Facilities Development Division www.oshpd.ca.gov/fdd
400 R Street. Suite 200, Sacramento, California 95811-6213 Phone (916) 440-8300 Fax (916) 654-2973

APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.
OSP-0226-10

Check whether application is: NEW [X] RENEWAL [ ]

1.0

Southland Industries	Raymond Gonzales
Manufacturer	*Manufacturer's Technical Representative*
74221 Orangewood Ave	Garden Grove, CA 92841
Mailing Address	
(714) 901-5800	RGonzales@southlandind.com
Telephone	*E-mail Address*

2.0

Temperature Control Panels	Electrical Equipment
Product Name	*Product Type*

PNL-1 through PNL-20

Product model No (List all unique product identification numbers and/or serial numbers)

General Description: The rigid wall mounted and post-mounted temperature control panels are 120V and consist of control modules, power supply, terminal blocks and additional components to each form a complete control panel. Cabinets are 14 or 16 gage powder-coated carbon steel with a NEMA 1 or 4 rating.

3.0

DYNAMIC CERTIFICATION LABORATORIES, LLC	*JOSEPH LA BRIE, S.E.*
Applicant Company Name	*Contact Person*
1315 GREG STREET, SUITE 109	*SPARKS, NV 89431*
Mailing Address	
(775) 358-5085	LaBrie@makeitright.net
Telephone	*E-mail Address*

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

	10/25/11
Signature of Applicant	*Date*
Managing Partner	Dynamic Certification Laboratories, LLC
Title	*Company Name*

1/10

Registered Design Professional Preparing the Report

4.0

DYNAMIC CERTIFICATION LABORATORIES, LLC	
Company Name	
JOSEPH LA BRIE, S.E.	SE-3566
Contact Name	*California License Number*
1315 GREG STREET, SUITE 109, SPARKS, NV 89431	
Mailing Address	
(626) 445-0366	*LaBrie@MakeItRight.net*
Telephone	*E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

DYNAMIC CERTIFICATION LABORATORIES, LLC	
Company Name	
DR. AHMAD ITANI, SE	SE-5220
Contact Name	*California License Number*
1315 GREG STREET, SUITE 109, SPARKS, NV 89431	
Mailing Address	
(775) 358-5085	Itani@shaketest.com
Telephone	*E-mail Address*

Anchorage Pre-Approval

6.0

☐ *Anchorage is pre-approved under OPA-*
(Separate application for anchorage pre-approval is required)

☒ Anchorage is not Pre-approved

Certification Method

70. ☒ *Testing in accordance with:* ☒ *ICC-ES AC-156* ☐ *Other (Please Specify):*

☐ *Analysis*

☐ *Experience data*

☐ *Combination of Testing, Analysis, and/or Experience Data (Please Specify): Testing*

Testing Laboratory (if applicable)

8.0

DYNAMIC CERTIFICATION LABORATORIES, LLC	*KELLY LAPLACE, PROJECT ENGINEER*
Company Name	*Contact Name*
1315 GREG STREET, STE 109	SPARKS, NV 89431
Mailing Address	
(775) 358-5085	*Kelly@shaketest.com*
Telephone	E-mail:

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Approval Parameters

9.0

Design in accordance with ASCE 7-05 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.39

S_{DS} (Spectral response acceleration at short period) = 1.93g

a_p (In-structure equipment or component amplification factor) =1.0

R_p (Equipment or component response modification factor) =2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio)=1.0

Equipment or Component fundamental period(s) =SEE ATTACHMENT

Building period limits (if any) =NONE

Overall dimensions and weight (or range thereof) =SEE ATTACHMENT

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) =

S_{DS} (Spectral response acceleration at short period) =

S_1 (Spectral response acceleration at 1 second period) =

R (Response modification coefficient)=1.0

Ω_0 (System overstrength factor) =1.0

C_d (Deflection amplification factor) =1.0

I_p (Importance factor) =1.5

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) = Sec

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007: ☐ Yes ☐ No

List of attachments supporting the special seismic certification of equipment or components:

☒ *Test Report* ☒ *Drawings* ☒ *Manufacturer's Catalog*

☐ *Calculations* ☐ *Others (Please Specify):*

11.0 ***OSHPD Approval*** *(For Office Use Only)*

10/26/2011	**December 31, 2016**
Signature & Date	*Approval Expiration Date*
M. R. Karim, SHFR	S_{DS} (g) = **1.93** z/h = **1.0**
Name & Title	*Special Seismic Certification Valid Up to*

Condition of Approval (if any): **Approval is limited to rigid wall mounted and as tested post mounted (listed as flexible) configurations only.**

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Table 1

Special Seismic Certification Approved Units

DCL Dynamic Certification Laboratories

Manufacturer: Southland Industries

Product Line: Temperature Control Panels

Certified Product Construction:

14 or 16 gage powder-coated carbon steel, NEMA 1 or NEMA 4

Certified Options:

120V, control modules, power supply, terminal blocks

Certified Mounting Description:

Rigid or flexible (As tested post-mounted configuration is listed as flexible)

Model	Dimensions (inches)			Operating Weight (lb)	Mounting	NEMA Rating	Sds Level Approved	Unit
	Depth	Width	Height					
PNL-2	6	12	16	19	Rigid and Flexible	NEMA 4	1.93	UUT2
PNL-3	6.6	12	16	19 to 123	Rigid and Flexible	NEMA 1 / NEMA 4	1.93	Interpolated
PNL-4	6.6	12	16					
PNL-5	6	16	20					
PNL-6	6	16	20					
PNL-7	6.6	16	20					
PNL-8	6	16	20					
PNL-9	6	16	20					
PNL-10	6.6	16	20					
PNL-11	6.6	16	20					
PNL-12	6.6	20	24					
PNL-13	6	20	24					
PNL-14	6.6	24	24					
PNL-15	8	24	30					
PNL-16	8	30	30					
PNL-17	8	30	30					
PNL-18	8	30	30					
PNL-19	6	20	24					
PNL-20	6.6	24	24					
PNL-1	6.6	30	36	123	Rigid and Flexible	NEMA 1	1.93	UUT1

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Table 2

UUT1 Unit Under Test Summary Sheet

((●)) DCL Dynamic Certification Laboratories

Manufacturer: Southland Industries

Product Line: Temperature Control Panels

Model Number: PNL-1

Product Construction Summary:

14 gage powder-coated carbon steel, NEMA 1

Options / Component Summary:

120V, control modules, power supply, terminal blocks

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
123	6.6	30	36	n/a	n/a	n/a

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:

UUT1a, mounted to rigid test wall, instrumented and ready for test.

UUT1b, mounted to flexible post setup, instrumented and ready for test.

UUT1 was tested in both a rigid and flexible mount configuration. UUT1a was mounted to a rigid DCL-provided stud wall shake table interface frame using four 3/8-inch Grade 5 bolts, strut and strut nuts, utilizing the exisiting manufacturer-provided mounting holes in the back of the back box. UUT1b was mounted to a flexible post-mount (by Southland Industries) using four 3/8-inch Grade 5 bolts, strut and strut nuts. The post-mount setup was attached to the shake table using 1/2-inch Grade 5 bolts.

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Table 3

UUT2 Unit Under Test Summary Sheet

DCL Dynamic Certification Laboratories

Manufacturer: Southland Industries

Product Line: Temperature Control Panels

Model Number: PNL-2

Product Construction Summary:

16 gage powder-coated carbon steel, NEMA 4

Options / Component Summary:

120V, control modules, power supply, terminal blocks

UUT Properties

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
19	6	12	16	n/a	n/a	n/a

Seismic Test Parameters

Building Code	Test Criteria	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2010	2010 ICC-ES AC156	1.93	1.0	1.5	3.09	2.32	1.29	0.51

Unit Mounting Description:

UUT2a, mounted to rigid test wall, instrumented and ready for test.

UUT2b, mounted to flexible post setup, instrumented and ready for test.

UUT2 was tested in both a rigid and flexible mount configuration. UUT2a was mounted to a rigid DCL-provided stud wall shake table interface frame using four 3/8-inch Grade 5 bolts, strut and strut nuts, utilizing the exisiting manufacturer-provided mounting holes in the back of the back box. UUT2b was mounted to a flexible post-mount (by Southland Industries) using four 3/8-inch Grade 5 bolts, strut and strut nuts. The post-mount setup was attached to the shake table using 1/2-inch Grade 5 bolts.

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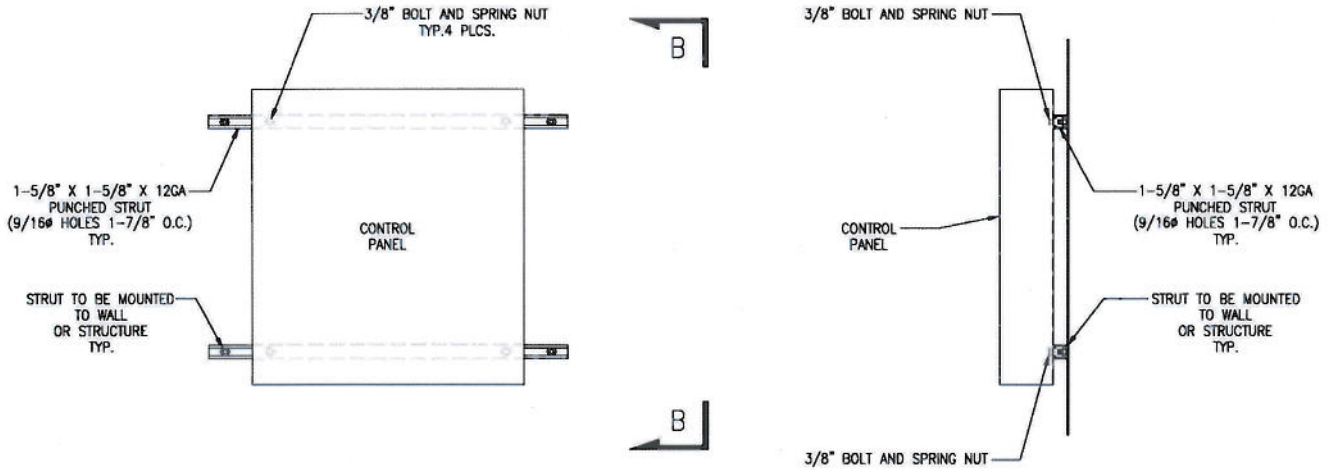
UUT1a and UUT2a Wall Mount (Rigid) Mounting Detail



ELEVATION VIEW – FRONT VIEW

SECTION B–B – SIDE VIEW

Note: 3/8-inch Grade 5 bolts were used to attach the UUTs to the rigid wall mount setup.

REVISIONS			
NO	DESCRIPTION	DATE	BY

DRAWING TITLE: CONTROL PANEL OSP WALL MOUNT

JOB TITLE

DATE	9-9-11
SCALE	NTS
DRAWN BY	ARS
DESIGNED BY	
CHECKED BY	
JOB NO.	

Southland Industries
74221 ORANGEWOOD AVE
GARDEN GROVE CALIFORNIA
92841-1420
(714) 901-5800

DRAWING NO
SK-02
OF SHEETS

Southland Industries CAD File: C:\Users\asorensen\Desktop\Control Panel Support.dwg "[" SK-02 "]" Date: 09-09-2011 2:29:02pm User: asorensen

DCL Dynamic Certification Laboratories

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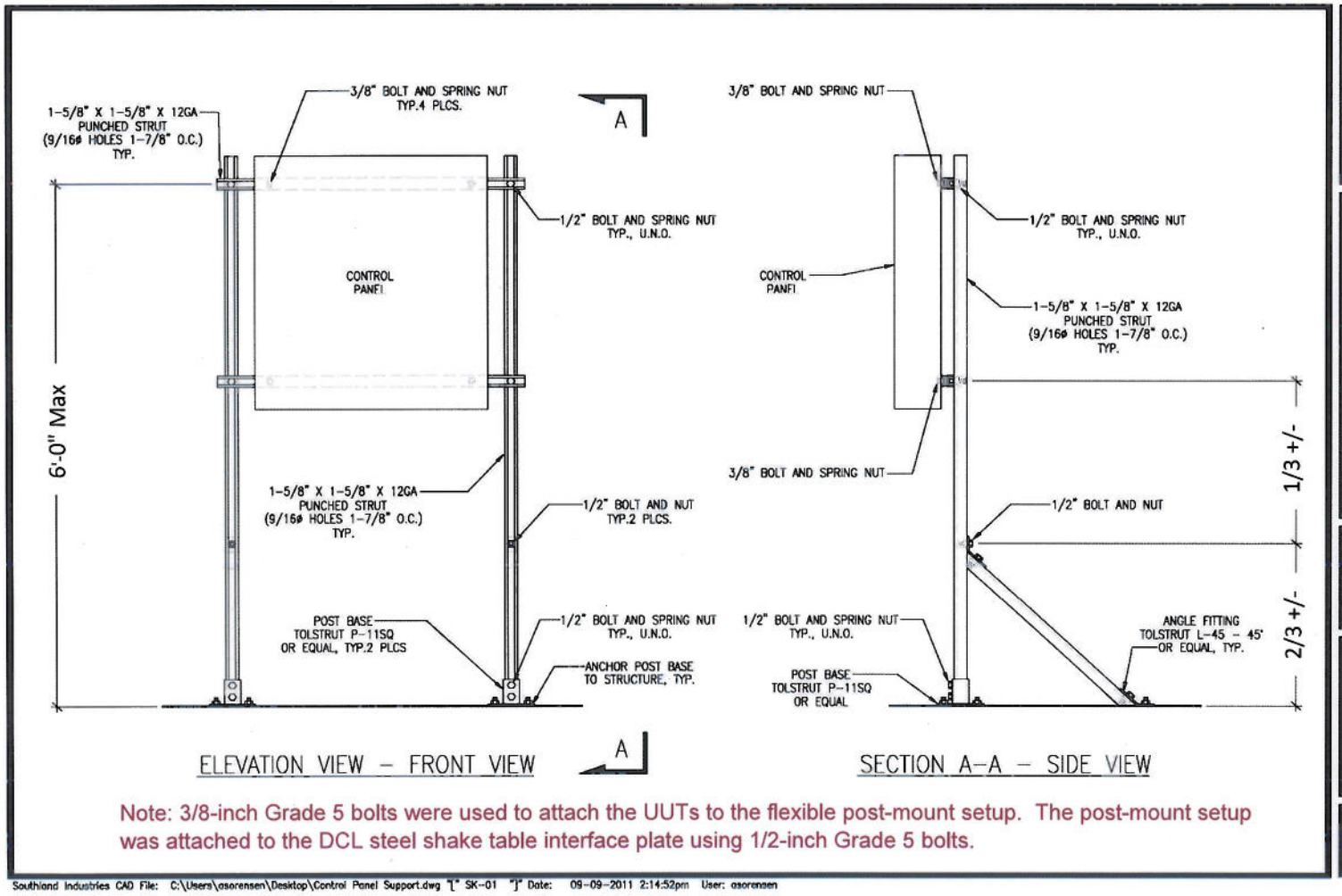
UUT1b and UUT2b Post Mount (Flexible) Mounting Detail



Note: 3/8-inch Grade 5 bolts were used to attach the UUTs to the flexible post-mount setup. The post-mount setup was attached to the DCL steel shake table interface plate using 1/2-inch Grade 5 bolts.

REVISIONS			
NO	DESCRIPTION	DATE	BY

DRAWING TITLE: CONTROL PANEL OSP POST MOUNT
JOB TITLE

DATE	9-9-11
SCALE	NTS
DRAWN BY	ARS
DESIGNED BY	
CHECKED BY	
JOB NO.	

Southland Industries
74221 ORANGEWOOD AVE
GARDEN GROVE, CALIFORNIA
92841-1420
(714) 901-5800

DRAWING NO: SK-01
OF SHEETS

Southland Industries CAD File: C:\Users\asorensen\Desktop\Control Panel Support.dwg "L" SK-01 "J" Date: 09-09-2011 2:14:52pm User: asorensen

DCL Dynamic Certification Laboratories

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COMPONENT IDENTIFICATION MATRIX:

CABINETS						
COMPONENT NAME	COMPONENT MANUFACTURER	MANUFACTURER MODEL NUMBER	SIZE	CONSTRUCTION MATERIAL	NEMA RATING	TEST IN UUT
Cabinet, 14 or 16 gage carbon steel, ANSI 61 gray polyester powder paint inside and out	Hoffman	C-SD16126/C-P1612	Smallest	carbon steel, 16 ga.	4	PNL-2
		A-16N12ALP/A-16N12MP	↓	carbon steel, 16 ga.	1	Interpolated
		C-SD20166/C-P2016		carbon steel, 16 ga.	4	Interpolated
		A-20N16ALP/A-20N16		carbon steel, 16 ga.	1	Interpolated
		A-20N16ALP/A-20N16MP		carbon steel, 16 ga.	1	Interpolated
		A-24N20ALP/A-24N20MP		carbon steel, 16 ga.	1	Interpolated
		C-SD24206/C-P2420		carbon steel, 16 ga.	4	Interpolated
		A-24N24ALP/A-24N24MP		carbon steel, 14 ga.	1	Interpolated
		C-SD30248/C-P3024		carbon steel, 14 ga.	4	Interpolated
		C-SD30308/C-P3030		carbon steel, 14 ga.	4	Interpolated
		A-36N30ALP/A-36N30MP	Largest	carbon steel, 14 ga.	1	PNL-1

COMPONENT IDENTIFICATION MATRIX:

APPROVED INTERNAL COMPONENTS					
COMPONENT NAME	COMPONENT MANUFACTURER	MANUFACTURER MODEL NUMBER	CONSTRUCTION MATERIAL	MOUNTING	TEST IN UUT
Terminal Blocks	ABB	M4/6	Plastic	Rigid	PNL-1, 2
Terminal Block End Section	ABB	FEM6	Plastic	Rigid	PNL-1, 2
Terminal Block Circuit Separator	ABB	SCF6	Plastic	Rigid	PNL-1, 2
Terminal Block End Stop	ABB	BAM2	Plastic	Rigid	PNL-1, 2
35mm Aluminum Din Rail	ABB	BAM-1000	Aluminum	Rigid	PNL-1, 2
Circuit Breaker	CBI	QL-1	Plastic	Rigid	PNL-2
Circuit Breaker	CBI	QL-8	Plastic	Rigid	PNL-1
DC Power Supply	IDEC	PS5R-SD24	Metal	Rigid	PNL-1
8-Port Unmanaged Ethernet Switch	Comtemporary Controls	EISK8-100T	Plastic	Rigid	PNL-1
Terminal Blocks	ABB	M4/6	Plastic	Rigid	PNL-1
Terminal Block End Section	ABB	FEM6	Plastic	Rigid	PNL-1
Terminal Block End Stop	ABB	BAM2	Plastic	Rigid	PNL-1
35mm Aluminum Din Rail	ABB	BAM-1000	Aluminum	Rigid	PNL-1
Transformer	Functional Devices	TR20VA001	Metal	Rigid	PNL-2
Transformer	Functional Devices	TR100VA002	Metal	Rigid	PNL-1
Din Rail Relay Module	Finder	Varies	Plastic	Rigid	PNL-1
RS-485 LAN Terminator	Delta	TRM-768	Metal/Plastic	Rigid	PNL-1, 2
Repeater	Delta	RPT-768	Metal/Plastic	Rigid	PNL-2
System Controller	Delta	Varies	Metal/Plastic	Rigid	PNL-1
Field Expansion Module	Delta	DFM-1600	Metal/Plastic	Rigid	PNL-1
1"W x 3"H Wire Panduit w/Cover	ABB	ABB-1SL5083A00	Plastic	Rigid	PNL-2
1.5"Wx3"H Wire Panduit w/Cover	ABB	ABB-1SL5085A00	Plastic	Rigid	PNL-1
2.25"Wx3"H Wire Panduit w/Cover	ABB	ABB-1SL5087A00	Plastic	Rigid	PNL-1
Ground Lug Connector	Thomas & Betts	3LN44	Aluminum	Rigid	PNL-1, 2