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

OFFICE USE ONLY

**APPLICATION #: OPM-0581**

## HCAI Preapproval of Manufacturer's Certification (OPM)

**Type:** [X] New [ ] Renewal/Update

## Manufacturer Information

Manufacturer: Kimball International

Manufacturer's Technical Representative: Jared Myrick

Mailing Address: 1600 Royal Street, Jasper, IN 47546

Telephone: (812) 481-6367 Email: jared.myrick@kimball.com

## Product Information

Product Name: KO Storage Cabinets, NOF Storage Cabinets, Files, Pedestals, Credenzas, Vertical Storage

Product Type: Wood Construction and Sheet Metal Construction. Floor standing, Floor Mounted (Anchoring to the floor) Storage Cabinets

Product Model Number: KO FOOTPRINT, KO PRIORITY, KO EXTRA, KO DEFINITION, KO FUNDAMENTAL, KO LF, KO STOW, NOF EPIC, NOF WAVEWORKS, NOF FILES, NOF EXTRA

General Description: Storage Cabinets, Files, Pedestals, Credenzas, Vertical Storage



## Applicant Information

Applicant Company Name: Kimball International

Contact Person: Jared Myrick

Mailing Address: 1600 Royal Street, Jasper, IN 47546

Telephone: (812) 481-6367 Email: jared.myrick@kimball.com

Title: Product Life Cycle Engineer

## Registered Design Professonal Preparing Engineering Recommendations

Company Name: ZFA STRUCTURAL ENGINEERS

Name: Ryan Bogart California License Number: S6104

Mailing Address: 601 Montgomery Street Suite 1450, San Francisco, CA 94111

Telephone: (415) 269-0660 Email: ryanb@zfa.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, 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 HCAI prior to testing.

☒ Analysis

☐ Experience Data

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



## HCAI Approval

Date: 1/8/2023

Name: William Staehlin Title: Senior Structural Engineer

Condition of Approval (if applicable):

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Job No. 34028
Date: Nov 15, 2022
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Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

SEE SHEET 41 FOR CABINET MODELS INCLUDED IN THIS OPM

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# GENERAL NOTES

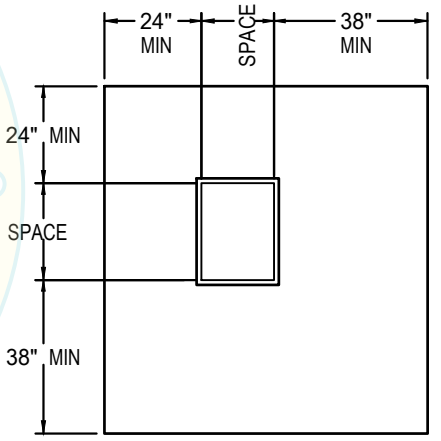
1. THIS HCAI PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2022. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2022.

2. EXPANSION ANCHORS:
   a. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED IN ACCORDANCE WITH THE CORRESPONDING ICC REPORT.
   b. THIS PRE-APPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE EDGES. SEE DETAIL 1 FOR MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

ANCHOR TYPE: HILTI KWIK BOLT TZ2 ICC REPORT: ESR 4266 MIN f'c: 3000 psi.

| Anchor Diameter | Min. Embed ($h_{ef}$) | Min. Spacing | Min. Edge Dist. | Min. Conc. Thickness | Installation/ Test Torque |
|---|---|---|---|---|---|
| 3/8" | 1 1/2" | 6" | 12" | 3 1/4" | 30 FT-LB |
| 1/2" | 2" | 6" | 12" | 4" | 50 FT-LB |
| 1/2" | 3 1/4" | 6" | 12" | 5 1/2" | 50 FT-LB |
| 5/8" | 4" | 6" | 12" | 6" | 40 FT-LB |

3. TESTING OF EXPANSION ANCHORS PER 2022 CBC, 1910A.5.2: TESTING AND SPECIAL INSPECTION SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY EMPLOYED BY THE FACILITY OWNER PER CBC 1704A & 1910A.5 AND CAC-7-149. ALL REPORTS SHALL BE SENT TO THE INSPECTOR OF RECORD, OWNER AND THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE.
   a. TORQUE TEST AT LEAST 50% OF THE ANCHORS.
   b. ACCEPTANCE CRITERIA: THE APPLICAPLE TORQUE MUST BE ACHIEVED WITHIN 1/2 TURN OF THE NUT.
   c. IF ANY ANCHOR FAILS, TEST ALL ANCHORS.



DETAIL 1 – TYPICAL CONCRETE EDGE

4. FORCES PER ASCE 7-16 SECTION 13.3.1, WHERE: $S_{DS}$ = 2.0, $a_p$ = 1.0, $I_p$ = 1.5, $R_p$ = 2.5
   z/h = 0, AT CONCRETE SLAB ON GRADE
   z/h ≤ 1.0, AT CONCRETE ON METAL DECK.

5. SHEET METAL SCREWS (SMS): "ALLOWABLE STRENGTHS ARE BASED UPON THE LEAST OF THE AVERAGE TESTED TENSILE AND SHEAR STRENGTHS TABULATED FROM ICC ESR'S 1976, 2196, 1730, 1408, AND THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA). FASTENER TYPES AND SIZES APPLY TO NON-PROPRIETARY FASTENER TYPES AND SIZES, AND DOES NOT ENDORSE A SPECIFIC MANUFACTURER. WHERE PROPRIETARY FASTENERS ARE SPECIFIED, NO EXCEPTIONS ARE TAKEN TO THE USE OF MANUFACTURER SPECIFIC VALUES THAT ARE BASED UPON THE AISI S100-07/S2-10, SECTION E4. ALL SCREW FASTENERS SHALL SATISFY AC118 - ACCEPTANCE CRITERIA FOR TAPPING SCREW FASTENERS."

6. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY LOCATION IN THE STATE OF CALIFORNIA, WHERE $S_{DS}$ IS NOT GREATER THAN 2.0.

7. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.

8. THIS PRE-APPROVAL COVERS THE SUPPORTS AND ATTACHMENTS OF THE UNIT TO THE STRUCTURE. SEE SHEETS 13 TO 26 FOR ATTACHMENT DETAILS.



# GENERAL NOTES

9. BOLTS THROUGH CONCRETE ON METAL DECK
   A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER THE SNUG TIGHT (THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNLESS OTHERWISE NOTED.
   B. THROUGH BOLT HOLES SHALL BE $\frac{1}{16}$" LARGER THAN BOLT SIZE FOR CONCRETE.

**RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING**

10. VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS FLOORS) WHICH SUPPORT THE UNITS FOR THE LOADS IMPOSED ON THEM BY THE UNITS AS WELL AS ALL OTHER LOADS.
11. PROVIDE SUPPORTING STRUCTURE REQUIRED TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.
12. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2022 CBC AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL. VERIFY THAT THE ACTUAL EQUIPMENT'S WEIGHT, CG LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS AND THE MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN IN THE PRE-APPROVAL DOCUMENTS
13. VERIFY THAT THE COMBINATION OF $S_{DS}$ & z/h RESULT IN SEISMIC FORCES ($E_h$, $E_v$) THAT ARE NOT GREATER THAN THE VALUES ON THE DETAILS.
14. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE UNIT ATTACHMENTS AND CHECK FOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR 6 x EFFECTIVE EMBEDMENT FROM THIS UNIT'S ANCHORS.



REGISTERED PROFESSIONAL ENGINEER
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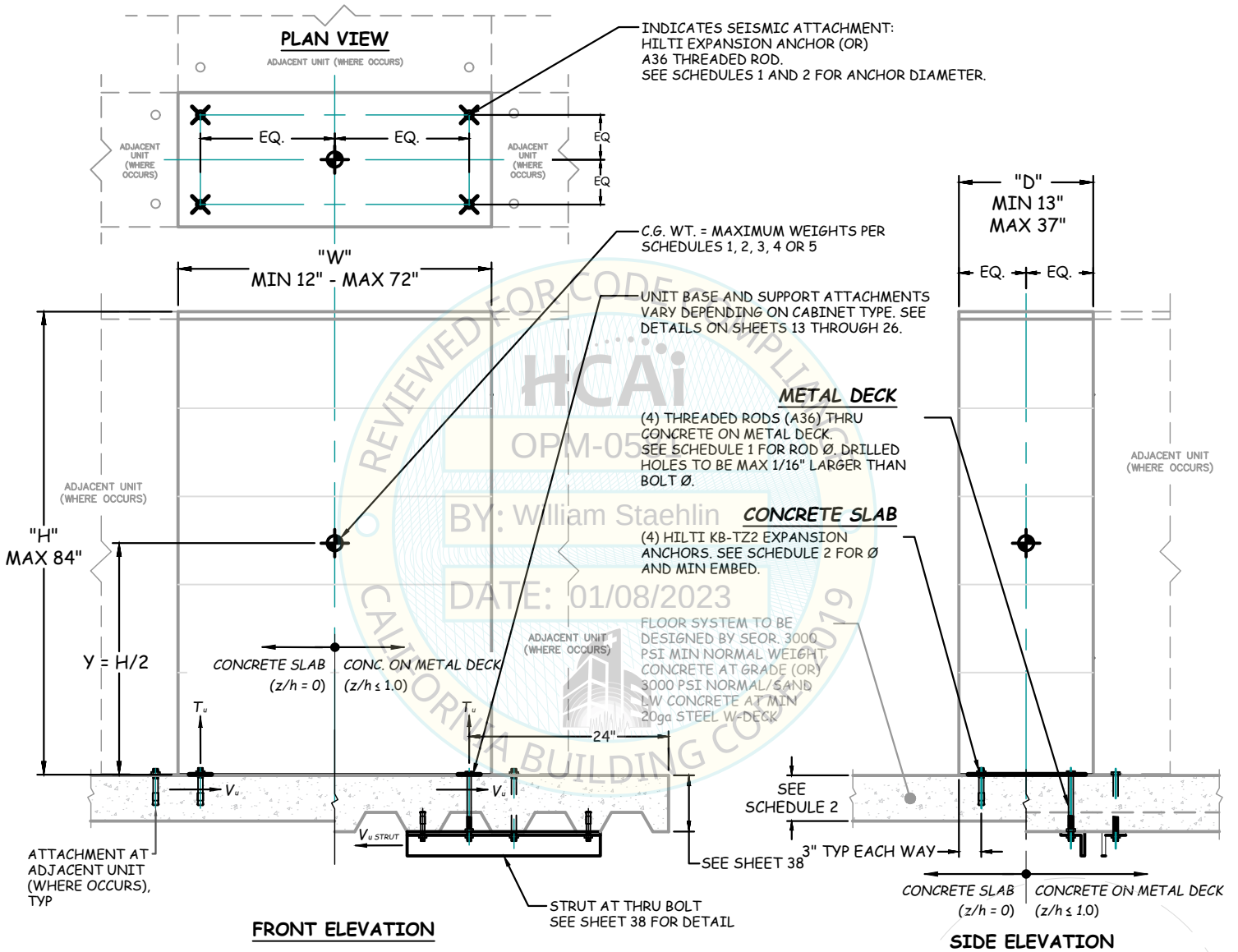
## CABINET GENERIC VIEW



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## CABINENT GENERIC VIEW NOTES:

1. THIS PRE-APPROVAL INCLUDES MULTIPLE CABINET BASE SOLUTIONS AND SUPPORT ATTACHMENTS SUCH AS LEGS, SIDE PANELS, METAL BRACKETS, GLIDES, AND SHEET METAL FORMS. SEE SHEETS 13 THROUGH 26 FOR APPLICABLE CONNECTION DETAILS. SEE SCHEDULES 1 AND 2 FOR DEMAND FORCES FOR THE SEISMIC ATTACHMENT TO STRUCTURE.
2. FORCES ARE DETERMINED PER CBC 2022 AND ASCE 7-16 WITH SDS = 2.00, ap = 1.0, Ip = 1.5, Rp = 2.5

   HORIZONTAL FORCE (Eh) AT SLAB ON GRADE (z/h = 0) = 0.90 Wp (LRFD) (EXCLUDING OVERSTRENGTH FACTOR - SEE SCHEDULES 1 & 2 FOR OVERSTRENGTH FACTOR).

   HORIZONTAL FORCE (Eh) AT ALL OTHER LEVELS (z/h ≤ 1) = 1.44 Wp (LRFD) (EXCLUDING OVERSTRENGTH FACTOR - SEE SCHEDULES 1 & 2 FOR OVERSTRENGTH FACTOR).

   VERTICAL FORCE (Ev) AT ALL LEVELS = 0.40 Wp (LRFD).
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.
4. OUTLINES SHOWN IN THE ATTACHMENT DETAILS ARE GENERIC ITEMS. THE UNIT CONFIGURATIONS VARY ACCORDING TO ITS FUNCTION AND MAY INCLUDE DRAWERS, SHELVES AND DIVIDERS IN ANY COMBINATION. CENTER OF GRAVITY WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
5. MAXIMUM WEIGHTS LISTED INCLUDE CABINET WEIGHT AND ITS CONTENTS. WEIGHTS SHOWN ARE WORST CASE SCENARIO (I.E. GLASS DOORS OR OTHER HEAVY OPTIONS). THE INSIDE OF ALL UNITS SHALL BE CLEARLY LABELED WITH THE MAXIMUM LOAD PERMITTED (ML). SEE SCHEDULES 1 THROUGH 5 FOR GOVERNING ML.
6. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.
7. EQUIP. MANUFACTURER MUST DESIGN UNIT TO MAKE C.G. ≤ THE C.G. HEIGHT DIMENSION SHOWN ON "FRONT" ELEVATION.
8. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.



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Job No. 34028
Date: Nov 15, 2022
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Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# SEISMIC ATTACHMENT: ANCHOR DEMAND FORCE (SCHEDULE 1)

CABINET HEIGHT (H) = 24", 28", 38", 40" | Y = H/2 @ CONCRETE ON METAL DECK (z/h ≤ 1.0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$** (lbs) | BOLT Ø |
|---|---|---|---|---|---|---|---|
| 24 | 13 | 30 | 232 | 163 | 283 | 218 | 3/8" |
| | 13 | 36 | 282 | 199 | 337 | 264 | 3/8" |
| | 16 | 16 | 148 | 103 | 162 | 151 | 3/8" |
| | 16 | 18 | 169 | 118 | 185 | 172 | 3/8" |
| | 16 | 30 | 293 | 208 | 248 | 274 | 3/8" |
| | 16 | 32 | 314 | 223 | 263 | 294 | 3/8" |
| | 16 | 36 | 355 | 253 | 293 | 332 | 3/8" |
| | 18 | 12 | 122 | 84 | 186 | 114 | 3/8" |
| | 18 | 15 | 157 | 109 | 194 | 160 | 3/8" |
| | 18 | 24 | 263 | 186 | 235 | 268 | 3/8" |
| | 18 | 30 | 334 | 238 | 235 | 312 | 3/8" |
| | 18 | 36 | 404 | 289 | 275 | 378 | 3/8" |
| | 18 | 42 | 475 | 341 | 317 | 444 | 3/8" |
| | 24 | 16 | 230 | 162 | 203 | 215 | 3/8" |
| | 24 | 18 | 263 | 186 | 235 | 267 | 3/8" |
| | 24 | 24 | 358 | 256 | 198 | 365 | 3/8" |
| | 24 | 30 | 455 | 327 | 252 | 463 | 3/8" |
| | 24 | 36 | 551 | 398 | 243 | 515 | 3/8" |
| | 24 | 42 | 647 | 468 | 276 | 606 | 3/8" |
| | 30 | 15 | 271 | 191 | 256 | 254 | 3/8" |
| | 30 | 18 | 332 | 236 | 234 | 311 | 3/8" |
| | 30 | 16 | 291 | 206 | 247 | 273 | 3/8" |
| 28 | 13 | 30 | 261 | 199 | 376 | 244 | 3/8" |
| | 13 | 36 | 316 | 242 | 447 | 296 | 3/8" |
| | 16 | 16 | 166 | 125 | 216 | 169 | 3/8" |
| | 16 | 18 | 190 | 144 | 247 | 193 | 3/8" |
| | 16 | 30 | 329 | 253 | 332 | 308 | 3/8" |
| | 16 | 32 | 352 | 271 | 352 | 330 | 3/8" |
| | 16 | 36 | 399 | 308 | 392 | 373 | 3/8" |
| | 18 | 12 | 136 | 102 | 245 | 127 | 3/8" |
| | 18 | 15 | 176 | 133 | 257 | 179 | 3/8" |
| | 18 | 24 | 295 | 227 | 313 | 300 | 3/8" |
| | 18 | 30 | 392 | 289 | 330 | 367 | 3/8" |
| | 18 | 36 | 475 | 352 | 387 | 444 | 3/8" |
| | 18 | 42 | 558 | 414 | 446 | 523 | 3/8" |
| | 21 | 48 | 758 | 566 | 469 | 710 | 3/8" |
| | 21 | 72 | 1083 | 863 | 642 | 1014 | 3/8" |
| | 24 | 16 | 270 | 197 | 284 | 253 | 3/8" |
| | 24 | 18 | 326 | 226 | 346 | 332 | 3/8" |
| | 24 | 24 | 446 | 312 | 297 | 454 | 3/8" |
| | 24 | 30 | 565 | 398 | 377 | 575 | 3/8" |
| | 24 | 36 | 684 | 484 | 366 | 640 | 3/8" |
| | 24 | 42 | 773 | 570 | 401 | 723 | 3/8" |
| | 30 | 15 | 305 | 212 | 342 | 286 | 3/8" |
| | 30 | 18 | 374 | 262 | 315 | 350 | 3/8" |
| | 30 | 16 | 328 | 229 | 331 | 307 | 3/8" |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$** (lbs) | BOLT Ø |
|---|---|---|---|---|---|---|---|
| 38 | 13 | 30 | 365 | 278 | 731 | 342 | 3/8" |
| | 13 | 36 | 443 | 339 | 870 | 414 | 3/8" |
| | 16 | 16 | 233 | 176 | 421 | 237 | 3/8" |
| | 16 | 18 | 265 | 201 | 480 | 270 | 3/8" |
| | 16 | 30 | 437 | 354 | 618 | 409 | 3/8" |
| | 16 | 32 | 469 | 380 | 657 | 439 | 3/8" |
| | 16 | 36 | 531 | 431 | 733 | 497 | 3/8" |
| | 18 | 12 | 179 | 142 | 448 | 168 | 3/8" |
| | 18 | 15 | 233 | 186 | 472 | 237 | 3/8" |
| | 18 | 24 | 392 | 317 | 583 | 399 | 3/8" |
| | 18 | 30 | 498 | 405 | 591 | 466 | 3/8" |
| | 18 | 36 | 604 | 492 | 696 | 566 | 3/8" |
| | 18 | 42 | 711 | 580 | 803 | 665 | 3/8" |
| | 24 | 16 | 373 | 276 | 548 | 349 | 3/8" |
| | 24 | 18 | 426 | 316 | 633 | 434 | 3/8" |
| | 24 | 24 | 582 | 436 | 553 | 593 | 3/8" |
| | 24 | 30 | 740 | 557 | 702 | 753 | 3/8" |
| | 24 | 36 | 896 | 677 | 692 | 839 | 3/8" |
| | 24 | 42 | 1022 | 797 | 766 | 957 | 3/8" |
| | 30 | 15 | 427 | 318 | 669 | 400 | 3/8" |
| | 30 | 18 | 530 | 393 | 629 | 496 | 3/8" |
| | 30 | 16 | 465 | 343 | 658 | 435 | 3/8" |
| 40 | 13 | 30 | 388 | 296 | 819 | 363 | 3/8" |
| | 13 | 36 | 470 | 360 | 975 | 439 | 3/8" |
| | 16 | 16 | 247 | 187 | 471 | 251 | 3/8" |
| | 16 | 18 | 281 | 214 | 537 | 286 | 3/8" |
| | 16 | 30 | 464 | 377 | 694 | 434 | 3/8" |
| | 16 | 32 | 498 | 404 | 737 | 466 | 3/8" |
| | 16 | 36 | 564 | 458 | 822 | 527 | 3/8" |
| | 18 | 12 | 190 | 151 | 501 | 178 | 3/8" |
| | 18 | 15 | 247 | 198 | 529 | 252 | 3/8" |
| | 18 | 24 | 416 | 337 | 655 | 424 | 3/8" |
| | 18 | 30 | 528 | 431 | 663 | 495 | 3/8" |
| | 18 | 36 | 642 | 524 | 782 | 601 | 3/8" |
| | 18 | 42 | 755 | 617 | 902 | 706 | 3/8" |
| | 24 | 16 | 395 | 293 | 615 | 370 | 3/8" |
| | 24 | 18 | 452 | 336 | 710 | 460 | 3/8" |
| | 24 | 24 | 618 | 464 | 622 | 629 | 3/8" |
| | 24 | 30 | 785 | 592 | 790 | 799 | 3/8" |
| | 24 | 36 | 951 | 720 | 779 | 890 | 3/8" |
| | 24 | 42 | 1118 | 848 | 888 | 1046 | 3/8" |
| | 30 | 15 | 433 | 318 | 716 | 405 | 3/8" |
| | 30 | 18 | 537 | 393 | 674 | 503 | 3/8" |
| | 30 | 16 | 471 | 343 | 705 | 441 | 3/8" |

** Ωo = 2.0 APPLIED PER 2022 CBC 1617A.1.23.

CONTINUES ON NEXT SHEET

WT = MAXIMUM UNIT WEIGHT INCLUDING LOADED CONTENTS.

ML = MAXIMUM LOADED CONTENTS. WEIGHTS MARKED WITH * ARE NOT THE MAXIMUM WEIGHT CAPACITY CALCULATED BY VOLUME PER 2022 CBC, TABLE 1607A.1, FOOTNOTE D, BUT THE MAXIMUM LOAD WEIGHT ALLOWED FOR THE UNIT SIZE. THE INSIDE OF ALL UNITS SHALL BE CLEARLY LABELED WITH THE MAXIMUM ALLOWED LOADED CONTENTS (ML) IN POUNDS.

THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO INCLUDES A LARGE NUMBER OF MODEL NUMBERS WITH MANY POTENTIAL CONFIGURATIONS (I.E. DOOR AND DRAWER STYLES, DIMENSIONS, FINISHES, LOCKS, PULLS). TO ELIMINATE LISTING HUNDREDS OF MODEL NUMBERS, THE FOLLOWING GUIDELINES APPLY:

ALL MODEL NUMBERS WITHIN THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO ARE INCLUDED IN THIS OPM, IF THE OVERALL UNIT HEIGHT WIDTH AND DEPTH DIMENSIONS ARE WITHIN THE VALUES LISTED IN SCHEDULES 1 THROUGH 5.

THE CABINET WEIGHT, INCLUDING ALL ACCESSORY OPTIONS AND LOADED CONTENTS DOES NOT EXCEED THE MAXIMUM WEIGHT LISTED IN SCHEDULES 1 THROUGH 5 AS APPLICABLE.

THE BOTTOM OF CABINET MEETS THE CRITERIA LISTED IN THE DETAILS ON SHEETS 13 THROUGH 26 .

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Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# SEISMIC ATTACHMENT: ANCHOR DEMAND FORCE (SCHEDULE 1 CONT.)

CABINET HEIGHT (H) = 42", 51", 54", 60", 64" | Y = H/2 @ CONCRETE ON METAL DECK (z/h ≤ 1.0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$** (lbs) | BOLT Ø |
|---|---|---|---|---|---|---|---|
| 42 | 13 | 30 | 410 | 314 | 912 | 384 | 3/8" |
| | 13 | 36 | 496 | 382 | 1085 | 465 | 3/8" |
| | 16 | 16 | 261 | 198 | 525 | 266 | 3/8" |
| | 16 | 18 | 297 | 227 | 599 | 303 | 3/8" |
| | 16 | 30 | 491 | 399 | 774 | 460 | 3/8" |
| | 16 | 32 | 526 | 428 | 822 | 493 | 3/8" |
| | 16 | 36 | 596 | 486 | 917 | 558 | 3/8" |
| | 18 | 12 | 201 | 160 | 558 | 188 | 3/8" |
| | 18 | 15 | 262 | 210 | 589 | 266 | 3/8" |
| | 18 | 24 | 441 | 358 | 730 | 449 | 3/8" |
| | 18 | 30 | 559 | 456 | 740 | 523 | 3/8" |
| | 18 | 36 | 679 | 555 | 873 | 635 | 3/8" |
| | 18 | 42 | 798 | 654 | 1007 | 747 | 3/8" |
| | 24 | 16 | 418 | 311 | 685 | 391 | 3/8" |
| | 24 | 18 | 478 | 356 | 791 | 486 | 3/8" |
| | 24 | 24 | 653 | 492 | 694 | 665 | 3/8" |
| | 24 | 30 | 830 | 627 | 882 | 845 | 3/8" |
| | 24 | 36 | 1005 | 763 | 871 | 941 | 3/8" |
| | 24 | 42 | 1182 | 899 | 994 | 1106 | 3/8" |
| | 30 | 15 | 438 | 318 | 764 | 410 | 3/8" |
| | 30 | 18 | 544 | 393 | 721 | 510 | 3/8" |
| | 30 | 16 | 478 | 343 | 753 | 447 | 3/8" |
| 51 | 13 | 30 | 515 | 384 | 1406 | 482 | 3/8" |
| | 13 | 36 | 625 | 468 | 1675 | 585 | 3/8" |
| | 16 | 16 | 338 | 242 | 835 | 344 | 3/8" |
| | 16 | 18 | 375 | 278 | 926 | 381 | 3/8" |
| | 16 | 30 | 650 | 489 | 1262 | 609 | 3/8" |
| | 16 | 32 | 697 | 525 | 1339 | 652 | 3/8" |
| | 16 | 36 | 788 | 595 | 1493 | 738 | 3/8" |
| | 18 | 12 | 277 | 196 | 941 | 259 | 3/8" |
| | 18 | 15 | 359 | 257 | 990 | 365 | 3/8" |
| | 18 | 24 | 583 | 438 | 1189 | 594 | 3/8" |
| | 18 | 30 | 740 | 559 | 1210 | 693 | 3/8" |
| | 18 | 36 | 879 | 680 | 1396 | 823 | 3/8" |
| | 18 | 42 | 1033 | 801 | 1609 | 967 | 1/2" |
| | 24 | 12 | 326 | 270 | 1057 | 305 | 3/8" |
| | 24 | 16 | 514 | 381 | 1037 | 481 | 3/8" |
| | 24 | 18 | 629 | 436 | 1283 | 641 | 3/8" |
| | 24 | 24 | 824 | 603 | 1085 | 838 | 3/8" |
| | 24 | 30 | 1034 | 769 | 1362 | 1053 | 3/8" |
| | 24 | 36 | 1244 | 935 | 1342 | 1164 | 1/2" |
| | 24 | 42 | 1482 | 1101 | 1553 | 1387 | 1/2" |
| | 30 | 15 | 595 | 425 | 1276 | 557 | 3/8" |
| | 30 | 18 | 729 | 525 | 1192 | 682 | 3/8" |
| | 30 | 16 | 542 | 458 | 1052 | 507 | 3/8" |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$** (lbs) | BOLT Ø |
|---|---|---|---|---|---|---|---|
| 54 | 13 | 30 | 535 | 411 | 1549 | 501 | 3/8" |
| | 13 | 36 | 648 | 500 | 1844 | 606 | 3/8" |
| | 16 | 16 | 360 | 259 | 946 | 367 | 3/8" |
| | 16 | 18 | 388 | 297 | 1018 | 395 | 3/8" |
| | 16 | 30 | 675 | 523 | 1392 | 632 | 3/8" |
| | 16 | 32 | 723 | 561 | 1477 | 676 | 3/8" |
| | 16 | 36 | 818 | 636 | 1647 | 766 | 3/8" |
| | 18 | 12 | 296 | 210 | 1064 | 277 | 3/8" |
| | 18 | 15 | 383 | 275 | 1121 | 390 | 3/8" |
| | 18 | 24 | 605 | 468 | 1311 | 616 | 3/8" |
| | 18 | 30 | 769 | 598 | 1336 | 720 | 3/8" |
| | 18 | 36 | 932 | 727 | 1574 | 872 | 3/8" |
| | 18 | 42 | 1095 | 856 | 1815 | 1025 | 1/2" |
| | 24 | 12 | 348 | 289 | 1197 | 326 | 3/8" |
| | 24 | 16 | 548 | 407 | 1174 | 513 | 3/8" |
| | 24 | 18 | 671 | 466 | 1453 | 683 | 3/8" |
| | 24 | 24 | 878 | 644 | 1231 | 894 | 3/8" |
| | 24 | 30 | 1102 | 822 | 1546 | 1122 | 1/2" |
| | 24 | 36 | 1327 | 1000 | 1525 | 1242 | 1/2" |
| | 24 | 42 | 1580 | 1177 | 1765 | 1479 | 1/2" |
| | 30 | 15 | 605 | 425 | 1378 | 566 | 3/8" |
| | 30 | 18 | 741 | 525 | 1288 | 694 | 3/8" |
| | 30 | 16 | 547 | 458 | 1128 | 512 | 3/8" |
| 60 | 19 | 12 | 337 | 252 | 1339 | 315 | 3/8" |
| | 19 | 15 | 435 | 329 | 1423 | 443 | 3/8" |
| | 19 | 18 | 516 | 407 | 1249 | 525 | 3/8" |
| | 19 | 21 | 611 | 484 | 1360 | 623 | 3/8" |
| | 19 | 24 | 707 | 562 | 1573 | 720 | 3/8" |
| | 19 | 30 | 899 | 717 | 1624 | 841 | 3/8" |
| | 19 | 36 | 1090 | 872 | 1910 | 1020 | 1/2" |
| | 24 | 12 | 391 | 325 | 1499 | 386 | 3/8" |
| | 24 | 15 | 553 | 425 | 1457 | 518 | 3/8" |
| | 24 | 18 | 716 | 525 | 1733 | 729 | 3/8" |
| | 24 | 21 | 843 | 625 | 1611 | 858 | 3/8" |
| | 24 | 24 | 997 | 725 | 1567 | 1015 | 1/2" |
| | 24 | 30 | 1220* | 893* | 1918 | 1242 | 1/2" |
| | 24 | 36 | 1450* | 1086* | 1872 | 1357 | 1/2" |
| | 37 | 15 | 713 | 425 | 1771 | 667 | 3/8" |
| | 37 | 18 | 821 | 525 | 1547 | 768 | 3/8" |
| | 37 | 21 | 926 | 625 | 1411 | 867 | 3/8" |
| | 37 | 24 | 1039 | 725 | 1334 | 973 | 3/8" |
| 64 | 13 | 30 | 640* | 476* | 2211 | 599 | 3/8" |
| | 13 | 36 | 660* | 463* | 2242 | 618 | 1/2" |
| | 16 | 16 | 429 | 309 | 1345 | 437 | 3/8" |
| | 16 | 18 | 476 | 354 | 1491 | 485 | 3/8" |
| | 16 | 30 | 826 | 624 | 2038 | 773 | 1/2" |
| | 16 | 32 | 885 | 669 | 2164 | 828 | 1/2" |
| | 16 | 36 | 900* | 658* | 2168 | 842 | 1/2" |
| | 18 | 12 | 352 | 251 | 1510 | 329 | 3/8" |
| | 18 | 15 | 456 | 328 | 1593 | 464 | 3/8" |
| | 18 | 24 | 741 | 559 | 1919 | 755 | 3/8" |
| | 18 | 30 | 941 | 713 | 1959 | 880 | 1/2" |
| | 18 | 36 | 1020* | 770* | 2066 | 955 | 1/2" |
| | 18 | 42 | 1050* | 759* | 2086 | 983 | 1/2" |
| | 24 | 12 | 415 | 345 | 1701 | 388 | 3/8" |
| | 24 | 16 | 653 | 486 | 1673 | 611 | 3/8" |
| | 24 | 18 | 724 | 557 | 1874 | 737 | 3/8" |
| | 24 | 24 | 1011 | 769 | 1703 | 1029 | 1/2" |
| | 24 | 30 | 1150* | 873* | 1938 | 1171 | 1/2" |
| | 24 | 36 | 1370* | 1037* | 1898 | 1282 | 1/2" |
| | 24 | 42 | 1400* | 1012* | 1886 | 1310 | 1/2" |
| | 30 | 15 | 744 | 531 | 2027 | 697 | 3/8" |
| | 30 | 18 | 912 | 656 | 1900 | 854 | 1/2" |
| | 30 | 16 | 677 | 572 | 1671 | 634 | 3/8" |

** Ωo = 2.0 APPLIED PER 2022 CBC 1617A.1.23.

CONTINUES ON NEXT SHEET

WT = MAXIMUM UNIT WEIGHT INCLUDING LOADED CONTENTS.

ML = MAXIMUM LOADED CONTENTS. WEIGHTS MARKED WITH * ARE NOT THE MAXIMUM WEIGHT CAPACITY CALCULATED BY VOLUME PER 2022 CBC, TABLE 1607A.1, FOOTNOTE D, BUT THE MAXIMUM LOAD WEIGHT ALLOWED FOR THE UNIT SIZE. THE INSIDE OF ALL UNITS SHALL BE CLEARLY LABELED WITH THE MAXIMUM ALLOWED LOADED CONTENTS (ML) IN POUNDS.

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THE CABINET WEIGHT, INCLUDING ALL ACCESSORY OPTIONS AND LOADED CONTENTS DOES NOT EXCEED THE MAXIMUM WEIGHT LISTED IN SCHEDULES 1 THROUGH 5 AS APPLICABLE.

THE BOTTOM OF CABINET MEETS THE CRITERIA LISTED IN THE DETAILS ON SHEETS 13 THROUGH 26 .

# SEISMIC ATTACHMENT: ANCHOR DEMAND FORCE (SCHEDULE 1 CONT.)

CABINET HEIGHT (H) = 66", 68", 72", 78", 84" | Y = H/2 @ CONCRETE ON METAL DECK (z/h ≤ 1.0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\ MAX}$ (lbs) | $V_{u\ MAX}$** (lbs) | BOLT Ø |
|---|---|---|---|---|---|---|---|
| 66 | 13 | 30 | 620* | 450* | 2211 | 580 | 3/8" |
| | 13 | 36 | 630* | 427* | 2209 | 590 | 3/8" |
| | 16 | 16 | 444 | 320 | 1437 | 452 | 3/8" |
| | 16 | 18 | 493 | 367 | 1593 | 501 | 3/8" |
| | 16 | 30 | 855 | 647 | 2179 | 800 | 1/2" |
| | 16 | 32 | 850* | 627* | 2146 | 796 | 1/2" |
| | 16 | 36 | 870* | 620* | 2165 | 814 | 1/2" |
| | 18 | 12 | 364 | 260 | 1613 | 341 | 3/8" |
| | 18 | 15 | 472 | 340 | 1701 | 480 | 3/8" |
| | 18 | 24 | 767 | 579 | 2051 | 781 | 1/2" |
| | 18 | 30 | 973 | 739 | 2095 | 911 | 1/2" |
| | 18 | 36 | 1000* | 742* | 2093 | 936 | 1/2" |
| | 18 | 42 | 1030* | 730* | 2115 | 964 | 1/2" |
| | 24 | 12 | 430 | 357 | 1817 | 402 | 3/8" |
| | 24 | 16 | 676 | 504 | 1788 | 632 | 3/8" |
| | 24 | 18 | 749 | 577 | 2003 | 762 | 1/2" |
| | 24 | 24 | 1046 | 797 | 1822 | 1065 | 1/2" |
| | 24 | 30 | 1120* | 834* | 1950 | 1140 | 1/2" |
| | 24 | 36 | 1320* | 977* | 1891 | 1236 | 1/2" |
| | 24 | 42 | 1350* | 950* | 1881 | 1264 | 1/2" |
| | 30 | 15 | 751 | 531 | 2112 | 703 | 1/2" |
| | 30 | 18 | 920 | 656 | 1980 | 861 | 1/2" |
| | 30 | 16 | 681 | 572 | 1734 | 637 | 3/8" |
| 68 | 13 | 30 | 600* | 391* | 2207 | 562 | 3/8" |
| | 13 | 36 | 620* | 493* | 2243 | 580 | 3/8" |
| | 16 | 16 | 459 | 332 | 1532 | 467 | 3/8" |
| | 16 | 18 | 509 | 380 | 1699 | 518 | 3/8" |
| | 16 | 30 | 820* | 605* | 2156 | 768 | 1/2" |
| | 16 | 32 | 820* | 591* | 2136 | 768 | 1/2" |
| | 16 | 36 | 850* | 593* | 2183 | 796 | 1/2" |
| | 18 | 12 | 376 | 269 | 1719 | 352 | 3/8" |
| | 18 | 15 | 487 | 351 | 1814 | 496 | 3/8" |
| | 18 | 24 | 770* | 577* | 2125 | 784 | 1/2" |
| | 18 | 30 | 960* | 719* | 2132 | 899 | 1/2" |
| | 18 | 36 | 960* | 695* | 2073 | 899 | 1/2" |
| | 18 | 42 | 1000* | 691* | 2119 | 936 | 1/2" |
| | 24 | 12 | 444 | 369 | 1938 | 416 | 3/8" |
| | 24 | 16 | 698 | 521 | 1907 | 654 | 3/8" |
| | 24 | 18 | 774 | 597 | 2136 | 788 | 1/2" |
| | 24 | 24 | 1082 | 824 | 1945 | 1101 | 1/2" |
| | 24 | 30 | 1100* | 805* | 1978 | 1120 | 1/2" |
| | 24 | 36 | 1320* | 967* | 1953 | 1236 | 1/2" |
| | 24 | 42 | 1350* | 938* | 1943 | 1264 | 1/2" |
| | 30 | 15 | 758 | 531 | 2198 | 709 | 1/2" |
| | 30 | 18 | 928 | 656 | 2061 | 869 | 1/2" |
| | 30 | 16 | 684 | 572 | 1798 | 640 | 3/8" |
| 72 | 19 | 12 | 407 | 305 | 1949 | 381 | 3/8" |
| | 19 | 15 | 526 | 398 | 2075 | 535 | 3/8" |
| | 19 | 18 | 651 | 492 | 1908 | 663 | 3/8" |
| | 19 | 21 | 773 | 586 | 2083 | 787 | 1/2" |
| | 19 | 24 | 800* | 585* | 2155 | 814 | 1/2" |
| | 19 | 30 | 950* | 678* | 2083 | 889 | 1/2" |
| | 19 | 36 | 1000* | 671* | 2128 | 936 | 1/2" |
| | 24 | 12 | 473 | 394 | 2190 | 443 | 3/8" |
| | 24 | 15 | 669 | 516 | 2133 | 626 | 3/8" |
| | 24 | 18 | 730* | 481* | 2138 | 743 | 1/2" |
| | 24 | 21 | 920* | 633* | 2133 | 937 | 1/2" |
| | 24 | 24 | 1050* | 688* | 2007 | 1069 | 1/2" |
| | 24 | 30 | 1050* | 613* | 2007 | 1069 | 1/2" |
| | 24 | 36 | 1250* | 814* | 1968 | 1170 | 1/2" |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\ MAX}$ (lbs) | $V_{u\ MAX}$** (lbs) | BOLT Ø |
|---|---|---|---|---|---|---|---|
| 78 | 19 | 12 | 439 | 329 | 2285 | 411 | 3/8" |
| | 19 | 15 | 520* | 382* | 2229 | 529 | 3/8" |
| | 19 | 18 | 680* | 508* | 2165 | 692 | 1/2" |
| | 19 | 21 | 740* | 537* | 2168 | 753 | 1/2" |
| | 19 | 24 | 750* | 517* | 2197 | 764 | 1/2" |
| | 19 | 30 | 900* | 605* | 2147 | 842 | 1/2" |
| | 19 | 36 | 930* | 574* | 2154 | 870 | 1/2" |
| | 24 | 12 | 450* | 364* | 2260 | 421 | 3/8" |
| | 24 | 15 | 640* | 474* | 2216 | 599 | 3/8" |
| | 24 | 18 | 690* | 420* | 2197 | 702 | 1/2" |
| | 24 | 21 | 850* | 539* | 2144 | 865 | 1/2" |
| | 24 | 24 | 1000* | 608* | 2081 | 1018 | 1/2" |
| | 24 | 30 | 1000* | 527* | 2081 | 1018 | 1/2" |
| | 24 | 36 | 1170* | 697* | 2007 | 1095 | 1/2" |
| 84 | 19 | 12 | 400* | 281* | 2245 | 374 | 3/8" |
| | 19 | 15 | 480* | 332* | 2220 | 489 | 3/8" |
| | 19 | 18 | 650* | 449* | 2235 | 662 | 1/2" |
| | 19 | 21 | 700* | 464* | 2215 | 713 | 1/2" |
| | 19 | 24 | 700* | 428* | 2215 | 713 | 1/2" |
| | 19 | 30 | 830* | 486* | 2141 | 777 | 1/2" |
| | 19 | 36 | 850* | 434* | 2128 | 796 | 1/2" |
| | 24 | 12 | 420* | 328* | 2276 | 393 | 3/8" |
| | 24 | 15 | 600* | 421* | 2243 | 562 | 3/8" |
| | 24 | 18 | 650* | 335* | 2235 | 662 | 1/2" |
| | 24 | 21 | 800* | 437* | 2180 | 814 | 1/2" |
| | 24 | 24 | 920* | 462* | 2070 | 937 | 1/2" |
| | 24 | 30 | 920* | 368* | 2070 | 937 | 1/2" |
| | 24 | 36 | 1100* | 591* | 2043 | 1030 | 1/2" |

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THE BOTTOM OF CABINET MEETS THE CRITERIA LISTED IN THE DETAILS ON SHEETS 13 THROUGH 26 .



REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

# SEISMIC ATTACHMENT: ANCHOR DEMAND FORCE (SCHEDULE 2)

CABINET HEIGHT (H) = 24", 28" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$** (lbs) | $V_{u\,MAX}$** (lbs) | BOLT Ø | MIN EMBED ($h_{ef}$) | MIN CONC THICK |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 13 | 30 | 232 | 163 | 361 | 136 | 1/2" | 2" | 4" |
| | 13 | 36 | 282 | 199 | 430 | 165 | 1/2" | 2" | 4" |
| | 16 | 16 | 148 | 103 | 208 | 94 | 1/2" | 2" | 4" |
| | 16 | 18 | 169 | 118 | 237 | 108 | 1/2" | 2" | 4" |
| | 16 | 30 | 293 | 208 | 319 | 171 | 1/2" | 2" | 4" |
| | 16 | 32 | 314 | 223 | 339 | 184 | 1/2" | 2" | 4" |
| | 16 | 36 | 355 | 253 | 377 | 208 | 1/2" | 2" | 4" |
| | 18 | 12 | 122 | 84 | 236 | 71 | 1/2" | 2" | 4" |
| | 18 | 15 | 157 | 109 | 247 | 100 | 1/2" | 2" | 4" |
| | 18 | 24 | 263 | 186 | 302 | 168 | 1/2" | 2" | 4" |
| | 18 | 30 | 334 | 238 | 304 | 195 | 1/2" | 2" | 4" |
| | 18 | 36 | 404 | 289 | 357 | 236 | 1/2" | 2" | 4" |
| | 18 | 42 | 475 | 341 | 411 | 278 | 1/2" | 2" | 4" |
| | 24 | 16 | 230 | 162 | 261 | 135 | 1/2" | 2" | 4" |
| | 24 | 18 | 263 | 186 | 301 | 167 | 1/2" | 2" | 4" |
| | 24 | 24 | 358 | 256 | 259 | 228 | 1/2" | 2" | 4" |
| | 24 | 30 | 455 | 327 | 329 | 289 | 1/2" | 2" | 4" |
| | 24 | 36 | 551 | 398 | 321 | 322 | 1/2" | 2" | 4" |
| | 24 | 42 | 647 | 468 | 366 | 379 | 1/2" | 2" | 4" |
| | 30 | 15 | 271 | 191 | 328 | 159 | 1/2" | 2" | 4" |
| | 30 | 18 | 332 | 236 | 302 | 194 | 1/2" | 2" | 4" |
| | 30 | 16 | 291 | 206 | 317 | 170 | 1/2" | 2" | 4" |
| 28 | 13 | 30 | 261 | 199 | 478 | 153 | 1/2" | 2" | 4" |
| | 13 | 36 | 316 | 242 | 569 | 185 | 1/2" | 2" | 4" |
| | 16 | 16 | 166 | 125 | 276 | 106 | 1/2" | 2" | 4" |
| | 16 | 18 | 190 | 144 | 314 | 121 | 1/2" | 2" | 4" |
| | 16 | 30 | 329 | 253 | 425 | 192 | 1/2" | 2" | 4" |
| | 16 | 32 | 352 | 271 | 451 | 206 | 1/2" | 2" | 4" |
| | 16 | 36 | 399 | 308 | 503 | 233 | 1/2" | 2" | 4" |
| | 18 | 12 | 136 | 102 | 311 | 79 | 1/2" | 2" | 4" |
| | 18 | 15 | 176 | 133 | 326 | 112 | 1/2" | 2" | 4" |
| | 18 | 24 | 295 | 227 | 401 | 188 | 1/2" | 2" | 4" |
| | 18 | 30 | 392 | 289 | 425 | 229 | 1/2" | 2" | 4" |
| | 18 | 36 | 475 | 352 | 499 | 278 | 1/2" | 2" | 4" |
| | 18 | 42 | 558 | 414 | 575 | 327 | 1/2" | 2" | 4" |
| | 21 | 48 | 758 | 566 | 610 | 444 | 1/2" | 2" | 4" |
| | 21 | 72 | 1083 | 863 | 837 | 634 | 1/2" | 3 1/4" | 6" |
| | 24 | 16 | 270 | 197 | 363 | 158 | 1/2" | 2" | 4" |
| | 24 | 18 | 326 | 226 | 443 | 207 | 1/2" | 2" | 4" |
| | 24 | 24 | 446 | 312 | 385 | 284 | 1/2" | 2" | 4" |
| | 24 | 30 | 565 | 398 | 488 | 359 | 1/2" | 2" | 4" |
| | 24 | 36 | 684 | 484 | 479 | 400 | 1/2" | 2" | 4" |
| | 24 | 42 | 773 | 570 | 525 | 452 | 1/2" | 2" | 4" |
| | 30 | 15 | 305 | 212 | 437 | 179 | 1/2" | 2" | 4" |
| | 30 | 18 | 374 | 262 | 405 | 219 | 1/2" | 2" | 4" |
| | 30 | 16 | 328 | 229 | 424 | 192 | 1/2" | 2" | 4" |

** $\Omega_0$ = 2.0 APPLIED PER 2022 CBC 1617A.1.23

CONTINUES ON NEXT SHEET

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# SEISMIC ATTACHMENT: ANCHOR DEMAND FORCE (SCHEDULE 2 CONT)

CABINET HEIGHT (H) = 38", 40", 42", 51" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$** (lbs) | $V_{u\,MAX}$** (lbs) | BOLT Ø | MIN EMBED ($h_{ef}$) | MIN CONC THICK |
|---|---|---|---|---|---|---|---|---|---|
| 38 | 13 | 30 | 365 | 278 | 925 | 214 | 1/2" | 3 1/4" | 6" |
| | 13 | 36 | 443 | 339 | 1101 | 259 | 1/2" | 3 1/4" | 6" |
| | 16 | 16 | 233 | 176 | 533 | 148 | 1/2" | 2" | 4" |
| | 16 | 18 | 265 | 201 | 608 | 169 | 1/2" | 2" | 4" |
| | 16 | 30 | 437 | 354 | 787 | 256 | 1/2" | 2" | 4" |
| | 16 | 32 | 469 | 380 | 836 | 274 | 1/2" | 3 1/4" | 6" |
| | 16 | 36 | 531 | 431 | 932 | 311 | 1/2" | 3 1/4" | 6" |
| | 18 | 12 | 179 | 142 | 565 | 105 | 1/2" | 2" | 4" |
| | 18 | 15 | 233 | 186 | 597 | 148 | 1/2" | 2" | 4" |
| | 18 | 24 | 392 | 317 | 742 | 250 | 1/2" | 2" | 4" |
| | 18 | 30 | 498 | 405 | 754 | 291 | 1/2" | 2" | 4" |
| | 18 | 36 | 604 | 492 | 889 | 354 | 1/2" | 3 1/4" | 6" |
| | 18 | 42 | 711 | 580 | 1026 | 416 | 1/2" | 3 1/4" | 6" |
| | 24 | 16 | 373 | 276 | 697 | 218 | 1/2" | 2" | 4" |
| | 24 | 18 | 426 | 316 | 805 | 271 | 1/2" | 2" | 4" |
| | 24 | 24 | 582 | 436 | 709 | 371 | 1/2" | 2" | 4" |
| | 24 | 30 | 740 | 557 | 901 | 471 | 1/2" | 3 1/4" | 6" |
| | 24 | 36 | 896 | 677 | 893 | 524 | 1/2" | 3 1/4" | 6" |
| | 24 | 42 | 1022 | 797 | 989 | 598 | 1/2" | 3 1/4" | 6" |
| | 30 | 15 | 427 | 318 | 849 | 250 | 1/2" | 2" | 4" |
| | 30 | 18 | 530 | 393 | 802 | 310 | 1/2" | 3 1/4" | 6" |
| | 30 | 16 | 465 | 343 | 836 | 272 | 1/2" | 3 1/4" | 6" |
| 40 | 13 | 30 | 388 | 296 | 1035 | 227 | 1/2" | 3 1/4" | 6" |
| | 13 | 36 | 470 | 360 | 1233 | 275 | 1/2" | 3 1/4" | 6" |
| | 16 | 16 | 247 | 187 | 597 | 157 | 1/2" | 2" | 4" |
| | 16 | 18 | 281 | 214 | 681 | 179 | 1/2" | 2" | 4" |
| | 16 | 30 | 464 | 377 | 882 | 272 | 1/2" | 3 1/4" | 6" |
| | 16 | 32 | 498 | 404 | 937 | 291 | 1/2" | 3 1/4" | 6" |
| | 16 | 36 | 564 | 458 | 1045 | 330 | 1/2" | 3 1/4" | 6" |
| | 18 | 12 | 190 | 151 | 633 | 111 | 1/2" | 2" | 4" |
| | 18 | 15 | 247 | 198 | 669 | 157 | 1/2" | 2" | 4" |
| | 18 | 24 | 416 | 337 | 831 | 265 | 1/2" | 2" | 4" |
| | 18 | 30 | 528 | 431 | 846 | 309 | 1/2" | 3 1/4" | 6" |
| | 18 | 36 | 642 | 524 | 998 | 375 | 1/2" | 3 1/4" | 6" |
| | 18 | 42 | 755 | 617 | 1151 | 442 | 1/2" | 3 1/4" | 6" |
| | 24 | 16 | 395 | 293 | 781 | 231 | 1/2" | 2" | 4" |
| | 24 | 18 | 452 | 336 | 902 | 288 | 1/2" | 3 1/4" | 6" |
| | 24 | 24 | 618 | 464 | 796 | 393 | 1/2" | 3 1/4" | 6" |
| | 24 | 30 | 785 | 592 | 1011 | 499 | 1/2" | 3 1/4" | 6" |
| | 24 | 36 | 951 | 720 | 1003 | 556 | 1/2" | 3 1/4" | 6" |
| | 24 | 42 | 1118 | 848 | 1146 | 654 | 1/2" | 3 1/4" | 6" |
| | 30 | 15 | 433 | 318 | 909 | 253 | 1/2" | 3 1/4" | 6" |
| | 30 | 18 | 537 | 393 | 860 | 314 | 1/2" | 3 1/4" | 6" |
| | 30 | 16 | 471 | 343 | 896 | 276 | 1/2" | 3 1/4" | 6" |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$** (lbs) | $V_{u\,MAX}$** (lbs) | BOLT Ø | MIN EMBED ($h_{ef}$) | MIN CONC THICK |
|---|---|---|---|---|---|---|---|---|---|
| 42 | 13 | 30 | 410 | 314 | 1152 | 240 | 1/2" | 3 1/4" | 6" |
| | 13 | 36 | 496 | 382 | 1372 | 290 | 1/2" | 3 1/4" | 6" |
| | 16 | 16 | 261 | 198 | 664 | 166 | 1/2" | 2" | 4" |
| | 16 | 18 | 297 | 227 | 757 | 189 | 1/2" | 2" | 4" |
| | 16 | 30 | 491 | 399 | 983 | 287 | 1/2" | 3 1/4" | 6" |
| | 16 | 32 | 526 | 428 | 1044 | 308 | 1/2" | 3 1/4" | 6" |
| | 16 | 36 | 596 | 486 | 1165 | 349 | 1/2" | 3 1/4" | 6" |
| | 18 | 12 | 201 | 160 | 704 | 118 | 1/2" | 2" | 4" |
| | 18 | 15 | 262 | 210 | 744 | 166 | 1/2" | 2" | 4" |
| | 18 | 24 | 441 | 358 | 926 | 280 | 1/2" | 3 1/4" | 6" |
| | 18 | 30 | 559 | 456 | 943 | 327 | 1/2" | 3 1/4" | 6" |
| | 18 | 36 | 679 | 555 | 1112 | 397 | 1/2" | 3 1/4" | 6" |
| | 18 | 42 | 798 | 654 | 1283 | 467 | 1/2" | 3 1/4" | 6" |
| | 24 | 16 | 418 | 311 | 870 | 245 | 1/2" | 3 1/4" | 6" |
| | 24 | 18 | 478 | 356 | 1004 | 304 | 1/2" | 3 1/4" | 6" |
| | 24 | 24 | 653 | 492 | 888 | 416 | 1/2" | 3 1/4" | 6" |
| | 24 | 30 | 830 | 627 | 1128 | 528 | 1/2" | 3 1/4" | 6" |
| | 24 | 36 | 1005 | 763 | 1120 | 588 | 1/2" | 3 1/4" | 6" |
| | 24 | 42 | 1182 | 899 | 1279 | 691 | 1/2" | 3 1/4" | 6" |
| | 30 | 15 | 438 | 318 | 969 | 256 | 1/2" | 3 1/4" | 6" |
| | 30 | 18 | 544 | 393 | 918 | 318 | 1/2" | 3 1/4" | 6" |
| | 30 | 16 | 478 | 343 | 956 | 280 | 1/2" | 3 1/4" | 6" |
| 51 | 13 | 30 | 515 | 384 | 1773 | 302 | 5/8" | 4" | 6" |
| | 13 | 36 | 625 | 468 | 2113 | 365 | 5/8" | 4" | 6" |
| | 16 | 16 | 338 | 242 | 1055 | 215 | 1/2" | 3 1/4" | 6" |
| | 16 | 18 | 375 | 278 | 1169 | 238 | 1/2" | 3 1/4" | 6" |
| | 16 | 30 | 650 | 489 | 1598 | 380 | 1/2" | 3 1/4" | 6" |
| | 16 | 32 | 697 | 525 | 1696 | 407 | 1/2" | 3 1/4" | 6" |
| | 16 | 36 | 788 | 595 | 1891 | 461 | 5/8" | 4" | 6" |
| | 18 | 12 | 277 | 196 | 1185 | 162 | 1/2" | 3 1/4" | 6" |
| | 18 | 15 | 359 | 257 | 1249 | 228 | 1/2" | 3 1/4" | 6" |
| | 18 | 24 | 583 | 438 | 1504 | 371 | 1/2" | 3 1/4" | 6" |
| | 18 | 30 | 740 | 559 | 1535 | 433 | 1/2" | 3 1/4" | 6" |
| | 18 | 36 | 879 | 680 | 1773 | 514 | 5/8" | 4" | 6" |
| | 18 | 42 | 1033 | 801 | 2044 | 604 | 5/8" | 4" | 6" |
| | 24 | 12 | 326 | 270 | 1331 | 191 | 1/2" | 3 1/4" | 6" |
| | 24 | 16 | 514 | 381 | 1312 | 301 | 1/2" | 3 1/4" | 6" |
| | 24 | 18 | 629 | 436 | 1623 | 400 | 1/2" | 3 1/4" | 6" |
| | 24 | 24 | 824 | 603 | 1382 | 524 | 1/2" | 3 1/4" | 6" |
| | 24 | 30 | 1034 | 769 | 1735 | 658 | 5/8" | 4" | 6" |
| | 24 | 36 | 1244 | 935 | 1716 | 728 | 5/8" | 4" | 6" |
| | 24 | 42 | 1482 | 1101 | 1987 | 867 | 5/8" | 4" | 6" |
| | 30 | 15 | 595 | 425 | 1614 | 348 | 1/2" | 3 1/4" | 6" |
| | 30 | 18 | 729 | 525 | 1512 | 426 | 1/2" | 3 1/4" | 6" |
| | 30 | 16 | 542 | 458 | 1332 | 317 | 1/2" | 3 1/4" | 6" |

** Ωo = 2.0 APPLIED PER 2022 CBC 1617A.1.23

CONTINUES ON NEXT SHEET

SEE NOTES ON FIRST SHEET OF SCHEDULE 2

REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

# SEISMIC ATTACHMENT: ANCHOR DEMAND FORCE (SCHEDULE 2 CONT)

CABINET HEIGHT (H) = 54", 60", 64", 66" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\ MAX}$** (lbs) | $V_{u\ MAX}$** (lbs) | BOLT Ø | MIN EMBED ($h_{ef}$) | MIN CONC THICK |
|---|---|---|---|---|---|---|---|---|---|
| 54 | 13 | 30 | 535 | 411 | 1953 | 313 | 5/8" | 4" | 6" |
| | 13 | 36 | 630* | 482* | 2261 | 369 | 5/8" | 4" | 6" |
| | 16 | 16 | 360 | 259 | 1193 | 229 | 1/2" | 3 1/4" | 6" |
| | 16 | 18 | 388 | 297 | 1284 | 247 | 1/2" | 3 1/4" | 6" |
| | 16 | 30 | 675 | 523 | 1761 | 395 | 5/8" | 4" | 6" |
| | 16 | 32 | 723 | 561 | 1868 | 423 | 5/8" | 4" | 6" |
| | 16 | 36 | 818 | 636 | 2084 | 479 | 5/8" | 4" | 6" |
| | 18 | 12 | 296 | 210 | 1339 | 173 | 1/2" | 3 1/4" | 6" |
| | 18 | 15 | 383 | 275 | 1413 | 243 | 1/2" | 3 1/4" | 6" |
| | 18 | 24 | 605 | 468 | 1658 | 385 | 1/2" | 3 1/4" | 6" |
| | 18 | 30 | 769 | 598 | 1694 | 450 | 5/8" | 4" | 6" |
| | 18 | 36 | 932 | 727 | 1997 | 545 | 5/8" | 4" | 6" |
| | 18 | 42 | 1030* | 791* | 2166 | 603 | 5/8" | 4" | 6" |
| | 24 | 12 | 348 | 289 | 1507 | 204 | 1/2" | 3 1/4" | 6" |
| | 24 | 16 | 548 | 407 | 1485 | 321 | 1/2" | 3 1/4" | 6" |
| | 24 | 18 | 671 | 466 | 1837 | 427 | 5/8" | 4" | 6" |
| | 24 | 24 | 878 | 644 | 1567 | 559 | 1/2" | 3 1/4" | 6" |
| | 24 | 30 | 1102 | 822 | 1967 | 701 | 5/8" | 4" | 6" |
| | 24 | 36 | 1327 | 1000 | 1948 | 776 | 5/8" | 4" | 6" |
| | 24 | 42 | 1450* | 1047* | 2070 | 848 | 5/8" | 4" | 6" |
| | 30 | 15 | 605 | 425 | 1742 | 354 | 5/8" | 4" | 6" |
| | 30 | 18 | 741 | 525 | 1633 | 433 | 1/2" | 3 1/4" | 6" |
| | 30 | 16 | 547 | 458 | 1427 | 320 | 1/2" | 3 1/4" | 6" |
| 60 | 19 | 12 | 337 | 252 | 1684 | 197 | 1/2" | 3 1/4" | 6" |
| | 19 | 15 | 435 | 329 | 1793 | 277 | 5/8" | 4" | 6" |
| | 19 | 18 | 516 | 407 | 1577 | 328 | 1/2" | 3 1/4" | 6" |
| | 19 | 21 | 611 | 484 | 1719 | 389 | 5/8" | 4" | 6" |
| | 19 | 24 | 707 | 562 | 1988 | 450 | 5/8" | 4" | 6" |
| | 19 | 30 | 899 | 717 | 2058 | 526 | 5/8" | 4" | 6" |
| | 19 | 36 | 980* | 762* | 2177 | 573 | 5/8" | 4" | 6" |
| | 24 | 12 | 391 | 325 | 1886 | 229 | 5/8" | 4" | 6" |
| | 24 | 15 | 553 | 425 | 1839 | 324 | 5/8" | 4" | 6" |
| | 24 | 18 | 716 | 525 | 2188 | 456 | 5/8" | 4" | 6" |
| | 24 | 21 | 843 | 625 | 2040 | 536 | 5/8" | 4" | 6" |
| | 24 | 24 | 997 | 725 | 1990 | 634 | 5/8" | 4" | 6" |
| | 24 | 30 | 1070* | 743* | 2136 | 681 | 5/8" | 4" | 6" |
| | 24 | 36 | 1280* | 916* | 2106 | 749 | 5/8" | 4" | 6" |
| | 37 | 15 | 713 | 425 | 2236 | 417 | 5/8" | 4" | 6" |
| | 37 | 18 | 821 | 525 | 1959 | 480 | 5/8" | 4" | 6" |
| | 37 | 21 | 926 | 625 | 1793 | 542 | 5/8" | 4" | 6" |
| | 37 | 24 | 1039 | 725 | 1700 | 608 | 5/8" | 4" | 6" |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\ MAX}$** (lbs) | $V_{u\ MAX}$** (lbs) | BOLT Ø | MIN EMBED ($h_{ef}$) | MIN CONC THICK |
|---|---|---|---|---|---|---|---|---|---|
| 64 | 13 | 30 | 530* | 366* | 2305 | 310 | 5/8" | 4" | 6" |
| | 13 | 36 | 540* | 343* | 2310 | 316 | 5/8" | 4" | 6" |
| | 16 | 16 | 429 | 309 | 1695 | 273 | 1/2" | 3 1/4" | 6" |
| | 16 | 18 | 476 | 354 | 1879 | 303 | 5/8" | 4" | 6" |
| | 16 | 30 | 730* | 528* | 2274 | 427 | 5/8" | 4" | 6" |
| | 16 | 32 | 730* | 514* | 2254 | 427 | 5/8" | 4" | 6" |
| | 16 | 36 | 730* | 488* | 2221 | 427 | 5/8" | 4" | 6" |
| | 18 | 12 | 352 | 251 | 1899 | 206 | 5/8" | 4" | 6" |
| | 18 | 15 | 456 | 328 | 2005 | 290 | 5/8" | 4" | 6" |
| | 18 | 24 | 690* | 508* | 2255 | 439 | 5/8" | 4" | 6" |
| | 18 | 30 | 850* | 623* | 2240 | 497 | 5/8" | 4" | 6" |
| | 18 | 36 | 860* | 610* | 2204 | 503 | 5/8" | 4" | 6" |
| | 18 | 42 | 870* | 579* | 2188 | 509 | 5/8" | 4" | 6" |
| | 24 | 12 | 415 | 345 | 2139 | 243 | 5/8" | 4" | 6" |
| | 24 | 16 | 653 | 486 | 2112 | 382 | 5/8" | 4" | 6" |
| | 24 | 18 | 690* | 523* | 2255 | 439 | 5/8" | 4" | 6" |
| | 24 | 24 | 1011 | 769 | 2161 | 643 | 5/8" | 4" | 6" |
| | 24 | 30 | 1010* | 733* | 2159 | 643 | 5/8" | 4" | 6" |
| | 24 | 36 | 1200* | 867* | 2116 | 702 | 5/8" | 4" | 6" |
| | 24 | 42 | 1230* | 842* | 2109 | 720 | 5/8" | 4" | 6" |
| | 30 | 15 | 660* | 447* | 2267 | 386 | 5/8" | 4" | 6" |
| | 30 | 18 | 850* | 594* | 2240 | 497 | 5/8" | 4" | 6" |
| | 30 | 16 | 677 | 572 | 2110 | 396 | 5/8" | 4" | 6" |
| 66 | 13 | 30 | 520* | 350* | 2334 | 304 | 5/8" | 4" | 6" |
| | 13 | 36 | 530* | 327* | 2340 | 310 | 5/8" | 4" | 6" |
| | 16 | 16 | 444 | 320 | 1810 | 283 | 5/8" | 4" | 6" |
| | 16 | 18 | 493 | 367 | 2007 | 313 | 5/8" | 4" | 6" |
| | 16 | 30 | 700* | 492* | 2251 | 410 | 5/8" | 4" | 6" |
| | 16 | 32 | 710* | 487* | 2263 | 415 | 5/8" | 4" | 6" |
| | 16 | 36 | 720* | 470* | 2262 | 421 | 5/8" | 4" | 6" |
| | 18 | 12 | 364 | 260 | 2028 | 213 | 5/8" | 4" | 6" |
| | 18 | 15 | 472 | 340 | 2142 | 300 | 5/8" | 4" | 6" |
| | 18 | 24 | 670* | 482* | 2261 | 426 | 5/8" | 4" | 6" |
| | 18 | 30 | 820* | 586* | 2231 | 480 | 5/8" | 4" | 6" |
| | 18 | 36 | 840* | 582* | 2223 | 491 | 5/8" | 4" | 6" |
| | 18 | 42 | 860* | 560* | 2234 | 503 | 5/8" | 4" | 6" |
| | 24 | 12 | 430 | 357 | 2285 | 251 | 5/8" | 4" | 6" |
| | 24 | 16 | 676 | 504 | 2257 | 395 | 5/8" | 4" | 6" |
| | 24 | 18 | 670* | 498* | 2261 | 426 | 5/8" | 4" | 6" |
| | 24 | 24 | 970* | 720* | 2142 | 617 | 5/8" | 4" | 6" |
| | 24 | 30 | 970* | 684* | 2142 | 617 | 5/8" | 4" | 6" |
| | 24 | 36 | 1170* | 827* | 2132 | 684 | 5/8" | 4" | 6" |
| | 24 | 42 | 1190* | 790* | 2109 | 696 | 5/8" | 4" | 6" |
| | 30 | 15 | 640* | 420* | 2270 | 374 | 5/8" | 4" | 6" |
| | 30 | 18 | 820* | 556* | 2231 | 480 | 5/8" | 4" | 6" |
| | 30 | 16 | 681 | 572 | 2189 | 398 | 5/8" | 4" | 6" |

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CONTINUES ON NEXT SHEET

SEE NOTES ON FIRST SHEET OF SCHEDULE 2

REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

# SEISMIC ATTACHMENT: ANCHOR DEMAND FORCE (SCHEDULE 2 CONT)

CABINET HEIGHT (H) = 68", 72", 78", 84" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\ MAX}$** (lbs) | $V_{u\ MAX}$** (lbs) | BOLT Ø | MIN EMBED ($h_{ef}$) | MIN CONC THICK |
|---|---|---|---|---|---|---|---|---|---|
| 68 | 13 | 30 | 500* | 291* | 2314 | 293 | 5/8" | 4" | 6" |
| | 13 | 36 | 510* | 383* | 2322 | 298 | 5/8" | 4" | 6" |
| | 16 | 16 | 459 | 332 | 1929 | 292 | 5/8" | 4" | 6" |
| | 16 | 18 | 509 | 380 | 2139 | 324 | 5/8" | 4" | 6" |
| | 16 | 30 | 680* | 465* | 2256 | 398 | 5/8" | 4" | 6" |
| | 16 | 32 | 690* | 461* | 2269 | 404 | 5/8" | 4" | 6" |
| | 16 | 36 | 700* | 443* | 2269 | 410 | 5/8" | 4" | 6" |
| | 18 | 12 | 376 | 269 | 2160 | 220 | 5/8" | 4" | 6" |
| | 18 | 15 | 487 | 351 | 2282 | 310 | 5/8" | 4" | 6" |
| | 18 | 24 | 650* | 457* | 2262 | 414 | 5/8" | 4" | 6" |
| | 18 | 30 | 800* | 559* | 2246 | 468 | 5/8" | 4" | 6" |
| | 18 | 36 | 810* | 545* | 2212 | 474 | 5/8" | 4" | 6" |
| | 18 | 42 | 830* | 521* | 2224 | 486 | 5/8" | 4" | 6" |
| | 24 | 12 | 430* | 355* | 2359 | 252 | 5/8" | 4" | 6" |
| | 24 | 16 | 660* | 483* | 2274 | 386 | 5/8" | 4" | 6" |
| | 24 | 18 | 650* | 473* | 2262 | 414 | 5/8" | 4" | 6" |
| | 24 | 24 | 950* | 693* | 2165 | 604 | 5/8" | 4" | 6" |
| | 24 | 30 | 950* | 655* | 2165 | 604 | 5/8" | 4" | 6" |
| | 24 | 36 | 1150* | 797* | 2163 | 673 | 5/8" | 4" | 6" |
| | 24 | 42 | 1170* | 758* | 2141 | 684 | 5/8" | 4" | 6" |
| | 30 | 15 | 630* | 403* | 2304 | 369 | 5/8" | 4" | 6" |
| | 30 | 18 | 800* | 528* | 2246 | 468 | 5/8" | 4" | 6" |
| | 30 | 16 | 684 | 572 | 2269 | 400 | 5/8" | 4" | 6" |
| 72 | 19 | 12 | 390* | 288* | 2349 | 228 | 5/8" | 4" | 6" |
| | 19 | 15 | 470* | 343* | 2334 | 299 | 5/8" | 4" | 6" |
| | 19 | 18 | 620* | 461* | 2290 | 395 | 5/8" | 4" | 6" |
| | 19 | 21 | 670* | 483* | 2277 | 426 | 5/8" | 4" | 6" |
| | 19 | 24 | 670* | 455* | 2277 | 426 | 5/8" | 4" | 6" |
| | 19 | 30 | 810* | 538* | 2246 | 474 | 5/8" | 4" | 6" |
| | 19 | 36 | 830* | 501* | 2234 | 486 | 5/8" | 4" | 6" |
| | 24 | 12 | 400* | 321* | 2326 | 234 | 5/8" | 4" | 6" |
| | 24 | 15 | 580* | 426* | 2329 | 339 | 5/8" | 4" | 6" |
| | 24 | 18 | 620* | 371* | 2290 | 395 | 5/8" | 4" | 6" |
| | 24 | 21 | 760* | 473* | 2226 | 484 | 5/8" | 4" | 6" |
| | 24 | 24 | 910* | 548* | 2202 | 579 | 5/8" | 4" | 6" |
| | 24 | 30 | 910* | 473* | 2202 | 579 | 5/8" | 4" | 6" |
| | 24 | 36 | 1090* | 654* | 2179 | 638 | 5/8" | 4" | 6" |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\ MAX}$** (lbs) | $V_{u\ MAX}$** (lbs) | BOLT Ø | MIN EMBED ($h_{ef}$) | MIN CONC THICK |
|---|---|---|---|---|---|---|---|---|---|
| 78 | 19 | 12 | 360* | 250* | 2353 | 211 | 5/8" | 4" | 6" |
| | 19 | 15 | 430* | 292* | 2318 | 274 | 5/8" | 4" | 6" |
| | 19 | 18 | 570* | 398* | 2286 | 363 | 5/8" | 4" | 6" |
| | 19 | 21 | 620* | 417* | 2290 | 395 | 5/8" | 4" | 6" |
| | 19 | 24 | 620* | 387* | 2290 | 395 | 5/8" | 4" | 6" |
| | 19 | 30 | 750* | 455* | 2260 | 439 | 5/8" | 4" | 6" |
| | 19 | 36 | 770* | 414* | 2253 | 450 | 5/8" | 4" | 6" |
| | 24 | 12 | 370* | 284* | 2335 | 216 | 5/8" | 4" | 6" |
| | 24 | 15 | 530* | 364* | 2311 | 310 | 5/8" | 4" | 6" |
| | 24 | 18 | 570* | 300* | 2286 | 363 | 5/8" | 4" | 6" |
| | 24 | 21 | 710* | 399* | 2260 | 452 | 5/8" | 4" | 6" |
| | 24 | 24 | 840* | 448* | 2211 | 534 | 5/8" | 4" | 6" |
| | 24 | 30 | 840* | 367* | 2211 | 534 | 5/8" | 4" | 6" |
| | 24 | 36 | 1010* | 537* | 2198 | 591 | 5/8" | 4" | 6" |
| 84 | 19 | 12 | 340* | 221* | 2396 | 199 | 5/8" | 4" | 6" |
| | 19 | 15 | 400* | 252* | 2326 | 255 | 5/8" | 4" | 6" |
| | 19 | 18 | 530* | 329* | 2294 | 337 | 5/8" | 4" | 6" |
| | 19 | 21 | 580* | 344* | 2312 | 369 | 5/8" | 4" | 6" |
| | 19 | 24 | 580* | 308* | 2312 | 369 | 5/8" | 4" | 6" |
| | 19 | 30 | 700* | 356* | 2279 | 410 | 5/8" | 4" | 6" |
| | 19 | 36 | 720* | 304* | 2276 | 421 | 5/8" | 4" | 6" |
| | 24 | 12 | 350* | 258* | 2382 | 205 | 5/8" | 4" | 6" |
| | 24 | 15 | 500* | 321* | 2353 | 293 | 5/8" | 4" | 6" |
| | 24 | 18 | 530* | 215* | 2294 | 337 | 5/8" | 4" | 6" |
| | 24 | 21 | 660* | 297* | 2269 | 420 | 5/8" | 4" | 6" |
| | 24 | 24 | 790* | 332* | 2247 | 503 | 5/8" | 4" | 6" |
| | 24 | 30 | 790* | 238* | 2247 | 503 | 5/8" | 4" | 6" |
| | 24 | 36 | 940* | 431* | 2212 | 550 | 5/8" | 4" | 6" |

** Ωo = 2.0 APPLIED PER 2022 CBC 1617A.1.23

SEE NOTES ON FIRST SHEET OF SCHEDULE 2



REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

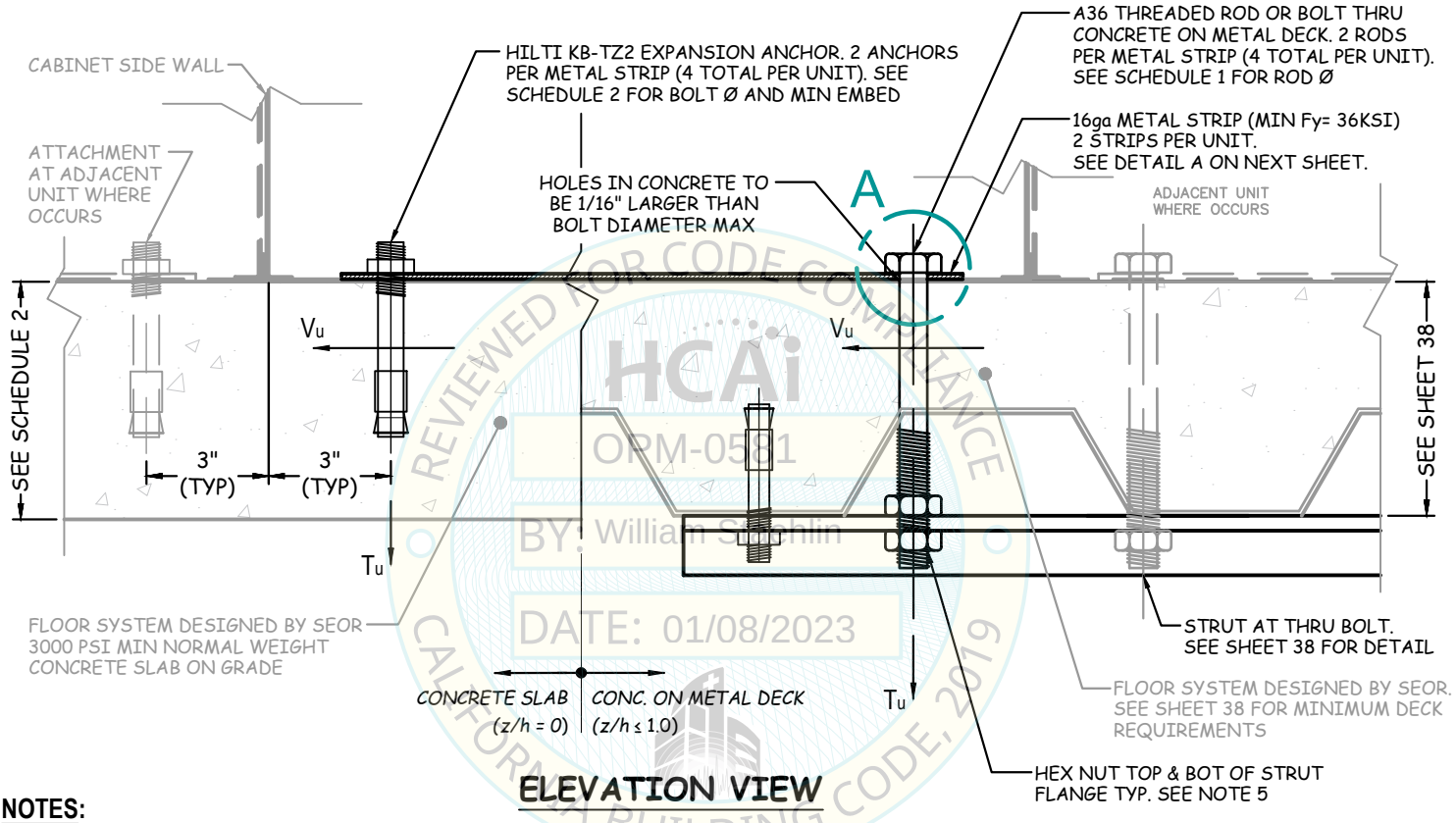
ZFA STRUCTURAL ENGINEERS
601 Montgomery St. Suite 1450 | San Francisco CA, 94111 | ph.415 243 4091 | zfa.com



Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# TYPE 1 AND 1A CABINET DETAIL: 20ga SHEET METAL UNIT BASE SUPPORTED ON FLOOR

FOR SEISMIC ATTACHMENT ANCHOR DEMAND FORCE SCHEDULES:
SEE SCHEDULE 1 FOR CONCRETE ON METAL DECK CONDITIONS
SEE SCHEDULE 2 FOR CONCRETE SLAB ON GRADE CONDITIONS




ELEVATION VIEW



**NOTES:**

1. BASE OF CABINET IS 20ga SHEET METAL (ASTM A1008/A1008M) MIN Fy= 41KSI. SEE SHEET 4 FOR OVERALL CABINET DIMENSIONS.
2. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN THE DEMAND FORCE SCHEDULES.
4. STRUCTURAL ENGINEER OF RECORD SHALL DEFINE STRUT(S) LENGTHS AT METAL DECK BASED ON UNIT LOCATION AND ORIENTATION.
5. IF A NUT CANNOT BE PLACED AT THE TOP-SIDE OF THE STRUT ASSEMBLY, PROVIDE A TAPPED HOLE THROUGH STRUT FLANGE.
6. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.

ZFA STRUCTURAL ENGINEERS
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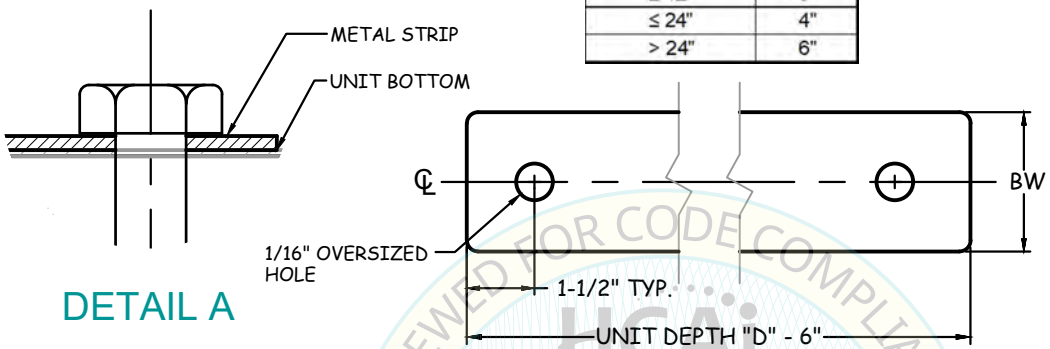
Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

## TYPE 1 AND 1A CABINET DETAIL: 20ga SHEET METAL UNIT BASE SUPPORTED ON FLOOR

### METAL STRIP DETAIL

| STRAP WIDTH | |
|---|---|
| UNIT WIDTH "W" | BW |
| ≤ 12" | 3" |
| ≤ 24" | 4" |
| > 24" | 6" |




DETAIL A



ZFA STRUCTURAL ENGINEERS
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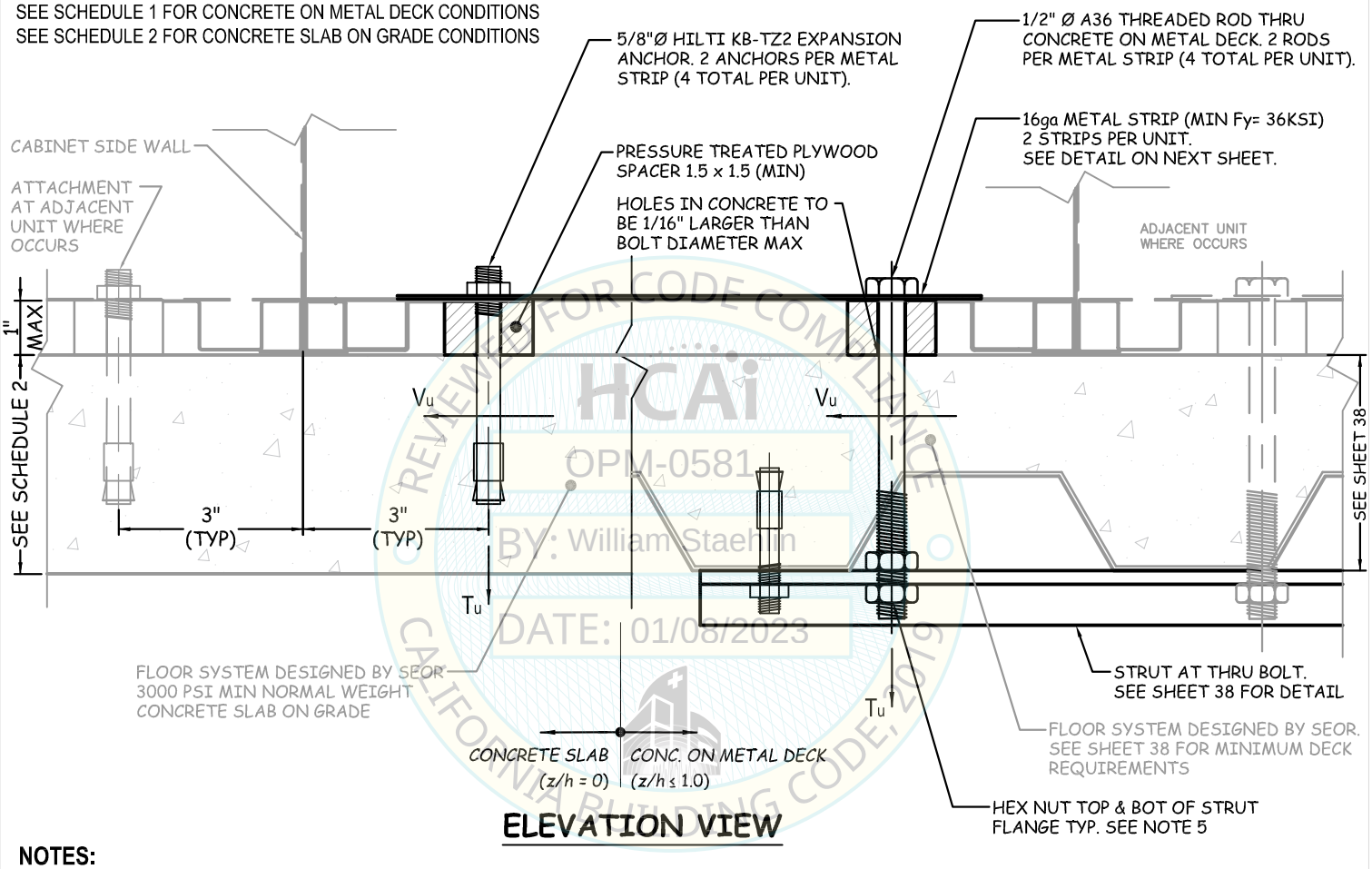
Job No. 34028
Date: Nov 15, 2022



Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# TYPE 1B CABINET DETAIL: 20ga SHEET METAL UNIT BASE SUPPORTED ON FLOOR

FOR SEISMIC ATTACHMENT ANCHOR DEMAND FORCE SCHEDULES:
SEE SCHEDULE 1 FOR CONCRETE ON METAL DECK CONDITIONS
SEE SCHEDULE 2 FOR CONCRETE SLAB ON GRADE CONDITIONS

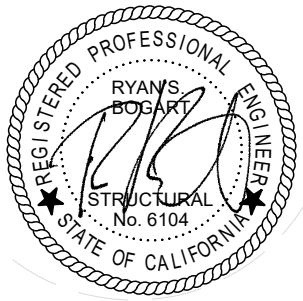



## ELEVATION VIEW



**NOTES:**

1. BASE OF CABINET IS 20ga SHEET METAL (ASTM A1008/A1008M) MIN Fy= 41KSI. SEE SHEET 4 FOR OVERALL CABINET DIMENSIONS.
2. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN THE DEMAND FORCE SCHEDULES.
4. STRUCTURAL ENGINEER OF RECORD SHALL DEFINE STRUT(S) LENGTHS AT METAL DECK BASED ON UNIT LOCATION AND ORIENTATION.
5. IF A NUT CANNOT BE PLACED AT THE TOP-SIDE OF THE STRUT ASSEMBLY, PROVIDE A TAPPED HOLE THROUGH STRUT FLANGE.
6. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.



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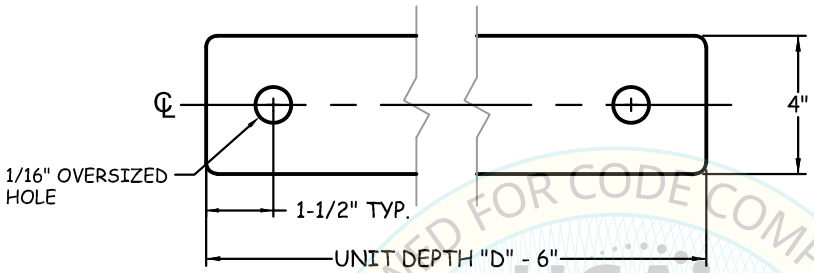
## TYPE 1B CABINET DETAIL: 20ga SHEET METAL UNIT BASE SUPPORTED ON FLOOR

## METAL STRIP DETAIL



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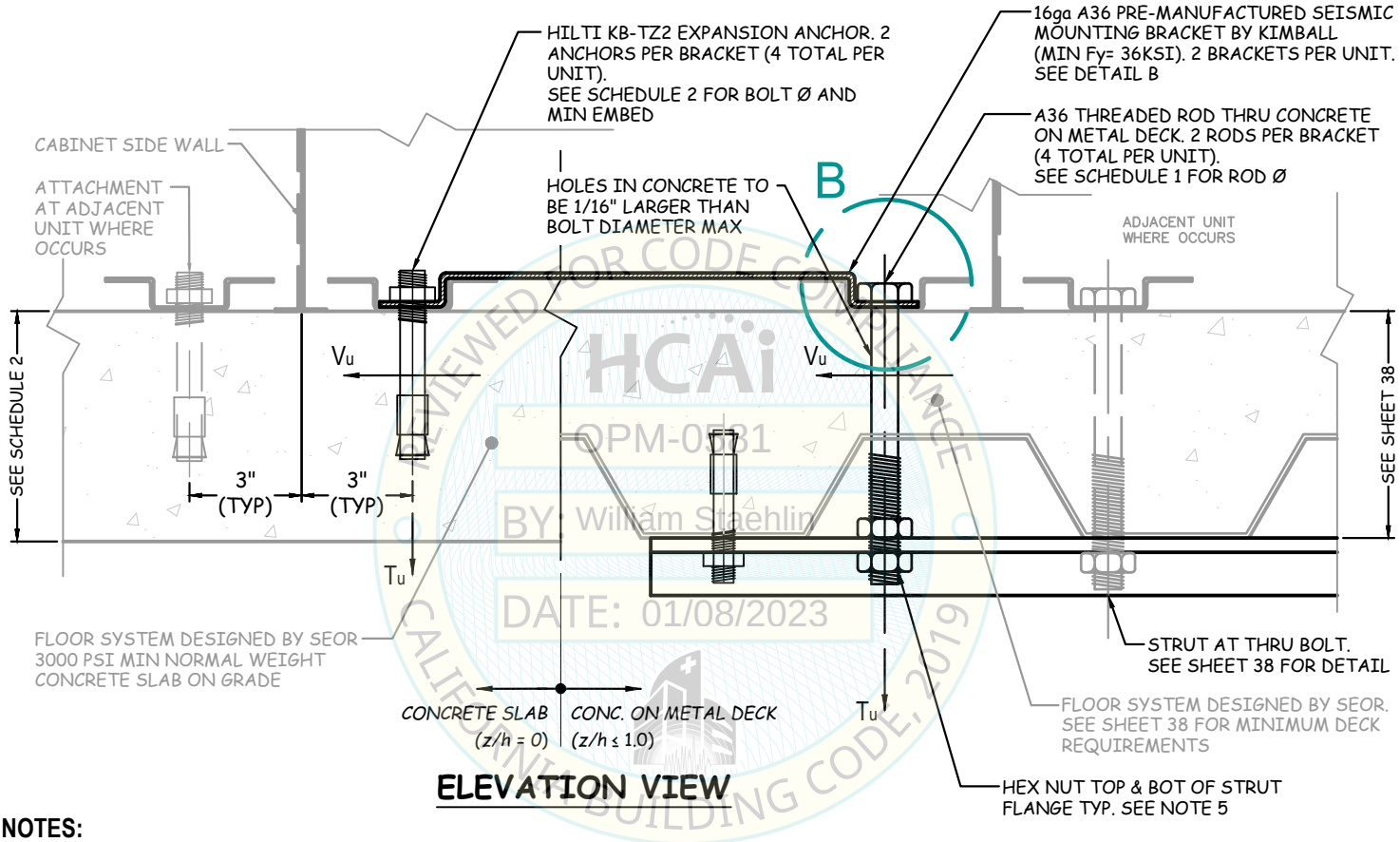
Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# TYPE 1C CABINET DETAIL: (2) 20ga SHEET METAL CHANNEL UNIT BASE SUPPORTED ON FLOOR

FOR SEISMIC ATTACHMENT ANCHOR DEMAND FORCE SCHEDULES:
SEE SCHEDULE 1 FOR CONCRETE ON METAL DECK CONDITIONS
SEE SCHEDULE 2 FOR CONCRETE SLAB ON GRADE CONDITIONS




## ELEVATION VIEW

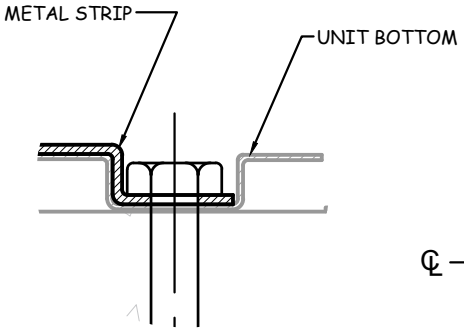


**NOTES:**

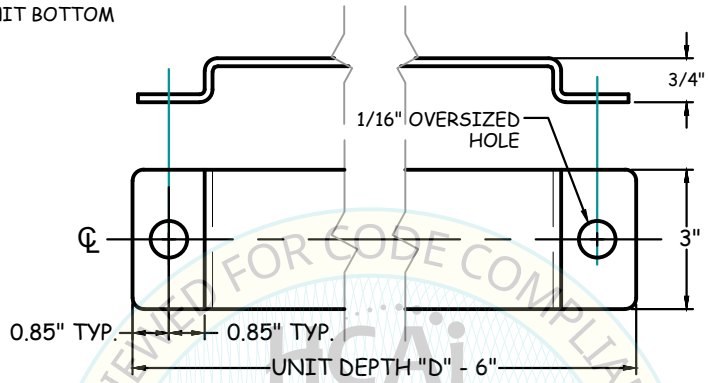
1. BASE OF CABINET IS 20ga SHEET METAL CHANNEL (ASTM A1008/A1008M) MIN Fy= 41KSI. SEE SHEET 4 FOR OVERALL CABINET DIMENSIONS.
2. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN THE DEMAND FORCE SCHEDULES.
4. STRUCTURAL ENGINEER OF RECORD SHALL DEFINE STRUT(S) LENGTHS AT METAL DECK BASED ON UNIT LOCATION AND ORIENTATION.
5. IF A NUT CANNOT BE PLACED AT THE TOP-SIDE OF THE STRUT ASSEMBLY, PROVIDE A TAPPED HOLE THROUGH STRUT FLANGE.
6. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.

## TYPE 1C CABINET DETAIL: (2) 20ga SHEET METAL CHANNEL UNIT BASE SUPPORTED ON FLOOR

## METAL BRACKET DETAIL




DETAIL B



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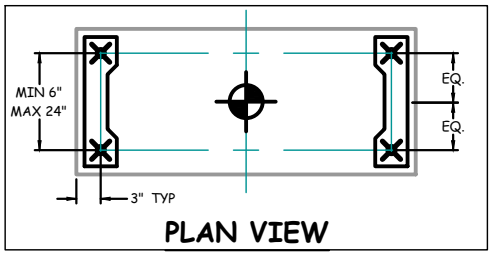
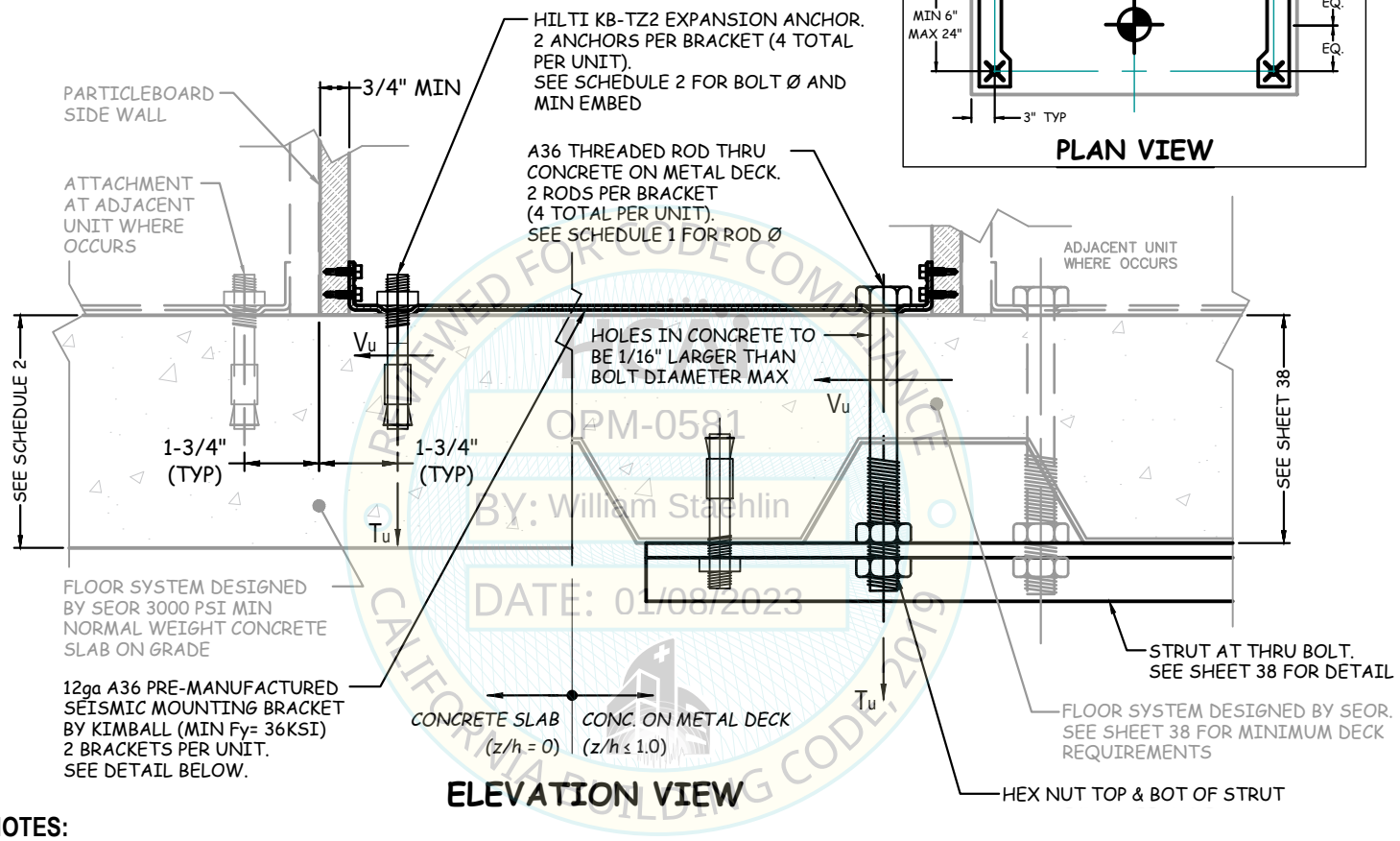
Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# TYPE 1D CABINET DETAIL: PARTICLEBOARD UNIT W/ (2) SHEET METAL BRACKETS SUPPORTED ON FLOOR

FOR SEISMIC ATTACHMENT ANCHOR DEMAND FORCE SCHEDULES:
SEE SCHEDULE 1 FOR CONCRETE ON METAL DECK CONDITIONS
SEE SCHEDULE 2 FOR CONCRETE SLAB ON GRADE CONDITIONS



PLAN VIEW

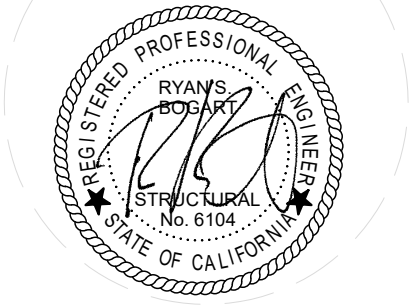


ELEVATION VIEW



## NOTES:

1. CABINET MATERIAL IS 3/4" PARTICLEBOARD (ANSI A208.1-2009 GRADE M2) MOD OF RUPTURE ≥ 1885 PSI MIN. SEE SHEET 4 FOR OVERALL CABINET DIMENSIONS.
2. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN THE DEMAND FORCE SCHEDULES.
4. STRUCTURAL ENGINEER OF RECORD SHALL DEFINE STRUT(S) LENGTHS AT METAL DECK BASED ON UNIT LOCATION AND ORIENTATION.
5. IF A NUT CANNOT BE PLACED AT THE TOP-SIDE OF THE STRUT ASSEMBLY, PROVIDE A TAPPED HOLE THROUGH STRUT FLANGE.
6. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.



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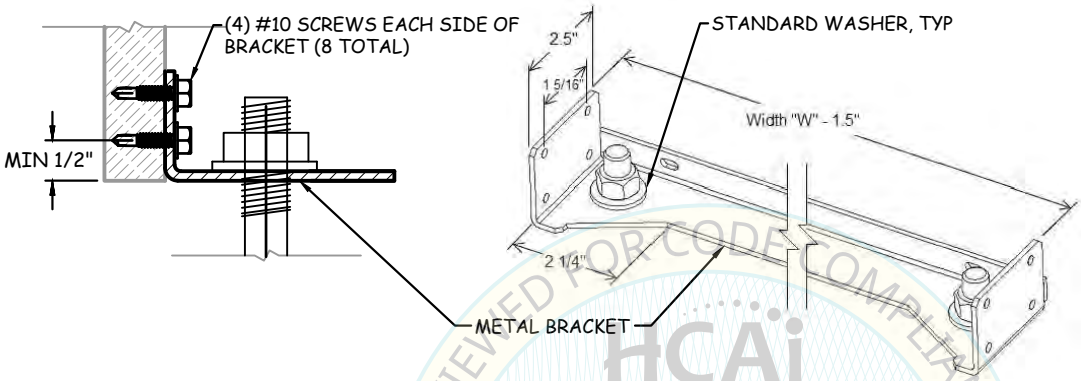
## TYPE 1D CABINET DETAIL: PARTICLEBOARD UNIT W/ (2) SHEET METAL BRACKETS SUPPORTED ON FLOOR

## METAL BRACKET DETAIL



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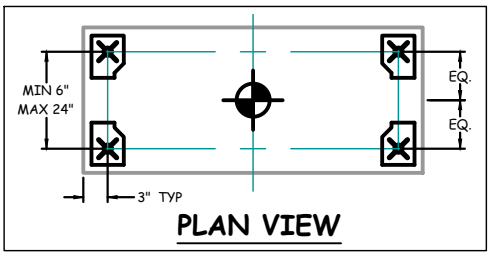
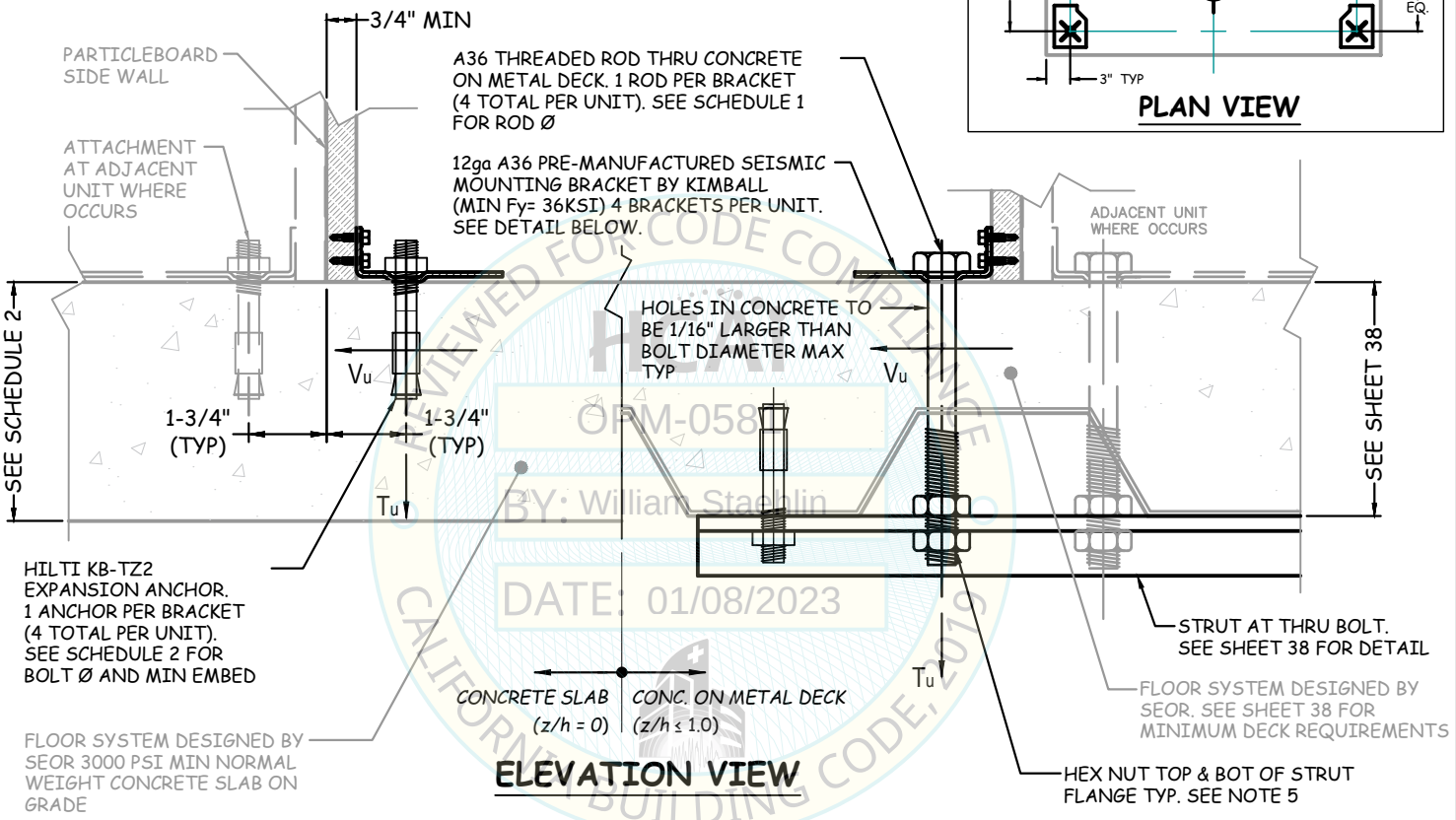
Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# TYPE 1F CABINET DETAIL

FOR SEISMIC ATTACHMENT ANCHOR DEMAND FORCE SCHEDULES:
SEE SCHEDULE 1 FOR CONCRETE ON METAL DECK CONDITIONS
SEE SCHEDULE 2 FOR CONCRETE SLAB ON GRADE CONDITIONS



PLAN VIEW



ELEVATION VIEW

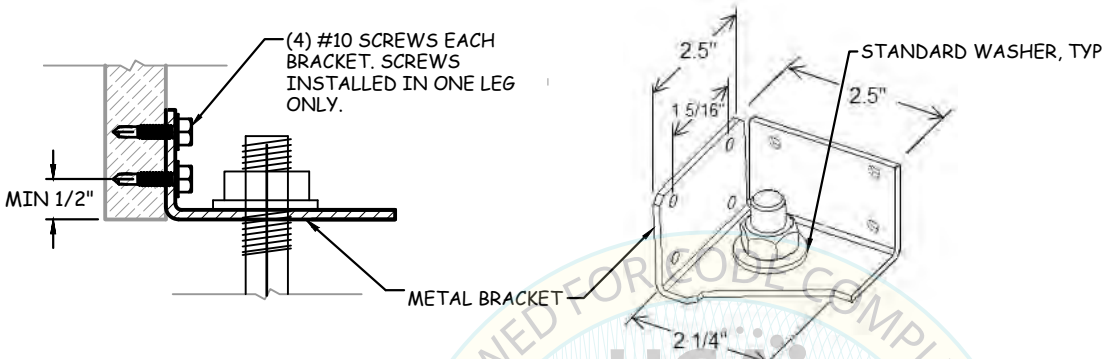


**NOTES:**

1. CABINET MATERIAL IS 3/4" PARTICLEBOARD (ANSI A208.1-2009 GRADE M2) MOD OF RUPTURE ≥ 1885 PSI MIN. SEE SHEET 4 FOR OVERALL CABINET DIMENSIONS.
2. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN THE DEMAND FORCE SCHEDULES.
4. STRUCTURAL ENGINEER OF RECORD SHALL DEFINE STRUT(S) LENGTHS AT METAL DECK BASED ON UNIT LOCATION AND ORIENTATION.
5. IF A NUT CANNOT BE PLACED AT THE TOP-SIDE OF THE STRUT ASSEMBLY, PROVIDE A TAPPED HOLE THROUGH STRUT FLANGE.
6. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.

## TYPE 1F CABINET DETAIL

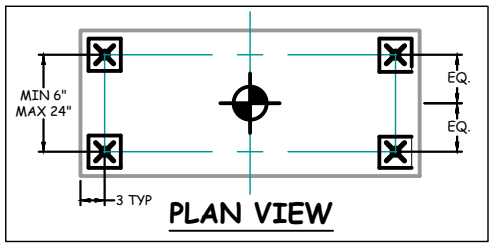
## METAL BRACKET DETAIL

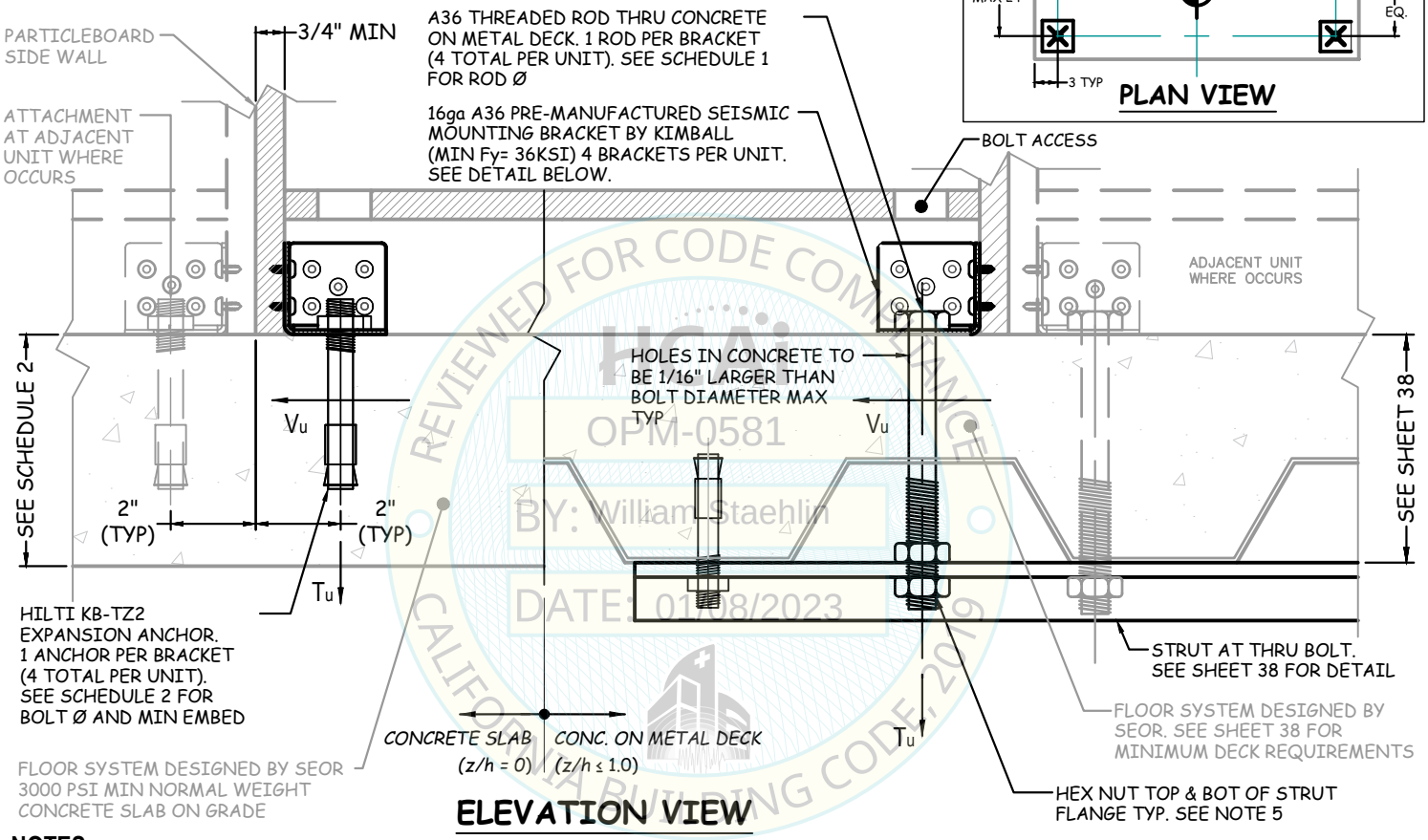





# TYPE 2 CABINET DETAIL

FOR SEISMIC ATTACHMENT ANCHOR DEMAND FORCE SCHEDULES:
SEE SCHEDULE 1 FOR CONCRETE ON METAL DECK CONDITIONS
SEE SCHEDULE 2 FOR CONCRETE SLAB ON GRADE CONDITIONS




## ELEVATION VIEW



**NOTES:**

1. CABINET MATERIAL IS 3/4" PARTICLEBOARD (ANSI A208.1-2009 GRADE M2) MOD OF RUPTURE ≥ 1885 PSI MIN. SEE SHEET 4 FOR OVERALL CABINET DIMENSIONS.
2. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN THE DEMAND FORCE SCHEDULES.
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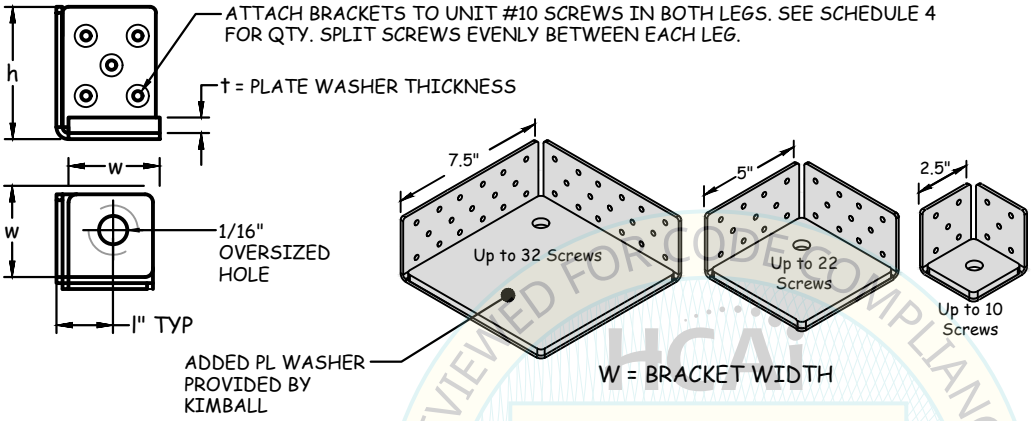
## TYPE 2 CABINET DETAIL

## METAL BRACKET DETAIL



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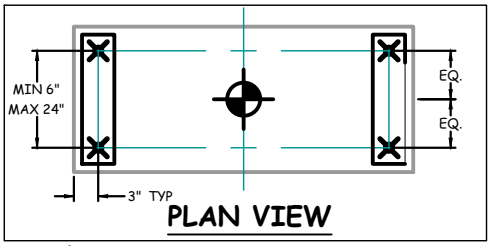
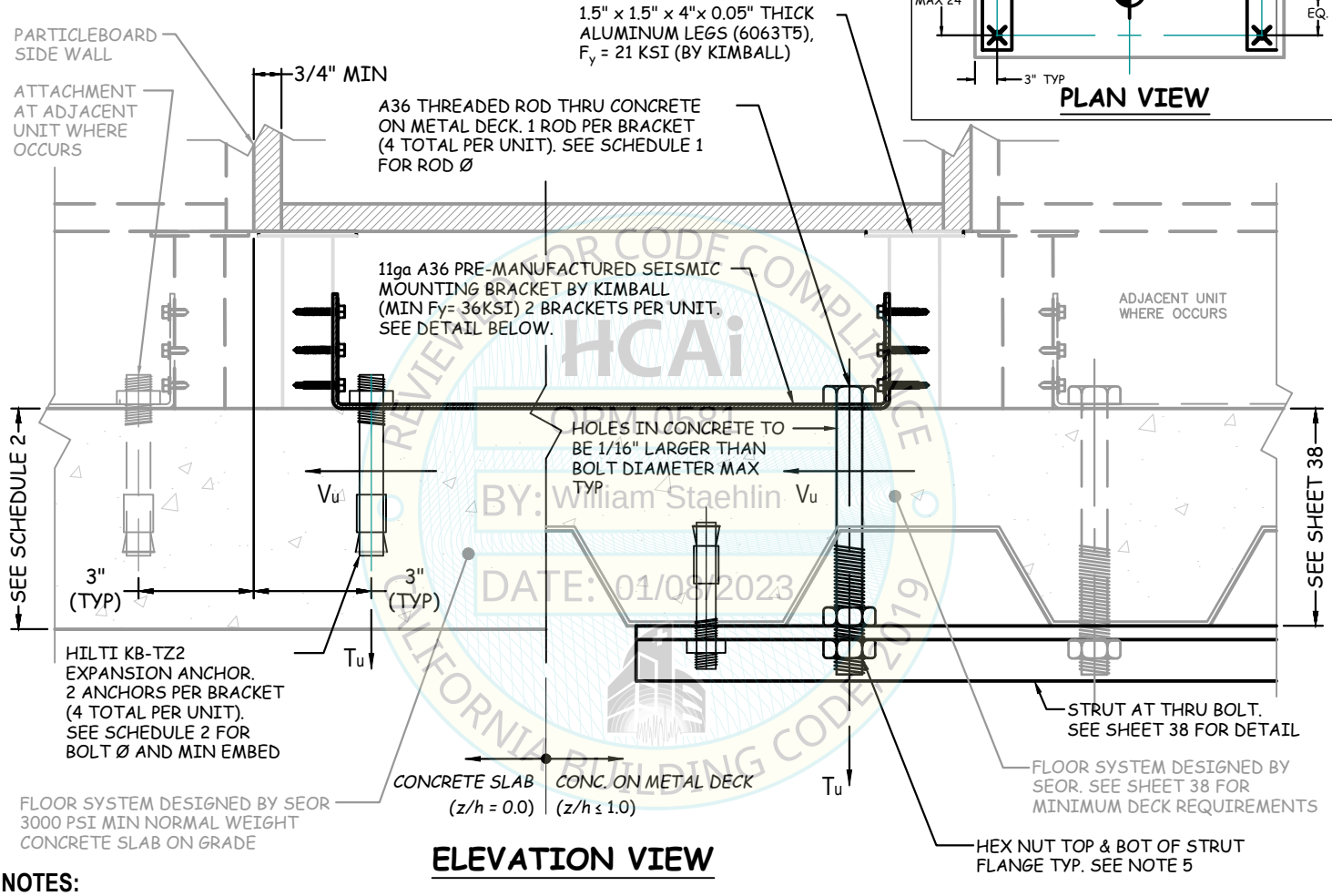
Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# TYPE 2A CABINET DETAIL

FOR SEISMIC ATTACHMENT ANCHOR DEMAND FORCE SCHEDULES:
SEE SCHEDULE 1 FOR CONCRETE ON METAL DECK CONDITIONS
SEE SCHEDULE 2 FOR CONCRETE SLAB ON GRADE CONDITIONS




## ELEVATION VIEW

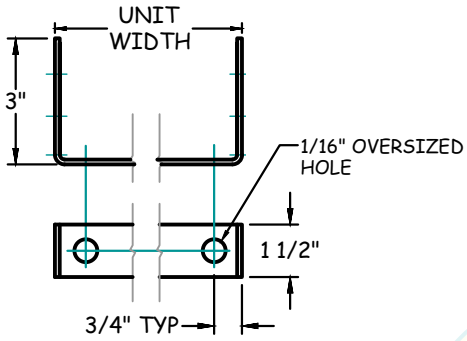


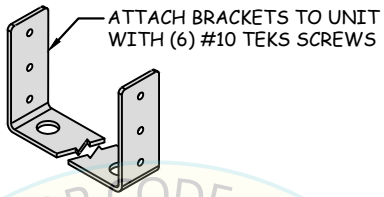
**NOTES:**

1. CABINET MATERIAL IS 3/4" PARTICLEBOARD (ANSI A208.1-2009 GRADE M2) MOD OF RUPTURE ≥ 1885 PSI MIN. SEE SHEET 4 FOR OVERALL CABINET DIMENSIONS.
2. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN THE DEMAND FORCE SCHEDULES.
4. STRUCTURAL ENGINEER OF RECORD SHALL DEFINE STRUT(S) LENGTHS AT METAL DECK BASED ON UNIT LOCATION AND ORIENTATION.
5. IF A NUT CANNOT BE PLACED AT THE TOP-SIDE OF THE STRUT ASSEMBLY, PROVIDE A TAPPED HOLE THROUGH STRUT FLANGE.
6. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.

## TYPE 2A CABINET DETAIL

## METAL BRACKET DETAIL



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Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 3)

CABINET HEIGHT (H) = 24", 28" | Y = H/2 @ CONCRETE ON METAL DECK (z/h ≤ 1.0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 24 | 13 | 30 | 232 | 163 | 283 | 109 | 6 | 0.125 |
| | 13 | 36 | 282 | 199 | 337 | 132 | 6 | 0.125 |
| | 16 | 16 | 148 | 103 | 162 | 75 | 4 | 0.125 |
| | 16 | 18 | 169 | 118 | 185 | 86 | 4 | 0.125 |
| | 16 | 30 | 293 | 208 | 248 | 137 | 6 | 0.125 |
| | 16 | 32 | 314 | 223 | 263 | 147 | 6 | 0.125 |
| | 16 | 36 | 355 | 253 | 293 | 166 | 8 | 0.125 |
| | 18 | 12 | 122 | 84 | 186 | 57 | 4 | 0.125 |
| | 18 | 15 | 157 | 109 | 194 | 80 | 4 | 0.125 |
| | 18 | 24 | 263 | 186 | 235 | 134 | 6 | 0.125 |
| | 18 | 30 | 334 | 238 | 235 | 156 | 6 | 0.125 |
| | 18 | 36 | 404 | 289 | 275 | 189 | 8 | 0.125 |
| | 18 | 42 | 475 | 341 | 317 | 222 | 8 | 0.125 |
| | 24 | 16 | 230 | 162 | 203 | 108 | 6 | 0.125 |
| | 24 | 18 | 263 | 186 | 235 | 134 | 6 | 0.125 |
| | 24 | 24 | 358 | 256 | 198 | 182 | 6 | 0.125 |
| | 24 | 30 | 455 | 327 | 252 | 232 | 8 | 0.125 |
| | 24 | 36 | 551 | 398 | 243 | 258 | 8 | 0.125 |
| | 24 | 42 | 647 | 468 | 276 | 303 | 10 | 0.125 |
| | 30 | 15 | 271 | 191 | 256 | 127 | 6 | 0.125 |
| | 30 | 18 | 332 | 236 | 234 | 155 | 6 | 0.125 |
| | 30 | 16 | 291 | 206 | 247 | 136 | 6 | 0.125 |
| 28 | 13 | 30 | 261 | 199 | 376 | 122 | 8 | 0.125 |
| | 13 | 36 | 316 | 242 | 447 | 148 | 8 | 0.125 |
| | 16 | 16 | 166 | 125 | 216 | 85 | 4 | 0.125 |
| | 16 | 18 | 190 | 144 | 247 | 97 | 6 | 0.125 |
| | 16 | 30 | 329 | 253 | 332 | 154 | 8 | 0.125 |
| | 16 | 32 | 352 | 271 | 352 | 165 | 8 | 0.125 |
| | 16 | 36 | 399 | 308 | 392 | 187 | 8 | 0.125 |
| | 18 | 12 | 136 | 102 | 245 | 63 | 4 | 0.125 |
| | 18 | 15 | 176 | 133 | 257 | 90 | 6 | 0.125 |
| | 18 | 24 | 295 | 227 | 313 | 150 | 6 | 0.125 |
| | 18 | 30 | 392 | 289 | 330 | 184 | 8 | 0.125 |
| | 18 | 36 | 475 | 352 | 387 | 222 | 10 | 0.125 |
| | 18 | 42 | 558 | 414 | 446 | 261 | 10 | 0.125 |
| | 21 | 48 | 758 | 566 | 469 | 355 | 12 | 0.125 |
| | 21 | 72 | 1083 | 863 | 642 | 507 | 18 | 0.125 |
| | 24 | 16 | 270 | 197 | 284 | 126 | 6 | 0.125 |
| | 24 | 18 | 326 | 226 | 346 | 166 | 8 | 0.125 |
| | 24 | 24 | 446 | 312 | 297 | 227 | 8 | 0.125 |
| | 24 | 30 | 565 | 398 | 377 | 287 | 10 | 0.125 |
| | 24 | 36 | 684 | 484 | 366 | 320 | 12 | 0.125 |
| | 24 | 42 | 773 | 570 | 401 | 362 | 12 | 0.125 |
| | 30 | 15 | 305 | 212 | 342 | 143 | 8 | 0.125 |
| | 30 | 18 | 374 | 262 | 315 | 175 | 8 | 0.125 |
| | 30 | 16 | 328 | 229 | 331 | 154 | 8 | 0.125 |

CONTINUES ON NEXT SHEET

MIN # OF SCREWS = MINIMUM SCREWS REQUIRED PER BRACKET. WHERE MIN # OF SCREWS IS 4, BRACKET TYPES 1D, 1F AND 2 MAY BE USED. WHERE MIN # OF SCREWS IS GREATER THAN 4, BRACKET TYPE 2 ONLY MAY BE USED.

t = PLATE WASHER THICKNESS FOR BRACKET TYPE 2 ONLY. PLATE WASHER NOT REQUIRED FOR TYPE 1D AND 1F BRACKETS.

WT = MAXIMUM UNIT WEIGHT INCLUDING LOADED CONTENTS.

ML = MAXIMUM LOADED CONTENTS. WEIGHTS MARKED WITH * ARE NOT THE MAXIMUM WEIGHT CAPACITY CALCULATED BY VOLUME PER 2022 CBC, TABLE 1607A.1 FOOTNOTE D, BUT THE MAXIMUM LOAD WEIGHT ALLOWED FOR THE UNIT SIZE. THE INSIDE OF ALL UNITS SHALL BE CLEARLY LABELED WITH THE MAXIMUM ALLOWED LOADED CONTENTS (ML) IN POUNDS.

THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO INCLUDES A LARGE NUMBER OF MODEL NUMBERS WITH MANY POTENTIAL CONFIGURATIONS (I.E. DOOR AND DRAWER STYLES, DIMENSIONS, FINISHES, LOCKS, PULLS). TO ELIMINATE LISTING HUNDREDS OF MODEL NUMBERS, THE FOLLOWING GUIDELINES APPLY:
ALL MODEL NUMBERS WITHIN THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO WITH TYPES 1D, 1F AND 2 ARE INCLUDED IN THIS OPM, IF THE OVERALL UNIT HEIGHT WIDTH AND DEPTH DIMENSIONS ARE WITHIN THE VALUES LISTED IN SCHEDULE 4.

THE CABINET WEIGHT, INCLUDING ALL ACCESSORY OPTIONS AND LOADED CONTENTS DOES NOT EXCEED THE MAXIMUM WEIGHT LISTED IN SCHEDULE 4.



REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 3 CONT)

CABINET HEIGHT (H) = 38", 40", 42", 51" | Y = H/2 @ CONCRETE ON METAL DECK (z/h ≤ 1.0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 38 | 13 | 30 | 365 | 278 | 731 | 171 | 12 | 0.125 |
| | 13 | 36 | 443 | 339 | 870 | 207 | 14 | 0.125 |
| | 16 | 16 | 233 | 176 | 421 | 118 | 8 | 0.125 |
| | 16 | 18 | 265 | 201 | 480 | 135 | 8 | 0.125 |
| | 16 | 30 | 437 | 354 | 618 | 205 | 12 | 0.125 |
| | 16 | 32 | 469 | 380 | 657 | 219 | 12 | 0.125 |
| | 16 | 36 | 531 | 431 | 733 | 248 | 14 | 0.125 |
| | 18 | 12 | 179 | 142 | 448 | 84 | 8 | 0.125 |
| | 18 | 15 | 233 | 186 | 472 | 119 | 8 | 0.125 |
| | 18 | 24 | 392 | 317 | 583 | 200 | 10 | 0.125 |
| | 18 | 30 | 498 | 405 | 591 | 233 | 12 | 0.125 |
| | 18 | 36 | 604 | 492 | 696 | 283 | 14 | 0.125 |
| | 18 | 42 | 711 | 580 | 803 | 333 | 16 | 0.125 |
| | 24 | 16 | 373 | 276 | 548 | 174 | 10 | 0.125 |
| | 24 | 18 | 426 | 316 | 633 | 217 | 12 | 0.125 |
| | 24 | 24 | 582 | 436 | 553 | 296 | 12 | 0.125 |
| | 24 | 30 | 740 | 557 | 702 | 377 | 16 | 0.125 |
| | 24 | 36 | 896 | 677 | 692 | 419 | 16 | 0.125 |
| | 24 | 42 | 1022 | 797 | 766 | 479 | 18 | 0.125 |
| | 30 | 15 | 427 | 318 | 669 | 200 | 12 | 0.125 |
| | 30 | 18 | 530 | 393 | 629 | 248 | 12 | 0.125 |
| | 30 | 16 | 465 | 343 | 658 | 218 | 12 | 0.125 |
| 40 | 13 | 30 | 388 | 296 | 819 | 181 | 14 | 0.125 |
| | 13 | 36 | 470 | 360 | 975 | 220 | 16 | 0.125 |
| | 16 | 16 | 247 | 187 | 471 | 126 | 8 | 0.125 |
| | 16 | 18 | 281 | 214 | 537 | 143 | 10 | 0.125 |
| | 16 | 30 | 464 | 377 | 694 | 217 | 12 | 0.125 |
| | 16 | 32 | 498 | 404 | 737 | 233 | 12 | 0.125 |
| | 16 | 36 | 564 | 458 | 822 | 264 | 14 | 0.125 |
| | 18 | 12 | 190 | 151 | 501 | 89 | 8 | 0.125 |
| | 18 | 15 | 247 | 198 | 529 | 126 | 10 | 0.125 |
| | 18 | 24 | 416 | 337 | 655 | 212 | 12 | 0.125 |
| | 18 | 30 | 528 | 431 | 663 | 247 | 12 | 0.125 |
| | 18 | 36 | 642 | 524 | 782 | 300 | 14 | 0.125 |
| | 18 | 42 | 755 | 617 | 902 | 353 | 16 | 0.125 |
| | 24 | 16 | 395 | 293 | 615 | 185 | 10 | 0.125 |
| | 24 | 18 | 452 | 336 | 710 | 230 | 12 | 0.125 |
| | 24 | 24 | 618 | 464 | 622 | 314 | 14 | 0.125 |
| | 24 | 30 | 785 | 592 | 790 | 399 | 16 | 0.125 |
| | 24 | 36 | 951 | 720 | 779 | 445 | 18 | 0.125 |
| | 24 | 42 | 1118 | 848 | 888 | 523 | 20 | 0.125 |
| | 30 | 15 | 433 | 318 | 716 | 202 | 12 | 0.125 |
| | 30 | 18 | 537 | 393 | 674 | 251 | 12 | 0.125 |
| | 30 | 16 | 471 | 343 | 705 | 221 | 12 | 0.125 |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 42 | 13 | 30 | 410 | 314 | 912 | 192 | 14 | 0.125 |
| | 13 | 36 | 496 | 382 | 1085 | 232 | 18 | 0.125 |
| | 16 | 16 | 261 | 198 | 525 | 133 | 10 | 0.125 |
| | 16 | 18 | 297 | 227 | 599 | 151 | 10 | 0.125 |
| | 16 | 30 | 491 | 399 | 774 | 230 | 14 | 0.125 |
| | 16 | 32 | 526 | 428 | 822 | 246 | 14 | 0.125 |
| | 16 | 36 | 596 | 486 | 917 | 279 | 16 | 0.125 |
| | 18 | 12 | 201 | 160 | 558 | 94 | 10 | 0.125 |
| | 18 | 15 | 262 | 210 | 589 | 133 | 10 | 0.125 |
| | 18 | 24 | 441 | 358 | 730 | 224 | 12 | 0.125 |
| | 18 | 30 | 559 | 456 | 740 | 262 | 14 | 0.125 |
| | 18 | 36 | 679 | 555 | 873 | 318 | 16 | 0.125 |
| | 18 | 42 | 798 | 654 | 1007 | 374 | 18 | 0.125 |
| | 24 | 16 | 418 | 311 | 685 | 196 | 12 | 0.125 |
| | 24 | 18 | 478 | 356 | 791 | 243 | 14 | 0.125 |
| | 24 | 24 | 653 | 492 | 694 | 332 | 14 | 0.125 |
| | 24 | 30 | 830 | 627 | 882 | 422 | 18 | 0.125 |
| | 24 | 36 | 1005 | 763 | 871 | 470 | 18 | 0.125 |
| | 24 | 42 | 1182 | 899 | 994 | 553 | 22 | 0.125 |
| | 30 | 15 | 438 | 318 | 764 | 205 | 12 | 0.125 |
| | 30 | 18 | 544 | 393 | 721 | 255 | 14 | 0.125 |
| | 30 | 16 | 478 | 343 | 753 | 224 | 14 | 0.125 |
| 51 | 13 | 30 | 515 | 384 | 1406 | 241 | 22 | 0.188 |
| | 13 | 36 | 625 | 468 | 1675 | 292 | 26 | 0.125 |
| | 16 | 16 | 338 | 242 | 835 | 172 | 14 | 0.125 |
| | 16 | 18 | 375 | 278 | 926 | 191 | 14 | 0.125 |
| | 16 | 30 | 650 | 489 | 1262 | 304 | 20 | 0.125 |
| | 16 | 32 | 697 | 525 | 1339 | 326 | 22 | 0.188 |
| | 16 | 36 | 788 | 595 | 1493 | 369 | 24 | 0.125 |
| | 18 | 12 | 277 | 196 | 941 | 130 | 14 | 0.125 |
| | 18 | 15 | 359 | 257 | 990 | 183 | 16 | 0.125 |
| | 18 | 24 | 583 | 438 | 1189 | 297 | 20 | 0.125 |
| | 18 | 30 | 740 | 559 | 1210 | 346 | 20 | 0.125 |
| | 18 | 36 | 879 | 680 | 1396 | 411 | 24 | 0.125 |
| | 18 | 42 | 1033 | 801 | 1609 | 483 | 26 | 0.125 |
| | 24 | 12 | 326 | 270 | 1057 | 153 | 16 | 0.125 |
| | 24 | 16 | 514 | 381 | 1037 | 241 | 16 | 0.125 |
| | 24 | 18 | 629 | 436 | 1283 | 320 | 20 | 0.188 |
| | 24 | 24 | 824 | 603 | 1085 | 419 | 20 | 0.125 |
| | 24 | 30 | 1034 | 769 | 1362 | 526 | 24 | 0.125 |
| | 24 | 36 | 1244 | 935 | 1342 | 582 | 26 | 0.125 |
| | 24 | 42 | 1482 | 1101 | 1553 | 693 | 30 | 0.125 |
| | 30 | 15 | 595 | 425 | 1276 | 278 | 20 | 0.188 |
| | 30 | 18 | 729 | 525 | 1192 | 341 | 20 | 0.125 |
| | 30 | 16 | 542 | 458 | 1052 | 254 | 18 | 0.125 |



SEE NOTES ON FIRST SHEET OF SCHEDULE 3

CONTINUES ON NEXT SHEET

REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

ZFA STRUCTURAL ENGINEERS
601 Montgomery St. Suite 1450 | San Francisco CA, 94111 | ph.415 243 4091 | zfa.com



Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 3 CONT)

CABINET HEIGHT (H) = 54", 60", 64", 66" | Y = H/2 @ CONCRETE ON METAL DECK (z/h ≤ 1.0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 54 | 13 | 30 | 535 | 411 | 1549 | 250 | 24 | 0.125 |
| | 13 | 36 | 648 | 500 | 1844 | 303 | 28 | 0.125 |
| | 16 | 16 | 360 | 259 | 946 | 183 | 14 | 0.125 |
| | 16 | 18 | 388 | 297 | 1018 | 197 | 16 | 0.125 |
| | 16 | 30 | 675 | 523 | 1392 | 316 | 22 | 0.125 |
| | 16 | 32 | 723 | 561 | 1477 | 338 | 24 | 0.125 |
| | 16 | 36 | 818 | 636 | 1647 | 383 | 26 | 0.125 |
| | 18 | 12 | 296 | 210 | 1064 | 138 | 16 | 0.125 |
| | 18 | 15 | 383 | 275 | 1121 | 195 | 18 | 0.125 |
| | 18 | 24 | 605 | 468 | 1311 | 308 | 20 | 0.188 |
| | 18 | 30 | 769 | 598 | 1336 | 360 | 22 | 0.188 |
| | 18 | 36 | 932 | 727 | 1574 | 436 | 26 | 0.125 |
| | 18 | 42 | 1095 | 856 | 1815 | 513 | 30 | 0.125 |
| | 24 | 12 | 348 | 289 | 1197 | 163 | 18 | 0.125 |
| | 24 | 16 | 548 | 407 | 1174 | 256 | 18 | 0.125 |
| | 24 | 18 | 671 | 466 | 1453 | 341 | 24 | 0.125 |
| | 24 | 24 | 878 | 644 | 1231 | 447 | 22 | 0.125 |
| | 24 | 30 | 1102 | 822 | 1546 | 561 | 28 | 0.125 |
| | 24 | 36 | 1327 | 1000 | 1525 | 621 | 28 | 0.125 |
| | 24 | 42 | 1580 | 1177 | 1765 | 739 | 32 | 0.125 |
| | 30 | 15 | 605 | 425 | 1378 | 283 | 22 | 0.188 |
| | 30 | 18 | 741 | 525 | 1288 | 347 | 22 | 0.188 |
| | 30 | 16 | 547 | 458 | 1128 | 256 | 18 | 0.125 |
| 60 | 19 | 12 | 337 | 252 | 1339 | 158 | 20 | 0.188 |
| | 19 | 15 | 435 | 329 | 1423 | 222 | 22 | 0.188 |
| | 19 | 18 | 516 | 407 | 1249 | 263 | 20 | 0.125 |
| | 19 | 21 | 611 | 484 | 1360 | 311 | 22 | 0.188 |
| | 19 | 24 | 707 | 562 | 1573 | 360 | 24 | 0.125 |
| | 19 | 30 | 899 | 717 | 1624 | 421 | 26 | 0.125 |
| | 19 | 36 | 1090 | 872 | 1910 | 510 | 30 | 0.188 |
| | 24 | 12 | 391 | 325 | 1499 | 183 | 22 | 0.125 |
| | 24 | 15 | 553 | 425 | 1457 | 259 | 22 | 0.125 |
| | 24 | 18 | 716 | 525 | 1733 | 364 | 26 | 0.125 |
| | 24 | 21 | 843 | 625 | 1611 | 429 | 26 | 0.125 |
| | 24 | 24 | 997 | 725 | 1567 | 508 | 26 | 0.125 |
| | 24 | 30 | 1220* | 893* | 1918 | 621 | 32 | 0.188 |
| | 24 | 36 | 1450* | 1086* | 1872 | 679 | 32 | 0.125 |
| | 37 | 15 | 713 | 425 | 1771 | 334 | 26 | 0.125 |
| | 37 | 18 | 821 | 525 | 1547 | 384 | 24 | 0.125 |
| | 37 | 21 | 926 | 625 | 1411 | 433 | 24 | 0.125 |
| | 37 | 24 | 1039 | 725 | 1334 | 486 | 24 | 0.125 |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 64 | 13 | 30 | 640* | 476* | 2211 | 300 | 32 | 0.188 |
| | 13 | 36 | 660* | 463* | 2242 | 309 | 32 | 0.188 |
| | 16 | 16 | 429 | 309 | 1345 | 219 | 20 | 0.188 |
| | 16 | 18 | 476 | 354 | 1491 | 242 | 22 | 0.125 |
| | 16 | 30 | 826 | 624 | 2038 | 387 | 30 | 0.188 |
| | 16 | 32 | 885 | 669 | 2164 | 414 | 32 | 0.188 |
| | 16 | 36 | 900* | 658* | 2168 | 421 | 32 | 0.188 |
| | 18 | 12 | 352 | 251 | 1510 | 165 | 22 | 0.125 |
| | 18 | 15 | 456 | 328 | 1593 | 232 | 24 | 0.125 |
| | 18 | 24 | 741 | 559 | 1919 | 377 | 30 | 0.188 |
| | 18 | 30 | 941 | 713 | 1959 | 440 | 30 | 0.188 |
| | 18 | 36 | 1020* | 770* | 2066 | 477 | 32 | 0.188 |
| | 18 | 42 | 1050* | 759* | 2086 | 491 | 32 | 0.188 |
| | 24 | 12 | 415 | 345 | 1701 | 194 | 24 | 0.188 |
| | 24 | 16 | 653 | 486 | 1673 | 306 | 26 | 0.125 |
| | 24 | 18 | 724 | 557 | 1874 | 368 | 28 | 0.125 |
| | 24 | 24 | 1011 | 769 | 1703 | 515 | 28 | 0.125 |
| | 24 | 30 | 1150* | 873* | 1938 | 585 | 32 | 0.188 |
| | 24 | 36 | 1370* | 1037* | 1893 | 641 | 32 | 0.125 |
| | 24 | 42 | 1400* | 1012* | 1886 | 655 | 32 | 0.125 |
| | 30 | 15 | 744 | 531 | 2027 | 348 | 30 | 0.188 |
| | 30 | 18 | 912 | 656 | 1900 | 427 | 30 | 0.188 |
| | 30 | 16 | 677 | 572 | 1671 | 317 | 26 | 0.125 |
| 66 | 13 | 30 | 620* | 450* | 2211 | 290 | 32 | 0.188 |
| | 13 | 36 | 630* | 427* | 2209 | 295 | 32 | 0.188 |
| | 16 | 16 | 444 | 320 | 1437 | 226 | 22 | 0.188 |
| | 16 | 18 | 493 | 367 | 1593 | 251 | 24 | 0.125 |
| | 16 | 30 | 855 | 647 | 2179 | 400 | 32 | 0.188 |
| | 16 | 32 | 850* | 627* | 2146 | 398 | 32 | 0.188 |
| | 16 | 36 | 870* | 620* | 2165 | 407 | 32 | 0.188 |
| | 18 | 12 | 364 | 260 | 1613 | 170 | 24 | 0.125 |
| | 18 | 15 | 472 | 340 | 1701 | 240 | 26 | 0.125 |
| | 18 | 24 | 767 | 579 | 2051 | 390 | 32 | 0.188 |
| | 18 | 30 | 973 | 739 | 2095 | 456 | 32 | 0.188 |
| | 18 | 36 | 1000* | 742* | 2093 | 468 | 32 | 0.188 |
| | 18 | 42 | 1030* | 730* | 2115 | 482 | 32 | 0.188 |
| | 24 | 12 | 430 | 357 | 1817 | 201 | 26 | 0.125 |
| | 24 | 16 | 676 | 504 | 1788 | 316 | 28 | 0.125 |
| | 24 | 18 | 749 | 577 | 2003 | 381 | 30 | 0.188 |
| | 24 | 24 | 1046 | 797 | 1822 | 533 | 30 | 0.125 |
| | 24 | 30 | 1120* | 834* | 1950 | 570 | 32 | 0.188 |
| | 24 | 36 | 1320* | 977* | 1891 | 618 | 32 | 0.125 |
| | 24 | 42 | 1350* | 950* | 1881 | 632 | 32 | 0.125 |
| | 30 | 15 | 751 | 531 | 2112 | 351 | 32 | 0.188 |
| | 30 | 18 | 920 | 656 | 1980 | 431 | 30 | 0.188 |
| | 30 | 16 | 681 | 572 | 1734 | 319 | 26 | 0.125 |

SEE NOTES ON FIRST SHEET OF SCHEDULE 3

CONTINUES ON NEXT SHEET

## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 3 CONT)

CABINET HEIGHT (H) = 68", 72", 78", 84" | Y = H/2 @ CONCRETE ON METAL DECK (z/h ≤ 1.0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 68 | 13 | 30 | 600* | 391* | 2207 | 281 | 32 | 0.188 |
| | 13 | 36 | 620* | 493* | 2243 | 290 | 32 | 0.188 |
| | 16 | 16 | 459 | 332 | 1532 | 234 | 22 | 0.125 |
| | 16 | 18 | 509 | 380 | 1699 | 259 | 26 | 0.125 |
| | 16 | 30 | 820* | 605* | 2156 | 384 | 32 | 0.188 |
| | 16 | 32 | 820* | 591* | 2136 | 384 | 32 | 0.188 |
| | 16 | 36 | 850* | 593* | 2183 | 398 | 32 | 0.188 |
| | 18 | 12 | 376 | 269 | 1719 | 176 | 26 | 0.125 |
| | 18 | 15 | 487 | 351 | 1814 | 248 | 26 | 0.125 |
| | 18 | 24 | 770* | 577* | 2125 | 392 | 32 | 0.188 |
| | 18 | 30 | 960* | 719* | 2132 | 449 | 32 | 0.188 |
| | 18 | 36 | 960* | 695* | 2073 | 449 | 32 | 0.188 |
| | 18 | 42 | 1000* | 691* | 2119 | 468 | 32 | 0.188 |
| | 24 | 12 | 444 | 369 | 1938 | 208 | 28 | 0.188 |
| | 24 | 16 | 698 | 521 | 1907 | 327 | 28 | 0.188 |
| | 24 | 18 | 774 | 597 | 2136 | 394 | 32 | 0.188 |
| | 24 | 24 | 1082 | 824 | 1945 | 551 | 32 | 0.188 |
| | 24 | 30 | 1100* | 805* | 1978 | 560 | 32 | 0.188 |
| | 24 | 36 | 1320* | 967* | 1953 | 618 | 32 | 0.188 |
| | 24 | 42 | 1350* | 938* | 1943 | 632 | 32 | 0.188 |
| | 30 | 15 | 758 | 531 | 2198 | 355 | 32 | 0.188 |
| | 30 | 18 | 928 | 656 | 2061 | 434 | 32 | 0.188 |
| | 30 | 16 | 684 | 572 | 1798 | 320 | 28 | 0.125 |
| 72 | 19 | 12 | 407 | 305 | 1949 | 190 | 28 | 0.188 |
| | 19 | 15 | 526 | 398 | 2075 | 268 | 30 | 0.188 |
| | 19 | 18 | 651 | 492 | 1908 | 331 | 28 | 0.188 |
| | 19 | 21 | 773 | 586 | 2083 | 393 | 32 | 0.188 |
| | 19 | 24 | 800* | 585* | 2155 | 407 | 32 | 0.188 |
| | 19 | 30 | 950* | 678* | 2083 | 445 | 32 | 0.188 |
| | 19 | 36 | 1000* | 671* | 2128 | 468 | 32 | 0.188 |
| | 24 | 12 | 473 | 394 | 2190 | 222 | 32 | 0.188 |
| | 24 | 15 | 669 | 516 | 2133 | 313 | 32 | 0.188 |
| | 24 | 18 | 730* | 481* | 2138 | 372 | 32 | 0.188 |
| | 24 | 21 | 920* | 633* | 2133 | 468 | 32 | 0.188 |
| | 24 | 24 | 1050* | 688* | 2007 | 534 | 32 | 0.188 |
| | 24 | 30 | 1050* | 613* | 2007 | 534 | 32 | 0.188 |
| | 24 | 36 | 1250* | 814* | 1968 | 585 | 32 | 0.188 |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 78 | 19 | 12 | 439 | 329 | 2285 | 206 | 32 | 0.188 |
| | 19 | 15 | 520* | 382* | 2229 | 265 | 32 | 0.188 |
| | 19 | 18 | 680* | 508* | 2165 | 346 | 32 | 0.188 |
| | 19 | 21 | 740* | 537* | 2168 | 377 | 32 | 0.188 |
| | 19 | 24 | 750* | 517* | 2197 | 382 | 32 | 0.188 |
| | 19 | 30 | 900* | 605* | 2147 | 421 | 32 | 0.188 |
| | 19 | 36 | 930* | 574* | 2154 | 435 | 32 | 0.188 |
| | 24 | 12 | 450* | 364* | 2260 | 211 | 32 | 0.188 |
| | 24 | 15 | 640* | 474* | 2216 | 300 | 32 | 0.188 |
| | 24 | 18 | 690* | 420* | 2197 | 351 | 32 | 0.188 |
| | 24 | 21 | 850* | 539* | 2144 | 433 | 32 | 0.188 |
| | 24 | 24 | 1000* | 608* | 2081 | 509 | 32 | 0.188 |
| | 24 | 30 | 1000* | 527* | 2081 | 509 | 32 | 0.188 |
| | 24 | 36 | 1170* | 697* | 2007 | 548 | 32 | 0.188 |
| 84 | 19 | 12 | 400* | 281* | 2245 | 187 | 32 | 0.188 |
| | 19 | 15 | 480* | 332* | 2220 | 244 | 32 | 0.188 |
| | 19 | 18 | 650* | 449* | 2235 | 331 | 32 | 0.188 |
| | 19 | 21 | 700* | 464* | 2215 | 356 | 32 | 0.188 |
| | 19 | 24 | 700* | 428* | 2215 | 356 | 32 | 0.188 |
| | 19 | 30 | 830* | 486* | 2141 | 388 | 32 | 0.188 |
| | 19 | 36 | 850* | 434* | 2128 | 398 | 32 | 0.188 |
| | 24 | 12 | 420* | 328* | 2276 | 197 | 32 | 0.188 |
| | 24 | 15 | 600* | 421* | 2243 | 281 | 32 | 0.188 |
| | 24 | 18 | 650* | 335* | 2235 | 331 | 32 | 0.188 |
| | 24 | 21 | 800* | 437* | 2180 | 407 | 32 | 0.188 |
| | 24 | 24 | 920* | 462* | 2070 | 468 | 32 | 0.188 |
| | 24 | 30 | 920* | 368* | 2070 | 468 | 32 | 0.188 |
| | 24 | 36 | 1100* | 591* | 2043 | 515 | 32 | 0.188 |

SEE NOTES ON FIRST SHEET OF SCHEDULE 3

## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 4)

CABINET HEIGHT (H) = 24", 28" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 24 | 13 | 30 | 232 | 163 | 166 | 68 | 4 | 0.125 |
| | 13 | 36 | 282 | 199 | 197 | 82 | 4 | 0.125 |
| | 16 | 16 | 148 | 103 | 95 | 47 | 4 | 0.125 |
| | 16 | 18 | 169 | 118 | 108 | 54 | 4 | 0.125 |
| | 16 | 30 | 293 | 208 | 141 | 86 | 4 | 0.125 |
| | 16 | 32 | 314 | 223 | 150 | 92 | 4 | 0.125 |
| | 16 | 36 | 355 | 253 | 167 | 104 | 4 | 0.125 |
| | 18 | 12 | 122 | 84 | 111 | 36 | 4 | 0.125 |
| | 18 | 15 | 157 | 109 | 114 | 50 | 4 | 0.125 |
| | 18 | 24 | 263 | 186 | 135 | 84 | 4 | 0.125 |
| | 18 | 30 | 334 | 238 | 131 | 98 | 4 | 0.125 |
| | 18 | 36 | 404 | 289 | 153 | 118 | 4 | 0.125 |
| | 18 | 42 | 475 | 341 | 176 | 139 | 6 | 0.125 |
| | 24 | 16 | 230 | 162 | 116 | 67 | 4 | 0.125 |
| | 24 | 18 | 263 | 186 | 134 | 84 | 4 | 0.125 |
| | 24 | 24 | 358 | 256 | 107 | 114 | 4 | 0.125 |
| | 24 | 30 | 455 | 327 | 136 | 145 | 6 | 0.125 |
| | 24 | 36 | 551 | 398 | 126 | 161 | 6 | 0.125 |
| | 24 | 42 | 647 | 468 | 142 | 189 | 6 | 0.125 |
| | 30 | 15 | 271 | 191 | 147 | 79 | 4 | 0.125 |
| | 30 | 18 | 332 | 236 | 130 | 97 | 4 | 0.125 |
| | 30 | 16 | 291 | 206 | 141 | 85 | 4 | 0.125 |
| 28 | 13 | 30 | 261 | 199 | 223 | 76 | 4 | 0.125 |
| | 13 | 36 | 316 | 242 | 265 | 92 | 6 | 0.125 |
| | 16 | 16 | 166 | 125 | 127 | 53 | 4 | 0.125 |
| | 16 | 18 | 190 | 144 | 145 | 60 | 4 | 0.125 |
| | 16 | 30 | 329 | 253 | 192 | 96 | 4 | 0.125 |
| | 16 | 32 | 352 | 271 | 204 | 103 | 4 | 0.125 |
| | 16 | 36 | 399 | 308 | 227 | 117 | 6 | 0.125 |
| | 18 | 12 | 136 | 102 | 147 | 40 | 4 | 0.125 |
| | 18 | 15 | 176 | 133 | 152 | 56 | 4 | 0.125 |
| | 18 | 24 | 295 | 227 | 182 | 94 | 4 | 0.125 |
| | 18 | 30 | 392 | 289 | 188 | 115 | 6 | 0.125 |
| | 18 | 36 | 475 | 352 | 220 | 139 | 6 | 0.125 |
| | 18 | 42 | 558 | 414 | 253 | 163 | 6 | 0.125 |
| | 21 | 48 | 758 | 566 | 258 | 222 | 8 | 0.125 |
| | 21 | 72 | 1083 | 863 | 351 | 317 | 10 | 0.125 |
| | 24 | 16 | 270 | 197 | 165 | 79 | 4 | 0.125 |
| | 24 | 18 | 326 | 226 | 201 | 104 | 4 | 0.125 |
| | 24 | 24 | 446 | 312 | 165 | 142 | 6 | 0.125 |
| | 24 | 30 | 565 | 398 | 209 | 180 | 6 | 0.125 |
| | 24 | 36 | 684 | 484 | 197 | 200 | 8 | 0.125 |
| | 24 | 42 | 773 | 570 | 214 | 226 | 8 | 0.125 |
| | 30 | 15 | 305 | 212 | 200 | 89 | 4 | 0.125 |
| | 30 | 18 | 374 | 262 | 179 | 109 | 4 | 0.125 |
| | 30 | 16 | 328 | 229 | 192 | 96 | 4 | 0.125 |

CONTINUES ON NEXT SHEET

MIN # OF SCREWS = MINIMUM SCREWS REQUIRED PER BRACKET. WHERE MIN # OF SCREWS IS 4, BRACKET TYPES 1D, 1F AND 2 MAY BE USED. WHERE MIN # OF SCREWS IS GREATER THAN 4, BRACKET TYPE 2 ONLY MAY BE USED.

t = PLATE WASHER THICKNESS FOR BRACKET TYPE 2.

WT = MAXIMUM UNIT WEIGHT INCLUDING LOADED CONTENTS.

ML = MAXIMUM LOADED CONTENTS. WEIGHTS MARKED WITH * ARE NOT THE MAXIMUM WEIGHT CAPACITY CALCULATED BY VOLUME PER 2022 CBC, TABLE 1607A.1 FOOTNOTE D, BUT THE MAXIMUM LOAD WEIGHT ALLOWED FOR THE UNIT SIZE. THE INSIDE OF ALL UNITS SHALL BE CLEARLY LABELED WITH THE MAXIMUM ALLOWED LOADED CONTENTS (ML) IN POUNDS.

THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO INCLUDES A LARGE NUMBER OF MODEL NUMBERS WITH MANY POTENTIAL CONFIGURATIONS (I.E. DOOR AND DRAWER STYLES, DIMENSIONS, FINISHES, LOCKS, PULLS). TO ELIMINATE LISTING HUNDREDS OF MODEL NUMBERS, THE FOLLOWING GUIDELINES APPLY:

ALL MODEL NUMBERS WITHIN THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO WITH TYPES 1D, 1F AND 2 ARE INCLUDED IN THIS OPM, IF THE OVERALL UNIT HEIGHT WIDTH AND DEPTH DIMENSIONS ARE WITHIN THE VALUES LISTED IN SCHEDULE 4.

THE CABINET WEIGHT, INCLUDING ALL ACCESSORY OPTIONS AND LOADED CONTENTS DOES NOT EXCEED THE MAXIMUM WEIGHT LISTED IN SCHEDULE 4.



REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

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601 Montgomery St. Suite 1450 | San Francisco CA, 94111 | ph.415 243 4091 | zfa.com



Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 4 CONT)

CABINET HEIGHT (H) = 38", 40", 42", 51" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 38 | 13 | 30 | 365 | 278 | 440 | 107 | 8 | 0.125 |
| | 13 | 36 | 443 | 339 | 523 | 129 | 10 | 0.125 |
| | 16 | 16 | 233 | 176 | 252 | 74 | 6 | 0.125 |
| | 16 | 18 | 265 | 201 | 287 | 84 | 6 | 0.125 |
| | 16 | 30 | 437 | 354 | 366 | 128 | 8 | 0.125 |
| | 16 | 32 | 469 | 380 | 388 | 137 | 8 | 0.125 |
| | 16 | 36 | 531 | 431 | 433 | 155 | 8 | 0.125 |
| | 18 | 12 | 179 | 142 | 271 | 52 | 4 | 0.125 |
| | 18 | 15 | 233 | 186 | 284 | 74 | 6 | 0.125 |
| | 18 | 24 | 392 | 317 | 346 | 125 | 6 | 0.125 |
| | 18 | 30 | 498 | 405 | 346 | 146 | 8 | 0.125 |
| | 18 | 36 | 604 | 492 | 407 | 177 | 8 | 0.125 |
| | 18 | 42 | 711 | 580 | 468 | 208 | 10 | 0.125 |
| | 24 | 16 | 373 | 276 | 325 | 109 | 6 | 0.125 |
| | 24 | 18 | 426 | 316 | 376 | 136 | 8 | 0.125 |
| | 24 | 24 | 582 | 436 | 318 | 185 | 8 | 0.125 |
| | 24 | 30 | 740 | 557 | 404 | 235 | 10 | 0.125 |
| | 24 | 36 | 896 | 677 | 390 | 262 | 10 | 0.125 |
| | 24 | 42 | 1022 | 797 | 431 | 299 | 12 | 0.125 |
| | 30 | 15 | 427 | 318 | 398 | 125 | 8 | 0.125 |
| | 30 | 18 | 530 | 393 | 368 | 155 | 8 | 0.125 |
| | 30 | 16 | 465 | 343 | 389 | 136 | 8 | 0.125 |
| 40 | 13 | 30 | 388 | 296 | 494 | 113 | 8 | 0.125 |
| | 13 | 36 | 470 | 360 | 587 | 137 | 10 | 0.125 |
| | 16 | 16 | 247 | 187 | 283 | 78 | 6 | 0.125 |
| | 16 | 18 | 281 | 214 | 323 | 89 | 6 | 0.125 |
| | 16 | 30 | 464 | 377 | 412 | 136 | 8 | 0.125 |
| | 16 | 32 | 498 | 404 | 437 | 146 | 8 | 0.125 |
| | 16 | 36 | 564 | 458 | 487 | 165 | 10 | 0.125 |
| | 18 | 12 | 190 | 151 | 304 | 56 | 6 | 0.125 |
| | 18 | 15 | 247 | 198 | 319 | 79 | 6 | 0.125 |
| | 18 | 24 | 416 | 337 | 390 | 132 | 8 | 0.125 |
| | 18 | 30 | 528 | 431 | 390 | 155 | 8 | 0.125 |
| | 18 | 36 | 642 | 524 | 459 | 188 | 10 | 0.125 |
| | 18 | 42 | 755 | 617 | 528 | 221 | 10 | 0.125 |
| | 24 | 16 | 395 | 293 | 366 | 116 | 6 | 0.125 |
| | 24 | 18 | 452 | 336 | 423 | 144 | 8 | 0.125 |
| | 24 | 24 | 618 | 464 | 360 | 197 | 8 | 0.125 |
| | 24 | 30 | 785 | 592 | 457 | 250 | 10 | 0.125 |
| | 24 | 36 | 951 | 720 | 442 | 278 | 10 | 0.125 |
| | 24 | 42 | 1118 | 848 | 503 | 327 | 12 | 0.125 |
| | 30 | 15 | 433 | 318 | 427 | 127 | 8 | 0.125 |
| | 30 | 18 | 537 | 393 | 396 | 157 | 8 | 0.125 |
| | 30 | 16 | 471 | 343 | 418 | 138 | 8 | 0.125 |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 42 | 13 | 30 | 410 | 314 | 551 | 120 | 10 | 0.125 |
| | 13 | 36 | 496 | 382 | 655 | 145 | 10 | 0.125 |
| | 16 | 16 | 261 | 198 | 316 | 83 | 6 | 0.125 |
| | 16 | 18 | 297 | 227 | 360 | 95 | 6 | 0.125 |
| | 16 | 30 | 491 | 399 | 461 | 144 | 8 | 0.125 |
| | 16 | 32 | 526 | 428 | 489 | 154 | 8 | 0.125 |
| | 16 | 36 | 596 | 486 | 545 | 174 | 10 | 0.125 |
| | 18 | 12 | 201 | 160 | 339 | 59 | 6 | 0.125 |
| | 18 | 15 | 262 | 210 | 356 | 83 | 6 | 0.125 |
| | 18 | 24 | 441 | 358 | 435 | 140 | 8 | 0.125 |
| | 18 | 30 | 559 | 456 | 436 | 164 | 8 | 0.125 |
| | 18 | 36 | 679 | 555 | 514 | 199 | 10 | 0.125 |
| | 18 | 42 | 798 | 654 | 592 | 234 | 12 | 0.125 |
| | 24 | 16 | 418 | 311 | 409 | 122 | 8 | 0.125 |
| | 24 | 18 | 478 | 356 | 472 | 152 | 8 | 0.125 |
| | 24 | 24 | 653 | 492 | 403 | 208 | 8 | 0.125 |
| | 24 | 30 | 830 | 627 | 512 | 264 | 12 | 0.125 |
| | 24 | 36 | 1005 | 763 | 497 | 294 | 12 | 0.125 |
| | 24 | 42 | 1182 | 899 | 566 | 346 | 14 | 0.125 |
| | 30 | 15 | 438 | 318 | 457 | 128 | 8 | 0.125 |
| | 30 | 18 | 544 | 393 | 425 | 159 | 8 | 0.125 |
| | 30 | 16 | 478 | 343 | 448 | 140 | 8 | 0.125 |
| 51 | 13 | 30 | 515 | 384 | 854 | 151 | 14 | 0.125 |
| | 13 | 36 | 625 | 468 | 1017 | 183 | 16 | 0.125 |
| | 16 | 16 | 338 | 242 | 506 | 108 | 8 | 0.125 |
| | 16 | 18 | 375 | 278 | 561 | 119 | 10 | 0.125 |
| | 16 | 30 | 650 | 489 | 758 | 190 | 12 | 0.125 |
| | 16 | 32 | 697 | 525 | 804 | 204 | 14 | 0.125 |
| | 16 | 36 | 788 | 595 | 896 | 230 | 14 | 0.125 |
| | 18 | 12 | 277 | 196 | 575 | 81 | 10 | 0.125 |
| | 18 | 15 | 359 | 257 | 602 | 114 | 10 | 0.125 |
| | 18 | 24 | 583 | 438 | 716 | 186 | 12 | 0.125 |
| | 18 | 30 | 740 | 559 | 721 | 216 | 12 | 0.125 |
| | 18 | 36 | 879 | 680 | 832 | 257 | 14 | 0.125 |
| | 18 | 42 | 1033 | 801 | 957 | 302 | 16 | 0.125 |
| | 24 | 12 | 326 | 270 | 645 | 95 | 10 | 0.188 |
| | 24 | 16 | 514 | 381 | 624 | 150 | 10 | 0.125 |
| | 24 | 18 | 629 | 436 | 772 | 200 | 12 | 0.125 |
| | 24 | 24 | 824 | 603 | 639 | 262 | 12 | 0.125 |
| | 24 | 30 | 1034 | 769 | 803 | 329 | 16 | 0.125 |
| | 24 | 36 | 1244 | 935 | 780 | 364 | 16 | 0.125 |
| | 24 | 42 | 1482 | 1101 | 901 | 433 | 18 | 0.125 |
| | 30 | 15 | 595 | 425 | 770 | 174 | 12 | 0.125 |
| | 30 | 18 | 729 | 525 | 711 | 213 | 12 | 0.125 |
| | 30 | 16 | 542 | 458 | 632 | 159 | 10 | 0.125 |

SEE NOTES ON FIRST SHEET OF SCHEDULE 4

CONTINUES ON NEXT SHEET



## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 4 CONT)

CABINET HEIGHT (H) = 54", 60", 64", 66" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 54 | 13 | 30 | 535 | 411 | 943 | 156 | 14 | 0.125 |
| | 13 | 36 | 630* | 482* | 1091 | 184 | 16 | 0.125 |
| | 16 | 16 | 360 | 259 | 574 | 115 | 10 | 0.125 |
| | 16 | 18 | 388 | 297 | 618 | 123 | 10 | 0.125 |
| | 16 | 30 | 675 | 523 | 838 | 197 | 14 | 0.125 |
| | 16 | 32 | 723 | 561 | 889 | 211 | 14 | 0.125 |
| | 16 | 36 | 818 | 636 | 991 | 239 | 16 | 0.125 |
| | 18 | 12 | 296 | 210 | 651 | 86 | 10 | 0.188 |
| | 18 | 15 | 383 | 275 | 683 | 122 | 10 | 0.125 |
| | 18 | 24 | 605 | 468 | 791 | 193 | 14 | 0.125 |
| | 18 | 30 | 769 | 598 | 799 | 225 | 14 | 0.125 |
| | 18 | 36 | 932 | 727 | 940 | 273 | 16 | 0.125 |
| | 18 | 42 | 1030* | 791* | 1018 | 301 | 18 | 0.125 |
| | 24 | 12 | 348 | 289 | 732 | 102 | 12 | 0.125 |
| | 24 | 16 | 548 | 407 | 708 | 160 | 12 | 0.125 |
| | 24 | 18 | 671 | 466 | 877 | 213 | 14 | 0.125 |
| | 24 | 24 | 878 | 644 | 728 | 279 | 14 | 0.125 |
| | 24 | 30 | 1102 | 822 | 914 | 351 | 16 | 0.125 |
| | 24 | 36 | 1327 | 1000 | 891 | 388 | 18 | 0.125 |
| | 24 | 42 | 1450* | 1047* | 944 | 424 | 18 | 0.125 |
| | 30 | 15 | 605 | 425 | 833 | 177 | 14 | 0.125 |
| | 30 | 18 | 741 | 525 | 770 | 217 | 14 | 0.125 |
| | 30 | 16 | 547 | 458 | 679 | 160 | 12 | 0.125 |
| 60 | 19 | 12 | 337 | 252 | 821 | 99 | 12 | 0.125 |
| | 19 | 15 | 435 | 329 | 869 | 139 | 14 | 0.125 |
| | 19 | 18 | 516 | 407 | 756 | 164 | 12 | 0.125 |
| | 19 | 21 | 611 | 484 | 821 | 195 | 14 | 0.125 |
| | 19 | 24 | 707 | 562 | 950 | 225 | 16 | 0.125 |
| | 19 | 30 | 899 | 717 | 973 | 263 | 16 | 0.125 |
| | 19 | 36 | 980* | 762* | 1027 | 287 | 18 | 0.125 |
| | 24 | 12 | 391 | 325 | 919 | 114 | 14 | 0.125 |
| | 24 | 15 | 553 | 425 | 885 | 162 | 14 | 0.125 |
| | 24 | 18 | 716 | 525 | 1049 | 228 | 16 | 0.125 |
| | 24 | 21 | 843 | 625 | 967 | 268 | 16 | 0.125 |
| | 24 | 24 | 997 | 725 | 933 | 317 | 16 | 0.125 |
| | 24 | 30 | 1070* | 743* | 1001 | 340 | 18 | 0.125 |
| | 24 | 36 | 1280* | 916* | 973 | 374 | 18 | 0.125 |
| | 37 | 15 | 713 | 425 | 1074 | 209 | 16 | 0.125 |
| | 37 | 18 | 821 | 525 | 928 | 240 | 16 | 0.125 |
| | 37 | 21 | 926 | 625 | 839 | 271 | 14 | 0.125 |
| | 37 | 24 | 1039 | 725 | 785 | 304 | 14 | 0.125 |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 64 | 13 | 30 | 530* | 366* | 1119 | 155 | 16 | 0.125 |
| | 13 | 36 | 540* | 343* | 1121 | 158 | 16 | 0.125 |
| | 16 | 16 | 429 | 309 | 820 | 137 | 12 | 0.125 |
| | 16 | 18 | 476 | 354 | 910 | 151 | 14 | 0.125 |
| | 16 | 30 | 730* | 528* | 1091 | 214 | 18 | 0.125 |
| | 16 | 32 | 730* | 514* | 1081 | 214 | 16 | 0.125 |
| | 16 | 36 | 730* | 488* | 1065 | 214 | 16 | 0.125 |
| | 18 | 12 | 352 | 251 | 927 | 103 | 14 | 0.125 |
| | 18 | 15 | 456 | 328 | 974 | 145 | 14 | 0.125 |
| | 18 | 24 | 690* | 508* | 1085 | 220 | 18 | 0.125 |
| | 18 | 30 | 850* | 623* | 1067 | 249 | 18 | 0.125 |
| | 18 | 36 | 860* | 610* | 1048 | 252 | 16 | 0.125 |
| | 18 | 42 | 870* | 579* | 1040 | 254 | 16 | 0.125 |
| | 24 | 12 | 415 | 345 | 1044 | 121 | 16 | 0.188 |
| | 24 | 16 | 653 | 486 | 1015 | 191 | 16 | 0.125 |
| | 24 | 18 | 690* | 523* | 1085 | 220 | 18 | 0.125 |
| | 24 | 24 | 1011 | 769 | 1017 | 322 | 18 | 0.125 |
| | 24 | 30 | 1010* | 733* | 1016 | 321 | 18 | 0.125 |
| | 24 | 36 | 1200* | 867* | 983 | 351 | 18 | 0.125 |
| | 24 | 42 | 1230* | 842* | 978 | 360 | 18 | 0.125 |
| | 30 | 15 | 660* | 447* | 1092 | 193 | 16 | 0.125 |
| | 30 | 18 | 850* | 594* | 1067 | 249 | 18 | 0.125 |
| | 30 | 16 | 677 | 572 | 1013 | 198 | 16 | 0.125 |
| 66 | 13 | 30 | 520* | 350* | 1135 | 152 | 18 | 0.125 |
| | 13 | 36 | 530* | 327* | 1137 | 155 | 18 | 0.125 |
| | 16 | 16 | 444 | 320 | 877 | 141 | 14 | 0.125 |
| | 16 | 18 | 493 | 367 | 973 | 157 | 16 | 0.125 |
| | 16 | 30 | 700* | 492* | 1082 | 205 | 16 | 0.125 |
| | 16 | 32 | 710* | 487* | 1087 | 208 | 16 | 0.125 |
| | 16 | 36 | 720* | 470* | 1086 | 211 | 16 | 0.125 |
| | 18 | 12 | 364 | 260 | 991 | 107 | 14 | 0.125 |
| | 18 | 15 | 472 | 340 | 1041 | 150 | 16 | 0.125 |
| | 18 | 24 | 670* | 482* | 1089 | 213 | 18 | 0.125 |
| | 18 | 30 | 820* | 586* | 1064 | 240 | 18 | 0.125 |
| | 18 | 36 | 840* | 582* | 1059 | 246 | 18 | 0.125 |
| | 18 | 42 | 860* | 560* | 1063 | 252 | 18 | 0.125 |
| | 24 | 12 | 430 | 357 | 1116 | 126 | 16 | 0.125 |
| | 24 | 16 | 676 | 504 | 1086 | 198 | 16 | 0.125 |
| | 24 | 18 | 670* | 498* | 1089 | 213 | 18 | 0.125 |
| | 24 | 24 | 970* | 720* | 1010 | 309 | 18 | 0.125 |
| | 24 | 30 | 970* | 684* | 1010 | 309 | 18 | 0.125 |
| | 24 | 36 | 1170* | 827* | 993 | 342 | 18 | 0.125 |
| | 24 | 42 | 1190* | 790* | 980 | 348 | 18 | 0.125 |
| | 30 | 15 | 640* | 420* | 1095 | 187 | 16 | 0.125 |
| | 30 | 18 | 820* | 556* | 1064 | 240 | 18 | 0.125 |
| | 30 | 16 | 681 | 572 | 1052 | 199 | 16 | 0.125 |

SEE NOTES ON FIRST SHEET OF SCHEDULE 4

CONTINUES ON NEXT SHEET

## CABINET TYPES 1D, 1F AND 2 BRACKET CONNECTION TO CABINET (SCHEDULE 4 CONT)

CABINET HEIGHT (H) = 68", 72", 78", 84" | Y = H/2 @ CONCRETE SLAB ON GRADE (z/h = 0)

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 68 | 13 | 30 | 500* | 291* | 1126 | 146 | 16 | 0.125 |
| | 13 | 36 | 510* | 383* | 1129 | 149 | 18 | 0.125 |
| | 16 | 16 | 459 | 332 | 936 | 146 | 14 | 0.125 |
| | 16 | 18 | 509 | 380 | 1038 | 162 | 16 | 0.125 |
| | 16 | 30 | 680* | 465* | 1085 | 199 | 16 | 0.125 |
| | 16 | 32 | 690* | 461* | 1091 | 202 | 16 | 0.125 |
| | 16 | 36 | 700* | 443* | 1091 | 205 | 16 | 0.125 |
| | 18 | 12 | 376 | 269 | 1057 | 110 | 16 | 0.125 |
| | 18 | 15 | 487 | 351 | 1111 | 155 | 16 | 0.125 |
| | 18 | 24 | 650* | 457* | 1091 | 207 | 18 | 0.125 |
| | 18 | 30 | 800* | 559* | 1073 | 234 | 18 | 0.125 |
| | 18 | 36 | 810* | 545* | 1055 | 237 | 16 | 0.125 |
| | 18 | 42 | 830* | 521* | 1060 | 243 | 18 | 0.125 |
| | 24 | 12 | 430* | 355* | 1152 | 126 | 18 | 0.125 |
| | 24 | 16 | 660* | 483* | 1096 | 193 | 16 | 0.125 |
| | 24 | 18 | 650* | 473* | 1091 | 207 | 18 | 0.125 |
| | 24 | 24 | 950* | 693* | 1023 | 302 | 18 | 0.125 |
| | 24 | 30 | 950* | 655* | 1023 | 302 | 18 | 0.125 |
| | 24 | 36 | 1150* | 797* | 1010 | 336 | 18 | 0.125 |
| | 24 | 42 | 1170* | 758* | 997 | 342 | 18 | 0.125 |
| | 30 | 15 | 630* | 403* | 1113 | 184 | 18 | 0.125 |
| | 30 | 18 | 800* | 528* | 1073 | 234 | 18 | 0.125 |
| | 30 | 16 | 684 | 572 | 1092 | 200 | 16 | 0.125 |
| 72 | 19 | 12 | 390* | 288* | 1150 | 114 | 18 | 0.125 |
| | 19 | 15 | 470* | 343* | 1137 | 150 | 18 | 0.125 |
| | 19 | 18 | 620* | 461* | 1106 | 197 | 18 | 0.125 |
| | 19 | 21 | 670* | 483* | 1097 | 213 | 18 | 0.125 |
| | 19 | 24 | 670* | 455* | 1097 | 213 | 18 | 0.125 |
| | 19 | 30 | 810* | 538* | 1072 | 237 | 18 | 0.125 |
| | 19 | 36 | 830* | 501* | 1065 | 243 | 18 | 0.125 |
| | 24 | 12 | 400* | 321* | 1138 | 117 | 16 | 0.125 |
| | 24 | 15 | 580* | 426* | 1128 | 170 | 18 | 0.125 |
| | 24 | 18 | 620* | 371* | 1106 | 197 | 18 | 0.125 |
| | 24 | 21 | 760* | 473* | 1066 | 242 | 18 | 0.125 |
| | 24 | 24 | 910* | 548* | 1044 | 290 | 18 | 0.125 |
| | 24 | 30 | 910* | 473* | 1044 | 290 | 18 | 0.125 |
| | 24 | 36 | 1090* | 654* | 1021 | 319 | 18 | 0.125 |

| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | MIN # OF SCREWS | MIN t (in) |
|---|---|---|---|---|---|---|---|---|
| 78 | 19 | 12 | 360* | 250* | 1154 | 105 | 18 | 0.125 |
| | 19 | 15 | 430* | 292* | 1132 | 137 | 16 | 0.125 |
| | 19 | 18 | 570* | 398* | 1107 | 181 | 16 | 0.125 |
| | 19 | 21 | 620* | 417* | 1106 | 197 | 18 | 0.125 |
| | 19 | 24 | 620* | 387* | 1106 | 197 | 18 | 0.125 |
| | 19 | 30 | 750* | 455* | 1083 | 219 | 18 | 0.125 |
| | 19 | 36 | 770* | 414* | 1078 | 225 | 18 | 0.125 |
| | 24 | 12 | 370* | 284* | 1144 | 108 | 16 | 0.125 |
| | 24 | 15 | 530* | 364* | 1122 | 155 | 16 | 0.125 |
| | 24 | 18 | 570* | 300* | 1107 | 181 | 16 | 0.125 |
| | 24 | 21 | 710* | 399* | 1086 | 226 | 18 | 0.125 |
| | 24 | 24 | 840* | 448* | 1053 | 267 | 18 | 0.125 |
| | 24 | 30 | 840* | 367* | 1053 | 267 | 18 | 0.125 |
| | 24 | 36 | 1010* | 537* | 1036 | 295 | 18 | 0.125 |
| 84 | 19 | 12 | 340* | 221* | 1177 | 99 | 18 | 0.125 |
| | 19 | 15 | 400* | 252* | 1138 | 127 | 18 | 0.125 |
| | 19 | 18 | 530* | 329* | 1114 | 169 | 16 | 0.125 |
| | 19 | 21 | 580* | 344* | 1120 | 185 | 18 | 0.125 |
| | 19 | 24 | 580* | 308* | 1120 | 185 | 18 | 0.125 |
| | 19 | 30 | 700* | 356* | 1096 | 205 | 18 | 0.125 |
| | 19 | 36 | 720* | 304* | 1093 | 211 | 18 | 0.125 |
| | 24 | 12 | 350* | 258* | 1169 | 102 | 18 | 0.125 |
| | 24 | 15 | 500* | 321* | 1145 | 146 | 18 | 0.125 |
| | 24 | 18 | 530* | 215* | 1114 | 169 | 16 | 0.125 |
| | 24 | 21 | 660* | 297* | 1093 | 210 | 18 | 0.125 |
| | 24 | 24 | 790* | 332* | 1074 | 251 | 18 | 0.125 |
| | 24 | 30 | 790* | 238* | 1074 | 251 | 18 | 0.125 |
| | 24 | 36 | 940* | 431* | 1047 | 275 | 18 | 0.125 |

SEE NOTES ON FIRST SHEET OF SCHEDULE 4



REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

## CABINET TYPE 2A BRACKET CONNECTION TO CABINET (SCHEDULE 5)

CABINET HEIGHT (H) = 24", 28"

| | | | CONCRETE OVER METAL DECK | | | | CONCRETESLAB-ON-GRADE | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) |
| 24 | 13 | 30 | 232 | 163 | 283 | 109 | 232 | 163 | 166 | 68 |
| | 13 | 36 | 282 | 199 | 337 | 132 | 282 | 199 | 197 | 82 |
| | 16 | 16 | 148 | 103 | 162 | 75 | 148 | 103 | 95 | 47 |
| | 16 | 18 | 169 | 118 | 185 | 86 | 169 | 118 | 108 | 54 |
| | 16 | 30 | 293 | 208 | 248 | 137 | 293 | 208 | 141 | 86 |
| | 16 | 32 | 314 | 223 | 263 | 147 | 314 | 223 | 150 | 92 |
| | 16 | 36 | 355 | 253 | 293 | 166 | 355 | 253 | 167 | 104 |
| | 18 | 12 | 122 | 84 | 186 | 57 | 122 | 84 | 111 | 36 |
| | 18 | 15 | 157 | 109 | 194 | 80 | 157 | 109 | 114 | 50 |
| | 18 | 24 | 263 | 186 | 235 | 134 | 263 | 186 | 135 | 84 |
| | 18 | 30 | 334 | 238 | 235 | 156 | 334 | 238 | 131 | 98 |
| | 18 | 36 | 404 | 289 | 275 | 189 | 404 | 289 | 153 | 118 |
| | 18 | 42 | 475 | 341 | 317 | 222 | 475 | 341 | 176 | 139 |
| | 24 | 16 | 230 | 162 | 203 | 108 | 230 | 162 | 116 | 67 |
| | 24 | 18 | 263 | 186 | 235 | 134 | 263 | 186 | 134 | 84 |
| | 24 | 24 | 358 | 256 | 198 | 182 | 358 | 256 | 107 | 114 |
| | 24 | 30 | 455 | 327 | 252 | 232 | 455 | 327 | 136 | 145 |
| | 24 | 36 | 551 | 398 | 243 | 258 | 551 | 398 | 126 | 161 |
| | 24 | 42 | 647 | 468 | 276 | 303 | 647 | 468 | 142 | 189 |
| | 30 | 15 | 271 | 191 | 256 | 127 | 271 | 191 | 147 | 79 |
| | 30 | 18 | 332 | 236 | 234 | 155 | 332 | 236 | 130 | 97 |
| | 30 | 16 | 291 | 206 | 247 | 136 | 291 | 206 | 141 | 85 |
| 28 | 13 | 30 | 261 | 199 | 376 | 122 | 261 | 199 | 223 | 76 |
| | 13 | 36 | 316 | 242 | 447 | 148 | 316 | 242 | 265 | 92 |
| | 16 | 16 | 166 | 125 | 216 | 85 | 166 | 125 | 127 | 53 |
| | 16 | 18 | 190 | 144 | 247 | 97 | 190 | 144 | 145 | 60 |
| | 16 | 30 | 329 | 253 | 332 | 154 | 329 | 253 | 192 | 96 |
| | 16 | 32 | 352 | 271 | 352 | 165 | 352 | 271 | 204 | 103 |
| | 16 | 36 | 399 | 308 | 392 | 187 | 399 | 308 | 227 | 117 |
| | 18 | 12 | 136 | 102 | 245 | 63 | 136 | 102 | 147 | 40 |
| | 18 | 15 | 176 | 133 | 257 | 90 | 176 | 133 | 152 | 56 |
| | 18 | 24 | 295 | 227 | 313 | 150 | 295 | 227 | 182 | 94 |
| | 18 | 30 | 392 | 289 | 330 | 184 | 392 | 289 | 188 | 115 |
| | 18 | 36 | 475 | 352 | 387 | 222 | 475 | 352 | 220 | 139 |
| | 18 | 42 | 558 | 414 | 446 | 261 | 558 | 414 | 253 | 163 |
| | 21 | 48 | 740* | 548* | 458 | 346 | 758 | 566 | 258 | 222 |
| | 21 | 72 | 740* | 520* | 439 | 346 | 1083 | 863 | 351 | 317 |
| | 24 | 16 | 270 | 197 | 284 | 126 | 270 | 197 | 165 | 79 |
| | 24 | 18 | 326 | 226 | 346 | 166 | 326 | 226 | 201 | 104 |
| | 24 | 24 | 446 | 312 | 297 | 227 | 446 | 312 | 165 | 142 |
| | 24 | 30 | 565 | 398 | 377 | 287 | 565 | 398 | 209 | 180 |
| | 24 | 36 | 684 | 484 | 366 | 320 | 684 | 484 | 197 | 200 |
| | 24 | 42 | 740* | 537* | 384 | 346 | 773 | 570 | 214 | 226 |
| | 30 | 15 | 305 | 212 | 342 | 143 | 305 | 212 | 200 | 89 |
| | 30 | 18 | 374 | 262 | 315 | 175 | 374 | 262 | 179 | 109 |
| | 30 | 16 | 328 | 229 | 331 | 154 | 328 | 229 | 192 | 96 |

CONTINUES ON NEXT SHEET

WT = MAXIMUM UNIT WEIGHT INCLUDING LOADED CONTENTS.

ML = MAXIMUM LOADED CONTENTS. WEIGHTS MARKED WITH * ARE NOT THE MAXIMUM WEIGHT CAPACITY CALCULATED BY VOLUME PER 2022 CBC, TABLE 1607A.1 FOOTNOTE D, BUT THE MAXIMUM LOAD WEIGHT ALLOWED FOR THE UNIT SIZE. THE INSIDE OF ALL UNITS SHALL BE CLEARLY LABELED WITH THE MAXIMUM ALLOWED LOADED CONTENTS (ML) IN POUNDS.

THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO INCLUDES A LARGE NUMBER OF MODEL NUMBERS WITH MANY POTENTIAL CONFIGURATIONS (I.E. DOOR AND DRAWER STYLES, DIMENSIONS, FINISHES, LOCKS, PULLS). TO ELIMINATE LISTING HUNDREDS OF MODEL NUMBERS, THE FOLLOWING GUIDELINES APPLY:

ALL MODEL NUMBERS WITHIN THE KIMBALL INTERNATIONAL FREE-STANDING CABINETS PRODUCT PORTFOLIO WITH TYPE 2A BRACKETS ARE INCLUDED IN THIS OPM, IF THE OVERALL UNIT HEIGHT, WIDTH AND DEPTH DIMENSIONS ARE WITHIN THE VALUES LISTED IN SCHEDULE 5 .

THE CABINET WEIGHT, INCLUDING ALL ACCESSORY OPTIONS AND LOADED CONTENTS DOES NOT EXCEED THE MAXIMUM WEIGHT LISTED IN SCHEDULE 5.



ZFA STRUCTURAL ENGINEERS
601 Montgomery St. Suite 1450 | San Francisco CA, 94111 | ph.415 243 4091 | zfa.com



Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

## CABINET TYPE 2A BRACKET CONNECTION TO CABINET (SCHEDULE 5 CONT)

CABINET HEIGHT (H) = 38", 40", 42", 51"

| | | | CONCRETE OVER METAL DECK | | | | CONCRETE SLAB-ON-GRADE | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) |
| 38 | 13 | 30 | 260* | 173* | 520 | 122 | 365 | 278 | 440 | 107 |
| | 13 | 36 | 260* | 156* | 511 | 122 | 443 | 339 | 523 | 129 |
| | 16 | 16 | 233 | 176 | 421 | 118 | 233 | 176 | 252 | 74 |
| | 16 | 18 | 265 | 201 | 480 | 135 | 265 | 201 | 287 | 84 |
| | 16 | 30 | 370* | 287* | 523 | 173 | 437 | 354 | 366 | 128 |
| | 16 | 32 | 370* | 281* | 518 | 173 | 469 | 380 | 388 | 137 |
| | 16 | 36 | 370* | 270* | 511 | 173 | 531 | 431 | 433 | 155 |
| | 18 | 12 | 179 | 142 | 448 | 84 | 179 | 142 | 271 | 52 |
| | 18 | 15 | 233 | 186 | 472 | 119 | 233 | 186 | 284 | 74 |
| | 18 | 24 | 350* | 275* | 520 | 178 | 392 | 317 | 346 | 125 |
| | 18 | 30 | 440* | 347* | 522 | 206 | 498 | 405 | 346 | 146 |
| | 18 | 36 | 460* | 348* | 530 | 215 | 604 | 492 | 407 | 177 |
| | 18 | 42 | 460* | 329* | 519 | 215 | 711 | 580 | 468 | 208 |
| | 24 | 16 | 360* | 263* | 530 | 168 | 373 | 276 | 325 | 109 |
| | 24 | 18 | 350* | 240* | 520 | 178 | 426 | 316 | 376 | 136 |
| | 24 | 24 | 540* | 394* | 513 | 275 | 582 | 436 | 318 | 185 |
| | 24 | 30 | 550* | 367* | 522 | 280 | 740 | 557 | 404 | 235 |
| | 24 | 36 | 680* | 461* | 525 | 318 | 896 | 677 | 390 | 262 |
| | 24 | 42 | 700* | 475* | 524 | 328 | 1022 | 797 | 431 | 299 |
| | 30 | 15 | 330* | 221* | 517 | 154 | 427 | 318 | 398 | 125 |
| | 30 | 18 | 440* | 303* | 522 | 206 | 530 | 393 | 368 | 155 |
| | 30 | 16 | 370* | 248* | 523 | 173 | 465 | 343 | 389 | 136 |
| 40 | 13 | 30 | 250* | 158* | 528 | 117 | 388 | 296 | 494 | 113 |
| | 13 | 36 | 250* | 141* | 519 | 117 | 420* | 311* | 525 | 123 |
| | 16 | 16 | 247 | 187 | 471 | 126 | 247 | 187 | 283 | 78 |
| | 16 | 18 | 270* | 203* | 516 | 137 | 281 | 214 | 323 | 89 |
| | 16 | 30 | 350* | 263* | 523 | 164 | 464 | 377 | 412 | 136 |
| | 16 | 32 | 350* | 256* | 518 | 164 | 498 | 404 | 437 | 146 |
| | 16 | 36 | 360* | 255* | 525 | 168 | 564 | 458 | 487 | 165 |
| | 18 | 12 | 190 | 151 | 501 | 89 | 190 | 151 | 304 | 56 |
| | 18 | 15 | 247 | 198 | 529 | 126 | 247 | 198 | 319 | 79 |
| | 18 | 24 | 330* | 251* | 519 | 168 | 416 | 337 | 390 | 132 |
| | 18 | 30 | 420* | 322* | 527 | 197 | 528 | 431 | 390 | 155 |
| | 18 | 36 | 430* | 312* | 524 | 201 | 642 | 524 | 459 | 188 |
| | 18 | 42 | 440* | 302* | 526 | 206 | 755 | 617 | 528 | 221 |
| | 24 | 16 | 340* | 238* | 529 | 159 | 395 | 293 | 366 | 116 |
| | 24 | 18 | 330* | 214* | 519 | 168 | 452 | 336 | 423 | 144 |
| | 24 | 24 | 520* | 366* | 523 | 265 | 618 | 464 | 360 | 197 |
| | 24 | 30 | 520* | 327* | 523 | 265 | 785 | 592 | 457 | 250 |
| | 24 | 36 | 640* | 409* | 524 | 300 | 951 | 720 | 442 | 278 |
| | 24 | 42 | 660* | 391* | 525 | 309 | 1118 | 848 | 503 | 327 |
| | 30 | 15 | 320* | 205* | 530 | 150 | 433 | 318 | 427 | 127 |
| | 30 | 18 | 420* | 276* | 527 | 197 | 537 | 393 | 396 | 157 |
| | 30 | 16 | 350* | 222* | 523 | 164 | 471 | 343 | 418 | 138 |

| | | | CONCRETE OVER METAL DECK | | | | CONCRETE SLAB-ON-GRADE | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) |
| 42 | 13 | 30 | 230* | 134* | 512 | 108 | 390* | 294* | 524 | 114 |
| | 13 | 36 | 240* | 125* | 525 | 112 | 400* | 285* | 528 | 117 |
| | 16 | 16 | 261* | 198* | 525 | 133 | 261 | 198 | 316 | 83 |
| | 16 | 18 | 260* | 189* | 523 | 132 | 297 | 227 | 360 | 95 |
| | 16 | 30 | 330* | 238* | 520 | 154 | 491 | 399 | 461 | 144 |
| | 16 | 32 | 330* | 232* | 515 | 154 | 526 | 428 | 489 | 154 |
| | 16 | 36 | 340* | 229* | 523 | 159 | 570* | 459* | 521 | 167 |
| | 18 | 12 | 190* | 149* | 527 | 89 | 201 | 160 | 339 | 59 |
| | 18 | 15 | 230* | 178* | 518 | 117 | 262 | 210 | 356 | 83 |
| | 18 | 24 | 320* | 237* | 530 | 163 | 441 | 358 | 435 | 140 |
| | 18 | 30 | 400* | 297* | 530 | 187 | 559 | 456 | 436 | 164 |
| | 18 | 36 | 410* | 286* | 527 | 192 | 679 | 555 | 514 | 199 |
| | 18 | 42 | 420* | 275* | 530 | 197 | 700* | 555* | 519 | 205 |
| | 24 | 16 | 320* | 213* | 524 | 150 | 418 | 311 | 409 | 122 |
| | 24 | 18 | 320* | 198* | 530 | 163 | 478 | 356 | 472 | 152 |
| | 24 | 24 | 490* | 329* | 521 | 249 | 653 | 492 | 403 | 208 |
| | 24 | 30 | 490* | 288* | 521 | 249 | 830 | 627 | 512 | 264 |
| | 24 | 36 | 610* | 368* | 528 | 285 | 1005 | 763 | 497 | 294 |
| | 24 | 42 | 630* | 347* | 530 | 295 | 1100* | 817* | 527 | 322 |
| | 30 | 15 | 300* | 180* | 523 | 140 | 438 | 318 | 457 | 128 |
| | 30 | 18 | 400* | 249* | 530 | 187 | 544 | 393 | 425 | 159 |
| | 30 | 16 | 330* | 195* | 520 | 154 | 478 | 343 | 448 | 140 |
| 51 | 13 | 30 | NOT PERMITTED | | | | 310* | 179* | 514 | 91 |
| | 13 | 36 | | | | | 320* | 163* | 521 | 94 |
| | 16 | 16 | | | | | 338* | 242* | 506 | 108 |
| | 16 | 18 | | | | | 350* | 253* | 524 | 111 |
| | 16 | 30 | | | | | 450* | 289* | 525 | 132 |
| | 16 | 32 | | | | | 450* | 278* | 520 | 132 |
| | 16 | 36 | | | | | 460* | 267* | 523 | 135 |
| | 18 | 12 | | | | | 250* | 169* | 519 | 73 |
| | 18 | 15 | | | | | 310* | 208* | 520 | 99 |
| | 18 | 24 | | | | | 430* | 285* | 528 | 137 |
| | 18 | 30 | | | | | 540* | 359* | 526 | 158 |
| | 18 | 36 | | | | | 550* | 351* | 520 | 161 |
| | 18 | 42 | | | | | 570* | 338* | 528 | 167 |
| | 24 | 12 | | | | | 260* | 204* | 514 | 76 |
| | 24 | 16 | | | | | 430* | 297* | 522 | 126 |
| | 24 | 18 | | | | | 430* | 237* | 528 | 137 |
| | 24 | 24 | | | | | 680* | 459* | 528 | 216 |
| | 24 | 30 | | | | | 680* | 415* | 528 | 216 |
| | 24 | 36 | | | | | 840* | 531* | 527 | 246 |
| | 24 | 42 | | | | | 870* | 490* | 529 | 254 |
| | 30 | 15 | | | | | 400* | 230* | 517 | 117 |
| | 30 | 18 | | | | | 540* | 336* | 526 | 158 |
| | 30 | 16 | | | | | 450* | 366* | 525 | 132 |

SEE NOTES ON FIRST SHEET OF SCHEDULE 5

CONTINUES ON NEXT SHEET



## CABINET TYPE 2A BRACKET CONNECTION TO CABINET (SCHEDULE 5 CONT)

CABINET HEIGHT (H) = 38", 40", 42", 51"

| | | | CONCRETE OVER METAL DECK | | | | CONCRETE SLAB-ON-GRADE | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| H (in) | D (in) | W (in) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) | WT (lbs) | ML (lbs) | $T_{u\,MAX}$ (lbs) | $V_{u\,MAX}$ (lbs) |
| 54 | 13 | 30 | NOT PERMITTED | | | | 300* | 176* | 529 | 88 |
| | 13 | 36 | | | | | 300* | 152* | 520 | 88 |
| | 16 | 16 | | | | | 330* | 229* | 526 | 105 |
| | 16 | 18 | | | | | 330* | 239* | 526 | 105 |
| | 16 | 30 | | | | | 420* | 268* | 522 | 123 |
| | 16 | 32 | | | | | 430* | 268* | 529 | 126 |
| | 16 | 36 | | | | | 430* | 248* | 521 | 126 |
| | 18 | 12 | | | | | 240* | 155* | 529 | 70 |
| | 18 | 15 | | | | | 290* | 182* | 517 | 92 |
| | 18 | 24 | | | | | 400* | 263* | 523 | 127 |
| | 18 | 30 | | | | | 510* | 339* | 530 | 149 |
| | 18 | 36 | | | | | 520* | 315* | 525 | 152 |
| | 18 | 42 | | | | | 530* | 291* | 524 | 155 |
| | 24 | 12 | | | | | 250* | 191* | 526 | 73 |
| | 24 | 16 | | | | | 400* | 259* | 517 | 117 |
| | 24 | 18 | | | | | 400* | 196* | 523 | 127 |
| | 24 | 24 | | | | | 630* | 396* | 523 | 200 |
| | 24 | 30 | | | | | 630* | 349* | 523 | 200 |
| | 24 | 36 | | | | | 780* | 453* | 524 | 228 |
| | 24 | 42 | | | | | 800* | 397* | 521 | 234 |
| | 30 | 15 | | | | | 380* | 200* | 523 | 111 |
| | 30 | 18 | | | | | 510* | 294* | 530 | 149 |
| | 30 | 16 | | | | | 420* | 331* | 522 | 123 |

SEE NOTES ON FIRST SHEET OF SCHEDULE 5

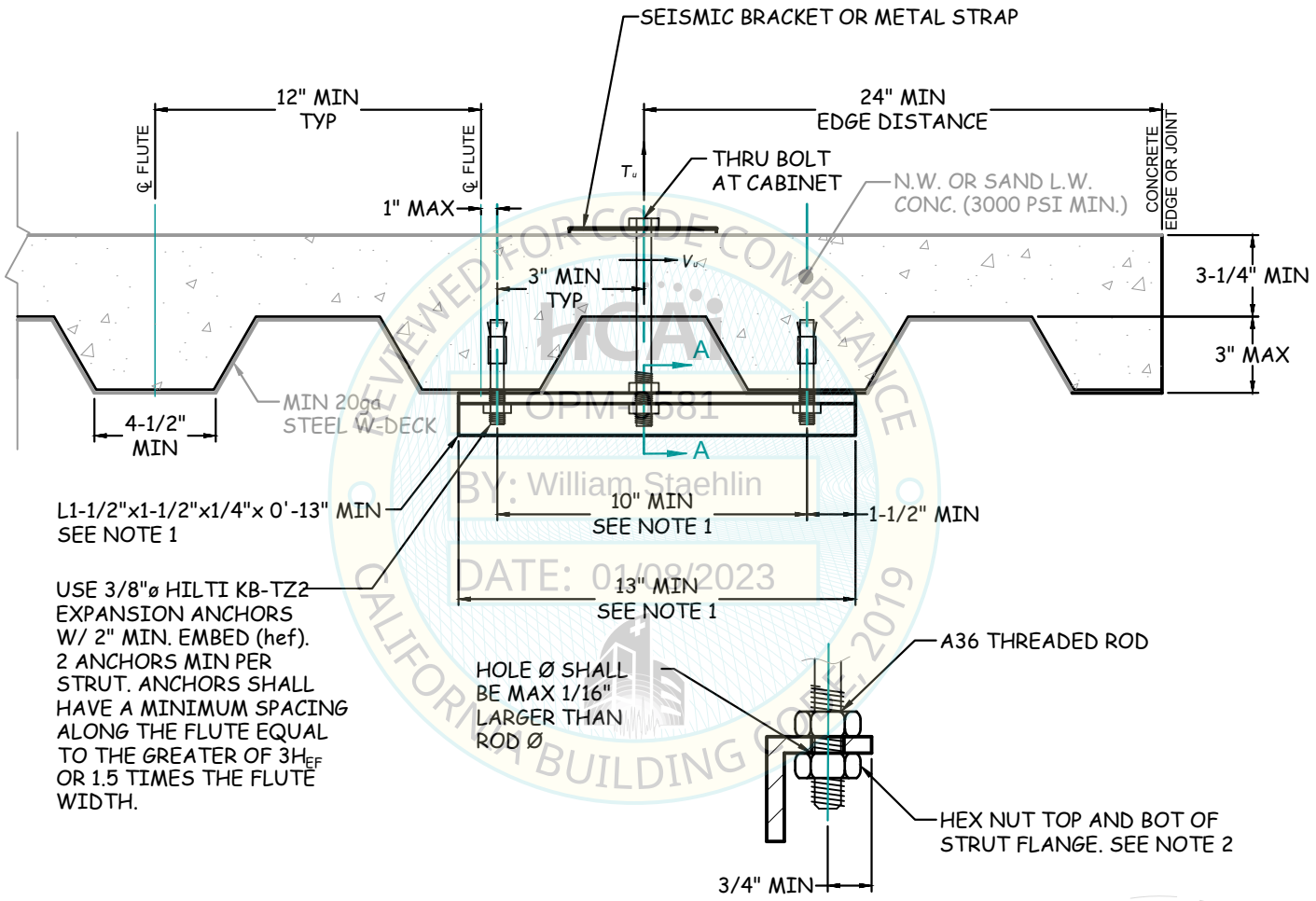


ZFA STRUCTURAL ENGINEERS
601 Montgomery St. Suite 1450 | San Francisco CA, 94111 | ph.415 243 4091 | zfa.com



Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

# SEISMIC ATTACHMENT: METAL DECK THRU BOLT DETAIL




SECTION A-A



**NOTES:**

1. THE STRUCTURAL ENGINEER OF RECORD SHALL DEFINE STRUT(S) LENGTHS AT METAL DECK BASED ON UNIT LOCATION AND ORIENTATION.
2. IF A NUT CANNOT BE PLACED AT THE TOP-SIDE OF THE STRUT ASSEMBLY, PROVIDE A TAPPED HOLE THROUGH STRUT FLANGE.
3. CABINETS MAY BE INSTALLED ADJACENT TO EACH OTHER. EACH CABINET SHALL HAVE ITS OWN ANCHORING SYSTEM.
4. SEE SHEET 2 AND 3 FOR GENERAL NOTES AND EXPANSION ANCHOR INSTALLATION INSTRUCTIONS.

ZFA STRUCTURAL ENGINEERS

601 Montgomery St. Suite 1450 | San Francisco CA, 94111 | ph.415 243 4091 | zfa.com

Job No. 34028

Date: Nov 15, 2022



Equipment Type: KIMBALL & NATIONAL METAL & WOOD FREE STANDING CABINETS - 12" to 72" Wide, 13" to 37" Deep, 84" Max Height

## CABINET WEIGHTS

| D | W | Height 24" | | | Height 28" | | | Height 38" | | | Height 40" | | | Height 42" | | | Height 51" | | | Height 54" | | | Height 64" | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WU | ML | WT | WU | ML | WT | WU | ML | WT | WU | ML | WT | WU | ML | WT | WU | ML | WT | WU | ML | WT | WU | ML | WT |
| 13 | 30 | 69 | 163 | 232 | 62 | 199 | 261 | 87 | 278 | 365 | 92 | 296 | 388 | 96 | 314 | 410 | 131 | 384 | 515 | 124 | 411 | 535 | 164 | 490 | 655 |
| 13 | 36 | 83 | 199 | 282 | 74 | 242 | 316 | 104 | 339 | 443 | 109 | 360 | 470 | 115 | 382 | 496 | 157 | 468 | 625 | 148 | 500 | 648 | 197 | 596 | 794 |
| 16 | 16 | 45 | 103 | 148 | 41 | 125 | 166 | 57 | 176 | 233 | 60 | 187 | 247 | 63 | 198 | 261 | 96 | 242 | 338 | 101 | 259 | 360 | 120 | 309 | 429 |
| 16 | 18 | 51 | 118 | 169 | 46 | 144 | 190 | 64 | 201 | 265 | 67 | 214 | 281 | 71 | 227 | 297 | 97 | 278 | 375 | 91 | 297 | 388 | 122 | 354 | 476 |
| 16 | 30 | 85 | 208 | 293 | 76 | 253 | 329 | 83 | 354 | 437 | 87 | 377 | 464 | 92 | 399 | 491 | 161 | 489 | 650 | 152 | 523 | 675 | 202 | 624 | 826 |
| 16 | 32 | 91 | 223 | 314 | 81 | 271 | 352 | 89 | 380 | 469 | 94 | 404 | 498 | 98 | 428 | 526 | 172 | 525 | 697 | 162 | 561 | 723 | 216 | 669 | 885 |
| 16 | 36 | 102 | 253 | 355 | 91 | 308 | 399 | 100 | 431 | 531 | 105 | 458 | 564 | 111 | 486 | 596 | 193 | 595 | 788 | 182 | 636 | 818 | 242 | 759 | 1001 |
| 18 | 12 | 38 | 84 | 122 | 34 | 102 | 136 | 37 | 142 | 179 | 39 | 151 | 190 | 41 | 160 | 201 | 81 | 196 | 277 | 86 | 210 | 296 | 101 | 251 | 352 |
| 18 | 15 | 48 | 109 | 157 | 43 | 133 | 176 | 47 | 186 | 233 | 49 | 198 | 247 | 52 | 210 | 262 | 102 | 257 | 359 | 108 | 275 | 383 | 128 | 328 | 456 |
| 18 | 24 | 77 | 186 | 263 | 68 | 227 | 295 | 75 | 317 | 392 | 79 | 337 | 416 | 83 | 358 | 441 | 145 | 438 | 583 | 137 | 468 | 605 | 182 | 559 | 741 |
| 18 | 30 | 96 | 238 | 334 | 103 | 289 | 392 | 93 | 405 | 498 | 98 | 431 | 528 | 103 | 456 | 559 | 181 | 559 | 740 | 171 | 598 | 769 | 227 | 713 | 941 |
| 18 | 36 | 115 | 289 | 404 | 123 | 352 | 475 | 112 | 492 | 604 | 118 | 524 | 642 | 124 | 555 | 679 | 199 | 680 | 879 | 205 | 727 | 932 | 250 | 868 | 1117 |
| 18 | 42 | 134 | 341 | 475 | 144 | 414 | 558 | 131 | 580 | 711 | 138 | 617 | 755 | 145 | 654 | 798 | 232 | 801 | 1033 | 239 | 856 | 1095 | 291 | 1022 | 1313 |
| 24 | 12 | | | | | | | | | | | | | | | | 56 | 270 | 326 | 59 | 289 | 348 | 70 | 345 | 415 |
| 24 | 16 | 68 | 162 | 230 | 73 | 197 | 270 | 97 | 276 | 373 | 102 | 293 | 395 | 107 | 311 | 418 | 133 | 381 | 514 | 141 | 407 | 548 | 167 | 486 | 653 |
| 24 | 18 | 77 | 186 | 263 | 100 | 226 | 326 | 110 | 316 | 426 | 116 | 336 | 452 | 122 | 356 | 478 | 193 | 436 | 629 | 204 | 466 | 671 | 167 | 557 | 724 |
| 24 | 24 | 102 | 256 | 358 | 134 | 312 | 446 | 146 | 436 | 582 | 154 | 464 | 618 | 161 | 492 | 653 | 221 | 603 | 824 | 234 | 644 | 878 | 242 | 769 | 1011 |
| 24 | 30 | 128 | 327 | 455 | 167 | 398 | 565 | 183 | 557 | 740 | 193 | 592 | 785 | 202 | 627 | 830 | 265 | 769 | 1034 | 281 | 822 | 1102 | 277 | 981 | 1258 |
| 24 | 36 | 153 | 398 | 551 | 200 | 484 | 684 | 219 | 677 | 896 | 231 | 720 | 951 | 242 | 763 | 1005 | 309 | 935 | 1244 | 327 | 1000 | 1327 | 333 | 1193 | 1526 |
| 24 | 42 | 179 | 468 | 647 | 203 | 570 | 773 | 225 | 797 | 1022 | 269 | 848 | 1118 | 283 | 899 | 1182 | 380 | 1101 | 1482 | 403 | 1177 | 1580 | 388 | 1405 | 1793 |
| 30 | 15 | 80 | 191 | 271 | 93 | 212 | 305 | 109 | 318 | 427 | 115 | 318 | 433 | 120 | 318 | 438 | 170 | 425 | 595 | 180 | 425 | 605 | 213 | 531 | 744 |
| 30 | 18 | 96 | 236 | 332 | 112 | 262 | 374 | 137 | 393 | 530 | 144 | 393 | 537 | 151 | 393 | 544 | 204 | 525 | 729 | 216 | 525 | 741 | 256 | 656 | 912 |
| 30 | 16 | 85 | 206 | 291 | 99 | 229 | 328 | 122 | 343 | 465 | 128 | 343 | 471 | 135 | 343 | 478 | 84 | 458 | 542 | 89 | 458 | 547 | 105 | 572 | 677 |
| 21 | 48 | | | | 192 | 566 | 758 | | | | | | | | | | | | | | | | | | |
| 21 | 72 | | | | 220 | 863 | 1083 | | | | | | | | | | | | | | | | | | |

| D | W | Height 66" | | | Height 68" | | |
|---|---|---|---|---|---|---|---|
| | | WU | ML | WT | WU | ML | WT |
| 13 | 30 | 170 | 508 | 678 | 175 | 526 | 700 |
| 13 | 36 | 203 | 618 | 821 | 209 | 639 | 849 |
| 16 | 16 | 124 | 320 | 444 | 128 | 332 | 459 |
| 16 | 18 | 126 | 367 | 493 | 129 | 380 | 509 |
| 16 | 30 | 208 | 647 | 855 | 215 | 669 | 884 |
| 16 | 32 | 223 | 693 | 916 | 229 | 717 | 947 |
| 16 | 36 | 250 | 787 | 1036 | 257 | 814 | 1071 |
| 18 | 12 | 105 | 260 | 364 | 108 | 269 | 376 |
| 18 | 15 | 132 | 340 | 472 | 136 | 351 | 487 |
| 18 | 24 | 188 | 579 | 767 | 193 | 599 | 793 |
| 18 | 30 | 234 | 739 | 973 | 241 | 765 | 1006 |
| 18 | 36 | 258 | 899 | 1156 | 265 | 930 | 1195 |
| 18 | 42 | 300 | 1059 | 1359 | 309 | 1096 | 1405 |
| 24 | 12 | 72 | 357 | 430 | 75 | 369 | 444 |
| 24 | 16 | 172 | 504 | 676 | 177 | 521 | 698 |
| 24 | 18 | 172 | 577 | 749 | 177 | 597 | 774 |
| 24 | 24 | 250 | 797 | 1046 | 257 | 824 | 1082 |
| 24 | 30 | 286 | 1016 | 1302 | 295 | 1052 | 1346 |
| 24 | 36 | 343 | 1236 | 1579 | 353 | 1279 | 1632 |
| 24 | 42 | 400 | 1456 | 1856 | 412 | 1506 | 1918 |
| 30 | 15 | 220 | 531 | 751 | 227 | 531 | 758 |
| 30 | 18 | 264 | 656 | 920 | 272 | 656 | 928 |
| 30 | 16 | 109 | 572 | 681 | 112 | 572 | 684 |

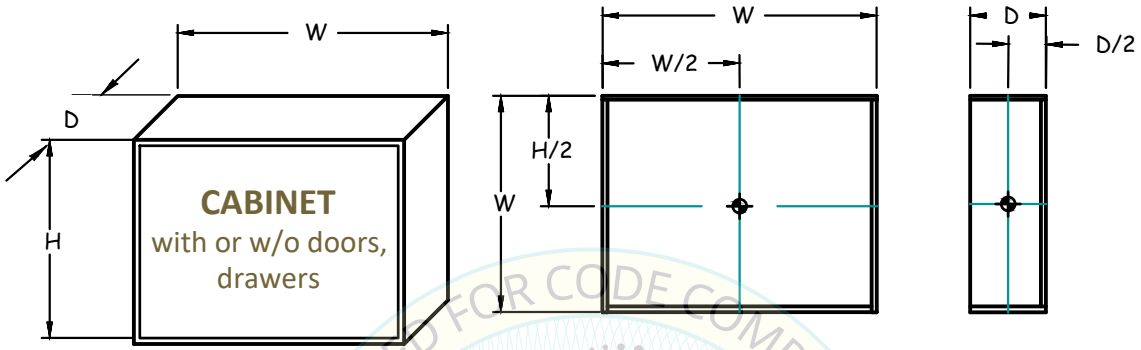
| D | W | Height 60" | | | Height 72" | | | Height 78" | | | Height 84" | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WU | ML | WT | WU | ML | WT | WU | ML | WT | WU | ML | WT |
| 19 | 12 | 85 | 252 | 337 | 102 | 305 | 407 | 111 | 329 | 439 | 119 | 357 | 476 |
| 19 | 15 | 106 | 329 | 435 | 127 | 398 | 526 | 138 | 430 | 568 | 148 | 467 | 616 |
| 19 | 18 | 109 | 407 | 516 | 159 | 492 | 651 | 172 | 531 | 703 | 201 | 577 | 778 |
| 19 | 21 | 127 | 484 | 611 | 187 | 586 | 773 | 203 | 632 | 835 | 236 | 687 | 924 |
| 19 | 24 | 145 | 562 | 707 | 215 | 680 | 895 | 233 | 733 | 966 | 272 | 797 | 1069 |
| 19 | 30 | 182 | 717 | 899 | 272 | 867 | 1139 | 295 | 936 | 1230 | 344 | 1017 | 1361 |
| 19 | 36 | 218 | 872 | 1090 | 329 | 1055 | 1384 | 356 | 1138 | 1494 | 416 | 1237 | 1653 |
| 24 | 12 | 66 | 325 | 391 | 79 | 394 | 473 | 86 | 425 | 511 | 92 | 463 | 555 |
| 24 | 15 | 128 | 425 | 553 | 154 | 516 | 669 | 166 | 556 | 723 | 179 | 605 | 784 |
| 24 | 18 | 191 | 525 | 716 | 249 | 637 | 886 | 270 | 687 | 957 | 315 | 747 | 1062 |
| 24 | 21 | 218 | 625 | 843 | 287 | 758 | 1045 | 311 | 818 | 1129 | 363 | 890 | 1252 |
| 24 | 24 | 272 | 725 | 997 | 362 | 880 | 1242 | 392 | 949 | 1341 | 458 | 1032 | 1490 |
| 24 | 30 | 327 | 925 | 1252 | 437 | 1122 | 1559 | 473 | 1211 | 1684 | 552 | 1317 | 1869 |
| 24 | 36 | 364 | 1125 | 1489 | 436 | 1365 | 1801 | 473 | 1472 | 1945 | 509 | 1601 | 2110 |
| 37 | 15 | 288 | 425 | 713 | | | | | | | | | |
| 37 | 18 | 296 | 525 | 821 | | | | | | | | | |
| 37 | 21 | 301 | 625 | 926 | | | | | | | | | |
| 37 | 24 | 314 | 725 | 1039 | | | | | | | | | |

D = UNIT DEPTH (in)
W = UNIT WIDTH (in)
WU = UNIT SELF WEIGHT (lb)
ML = MAX WEIGHT OF CONTENTS (lb)*
WT = TOTAL MAX WEIGHT LOADED (lb)

* WEIGHTS SHOWN HERE ARE BASED ON 2022 CBC, TABLE 1607A.1, FOOTNOTE D. FILM MEDIA: 18-INCH-DEEP SHELF 100 POUNDS PER LINEAL FOOT, OR 50 POUNDS PER CUBIC FOOT PER TOTAL VOLUME OF THE RACK OR CABINET, WHICHEVER IS LESS. VERIFY MAXIMUM ALLOWABLE WEIGHT OF CONTENTS IN SCHEDULES 1 THROUGH 5.

# MODEL NUMBERS

TOTAL LOAD INCLUDES ALL UNIT COMPONENTS (DOORS, DRAWERS, ETC.)






| Series | Mounting Type | Body | "D" Depth | "W" Width | "H" Height |
|---|---|---|---|---|---|
| ALTERNA | 1F | Wood | 13, 16, 18, 19, 21, 24, 30, 37 | 12, 15, 16, 18, 21, 24, 30, 32, 36, 42, 48, 60, 72 | 24, 28, 38, 40, 42, 51, 54, 60, 64, 66, 68, 72, 78, 84 |
| DEFINITION | 1D, 1F , 2 | | | | |
| FOOTPRINT | 1F, 2 | | | | |
| PRIORITY | 1D, 1F, 1B | | | | |
| WAVEWORKS | 3, 3A, 2A | | | | |
| SANCTUARY | 1F, 2A | | | | |
| STOW | 1F, 2A | | | | |
| FOOTPRINT | 1C, 2A, 1B | Metal | | | |
| WAVEWORKS | 1, 1A | | | | |
| FUNDAMENTAL | 1, 1A | | | | |
| LF SERIES | 1, 1A | | | | |

The Kimball International free standing cabinets product portfolio includes thousands of model numbers with thousands of potential configurations (i.e. door styles and drawers, dimensions, finishes, locks, pulls). To eliminate listing those thousand of model numbers the following guidelines will be used:

All model numbers within the Kimball International free standing cabinets product portfolio are included in this OPM, if the overall unit height, width and depth dimensions are within the values listed in the schedules herein.

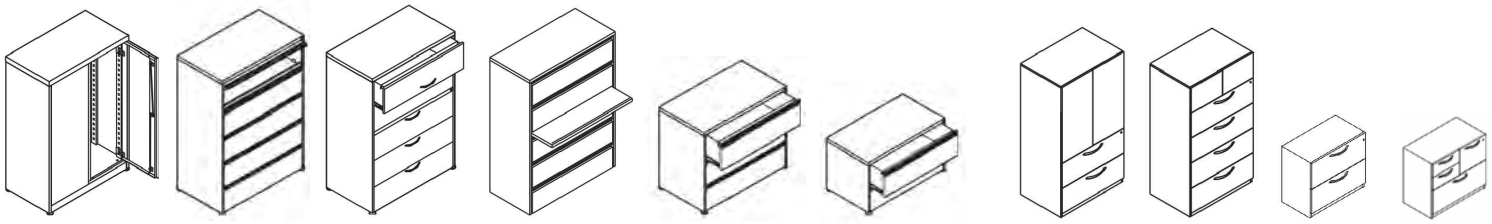
The cabinet weight, including all accessory options and loaded contents does not exceed the maximum weight listed in the schedules herein.

REGISTERED PROFESSIONAL ENGINEER
RYAN S. BOGART
STRUCTURAL
No. 6104
STATE OF CALIFORNIA

CABINETS MAY BE STANDALONE OR INSTALLED ADJACENT TO EACH OTHER.

EACH CABINET WILL HAVE ITS OWN ANCHORING SYSTEM.

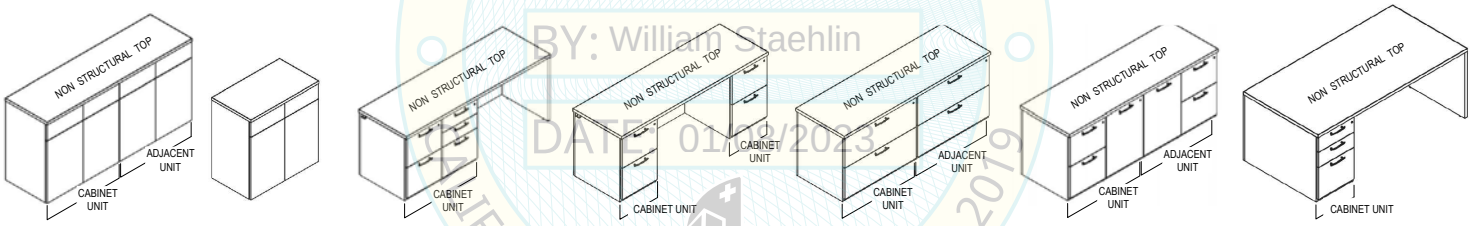
## APPENDIX – TYPICAL CABINET CONFIGURATIONS (FOR REFERENCE ONLY)



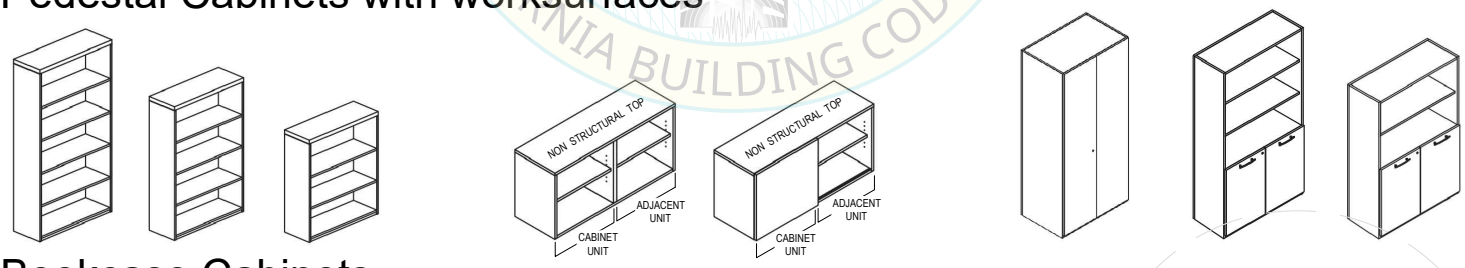
Lateral File Cabinets

Locker and Wardrobe Cabinets

Pedestal Cabinets




Pedestal Cabinets with worksurfaces




Bookcase Cabinets

The Kimball International free standing cabinets product portfolio includes thousands of model numbers with thousands of potential configurations (i.e. door styles and drawers, dimensions, finishes, locks, pulls). To eliminate listing those thousand of model numbers the following guidelines will be used:

All model numbers within the Kimball International free standing cabinets product portfolio are included in this OPM, if the overall unit height, width and depth dimensions are within the values listed in the schedules herein.

The cabinet weight, including all accessory options and loaded contents does not exceed the maximum weight listed in the schedules herein.

CABINETS MAY BE STANDALONE OR INSTALLED ADJACENT TO EACH OTHER.

EACH CABINET WILL HAVE ITS OWN ANCHORING SYSTEM.

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