



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

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

OFFICE USE ONLY

APPLICATION #: OPM-0716

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☒ Renewal/Update

Manufacturer Information

Manufacturer: Sysmex

Manufacturer's Technical Representative: Jill Crist

Mailing Address: 577 Aptakisic Road, Lincolnshire, IL 60069

Telephone: (215) 962-8236

Email: CrisJ@Sysmex.com

Product Information

Product Name: Sysmex XN-2000 or XR-2000 on Benchtop

Product Type: Automated Hematology Analyzer

Product Model Number: XN-2000; XR-2000

General Description: Blood Analyzer

Applicant Information

Applicant Company Name: Sysmex

Contact Person: Jill Crist

Mailing Address: 577 Aptakisic Road, Lincolnshire, IL 60069

Telephone: (215) 962-8236

Email: CristJ@Sysmex.com

Title: Sr Product Manager, Hematology

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STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
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Registered Design Professional Preparing Engineering Recommendations

Company Name: CYS STRUCTURAL ENGINEERS, INC.

Name: Dieter Siebald

California License Number: S4346

Mailing Address: 2710 Gateway Oaks Drive, Suite 190N, Sacramento, CA 95833

Telephone: (916) 920-2020

Email: dieters@cyseng.com

Certification Method

Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950 ☐ ASHRAE 171 ☐ FEMA 461

☐ Other(s) (Please Specify): _____

*Use of criteria other than those adopted by the California Building Standards Code, 2025 (CBSC 2025) 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 2025 may be used when approved by HCAI prior to testing.

☒ Analysis

☐ Experience Data

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

HCAI Approval

Date: 6/30/2026

Name: William Staehlin

Title: Senior Structural Engineer

Condition of Approval (if applicable): _____

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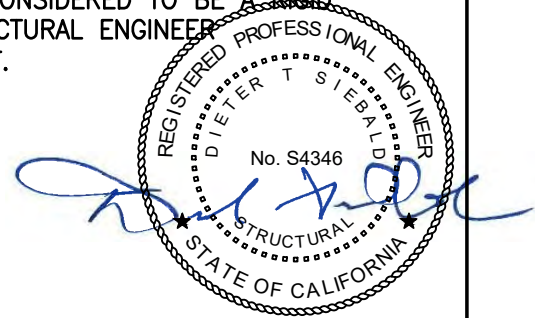


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NOTES:

1. THESE DRAWINGS ARE PREPARED FOR SYSMEX AMERICA, INC., LINCOLNSHIRE, ILLINOIS.
2. THE CONTRACTOR & INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE-APPROVAL FROM THE DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION (HCAI) PRE-APPROVAL PROGRAMS WEBSITE.
3. THIS PRE-APPROVAL COVERS THE ATTACHMENTS OF THE EQUIPMENT TO A SUPPORTING BENCH. THE EQUIPMENT ATTACHMENT HARDWARE IS SUPPLIED BY THE MANUFACTURER. THE BOLTS & "SAFE-T-PROOF" (STP) ADHESIVE FASTENERS SHOWN IN THIS OPM SHALL BE SUPPLIED & INSTALLED BY THE CONTRACTOR.
4. NOTE THAT THIS PRE-APPROVAL IS ONLY FOR THE SYSMEX EQUIPMENT ATTACHED TO A BENCH. THE BENCH IS A SUPPORT PROVIDED BY OTHERS. THE SYSMEX EQUIPMENT IS DESIGNED ASSUMING THAT THE BENCH SUPPORT IS RIGID. REFER TO ASCE 7-22 CHAPTER 13, TABLE 13.6-1 EQUIPMENT SUPPORT STRUCTURES AND PLATFORMS.
5. IF THE BENCH SUPPORT IS ATTACHED TO A WALL, THE BENCH IS CONSIDERED TO BE A RIGID SUPPORT. IF THE BENCH IS FREE STANDING IN A ROOM, THE STRUCTURAL ENGINEER OF RECORD (SEOR) MUST DESIGN THE BENCH AS A RIGID SUPPORT.



SHEET TITLE: TABLE OF CONTENTS



CYS STRUCTURAL ENGINEERS, INC.

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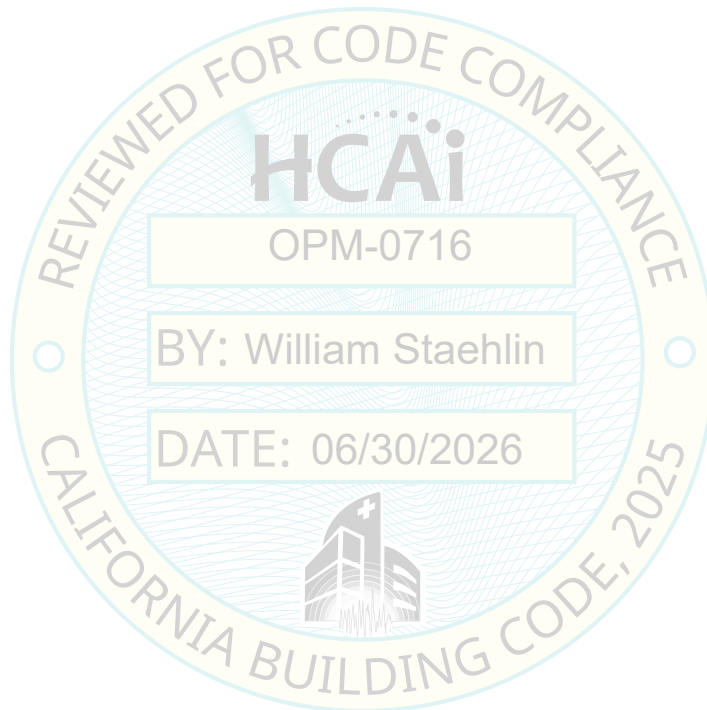
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SYSMEX XN-2000 OR XR-2000 ON BENCHTOP



GENERAL NOTES:

1. THIS HCAI OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2025. THE DEMAND (DESIGN FORCES) FOR USE W/ THIS OPM SHALL BE BASED ON THE CBC 2025.
2. IT IS THE RESPONSIBILITY OF THE SEOR FOR A SITE SPECIFIC PROJECT TO VERIFY:
 - A. THE ADEQUACY OF THE NEW OR EXISTING 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 2025 & 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 & GAUGE OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE W/ THE INFO SHOWN ON THE PRE-APPROVAL DOCUMENTS.
 - D. THAT THE SURFACE TO WHICH THE EQUIP IS ANCHORED SHALL MEET THE REQUIREMENTS OF THIS OPM.
3. PRIMARY DIMENSION VALUES ARE SHOWN IN IMPERIAL UNITS, AND ALTERNATE DIMENSION VALUES ARE SHOWN IN METRIC IN PARENTHESES (xxx), TYPICAL ALL SHEETS.



SHEET TITLE: GENERAL NOTES



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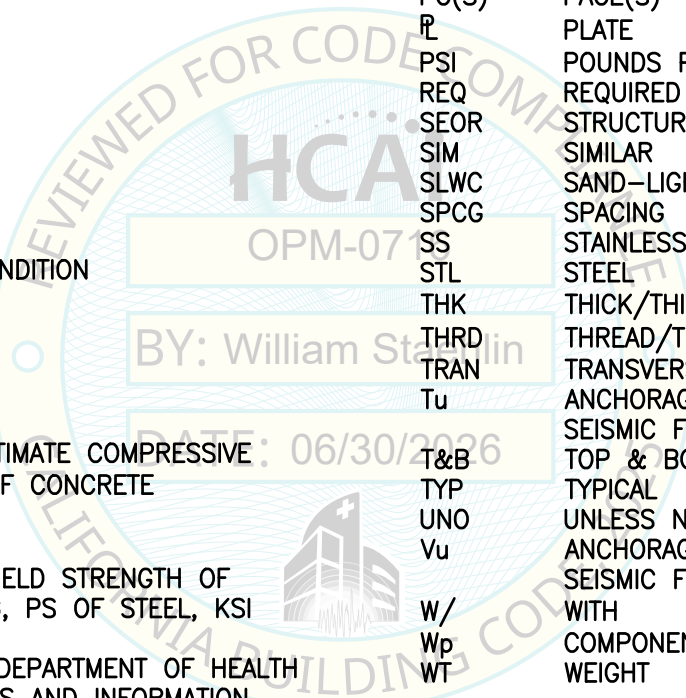
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SYSMEX XN-2000 OR XR-2000 ON BENCHTOP



ABBREVIATIONS:

(xxxx)	ALTERNATE METRIC VALUE, mm UNO	MIN	MINIMUM
@	AT	mm	MILLIMETER
AB	ANCHOR BOLT	MOD	MODULE
ABV	ABOVE	MTL	METAL
ADJ	ADJACENT	(N)	NEW CONDITION
ALT	ALTERNATE	NO. (#)	NUMBER OR POUNDS
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	NWC	NORMAL WEIGHT CONCRETE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	OP	OPERATING
BLDG	BUILDING	OPG	OPENING
BLW	BELOW	OPM	HCAI OSHPD PRE-APPROVAL OF
BOTT	BOTTOM		MANUFACTURER'S CERTIFICATION
BRG	BEARING	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING
BYD	BEYOND		& DEVELOPMENT
CBC	CALIFORNIA BUILDING CODE	PERP	PERPENDICULAR
CG	CENTER OF GRAVITY	PG(S)	PAGE(S)
CL	CENTERLINE	P	PLATE
COL	COLUMN	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	REQ	REQUIRED
CONN	CONNECTION	SEOR	STRUCTURAL ENGINEER OF RECORD
COORD	COORDINATE	SIM	SIMILAR
DBL	DOUBLE	SLWC	SAND-LIGHTWEIGHT CONCRETE
DTL(S)	DETAIL(S)	SPCG	SPACING
DIA (φ)	DIAMETER	SS	STAINLESS STEEL
(E)	EXISTING CONDITION	STL	STEEL
EA	EACH	THK	THICK/THICKNESS
EE	EACH END	THRD	THREAD/THREADED
ELEV	ELEVATION	TRAN	TRANSVERSE
EQ	EQUAL	Tu	ANCHORAGE TENSION REACTION DUE TO
EQUIP	EQUIPMENT		SEISMIC FORCE AT LRFD
f'c	MINIMUM ULTIMATE COMPRESSIVE	T&B	TOP & BOTTOM
	STRENGTH OF CONCRETE	TYP	TYPICAL
FLR	FLOOR	UNO	UNLESS NOTED OTHERWISE
FT (')	FOOT/FEET	Vu	ANCHORAGE SHEAR REACTION DUE TO
Fy	SPECIFIED YIELD STRENGTH OF		SEISMIC FORCE AT LRFD
	REINFORCING, PS OF STEEL, KSI	W/	WITH
GA	GAUGE	Wp	COMPONENT OPERATING WEIGHT
HCAI	CALIFORNIA DEPARTMENT OF HEALTH	WT	WEIGHT
	CARE ACCESS AND INFORMATION		
HSS	HOLLOW STRUCTURAL SECTION		
ICC	INTERNATIONAL CODE COUNCIL		
IN (")	INCH		
INFO	INFORMATION		
KSI	KIPS PER SQUARE INCH		
LBS	POUNDS		
LRFD	LOAD & RESISTANCE FACTOR DESIGN		
MAX	MAXIMUM		
MFR	MANUFACTURER		



SHEET TITLE: ABBREVIATIONS



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DESIGN CRITERIA & SEISMIC DESIGN FORCES (LRFD)

$$C_{PM} = F_p/W_p = 0.4 S_{DS} I_p \left[\frac{H_f}{R_{\mu}} \right] \left[\frac{C_{AR}}{R_{po}} \right] \quad \text{ASCE 7-22 (13.3-1)}$$

$$C_{PM} = F_p/W_p \text{ (MAX)} = 1.6 S_{DS} I_p \quad \text{ASCE 7-22 (13.3-2)}$$

$$C_{PM} = F_p/W_p \text{ (MIN)} = 0.3 S_{DS} I_p \quad \text{ASCE 7-22 (13.3-3)}$$

$$C_{VM} = F_v/W_p = \pm 0.2 S_{DS} \quad \text{ASCE 7-22 (12.4-4a)}$$

$$H_{f_{MIN}} = 1.0 \quad \text{AT OR BELOW GRADE PLANE}$$

$$H_{f_{MAX}} = 1+2.5 (z/h) = 3.375 \quad \text{ABOVE GRADE } z/h = 0.95$$

$$R_{\mu_{MIN}} = 1.0 \quad \text{AT OR BELOW GRADE PLANE}$$

$$R_{\mu_{MIN}} = 1.3 \quad \text{ABOVE GRADE FOR UNSPECIFIED BUILDING SFERS}$$

$$[H_f/R_{\mu}]_{MAX} = 2.60 \quad \text{ABOVE GRADE } z/h = 0.95$$

$$[H_f/R_{\mu}]_{MIN} = 1.00 \quad \text{AT OR BELOW GRADE PLANE}$$

SUPPORT & ATTACHMENT DESIGN IS PER 2025 CBC AT LRFD LEVEL FORCES PER TABLE 13.6-1 OF ASCE 7-22. "OTHER MECHANICAL OR ELECTRICAL COMPONENTS"

$$C_{AR} = 1.0 \quad R_{po} = 1.5 \quad I_p = 1.5 \quad C_{pm} = F_p/W_p \quad W_p = \text{AS NOTED ON DRAWINGS}$$

ABOVE GRADE:

$$S_{DS} \leq 1.560 \quad C_{pm} = 1.080 \quad z/h \leq 0.50$$

$$S_{DS} \leq 1.221 \quad C_{pm} = 1.080 \quad z/h \leq 0.75$$

AT OR BELOW GRADE:

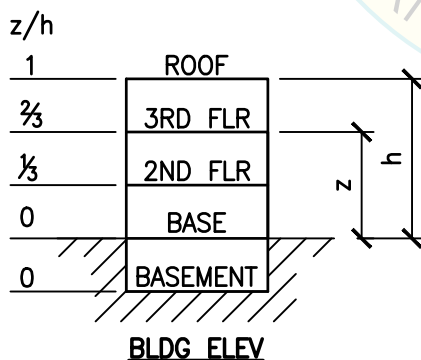
$$S_{DS} \leq 2.400 \quad C_{pm} = 1.080 \quad z/h \leq 0.00$$

LOAD COMBINATIONS

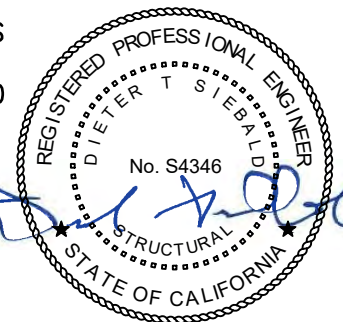
$$(0.9 - 0.2 S_{DS}) D - C_{pm} * W_p \text{ (FOR MAX TENSION)}$$

$$(1.2 + 0.2 S_{DS}) D + C_{pm} * W_p \text{ (FOR MAX COMPRESSION)}$$

- THIS PRE-APPROVAL MAY BE USED ONLY AT GEOGRAPHICAL LOCATIONS IN THE STATE OF CALIFORNIA WHERE S_{DS} & z/h VALUES RESULT IN AN C_{pm} FORCE THAT IS LESS THAN OR EQ TO THE VALUE NOTED ABV. SEOR SHALL VERIFY THAT OTHER COMBINATIONS OF S_{DS} & z/h MUST RESULT IN AN C_{pm} VALUE THAT IS EQ TO OR LESS THAN C_{pm} FORCE FOR CASE UNDER CONSIDERATION.



"z/h" IS A RATIO OF THE HEIGHT IN THE STRUCTURE THAT THE COMPONENT HAS BEEN ANCHORED, TO THE OVERALL HEIGHT OF THE STRUCTURE. FOR EXAMPLE, A z/h OF 1.0 STATES THAT THE COMPONENT IS CAPABLE OF BEING INSTALLED ANYWHERE WITHIN THE STRUCTURE.



SHEET TITLE: DESIGN CRITERIA



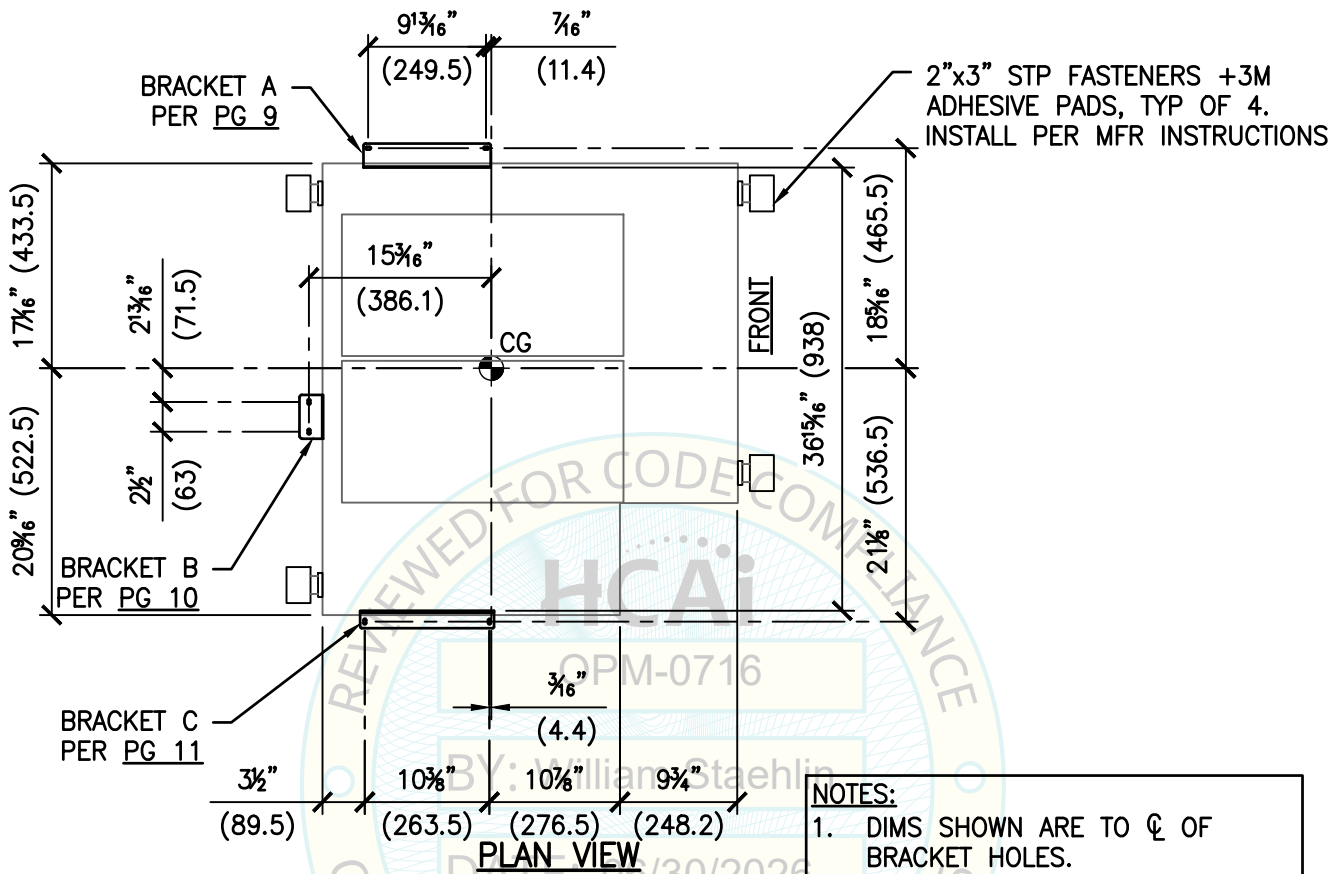
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SYSMEX XN-2000 OR XR-2000 ON BENCHTOP



SHEET TITLE: SYSMEX XN-2000 OR XR-2000 INSTRUMENTS
PLAN VIEW



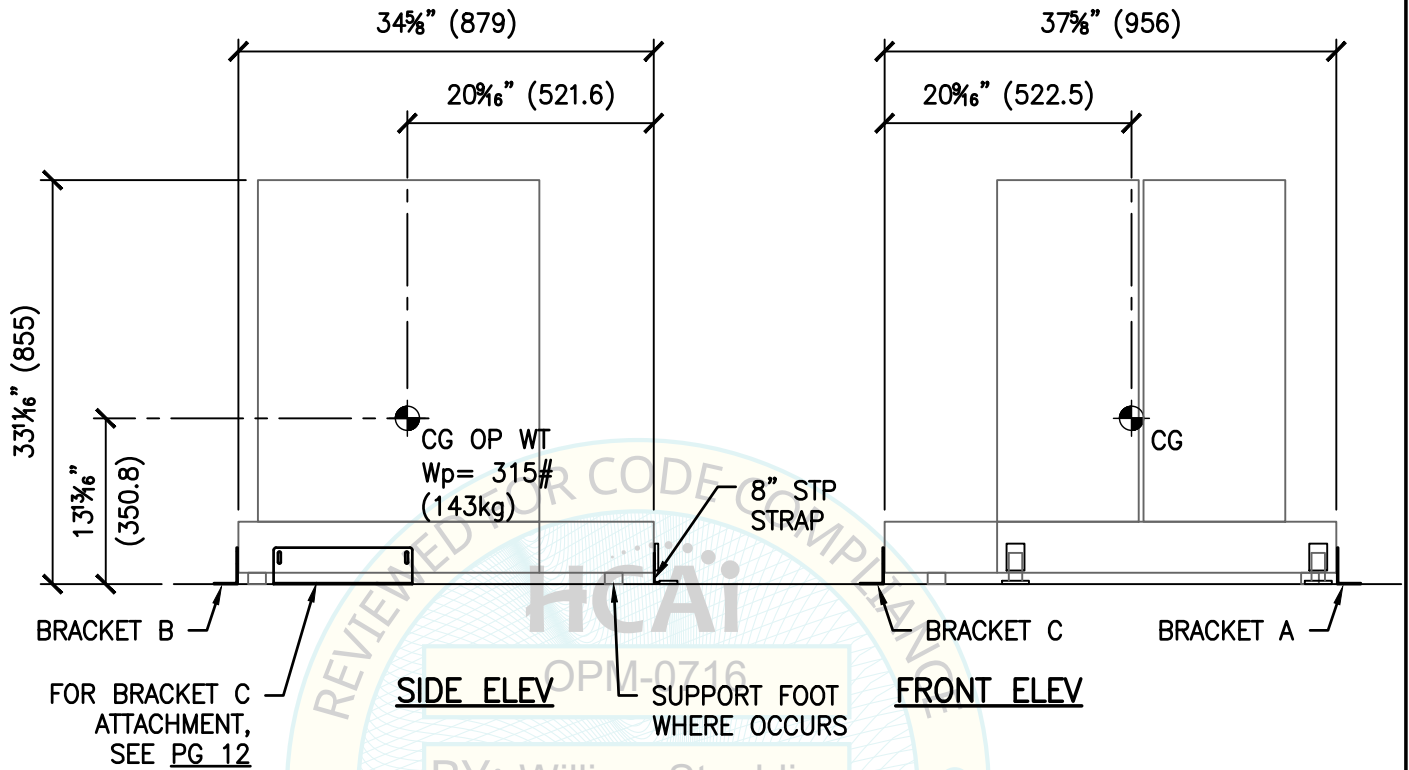
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SYSMEX XN-2000 OR XR-2000 ON BENCHTOP

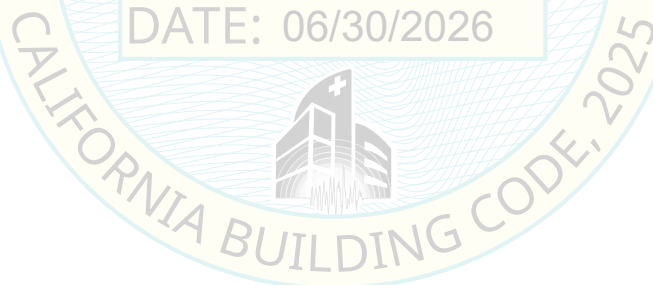


SIDE ELEV

FRONT ELEV

BY: William Staehlin

DATE: 06/30/2026



SHEET TITLE: SYSMEX XN-2000 OR XR-2000 INSTRUMENTS
ELEVATIONS



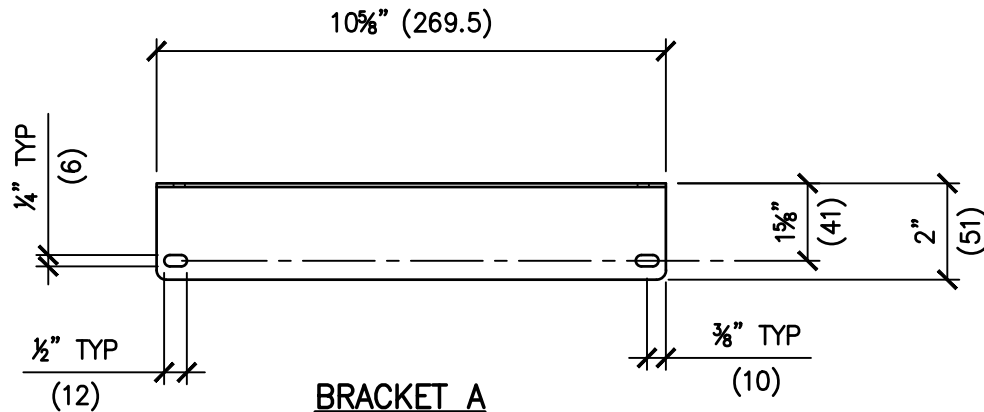
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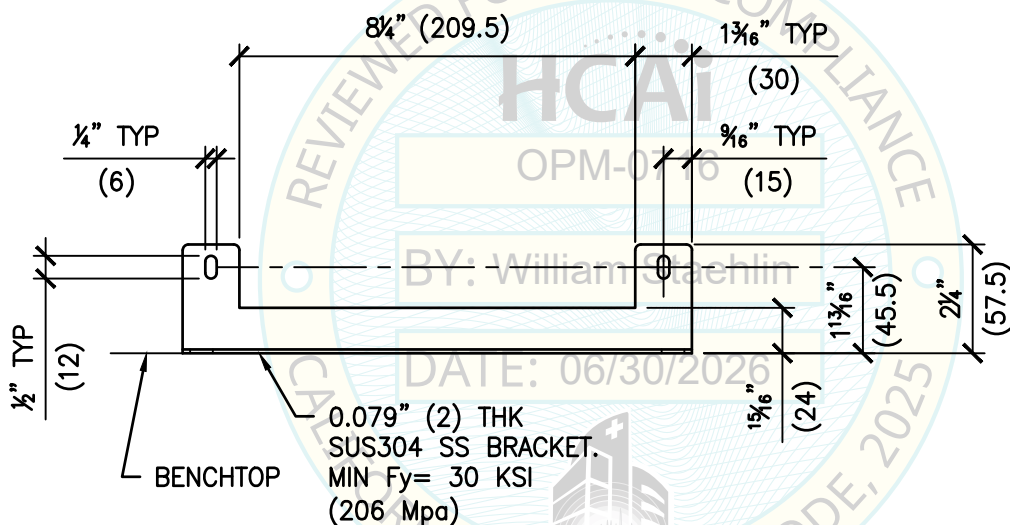
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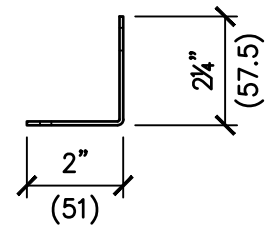
SYSMEX XN-2000 OR XR-2000 ON BENCHTOP



**BRACKET A
PLAN VIEW**



**BRACKET A
FRONT ELEV**



**BRACKET A
SIDE ELEV**



SHEET TITLE: BRACKET DETAILS



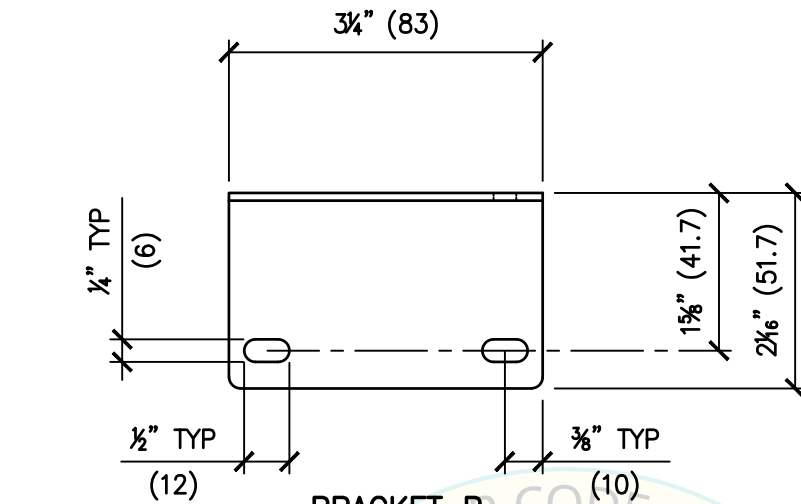
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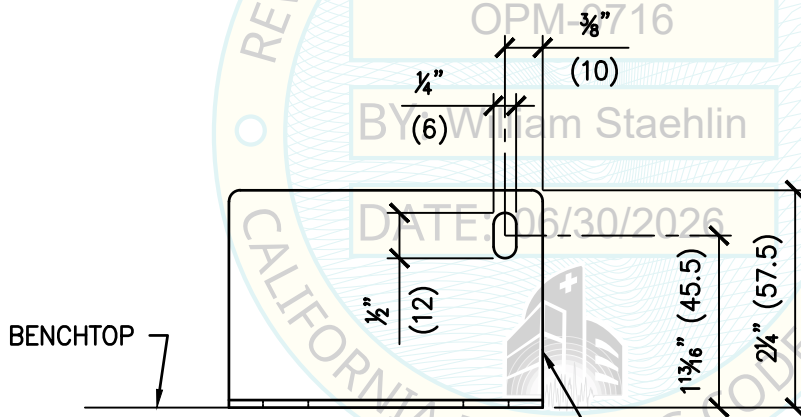
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SYSMEX XN-2000 OR XR-2000 ON BENCHTOP

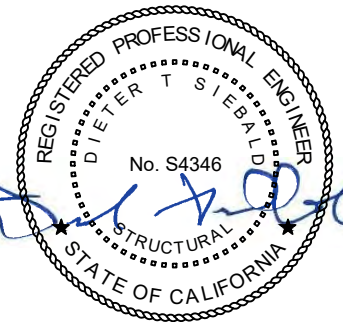


**BRACKET B
PLAN VIEW**



**BRACKET B
FRONT ELEV**

0.08" (2) THK
SUS304 SS BRACKET
MIN Fy= 30 KSI
(206 Mpa)



SHEET TITLE: BRACKET DETAILS



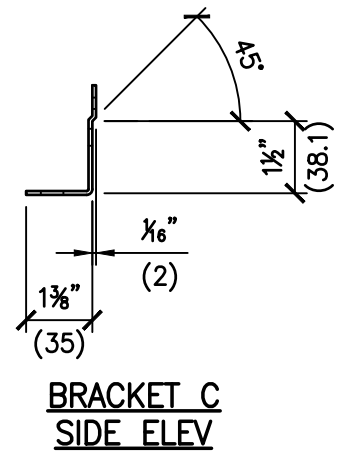
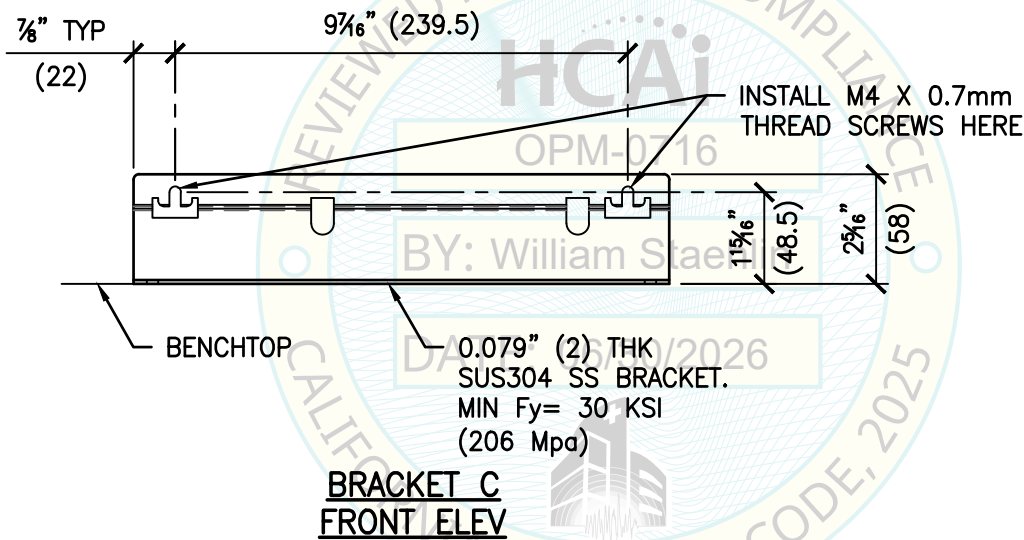
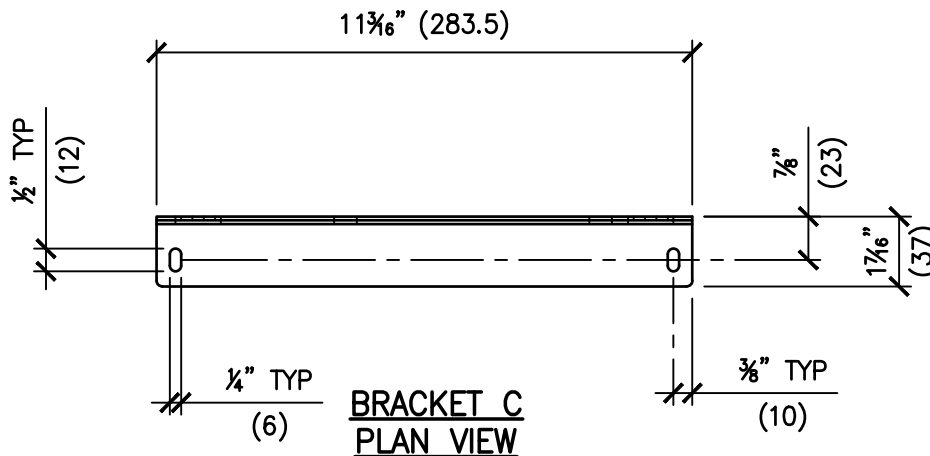
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SYSMEX XN-2000 OR XR-2000 ON BENCHTOP



SHEET TITLE: BRACKET DETAILS



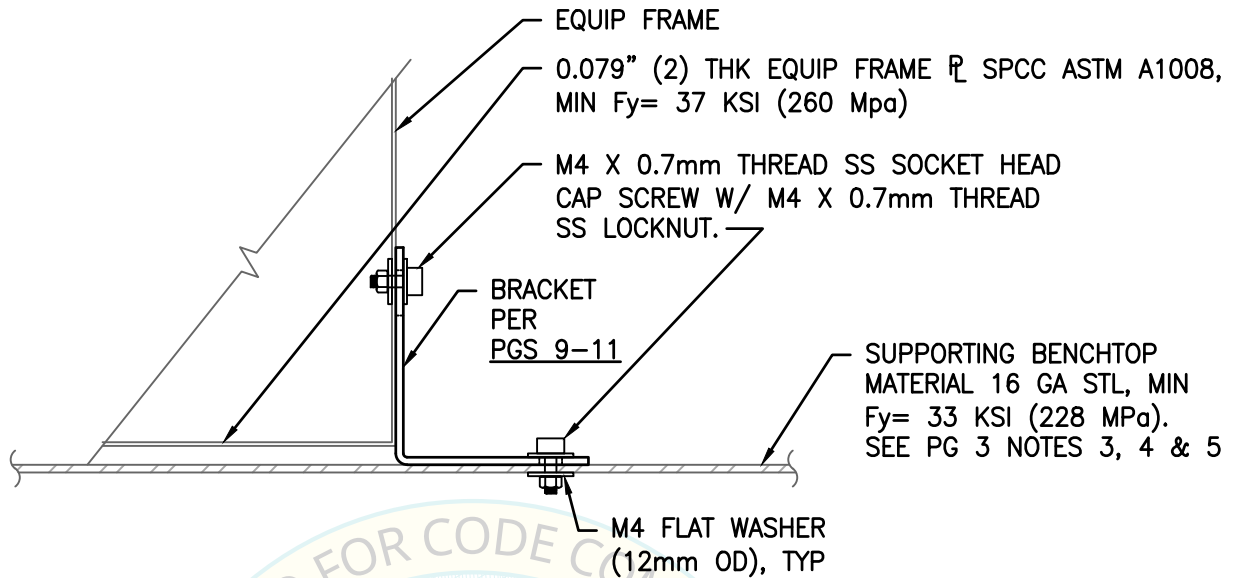
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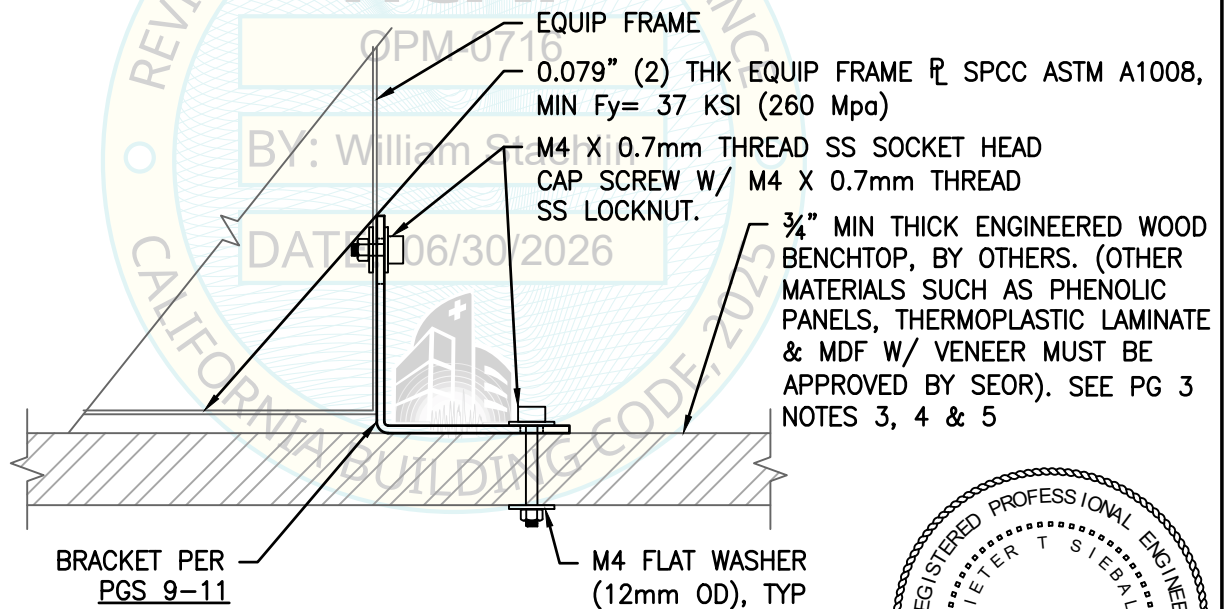
SYSMEX XN-2000 OR XR-2000 ON BENCHTOP



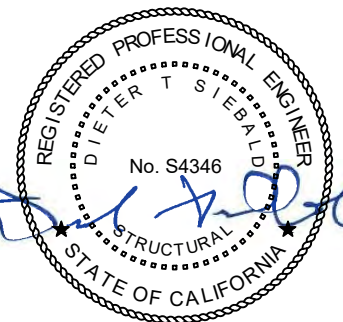
STEEL BENCHTOP ATTACHMENT

NOTES

TORQUE ALL M4 BOLTS TO 3.5 FT-LBS.



PLYWOOD BENCHTOP ATTACHMENT



SHEET TITLE: BENCHTOP ATTACHMENT DETAILS

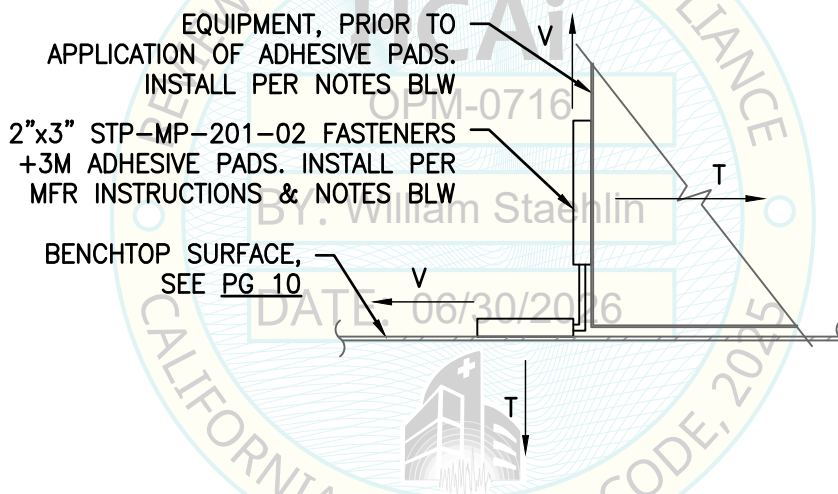


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NOTE:

FOLLOW MFR'S INSTRUCTIONS FOR ADHESION OF FOAM ADHESIVE TO BOND SURFACE AS FOLLOWS: LIGHTLY ABRASE THE BOND AREA OF SURFACES (POWDER-COATED STL, SS, PHENOLIC, THERMOPLASTIC LAMINATE) W/ A SCOTCHBRITE 7447 PAD & THEN CLEAN W/ A 70:30 ISOPROPYL ALCOHOL (IPA)/WATER SOLUTION, ALLOWED TO DRY PRIOR TO APPLICATION OF THE ADHESIVE PADS



SHEET TITLE: STP FASTENER TO BENCHTOP CONNECTION DETAIL



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SYSMEX XN-2000 OR XR-2000 ON BENCHTOP



DESIGN CRITERIA:

1. SUPPORT & ATTACHMENT DESIGN IS PER 2022 CBC AT LRFD LEVEL FORCES.

OTHER MECHANICAL OR ELECTRICAL COMPONENTS PER TABLE 13.6-1 OF ASCE 7-16 INCL SUPPLEMENT #1 & ERRATA:

$$a_p = 1.0 \quad R_p = 1.5 \quad I_p = 1.5 \quad C_{pm} = F_p/W_p$$

ABOVE GRADE:

$$S_{DS} \leq 1.080 \quad F_p = 1.080 W_p \quad z/h \leq 0.75$$

$$S_{DS} \leq 1.350 \quad F_p = 1.080 W_p \quad z/h \leq 0.50$$

AT OR BELOW GRADE:

$$S_{DS} \leq 2.400 \quad F_p = 1.080 W_p \quad z/h \leq 0.0$$

W_p AS NOTED ON DRAWINGS

LOAD COMBINATIONS

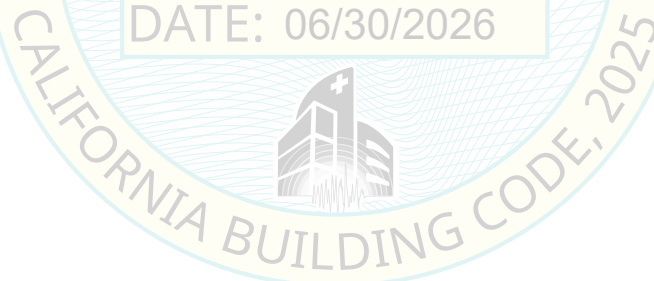
$$(0.9 - 0.2 S_{DS}) D - C_{pm} W_p \text{ (FOR MAX TENSION)}$$

$$(1.2 + 0.2 S_{DS}) D + C_{pm} W_p \text{ (FOR MAX COMPRESSION)}$$

2. THIS PRE-APPROVAL MAY BE USED ONLY AT GEOGRAPHICAL LOCATIONS IN THE STATE OF CALIFORNIA WHERE S_{DS} & z/h VALUES RESULT IN A C_{pm} FORCE THAT IS LESS THAN OR EQ TO THE VALUE NOTED ABV. SEOR SHALL VERIFY THAT OTHER COMBINATIONS OF S_{DS} & z/h MUST RESULT IN A C_{pm} VALUE THAT IS $\leq C_{pm}$ FORCE FOR CASE UNDER CONSTRUCTION.

BY: William Staehlin

DATE: 06/30/2026



SHEET TITLE: APPENDIX "A" BASED ON 2022 CBC



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