



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY
APPLICATION #: OPM-0204

OSHPD Preapproval of Manufacturer's Certification OPM)

Type: [ ] New [X] Renewal/Update

Manufacturer Information

Manufacturer: NUAIRE, INC.
Manufacturer's Technical Representative: WILLIAM PETERS
Mailing Address: 2100 FERNBROOK LANE, PLYMOUTH, MN 55447
Telephone: (763) 553-1270 Email: BPETERS@NUAIRE.COM

Product Information

Product Name: BIOLOGICAL SAFETY CABINETS
Product Type: Class II
Product Model Number: Numerous models, see drawing 1 of 7 - 0204
General Description: Biological safety cabinets (Class II) providing personnel, product and environmental protection from materials used in the life sciences, pharmaceuticals, pharmacy and other industries.

Applicant Information

Applicant Company Name: LTK ASSOCIATES, INC.
Contact Person: RAYMOND Z. URIBES
Mailing Address: 745 DISTEL DRIVE, SUITE 7, LOS ALTOS, CA 94022
Telephone: () - Email: LTK@LTKSE.COM
Title:

Registered Design Professional Preparing Engineering Recommendations

Company Name: LTK ASSOCIATES, INC.
Name: Raymond Z. Uribes California License Number: S2479
Mailing Address: 745 Distel Drive, Suite 7, Los Altos, CA 94022
Telephone: (650) 967-8465 Email: ltk@ltkse.com

OSHPD Special Seismic Certification Preapproval (OSP)

[ ] Special Seismic Certification is preapproved under OSP OSP Number:



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**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 OSHPD prior to testing.

Analysis

Experience Data

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

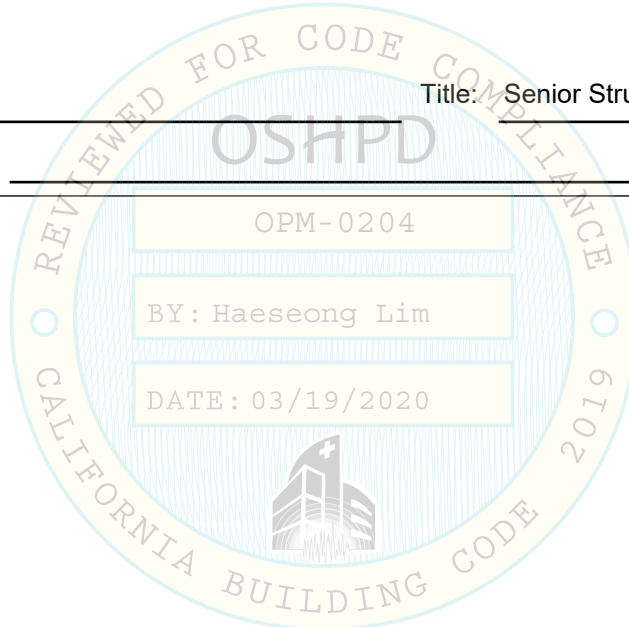
**OSHPD Approval**

Date: 3/19/2020

Name: Haeseong Lim

Title: Senior Structural Engineer

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



Biosafety Cabinet Models			
Model Number	Associated Basestand Model Number	Model Number	Associated Basestand Model Number
NU-425-300	NU-400-229	NU-425-600	NU-400-232
NU-427-300	NU-400-229	NU-427-600	NU-400-232
NU-430-300	NU-400-229	NU-430-600	NU-400-232
NU-435-300	NU-400-229	NU-435-600	NU-400-232
NU-437-300	NU-400-229	NU-437-600	NU-400-232
NU-440-300	NU-400-229	NU-440-600	NU-400-232
NU-475-300	NU-500-121	NU-475-600	NU-500-124
NU-477-300	NU-500-121	NU-477-500	NU-500-124
NU-480-300	NU-500-121	NU-480-600	NU-500-124
NU-540-300	NU-500-121	NU-540-600	NU-500-124
NU-543-300	NU-500-121	NU-543-600	NU-500-124
NU-545-300	NU-500-121	NU-545-600	NU-500-124
NU-550-300	NU-500-121	NU-550-600	NU-500-124
NU-560-300	NU-500-121	NU-560-600	NU-500-124
NU-565-300	NU-500-121	NU-565-600	NU-500-124
NU-425-400	NU-400-230		
NU-427-400	NU-400-230		
NU-430-400	NU-400-230		
NU-435-400	NU-400-230		
NU-437-400	NU-400-230		
NU-440-400	NU-400-230		
NU-475-400	NU-500-122		
NU-477-400	NU-500-122		
NU-480-400	NU-500-122		
NU-540-400	NU-500-122		
NU-543-400	NU-500-122		
NU-545-400	NU-500-122		
NU-550-400	NU-500-122		
NU-560-400	NU-500-122		
NU-565-400	NU-500-122		
NU-425-500	NU-400-231		
NU-427-500	NU-400-231		
NU-430-500	NU-400-231		
NU-435-500	NU-400-231		
NU-437-500	NU-400-231		
NU-440-500	NU-400-231		
NU-475-500	NU-500-123		
NU-477-500	NU-500-123		
NU-480-500	NU-500-123		
NU-540-500	NU-500-123		
NU-543-500	NU-500-123		
NU-545-500	NU-500-123		
NU-550-500	NU-500-123		
NU-560-500	NU-500-123		
NU-565-500	NU-500-123		

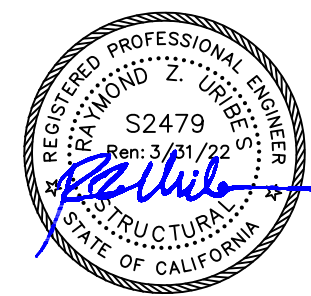
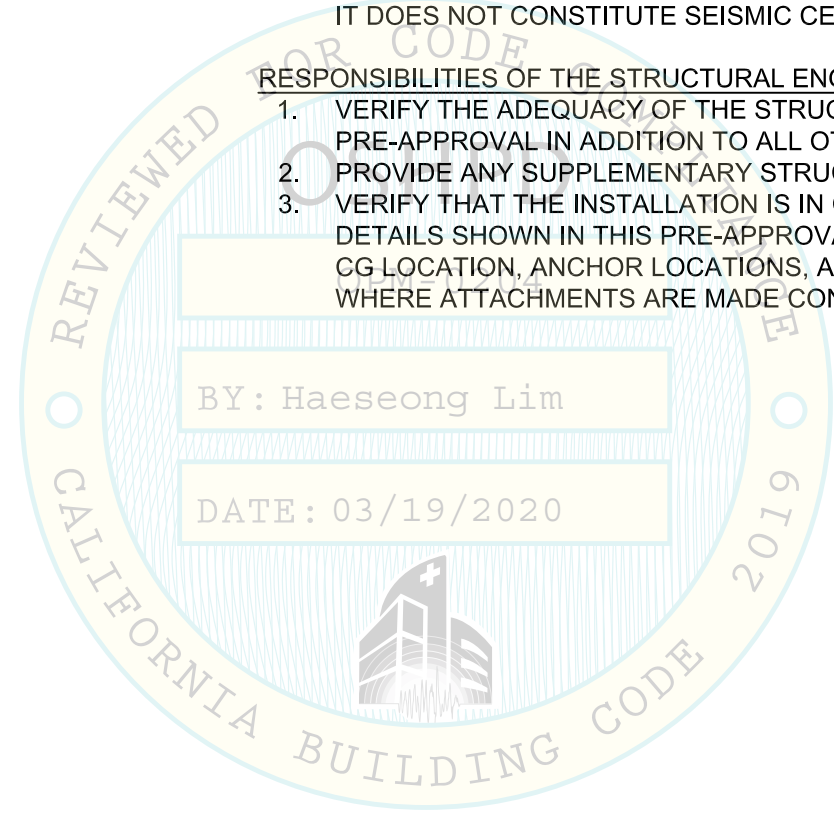
REV	ECO	DESCRIPTION	DATE	DRFT	CHKD
A	-----	RELEASED TO PRODUCTION	01/09/18	LS	BP

**PRE-APPROVAL NOTES:**

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2019.
2. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 AND 13.3-3, WHERE:  $S_{DS} = 2.0$ ,  $a_p = 1.0$ , AND  $R_p = 2.5$ . (FORCE LEVEL FOR  $E_h$  &  $E_v$  IS ASD) HORIZONTAL FORCE ( $E_h$ ) =  $1.00W_p$ , VERTICAL FORCE ( $E_v$ ) =  $0.28W_p$ .
3. THE DETAILS IN THIS PRE-APPROVAL ARE APPLICABLE TO ANY LOCATION IN THE STATE OF CALIFORNIA WHERE  $S_{DS}$  IS NOT GREATER THAN 2.0. THE DETAILS WERE DEVELOPED USING  $h=z$  AND MAY BE USED AT ANY HEIGHT IN THE BUILDING WHERE  $z/h \leq 1.0$ .
4. DESIGN FORCES SHOWN ON THE DRAWINGS ARE BASED ON WORKING STRESS LOADS AND MAY BE USED FOR ALLOWABLE STRESS DESIGN.
5. THIS PRE-APPROVAL COVERS ONLY THE ATTACHMENT OF THE UNIT TO THE STRUCTURE. IT DOES NOT CONSTITUTE SEISMIC CERTIFICATION OF THE EQUIPMENT.

**RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD:**

1. VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE WEIGHT AND FORCES SHOWN IN THIS PRE-APPROVAL IN ADDITION TO ALL OTHER WEIGHTS AND FORCES THAT ARE IMPOSED ON IT.
2. PROVIDE ANY SUPPLEMENTARY STRUCTURE REQUIRED FOR STRENGTH AND STABILITY.
3. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH THE NOTES AND DETAILS SHOWN IN THIS PRE-APPROVAL. VERIFY THAT THE EQUIPMENT'S ACTUAL WEIGHT, CG LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS AND THE MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE CONFORM WITH THE INFORMATION SHOWN IN THIS PRE-APPROVAL.



**LTK ASSOCIATES Incorporated**  
**Structural Engineers**  
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 Los Altos, CA 94022  
 (650) 967- 8465  
 ltk@ltkse.com

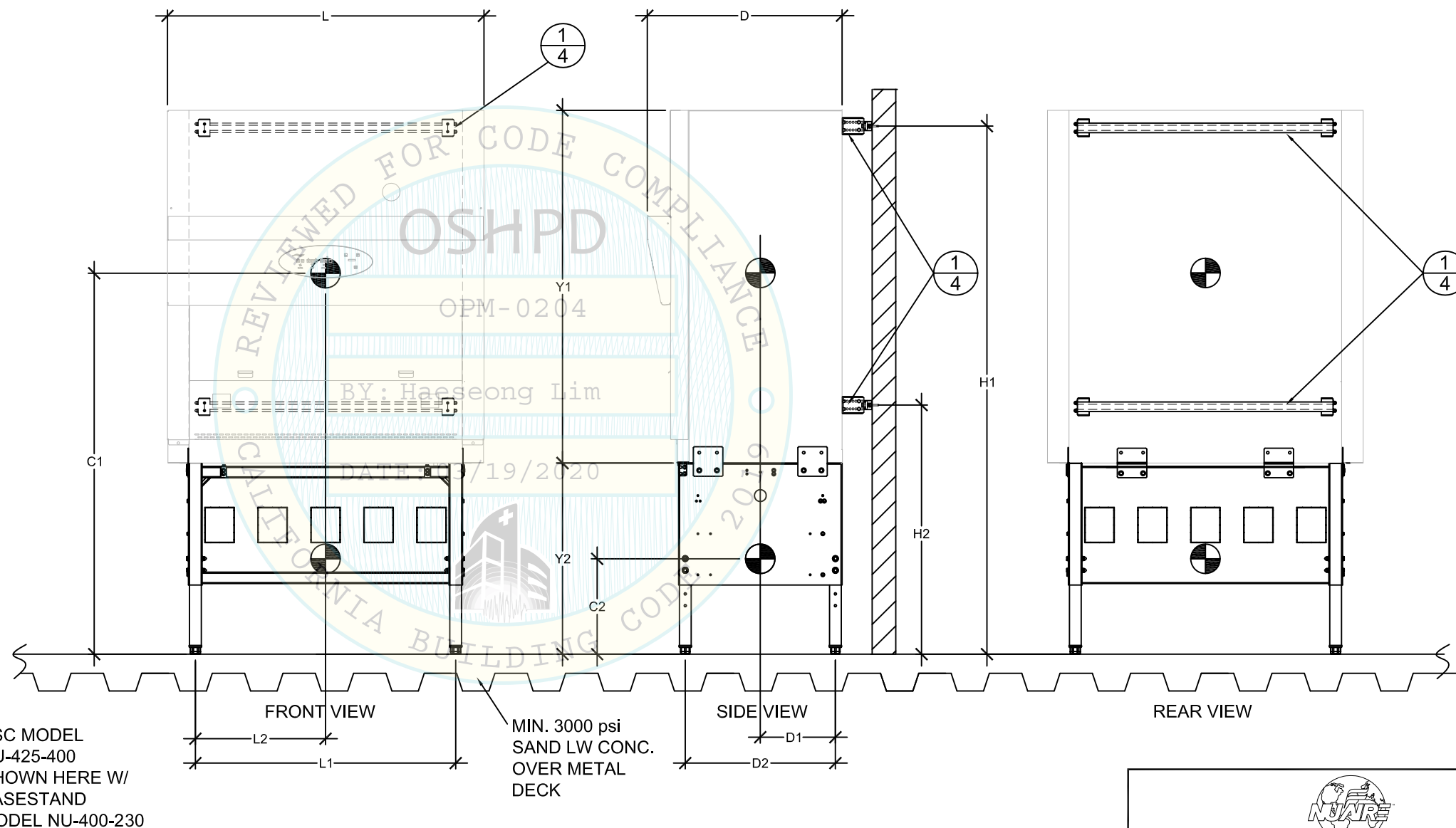
SUPPORTS AND ATTACHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET					
DFTM	LS	02/29/20	CHKD	BP	SHEET 1 OF 7
DRAWING NUMBER					<b>BCD-19632</b>
					<b>A</b>

Biological Safety Cabinet (BSC) Data			
Model no.	HOOD = W1 (lb)	CONTENT = W2 (lb)	STAND = W3 (lb)
NU-425/427/430/435/437/440-300	425	100	82 (NU-400-229)
NU-425/427/430/435/437/440-400	550	100	84 (NU-400-230)
NU-425/427/430/435/437/440-500	590	100	86 (NU-400-231)
NU-425/427/430/435/437/440-600	740	100	88 (NU-400-232)

REV	ECO	DESCRIPTION	DATE	DRFT	CHKD
		UPDATE STAND MODEL NUMBERS	6/18/2019	LTK	

DIMENSIONS												
Model no.	C1	C2	D	D1	D2	L	L1	L2	H1	H2	Y1	Y2
NU-425/427/430/435/437/440-300	69.00	13.00	33.12	12.00	25.50	41.62	32.00	16.00	89.75	41.00	60.00	34.00
NU-425/427/430/435/437/440-400	68.00	13.00	33.12	12.00	25.50	53.62	44.00	22.00	89.75	41.00	60.00	34.00
NU-425/427/430/435/437/440-500	69.00	13.00	33.12	12.00	25.50	65.62	56.00	28.00	89.75	41.00	60.00	34.00
NU-425/427/430/435/437/440-600	68.00	13.00	33.12	12.00	25.50	77.62	68.00	34.00	89.75	41.00	60.00	34.00

SEE NOTE 3 BELOW



NOTE:

- SEE ALL NOTES SHEET 1 OF 7.
- FOR ANCHOR SCHEDULE AND SUPPORTS AND ATTACHEMENTS DETAILS, SEE SHEET 4 OF 7.
- THE "H" DIMENSIONS SHOWN ABOVE ARE BASED ON MAXIMUM BASE STAND HEIGHTS, WITH OTHER BASE STAND HEIGHTS, THE WALL BRACKET LOCATIONS SHALL BE LOCATED APPROPRIATELY.



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ASSOCIATES  
Incorporated

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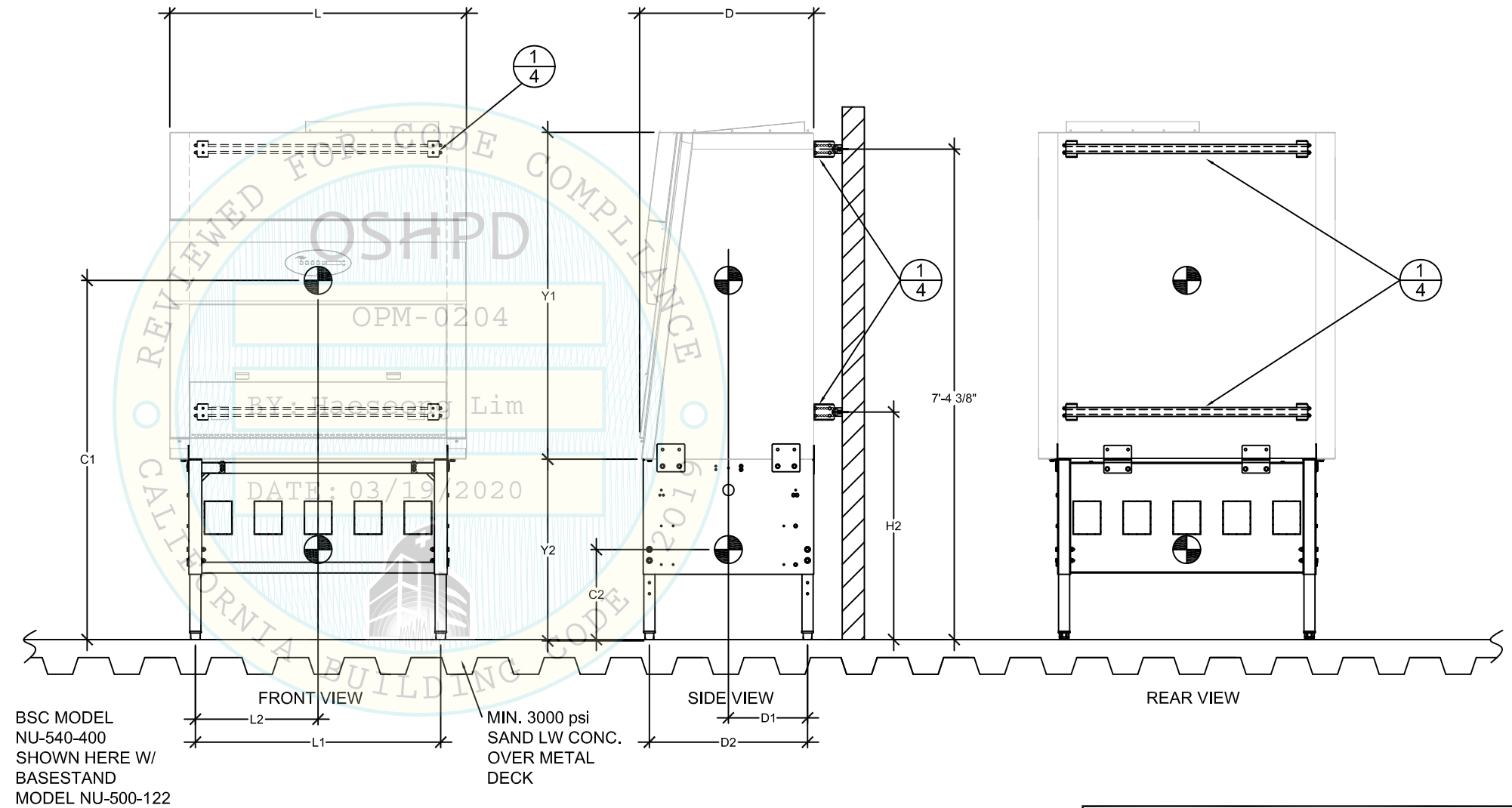
SUPPORTS AND ATTACHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET					
DFTM	LS	02/29/20	CHKD	BP	SHEET 2 OF 7
DRAWING NUMBER		<b>BCD-19632</b>		<b>A</b>	

REV	ECO	DESCRIPTION	DATE	DRFT	CHKD
		UPDATE STAND MODEL NUMBERS	6/18/2019	LTK	

Biological Safety Cabinet (BSC) Data			
Model no.	HOOD = W1 (lb)	CONTENT = W2 (lb)	STAND = W3 (lb)
NU-475/477/480/540/543/545/550/560/565-300	425	100	82 (NU-500-121)
NU-475/477/480/540/543/545/550/560/565-400	520	100	84 (NU-500-122)
NU-475/477/480/540/543/545/550/560/565-500	600	100	86 (NU-500-123)
NU-475/477/480/540/543/545/550/560/565-600	700	100	88 (NU-500-124)

DIMENSIONS												
Model no.	C1	C2	D	D1	D2	L	L1	L2	H1	H2	Y1	Y2
NU-475/477/480/540/543/545/550/560/565-300	66.00	13.00	31.50	13.00	28.50	41.50	32.00	16.00	88.75	41.00	59.00	33.00
NU-475/477/480/540/543/545/550/560/565-400	65.00	13.00	31.50	13.00	28.50	53.50	44.00	22.00	88.75	41.00	59.00	33.00
NU-475/477/480/540/543/545/550/560/565-500	65.50	13.00	31.50	13.00	28.50	65.50	56.00	28.00	88.75	41.00	59.00	33.00
NU-475/477/480/540/543/545/550/560/565-600	65.00	13.00	31.50	13.00	28.50	77.50	68.00	34.00	88.75	41.00	59.00	33.00

SEE NOTE 3 BELOW



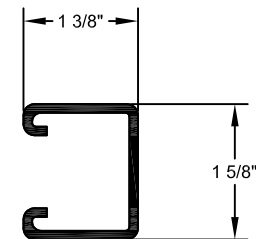
NOTE:  
IF BSC IS USED FOR PHARMACY APPLICATION, WALL MOUNT BRACKETS MUST BE ENCLOSED ON TOP AND SIDES FOR CLEANING PURPOSES, SUBJECT TO THE APPROVAL BY THE CA BOARD OF PHARMACY PRIOR TO INSTALLATION.

- NOTE:
- SEE ALL NOTES SHEET 1 OF 7.
  - FOR ANCHOR SCHEDULE AND SUPPORTS AND ATTACHMENTS DETAILS, SEE SHEET 4 OF 7.
  - THE "H" DIMENSIONS SHOWN ABOVE ARE BASED ON MAXIMUM BASE STAND HEIGHTS, WITH OTHER BASE STAND HEIGHTS, THE WALL BRACKET LOCATIONS SHALL BE LOCATED APPROPRIATELY.



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<b>SUPPORTS AND ATTACHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET</b>					
DFTM	LS	02/29/20	CHKD	BP	SHEET 3 OF 7
DRAWING NUMBER		<b>BCD-19632</b>		<b>A</b>	



12ga STRUT (PLAIN-ASTM A1011, SS. GRADE 33, POWDER COATED)  
 SOLID (NO HOLES)  
 MIN. STRUT CHANNEL PROPERTIES:  
 Wt. = 1.7 lb/ft A = 0.50 sq. in.  
 Sxx = 0.156 Syy = 0.255  
 rx = 0.493 ry = 0.643  
 lxx = 0.122 lyy = 0.207

NUAIRE 12GA. (ASTM A240 TYPE 304)  
 SEISMIC BRACKET SYSTEM  
 AT CABINET BACK PANEL  
 (UNISTRUT BRACKET / CABINET BRACKET)  
 (2) 1/4-20 X 3/4" SST (AISI TYPE 304) BOLT  
 HEX NUT AND LOCK WASHER

CABINET  
 BACK  
 (18 GA.)

1/4" - 14 X 1-1/2 TEKS  
 SELF-DRILLING SCREWS  
 FOR SPACING SEE DETAIL

MIN. 16GA. (50KSI)  
 BACKING OR METAL STUDS  
 BY SEOR

HORIZONTAL UNISTRUT  
 P3000 (MIN.) ONE LENGTH  
 NOT TO EXTEND BEYOND  
 SIDES OF UNIT, SEE

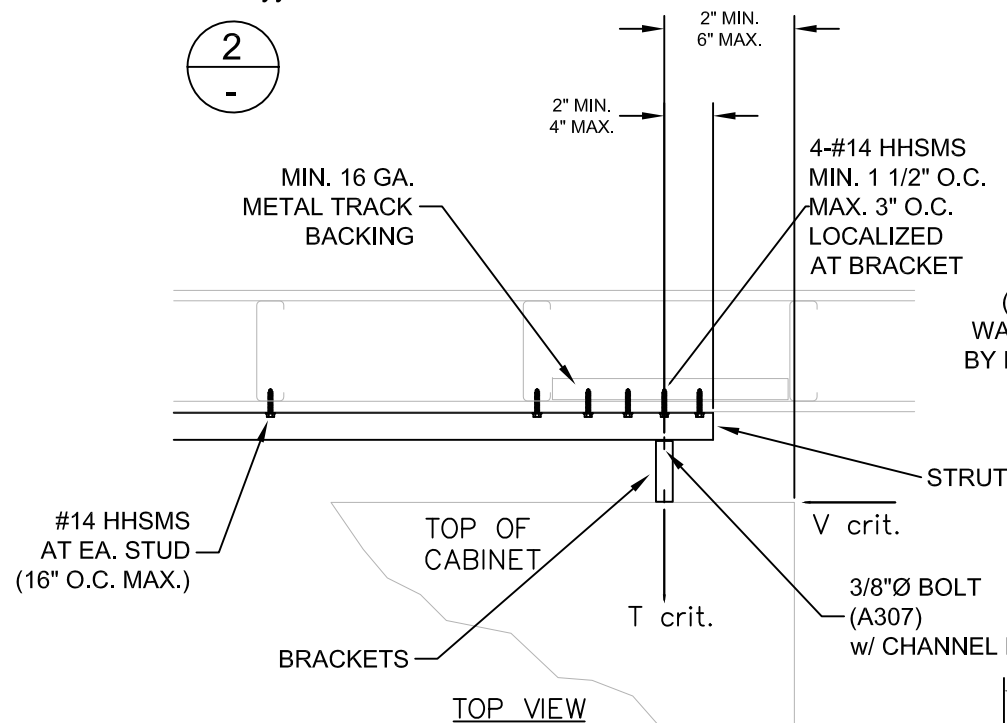
TYPICAL  
 EA. END

V crit.

T crit.

Fp

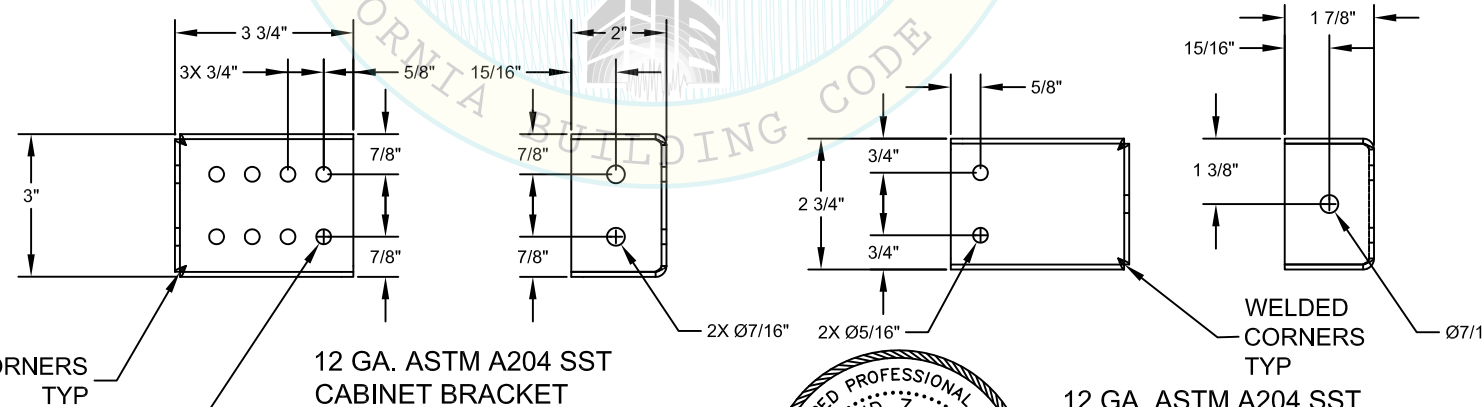
TOP PLAN



TOP VIEW

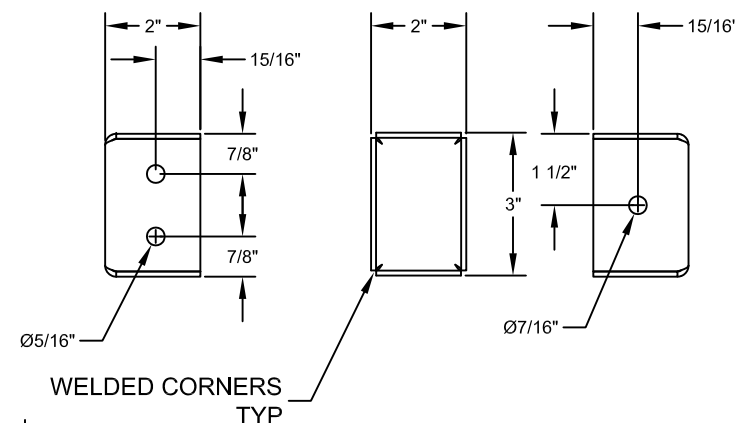
1/4-20 THREADED STUDS  
 (AISI TYPE 304)  
 CAPACITOR DISCHARGE (CD)  
 SHOP WELDED TO  
 18 GA. (ASTM A240 TYPE 304)  
 (Fy=30ksi min.) CABINET BACK.  
 WASHERS AND NUTS PROVIDED  
 BY EQUIPMENT MANUFACTURER  
 INSTALLED BY CONTRACTOR

3/8 Ø HEX HEAD M.B. &  
 B-LINE N200 SPRING NUT  
 AT EACH BRACKET  
 (TORQUE TO 19 FT-LB)



12 GA. ASTM A240 SST  
 CABINET BRACKET

12 GA. ASTM A240 SST  
 UNISTRUT BRACKET



12 GA. ASTM A240 SST  
 FIXED DEPTH BRACKET

NOTES

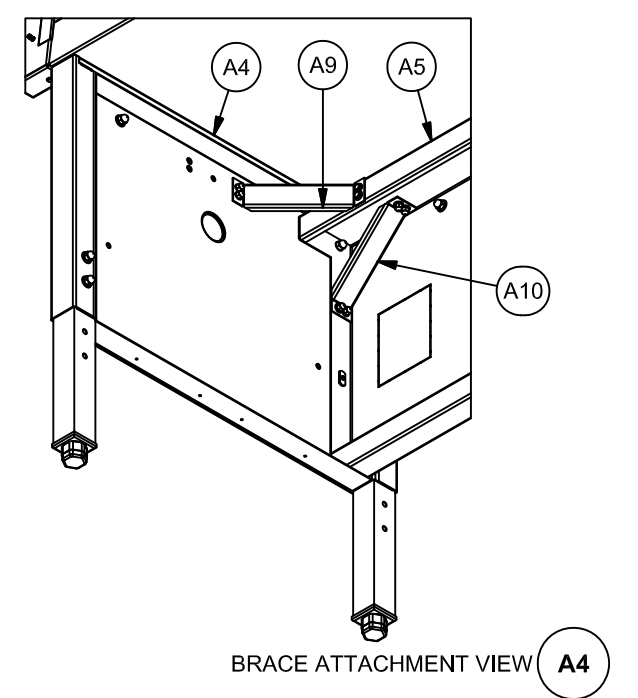
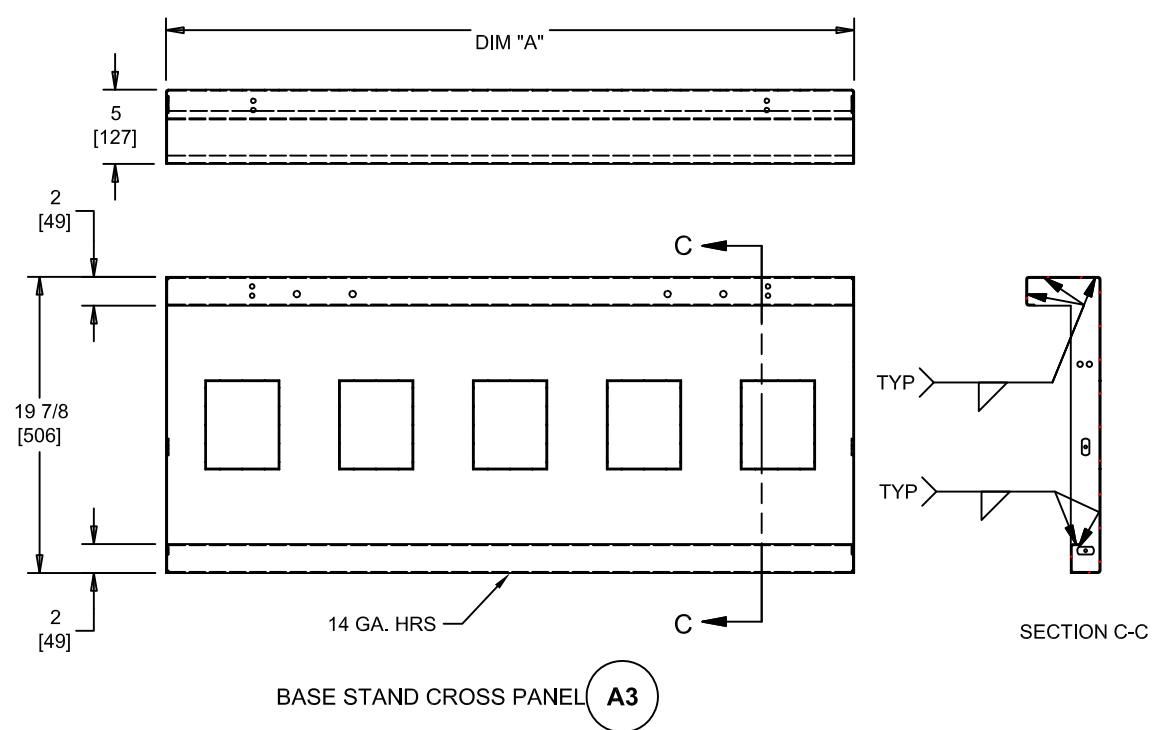
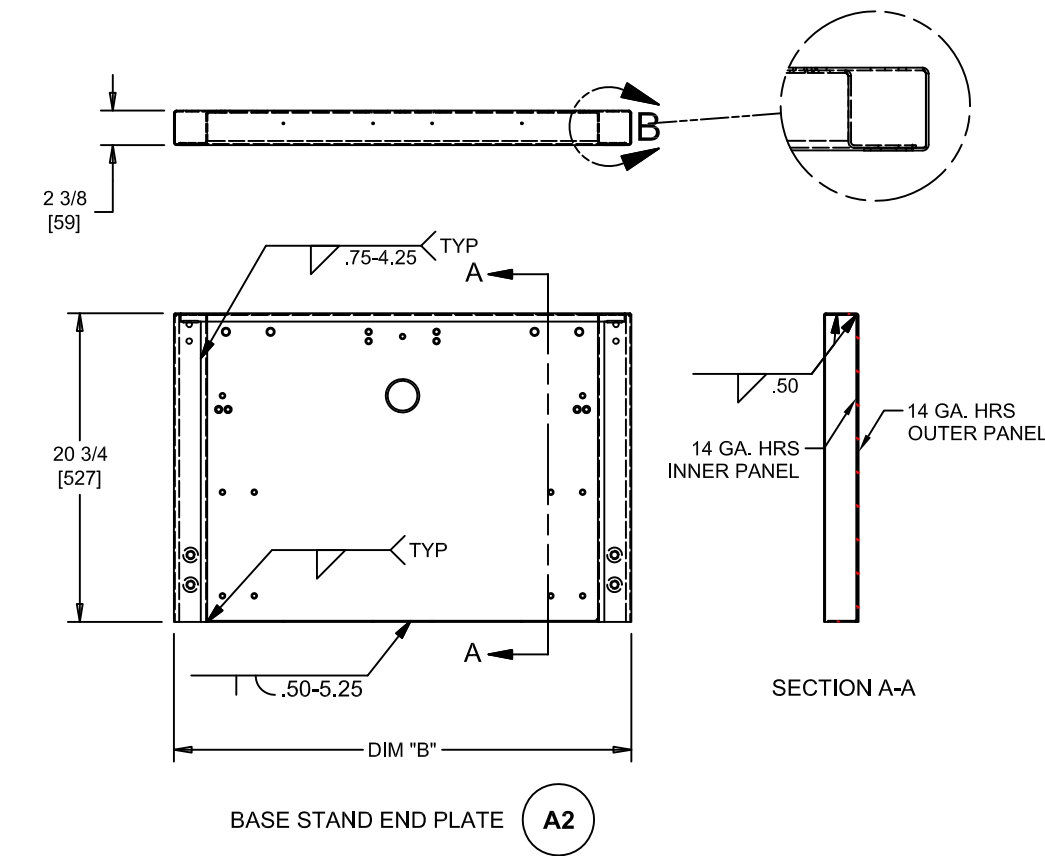
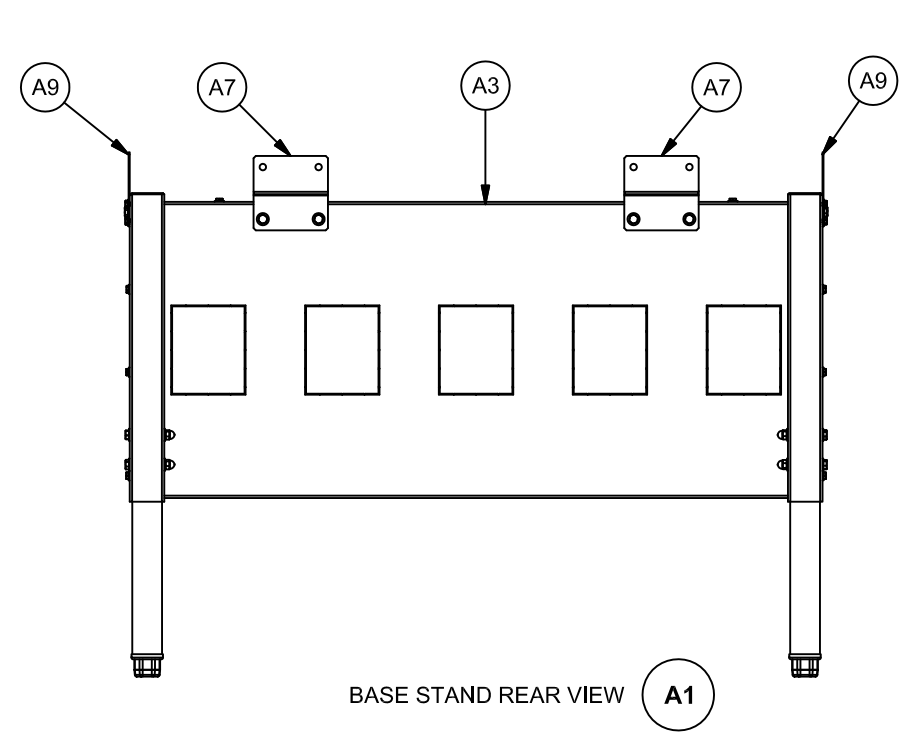
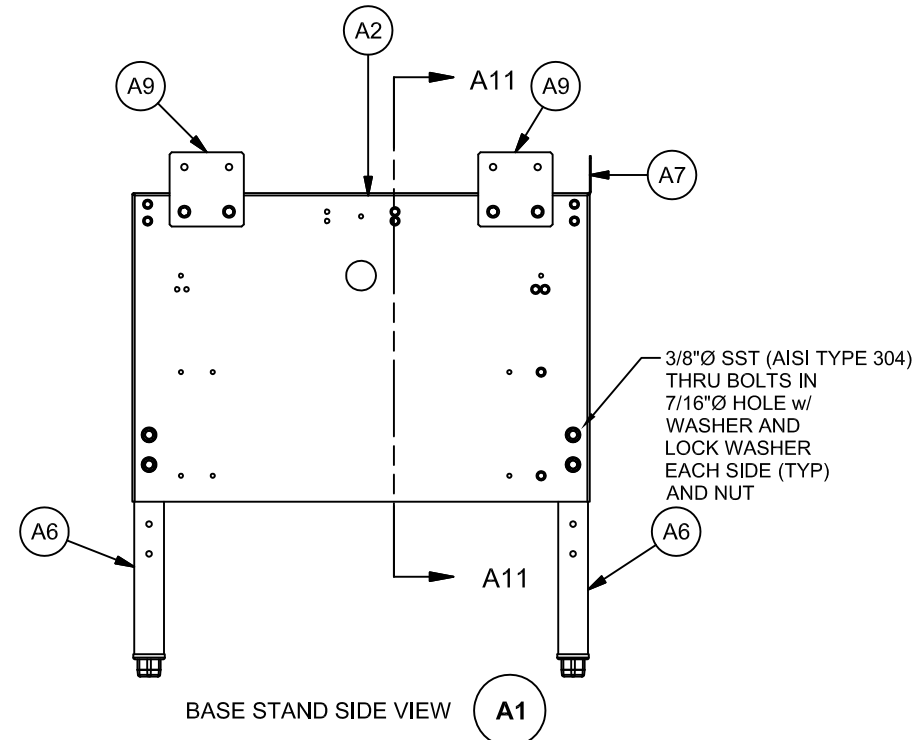
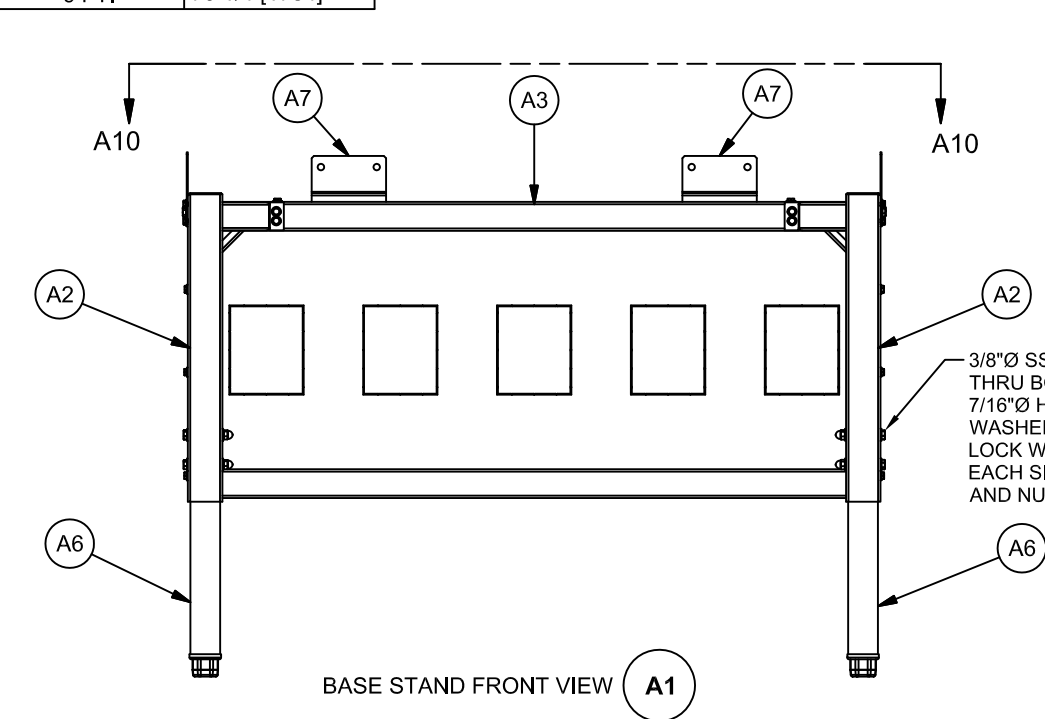
- SEE ALL NOTES SHEET 1 OF 7.
- MAXIMUM CRITICAL DESIGN FORCES AT EACH CLAMP:  
 Tcrit. = 285 lbs., Vcrit. = 257 lbs.  
 ALL FORCES ARE ASD LEVEL.
- SMS SHALL BE TEKS SCREWS (ICC-ES ESR-1976)



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SUPPORTS AND ATTACHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET					
DFTM	LS	03/29/19	CHKD	BP	SHEET 4 OF 7
DRAWING NUMBER		BCD-19632		A	

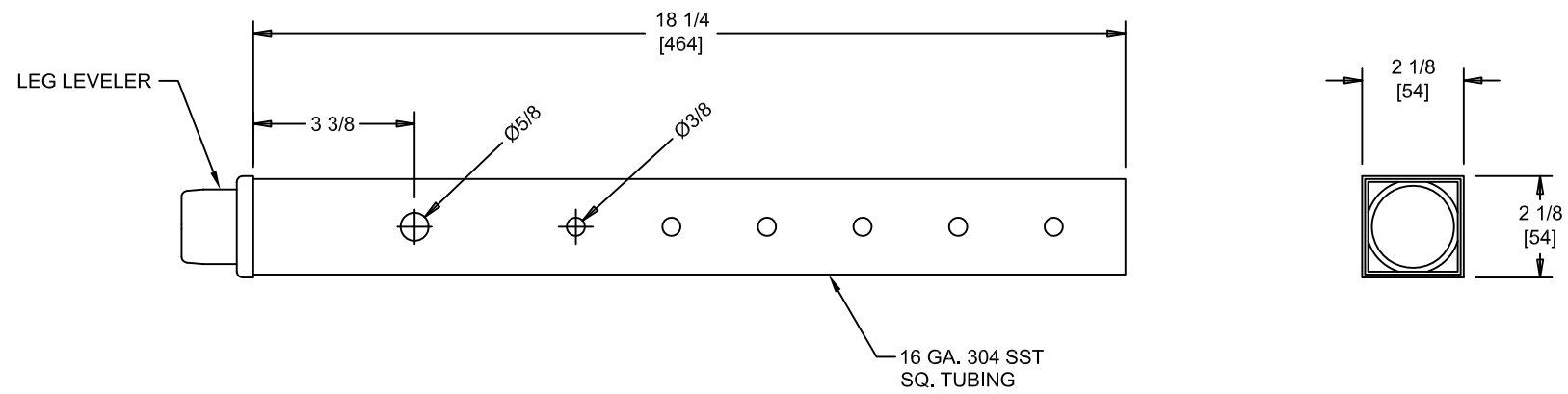
VIEW A3		VIEW A2	
CABINET SIZE	DIM "A"	CABINET STYLE	DIM "B"
3 FT.	34 1/4 [870]	SLANTED	30 3/4 [781]
4 FT.	46 1/4 [1175]	VERTICAL	27 3/4 [705]
5 FT.	58 1/4 [1480]		
6 FT.	70 1/4 [1784]		



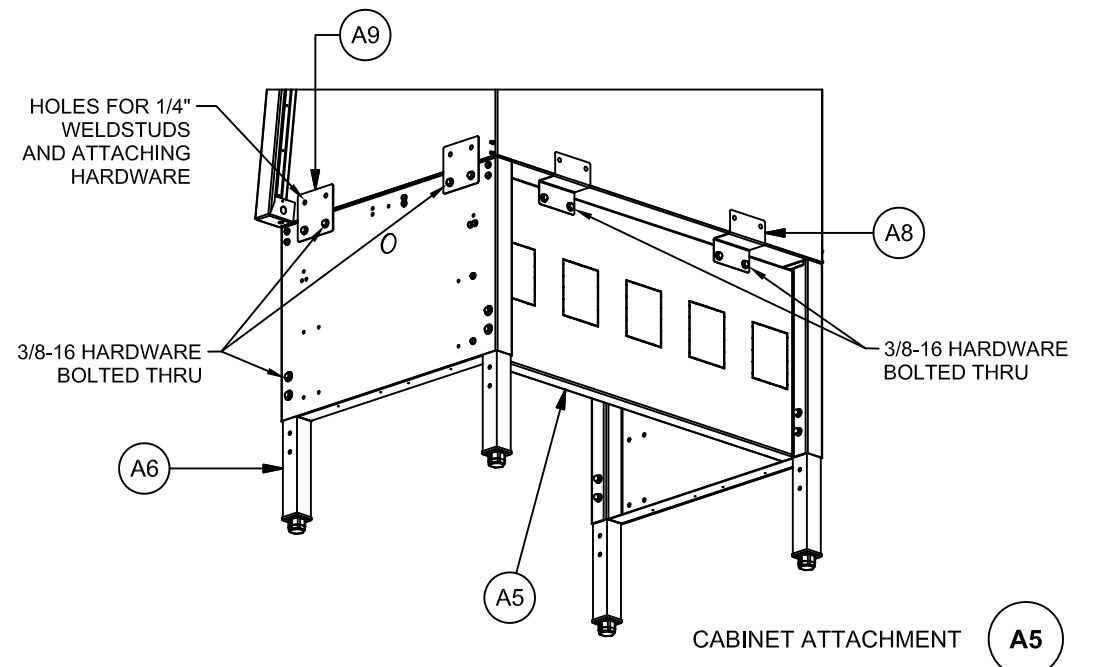
NOTE:  
 1. THIS DRAWING IS INFORMATIONAL USE ONLY. ALL BASE STAND COMPONENTS, CONNECTION HARDWARE AND WELDS ARE PROVIDED BY MANUFACTURER.  
 03/19/2020

**BIOLOGICAL SAFETY CABINET  
 TELESCOPING BASESTAND SEISMIC DETAILS**

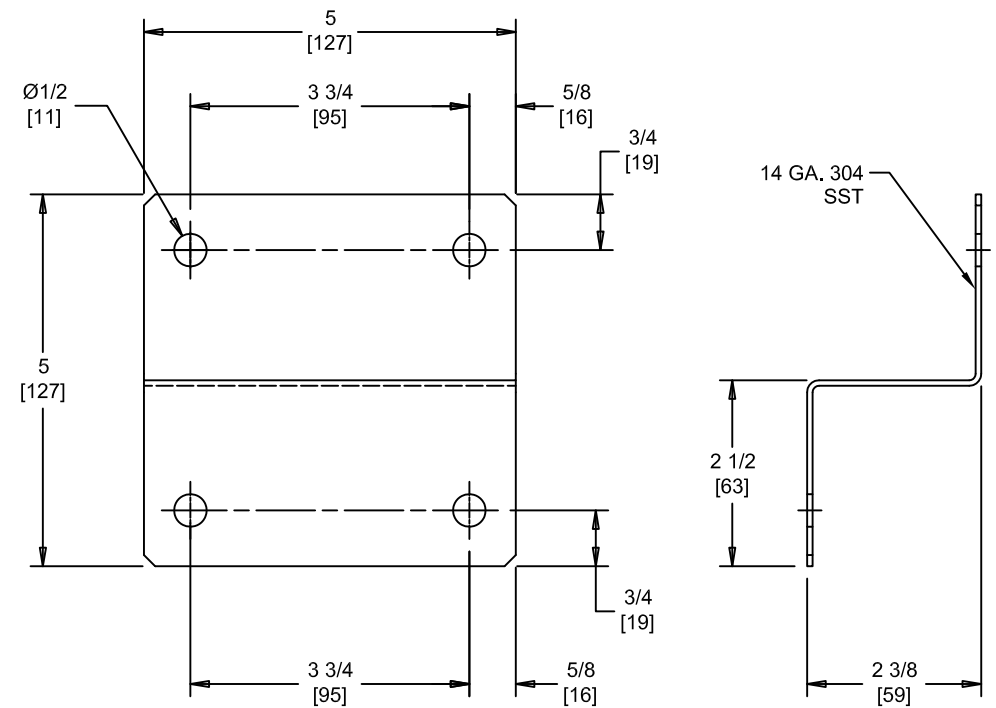
DFTM	LS	03/29/19	CHKD	BP	SHEET 5 OF 7
DRAWING NUMBER		<b>BCD-19632</b>		<b>A</b>	



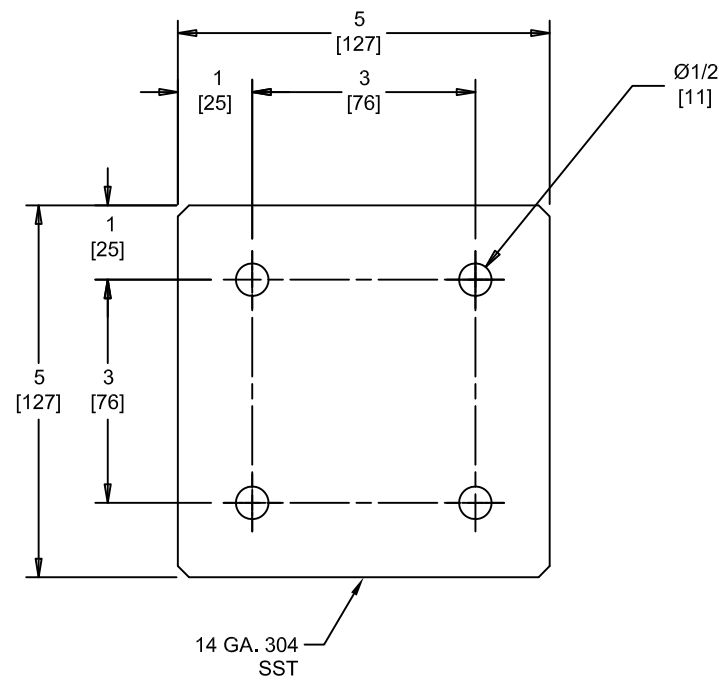
LEG EXTENSION DETAIL "A" **A6**



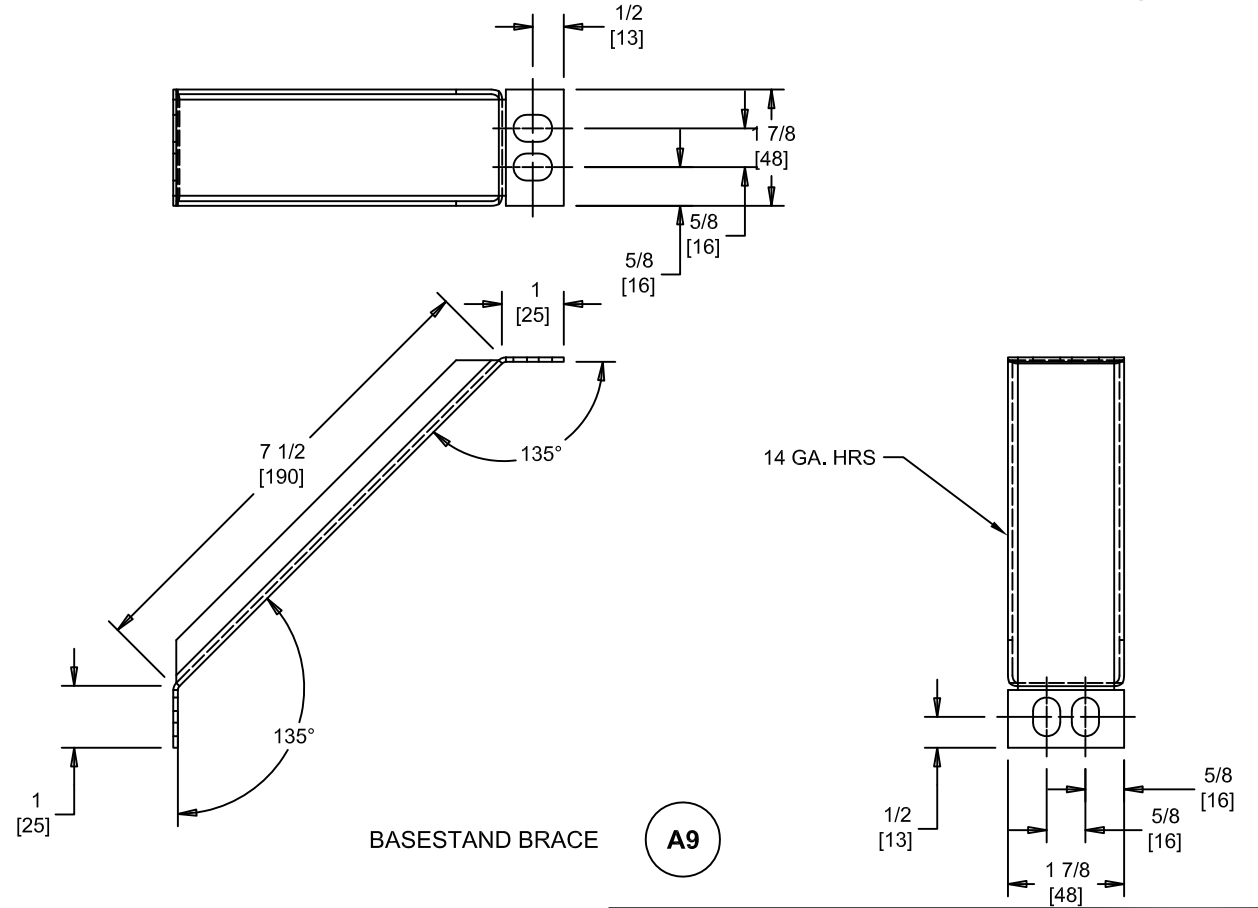
CABINET ATTACHMENT **A5**



REAR SEISMIC ANGLE **A7**



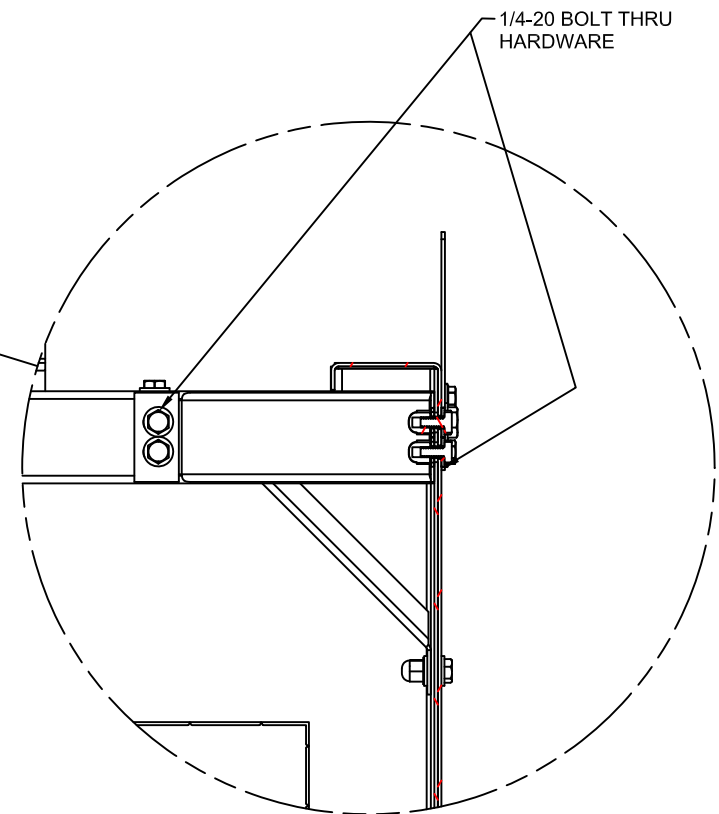
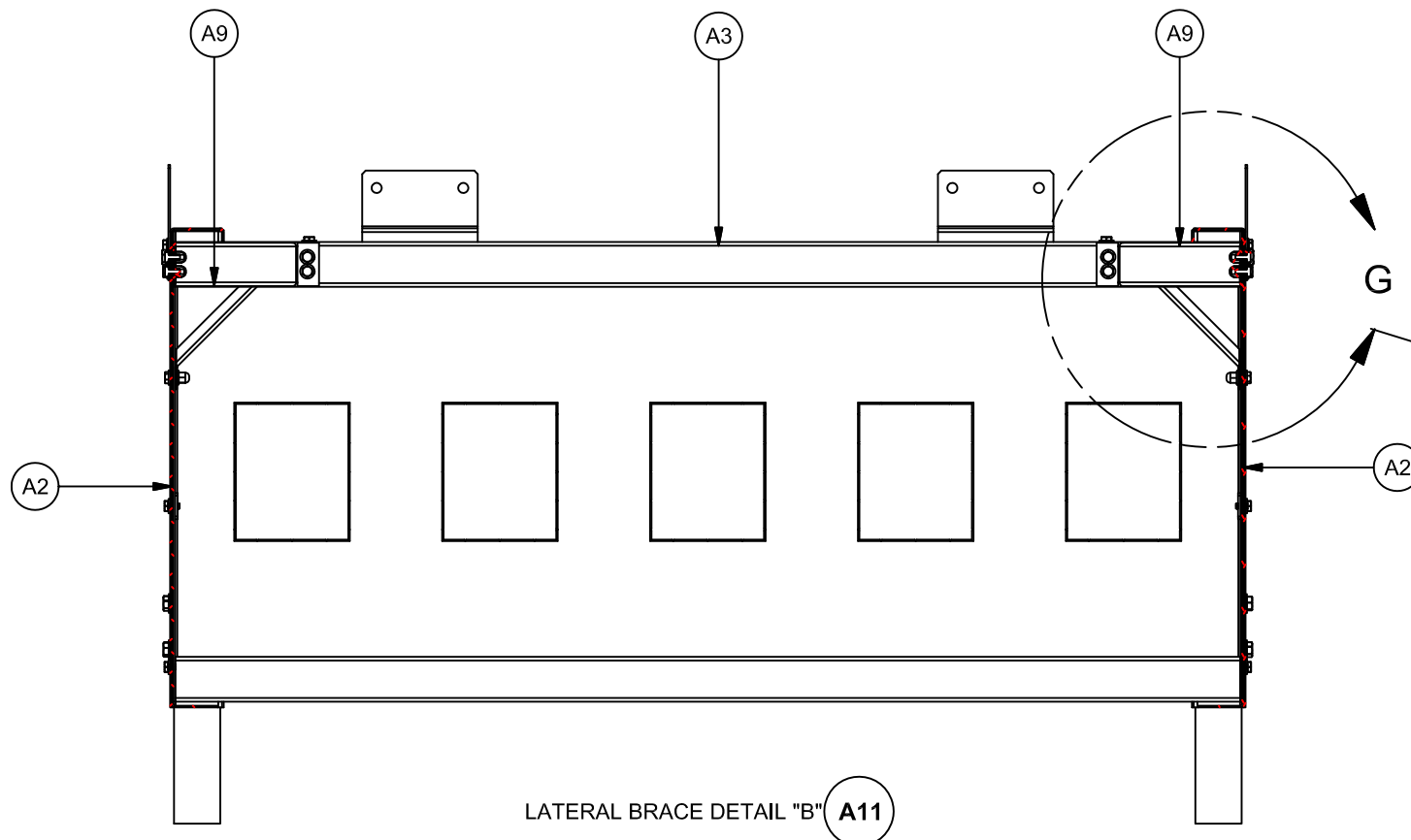
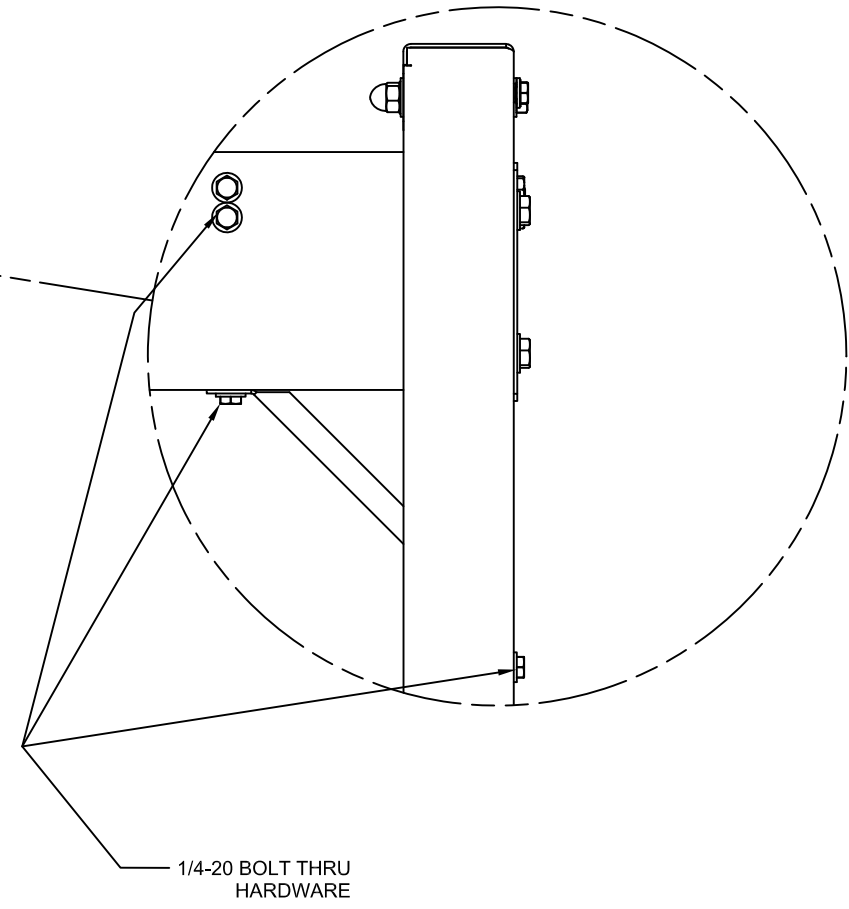
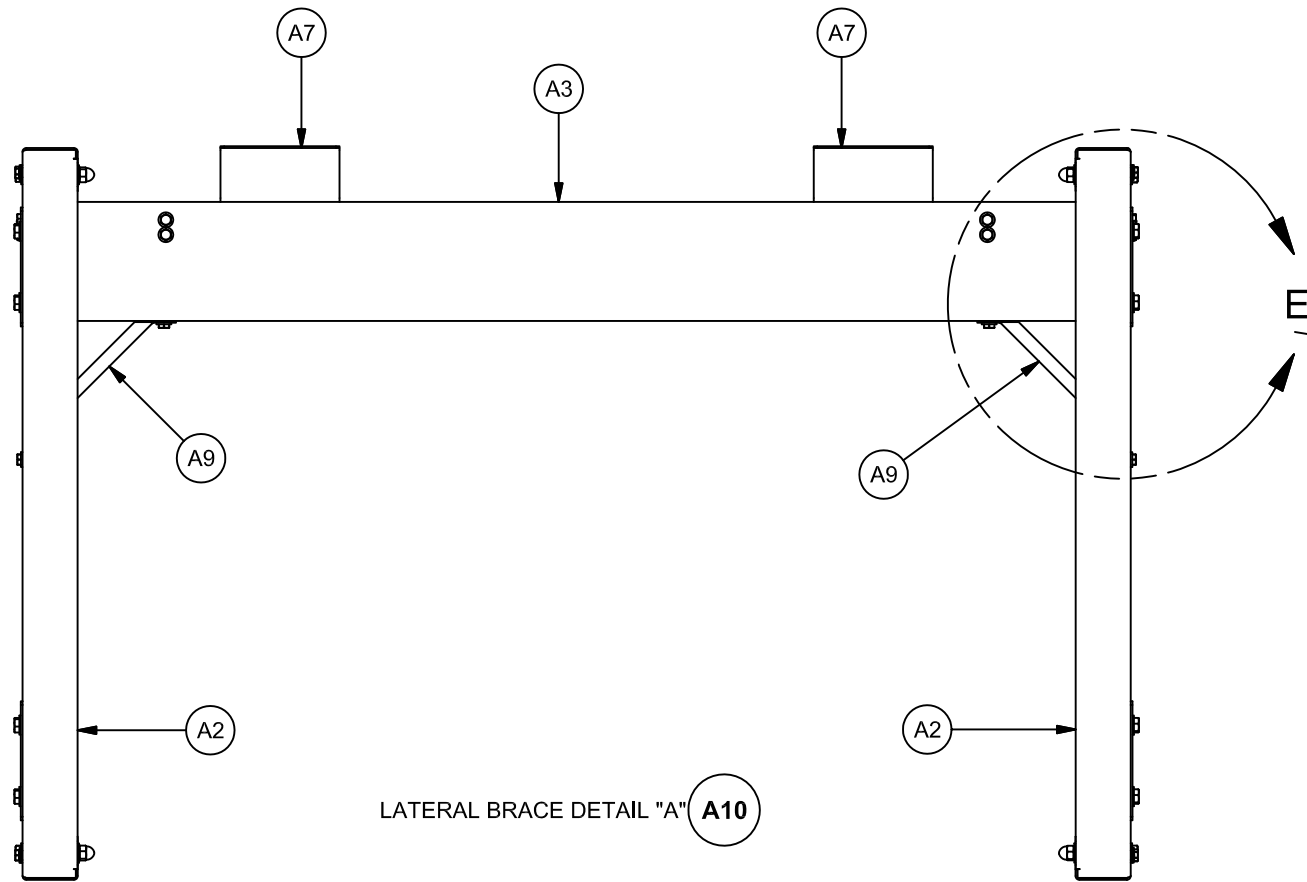
SIDE SEISMIC PLATE **A8**



BASESTAND BRACE **A9**

<b>BIOLOGICAL SAFETY CABINET</b> TELESCOPING BASESTAND SEISMIC DETAILS					
DFTM	LS	01/09/18	CHKD	BP	SHEET 6 OF 7
DRAWING NUMBER		<b>BCD-19632</b>			<b>A</b>





BIOLOGICAL SAFETY CABINET  
TELESCOPING BASESTAND SEISMIC DETAILS

DFTM LS 01/09/18 CHKD BP SHEET 7 OF 7

DRAWING NUMBER **BCD-19632** A