



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-0689

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: ☒ New ☐ Renewal/Update

Manufacturer Information

Manufacturer: Sysmex

Manufacturer's Technical Representative: Jill Crist

Mailing Address: 577 Aptakistic Road, Lincolnshire, IL 60069

Telephone: (215) 962-8236

Email: CristJ@Sysmex.com

Product Information

Product Name: Sysmex XN-3100+DI on Benchtop

Product Type: Automated Hematology Analyzer

Product Model Number: XN-3100+DI

General Description: Medical Analyzer Equipment

Applicant Information

Applicant Company Name: Sysmex

Contact Person: Jill Crist

Mailing Address: 577 Aptakistic Road, Lincolnshire, IL 60069

Telephone: (215) 962-8236

Email: CristJ@Sysmex.com

Title: Senior Product Manager

"A healthier California where all receive equitable, affordable, and quality health care"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





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

**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

**HCAI 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, 2022 (CBSC 2022) 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 2022 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: 3/6/2025

Name: Timothy Piland

Title: Senior Structural Engineer

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

*"A healthier California where all receive equitable, affordable, and quality health care"*

**STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY**



## TABLE OF CONTENTS OPM-0689

	PAGE
GENERAL NOTES	2
ABBREVIATIONS	3
DESIGN CRITERIA	4
SYSMEX XN-3100+DI INSTRUMENTS ELEVATIONS	5
SYSMEX XN-3100+DI INSTRUMENTS PLAN VIEW	6
BENCHTOP ATTACHMENT DETAILS	7
BRACKET DETAILS	
BRACKET NO. BP179499 "A"	8
BRACKET NO. 2148 "B"	9
BRACKET NO. 2149 "C"	10
BRACKET NO. 2150 "D"	11
BRACKET NO. 6401 "E"	12
"SAFE-T-PROOF" (STP) FASTENER CONNECTION DETAILS	13

### 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 SUPPORTS & ATTACHMENTS OF THE EQUIPMENT TO THE SUPPORTING STRUCTURE. THE EQUIPMENT, SUPPORT & ATTACHMENT HARDWARE ARE SUPPLIED BY THE MANUFACTURER. THE BOLTS & "SAFE-T-PROOF" (STP) ADHESIVE FASTENERS SHOWN IN THIS OPM SHALL BE SUPPLIED & INSTALLED BY THE CONTRACTOR.



SHEET TITLE: TABLE OF CONTENTS



**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No:	23032
Date:	01-14-2025
Page:	1 of 13



# SYSMEX XN-3100+DI ON BENCHTOP



## GENERAL NOTES:

1. THIS HCAI PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2022. THE DEMAND (DESIGN FORCES) FOR USE W/ THIS OPM SHALL BE BASED ON THE CBC 2022.
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 2022 & 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.



SHEET TITLE: GENERAL NOTES



**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No:	23032
Date:	01-14-2025
Page:	2 of 13

# SYSMEX XN-3100+DI ON BENCHTOP



## ABBREVIATIONS:

@	AT	NO. (#)	NUMBER OR POUNDS
AB	ANCHOR BOLT	NWC	NORMAL WEIGHT CONCRETE
ABV	ABOVE	OP	OPERATING
ADJ	ADJACENT	OPG	OPENING
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	OPM	HCAI PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION
BLDG	BUILDING	PERP	PERPENDICULAR
BLW	BELOW	PG	PAGE
BOTT	BOTTOM	PL	PLATE
BYD	BEYOND	PSI	POUNDS PER SQUARE INCH
CBC	CALIFORNIA BUILDING CODE	REQ	REQUIRED
CG	CENTER OF GRAVITY	SEOR	STRUCTURAL ENGINEER OF RECORD
CL	CENTERLINE	SIM	SIMILAR
CONC	CONCRETE	SLWC	SAND-LIGHTWEIGHT CONCRETE
CONN	CONNECTION	SPCG	SPACING
COORD	COORDINATE	SS	STAINLESS STEEL
DBL	DOUBLE	STL	STEEL
DTL(S)	DETAIL(S)	THK	THICK/THICKNESS
DIA (Ø)	DIAMETER	Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE AT LRFD
(E)	EXISTING CONDITION	THRD	THREAD OR THREADED
EA	EACH	T&B	TOP & BOTTOM
EE	EACH END	TYP	TYPICAL
ELEV	ELEVATION	UNO	UNLESS NOTED OTHERWISE
EQ	EQUAL	Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE AT LRFD
EQUIP	EQUIPMENT	W/	WITH
f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE	Wp	COMPONENT OPERATING WEIGHT
FLR	FLOOR	WT	WEIGHT
FT (')	FOOT/FEET		
Fy	SPECIFIED YIELD STRENGTH OF REINFORCING, PS OF STEEL, KSI		
GA	GAUGE		
HCAI	DEPARTMENT OF HEALTH 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		
MIN	MINIMUM		
mm	MILLIMETER		
MOD	MODULE		
MTL	METAL		



SHEET TITLE: ABBREVIATIONS



**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No:	23032
Date:	01-14-2025
Page:	3 of 13



# SYSMEX XN-3100+DI 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:

$$a_p = 1.0 \quad R_p = 1.5 \quad I_p = 1.5 \quad \Omega_0 = 1.5$$

### ABOVE GRADE:

$$\begin{array}{lll} S_{DS} \leq 1.080 & F_p = 1.080 W_p & z/h \leq 0.75 \\ S_{DS} \leq 1.350 & F_p = 1.080 W_p & z/h \leq 0.50 \\ S_{DS} \leq 0.931 & F_p = 1.080 W_p & z/h \leq 0.95 \end{array}$$

### AT OR BELOW GRADE:

$$S_{DS} \leq 2.400 \quad F_p = 1.080 W_p \quad z/h \leq 0.00$$

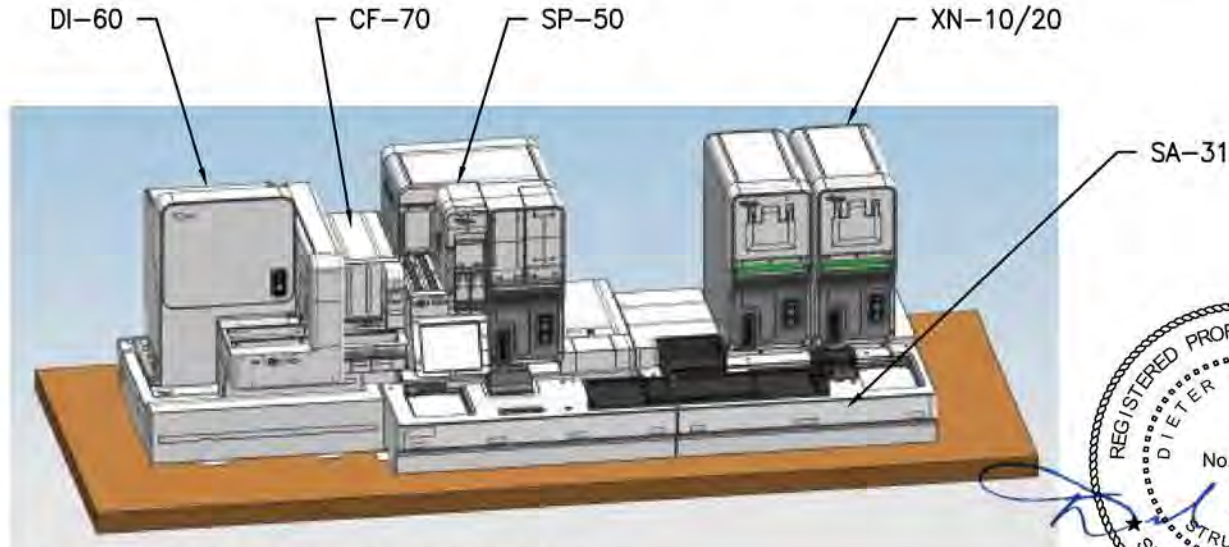
$W_p$  AS NOTED ON DRAWINGS

### LOAD COMBINATIONS

$$(0.9 - 0.2 S_{DS}) D - \Omega_0 F_p \text{ (FOR MAX TENSION)}$$

$$(1.2 + 0.2 S_{DS}) D + \Omega_0 F_p \text{ (FOR MAX COMPRESSION)}$$

2. THIS PRE-APPROVAL MAY BE USED ONLY AT GEOGRAPHICAL LOCATIONS IN THE STATE OF CALIFORNIA WHERE  $S_{DS}$  &  $z/h$  VALUES RESULT IN AN  $F_p$  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  $F_p$  VALUE THAT IS EQ TO OR LESS THAN  $F_p$  FORCE FOR CASE UNDER CONSIDERATION.



**ISOMETRIC OF SYSTEM CONFIGURATION**

SHEET TITLE: DESIGN CRITERIA



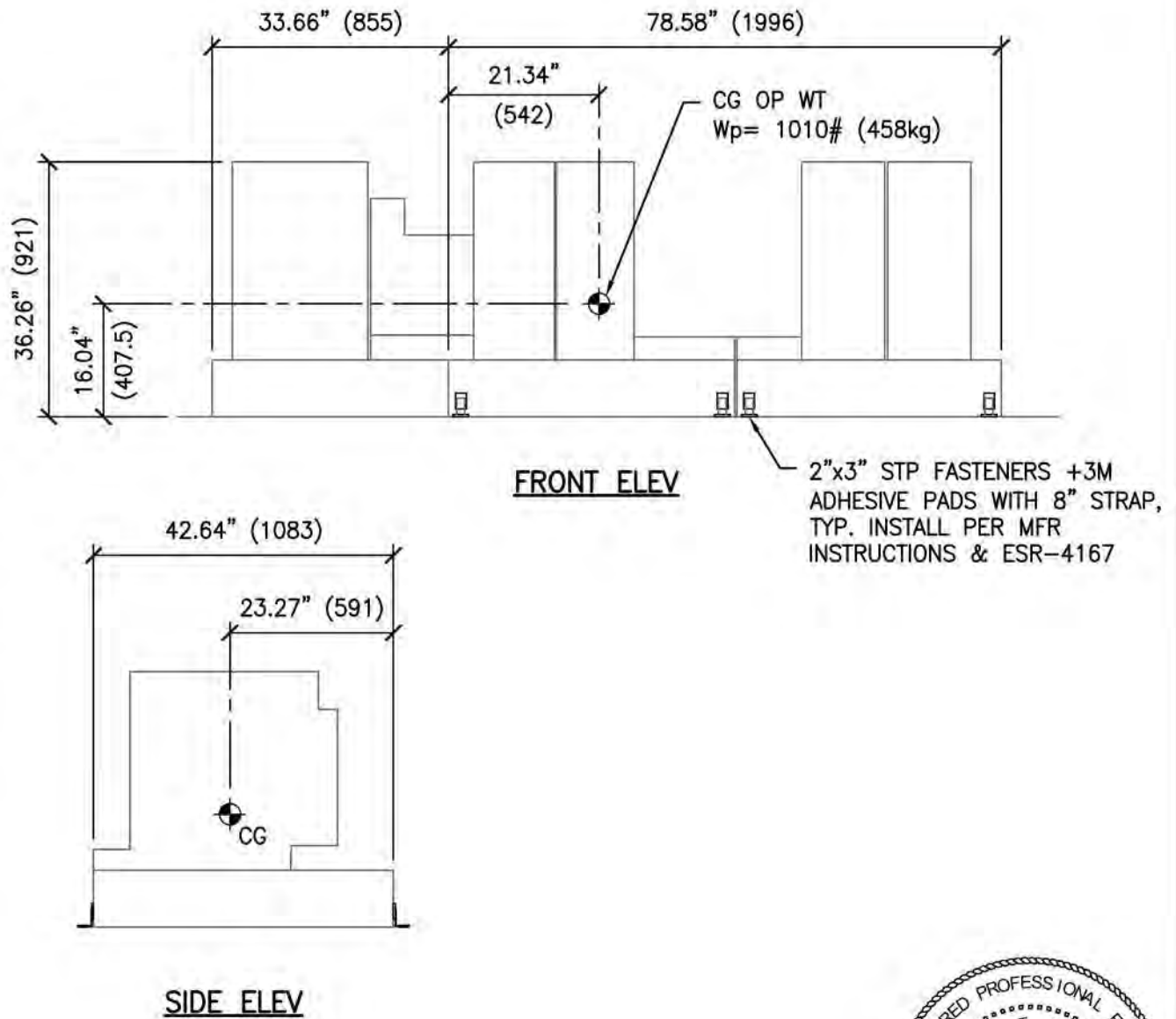
**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No:	23032
Date:	01-14-2025
Page:	4 of 13

# SYSMEX XN-3100+DI ON BENCHTOP



SHEET TITLE: SYSMEX XN-3100 + DI INSTRUMENTS  
ELEVATIONS



**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

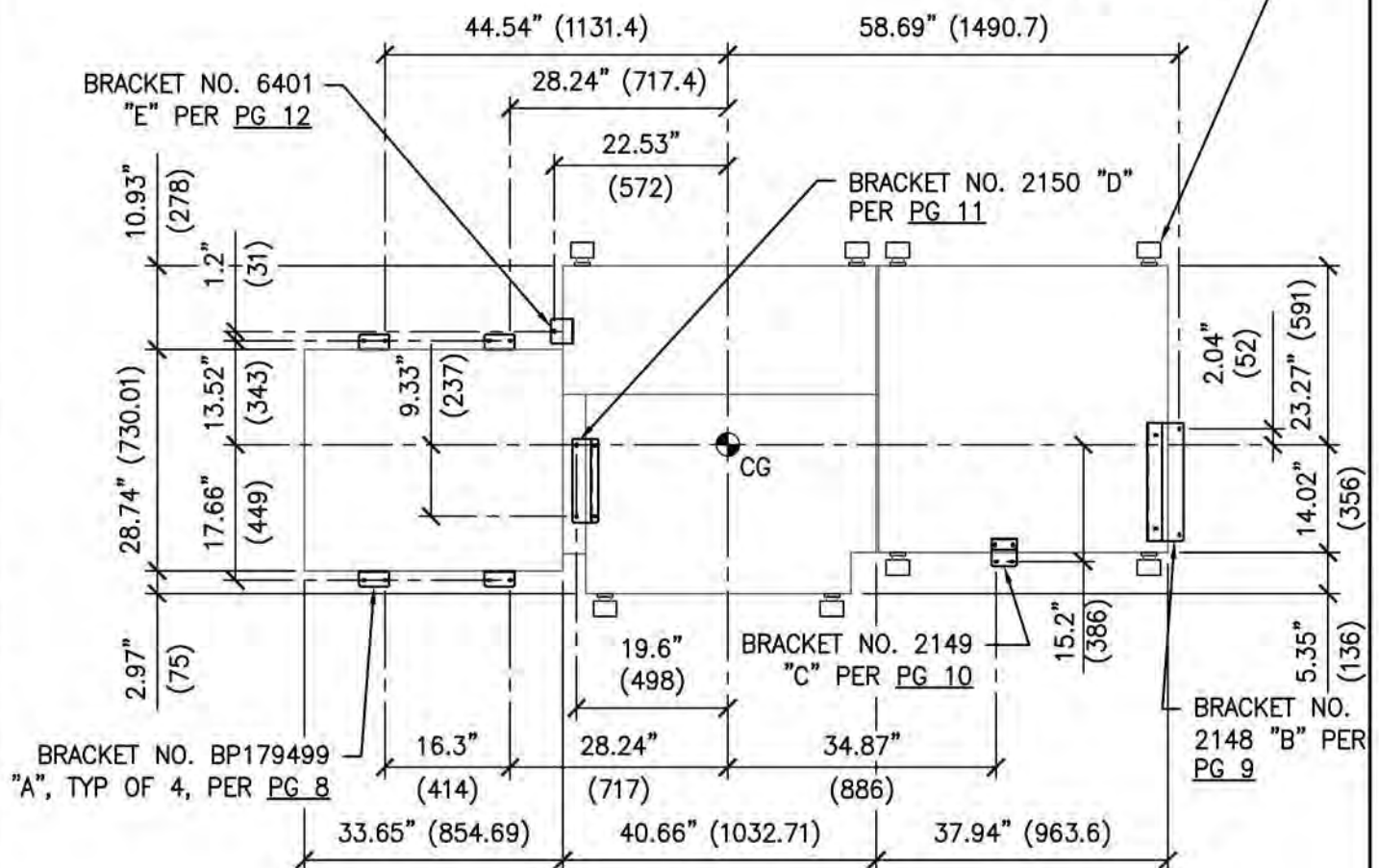
Job No:	23032
Date:	01-14-2025
Page:	5 of 13



# SYSMEX XN-3100+DI ON BENCHTOP



2"x3" STP FASTENERS +3M ADHESIVE PADS, TYP OF 8. INSTALL PER MFR INSTRUCTIONS & ESR-4167



**PLAN VIEW**  
FROM BELOW

## NOTES:

1. DIMS SHOWN ARE TO  $\phi$  OF BRACKET HOLES.
2. SEE PG 13 FOR ADHESIVE PAD FASTENING DETAIL.



SHEET TITLE: SYSMEX XN-3100 + DI INSTRUMENTS  
PLAN VIEW



**CYS STRUCTURAL ENGINEERS, INC.**

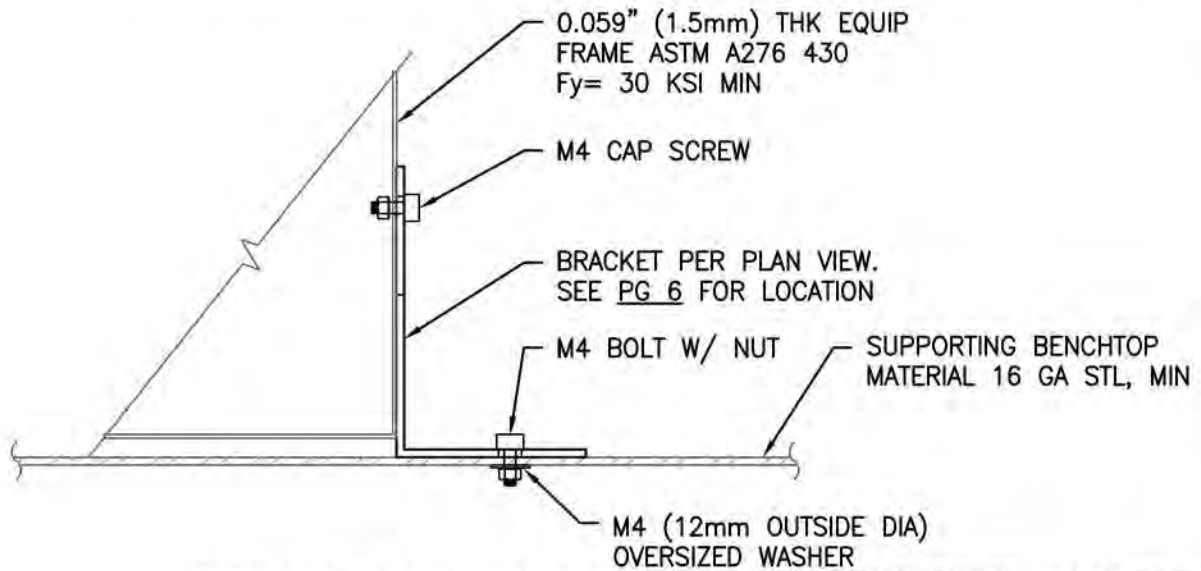
2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No: 23032  
Date: 01-14-2025  
Page: 6 of 13

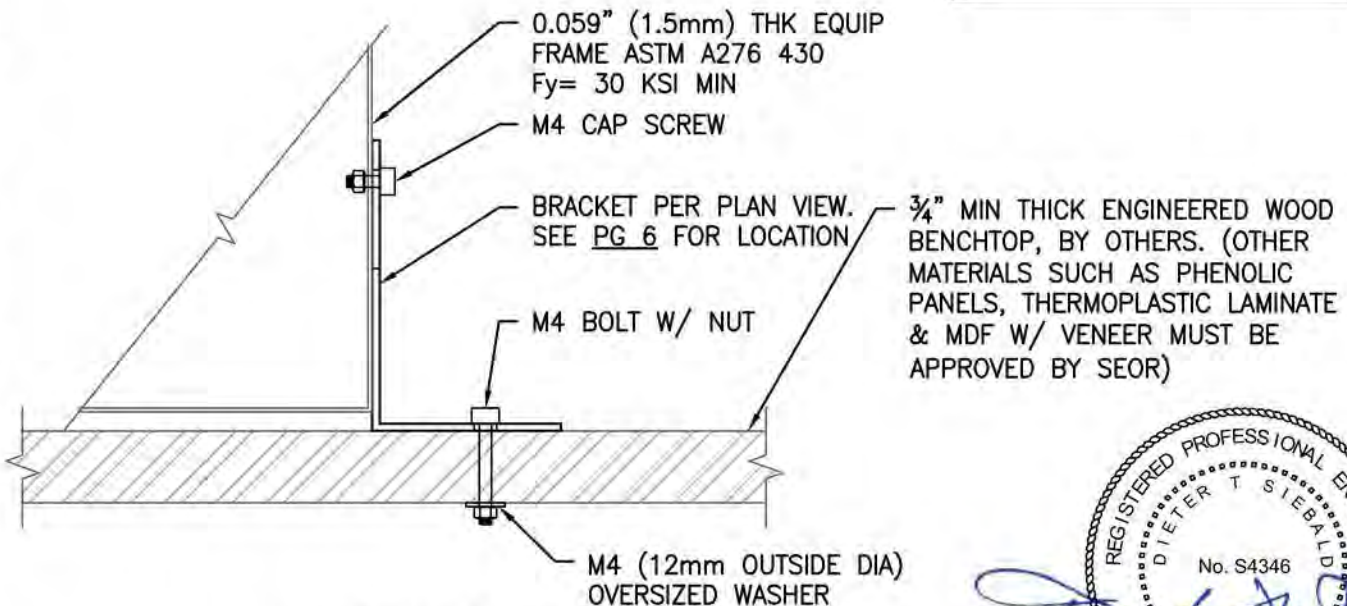


# SYSMEX XN-3100+DI ON BENCHTOP



## STEEL BENCHTOP ATTACHMENT

ATTACHMENT FOR BRACKET  
NO. BP179499 "A" SHOWN,  
OTHER BRACKET ATTACHMENTS  
SIM



## ALTERNATE BENCHTOP ATTACHMENT



SHEET TITLE: BENCHTOP ATTACHMENT DETAILS



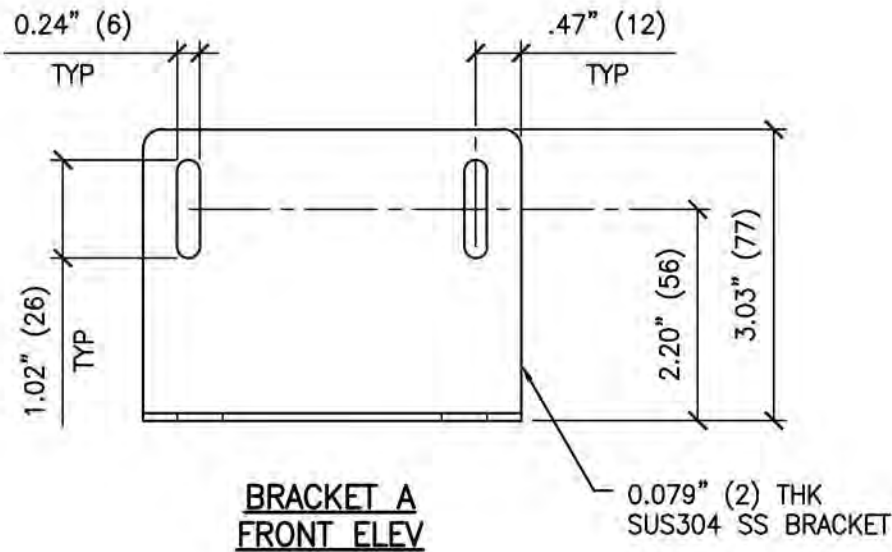
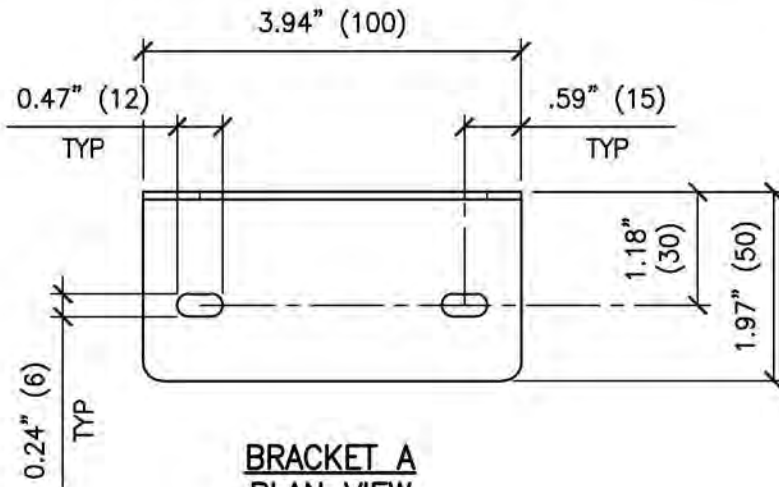
**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No:	23032
Date:	01-14-2025
Page:	7 of 13

# SYSMEX XN-3100+DI ON BENCHTOP



SHEET TITLE: BRACKET NO. BP179499 "A" DETAIL



**CYS STRUCTURAL ENGINEERS, INC.**

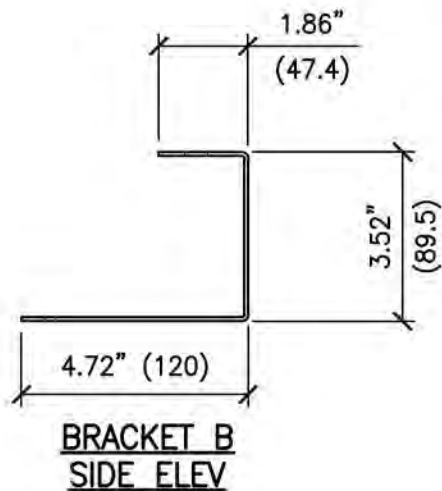
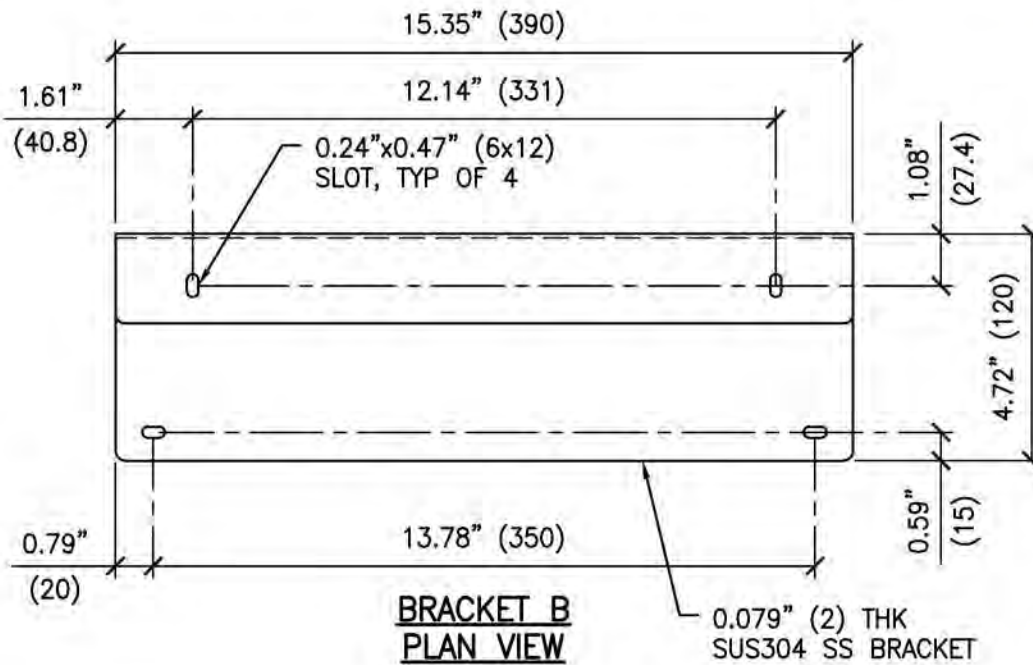
2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No:	23032
Date:	01-14-2025
Page:	8 of 13



# SYSMEX XN-3100+DI ON BENCHTOP



SHEET TITLE: BRACKET NO. 2148 "B" DETAIL



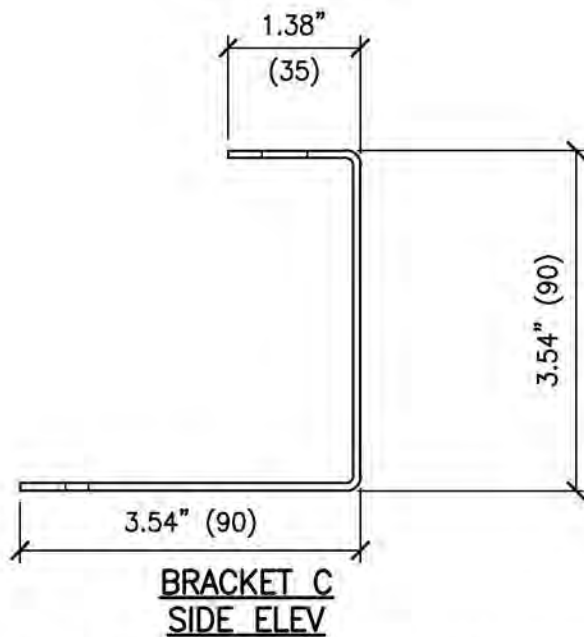
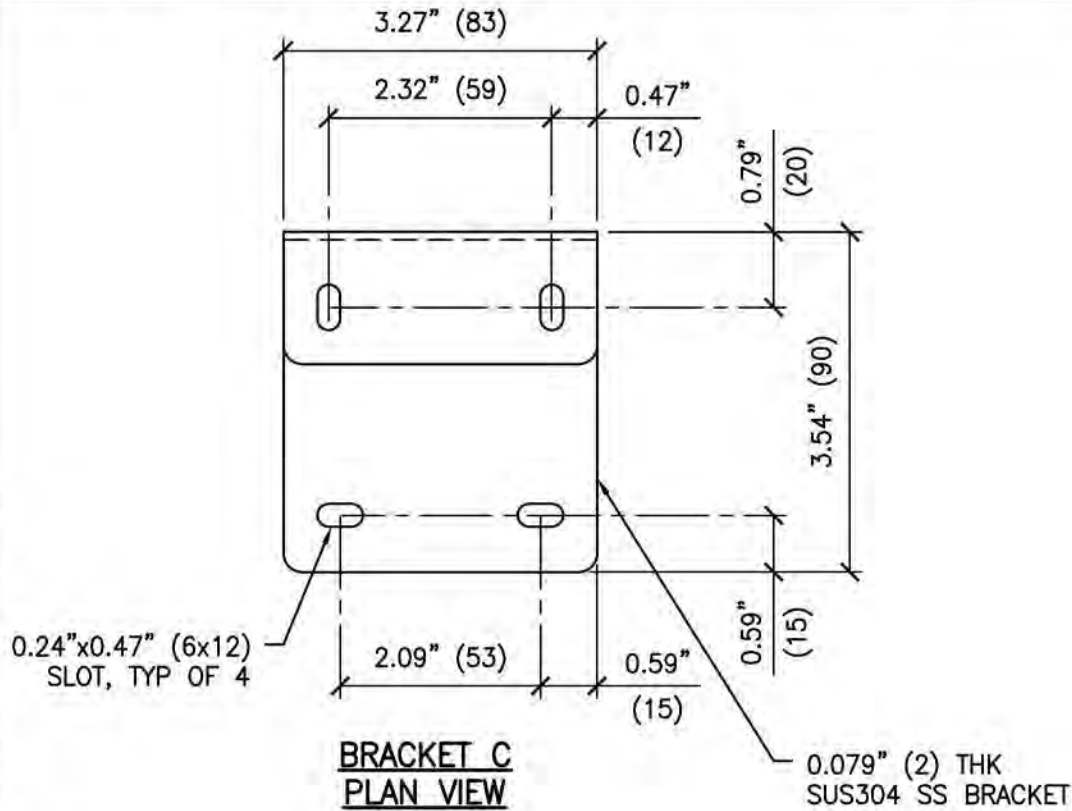
**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No:	23032
Date:	01-14-2025
Page:	9 of 13

# SYSMEX XN-3100+DI ON BENCHTOP



SHEET TITLE: BRACKET NO. 2149 "C" DETAIL



**CYS STRUCTURAL ENGINEERS, INC.**

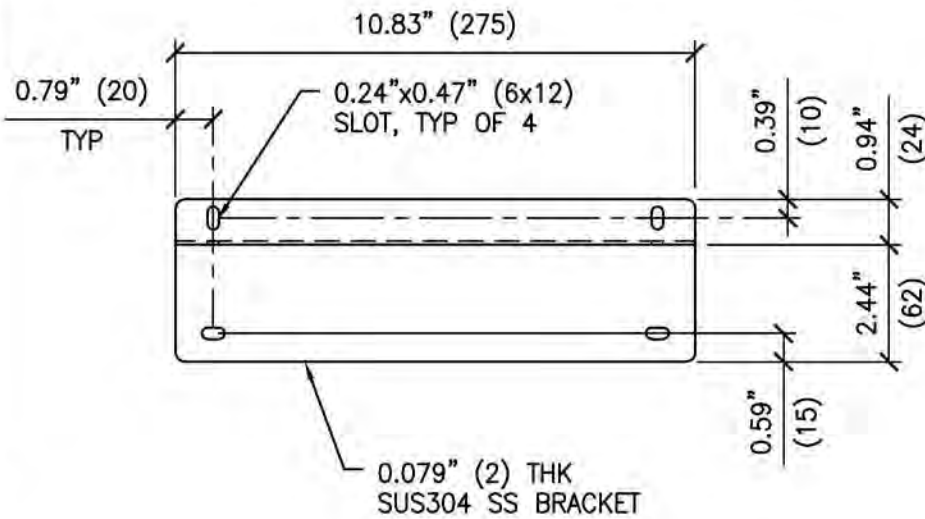
2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

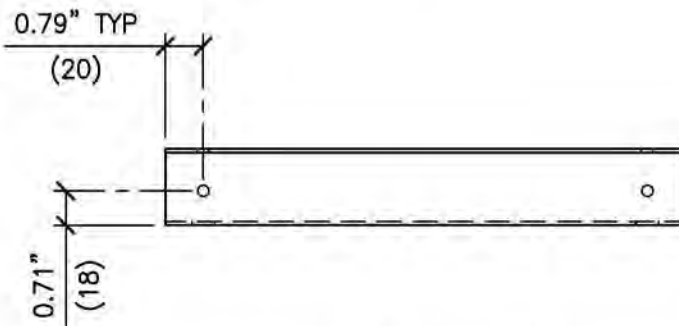
Job No:	23032
Date:	01-14-2025
Page:	10 of 13



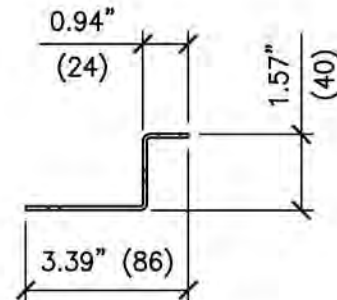
# SYSMEX XN-3100+DI ON BENCHTOP



**BRACKET D**  
**PLAN VIEW**



**BRACKET D**  
**FRONT ELEV**



**BRACKET D**  
**SIDE ELEV**



SHEET TITLE: BRACKET NO. 2150 "D" DETAIL



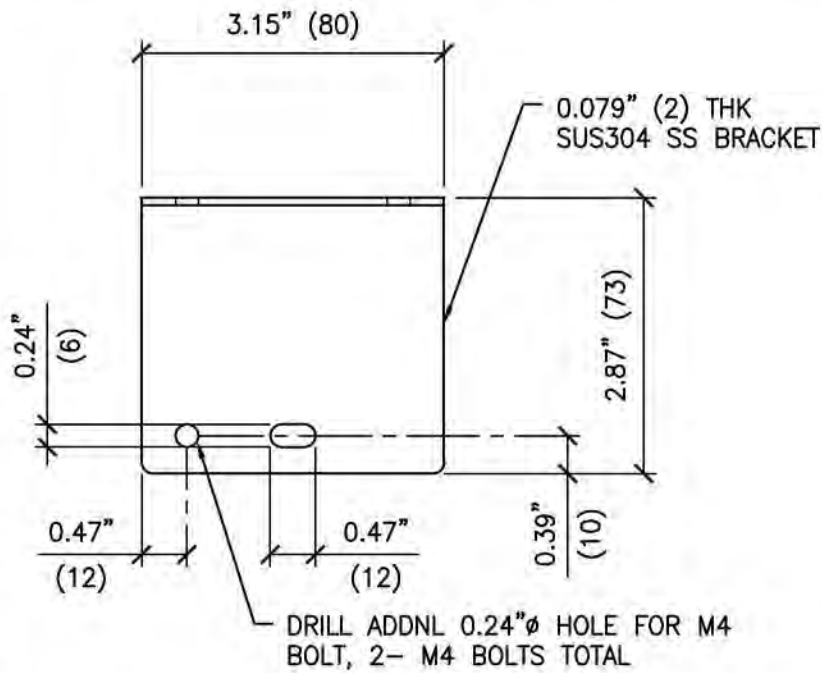
**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

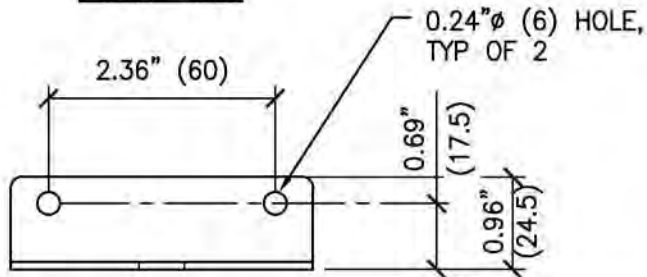
TEL (916) 920-2020  
www.cyseng.com

Job No:	23032
Date:	01-14-2025
Page:	11 of 13

# SYSMEX XN-3100+DI ON BENCHTOP



**BRACKET E  
PLAN VIEW**



**BRACKET E  
FRONT ELEV**



**BRACKET E  
SIDE ELEV**



SHEET TITLE: BRACKET NO. 6401 "E" DETAIL



**CYS STRUCTURAL ENGINEERS, INC.**

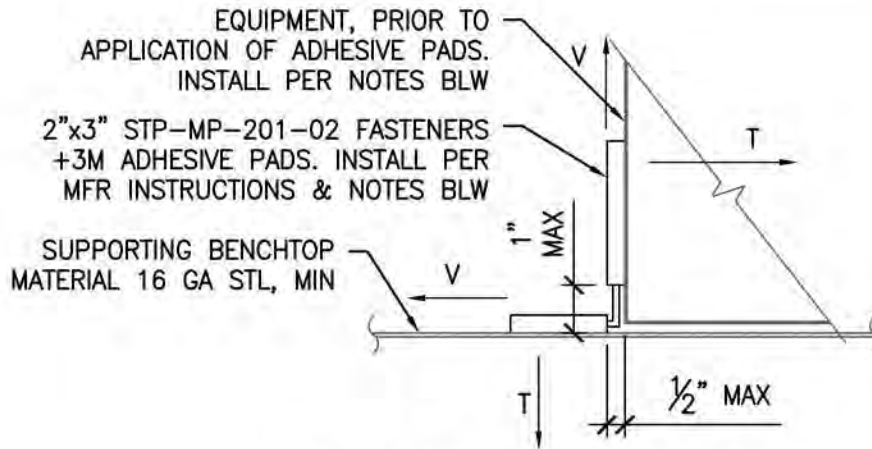
2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

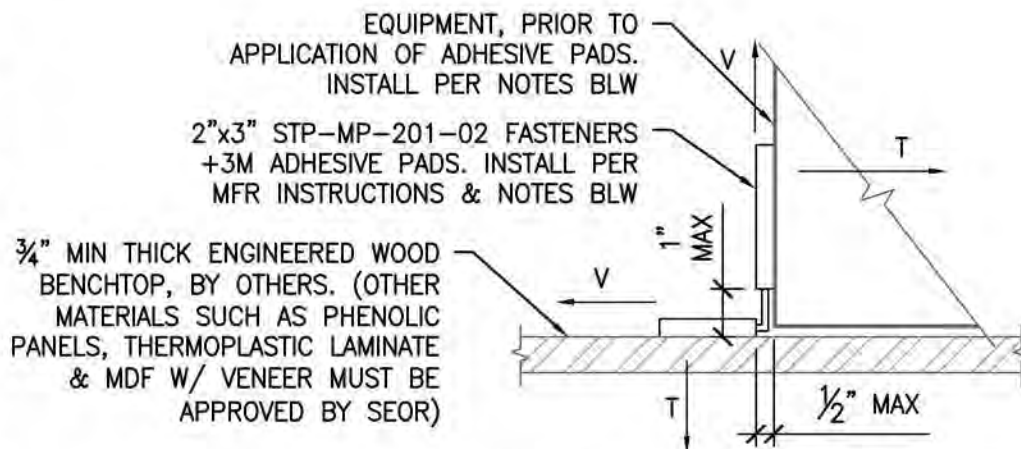
Job No:	23032
Date:	01-14-2025
Page:	12 of 13



# SYSMEX XN-3100+DI ON BENCHTOP



**STEEL BENCHTOP ATTACHMENT**



**ALTERNATE BENCHTOP ATTACHMENT**

**NOTE:**

FOLLOW MFR'S INSTRUCTIONS FOR ADHESION OF FOAM ADHESIVE TO BOND SURFACE AS FOLLOWS: LIGHTLY ABRASD THE BOND AREA OF SURFACES (POWDER-COATED STL, SS, PHENOLIC RESIN, 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: "SAFE-T-PROOF" (STP) FASTENER CONNECTION DETAIL



**CYS STRUCTURAL ENGINEERS, INC.**

2710 GATEWAY OAKS DRIVE, SUITE 190N  
SACRAMENTO, CA 95833

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

Job No: 23032  
Date: 01-14-2025  
Page: 13 of 13