APPLICATION FOR OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM)

OFFICE USE ONLY
APPLICATION #: OPM-0232-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☒ Renewal ☐ Update to Pre-CBC 2013 OPA Number: _____

Manufacturer Information

Manufacturer: Haworth® Inc

Manufacturer's Technical Representative: Ross Koning

Mailing Address: One Haworth Center, Holland, MI 49423-9576

Telephone: 616-393-3707 Email: Ross.koning@haworth.com

Product Information

Product Name: Compose® Panel Systems

Product Type: Workstation Modules

Product Model Number: Configuration #1 through #7

General Description: Workstation Modules that can be arranged into seven different configurations

Applicant Information

Applicant Company Name: Haworth® Inc

Contact Person: Ross Koning

Mailing Address: One Haworth Center, Holland, MI 49423-9576

Telephone: 616-393-3707 Email: Ross.koning@haworth.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: _____ Date: October 6, 2015

Title: Supervisor Sales Engineering Company Name: Haworth® Inc

Registered Design Professional Preparing Engineering Recommendations

Company Name: CYS Structural Engineers, Inc.

Name: Dieter T. Siebald California License Number: S4346

Mailing Address: 2495 Natomas Park Drive, Sacramento, CA 95833

Telephone: 916-920-2020 Email: dieters@cyseng.com

OSHPD Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP-
(Separate application for OSP is required)

☐ Special Seismic Certification is not preapproved

Certification Method(s)

☐ Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-10

☐ Other* (Please Specify):

*Use of criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2013 may be used when approved by OSHPD prior to testing.

☒ Analysis

☐ Experience Data

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

List of Attachments Supporting the Manufacturer's Certification

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

☐ Other(s) (Please Specify):

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Signature: Date: October 23, 2015

Print Name: Jeffrey Y. Kikumoto

Title: Senior Structural Engineer

Condition of Approval (if applicable):

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OPM–0232–13

NOTES:

1. THESE DRAWINGS ARE PREPARED FOR HAWORTH, INC.
2. THE CONTRACTOR AND INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE–APPROVAL FROM THE OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT (OSHPD) PRE–APPROVAL PROGRAMS WEBSITE.
3. THIS PRE–APPROVAL COVERS THE SUPPORTS AND ATTACHMENTS OF THE PANEL SYSTEM TO THE SUPPORTING STRUCTURE. THE PANEL SYSTEM WORKSTATIONS & SEISMIC BRACKETS ARE SUPPLIED BY HAWORTH. THE EXPANSION ANCHORS, THRU–BOLTS & STRUT PLATES SHOWN IN THIS OPM SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: TABLE OF CONTENTS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
www.cyseng.com

Job No:	15008
Date:	10/23/2015
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GENERAL NOTES:

1. THIS OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. IT IS THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD (SEOR) FOR A SITE SPECIFIC PROJECT TO VERIFY:
   - A. THE ADEQUACY OF THE NEW OR EXISTING STRUCTURE TO RESIST THE FORCES AND WEIGHT SPECIFIED FOR EACH EQUIPMENT IN ADDITION TO ALL OTHER LOADS. PROVIDE AND DESIGN SUPPLEMENTARY MEMBERS AS REQUIRED.
   - B. THAT THE FLOOR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS.
   - C. THAT THE FLOOR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR EXISTING ANCHORS. THE SPACING SHOWN IN THE TEST LOADS TABLE ON PAGE 3 IS THE REQUIRED MINIMUM SPACING OF THE GIVEN DIAMETER ANCHORS. THE REQUIRED SPACING FROM ANCHORS OF OTHER DIAMETERS AND EMBEDMENTS MAY VARY AND SHALL BE EVALUATED BY THE SEOR.
   - D. THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CBC 2013 AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL.
   - E. THAT THE ACTUAL PANEL SYSTEM'S WEIGHT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, AND THE MATERIAL AND GAUGE OF THE EQUIPMENT WHERE ATTACHMENTS ARE MADE, AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.
3. EXPANSION ANCHORS INSTALLED IN NORMAL WEIGHT OR SAND-LIGHTWEIGHT CONCRETE SHALL BE CARBON STEEL HILTI KB-TZ EXPANSION ANCHORS COMPLYING WITH ICC ESR-1917 REISSUED MAY 2015.
   - A. INSTALLATION: INSTALL THE EXPANSION ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR AND THE PARAMETERS GIVEN IN THE TABLE ON PAGE 3.
   - B. TESTING:
     - JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE WITH THE TEST LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. THE TEST LOAD MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY MEASURE THE TENSION OR TORQUE IN THE ANCHOR SUCH AS DIRECT PULL WITH A HYDRAULIC JACK OR CALIBRATED SPRING LOADING DEVICES OR CALIBRATED TORQUE WRENCH METHOD. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE INSPECTOR OF RECORD (IOR). IF ANY ANCHOR FAILS THE TEST, TEST ALL ANCHORS. THE TEST SHALL BE PERFORMED 24 HOURS OR MORE AFTER INSTALLATION. TESTING MAY BE DONE PRIOR TO EQUIPMENT INSTALLATION. ALSO REFER TO CBC 1913A.7 "FIELD TESTS FOR POST-INSTALLED ANCHORS IN CONCRETE".
     - FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
       - HYDRAULIC RAM METHOD: APPLY AND HOLD TEST LOAD FOR A MINIMUM OF 15 SECONDS. THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD WHERE WASHERS ARE USED. FOR WEDGE TYPE ANCHORS, SUCH AS HILTI KB-TZ, A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE.
       - TORQUE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE: ONE-HALF (½) TURN OF THE NUT.

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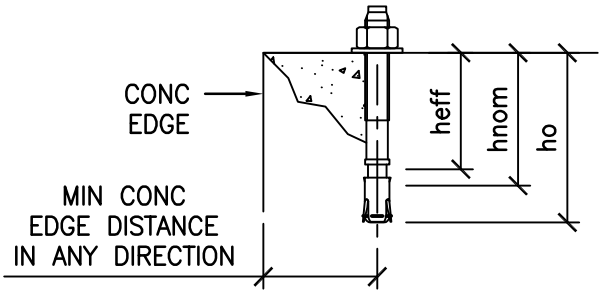
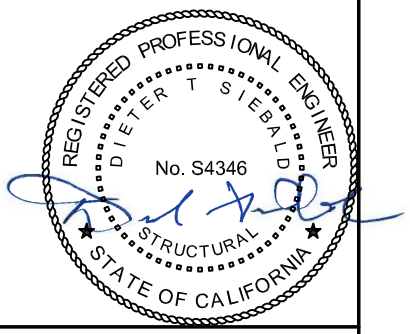
GENERAL NOTES CONTINUED:

3D. TEST VALUES: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE, SEE TABLE BELOW.



ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) hef	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h_{min}	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPACING (INCH)	TEST LOAD		CONDITION OF ANCHORAGE
							TENSION LOAD (LBS)	TORQUE (FT–LBS)	
3/8	2 5/16	2	2 5/8	3 1/4	12	2 1/2	–	25	CASE 2
3/8	2 5/16	2	2 5/8	4	12	2 1/2	–	25	CASE 3

4. BOLTS THROUGH CONCRETE ON METAL DECK:
   A. BOLTS SHALL BE TORQUED BY ¾ TURN OF THE NUT AFTER SNUG TIGHT CONDITION IS ACHIEVED, UNO. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
   B. THRU–BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16").
   C. THRU–BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION & TESTING IN ACCORDANCE WITH REQUIREMENTS FOR POST–INSTALLED ANCHORS. THRU–BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TESTING.



SHEET TITLE: GENERAL NOTES (CONTINUED)

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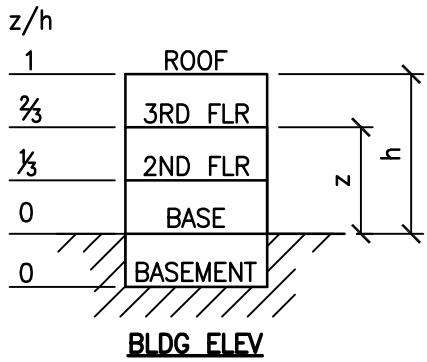
GENERAL NOTES CONTINUED:

5. THREE (3) CASES OF ATTACHMENT ARE SPECIFIED AND PRESENTED IN THIS PRE-APPROVAL:



BLDG ELEV

CASE 1: ATTACHMENT DETAILS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG ($z/h \leq 1.0$), THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 3¼" SLWC TOPPING OVER MTL DECK ($f'c$ = 3000 PSI, MIN).

CASE 2: ATTACHMENT DETAILS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG ($z/h \leq 0.75$), THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 3¼" SLWC TOPPING OVER MTL DECK OR MIN 4" NWC SLAB (EA $f'c$ = 3000 PSI, MIN).
FOR THIS CASE THE MAX S_{DS} IS LIMITED TO 1.90.

CASE 3: ATTACHMENT DETAILS LOCATED AT OR BELOW THE BASE OF A BLDG ($z/h=0$). THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 4" NWC SLAB ($f'c$ = 3000 PSI, MIN).

6. THIS PRE-APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE S_{DS} IS LESS THAN OR EQ TO 2.50, **EXCEPT FOR CASE 2 WHERE S_{DS} MUST BE LESS THAN OR EQ TO THE VALUE NOTED ABV.**

ABBREVIATIONS:

@	AT
AB	ANCHOR BOLT
ABV	ABOVE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BLDG	BUILDING
BLW	BELOW
BOTT	BOTTOM
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
℄	CENTERLINE
CONC	CONCRETE
COORD	COORDINATE
DIA (ø)	DIAMETER
(E)	EXISTING CONDITION
EA	EACH
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE
FLR	FLOOR
FT (')	FOOT/FEET
F_p	HORIZONTAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS
F_v	VERTICAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS
F_y	SPECIFIED MINIMUM YIELD STRESS OF STEEL
GA	GAUGE
IN (")	INCH
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
NO. (#)	NUMBER OR POUNDS
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OPG	OPENING
PCF	POUNDS PER CUBIC FOOT
PG(S)	PAGE(S)
PL	PLATE
PSI	POUNDS PER SQUARE INCH
SLWC	SAND-LIGHTWEIGHT CONCRETE
STL	STEEL
Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
TYP	TYPICAL
T&B	TOP & BOTTOM
Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH
Wp	OPERATING WEIGHT
WT	WEIGHT

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SHEET TITLE: GENERAL NOTES (CONTINUED)

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SYSTEM OVERVIEW & DESIGN CRITERIA

1. THE COMPOSE PANEL SYSTEMS ARE WORKSTATION MODULES THAT CAN BE ARRANGED INTO DIFFERENT CONFIGURATIONS. THE OPERATING WEIGHT FOR THE MODULES IS BASED ON COMPONENT WEIGHTS PLUS WEIGHT OF MEDIA AS FOLLOWS:
   PAPER MEDIA: 33 PCF PER TOTAL VOLUME OF THE RACK OR CABINET

2. SCHEMATIC OVERVIEW DRAWINGS FOLLOW THAT SHOW SEVEN SYSTEM CONFIGURATIONS OF THE WORKSTATION MODULES. ONLY CONFIGURATIONS SHOWN ARE COVERED BY THIS OPM.

3. ATTACHMENT DESIGN IS PER 2013 CBC AT LRFD LEVEL FORCES.

   CABINETS & OTHER RIGID COMPONENTS WITH LIMITED DEFORMABILITY
   ELEMENTS & ATTACHMENTS PER TABLE 13.5-1 OF ASCE 7-10 SUPPLEMENT #1:

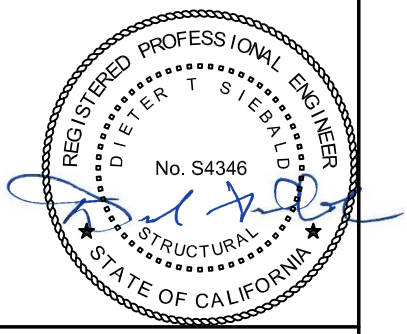
   $a_p = 1.0$ $R_p = 2.5$ $I_p = 1.5$ $\Omega_0 = 2.5$ (USE FOR CONC ANCHORS ONLY)

   W_P AS NOTED ON DRAWINGS SHOWN ON PGS 6 TO 12.

CASE 1: $z/h \leq 1.0$ (ANY LOCATION IN THE BLDG)
$S_{DS} = 2.50$ $F_p = 1.80\ W_p$ $F_v = 0.50\ W_p$

CASE 2: $z/h \leq 0.75$
$S_{DS} = 1.90$ $F_p = 1.14\ W_p$ $F_v = 0.38\ W_p$

CASE 3: $z/h = 0$ (SLAB AT OR BELOW BASE)
$S_{DS} = 2.50$ $F_p = 1.13\ W_p$ $F_v = 0.50\ W_p$



SHEET TITLE: SYSTEM OVERVIEW & DESIGN CRITERIA
ABBREVIATIONS

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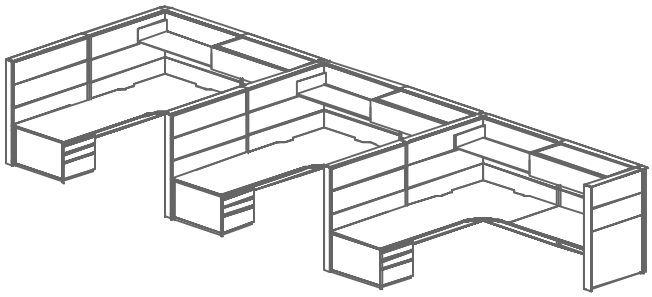
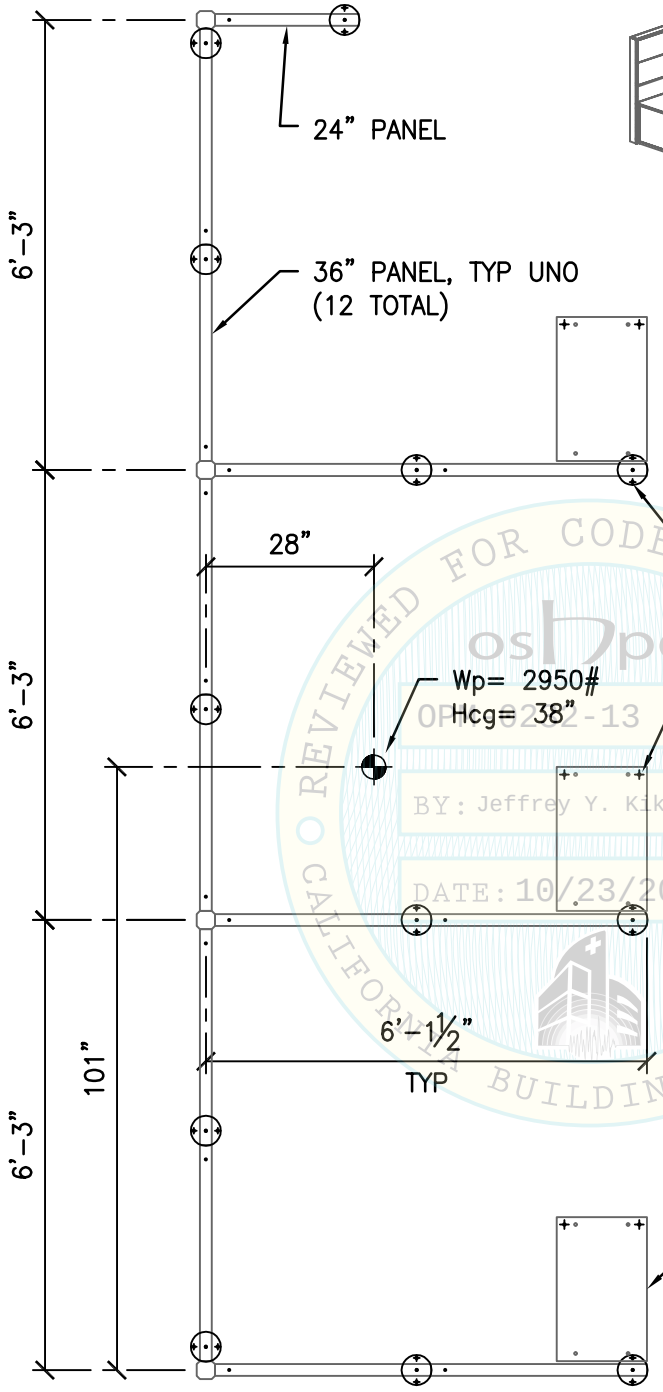
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

HAWORTH



ISOMETRIC VIEW
NTS



CONFIGURATION #1
BASE PLAN

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STATE OF CALIFORNIA

SHEET TITLE: CONFIGURATION #1
BASE PLAN & ISOMETRIC VIEW

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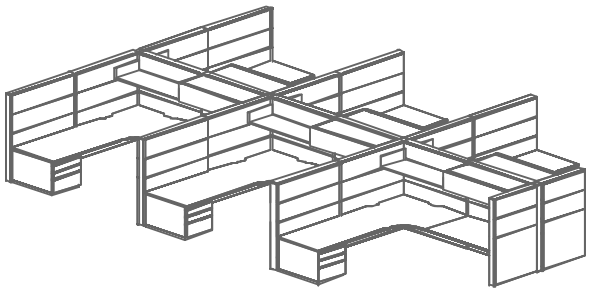
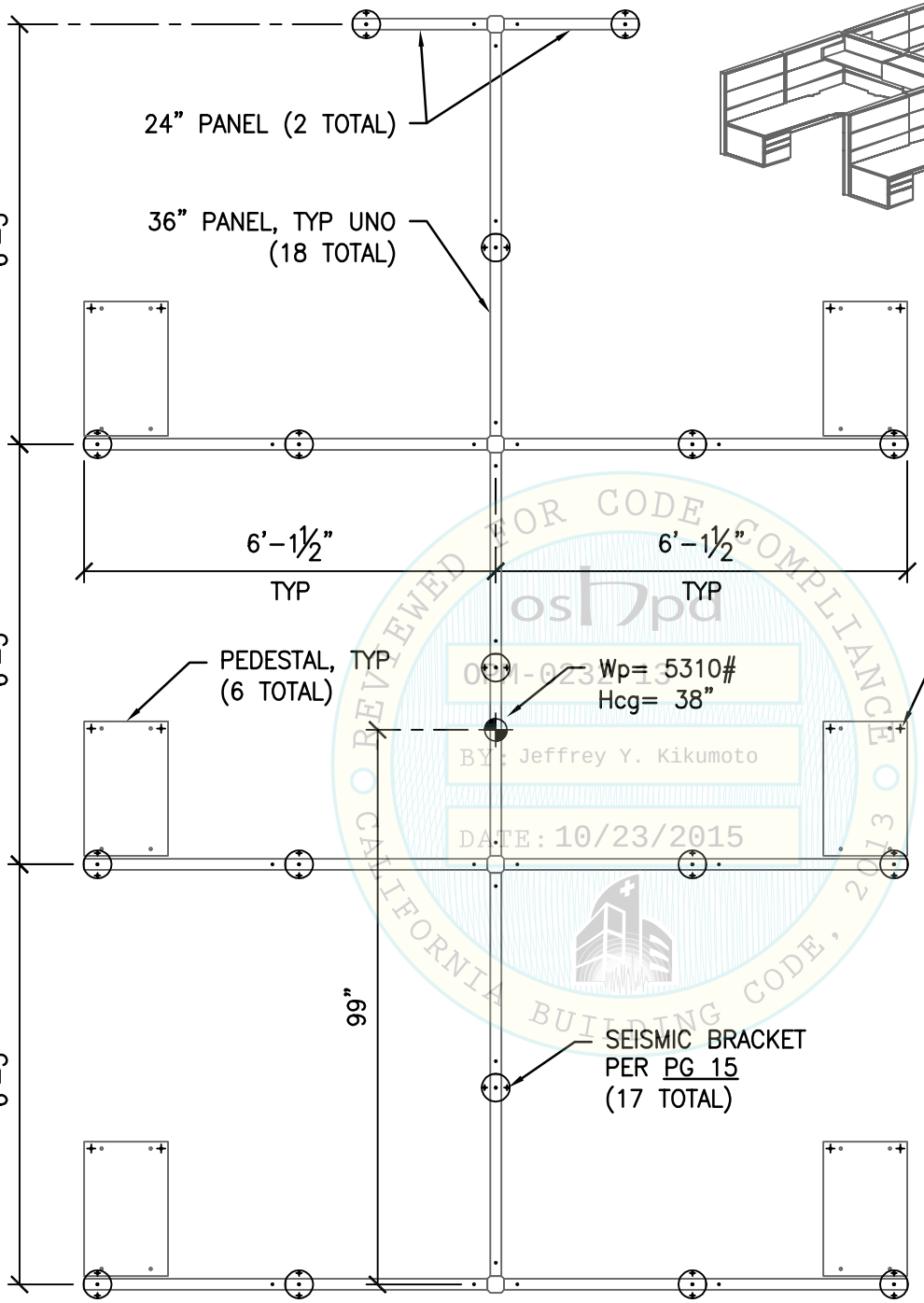
COMPOSE® PANEL SYSTEMS

HAWORTH



ISOMETRIC VIEW
NTS



CONFIGURATION #2
BASE PLAN

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STATE OF CALIFORNIA

SHEET TITLE: CONFIGURATION #2
BASE PLAN & ISOMETRIC VIEW

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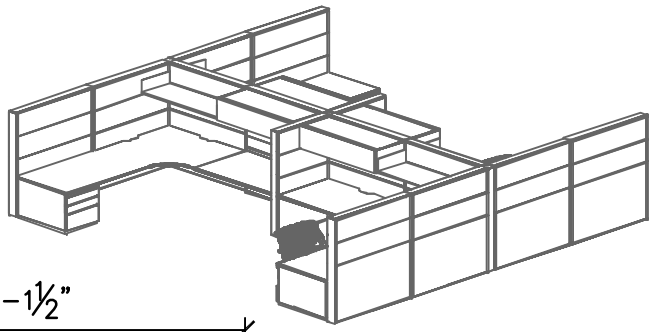
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

HAWORTH



ISOMETRIC VIEW
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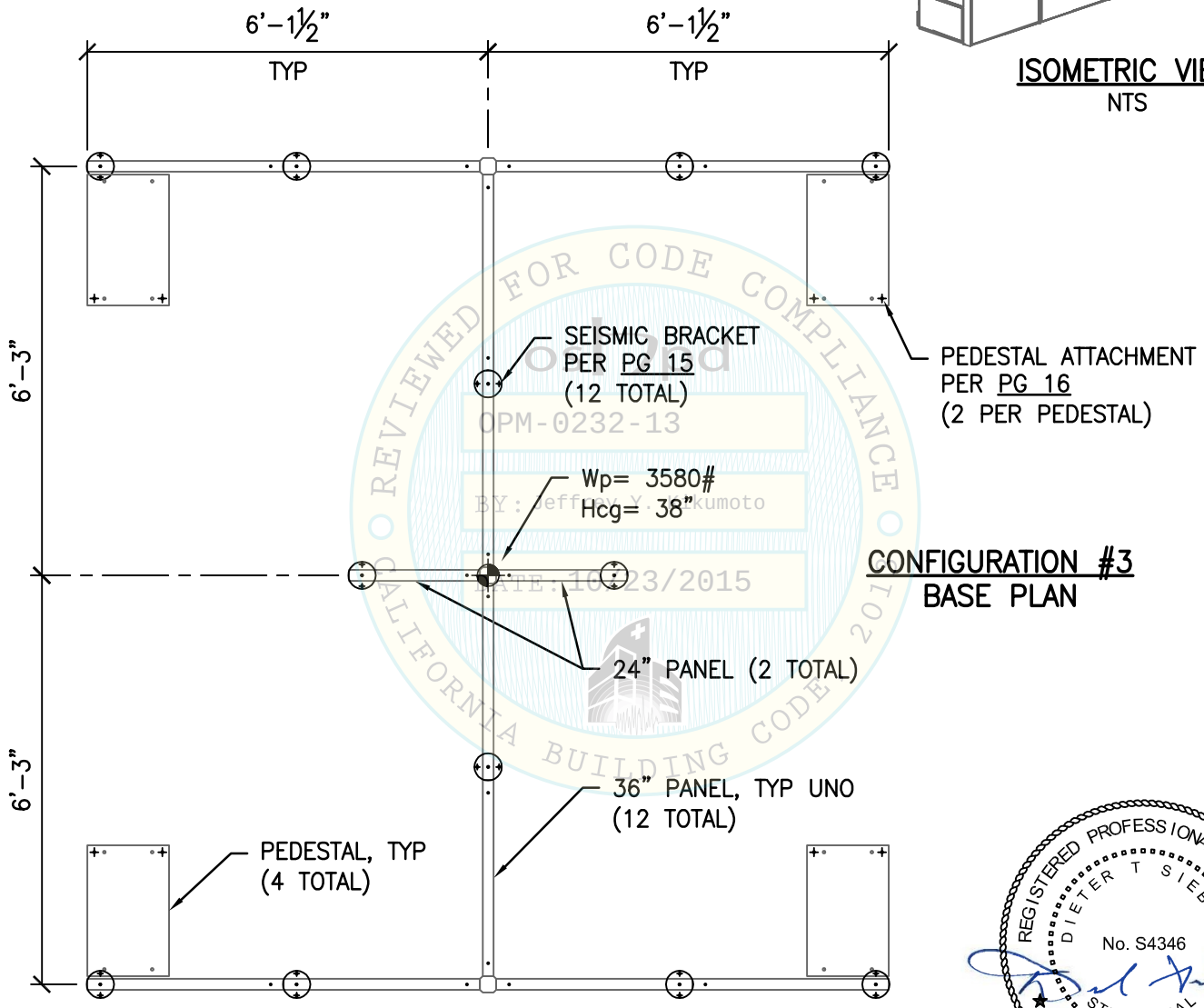

CONFIGURATION #3
BASE PLAN

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SHEET TITLE: CONFIGURATION #3
BASE PLAN & ISOMETRIC VIEW

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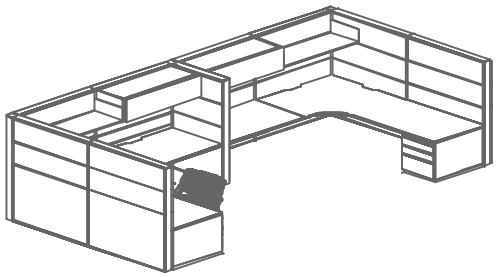

ISOMETRIC VIEW
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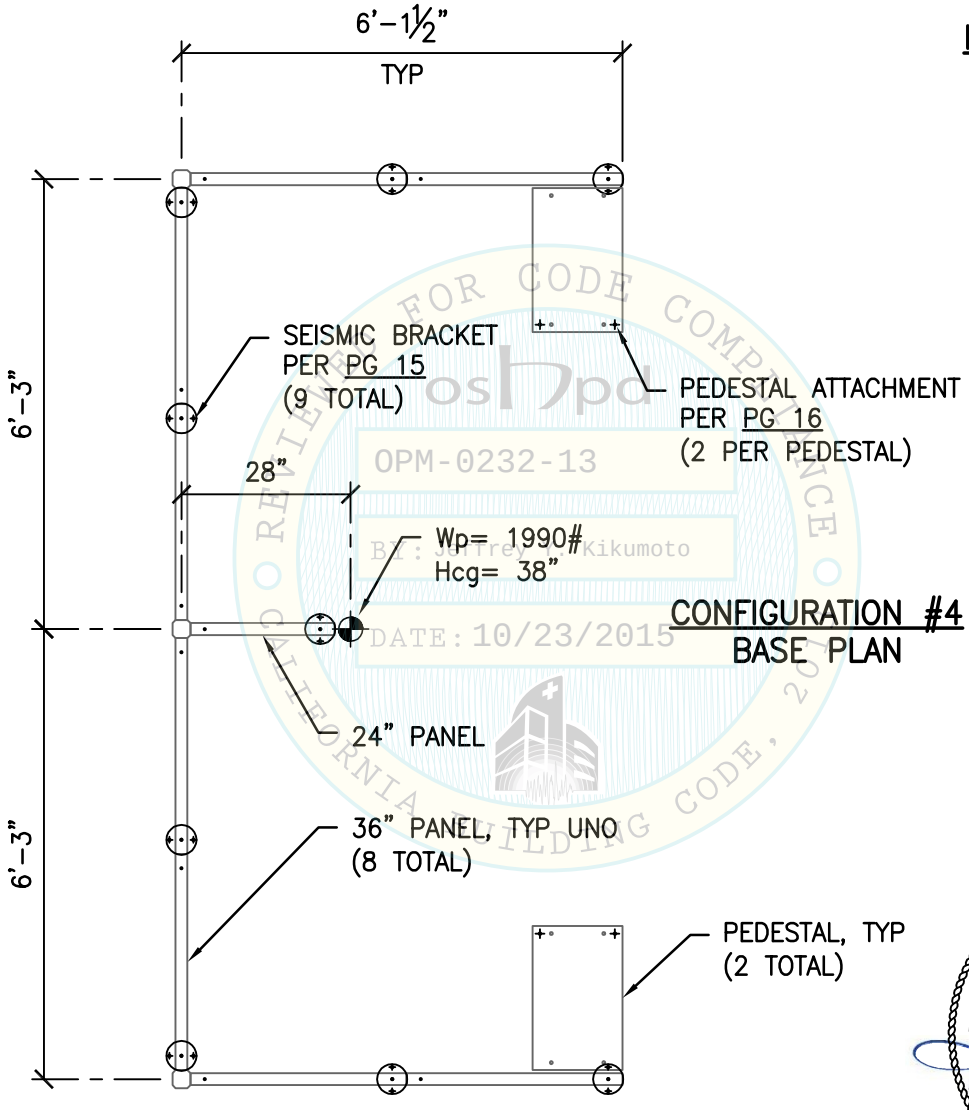
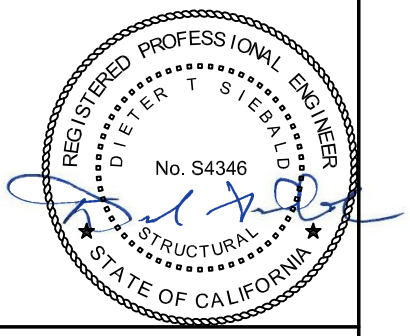


CONFIGURATION #4
BASE PLAN



SHEET TITLE: CONFIGURATION #4
BASE PLAN & ISOMETRIC VIEW

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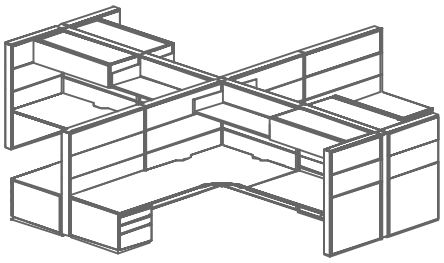
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

HAWORTH



ISOMETRIC VIEW
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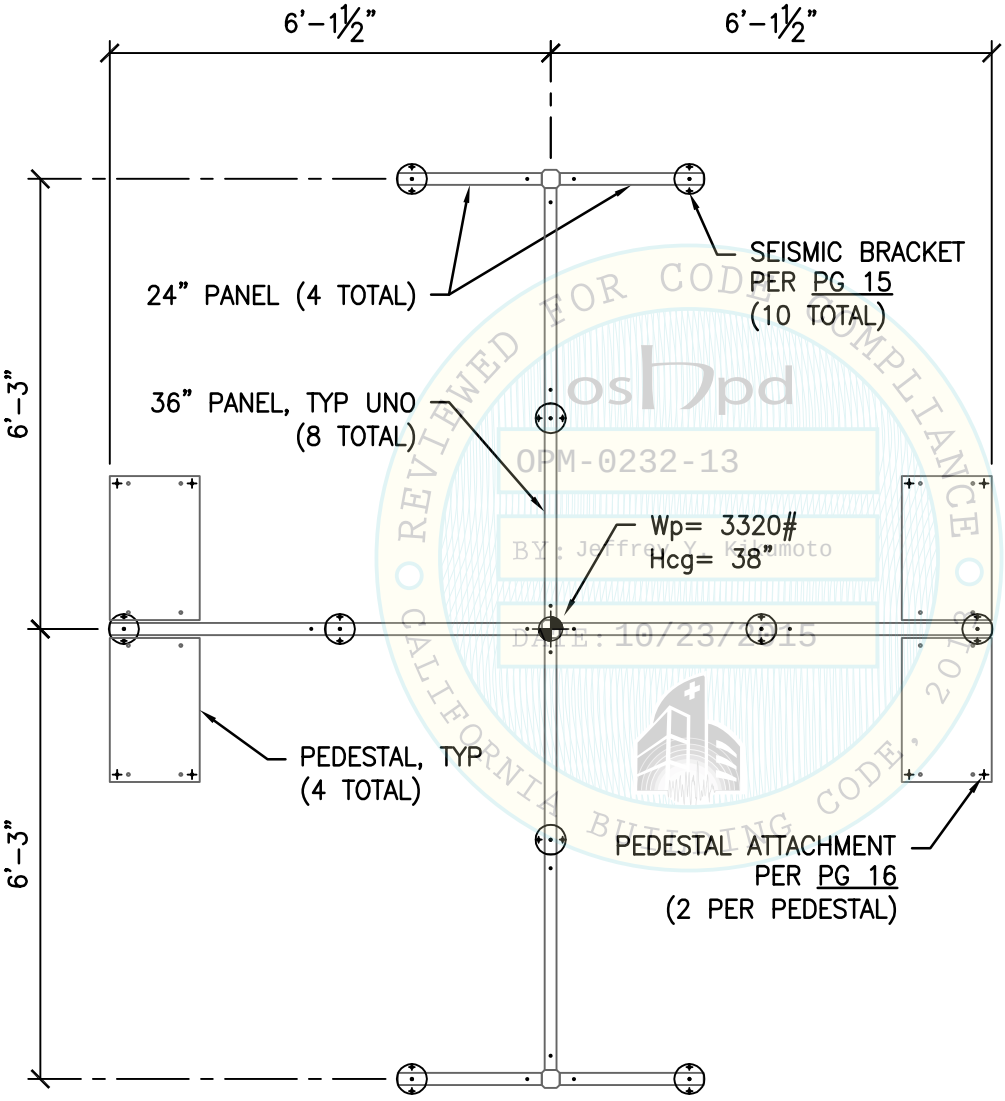

CONFIGURATION #5
BASE PLAN

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STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: CONFIGURATION #5
BASE PLAN & ISOMETRIC VIEW

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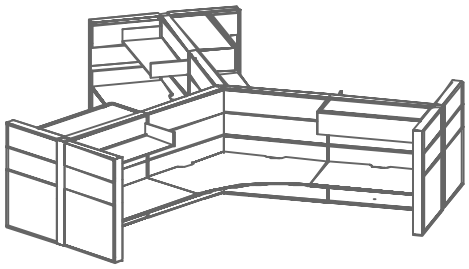
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

HAWORTH



ISOMETRIC VIEW
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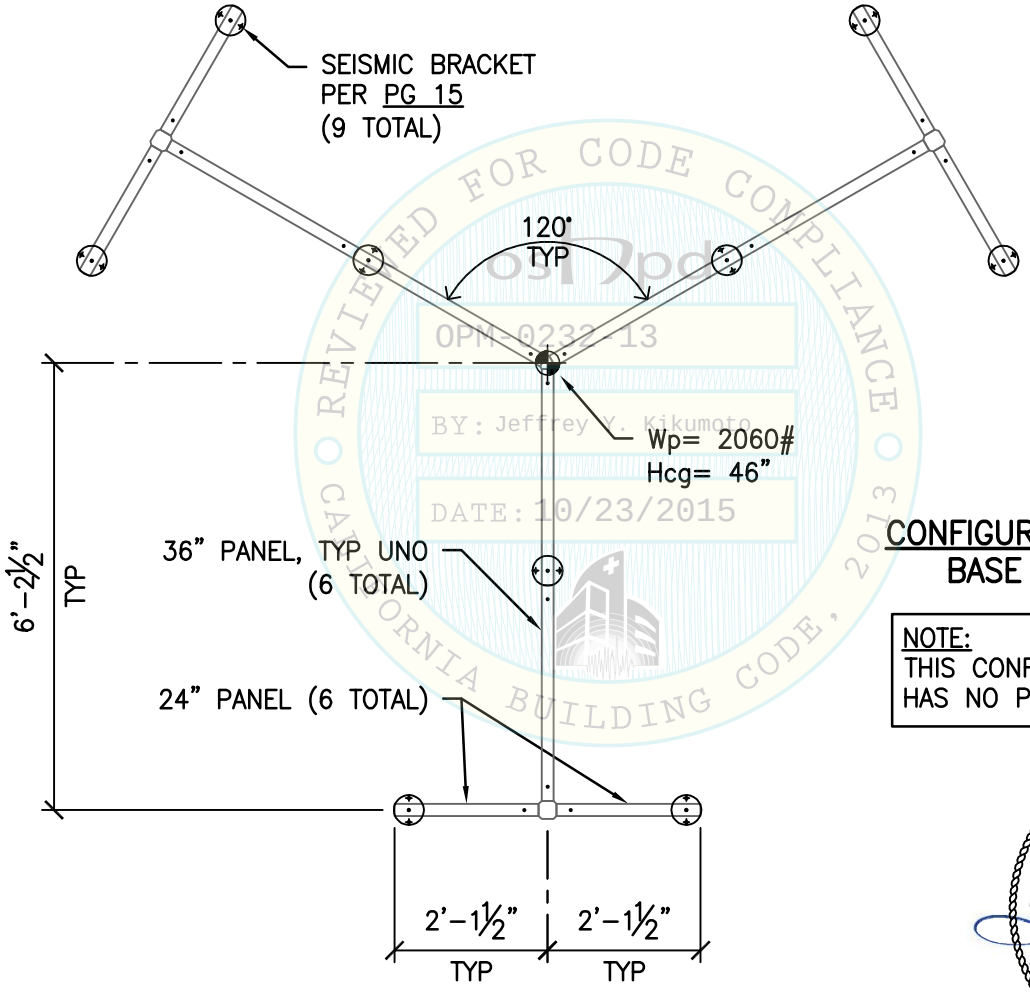

CONFIGURATION #6
BASE PLAN

NOTE:
THIS CONFIGURATION HAS NO PEDESTALS.

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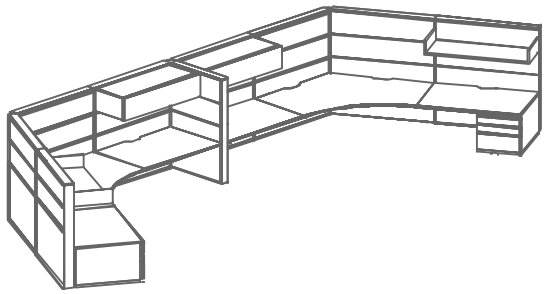
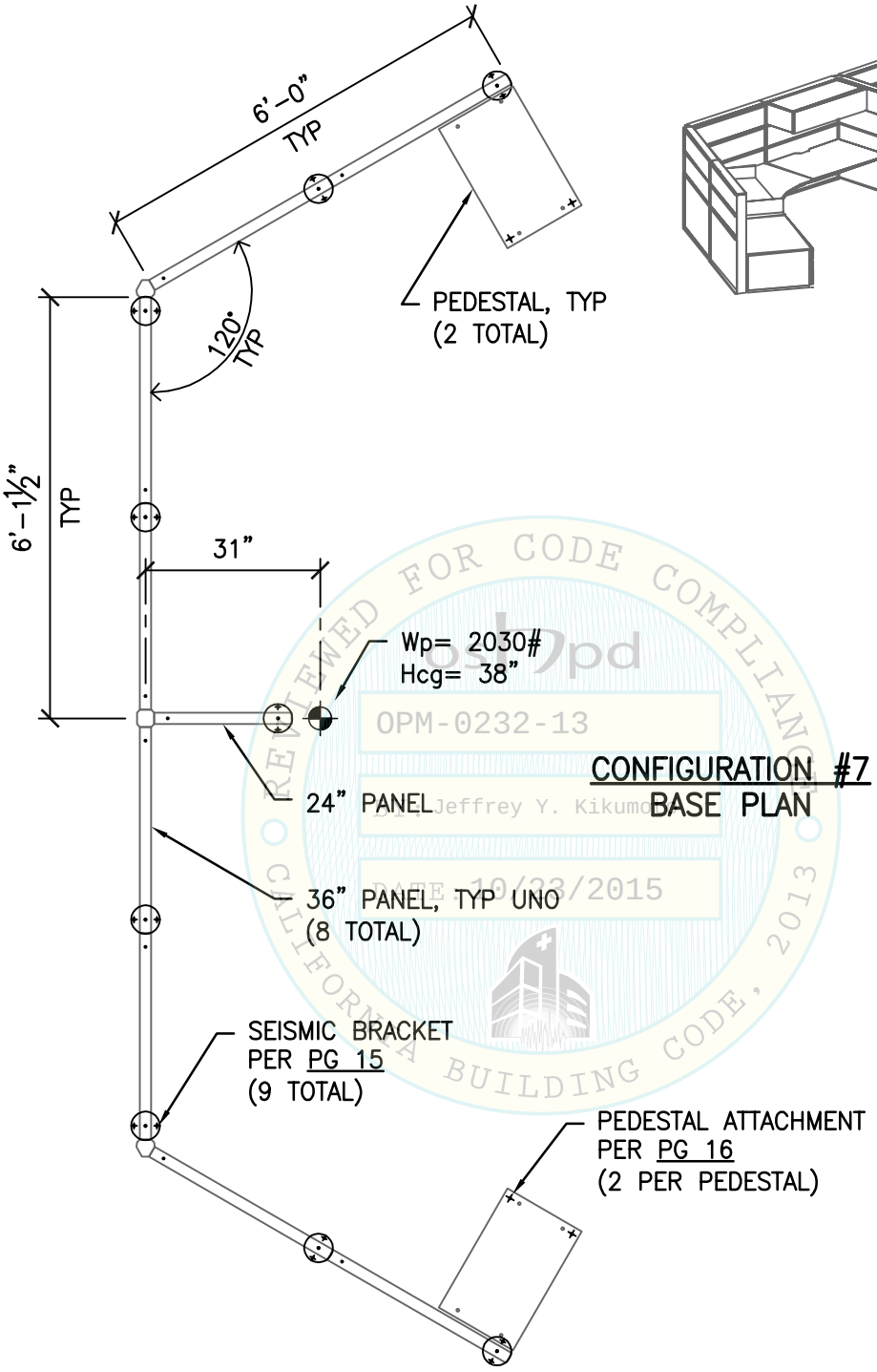
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

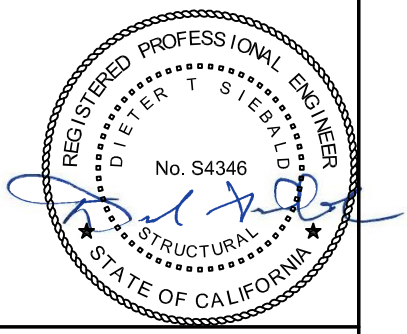
HAWORTH



ISOMETRIC VIEW
NTS



CONFIGURATION #7
BASE PLAN



SHEET TITLE: CONFIGURATION #7
BASE PLAN & ISOMETRIC VIEW

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
www.cyseng.com

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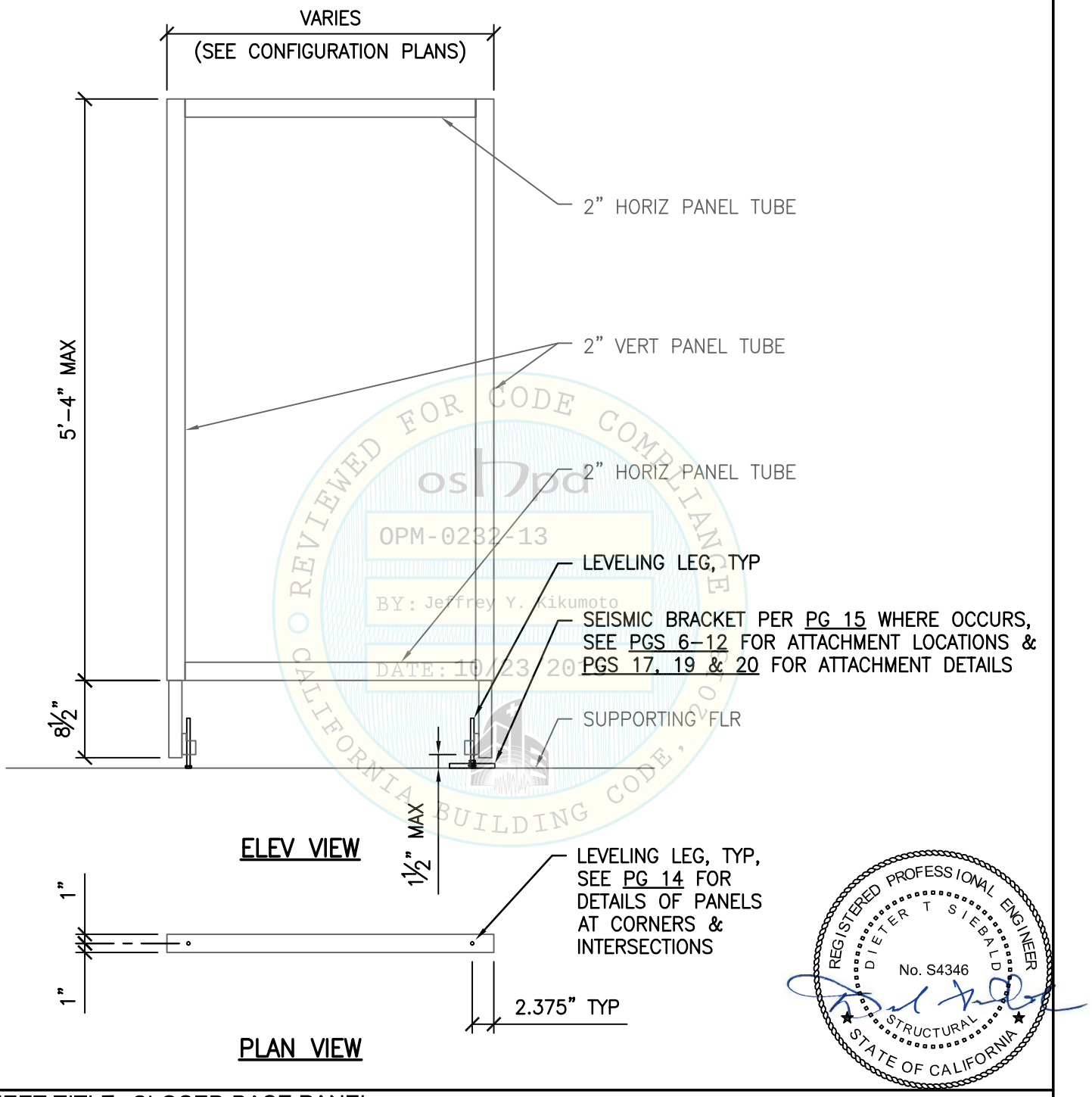

SHEET TITLE: CLOSED BASE PANEL
PLAN & ELEVATION

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
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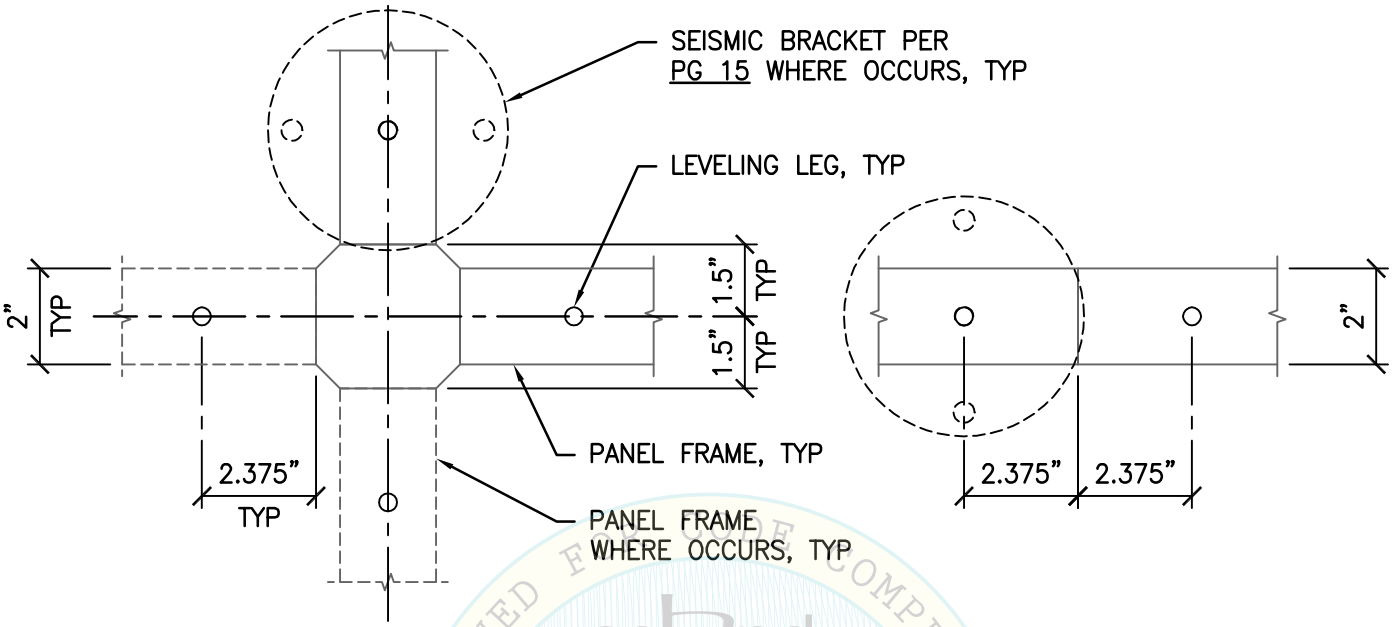
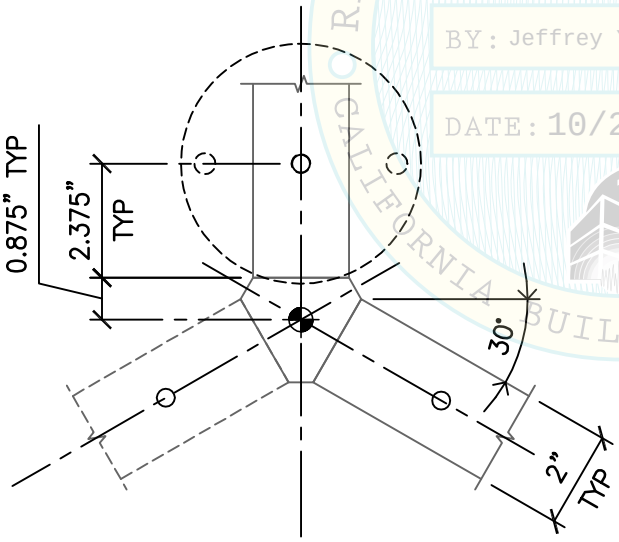
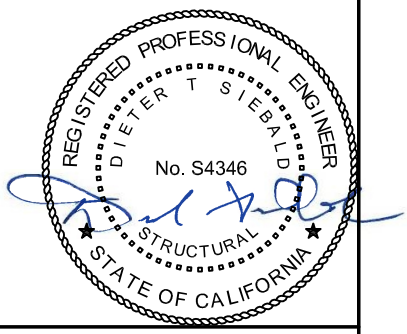


PANELS AT 90 DEGREES

STANDARD IN-LINE PANELS



PANELS AT 120 DEGREES



SHEET TITLE: CLOSED BASE PANEL
LEVELING LEG LOCATIONS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
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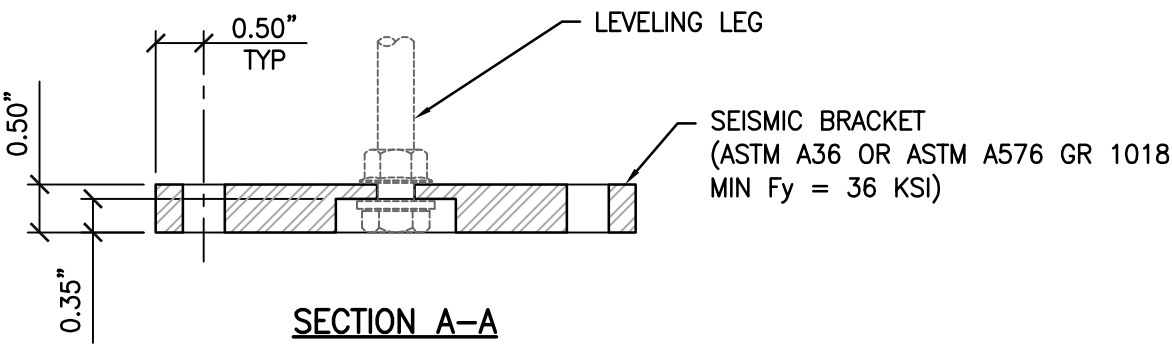
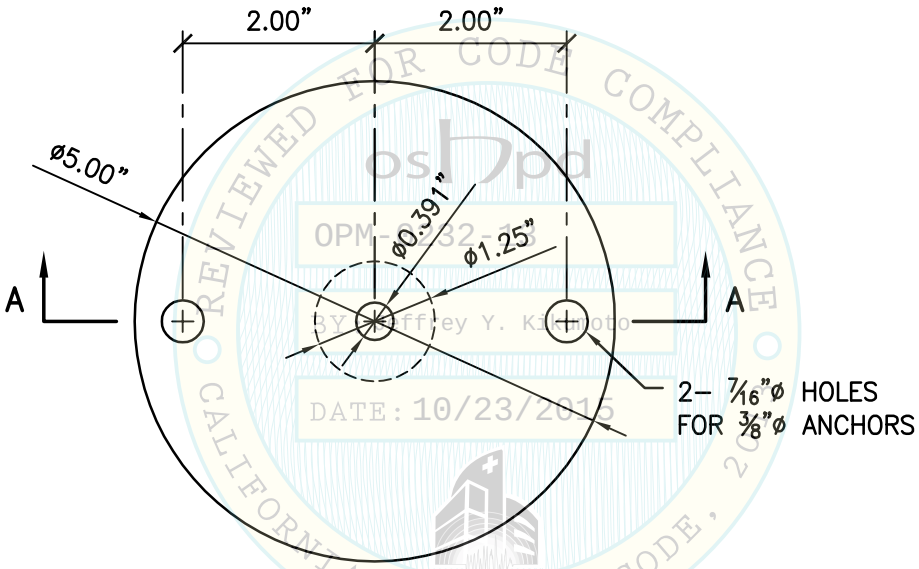
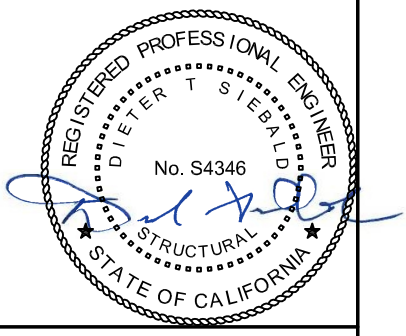


SECTION A–A



PLAN VIEW

NOTES:
1. FOR ATTACHMENT TO SUPPORTING FLOOR, SEE PGS 17, 19 & 20.
2. FOR BRACKET LOCATIONS, SEE SYSTEM CONFIGURATION DWGS ON PGS 6–12.



SHEET TITLE: SEISMIC BRACKET DETAIL

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
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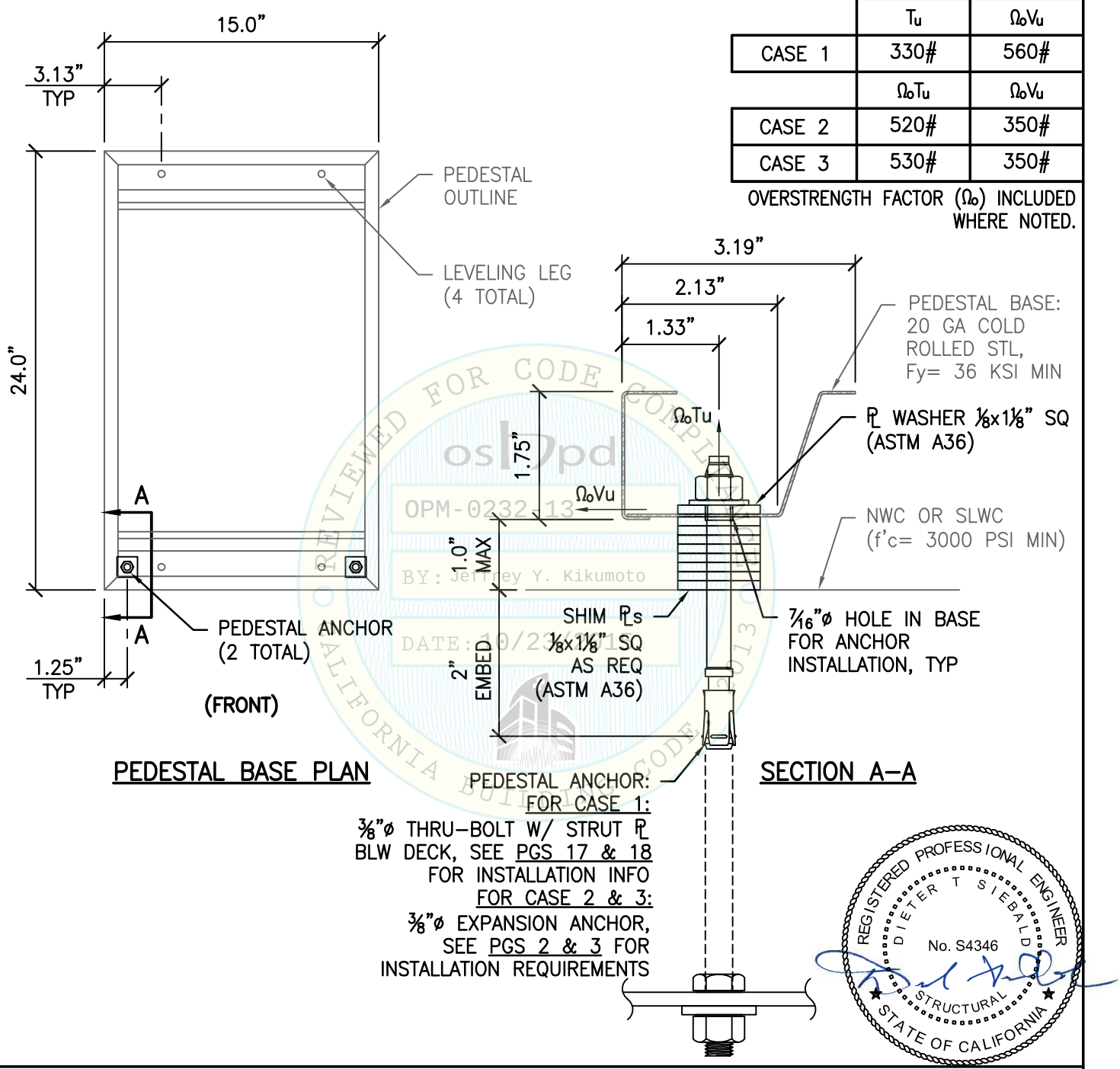
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

HAWORTH

	MAX LRFD FORCES AT EA ANCHOR	
	T_u	$\Omega_o V_u$
CASE 1	330#	560#
	$\Omega_o T_u$	$\Omega_o V_u$
CASE 2	520#	350#
CASE 3	530#	350#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED WHERE NOTED.



REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: PEDESTAL ATTACHMENT DETAIL

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
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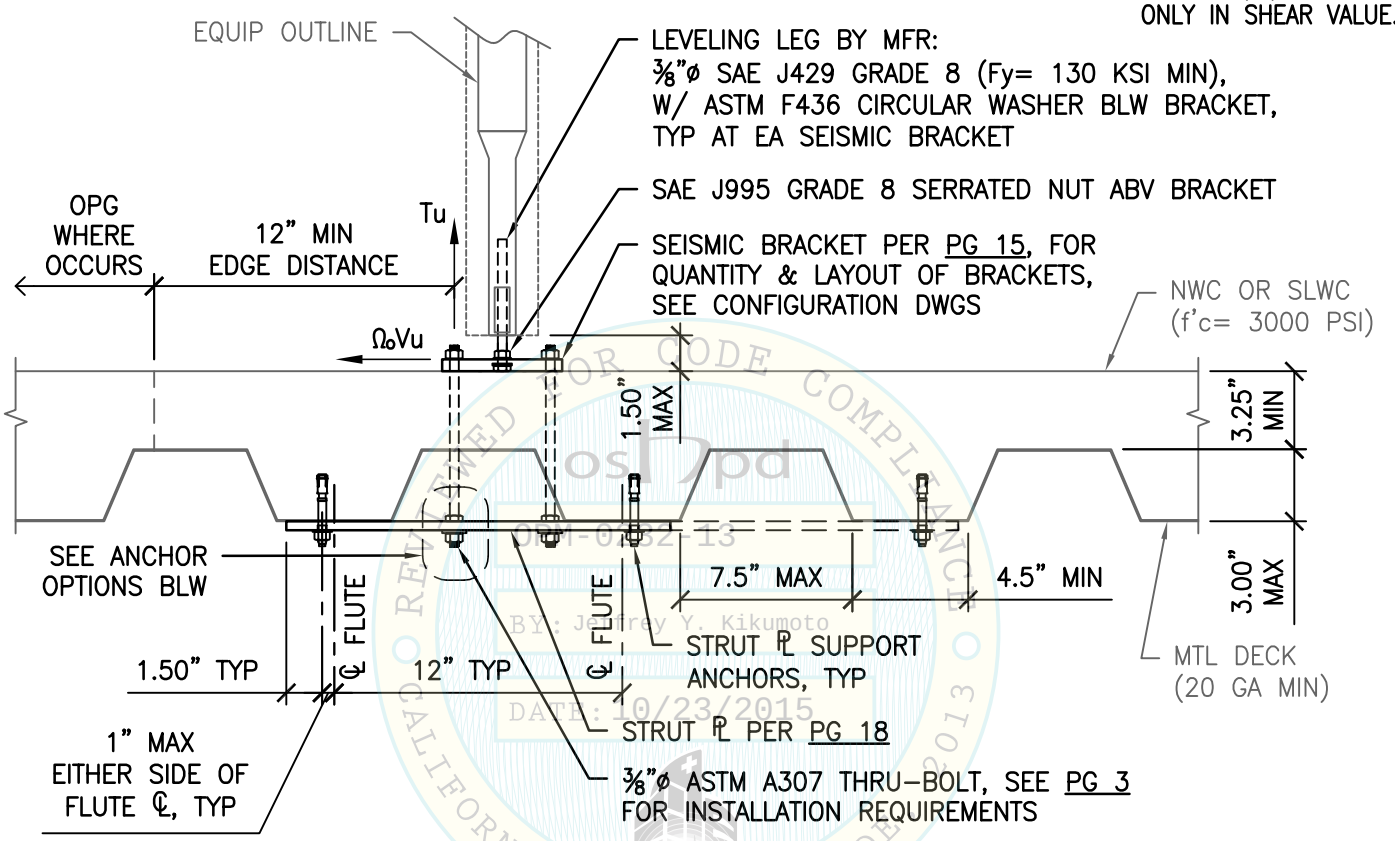
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

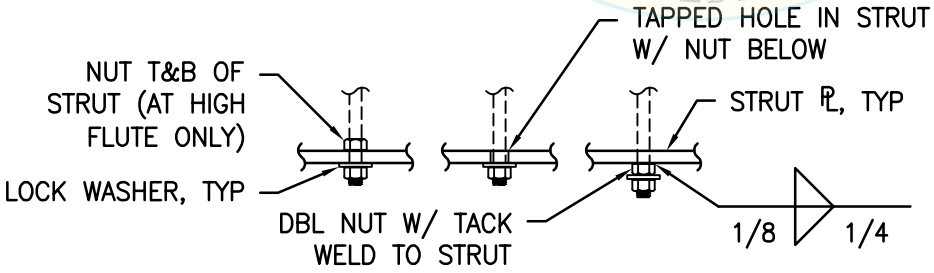
HAWORTH

	MAX LRFD FORCES AT EA ANCHOR	
	T_u	$\Omega_o V_u$
CASE 1	300#	560#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED ONLY IN SHEAR VALUE.



SUSPENDED FLOOR W/ THRU-BOLTS (CASE 1)



ANCHOR OPTIONS

SHEET TITLE: ATTACHMENT DETAIL
TO CONCRETE FILL OVER METAL DECK (CASE 1)

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
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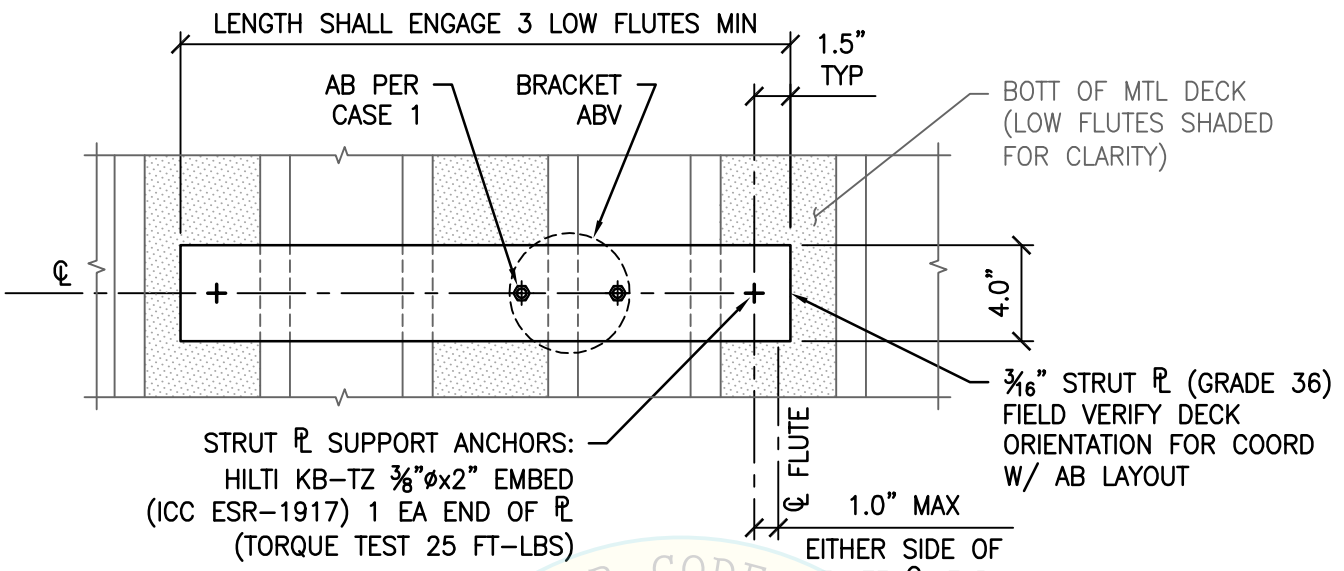
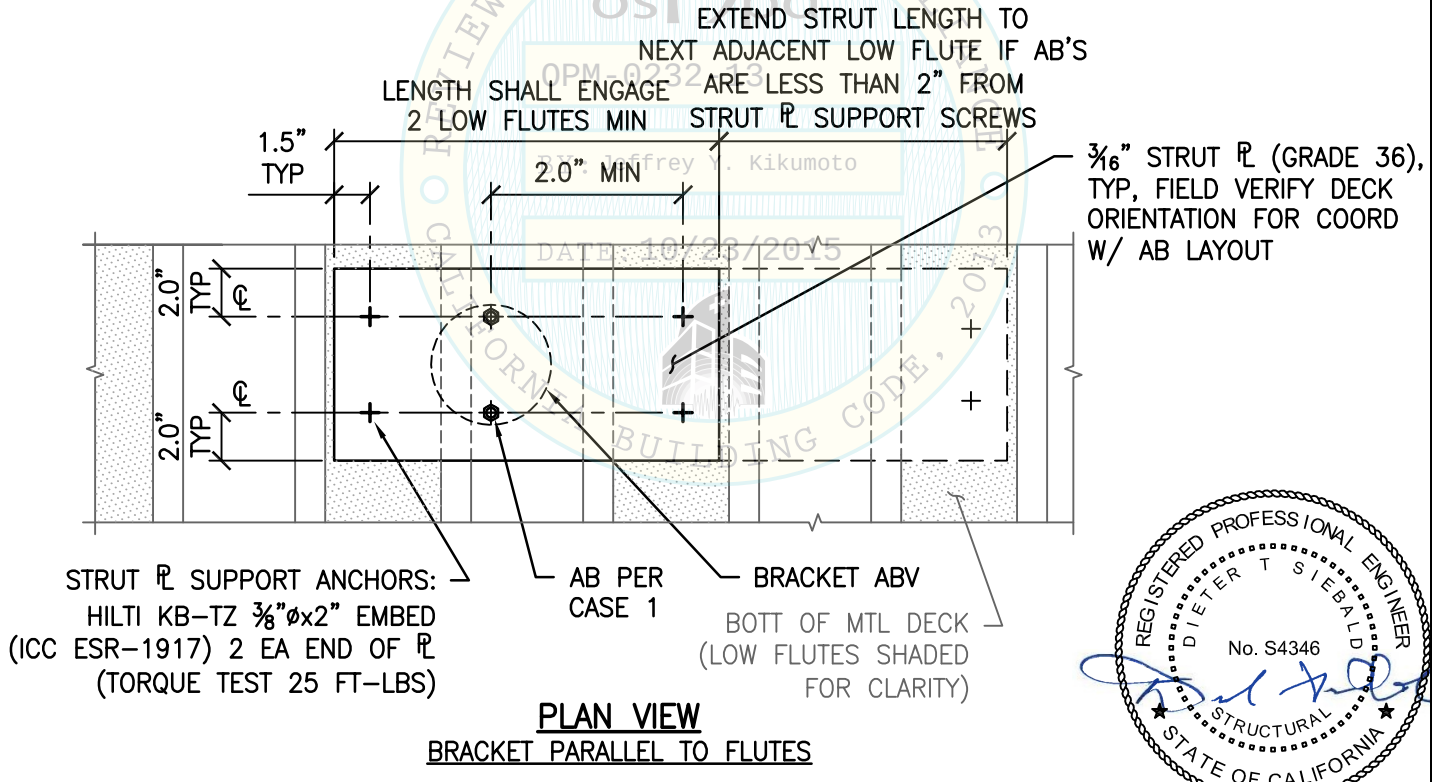
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

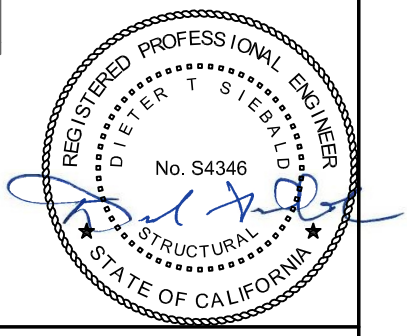
HAWORTH



PLAN VIEW
BRACKET PERPENDICULAR TO FLUTES



PLAN VIEW
BRACKET PARALLEL TO FLUTES



SHEET TITLE: TYPICAL STRUT DETAIL

CYS STRUCTURAL ENGINEERS, INC.
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SACRAMENTO, CA 95833
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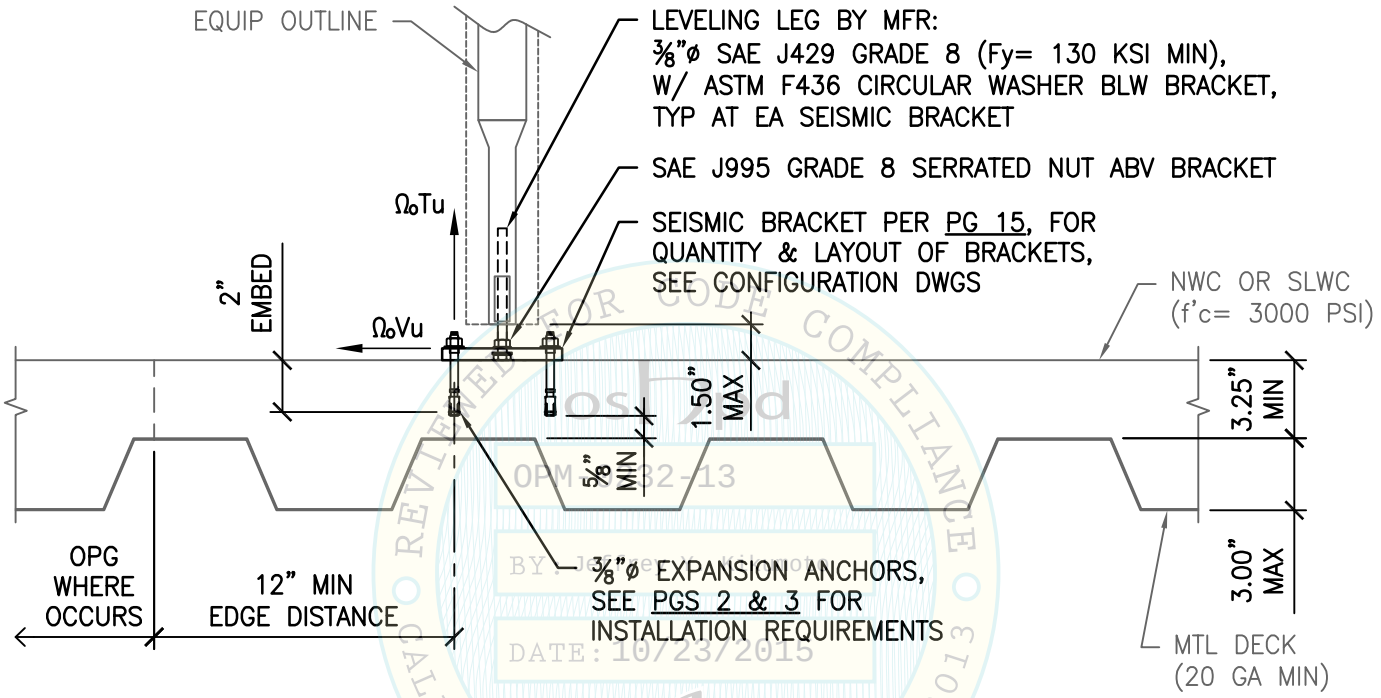
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

HAWORTH

	MAX LRFD FORCES AT EA ANCHOR	
	$\Omega_o T_u$	$\Omega_o V_u$
CASE 2	490#	350#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED.



SUSPENDED FLOOR W/ EXPANSION ANCHORS (CASE 2)

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: ATTACHMENT DETAIL
TO CONCRETE FILL OVER METAL DECK (CASE 2)

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
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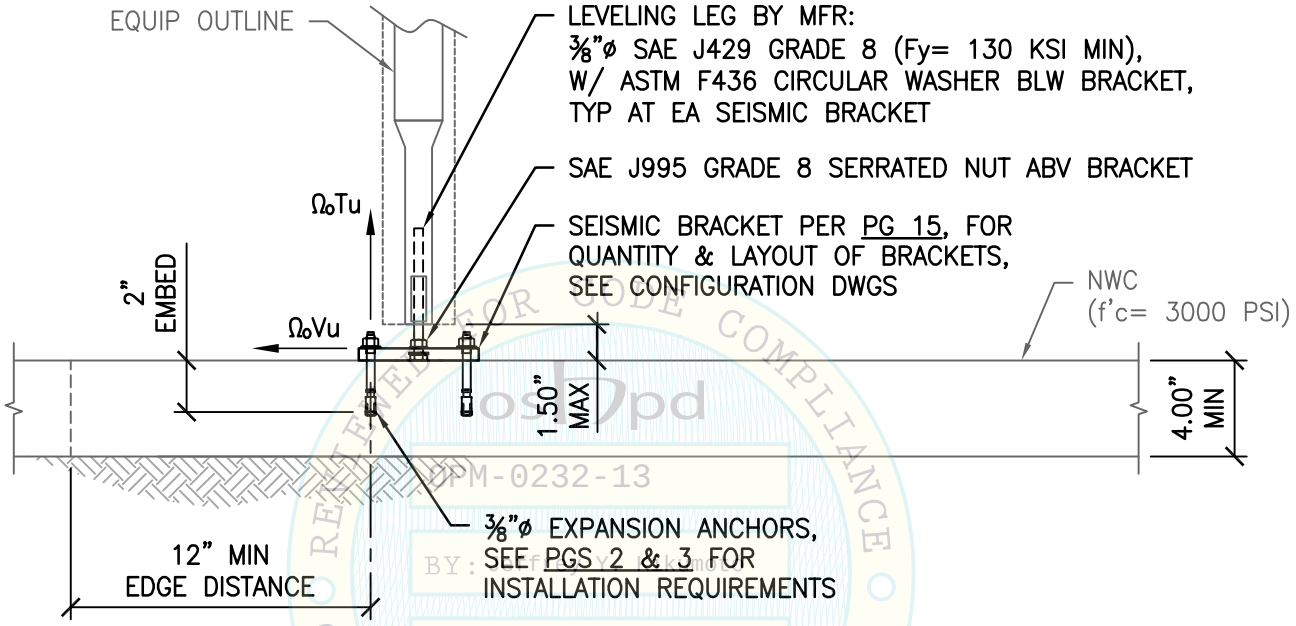
HAWORTH, INC.
COMPOSE® PANEL SYSTEMS

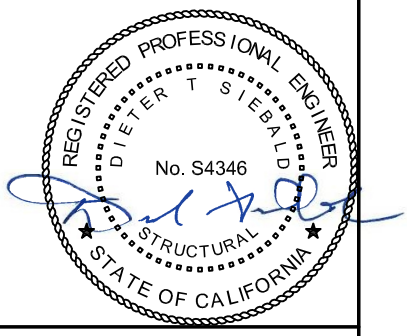
HAWORTH

	MAX LRFD FORCES AT EA ANCHOR	
	$\Omega_o T_u$	$\Omega_o V_u$
CASE 3	500#	350#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED.



SLAB ON GRADE (CASE 3)



SHEET TITLE: ATTACHMENT DETAIL
TO SLAB ON GRADE (CASE 3)

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SACRAMENTO, CA 95833
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