



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0627

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: ☒ New ☐ Renewal/Update

Manufacturer Information

Manufacturer: Hospital Systems, Inc.

Manufacturer's Technical Representative: Kathie CAMPBELL

Mailing Address: 750 Garcia Ave., Pittsburg, CA 94565

Telephone: (925) 427-7800

Email: kcampbell@hsiheadwalls.com

Product Information

Product Name: HSI AXIOM HEADWALL

Product Type: Hospital Patient Headwall

Product Model Number: AXIOM

General Description: Patient Headwall

Applicant Information

Applicant Company Name: CYS STRUCTURAL ENGINEERS

Contact Person: DIETER SIEBALD

Mailing Address: 2495 Natomas Park Drive, #650, SACRAMENTO, CA 95624

Telephone: (916) 920-2020

Email: dieters@cyseng.com

Title: STRUCTURAL ENGINEER

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY

OSHPD



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

Registered Design Professional Preparing Engineering Recommendations

Company Name: CYS STRUCTURAL ENGINEERS, INC.

Name: Dieter Siebald

California License Number: S4346

Mailing Address: 2495 Natomas Park Drive, Suite 650, Sacramento, CA 95833

Telephone: (916) 920-2020

Email: dieters@cyseng.com

OSHDP Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP

OSP Number: _____

Certification Method

Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-16

☐ Other(s) (Please Specify): _____

*Use of criteria other than those adopted by the California Building Standards Code, 2019 (CBSC 2019) 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 2019 may be used when approved by OSHDP prior to testing.

☒ Analysis

☐ Experience Data

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

OSHDP Approval

Date: 11/8/2021

Name: Jeffrey Kikumoto

Title: Senior Structural Engineer

Condition of Approval (if applicable): _____



AXIOM HEADWALL



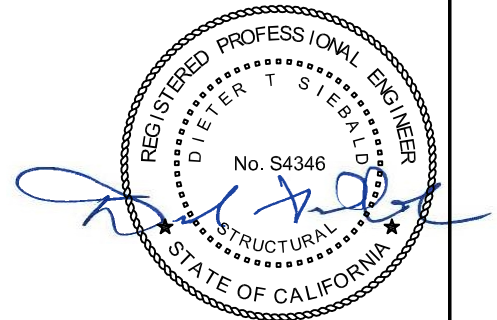
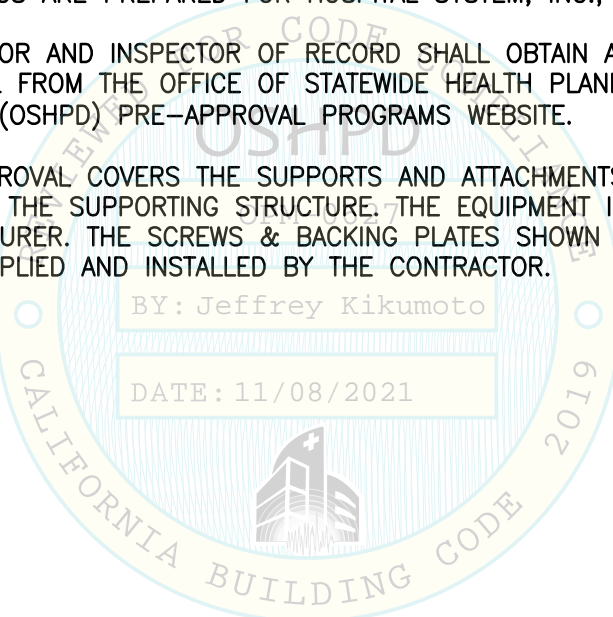
TABLE OF CONTENTS OPM-0627

	PAGE
GENERAL NOTES	2
ABBREVIATIONS	3
DESIGN CRITERIA & LOAD COMBINATIONS	4
SURFACE MOUNTED HEADWALL ELEVATIONS	5
SURFACE MOUNTED HEADWALL ATTACHMENT TO STUD WALLS	6
AXIOM ELOQUENCE FLUSH MOUNTED HEADWALL ELEVATION & DETAILS	8

- NOTES:**
1. THESE DRAWINGS ARE PREPARED FOR HOSPITAL SYSTEM, INC., PITTSBURG, CA
 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 EQUIPMENT TO THE SUPPORTING STRUCTURE. THE EQUIPMENT IS SUPPLIED BY THE MANUFACTURER. THE SCREWS & BACKING PLATES SHOWN IN THIS OPM SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

BY: Jeffrey Kikumoto

DATE: 11/08/2021



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

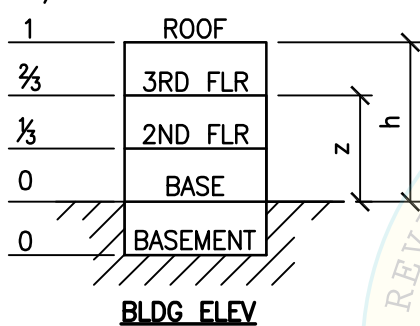
Job No:	20109
Date:	09-24-2021
Page:	1 of 9

AXIOM HEADWALL



GENERAL NOTES:

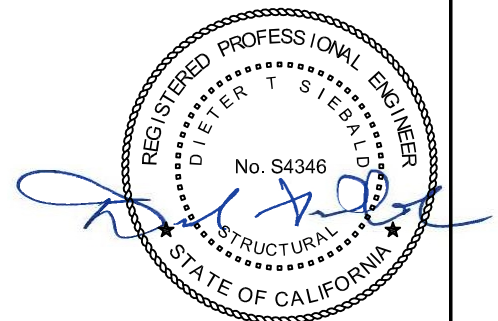
1. THIS OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM MUST BE BASED ON THE CBC 2019.
2. IT IS THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD FOR A SITE SPECIFIC PROJECT TO VERIFY:
 - A. THE ADEQUACY OF THE NEW OR (E) STRUCTURE TO RESIST THE FORCES & WT SPECIFIED FOR EA EQUIP IN ADDITION TO ALL OTHER LOADS. PROVIDE & DESIGN SUPPLEMENTARY MEMBERS AS REQ.
 - B. THAT THE INSTALLATION IS IN CONFORMANCE W/ THE CBC 2019 & W/ THE DETAILS SHOWN IN THIS PRE-APPROVAL.
 - C. THAT THE ACTUAL EQUIP'S WT, CENTER OF GRAVITY (CG) LOCATION, ATTACHMENT LOCATIONS, ATTACHMENT DETAILS, & THE MATERIAL & GA OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE W/ THE INFO SHOWN ON THE PRE-APPROVAL DOCUMENTS.
 - D. THAT THE PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES THAT DO NOT EXCEED THE VALUES PROVIDED IN THE DESIGN CRITERIA.
3. ONE (1) CASE OF ATTACHMENT IS SPECIFIED & PRESENTED IN THIS PRE-APPROVAL:



CASE 1: ATTACHMENT DETAILS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG ($z/h \leq 1.0$), IT IS ASSUMED THAT THE WALLS ARE BUILT OF A MIN $\frac{5}{8}$ " THK GWB OVER 20 GA MID STUD WALLS. MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE S_{DS} IS LESS THAN OR EQ TO 2.5.

4. SHEET METAL SCREWS SHALL BE HILTI SELF-DILLING & SELF-PIERCING SCREWS PER ISS-ES ESR-2196.

DATE: 11/08/2021



SHEET TITLE: GENERAL NOTES



CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

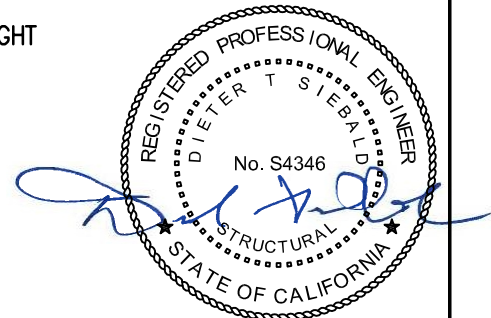
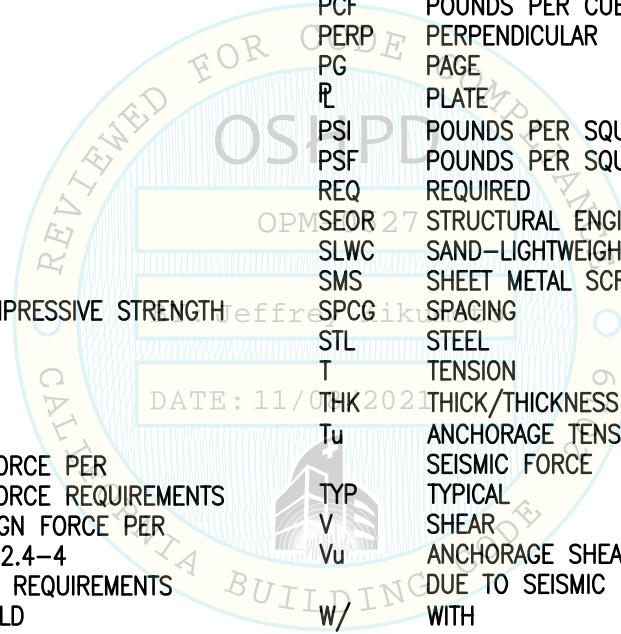
Job No: 20109
Date: 09-24-2021
Page: 2 of 9

AXIOM HEADWALL



ABBREVIATIONS:

Ω_o	SEISMIC OVERSTRENGTH FACTOR	INFO	INFORMATION
@	AT	JT	JOINT
ABV	ABOVE	KSI	KIPS PER SQUARE INCH
ALUM	ALUMINUM	LBS	POUNDS
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	LL	LIVE LOAD
ASD	ALLOWABLE STRESS DESIGN	LRFD	LOAD AND RESISTANCE FACTOR DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	MAX	MAXIMUM
BLDG	BUILDING	MFR	MANUFACTURER
BLW	BELOW	MIN	MINIMUM
CBC	CALIFORNIA BUILDING CODE	MTL	METAL
CG	CENTER OF GRAVITY	NO. (#)	NUMBER OR POUNDS
\bar{C}	CENTERLINE	NWC	NORMAL WEIGHT CONCRETE
CLR	CLEAR	OPM	OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION
CONC	CONCRETE	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
CONT	CONTINUOUS	PCF	POUNDS PER CUBIC FOOT
DF	DOUG FIR	PERP	PERPENDICULAR
DIA (ϕ)	DIAMETER	PG	PAGE
DL	DEAD LOAD	\bar{P}	PLATE
(E)	EXISTING	PSI	POUNDS PER SQUARE INCH
EA	EACH	PSF	POUNDS PER SQUARE FOOT
ELEV	ELEVATION	REQ	REQUIRED
EQ	EQUAL	SEOR	STRUCTURAL ENGINEER OF RECORD
EQUIP	EQUIPMENT	SLWC	SAND-LIGHTWEIGHT CONCRETE
ES	EACH SIDE	SMS	SHEET METAL SCREW
f'_c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE	SPCG	SPACING
FLG	FLANGE	STL	STEEL
FLR	FLOOR	T	TENSION
FT (')	FOOT/FEET	THK	THICK/THICKNESS
Fp	HORIZONTAL SEISMIC FORCE PER ASCE 7-16 SEISMIC FORCE REQUIREMENTS	Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
Fv	VERTICAL SEISMIC DESIGN FORCE PER ASCE 7-16 SECTION 12.4-4	TYP	TYPICAL
Fy	SEISMIC DESIGN FORCE REQUIREMENTS SPECIFIED MINIMUM YIELD STRESS OF STEEL	V	SHEAR
GA	GAUGE	Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
GR	GRADE	W/	WITH
GWB	GYPSUM WALLBOARD	Wp	OPERATING WEIGHT
HORIZ	HORIZONTAL	WS	WOOD SCREW
HT	HEIGHT	WT	WEIGHT
ICC	INTERNATIONAL CODE COUNCIL		
IN (")	INCH		



SHEET TITLE: ABBREVIATIONS



CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

Job No: 20109
Date: 09-24-2021
Page: 3 of 9

AXIOM HEADWALL



DESIGN CRITERIA

SUPPORT & ATTACHMENT DESIGN IS PER 2019 CBC AT LRFD LEVEL FORCES. OTHER RIGID COMPONENTS LOW DEFORMABILITY ELEMENTS & ATTACHMENTS.. PER TABLE 13.5-1 OF ASCE 7-16 SUPPLEMENT #1

$$a_p = 1.0 \quad R_p = 1.5 \quad I_p = 1.5$$

MAX W_p AS SHOWN ON PG 5.

FOR CASE 1 - UPPER FLRS ABV THE BASE, $z/h \leq 1.0$

$$S_{DS} = 2.5$$

$$F_p = \frac{0.4 a_p S_{DS} W_p}{(R_p/I_p)} (1+2 z/h) = 3.0 W_p \quad \text{ASCE 7-16 (13.3-1)}$$

$$F_p (\text{MAX}) = 1.6 S_{DS} I_p W_p = 6.00 W_p \quad \text{ASCE 7-16 (13.3-2)}$$

$$F_p (\text{MIN}) = 0.3 S_{DS} I_p W_p = 1.125 W_p \quad \text{ASCE 7-16 (13.3-3)}$$

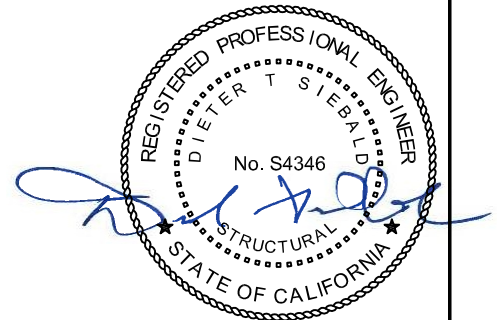
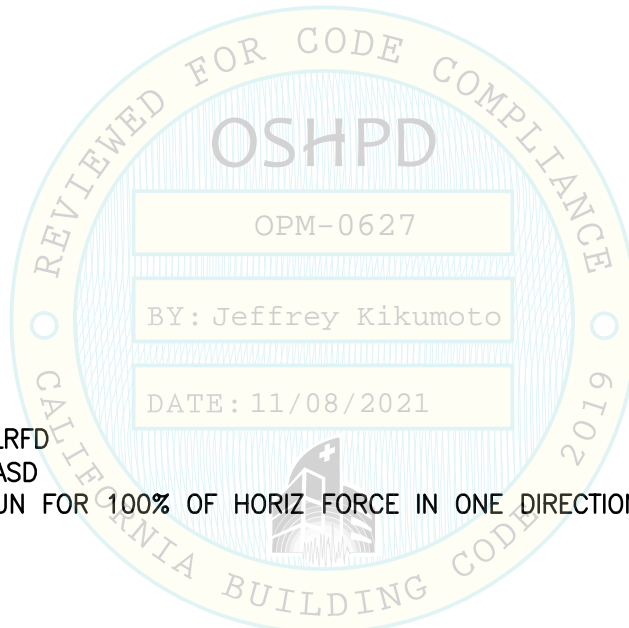
$$E_v + F_v = \pm 0.2 S_{DS} W_p = 0.50 W_p \quad \text{ASCE 7-16 (12.4-4)}$$

LOAD COMBINATIONS

(1.2+0.2 S_{DS}) D+1.0E+L LRFD

(1.0+0.14 S_{DS}) D+0.7E ASD

LOAD COMBINATIONS WERE RUN FOR 100% OF HORIZ FORCE IN ONE DIRECTION & 30% OF HORIZ FORCE IN THE PERP DIRECTION.



SHEET TITLE: DESIGN CRITERIA & LOAD COMBINATIONS



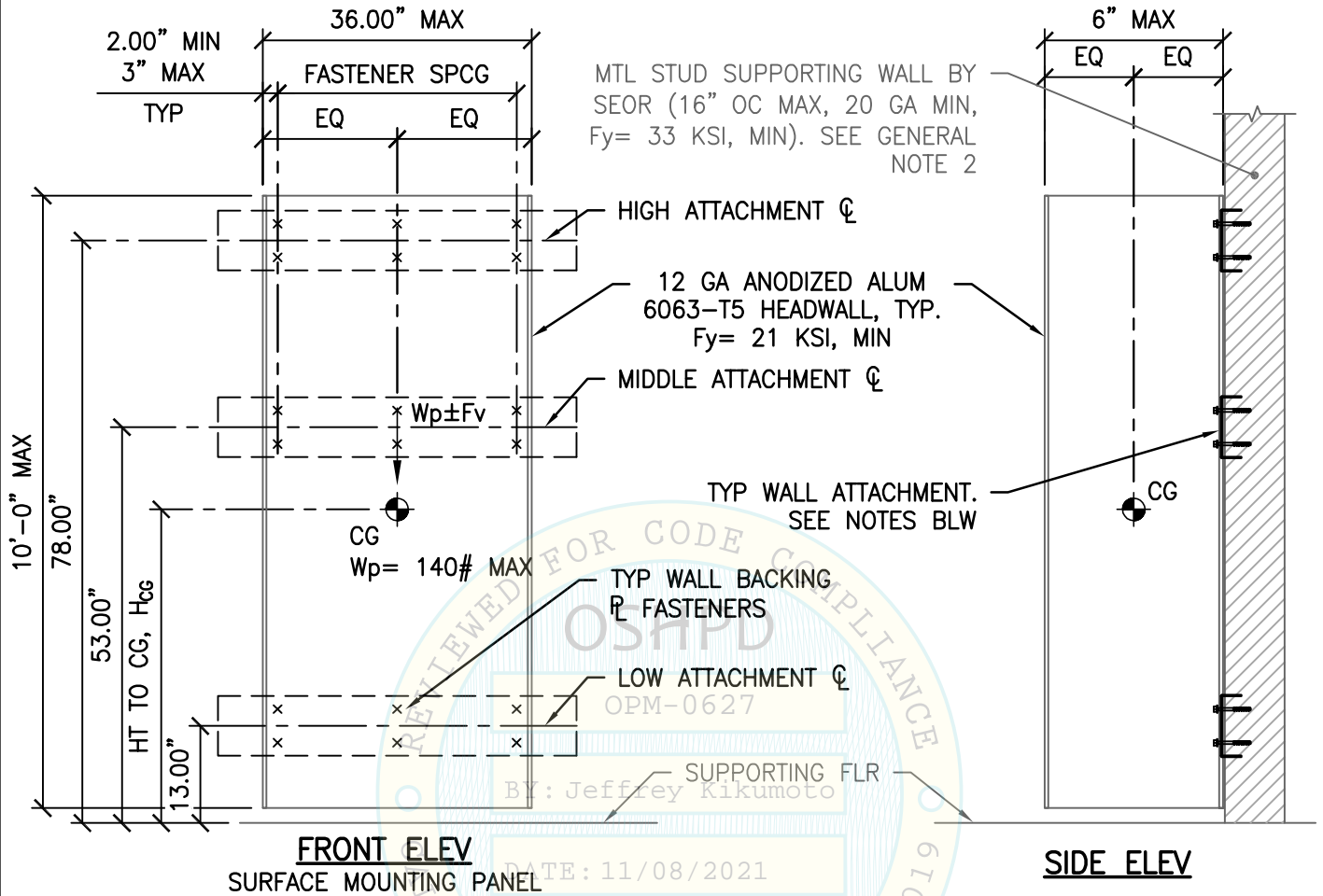
CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

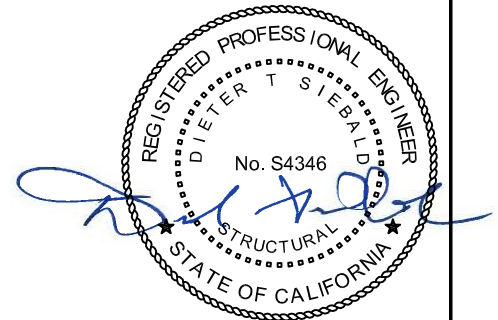
TEL (916) 920-2020
www.cyseng.com

Job No:	20109
Date:	09-24-2021
Page:	4 of 9

AXIOM HEADWALL



NOTE:
FOR ATTACHMENT TO STUD WALLS,
SEE PGS 6 & 7.



SHEET TITLE: SURFACE MOUNTED HEADWALL
ELEVATION



CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

Job No:	20109
Date:	09-24-2021
Page:	5 of 9

AXIOM HEADWALL



MAX ASD FORCES
AT EA SCREW (LBS)
PLATE TO STUDS

16 GA MTL

T

V

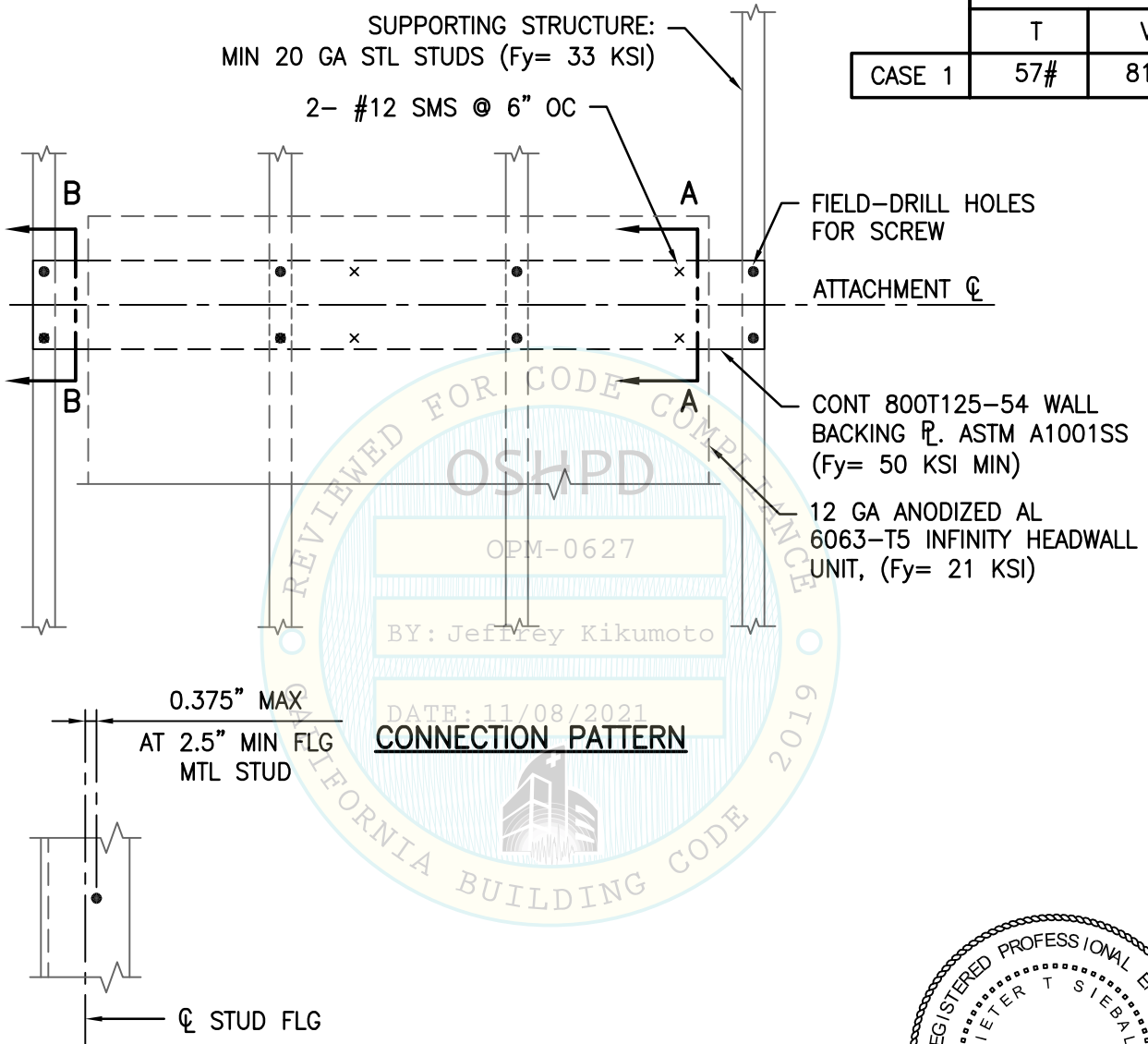
CASE 1

57#

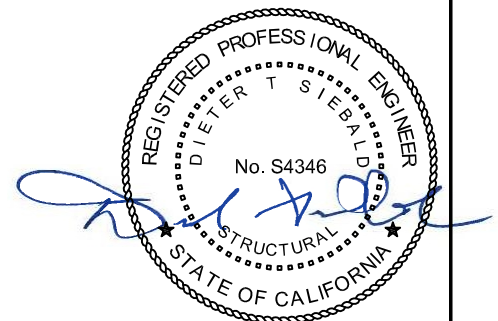
81#

SUPPORTING STRUCTURE:
MIN 20 GA STL STUDS ($F_y = 33$ KSI)

2- #12 SMS @ 6" OC



SCREW INSTALL VARIANCE



SHEET TITLE: SURFACE MOUNTED HEADWALL
ATTACHMENT TO STUD WALLS



CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

Job No: 20109

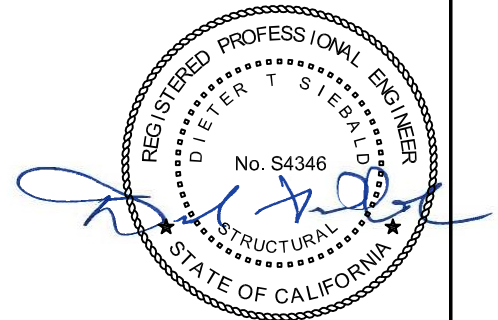
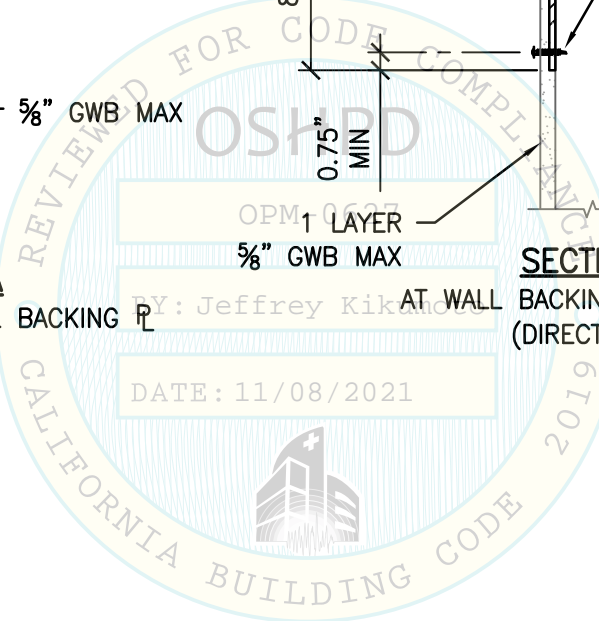
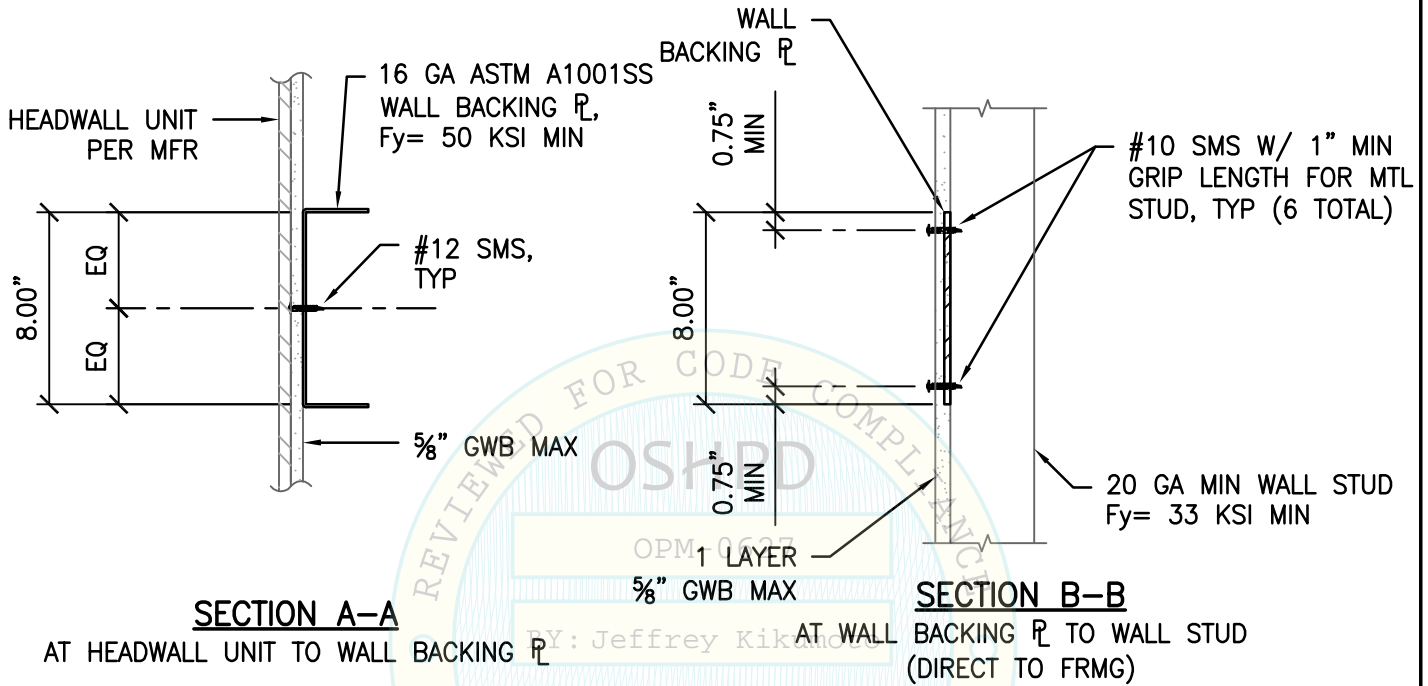
Date: 09-24-2021

Page: 6 of 9

AXIOM HEADWALL



NOTE:
HEADWALL UNIT NOT SHOWN IN
SECTION B-B FOR CLARITY.



**SHEET TITLE: SURFACE MOUNTED HEADWALL
ATTACHMENT TO STUD WALLS**



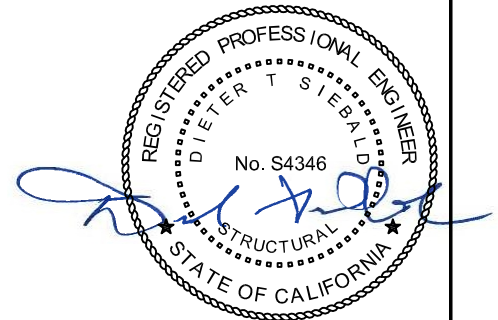
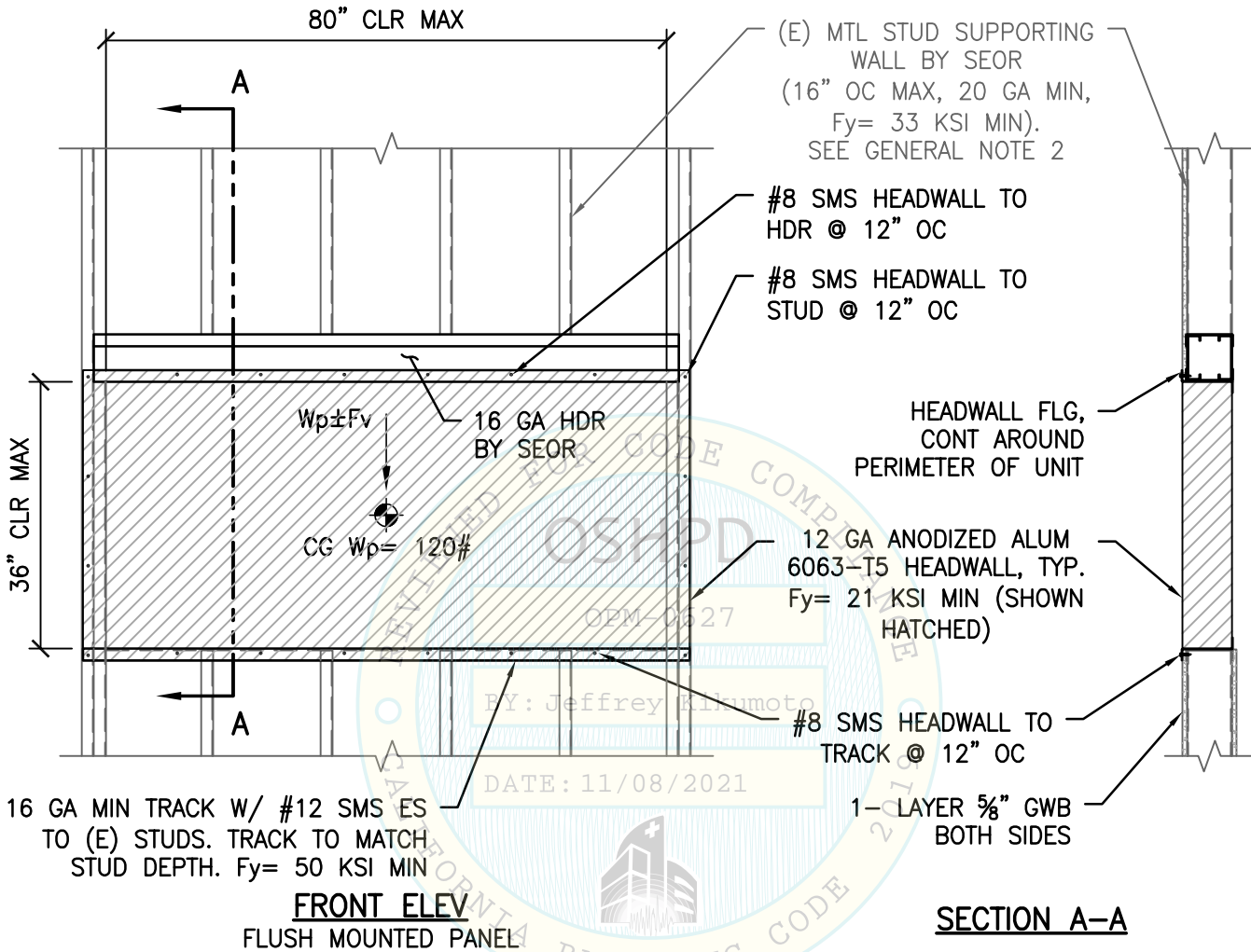
CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

Job No:	20109
Date:	09-24-2021
Page:	7 of 9

AXIOM HEADWALL



SHEET TITLE: HORIZONTAL FLUSH MOUNTED HEADWALL
ELEVATION & DETAIL



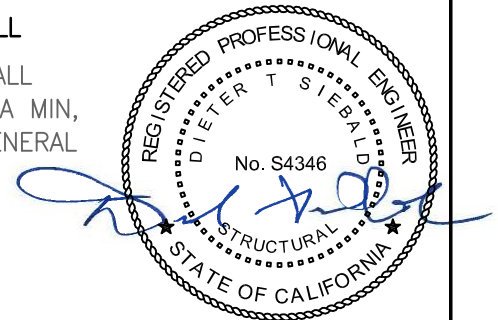
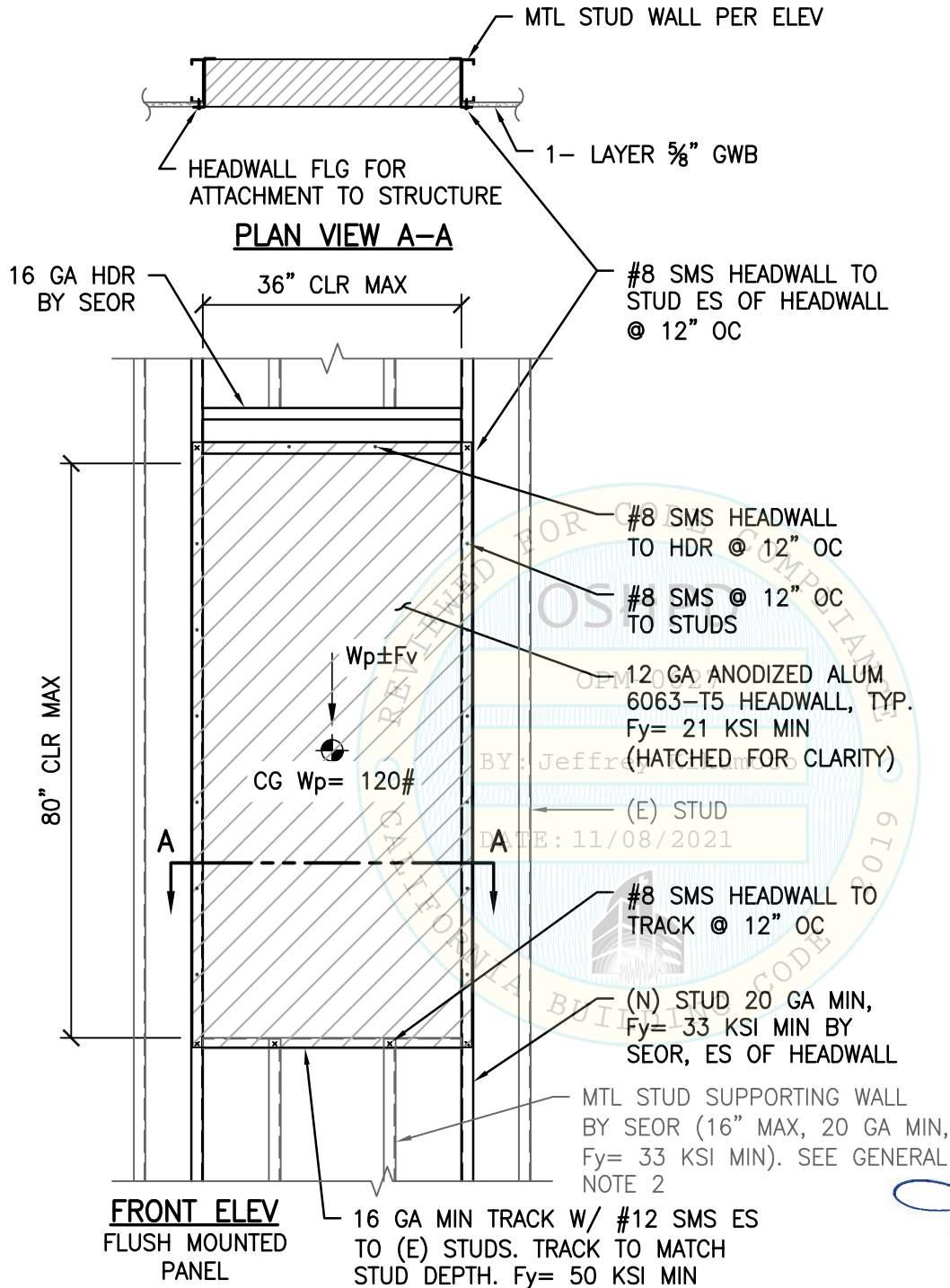
CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

Job No:	20109
Date:	09-24-2021
Page:	8 of 9

AXIOM HEADWALL



SHEET TITLE: VERTICAL FLUSH MOUNTED ELEVATIONS & DETAIL



CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

Job No:	20109
Date:	09-24-2021
Page:	9 of 9