



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0555 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Cisco Systems Inc.

Manufacturer's Technical Representative: John Krahner

Mailing Address: 170 West Tasman Drive, San Jose, CA 95134

Telephone: 408.527.8398

Email: [jkrahner@cisco.com](mailto:jkrahner@cisco.com)

Product Information

Product Name: Nexus 9504, Catalyst 6807/3650/9300/9400/9500, Firepower 4120/4140, ASR 1002

Product Type: Networking Equipment

Product Model Number: See Attachment 1

(List all unique product identification numbers and/or part numbers)

General Description: Rack mounted networking switches, routers, and firewalls.

Mounting Description: Rigid floor mounted within a Telect DR1250-84436 rack – See rack cut sheet.

**Similar installations must use identical rack with a C.G. ≤ the listed C.G. in Table 1 & UUT Sheets.**

Applicant Information

Applicant Company Name: Manwill Engineering LLC

Contact Person: Derek Manwill, SE

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: 541.241.2102

Email: [derek@manwillSE.com](mailto:derek@manwillSE.com)

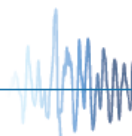
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 03/30/2018

Title: President Company Name: Manwill Engineering LLC

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY  
OSH-FD-759 (REV 12/16/15)



OSHPD

Page 1 of 3



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)**

Company Name: Manwill Engineering LLC

Name: Derek Manwill, SE

California License Number: S6266

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: 541.241.2102

Email: [derek@manwillSE.com](mailto:derek@manwillSE.com)

**Supports and Attachments Preapproval**

- ☐ Supports and attachments are preapproved under OPM-  
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- ☒ Supports and attachments are not preapproved

**Certification Method**

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify):

OSP-0555-10

BY: Timothy J. Piland

DATE: 08/14/2018

**Testing Laboratory**

Company Name: National Technical Systems, Inc. – Silicon Valley

Contact Name: Rajnish Nand

Mailing Address: 38995 Cherry Street, Newark, CA 94560

Telephone: 510.578.3500

Email: [rajnish.nand@nts.com](mailto:rajnish.nand@nts.com)



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

**Seismic Parameters**

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.44 ( $S_{DS} = 2.00$ ); 1.13 ( $S_{DS} = 2.50$ )

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.00 ( $z/h = 1$ ); 2.50 ( $z/h = 0$ )

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

$R_p$  (Equipment or component response modification factor) = 2.5

$\Omega_0$  (System overstrength factor) = 2

$I_p$  (Importance factor) = 1.5

$z/h$  (Height factor ratio) = 1 ( $S_{DS} = 2.00$ ); 0 ( $S_{DS} = 2.50$ )

Equipment or Component Natural Frequencies (Hz) = See Attachment 2

Overall dimensions and weight (or range thereof) = See Attachments 1 & 2

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

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

$S_{DS}$  (Design spectral response acceleration at short period, g) = \_\_\_\_\_

$S_{D1}$  (Design spectral response acceleration at 1 second period, g) = \_\_\_\_\_

$R$  (Response modification coefficient) = \_\_\_\_\_

$\Omega_0$  (System overstrength factor) = BY: Timothy J. Piland

$C_d$  (Deflection amplification factor) = \_\_\_\_\_

$I_p$  (Importance factor) = 1.5

Height to Center of Gravity above base = \_\_\_\_\_

Equipment or Component Natural Frequencies (Hz) = \_\_\_\_\_

Overall dimensions and weight (or range thereof) = \_\_\_\_\_

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

**List of Attachments Supporting Special Seismic Certification**

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Attachments 1 & 2

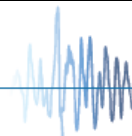
**OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022**

Signature: Timothy J. Piland Date: August 14, 2018

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = See Above  $z/h$  = See Above

Condition of Approval (if applicable): \_\_\_\_\_



## ATTACHMENT 1: CERTIFIED COMPONENTS

## SEISMIC COMPLIANCE REPORT

### TABLE 1

DOCUMENT NO.: 18012CR1.1

MANUFACTURER: CISCO SYSTEMS INC.						
PRODUCT FAMILY: NEXUS 9504, CATALYST 6807/3650/9300/9400/9500, FIREPOWER 4120/4140, ASR 1002						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
Nexus 9504 Custom Rack Configuration						
Nexus 9504 Custom	36.0	24.0	84.0	944	Wt. incl. rack, vert. C.G. = 37.0in	UUT 1
Catalyst 9000 Custom Rack Configuration						
Catalyst 9000 Custom	36.0	24.0	84.0	791	Wt. incl. rack, vert. C.G. = 41.6in	UUT 2
MOUNTING:	Rigid floor mounted within Telect DR1250-84436 rack. Use identical rack with a C.G. ≤ the listed C.G. above.			SEISMIC LEVELS	S <sub>DS</sub> = 2.0g for z/h = 1 S <sub>DS</sub> = 2.5g for z/h = 0	I <sub>P</sub> = 1.5
NOTES:	Product Construction: Carbon steel rack. Frame only, doors and panels are not certified. Options/Subcomponents: Rack may contain any combination of subcomponents listed in Table 2.					

### TABLE 2 - SUBCOMPONENTS

MANUFACTURER: CISCO SYSTEMS INC.						
PRODUCT FAMILY: NEXUS 9504, CATALYST 6807/3650/9300/9400/9500, FIREPOWER 4120/4140, ASR 1002						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
Cisco - Nexus 9504						
N9K-C9504	33.2	17.5	12.3	250	Main chassis, 4 linecard slots	UUT 1
N9K-C9504-FM-E	Included in main chassis bundle				Fabric module, 100G, ACI, NX-OS	UUT 1
N9K-C9504-FAN	Included in main chassis bundle				Fan tray, port-side intake	UUT 1
N9K-SC-A	Included in main chassis bundle				System controller	UUT 1
N9K-SUP-B	Included in main chassis bundle				Supervisor B	UUT 1
N9K-PAC-3000W-B	Included in main chassis bundle				3000W power supply	UUT 1
N9K-X9732C-EX	Included in main chassis bundle				Agg/ACI linecard, 32 port 100G	UUT 1
QSFP-40G-SR-BD	Included in main chassis bundle				QSFP40G BiDi short transceiver	UUT 1
GLC-TE	Included in main chassis bundle				1000BASE-T SFP transceiver	UUT 1
SFP-10G-SR	Included in main chassis bundle				10GBASE-SR SFP module	UUT 1
Cisco - Catalyst 6807						
C6807-XL	18.1	17.4	17.5	196	Main chassis, 7 slot, 10RU	UUT 1
C6807-XL-FAN	Included in main chassis bundle				Fan tray	UUT 1
C6800-SUP6T	Included in main chassis bundle				Sup6T, 440G/slot, 8x10GE, 2x40GE	UUT 1
SFP-10G-SR	Included in main chassis bundle				10GBASE-SR SFP module	UUT 1
QSFP-40G-SR-BD	Included in main chassis bundle				QSFP40G BiDi short transceiver	UUT 1
C6800-32P10G	Included in main chassis bundle				32 port 10GE with dual DFC4	UUT 1
C6800-XL-3KW-AC	Included in main chassis bundle				3000W power supply	UUT 1
Cisco - Catalyst 3650						
C1-WS3650-48TQ/K9	17.6	17.5	1.7	20	Switch, 48 Port Data 4x10G Uplink	UUT 1
S3650UK9-163	Included in switch bundle				UNIVERSAL	UUT 1
PWR-C2-1025WAC/2	Included in switch bundle				1025W secondary power supply	UUT 1
PWR-C2-250WAC	Included in switch bundle				250W power supply	UUT 1
C3650-STACK-KIT	Included in switch bundle				Stack module	UUT 1
NOTES:	Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.					

## ATTACHMENT 1: CERTIFIED COMPONENTS

## SEISMIC COMPLIANCE REPORT

### TABLE 2 - SUBCOMPONENTS (continued)

DOCUMENT NO.: 18012CR1.1

MANUFACTURER: CISCO SYSTEMS INC.						
PRODUCT FAMILY: NEXUS 9504, CATALYST 6807/3650/9300/9400/9500, FIREPOWER 4120/4140, ASR 1002						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
Cisco - Catalyst 3650 (continued)						
C3650-STACK	Included in switch bundle				Stack module	UUT 1
STACK-T2-1M	Included in switch bundle				Stacking cable	UUT 1
Cisco - Catalyst 9300 Switches						
C9300-24T	17.5	17.5	1.7	19	Switch 24-port data only	UUT 2
C9300-24P	17.5	17.5	1.7	19	Switch 24-port PoE+	INTERP
C9300-24U	17.5	17.5	1.7	19	Switch 24-port UPOE	INTERP
C9300-48T	17.5	17.5	1.7	22	Switch 48-port data only	INTERP
C9300-48P	17.5	17.5	1.7	22	Switch 48-port PoE+	INTERP
C9300-48U	17.5	17.5	1.7	22	Switch 48-port UPOE	UUT 2
Cisco - Catalyst 9300 Modules						
C9300-NM-4G	Included in switch bundle				4 x 1GE network module	UUT 2
C9300-NM-2Q	Included in switch bundle				2 x 40GE network module	INTERP
C9300-NM-4M	Included in switch bundle				4 x MGig network module	INTERP
C9300-NM-8X	Included in switch bundle				8 x 10GE network module	UUT 2
GLC-SX-MM-RGD	Included in switch bundle				1G SFP optical module	UUT 2
SFP-10G-SR	Included in switch bundle				10G SFP optical module	UUT 2
FAN-T2	Included in switch bundle				Fan module	UUT 2
Cisco - Catalyst 9300 Power Supplies						
PWR-C1-350WAC	Included in switch bundle				350WAC power supply	UUT 2
PWR-C1-715WAC	Included in switch bundle				715WAC power supply	INTERP
PWR-C1-1100WAC	Included in switch bundle				1100WAC power supply	UUT 2
Cisco - Catalyst 9400 Main Chassis						
C9407R	16.3	17.3	17.4	148	7 slot chassis	UUT 2
C9410R	16.3	17.3	22.6	180	10 slot chassis	UUT 2
Cisco - Catalyst 9400 Line Cards						
C9400-LC-24XS	Included in main chassis bundle				24-Port 10G ethernet SFP+	UUT 2
C9400-LC-48T	Included in main chassis bundle				48-Port 10/100/1000 RJ-45	INTERP
C9400-LC-48UX	Included in main chassis bundle				48Port UPOE 24p mGig 24p RJ-45	INTERP
C9400-LC-48U	Included in main chassis bundle				48-Port UPOE 10/100/1000 RJ-45	UUT 2
Cisco - Catalyst 9400 Modules						
C9400-SUP-1	Included in main chassis bundle				Supervisor 1 module	UUT 2
SFP-10G-SR	Included in main chassis bundle				10G SFP optical module	UUT 2
SFP-10G-SR-X	Included in main chassis bundle				10G SFP optical module	UUT 2
QSFP-40G-SR4	Included in main chassis bundle				40G QSFP optical module	UUT 2
C9410-FAN	Included in main chassis bundle				10 slot chassis fan tray	UUT 2
C9407-FAN	Included in main chassis bundle				7 slot chassis fan tray	UUT 2
Cisco - Catalyst 9400 Accessories						
C9410-ACC-KIT	Included in main chassis bundle				10 slot chassis accessory kit	UUT 2
C9407-ACC-KIT	Included in main chassis bundle				7 slot chassis accessory kit	UUT 2
C9410-RACK-KIT	Included in main chassis bundle				10 slot chassis rack mount	UUT 2
C9407-RACK-KIT	Included in main chassis bundle				7 slot chassis rack mount	UUT 2
C9400-S-BLANK	Included in main chassis bundle				Slot blank cover	UUT 2
NOTES:	Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.					



## ATTACHMENT 1: CERTIFIED COMPONENTS

## SEISMIC COMPLIANCE REPORT

### TABLE 2 - SUBCOMPONENTS (continued)

DOCUMENT NO.: 18012CR1.1

MANUFACTURER: CISCO SYSTEMS INC.						
PRODUCT FAMILY: NEXUS 9504, CATALYST 6807/3650/9300/9400/9500, FIREPOWER 4120/4140, ASR 1002						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
Cisco - Catalyst 9400 Power Supplies						
C9400-PWR-3200AC	Included in main chassis bundle				3200W power supply	UUT 2
Cisco - Catalyst 9500 Switches						
C9500-12Q	21.5	17.5	1.7	29	Switch 12-port 40G QSFP+	EXTRAP
C9500-24Q	21.5	17.5	1.7	30	Switch 24-port 40G QSFP+	UUT 2
C9500-40X	21.5	17.5	1.7	29	Switch 40-port 10G SFP/SFP+	UUT 2
Cisco - Catalyst 9500 Modules						
C9500-NM-8X	Included in switch bundle				Network module 8-port 10G SFP+	UUT 2
C9500-NM-2Q	Included in switch bundle				Network module 2-port 40G QSFP+	UUT 2
QSFP-H40G-AOC3M	Included in switch bundle				40G QSFP optical module	UUT 2
QSFP-40G-SR4	Included in switch bundle				40G QSFP optical module	UUT 2
SFP-10G-SR	Included in switch bundle				10G SFP optical module	UUT 2
FAN-T4-R	Included in switch bundle				Fan	UUT 2
Cisco - Catalyst 9500 Power Supplies						
PWR-C4-950WAC-R	Included in switch bundle				950W power supply	UUT 2
Cisco - Catalyst 9500 Accessories						
C9500-ACC-KIT-19I	Included in switch bundle				Accessory kit 19" rack mount	UUT 2
C9500-4PT-KIT	Included in switch bundle				Extension rails/brackets four-point	UUT 2
Cisco - ASR 1002						
ASR1002-HX	19.3	17.3	3.5	35	Router 4x10GE+4x1GE, 2xP/S	UUT 1
SFP-10G-SR	Included in router bundle				10GBASE-SR SFP module	UUT 1
GLC-TE	Included in router bundle				1000BASE-T SFP transceiver	UUT 1
ASR1002HX-IPSECHW	Included in router bundle				Crypto module	UUT 1
ASR1000X-AC-750W	Included in router bundle				750W power supply	UUT 1
EPA-10X10GE	Included in router bundle				10X10GE ethernet port adapter	UUT 1
Cisco - Firepower 4120						
FPR4120-NGFW-K9	29.7	16.9	1.8	40	NGFW appliance, 1U, 2 x NetMod	UUT 1
FPR4K-PWR-AC-1100	Included in firewall bundle				1100W power supply	UUT 1
SFP-10G-SR	Included in firewall bundle				10GBASE-SR SFP module	UUT 1
FPR4K-SSD200	Included in firewall bundle				SSD for FPR-4110/4120	UUT 1
FPR4K-SSD-BBLKD	Included in firewall bundle				SSD slot carrier	UUT 1
GLC-TE	Included in firewall bundle				1000BASE-T SFP transceiver	UUT 1
FPR4K-FAN	Included in firewall bundle				Fan	UUT 1
FPR4K-NM-8X10G	Included in firewall bundle				8 port SFP+ network module	UUT 1
SFP-10G-SR	Included in firewall bundle				10GBASE-SR SFP module	UUT 1
Cisco - Firepower 4140						
FPR4140-NGFW-K9	29.7	16.9	1.8	41	NGFW Appliance, 1U, 2 x NetMod	UUT 1
FPR4K-PWR-AC-1100	Included in firewall bundle				1100W power supply	UUT 1
SFP-10G-SR	Included in firewall bundle				10GBASE-SR SFP module	UUT 1
FPR4K-SSD400	Included in firewall bundle				SSD for FPR-4140/4150	UUT 1
FPR4K-SSD-BBLKD	Included in firewall bundle				SSD slot carrier	UUT 1
GLC-TE	Included in firewall bundle				1000BASE-T SFP transceiver	UUT 1
FPR4K-FAN	Included in firewall bundle				Fan	UUT 1
NOTES: Table continues on the next page. Additional notes, information, and seismic parameters are shown at the end of the table.						

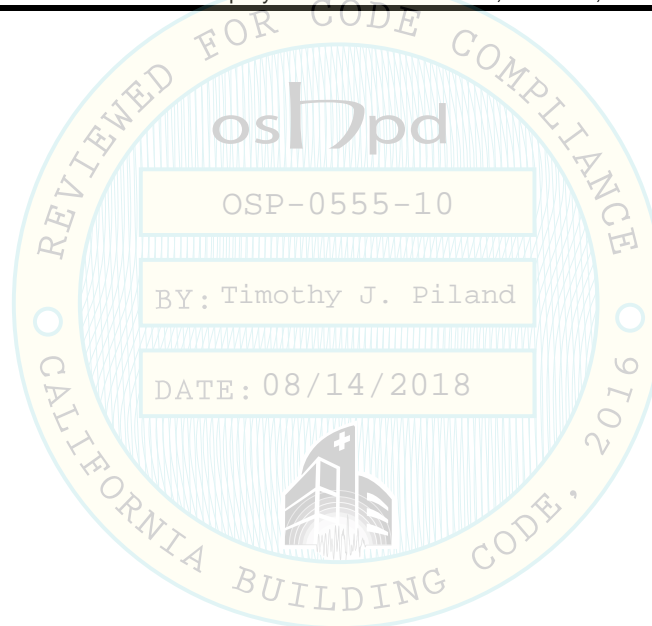
## ATTACHMENT 1: CERTIFIED COMPONENTS

## SEISMIC COMPLIANCE REPORT

**TABLE 2 - SUBCOMPONENTS (continued)**

DOCUMENT NO.: 18012CR1.1

MANUFACTURER: CISCO SYSTEMS INC.						
PRODUCT FAMILY: NEXUS 9504, CATALYST 6807/3650/9300/9400/9500, FIREPOWER 4120/4140, ASR 1002						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
Cisco - Firepower 4140 (continued)						
FPR4K-PWR-AC-1100	Included in firewall bundle			1100W power supply	UUT 1	
FPR4K-NM-4X40G	Included in firewall bundle			4 port QSFP+ network module	UUT 1	
QSFP-40G-SR4	Included in firewall bundle			QSFP transceiver module w/ MPO	UUT 1	
MOUNTING:	Mounted within unit.			SEISMIC LEVELS	S <sub>DS</sub> = 2.0g for z/h = 1 S <sub>DS</sub> = 2.5g for z/h = 0	I <sub>p</sub> = 1.5
NOTES:	Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.					



### ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

### SEISMIC COMPLIANCE REPORT

#### UUT 1

DOCUMENT NO.: 18012CR1.1

<b>MANUFACTURER:</b>		CISCO SYSTEMS INC.				
<b>MODEL NUMBER:</b>		NEXUS 9504 CUSTOM				
<b>UNIT FUNCTION:</b>		NETWORKING EQUIPMENT				
<b>SERIAL NUMBER:</b>		N/A				
<b>DIMENSIONS (in)</b>			<b>WEIGHT (lb)</b>	<b>RES. FREQ. (Hz)</b>		
<b>DEPTH</b>	<b>WIDTH</b>	<b>HEIGHT</b>		<b>F-B</b>	<b>S-S</b>	<b>V</b>
36	24	84	944	14.0	4.9	21.4
<b>BUILDING CODE</b>		<b>TEST CRITERIA</b>		<b>LAB REPORT NO.</b>		
2016 CBC		ICC-ES AC156		NTS 18012TR1		
<b>S<sub>DS</sub> (g)</b>	<b>z/h</b>	<b>A<sub>FLX-H</sub> (g)</b>	<b>A<sub>RIG-H</sub> (g)</b>	<b>A<sub>FLX-V</sub> (g)</b>	<b>A<sub>RIG-V</sub> (g)</b>	
2.0	1	3.20	2.40	1.68	0.68	
2.5	0					

#### IMPORTANCE FACTOR, I<sub>p</sub> = 1.5

Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.



<b>MOUNTING:</b>	Rigid floor mounted using (4) 1/2" Grade 8 bolts.
<b>CONSTRUCTION:</b>	Carbon steel rack.
<b>SUBCOMPONENTS:</b>	<p>Telect - Four Post Rack (DR1250-84436)</p> <p>Cisco - Nexus 9504 (N9K-C9504, N9K-C9504-FM-E, N9K-C9504-FAN, N9K-SC-A, N9K-SUP-B, N9K-PAC-3000W-B, N9K-X9732C-EX, QSFP-40G-SR-BD, GLC-TE, SFP-10G-SR)</p> <p>Cisco - Catalyst 6807 (C6807-XL, C6807-XL-FAN, C6800-SUP6T, SFP-10G-SR, QSFP-40G-SR-BD, C6800-32P10G, C6800-XL-3KW-AC)</p> <p>Cisco - Catalyst 3650 (C1-WS3650-48TQ/K9, S3650UK9-163, PWR-C2-250WAC, PWR-C2-1025WAC/2, C3650-STACK-KIT, C3650-STACK, STACK-T2-1M)</p> <p>Cisco - ASR 1002 (ASR1002-HX, SFP-10G-SR, GLC-TE, ASR1002HX-IPSECHW, ASR1000X-AC-750W, EPA-10X10GE)</p> <p>Cisco - Firepower 4120 (FPR4120-NGFW-K9, FPR4K-PWR-AC-1100, SFP-10G-SR, FPR4K-SSD200, FPR4K-SSD-BBLKD, GLC-TE, FPR4K-FAN, FPR4K-NM-8X10G, SFP-10G-SR)</p> <p>Cisco - Firepower 4140 (FPR4140-NGFW-K9, FPR4K-PWR-AC-1100, SFP-10G-SR, FPR4K-SSD400, FPR4K-SSD-BBLKD, GLC-TE, FPR4K-FAN, FPR4K-PWR-AC-1100, FPR4K-NM-4X40G, QSFP-40G-SR4)</p>
<b>TESTING NOTES:</b>	CG of unit = 37.0 inches from bottom.



## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SEISMIC COMPLIANCE REPORT

### UUT 1 - RACK CONFIGURATION

DOCUMENT NO.: 18012CR1.1

CG of unit = 37.0 inches from bottom. Total height = 84.0in.

		Weight	CG
45			
44	Catalyst 3650	20 lb	78.6 in
43	Catalyst 3650	20 lb	76.9 in
42			
41	ASR 1002	35 lb	74.3 in
40	Firepower 4120	40 lb	71.6 in
39	Firepower 4140	41 lb	69.9 in
38			
37			
36			
35			
34			
33			
32			
31			
30			
29			
28			
27			
26			
25			
24			
23			
22			
21			
20			
19			
18			
17			
16	Catalyst 6807	196 lb	28.8 in
15			
14			
13			
12			
11			
10			
9			
8			
7	Nexus 9504	250 lb	13.9 in
6			
5			
4			
3			
2			
1			



### ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

### SEISMIC COMPLIANCE REPORT

#### UUT 2

DOCUMENT NO.: 18012CR1.1

<b>MANUFACTURER:</b>		CISCO SYSTEMS INC.				
<b>MODEL NUMBER:</b>		CATALYST 9000 CUSTOM				
<b>UNIT FUNCTION:</b>		NETWORKING EQUIPMENT				
<b>SERIAL NUMBER:</b>		N/A				
<b>DIMENSIONS (in)</b>			<b>WEIGHT (lb)</b>	<b>RES. FREQ. (Hz)</b>		
<b>DEPTH</b>	<b>WIDTH</b>	<b>HEIGHT</b>		<b>F-B</b>	<b>S-S</b>	<b>V</b>
36	24	84	791	12.7	4.9	24.2
<b>BUILDING CODE</b>		<b>TEST CRITERIA</b>		<b>LAB REPORT NO.</b>		
2016 CBC		ICC-ES AC156		NTS 18012TR1		
<b>S<sub>DS</sub> (g)</b>	<b>z/h</b>	<b>A<sub>FLX-H</sub> (g)</b>	<b>A<sub>RIG-H</sub> (g)</b>	<b>A<sub>FLX-V</sub> (g)</b>	<b>A<sub>RIG-V</sub> (g)</b>	
2.0	1	3.20	2.40	1.68	0.68	
2.5	0					

#### IMPORTANCE FACTOR, $I_p = 1.5$

Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.



<b>MOUNTING:</b>	Rigid floor mounted using (4) 1/2" Grade 8 bolts.
<b>CONSTRUCTION:</b>	Carbon steel rack.
<b>SUBCOMPONENTS:</b>	<p>Telect - Four Post Rack (DR1250-84436)</p> <p>Cisco - Catalyst 9300-24T (C9300-24T, PWR-C1-350WAC, C9300-NM-4G, GLC-SX-MM-RGD, FAN-T2)</p> <p>Cisco - Catalyst 9300-48U (C9300-48U, PWR-C1-1100WAC, C9300-NM-8X, SFP-10G-SR, FAN-T2)</p> <p>Cisco - Catalyst 9407R (C9407R, C9400-LC-24XS, SFP-10G-SR, SFP-10G-SR-X, C9400-LC-48U, C9400-SUP-1, C9400-PWR-3200AC, C9407-FAN, C9400-S-BLANK, C9407-ACC-KIT, C9407-RACK-KIT)</p> <p>Cisco - Catalyst 9410R (C9410R, C9400-LC-48U, C9400-LC-24XS, SFP-10G-SR, SFP-10G-SR-X, C9400-SUP-1, QSFP-40G-SR4, C9400-PWR-3200AC, C9410-FAN, C9400-S-BLANK, C9410-ACC-KIT, C9410-RACK-KIT)</p> <p>Cisco - Catalyst 9500-24Q (C9500-24Q, PWR-C4-950WAC-R, QSFP-H40G-AOC3M, QSFP-40G-SR4, FAN-T4-R, C9500-ACC-KIT-19I, C9500-4PT-KIT)</p> <p>Cisco - Catalyst 9500-40X (C9500-40X, PWR-C4-950WAC-R, C9500-NM-8X, SFP-10G-SR, FAN-T4-R, C9500-ACC-KIT-19I, C9500-4PT-KIT)</p> <p>Cisco - Catalyst 9500-40X (C9500-40X, PWR-C4-950WAC-R, C9500-NM-2Q, QSFP-40G-SR4, QSFP-H40G-AOC5M, SFP-10G-SR, FAN-T4-R, C9500-ACC-KIT-19I, C9500-4PT-KIT)</p>
<b>TESTING NOTES:</b>	CG of unit = 41.6 inches from bottom.

## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SEISMIC COMPLIANCE REPORT

### UUT 2 - RACK CONFIGURATION

DOCUMENT NO.: 18012CR1.1

CG of unit = 41.6 inches from bottom. Total height = 84.0in.

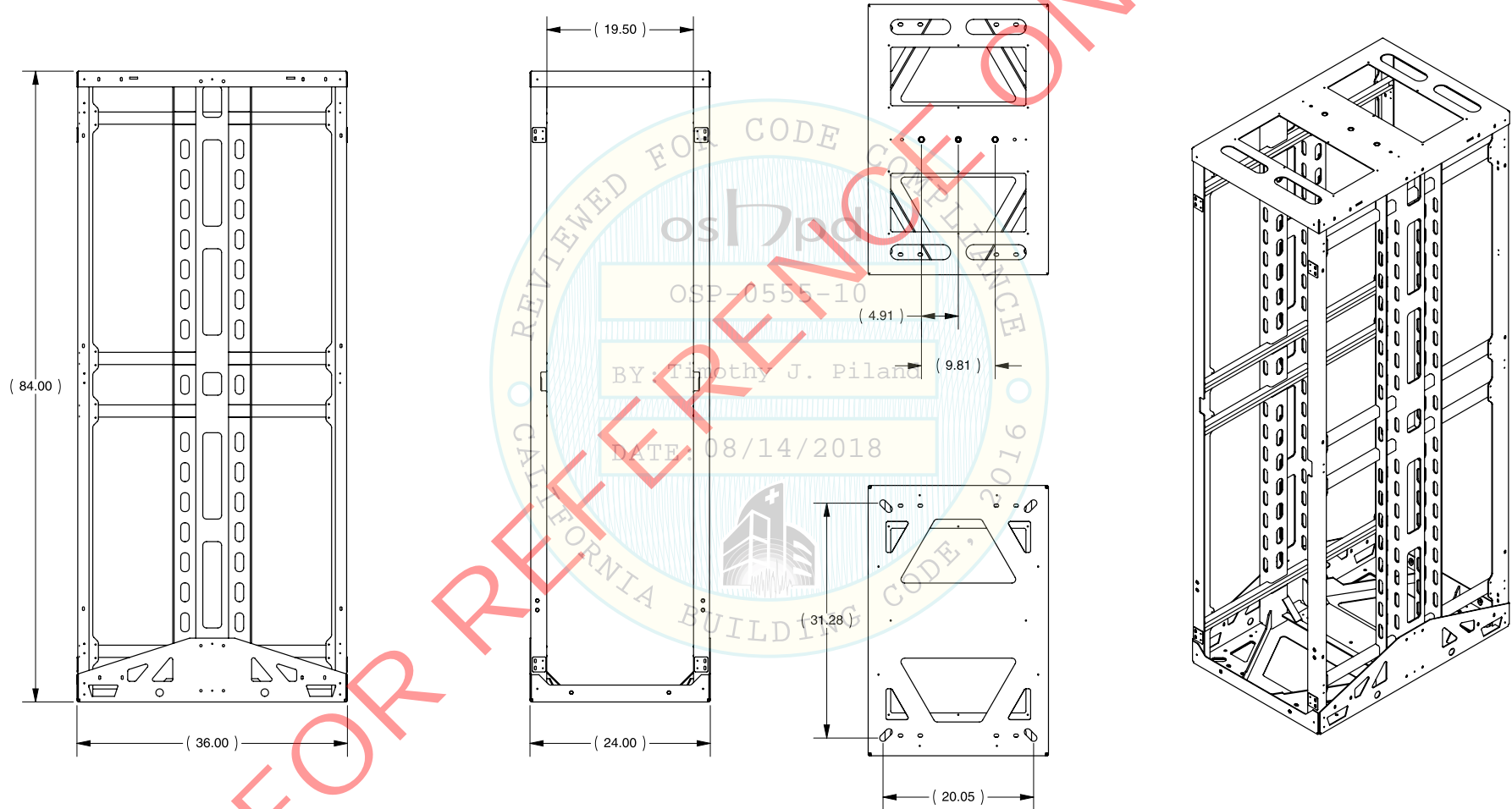
		Weight		CG
45				
44	Catalyst 9300-24T	19	lb	78.6 in
43	Catalyst 9300-48U	22	lb	76.9 in
42	Catalyst 9500-40X	29	lb	75.1 in
41	Catalyst 9500-40X	29	lb	73.4 in
40	Catalyst 9500-24Q	30	lb	71.6 in
39				
38				
37				
36				
35				
34				
33				
32				
31				
30				
29				
28				
27				
26				
25				
24				
23				
22	Catalyst C9407	148	lb	39.3 in
21				
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10	Catalyst C9410	180	lb	19.1 in
9				
8				
7				
6				
5				
4				
3				
2				
1				








NOTES: (UNLESS OTHERWISE SPECIFIED)

1. DIMENSIONS ARE FOR REFERENCE ONLY.
2. DIMENSIONS ARE IN INCHES.
3. MOUNTING RAILS NOT SHOWN.



A0	---	INITIAL RELEASE	4/25/2012	GTH												
REV	ECO	DESCRIPTION	DATE	BY												
drawing no		customer drawing	rev	units	designed by	date	tolerances (unless otherwise specified)	hole size	angularity	sheet	sheet size	scale	project	projection		
DR1250-84436		RACK: SEISMIC, DATA CENTER, 1250 LB, 24X36	A0	inch	S. SITTON	2/17/2012	.X ±.060 .XX ±.020 .XXX ±.010	±.005	±1°	1 of 1	B	NTS	R118			
					G. HILBERT	4/25/2012										