



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0071-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☐ Renewal ☒ Update to Pre-CBC 2013 OPA Number: OPA-2256-10

Manufacturer Information

Manufacturer: Knoll Inc.

Manufacturer's Technical Representative: Michael Kraynak.

Mailing Address: 1235 Water St., East Greenville, PA 18041

Telephone: (215) 679- 1217

Email: mkraynak@knoll.com

Product Information

Product Name: Knoll Morrison Wall Cabinets

Product Type: Metal cabinets hung on wall. OPM-0071-13

Product Model Number: Morrison Wall Cabinet: MO8 (30,36,42,48,60); Rail: MO8WMR; Brackets, pair: MO8WMB

General Description: Metal wall cabinets that are hung on metal stud framed walls with a metal bracket and sheet metal screws.

Applicant Information

Applicant Company Name: Knoll Inc.

Contact Person: Michael Kraynak

Mailing Address: 1235 Water St.; East Greenville, PA 18041

Telephone: (215) 679- 1217

Email: mkraynak@knoll.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: Michael Kraynak

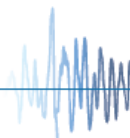
Date: May 10, 2013

Title: Manager, Product Development

Company Name: Knoll Inc.

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-700 (REV 1/24/13)



osHPD

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Registered Design Professional Preparing Engineering Recommendations

Company Name: Miyamoto International Inc.

Name: Bob Glasgow California License Number: S4567

Mailing Address: 1450 Halyard Drive, Suite One; West Sacramento, CA 95691

Telephone: (916) 373-1995 ext. 814 Email: bglasgow@miyamotointernational.com

OSHDP Special Seismic Certification Preapproval (OSP)

- ☐ Special Seismic Certification is preapproved under OSP-
(Separate application for OSP is required)
- ☐ Special Seismic Certification is no preapproved

Certification Method(s)

- ☐ Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-10
- ☐ Other* (Please Specify):

*Use of test criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2013 may be used when approved by OSHDP prior to testing.

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

List of Attachments Supporting the Manufacturer's Certification

- ☐ Test Report ☒ Drawings ☒ Calculations ☐ Manufacturer's Catalog
- ☐ Other(s) (Please Specify):

OFFICE USE ONLY – OSHDP APPROVAL VALID FOR CBC 2013 ONLY

Signature:  Date: April 09, 2014

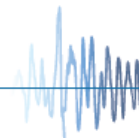
Print Name: Jeffrey Y. Kikumoto

Title: Senior Structural Engineer

Condition of Approval (if applicable):

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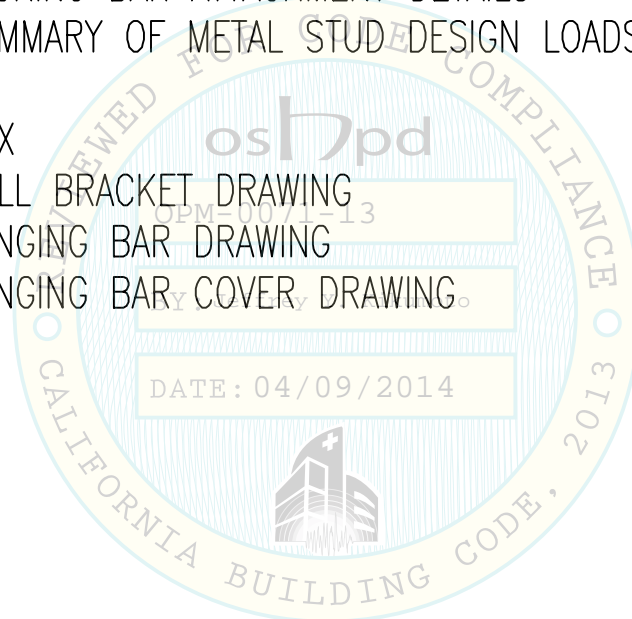
KNOLL MORRISON WALL CABINETS

SHEET

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4. OVERHEAD CABINET DIMENSIONS
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9. SUMMARY OF METAL STUD DESIGN LOADS

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10. WALL BRACKET DRAWING
11. HANGING BAR DRAWING
12. HANGING BAR COVER DRAWING



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KNOLL MORRISON OVERHEAD WALL CABINET ANCHORAGE

MODELS: M08-N30, M08-N36, M08-N42, M08-N48, M08-N60

SHEET 1 OF 12

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GENERAL NOTES:

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2013 CALIFORNIA BUILDING CODE (CBC). THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. EQUIPMENT TYPE: OVERHEAD SHELVES (MORRISON™)
3. EQUIPMENT MANUFACTURER: KNOLL, INC EAST GREENVILLE, PA
4. FORCES ARE PER ASCE 7-10. SECTION 13.3.1:

$$S_{DS} = 2.5 \quad A_p = 1.0 \quad R_p = 2.5 \quad I_p = 1.5$$

SEE PAGE 3 FOR DESIGN FORCES

5. MINIMUM REQUIREMENTS FOR ATTACHMENTS ARE AS FOLLOWS:
METAL STUD (SSMA SPECS, NO SUBSTITUTIONS):

| <u>GAGE</u> | <u>DEPTH</u> | <u>WIDTH</u> | <u>AREA</u> | <u>I_x</u> | <u>S_x</u> |
|--------------|--------------|--------------|-----------------------|-------------------------|-------------------------|
| 18 (43 MILS) | 3 5/8" | 1 3/8" | 0.236 in ² | 0.479 in ⁴ | 0.264 in ³ |

SHEET METAL SCREW: ICC APPROVED

COLD FORMED STEEL GRADE TO BE ASTM A1003. $F_y = 33$ KSI FOR 18GA (43 MIL) AND THINNER SECTIONS AND $F_y = 50$ KSI FOR 16GA (54 MIL) AND THICKER SECTIONS.

6. WALL STUDS TO BE SPACED AT 16"OC, MAX.
7. THIS PRE-APPROVAL IS APPLICABLE TO ANY LOCATION IN THE STATE OF CALIFORNIA WHERE $S_{DS} \leq 2.5$ AND AT ANY HEIGHT WITHIN THE BUILDING.
8. THIS PRE-APPROVAL COVERS THE SUPPORTS AND ATTACHMENTS OF THE UNIT TO THE STRUCTURE.
9. ANCHOR FORCES SHOWN ON DRAWINGS ARE ALLOWABLE STRESS DESIGN LEVEL.

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD:

1. FOR SITE SPECIFIC INSTALLATION, VERIFY:
 - a. THE ADEQUACY OF NEW OR EXISTING STRUCTURE (METAL STUDS, ETC) TO RESIST THE FORCES AND WEIGHT SPECIFIED FOR EACH EQUIPMENT IN ADDITION TO ALL OTHER LOADS.
 - b. THE ATTACHMENTS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY END OR EDGE OF METAL STUD.
 - c. PROVIDE AND DESIGN ANY SUPPLEMENTARY MEMBERS AS REQUIRED.
 - d. THE INSTALLATION IS IN CONFORMANCE WITH THE 2013 CBC AND WITH DETAILS SHOWN ON THIS PRE-APPROVAL.
 - e. THE EQUIPMENT'S ACTUAL WEIGHT, CENTER OF GRAVITY (C.G.) LOCATION, ATTACHMENT LOCATIONS, ATTACHMENT DETAILS AND MATERIAL AND GAGE OF UNIT WHERE ATTACHMENTS ARE MADE TO AGREE WITH INFORMATION SHOWN ON THIS PRE-APPROVAL.
 - f. SHEET METAL SCREWS ARE TO BE IN COMPLIANCE WITH "SSMA" STANDARDS, ARE ICC APPROVED, & HAVE MINIMUM LOAD CAPACITIES PER OPD-0001-13.



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KNOLL MORRISON OVERHEAD WALL CABINET ANCHORAGE

MODELS: M08-N30, M08-N36, M08-N42, M08-N48, M08-N60

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SUMMARY OF WEIGHTS & LOADS:

| KNOLL MORRISON OVERHEAD CABINETS | | | | | | |
|----------------------------------|---------|----------|-----------------------|----------------------|------------------------------------|------------------------------------|
| | ITEM | DL (LBS) | LL (LBS) ¹ | W _p (LBS) | F _{PH} (LBS) ² | F _{PV} (LBS) ² |
| OVERHEAD CABINETS | M08-N30 | 42.0 | 103 | 145 | 186 | 52 |
| | M08-N36 | 47.5 | 123 | 171 | 220 | 61 |
| | M08-N42 | 53.0 | 144 | 197 | 253 | 70 |
| | M08-N48 | 58.5 | 164 | 223 | 287 | 80 |
| | M08-N60 | 69.5 | 205 | 275 | 354 | 98 |

1. GOVERNING LL BASED ON 41 PLF PER CBC, TABLE 1607A.1, FOOTNOTE N.
2. SEE PAGE 2 FOR SEISMIC DESIGN CRITERIA. SEISMIC LOADS (F_{PH} & F_{PV}) ARE ALLOWABLE STRESS DESIGN LEVEL FORCES.

FOR $z/h \leq 1.0$:

STRENGTH LEVEL:

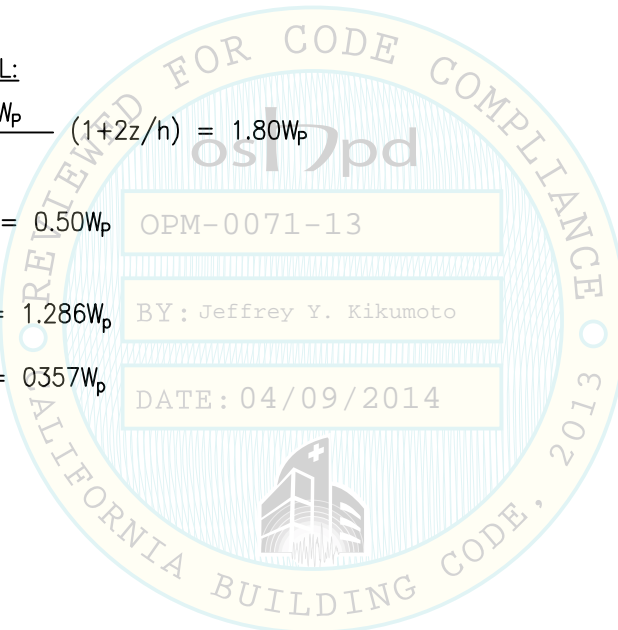
$$F_P = \frac{0.4a_p S_{DS} W_p}{R_p / I_p} (1 + 2z/h) = 1.80 W_p$$

$$E_v = 0.2 S_{DS} W_p = 0.50 W_p$$

ASD LEVEL:

$$F_{PH} = F_P / 1.4 = 1.286 W_p$$

$$F_{PV} = E_v / 1.4 = 0.357 W_p$$



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KNOLL MORRISON OVERHEAD WALL CABINET ANCHORAGE

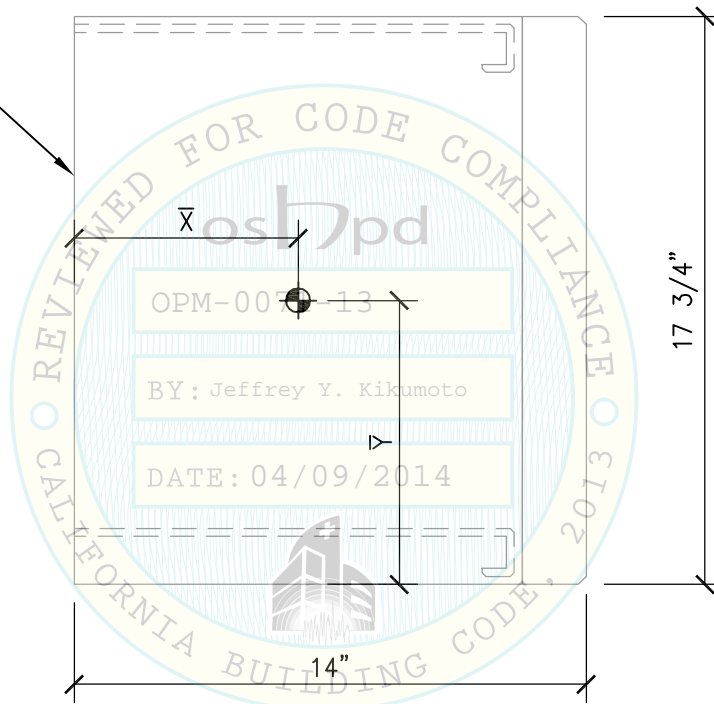
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| CABINET SCHEDULE | | | | | | |
|------------------|----------------|--------------|----------------|----------------|----------------|-----------------------|
| MODEL # | LENGTH, L (IN) | WEIGHT (LBS) | \bar{X} (IN) | \bar{Y} (IN) | \bar{Z} (IN) | MATERIAL GAUGE (MILS) |
| M08-N30 | 30 | 42.0 | 7 | 9 7/8 | 15 | 20 |
| M08-N36 | 36 | 47.5 | 7 | 9 7/8 | 18 | 20 |
| M08-N42 | 42 | 53.0 | 7 | 9 7/8 | 21 | 18 |
| M08-N48 | 48 | 58.5 | 7 | 9 7/8 | 24 | 18 |
| M08-N60 | 60 | 69.5 | 7 | 9 7/8 | 30 | 18 |

CABINET MATERIAL @
ATTACHMENT LOCATIONS:
SAE1010, Fy=44.2 KSI
SEE TABLE FOR GAUGE



OVERHEAD CABINET – SIDE VIEW

CABINET LENGTH PER
SCHEDULE ABOVE



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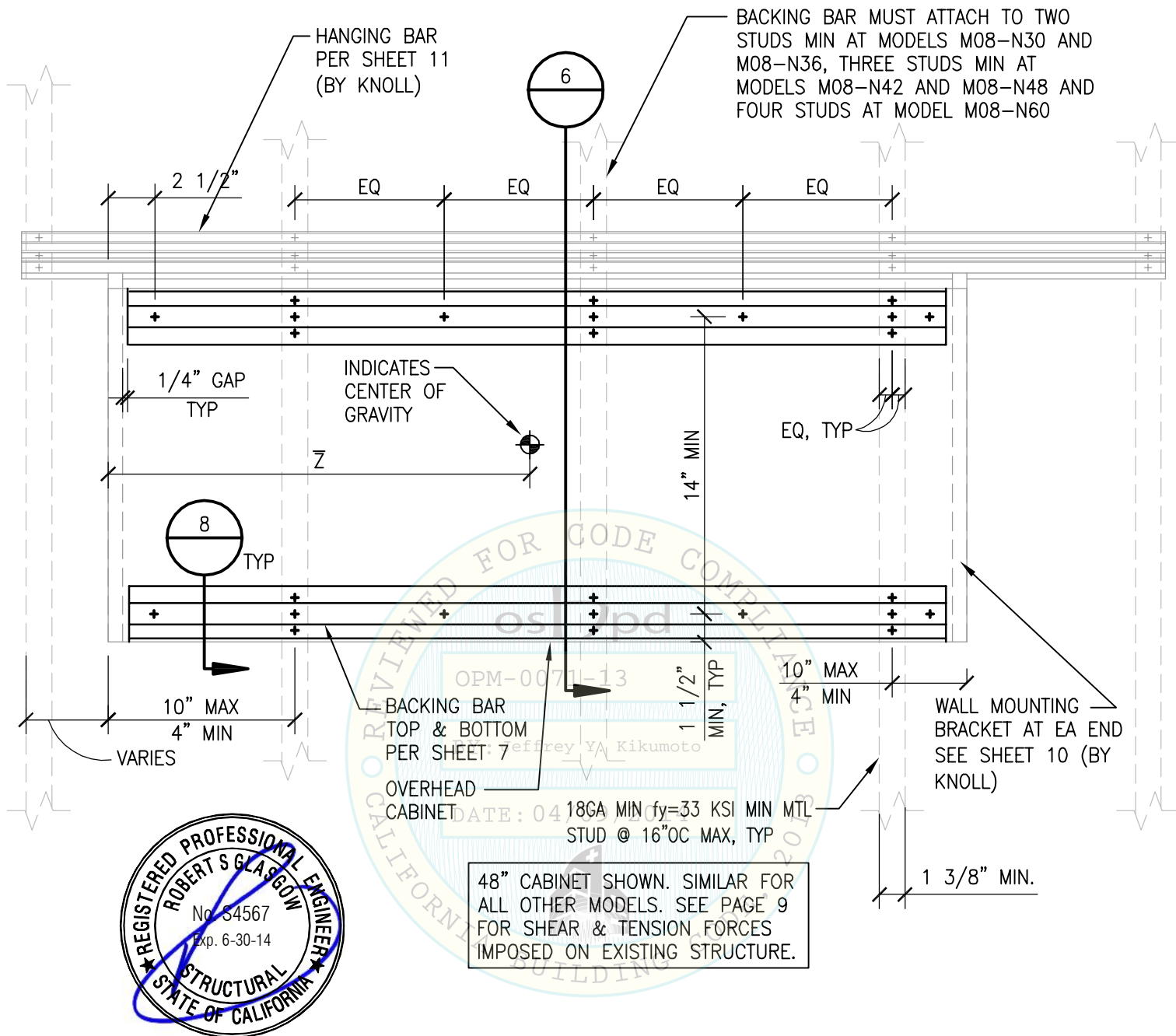
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TYPICAL CABINET LAYOUT – ELEVATION

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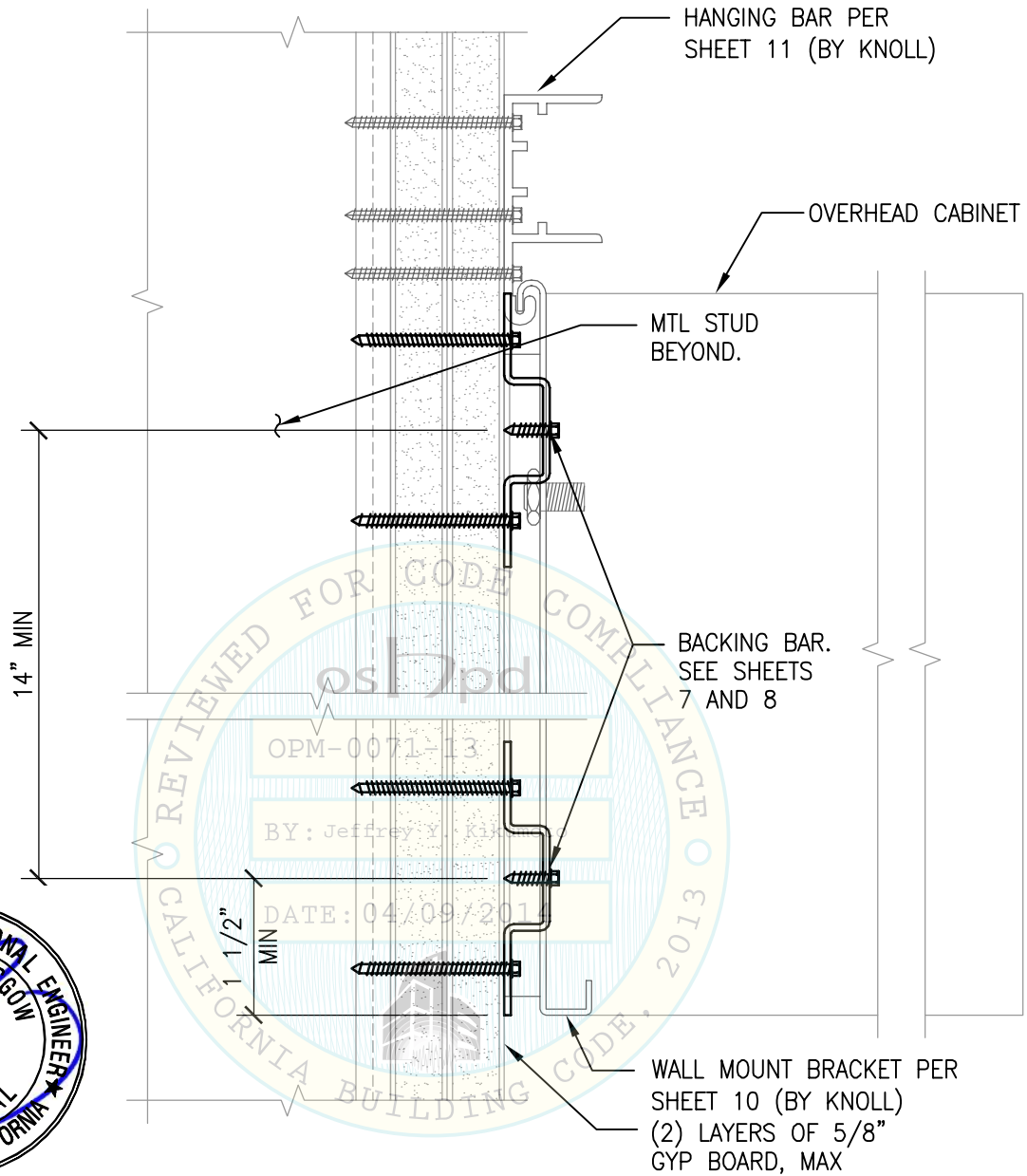
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6 WALL MOUNT BRACKET & HANGING BAR

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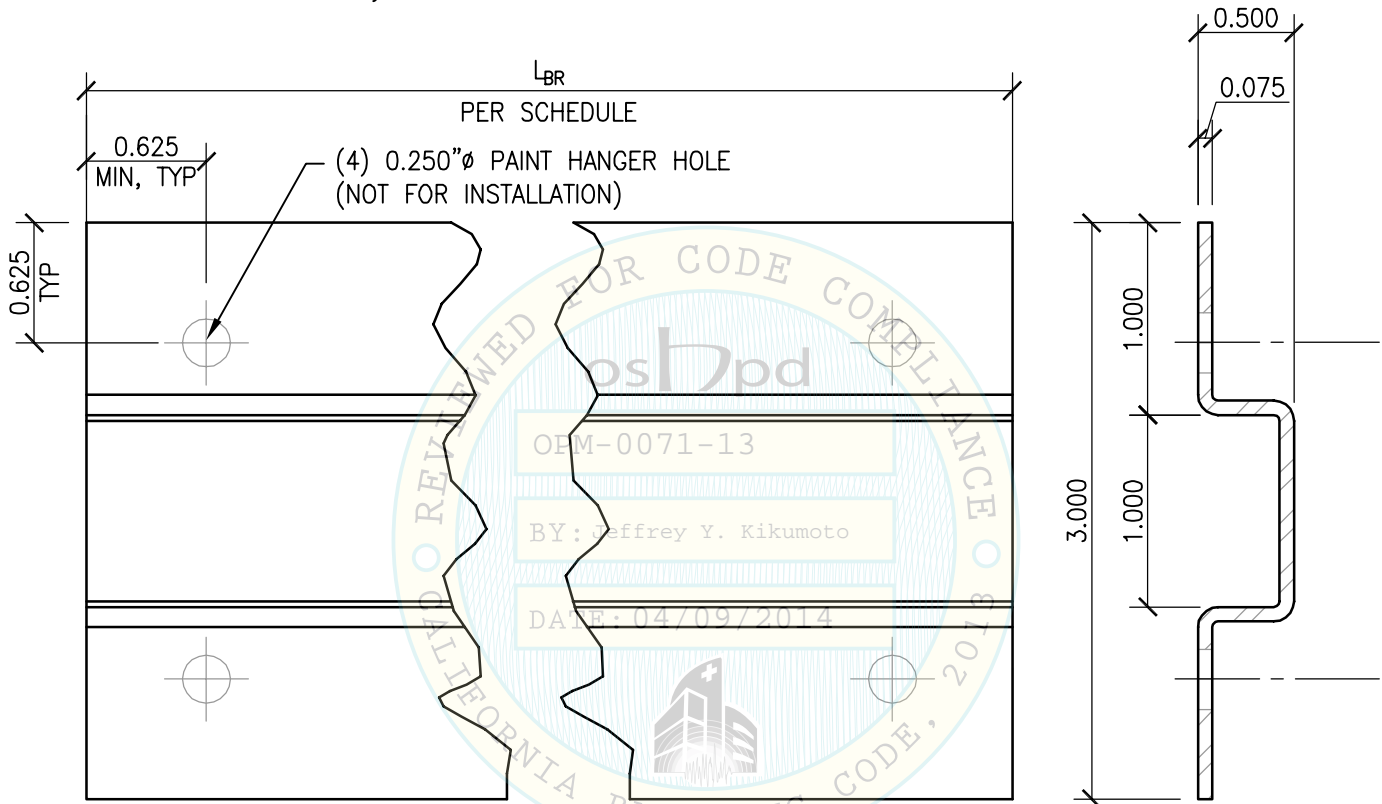
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| KNOLL PART NO. | L _{BR} | CABINET WIDTH | ITEM |
|----------------|-----------------|---------------|---------|
| 1C5967501 | 26.375" | 30" | M08-N30 |
| 1C5967502 | 32.375" | 36" | M08-N36 |
| 1C5967503 | 38.375" | 42" | M08-N42 |
| 1C5967504 | 44.375" | 48" | M08-N48 |
| 1C5967505 | 56.375" | 60" | M08-N60 |

BACKING BAR MATERIAL:

COLD ROLLED STEEL ASTM A653 EQUIVALENT OR BETTER

F_y = 50 KSI MIN



ELEVATION

SECTION



7

BACKING BAR

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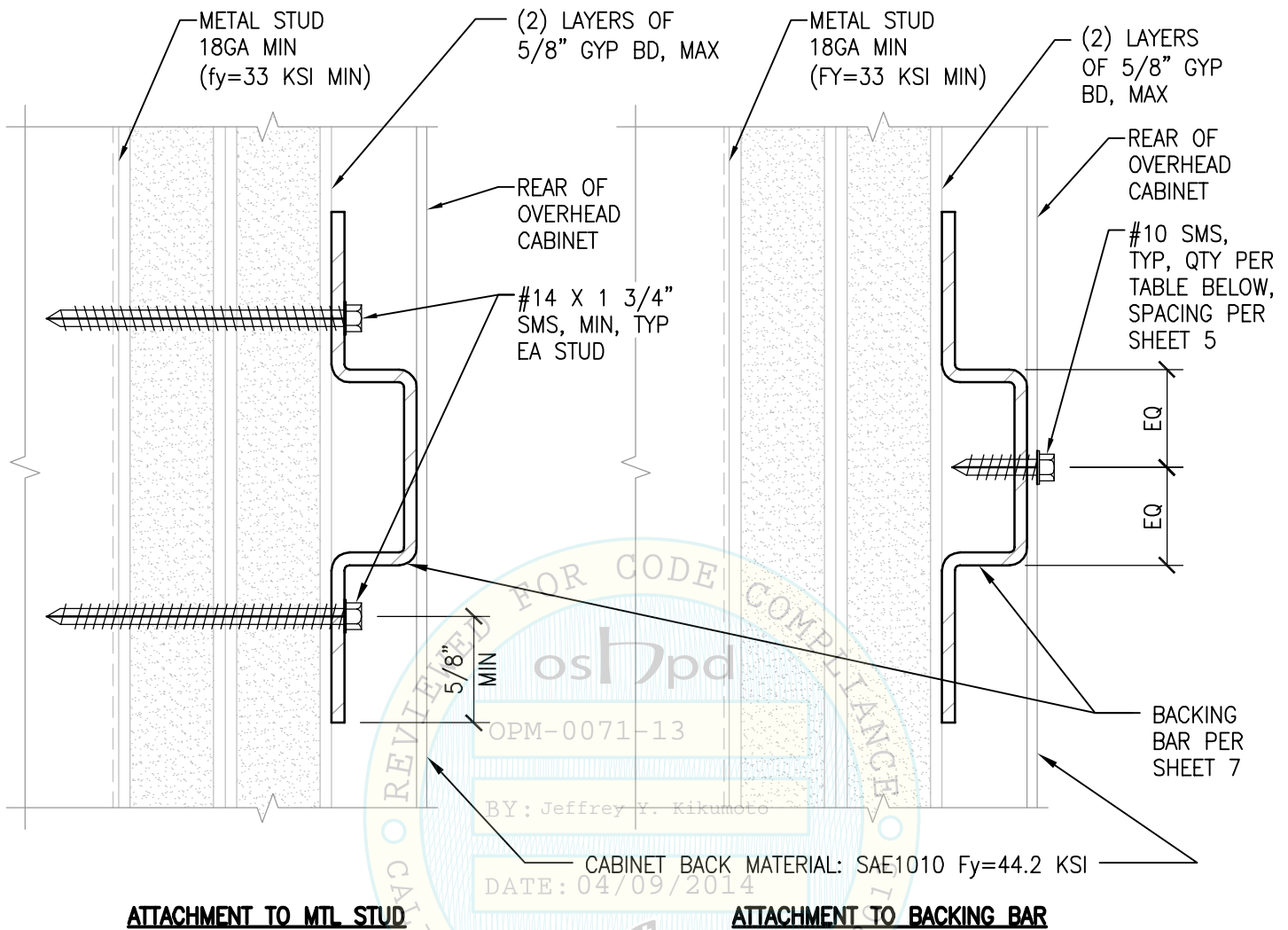
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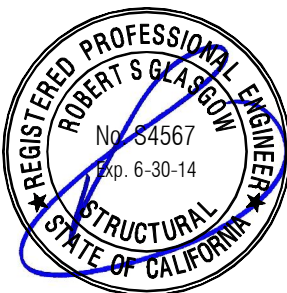
MODELS: M08-N30, M08-N36, M08-N42, M08-N48, M08-N60

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| MODEL | QTY #10 SMS |
|------------------|-------------|
| M08-N30, M08-N36 | 5 |
| M08-N42, M08-N48 | 7 |
| M08-N60 | 9 |



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BACKING BAR ATTACHMENT DETAILS

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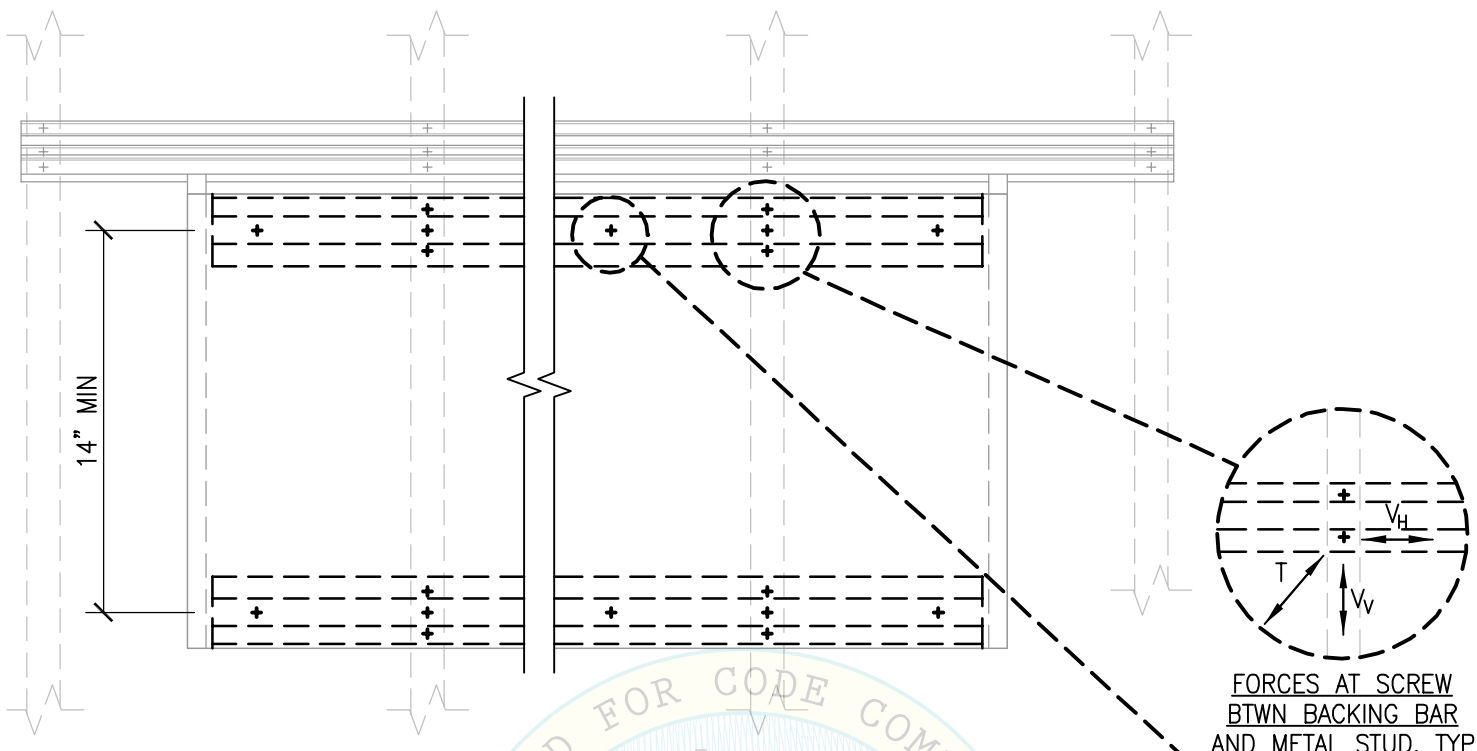
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MODELS: M08-N30, M08-N36, M08-N42, M08-N48, M08-N60

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SUMMARY OF METAL STUD DESIGN LOADS:

| ITEM | MAX LOADS FROM CABINET TO BACKING BAR ^{1,2} | | | MAX LOADS FROM BACKING BAR TO METAL STUDS ^{1,2} | | |
|---------|--|---------------------|--------|--|---------------------|--------|
| | V _V (lb) | V _H (lb) | T (lb) | V _V (lb) | V _H (lb) | T (lb) |
| M08-N30 | 26 | 22 | 60 | 35 | 28 | 84 |
| M08-N36 | 27 | 26 | 62 | 34 | 26 | 84 |
| M08-N42 | 25 | 22 | 54 | 34 | 22 | 79 |
| M08-N48 | 27 | 25 | 60 | 33 | 25 | 79 |
| M08-N60 | 25 | 24 | 53 | 33 | 24 | 77 |

1. LOADS ARE ALLOWABLE STRESS DESIGN LEVEL FORCES.
2. LOADS ARE PER SCREW.



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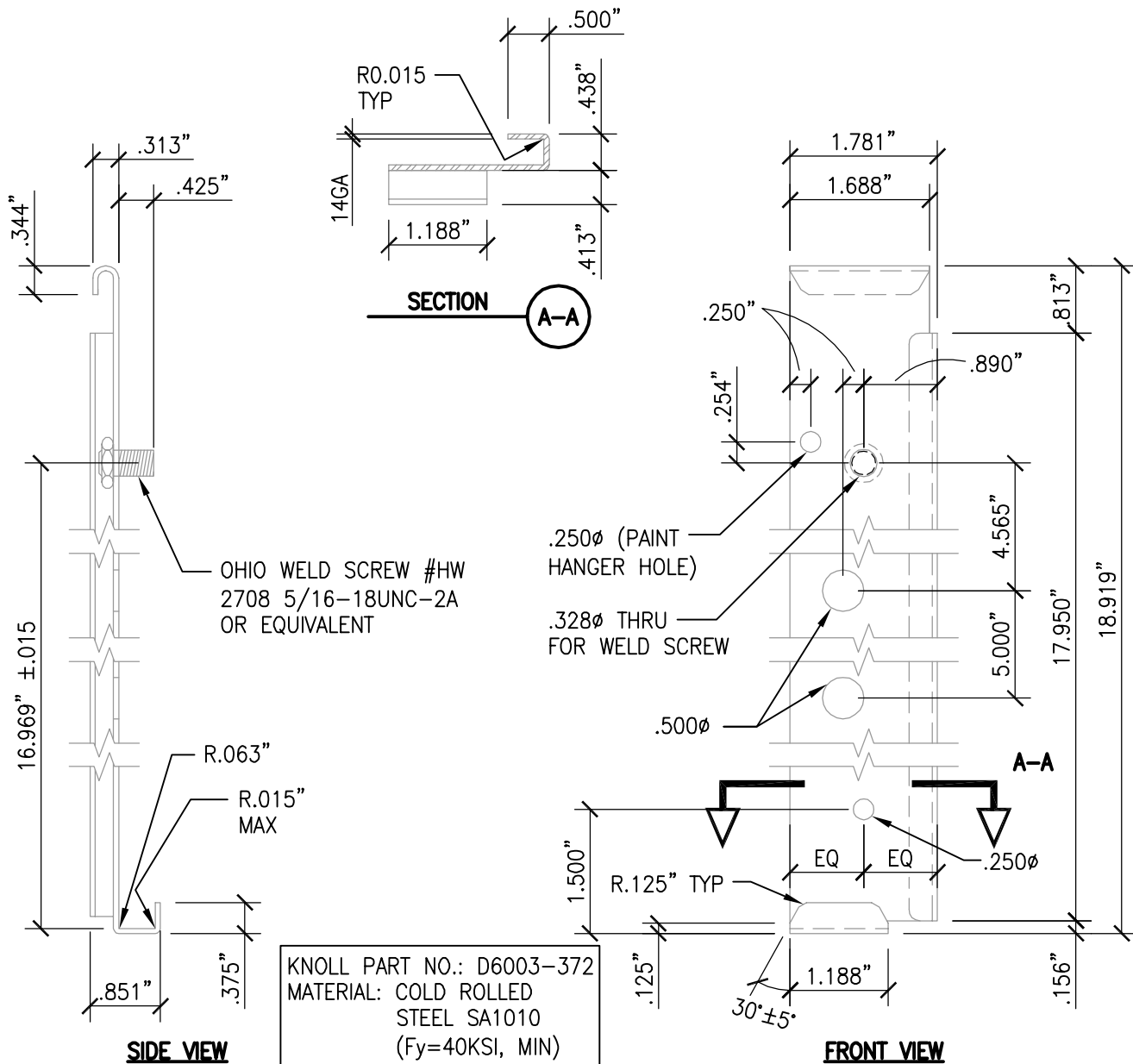
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KNOLL MORRISON OVERHEAD WALL CABINET ANCHORAGE

MODELS: M08-N30, M08-N36, M08-N42, M08-N48, M08-N60

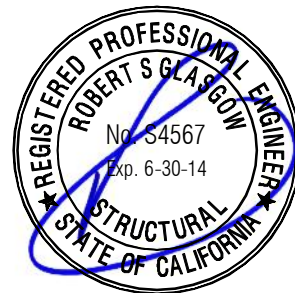
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10 WALL BRACKET (FOR REFERENCE ONLY)

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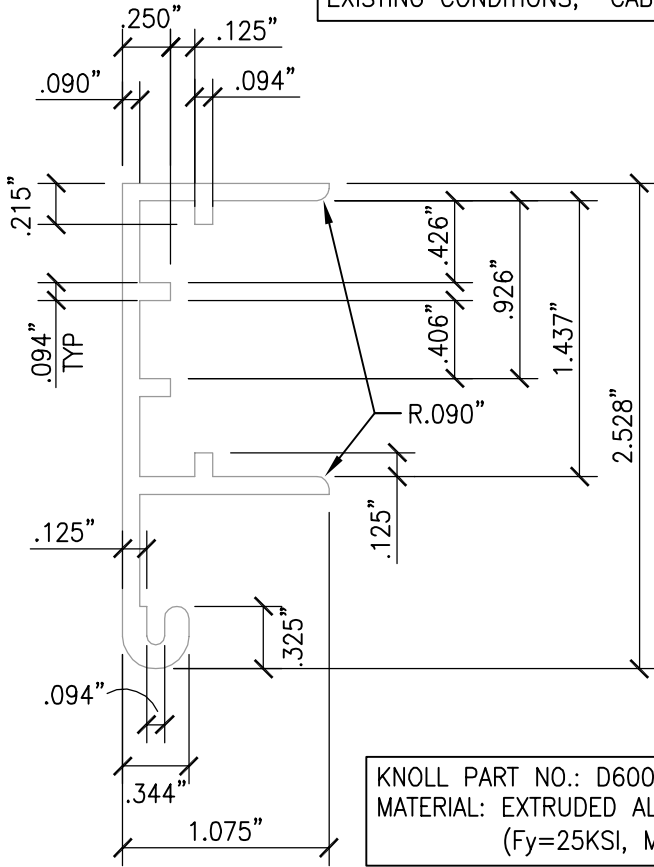


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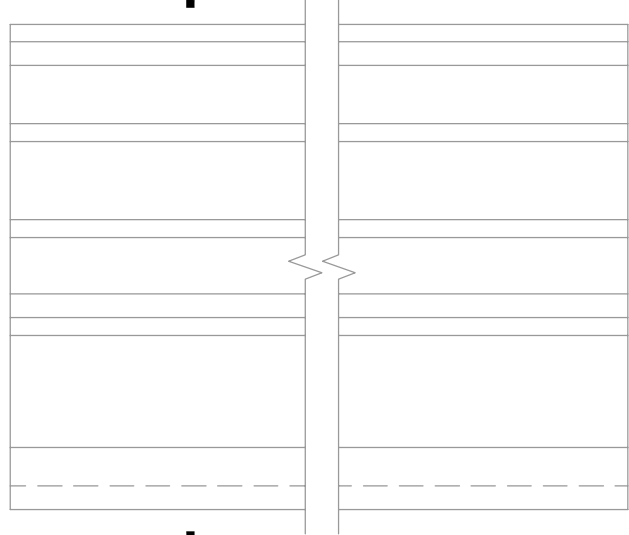
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| miyamoto. <small>1450 Halyard Drive, Suite One West Sacramento, CA 95691 T: (916) 373-1995 miyamotointernational.com</small> | KNOLL MORRISON OVERHEAD WALL CABINET ANCHORAGE MODELS: M08-N30, M08-N36, M08-N42, M08-N48, M08-N60 <div style="text-align: right;">SHEET 10 OF 12</div> |
|--|--|

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THE LENGTH OF THE HANGING BAR TO BE SUFFICIENT TO REACH ADJACENT STUD BEYOND THE END OF THE CABINET. ALL ENDS OF HANGING BAR TO BE ATTACHED DIRECTLY TO A STUD PER DETAIL SHEET 12. LENGTH WILL VARY BASED ON EXISTING CONDITIONS, CABINET LENGTH AND LOCATION.



B-B



ELEVATION

KNOLL PART NO.: D6007-579
MATERIAL: EXTRUDED ALUMINUM 6063-T5
(Fy=25KSI, MIN)

SECTION

B-B

11

HANGING BAR (FOR REFERENCE ONLY)

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APPENDIX

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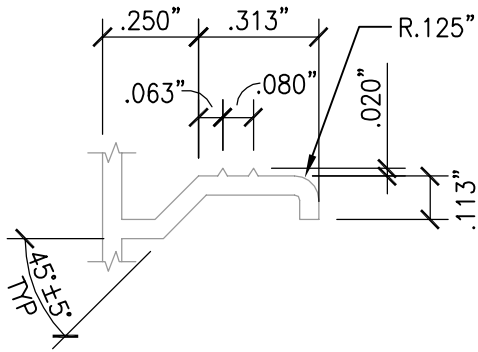
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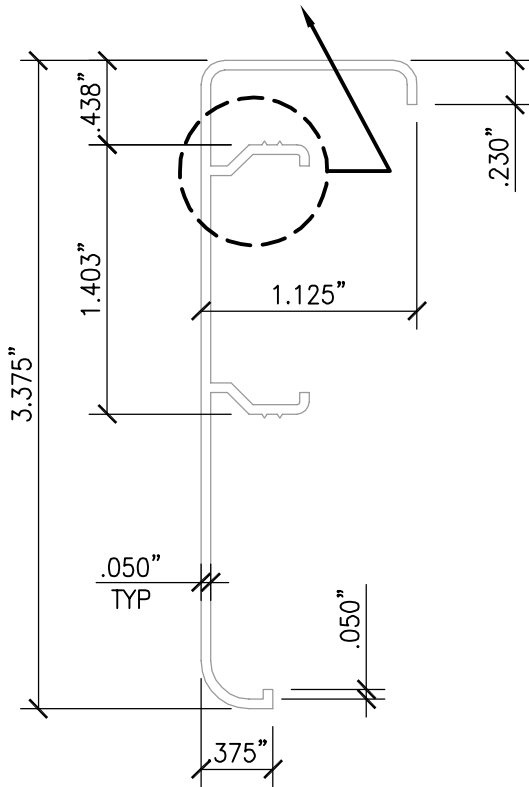
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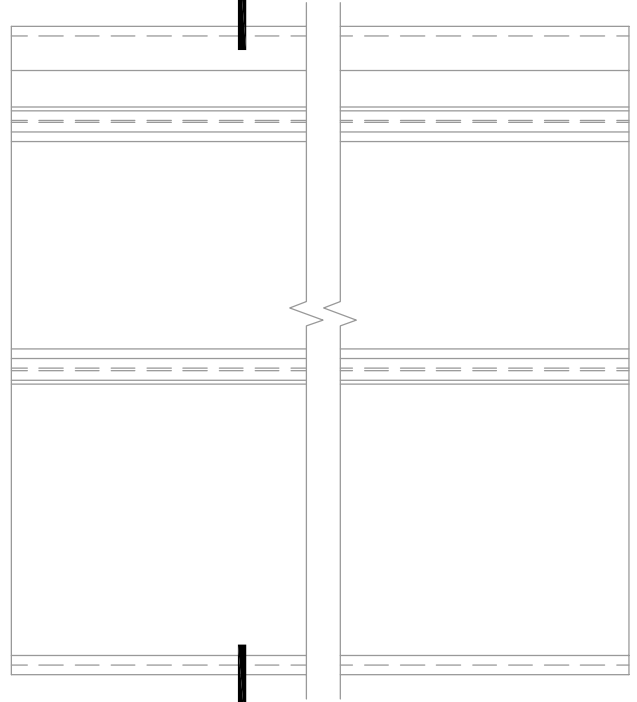
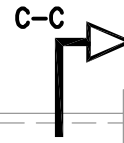


KNOLL PART NO.: D6007-577
 MATERIAL: EXTRUDED ALUMINUM 6063-T5
 (Fy=25KSI, MIN)



SECTION

C-C



ELEVATION

HANGING BAR COVER (FOR REFERENCE ONLY)

12

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KNOLL MORRISON OVERHEAD WALL CABINET ANCHORAGE

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