INDOOR LIGHTING POWER ALLOWANCE — LTG-3C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

ALLOWED LIGHTING POWER (Chose One Method)

A Separate LTG-3C must be filled out for Conditioned and Unconditioned Spaces. Indoor Lighting Power Allowances listed on this page are only for:

☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

COMPLETE BUILDING METHOD

BUILDING CATEGORY (From §146 Table 146-E)	WATTS PER (ft^2)	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
TOTALS			AREA		WATTS

AREA CATEGORY METHOD

BUILDING CATEGORY (From §146 Table 146-F)	WATTS PER (ft^2)	X	Area ft^2	=	ALLOWED WATTS
Corridor/Restroom/Support	*0.60*		*529*		*317*
Commercial, Industrial Storage	*0.60*		*135*		*82*
Laundry	*0.90*		*181*		*163*
Classroom, Lecture, Training	*1.20*		*339*		*407*
Office <= 250 sqft	*1.10*		*317*		*349*
Convention/Conference/Meeting	*1.40*		*1,170*		*1,638*
Waiting Areas/Lounges	*0.80*		*189*		*151*
TOTALS			*2,861*		*3,107*
			AREA		WATTS

TAILORED METHOD

Total Allowed Watts using the Tailored Method taken from LTG-4C (Page 1 of 4) Row 3 | *0*

The indoor lighting power allowance using the Tailored Method of compliance shall be determined using the LTG-4C set of forms. A separate set of LTG-4C forms shall be filled out for CONDITIONED and UNCONDITIONED spaces.

CERTIFICATE OF COMPLIANCE (Part 3 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Fill in controls for all spaces: a) area controls, b) multi-level controls, c) manual daylighting controls for daylit areas > 250 ft^2, automatic daylighting controls for daylit areas > 2,500 ft^2, d) shut-off controls, e) display lighting controls, f) tailored lighting controls – general lighting controlled separately from display, ornamental and display case lighting and g) demand responsive automatic controls for retail stores > 50,000 ft^2, in accordance with Section 131.

MANDATORY LIGHTING CONTROLS – FIELD INSPECTION ENERGY CHECKLIST

Type/ Description	Number of Units	Location in Building	Special Features	Field Inspector Pass	Field Inspector Fail
^{a}$^{b} MULTI–LEVEL CONTROL	4	MP, KITCHEN, CLASS, WAITING	☐	☐	☐
OS OCCUPANCY SENSOR – CEILING	9	THROUGH–OUT BUILDING	☐	☐	☐
^{a,g}$^{b} MULTI–LEVEL OS WALL SWITCH	2	OFFICES	☐	☐	☐
^{OS} OCC. SENSOR – WALL SWITCH	4	ELEC, MECH, STOR	☐	☐	☐

SPECIAL FEATURES INSPECTION CHECKLIST (See Page 2 of 4 of LTG-1C)

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. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

Field Inspector's Notes or Discrepancies:

CERTIFICATE OF COMPLIANCE (Part 1 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

Project Address	Climate Zone	Total Cond. Floor Area	Unconditioned Floor Area
999 LAS TABLAS TEMPLETON	*4*	*2,861*	*0*

GENERAL INFORMATION

Building Type: ☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room ☐ School ☐ Relocatable Public School ☑ Conditioned Spaces ☐ Unconditioned Spaces

Phase of Construction: ☑ New Construction ☐ Addition ☐ Alteration

Method of Compliance: ☐ Complete Building ☑ Area Category ☐ Tailored

Documentation Author's Declaration Statement

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

Name: *William Thoma, P.E.*	Signature
Company: *Thoma Electric*	Date: *5/5/2010*
Address: *3562 Empleo*	CEA # / CEPE #
City/State/Zip: *San Luis Obispo, CA 93405*	Phone: *805.543.3850*

The Principal Lighting Designer's Declaration Statement

- I am eligible under Division 3 of the California Business and Professional Code to accept responsibility for the lighting design.
- This Certificate of Compliance identifies the lighting features and performance specifications required for compliance with Title 24, Pages 1 and 6 of the California Code of Regulations.
- The design features represented on this Certificate of Compliance are consistent with the information provided to document this design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Name: *WILLIAM THOMA, PE*	Signature
Company: *THOMA ELECTRIC, INC*	Phone: *805.543.3850*
Address: *3562 EMPLEO*	License #: *10757*
City/State/Zip: *SAN LUIS OBISPO, CA 93401*	Date: *05–05–2010*

Lighting Mandatory Measures
Indicate location on building plans of Mandatory Measures Note Block: *E6.0*

LIGHTING COMPLIANCE FORMS & WORKSHEETS (check box if worksheets is included)

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

☑	LTG-1C Pages 1 through 4	Certificate of Compliance. All Pages required on plans for all submittals.
☑	LTG-2C	Lighting Controls Credit Worksheet
☑	LTG-3C	Indoor Lighting Power Allowance
☐	LTG-4C Pages 1 through 4	Tailored Method Worksheet
☐	LTG-5C Pages 1 and 2	Line Voltage Track Lighting Worksheet

LIGHTING MANDATORY MEASURES: NONRESIDENTIAL — LTG-MM

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

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.
§119(h):		Automatic Control Devices Certified: All automatic control devices specified are certified, all alternate equipment shall be certified and installed as directed by the manufacturer.
§111:		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(a):		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(b):		Uniform Reduction for Individual Rooms: All rooms and areas greater than 100 square feet and more than 0.8 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.6.

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 either have a lamp efficacy of at least 60 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.

CERTIFICATE OF COMPLIANCE (Part 4 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

CONDITIONED AND UNCONDITIONED SPACE LIGHTING MUST NOT BE COMBINED FOR COMPLIANCE

Indoor Lighting Power for Conditioned Spaces	Watts	Indoor Lighting Power for Unconditioned Spaces	Watts
Installed Lighting (from Conditioned LTG-1C, Page 2)	*2,897*	**Installed** Lighting (from Unconditioned LTG-1C, Page 2)	*0*
Lighting Control Credit Conditioned Spaces (from LTG-2C)	- *0*	Lighting Control Credit Unconditioned Spaces (from LTG-2C)	- *0*
Adjusted **Installed** Lighting Power	= *2,897*	Adjusted **Installed** Lighting Power	= *0*
Complies if **Installed** ≤ **Allowed**	↕	Complies if **Installed** ≤ **Allowed**	↕
Allowed Lighting Power Conditioned Spaces (from LTG-3C or PERF-1)	*3,107*	**Allowed** Lighting Power Unconditioned Spaces (from LTG-3C)	*0*

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 this Lighting system, **LTG-2A.** The designer is required to check the acceptance tests and list all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance. If all the lighting system or control of a certain type requires a test, list the different lighting 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. **Forms can be grouped by type of Luminaire controlled.**

Enforcement Agency:

Systems Acceptance. Before Occupancy Permit is granted for a newly constructed building or space or when ever new lighting system with controls is installed in the building or space shall be certified as meeting the Acceptance Requirements. The **LTG-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 **LTG-2A** for each different lighting luminaire control(s) must be provided to the owner of the building for their records.

Controls for Credits — LTG-2A

Equipment Requiring Testing	Description	Number of Luminaire controls	Location	Controls and Sensors and Automatic Daylighting Controls Acceptance
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐

CERTIFICATE OF COMPLIANCE (Part 2 of 4) — LTG-1C

Project Name: ROLLING HILLS APARTMENTS | Date: 5/5/2010

INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

Installation Certificate, LTG-1- INST (Retain a copy and verify form is completed and signed.) **Field Inspector** ☐

Certificate of Acceptance, LTG-2A (Retain a copy and verify form is completed and signed.) **Field Inspector** ☐

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces Installed Lighting Power listed on this Lighting Schedule is only for:

☑ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

☑ The actual indoor lighting power listed below includes all installed permanent and portable lighting systems in accordance with §148(a).

☑ Only for offices: Up to the first 0.2 watts per square foot of portable lighting shall not be required to be included in the calculation of actual indoor lighting power density in accordance with the Exception to §146(a). All portable lighting in excess of 0.2 watts per square foot is totaled below.

		Luminaire (Type, Lamps, Ballasts)	Installed Watts							
A	B		C	D	E		F	G	H	
None or Item Tag	Complete Luminaire Description[1] (i.e.,3 lamp fluorescent troffer, F32T8, one dimmable electronic ballasts)		Special Features	Watts per Luminaire	How wattage Was determined: CEC Default From NA8	How wattage Was determined: According To §130(d or e)	Number of Luminaires	Installed Watts (C x F)	Field Inspector[2]: Pass	Field Inspector[2]: Fail
D	*(2) 4 ft Fluorescent T8 Rapid Start Elec*		☐	*62.0*	☑	☐	*8*	*496*	☐	☐
E1	*(2) 4 ft Fluorescent T8 Rapid Start Elec*		☐	*62.0*	☑	☐	*2*	*124*	☐	☐
E3	*(1) 4 ft Fluorescent T8 Rapid Start Elec*		☐	*32.0*	☑	☐	*1*	*32*	☐	☐
F	*(1) 4 ft Fluorescent T8 Rapid Start Elec*		☐	*32.0*	☑	☐	*2*	*64*	☐	☐
G	*(1) 18w Compact Fluorescent Triple 4 Pin Elec*		☐	*21.0*	☑	☐	*10*	*210*	☐	☐
H	*(2) 35w/39w Leg Crept T5 Fluorescent Twin Elec*		☐	*70.0*	☑	☐	*2*	*140*	☐	☐
J1a	*(4) 32w Compact Fluorescent Triple 4 Pin ElecD*		☐	*152.0*	☑	☐	*1*	*152*	☐	☐
J1b	*50w PAR-20*		☐	*50.0*	☑	☐	*1*	*50*	☐	☐
J2a	*(4) 57w Compact Fluorescent TripQuad 4pin ElncD*		☐	*264.0*	☑	☐	*4*	*1,056*	☐	☐
J2b	*75w PAR-30*		☐	*75.0*	☑	☐	*4*	*300*	☐	☐
K	*(2) 32w Compact Fluorescent Triple 4 Pin Elec*		☐	*69.0*	☑	☐	*3*	*207*	☐	☐
M	*(2) 2 ft Fluorescent T8 Elec*		☐	*33.0*	☑	☐	*2*	*66*	☐	☐
			☐		☐	☐			☐	☐
			☐		☐	☐			☐	☐
			☐		☐	☐			☐	☐
			☐		☐	☐			☐	☐
			☐		☐	☐			☐	☐
			☐		☐	☐			☐	☐
			☐		☐	☐			☐	☐
			☐		☐	☐			☐	☐
							Installed Watts Page Total:	*2,897*		
Building total number of pages:							Installed Watts Building Total (Sum of all pages)			
							Enter into LTG-1C Page 4 of 4	*2,897*		

1. Wattage shall be determined according to Section 130 (d and e). Wattage shall be rating of light fixture, not rating of bulb.
2. If Fail then describe on Page 2 of the Inspection Checklist Form and take appropriate action to correct. Verify building plans if necessary.

PROJECT

ACCESSIBILITY IMPROVEMENTS

ROLLING HILLS APARTMENTS

TEMPLETON, CA

CLIENT JOB # | ARCHITECT JOB #: 0708B

FRASER SEIPLE ARCHITECTS

PROJECT MANAGER JT

DRAWN BY DM

DATES

	FIRST SUBMITTAL	5/28/10
1	PLAN CHECK 1	8 /16 /10

SIGNED

thoma ENGINEERING
THOMA ELECTRIC, INC
P.O. Box 1167 – 3562 Empleo St.
San Luis Obispo, CA 93406
Phone: (805) 543–3850
Fax: (805) 543–3829
cod@thomaelec.com

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. THOMA NO. 10757 ELECTRICAL STATE OF CALIFORNIA

EXPIRES: 06/30/11
THOMA #10–8055

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with the architect without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Written dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and existing conditions on the job and shall report any discrepancies to the architect for resolution prior to commencing work.

SHEET TITLE

TITLE 24

SHEET #

E6.0