SHEET OF

DWG NO. :

HVAC LEGEND

GENERAL

SYMBOL	DESCRIPTION
℄	CENTER LINE
	POINT OF CONNECTION
AD/AP	ACCESS DOOR / ACCESS PANEL
T CO2	THERMOSTAT, CO2 SENSOR
SP	STATIC PRESSURE SENSOR
TOP BOTTOM	DETAIL 1, DRAWING M-1
TOP BOTTOM	SECTION A, DRAWING M-1
TOP BOTTOM	ELEVATION 1, DRAWING M-1
EXH 1	RISER IDENTIFICATION EXHAUST #1
HP 1	EQUIPMENT IDENTIFICATION HEAT PUMP UNIT #1
KIT_TAG	KITCHEN EQUIPMENT TAG
XX	SHEET NOTE REFERENCE TAG

PIPING

SYMBOL	DESCRIPTION
	DIRECTION OF SLOPE
	DIRECTION OF FLOW
	PIPE UP
	PIPE DOWN
	PIPE DROP/PIPE RISE
	TOP CONNECTION – BRANCH LINE
	BOTTOM CONNECTION – BRANCH LINE
	PIPE ANCHOR
	TEE UP
	TEE DOWN
	STRAINER
	STRAINER WITH BLOW OFF
	INLINE PUMP
	BASE MOUNTED PUMP
	TEST TEE
	TEST TAP (PETE'S PLUG)
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	VACUUM BREAKER
	VENT THRU ROOF
	PIPE GUIDE
	EXPANSION JOINT
	FLEXIBLE CONNECTOR
	UNION
	CAPPED OR PLUGGED TEE
	BLIND FLANGE, CAP
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	EXPANSION LOOP
	VALVE ON RISE

DUCTWORK

SYMBOL (DOUBLE LINE)	DESCRIPTION	SYMBOL (SINGLE LINE)
AD/AP	ACCESS DOOR / ACCESS PANEL	
	FLEXIBLE CONNECTION	
	FLEXIBLE DUCT RUNOUT TO DIFFUSER	
12x6	DUCT SIZE (WIDTH x DEPTH)	12x6
	DUCT THROUGH BEAM PENETRATION	
R D	DUCT OFFSET (RISE OR DROP)	R D
VD	VOLUME DAMPER	VD
FD SD FSD	FIRE, SMOKE OR FIRE/SMOKE DAMPER	FD SD FSD
	SUPPLY DUCT UP	
	SUPPLY DUCT DOWN	
	EXHAUST DUCT UP	
	EXHAUST DUCT DOWN	
	RETURN DUCT UP	
	RETURN DUCT DOWN	
	CROSS SECTION OF SUPPLY DUCT	
	CROSS SECTION OF EXHAUST AIR DUCT	
	CROSS SECTION OF RETURN AIR DUCT	
	CROSS SECTION OF ROUND DUCT	
	DUCT ELBOW WITH TURNING VANES	
	SMOOTH RADIUS DUCT ELBOW WITHOUT TURNING VANES	
12x6	ACOUSTICAL LINING DUCT DIMENSION IS ID	12x6
M	MOTORIZED DAMPER	M
SIZE CFM TD	TRANSFER DUCT (WITH LINER)	SIZE CFM TD
8'-11" BOD	INDICATES 8'11" TO BOTTOM OF DUCT	8'-11" BOD
NECK SIZE–TAG–CFM	ROUND RAISED FLOOR DIFFUSOR (SEE SCHEDULE)	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	ROUND OR SQUARE CEILING SUPPLY DIFFUSER (SEE SCHEDULE) 4–WAY THROW UNLESS INDICATED OTHERWISE.	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	ROUND OR SQUARE CEILING EXHAUST REGISTER (SEE SCHEDULE)	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	ROUND OR SQUARE CEILING RETURN REGISTER (SEE SCHEDULE)	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	ROUND OR SQUARE CEILING RETURN GRILLE (SEE SCHEDULE)	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	ROUND OR SQUARE CEILING RETURN GRILLE (SEE SCHEDULE)	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	ROUND OR SQUARE CEILING RETURN GRILLE (SEE SCHEDULE)	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	WALL SUPPLY REGISTER (SEE SCHEDULE)	NECK SIZE–TAG–CFM
NECK SIZE–TAG–CFM	WALL RETURN REGISTER (SEE SCHEDULE)	NECK SIZE–TAG–CFM
A	LINEAR SLOT DIFFUSER (SEE SCHEDULE)	A
DSD	DUCT SMOKE DETECTOR	

ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	ID	INSIDE DIAMETER
ABV	ABOVE	IN	INCH(ES)
AC	AIR CONDITIONING	IPLV	INTEGRATED PART LOAD VALUE
ACCEPT	ACCEPTANCE		
ACU	AIR CONDITIONING UNIT	JB	JUNCTION BOX
AD	ACCESS DOOR		
ADD	ADDITION		
AF	AFTER FILTER	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	KWH	KILOWATT HOUR
AFMS	AIR FLOW MEASURING STATION		
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	L	LENGTH
AG	AIR GAP	LAT	LEAVING AIR TEMPERATURE
AHJ	AUTHORITY HAVING JURISDICTION	LBS	POUNDS
AHU	AIR HANDLING UNIT	LDB	LEAVING DRY BULB
AMB	AMBIENT	LF	LINEAR FEET
A	AMPERE	LP	LOW PRESSURE
AP	ACCESS PANEL	LPC	LOW PRESSURE CONDENSATE
APPROX	APPROXIMATELY	LPS	LOW PRESSURE STEAM
ARCH	ARCHITECT	LWB	LEAVING WET BULB
ARI	AMERICAN REFRIGERATION INSTITUTE	LWT	LEAVING WATER TEMPERATURE
AS	AIR SEPARATOR	M	MOTOR
AUTO	AUTOMATIC	MA	MIXED AIR
AUX	AUXILIARY	MAD	MIXED AIR DAMPER
		MAX	MAXIMUM
B	BOILER	MBH	THOUSAND BTU PER HOUR
BBD	BOILER BLOW DOWN	MC	MECHANICAL CONTRACTOR
BDD	BACKDRAFT DAMPER	MCA	MINIMUM CIRCUIT AMPACITY
BEL	BELOW	MCC	MOTOR CONTROL CENTER
BHP	BRAKE HORSEPOWER	MD	MOTORIZED DAMPER
BHT	BASEBOARD HEATER	MECH	MECHANICAL
BMS	BUILDING MANAGEMENT SYSTEM	MERV	MINIMUM EFFICIENCY RATING VALUE
BOD	BOTTOM OF DUCT	MFR	MANUFACTURER
BOP	BOTTOM OF PIPE	MIN	MINIMUM
BFP	BACKFLOW PREVENTER	MOCP	MAXIMUM OVER CURRENT PROTECTION
BSMT	BASEMENT	MPC	MEDIUM PRESSURE CONDENSATE
BTU	BRITISH THERMAL UNIT	MPS	MEDIUM PRESSURE STEAM
BTUH	BTU PER HOUR	MV	MANUAL AIR VENT
BV	BALL VALVE OR BALANCING VALVE		
BYV	BUTTERFLY VALVE		
		N/A	NOT APPLICABLE
C	COMMON, CONDENSATE OR CONDUIT	NC	NORMALLY CLOSED
CA	CONTROL AIR	NIC	NOT IN CONTRACT
CAP	CAPACITY	NO	NUMBER OR NORMALLY OPEN
CAV	CONSTANT AIR VOLUME	NOM	NOMINAL
CB	CHILLED BEAM	NPSH	NET POSITIVE SUCTION HEAD
CC	COOLING COIL OR CONTROLS CONTRACTOR	NTS	NOT TO SCALE
CEG	CEILING EXHAUST GRILLE		
CER	CEILING EXHAUST REGISTER	OAD	OUTSIDE AIR DAMPER
CFF	CAP FOR FUTURE	OAT	OUTSIDE AIR TEMPERATURE
CFM	CUBIC FEET PER MINUTE	OBD	OPPOSED BLADE DAMPER
CFS	CUBIC FEET PER SECOND	OC	ON CENTER
CDWR	CONDENSER WATER RETURN	OD	OUTSIDE DIAMETER
CDWS	CONDENSER WATER SUPPLY	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CHWR	CHILLED WATER RETURN	OFOI	OWNER FURNISHED OWNER INSTALLED
CHWS	CHILLED WATER SUPPLY	OPER	OPERATING
CH	CHILLER	OSA	OUTSIDE AIR
CHV	CHECK VALVE	OV	OUTLET VELOCITY
CL	CENTERLINE		
CLG	CEILING		
CO	CLEANOUT	P	PUMP OR PRESSURE OR POLE
COL	COLUMN	PC	PUMPED CONDENSATE
COMP	COMPRESSOR	PD	PRESSURE DROP
CONC	CONCRETE	PF	PREFILTER
COND	CONDENSATE	PG	PIPE GUIDE OR PRESSURE GAUGE
CONN	CONNECTION	PH	PHASE (ELECTRICAL)
CONT	CONTINUATION	PHC	PREHEAT COIL
CONTR	CONTRACTOR	PLBG	PLUMBING
COP	COEFFICIENT OF PERFORMANCE	POC	POINT OF CONNECTION
CP	CONTROL PANEL OR CONDENSATE PUMP	PRESS	PRESSURE
CPF	CHEMICAL POT FEEDER	PRV	PRESSURE REDUCING VALVE
CR	CONDENSATE RETURN	PS	PRESSURE SENSOR
CRR	CEILING RETURN REGISTER	PSI	POUNDS PER SQUARE INCH
CRG	CEILING RETURN GRILLE	PSIA	PSI ABSOLUTE
CS	CIRCUIT SETTER	PSIG	PSI GAUGE
CSD	CEILING SUPPLY DIFFUSER	PV	PLUG VALVE
CTE	CONNECT TO EXISTING		
CU FT	CUBIC FEET	QTY	QUANTITY
CU IN	CUBIC INCH		
CV	CONSTANT VOLUME OR CONTROL VALVE	R	RISERS, RELOCATE OR RISE
CW	COLD WATER	RA	RETURN AIR
		RAD	RETURN AIR DAMPER
D	DROP OR DRAIN	RD	REFRIGERANT DISCHARGE OR ROOF DRAIN
DB	DRY BULB TEMPERATURE		
DDC	DIRECT DIGITAL CONTROL	REF	ROOFTOP EXHAUST FAN
DEFL	DEFLECTION	REFRIG	REFRIGERATION
DIA	DIAMETER	REJ	REJECTION
DIFF	DIFFERENCE	REQ'D	REQUIRED
DN	DOWN	REV	REVISE, REVISION OR REVOLUTIONS
DP	DIFFERENTIAL PRESSURE	RF	RETURN FAN
DPT	DEW POINT TEMPERATURE	RH	RELATIVE HUMIDITY
DSD	DUCT SMOKE DETECTOR	RHC	REHEAT COIL
DV	DIAPHRAGM VALVE	RHT	RADIANT HEATER
DWG(S)	DRAWING(S)	RM	ROOM
DX	DIRECT EXPANSION	RPM	REVOLUTIONS PER MINUTE
		RS	REFRIGERANT SUCTION
EA	EXHAUST AIR OR EACH	RTU	ROOFTOP UNIT
EAD	EXHAUST AIR DAMPER		
EAT	ENTERING AIR TEMPERATURE	S	SUPPLY OR SLOPE
EC	ELECTRICAL CONTRACTOR	SA	SUPPLY AIR
ECON	ECONOMIZER	SCFM	CFM, STANDARD CONDITIONS
EDB	ENTERING DRY BULB TEMPERATURE	SD	SMOKE DAMPER
EER	ENERGY EFFICIENCY RATING	SEER	SEASONAL ENERGY EFFICIENCY RATING
EF	EXHAUST FAN		
EFF	EFFICIENCY	SEN	SENSIBLE
EJ	EXPANSION JOINT	SF	SUPPLY FAN OR SQUARE FEET
EL	ELEVATION	SHC	SQUARE HEAD COCK
ELEC	ELECTRICAL	SN	SHEET NOTE
EMS	ENERGY MANAGEMENT SYSTEM	SP	STATIC PRESSURE
EQUIP	EQUIPMENT	SPD	SPLITTER DAMPER
ESP	EXTERNAL STATIC PRESSURE	SPEC	SPECIFICATIONS
EWB	ENTERING WET BULB TEMPERATURE	SQ IN	SQUARE INCH
EWT	ENTERING WATER TEMPERATURE	ST	STRAINER OR SOUND TRAP
EXH	EXHAUST	STD	STANDARD
EXPT	EXPANSION TANK	STRUCT	STRUCTURAL
EXT	EXTERNAL	SV	STEAM VENT
F	FAHRENHEIT OR FILTER	T	THERMOMETER OR THERMOSTAT
FPB	FAN POWERED BOX	TCP	TEMPERATURE CONTROL PANEL
FC	FLEXIBLE CONNECTION OR FAIL CLOSED	TDH	TOTAL DYNAMIC HEAD
FCU	FAN COIL UNIT	TEMP	TEMPERATURE
FD	FIRE DAMPER	TI	TENANT IMPROVEMENT
FF	FINAL FILTER OR FINISHED FLOOR	TRG	TRANSFER GRILLE
FLR	FLOOR	TS	TEMPERATURE SENSOR
FO	FAIL OPEN	TSP	TOTAL STATIC PRESSURE
FPI	FINS PER INCH	TT	TEST TAP OR TEST TEE
FPM	FEET PER MINUTE	TXV	THERMAL EXPANSION VALVE
FPS	FEET PER SECOND	(TYP)	TYPICAL
FSD	FIRE/SMOKE DAMPER		
FT	FOOT OR FEET		
G	GAS	U	HEAT TRANSFER COEFFICIENT
GA	GAUGE, GAGE	UG	UNDERGROUND
GAL	GALLONS	UH	UNIT HEATER
GALV	GALVANIZED	UON	UNLESS OTHERWISE NOTED
GC	GAS COCK OR GENERAL CONTRACTOR		
GLV	GLOBE VALVE	V	VENT OR VOLT OR VELOCITY
GN	GENERAL NOTE	VAV	VARIABLE AIR VOLUME
GPM	GALLONS PER MINUTE	VB	VACUUM BREAKER
GND	GROUND	VD	VOLUME DAMPER
GV	GATE VALVE	VEL	VELOCITY
		VERT	VERTICAL
		VFD	VARIABLE FREQUENCY DRIVE
H	HEIGHT	VFM	VENTURI FLOW METER
HB	HOSE BIBB	VOL	VOLUME
HC	HEATING COIL	VTR	VENT THROUGH ROOF
HD	HEAD		
HOR	HORIZONTAL	W	WASTE OR WIDTH OR WATTS
HP	HIGH PRESSURE	W/	WITH
HP	HORSEPOWER	W/O	WITHOUT
HP	HEAT PUMP	WB	WET BULB TEMPERATURE
HPC	HIGH PRESSURE CONDENSATE	WC	WATER COLUMN
HPS	HIGH PRESSURE STEAM	WEG	WALL EXHAUST GRILLE
HR	HOUR(S)	WG	WATER GAUGE
HRU	HEAT RECOVERY UNIT	WP	WORKING PRESSURE
HS	HUMIDITY SENSOR	WPD	WATER PRESSURE DROP
HTR	HEATER	WRR	WALL RETURN REGISTER
HV	HOSE VALVE	WSHP	WATER–SOURCE HEAT PUMP
HVAC	HEATING, VENTILATING & AIR CONDITIONING	WSR	WALL SUPPLY REGISTER
		WT	WEIGHT
HW	HOT WATER		
HWR	HEATING WATER RETURN	XFMR	TRANSFORMER
HWS	HEATING WATER SUPPLY		
HX	HEAT EXCHANGER	Z	ZONE
HZ	FREQUENCY (HERTZ)		

HVAC BASIS OF DESIGN

1. CODES AND STANDARDS
   A. AMERICANS WITH DISABILITIES ACT, (ADA)
   B. BUILDING CODES ENFORCED BY THE AUTHORITY HAVING JURISDICTION IN CALIFORNIA:
      1. 2010 CALIFORNIA BUILDING CODE (CBC) BASED ON 2009 INTERNATIONAL BUILDING CODE (IBC) WITH STATE AMENDMENTS.
      2. 2010 CALIFORNIA MECHANICAL CODE (CMC) BASED 2009 UNIFORM MECHANICAL CODE (UMC) WITH STATE AMENDMENTS.
      3. 2010 TITLE 24, PART 6 CALIFORNIA ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL AND NONRESIDENTIAL BUILDINGS

2. OUTDOOR DESIGN CONDITIONS
   A. SUMMER: 78F DB/66F WB (ASHRAE 0.5% SANTA MONICA, C
      1. DUE TO THE SUN REFLECTION ON ROOF, 83F IS BEING USED FOR UNIT SELECTION. 2
   B. WINTER: 41F (ASHRAE 99% SANTA MONICA, CA)
   C. ELEVATION: 15 FT.
   D. CALIFORNIA CLIMATE ZONE: 6

3. INDOOR DESIGN CONDITIONS
   A. ALL AREAS:
      1. COOLING 72F +/–2F
      2. HEATING 68F +/–2F
   B. EXCEPTIONS:
      1. ELEC. ROOMS: EXHAUST ONLY, 10F ABOVE PLENUM TEMP
      2. DATA ROOMS: COOLING ONLY, 72F +/–2F
   C. HUMIDITY CONTROL
      1. ALL OTHER AREAS: NONE

4. VENTILATION CRITERIA:
   A. ALL AREAS: 15 CFM/PERSON AND 0.12 CFM/SQ.FT. MINIMUM

5. EXHAUST TO OUTDOORS
   A. TOILET ROOMS: 10 AIR CHANGES PER HOUR

6. BUILDING ENVELOPE
   A. GLAZING: GLASS/FRAME COMBINATION
      1. TYPICAL VERTICAL:
         a. DESCRIPTION: DOUBLE PANE, LOW–E, THERMAL BREAK FRAME
         b. U = 0.27 BTU/hxft2xF (GLASS ONLY)
         c. U = 0.436 BTU/hxft2xF (WITH FRAME)
         d. SHADING COEFFICIENT = 0.32
      2. TYPICAL SKYLIGHT:
         a. DESCRIPTION: DOUBLE PANE, LOW–E, THERMAL BREAK FRAME
         b. U = 0.27 BTU/hxft2xF (GLASS ONLY)
         c. U = 0.5 BTU/hxft2xF (WITH FRAME)
         d. SHADING COEFFICIENT = 0.32
   B. WALL CONSTRUCTION:
      1. DESCRIPTION: STUCCO WITH R–19 BATT INSULATION
      2. OVERALL U–VALUE = 0.074 BTU/hxft2xF
   C. ROOF:
      1. DESCRIPTION: LIGHT COLORED MEMBRANE WITH R–30 INSULATION
      2. OVERALL U–VALUE = 0.035 BTU/hxft2xF

7. INTERNAL HEAT GAIN
   A. LIGHTING:
      1. 1.2 W/SQ. FT.
      2. 20% OF LIGHTING HEAT TO PLENUM
   B. RECEPTACLE POWER:
      1. 1.0 W/SQ. FT.
   C. OCCUPANTS:
      1. 245 BTU/H SENSIBLE/205 BTU/H LATENT
   D. ELECTRICAL TRANSFORMERS: 3% LOSS/50% DIVERSITY
   E. IDF ROOM:
      SERVER+IT EQUIPMENT:10.000 BTU/H

8. OCCUPANCY CRITERIA:
   A. OFFICE: 1 PERSON/100 SQ. FT.
   B. CONFERENCE ROOM: 1 PERSON/15 SQ. FT.
   C. COMMUNITY CENTER: 1 PERSON/15 SQ. FT.
   D. LIBRARY: 1 PERSON/50 SQ. FT.

9. DUCTWORK DESIGN CRITERIA
   A. ALL DUCTWORK: 0.08" W.G./100 FT. MAX
   B. MEDIUM PRESSURE SUPPLY
      1. 1500 FPM MAX ABOVE CEILING
      2. 2000 FPM MAX IN SHAFT
   C. RETURN VELOCITY: 1500 FPM MAX
   D. EXHAUST VELOCITY: 1500 FPM MAX.

10. PIPE DESIGN CRITERIA
    A. MAX PRESSURE DROP: 4 FT. W.G./100 FT.
    B. MAX VELOCITY:
       1. 8 FT/SEC MAX IN OCCUPIED AREAS
       2. 10 FT/SEC MAX IN MECHANICAL ROOMS

HVAC DRAWING LIST

PICO BRANCH LIBRARY

2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404
310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER HENRY Y. LAU No. M33781 Exp. 08-30-13 MECHANICAL STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE

engineers for a sustainable future℠

CONSULTANT

City of Santa Monica Architecture Services
1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

SUBMITTED BY : DATE : ____ 20__

APPROVED BY : DATE : ____ 20__
Miriam Mulder,
Architecture Services Manager
CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : ____ 20__

REVIEWED BY : DATE : ____ 20__

REVIEWED BY : DATE : ____ 20__

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
3	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
2	03/06/12		ADDENDUM 3
1	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE:
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL LEAD SHEET

SHEET NO.
M0.1

TITLE OF PROJECT

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 1 of 3) PERF-1C

Project Name			Date
Pico Branch Library			5/3/2012
Project Address: Virginia Avenue Park Santa Monica	Climate Zone: CA Climate Zone 06	Total Cond. Floor Area: 7,369	Addition Floor Area: n/a

GENERAL INFORMATION

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room
☐ Relocatable - indicate specific climate zone ☐ all climates

Phase of Construction ☑ New Construction ☐ Addition ☐ Alteration

STATEMENT OF COMPLIANCE

This certificate of compliance lists the building features and specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to a Building using the performance compliance approach.

The documentation author hereby certifies that the documentation is accurate and complete.

Documentation Author

Name	Henry Lam	Signature	
Company	Glumac	Date	5/3/2012
Address	617 W7th Street	Phone	213.239.8866
City/State/Zip	Los Angeles, CA 90017		

The Principal Designer hereby certifies that the proposed building design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building has been designed to meet the energy efficiency requirements contained in sections 110, 116 through 118, and 140 through 149 of Title 24, Part 6. Please check one:

ENV.	LTG.	MECH.	
☐	☐	☒	I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or I am a licensed architect.
☐	☐	☐	I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
☐	☐	☐	I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

Principal Envelope Designer

Name	Jennifer Rios	Signature	
Company	Koning Eizenberg Architecture	Date	
Address	1454 25th Street	License #	
City/State/Zip	Santa Monica, CA 90404	Phone	310-828-6131

Principal Mechanical Designer

Name	Henry Lam	Signature	
Company	Glumac	Date	5/3/2012
Address	617 W. 7th St., Suite 500	License #	M-33781
City/State/Zip	Los Angeles, CA 90017	Phone	213.239.8866

Principal Lighting Designer

Name	Jennifer Rios	Signature	
Company	Koning Eizenberg Architecture	Date	
Address	1454 25th Street	License #	
City/State/Zip	Santa Monica, Santa Monica 90404	Phone	310-828-6131

INSTRUCTIONS TO APPLICANT COMPLIANCE & WORKSHEETS (check box if worksheets are included)

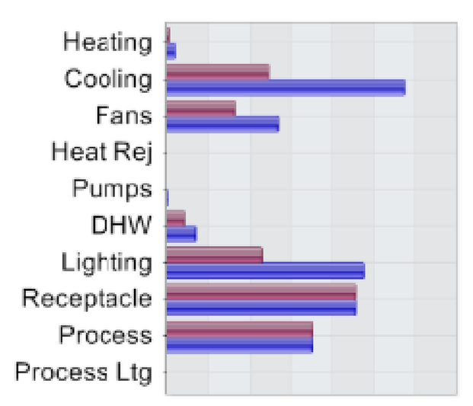
☑	ENV-1C	Certificate of Compliance. Required on plans.	☑	MECH-1C	Certificate of Compliance. Required on plans.
☑	LTG-1C	Certificate of Compliance. Required on plans.	☑	MECH-2C	Air/Water Side/Service Hot Water & Pool Requirements.
☑	LTG-2C	Lighting Controls Credit Worksheet.	☑	MECH-3C	Mechanical Ventilation and Reheat.
☑	LTC-3C	Indoor Lighting Power Allowance.	☑	MECH-5C	Mechanical Equipment Details

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 2 of 3) PERF-1C

Project Name: Pico Branch Library — Date: 5/3/2012

ANNUAL TDV ENERGY USE SUMMARY (kBtu/sqft-yr)

Energy Component	Standard Design	Proposed Design	Compliance Margin
Space Heating	4.58	1.30	3.28
Space Cooling	114.81	50.09	64.72
Indoor Fans	54.32	32.80	21.53
Heat Rejection	0.00	0.00	0.00
Pumps & Misc.	0.86	0.00	0.86
Domestic Hot Water	14.24	8.83	5.41
Lighting	95.42	46.82	48.60
Receptacle	91.62	91.62	0.00
Process	70.85	70.85	0.00
Process Lighting	0.00	0.00	0.00
TOTALS	446.71	302.31	144.39
Percent better than Standard		32.3 %	(38.4 % excluding process)



BUILDING COMPLIES

GENERAL INFORMATION

Building Orientation	(N) 348 deg	Conditioned Floor Area	7,369 sqft.
Number of Stories	1	Unconditioned Floor Area	1,077 sqft.
Number of Systems	7	Conditioned Footprint Area	7,369 sqft.
Number of Zones	13	Natural Gas Available On Site	Yes

	Orientation	Gross Area	Glazing Area	Glazing Ratio
Front Elevation	(N)	2,039 sqft.	260 sqft.	12.7 %
Left Elevation	(E)	1,149 sqft.	524 sqft.	45.6 %
Rear Elevation	(S)	1,909 sqft.	854 sqft.	44.7 %
Right Elevation	(W)	728 sqft.	243 sqft.	33.4 %
Total		5,824 sqft.	1,881 sqft.	32.3 %
Roof		7,369 sqft.	14 sqft.	0.2 %

	Standard	Proposed	
Prescriptive Lighting Power Density	1.362 W/sqft.	0.668 W/sqft.	Prescriptive Values for Comparison only. See LTG-1C for allowed LPD.
Prescriptive Envelope TDV Energy	293,435	215,664	

Remarks:
New Building.

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 3 of 3) PERF-1C

Project Name: Pico Branch Library — Date: 5/3/2012

ZONE INFORMATION

System Name	Zone Name	Occupancy Type	Floor Area (sqft.)	Inst. LPD (W/sf)[1]	Ctrl. Credits (W/sf)[2]	Allowed LPD Area (W/sf)[3]	Allowed LPD Tailored (W/sf)[4]	Proc. Loads (W/sf)
RTU-1	Zone 1 - Entry/Children's Lib	Library, Stacks	1,501	0.953	0.305			0.500
RTU-2	Zone 2 - Branch Manager	Office <= 250 sqft	135	0.850	0.160			0.500
	Zone 2 - Restrooms / storag	Corridor/Restroom/Support	642	0.294	0.044			
	Zone 2 - Group Study Room	Library, Reading Area	377	0.645	0.129			
	Zone 2 - Staff Lounge	Kitchen, Food Preparation	171	0.632	0.126			0.500
RTU-3	Zone 3 - Computer Commo	Library, Reading Area	2,303	0.857	0.242			2.500
RTU-4	Zone 4 - Collections & Seati	Library, Stacks	1,200	0.712				0.500
RTU-5	Zone 5 - Community Room	Convention/Conference/Mee	870	1.031				0.500
	Zone 5 - Pantry	Kitchen, Food Preparation	120	0.350	0.180			0.500
	Zone 5 - Restrooms / Janitor	Corridor/Restroom/Support	238	0.764	0.118			
	Zone 5 - Electrical Room	Corridor/Restroom/Support	77	1.429	0.214			1.500
CU-1 & FC-1	Zone 6 - Workroom	Library, Stacks	705	0.811	0.122			0.500
CU-2 & FC-2	Zone 7 - IT Room	Electrical, Mechanical Room	107	0.523	0.079			10.500

Notes: 1. See LTG-1C (items marked with asterisk, see LTG-1-C by others) 2. See LTG-2C 3. See LTG-3C (by others) 4. See LTG-4C — Items above require special documentation

EXCEPTIONAL CONDITIONS COMPLIANCE CHECKLIST

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justifications, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

- The HVAC System RTU-1 includes Demand Control Ventilation per Standards Section 121.
- The Zone Zone 1 - Entry/Children's Library/Popular Materials has a North/East/South Display Perimeter Credit of 21 ft.
- The Zone Zone 2 - Branch Manager has a North/East/South Display Perimeter Credit of 21 ft.
- The Zone Zone 2 - Group Study Rooms has a North/East/South Display Perimeter Credit of 58 ft.
- The Zone Zone 2 - Staff Lounge has a North/East/South Display Perimeter Credit of 21 ft.
- The HVAC System RTU-3 includes Demand Control Ventilation per Standards Section 121.
- The Zone Zone 3 - Computer Commons/Customer Service has a North/East/South Display Perimeter Credit of 6 ft.
- The HVAC System RTU-4 includes Demand Control Ventilation per Standards Section 121.
- The Zone Zone 4 - Collections & Seating has a North/East/South Display Perimeter Credit of 21 ft.
- The HVAC System RTU-5 includes Demand Control Ventilation per Standards Section 121.
- The Zone Zone 5 - Community Room has a North/East/South Display Perimeter Credit of 21 ft.
- The HVAC System CU-1 & FC-1 includes Demand Control Ventilation per Standards Section 121.
- The HVAC System CU-1 & FC-1 incorporates HERS verified Duct Leakage. Target leakage is calculated and documented on the MECH-4-A.

The exceptional features listed in this performance approach application have specifically been reviewed. Adequate written justification and documentation for their use have been provided by the applicant.

Authorized Signature or Stamp ____________________

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 3 of 3) PERF-1C

Project Name: Pico Branch Library — Date: 5/3/2012

ZONE INFORMATION

System Name	Zone Name	Occupancy Type	Floor Area (sqft.)	Inst. LPD (W/sf)[1]	Ctrl. Credits (W/sf)[2]	Allowed LPD Area (W/sf)[3]	Allowed LPD Tailored (W/sf)[4]	Proc. Loads (W/sf)

Notes: 1. See LTG-1C (items marked with asterisk, see LTG-1-C by others) 2. See LTG-2C 3. See LTG-3C (by others) 4. See LTG-4C — Items above require special documentation

EXCEPTIONAL CONDITIONS COMPLIANCE CHECKLIST

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justifications, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

- The Zone Zone 6 - Workroom has a North/East/South Display Perimeter Credit of 50 ft.
- The HVAC System CU-2 & FC-2 incorporates HERS verified Duct Leakage. Target leakage is calculated and documented on the MECH-4-A.
- The HVAC System CU-2 & FC-2 assumes a Constant Volume Baseline for spaces with Space Pressurization Relationship Requirements.
- The HVAC System RTU-1 - AACN RN006 includes a Variable Speed Drive on the Fan.
- The HVAC System RTU-1 - AACN RN006 includes an Economizer. This system has a cooling output < 75,000 Btuh or a supply cfm < 2500.
- The HVAC System RTU-2 - AACN RQ503 includes a Variable Speed Drive on the Fan.
- The HVAC System RTU 2 AACN RQ503 includes an Economizer This system has a cooling output < 75,000 Btuh or a supply cfm < 2500.
- The HVAC System RTU 3 AACN RQ503 includes a Variable Speed Drive on the Fan.
- The HVAC System RTU-3 - AACN RQ503 includes an Economizer This system has a cooling output < 75,000 Btuh or a supply cfm < 2500.
- The HVAC System RTU-4 - AACN RQ503 includes a Variable Speed Drive on the Fan.
- The HVAC System RTU-4 - AACN RQ503 includes an Economizer This system has a cooling output < 75,000 Btuh or a supply cfm < 2500.
- The HVAC System RTU-5 - AACN RQ503 includes a Variable Speed Drive on the Fan.
- The HVAC System RTU-5 - AACN RQ503 includes an Economizer This system has a cooling output < 75,000 Btuh or a supply cfm < 2500.

The exceptional features listed in this performance approach application have specifically been reviewed. Adequate written justification and documentation for their use have been provided by the applicant.

Authorized Signature or Stamp ____________________

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 3 of 3) PERF-1C

Project Name: Pico Branch Library — Date: 5/3/2012

ZONE INFORMATION

System Name	Zone Name	Occupancy Type	Floor Area (sqft.)	Inst. LPD (W/sf)[1]	Ctrl. Credits (W/sf)[2]	Allowed LPD Area (W/sf)[3]	Allowed LPD Tailored (W/sf)[4]	Proc. Loads (W/sf)

Notes: 1. See LTG-1C (items marked with asterisk, see LTG-1-C by others) 2. See LTG-2C 3. See LTG-3C (by others) 4. See LTG-4C — Items above require special documentation

EXCEPTIONAL CONDITIONS COMPLIANCE CHECKLIST

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justifications, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

- The HVAC System Carrier 25VNA024 & FE4ANF002 includes an Economizer. This system has a cooling output < 75,000 Btuh or a supply cfm < 2500.

The exceptional features listed in this performance approach application have specifically been reviewed. Adequate written justification and documentation for their use have been provided by the applicant.

Authorized Signature or Stamp ____________________

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C

Project Name: Pico Branch Library — Date: 5/3/2012

Project Address: Virginia Avenue Park Santa Monica — Climate Zone: 6 — Total Cond. Floor Area: 7,369 — Addition Floor Area: n/a

GENERAL INFORMATION

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room
☐ Schools (Public School) ☐ Relocatable Public School Bldg ☑ Conditioned Spaces ☐ Unconditioned Spaces
☐ Skylight Area for Large Enclosed Space ≥ 8000 ft² (If checked include the ENV 4C with submittal)
Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration
Approach of Compliance: ☐ Component ☑ Overall Envelope ☐ Unconditioned (file affidavit)
Front Orientation: N, E, S, W or in Degrees: 348 deg

FIELD INSPECTION ENERGY CHECKLIST

OPAQUE SURFACE DETAILS / INSULATION

Tag/ID	Assembly Type	Area (ft²)	Orientation N, E, S, W	U-Factor	Cavity R-Value	Exterior R-Value	Exterior Furring³	Interior R-Value	Interior Furring³	Joint Appendix 4	Condition Status	Pass	Fail²
1	Wall	34	(N)	0.074	R-19					4.3.1-A5	New	☐	☐
2	Door	24	(N)	1.450	None					4.5.1-A1	New	☐	☐
3	Roof	1,491	(N)	0.035	R-30					4.2.2-A17	New	☐	☐
4	Slab	1,501	(N)	0.730	None					4.4.7-A1	New	☐	☐
5	Wall	440	(W)	0.074	R-19					4.3.1-A5	New	☐	☐
6	Wall	285	(S)	0.074	R-19					4.3.1-A5	New	☐	☐
7	Door	64	(S)	1.450	None					4.5.1-A1	New	☐	☐
8	Roof	135	(NW)	0.035	R-30					4.2.2-A17	New	☐	☐
9	Slab	135	(N)	0.730	None					4.4.7-A1	New	☐	☐
10	Wall	113	(N)	0.074	R-19					4.3.1-A5	New	☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. A fail does not meet compliance.

FENESTRATION SURFACE DETAILS

Tag/ID	Fenestration Type	Area (ft²)	Orientation N, E, S, W	Max U-Factor	U-Factor Source	Max (R)SHGC	SHGC Source	Overhang	Conditions Status	Pass	Fail²
1	Window	169	(N)	0.270	COG	0.320	COG	☑	New	☐	☐
2	Skylight	10	(N)	0.270	COG	0.320	COG	☐	New	☐	☐
3	Window	243	(W)	0.270	COG	0.320	COG	☑	New	☐	☐
4	Window	532	(S)	0.270	COG	0.320	COG	☑	New	☐	☐
5	Window	27	(N)	0.270	COG	0.320	COG	☐	New	☐	☐
6	Skylight	4	(N)	0.270	COG	0.320	COG	☐	New	☐	☐
7	Window	497	(E)	0.270	COG	0.320	COG	☑	New	☐	☐
8	Window	64	(N)	0.270	COG	0.320	COG	☑	New	☐	☐
9	Window	27	(E)	0.270	COG	0.320	COG	☑	New	☐	☐
10	Window	23	(S)	0.270	COG	0.320	COG	☐	New	☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C

Project Name: Pico Branch Library — Date: 5/3/2012

Project Address: Virginia Avenue Park Santa Monica — Climate Zone: 6 — Total Cond. Floor Area: 7,369 — Addition Floor Area: n/a

GENERAL INFORMATION

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room
☐ Schools (Public School) ☐ Relocatable Public School Bldg ☑ Conditioned Spaces ☐ Unconditioned Spaces
☐ Skylight Area for Large Enclosed Space ≥ 8000 ft² (If checked include the ENV 4C with submittal)
Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration
Approach of Compliance: ☐ Component ☑ Overall Envelope ☐ Unconditioned (file affidavit)
Front Orientation: N, E, S, W or in Degrees: 348 deg

FIELD INSPECTION ENERGY CHECKLIST

OPAQUE SURFACE DETAILS / INSULATION

Tag/ID	Assembly Type	Area (ft²)	Orientation N, E, S, W	U-Factor	Cavity R-Value	Exterior R-Value	Exterior Furring³	Interior R-Value	Interior Furring³	Joint Appendix 4	Condition Status	Pass	Fail²
11	Roof	377	(N)	0.035	R-30					4.2.2-A17	New	☐	☐
12	Slab	377	(N)	0.730	None					4.4.7-A1	New	☐	☐
13	Wall	273	(N)	0.074	R-19					4.3.1-A5	New	☐	☐
14	Roof	171	(NW)	0.035	R-30					4.2.2-A17	New	☐	☐
15	Slab	171	(N)	0.730	None					4.4.7-A1	New	☐	☐
16	Wall	113	(N)	0.074	R-19					4.3.1-A5	New	☐	☐
17	Roof	2,299	(N)	0.035	R-30					4.2.2-A17	New	☐	☐
18	Slab	2,303	(N)	0.730	None					4.4.7-A1	New	☐	☐
19	Wall	595	(N)	0.074	R-19					4.3.1-A5	New	☐	☐
20	Roof	1,200	(N)	0.035	R-30					4.2.2-A17	New	☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. A fail does not meet compliance.

FENESTRATION SURFACE DETAILS

Tag/ID	Fenestration Type	Area (ft²)	Orientation N, E, S, W	Max U-Factor	U-Factor Source	Max (R)SHGC	SHGC Source	Overhang	Conditions Status	Pass	Fail²
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C

Project Name: Pico Branch Library — Date: 5/3/2012

Project Address: Virginia Avenue Park Santa Monica — Climate Zone: 6 — Total Cond. Floor Area: 7,369 — Addition Floor Area: n/a

GENERAL INFORMATION

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room
☐ Schools (Public School) ☐ Relocatable Public School Bldg ☑ Conditioned Spaces ☐ Unconditioned Spaces
☐ Skylight Area for Large Enclosed Space ≥ 8000 ft² (If checked include the ENV 4C with submittal)
Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration
Approach of Compliance: ☐ Component ☑ Overall Envelope ☐ Unconditioned (file affidavit)
Front Orientation: N, E, S, W or in Degrees: 348 deg

FIELD INSPECTION ENERGY CHECKLIST

OPAQUE SURFACE DETAILS / INSULATION

Tag/ID	Assembly Type	Area (ft²)	Orientation N, E, S, W	U-Factor	Cavity R-Value	Exterior R-Value	Exterior Furring³	Interior R-Value	Interior Furring³	Joint Appendix 4	Condition Status	Pass	Fail²
21	Slab	1,200	(N)	0.730	None					4.4.7-A1	New	☐	☐
22	Wall	40	(S)	0.074	R-19					4.3.1-A5	New	☐	☐
23	Wall	210	(E)	0.074	R-19					4.3.1-A5	New	☐	☐
24	Wall	163	(N)	0.074	R-19					4.3.1-A5	New	☐	☐
25	Roof	870	(N)	0.035	R-30					4.2.2-A17	New	☐	☐
26	Wall	325	(N)	0.074	R-19					4.3.1-A5	New	☐	☐
27	Door	54	(N)	0.700	None					4.5.1-A2	New	☐	☐
28	Wall	415	(E)	0.074	R-19					4.3.1-A5	New	☐	☐
29	Wall	221	(S)	0.074	R-19					4.3.1-A5	New	☐	☐
30	Slab	870	(N)	0.730	None					4.4.7-A1	New	☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. A fail does not meet compliance.

FENESTRATION SURFACE DETAILS

Tag/ID	Fenestration Type	Area (ft²)	Orientation N, E, S, W	Max U-Factor	U-Factor Source	Max (R)SHGC	SHGC Source	Overhang	Conditions Status	Pass	Fail²
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

SHEET OF

DWG. NO. : -

TITLE OF PROJECT :

PICO BRANCH LIBRARY

2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404
310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER — HENRY Y. LAM — No. M33781 — Exp. 06-30-13 — MECHANICAL — STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE
engineers for a sustainable future™

CONSULTANT

City of Santa Monica
Architecture Services
1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

________ DATE : ______ 20 __
SUBMITTED BY :

________ DATE : ______ 20 __
APPROVED BY :
Miriam Mulder,
Architecture Services Manager
CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : ______ 20 __

REVIEWED BY : DATE : ______ 20 __

REVIEWED BY : DATE : ______ 20 __

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
3	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
2	03/06/12		ADDENDUM 3
1	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL TITLE 24

SHEET NO.
M0.2

SHEET OF

DWG. NO. : -

TITLE OF PROJECT :

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 3) ENV-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

Project Address: *Virginia Avenue Park Santa Monica* | Climate Zone: *6* | Total Cond. Floor Area: *7,369* | Addition Floor Area: *n/a*

GENERAL INFORMATION

Building Type: ☒ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room

☐ Schools (Public School) ☐ Relocatable Public School Bldg ☒ Conditioned Spaces ☐ Unconditioned Spaces

☐ Skylight Area for Large Enclosed Space ≥ 8000 ft² (If checked include the ENV-4C with submittal)

Phase of Construction: ☒ New Construction ☐ Addition ☐ Alteration

Approach of Compliance: ☐ Component ☒ Overall Envelope ☐ Unconditioned (file affidavit)

Front Orientation: N, E, S, W or in Degrees: *348 deg*

FIELD INSPECTION ENERGY CHECKLIST

OPAQUE SURFACE DETAILS / **INSULATION**

Tag/ID	Assembly Type	Area (ft²)	Orientation N, E, S, W	U-Factor	Cavity R-Value	Exterior R-Value	Exterior Furring[3]	Interior R-Value	Interior Furring[3]	Joint Appendix 4	Condition Status	Pass	Fail[2]
31	Roof	705	(N)	0.035	R-30					4.2.2-A17	New	☐	☐
32	Slab	705	(N)	0.730	None					4.4.7-A1	New	☐	☐
33	Wall	435	(S)	0.074	R-19					4.3.1-A5	New	☐	☐
34	Wall	45	(W)	0.074	R-19					4.3.1-A5	New	☐	☐
35	Roof	107	(N)	0.035	R-30					4.2.2-A17	New	☐	☐
36	Slab	107	(N)	0.730	None					4.4.7-A1	New	☐	☐
37	Wall	88	(N)	0.074	R-19					4.3.1-A5	New	☐	☐
												☐	☐
												☐	☐
												☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. A fail does not meet compliance.

FENESTRATION SURFACE DETAILS

Tag/ID	Fenestration Type	Area (ft²)	Orientation N, E, S, W	Max U-Factor	U-Factor Source	Max (R)SHGC	SHGC Source	Overhang	Conditions Status	Pass	Fail[2]
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐
								☐		☐	☐

1. See Instructions in the Nonresidential Compliance Manual, page 3-96.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 11 of 43*

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 2 of 3) ENV-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

ROOFING PRODUCT (COOL ROOFS)

(Note if the roofing product is not CRRC certified, this compliance approach cannot be used). Go to Overall Envelope Approach or Performance Approach.

CHECK APPLICABLE BOX BELOW IF EXEMPT FROM THE ROOFING PRODUCT "COOL ROOF" REQUIREMENTS:	Pass	Fail[1]	N/A
☐ Roofing compliance not required in Climate Zones 1 and16 with a Low-Sloped. 2:12 pitch or less.	☐	☐	☐
☐ Roofing compliance not required in Climate Zone 1 with a Steep-Sloped with less than 5 lb/ft². Greater than 2:12 pitch.	☐	☐	☐
☐ Low-sloped Wood framed roofs in Climate Zones 3 and 5 are exempted, solar reflectance and thermal emittance or SRI that have a U-factor of 0.039 or lower. See Opaque Surface Details roof assembly, Column H of ENV-2C.	☐	☐	☐
☐ Low-sloped Metal building roofs in Climate Zone 3 and 5 are exempted, solar relectance and thermal emittance or SRI that have a U-factor of 0.048 or lower. See Opaque Surface Details roof assembly below, Column H of ENV-2C.	☐	☐	☐
☐ The roof area covered by building integrated photovoltaic panels and building integrated solar thermal panels are exempted. Solar reflectance and thermal emittance or SRI, see spreadsheet calculator at www.energy.ca.gov/title24/	☐	☐	☐
☐ Roof constructions that have thermal mass over the roof membrane with a weight of at least 25 lb/ft² are exempt from the Cool Roof criteria below.	☐	☐	☐
☐ High-rise residential buildings and hotels and motels with low-sloped roofs in Climate Zones 1 through 9, 12 and 16 are exempted from the low-sloped roofing criteria.	☐	☐	☐

1. If Fail then describe on this page of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

CRRC Product ID Number[1]	Roof Slope ≤ 2:12	Roof Slope > 2:12	Product Weight < 5lb/ft²	Product Weight ≥ 5lb/ft²	Product Type[2]	Aged Solar Reflectance[3]	Thermal Emmitance	SRI[5]	Pass	Fail[6]
	☐	☐	☐	☐		☐[4]			☐	☐
	☐	☐	☐	☐		☐[4]			☐	☐
	☐	☐	☐	☐		☐[4]			☐	☐
	☐	☐	☐	☐		☐[4]			☐	☐
	☐	☐	☐	☐		☐[4]			☐	☐
	☐	☐	☐	☐		☐[4]			☐	☐

1. The CRRC Product ID Number can be obtained from the Cool Roof Rating Council's Rated Product Directory at www.coolroofs.org/products/search.php
2. Indicate the type of product is being used for the roof top, i.e. single-ply roof, asphalt roof, metal roof, etc.
3. If the Aged Reflectance is not available in the Cool Roof Rating Council's Rated Product Directory then use the Initial Reflectance value from the same directory and use the equation $(0.2+0.7(\rho_{initial} - 0.2)$ to obtain a calculated aged value. Where ρ is the Initial Solar Reflectance from the Cool Roof Rating Council's Rated Product Directory.
4. Check box if the Aged Reflectance is a calculated value using the equation above.
5. The SRI value needs to be calculated from a spreadsheet calculator at http://www.energy.ca.gov/title24/
6. If Fail then describe on this page of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

To apply **Liquid Field Applied Coatings**, the coating must be applied across the entire roof surface and meet the dry mil thickness or coverage recommended by the coatings manufacturer and meet minimum performance requirements listed in §118(i)4. Select the applicable coating:

☐ Aluminum-Pigmented Asphalt Roof Coating ☐ Cement-Based Roof Coating ☐ Other ____________

Discrepancies:

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 12 of 43*

CERTIFICATE OF COMPLIANCE AND FIELD INSPECTION ENERGY CHECKLIST (Part 3 of 3) ENV-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

Required Acceptance Tests

Designer:

This form is to be used by the designer and attached to the plans. Listed below is the acceptance test for Envelope Fenestrations system. The designer is required to check the acceptance tests and list all the fenestration products that require an acceptance test. If all the site-built fenestration of a certain type requires a test, list the different fenestration products and the number of systems. The NA7 Section in the Appendix of the Nonresidential Reference Appendices Manual describes the test. Since this form 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 whenever new fenestration is installed in the building or space shall be certified as meeting the Acceptance Requirements.
The ENV-2A form is not considered a complete form and is not to be accepted by the enforcement agency unless the boxes are checked and/or filled and signed. In addition, a Certificate of Acceptance forms shall be submitted to the enforcement agency that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of §10-103(b) of Title 24 Part 6. The field inspector must receive the properly filled out and signed forms before the building can receive final occupancy. A copy of the ENV-2A for each different fenestration product line must be provided to the owner of the building for their records.

Test Description: Fenestration Products Name or ID Requiring Testing or Verification	Area of like Products	ENV-2A: Building Envelope Acceptance Test	Test Performed By:
Pico Window PPG SOLARBAN 60 (2) Clear	1,881	☑	
Pico Skylight PPG SOLARBAN 60 (2) Clear	14	☑	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	
		☐	

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 13 of 43*

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) MECH-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

Project Address: *Virginia Avenue Park Santa Monica* | Climate Zone: *6* | Total Cond. Floor Area: *7,369* | Addition Floor Area: *n/a*

GENERAL INFORMATION

Building Type: ☒ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room

☐ Schools (Public School) ☐ Relocatable Public School Bldg. ☑ Conditioned Spaces ☐ Unconditioned Spaces (affidavit)

Phase of Construction: ☒ New Construction ☐ Addition ☐ Alteration

Approach of Compliance: ☐ Component ☐ Overall Envelope TDV Energy ☐ Unconditioned (file affidavit)

Front Orientation: N, E, S, W or In Degrees: *345 deg*

HVAC SYSTEM DETAILS Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Meets Criteria or Requirements: Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	DHW Heater	☐	☐
Equipment Type[3]:	Gas Fired DHW Boiler	☐	☐
Number of Systems	2	☐	☐
Max Allowed Heating Capacity[1]	199,000 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	1.00 EF	☐	☐
Max Allowed Cooling Capacity[1]	n/a	☐	☐
Cooling Efficiency[1]	n/a	☐	☐
Duct Location/ R-Value	n/a	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	n/a	☐	☐
Economizer	n/a	☐	☐
Thermostat	n/a	☐	☐
Fan Control	n/a	☐	☐

Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	RTU-1	☐	☐
Equipment Type[3]:	Packaged VAV	☐	☐
Number of Systems	1	☐	☐
Max Allowed Heating Capacity[1]	80 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	81% AFUE	☐	☐
Max Allowed Cooling Capacity[1]	58,000 Btu/hr	☐	☐
Cooling Efficiency[1]	14.3 SEER / 12.5 EER	☐	☐
Duct Location/ R-Value	Attic, Ceiling Ins, unvented / 8.0	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	Yes	☐	☐
Economizer	Diff. Enth (Integrated)	☐	☐
Thermostat	Setback Required	☐	☐
Fan Control	Variable Speed	☐	☐

1. If the Actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 19 of 43*

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) MECH-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

Project Address: *Virginia Avenue Park Santa Monica* | Climate Zone: *6* | Total Cond. Floor Area: *7,369* | Addition Floor Area: *n/a*

GENERAL INFORMATION

Building Type: ☒ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room

☐ Schools (Public School) ☐ Relocatable Public School Bldg. ☒ Conditioned Spaces ☐ Unconditioned Spaces (affidavit)

Phase of Construction: ☒ New Construction ☐ Addition ☐ Alteration

Approach of Compliance: ☐ Component ☐ Overall Envelope TDV Energy ☐ Unconditioned (file affidavit)

Front Orientation: N, E, S, W or In Degrees: *348 deg*

HVAC SYSTEM DETAILS Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Meets Criteria or Requirements: Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	RTU-2	☐	☐
Equipment Type[3]:	Packaged VAV	☐	☐
Number of Systems	1	☐	☐
Max Allowed Heating Capacity[1]	49,000 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	81% AFUE	☐	☐
Max Allowed Cooling Capacity[1]	37,000 Btu/hr	☐	☐
Cooling Efficiency[1]	15.7 SEER / 13.6 EER	☐	☐
Duct Location/ R-Value	Attic, Ceiling Ins, vented / 5.0	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	Yes	☐	☐
Economizer	Diff. Enth (integrated)	☐	☐
Thermostat	Setback Required	☐	☐
Fan Control	Variable Speed	☐	☐

Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	RTU-3	☐	☐
Equipment Type[3]:	Packaged VAV	☐	☐
Number of Systems	1	☐	☐
Max Allowed Heating Capacity[1]	50 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	81% AFUE	☐	☐
Max Allowed Cooling Capacity[1]	39,000 Btu/hr	☐	☐
Cooling Efficiency[1]	15.7 SEER / 13.6 EER	☐	☐
Duct Location/ R-Value	Attic, Ceiling Ins, vented / 8.0	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	Yes	☐	☐
Economizer	Diff. Enth (Integrated)	☐	☐
Thermostat	Setback Required	☐	☐
Fan Control	Variable Speed	☐	☐

1. If the Actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 20 of 43*

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) MECH-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

Project Address: *Virginia Avenue Park Santa Monica* | Climate Zone: *6* | Total Cond. Floor Area: *7,369* | Addition Floor Area: *n/a*

GENERAL INFORMATION

Building Type: ☒ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room

☐ Schools (Public School) ☐ Relocatable Public School Bldg. ☑ Conditioned Spaces ☐ Unconditioned Spaces (affidavit)

Phase of Construction: ☒ New Construction ☐ Addition ☐ Alteration

Approach of Compliance: ☐ Component ☐ Overall Envelope TDV Energy ☐ Unconditioned (file affidavit)

Front Orientation: N, E, S, W or In Degrees: *345 deg*

HVAC SYSTEM DETAILS Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Meets Criteria or Requirements: Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	RTU-4	☐	☐
Equipment Type[3]:	Packaged VAV	☐	☐
Number of Systems	1	☐	☐
Max Allowed Heating Capacity[1]	49,000 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	81% AFUE	☐	☐
Max Allowed Cooling Capacity[1]	36,000 Btu/hr	☐	☐
Cooling Efficiency[1]	15.7 SEER / 13.6 EER	☐	☐
Duct Location/ R-Value	Attic, Ceiling Ins, vented / 8.0	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	Yes	☐	☐
Economizer	Diff. Enth (Integrated)	☐	☐
Thermostat	Setback Required	☐	☐
Fan Control	Variable Speed	☐	☐

Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	RTU-5	☐	☐
Equipment Type[3]:	Packaged VAV	☐	☐
Number of Systems	1	☐	☐
Max Allowed Heating Capacity[1]	49,000 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	81% AFUE	☐	☐
Max Allowed Cooling Capacity[1]	39,000 Btu/hr	☐	☐
Cooling Efficiency[1]	15.7 SEER / 13.6 EER	☐	☐
Duct Location/ R-Value	Attic, Ceiling Ins, vented / 8.0	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	Yes	☐	☐
Economizer	Diff. Enth (Integrated)	☐	☐
Thermostat	Setback Required	☐	☐
Fan Control	Variable Speed	☐	☐

1. If the Actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 21 of 43*

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 1 of 4) MECH-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

Project Address: *Virginia Avenue Park Santa Monica* | Climate Zone: *6* | Total Cond. Floor Area: *7,369* | Addition Floor Area: *n/a*

GENERAL INFORMATION

Building Type: ☒ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room

☐ Schools (Public School) ☐ Relocatable Public School Bldg. ☑ Conditioned Spaces ☐ Unconditioned Spaces (affidavit)

Phase of Construction: ☒ New Construction ☐ Addition ☐ Alteration

Approach of Compliance: ☐ Component ☐ Overall Envelope TDV Energy ☐ Unconditioned (file affidavit)

Front Orientation: N, E, S, W or In Degrees: *345 deg*

HVAC SYSTEM DETAILS Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Meets Criteria or Requirements: Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	CU-1 & FC-1	☐	☐
Equipment Type[3]:	Split DX	☐	☐
Number of Systems	1	☐	☐
Max Allowed Heating Capacity[1]	24,000 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	9.30 HSPF	☐	☐
Max Allowed Cooling Capacity[1]	24,190 Btu/hr	☐	☐
Cooling Efficiency[1]	19.1 SEER / 14.7 EER	☐	☐
Duct Location/ R-Value	Attic, Ceiling Ins, vented / 8.0	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	Yes	☐	☐
Economizer	Fixed Enth (Non-Integ)	☐	☐
Thermostat	Setback Required	☐	☐
Fan Control	Constant Volume	☐	☐

Equipment[2]	Inspection Criteria	FIELD INSPECTION ENERGY CHECKLIST — Pass	Fail – Describe Reason[2]
Item or System Tags (i.e. AC-1, RTU-1, HP-1)	CU-2 & FC-2	☐	☐
Equipment Type[3]:	Split DX	☐	☐
Number of Systems	1	☐	☐
Max Allowed Heating Capacity[1]	48,000 Btu/hr	☐	☐
Minimum Heating Efficiency[1]	n/a	☐	☐
Max Allowed Cooling Capacity[1]	25,000 Btu/hr	☐	☐
Cooling Efficiency[1]	16.7 SEER / 9.1 EER	☐	☐
Duct Location/ R-Value	n/a	☐	☐
When duct testing is required, submit **MECH-4A & MECH-4-HERS**	Yes	☐	☐
Economizer	No Economizer	☐	☐
Thermostat	Setback Required	☐	☐
Fan Control	Constant Volume	☐	☐

1. If the Actual installed equipment performance efficiency and capacity is less than the Proposed (from the energy compliance submittal or from the building plans) the responsible party shall resubmit energy compliance to include the new changes.
2. For additional detailed discrepancy use Page 2 of the Inspection Checklist Form. Compliance fails if a Fail box is checked.
3. Indicate Equipment Type: Gas (Pkg or Split), VAV, HP (Pkg or split), Hydronic, PTAC, or other.

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 22 of 43*

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 2 of 4) MECH-1C

Project Name: *Pico Branch Library* | Date: *5/3/2012*

Discrepancies:

EnergyPro 5.1 by EnergySoft User Number: 7306 ***RunCode: 2012-05-03T14:52:47*** *ID: 06.11.00192 Page 23 of 43*

PICO BRANCH LIBRARY

2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404

310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER HENRY Y. LAM No. M33781 Exp. 06-30-13 MECHANICAL STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE

engineers for a sustainable future™

CONSULTANT

City of Santa Monica
Architecture Services

1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

_______ DATE : _______ 20 __
SUBMITTED BY :

_______ DATE : _______ 20 __
APPROVED BY :
Miriam Mulder,
Architecture Services Manager

CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : _______ 20 __

REVIEWED BY : DATE : _______ 20 __

REVIEWED BY : DATE : _______ 20 __

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
3	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
2	03/06/12		ADDENDUM 3
1	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL TITLE 24

SHEET NO.
M0.3

SHEET
OF
DWG. NO.:
TITLE OF PROJECT:

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 3 of 4) MECH-1C

Project Name: *Pico Branch Library*
Date: *5/3/2012*

Required Acceptance Tests

Designer:

This form 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 listed all equipment that requires 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 form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Building Departments:

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 MECH-1C form is not considered a completed form 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 equipment. In addition a Certificate of Acceptance forms shall be submitted to the building department that certifies plans, specifications, installation, certificates, and operating and maintenance information meet the requirements of §10-103(b) and Title-24 Part 6. The building inspector must receive the properly filled out and signed forms before the building can receive final occupancy.

TEST DESCRIPTION Equipment Requiring Testing or Verification	Qty	MECH-2A Outdoor Ventilation For VAV & CAV	MECH-3A Constant Volume & Single-Zone Unitary	MECH-4A Air Distribution Ducts	MECH-5A Economizer Controls	MECH-6A Demand Control Ventilation DCV	MECH-7A Supply Fan VAV	MECH-8A Valve Leakage Test	MECH-9A Supply Water Temp. Reset	MECH-10A Hydronic System Variable Flow Control	MECH-11A Automatic Demand Shed Control
RTU-1 - AAON RN006	1	☑	☐	☑	☑	☑	☑	☐	☐	☐	☑
RTU-2 - AAON RQ003	1	☑	☐	☑	☑	☐	☑	☐	☐	☐	☑
RTU-3 - AAON RQ003	1	☑	☐	☑	☑	☑	☑	☐	☐	☐	☑
RTU-4 - AAON RQ003	1	☑	☐	☑	☑	☑	☑	☐	☐	☐	☑
RTU-5 - AAON RQ003	1	☐	☐	☑	☑	☑	☑	☐	☐	☐	☑
Carrier 25VNA024 & FE4ANF002	1	☑	☑	☑	☑	☑	☐	☐	☐	☐	☑
Carrier RAVKR024	1	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑
		☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

CERTIFICATE OF COMPLIANCE and FIELD INSPECTION ENERGY CHECKLIST (Part 4 of 4) MECH-1C

Project Name: *Pico Branch Library*
Date: *5/3/2012*

TEST DESCRIPTION Equipment Requiring Testing	Qty	MECH-12A Fault Detection & Diagnostics for DX Units	MECH-13A Automatic Fault Detection & Diagnostics for Air & Zone	MECH-14A Distributed Energy Storage DX AC Systems	MECH-15A Thermal Energy Storage (TES) Systems	Test Performed By:
RTU-1 - AAON RN006	1	☑	☐	☐	☐	
RTU-2 - AAON RQ003	1	☑	☐	☐	☐	
RTU-3 - AAON RQ003	1	☑	☐	☐	☐	
RTU-4 - AAON RQ003	1	☑	☐	☐	☐	
RTU-5 - AAON RQ003	1	☑	☐	☐	☐	
Carrier 25VNA024 & FE4ANF002	1	☐	☑	☐	☐	
Carrier RAVKR024	1	☐	☑	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐ ☐	☐ ☐	☐ ☐	☐ ☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	
		☐	☐	☐	☐	

AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C

Project Name: *Pico Branch Library*
Date: *5/3/2012*

Item or System Tags (i.e. AC-1, RTU-1, HP-1)	**Indicate Air Systems Type (Central, Single Zone, Package, VAV, or etc...)**	*RTU-1*	*RTU-2*	*RTU-3*
Number of Systems		*1*	*1*	*1*
	Indicate Page Reference on Plans or Schedule and indicate the applicable exception(s)			
MANDATORY MEASURES	**T-24 Sections**			
Heating Equipment Efficiency	112(a)	*81% AFUE*	*81% AFUE*	*81% AFUE*
Cooling Equipment Efficiency	112(a)	*14.3 SEER / 12.5 EER*	*15.7 SEER / 13.6 EER*	*15.7 SEER / 13.6 EER*
HVAC Heat Pump Thermostat	112(b), 112(c)	*n/a*	*n/a*	*n/a*
Furnace Controls/Thermostat	112(c), 115(a)	*n/a*	*n/a*	*n/a*
Natural Ventilation	121(b)	*No*	*No*	*No*
Mechanical Ventilation	121(b)	*225 cfm*	*397 cfm*	*531 cfm*
VAV Minimum Position Control	121(c)	*No*	*No*	*No*
Demand Control Ventilation	121(c)	*Yes*	*No*	*Yes*
Time Control	122(e)	*Programmable Switch*	*Programmable Switch*	*Programmable Switch*
Setback and Setup Control	122(e)	*Setback Required*	*Setback Required*	*Setback Required*
Outdoor Damper Control	122(f)	*Auto*	*Auto*	*Auto*
Isolation Zones	122(g)	*n/a*	*n/a*	*n/a*
Pipe Insulation	123			
Duct Location/ R-value	124	*Attic, Ceiling Ins, unvented / 8.0*	*Attic, Ceiling Ins, vented / 8.0*	*Attic, Ceiling Ins, vented / 8.0*
PRESCRIPTIVE MEASURES				
Calculated Design Heating Load	144(a & b)	*n/a*	*n/a*	*n/a*
Proposed Heating Capacity	144(a & b)	*80 Btu/hr*	*49,000 Btu/hr*	*80 Btu/hr*
Calculated Design Cooling Load	144(a & b)	*n/a*	*n/a*	*n/a*
Proposed Cooling Capacity	144(a & b)	*54,216 Btu/hr*	*30,472 Btu/hr*	*36,400 Btu/hr*
Fan Control	144(c)	*Variable Speed*	*Variable Speed*	*Variable Speed*
DP Sensor Location	144(c)			
Supply Pressure Reset (DDC only)	144(c)	*Yes*	*Yes*	*Yes*
Simultaneous Heat/Cool	144(d)	*No*	*No*	*No*
Economizer	144(e)	*Diff. Enth (Integrated)*	*Diff. Enth (Integrated)*	*Diff. Enth (Integrated)*
Heat Air Supply Reset	144(f)	*Coldest Zone*	*Coldest Zone*	*Coldest Zone*
Cool Air Supply Reset	144(f)	*Constant Temp*	*Constant Temp*	*Constant Temp*
Electric Resistance Heating[1]	144(g)			
Air Cooled Chiller Limitation	144(i)			
Duct Leakage Sealing. If Yes, a MECH-4-A must be submitted	144(k)	*Yes*	*Yes*	*Yes*

1. Total installed capacity (MBtu/hr) of all electric heat on this project exclusive of electric auxiliary heat for heat pumps. If electric heat is used explain which exception(s) to §144(g) apply.

AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C

Project Name: *Pico Branch Library*
Date: *5/3/2012*

Item or System Tags (i.e. AC-1, RTU-1, HP-1)	**Indicate Air Systems Type (Central, Single Zone, Package, VAV, or etc...)**	*RTU-4*	*RTU-5*	*CU-1 & FC-1*
Number of Systems		*1*	*1*	*1*
	Indicate Page Reference on Plans or Schedule and indicate the applicable exception(s)			
MANDATORY MEASURES	**T-24 Sections**			
Heating Equipment Efficiency	112(a)	*81% AFUE*	*81% AFUE*	*9.30 HSPF*
Cooling Equipment Efficiency	112(a)	*15.7 SEER / 13.6 EER*	*15.7 SEER / 13.6 EER*	*19.1 SEER / 14.7 EER*
HVAC Heat Pump Thermostat	112(b), 112(c)	*n/a*	*n/a*	*Yes*
Furnace Controls/Thermostat	112(c), 115(a)	*n/a*	*n/a*	*n/a*
Natural Ventilation	121(b)	*No*	*Yes*	*No*
Mechanical Ventilation	121(b)	*180 cfm*	*870 cfm*	*106 cfm*
VAV Minimum Position Control	121(c)	*No*	*No*	*No*
Demand Control Ventilation	121(c)	*Yes*	*Yes*	*Yes*
Time Control	122(e)	*Programmable Switch*	*Programmable Switch*	*Programmable Switch*
Setback and Setup Control	122(e)	*Setback Required*	*Setback Required*	*Setback Required*
Outdoor Damper Control	122(f)	*Auto*	*Auto*	*Auto*
Isolation Zones	122(g)	*n/a*	*n/a*	*n/a*
Pipe Insulation	123			
Duct Location/ R-value	124	*Attic, Ceiling Ins, vented / 8.0*	*Attic, Ceiling Ins, vented / 8.0*	*Attic, Ceiling Ins, vented / 8.0*
PRESCRIPTIVE MEASURES				
Calculated Design Heating Load	144(a & b)	*n/a*	*n/a*	*n/a*
Proposed Heating Capacity	144(a & b)	*49,000 Btu/hr*	*49,000 Btu/hr*	*25,185 Btu/hr*
Calculated Design Cooling Load	144(a & b)	*n/a*	*n/a*	*n/a*
Proposed Cooling Capacity	144(a & b)	*29,765 Btu/hr*	*34,575 Btu/hr*	*22,583 Btu/hr*
Fan Control	144(c)	*Variable Speed*	*Variable Speed*	*Constant Volume*
DP Sensor Location	144(c)			
Supply Pressure Reset (DDC only)	144(c)	*Yes*	*Yes*	*Yes*
Simultaneous Heat/Cool	144(d)	*No*	*No*	*No*
Economizer	144(e)	*Diff. Enth (Integrated)*	*Diff. Enth (Integrated)*	*Fixed Enth (Non-Integ)*
Heat Air Supply Reset	144(f)	*Coldest Zone*	*Coldest Zone*	*Constant Temp*
Cool Air Supply Reset	144(f)	*Constant Temp*	*Constant Temp*	*Constant Temp*
Electric Resistance Heating[1]	144(g)			
Air Cooled Chiller Limitation	144(i)			
Duct Leakage Sealing. If Yes, a MECH-4-A must be submitted	144(k)	*Yes*	*Yes*	*Yes*

1. Total installed capacity (MBtu/hr) of all electric heat on this project exclusive of electric auxiliary heat for heat pumps. If electric heat is used explain which exception(s) to §144(g) apply.

AIR SYSTEM REQUIREMENTS (Part 1 of 2) MECH-2C

Project Name: *Pico Branch Library*
Date: *5/3/2012*

Item or System Tags (i.e. AC-1, RTU-1, HP-1)	**Indicate Air Systems Type (Central, Single Zone, Package, VAV, or etc...)**	*CU-2 & FC-2*		
Number of Systems		*1*		
	Indicate Page Reference on Plans or Schedule and indicate the applicable exception(s)			
MANDATORY MEASURES	**T-24 Sections**			
Heating Equipment Efficiency	112(a)	*n/a*		
Cooling Equipment Efficiency	112(a)	*16.7 SEER / 9.1 EER*		
HVAC Heat Pump Thermostat	112(b), 112(c)	*n/a*		
Furnace Controls/Thermostat	112(c), 115(a)	*n/a*		
Natural Ventilation	121(b)	*No*		
Mechanical Ventilation	121(b)	*6 cfm*		
VAV Minimum Position Control	121(c)	*No*		
Demand Control Ventilation	121(c)	*No*		
Time Control	122(e)	*Programmable Switch*		
Setback and Setup Control	122(e)	*Setback Required*		
Outdoor Damper Control	122(f)	*Auto*		
Isolation Zones	122(g)	*n/a*		
Pipe Insulation	123			
Duct Location/ R-value	124	*n/a*		
PRESCRIPTIVE MEASURES				
Calculated Design Heating Load	144(a & b)	*n/a*		
Proposed Heating Capacity	144(a & b)	*0 Btu/hr*		
Calculated Design Cooling Load	144(a & b)	*n/a*		
Proposed Cooling Capacity	144(a & b)	*21,214 Btu/hr*		
Fan Control	144(c)	*Constant Volume*		
DP Sensor Location	144(c)			
Supply Pressure Reset (DDC only)	144(c)	*Yes*		
Simultaneous Heat/Cool	144(d)	*No*		
Economizer	144(e)	*No Economizer*		
Heat Air Supply Reset	144(f)	*Constant Temp*		
Cool Air Supply Reset	144(f)	*Constant Temp*		
Electric Resistance Heating[1]	144(g)			
Air Cooled Chiller Limitation	144(i)			
Duct Leakage Sealing. If Yes, a MECH-4-A must be submitted	144(k)	*Yes*		

1. Total installed capacity (MBtu/hr) of all electric heat on this project exclusive of electric auxiliary heat for heat pumps. If electric heat is used explain which exception(s) to §144(g) apply.

WATER SIDE SYSTEM REQUIREMENTS (Part 2 of 2) MECH-2C

Project Name: *Pico Branch Library*
Date: *5/3/2012*

Item or System Tags (i.e. AC-1, RTU-1, HP-1)[1]	**WATER[2] SIDE SYSTEMS: Chillers, Towers, Boilers, Hydronic Loops**			
Number of Systems				
	Indicate Page Reference on Plans or Specification[2]			
MANDATORY MEASURES	**T-24 Sections**			
Equipment Efficiency	112(a)			
Pipe Insulation	123			
PRESCRIPTIVE MEASURES				
Cooling Tower Fan Controls	144(a & b)			
Cooling Tower Flow Controls	144(h)			
Variable Flow System Design	144(h)			
Chiller and Boiler Isolation	144(j)			
CHW and HHW Reset Controls	144(j)			
WLHP Isolation Valves	144(j)			
VSD on CHW, CW & WLHP Pumps>5HP	144(j)			
DP Sensor Location	144(j)			

1. The proposed equipment need to match the building plans schedule or specifications. If a requirement is not applicable, put "N/A" in the column next to applicable section.
2. For each chiller, cooling tower, boiler, and hydronic loop (or groups of similar equipment) fill in the reference to sheet number and/or specification section and paragraph number where the required features are documented. If a requirement is not applicable, put "N/A" in the column next to applicable section.

Item or System Tags (i.e. WH-1, WHP, DHW, etc...)[1]	**Service Hot Water, Pool Heating**	*DHW Heater*		
Number of Systems		*2*		
	Indicate Page Reference on Plans or Schedule[2]			
MANDATORY MEASURES	**T-24 Sections**			
SERVICE HOT WATER				
Certified Water Heater	111, 113(a)	*Noritz NC-199-OD*		
Water Heater Efficiency	113(b)	*1.00 EF*		
Service Water Heating Installation	113(c)	*Controls Req.*		
Pipe Insulation	123	*Required*		
POOL AND SPA				
Pool and Spa Efficiency and Control	114(a)	*n/a*		
Pool and Spa Installation	114(b)	*n/a*		
Pool Heater – No Pilot Light	115(c)	*n/a*		
Spa Heater – No Pilot Light	115(d)	*n/a*		
Pipe Insulation	123	*n/a*		

1. The Proposed equipment needs to match the building plans schedule or specifications. If a requirement is not applicable, put "N/A" in the column next to applicable section.
2. For each water heater, pool heater and domestic water loop (or groups of similar equipment) fill in the reference to sheet number and/or specification section and paragraph number where the required features are documented. If a requirement is not applicable, put "N/A" in the column.

MECHANICAL VENTILATION AND REHEAT MECH-3C

Project Name: *Pico Branch Library*
Date: *5/3/2012*

MECHANICAL VENTILATION (§121(b)2)									REHEAT LIMITATION (§144(d))				
	AREA BASIS			OCCUPANCY BASIS					VAV MINIMUM				
A Zone/System	B Condition Area (ft²)	C CFM per ft²	D Min CFM By Area B X C	E Number Of People	F CFM per Person	G Min CFM by Occupant E X F	H REQ'D V.A. Max of D or G	I Design Ventilation Air CFM	J 50% of Design Zone Supply CFM	K B X 0.4 CFM / ft²	L Max of Columns H, J, K, 300 CFM	M Design Minimum Air Setpoint	N Transfer Air
Zone 1 - Entry/Children's Library/P	*1,501*	*0.15*	*225*	*15.0*	*15.0*	*225*	*225*	*225*					
RTU-1						*Total*	*225*	*225*					
Zone 2 - Branch Manager	*135*	*0.15*	*20*	*1.9*	*15.0*	*29*	*29*	*29*					
Zone 2 - Group Study Rooms	*377*	*0.15*	*57*	*12.6*	*15.0*	*189*	*189*	*189*					
Zone 2 - Staff Lounge	*171*	*0.15*	*26*	*4.0*	*15.0*	*60*	*60*	*180*					
RTU-2						*Total*	*277*	*397*					
Zone 3 - Computer Commons/Cus	*2,303*	*0.15*	*345*	*35.4*	*15.0*	*531*	*531*	*531*					
RTU-3						*Total*	*531*	*531*					
Zone 4 - Collections & Seating	*1,200*	*0.15*	*180*	*12.0*	*15.0*	*180*	*180*	*180*					
RTU-4						*Total*	*180*	*180*					
Zone 5 - Community Room	*870*	*0.50*	*435*	*58.0*	*15.0*	*870*	*870*	*870*					
RTU-5						*Total*	*870*	*870*					
Zone 6 - Workroom	*705*	*0.15*	*106*	*7.1*	*15.0*	*106*	*106*	*106*					
CU-1 & FC-1						*Total*	*106*	*106*					
Zone 7 - IT Room	*107*	*0.15*	*16*	*0.4*	*15.0*	*6*	*16*	*6*					*10*
			Totals						Column I Total Design Ventilation Air				

C	Minimum ventilation rate per Section §121, Table 121-A.
E	Based on fixed seat or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
H	Required Ventilation Air (REQ'D V.A.) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column D or G).
I	Must be greater than or equal to H, or use Transfer Air (column N) to make up the difference.
J	Design fan supply CFM (Fan CFM) x 50%; or the design zone outdoor airflow rate per §121.
K	Condition area (ft²) x 0.4 CFM / ft²; or
L	Maximum of Columns H, J, K, or 300 CFM
M	This must be less than or equal to Column L and greater than or equal to the sum of Columns H plus N.
N	Transfer Air must be provided where the Required Ventilation Air (Column H) is greater than the Design Minimum Air (Column M). Where required, transfer air must be greater than or equal to the difference between the Required Ventilation Air (Column H) and the Design Minimum Air (Column M), Column H minus M.

PICO BRANCH LIBRARY

2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404

310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

HENRY Y. LAM
No. M33781
Exp. 06-30-13

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE

engineers for a sustainable future™

CONSULTANT

City of
Santa Monica
Architecture Services

1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

SUBMITTED BY : ____ DATE : ____ 20 __

APPROVED BY : ____ DATE : ____ 20 __
Miriam Mulder,
Architecture Services Manager

CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : ____ 20 __

REVIEWED BY : DATE : ____ 20 __

REVIEWED BY : DATE : ____ 20 __

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
3	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
2	03/06/12		ADDENDUM 3
1	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL TITLE 24

SHEET NO.
M0.4

MECHANICAL VENTILATION AND REHEAT — MECH-3C

Project Name: *Pico Branch Library* — Date: *5/3/2012*

	MECHANICAL VENTILATION (§121(b)2)								REHEAT LIMITATION (§144(d))		
	AREA BASIS			OCCUPANCY BASIS			VAV MINIMUM				
A	B	C	D	E	F	G	H	I	J	K	L	M	N
Zone/System	Condition Area (ft²)	CFM per ft²	Min CFM By Area B X C	Number Of People	CFM per Person	Min CFM by OCCupant E X F	REQ'D V.A. Rate of Dist G	Design Ventilation Air CFM	70% of Design Zone Supply CFM	B X 0.4 CFM / ft²	Max. of Columns H, J, K 300 CFM	Design Minimum Air Setpoint	Transfer Air
GNAZ 8-HC-2							res/v	18	9				
				Totals:					Column I Total Design Ventilation Air				

C	Minimum ventilation rate per Section §121, Table 121-A.
E	Either a fixed area or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes, for spaces without fixed seating.
H	Required Ventilation Air (REQ'D V.A.) is the larger of the ventilation rates calculated for an AREA BASIS or OCCUPANCY BASIS (Column D or G).
I	Must be greater than or equal to H or use Transfer Air (column N) to make up the difference.
J	Design fan supply CFM (Fan CFM) x 50%, or the design zone outdoor airflow rate per §121
K	Conditior area (ft²) x 0.4 CFM / ft², or...
L	Maximum of Columns H, J, K, or 300 CFM.
M	This must be less than or equal to Column L and greater than or equal to the sum of Columns H plus N.
N	Transfer Air must be provided where the Required Ventilation Air (Column H) is greater than the Design Minimum Air (Column M). Where required, transfer air must be greater than or equal to the difference between the Required Ventilation Air (Column H) and the Design Minimum Air (Column M). Column H minus M.

MECHANICAL EQUIPMENT DETAILS (Part 1 of 2) — MECH-5C

Project Name: *Pico Branch Library* — Date: *5/3/2012*

CHILLER AND TOWER SUMMARY

					PUMPS			
Equipment Name	Type	Qty.	Efficiency	Tons	Qty.	GPM	BHP	Pump Control

DHW / BOILER SUMMARY

System Name	Type	Distribution	Qty.	Rated Input	Vol. (Gals).	Energy Factor or Eff.	Standby Loss or Pilot	Tank Ext. R-Value	Status
Noritz NC-199-OD	Instant Gas	Kitchen Pipe Ins	2	199,000	0	1.00		n/a	New

MULTI-FAMILY CENTRAL WATER HEATING DETAILS

Control	Hot Water Pump Qty.	Hot Water Pump HP	Type	Hot Water Piping Length (ft) In Plenum	Outside	Buried	Add ½" Insulation
							☐
							☐
							☐

CENTRAL SYSTEM RATINGS

		HEATING			COOLING		
System Name	Type	Qty.	Output	Aux. kW	Efficiency	Output	Efficiency	Status
RTU-1 - AADU RN006	Packaged VAV	1	80	0.0	81% AFUE	58,000	14.3 SEER / 12.5 EER	New
RTU-2 - AADU RQ003	Packaged VAV	1	49,000	0.0	81% AFUE	37,000	15.7 SEER / 13.6 EER	New
RTU-3 - AADU RQ003	Packaged VAV	1	80	0.0	81% AFUE	39,000	15.7 SEER / 13.6 EER	New
RTU-4 - AADU RQ003	Packaged VAV	1	49,000	0.0	81% AFUE	36,000	15.7 SEER / 13.6 EER	New
RTU-5 - AADU RQ003	Packaged VAV	1	49,000	0.0	81% AFUE	38,000	15.7 SEER / 13.6 EER	New
Carrier 25VNA024 & FB4ANF002	Split DX	1	21,000	1.8	9.30 HSPF	23,100	19.1 SEER / 11.7 EER	New
Carrier 7AAW7924	Split DX	1		0.0	n/a	25,000	16.7 SCCT / 9.1 ECT	New

CENTRAL SYSTEM FAN SUMMARY

			SUPPLY FAN		RETURN FAN	
System Name	Fan Type	Economizer Type	CFM	BHP	CFM	BHP
RTU-1 - AADU RN006	Variable Speed	Diff. Enth (Integrated)	2,600	1.61	none	
RTU-2 - AADU RQ003	Variable Speed	Diff. Enth (Integrated)	800	0.55	none	
RTU-3 - AADU RQ003	Variable Speed	Diff. Enth (Integrated)	2,600	1.77	none	
RTU-4 - AADU RQ003	Variable Speed	Diff. Enth (Integrated)	2,200	1.42	none	
RTU 5 - AADU RQ003	Variable Speed	Diff. Enth (Integrated)	2,200	1.32	none	
Carrier 25VNA024 & FB4ANF002	Constant Volume	Fixed Enth (Non-Integ)	800	0.50	none	
Carrier 7AAW7924	Constant Volume	No Economizer	830	0.63	none	

MECHANICAL EQUIPMENT DETAILS (Part 2 of 2) — MECH-5C

Project Name: *Pico Branch Library* — Date: *5/3/2012*

ZONE SYSTEM SUMMARY

		SYSTEM				VAV		Fan			
Zone Name	System Name	Type	Qty.	Heating	Cooling	Min CFM Ratio	Reheat Coil	CFM	BHP	Fan Access	ECM Motor	Outside Air
Zone 1 - Entry/Children's Libra	Displacement Ventilation	VAV Diffuser	1	0			None	none		☐	☐	
Zone 2 - Branch Manager	Displacement Ventilation	VAV Diffuser	1	0			None	none		☐	☐	
Zone 2 - Group Study Rooms	Displacement Ventilation	VAV Diffuser	1	0			None	none		☐	☐	
Zone 2 - Staff Lounge	Displacement Ventilation	VAV Diffuser	1	0			None	none		☐	☐	
Zone 3 - Computer Commons	Displacement Ventilation	VAV Diffuser	1	0			None	none		☐	☐	
Zone 4 - Collections & Seating	Displacement Ventilation	VAV Diffuser	1	0			None	none		☐	☐	
Zone 5 - Community Room	Displacement Ventilation	VAV Diffuser	1	0			None	none		☐	☐	
Zone 6 - Workroom	Ceiling Supply	VAV Box	1	0		30 %	None			☐	☐	
Zone 7 - IT Room	Ceiling Supply	VAV Box	1	0		30 %	None			☐	☐	
										☐	☐	
										☐	☐	
										☐	☐	
										☐	☐	
										☐	☐	
										☐	☐	
										☐	☐	
										☐	☐	
										☐	☐	

EXHAUST FAN SUMMARY

EXHAUST FAN				EXHAUST FAN				EXHAUST FAN			
Room Name	Qty.	CFM	BHP	Room Name	Qty.	CFM	BHP	Room Name	Qty.	CFM	BHP
Restrooms	1.0	640	0.10	132 Electrical Room	1.0	150	0.05				
116 Staff Lounge	1.0	160	0.01								
123 Vestry	1.0	130	0.02								
Restrooms	1.0	70	0.04								

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name: *Pico Branch Library* — Date: *5/3/2012*

DESCRIPTION	
Building Envelope Measures:	
§110.8(a):	Insulation entering material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(f):	The opaque portions of framed demising walls in non-residential buildings shall have insulation with an installed R-value of no less than R-3 between framing members.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a) 1:	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft² of window area, 0.5 cfm/ft² of door area for residential doors, 0.3 cfm/ft² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft² for nonresidential double doors (swinging).
§110.6(a) 2:	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a) 3:	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).

LIGHTING MANDATORY MEASURES: NONRESIDENTIAL — LTG-MM

Project Name: *Pico Branch Library* — Date: *5/3/2012*

Indoor Lighting Measures:	
§131(d):	**Shut-off Controls**
	1. For every floor, all interior lighting systems shall be equipped with a separate automatic control to shut off the lighting. This automatic control shall meet the requirements of Section 119 and may be an occupancy sensor, automatic time switch, or other device capable of automatically shutting off the lighting.
	2. Override for Building Lighting Shut-off. The automatic building shut-off system is provided with a manual, accessible override switch in sight of the lights. The area of override is not to exceed 5,000 square feet.
§110(b):	Automatic Controls Devices Certified. All automatic control devices specified are certified, all alternate equipment shall be certified and installed as directed by the manufacturer.
§131(e):	Fluorescent Ballast and Luminaires Certified. All fluorescent fixtures specified for the project are certified and listed in the Directory. All installed fixtures shall be certified.
§131(b):	Individual Room/Area Controls: Each room and area in this building is equipped with a separate switch or occupancy sensor device for each area with floor to ceiling walls.
§131(c):	Uniform Reduction for Individual Rooms. All rooms and areas greater than 100 square feet and more than 3.6 watts per square foot of lighting load shall be controlled with bi-level switching for uniform reduction of lighting within the room.
§131(c):	Daylight Area Control. All rooms with windows and skylights that are greater than 250 square feet and that allow for the effective use of daylight in the area shall have 50% of the lamps in each daylit area controlled by a separate switch; or the effective use of daylight cannot be accomplished because the windows are continuously shaded by a building on the adjacent lot. Diagram of shading during different times of the year is included on plans.
§131(c):	Display Lighting. Display lighting shall be separately switched on circuits that are 20 amps or less.
Outdoor Lighting Measures:	
§130(c) 1:	Mandatory lighting power determination for medium base sockets without permanently installed ballasts
§132(a):	All permanently installed luminaires with lamps rated over 100 Watts shall have a lamp efficacy of at least 80 lumens per Watt or are controlled by a motion sensor.
§132(b):	All Luminaires with lamps rated greater than 175 Watts in hardscape area, including parking lots, building entrances, canopies, and all outdoor sales areas meet the Cutoff Requirements.
§132(c) 1:	All permanently installed outdoor lighting meets the control requirements listed.
§132(c):	Building facades, parking lots, garages, canopies, and outdoor sales areas meet the Multi-Level Lighting requirements listed.

MECHANICAL MANDATORY MEASURES: NONRESIDENTIAL — MECH-MM

Project Name: *Pico Branch Library* — Date: *5/3/2012*

Equipment and System Efficiencies	
§111:	Any appliance for which there is a California standard established in the Appliance Efficiency Regulations will comply with the applicable standard.
§151(a):	Fan type central furnaces shall not have a pilot light.
§123:	Piping, except that conveying fluids at temperatures between 60 and 105 degrees Fahrenheit or within HVAC equipment, shall be insulated in accordance with Standards Section 123.
§174:	All heating duct systems shall be installed and insulated in compliance with Sections 601, 602, 603, 604 and 605 of the CMC Standards.
Controls	
§122(a):	Each space conditioning system shall be installed with one of the following:
1A.	Each space conditioning system serving building types such as offices and manufacturing facilities (and all others not explicitly exempt from the requirements of Section 112 (d)) shall be installed with an automatic time switch with an accessible manual override that allows operation of the system during off-hours for up to 4 hours. The time switch shall be capable of programming different schedules for weekdays and weekends and have program backup capabilities that prevent the loss of the device's program and time setting for at least 10 hours if power is interrupted; or
1B.	An occupancy sensor to control the operating period of the system; or
1C.	A 4-hour timer that can be manually operated to control the operating period of the system.
2.	Each space conditioning system shall be installed with controls that temporarily restart and temporarily operate the system as required to maintain a setback heating and/or a setup cooling thermostat setpoint.
§122(g):	Each space conditioning system serving multiple zones with a combined conditioned floor area more than 25,000 square feet shall be provided with isolation zones. Each zone shall not exceed 25,000 square feet shall be provided with isolation devices, such as valves or dampers, that allow the supply of heating or cooling to be setback or shut off independently of other isolation areas, and shall be controlled by a time control device as described above.
§122(c):	The controls shall have manual setpoints in degrees Fahrenheit (F) and adjustable setpoint stops accessible only to authorized personnel.
§122(b):	Heat pumps shall be installed with controls to prevent electric resistance supplemental heater operation when the heating load can be met by the heat pump alone.
§122(a)&(b):	Each space conditioning system shall be controlled by an individual thermostat that responds to temperature within the zone. Where used to control heating, the control shall be adjustable down to 55 degrees F or lower. For cooling, the control shall be adjustable up to 85 degrees F or higher. Where used for both heating and cooling, the control shall be capable of providing a deadband of at least 5 degrees F within which the supply of heating and cooling is shut off or reduced to a minimum.
Ventilation	
§121(e):	Controls shall be provided to allow outside air dampers or devices to be operated at the ventilation rates as specified on these plans.
§122(i):	All gravity ventilating systems shall be provided with automatic or readily accessible manually operated dampers in all openings to the outside, except for combustion air openings.
§121(f):	Ventilation System Acceptance. Before an occupancy permit is granted for a newly constructed building or space, or a new ventilating system serving a building or space is operated for normal use all ventilation systems serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.
Service Water Heating Systems	
§110.3(c):	Insulation
3.	Temperature controls for public lavatories. The controls shall limit the outlet temperature to 110°F.
2.	Circulating service water-heating systems shall have a control capable of automatically turning off the circulating pump when hot water is not required.

TITLE OF PROJECT:

PICO BRANCH LIBRARY

2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404
310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

GLUMAC

617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE

engineers for a sustainable future℠

CONSULTANT

City of Santa Monica
Architecture Services
1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

DATE: _____ 20__
SUBMITTED BY:

DATE: _____ 20__
APPROVED BY:
Miriam Mulder,
Architecture Services Manager
CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY: DATE: _____ 20__

REVIEWED BY: DATE: _____ 20__

REVIEWED BY: DATE: _____ 20__

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
5	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
3	03/06/12		ADDENDUM 3
2	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO.
6693

SHEET TITLE
MECHANICAL TITLE 24

SHEET NO.
M0.5

PACKAGED ROOFTOP UNIT SCHEDULE (NATURAL GAS)

TAG	MFR & MODEL	LOCATION	AREA SERVED	NOM. CAP. (TONS)	SUPPLY AIRFLOW (CFM)	SUPPLY MIN OSA (CFM)	SUPPLY MIN DCV OSA (CFM)	SUPPLY ESP (IN.WG.)	SUPPLY BHP	SUPPLY HP	EER	SEER	COOLING TOTAL (MBH)	COOLING SENS (MBH)	COOLING EAT DB/WB (°F)	COOLING LAT DB/WB (°F)	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	FILTER TYPE	ELECTRICAL V/PH	ELECTRICAL MCA (A)	ELECTRICAL MOCP (A)	UNIT SIZE (L"xW"xH")	OPER. WT. (LBS)	NOTES
RTU–1	AAON RN006	ROOF	CHILDREN'S LIBRARY/POP MATERIAL	6	2,800	400	230	1.25	1.61	2	12.5	14.3	58.0	56.0	76.3/63.4	57.6/56.4	90.0	73	MERV 13	208/3/60	39	50	83x79x44	1300	1,2,3,4,5,6,7,8,9,10,11,13
RTU–2	AAON RQ003	ROOF	MANAGER RM/STAFF/GROUP STUDY	3	800	350	120	1.45	0.57	1	13.55	15.7	37.0	26.0	81/66.2	51.1/49.4	60.0	49	MERV 13	208/3/60	24	35	83x45x45	800	1,2,3,4,5,6,8,9,10,11,13
RTU–3	AAON RQ003	ROOF	COMPUTER COMMONS	3	2,000	600	350	1.25	1.77	2	13.55	15.7	39.0	39.0	78.8/64.9	60.6/58.5	60.0	49	MERV 13	208/3/60	32	40	83x45x45	900	1,2,3,4,5,6,7,8,9,10,11,13
RTU–4	AAON RQ003	ROOF	COLLECTION & SEATING	3	2,200	300	180	1.25	1.92	2	13.55	15.7	38.0	38.0	76.3/63.4	59.7/57.4	60.0	49	MERV 13	208/3/60	32	40	83x45x45	900	1,2,3,4,5,6,7,8,9,10,11,13
RTU–5	AAON RQ005	ROOF	COMMUNITY ROOM	3	2,200	740	140	1.25	1.92	2	13.55	15.7	39.0	39.0	78.6/64.8	61.2/58.6	60.0	49	MERV 13	208/3/60	32	40	83x45x45	900	1,2,3,4,5,6,7,8,9,10,11,12,13

NOTES
1. FUSED DISCONNECT PROVIDED BY ELEC CONTRACTOR.
2. SEE PLUMBING PLAN FOR GAS LINE AND CONDENSATE DRAIN LINE.
3. PROVIDE 14" PRE–FABRICATED ROOF CURB WITH SPRING ISOLATORS.
4. VERTICAL DISCHARGES FOR SUPPLY AIR AND RETURN AIR.
5. PROVIDE ENVIRONMENTAL PROTECTIVE PAINT ON COILS
6. PROVIDE MANUFACTURER THERMOSTAT THAT IS CAPABLE TO CONNECT TO BMS SYSTEM. RTU SHOULD BE CONTROLLED BY BMS.
7. PROVIDE CO2 SENSOR TO MODULATE THE OUTSIDE AIR INTAKE TO MEET THE CODE REQUIREMENT.
8. PROVIDE ECONOMIZER WITH POWER EXHAUST FAN.
9. REFRIGERANT TYPE R–410A.
10. PROVIDE CONVENIENCE POWER OUTLET.
11. FRESH AIR INTAKE MUST BE MIN. 10' AWAY FROM ANY EXHAUST AIR OR VENT.
12. PROVIDE DOOR SWITCHES AT THE SLIDING DOORS. WHEN ANY SLIDING DOOR IS OPEN, THE HVAC UNIT SHOULD BE TURN OFF.
13. PROVIDE MIN/MAX OSA DAMPERS. PROVIDE AIRFLOW MEASUREMENT STATION AT EACH DAMPER.

FAN SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	AREA SERVED	TYPE	C.F.M.	E.S.P. (IN.)	FAN R.P.M.	DRIVE	BHP	ELECTRICAL VOLTAGE V/PH/HZ	ELECTRICAL HP	DIMENSION LxWxH (IN)	OPER. WT. (LBS.)	REMARKS
EF 1	COOK 100 ACE–B	ROOF	MAIN RESTROOMS	CENTRIFUGAL	640	0.35	1424	BELT	0.100	120/1/60	0.167	24x24x22	30	1,2,4
EF 2	COOK 90 ACE–D	WALL	LOUNGE	CENTRIFUGAL	180	0.25	1125	DIRECT	–	120/1/60	0.04	19x19x17	28	1,2
EF 3	COOK 70 ACE–D	ROOF	PANTRY	CENTRIFUGAL	130	0.15	1550	DIRECT	–	120/1/60	0.05	14x14x14	25	1,2,4
EF 4	COOK 70 ACE–D	ROOF	COMMUNITY RESTROOMS	CENTRIFUGAL	70	0.15	2107	DIRECT	–	120/1/60	0.04	14x14x14	25	1,2,4
EF 5	COOK 70 ACE–D	ROOF	ELECTRICAL ROOM	CENTRIFUGAL	130	0.20	1700	DIRECT	–	120/1/60	0.05	14x14x14	25	2,3,4
GV 1	COOK 8 PR	ROOF	AV ROOM	GRAVITY	20	0.15	–	–	–	–	–	19X19X8	–	4

NOTES
1. PROVIDE PROGRAMMABLE CONTROL TO TURN ON THE FAN DURING OPERATING HOURS BY BMS SYSTEM.
2. EXHAUST AIR DISCHARGE MUST BE 10' AWAY FROM ANY FRESH AIR INTAKE.
3. EXHAUST FAN SHOULD BE ON BY ROOM THERMOSTAT WHEN ROOM TEMPERATURE IS HIGHER THAN 85°F. SYSTEM SHOULD BE MONITORED BY BMS SYSTEM.
4. PROVIDE MANUFACTURED ROOF CURB.

FAN COIL UNIT SCHEDULE

TAG	MFR & MODEL	LOCATION / MOUNTING	AREA SERVED	SUPPLY AIR (CFM)	OSA (CFM)	ESP (IN.WG.)	COOLING COIL TOTAL COOLING (MBH)	HEATING COIL TOTAL HEATING (MBH)	ELECTRICAL V/PH	ELECTRICAL MOTOR MCA	ELECTRICAL MOTOR FLA	ELECTRICAL MOTOR FUSE	SEER	OUTDOOR UNIT	UNIT SIZE (L"xW"xH")	OPER. WT. (LBS)	NOTES
FC–1	CARRIER FE4ANF002000	CEILING CONCEALED	WORK ROOM	600	190	0.65	25.0	24.0	208/1	5.4	4.3	15.0	19.1	CU–1	22x18x43	135	1,2,3,4,5,6
FC–2	CARRIER RAV–SP240KRT–UL	WALL MOUNTED	IT ROOM	560	0	0.25	25.0	N/A	208/1	N/A	N/A	N/A	16.7	CU–2	9x41x13	31	1,2,3,6,7

NOTES:
1. FUSE DISCONNECT BY ELECTRICAL CONTRACTOR
2. SIZE REFRIGERANT PIPES PER MANUFACTURER'S INSTALLATION MANUAL AND ACTUAL CONSTRUCTION CONDITIONS.
3. INSULATE REFRIGERANT PIPES PER MANUFACTURER'S RECOMMENDATIONS
4. PROVIDE FLEXIBLE SA & RA DUCT CONNECTIONS.
5. PROVIDE CEILING ACCESS PANEL FOR UNIT MAINTENANCE.
6. SPLIT SYSTEM SHALL BE TURN ON/OFF BY PROGRAMMABLE ROOM THERMOSTAT, WHICH SHALL INTERLOCK WITH BMS TO MONITOR THE SYSTEM STATUS.
7. THIS IS A 24/7 COOLING ONLY SYSTEM. SYSTEM SHALL BE TURN ON WHEN ROOM TEMPERATURE IS HIGHER THAN 72'F (ADJUSTABLE TEMP SET–POINT).

AIR-COOLED CONDENSER UNIT SCHEDULE

TAG	MFR & MODEL	LOCATION	EQUIP. SERVED	NOM. CAP. (TONS)	EER	SEER	REFRIG	ELECTRICAL V/PH	ELECTRICAL MCA (A)	ELECTRICAL MOCP (A)	UNIT SIZE (L"xW"xH")	OPER. WT. (LBS)	NOTES
CU–1	CARRIER 25VNA024A003	ROOF	FC–1	2.0	14.7	19.1	R–410	208/1	23.5	30	36x39x50	367	1,2,3,4,5
CU–2	CARRIER RAV–SP240AT2–UL	ROOF	FC–2	2.0	9.1	16.7	R–410	208/1	24.0	40.0	13x35x35	135	1,2,3,4,5

NOTES
1. FUSED DISCONNECT PROVIDED BY ELEC CONTRACTOR.
2. CAPACITY RATED AT ARI STANDARD CONDITIONS.
3. INSULATE REFRIGERANT PIPES PER MANUFACTURER'S RECOMMENDATIONS
4. SIZE REFRIGERANT PIPES PER UNIT MANUFACTURER'S INSTALLATION MANUAL AND ACTUAL CONSTRUCTION CONDITIONS.
5. MOUNT ON LEVELED PLATFORM WITH NEOPRENE PAD. THE SHALLOW SIDE OF THE PLATFORM MUST BE MIN. 4" ABOVE THE ROOF.

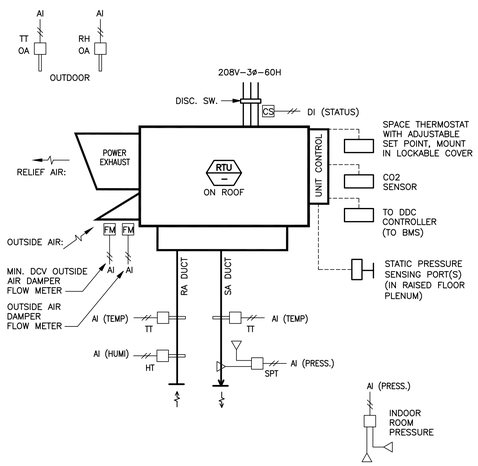
DIFFUSER AND GRILLE SCHEDULE

TAG	MFR	MODEL	DESCRIPTION	FACE TYPE	FACE SIZE (IN.)	COLOR / FINISH	MATERIAL	OBD	NOTES
A	KRUEGER	FPDFR–R	RAISED FLOOR DIFFUSER	CURVED SLOT	9 3/4"	PER ARCHITECT	POLYCARBONATE	NO	1,2,3,4,5,8
B	TITUS	PAR–AA	CEILING RETURN/EXHAUST GRILLE	SURFACE MOUNT	12"x12"	PER ARCHITECT	ALUMINUM	NO	1,2,3,4,5
C	TITUS	3FL	SIDEWALL RETURN/EXHAUST GRILLE	SURFACE MOUNT	DUCT SIZE + 3"	PER ARCHITECT	ALUMINUM	NO	1,2,3,4,5
D	TITUS	ML–39	SLOT SUPPLY	(2) 1" SLOTS	48" X 4" SLOT	PER ARCHITECT	ALUMINUM	NO	1,2,3,4,5
E	TITUS	MLR–39	SLOT RETURN	(4) 1" SLOTS	48" X 8" SLOT	PER ARCHITECT	ALUMINUM	NO	1,2,3,4,5,7
F	TITUS	MLR–39	SLOT RETURN	(2) 1" SLOTS	48" x 4" SLOT	PER ARCHITECT	ALUMINUM	NO	1,2,3,4,6,7
G	TITUS	PAR–AA	CEILING RETURN/EXHAUST GRILLE	SURFACE MOUNT	24"x24"	PER ARCHITECT	ALUMINUM	NO	1,2,3,4,5

NOTES
1. MAXIMUM TOTAL PRESSURE DROP SHALL BE 0.1" WG.
2. MAXIMUM NC LEVEL SHALL BE 35.
3. ALL VISIBLE SURFACES AND DUCTWORK BEHIND FACE SHALL BE PAINTED FLAT BLACK.
4. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR BORDER TYPES.
5. NECK SIZE AND CFM SHOWN ON PLANS (E.G. 12x12–A–400 REFERS TO TAG "A" WITH 12x12 NECK AND 400 CFM).
6. PLENUM CONNECTION SIZE, SLOT LENGTH, AND CFM SHOWN ON PLANS (E.G. 8–120–A–2000 REFERS TO TAG "A" WITH 8" ROUND CONNECTION(S), 120" CONTINUOUS SLOT LENGTH AND 2000 CFM).
7. PROVIDE MANUFACTURER'S INSULATED PLENUM.
8. PROVIDE DIRT RECEPTACLE WITH VOLUME DAMPER OF ROTATING FACE.

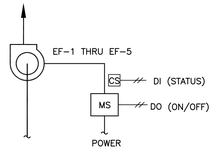
ROOFTOP UNIT (RTU) SEQUENCE OF OPERATION

1. GENERAL NOTES:
   A. PROVIDE ALL NECESSARY HARDWARE AND SOFTWARE INCLUDING, BUT NOT LIMITED TO, CONTACTS, INSTRUMENTATION, WIRING AND CONDUITS TO ACCOMPLISH THE FOLLOWING CONTROL AND CONTROL SEQUENCE FOR THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM UNLESS OTHERWISE NOTED ON THE DRAWINGS AND SPECIFIED ELSEWHERE.
   B. ALL CONTROL SET POINTS SHALL BE ADJUSTABLE.
   C. ALARM SIGNAL BMS WHEN ANY RTU FAIL. IDENTIFY THE SPECIFIC FAILED UNIT.
   D. MONITOR AND TREND
      1. ROOM TEMPERATURE AND HUMIDITY.
      2. OUTSIDE AIR TEMPERATURE AND HUMIDITY.
      3. OUTSIDE AIR QUANTITY (IN CFM).
      4. SUPPLY AIR TEMPERATURE AND PRESSURE.
      5. RETURN AIR TEMPERATURE AND HUMIDITY.
      6. SPACE PRESSURE.
      7. AIR PLENUM PRESSURE.
      8. ROOFTOP UNIT (RTU–1 THRU RTU–5) STATUS.
      9. INDOOR AIR CO2 LEVEL.
2. ROOFTOP PACKAGE UNITS:
   A. ROOFTOP UNITS SHOULD BE CONTROLLED AND MONITORED BY THE BMS. UNITS SHOULD BE ON DURING THE OPERATING HOURS.
   B. SUPPLY ROOM TEMPERATURE SHOULD BE PRE–SET AT THE BMS SYSTEM. ROOM THERMOSTAT SHOULD ALLOW THE ROOM OCCUPANTS TO ADJUST THE ROOM TEMPERATURE BY +/– 2°F.
   C. PRESSURE SENSOR IN THE UNDERFLOOR AIR PLENUM SHOULD ADJUST THE SUPPLY FAN TO INCREASE/DECREASE THE SUPPLY AIR VOLUME. PRESSURE IN THE UNDERFLOOR AIR PLENUM WILL BE CHANGED BASED ON THE DIFFUSER AIR VOLUME ADJUSTMENT ON THE RAISED FLOOR.
   D. CO2 SENSOR IN THE ROOM TO MODULATE THE OUTSIDE AIR DAMPER OF RTU TO MEET THE MINIMUM AIR QUALITY REQUIREMENTS.
      1. WHEN IN THE OCCUPIED MODE, THE SPACE CO2 LEVEL SHALL BE MONITORED BY SPACE CO2 SENSOR. IF SPACE CO2 LEVEL IS BELOW 600 PPM (ADJ.), THE CONTROLLER SHOULD ACTIVATED THE DEMAN BASED CONTROL VENTILATION LOGIC OF THE ROOFTOP UNIT.
      2. UPON ACTIVATION, THE OUTSIDE AIR DAMPER AND RETURN AIR DAMPER SHALL BE MODULATED TO REDUCE VENTILATION. THE OUTSIDE AIR DAMPER SHALL NOT MODULATED BELOW PRESET DCV MINIMUM OUTSIDE CFM POSITION AS SHOWN ON SCHEDULE.
      3. AS THE SPACE CO2 LEVEL RISES ABOVE 750 PPM (ADJ.), THE OUTSIDE AIR DAMPER AND RETURN AIR DAMPER SHALL BE MODULATED TO INCREASE VENTILATION.
      4. ALARM SHALL BE PROVIDED IF THE SPACE CO2 CONCENTRATION IS GREATER THAN 1000 PPM (ADJ.) WHEN IN THE OCCUPIED MODE.
   E. ECONOMIZER CONTROLLER SHALL CONTROL THE RETURN AND OUTDOOR AIR DAMPERS AND POWER EXHAUST FAN FOR MAXIMUM FREE COOLING. ENTHALPY ECONOMIZER CONTROLS SHALL BE PROVIDED. ECONOMIZER SHOULD OVERRIDE THE CO2 CONTROL.
      1. WHEN OUTDOOR ENTHALPY IS ABOVE THE RETURN AIR ENTHALPY, SYSTEM SHALL OPERATE WITH MINIMUM OUTSIDE AIR REQUIRED FOR VENTILATION. OSA ECONOMIZER DAMPER SHALL BE CLOSED AND THE FLOW METERS AT MINIMUM OUTSIDE AIR INTAKES SHALL MODULATE THE OUTSIDE AIR DAMPERS TO MAINTAIN THE DESIGN MINIMUM OUTDOOR VENTILATION FOR THE SYSTEM
      2. WHEN THE OUTDOOR AIR ENTHALPY IS BELOW THE RETURN AIR ENTHALPY AND THE OUTDOOR TEMPERATURE IS ABOVE THE DISCHARGE DUCT TEMPERATURE SETPOINT, OSA ECONOMIZER DAMPER WITH THE MINIMUM OSA DAMPER SHALL BE POSITIONED FOR 100% OUTSIDE AIR.
      3. WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW THE SUPPLY DUCT TEMPERATURE SETPOINT, ECONOMIZER DAMPERS SHALL BE MODULATED TO MIX RETURN AIR AND OUTSIDE AIR SO THAT THE DISCHARGE DUCT TEMPERATURE SETPOINT IS MAINTAINED.
   F. FOR RTU–5 ONLY: IN THE COMMUNITY ROOM, SLIDING DOOR SWITCH SHOULD TURN OFF THE ROOFTOP UNIT WHEN ANY OF THE SLIDING DOORS IS OPENED MORE THAN 5 MINUTES.
   G. A SIGNAL FROM A SPACE STATIC PRESSURE SENSOR SHALL MODULATE THE POWER EXHAUST FAN TO MAINTAIN A PRE–SET DIFFERENTIAL PRESSURE BETWEEN THE RETURN AIR DUCT AND OUTSIDE (0.05" W.G. ADJUSTABLE).



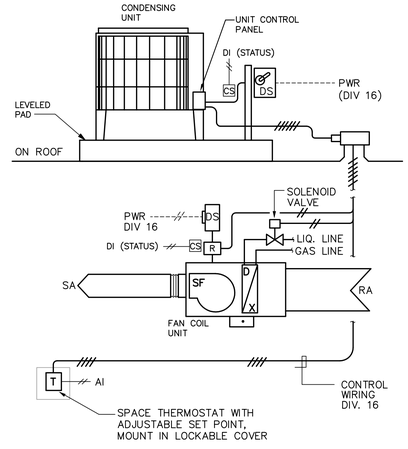
EXHAUST FANS (EF UNITS) SEQUENCE OF OPERATION

1. EXHAUST FANS (EF–1 THRU EF–5) SHALL BE INTERLOCKED THROUGH THE BMS WITH ASSOCIATED SYSTEM(S) AND SHALL BE MONITORED AT BMS BY USING THE CURRENT SENSOR. PROVIDE FAN FAILURE ALARM.
2. PROVIDE OVERRIDES FOR THE OPERATOR TO BE ABLE TO STOP AN EXHAUST FAN WITHOUT GOING INTO THE CONTROL PROGRAM.
3. EF–1 SHALL BE INTERLOCKED WITH RTU–3.
4. EF–2 SHALL BE INTERLOCKED WITH RTU–2.
5. EF–3 AND EF–4 SHALL BE INTERLOCK WITH RTU–5.
6. EF–5 SHALL BE CONTROLLED BY THE THERMOSTAT IN ELECTRICAL ROOM 132.



SPLIT SYSTEM (FC & CU UNITS) SEQUENCE OF OPERATION

1. SPLIT HVAC SYSTEM SHALL BE INTERLOCKED THROUGH THE BMS AND SHALL BE MONITORED AT BMS BY USING THE CURRENT SENSOR. PROVIDE FAN FAILURE ALARM.
2. THE SPACE TEMPERATURE SENSOR SHALL TURN ON/OFF THE SPLIT HVAC SYSTEM TO MAINTAIN THE ROOM TEMPERATURE SET POINT.
3. ALARM SIGNAL BMS WHEN SPLIT HVAC SYSTEM FAIL.
4. MONITOR AND TREND
   A. ROOM TEMPERATURE
   B. SPLIT SYSTEM STATUS.



PICO BRANCH LIBRARY
2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenberg Architecture
1454 25th St, Santa Monica, CA 90404
310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER HIMMY Y. LAM No. M33781 Exp. 08–30–13 MECHANICAL STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 08.11.00192
Contact: E. LEE
engineers for a sustainable future℠

CONSULTANT

City of Santa Monica Architecture Services
1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

SUBMITTED BY: DATE: ____ 20__

APPROVED BY: Miriam Mulder, Architecture Services Manager DATE: ____ 20__

CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY: DATE: ____ 20__

REVIEWED BY: DATE: ____ 20__

REVIEWED BY: DATE: ____ 20__

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
3	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
2	03/06/12		ADDENDUM 3
1	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. 6693

SHEET TITLE
MECHANICAL UNIT SCHEDULES

SHEET NO.
M1.0

SHEET OF
DWG NO. -
TITLE OF PROJECT

SHEET OF

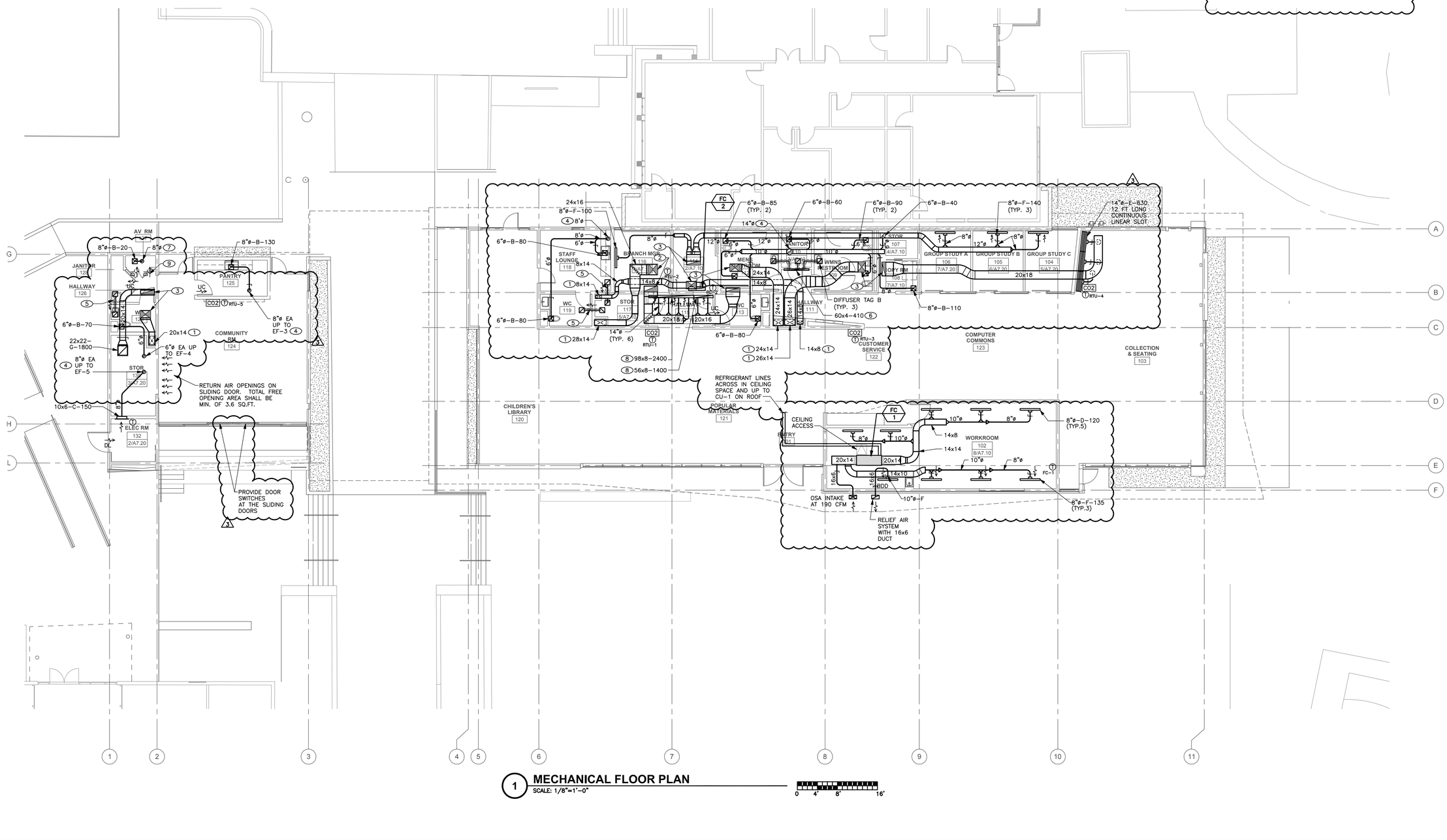
DWG NO. -

GENERAL NOTES

A. MATERIALS EXPOSED IN RETURN AIR PLENUM SHALL COMPLY WITH SECTION 602.2 OF 2010 CMC.

SHEET NOTES

1. SUPPLY AIR DUCT DOWN TO THE RAISED FLOOR AIR PLENUM LEVEL.
2. 25"x22"SA AND 32"x13"RA DUCTS UP TO HVAC UNIT ON ROOF (RTU-1).
3. 24"x18"SA AND 33"x9"RA DUCTS UP TO HVAC UNIT ON ROOF.
4. EXHAUST AIR DUCT UP TO EXHAUST FAN ON ROOF.
5. 10"ø TRANSFER AIR DUCT WITH LINING.
6. TRANSFER AIR PLENUM FROM HALLWAY TO RESTROOMS. 10"ø TRANSFER AIR DUCT TO MEN'S RESTROOM AT 170 CFM. 10"ø TRANSFER AIR DUCT TO JANITOR ROOM AT 110 CFM. 10"ø TRANSFER AIR DUCT TO WOMEN'S RESTROOM AT 180 CFM.
7. RELIEF AIR DUCT UP TO VENT ON ROOF WITH BAROMETRIC DAMPER.
8. PROVIDE 8" WIDE CONTINUOUS RETURN AIR SLOT.
9. PROVIDE 24"X24" DOOR LOUVER ON EACH DOOR FOR THE AV ROOM.



1 **MECHANICAL FLOOR PLAN**
SCALE: 1/8"=1'-0"

0 4' 8' 16'

TITLE OF PROJECT

PICO BRANCH LIBRARY

2201 Pico Blvd,
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404
310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER HENRY Y. LAU No. M33781 Exp. 06-30-15 MECHANICAL STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE

engineers for a sustainable future℠

CONSULTANT

City of Santa Monica Architecture Services
1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

DATE : _____ 20 __
SUBMITTED BY :

DATE : _____ 20 __
APPROVED BY :
Miriam Mulder,
Architecture Services Manager
CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : _____ 20 __

REVIEWED BY : DATE : _____ 20 __

REVIEWED BY : DATE : _____ 20 __

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
3	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
2	03/06/12		ADDENDUM 3
1	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL FLOOR PLAN

SHEET NO.
M2.0

GENERAL NOTES

A. MATERIALS EXPOSED IN RAISED FLOOR AIR PLENUM SHALL COMPLY WITH SECTION 602.2 OF 2010 CMC.

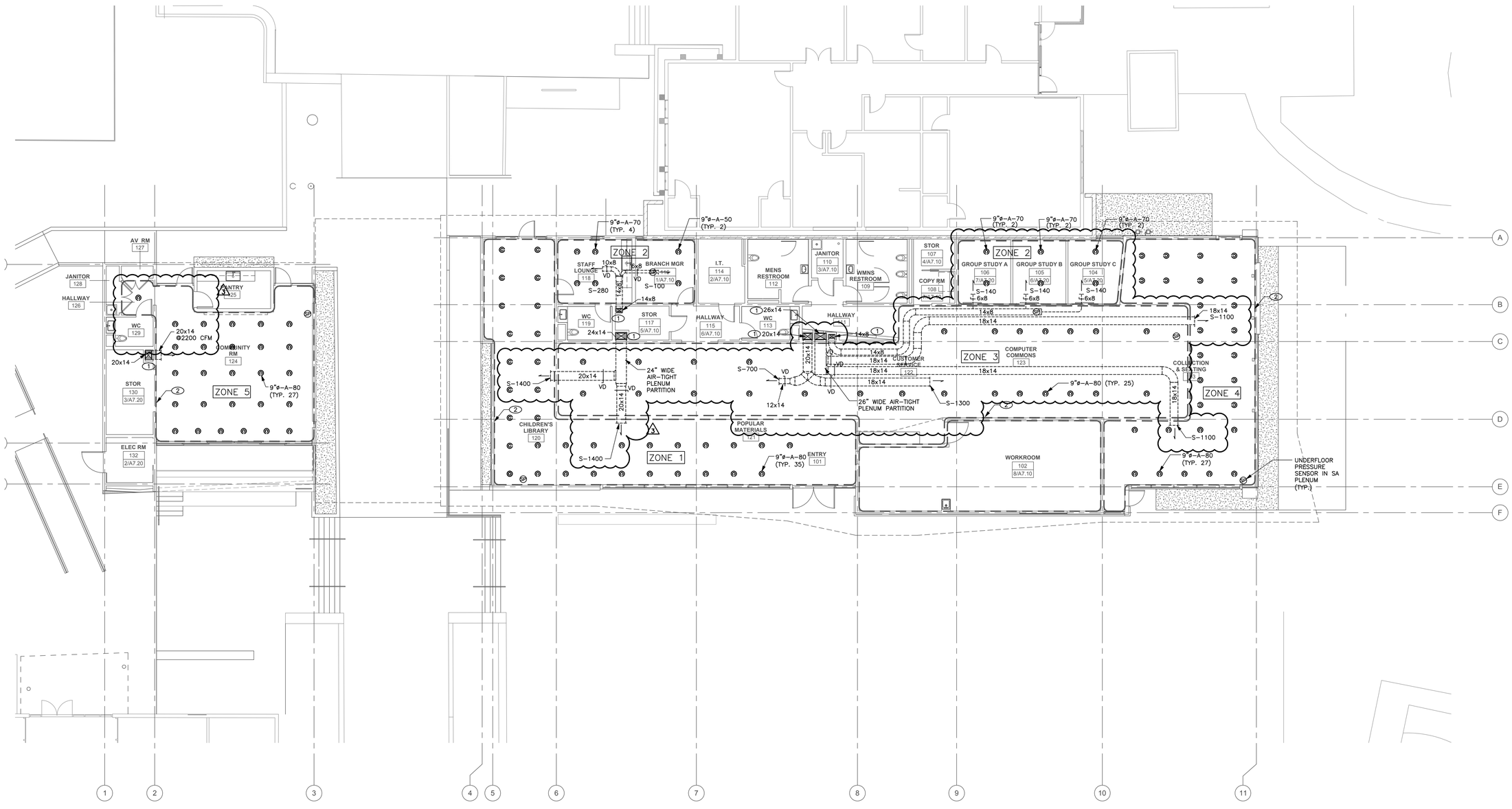
B. FLOOR DIFFUSERS AS SHOWN ON PLAN ARE DIAGRAMMATIC. EXACT LOCATION OF THE DIFFUSERS TO BE DETERMINED PER FIELD CONDITIONS DURING CONSTRUCTION. THE QUANTITY OF DIFFUSERS FOR EACH ZONE SHOULD BE THE SAME AS SHOWN ON PLAN.

C. THE DESIGN OF THE UNDERFLOOR AIR DISTRIBUTION SYSTEM IS BASED ON A SEALED, AIRTIGHT UNDERFLOOR PLENUM. ALL CONSTRUCTION JOINTS AT PLENUM BOUNDARIES AND PLENUM DIVIDING PARTITIONS SHALL BE SEALED AIRTIGHT. ALL PENETRATIONS FOR PIPES, CONDUIT AND OTHER SERVICES SHALL BE SEALED AIRTIGHT. PLENUMS SHALL BE TESTED FOR LEAKAGE PER THE COMMISSIONING SPECIFICATIONS. PLENUMS THAT DO NOT MEET THE LEAKAGE CRITERIA PER THE SPECIFICATIONS SHALL BE RESEALED AND RETESTED UNTIL THEY PASS. REFER TO THE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION DETAILS AND ADDITIONAL INFORMATION.

D. ALL UNDER FLOOR DUCTS AND AIRTIGHT PLENUMS MUST BE INSULATED.

SHEET NOTES

1. SUPPLY AIR DUCT UP TO CEILING LEVEL
2. TEMPERATURE CONTROL ZONING
   EACH ZONE IS SERVED BY INDIVIDUAL ROOFTOP UNIT. ZONING UNDERFLOOR SUPPLY AIR PLENUM MUST BE AIRTIGHT.



1 **MECHANICAL FLOOR PLAN (UNDERFLOOR)**
SCALE: 1/8"=1'-0"

0 4' 8' 16'

PICO BRANCH LIBRARY

2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404
310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER HENRY Y. LAM No. M33781 Exp. 08-30-13 MECHANICAL STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE
engineers for a sustainable future℠

CONSULTANT

City of Santa Monica Architecture Services
1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

SUBMITTED BY : DATE : _____ 20__

APPROVED BY : DATE : _____ 20__
Miriam Mulder,
Architecture Services Manager
CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : _____ 20__

REVIEWED BY : DATE : _____ 20__

REVIEWED BY : DATE : _____ 20__

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
5	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
4	03/06/12		ADDENDUM 3
3	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL FLOOR PLAN (UNDERFLOOR)

SHEET NO.
M2.1

SHEET OF

DWG NO. -

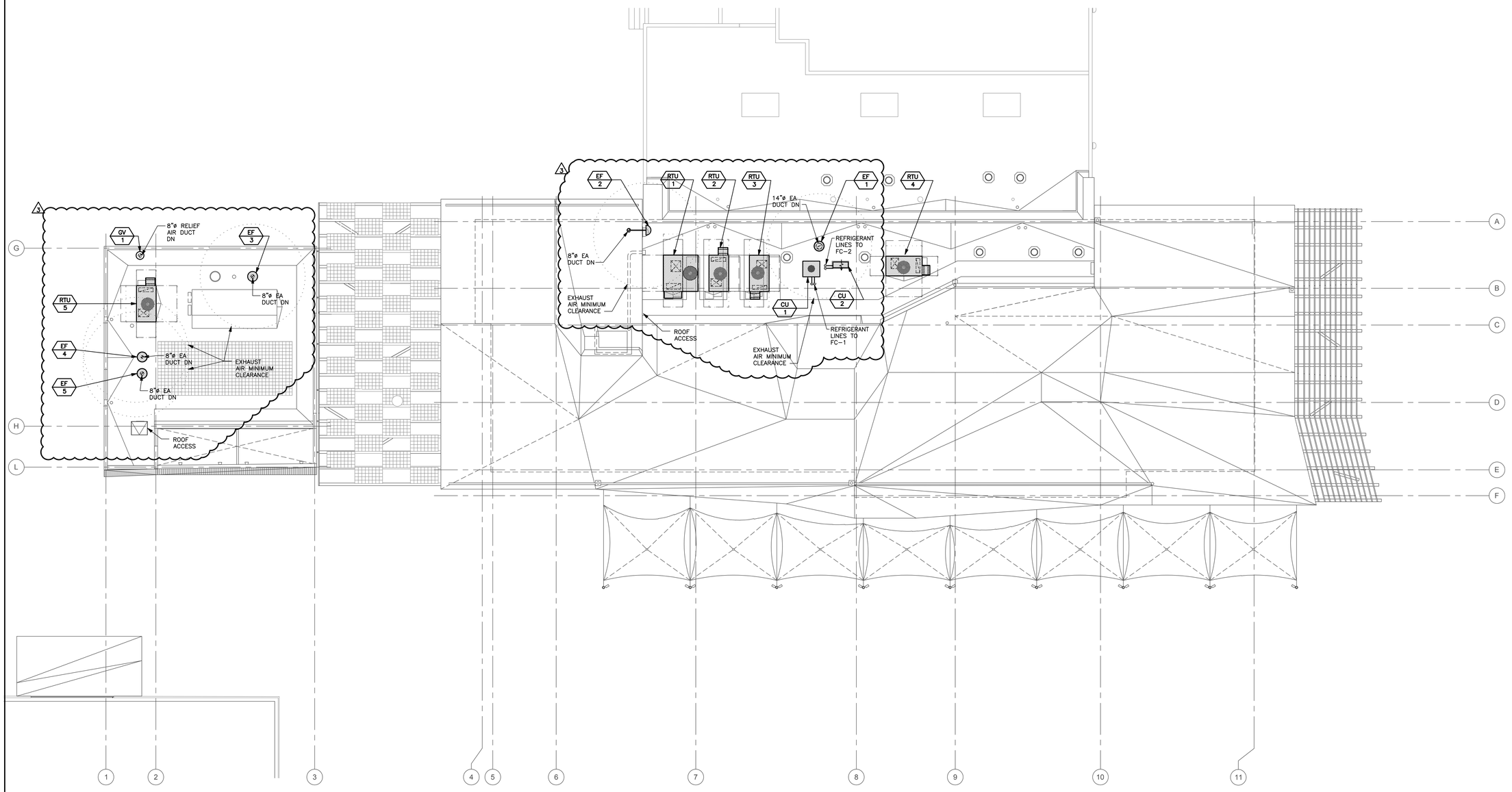
TITLE OF PROJECT:

SHEET OF

DWG NO. -

GENERAL NOTES

A. EXHAUST AIR DISCHARGE MUST TO MINIMUM 10'–0" AWAY FROM ANY OPENING TO THE BUILDING.



1 **MECHANICAL ROOF PLAN**
SCALE: 1/8"=1'–0"

0 4' 8' 16'

TITLE OF PROJECT:

PICO BRANCH LIBRARY

2201 Pico Blvd,
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404

310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER HENRY Y. LEE No. M33781 Exp. 06-30-13 MECHANICAL STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE

engineers for a sustainable future℠

CONSULTANT

City of Santa Monica
Architecture Services

1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

SUBMITTED BY : DATE : _____ 20__

APPROVED BY : DATE : _____ 20__
Miriam Mulder,
Architecture Services Manager

CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : _____ 20__

REVIEWED BY : DATE : _____ 20__

REVIEWED BY : DATE : _____ 20__

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
5	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
3	03/06/12		ADDENDUM 3
2	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL ROOF PLAN

SHEET NO.
M2.2

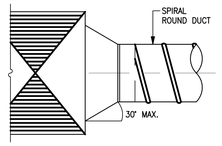
SHEET OF

DWG NO. :

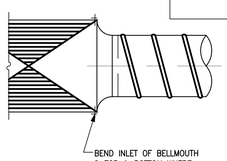
DUCT FITTING LEGEND

SINGLE LINE	DOUBLE LINE ROUND DUCT	DOUBLE LINE RECTANGULAR DUCT	DESCRIPTION
	R=1.5W	W/SINGLE THICKNESS TURNING VANES R=1.5W	90° ELL
			45° ELL
			REDUCER
		N/A	45° TEE
	N/A		45° – 90° TEE
		N/A	CONICAL 90° TEE
		N/A	CONNECTION BETWEEN RIGID AND FLEXIBLE DUCT
			Y–FITTING
			ACOUSTICALLY LINED DUCT
			SQUARE TO ROUND TRANSITION

DUCT FITTING LEGEND 1



CONICAL

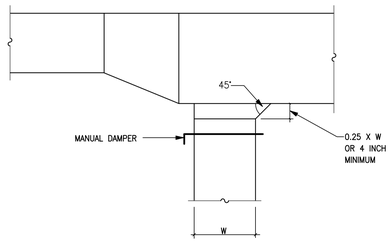


BELLMOUTH

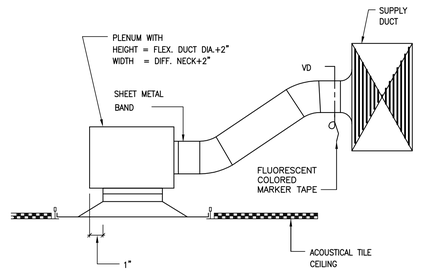
NOTES:

1. SECURE ALL CONNECTIONS TO COMPLY WITH THE REQUIREMENTS OF THE PRESSURE CLASS SPECIFIED.
2. SUPPLY ROUND DUCT TAKE–OFF IS SHOWN. RETURN/EXHAUST SIMILAR.

ROUND DUCT TAKE-OFF CONN. TO RECTANGULAR DUCT 2



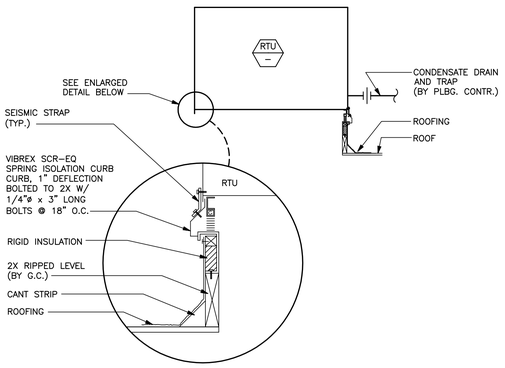
45 DEG. ENTRY BRANCH TAKE-OFF 3



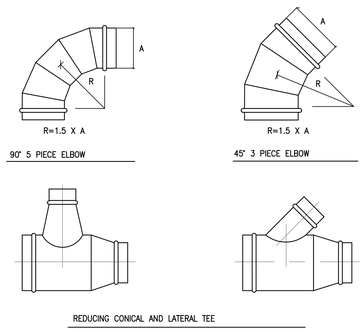
NOTES:

1. ACOUSTICAL TILE CEILING SHOWN. GYP. BOARD CEILING SIMILAR.
2. USE THIS DETAIL FOR TIGHT CEILING SPACE WHERE TOP CONNECTION AT DIFFUSER OR GRILLE CANNOT BE ACHIEVED.

DIFFUSER SIDE CONNECTION 4

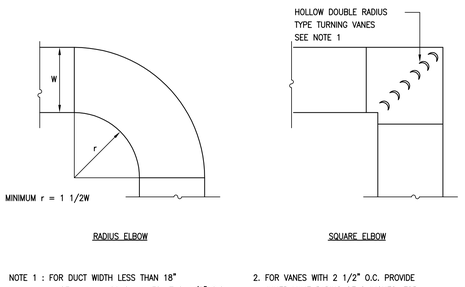


ROOFTOP UNIT MOUNTING DETAIL 5



REDUCING CONICAL AND LATERAL TEE

ROUND DUCT FITTINGS 6



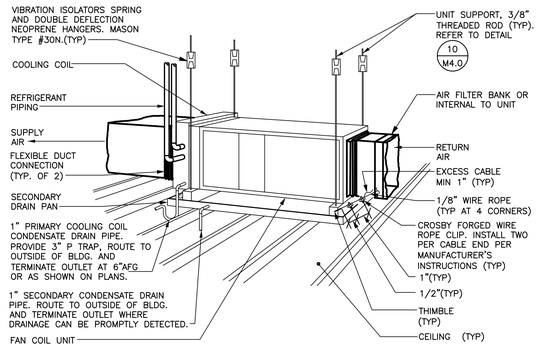
RADIUS ELBOW

SQUARE ELBOW

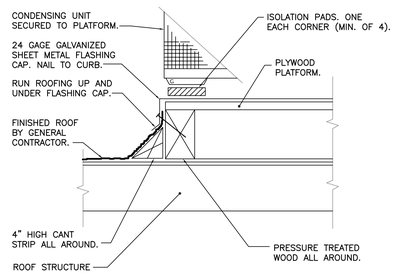
NOTE 1 : FOR DUCT WIDTH LESS THAN 18" USE MINIMUM 26 GA VANES AT 2–1/8" O.C. FOR DUCT 18" AND WIDER, USE MINIMUM 24 GA VANES AT 3–1/4" O.C.

2. FOR VANES WITH 2 1/2" O.C. PROVIDE INNER VANE RADIUS OF 2 INCHES. FOR VANES 3 1/2" O.C. PROVIDE INNER RADIUS OF 4 1/2 INCHES.

RETANGULAR DUCT ELBOWS 7

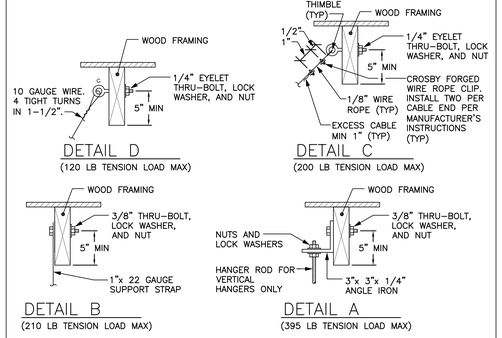


SUSPENDED FAN COIL UNIT 8



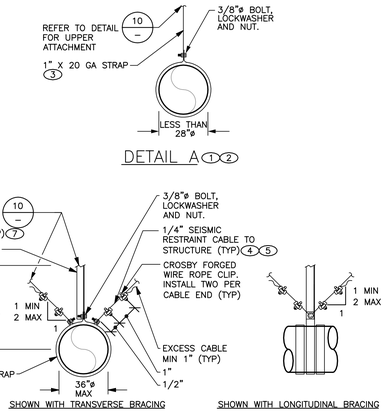
NOTE: SEE STRUCTURAL PLANS FOR PLATFORM DETAIL.

ROOF MOUNTED CONDENSING UNIT 9



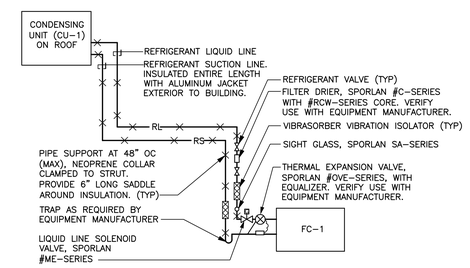
NOTE:
SEE SMACNA SEISMIC RESTRAINT MANUAL FIGURE 8–15 AND TABLE 8–1.

WOOD UPPER ATTACHMENTS 10



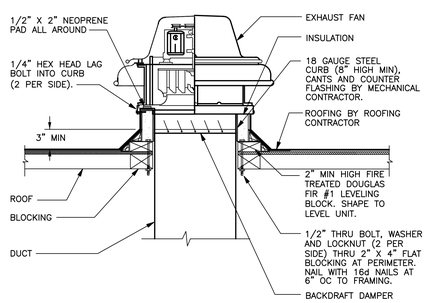
NOTES:

1. HANGERS SHALL BE INSTALLED AT EVERY CHANGE OF DIRECTION AND NO MORE THAN 10'–0" APART.
2. PROVIDE A FLEXIBLE CONNECTION BETWEEN MECHANICAL EQUIPMENT AND DUCT.
3. STRAP MAY BE REDUCED TO 1" X 22GA FOR DUCT 24"ø AND LESS IN DIAMETER.
4. SEISMIC RESTRAINT CABLES MAY BE OMITTED WHERE DUCT IS SUPPORTED WITHIN 12" OF STRUCTURE AS MEASURED FROM THE TOP OF DUCT TO THE BOTTOM OF STRUCTURE.
5. WHERE SEISMIC CABLE RESTRAINTS ARE REQUIRED,
   A. PROVIDE SEISMIC CABLE TRANSVERSE BRACING AT 30 FT AND
   B. SEISMIC CABLE LONGITUDINAL BRACING AT 60 FT.
   C. SEISMIC CABLE RESTRAINTS ARE NOT REQUIRED AT EVERY HANGER LOCATION.
6. VERTICAL HANGERS, DIAGONAL AND HORIZONTAL BRACES TO BE SIZED IN ACCORDANCE WITH SMACNA SEISMIC RESTRAINT MANUAL TABLE 5–6.
7. SIZE ANCHORS IN ACCORDANCE WITH SMACNA SEISMIC RESTRAINT MANUAL TABLE 8–1, TYPE C FOR CONCRETE AND TYPE A FOR ALL OTHERS.



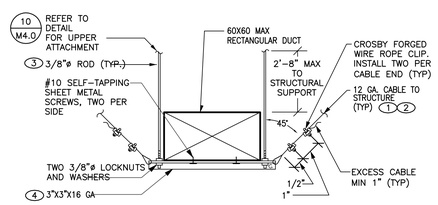
NOTE: SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.

REFRIGERANT PIPING SCHEMATIC 11



NOTE: REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.

ROOF EXHAUST FAN 12



NOTES:

1. SEISMIC RESTRAINT CABLES MAY BE OMITTED WHERE:
   A. THERE IS A FLEXIBLE CONNECTION BETWEEN THE MECHANICAL EQUIPMENT AND
   B. RECTANGULAR DUCT IS LESS THAN 6 SQUARE FEET IN AREA OR
   C. DUCT OF ANY SIZE IS SUPPORTED WITHIN 12" OF STRUCTURE AS MEASURED FROM THE TOP OF DUCT TO THE BOTTOM OF STRUCTURE.
2. WHERE SEISMIC RESTRAINTS ARE REQUIRED,
   A. PROVIDE TRANSVERSE BRACING AT 30 FT AND
   B. LONGITUDINAL BRACING AT 60 FT.
3. VERTICAL HANGERS, DIAGONAL AND HORIZONTAL BRACES TO BE SIZED IN ACCORDANCE WITH SMACNA SEISMIC RESTRAINT MANUAL TABLE 5–1 AND 5–2.

RECTANGULAR DUCT SUPPORT 13

ROUND DUCT SUPPORT 14

TITLE OF PROJECT

PICO BRANCH LIBRARY

2201 Pico Blvd.
Santa Monica, CA 90404

PROJECT

KoningEizenbergArchitecture
1454 25th St, Santa Monica, CA 90404
310.828.6131 info@kearch.com
310.828.0719 fax www.kearch.com

ARCHITECT'S PROJECT NO.
1001

ARCHITECT

REGISTERED PROFESSIONAL ENGINEER HENRY Y. LEE No. M33781 Exp. 06–30–13 MECHANICAL STATE OF CALIFORNIA

GLUMAC
617 W. 7th Street, Suite 500
Los Angeles, CA 90017
T. 213.239.8866 F. 213.239.8816
www.glumac.com
Job No.: 06.11.00192
Contact: E. LEE
engineers for a sustainable future℠

CONSULTANT

City of Santa Monica Architecture Services
1437 4TH STREET, SUITE 300
SANTA MONICA, CA 90401
TEL. (310) 458-2205
FAX. (310) 399-1541
architecture@smgov.net

SUBMITTED BY : DATE : 20

APPROVED BY : DATE : 20
Miriam Mulder,
Architecture Services Manager
CITY OF SANTA MONICA
DEPARTMENT OF PUBLIC WORKS

REVIEWED BY : DATE : 20

REVIEWED BY : DATE : 20

REVIEWED BY : DATE : 20

CITY CLIENT

NO.	DATE	BY	DESCRIPTION
3	07/16/12		BULLETIN 1
	06/21/12		PLAN CHECK 2
	05/07/12		PLAN CHECK 1
2	03/06/12		ADDENDUM 3
1	02/21/12		ADDENDUM 2

REVISIONS

ISSUE
100% CONSTRUCTION DOCUMENTS

DATE
07/16/2012

DRAWING NO. **6693**

SHEET TITLE
MECHANICAL DETAILS

SHEET NO.
M4.0