY AND COMPLY WITH ALL PERMITS AND LICENSES REQUIRED BY LOCAL AUTHORITIES HAVING INSPECTION JURISDICTION, LOCAL ORDINANCES, STATE, AND FEDERAL LEGISLATION. ALL CONSTRUCTION PERMITTING AND FEES REQUIRED SHALL BE BY THE CONTRACTOR.
5. CONDUIT SIZES, WIRE SIZES AND THEIR RESPECTIVE LENGTHS ARE ESTIMATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WIRE SIZE CHANGES WHEN INSTALLED MOTOR H.P.'S ARE DIFFERENT FROM THOSE SHOWN ON CONTRACT DRAWINGS.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION AS SHOWN ON THESE DRAWINGS, AS WELL AS ALL "HOLDS" FOR MISSING INFORMATION NOT SHOWN ON CONTRACT DRAWINGS AND TO CONFIRM ALL OF THE ABOVE WITH THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL MARK-UP A SET OF THESE DRAWINGS FOR "AS BUILT", AND DELIVER TO THE OWNER'S REPRESENTATIVE AFTER ALL WORK HAS BEEN COMPLETED. THE DRAWINGS WERE DEVELOPED FROM PAST RECORD DRAWINGS AND INFORMATION SUPPLIED BY THE OWNER AND MAY NOT REFLECT THE AS-BUILT CONDITIONS. THE CONTRACTOR SHALL FIELD SURVEY ALL EXISTING CONDITIONS AND MAKE ADJUSTMENTS TO SUIT THE FIELD CONDITIONS.
7. INSTALLATIONS MAY OCCUR WHILE THE FACILITY IS OPERATING. DURING THIS WORK, THE OWNER'S OPERATING PERSONNEL WILL BE WORKING IN THE FACILITY. THE CONTRACTOR SHALL POST THE AREA FOR SAFETY WHERE WORK IS BEING PERFORMED, AS REQUIRED. POSTING CAN BE WITH THE USE OF BARRICADES AND CONSTRUCTION TAPE ENCOMPASSING THE AREA.
8. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE OWNER IN ORDER TO KEEP A MINIMUM INTERRUPTION OF EXISTING OPERATIONS AND TO PRECLUDE ANY UNSAFE CONDITIONS.
9. THE DE-ENERGIZATION AND RE-ENERGIZATION OF EXISTING CIRCUITS AND ENERGIZATION OF NEW CIRCUITS SHALL BE DONE BY THE ELECTRICAL INSPECTOR. CUTTING OF EXISTING CIRCUITS SHALL BE COORDINATED BY THE ELECTRICAL INSPECTOR.
10. DOWNTIME OF THE ELECTRICAL POWER SYSTEM TO THE OPERATING FACILITIES SHALL BE KEPT TO A MINIMUM. POWER OUTAGES TO THE FACILITIES MAY BE LIMITED TO THE WEEKENDS, AND ALL OUTAGES SHALL BE COORDINATED BETWEEN THE CONTRACTOR AND THE OWNER.
11. THE CONTRACTOR IS RESPONSIBLE FOR LEAVING THE JOB SITE (AND ANY OTHER AREA USED BY THE CONTRACTOR) IN A CLEAN, SAFE AND ORDERLY CONDITION AT THE END OF EACH WORK DAY AND AT THE CONCLUSION OF THE JOB. ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE PROTECTED FROM DUST OR MOISTURE WITH PLASTIC SHEETING OVER ANY VENTILATION OPENINGS DURING THE CONSTRUCTION PHASE OF THE WORK. PROVIDE FILTERED AIR (FILTER SHALL NOT PASS A PARTICLE LARGER THAN 90 MICRON IN DIAMETER) TO COOL ANY EQUIPMENT THAT MAY BECOME OVERHEATED WITH THE PLASTIC COVER.
12. JUNCTION BOXES SHOWN ON CONTRACT DRAWINGS ARE SHOWN CONCEPTUALLY FOR THE CONDUIT SYSTEM. CONTRACTOR SHALL PROVIDE ADDITIONAL BOXES AS REQUIRED FOR THE CONDUIT SYSTEM. JUNCTION BOXES AND ENCLOSURES SHALL BE SIZED PROPERLY TO COMPLY WITH NEC REQUIREMENTS.
13. THE CONTRACTOR SHALL SET AND ANCHOR, CONNECT AND TEST THE NEW EQUIPMENT IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS. USE THE MOST STRICT REQUIREMENT WHERE REQUIREMENTS DIFFER. PERFORM COMPLETE OPERATIONAL TESTS ON ALL COMPONENTS AND ALL OTHER MISCELLANEOUS EQUIPMENT AND ACCESSORIES REQUIRED.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL REQUIRED ADJUSTMENTS TO MEET FINAL ACCEPTANCE CRITERIA IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS AND THE OWNER'S REPRESENTATIVE.
15. THE CONTRACTOR IS RESPONSIBLE FOR FINAL SYSTEM "SIGN-OFF" TO THE OWNER. THE CONTRACTOR SHALL HAVE NECESSARY DOCUMENTS READY FOR SIGNATURES AT TIME OF
16. THE CONTRACTOR SHALL DISPOSE OF ALL SURPLUS, OR SCRAP MATERIALS GENERATED BY THE PROJECT ANY COST OF SUCH DISPOSAL SHALL BE BORNE BY THE CONTRACTOR, AND ANY REVENUE RECEIVED SHALL BELONG TO THE CONTRACTOR.
17. ELECTRICAL CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR ALL PATCH WORK.
18. ALL WIRES SHALL BE THHN/THWN 75°, 600V RATED AND SHALL RUN INSIDE EMT.
19. ALL 120V, 20A CIRCUITS SHALL BE 2#12 & 1#12 GROUND U.O.N.
20. ALL CONDUITS SHALL BE EMT.
21. ALL INSTALLATION SHALL COMPLY WITH THE 2016 CALGREEN CODE, 2016 CALIFORNIA BUILDING CODE, 2016 CALIFORNIA MECHANICAL CODE, 2016 CALIFORNIA ELECTRICAL CODE, 2016 CALIFORNIA PLUMBING CODE, 2016 CALIFORNIA ENERGY CODE, AND THE 2016 CALIFORNIA FIRE CODE.

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	FLUORESCENT LIGHTING FIXTURE, RECESSED MOUNTED.
	FLUORESCENT LIGHTING FIXTURE, SURFACE OR SUSPENDED.
	INCANDESCENT AND HID LIGHTING FIXTURES, CLG. & WALL MTD.
	FLOOD LIGHTING UNIT.
	EXIT SIGN, DIRECTIONAL ARROWS INDICATED.
	STRIP FLUORESCENT LIGHTING UNIT, SURFACE OR SUSPENDED.
J	JUNCTION OR PULL BOX.
	SINGLE PLEX RECEPTACLE, MOUNTED 18" UP UNLESS NOTED OTHERWISE.
	DUPLEX RECEPTACLE, 20A, MOUNTED 18" UP UNLESS NOTED OTHERWISE.
	QUAD RECEPTACLE, 20A. TWO DUPLEX RECEPTACLES GANG MOUNTED.
30A	DUPLEX RECEPTACLE, 30A, MOUNTED 18" UP UNLESS NOTED OTHERWISE. ALL 30A 120V CIRCUITS SHALL BE 2#10,1#10G,3/4"C.
GFI	GROUND FAULT INTERRUPTING RECEPTACLE.
WP	WEATHER PROOF GROUND FAULT INTERRUPTING RECEPTACLE.
R	CEILING MTD CORD REEL WITH 30 FOOT CORD REEL, HEAVY DUTY STEEL CASE, AND 14/3 SJO CORD AND DUPLEX NEMA #5-15R RECEPTACLE IN A HARD RUBBER BOX. ERICSON MODEL #4143-30-B, OR EQUIVALENT.
	DUPLEX RECEPTACLE IN HANDY BOX MOUNTED ON CONDUIT STUB.
	POLARIZED THREE OR FOUR WIRE RECEPTACLE, RATING NOTED.
	CEILING MOUNTED DUPLEX RECEPTACLE
	CEILING MOUNTED QUAD RECEPTACLE. TWO DUPLEX GANG MOUNTED
	FLUSH FLOOR MOUNTED 20A QUAD RECEPTACLE. WITH ALL REQUIRED FITTINGS AND BRASS COVER. VERIFY FLOOR COVERING AND TYPE, U.O.N.
	NEMA TWISTLOCK RECEPTACLE L5-20 (120V, 1P)
S_3	SINGLE POLE SWITCH MOUNTED 48" UP UNLESS NOTED OTHERWISE.
S_2 S_3 S_4	TWO POLE, THREE WAY, FOUR WAY SWITCHES MTD. 48" UP UNLESS NOTED OTHERWISE.
S_K S_P	KEY OPERATED SWITCH, PILOT LIGHT SWITCH, MTD. 48" UP UNLESS NOTED OTHERWISE.
2- S_3	NUMBER DENOTES SINGLE POLE SWITCHES GANG MOUNTED.
	TELEPHONE OUTLET MTD. 18" UP UNLESS NOTED OTHERWISE.
	COMPUTER
	COMBINATION TELEPHONE/DATA OUTLET, MTD. 18" UP UNLESS NOTED OTHERWISE.
	FLUSH FLOOR MOUNTED COMBINATION VOICE/DATA OUTLET WITH ALL REQUIRED FITTINGS AND BRASS COVER. VERIFY THE FLOOR COVERING AND TYPE, U.O.N.
H1-11	CIRCUIT IDENTIFICATION, PANELBOARD ID - CIRCUIT NUMBER. ALL 20A 120V CIRCUITS SHALL BE 2#12,1#12G,3/4"C. ALL 30A 120V CIRCUITS SHALL BE 2#10,1#10G,3/4"C.
TS PE	TIME SWITCH, PHOTO-ELECTRIC SWITCH.
S_M	MANUAL MOTOR STARTER-DISCONNECT SWITCH.
	MOTOR DISCONNECT OR FUSED SAFETY SWITCH.
	MOTOR.
	ELECTRICAL PANELBOARDS, SURFACE AND FLUSH MOUNTED.
WP	DENOTES "WEATHER PROOF".
CC MC EC	DENOTES "GENERAL, MECHANICAL, & ELECTRICAL CONTRACTORS".
NL	DENOTES LIGHTING FIXTURE ON NIGHT LIGHT CIRCUIT.
EM	DENOTES LIGHTING FIXTURE ON EMERGENCY POWER CIRCUIT.
1	PLAN NOTE. REFER TO NOTATION ON PLANS.
F	FIRE ALARM MANUAL PULL STATION.
SD	SMOKE DETECTOR.
FA	FIRE ALARM AUDIO/VISUAL ALARM DEVICE.
UPS	DUPLEX RECEPTACLE 20A ORANGE COLOR-UPS POWER, MOUNTED 18" UP UNLESS NOTED OTHERWISE.
M	OCCUPANCY SENSOR
D	DAYLIGHT SENSOR

NOTE: ALL SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

SCOPE OF WORK

1. PROVIDE LIGHTING AND POWER FOR NEW TENANT BASED ON NEW ARCHITECTURAL FLOOR AND CEILING PLANS.

SHEET INDEX

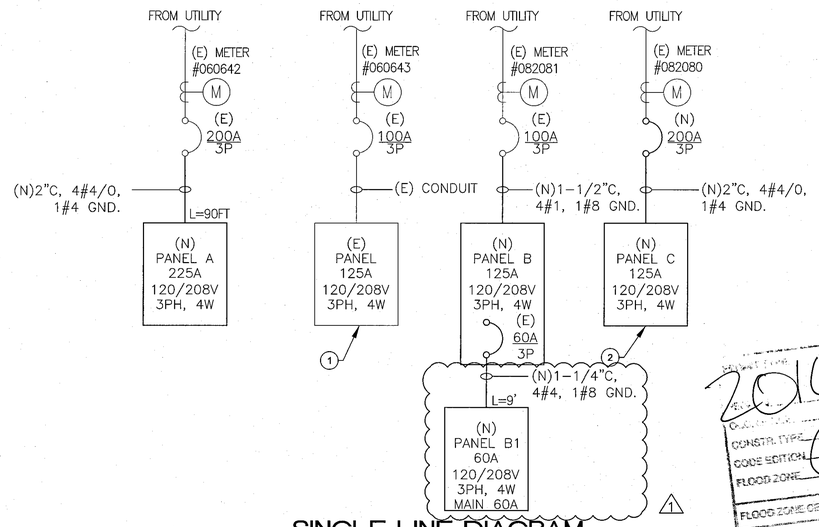
GENERAL NOTES:

1. CONTRACTOR TO FIELD-VERIFY AND INFORM THE ENGINEER OF RECORD OF ANY DISCREPANCIES.
2. ALL NEW PANELS ARE FULLY RATED. NO SERIES RATING ACCEPTED.

KEY NOTES:

(1) COORDINATE WITH SCE SERVICE PLANNER AND REMOVE THE EXISTING PANEL AND METER.

(2) COORDINATE WITH SCE SERVICE PLANNER AND UPSIZE THE EXISTING SERVICE TO 200A @ 120/208V, 3PH, 4W.



SINGLE LINE DIAGRAM

SCALE: NTS

VOLTAGE DROP TABLE

FROM	TO	WIRE SIZE	LENGTH (FT)	LOAD (A)	REF. VOLTAGE	V.D. (V)	V.D. (%)
METER	PANEL A	4/0	90	127	208V-3PH	0.97	0.47
METER	PANEL B	1	50	27	208V-3PH	0.29	0.17
METER	PANEL C	4/0	47	137	208V-3PH	0.55	0.26
PANEL B	B-2	12	116	9	120V-1PH	3.29	2.74
PANEL A	A-11	12	130	5	120V-1PH	2.06	1.72
PANEL A	A-35	10	90	15	120V-1PH	2.70	2.25
PANEL A	A-17	10	85	13	120V-1PH	2.21	1.84

THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.

ISSUE	DATE
1 PC CMT	4/24/19

Q3 inc
QUALITY AND EXCELLENCE IN ENGINEERING AND PROJECT MANAGEMENT
17855 GOTHARD STREET HUNTINGTON BEACH, CA. 92647
PHONE: (714) 843-3300
FAX: (714) 843-3308

REGISTERED PROFESSIONAL ENGINEER
RIVA M. KAMANGER
No. E 21432
EXP. 3/31/20
ELECTRICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

2016 7692

RECEIVED
MAY 28 2019
City of Santa Ana

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE
JUN 03 2019
BY:
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

RECEIVED
MAY 30 2019
CSG CONSULTANTS INC

PROJECT NO. 18E 30046

DRAWN/REVIEWED DP/HK

DATE/ISSUE TBD

SHEET TITLE GENERAL NOTES, SYMBOLS, PANEL SCHEDULES

SHEET NO. E-0.0

RECEIVED
2016 7692

(N) PANEL A

VOLTS: 120/208V | PHASE: 3 | A.I.C. RATING: 10,000 AMP | MAIN: 200A
MOUNTING: RECESSED | WIRE: 4 | BUSSING: 225A

LOAD	*	A–VA	B–VA	C–VA	BKR	CT	CT	BKR	A–VA	B–VA	C–VA	*	LOAD
CHECK–IN / CHECK–OUT	R	1080			20/1	1	2	20/1	1080			R	EXAM 102 AND 103
PROCEDURE 1	R		540		20/1	3	4	20/1		1080		R	EXAM 104 AND 105
LAB	R			900	20/1	5	6	20/1			1080	R	EXAM 114 AND 117
PT	R	540			20/1	7	8	20/1	1080			R	EXAM 112 AND 113
PT	R		540		20/1	9	10	20/1		540		R	BAT
PT	R			540	20/1	11	12	20/1			540	R	AUDIO
PT	R	540			20/1	13	14	20/1	720			R	OFFICE AND FILE ROOM
PT CHECK–IN	R		1080		20/1	15	16	20/1		540		R	PROCEDURE 2
BREAK RM GARGABE DISPOSAL	R			1500	20/1	17	18	20/1			1200	R	RECEPTION COPIER
BREAK RM GEN. REC.	R	540			20/1	19	20	20/1	720			R	HALLWAY 129 AND 137
BREAK RM COFFEE MAKER	R		1200		20/1	21	22	20/1		360		R	RESTROOM 131
BREAK RM MICROWAVE	R			1200	20/1	23	24	20/1			1440	R	WORK AREA
BREAK RM FRIGE	R	540			15/1	25	26	20/1	1080			R	PHYSICIAN'S STATION
WAITING AREA COFFEE MACHINE	R		1500		20/1	27	28	20/1		1800		C	PHONE SYSTEM
RECEPTION – WAITING RM REC	R			1440	20/1	29	30	20/1			1800	R	SERVER
PROCEDURE 1 FLOOR OUTLET	R	1800			20/1	31	32	20/1	540			R	ROOFTOP RECEPTACLES
PROCEDURE 2 FLOOR OUTLET	R		1800		20/1	33	34	20/1		1500		R	TV
PT FLOOR OUTLET	R			1800	20/1	35	36	20/1			540	R	WAITING ROOM
WATER HEATER	N	3994			40/3	37	38	20/1	720			R	X–RAY GEN. REC.
	N		3994		–	39	40	60/2		4368		N	X–RAY
	N			3994	–	41	42	–			4368	N	X–RAY
PHASE TOTALS:		14974	20842	22342	58158 =TOTAL CONNECTED LOAD,VA (FOR DEMAND LOAD SEE BELOW)								
PHASE AMPERES:		41.6	57.9	62.0									

*DEMAND LOAD CALCULATION:

L=LIGHTING LOADS:		1.25	X	0	= 0 VA
C=CONTINUOUS LOADS, OTHER:		1.25	X	1800	= 2250 VA
M=MOTOR LOADS (INCL LGST):		1.00	X	0	= 0 VA
LARGEST, VA:		0.25	X	0	= 0 VA
R=RECEPTACLES: 1ST 10K:		1.00	X	10000	= 10000 VA
BALANCE:		0.50	X	25640	= 12820 VA
K=KITCHEN LOADS: QTY:	0	1.00	X	0	= 0 VA
N=NONCONTINUOUS LOADS, OTHER:		1.00	X	20719	= 20719 VA
(P=PANEL, INCL. IN ABOVE)		TOTAL N.E.C. DEMAND LOAD			= 45789 VA = 127.1 AMPERES

NOTES:

(N) PANEL B

VOLTS: 120/208V | PHASE: 3 | A.I.C. RATING: 10,000 AMP | MAIN: 100A
MOUNTING: RECESSED | WIRE: 4 | BUSSING: 125A

LOAD	*	A–VA	B–VA	C–VA	BKR	CT	CT	BKR	A–VA	B–VA	C–VA	*	LOAD
EXAM AND PROCEDURE ROOMS	L	854			20/1	1	2	20/1	915			L	PT AREA
OFFICE AREAS	L		976		20/1	3	4	20/1		732		L	CHECK–IN AND WAITING AREA
HALLWAYS	L			671	20/1	5	6	15/1			568	L	RESTROOMS
HALLWAYS	L	671			20/1	7	8	15/1	24			L	EMERGENCY LIGHT
					20/1	9	10	20/1					
					20/1	11	12	20/1					
					20/1	13	14	20/1					
					20/1	15	16	20/1					
						17	18						
						19	20	60/3	1173			N	(N) PANEL B1
						21	22	–		1173		N	
						23	24	–			1173	N	
PHASE TOTALS:		3637	2881	2412	8930 =TOTAL CONNECTED LOAD,VA (FOR DEMAND LOAD SEE BELOW)								
PHASE AMPERES:		10.1	8.0	6.7									

*DEMAND LOAD CALCULATION:

L=LIGHTING LOADS:		1.25	X	5411	= 6764 VA
C=CONTINUOUS LOADS, OTHER:		1.25	X	0	= 0 VA
M=MOTOR LOADS (INCL LGST):		1.00	X	0	= 0 VA
LARGEST, VA:		0.25	X	0	= 0 VA
R=RECEPTACLES: 1ST 10K:		1.00	X	0	= 0 VA
BALANCE:		0.50	X	0	= 0 VA
K=KITCHEN LOADS: QTY:	0	1.00	X	0	= 0 VA
N=NONCONTINUOUS LOADS, OTHER:		1.00	X	3520	= 3520 VA
(P=PANEL, INCL. IN ABOVE)		TOTAL N.E.C. DEMAND LOAD			= 10284 VA = 28.5 AMPERES

NOTES:

(N) PANEL C

VOLTS: 120/208V | PHASE: 3 | A.I.C. RATING: 10,000 AMP | MAIN: 200A
MOUNTING: RECESSED | WIRE: 4 | BUSSING: 225A

LOAD	*	A–VA	B–VA	C–VA	BKR	CT	CT	BKR	A–VA	B–VA	C–VA	*	LOAD
HP 1	M	3038			30/3	1	2	15/2	1456			M	FC1
	M		3038		–	3	4	–		1456		M	
	M			3038	–	5	6	15/2			1456	M	FC2
HP 2	M	1741			25/3	7	8	–	1456			M	
	M		1741		–	9	10	15/3		1681		M	FC3
	M			1741	–	11	12	–			1681	M	
HP 3	M	4803			60/3	13	14	–	1681			M	
	M		4803		–	15	16	15/1		168		M	EF1–2–3
	M			4803	–	17	18	15/1			112	M	EF 4–5
RTU 1	M	4659			60/2	19	20						
	M		4659		–	21	22						
						23	24						
						25	26						
						27	28						
						29	30						
						31	32						
						33	34						
						35	36						
						37	38						
						39	40						
						41	42						
PHASE TOTALS:		18835	17547	12832	49214 =TOTAL CONNECTED LOAD,VA (FOR DEMAND LOAD SEE BELOW)								
PHASE AMPERES:		52.3	48.7	35.6									

*DEMAND LOAD CALCULATION:

L=LIGHTING LOADS:		1.25	X	0	= 0 VA
C=CONTINUOUS LOADS, OTHER:		1.25	X	0	= 0 VA
M=MOTOR LOADS (INCL LGST):		1.00	X	49214	= 49214 VA
LARGEST, VA:		0.25	X	0	= 0 VA
R=RECEPTACLES: 1ST 10K:		1.00	X	0	= 0 VA
BALANCE:		0.50	X	0	= 0 VA
K=KITCHEN LOADS: QTY:	0	1.00	X	0	= 0 VA
N=NONCONTINUOUS LOADS, OTHER:		1.00	X	0	= 0 VA
(P=PANEL, INCL. IN ABOVE)		TOTAL N.E.C. DEMAND LOAD			= 49214 VA = 136.6 AMPERES

NOTES:

(N) PANEL B1

VOLTS: 120/208V | PHASE: 3 | A.I.C. RATING: 10,000 AMP | MAIN: 60A
MOUNTING: RECESSED | WIRE: 4 | BUSSING: 60A

LOAD	*	A–VA	B–VA	C–VA	BKR	CT	CT	BKR	A–VA	B–VA	C–VA	*	LOAD
PT CHECK IN	R	1500			20/1	1	2	20/1	540			R	STORAGE ROOM
HALLWAY	R		940		20/1	3	4						
RESTROOM HALLWAY	R			540	20/1	5	6						
						7	8						
						9	10						
						11	12						
						13	14						
						15	16						
						17	18						
						19	20						
						21	22						
						23	24						
						25	26						
						27	28						
						29	30						
PHASE TOTALS:		2040	940	540	3520 =TOTAL CONNECTED LOAD,VA (FOR DEMAND LOAD SEE BELOW)								
PHASE AMPERES:		5.7	2.6	1.5									

*DEMAND LOAD CALCULATION:

L=LIGHTING LOADS:		1.25	X	0	= 0 VA
C=CONTINUOUS LOADS, OTHER:		1.25	X	0	= 0 VA
M=MOTOR LOADS (INCL LGST):		1.00	X	0	= 0 VA
LARGEST, VA:		0.25	X	0	= 0 VA
R=RECEPTACLES: 1ST 10K:		1.00	X	3520	= 3520 VA
BALANCE:		0.50	X	0	= 0 VA
K=KITCHEN LOADS: QTY:	0	1.00	X	0	= 0 VA
N=NONCONTINUOUS LOADS, OTHER:		1.00	X	0	= 0 VA
(P=PANEL, INCL. IN ABOVE)		TOTAL N.E.C. DEMAND LOAD			= 3520 VA = 9.8 AMPERES

NOTES:

PANEL SCHEDULE

GENERAL NOTES:

1– ALL NEW PANELS ARE FULLY RATED. NO SERIES RATING ACCEPTED.

ISSUE	DATE
1 PC CMT	4/24/19

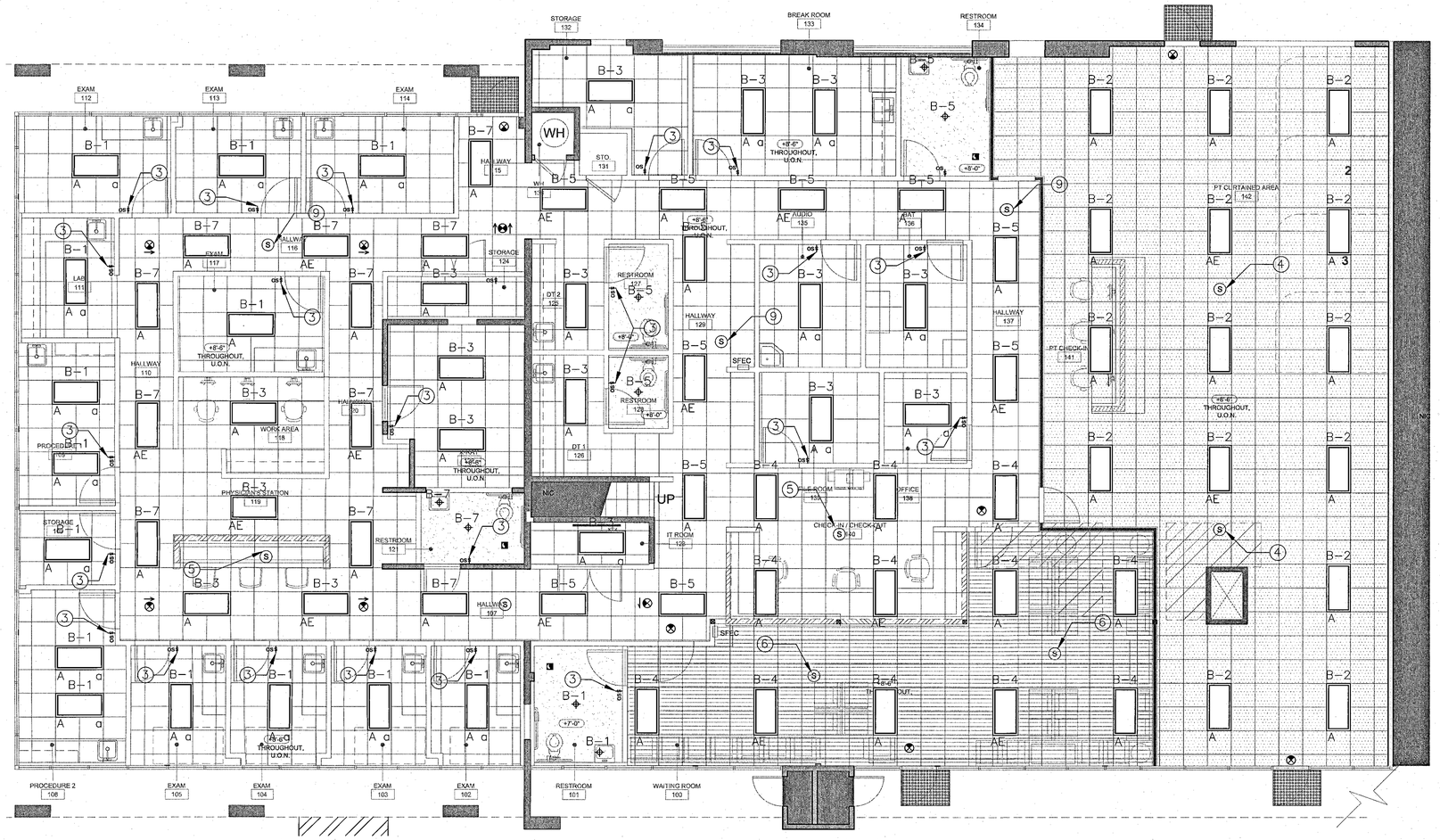
Q3 inc.
QUALITY AND EXCELLENCE IN ENGINEERING AND INTEGRITY IN BUSINESS
17782 GOTHARD STREET HUNTINGTON BEACH, CA 92647
PHONE: 714.842.3553
FAX: 714.842.3668

REGISTERED PROFESSIONAL ENGINEER
HIVA M. KAMANGIR
No. E 21432
EXP. 3/31/20
ELECTRICAL
STATE OF CALIFORNIA

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE
JUN 03 2019
BY:
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.	18E 30046
DRAWN/REVIEWED	DP/HK
DATE/ISSUE	TBD
SHEET TITLE	PANEL SCHEDULES
SHEET NO.	E-0.1



ELECTRICAL LIGHTING PLAN

SCALE: 3/16"=1'-0"

N

GENERAL NOTES:

1– PROVIDE SWITCH AND RECEPTACLE MOUNTING HEIGHTS PER STATE OF CALIFORNIA ACCESSIBLE REQUIREMENTS.
2– EMERGENCY LIGHT FIXTURES AND EXIT SIGNS SHALL BE EQUIPPED WITH BACKUP BATTERY TO PROVIDE POWER FOR AT LEAST 90 MIN.
3– EMERGENCY LIGHT FIXTURES AND EXIT SIGNS SHALL BE INSTALLED AHEAD OF ANY SWITCHING DEVICE AND BE FED DIRECTLY FROM PROVIDED BRANCH CIRCUIT.
4– CONTRACTOR SHALL FOLLOW ARCHITECTURE DRAWINGS FOR THE SPECIFIC TYPE OF EXIT SIGN (1)
5– ALL 20A 120V BRANCH CIRCUITS SHALL BE 2#12, 1#12GND, 3/4"C. BRANCH CIRCUITS B–1,2,3 SHALL BE 2#10, 1#10GND, 3/4"C.
6– CONTRACTOR TO COORDINATE WITH THE OWNER/ARCHITECTS FOR THE EXACT FINISH, COLOR TEMPERATURE, AND EXACT MODEL OF THE LIGHT FIXTURES.
7– CONTRACTOR TO VERIFY UL LISTING OF ALL FIXTURES PRIOR ORDERING.
8– ALL EXISTING LOADS THAT WILL REMAIN OTHER THAN SHOWN IN THIS SET OF DRAWINGS SHALL BE FED FROM NEW PANELS. CONTRACTOR TO GET CLARIFICATION PRIOR TO ANY CONSTRUCTION WORK.

KEY NOTES:

(1) PROVIDE NEW WALL MOUNTED ON/OFF DIMMER SWITCH AND CEILING MOUNT OCCUPANCY/PHOTOCELL COMBINED SENSOR. USE POWER PACK nPP16 OR SIMILAR.

(2) PROVIDE WALL MOUNTED DIMMER. ON/OFF OPERATION WILL BE OVERRIDDEN BY CEILING MOUNT OCCUPANCY SENSOR SERVING AS PARTIAL–ON OCCUPANCY SENSOR. USE NLIGHT nPODM–DX OR SIMILAR.

(3) PROVIDE NEW WALL MOUNTED DIMMER SWITCH WITH INTEGRATED OCCUPANCY AND PHOTOCELL SENSOR PER C.E.C. 2016 REQUIREMENTS. USE NLIGHT nWSX–PDT–LV–DX OR SIMILAR.

(4) PROVIDE 24'R COVERAGE CEILING MOUNTED OCCUPANCY SENSOR. USE NLIGHT nCM–PDT–10 OR SIMILAR.

(5) PROVIDE 12'R COVERAGE CEILING MOUNTED OCCUPANCY SENSOR. USE NLIGHT nCM–PDT–9 OR SIMILAR.

(6) PROVIDE 24'R COVERAGE CEILING MOUNTED OCCUPANCY AND PHOTOCELL COMBINED SENSOR. USE NLIGHT nCM–PDT–10 (PHOTOCELL ENABLED) OR SIMILAR.

(7) PROVIDE 12'R COVERAGE CEILING MOUNTED OCCUPANCY AND PHOTOCELL COMBINED SENSOR. USE NLIGHT nCM–PDT–9 (PHOTOCELL ENABLED) OR SIMILAR.

(8) PROVIDE WALL MOUNTED DIMMER. ON/OFF OPERATION WILL BE OVERRIDDEN BY CEILING MOUNT OCCUPANCY SENSOR. USE NLIGHT nPODM–DX OR SIMILAR.

(9) PROVIDE 70FEET COVERAGE CEILING MOUNTED HALLWAY OCCUPANCY SENSOR TO SERVE AS PARTIAL–ON OCCUPANCY SENSOR. USE NLIGHT nHW–13 OR SIMILAR.

(10) BOTH SENSORS IN ZONE 10 SHALL BE PROGRAMMED TO WORK TOGETHER.

(11) BOTH SENSORS IN ZONES 9 AND 34 SHALL BE PROGRAMMED TO WORK TOGETHER.

(12) CONDUCTOR SHALL BE 3/4"C, 2#8, 1#10 GND. TO COMPENSATE THE COLTAGE DROP.

LIGHT FIXTURE SCHEDULE

SYM.	MK.	MANUF.	MODEL NUMBER	DESCRIPTION	MOUNTING	LAMPS	FIX. WATT	FIXTURE QTY.	TOTAL WATTS	VOLT
▭	A	LITHONIA	2AVL4–50L–MDR–EZ1–LP840	2'X4' LED LIGHT FIXTURE "AVANTE" SERIES "E" INDICATES EMERGENCY LIGHT WITH 90 MIN BATT.	RECESSED	LED	61W	80	4880W	120
⌖	B	LITHONIA	65BEMW/65SEMW–HL LED–40K (1)	LITHONIA 6" DOWNLIGHT	RECESSED	LED	12W	8	96W (1)	120
⊗	E	LSI	EXL–U–R–1C–ZC/ FC–WB–WH–SD2	EXIT SIGN WITH 90 MINUTES EMERGENCY BATTERY BACK–UP	SURFACE	LED	2W	12	24W	120

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JUN 03 2019

BY:
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

ISSUE	DATE
1 PC CMT	4/24/19

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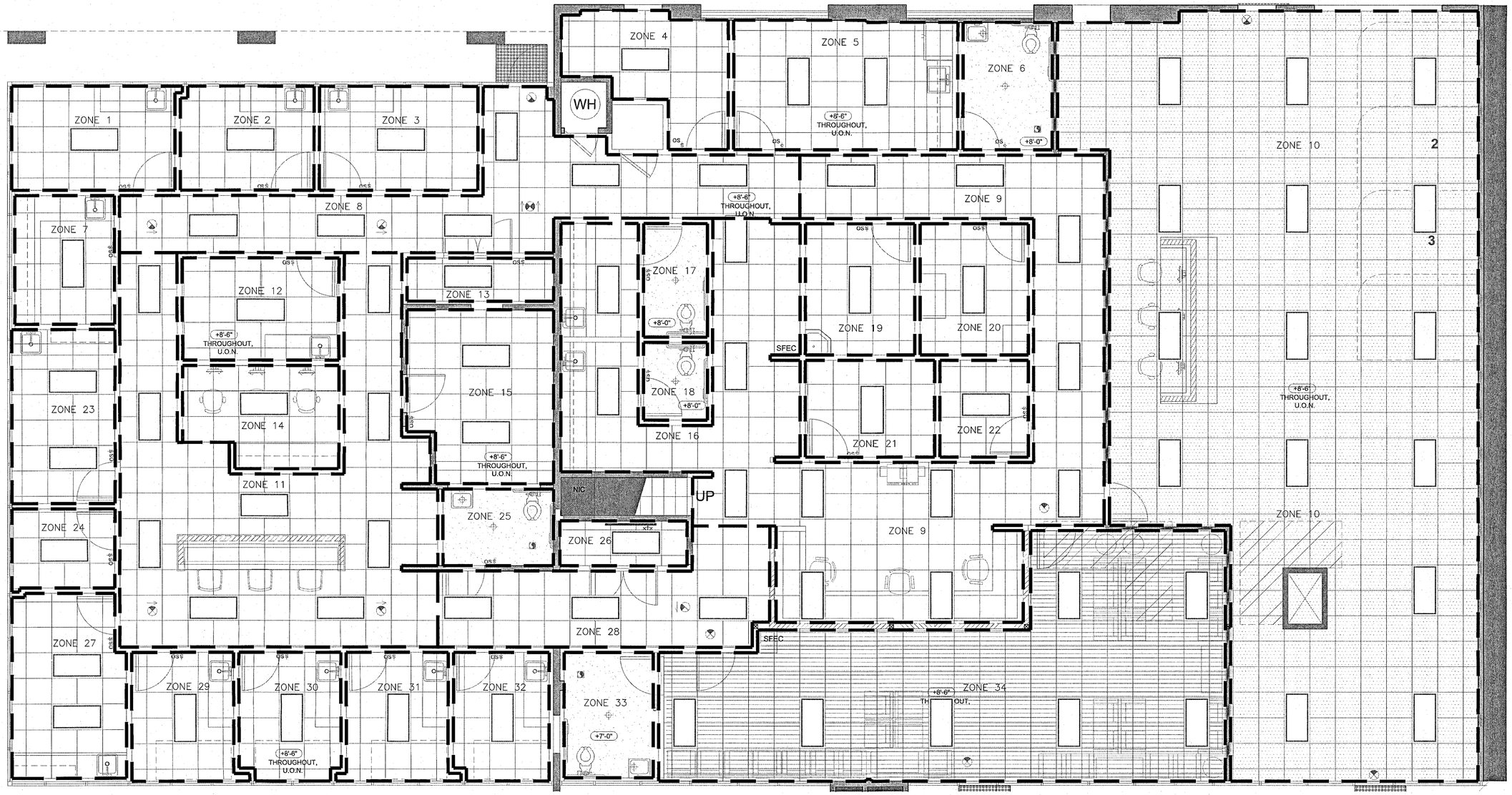
PROJECT NO.
18E 30046

DRAWN/REVIEWED
DP/HK

DATE/ISSUE
TBD

SHEET TITLE
ELECTRICAL LIGHTING PLAN

SHEET NO.
E-1.0



ELECTRICAL LIGHTING ZONES

SCALE: 3/16"=1'-0"

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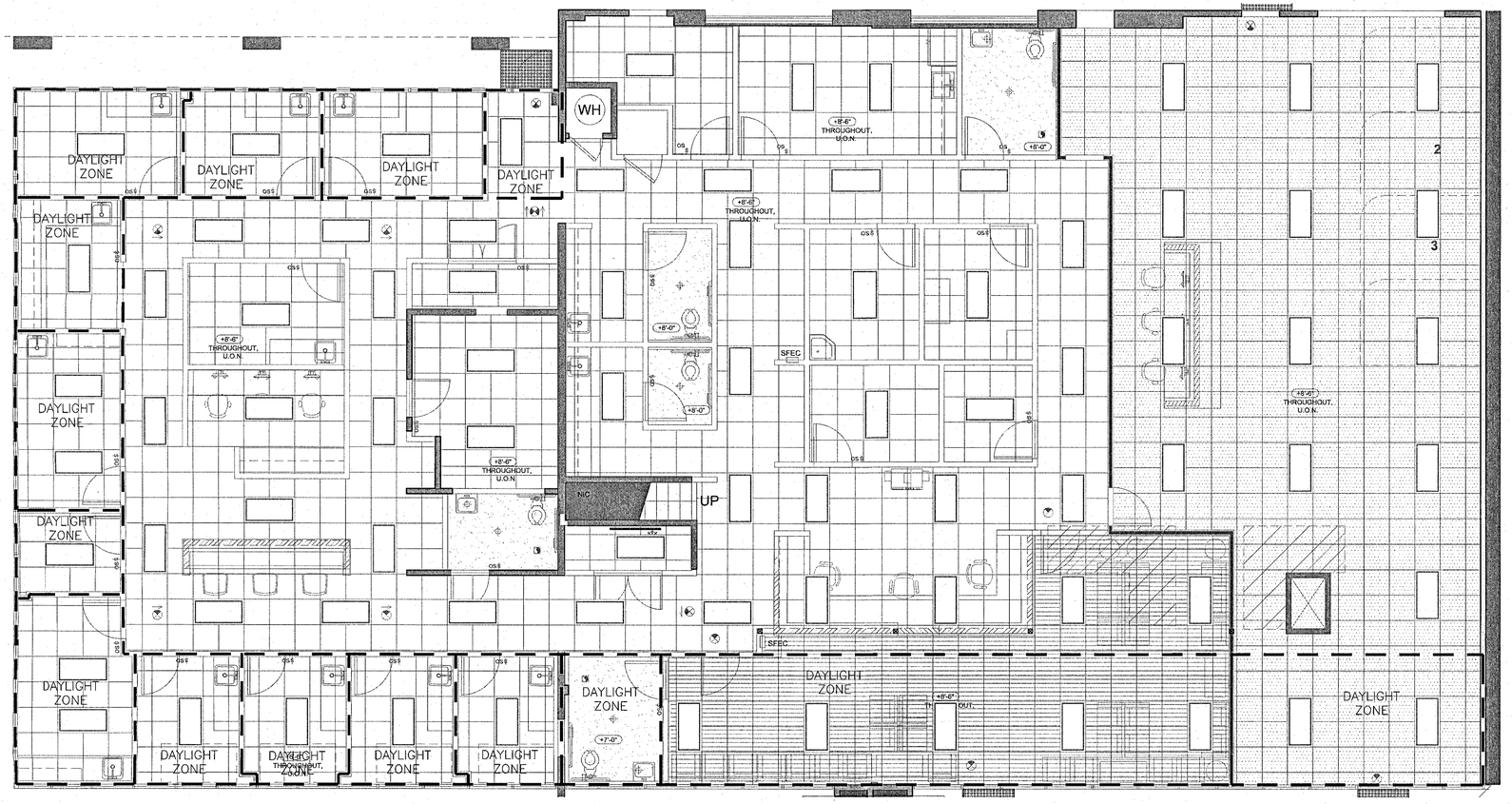
PROJECT NO.	18E 30046
DRAWN/REVIEWED	DP/HK
DATE/ISSUE	TBD
SHEET TITLE	ELECTRICAL LIGHTING ZONES
SHEET NO.	E-1.1



ELECTRICAL DAYLIGHT ZONES

SCALE: 3/16"=1'-0"

CONTROL ZONE	Multi–Level Lighting Control		DAYLIGHT HARVESTING CONTROL		AUTO SHUT–OFF CONTROL		CONTROLLED RECEPTACLE
	APPLICABLE	CONTROL TYPE	APPLICABLE	CONTROL TYPE	APPLICABLE	CONTROL TYPE	APPLICABLE
Zone 1	Yes	Continious Dimming	Yes	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 2	Yes	Continious Dimming	Yes	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 3	Yes	Continious Dimming	Yes	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 4	Yes	Continious Dimming	Yes	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 5	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 6	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 7	Yes	Continious Dimming	Yes	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 8	Yes	Continious Dimming	Yes	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 9	Yes	Continious Dimming	No	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 10	Yes	Continious Dimming	Yes	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 11	Yes	Continious Dimming	No	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 12	Yes	Continious Dimming	No	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 13	Yes	Continious Dimming	No	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 14	Yes	Continious Dimming	No	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 15	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 16	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 17	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 18	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 19	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 20	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 21	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 22	Yes	Continious Dimming	No	Ceiling Mount Photocell Sensor	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 23	Yes	Continious Dimming	Yes	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 24	Yes	Continious Dimming	Yes	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 25	Yes	Continious Dimming	No	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 26	Yes	Continious Dimming	No	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 27	Yes	Continious Dimming	Yes	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 28	Yes	Continious Dimming	No	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 29	Yes	Continious Dimming	Yes	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 30	Yes	Continious Dimming	Yes	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 31	Yes	Continious Dimming	Yes	–	Yes	– Ceiling mount Occupancy Sensor – Time Clock with override	No
Zone 32	Yes	Continious Dimming	Yes	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 33	Yes	Continious Dimming	Yes	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No
Zone 34	Yes	Continious Dimming	Yes	–	Yes	– Wall mount Occupancy Sensor – Time Clock with override	No

ISSUE	DATE
1 PC CMT	4/24/19

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JUN 03 2019

BY:

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CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.
18E 30046

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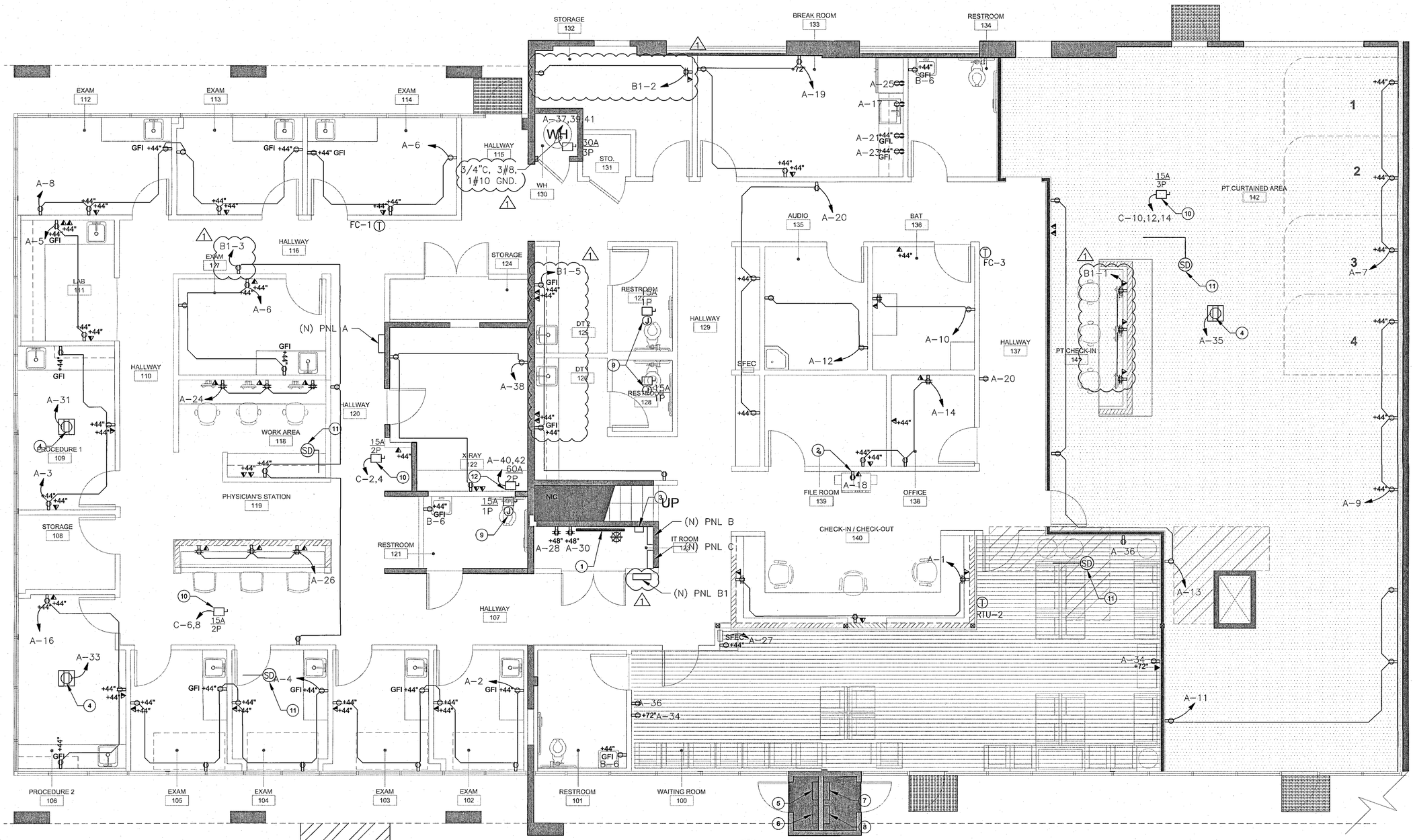
DATE/ISSUE
TBD

SHEET TITLE
ELECTRICAL DAYLIGHT ZONES

SHEET NO.
E-1.2



ELECTRICAL POWER PLAN

SCALE: 1/4"=1'-0"

GENERAL NOTES:

1- PROVIDE SWITCH AND RECEPTACLE MOUNTING HEIGHTS PER STATE OF CALIFORNIA ACCESSIBLE REQUIREMENTS.
2- GENERAL CONTRACTOR (G.C.) SHALL NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN ELECTRICAL AND ARCHITECTURAL DRAWINGS AND OBTAIN CLARIFICATION BEFORE COMMENCING WORK.
3- REFER TO ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHT OF POWER OUTLETS, FURNITURE AND EQUIPMENT.
4- ALL RECEPTACLES SHALL BE INSTALLED AT 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
5- ALL THE WIRING ABOVE THE DROPPED CEILING AND IN THE RATED RETURN AIR PLENUM SHALL BE FIRE RATED.
6- ALL 20A 120V BRANCH CIRCUITS SHALL BE 2#12, 1#12GND, 3/4"C. ALL 30A 120V BRANCH CIRCUITS SHALL BE 2#10, 1#10GND, 3/4"C. BRANCH CIRCUITS A-17,27,33,34,35 SHALL BE 2#10, 1#10GND, 3/4"C.

KEY NOTES:

(1) PROVIDE FIRE TREATED BACKBOARD WITH HOME RUN TO BASE BUILDING TELEPHONE ROOM PAINTED TO MATCH WALL. VERIFY CONDUIT SIZE. 4'X8'X 3/4" PLYWOOD BACKBOARD MOUNTED FROM THE CEILING DOWN AND (2) 4" EMT CONDUIT SLEEVES WITH INSULATED BUSHINGS MOUNTED WITH UNISTRUT COMING THROUGH THE CEILING ABOVE THE BOARD, ONE FOOT ABOVE THE CEILING AND ONE FOOT BELOW. A #12 GROUNDING WIRE RUN TO THE SERVER RACK SHALL BE PROVIDED.

(2) PROVIDE POWER FOR TENANT RICOH MP6001 COPIER/SCANNER. COORDINATE WITH TENANT FOR ANY OTHER REQUIREMENTS.

(3) PROVIDE PROGRAMMABLE ASTRONOMICAL TIME CLOCK TO CONTROL ALL LIGHT FIXTURES. PROVIDE OVERRIDE (NO MORE THAN 120 MINUTES) FOR AFTER HOURS WORKING.

(4) PROVIDE FLOOR-MOUNT MEDICAL RATED AFCI OUTLET. COORDINATE WITH TENANT AND TENANT VENDOR FOR THE EXACT LOCATION.

(5) (E) METER#060642 AND 200A BREAKER

(6) (E) METER#060643 AND 100A BREAKER

(7) (E) METER#082081 AND 100A BREAKER

(8) (E) METER#082080 AND 100A BREAKER

(9) PROVIDE J-BOX FOR EXHAUST FAN. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION AND DETAILS.

(10) PROVIDE MANUAL DISCONNECT FOR CEILING FAN COIL. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION.

(11) COORDINATE WITH MANUFACTURER AND PROVIDE POWER FOR IN-DUCT SMOKE DETECTOR. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION.

(12) RE-CIRCUIT THE EXISTING X-RAY POWER PER PANEL SCHEDULE ON SHEET E-0.1.

ISSUE	DATE
1 PC CMT	4/24/19

Q3 inc.
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PROJECT NO.	18E 30046
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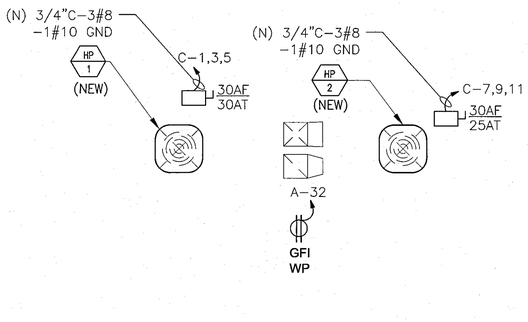
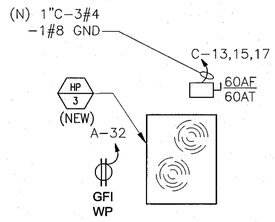
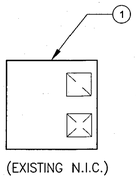
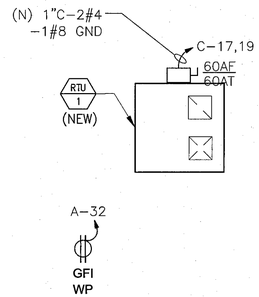
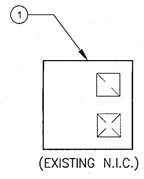
DATE/ISSUE	TBD
SHEET TITLE	ELECTRICAL POWER PLAN
SHEET NO.	E-2.0











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ELECTRICAL ROOFTOP PLAN

SCALE: 1/4" = 1'-0"

KEY NOTES:

(1) CONTRACTOR TO FIELD VERIFY AND RECONNECT THE EXISTING MECHANICAL UNIT TO NEW CIRCUIT ON PANEL C IF REQUIRED.

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE RECEPTACLES WITHIN 25 FEET OF MECHANICAL EQUIPMENT. RECEPTACLES SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF (WP) AND IS LISTED/IDENTIFIED AS "EXTRA DUTY." THE RECEPTACLES SHALL BE LISTED AS THE WEATHER RESISTANT (WR) TYPE AND SHALL BE GFI PROTECTED.
2. ALL ELECTRICAL EQUIPMENT ON ROOFTOP SHALL BE WP/ NEMA 3R TYPE.

ISSUE	DATE
1 PC CMT	4/24/19

Q3 inc.
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PROJECT NO.	18E 30046
DRAWN/REVIEWED	DP/HK
DATE/ISSUE	TBD
SHEET TITLE	ROOF POWER PLAN
SHEET NO.	E-3.0

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/18) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 1 of 6)
Project Name: Concentra	Data Prepared: 4/19/2019

A. General Information

Climate Zone: 8	Conditioned Floor Area: 6,222						
	Unconditioned Floor Area: 0						
Building Type:		☑	Nonresidential	☐	High-Rise Residential	☐	Hotel/Motel
☐ Schools		☐	Relocatable Public Schools	☑	Conditioned Spaces	☐	Unconditioned Spaces
Phase of Construction:		☐	New Construction	☐	Addition	☑	Alteration
Method of Compliance:		☐	Complete Building	☑	Area Category	☐	Tailored
Project Address: 3100 W. Warner Ave., Suite 100							

B. Lighting Compliance Documents (select yes for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

YES	NO	COMP. DOC.	TITLE
☑	☐	NRCC-LTI-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
☑	☐	NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All Pages required on plans for all submittals.
☑	☐	NRCC-LTI-03-E	Indoor Lighting Power Allowance
☐	☑	NRCC-LTI-04-E	Tailored Method Worksheets
☐	☑	NRCC-LTI-05-E	Line Voltage Track Lighting Worksheets
☐	☐	NRCC-LTI-06-E	Indoor Lighting Existing Conditions

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/18) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 2 of 6)
Project Name: Concentra	Data Prepared: 4/19/2019

C. Summary of Allowed Lighting Power

Conditioned and Unconditioned space Lighting must not be combined for compliance

	Indoor Lighting Power for Conditioned Spaces		Watts	Indoor Lighting Power for Unconditioned Spaces		Watts
01	Installed Lighting NRCC-LTI-01-E, Table H, page 5	+	4,907	Installed Lighting NRCC-LTI-01-E, Table H, page 5	+	0
02	Portable Only for Offices NRCC-LTI-01-E, Table G, page 4	+				
03	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0
04	Adjusted Installed Lighting Power (row 1 plus row 2 minus row 3)	=	4,907	Adjusted Installed Lighting Power (row 1 minus row 3)	=	0
	Complies ONLY if Installed ≤ Allowed (Box 04 < Box 05)			Complies ONLY if Installed ≤ Allowed (Box 04 < Box 05)		
05	Allowed Lighting Power Conditioned NRCC-LTI-03-E, page 1 Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		6,146	Allowed Lighting Power Unconditioned NRCC-LTI-03-E, page 1 Alterations with replacement luminaires that have at least 50/35% lower power compared to the original existing luminaires, may instead use the allowed wattage from NRCC-LTI-06, page 2		0

D. Declaration of Required Certificates of Installation

Declare by selecting yes for all of the Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Compliance Document/Title	
☑	☐	NRCI-LTI-01-E - Must be submitted for all buildings	☐ Field Inspector
☐	☑	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ Field Inspector
☐	☑	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
☐	☒	NRCI-LTI-05-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ Field Inspector

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/18) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 3 of 6)
Project Name: Concentra	Data Prepared: 4/19/2019

E. Declaration of Required Certificates of Acceptance

Declare by selecting yes for all of the Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Compliance Document/Title	
☑	☐	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐ Field Inspector
☑	☐	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐ Field Inspector
☐	☑	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐ Field Inspector
☐	☑	NRCA-LTI-05-A – Must be submitted for institutional tuning power adjustment factor (PAF).	☐ Field Inspector

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☐ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

F. Indoor Lighting Schedule and Field Inspection Energy Checklist

☐ The actual indoor lighting power listed on the next 2 pages includes all installed permanent and planned portable lighting systems.
☐ When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
☐ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines
☐ Also include track lighting in schedule, and submit the track lighting compliance document (NRCC-LTI-05-E) when line-voltage track lighting is installed.

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/18) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 4 of 6)
Project Name: Concentra	Data Prepared: 4/19/2019

G. Installed Portable Luminaires in Offices – Exception to Section 140.6(a)

☐ This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). All other planned portable luminaires shall be documented on next page of this compliance document.
☐ This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office
☐ Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

Office Portable Luminaire Schedule	Office Installed Portable Luminaire W/ft²							Office Location	Field Inspector	
1	2	3	4	5	6	7	8	9	10	
Complete Luminaire Description (i.e., LED, under cabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (G02 x G03)	Square feet of this office	Watts per square foot (G04 / G05)	If G06 ≤ 0.3, enter zero; If G06 > 0.3, (G05-0.3)	(G05 x G07)	Identify Office area in which these portable luminaires are installed	Pass	Fail
									☐	☐
									☐	☐
									☐	☐
									☐	☐
									☐	☐
Total installed portable luminaire watts that are greater than 0.3 W/ft² per office:								Enter sum total of all pages into NRCC-LTI-01-E; Page 1		

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/18) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 5 of 6)
Project Name: Concentra	Data Prepared: 4/19/2019

A Separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:
☑ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

H. Indoor Lighting Schedule and Field Inspection Energy Checklist

Luminaire Schedule		Installed Watts					Location	Field Inspector[1]	
01	02	03	04		05	06	07	08	
Name or Item Tag	Complete Luminaire Description (i.e., 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined: CEC Default from RMM	How wattage was determined: According to plans	Number Luminaires	Total Installed Watts in this area (I03 x I05)	Primary Function area in which these luminaires are installed	Pass	Fail
A	Lithonia 2' x 4' LED Fixture	61.0	☑	☐	18	1,098	Corridor/Restroom/Support	☐	☐
A	Lithonia 2' x 4' LED Fixture	61.0	☑	☐	10	610	Comp Bldg Office	☐	☐
A	Lithonia 2' x 4' LED Fixture	61.0	☑	☐	9	549	Lounge, Recreation	☐	☐
A	Lithonia 2' x 4' LED Fixture	61.0	☑	☐	39	2,379	Comp Bldg Hospital/Healthcare	☐	☐
A	Lithonia 2' x 4' LED Fixture	61.0	☑	☐	3	183	All Others	☐	☐
B	Lithonia 6" Downlight	11.0	☑	☐	8	88	Corridor/Restroom/Support	☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
			☐	☐				☐	☐
					INSTALLED WATTS PAGE TOTAL:	4,907	Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 04/18) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-01-E
Indoor Lighting	(Page 6 of 6)
Project Name: Concentra	Data Prepared: 4/19/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Duy Pham	Documentation Author Signature:
Company: Q3 Engineers Inc.	Signature Date: 4/19/2019
Address: 17162 Gothard Street	CEA Certification Identification (if applicable):
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200 x108

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Hiva Kamangar	Responsible Designer Signature:
Company: Q3 Inc.	Date Signed: 4/19/2019
Address: 17162 Gothard Street	License: E21432
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200 x105

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE

JUN 03 2019

BY: _____

THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

ISSUE	DATE
1 PC CMT	4/24/19

Q3 inc.
QUALITY AND EXCELLENCE IN ENGINEERING AND CONSULTING SERVICES
17162 GOTHARD STREET HUNTINGTON BEACH, CA 92647
PHONE: 714.465.5200 FAX: 714.847.1498

REGISTERED PROFESSIONAL ENGINEER
HIVA M. KAMANGAR
No. E 21432
EXP. 3/31/20
ELECTRICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.
18E 30046

DRAWN/REVIEWED
DP/HK

DATE/ISSUE
TBD

SHEET TITLE
ELECTRICAL TITLE 24 COMPLIANCE FORMS

SHEET NO.
ET24-1
1

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 1 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

A. Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
☑	☐	Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
☐	☑	Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
☐	☑	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
☐	☑	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
☑	☐	All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
☐	☑	All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
☑	☐	General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.1(a)4.
☑	☐	The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
☑	☐	All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
☐	☐	Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
☐	☐	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
☐	☐	Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (C x L)	✓ If Acceptance Test Required		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
Exam Room 6	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Exam Room 6	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Exam Room 6	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Exam Room 7	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Exam Room 7	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Exam Room 7	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
										Control Credit PAGE TOTAL (Sum of Column 13):				0	
										IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):				0	
														Enter Control Credit total into NRCC-LTI-01-E; Page 1.	

1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(d) = Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (C x L)	✓ If Acceptance Test Required		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
Break Room	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Upper Restroom	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Upper Restroom	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Lab Area	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Lab Area	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Lab Area	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
										Control Credit PAGE TOTAL (Sum of Column 13):				0	
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (C x L)	✓ If Acceptance Test Required		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
Upper Hallway	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Upper Hallway	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Upper Hallway	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Check In/Check Out Area	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Check In/Check Out Area	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Physical Therapy Area	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
										Control Credit PAGE TOTAL (Sum of Column 13):				0	
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2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (C x L)	✓ If Acceptance Test Required		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
Physical Therapy Area	Occupancy Sensor	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Physical Therapy Area	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Physician Station Hallway P	Multi Level	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Physician Station Hallway P	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Exam Room 5	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Exam Room 5	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
										Control Credit PAGE TOTAL (Sum of Column 13):				0	
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

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JUN 03 2019

BY: _____
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ISSUE	DATE
1 PC CMT	4/24/19

Q3 inc.
QUALITY AND EXCELLENCE IN ENGINEERING AND CONSULTING SERVICES
17782 GOTHARD STREET
HUNTINGTON BEACH, CA 92647
PHONE: 714.847.3102
FAX: 714.847.3498

REGISTERED PROFESSIONAL ENGINEER
RIVA M. KAMINOKS
No. E 21432
EXP. 3/31/20
ELECTRICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W, WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.	18E 30046
DRAWN/REVIEWED	DP/HK
DATE/ISSUE	TBD
SHEET TITLE	ELECTRICAL TITLE 24 COMPLIANCE FORMS
SHEET NO.	ET24-2 (1)

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)	Watts of Controlled Lighting	PAF	Control Credit (E x L)	✓ If Acceptance Test Required	Pass	Fail
Storage Room Above X-Ray	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Storage Room Above X-Ray	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Physician Station Enclosed	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Physician Station Enclosed	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
X-Ray Room	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
X-Ray Room	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
												Control Credit PAGE TOTAL (Sum of Column 13):		0	
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INDOOR LIGHTING – LIGHTING CONTROLS
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CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)	Watts of Controlled Lighting	PAF	Control Credit (E x L)	✓ If Acceptance Test Required	Pass	Fail
Work Up Area	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Work Up Area	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
DT 2 Restroom	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
DT 2 Restroom	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
DT 1 Restroom	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
DT 1 Restroom	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
												Control Credit PAGE TOTAL (Sum of Column 13):		0	
												IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):		0	
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1. §130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(d) = Additional lighting controls installed to earn a PAF; §140.6(d) = Prescriptive Secondary Sidelit Daylight Controls.
2. Check Table 140.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)	Watts of Controlled Lighting	PAF	Control Credit (E x L)	✓ If Acceptance Test Required	Pass	Fail
Audio Room	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Audio Room	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Bat Room	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Bat Room	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
File Room	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
File Room	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
												Control Credit PAGE TOTAL (Sum of Column 13):		0	
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)	Watts of Controlled Lighting	PAF	Control Credit (E x L)	✓ If Acceptance Test Required	Pass	Fail
Cod Office	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Cod Office	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Procedure Room #1	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Procedure Room #1	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Procedure Room #1	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✓	☐	☐
Leftmost Storage Room	Multi Level	1	☐	☐	☐	☐	☐	☐	☐				✓	☐	☐
												Control Credit PAGE TOTAL (Sum of Column 13):		0	
												IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):		0	
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)	Watts of Controlled Lighting	PAF	Control Credit (E x L)	✓ If Acceptance Test Required	Pass	Fail
Leftmost Storage Room	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Leftmost Storage Room	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✓	☐	☐
Restroom Under X-Ray Roc	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Restroom Under X-Ray Roc	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Telecom Room	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Telecom Room	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
												Control Credit PAGE TOTAL (Sum of Column 13):		0	
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)	Watts of Controlled Lighting	PAF	Control Credit (E x L)	✓ If Acceptance Test Required	Pass	Fail
Procedure Room #2	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Procedure Room #2	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Procedure Room #2	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✓	☐	☐
Lower Hallway	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✓	☐	☐
Lower Hallway	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✓	☐	☐
Exam Room 4	Multi Level	1	☐	☐	☐	☐	☐	☐	☐				✓	☐	☐
												Control Credit PAGE TOTAL (Sum of Column 13):		0	
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

ISSUE	DATE
1 PC CMT	4/24/19

Q3 Quinc.
QUALITY AND EXCELLENCE IN ENGINEERING AND INTEGRITY IN BUSINESS
27282 GOTHARD STREET
LAGUNA NIGUEL, CA 92677
PHONE/FAX 714.257.1422

REGISTERED PROFESSIONAL ENGINEER
NIVIA M. KAMANGER
No. E 21432
EXP. 3/31/20
ELECTRICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W, WARNER AVE, SUITE 100
SANTA ANA, CA 92704

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE
JUN 03 2019
BY:
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

PROJECT NO.
18E 30046

DRAWN/REVIEWED
DP/HK

DATE/ISSUE
TBD

SHEET TITLE
ELECTRICAL TITLE 24 COMPLIANCE FORMS

SHEET NO.
ET24-3 1

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)

Project Name: Concentra — Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (K x L)	✓ If Acceptance Test Required		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
Exam Room 4	Occupancy Sensor	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Exam Room 4	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Exam Room 3	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Exam Room 3	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Exam Room 3	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Exam Room 2	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Control Credit PAGE TOTAL (Sum of Column 13):												0			
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column 13):												0			
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STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)

Project Name: Concentra — Date Prepared: 4/19/2019

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B. Mandatory and Prescriptive Indoor Lighting Control Schedule, PAF Calculation, and Field Inspection Checklist

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
										Watts of Controlled Lighting	PAF	Control Credit (K x L)	✓ If Acceptance Test Required		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
Exam Room 2	Occupancy Sensor	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Exam Room 2	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Exam Room 1	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Exam Room 1	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Exam Room 1	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Lower Restroom	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Control Credit PAGE TOTAL (Sum of Column 13):												0			
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 2 of 3)

Project Name: Concentra — Date Prepared: 4/19/2019

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Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter 'E' if Exempted)							PAF Credit Calculation [2]				Field Inspector	
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01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
Location in Building	Type/Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(a)	§130.0(b)	§130.1(c)	§130.1(d)	§130.1(e)	§140.6(a)2	§140.6(d)					Pass	Fail
Lower Restroom	Occupancy Sensor	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Lower Restroom	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
Welcome Lounge	Multi Level	1	☐	☑	☐	☐	☐	☐	☐				✔	☐	☐
Welcome Lounge	Occupancy Sensor	1	☐	☐	☑	☐	☐	☐	☐				✔	☐	☐
Welcome Lounge	Automatic Daylighting	1	☐	☐	☐	☑	☐	☐	☐				✔	☐	☐
			☐	☐	☐	☐	☐	☐	☐					☐	☐
Control Credit PAGE TOTAL (Sum of Column 13):												0			
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-02-E
Indoor Lighting - Lighting Controls	(Page 3 of 3)

Project Name: Concentra — Date Prepared: 4/19/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Duy Pham	Documentation Author Signature:	
Company:	Q3 Engineers Inc.	Signature Date:	4/19/2019
Address:	17162 Gothard Street	CEA Certification Identification (if applicable):	
City/State/Zip:	Huntington Beach, CA 92647	Phone:	714-465-5200 x108

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Hiva Kamangar	Responsible Designer Signature:	
Company:	Q3 Inc.	Date Signed:	4/19/2019
Address:	17162 Gothard Street	License:	E21432
City/State/Zip:	Huntington Beach, CA 92647	Phone:	714-465-5200 x105

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 1 of 4)

Project Name: Concentra — Date Prepared: 4/19/2019

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES
☐ If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
☐ If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)	(b)
01 Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
02 Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)		6,146
03 Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E		0
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		6,146

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

01	02		03		04
TYPE OF BUILDING (From §140.6 Table 140.6-B)	WATTS PER ft²	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
			Total Area:		
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C-1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES

	Watts
Total from section C-2.	6,146
Total from section C-3.	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page).	6,146
For Alterations Only – Reduced lighting power option (Total Allowed Watts x 0.85). Enter this value into section A, row 2 if using this option.	

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 2 of 4)

Project Name: Concentra — Date Prepared: 4/19/2019

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE
☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in Section G of NRCC-LTI-01-E.
☐ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

01		02		03		04
AREA CATEGORY (From §140.6 Table 140.6-C)		WATTS PER ft²	X	AREA (ft²)	=	ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
Exam Areas	Comp Bldg Hospital/Healthcare	1.21		3,381		4,087
Storage Areas	All Others	0.50		188		94
Lounges	Lounge, Recreation	0.90		839		755
Restrooms	Corridor/Restroom/Support	0.60		267		160
Hallways	Corridor/Restroom/Support	0.60		921		553
Other Areas	Comp Bldg Office	0.80		646		517
				TOTALS	6,222	
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance document)						6,146
						WATTS

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE

JUN 03 2019

BY: _____

THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

ISSUE	DATE
1 PC CMT	4/24/19

Q3 inc.
QUALITY AND EXCELLENCE IN ENGINEERING AND CONSTRUCTION MANAGEMENT
17162 GOTHARD STREET HUNTINGTON BEACH, CA 92647
PHONE: 714-847-1428
FAX: 714-847-1429

REGISTERED PROFESSIONAL ENGINEER
HIVA M. KAMANGAR
No. E 21432
EXP. 3/31/20
ELECTRICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.
18E 30046

DRAWN/REVIEWED
DP/HK

DATE/ISSUE
TBD

SHEET TITLE
ELECTRICAL TITLE 24 COMPLIANCE FORMS

SHEET NO.
ET24-4 1

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 3 of 4)
Project Name: Concentra	Date Prepared: 4/18/2019

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☑ CONDITIONED spaces ☐ UNCONDITIONED spaces

C-3 AREA CATEGORY METHOD ADDITIONAL LIGHTING WATTAGE ALLOWANCE (from Table 140.6-C Footnotes)

01	02	03 [4]	04	05	06	07
Primary Function	Sq Ft or Linear Ft [1]	Additional Watts Allowed	Wattage Allowance (02 x 03)	Description(s) and Quantity of Special Luminaire Types in each Primary Function Area	Total Design Watts [3]	ALLOWED WATTS Smaller of 04 or 06

TOTALS – Enter Into TOTAL AREA CATEGORY METHOD ADDITIONAL ALLOWANCES – Section C-1 . 0

1. Use linear feet only for additional allowance for white board or chalk board. All other additional Area Category allowances shall use watts per square foot.
2. Additional watts are available only when allowed according to the footnotes on bottom of Table 140.6-C, which include: Specialized task work; Ornamental lighting; Precision commercial and industrial work; Per linear foot of white board or chalk board; Accent, display and feature lighting; and Videoconferencing studio lighting..
3. Luminaire classification and wattage shall be determined in accordance with §130.0(c) of the Standards.

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
CEC-NRCC-LTI-03-E (Revised 04/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance	(Page 4 of 4)
Project Name: Concentra	Date Prepared: 4/19/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Duy Pham	Documentation Author Signature:
Company: Q3 Engineers Inc.	Signature Date: 4/19/2019
Address: 17162 Gothard Street	CEA Certification Identification (if applicable):
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200 x108

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provided to the building owner at occupancy.

Responsible Designer Name: Hiva Kamangar	Responsible Designer Signature:
Company: Q3 Inc.	Date Signed: 4/19/2019
Address: 17162 Gothard Street	License: E21432
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200 x105

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JUN 03 2019

BY: ...
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

ISSUE	DATE
1 PC CMT	4/24/19

Q3 inc.
QUALITY AND EXCELLENCE IN ENGINEERING AND PROJECT MANAGEMENT
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EXP. 3/31/20
ELECTRICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.
18E 30046

DRAWN/REVIEWED
DP/HK

DATE/ISSUE
TBD

SHEET TITLE
ELECTRICAL TITLE 24 COMPLIANCE FORMS

SHEET NO.
ET24-5 1

GENERAL NOTES

1. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT AND ALL CONTRACTURAL EXPENSES REQUIRED FOR THE COMPLETE INSTALLATION OF THE MECHANICAL SYSTEM TO THE SATISFACTION OF THE OWNER, ARCHITECT AND MECHANICAL ENGINEER.
2. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED WORK. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES AND PROCEDURES.
3. FIELD OBSERVATION AND SUPPORT SERVICES PERFORMED BY THE ENGINEER PRIOR TO, DURING AND AFTER CONSTRUCTION ARE PERFORMED FOR THE PURPOSED OF ACHIEVING QUALITY CONTROL AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
4. THE INSTALLATION SHALL COMPLY WITH AND BE IN ACCORDANCE WITH ALL LEGAL AUTHORITIES AND CODES HAVING JURISDICTION. AS A MINIMUM STANDARD, ALL WORK SHALL MEET THE REQUIREMENTS OF THE 2016 CBC, 2016 CMC CODE, 2016 CEC AND 2016 CPC.
5. THE MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, INSPECTIONS AND PLAN CHECKS REQUIRED TO COMPLETE THIS JOB.
6. THE MECHANICAL CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT, APPARATUS, ACCESSORIES AS FURNISHED BY HIM OR HIS SUBCONTRACTORS FOR A PERIOD OF ONE YEAR.
7. COORDINATE THE SIZE, LOCATION AND SERVICE REQUIREMENTS OF ALL MECHANICAL EQUIPMENT, DUCTWORK AND PIPING WITH THE GENERAL CONTRACTOR, PLUMBING CONTRACTOR, ELECTRICAL CONTRACTOR AND FIRE PROTECTION CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. REPORT ALL UNRESOLVED CONFLICTS TO THE OWNER/ARCHITECT/ENGINEER.
8. COORDINATE THE LOCATION OF ALL CEILING OR WALL DIFFUSERS, REGISTERS, GRILLES AND ACCESS OPENINGS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS OR ACTUAL EXISTING FIELD CONDITIONS.
9. ALL NEW DUCTWORK SHALL BE MIN. 26 GA. GALVANIZED SHEET METAL. RIGID DUCT GAUGES, CONSTRUCTION, SUPPORTS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2016 CMC, SMACNA STANDARDS AND ASHRAE STANDARDS.
10. FLEXIBLE DUCT SHALL BE JOHNS-MANVILLE "MICRO-AIRE J/FLX" TYPE INSULATED FIBERGLASS DUCT OR APPROVED EQUAL. LENGTH SHALL NOT EXCEED SEVEN FEET. CONNECTIONS OF FLEXIBLE DUCT TO ROUND DUCTS OR COLLARS SHALL BE MADE WITH 1/2" WIDE POSITIVE LOCKING STEEL STRAPS. INSTALL "DOUBLE-BANDED" WITH ADJUSTABLE NYLON "ZIP-TIES" (MACHINE APPLIED) TO ENSURE THAT THE INNER DUCT AND OUTER INSULATION PROVIDE AN INDEPENDENT LOCK-TIGHT SEAL AGAINST DUCT LEAKAGE.
11. ALL CONCEALED SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK SHALL BE INSULATED WITH JOHNS-MANVILLE "R-SERIES MICRO-LITE WITH FSK\" TYPE FIBERGLASS DUCT INSULATION WITH ALUMINUM FOIL FACING OR APPROVED EQUAL. 1" THICK, 0.75 LBS/CU.FT. DENSITY, R=8.0 ALL DUCTWORK IN CONDITIONED SPACE NEED NOT BE INSULATED.
12. ALL CUTTING, CURBING, PATCHING, PAINTING, EQUIPMENT PLATFORMS AND STRUCTURAL SUPPORTS OR PLATFORMS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.
13. MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH CBC STD. NO. 42-1.
14. IN ACCORDANCE WITH(AABC) ASSOCITED AIR BALLANCE COUNCIL STANDARDS PRIOR TO OCCUPANCY THE ENTIRE HVAC SYSTEM SHALL BE BALLANCED BY AN INDEPENDENT AIR BALANCE CONTRACTOR. CERTIFICATION SHALL BE PROVIDED BY THE CONTRACTOR. BALANCING SHALL BE BASED ON THE MINIMUM DESIGN TO THIS SYSTEM LISTED IN 5.410.3.2. SYSTEM SHALL ALSO BE BALANCED AS DEFINED BY NATIONAL STANDARDS LISTED IN 5.410.3.3.1 FINAL REPORT MUST BE SIGNED BY CERTIFIED BALANCING CO. AND A O & M MANUAL TO OWNER. PER SECTION 5.410.5.1 A COPY OF INSPECTION & VERIFICATION REPORT SHALL BE GIVEN TO ENFORCING AGENCY.
15. RESTRAIN, BRACE, SUPPORT ALL MECHANICAL SYSTEMS AND PIPING SYSTEMS ACCORDING TO THE STANDARDS AND GUIDELINES ESTABLISHED BY SMACNA IN THEIR GUIDE FOR SEISMIC RESTRAINS FOR MECHANICAL SYSTEMS AND PLUMBING SYSTEMS.
16. THE PERSON WITH OVERALL RESPONSIBILITY FOR CONSTRUCTION OR THE PERSON RESPONSIBLE FOR THE INSTALLATION OF REGULATED MANUFACTURED DEVICES SHALL POST, OR MAKE AVAILABLE WITH THE BUILDING PERMIT(S) ISSUED FOR THE BUILDING, THE INSTALLATION CERTIFICATE(S) FOR MANUFACTURED DEVICES REGULATED BY THE APPLIANCE STANDARDS. SUCH INSTALLATION CERTIFICATE(S) SHALL BE MADE AVAILABLE TO THE ENFORCEMENTS AGENCY FOR ALL APPROPRIATE INSPECTIONS. THESE CERTIFICATES SHALL:
    1) IDENTIFY FEATURES REQUIRED TO VERIFY COMPLIANCE WITH THE APPLIANCE STANDARDS;
    2) INCLUDE A STATEMENT INDICATING THAT THE INSTALLED DEVICES CONFORM TO THE APPLIANCE STANDARDS AND THE REQUIREMENTS FOR SUCH DEVICES GIVEN IN THE PLANS AND SPECIFICATIONS APPROVED BY LOCAL ENFORCEMENT AGENCY;
    3) STATE THE BUILDING PERMIT NUMBER UNDER WHICH THE CONSTRUCTION OR INSTALLATION WAS PERFORMED.
17. THE BUILDER SHALL PROVIDE THE BUILDING OWNER OR THE PERSON(S) RESPONSIBLE FOR BUILDING MAINTENANCE (IN CASE OF MULTI-TENANT OR CENTRALLY OPERATED BUILDINGS) AT OCCUPANCY THE FOLLOWING:
    1) OPERATING INFORMATION; A LIST OF THE HEATING, COOLING, WATER HEATING AND LIGHTING SYSTEMS AND FEATURES, MATERIALS, COMPONENTS AND MECHANICAL DEVICES, CONSERVATION OR SOLAR DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY.
    2) MAINTENANCE INFORMATION; REQUIRED ROUTINE MAINTENANCE ACTION SHALL BE CLEARLY STATED AND INCORPORATED ON A READILY ACCESSIBLE LABEL. THE LABEL MAY BE LIMITED TO IDENTIFYING THE MAINTENANCE MANUAL.
18. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S INSTRUCTIONS. MAINTENANCE LABEL SHALL BE ATTACHED TO ALL MECHANICAL EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED FOR THE OWNER'S USE.
19. THE THERMOSTATIC CONTROLS FOR HVAC SYSTEMS SHALL MEET THE FOLLOWING REQUIREMENTS AS APPLICABLE:
    1) EACH SPACE CONDITIONING SYSTEM SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL.
    2) THERMOSTATIC CONTROLS SHALL BE CAPABLE OF BEING SET LOCALLY BY ADJUSTMENT OR SELECTION OF SENSORS;
        A) DOWN TO 55'F OR LOWER TO CONTROL HEATING AND
        B) UP TO 85'F OR HIGHER TO CONTROL COOLING AND
        C) BOTH A & B CONDITIONS TO CONTROL BOTH HEATING AND COOLING.
    3) TO CONTROL BOTH HEATING AND COOLING, THE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5'F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.
20. ALL DUCTS SHALL BE INSTALLED AND INSULATED IN COMPLIANCE WITH SECTIONS 601, 603 AND 604 OF THE LATEST ADOPTED IMC.
21. ALL SUBMITTED AND APPROVED ALTERNATE MECHANICAL EQUIPMENT, MATERIAL AND/OR CONTROL SYSTEM SHALL BE COORDINATED BY THE MECHANICAL AND GENERAL CONTRACTORS. ANY ADDITIONAL EQUIPMENT WEIGHTS AND ELECTRICAL LOADS, ALTERNATE ROOF OR STRUCTURAL OPENINGS SHALL BE REVIEWED AND INSTALLED BY THE MECHANICAL CONTRACTOR WITH HIS OWN EXPENSES AND RESPONSIBILITIES.

NEW - SPLIT SYSTEM INDOOR FAN COIL

UNIT NO.	MANUFACTURER & MODEL NO.	NOM. CAP. TONS	SERVICE	MATCHING OUTDOOR UNIT	AIR QUANTITY (CFM)	OSA	EXTERNAL S.P. (IN. WG.)	COIL DATA				ELECTRICAL				OPERATING WEIGHTS (LBS.)	REMARKS
								FACE AREA (SQ. FT.)	ROWS	E.A.T D.B. (°F)	E.A.T. W.B. (°F)	HP	VOLTAGE V / PH / HZ	MCA	MOCP		
FC 1	CARRIER FV4C006	5.0	USH	HP 1	1,950	400	0.80	7.4	3	80	67	3/4	230/1/60	14.0	15.0	207#	FACTORY FURNISHED CONDENSATE OVERFLOW SWITCH, PROGRAMMABLE T'STAT. ECONOMIZER, CONDENSATE PUMP
FC 2	CARRIER FV4C006	4.0	USH	HP 2	1,500	450	0.80	7.4	3	80	67	3/4	230/1/60	14.0	15.0	207#	OUTSIDE VALUES MATCH T-24. SHT. MT24.2 MCH-03-E
FC 3	CARRIER 40RUQA08	7.5	USH	HP 3	3,000	600	0.80	8.3	4	80	67	3.0	230/3/60	14.0	20.0	485#	FACTORY FURNISHED CONDENSATE OVERFLOW SWITCH, PROGRAMMABLE T'STAT. ECONOMIZER, CONDENSATE PUMP PROVIDE ALTERNATE MOTOR. OUTSIDE VALUES MATCH T-24. SHT. MT24.2 MCH-03-E

NEW - SPLIT SYSTEM OUTDOOR HEAT PUMP UNIT

UNIT NO.	MANUFACTURER & MODEL NO.	NOM. CAP. TONS	SERVICE	MATCHING INDOOR UNIT	COOLING CAPACITY MBH		AMBIENT TEMPERATURE (°F.)	E.E.R.	HEATING	ELECTRICAL			OPERATING WEIGHTS (LBS.)	REMARKS
					SENSIBLE	TOTAL			INTEGRATED-MBH	MINIMUM CIRCUIT AMPS	MAXIMUM FUSE AMPS	VOLTAGE V - PH - HZ		
HP 1 (SPLIT SYS.)	CARRIER 25HCE60	5.0	USH	FC 1	60.0	65.0	95.0	11.0	66.0	21.5	30.0	230-3-60	212	
HP 2 (SPLIT SYS.)	CARRIER 25HCE48	4.0	USH	FC 2	60.0	65.0	95.0	11.0	66.0	14.5	25.0	230-3-60	197	
HP 3 (SPLIT SYS.)	CARRIER 38AUQA08	7.5	USH	FC 3	65.0	55.0	95.0	11.0	66.0	40.0/40.0	60.0/60.0	230-3-60	483	

NEW-ROOFTOP AIR CONDITIONING UNIT SCHEDULE - HEAT PUMP

MARK	SERVES	MANUFACTURER & MODEL NO.	NOMINAL TONS	AIR QUANTITIES (CFM) SUPPLY	RETURN	O.S.A.	E.S.P.	COOLING CAPACITY TOTAL	SENSIBLE	(EER) (SEER)	HEATING INTEGRATED	ELEC. DATA	MCA	MOCP	----	FILTERS	WGHT. (lbs.)	REMARKS
RTU 1	USH	CARRIER 50VRA60	5	1,900	1,500	400	.8"	50,000 BTUH	40,000 BTUH	12.0 15.0	25.0 MBH	230/1/60	44.8	60.0		MERV 8	511#	PROGRAMMABLE T'STAT W/ LOCKING COVER, SMOKE DETECTOR, ROOF CURB, ECONOMOZER, PROVIDE STRUCTURAL CALCULATIONS. OUTSIDE VALUES MATCH T-24. SHT. MT24.2 MCH-03-E, EXISTING CURB, SMOKE DETECTOR

PLAN CHECK NOTES

1. PENETRATIONS IN WALLS REQUIRING PROTECTED OPENINGS MUST BE FIRESTOPPED WITH AN APPROVED 3M FIRE BARRIER SEALANT ICC AND UL APPROVED PER 713.3.
   A. COPPER OR FERROUS PIPES OR CONDUITS MAY PENETRATE THE WALLS OR PARTITIONS, PROVIDED THEY ARE FIRESTOPPED.
   B. OPENINGS FOR STEEL ELECTRICAL OUTLET BOXES NOT EXCEEDING 16 SQUARE INCHES ARE PERMITTED, PROVIDED OPENINGS DO NOT EXCEED AN AGGREGATE AREA OF MORE THAN 100 SQUARE INCHESFOR ANY 100 SQUARE FEET OF WALL OR PARTITIONS. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.
   C. WHERE WALLS ARE PENETRATED BY OTHER MATERIALS OR WHERE LARGER OPENINGS ARE REQUIRED THAN PERMITTED IN (B) ABOVE, THEY MUST BE QUALIFIED BY TESTS CONDUCTED IN ACCORDANCE WITH SECTION 703.
2. CONSTRUCTION OR WORK FOR WHICH A PERMIT IS REQUIRED SHALL BE SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL AND SUCH CONSTRUCTION OR WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED. INSPECTIONS CAN BE REQUESTED BY CALLING THE INSPECTION LINE AT 562-570-6105.
3. HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS OF ALL STRUCTURES SHALL BE DESIGNED AND INSTALLED FOR EFFICIENT UTILIZATION OF ENERGY IN ACCORDANCE WITH THE CALIFORNIA ENERGY CODE.
4. APPLIANCES, APPURTENANANCES AND EQUIPMENT REQUIRED BY THE CMC SHALL BE LISTED AND LABELED FOR THE APPLICATION IN WHICH THEY ARE INSTALLED AND USED (CMC SECTIONS 301.2, 302.1, AND 303.1)
5. LABELING SHALL BE IN ACCORDANCE WITH THE PROCEDURES SET FORTH IN CMC 307.0.
6. THE VENTILATION AIR DISTRIBUTION SYSTEM SHALL BE PROVIDED WITH MEANS TO ADJUST THE SYSTEM TO ACHIEVE AT LEAST THE MINIMUM VENTILATION AIRFLOW RATE AS REQUIRED BY THE CMC SECTION 403. VENTILATION SYSTEMS SHALL BE BALANCED BY AN APPROVED METHOD. SUCH BALANCING SHALL VERIFY THAT THE VENTILATION SYSTEM IS CAPABLE OF SUPPLYING AND EXHAUSTING THE AIRFLOW RATES REQUIRED BY CMC SECTIONS 403.2. SUCH AIR BALANCE REPORTS SHALL BE PROVIDED TO THE INSPECTOR AT TIME OF INSPECTION. AIR BALANCE REPORTS MAY BE REQUESTED BY THE INSPECTION DURING ANNUAL INSPECTIONS TO ENSURE ONGOING COMPLIANCE WITH CITY REQUIREMENTS, AND WHEN ISSUES OR CONCERNS REGARDING ODORS ARE BROUGHT TO THE ATTENTION OF THE CITY.
7. WHEN CARBON DIOXIDE IS STORED, USED, OR GENERATED IN A BUILDING, A CONTINUOUS VENTILATION SYSTEM SHALL BE PROVIDED AS REQUIRED BY THE CFC SECTION 5308.2.
8. ALL MECHANICAL EQUIPMENT AND SYSTEMS INSTALLED AS PART OF PROJECT SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2016 CMC AND THE 2016 CBC, 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE AND 2016 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
9. ALL DUCTWORK FOR HEATING AND COOLING SYSTEM OR EVAPORATE COOLING SYSTEM SHALL BE CONDUCTED THROUGH DUCT SYSTEMS CONSTRUCTED OF METAL AS SET FORTH IN SMACNA HVAC DUCT CONSTRUCTION STANDARD - METAL AND FLEXIBLE. FACTORY MADE AIR DUCTS SHALL BE APPROVED FOR THE USE INTENDED OR SHALL COMPLY WITH THE 2013 CMC REFERENCED STANDARDS CHAPTER 17 (CMC 602.1).
10. THE REQUIRED SERVICE DISTANCE FROM THE MECHANICAL EQUIPMENT TO SCREENING, PARAPETS, WALLS AND OTHER EQUIPMENT SHALL BE A MINIMUM OF 30"x30" ON THE SERVICE SIDE OF THE EQUIPMENT, OR AS REQUIRED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, IF THE INSTRUCTIONS REQUIRE A GREATER CLEARANCE. (CMC SECTION 304.1)
11. EQUIPMENT AND APPLIANCES SHALL BE ACCESSIBLE FOR SERVICE, INSPECTION REPAIR AND REPLACEMENT WITHOUT REMOVING PERMANENT CONSTRUCTION. SUFFICIENT CLEARANCE SHALL BE MAINTAINED TO PERMIT CLEANING, REPLACEMENT OF FILTERS, BLOWERS, MOTOR CONTROLS AND LUBRICATION OF MOVING PARTS. 30" OF CLEARANCE IN DEPTH, WIDTH, AND HEIGHT SHALL BE PROVIDED TO SERVE THE APPLIANCE OR EQUIPMENT. (CMC 304.1)
12. OUTSIDE AIR FOR HEATING OR COOLING SYSTEM SHALL NOT BE TAKEN FROM CLOSER THAN 10'-0" FROM AN APPLIANCE VENT OUTLET, VENT OPENING OF A PLUMBING SYSTEM, OR THE DISCHARGE OUTLET OF EXHAUST FAN, UNLESS THE OUTLET IS 3'-0" ABOVE THE OUTSIDE AIR INLET. (CMC 314.3)
13. REFRIGERANT CONTAINING PORTIONS OF A SYSTEM THAT ARE FIELD ERECTED SHALL BE TESTED AND PROVED TIGHT TO THE AUTHORITY HAVING JURISDICTION AFTER COMPLETE INSTALLATION AND BEFORE OPERATION. THE HIGH LOW SIDES OF EACH SYSTEM SHALL BE TESTED AND PROVED TIGHT AT NOT LESS THAN THE LOWER OF THE PRESSURE IN CMC TABLE 1124.2 OR THE SETTING THE PRESSURE RELIEF DEVICE. (CMC 1124.2)
14. ONE OF THE FOLLOWING METHODS IS REQUIRED TO COMPLY WITH MECH-3 VENTILATION REQUIREMENTS
    A. AIR BALANCING: ALL SPACE CONDITIONING AND VENTILATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SPECIFIED IN THESE PLANS, IN ACCORDANCE THE THE NATIONAL ENVIRONMENTAL BALANCING BUREAU, (NEBB), PROCEDURAL STANDARDS (1983), OR ASSOCIATED AIR BALANCE COUNCIL, (AABC, NATIONAL STANDARDS (1986)
    B. OUTSIDE AIR CERTIFICATION: THE SYSTEM SHALL PROVIDE THE MINIMUM OUTSIDE AIR AS SHOWN ON THE MECHANICAL DRAWINGS, AND SHALL BE MEASURED AND CERTIFIED BY THE INSTALLING LICENSED C-20 MECHANICAL CONTRACTOR. (AIR BALANCING SHALL COMPLY TO CGBSC 5.410.1)

NEW EXHAUST FAN SCHEDULE

TAG	MFGR. MODEL#	SERVES	CFM	S.P.	RPM	WATTS	ELECTRICAL	WEIGHT	REMARKS
EF 1	GRENNHECK SP A200	RESTROOM	68	.75	900	56.1	120/1/60	24 LBS.	INTERLOCK W/LIGHT SWITCH
EF 2	GRENNHECK SP A200	RESTROOM	68	.75	900	56.1	120/1/60	24 LBS.	INTERLOCK W/LIGHT SWITCH
EF 3	GRENNHECK SP A200	RESTROOM	68	.75	900	56.1	120/1/60	24 LBS.	INTERLOCK W/LIGHT SWITCH
EF 4	GRENNHECK SP A200	RESTROOM	68	.75	900	56.1	120/1/60	24 LBS.	INTERLOCK W/LIGHT SWITCH
EF 5	GRENNHECK SP A200	RESTROOM	68	.75	900	56.1	120/1/60	24 LBS.	INTERLOCK W/LIGHT SWITCH
EF 6	GRENNHECK SP A200	JANITOR	68	.75	900	56.1	120/1/60	24 LBS.	INTERLOCK W/LIGHT SWITCH

RECEIVED
MAY 28 2019
City of Santa Ana

MECHANICAL LEGEND

SYMBOL	DESCRIPTION	ABBREV.
	SUPPLY DUCT	S.
	RETURN AIR DUCT	R.
	EXHAUST AIR DUCT	E.
	CEILING DIFFUSER 1-2-3 OR 4 WAY THROW	C.D.
	CEILING REGISTER	C.R.
	ACCESS PANEL	A.P.
	FIRE DAMPER	F.D.
T	THERMOSTAT	
S	SENSOR	
SD	SMOKE DETECTOR	
CO2	CO2 SENSOR	
	GENERAL CONTRACTOR	G.C.
	POINT OF CONNECTION TO EXISTING	POC
	CUBIC FEET PER MINUTE	CFM

AIR DEVICE SCHEDULE

SYMBOL	MAKE/MODEL	DESCRIPTION	FACE/TYPE	REMARKS
A	TITUS TDC	SUPPLY LINEAR DIFFUSER	T-BAR 24"x24"	NECK SIZE ON DRAWINGS
B	TITUS 50F	RETURN GRILLE	T-BAR 24"x24"	NECK SIZE ON DRAWINGS 1/2"x1/2"x1/2" DUCT PAINTED BLACK IN THE INSIDE
C	TITUS TDC	SUPPLY LINEAR DIFFUSER	SURFACE MTD. 12"x12"	NECK SIZE ON DRAWINGS
D	TITUS 50F	RETURN GRILLE	T-BAR 12"x12"	NECK SIZE ON DRAWINGS 1/2"x1/2"x1/2" DUCT PAINTED BLACK IN THE INSIDE

NOTE: 1. SEE PLANS FOR NECK SIZES OF AIR DEVICES

AIR DEVICE LEGEND:
- SUPPLY DIFFUSER
- RETURN GRILLE/TRANSFER GRILLE
- EXHAUST REGISTER
- SUPPLY/RETURN LINEAR DIFFUSER

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE
JUN 06 2019
BY:
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

GENERAL BUILDING REQUIREMENTS

1. ALL CONSTRUCTION AND REMODELING WORK MUST BE PERFORMED BY CA LICENSED CLASS A OR CLASS B CONTRACTORS. ALL BUILDING TRADES WORK MUST BE PERFORMED BY A STATE OF CALIFORNIA LICENSED CONTRACTOR(S).
2. BUILDING CODES AND STANDARDS ARE AS FOLLOWS:
   A: 2016 CALIFORNIA BUILDING CODE (CBC)
   B: 2016 CALIFORNIA EXISTING BUILDING CODE (CEBC)
   C: 2016 CALIFORNIA MECHANICAL CODE (CMC)
   D: 2016 CALIFORNIA PLUMBING CODE (CPC)
   E: 2016 CALIFORNIA FIRE CODE (CFC)
   F: 2016 CALIFORNIA ELECTRICAL CODE (CEC)
   G: 2016 CALIFORNIA ENERGY CODE

RECEIVED
MAY 30 2019
CSG CONSULTANTS INC

ISSUE	DATE
A	XXXX

QUALITY AND EXCELLENCE IN MECHANICAL DESIGN SOLUTIONS
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FAX:
Q3 inc.

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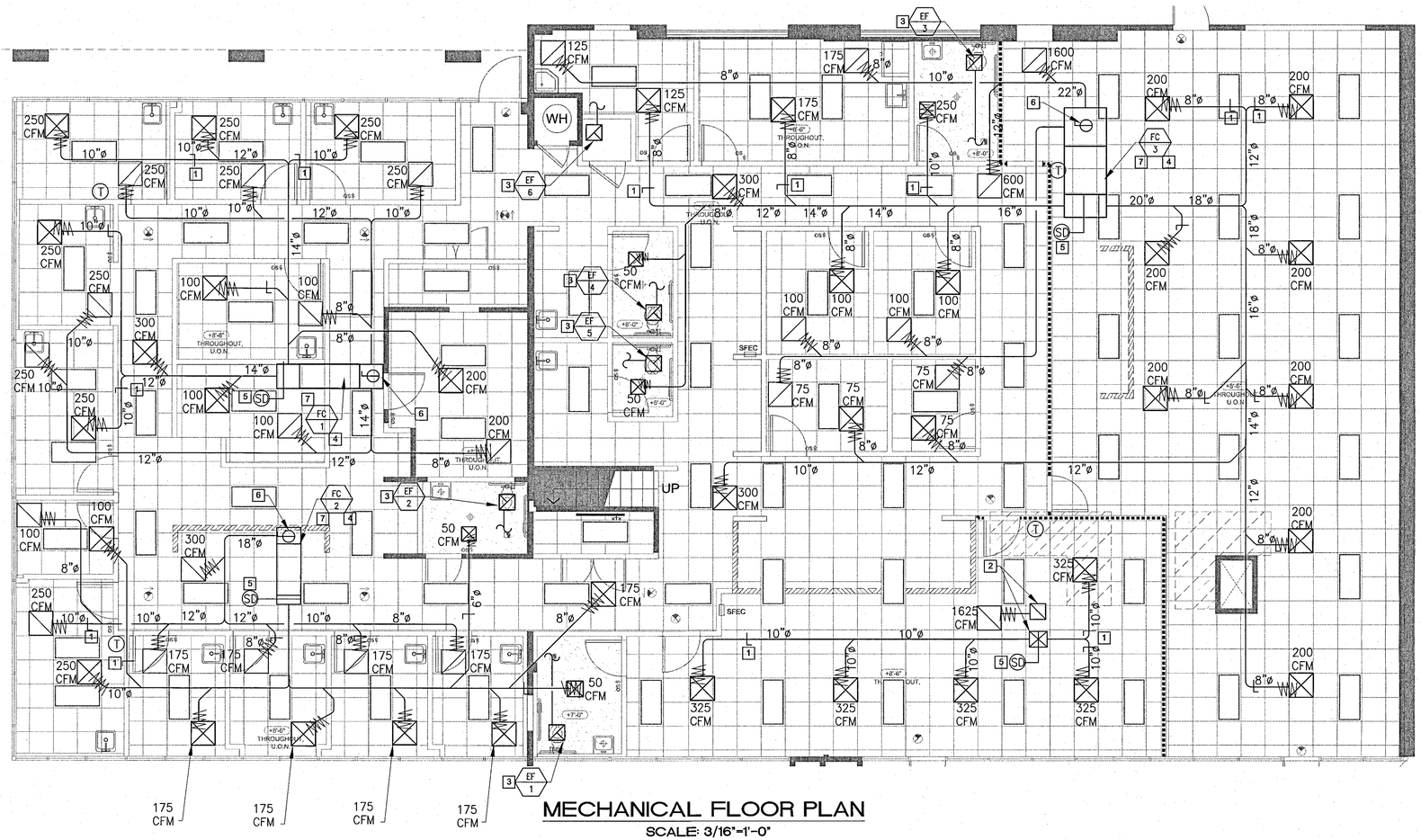
No. M 28203
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.	18E 30043
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	MECHANICAL COVER SHEET
SHEET NO.	M-0.0

RECHECK

401 33001



MECHANICAL FLOOR PLAN

SCALE: 3/16"=1'-0"

MECHANICAL GENERAL NOTES

1. REMOVE ALL EXISTING AIR DISTRIBUTION AND DISPOSE OF PROPERLY.
2. CONTRACTOR TO VERIFY ALL SITE CONDITIONS PRIOR TO BID AND INSTALLATION.

MECHANICAL KEY NOTES

1. PROVIDE M.V.D. FOR ALL SUPPLY DUCTWORK TO SUPPLY GRILLES FOR BALANCING.(TYPICAL THRU-OUT)
2. 18"x16" LINED SUPPLY AND RETURN AIR DUCT UP TO RTU-1. NEW 5-TON UNIT ON ROOF. DUCTWORK SHALL BE ROUTED UP THRU 2ND LEVEL FLOOR AT AREA SHOWN WHERE EXISTING STAIRS ARE TO BE REMOVED AND A SHAFT FOR THESE DUCTS SHALL BE ADDED. PROVIDE TURNING VANES FOR ALL 90° TURNS UP TO ROOF LEVEL.
3. INSTALL NEW EXHAUST FAN AND TIE INTO EXISTING EXHAUST DUCT TO EXTERIOR OF BUILDING.
4. PROVIDE REFRIGERANT LINES UP TO HEAT PUMP ON ROOF. CONTRACTOR TO VERIFY IN FIELD EXACT ROUTING.
5. PROVIDE SMOKE DETECTOR. UNIT TO SHUT DOWN UPON DETECTION OF SMOKE WITH TEST STATION PER CMC 2016.
6. PROVIDE 12"Ø OSA DUCT UP THRU ROOF TO APPROVED TERMINATION WITH BACK DRAFT DAMPER AND M.V.D. CFM TO MATCH T-24.
7. PROVIDE CONDENSATE DRAIN TO APPROVED RECEPTOR BY PLUMBER.

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE

JUN 06 2019

BY:

THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS

ISSUE	DATE
A XXXX	

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11181 GOLD RANCH ST 92127
CELL PHONE: 619-252-3155
PHONE: 858-592-3155

Q3 inc.

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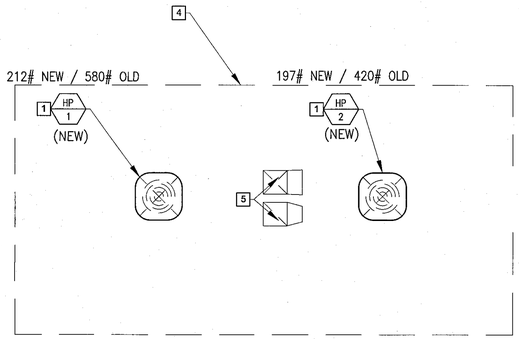
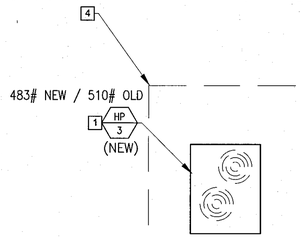
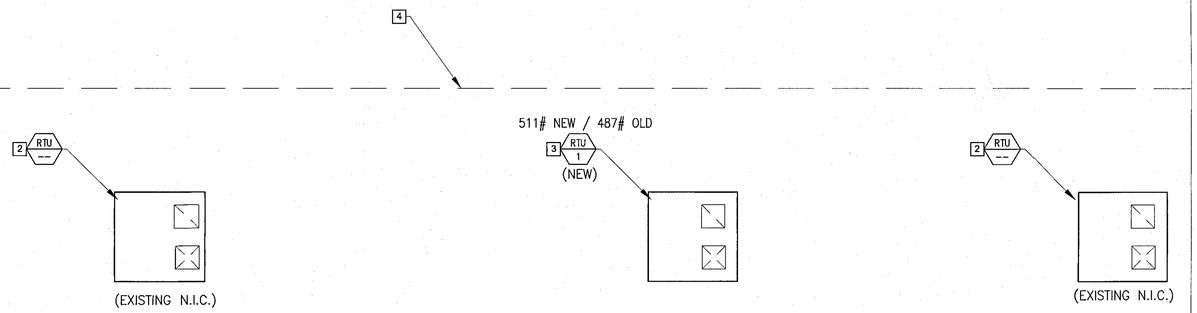
PROJECT NO.	18E 30043
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	MECHANICAL FLOOR PLAN
SHEET NO.	M-1.0

PHASE 4 | PHASE 3 | PHASE 2 | PHASE 1







MECHANICAL GENERAL NOTES

1. EXISTING ROOF ACCESS PER CMC 94.10.3.
2. AIR CONDITIONING REFRIGERATION SERVICE PORTS LOCATED OUTDOORS SHALL BE FITTED WITH LOCKING TYPE TAMPER RESISTANT CAP OR SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS BY A MEANS ACCEPTABLE TO THE BUILDING DEPARTMENT PER CMC SECTION 1106.1.4.
3. ROOFTOP EQUIPMENT SHALL BE LOCATED A MINIMUM OF 10 FEET FROM THE EDGE OF THE ROOF PER SECTION C.M.C. THE DISTANCE MAY BE LESS THAN 10 FEET BASED ON THE C.B.C REQUIREMENTS, BUT NOT LESS THAN 6 FEET, IF IT CAN BE SHOWN THAT THE PARAPET IS AT LEAST 30 INCHES HIGH OR A GUARD 30 INCHES HIGH IS PROVIDED PER CODE. IF THE DISTANCE FROM THE EDGE OF THE ROOF IS LESS THAN 6 FEET, 2010 C.M.C. SHALL APPLY AND IF THE PARAPET IS LESS THAN 42 INCHES HIGH A GUARD RAIL AT LEAST 42 INCHES HIGH INSTALLED AT THE EDGE OF THE ROOF WOULD MEET THE REQUIREMENTS.
   C.M.C MINIMUM 6'–0" FROM EDGE OF ROOF OR 42" GUARDS OR PARAPETE ON EXPOSED SIDE.

N

MECHANICAL FLOOR PLAN

SCALE: 1/4"=1'–0"

STRUCTURAL NOTES

1. ALL NEW ROOFTOP UNITS ARE LIGHTER IN WEIGHT THAN THE NEW UNITS
2. EXCEPTION RTU-1: THE WEIGHT IS WITHIN 5% OF THE EXISTING WEIGHTS.

MECHANICAL KEY NOTES

1. REMOVE PACKAGE UNIT AND PROVIDE NEW SPLIT SYSTEM HEAT PUMP.
2. ROOFTOP UNIT N.I.C. EXISTING UNIT TO REMAIN. UNIT SERVING 2ND LEVEL STORAGE AREA.
3. RTU-1 - REMOVE AND REPLACE UNIT SAME LOCATION INSIDE EQUIPMENT SCREEN(DOWN DISCHARGE). PROVIDE TURNING VANES AT EACH 90° TURN CONNECT EXISTING 3/4" CONDENSATE DRAIN TO EXISTING APPROVED RECEPTOR PER CPC 2013 BY PLUMBER. VERIFY ROOF CURB MATCHES EXISTING UNIT. 4 TON TO 5 TON.
4. EXISTING WOOD FRAMED SCREEN TO REMAIN.
5. DUCTWORK ON ROOF TO BE REMOVED AND DISPOSED OF PROPERLY. ROOF OPENINGS TO PATCHED AND WATER PROOFED.

CSC CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE
JUN 06 2019
BY:
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

ISSUE	DATE
A	XXXX

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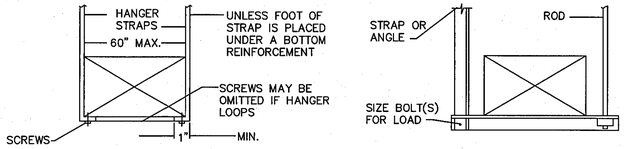
PROJECT NO.
18E 30043

DRAWN/REVIEWED
RJM/TB

DATE/ISSUE
TBD

SHEET TITLE
MECHANICAL ROOF PLAN

SHEET NO.
M-2



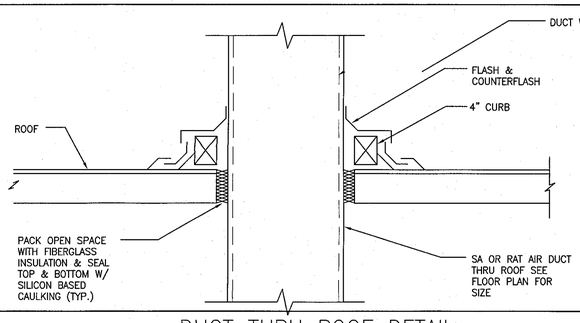
NOTE: FOR ADDITIONAL INFORMATION REFER TO THE LATEST EDITION OF SMACNA

TABLE 4-1 - RECTANGULAR DUCT HANGERS - MINIMUM SIZE

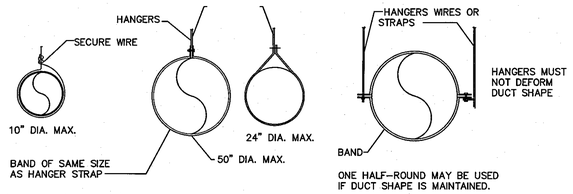
MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10 FT. SPACING		PAIR AT 8 FT. SPACING		PAIR AT 5 FT. SPACING		PAIR AT 4 FT. SPACING	
	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD
$\frac{P}{2}$ = 30"	1" x 22 ga.	10 ga. (.135")	1" x 22 ga.	10 ga. (.135")	1" x 22 ga.	12 ga. (.106")	1" x 22 ga.	12 ga. (.106")
$\frac{P}{2}$ = 72"	1" x 18 ga.	3/8"	1" x 20 ga.	1/4"	1" x 22 ga.	1/4"	1" x 22 ga.	1/4"
$\frac{P}{2}$ = 96"	1" x 16 ga.	3/8"	1" x 18 ga.	3/8"	1" x 20 ga.	3/8"	1" x 22 ga.	1/4"
$\frac{P}{2}$ = 120"	1 1/2" x 16 ga.	1/2"	1" x 16 ga.	3/8"	1" x 18 ga.	3/8"	1" x 20 ga.	1/4"
$\frac{P}{2}$ = 168"	1 1/2" x 16 ga.	1/2"	1 1/2" x 16 ga.	1/2"	1" x 16 ga.	3/8"	1" x 18 ga.	3/8"
$\frac{P}{2}$ = 192"	–	1/2"	1 1/2" x 16 ga.	1/2"	1" x 16 ga.	3/8"	1" x 18 ga.	3/8"
$\frac{P}{2}$ = 193"up	SPECIAL ANALYSIS REQUIRED							

DO NOT SUPPORT/ATTACH FROM DECK ABOVE TYP. ALL TRADES

RECTANGULAR DUCT HANGER ATTACHMENT DETAIL | SCALE NONE | 1



DUCT THRU ROOF DETAIL | SCALE NONE | 2



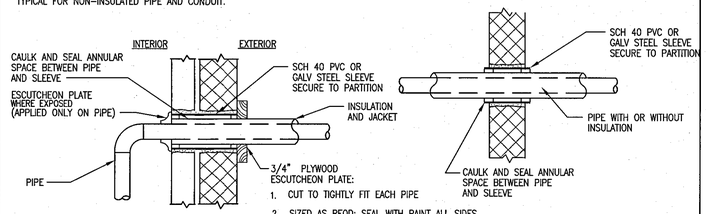
MINIMUM HANGER SIZES FOR ROUND DUCT

DIA.	MAXIMUM SPACING	WIRE DIA.	STRAP
10" dn	12'	One 12 ga.	1" x 22 ga.
11–18"	12'	Two 12 ga. or One 8 ga.	1" x 22 ga.
19–24"	12'	Two 10 ga.	1" x 22 ga.
25–36"	12'	Two 8 ga.	1" x 20 ga.
37–50"	12'	———	Two 1" x 20 ga.
51–60"	12'	———	Two 1" x 18 ga.
61–84"	12'	———	Two 1" x 16 ga.

FOR ADDITIONAL INFORMATION REFER TO THE LATEST EDITION OF SMACNA

ROUND DUCT HANGER ATTACHMENT DETAIL | SCALE NONE | 3

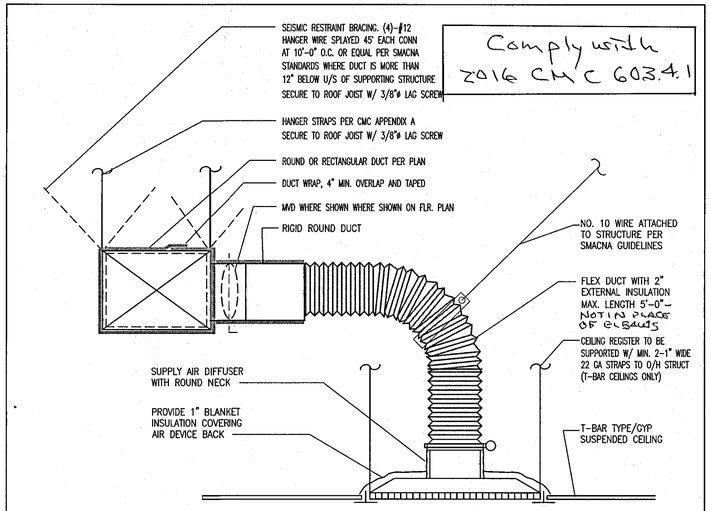
TYPICAL FOR NON-INSULATED PIPE AND CONDUIT.



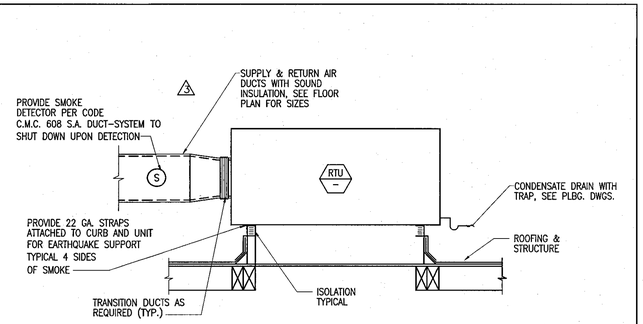
NOTES:

1. TYPICAL FOR NON-INSULATED PIPE AND CONDUIT.
2. TYPICAL FOR MASONRY OR CONCRETE WALL.
3. FIRE RATED WALLS MUST BE SEALED WITH APPROPRIATE FIRE RETARDED CAULKING PER CODE.
4. WHERE PIPING IS EXPOSED AT FINISH WALLS, FLUSH MOUNT SLEEVE AND PROVIDE ESCUTCHEON PLATE.
5. DUCT THRU WALL SHALL BE SIMILAR.
6. WALL PENETRATION IN ACCORDANCE WITH C.B.C.

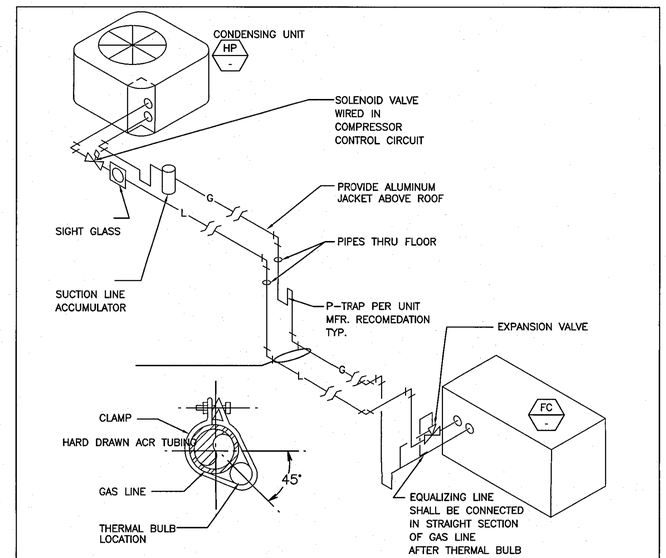
PIPE PENETRATION THRU WALLS | SCALE NONE | 4



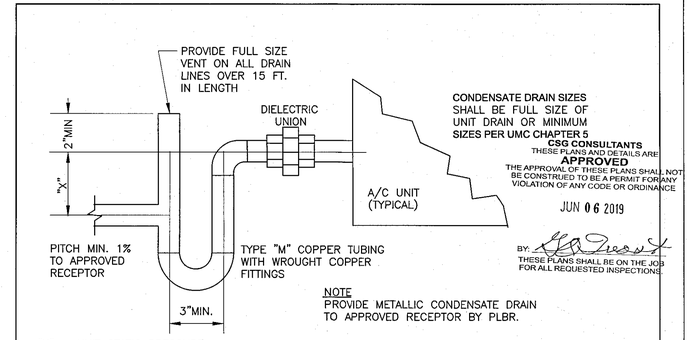
AIR DEVICE MOUNTING DETAIL | SCALE NONE | 5



ROOFTOP A/C UNIT DETAIL | SCALE NONE | 6



AIR DEVICE MOUNTING DETAIL | SCALE NONE | 8



NOTE
PROVIDE METALLIC CONDENSATE DRAIN TO APPROVED RECEPTOR BY PLBR.

CONDENSATE DRAIN DETAIL | SCALE NONE | 9

ISSUE	DATE
A	XXXX

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PROJECT NO.	18E 30043
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	MECHANICAL DETAIL SHEET
SHEET NO.	M-3

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	(Page 1 of 4)
Project Name: Concentra	Date Prepared: 12/18/2018

A. MECHANICAL COMPLIANCE DOCUMENTS & WORKSHEETS (check box if worksheet is included)
For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.

YES	NO	Comp. Doc./Worksheet #	Title
☑	☐	NRCC-MCH-01-E (Part 1 of 3)	Certificate of Compliance, Declaration. Required on plans for all submittals.
☑	☐	NRCC-MCH-01-E (Part 2 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-02-A to 11-A). Required on plans for all submittals.
☑	☐	NRCC-MCH-01-E (Part 3 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-12-A to 18-A). Required on plans where applicable.
☑	☐	NRCC-MCH-02-E (Part 1 of 2)	Mechanical Dry Equipment Summary is required for all submittals with Central Air Systems. It is optional on plans.
☑	☐	NRCC-MCH-02-E (Part 2 of 2)	Mechanical Wet Equipment Summary is required for all submittals with chilled water, hot water or condenser water systems. It is optional on plans.
☐	☐	NRCC-MCH-03-E	Mechanical Ventilation and Reheat is required for all submittals with multiple zone heating and cooling systems. It is optional on plans.
☐	☑	NRCC-MCH-07-E (Part 1 of 2)	Power Consumption of Fans. Required on plans where applicable
☐	☑	NRCC-MCH-07-E (Part 2 of 2)	Power Consumption of Fans, Declaration. Required on plans where applicable

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	(Page 2 of 4)
Project Name: Concentra	Date Prepared: 12/18/2018

B. MECHANICAL HVAC ACCEPTANCE FORMS (check box for required compliance documents)
Test Performed By:
Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.
Installing Contractor:
The contractor who installed the equipment is responsible to either conduct the acceptance test themselves or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portions of the construction or installation for which they are responsible.
Enforcement Agency:
Plancheck – The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.
Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-02-A	MCH-03-A	MCH-04-A	MCH-05-A	MCH-06-A	MCH-07-A	MCH-08-A	MCH-09-A	MCH-10-A	MCH-11-A
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control
A.O. SMITH (E,	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Carrier 25 HCEI	1	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
Carrier 25 HCE-	1	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
Carrier 50 50VF	1	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
Carrier 38 AUQ	1	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	(Page 3 of 4)
Project Name: Concentra	Date Prepared: 12/18/2018

C. MECHANICAL HVAC ACCEPTANCE FORMS (check box for required compliance documents)
Test Performed By:
Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.
Installing Contractor:
The contractor who installed the equipment is responsible to either conduct the acceptance test themselves or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible.
Enforcement Agency:
Plancheck – The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.
Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-12-A	MCH-13-A	MCH-14-A	MCH-15-A	MCH-16-A	MCH-17-A	MCH-18-A
Equipment Requiring Testing or Verification	# of Units	Fault Detection & Diagnostics for DX Units	Automatic Fault Detection & Diagnostics for Air & Zone	Distributed Energy Storage DX AC Systems	Thermal Energy Storage (TES) Systems	Supply Air Temperature Reset Controls	Condenser Water Reset Controls	ECMS
A.O. SMITH (E,	1	☐	☐	☐	☐	☐	☐	☐
Carrier 25 HCEI	1	☐	☐	☐	☐	☐	☐	☐
Carrier 25 HCE-	1	☐	☐	☐	☐	☐	☐	☐
Carrier 50 50VF	1	☐	☐	☐	☐	☐	☐	☐
Carrier 38 AUQ	1	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐
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		☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
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CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	(Page 4 of 4)
Project Name: Concentra	Date Prepared: 12/18/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Tony Bui	Documentation Author Signature:	
Company:	Q3 Engineers Inc.	Signature Date:	12/18/2018
Address:	17162 Gothard Street	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Huntington Beach, CA 92647	Phone:	714-465-5200 x104

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Tony Bui	Responsible Designer Signature:	
Company:	Q3 Inc.	Date Signed:	12/18/2018
Address:	17162 Gothard Street	License:	M28203
City/State/Zip:	Huntington Beach, CA 92647	Phone:	714-465-5200

STATE OF CALIFORNIA
HVAC DRY & WET SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 01/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Dry & Wet System Requirements	(Page 1 of 3)
Project Name: Concentra	Date Prepared: 12/18/2018

A. Equipment Tags and System Description[1] – Dry Systems		HP-1	HP-2	RTU-1
MANDATORY MEASURES	*T-24 Sections*	*Reference to the Requirements in the Contract Documents[2]*		
Heating Equipment Efficiency[3]	110.1 or 110.2(a)			
Cooling Equipment Efficiency[3]	110.1 or 110.2(a)			
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)			
Furnace Standby Loss Control	110.2(d)			
Low Leakage AHUs	110.2(f)			
Ventilation[4]	120.1(b)			
Demand Control Ventilation[5]	120.1(c)4			
Occupant Sensor Ventilation Control[6]	120.1(c)5, 120.2(e)3			
Shutoff and Reset Controls[7]	120.2(e)			
Outdoor Air and Exhaust Damper Control	120.2(f)			
Isolation Zones	120.2(g)			
Automatic Demand Shed Controls	120.2(h)			
Economizer FDD	120.2(i)			
Duct Insulation	120.4			
PRESCRIPTIVE MEASURES				
Equipment is sized in conformance with 140.4(a & b)	140.4(a & b)	Y Y/N	Y Y/N	Y Y/N
Supply Fan Pressure Control	140.4(c)			
Simultaneous Heat/Cool[8]	140.4(d)			
Economizer	140.4(e)			
Heat and Cool Air Supply Reset	140.4(f)			
Electric Resistance Heating[9]	140.4(g)			
Duct Leakage Sealing and Testing[10]	140.4(l)			

Notes:
1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.
2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.
3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq.
4. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document.
5. If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation.
6. If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation
7. If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable).
8. Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E compliance document.
9. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.
10. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

STATE OF CALIFORNIA
HVAC DRY & WET SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 01/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Dry & Wet System Requirements	(Page 1 of 3)
Project Name: Concentra	Date Prepared: 12/18/2018

A. Equipment Tags and System Description[1] – Dry Systems		HP-3		
MANDATORY MEASURES	*T-24 Sections*	*Reference to the Requirements in the Contract Documents[2]*		
Heating Equipment Efficiency[3]	110.1 or 110.2(a)			
Cooling Equipment Efficiency[3]	110.1 or 110.2(a)			
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)			
Furnace Standby Loss Control	110.2(d)			
Low Leakage AHUs	110.2(f)			
Ventilation[4]	120.1(b)			
Demand Control Ventilation[5]	120.1(c)4			
Occupant Sensor Ventilation Control[6]	120.1(c)5, 120.2(e)3			
Shutoff and Reset Controls[7]	120.2(e)			
Outdoor Air and Exhaust Damper Control	120.2(f)			
Isolation Zones	120.2(g)			
Automatic Demand Shed Controls	120.2(h)			
Economizer FDD	120.2(i)			
Duct Insulation	120.4			
PRESCRIPTIVE MEASURES				
Equipment is sized in conformance with 140.4(a & b)	140.4(a & b)	Y Y/N	Y/N	Y/N
Supply Fan Pressure Control	140.4(c)			
Simultaneous Heat/Cool[8]	140.4(d)			
Economizer	140.4(e)			
Heat and Cool Air Supply Reset	140.4(f)			
Electric Resistance Heating[9]	140.4(g)			
Duct Leakage Sealing and Testing[10]	140.4(l)			

Notes:
1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.
2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.
3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq.
4. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document.
5. If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation.
6. If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation
7. If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable).
8. Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E compliance document.
9. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.
10. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

ISSUE	DATE
A	XXXX

Q3 inc.
QUALITY AND EXCELLENCE IN ENGINEERING DESIGN SOLUTIONS
17162 GOTHARD STREET
HUNTINGTON BEACH, CA 92647
PHONE: 714-465-5200
FAX: 714-842-3455

REGISTERED PROFESSIONAL ENGINEER
TONY BUI
No. M 28203
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE
JUN 06 2019
BY:
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

PROJECT NO.	18E 30043
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	MECHANICAL COMPLIANCE FORMS
SHEET NO.	MT24.1

STATE OF CALIFORNIA
HVAC DRY & WET SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 07/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Dry & Wet System Requirements	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 12/18/2018

B. Equipment Tags and System Description[1] – Wet Systems — A.O. SMITH (E,P)

MANDATORY MEASURES	*T-24 Sections*	*Reference to the Requirements in the Contract Documents[2]*		
Heating Hot Water Equipment Efficiency[3]	110.1			
Cooling Chilled and Condenser Water Equipment Efficiency[3]	110.1, 140.4(i)			
Open and Closed Circuit Cooling Towers conductivity or flow-based controls	110.2(e) 1			
Open and Closed Circuit Cooling Towers Maximum Achievable Cycles of Concentration (ToI)[4]	110.2(e) 2			
Open and Closed Circuit Cooling Towers Flow Meter with analog output	110.2(e) 3			
Open and Closed Circuit Cooling Towers Overflow Alarm	110.2(e) 4			
Open and Closed Circuit Cooling Towers Efficient Drift Eliminators	110.2(e) 5			
Pipe Insulation	120.3			
PRESCRIPTIVE MEASURES				
Cooling Tower Fan Controls	140.4(h)2, 140.4(h)5	Y Y/N	Y/N	Y/N
Cooling Tower Flow Controls	140.4(h)3			
Centrifugal Fan Cooling Towers[5]	140.4(h)4			
Air-Cooled Chiller Limitation[6]	140.4(j)			
Variable Flow System Design	140.4(k)			
Chiller and Boiler Isolation	140.4(k)			
CHW and HHW Reset Controls	140.4(k)			
W/HP Isolation Valves	140.4(k)			
VSD on CHW, CW & W/HP Pumps >5HP	140.4(k)			
DP Sensor Location	140.4(k)			

Notes:
1. Provide equipment tags (e.g. CH 1 to 3) or system description (e.g. CHW loop) as appropriate. Multiple units with common requirements can be grouped together.
2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.
3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. For chillers operating at non-standard efficiencies provide the Kadj values. For chillers also note whether the efficiencies are Path A or Path B.
4. Identify if cooling towers have propeller fans. If towers use centrifugal fans document which exception is used.
5. If air-cooled chillers are used, document which exceptions have been used to comply with 140.4(j) and the total installed design capacity of the air-cooled chillers in the chilled water plant.
6. Identify the existence of a completed MCH-06-E when open or closed circuit cooling towers are specified to be installed, otherwise enter "N/A".

STATE OF CALIFORNIA
HVAC SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 05/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Wet System Requirements	(Page 3 of 3)
Project Name: Concentra	Date Prepared: 12/18/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Tony Bui	Documentation Author Signature:
Company: Q3 Engineers Inc.	Signature Date: 12/18/2018
Address: 17162 Gothard Street	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200 x104

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
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Responsible Designer Name: Tony Bui	Responsible Designer Signature:
Company: Q3 Inc.	Date Signed: 12/18/2018
Address: 17162 Gothard Street	License: M28203
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200

STATE OF CALIFORNIA
MECHANICAL VENTILATION AND REHEAT
CEC-NRCC-MCH-03-E (Revised 05/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-03-E
Mechanical Ventilation & Reheat	(Page 1 of 2)
Project Name: Concentra	Date Prepared: 12/18/2018

A. Mechanical Ventilation and Reheat

ACTUAL DESIGN INFO (FROM EQUIPMENT SCHEDULES, ETC)						AREA BASIS			OCCUPANCY BASIS			ROOM BASIS	MINIMUM		VAV Reheat and Primary Air CFM			VAV Deadband Primary Air CFM		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
ZONE/SYSTEM / VAV BOX TAG	DESIGN PRIMARY COOLING AIRFLOW (CFM)	DESIGN PRIMARY DEADBAND AIRFLOW (CFM)	DESIGN PRIMARY REHEAT AIRFLOW (CFM)	OVER-THE-DOOR (YES)	TRANSFER AIRFLOW (CFM)	CONDITIONED AREA (FT²)	MIN CFM PER AREA	MIN CFM BY AREA	NUM. OF PEOPLE	CFM PER PERSON	MIN CFM BY OCCUPANCY	MAX VELOCITY OCCUPANT	RESET VENT AIRFLOW (CFM)	COMPLIES?	PEAK SCHED. REHEAT COOLING AIRFLOW (CFM)	MAXIMUM REHEAT (CFM)	COMPLIES?	% BASED ON PRIMARY COOLING AIR	MAX DEAD-BAND AIRFLOW (CFM)	COMPLIES?
Zone 1						1,870	0.15	281	9.4	15.0	140		281	☒ Pass ☐ Fail			☐ Pass ☐ Fail ☒ N/A			☐ Pass ☐ Fail ☒ N/A
											Total		281	☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
Zone 2						582	0.15	87	2.9	15.0	44		87	☒ Pass ☐ Fail			☐ Pass ☐ Fail ☒ N/A			☐ Pass ☐ Fail ☒ N/A
											Total		87	☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
Zone 3						756	0.15	113	3.8	15.0	57		113	☒ Pass ☐ Fail			☐ Pass ☐ Fail ☒ N/A			☐ Pass ☐ Fail ☒ N/A
											Total		113	☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
Zone 4						2,550	0.15	383	12.8	15.0	191		383	☒ Pass ☐ Fail			☐ Pass ☐ Fail ☒ N/A			☐ Pass ☐ Fail ☒ N/A

STATE OF CALIFORNIA
MECHANICAL VENTILATION AND REHEAT
CEC-NRCC-MCH-03-E (Revised 05/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-03-E
Mechanical Ventilation & Reheat	(Page 1 of 2)
Project Name: Concentra	Date Prepared: 12/18/2018

A. Mechanical Ventilation and Reheat

ACTUAL DESIGN INFO (FROM EQUIPMENT SCHEDULES, ETC)						AREA BASIS			OCCUPANCY BASIS			ROOM BASIS	MINIMUM		VAV Reheat and Primary Air CFM			VAV Deadband Primary Air CFM		
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
ZONE/SYSTEM / VAV BOX TAG	DESIGN PRIMARY COOLING AIRFLOW (CFM)	DESIGN PRIMARY DEADBAND AIRFLOW (CFM)	DESIGN PRIMARY REHEAT AIRFLOW (CFM)	OVER-THE-DOOR (YES)	TRANSFER AIRFLOW (CFM)	CONDITIONED AREA (FT²)	MIN CFM PER AREA	MIN CFM BY AREA	NUM. OF PEOPLE	CFM PER PERSON	MIN CFM BY OCCUPANCY	MAX VELOCITY OCCUPANT	RESET VENT AIRFLOW (CFM)	COMPLIES?	PEAK SCHED. REHEAT COOLING AIRFLOW (CFM)	MAXIMUM REHEAT (CFM)	COMPLIES?	% BASED ON PRIMARY COOLING AIR	MAX DEAD-BAND AIRFLOW (CFM)	COMPLIES?
											Total		383	☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
														☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
														☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
														☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
														☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
														☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A
														☐ Pass ☐ Fail			☐ Pass ☐ Fail ☐ N/A			☐ Pass ☐ Fail ☐ N/A

STATE OF CALIFORNIA
MECHANICAL VENTILATION AND REHEAT
CEC-NRCC-MCH-03-E (Revised 05/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-03-E
Mechanical Ventilation & Reheat	(Page 2 of 2)
Project Name: Concentra	Date Prepared: 12/18/2018

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Company: Q3 Engineers Inc.	Signature Date: 12/18/2018
Address: 17162 Gothard Street	CEA/HERS Certification Identification (if applicable):
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Responsible Designer Name: Tony Bui	Responsible Designer Signature:
Company: Q3 Inc.	Date Signed: 12/18/2018
Address: 17162 Gothard Street	License: M28203
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STATE OF CALIFORNIA
REQUIRED ACCEPTANCE TESTS
CEC-NRCC-MCH-04-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	(Page 1 of 3)
Project Name: Concentra	Date Prepared: 12/18/2018

A. MECHANICAL COMPLIANCE FORMS & WORKSHEETS
(Indicate if worksheet is included)

For detailed instructions on the use of this and all Energy Standards compliance documents, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all compliance documents to be incorporated onto the building plans. The NRCC-MCH-04-E and NRCC-MECH-05-E are alternative compliance documents to NRCC-MCH-01-E, NRCC-MCH-02-E and NRCC-MCH-03-E for projects using only single zone packaged HVAC systems.

YES	NO	Form	Title
✓		NRCC-MCH-04-E (1 of 2)	Certificate of Compliance. Required on plans when used.
✓		NRCC-MCH-04-E (2 of 2)	Mechanical Acceptance Tests. Required on plans when used.
✓		NRCC-MCH-05-E (1 of 2)	HVAC Prescriptive Requirements. It is required on plans when used.
✓		NRCC-MCH-05-E (2 of 2)	Mechanical SWH Equipment Summary is required for all submittals with service water heating, pools or spas. It is required on plans where applicable.

ISSUE	DATE
A	XXXX

Q3 inc.
QUALITY AND EXCELLENCE IN ENGINEERING AND DESIGN SERVICES
17162 GOTHARD STREET
HUNTINGTON BEACH, CA 92647
PHONE: 714-847-3443
FAX: 714-847-3449

REGISTERED PROFESSIONAL ENGINEER
TONY BUI
No. M 28203
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
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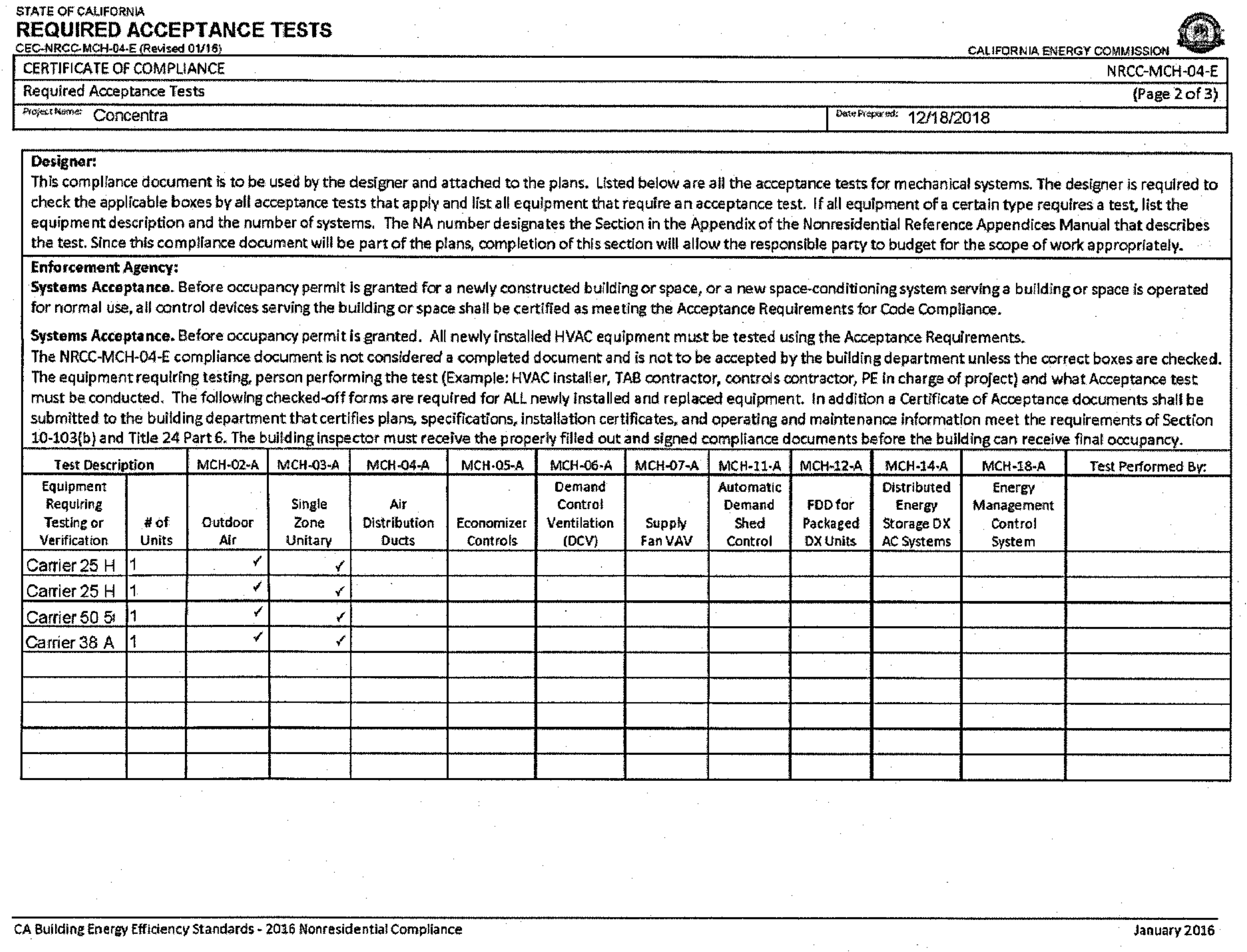
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE

JUN 06 2019

BY:

THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

PROJECT NO.
18E 30043
DRAWN/REVIEWED
RJM/TB
DATE/ISSUE
TBD
SHEET TITLE
MECHANICAL COMPLIANCE FORMS
SHEET NO.
MT24.2



STATE OF CALIFORNIA

REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

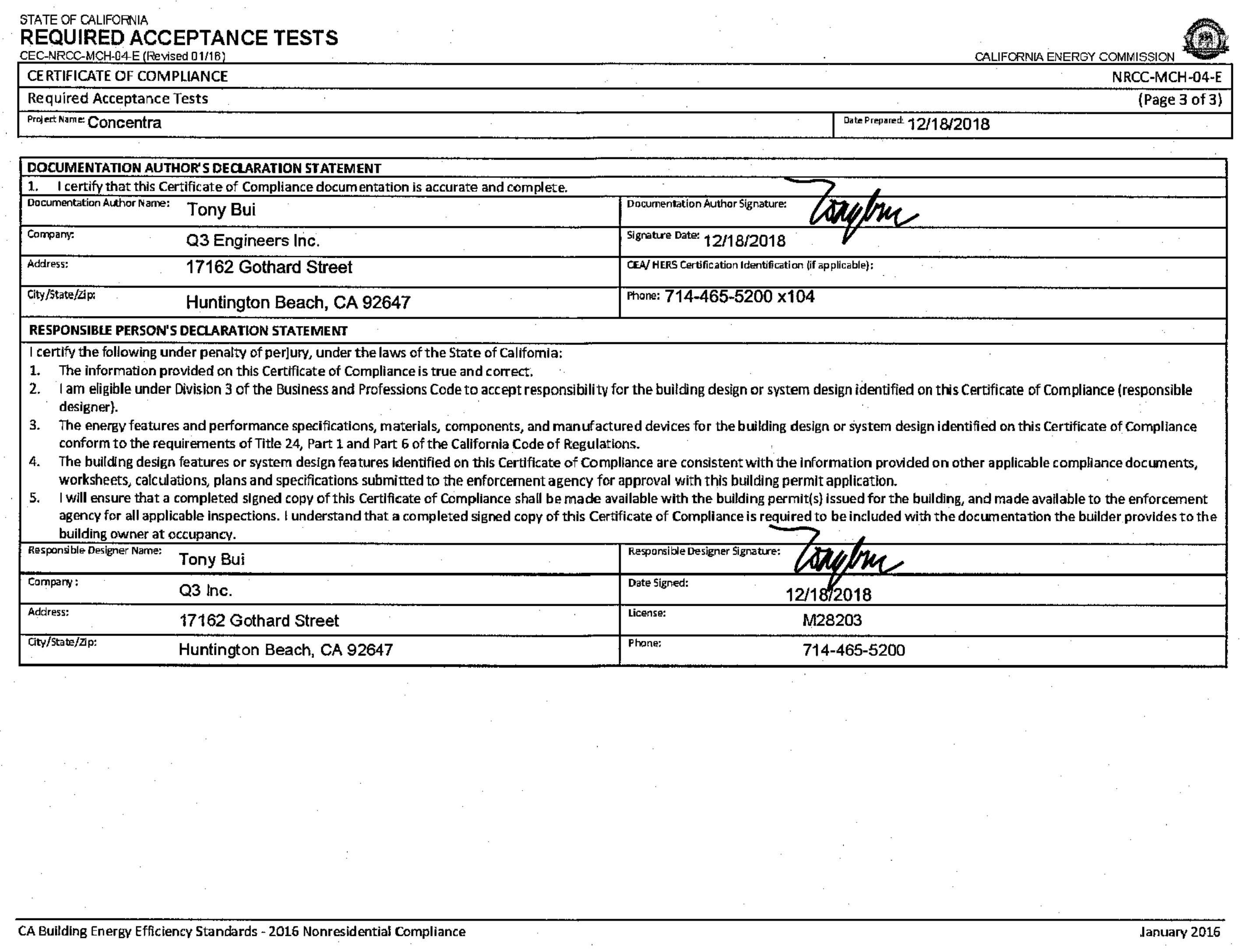
CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	(Page 2 of 3)
Project Name: Concentra	Date Prepared: 12/18/2018

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and list all equipment that require an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Since this compliance document will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Enforcement Agency:
Systems Acceptance. Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

Systems Acceptance. Before occupancy permit is granted. All newly installed HVAC equipment must be tested using the Acceptance Requirements.
The NRCC-MCH-04-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, person performing the test (Example: HVAC installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off forms are required for ALL newly installed and replaced equipment. In addition a Certificate of Acceptance documents shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Section 10-103(b) and Title 24 Part 6. The building inspector must receive the properly filled out and signed compliance documents before the building can receive final occupancy.

Test Description		MCH-02-A	MCH-03-A	MCH-04-A	MCH-05-A	MCH-06-A	MCH-07-A	MCH-11-A	MCH-12-A	MCH-14-A	MCH-18-A	Test Performed By:
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Automatic Demand Shed Control	FDD for Packaged DX Units	Distributed Energy Storage DX AC Systems	Energy Management Control System	
Carrier 25 H	1	✓	✓									
Carrier 25 H	1	✓	✓									
Carrier 50 5	1	✓	✓									
Carrier 38 A	1	✓	✓									



STATE OF CALIFORNIA

REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	(Page 3 of 3)
Project Name: Concentra	Date Prepared: 12/18/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

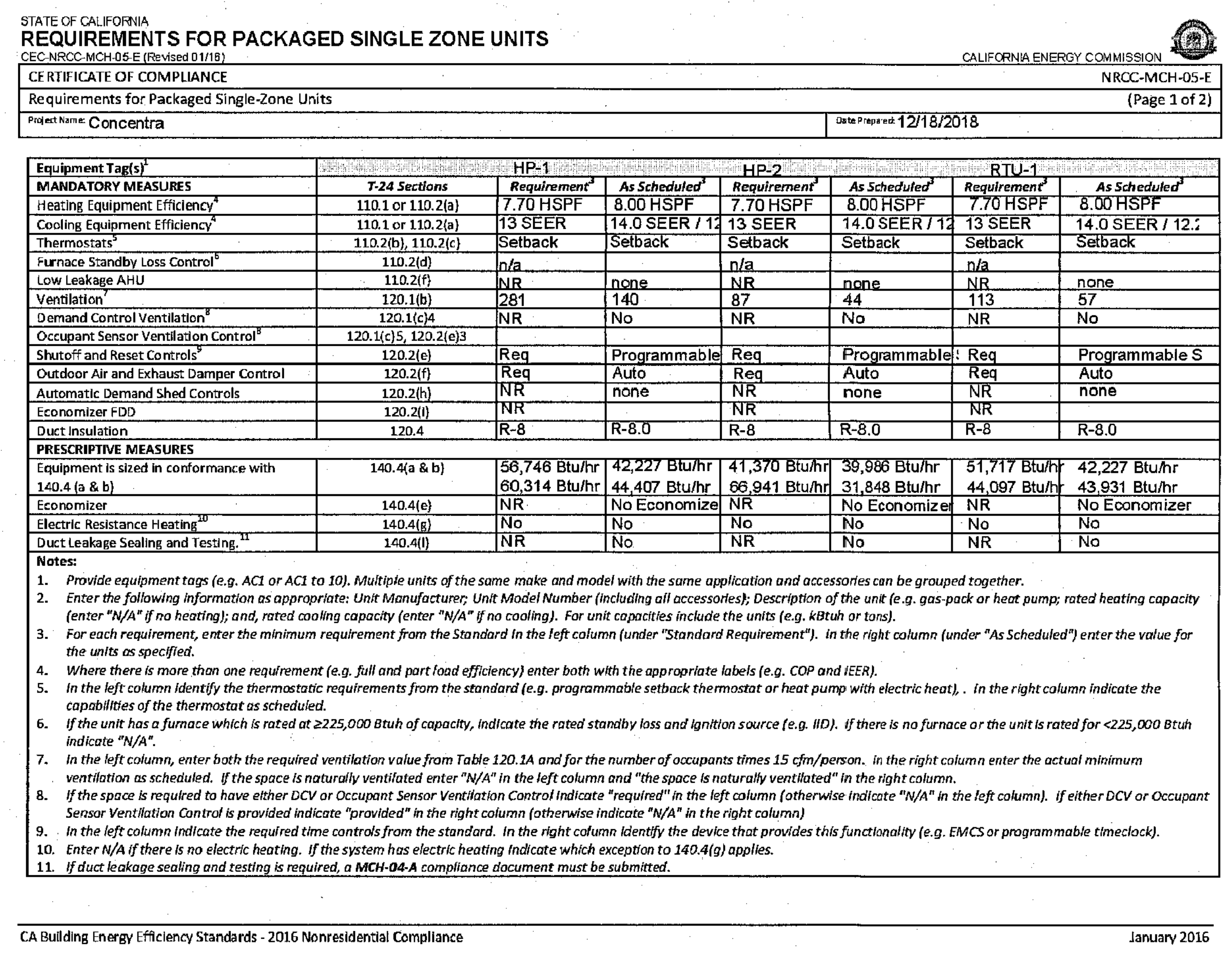
Documentation Author Name: Tony Bui	Documentation Author Signature:
Company: Q3 Engineers Inc.	Signature Date: 12/18/2018
Address: 17162 Gothard Street	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200 x104

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Tony Bui	Responsible Designer Signature:
Company: Q3 Inc.	Date Signed: 12/18/2018
Address: 17162 Gothard Street	License: M28203
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200



STATE OF CALIFORNIA

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

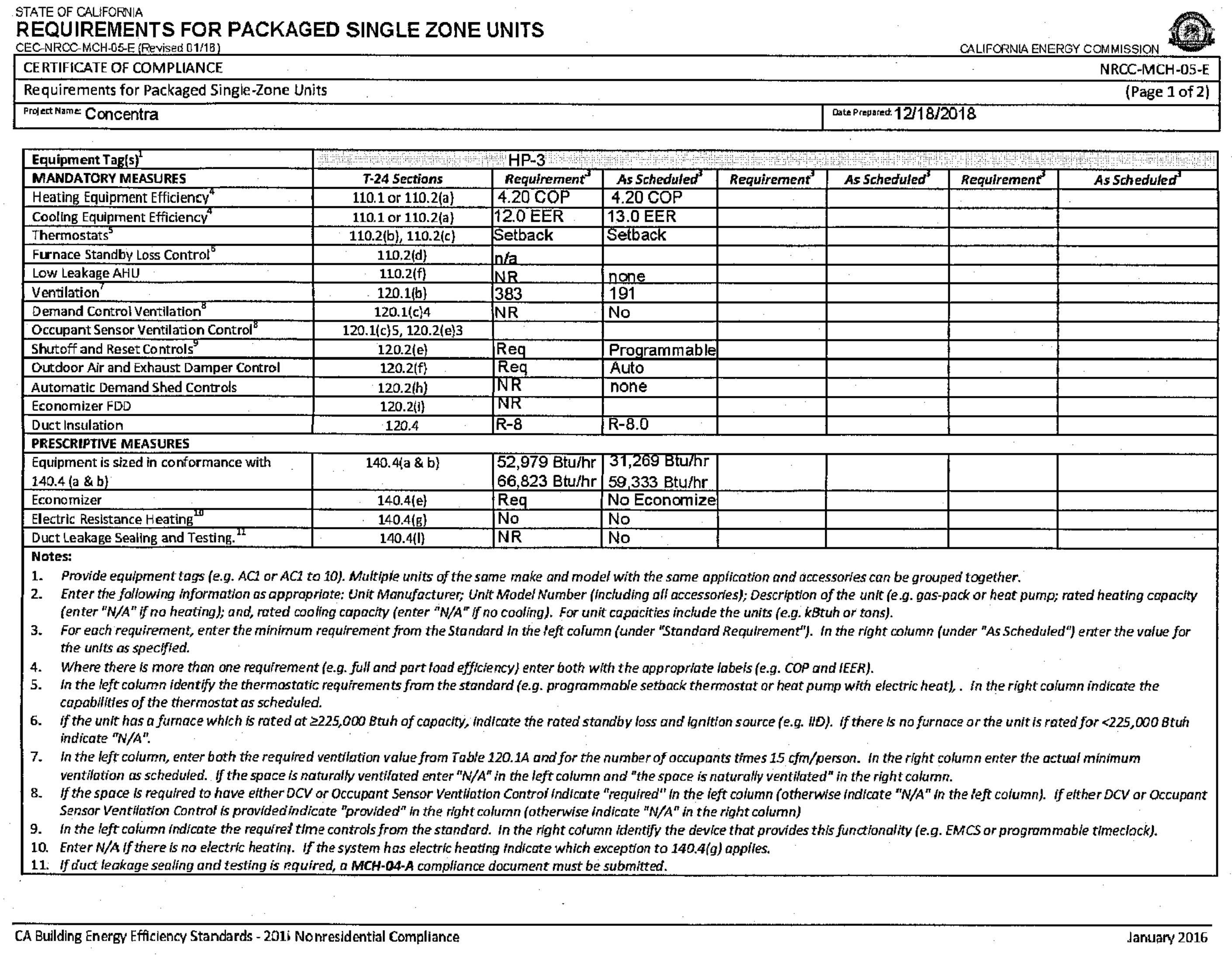
CEC-NRCC-MCH-05-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units	(Page 1 of 2)
Project Name: Concentra	Date Prepared: 12/18/2018

Equipment Tag(s)[1]		HP-1		HP-2		RTU-1	
MANDATORY MEASURES	*T-24 Sections*	*Requirement*[3]	*As Scheduled*[3]	*Requirement*[3]	*As Scheduled*[3]	*Requirement*[3]	*As Scheduled*[3]
Heating Equipment Efficiency[4]	110.1 or 110.2(a)	7.70 HSPF	8.00 HSPF	7.70 HSPF	8.00 HSPF	7.70 HSPF	8.00 HSPF
Cooling Equipment Efficiency[4]	110.1 or 110.2(a)	13 SEER	14.0 SEER / 12	13 SEER	14.0 SEER / 12	13 SEER	14.0 SEER / 12.
Thermostats[5]	110.2(b), 110.2(c)	Setback	Setback	Setback	Setback	Setback	Setback
Furnace Standby Loss Control[6]	110.2(d)	n/a		n/a		n/a	
Low Leakage AHU	110.2(f)	NR	none	NR	none	NR	none
Ventilation[7]	120.1(b)	281	140	87	44	113	57
Demand Control Ventilation[8]	120.1(c)4	NR	No	NR	No	NR	No
Occupant Sensor Ventilation Control[8]	120.1(c)5, 120.2(e)3						
Shutoff and Reset Controls[9]	120.2(e)	Req	Programmable	Req	Programmable	Req	Programmable S
Outdoor Air and Exhaust Damper Control	120.2(f)	Req	Auto	Req	Auto	Req	Auto
Automatic Demand Shed Controls	120.2(h)	NR	none	NR	none	NR	none
Economizer FDD	120.2(i)	NR		NR		NR	
Duct Insulation	120.4	R-8	R-8.0	R-8	R-8.0	R-8	R-8.0
PRESCRIPTIVE MEASURES							
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	56,746 Btu/hr 60,314 Btu/hr	42,227 Btu/hr 44,407 Btu/hr	41,370 Btu/hr 66,941 Btu/hr	39,986 Btu/hr 31,848 Btu/hr	51,717 Btu/hr 44,097 Btu/hr	42,227 Btu/hr 43,931 Btu/hr
Economizer	140.4(e)	NR	No Economize	NR	No Economizer	NR	No Economizer
Electric Resistance Heating[10]	140.4(g)	No	No	No	No	No	No
Duct Leakage Sealing and Testing.[11]	140.4(l)	NR	No	NR	No	NR	No

Notes:

1. *Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together.*
2. *Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity (enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons).*
3. *For each requirement, enter the minimum requirement from the Standard in the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for the units as specified.*
4. *Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER).*
5. *In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heat pump with electric heat), . In the right column indicate the capabilities of the thermostat as scheduled.*
6. *If the unit has a furnace which is rated at ≥225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh indicate "N/A".*
7. *In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column.*
8. *If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupant Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column)*
9. *In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock).*
10. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
11. *If duct leakage sealing and testing is required, a **MCH-04-A** compliance document must be submitted.*



STATE OF CALIFORNIA

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CEC-NRCC-MCH-05-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units	(Page 1 of 2)
Project Name: Concentra	Date Prepared: 12/18/2018

Equipment Tag(s)[1]		HP-3					
MANDATORY MEASURES	*T-24 Sections*	*Requirement*[3]	*As Scheduled*[3]	*Requirement*[3]	*As Scheduled*[3]	*Requirement*[3]	*As Scheduled*[3]
Heating Equipment Efficiency[4]	110.1 or 110.2(a)	4.20 COP	4.20 COP				
Cooling Equipment Efficiency[4]	110.1 or 110.2(a)	12.0 EER	13.0 EER				
Thermostats[5]	110.2(b), 110.2(c)	Setback	Setback				
Furnace Standby Loss Control[6]	110.2(d)	n/a					
Low Leakage AHU	110.2(f)	NR	none				
Ventilation[7]	120.1(b)	383	191				
Demand Control Ventilation[8]	120.1(c)4	NR	No				
Occupant Sensor Ventilation Control[8]	120.1(c)5, 120.2(e)3						
Shutoff and Reset Controls[9]	120.2(e)	Req	Programmable				
Outdoor Air and Exhaust Damper Control	120.2(f)	Req	Auto				
Automatic Demand Shed Controls	120.2(h)	NR	none				
Economizer FDD	120.2(i)	NR					
Duct Insulation	120.4	R-8	R-8.0				
PRESCRIPTIVE MEASURES							
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	52,979 Btu/hr 66,823 Btu/hr	31,269 Btu/hr 59,333 Btu/hr				
Economizer	140.4(e)	Req	No Economize				
Electric Resistance Heating[10]	140.4(g)	No	No				
Duct Leakage Sealing and Testing.[11]	140.4(l)	NR	No				

Notes:

1. *Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together.*
2. *Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity (enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons).*
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4. *Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER).*
5. *In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heat pump with electric heat), . In the right column indicate the capabilities of the thermostat as scheduled.*
6. *If the unit has a furnace which is rated at ≥225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh indicate "N/A".*
7. *In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column.*
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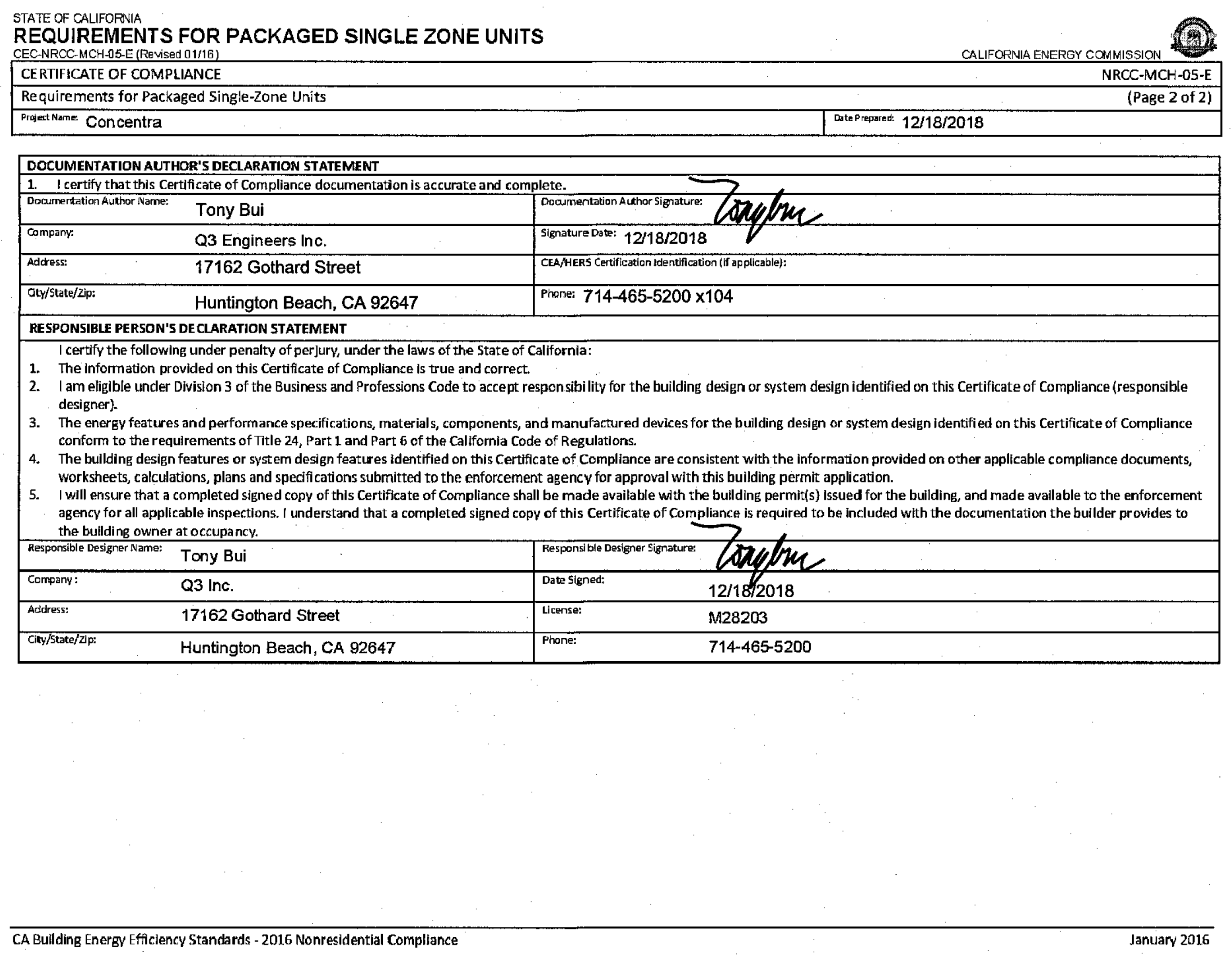
9. *In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock).*
10. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
11. *If duct leakage sealing and testing is required, a **MCH-04-A** compliance document must be submitted.*



STATE OF CALIFORNIA

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CEC-NRCC-MCH-05-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units	(Page 2 of 2)
Project Name: Concentra	Date Prepared: 12/18/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Tony Bui	Documentation Author Signature:
Company: Q3 Engineers Inc.	Signature Date: 12/18/2018
Address: 17162 Gothard Street	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200 x104

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I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
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4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
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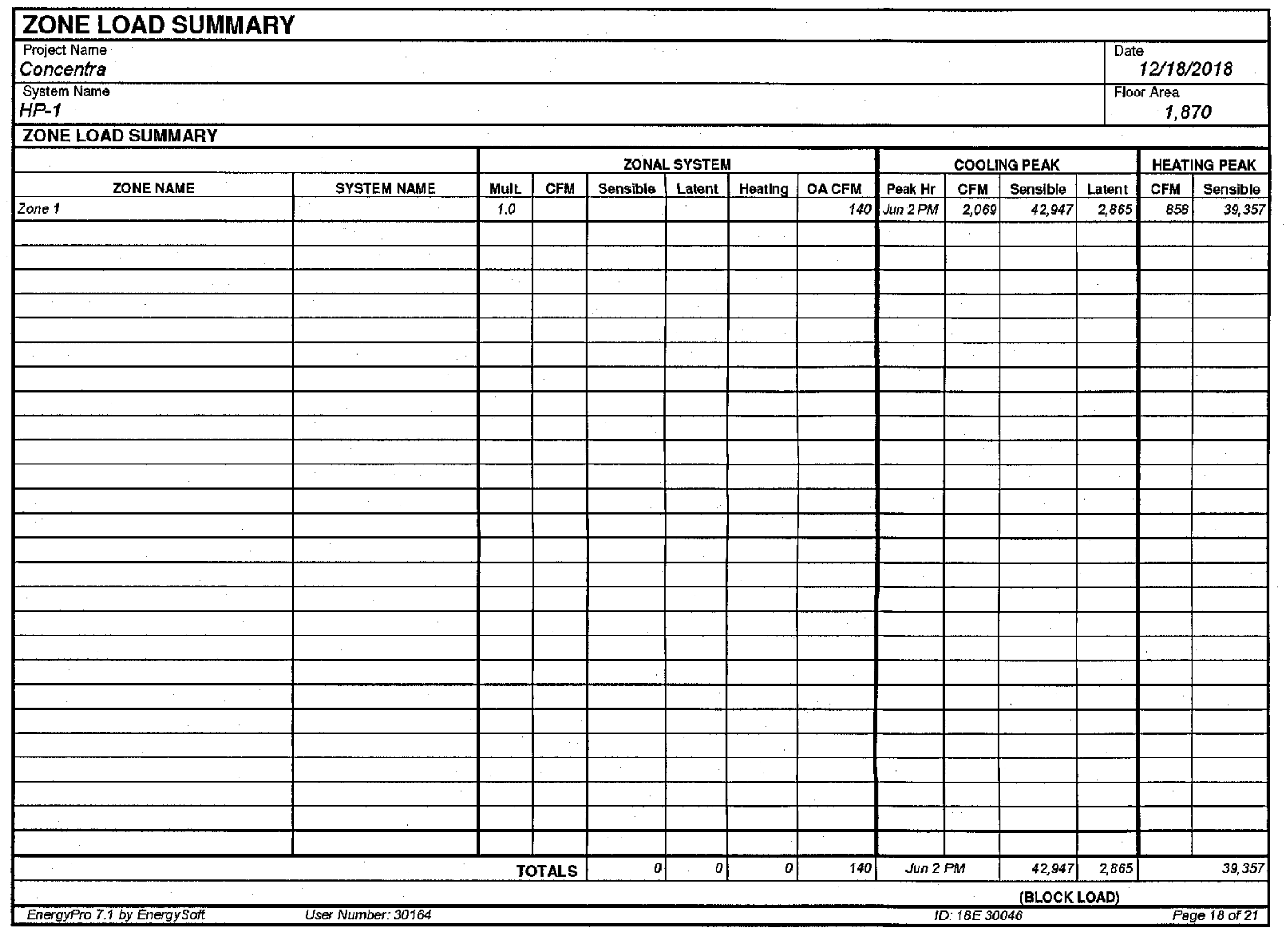
Responsible Designer Name: Tony Bui	Responsible Designer Signature:
Company: Q3 Inc.	Date Signed: 12/18/2018
Address: 17162 Gothard Street	License: M28203
City/State/Zip: Huntington Beach, CA 92647	Phone: 714-465-5200



ZONE LOAD SUMMARY

Project Name *Concentra*	Date *12/18/2018*
System Name *HP-1*	Floor Area *1,870*

ZONE LOAD SUMMARY

		ZONAL SYSTEM						COOLING PEAK				HEATING PEAK	
ZONE NAME	SYSTEM NAME	Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
Zone 1		*1.0*					*140*	*Jun 2 PM*	*2,069*	*42,947*	*2,865*	*858*	*39,357*
			TOTALS	*0*	*0*	*0*	*140*	*Jun 2 PM*		*42,947*	*2,865*		*39,357*
										(BLOCK LOAD)			

ISSUE	DATE
A	XXXX

QUALITY AND EXELLENCE
IN ENGINEERING AND
DESIGN SOLUTIONS
17162 GOTHARD STREET
HUNTINGTON BEACH, CA 92647
PHONE: 714-847-1102
FAX: 714-242-8499

TONY BUI
No. M 28203
EXP. 6/30/19

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT
BE CONSTRUED TO BE A PERMIT FOR ANY
VIOLATION OF ANY CODE OR ORDINANCE
JUN 06 2019
BY:
THESE PLANS SHALL BE ON THE JOB
FOR ALL REQUESTED INSPECTIONS.

PROJECT NO.
18E 30043

DRAWN/REVIEWED
RJM/TB

DATE/ISSUE
TBD

SHEET TITLE
MECHANICAL COMPLIANCE FORMS

SHEET NO.
MT24.3

ZONE LOAD SUMMARY

Project Name: *Concentra* | Date: *12/18/2018*
System Name: *HP-2* | Floor Area: *582*

ZONE LOAD SUMMARY

ZONE NAME	SYSTEM NAME	ZONAL SYSTEM Mult.	CFM	Sensible	Latent	Heating	OA CFM	COOLING PEAK Peak Hr	CFM	Sensible	Latent	HEATING PEAK CFM	Sensible
Zone 2		*1.0*					*44*	*Jul 5 PM*	*3,195*	*47,658*	*582*	*460*	*29,237*
TOTALS		*0*	*0*	*0*	*0*	*44*		*Jul 5 PM*		*47,658*	*582*		*29,237*

(BLOCK LOAD)

ZONE LOAD SUMMARY

Project Name: *Concentra* | Date: *12/18/2018*
System Name: *RTU-1* | Floor Area: *756*

ZONE LOAD SUMMARY

ZONE NAME	SYSTEM NAME	ZONAL SYSTEM Mult.	CFM	Sensible	Latent	Heating	OA CFM	COOLING PEAK Peak Hr	CFM	Sensible	Latent	HEATING PEAK CFM	Sensible
Zone 3		*1.0*					*57*	*Jun 2 PM*	*1,491*	*30,496*	*1,132*	*849*	*35,897*
TOTALS		*0*	*0*	*0*	*0*	*57*		*Jun 2 PM*		*30,496*	*1,132*		*35,897*

(BLOCK LOAD)

ZONE LOAD SUMMARY

Project Name: *Concentra* | Date: *12/18/2018*
System Name: *HP-3* | Floor Area: *2,550*

ZONE LOAD SUMMARY

ZONE NAME	SYSTEM NAME	ZONAL SYSTEM Mult.	CFM	Sensible	Latent	Heating	OA CFM	COOLING PEAK Peak Hr	CFM	Sensible	Latent	HEATING PEAK CFM	Sensible
Zone 4		*1.0*					*191*	*Jun 2 PM*	*2,312*	*49,230*	*3,936*	*719*	*35,926*
TOTALS		*0*	*0*	*0*	*0*	*191*		*Jun 2 PM*		*49,230*	*3,936*		*35,926*

(BLOCK LOAD)

CSG CONSULTANTS
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE

JUN 06 2019

BY:

THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

ISSUE	DATE
A	XXXX

QUALITY AND EXCELLENCE IN ENERGY AND BUILDING DESIGN SOLUTIONS
17782 GOTHARD STREET
HUNTINGTON BEACH, CA 92647
PHONE: 714-847-3443
FAX: 714-847-3993

Q3 inc.

REGISTERED PROFESSIONAL ENGINEER
TONY BUT
No. M 28203
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE. SUITE 100
SANTA ANA, CA 92704

PROJECT NO.	18E 30043
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	**MECHANICAL COMPLIANCE FORMS**
SHEET NO.	MT24.4

GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF ALL UTILITIES AND PIPING, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
2. EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS.
3. SEE ARCHITECTURAL DRAWINGS FOR HANDICAP FIXTURE LOCATIONS AND MOUNTING HEIGHTS. INSULATE ALL EXPOSED WATER AND DRAIN PIPING BELOW LAVATORIES AND SINKS WITH TRUEBRO LAVGUARD 2 INSULATION KIT AND OFFSET P-TRAP TO WALL. ALL WATER CLOSET FLUSHING LEVERS SHALL BE TO THE WIDE SIDE OF THE STALL.
4. ALL PLUMBING WORK SHALL BE INSTALLED SO AS TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING.
5. ALL VALVES, UNIONS, ETC. TO BE SAME SIZE AS PIPE UNLESS OTHERWISE INDICATED ON DRAWINGS.
6. UNIONS SHALL BE PROVIDED AND INSTALLED AFTER EACH SCREW-TYPE VALVE AND PRIOR TO EQUIPMENT CONNECTIONS.
7. TRAPS FOR ALL LAVATORIES AND SINKS SHALL TRAP STRAIGHT BACK TO WALL WITH ALL REQUIRED OFFSETS HAPPENING WITHIN THE WALL.
8. ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THIS PROJECT:

   2016 CALIFORNIA BUILDING CODE
   2016 CALIFORNIA MECHANICAL CODE
   2016 CALIFORNIA PLUMBING CODE
   2016 CALIFORNIA ELECTRICAL CODE
   2016 CALIFORNIA ENERGY CODE
   CITY OF SANTA ANA MUNICIPAL CODE
9. BEFORE FABRICATION OR INSTALLATION THIS CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT AND EQUIPMENT PROVIDED UNDER ANOTHER SECTION OF SPECIFICATIONS. EXACT ROUGH-IN LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN FIELD.
10. ALL UNDERGROUND IRON, COPPER OR STEEL PIPING LOCATED BOTH INSIDE AND OUTSIDE OF BUILDING SHALL BE ENCASED WITHIN A MINIMUM 10 MIL POLYETHYLENE PLASTIC SLEEVE SEALED WATER TIGHT WITH POLYVINYL CHLORIDE TAPE.
11. HOT WATER HEATERS SHALL BE INSULATED TO A MINIMUM THERMAL RESISTANCE VALUE OF R-6 OR GREATER.
12. ALL POINTS OF CONNECTION SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR PRIOR TO BID.
13. ALL WASTE AND VENT PIPING SHALL SLOPE AT 2% UNLESS OTHERWISE INDICATED.
14. ALL VALVES, TRAP PRIMER, WATER HAMER ARRESTERS OR OTHER EQUIPMENT SHOWN IN WALLS OR ABOVE NON-ACCESSIBLE CEILINGS SHALL BE INSTALLED BEHIND AN ACCESS PANEL.
15. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH AND BE CONSIDERED TO BE A PART OF SEPARATE AND COMPLETE MECHANICAL SPECIFICATIONS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING ALL PAVED AREAS WHICH ARE EXCAVATED AND/OR DAMAGED BY HIS OPERATIONS. IN ADDITION, THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION ALL PLANTED AREAS DAMAGED BY HIS OPERATIONS.
17. ALL PATCHING AND REPAIRING OF CONCRETE PAVINGS AND/OR WALKS SHALL BE UNDER ANOTHER SECTION OF THE SPECIFICATIONS.
18. ALL CONNECTIONS TO EXISTING SERVICES SHALL BE MADE SUCH THAT INTERRUPTION TIME WILL BE AS SHORT AS POSSIBLE. THE CONTRACTOR SHALL GIVE THE OWNER'S REPRESENTATIVE SUFFICIENT NOTICE OF SUCH INTERRUPTION AND THE ACTUAL SHUT DOWN TIME SHALL BE AT A TIME DESIGNATED BY THE OWNER'S REPRESENTATIVE.
19. ALL EXISTING PIPING DAMAGED DURING EXCAVATION SHALL BE REPAIRED WITH MATERIALS TO MATCH EXISTING BY THE CONTRACTOR.
20. ALL EXISTING PIPING AND EQUIPMENT THAT IS REMOVED SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
21. ALL CUTTING OF EXISTING PAVINGS, WALKS AND/OR FLOORS SHALL BE BY MACHINE SAW CUTTING. HOLES FOR PIPES IN CONCRETE WALLS OR FLOORS SHALL BE DONE BY CORE DRILLING EQUIPMENT.
22. CAP AND ABANDON ALL EXISTING WASTE PIPING BELOW FLOOR EXCEPT INDICATED TO BE REUSED. ROUTER AND CLEAN ALL EXISTING WASTE PIPING TO BE REUSED.
23. EXISTING PIPING ABOVE CEILING AND IN EXISTING WALLS BEING DEMOLISHED, THAT IS NOT BEING REUSED, SHALL BE REMOVED. COORDINATE EXTENT OF DEMOLITION WITH THE ARCHITECT AND THE GENERAL CONTRACTOR.
24. ALL HOT WATER PIPING SHALL BE INSULATED IN ACCORDANCE WITH SECTION 123, TABLE 1-G OF THE TITLE 24 REGULATIONS.
25. ALL PLUMBING FIXTURE VENTS TO TERMINATE A MIN. OF 12 INCHES FROM ANY VERTICAL SURFACE AND 10 FEET FROM ANY OUTSIDE AIR INTAKES.
26. ALL CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. THE CONT'R SHALL COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC., AND THE ARCHITECT PRIOR TO ANY INSTALLATION.
27. ALL PLUMBING FIXTURES AND EQUIPMENT SHALL BE CERTIFIED BY THE CALIFORNIA STATE ENERGY COMMISSION TO COMPLY WITH EFFICIENCY STANDARDS PER SECTION 2-5314(A) OF THE TITLE-24 REGULATIONS.
28. ALL PIPING INTO STEM WALLS AND FOOTINGS SHALL BE DOUBLE HALF LAP WRAPPED WITH 1/8" THICK "ARMOFLEX" INSULATION. THE CONTRACTOR SHALL ALSO PROVIDE BLOCKED OUT AREAS IN STEM WALL AND FOOTING. ALL PIPING SHALL AVOID THE LOWER 8" OF THE FOOTING.
29. SEISMIC BRACING AND ANCHORAGE REQUIREMENTS ARE AS FOLLOWS:
   A) ALL MECHANICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION USING THE FOLLOWING CRITERIA:
      1. FIXED EQUIP. ON GRADE 20% OF OPERATING WEIGHT
         FIXED EQUIP. ON STRUCTURE 30% OF OPERATING WEIGHT
      2. FOR FLEXIBLY MOUNTED EQUIPMENT USE 4 X THE ABOVE VALUES.
         SIMULTANEOUS VERTICAL FORCE - USE 1/3 X HORIZONTAL FORCE.
      3. FOR I = 1.15 INCREASE THE ABOVE VALUES BY 15%.
   B) WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE LOCAL AUTHORITY HAVING JURISDICTION.
   C) THE SEISMIC BRACING AND ANCHORAGE OF PIPING AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE "GUIDE-LINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING SYSTEMS" PUBLISHED BY SMACNA AND APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
30. ALL BRACING OF PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES AS APPROVED BY LOCAL AUTHORITY HAVING JURISDICTION.
31. WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER AND THE LOCAL AUTHORITY HAVING JURISDICTION.
32. A COPY OF THE GUIDELINES PUBLISHED BY SMACNA AND APPROVED BY LOCAL AUTHORITY SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB AT ALL TIMES.
33. ALL REQUIRED CLEANOUTS SHALL BE INSTALLED AS PER SECTION 707.0 AND 719.0 OF THE CALIFORNIA PLUMBING CODE.
34. ALL HOSE BIBBS SHALL BE EQUIPPED WITH AN APPROVED NON-REMOVABLE VACUUM BREAKER.
35. NEW OR REPAIRED POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE ACCORDING TO THE METHOD SET IN SECTION 609.9 OF THE CALIFORNIA PLUMBING CODE.
36. ACCESSIBLE WATER HAMMER ARRESTERS SHALL BE INSTALLED FOR QUICK-ACTING VALVES. LOCATION AND METHOD OF INSTALLATION SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATION.
37. DIELECTRIC UNIONS SHALL BE USED AT ALL POINTS OF CONNECTION WHERE THERE IS A DISSIMILARITY OF METALS.
38. THESE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT BRANCHES, SIZING, AND GENERAL ROUTING ARE SHOWN AS REQUIRED FOR PROPER SIZING AND FUNCTION OF PIPING SYSTEMS. PIPING LAYOUT IS INDICATED IN A MANNER TO PROVIDE CLARITY OF SIZING AND CONFIGURATION, AND IS NOT INTENDED TO PORTRAY ACTUAL INSTALLED CONDITIONS. NOT ALL VALVES, FITTINGS, PIPING SPECIALTIES AND COMPONENTS ARE SHOWN. CONTRACTOR MAY MAKE MINOR VARIATIONS TO ROUTING SHOWN AS REQUIRED FOR PROPER INTERFACE WITH STRUCTURE AND IN COORDINATION WITH OTHER TRADES PROVIDED THAT DIAGRAMMATIC CONFIGURATION IS ADHERED TO, INCLUDING BRANCH AND MAIN PIPE SIZES AND ORDER OF CONNECTION TO PLUMBING FIXTURES AND OUTLETS. ALL PIPING SHALL BE INSTALLED WITHIN CONCEALED LOCATIONS UNLESS NOTED OTHERWISE.

LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S OR W	SOIL OR WASTE (ABOVE GRADE)
	S OR W	SOIL OR WASTE (BELOW GRADE)
	(E)W	EXISTING SOIL OR WASTE
IW	IW	INDUSTRIAL WASTE
GW	GW	GREASE WASTE
	V	SANITARY VENT
(E)V	(E)V	EXISTING SANITARY VENT
CD	CD	CONDENSATE DRAIN
	CW	COLD WATER
	(E)CW	EXISTING COLD WATER
	HW	HOT WATER
	(E)HW	EXISTING HOT WATER
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
	BV	BALL VALVE
	GV	GATE VALVE
	CV	CHECK VALVE
	GC	GAS COCK
	VTR	VENT THRU ROOF
	POC	POINT OF DISCONNECTION/CONNECTION
	(E)	EXISTING TO BE REMOVED
	FSR	FIRE SPRINKLER RISER
	I.E.	INVERT ELEVATION

SHEET INDEX

SHEET NO.	DESCRIPTION
P-0.0	PLUMBING GENERAL NOTES, LEGEND, SCOPE OF WORK, AND PIPE SCHEDULE.
P-0.1	PLUMBING WATER PRESSURE CALCULATION AND FIXTURE SCHEDULE.
P-1.0	PLUMBING SW & V PIPING PLAN
P-1.1	PLUMBING SW & V DIAGRAM PLAN
P-2.0	PLUMBING CW & HW PIPING PLAN
P-2.1	PLUMBING CW & HW DIAGRAM
PT24-1	PLUMBING TITLE 24

PLUMBING RENOVATION NOTES:

1. RENOVATION WORK BY DEMOLISHING SOME PLUMBING FIXTURES (REFER TO ARCH DWG A-1.0. REPLACE PLUMBING FIXTURES.
2. RECONNECT NEW 4" SW TO REPLACED WATER CLOSETS. EXTEND 4" SW & 2" V FOR NEW WATER CLOSET.
3. RECONNECT NEW 2" SW TO REPLACED LAVATORIES. EXTEND 2" SW & 1 1/2" V FOR NEW FIXTURES AS REQUIRED.
4. RECONNECT NEW 2" SW TO REPLACED SERVICE SINKS. EXTEND 2" SW & 1 1/2" V FOR NEW FIXTURES AS REQUIRED.
5. RECONNECT NEW 2" SW TO REPLACED KITCHEN SINKS IN BREAK ROOM. EXTEND 2" SW & 1 1/2" V FOR NEW FIXTURES AS REQUIRED.
6. CONNECT NEW ¾" CW & HW TO NEW WATER HEATER.
7. EXTEND 1" HW TO PLUMBING FIXTURES.
8. KEEP 4" SW AT SLOPE 2%.
9. NO CHANGE TO EXISTING CONDENSATE LINES CONNECT TO EXISTING HVAC UNIT .

PIPE SCHEDULE

SEE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS

SERVICE	LOCATION	MATERIAL
DOMESTIC WATER	COLD WATER	TYPE "L" COPPER TUBING W/ WROUGHT COPPER SWEAT FITTINGS
	HOT WATER	SAME AS ABOVE W/ 1" THICK MANVILLE MICRO-LOCK INSULATION
SANITARY WASTE	ABOVE FLOOR	NO-HUB CAST IRON W/ "TYLER" WIDE BODY S.S. COUPLINGS
	BELOW FLOOR	SCH 40, ABS COMPLY WITH ASTMD 2321-88
SANITARY VENT	CONCEALED	NO-HUB CAST IRON W/ "TYLER" 2-BAND S.S. COUPLINGS
	EXPOSED	NO-HUB CAST IRON W/ "TYLER" 2-BAND S.S. COUPLINGS
CONDENSATE DRAIN	ABOVE FLOOR	TYPE "M" COPPER TUBING W/ WROUGHT COPPER SWEAT FITTINGS

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JUL 02 2019

BY:

THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

PERMIT TYPE: BLDG
PERMIT #: 30140137
OCC. GROUP:
CONSTR. TYPE:
CODE EDITION:
FLOOD ZONE:
FLOOD ZONE CLEARANCE REQ'D - YES - NO
MICROFILM - YES - NO
PERMIT ISSUED - YES - NO

RECEIVED
JUN 26 2019
BD
CSG CONSULTANTS INC

ISSUE	DATE
1 PC CMT	4/24/19
2 PC CMT	6/14/19

QUALITY AND EXCELENCE IN ARCHITECTURAL DESIGN SOLUTIONS
12121 GOLDEN ROAD, #7617
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MECHANICAL
STATE OF CALIFORNIA

RECEIVED
JUN 25 2019
City of Santa Ana

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SANTA ANA, CA 92704

PROJECT NO.	18E 30046
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	PLUMBING GENERAL NOTES & LEGENDS
SHEET NO.	P-0.0

30140137 RCK

WATER PIPE SIZING CALCULATION

JOB NAME : US HEALTHWORKS MEDICAL GROUP

ADDRESS : 3100 W. WARNER AVE., SANTA ANA, CA 92704

DATE : 1/23/2018

PRESSURE AVAILABLE:

MINIMUM = 85 P.S.I. METER SIZE = 1 1/2 INCHES

MAXIMUM = 90 P.S.I. PRV SETTING = 75 P.S.I.

MAX. VELOCITY = 8 F.P.S.

A) PRESSURE LOSS FROM WATER METER TO BUILDING:		
1. METER LOSS	4	P.S.I.
2. PRESSURE LOSS THRU BACKFLOW DEVICE:	6	P.S.I.
3. STATIC HEIGHT: 10 FT. x 0.43	4.3	P.S.I.
4.	--	P.S.I.
5.	--	P.S.I.
6. TOTAL LOSSES: (ADD #1 THRU #5)	14.30	P.S.I.
B) PRESSURE LOSSES IN BUILDING:		
1. STATIC LOSS 15 FT. X 0.43	6.5	P.S.I.
2. PRESSURE REQUIRED AT FARTHEST FIXTURE	30.0	P.S.I.
3. OTHER LOSSES	--	P.S.I.
4. TOTAL LOSSES	36.5	P.S.I.
C) UNIFORM FRICTION LOSS CALCULATION		
1. TOTAL PRESSURE LOSS (A6 + B4)	50.82	P.S.I.
2. PRESSURE AVAILABLE FOR FRICTION = (MIN. PRESS. – C1)	29.18	P.S.I.
3. DEVELOPED LENGTH OF SYSTEM	250	FT.
4. EQUIVALENT LENGTH OF SYSTEM = (C3 x 1.3)	325	FT.
5. UNIFORM FRICTION HEAD LOSS = (C2 x 100)/C4	8.9	P.S.I./100 FT.

PIPE SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	
GPM	–	–	–	30	44	77	118	–	
FT (FU)	3	10	24	54	103	254	455	–	
FV (FU)	0	0	0	13	35	132	329	–	
HW (5F/S)	3	8	16	28	46	119	–	–	

NOTE:
1. SAN. WASTE WILL BE CONNECTED TO (1) EXISTING 4" & (1) 6" SW UNDERGROUND
2. EXISTING CW SUPPLIED TO BUILDING BY 1 1/2" WATER METER
3. HOT WATER SUPPLY IN THE BUILDING BY ELECTRICAL WATER HEATER

PIPES TESTING PARAMETERS

WASTE AND VENT PIPE:
EACH SECTION SHALL BE FILLED WITH WATER, BUT NO SECTION SHALL BE TESTED WITH LESS THAN 10 FEET HEAD OF WATER. THE WATER SHALL BE KEPT IN THE SYSTEM, OR IN THE PORTION UNDER TEST, FOR NOT LESS THAN 15 MINUTES BEFORE INSPECTION STARTS.

WATER PIPE:
UPON COMPLETION OF A SECTION OR OF THE ENTIRE HOT AND COLD WATER SUPPLY SYSTEM, IT SHALL BE TESTED AND PROVIDE TIGHT UNDER WATER PRESSURE NOT LESS THAN THE WORKING PRESSURE UNDER WHICH IT IS TO BE USED. THE WATER USE FOR TEST SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY. EXCEPT FOR PLASTIC PIPING, A 50 LBS AIR PRESSURE SHALL BE PERMITTED TO BE SUBSTITUTED TO THE WATER TEST.
IN EITHER METHOD OF TEST, THE PIPING SHALL WITHSTAND THE TEST WITHOUT LEAKING FOR A PERIOD OF NOT LESS THAN 15 MINUTES. (CPC 609.4)

PLUMBING SCHEDULES

ITEM	FIXTURE	CW	HW	W	TRAP	VENT	DESCRIPTION
WC–1	WATER CLOSET	1"	–	4"	INTER.	2"	KOHLER MODEL K–4199 FLOOR MOUNTED ELONGATED, COMFORT HEIGHT, VITREOUS CHINA WHITE, 1½" INLET SPUD, POLISHED CHROME TRIP LEVER, CLASS FIVE FLUSHING SYSTEM, 1.28 GPF COMPLY TO CAL GREEN CODE SECTION 5.303.2 TABLE 5.303.2.3
WC–2	WATER CLOSET	1 1/2"	–	4"	INTER.	2"	AMERICAN STANDARD MODEL MADERA FLOWISE DUAL FLUSH, VITREOUS CHINA WHITE, 1½" INLET SPUD, WITH TOUCHLESS FLUSHVALVE KOHLER MODEL K–10674–SV–CP, WAVE DC 1.5 V, AA BATTERIES. 1.28 GPF. 1 COMPLY TO CAL GREEN CODE SECTION 5.303.2 TABLE 5.303.2.3
LV–1	LAVATORY	1/2"	1/2"	2"	1 1/2"	1 1/2"	AMERICAN STANDARD "COMRADE" #0124–024 ADA COMPLY, LAVATORY WITH CENTER FAUCET HOLE, WHITE VITREOUS CHINA, FRONT OVERFLOW W/ CHICAGO HYTRONIC GOOSENECK SINK FAUCET DUAL BEAM INFRARED SENSOR MODEL 116.123.AB.1. 0.5 GPM AT 60 PSI. 1 COMPLY TO CAL GREEN CODE SECTION 5.303.2 TABLE 5.303.2.3
SS–1	SINK SERVICE	3/4"	3/4"	2"	1 1/2"	2"	ELKAY #LRAD1918650PD, SINGLE BOWL, 18 GAUGE SS SELF RIMMING 19X18X6.5 DEEP, TOP MOUNT SINK WITH PERFECT DRAIN, CHICAGO FAUCET HYTRONIC GOOSE NECK W/ DUAL BEAM INFRARED SENSOR MODEL 116.123.AB.1. CONTROL 1.8 GPM. PER CAL GREEN CODE SECTION 5.303.2 TABLE 5.303.2.3
SS–2	SINK (BREAK ROOM)	3/4"	3/4"	2"	1 1/2"	2"	ELKAY LUSTERTONE S.S., EQUAL TO DOUBLE BOWL #LRAD0292265, 3 HOLES PUNCHE, 18 GAUGE SS SELF RIMMING 29X22X6.5 DEEP, DELTA CLASSIC FAUCET #300 SINGLE HANDLE , DECK MOUNT FAUCET WITH INTEGRAL SPRAY COMPLY TO CAL GREEN CODE SECTION 5.303.2 TABLE 5.303.2.3. 0.5 GPM AT 60 PSI. 1
MS–1	MOP SINK	3/4"	3/4"	2"	1 1/2"	2"	MOP SINK, FLORESTONE, MODEL 2424, MOLDED MOP RECEPTOR 24X24X10 WITH INTEGRAL DRAIN, S.S DRAIN GRID AND CHROME STRAINER. UTILITY FAUCET BY FIAT PRODUCTS MODEL 830–AA, EXPOSED YOKE WALL MOUNT UTILITY FAUCET 8" CENTER W/ VACUUM BREAKERWALL BRACE, INTEGRAL STOPS & PAIL HOOK. CHROME FINISH W/ OPTIONAL #889–CC, WALL MOUNT 24" W/ MOP BRACKET. 11.2 GPM AT 60 PSI. 1
WH–1	HOT WATER HEATER	1"	1"	--	--	--	A.O. SMITH 40 GAL TANK MODEL DEL–40D–4 , 4000W DUAL ELEMENTS, RECOVERY 22 GPH AT 70°F RISE, CIRCULATION PUMP, TEMP. PRESSURE RELIEF VENT, SEISMIC STRAP, WITH P&T DRAIN TO NEAREST FLOOR SINK/RECEPTOR & VACUUM BREAKER
ET–1	EXPANSION TANK	--	--	--	--	--	AMTROL THERM–X–TROL ST–5, 13 LBS, 8" DIA. X 13 HT. , VOLUME 2 GAL. MAX OPERATING 200°F, PRESS. 150 PSI
TP–1	TRAP PRIMMER	1/2"	--	--	--	--	PRECISION PLUMBING PRODUCTS, PR–500, ½" CW PIPE TO FLOOR DRAIN, WITH DISTRIBUTION UNIT AS REQUIRED.
FD–1	FLOOR DRAIN	--	--	2"	2"	2"	JR SMITH 2005–P, POLISH NICKEL BRONZE COVER WITH TRAP PRIMER CONNECTION
TP–1	TRAP PRIMMER	1/2"	--	--	--	--	PRECISION PLUMBING PRODUCTS, PR–500, ½" CW PIPE TO FLOOR DRAIN, WITH DISTRIBUTION UNIT AS REQUIRED.

NOTES:
1. SHOWER AND TUB SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC OR COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING VALVE TYPE. HANDLE POSITION STOPS SHALL BE ADJUSTED TO DELIVER A MAXIMUM MIXED WATER SETTING OF 120°F WITH A DEVICE THAT CONFORMS TO ASSE 1016

NOTES:
1. PER CPC 407.3 REQUIREMENT CONTRACTOR TO PROVIDE & INSTALL CONTROLS TO LIMIT THE WATER TEMPERATURE TO 120°F FOR ALL FAUCETS LV–1 .

PLUMBING FIXTURES CALC.

ITEM	MARK	TYPE (RESIDENCE)	FIXTURE PER RM.	DRAIN FIXT. UNIT (DFU)	DFU	CW FIXT. UNIT (CWFU)	CWFU	HWFU
1	WC–1	WATER CLOSET	4	3	12	2.5	10	
1	WC–2	WATER CLOSET	1	6	6	10	10	
2	LV–1	LAVATORY	3	1	3	1	3	2.25
3	SS–1	SERVICE SINK	5	2	10	2	10	7.5
4	KS–1	KITCHEN SINK	1	2	2	3	3	2.25
5	MS–1	MOP SINK	1	2	2	2	2	1.5
TOTAL :					35		38	14

38 CWFU = 42 GPM FLUSH VALVE

NOTE:
1. SAN. WASTE WILL BE CONNECTED TO (1) EXISTING 4" SW UNDERGROUND
2. EXISTING CW SUPPLIED TO BUILDING BY 1 1/2" WATER METER

MOP SINK FLOW RATE

PRESSURE (PSI)	FLOW RATE (GPM)
20	6.1
40	8.9
60	11.2
80	13.1

1

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JUL 02 2019

BY:

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ISSUE	DATE
1 PC CMT	4/24/19
2 PC CMT	6/14/19

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Q3 inc.

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EXP. 6/30/19
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STATE OF CALIFORNIA

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3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

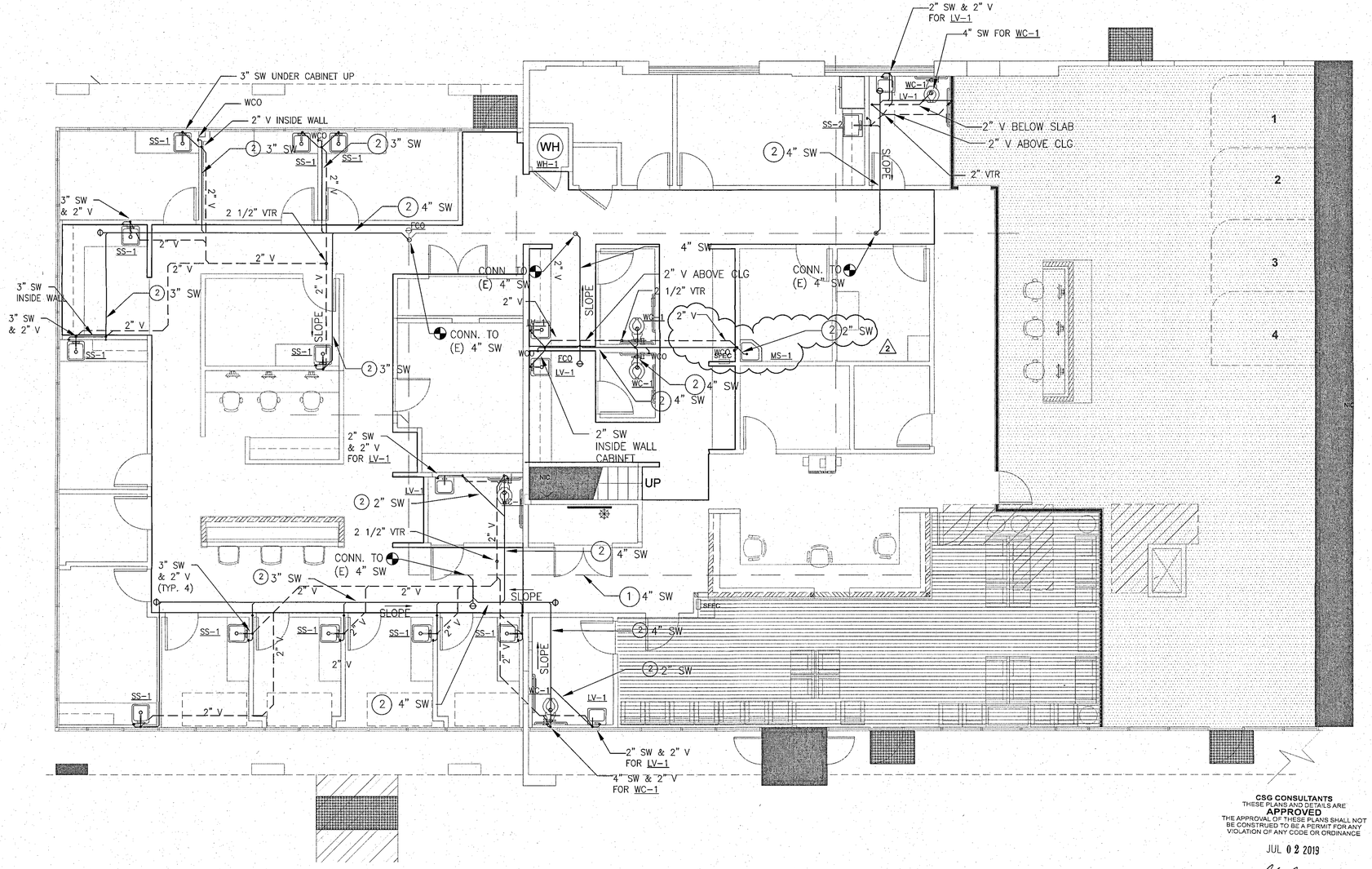
PROJECT NO.
18E 30046

DRAWN/REVIEWED
RJM/TB

DATE/ISSUE
TBD

SHEET TITLE
PLUMBING SCHEDULES & CALCULATION

SHEET NO.
P-0.1



PLUMBING - SW & V PIPING PLAN

SCALE: 1/4" = 1'-0"

A / P-1.0

N

KEYED NOTES

1. (E) 4" SW UNDER 4TH FLOOR NEAR RESTROOM AREA. CONTRACTOR TO FIELD VERIFY FOR EXACT LOCATION PRIOR CONNECTION.
2. (N) UNDER FLOOR SW PIPING. 1

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2 PC CMT	6/14/19

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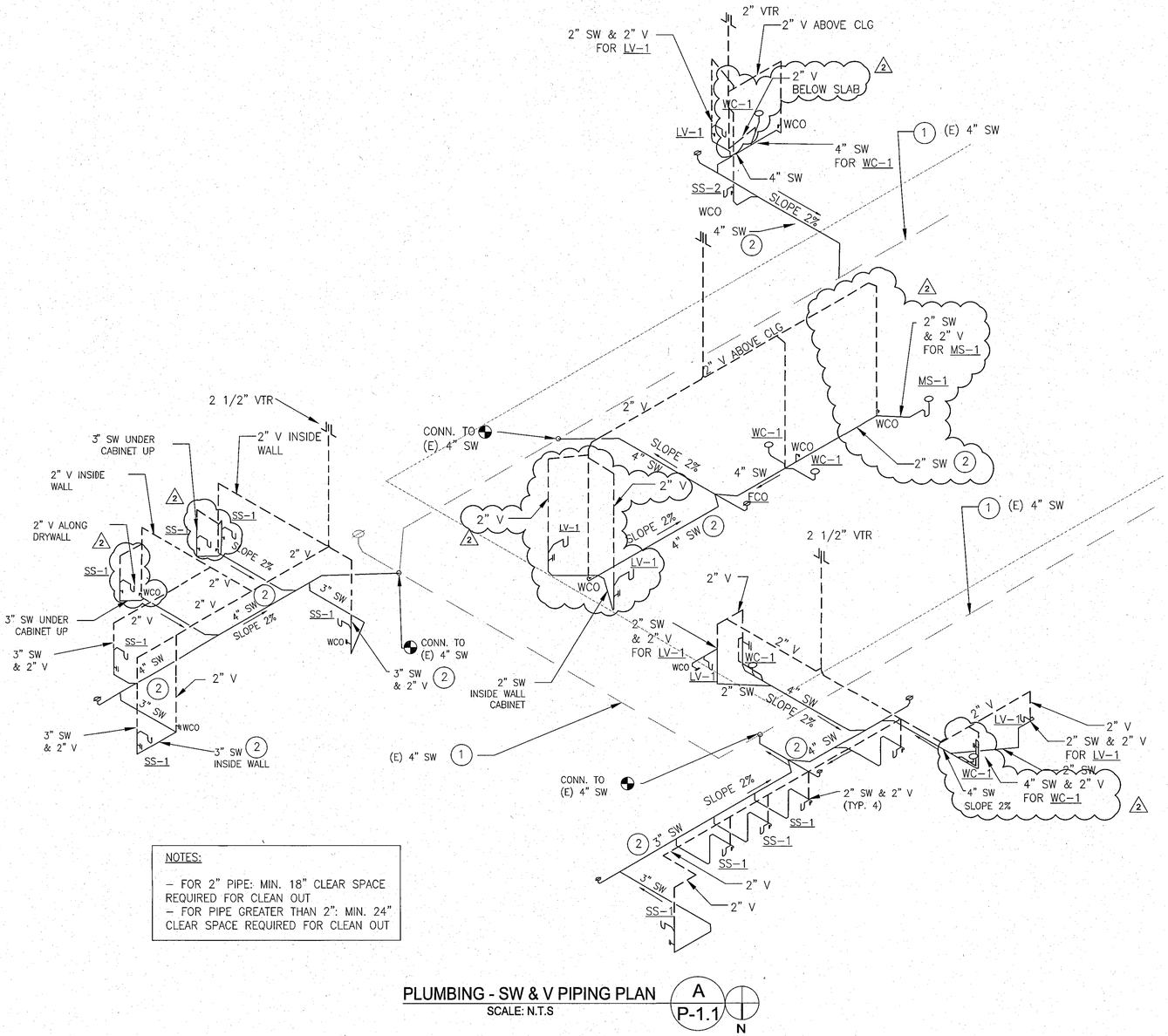
PROJECT NO.	18E 30046
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	
SHEET NO.	P-1.0



KEYED NOTES

1. (E) 4" SW UNDER 4TH FLOOR NEAR RESTROOM AREA. CONTRACTOR TO FIELD VERIFY FOR EXACT LOCATION PRIOR CONNECTION.
2. (N) UNDER FLOOR SW PIPING.

NOTES:

– FOR 2" PIPE: MIN. 18" CLEAR SPACE REQUIRED FOR CLEAN OUT
– FOR PIPE GREATER THAN 2": MIN. 24" CLEAR SPACE REQUIRED FOR CLEAN OUT

PLUMBING - SW & V PIPING PLAN (A / P-1.1)
SCALE: N.T.S

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JUL 02 2019
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ISSUE	DATE
1 PC CMT	4/24/19
2 PC CMT	6/14/19

QUALITY AND EXCELLENCE IN ENGINEERING AND DESIGN
17171 GOTHARD STREET HUNTINGTON BEACH, CA 92647
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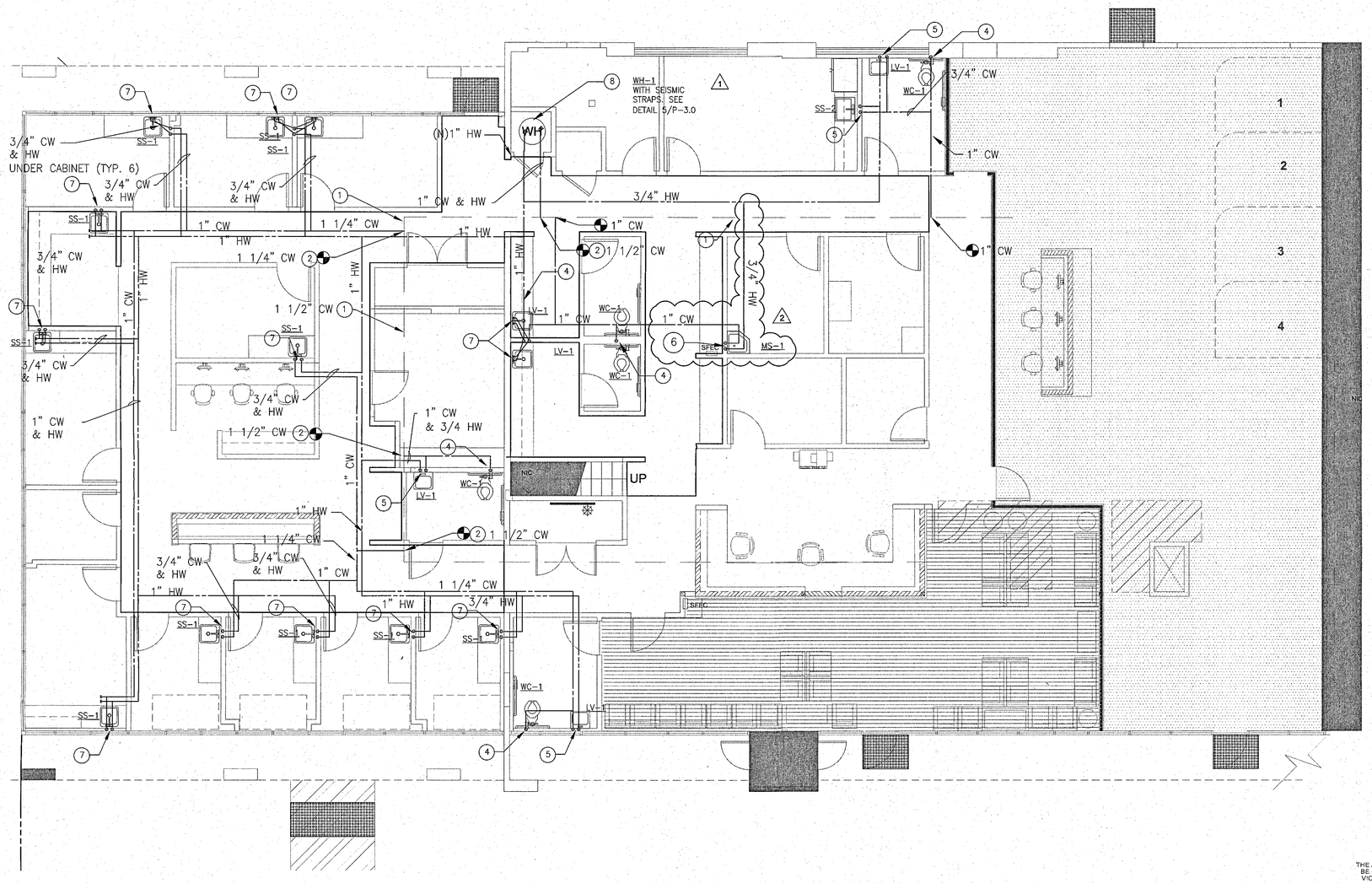
PROJECT NO.	18E 30046
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	PLUMBING SW & V DIAGRAM
SHEET NO.	P-1.1

1



NOTE: CONTRACTOR TO FIELD VERIFY FOR PIPE SIZE AND EXACT LOCATION PRIOR CONNECTING (N) CW PIPE .

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JUL 02 2019

BY: _____

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PLUMBING - CW & HW PIPING PLAN

SCALE: 1/4" = 1'-0"

A / P-2.0

N

KEYED NOTES

1. (E) 1 1/2" CW ABOVE CEILING. CONTRACTOR TO FIELD VERIFY FOR EXACT LOCATION AND ELEVATION
2. (N) 1 1/2" CW ABOVE CEILING.
3. (N) 1" HW ABOVE CEILING.
4. (N) 3/4" CW DN. INSIDE WALL TO NEW WATER CLOSET WC-1.
5. (N) 1/2" CW & HW DN. INSIDE WALL TO NEW LAVATORY LV-1.
6. (N) 3/4" CW & HW DN. INSIDE WALL TO NEW MOP SINK MS-1.
7. (N) 3/4" CW & HW DN. INSIDE WALL TO NEW KITCHEN SINK SS-1.
8. (N) 3/4" CW & HW DN. AND CONN. TO NEW WATER HEATER WH-1.

ISSUE	DATE
1 PC CMT	4/24/19
2 PC CMT	6/14/19

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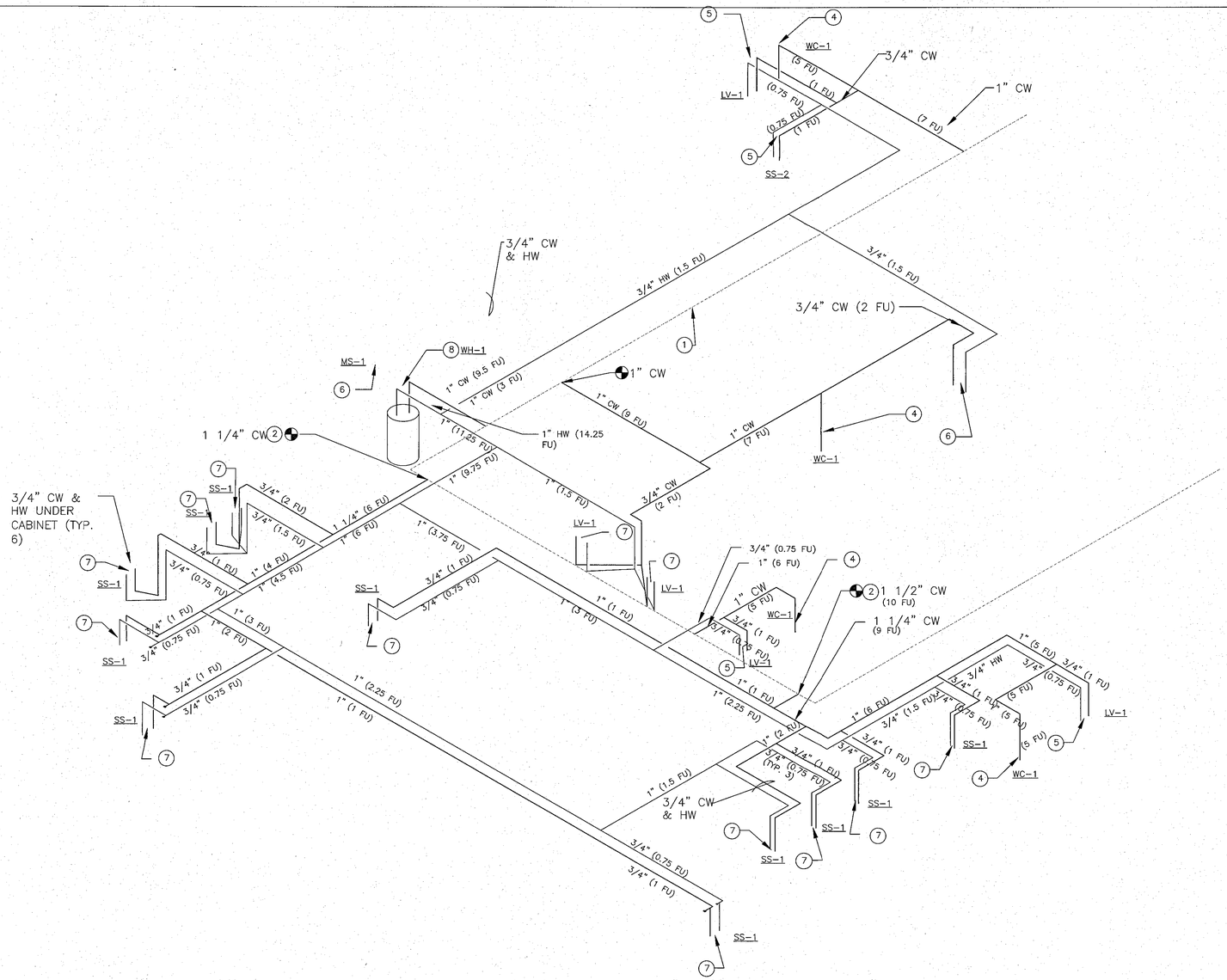
PROJECT NO. 18E 30046

DRAWN/REVIEWED RJM/TB

DATE/ISSUE TBD

SHEET TITLE PLUMBING CW & HW PIPING PLAN

SHEET NO. P-2.0



PLUMBING – CW & HW PIPING PLAN
SCALE: N.T.S

NOTE: CONTRACTOR TO FIELD VERIFY FOR PIPE SIZE AND EXACT LOCATION PRIOR CONNECTING (N) CW PIPE .

KEYED NOTES

1. (E) 1 1/2" CW ABOVE CEILING. CONTRACTOR TO FIELD VERIFY FOR EXACT LOCATION AND ELEVATION
2. (N) 1 1/2" CW ABOVE CEILING.
3. (N) 1" HW ABOVE CEILING.
4. (N) 3/4" CW DN. INSIDE WALL TO NEW WATER CLOSET WC-1.
5. REDUCE TO 1/2" CW & HW DN. INSIDE WALL TO NEW LAVATORY LV-1.
6. (N) 3/4" CW & HW DN. INSIDE WALL TO NEW MOP SINK MS-1.
7. (N) 3/4" CW & HW DN. INSIDE WALL TO NEW KITCHEN SINK SS-1.
8. (N) 3/4" CW & HW DN. AND CONN. TO NEW WATER HEATER WH-1.

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2 PC CMT	6/14/19

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PROJECT NO.
18E 30046

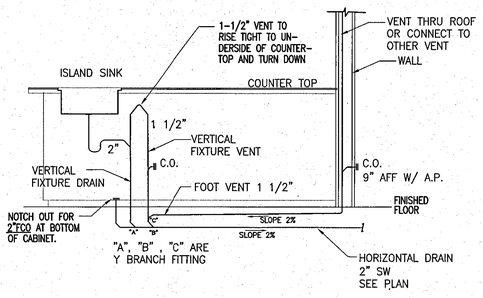
DRAWN/REVIEWED
RJM/TB

DATE/ISSUE
TBD

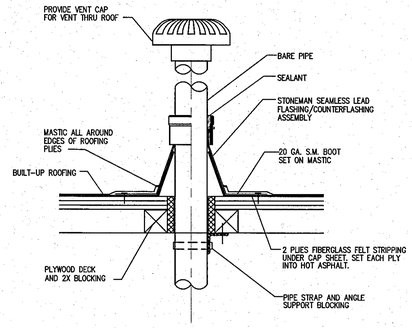
SHEET TITLE
PLUMBING CW & HW DIAGRAM

SHEET NO.
P-2.1

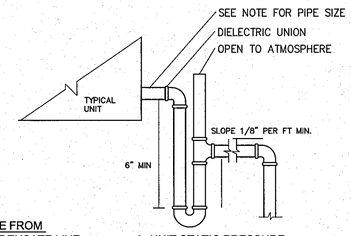
1
2



ISLAND SINK DETAIL | SCALE: NONE | 4



VENT THRU ROOF DETAIL | SCALE: NONE | 3



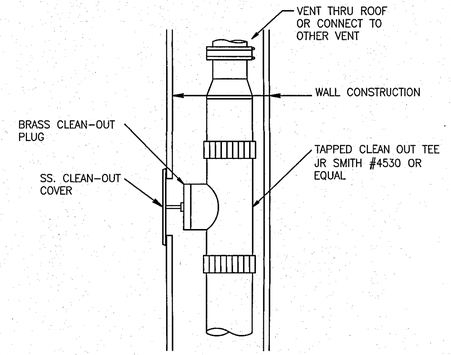
CONDENSATE FROM AHU TO CONDENSATE LINE

A=UNIT STATIC PRESSURE

CONDENSATE WASTE SIZING

EQUIPMENT COOLING CAPACITY	MIN. PIPE DIAMETER
UP TO 20 TONS	3/4 INCH
21 TO 40 TONS	1 INCH
41 TO 90 TONS	1 1/4 INCH

CONDENSATE CONNECTION TO AC UNIT ON ROOF DETAIL | SCALE: NONE | 2

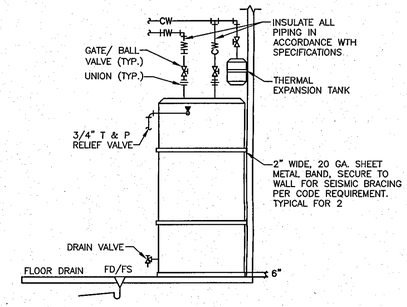


WALL CLEAN-OUT DETAIL | SCALE: NONE | 1

NOT USED

NOT USED

NOT USED



ELECTRIC WATER HEATER DETAIL | SCALE: NONE | 5

1

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JUL 02 2019

BY:

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ISSUE	DATE
1 PC CMT	4/24/19
2 PC CMT	6/14/19

Q3 inc
QUALITY AND EXCELLENCE IN MECHANICAL DESIGN SOLUTIONS
HUNTINGTON BEACH, CA 92647
PHONE 714-842-3400
FAX 714-842-3402

REGISTERED PROFESSIONAL ENGINEER
TONY BUI
No. M 28203
EXP. 6/30/19
MECHANICAL
STATE OF CALIFORNIA

CONCENTRA
3100 W. WARNER AVE, SUITE 100
SANTA ANA, CA 92704

PROJECT NO.	18E 30046
DRAWN/REVIEWED	RJM/TB
DATE/ISSUE	TBD
SHEET TITLE	PLUMBING DETAILS
SHEET NO.	P-3.0

STATE OF CALIFORNIA
WATER HEATING SYSTEM GENERAL INFORMATION
CEC-NRCC-PLB-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PLB-01-E
Water Heating System General Information	(Page 1 of 2)
Project Name: Concentra TI	Date Prepared: 04-29-2019

A. GENERAL INFORMATION/SYSTEM INFORMATION		
01	Water Heater System Name:	A.O. Smith Water Heater
02	Water Heater System Configuration:	
03	Water Heater System Type:	Electric
04	Building Type:	Commerical
05	Total Number of Water Heaters in Systems:	1
06	Central DHW Distribution Type:	
07	Dwelling Unit DHW Distribution Type:	

B. WATER HEATER INFORMATION Each water heater type requires a separate compliance document.		
01	Water Heater Type:	Commercial - Grade
02	Fuel Type:	Electrical
03	Manufacture Name:	A.O. Smith Manufacture
04	Model Number:	DEL-40D-4
05	Number of Identical Water Heaters:	0
06	Installed Water Heater System Efficiency:	0.92 Uniform Energy Factor
07	Required Minimum Efficiency:	
08	Standby Loss Percent or Standby Loss Total:	
09	Rated Input:	
10	Pilot Energy:	
11	Water Heater Tank Storage Volume:	40 Gal
12	Exterior Insulation on Water Heater:	2" insulation blanket
13	Volume of Supplemental Storage:	
14	Internal Insulation on Supplemental Storage:	
15	Exterior Insulation on Supplemental Storage:	

C. PLUMBING COMPLIANCE FORMS & WORKSHEETS
Check box if worksheet is included.
For detailed instructions on the use of this and all Energy Standards compliance documents, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all compliance documents to be incorporated onto the building plans.

YES	NO	Doc/Worksheet #	Title
☒	☐	NRCC-PLB-01-E	Certificate of Compliance, Declaration. Required on plans for all submittals.
☐	☐	NRCI-PLB-01-E	Certificate of Installation. Required on plans for all submittals.
☐	☐	NRCI-PLB-02-E	Certificate of Installation, required on central systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-PLB-03-E	Certificate of Installation, required on single dwelling unit systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-PLB-21-H	Certificate of Installation, required on HERS verified central systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-PLB-22-H	Certificate of Installation, required on HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-STH-01-E	Certificate of Installation, required on any solar water heating

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

STATE OF CALIFORNIA
WATER HEATING SYSTEM GENERAL INFORMATION
CEC-NRCC-PLB-01-E (Revised 01/16) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-PLB-01-E
Water Heating System General Information	(Page 2 of 2)
Project Name: Concentra TI	Date Prepared: 04-29-2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Tony Bui	Documentation Author Signature:
Company:	Signature Date: 4/29/2019
Address: 17162 Gothard Street	CEA/HERS Certification Identification (if applicable):
City/State/Zip: Huntington Beach, CA 92646	Phone: 714-465-5200x104

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Tony Bui	Responsible Designer Signature:
Company:	Date Signed: 4/29/2019
Address: 17162 Gothard Street	License:
City/State/Zip: Huntington Beach,CA 92646	Phone: 714-465-5200x104

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance January 2016

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SHEET TITLE
PLUMBING
TITLE 24

SHEET NO.
PT24-1
1