LIGHTING MANDATORY MEASURES — LTG-MM

PROJECT NAME: DEL MAR HIGH SCHOOL
DATE: 11/11/08

		DESCRIPTION	Designer	Enforcement
☒	131(d)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.	SZ	
☐	131(d)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.	SZ	
☒	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.	SZ	
☐	132	Tandem Wiring for One and Three Lamp Fluorescent Fixtures: All one and three lamp fluorescent fixtures are tandem wired with two lamp ballasts where required by Standards Section 132; or all one and three lamp fluorescent fixtures are specified with electronic high-frequency ballasts and are exempt from tandem wiring requirements.		
☒	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.	SZ	
☒	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.	SZ	
☐	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(e)	Display Lighting. Display lighting shall be separately switched on circuits that are 20 amps or less.		

Job Number: Page:

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

PROJECT NAME: DEL MAR HIGH SCHOOL — DATE: 01/31/09
PROJECT ADDRESS: 312 DEL MAR AVE. SAN GABRIEL, CA 91776 — Building Permit #
PRINCIPAL DESIGNER - LIGHTING: F.B.A ENGINEERING — TELEPHONE: (949) 852-9995 — Checked by/Date
DOCUMENTATION AUTHOR: STEVE ZAJICEK — TELEPHONE: (949) 852-9995 — Enforcement Agency Use

GENERAL INFORMATION

DATE OF PLANS: 01/31/09 — BUILDING CONDITIONED FLOOR AREA: 5065 Sq.Ft. — CLIMATE ZONE

BUILDING TYPE: ☒ NONRESIDENTIAL ☐ HIGH RISE RESIDENTIAL ☐ HOTEL/MOTEL GUEST ROOM ☐ CONDITIONED SPACES ☐ UNCONDITIONED SPACES ☐ INDOOR & OUTDOOR SIGNS

PHASE OF CONSTRUCTION: ☐ NEW CONSTRUCTION ☐ ADDITION ☒ ALTERATION

METHOD OF LIGHTING COMPLIANCE: ☒ COMPLETE BUILDING ☐ AREA CATEGORY ☐ TAILORED ☐ PERFORMANCE ☐ COMMON LIGHTING

STATEMENT OF COMPLIANCE

This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to building lighting requirements.

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

DOCUMENTATION AUTHOR: STEVE ZAJICEK — SIGNATURE: SZ — DATE: 01/31/09

The Principal Lighting 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 lighting requirements contained in Sections 110, 119, 130 through 132, and 146, 148 and 149 of Title 24, Part 6.

Please Check One: (These sections of the Business and Professions Code are printed in full in the Nonresidential Manual.)

☒ 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 or 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 the exemption to 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 LIGHTING DESIGNER - NAME: STEVE ZAJICEK — SIGNATURE: SZ — DATE: 01/31/09 — LIC. #: E10372

LIGHTING MANDATORY MEASURES

Indicate location on plans of Note Block for Mandatory Measures: E00.4

LIGHTING COMPLIANCE FORMS & WORKSHEETS (Check box if worksheet is included)

- ☒ LTG-1-C, Parts 1 of 4 and 2 of 4: Certificate of Compliance. Part 1 of 4 and 2 of 4 are required for all submittals
- ☐ LTG-1-C, Part 3 of 4: Certificate of Compliance. Part 3 of 4 submittal is required only if Control Credits are claimed
- ☐ LTG-1-C, Part 4 of 4: Certificate of Compliance. Part 4 of 4 submittal is required when lighting controls are installed
- ☒ LTG-2-C: Interior Lighting Schedule
- ☐ LTG-3-C: Portable Lighting Worksheet
- ☐ LTG-4-C: Lighting Controls Credit Worksheet
- ☒ LTG-5-C: Interior Lighting Power Allowance
- ☐ LTG-6-C: Tailored Method Worksheet
- ☐ LTG-7-C: Room Cavity Ratio Worksheet
- ☐ LTG-8-C: Common Lighting Systems Method Worksheet
- ☐ LTG-9-C: Line Voltage Track Lighting Worksheet

2005 Nonresidential Compliance Forms — Job Number: — Page: — March 2005

CERTIFICATE OF COMPLIANCE — LTG-1-C

PROJECT NAME: DEL MAR HIGH SCHOOL — DATE: 11/11/08

INSTALLED INTERIOR LIGHTING POWER FOR CONDITIONED AND UNCONDITIONED SPACES

	INSTALLED WATTS
INSTALLED LIGHTING, CONDITIONED SPACES (From LTG-2-C)	6153.0
PORTABLE LIGHTING (From LTG-3-C)	------
LIGHTING CONTROL CREDIT, CONDITIONED SPACES (From LTG-4-C)	732.6
CONDITIONED SPACE ADJUSTED INSTALLED LIGHTING POWER	5420.4
INSTALLED LIGHTING, UNCONDITIONED SPACES (From LTG-2-C)	------
LIGHTING CONTROL CREDIT, UNCONDITIONED SPACES (From LTG-4-C)	------
UNCONDITIONED SPACE ADJUSTED INSTALLED LIGHTING POWER	------

ALLOWED INTERIOR LIGHTING POWER FOR CONDITIONED SPACES

- ☒ COMPLETE BUILDING METHOD (From LTG-5-C)
- ☐ AREA CATEGORY METHOD (From LTG-5-C)
- ☐ TAILORED METHOD (From LTG-5-C)

ALLOWED LIGHTING POWER — ALLOWED WATTS: 6360.0

ALTERNATE COMPLIANCE

- ☐ PERFORMANCE METHOD
- ☐ COMMON LIGHTING SYSTEM (From LTG-8-C)

ALLOWED INTERIOR LIGHTING POWER FOR UNCONDITIONED SPACES (From LTG-5-C)

MANDATORY INTERIOR AND DAYLIGHTING AUTOMATIC CONTROLS

CONTROL LOCATION (Room #)	CONTROL IDENTIFICATION	CONTROL TYPE (Auto Time Switch, Dimming, etc.)	SPACE CONTROLLED	Check if Daylighting	NOTE TO FIELD

NOTES TO FIELD - For Building Department Use Only

2005 Nonresidential Compliance Forms — Job Number: — Page: — March 2005

LIGHTING CONTROLS CREDIT WORKSHEET (Part 1 of 2) LTG-4-C

CONTROL CREDITS FOR CONDITIONED SPACES

PROJECT NAME: DEL MAR HIGH SCHOOL — DATE: 11/11/08

A ROOM # ZONE ID CONDITIONED AREAS	B LIGHTING CONTROL DESCRIPTION	C PLANS REFERENCE	D ROOM AREA (ft²)	E DAYLIGHTING: WINDOW WALL RATIO	F DAYLIGHTING: Glazing VLT	G DAYLIGHTING: SKYLIGHT EFFECTIVE APERTURE	H WATTS OF CONTROL LIGHTING	I LIGHTING ADJUSTMENT FACTOR ²	J CONTROL CREDIT WATTS (H X I)
	OCC. SENSOR	E2.1	943.6				1460	.2	292.0
	OCC. SENSOR	E2.1	943.6				1495	.2	299.0
	OCC. SENSOR	E2.1	680.0				322	.2	64.4
	OCC. SENSOR	E2.1	191.0				193	.2	38.6
	OCC. SENSOR	E2.1	194.0				193	.2	38.6

PAGE TOTAL → 732.6
BUILDING TOTAL → 732.6
Enter in LTG-2-C: Lighting Control Credit

1) From Equation 146-A
2) From Table 146-A

2005 Nonresidential Compliance Forms — January 2006

2005 NONRESIDENTIAL COMPLIANCE FORMS

INTERIOR LIGHTING SCHEDULE (Part 2 of 2) LTG-2-C

PROJECT NAME: DEL MAR HIGH SCHOOL — DATE: 11/11/08

INSTALLED LIGHTING POWER FOR UNCONDITIONED SPACES

A Name	B Type Description	C Lamp Type	D Number of Lamps per Luminaire	E Watts per Lamp	F Number of Ballast per Luminaire	G Watts per Luminaire	H If CEC Default	I Number of Luminaires	J Installed Watts (G x I)
1A	LINEAR PENDANT FLUOR.	T8	10	25	5	250	X	10	2500
1B	LINEAR PENDANT FLUOR.	T8	6	25	3	150	X	0	0
2	CFL DOWNLIGHT	TRT	1	32	1	35	X	22	770
3	PENDANT FLUOR.	TTT	4	26	2	129	X	0	0
4	4' SURFACE FLUOR.	T8	2	25	1	46	X	6	276
5	4' PENDANT FLUOR.	T8	2	25	1	46	X	7	322
6	4' FLUOR. STRIP	T8	2	25	1	46	X	1	46
12	4' FLUORESCENT WALL	T8	1	25	1	35	X	2	70
13	CFL DOWNLIGHT	TRT	1	30	1	26	X	2	52
15	LINEAR PENDANT FLUOR.	T8	3	25	2	73	X	29	2117

BUILDING TOTAL (sum of all pages) + 6153.0
CONTROL CREDIT (from LTG-4-C) - 732.6
ADJUSTED ACTUAL WATTS + 5420.4

January 2006

INTERIOR LIGHTING POWER ALLOWANCE — LTG-5-C

PROJECT NAME: DEL MAR HIGH SCHOOL — DATE: 11/11/08

ALLOWED LIGHTING POWER (Choose One Method)

COMPLETE BUILDING METHOD - CONDITIONED SPACES

BUILDING CATEGORY (From Section 146 Table 146-B)	WATTS PER SF	COMPLETE BLDG. AREA	ALLOWED WATTS
SCHOOL	1.2	5300	6360.0

AREA CATEGORY METHOD - CONDITIONED SPACES

AREA CATEGORY (From Section 146 Table 146-C)	WATTS PER SF	AREA (SF)	ALLOWED WATTS

PAGE TOTAL
BUILDING TOTAL — AREA — WATTS

TAILORED METHOD - CONDITIONED SPACES

TOTAL ALLOWED WATTS (From LTG-6-C or from computer run.)

UNCONDITIONED SPACES

Complete Building and Area Category Methods Category (From Section 146 Table 146-B&C)	WATTS PER SF	AREA (SF)	ALLOWED WATTS

PAGE TOTAL
BUILDING TOTAL — AREA — WATTS

TAILORED METHOD - UNCONDITIONED SPACES

TOTAL UNCONDITIONED SPACES ALLOWED WATTS (From LTG-5-C and LTG-6-C)

2005 Nonresidential Compliance Forms — Job Number: — Page: — March 2005

San Gabriel Unified School District

408 Junipero Serra
San Gabriel, CA 91776

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FBA Engineering — Consulting Electrical Engineers — 3420 Irvine Avenue Suite 200, Newport Beach, California 92660-3189 — TEL 949 852 9995 FAX 949 852 1657 — EMAIL: fba@fbaengineering.net

REGISTERED PROFESSIONAL ENGINEER — STEPHEN R. ZAJICEK — No. E 10372 — Exp. 09-30-10 — ELECTRICAL — STATE OF CALIFORNIA

IDENTIFICATION STAMP — DIV. OF THE STATE ARCHITECT — OFFICE OF REGULATION SERVICES — 03-112620 — AC — FLS — SS — DATE

LICENSED ARCHITECT — KEVIN S. FLEMING — NO. C26668 — 08-31-11 RENEWAL DATE — STATE OF CALIFORNIA

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Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job and the Architect shall be informed of any variations from the dimensions and conditions show on the drawing. Shop drawings shall be submitted to the Architect for approval before proceeding with fabrication.

Del Mar High School

312 Del Mar Ave
San Gabriel, CA 91776

TITLE 24 LIGHTING CALCULATIONS

Project Number	20318
Date	FEBRUARY, 2010
Drawn By	JBM
Checked By	RR

E0.5

Scale