



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY
APPLICATION #: OPM-0204-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [] Renewal [X] Update to Pre-CBC 2013 OPA Number: OPA-0537-10

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: Model numbers - See Sheet 2 of 7
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: Ray Uribes
Mailing Address: 745 Distel Drive, Los Altos, CA 94022
Telephone: 650-967-8465 Email: ltk@ltkse.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: [Signature] Date: March 30, 2015
Title: President Company Name: LTK Associates, Inc.

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





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

Registered Design Professional Preparing Engineering Recommendations

Company Name: LTK Associates, Inc.

Name: Ray Uribes California License Number: S2479

Mailing Address: 745 Distel Drive, 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- (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): _____

OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2013 ONLY

Signature:  Date: 03-03-2016

Print Name: Jeffrey Kikumoto

Title: SSE

Condition of Approval (if applicable): _____

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



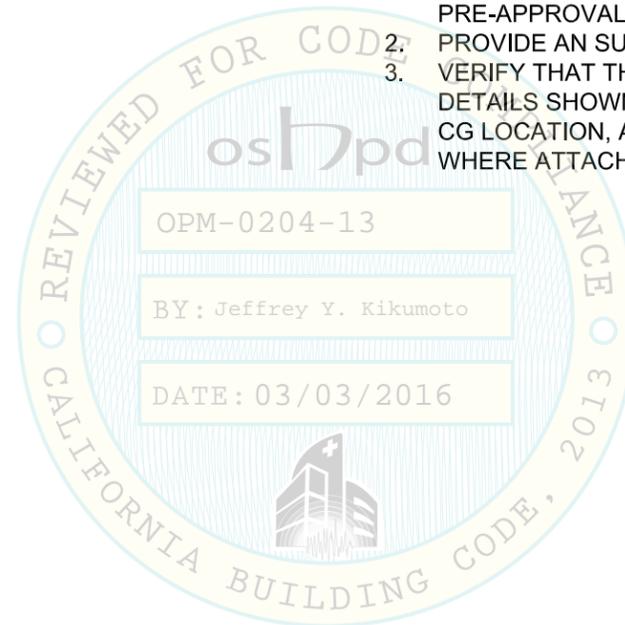
REV	ECO	DESCRIPTION	DATE	DRFT	CHKD
A	12543	RELEASED TO PRODUCTION	9/8/15	LS	BP

PRE-APPROVAL NOTES:

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. FORCES PER ASCE 7-10 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 AN SUPPLEMENTARY STRUCTURE REQUIRED FOR STRENGTH AND STABILITY.
3. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2013 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
745 Distel Drive
Los Altos, CA 94022
(650) 967-8465
FAX (650) 967-5148

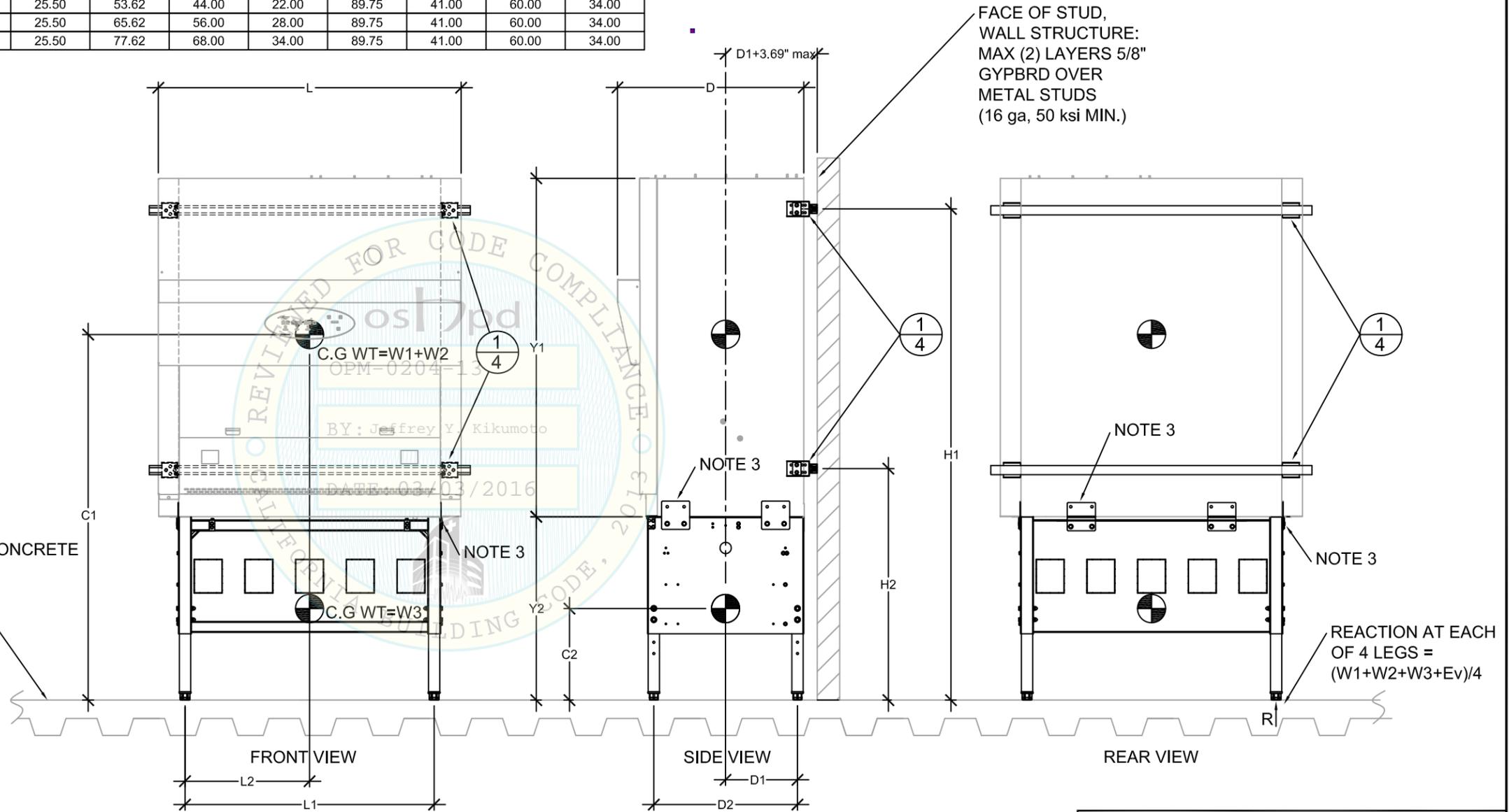
SUPPORTS & ATTCHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET					
DFTM	LS	1/15/16	CHKD	BP	SHEET 1 OF 7
DRAWING NUMBER				BCD-17199	
					A

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-425/427/430/435/437/440-400	550	100	84
NU-425/427/430/435/437/440-500	590	100	86
NU-425/427/430/435/437/440-600	740	100	88

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

Cabinet Model no.	Basestand Part number
NU-425/427/430/435/437/440-300	NU-400-229
NU-425/427/430/435/437/440-400	NU-400-230
NU-425/427/430/435/437/440-500	NU-400-231
NU-425/427/430/435/437/440-600	NU-400-232

FLOOR STRUCTURE:
 AT ELEVATED SLAB:
 MIN. 2 1/2" THICK, 3000 PSI SAND LTWT CONCRETE
 OVER METAL DECK.
 AT SOG:
 MIN 4" THICK, 3000 PSI, NW CONCRETE.



- NOTES:
- SEE ALL NOTES SHEET 1 OF 7.
 - FOR ATTACHMENT DETAILS, SEE SHEET 4 OF 7.
 - FIELD ASSEMBLED CONNECTION OF CABINET TO SUPPORT TABLE, CONTRACTOR TO INSTALL 14 ga 304 SST PLATES (Fy=30ksi min.) w/ WASHERS AND NUTS ON WELDED STUDS ALL PROVIDED BY THE EQUIPMENT MANUFACTURER. TYPICAL 2 PLACES ON EACH SIDE AND 2 PLACES ON REAR

BSC MODEL NU-425-400
 SHOWN HERE W/
 BASESTAND MODEL NU-400-230



Structural Engineers
 745 Distel Drive
 Los Altos, CA 94022
 (650) 967- 8465
 FAX (650) 967-5148

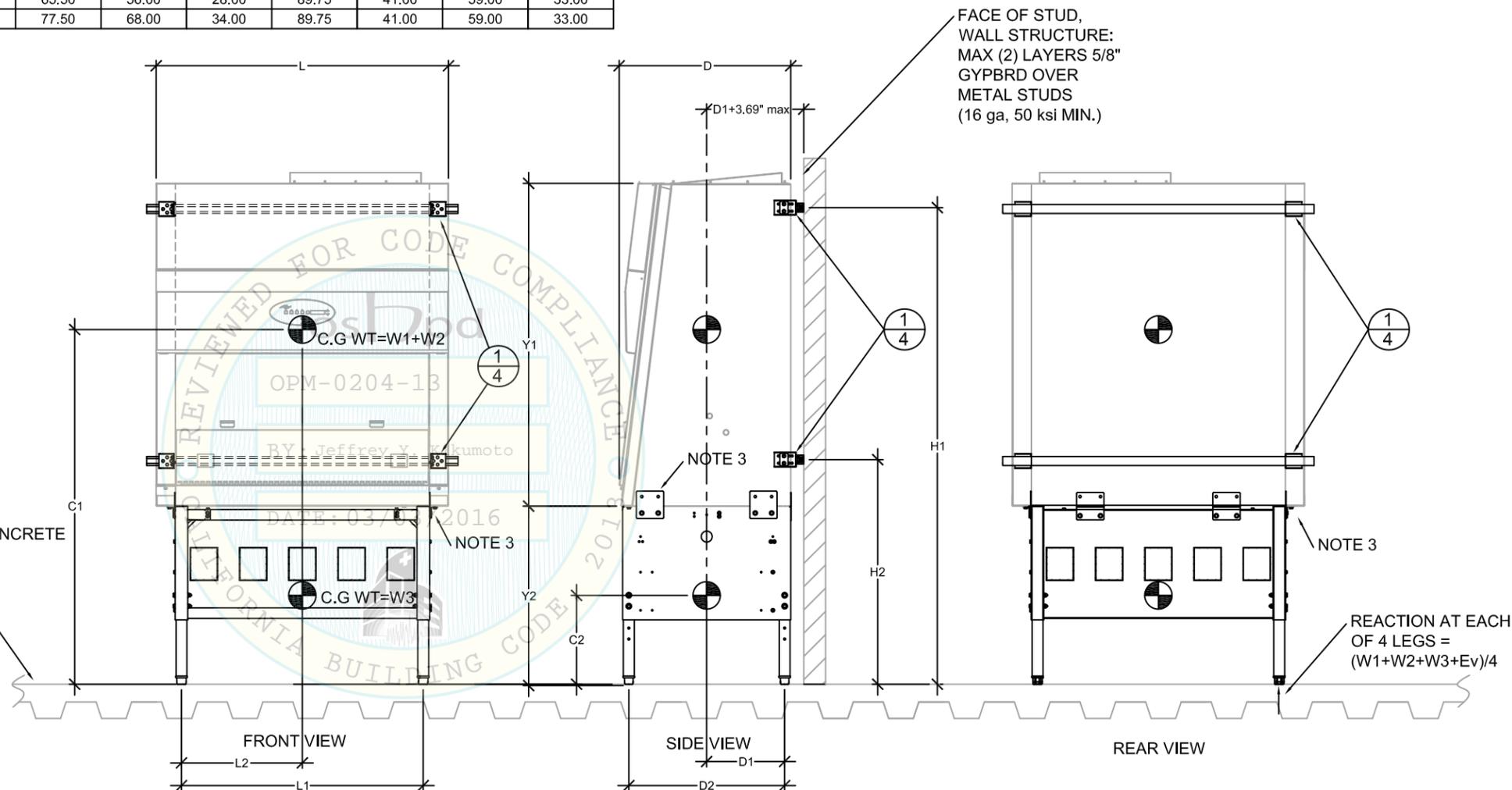
SUPPORTS & ATTACHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET					
DFTM	LS	3/2/16	CHKD	BP	SHEET 2 OF 7
DRAWING NUMBER		BCD-17199			A

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

DIMENSIONS												
Model no.	C1	C2	D	D1	D2	L	L1	L2	H1	H2	Y1	Y2
NU-475/477/480/540/543/545/550/560-300	66.00	13.00	31.50	13.00	28.50	41.50	32.00	16.00	89.75	41.00	59.00	33.00
NU-475/477/480/540/543/545/550/560-400	65.00	13.00	31.50	13.00	28.50	53.50	44.00	22.00	89.75	41.00	59.00	33.00
NU-475/477/480/540/543/545/550/560-500	65.50	13.00	31.50	13.00	28.50	65.50	56.00	28.00	89.75	41.00	59.00	33.00
NU-475/477/480/540/543/545/550/560-600	65.00	13.00	31.50	13.00	28.50	77.50	68.00	34.00	89.75	41.00	59.00	33.00

Cabinet Model no.	Basestand Part number
NU-475/477/480/540/543/545/550/560-300	NU-500-121
NU-475/477/480/540/543/545/550/560-400	NU-500-122
NU-475/477/480/540/543/545/550/560-500	NU-500-123
NU-475/477/480/540/543/545/550/560-600	NU-500-124

FLOOR STRUCTURE:
 AT ELEVATED SLAB:
 MIN. 2 1/2" THICK, 3000 PSI SAND LTWT CONCRETE
 OVER METAL DECK.
 AT SOG:
 MIN. 4" THICK 3000 PSI, NW CONCRETE



BSC MODEL NU-540-400
 SHOWN HERE W/
 BASESTAND MODEL NU-500-122

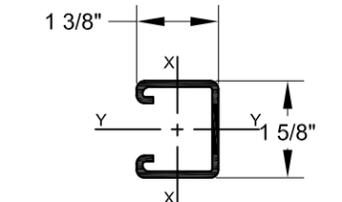
NOTES:

- SEE ALL NOTES SHEET 1 OF 7.
- FOR ATTACHMENT DETAILS, SEE SHEET 4 OF 7.
- FIELD ASSEMBLED CONNECTION OF CABINET TO SUPPORT TABLE CONTRACTOR TO INSTALL 14 ga 304 SST PLATES (Fy=30ksi min.) w/ WASHERS AND NUTS ON SHOP WELDED STUDS ALL PROVIDED BY THE EQUIPMENT MANUFACTURER. TYPICAL 2 PLACES ON EACH SIDE AND 2 PLACES ON REAR.

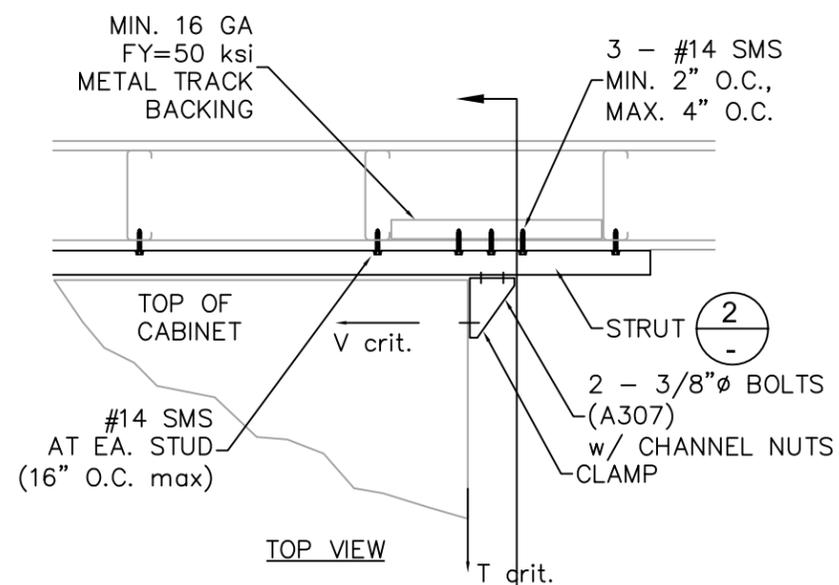
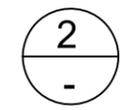


Structural Engineers
 745 Distel Drive
 Los Altos, CA 94022
 (650) 967-8465
 FAX (650) 967-5148

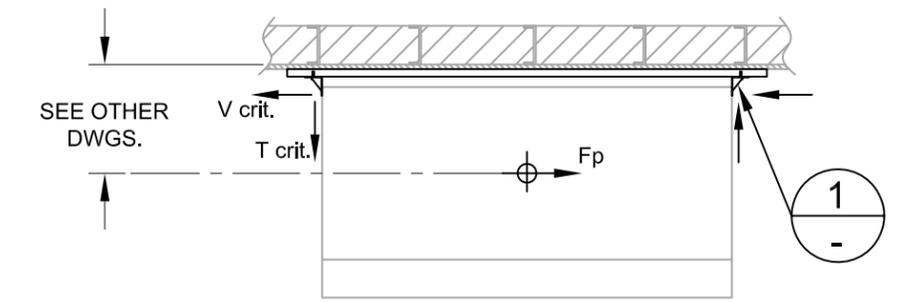
SUPPORTS & ATTACHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET					
DFTM	LS	3/2/16	CHKD	BP	SHEET 3 OF 7
DRAWING NUMBER			BCD-17199		A



12ga STRUT (ASTM A1033 SS GRADE 33)
 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
 Ixx = 0.122 Iyy = 0.207



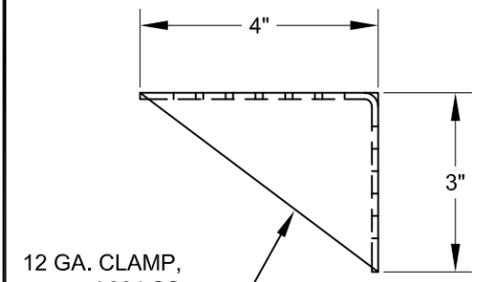
TOP VIEW



TOP PLAN

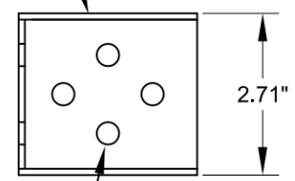
NOTES

- SEE ALL NOTES SHEET 1 OF 7.
- MAXIMUM CRITICAL DESIGN FORCES AT EACH CLAMP:
 T crit. = 239 lbs., V crit. = 232 lbs.
 ALL FORCES ARE ASD LEVEL.
- SMS SHALL BE TEKS SCREWS (ICC-ES ESR-1976)



12 GA. CLAMP, A304 SS NUAIRE PART #A-425-1996

12 GA. CLAMP TOP VIEW



7/16"Ø HOLES (4 TOTAL)

12 GA. CLAMP END VIEW

12 GA. CLAMP, ASTM A240 TYPE 304 SST
 Fy=30 ksi MIN.
 NUAIRE PART #A-425-1996 (SIDE VIEW SHOWN HERE)

3/8"Ø HOLES @ 3/4" O.C.

CABINET, 18 GA.

12 GA.x2 1/4"x1 1/2" A304 SST PLATE WASHER w/ 5/16"Ø HOLES NUAIRE PART #A-425-5016

1/4"-20 THREADED STUDS CAPACITOR DISCHARGE (CD) SHOP WELDED TO 18GA. 304 SST (Fy=30ksi min.) CABINET SIDE, WASHERS AND NUT PROVIDED BY EQUIPMENT MANUFACTURER, INSTALLED BY CONTRACTOR

2 - 3/8"Ø A307 BOLTS & B-LINE/TOLCO CHANNEL NUTS (N200) @ 1-1/2" O.C. (TORQUE TO 19 ft-lbs) AT EACH CLAMP

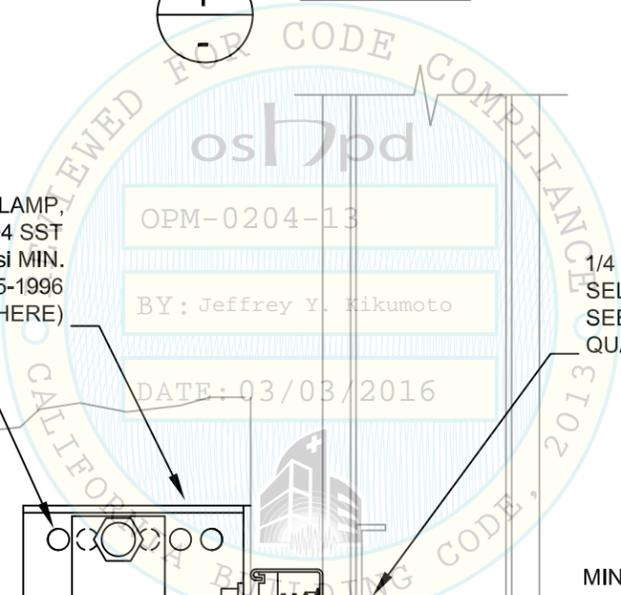
MAX 2 LAYERS (5/8") GYPSUM BOARD

1/4"-14 X 1-1/2 SMS SELF DRILLING SCREWS, SEE DETAIL ABOVE FOR QUANTITY AND SPACING

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

HORIZONTAL STRUT (SEE DETAIL 2) ONE LENGTH TO EXTEND PAST UNIT MIN. 6" EITHER SIDE

SECTION A-A



Structural Engineers
 745 Distel Drive
 Los Altos, CA 94022
 (650) 967-8465
 FAX (650) 967-5148

 SUPPORTS AND ATTACHMENTS DETAILS (WALL MOUNT) BENCH TOP BIOLOGICAL SAFETY CABINET					
DFTM	LS	3/2/16	CHKD	BP	SHEET 4 OF 7
DRAWING NUMBER		BCD-17199			A

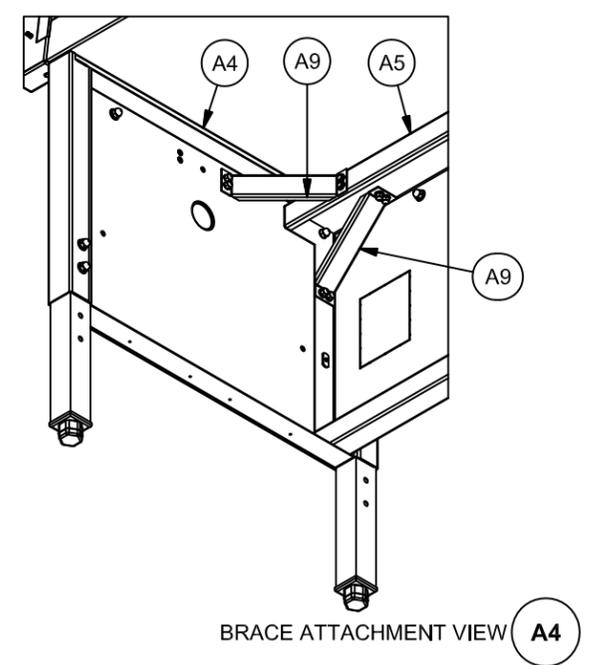
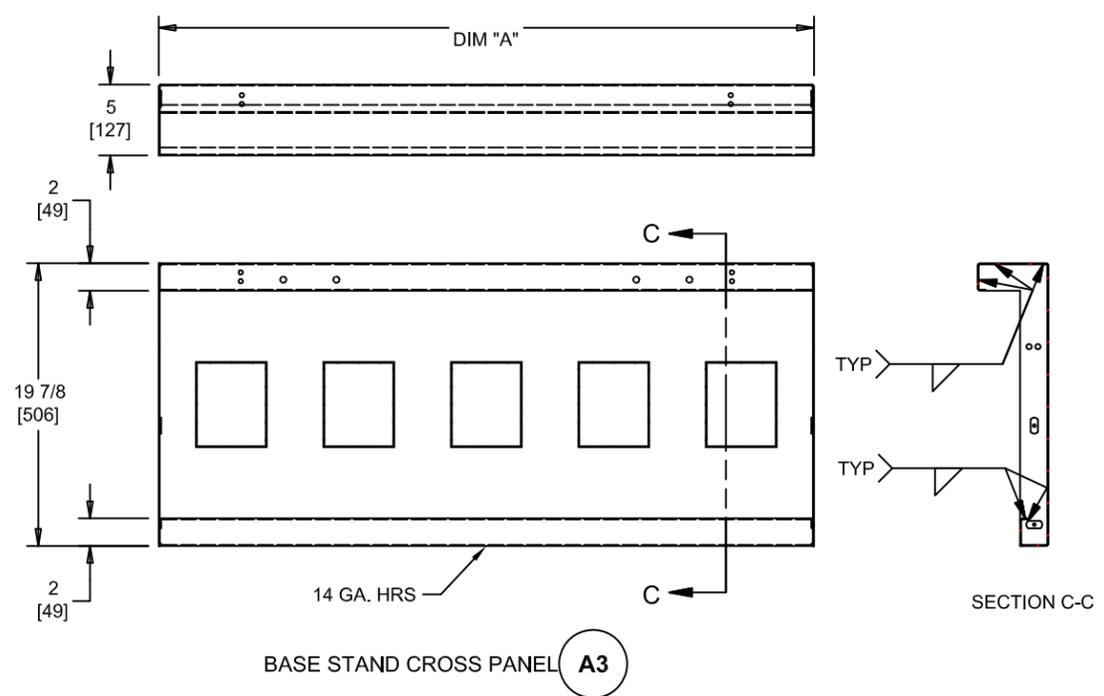
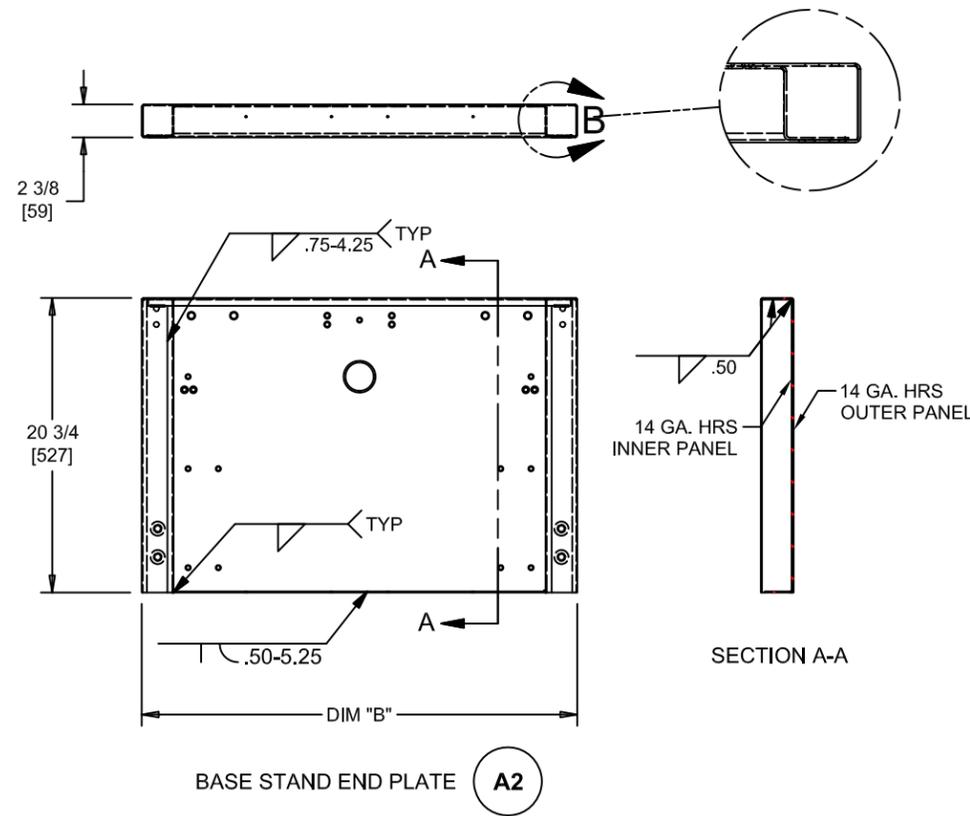
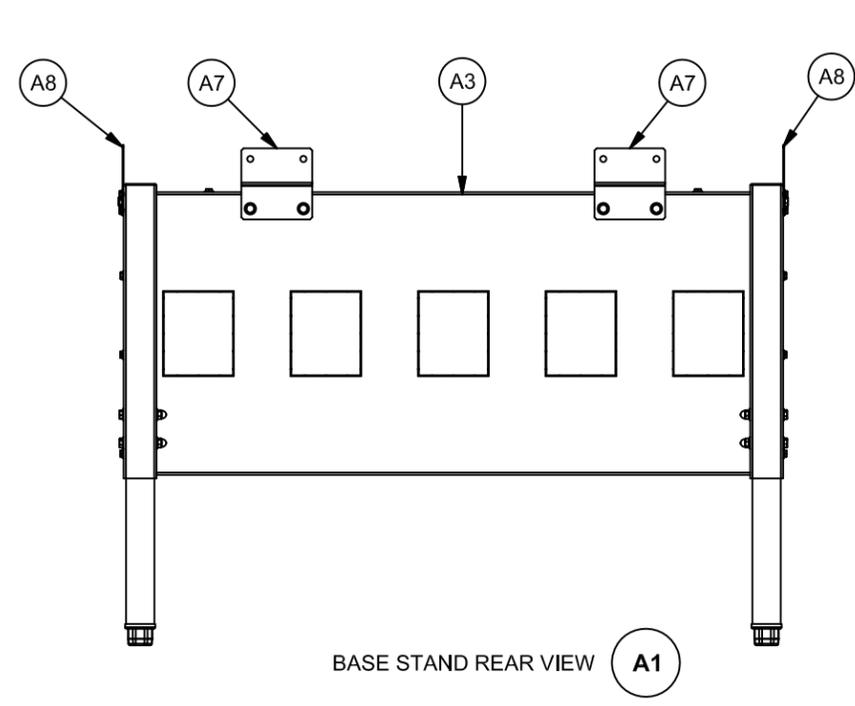
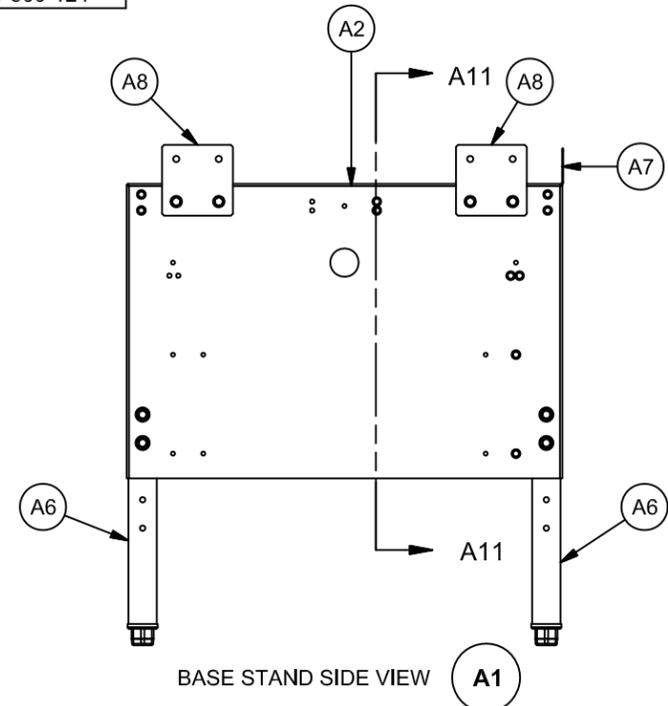
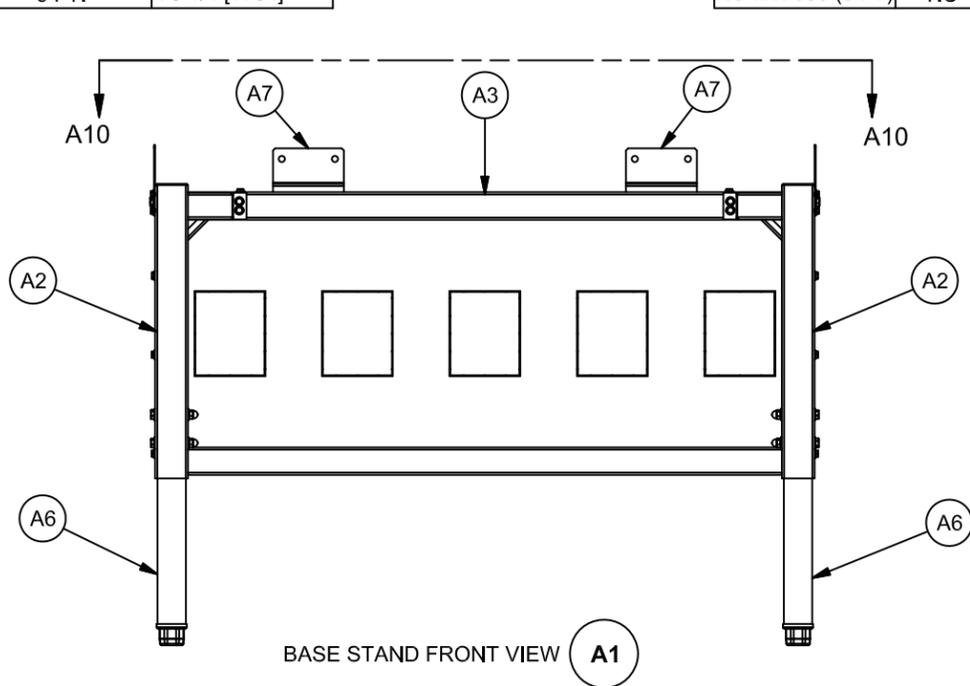
VIEW A3	
CABINET SIZE	DIM "A"
3 FT.	34 1/4 [870]
4 FT.	46 1/4 [1175]
5 FT.	58 1/4 [1480]
6 FT.	70 1/4 [1784]

VIEW A2	
CABINET STYLE	DIM "B"
SLANTED	30 3/4 [781]
VERTICAL	27 3/4 [705]

BASESTAND MODEL No.		
BSC MODEL #	VERT:	SLANTED:
NU-xxx-300 (3 FT)	NU-400-229	NU-500-121
NU-xxx-400 (4 FT)	NU-400-230	NU-500-122
NU-xxx-500 (5 FT)	NU-400-231	NU-500-123
NU-xxx-600 (6 FT)	NU-400-232	NU-500-124

REFERENCE ONLY

REV	ECO	DESCRIPTION	DATE	DRFT	CHKD

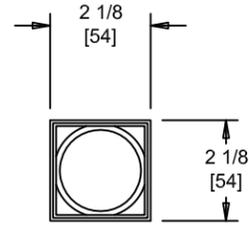
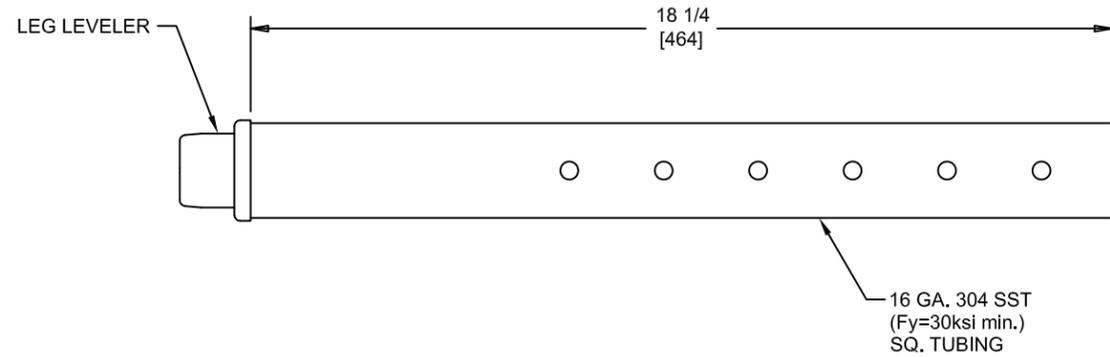


NOTE:
1. THIS DRAWING IS INFORMATIONAL USE ONLY. ALL BASE STAND COMPONENTS, CONNECTION HARDWARE AND WELDS ARE PROVIDED BY MANUFACTURER.
03/03/2016

BIOLOGICAL SAFETY CABINET (WALL MOUNT) TELESCOPING BASESTAND SEISMIC DETAILS					
DFTM	LS	1/15/16	CHKD	BP	SHEET 5 OF 7
DRAWING NUMBER		BCD-17199		Page 1 of 9	

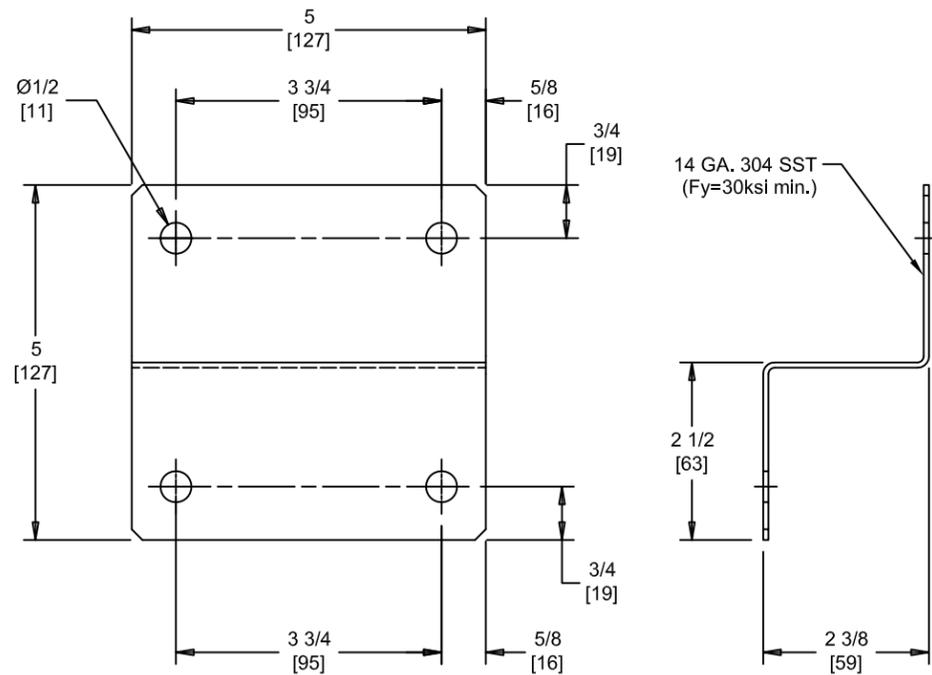
A

REFERENCE ONLY

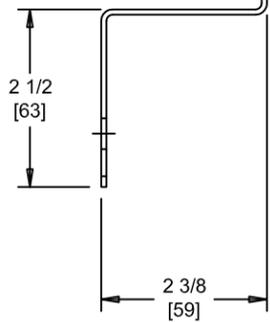


16 GA. 304 SST
(Fy=30ksi min.)
SQ. TUBING

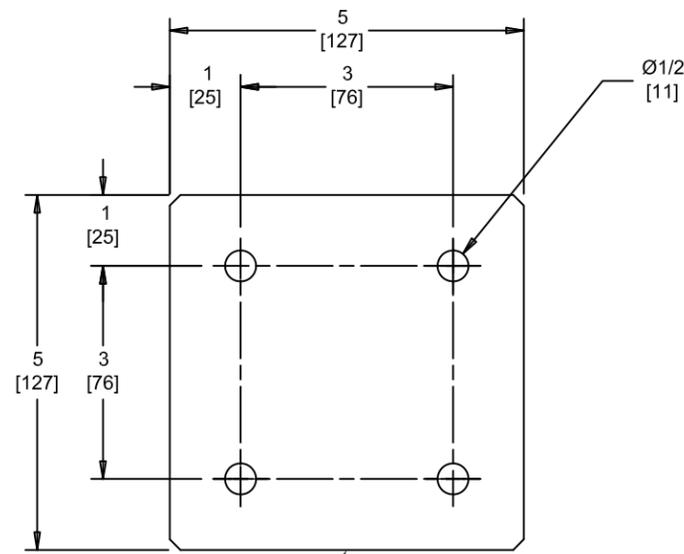
LEG EXTENSION DETAIL "A" **A6**



14 GA. 304 SST
(Fy=30ksi min.)



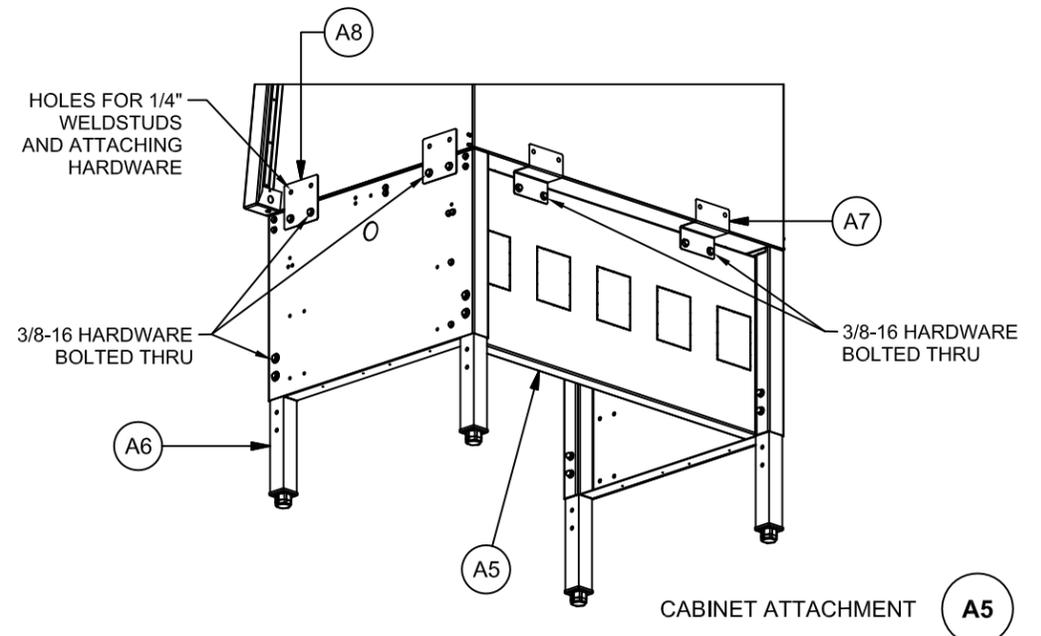
REAR SEISMIC ANGLE **A7**



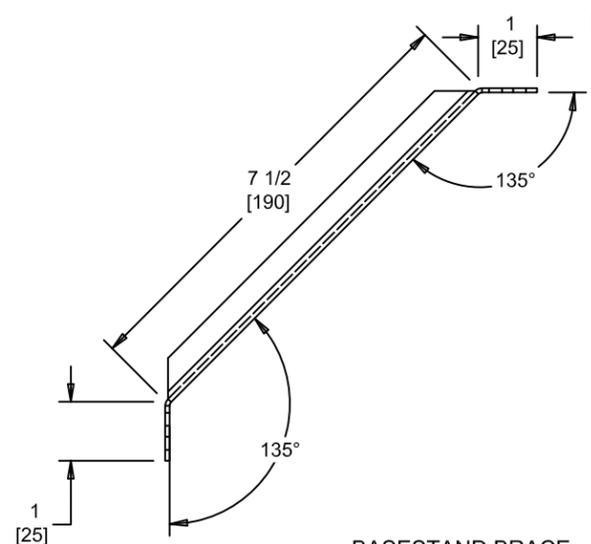
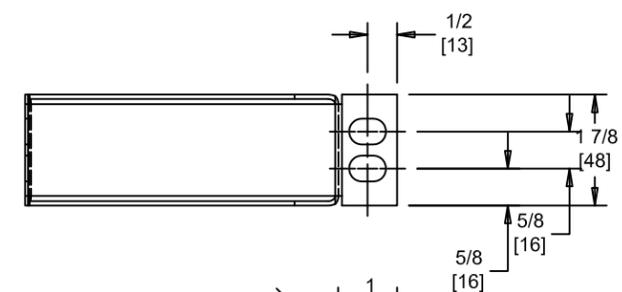
14 GA. 304 SST
(Fy=30ksi min.)

SIDE SEISMIC PLATE **A8**

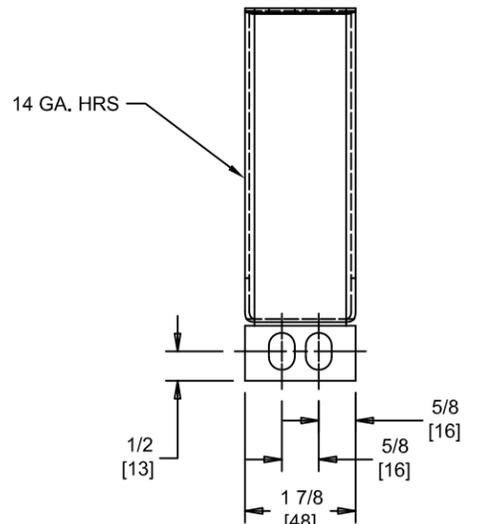
REV	ECO	DESCRIPTION	DATE	DRFT	CHKD
-----	-----	-------------	------	------	------



CABINET ATTACHMENT **A5**



BASESTAND BRACE **A9**



BIOLOGICAL SAFETY CABINET (WALL MOUNT) TELESCOPING BASESTAND SEISMIC DETAILS					
DFTM	LS	3/2/16	CHKD	BP	SHEET 6 OF 7
DRAWING NUMBER		BCD-17199			A

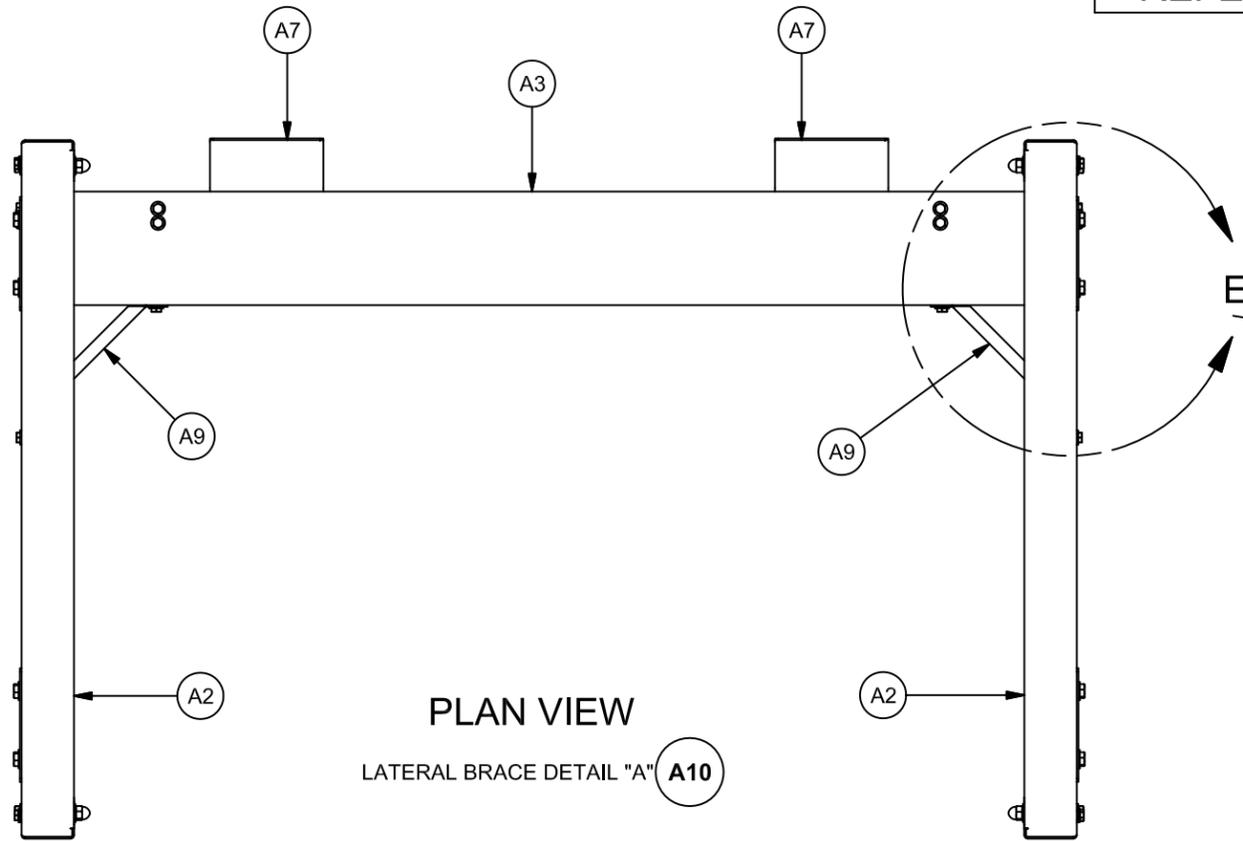
REFERENCE ONLY

REV ECO

DESCRIPTION

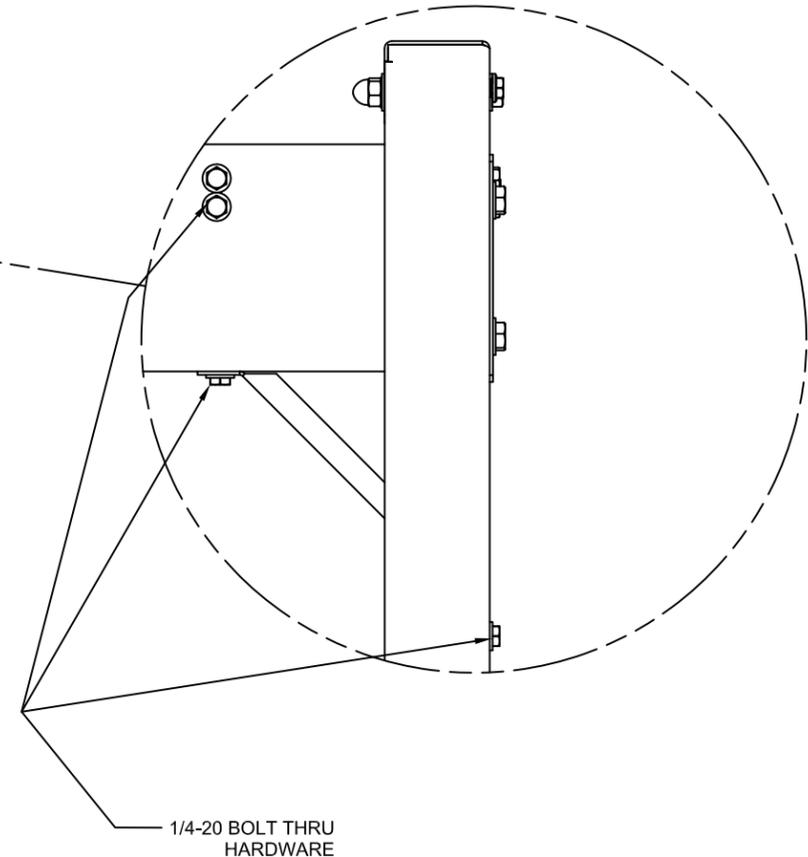
DATE

DRFT CHKD

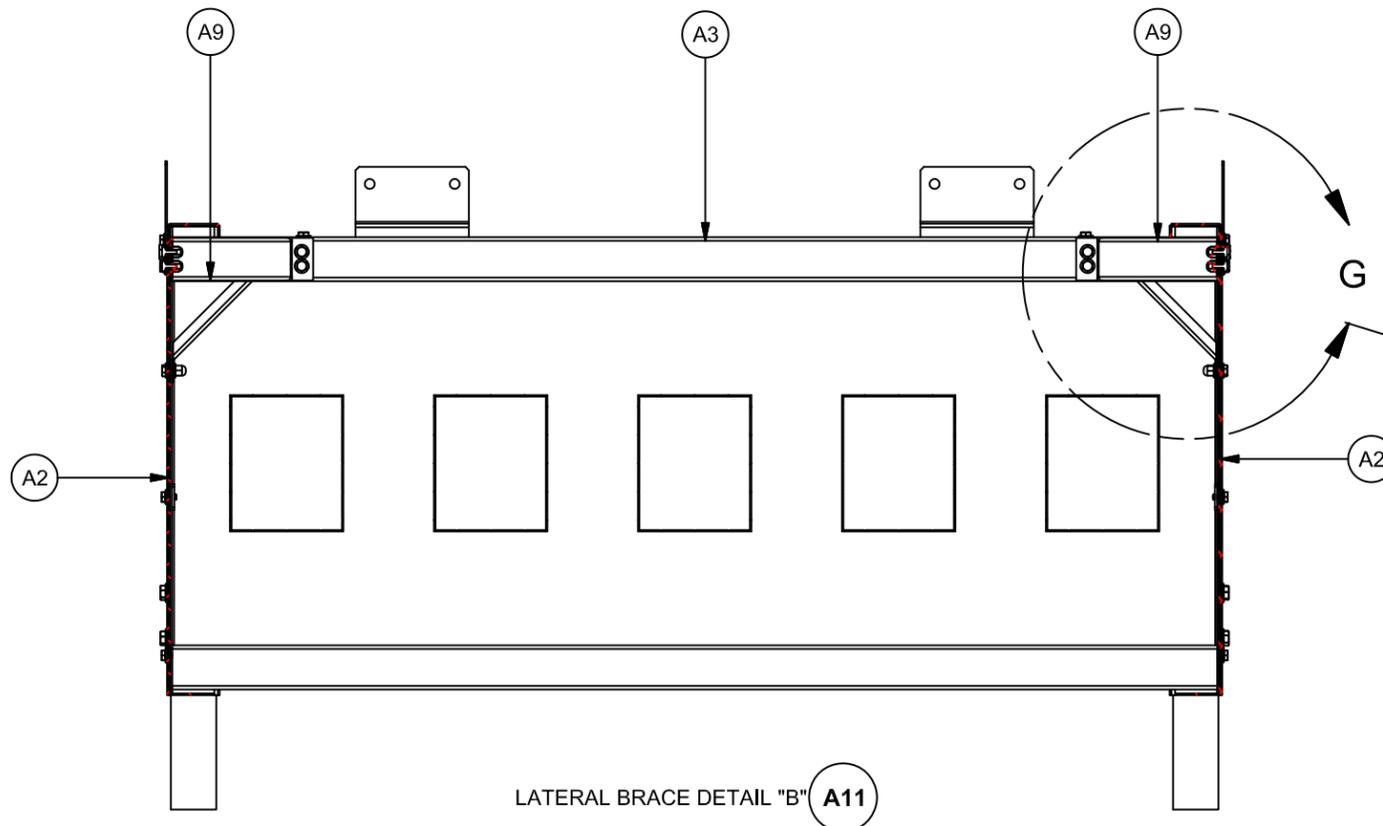


PLAN VIEW

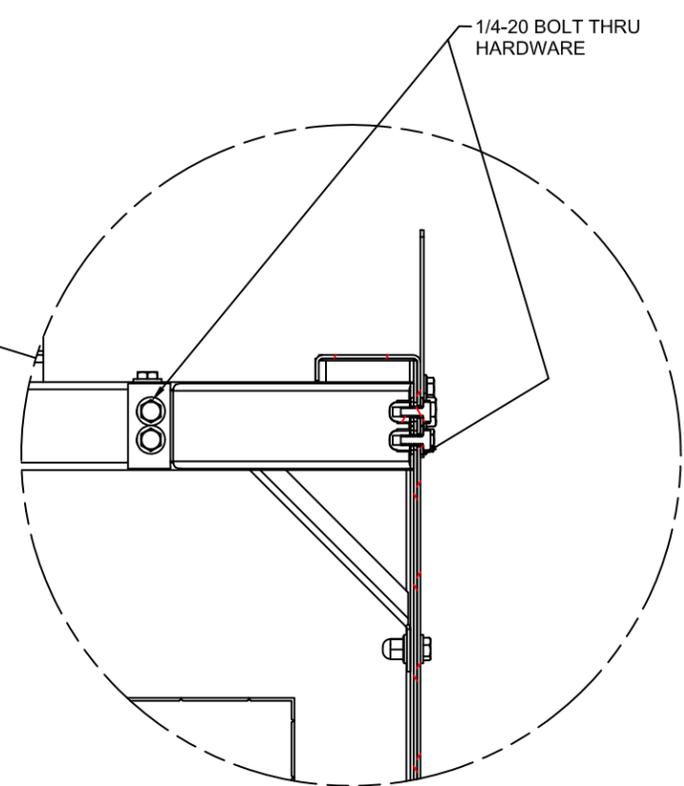
LATERAL BRACE DETAIL "A" A10



1/4-20 BOLT THRU HARDWARE



LATERAL BRACE DETAIL "B" A11



1/4-20 BOLT THRU HARDWARE



BIOLOGICAL SAFETY CABINET
(WALL MOUNT)
TELESCOPING BASESTAND SEISMIC DETAILS

DFTM LS 1/15/16 CHKD BP SHEET 7 OF 7

DRAWING NUMBER BCD-17199 A