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

OFFICE USE ONLY
APPLICATION #: OPM-0532-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

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

Manufacturer Information

Manufacturer: LOGIQUIP, LLC

Manufacturer's Technical Representative: Mark Roberts

Mailing Address: 1456 S 35th Street, Galesburg, MI 49053

Telephone: 616-706-0429 Email: Mark.roberts@logiquip.net

Product Information

Product Name: Steel Storage Cabinets

Product Type: Medical Storage Shelves

Product Model Number: A, B, C, D, E. F. G. H, I

General Description: Floor and Wall supported Cabinets

Applicant Information

Applicant Company Name: LOGIQUIP, LLC

Contact Person: Mark Roberts

Mailing Address: 1456 S 35th Street, Galesburg, MI 49053

Telephone: 616-706-0429 Email: Mark.roberts@logiquip.net

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2019.

Signature of Applicant: Mark V Roberts Date: 4/4/2019

Title: Product Development Manager Company Name: LOGIQUIP, LLC

Registered Design Professional Preparing Engineering Recommendations

Company Name: CYS Structural Engineers, Inc.

Name: Dieter T. Siebald California License Number: S4346

Mailing Address: 2495 Natomas Park Drive, Suite 650

Telephone: 916-920-2020 Email: dieters@cyseng.com

OSHPD Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP-
(Separate application for OSP is required)

☐ Special Seismic Certification is not preapproved

Certification Method(s)

☐ Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-16

☐ Other* (Please Specify):

*Use of criteria other than those adopted by the California Building Standards Code, 2019 (CBSC 2019) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2019 may be used when approved by OSHPD prior to testing.

☐ Analysis

☐ Experience Data

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

List of Attachments Supporting the Manufacturer's Certification

☐ Test Report ☒ Drawings ☒ Calculations ☐ Manufacturer's Catalog

☐ Other(s) (Please Specify):

OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2019 & ALL PRE-2019 CODE BASED PROJECTS

Signature: Haeseong Lim Date: 5/6/2020

Print Name: Haeseong Lim

Title: Senior Structural Engineer

Condition of Approval (if applicable):

STEEL STORAGE CABINETS

TABLE OF CONTENTS
OPM-0532-19

NOTES:

1. THESE DRAWINGS ARE PREPARED FOR LOGIQUIP, LLC, GALESBURG, MICHIGAN.
2. THE CONTRACTOR AND INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE-APPROVAL FROM THE OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT (OSHPD) PRE-APPROVAL PROGRAMS WEBSITE.
3. THIS PRE-APPROVAL COVERS THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE SUPPORTING STRUCTURE. THE EQUIPMENT IS SUPPLIED BY THE MANUFACTURER. THE EXPANSION ANCHORS, SCREWS & BACKING PLATES SHOWN IN THIS OPM SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: TABLE OF CONTENTS

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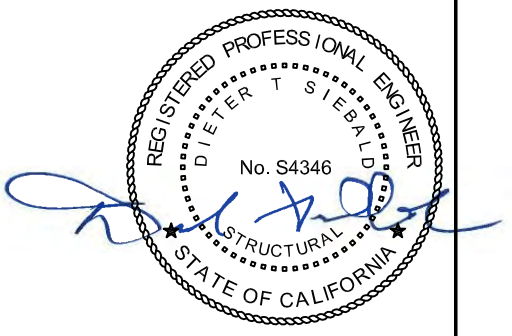
Job No:	18025
Date:	05-01-2020
Page:	1 of 15

STEEL STORAGE CABINETS

GENERAL NOTES:

1. THIS OSHPD PRE–APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2019.
2. IT IS THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD FOR A SITE SPECIFIC PROJECT TO VERIFY:
   - A. THE ADEQUACY OF THE NEW OR (E) STRUCTURE TO RESIST THE FORCES & WT SPECIFIED FOR EA EQUIP IN ADDITION TO ALL OTHER LOADS. PROVIDE & DESIGN SUPPLEMENTARY MEMBERS AS REQ.
   - B. THAT THE FLR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS.
   - C. THAT THE FLR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR (E) ANCHORS. THE SPCG SHOWN IN THE INSTALLATION TORQUE TABLE 1 ON PG 3 IS THE REQ MIN SPCG OF THE ¼" DIA SCREW ANCHORS. THE REQ SPCG FROM ANCHORS OF OTHER DIAMETERS & EMBEDMENTS MAY VARY & SHALL BE EVALUATED BY THE SEOR.
   - D. THAT THE WALL SCREW ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR (E) ANCHORS. THE SPCG SHOWN IN TABLE 2 ON PG 4 IS THE REQ MIN SPCG OF THE ½" DIA SCREW ANCHOR THE REQ SPCG FROM ANCHORS OF OTHER DIAS & EMBEDMENTS MAY VARY & SHALL BE EVALUATED BY SEOR.
   - E. THAT THE INSTALLATION IS IN CONFORMANCE W/ THE CBC 2019 & W/ THE DETAILS SHOWN IN THIS PRE–APPROVAL.
   - F. THAT THE ACTUAL EQUIP'S WT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, & THE MATERIAL & GA OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE W/ THE INFO SHOWN ON THE PRE–APPROVAL DOCUMENTS.
   - G. THAT THE PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES THAT DO NOT EXCEED THE VALUES PROVIDED IN THE DESIGN CRITERIA.
   - H. THAT THE CONC SLAB TO WHICH THE EQUIP IS ANCHORED SHALL MEET THE REQUIREMENTS OF THE APPLICABLE ICC REPORT & THIS OPM.
3. A. SCREW ANCHORS IN CONC FLRS: ANCHORS INSTALLED IN NORMAL WEIGHT OR SAND–LIGHTWEIGHT CONCRETE SHALL BE HILTI KWIK HUS–EZ SCREW ANCHORS COMPLYING WITH ESR–3027 REVISED JANUARY 2020.
   - B. INSTALLATION: INSTALL THE ANCHORS IN ACCORDANCE W/ THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR & THE PARAMETERS GIVEN IN TABLE 1 ON PG 3.
   - C. JOB TESTING: THERE IS NO TENSION ON THE FLR ANCHORS. TENSION TESTING IS NOT REQ.
   - D. AVOID DAMAGING (E) STL REINF IN CONC SLAB WHEN INSTALLING CONC ANCHORS.



SHEET TITLE: GENERAL NOTES

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Page:	2 of 15

STEEL STORAGE CABINETS

GENERAL NOTES CONTINUED:

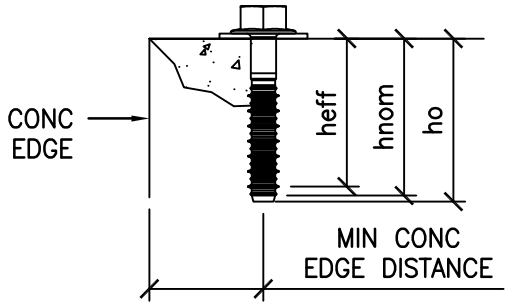

FIGURE 1
FOR USE W/ TABLE 1

TABLE 1: FLR ANCHOR INSTALLATION REQUIREMENTS

CONDITION OF FLR ANCHORAGE	ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) hef	MIN HOLE DEPTH (INCH) ho	MIN CONC THK (INCH) h_{min}	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPCG (INCH)	INSTALLATION TORQUE (FT-LBS)
CASES 1 & 2	¼	1⅝	1.18	2	3¼	1½	1½	18

4A. SCREW ANCHORS IN CONC WALLS: ANCHORS INSTALLED IN NORMAL WEIGHT CONCRETE SHALL BE CARBON STEEL HILTI HUS-EZ SCREW ANCHORS COMPLYING WITH ESR-3027 REVISED JANUARY 2020.

B. INSTALLATION: INSTALL THE SCREW ANCHORS IN ACCORDANCE W/ THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR & THE PARAMETERS GIVEN IN TABLE 2 ON PG 4.

C. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TENSION TESTS IN ACCORDANCE W/ THE TENSION TEST VALUES PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. THE TENSION TEST LOAD MAY BE APPLIED BY THE HYDRAULIC RAM METHOD SUCH THAT THE TENSION IN THE ANCHORS IS EFFECTIVELY MEASURED. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE SPECIAL INSPECTOR. REPORT OF TEST RESULTS SHALL BE SUBMITTED TO THE INSPECTOR OF RECORD, OWNER & ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE. IF ANY ANCHOR FAILS THE TEST, TEST ALL ANCHORS. THE TEST SHALL BE PERFORMED 24 HOURS OR MORE AFTER INSTALLATION. TESTING MAY BE DONE PRIOR TO EQUIP INSTALLATION. ALSO REFER TO CBC 1910A.5 "TESTS FOR POST-INSTALLED ANCHORS IN CONCRETE".

D. AVOID DAMAGING (E) STL REINF IN CONC SLAB & WALL WHEN INSTALLING CONC ANCHORS.

E. FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:

- HYDRAULIC RAM METHOD: APPLY & HOLD TEST LOAD FOR A MIN OF 15 SECONDS. THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD WHERE WASHERS ARE USED.

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Job No:	18025
Date:	05-01-2020
Page:	3 of 15

STEEL STORAGE CABINETS

GENERAL NOTES CONTINUED:

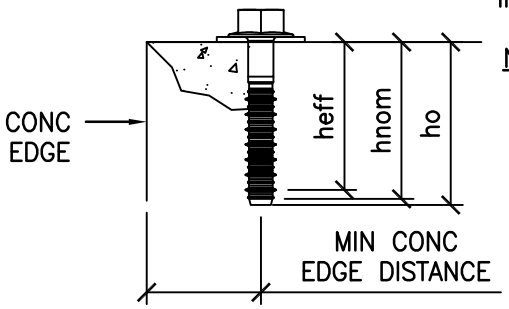

FIGURE 2
FOR USE W/ TABLE 2

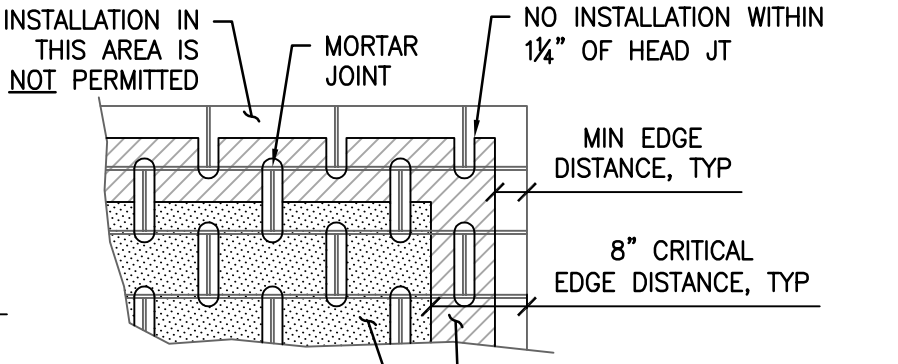

FIGURE 3
FOR USE W/ TABLE 2

TABLE 2: WALL SCREW ANCHOR INSTALLATION REQUIREMENTS

WALL TYPE	ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) hef	MIN HOLE DEPTH (INCH) ho	MIN WALL THK (INCH) h_{min}	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPCG (INCH)	TEST TENSION (LBS)
CONCRETE	½	3	2.16	3⅜	4¾	6	4	1800
CMU	½	4½	4¼	4⅝	7⅝	4	4	910

5A. SCREW ANCHORS IN CMU WALLS: ANCHORS INSTALLED IN FULLY GROUTED CMU WALLS SHALL BE CARBON STEEL HILTI HUS-EZ SCREW ANCHORS COMPLYING WITH ESR-3056 REISSUED OCTOBER 2019.

B. SCREW ANCHORS DESIGNED TO ICC-ES AC106 ARE LIMITED TO ASD ONLY IN ACCORDANCE W/ AC106 1.2. HENCE, LRFD VALUES ARE NOT ACCEPTABLE. ASD VALUES CAN BE SHOWN PROVIDED, SEOR WILL VERIFY THAT:
   a. MASONRY IS UNCRACKED AS DEFINED IN ICC-ES AC106 SECTION 1.4.8; THE SEOR SHALL PROVIDE CALCULATIONS TO SHOW THAT THE MASONRY WALL WOULD NOT CRACK UNDER THE DESIGN EARTHQUAKE LOADS UNDER ALL SERVICE CONDITIONS; THE WALL HAS TO REMAIN ELASTIC.
   b. MASONRY IS FULLY GROUTED IN ACCORDANCE W/ ESR-3056 SECTION 3.2.
   c. CONDITIONS OF USE REQUIREMENTS IN ACCORDANCE W/ ESR-3056 SECTION 5.0 IS SATISFIED.

C. INSTALLATION: INSTALL THE SCREW ANCHORS IN ACCORDANCE W/ THE REQUIREMENTS GIVEN IN THE APPROVED ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR.

D. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING FOR SCREW ANCHORS IN CMU SIMILAR TO THE CRITERIA NOTED IN SECTION 4.

E. AVOID DAMAGING (E) STL REINF IN CMU WALL WHEN INSTALLING ANCHORS.

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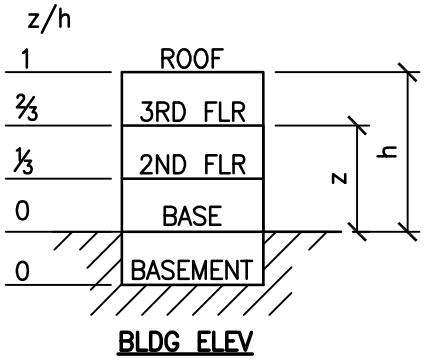
Job No:	18025
Date:	05-01-2020
Page:	4 of 15

STEEL STORAGE CABINETS

GENERAL NOTES CONTINUED:

6. TWO (2) CASES OF FLR ANCHORAGE ARE SPECIFIED & PRESENTED IN THIS PRE-APPROVAL:



BLDG ELEV

CASE 1: ANCHORAGE DETAILS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG (z/h<=0.9), IT IS ASSUMED THAT THE FLRS ARE BUILT OF A MIN 3¼" NWC OR SLWC TOPPING OVER 20 GA MIN MTL DECK (f'c = 3000 PSI, MIN). MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE S_{DS} IS LESS THAN OR EQ TO 2.15.

CASE 2: ANCHORAGE DETAILS LOCATED AT OR BLW THE BASE OF A BLDG (z/h=0). THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 4" NWC SLAB (f'c = 3000 PSI, MIN). MAY BE USED IN ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE S_{DS} IS LESS THAN OR EQ TO 2.15.

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Job No:	18025
Date:	05-01-2020
Page:	5 of 15

STEEL STORAGE CABINETS

ABBREVIATIONS:

Ω_o	SEISMIC OVERSTRENGTH FACTOR
@	AT
AB	ANCHOR BOLT
ABV	ABOVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASD	ALLOWABLE STRESS DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BLDG	BUILDING
BLW	BELOW
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
℄	CENTERLINE
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
DF	DOUG FIR
DIA (ø)	DIAMETER
DL	DEAD LOAD
(E)	EXISTING
EA	EACH
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE
f'm	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF MASONRY
FLG	FLANGE
FLR	FLOOR
FT (')	FOOT/FEET
Fp	HORIZONTAL SEISMIC FORCE PER ASCE 7-16 SEISMIC FORCE REQUIREMENTS
Fv	VERTICAL SEISMIC DESIGN FORCE PER ASCE 7-16 SECTION 12.4-4 SEISMIC DESIGN FORCE REQUIREMENTS
Fy	SPECIFIED MINIMUM YIELD STRESS OF STEEL
GA	GAUGE
GR	GRADE
GWB	GYPSUM WALLBOARD
HORIZ	HORIZONTAL
HT	HEIGHT
ICC	INTERNATIONAL CODE COUNCIL
IN (")	INCH
INFO	INFORMATION
JT	JOINT
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LL	LIVE LOAD
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
NO. (#)	NUMBER OR POUNDS
NWC	NORMAL WEIGHT CONCRETE
OPM	OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION
OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PG	PAGE
ℙ	PLATE
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
REQ	REQUIRED
SEOR	STRUCTURAL ENGINEER OF RECORD
SLWC	SAND-LIGHTWEIGHT CONCRETE
SMS	SHEET METAL SCREW
SPCG	SPACING
STL	STEEL
T	TENSION
THK	THICK/THICKNESS
Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
TYP	TYPICAL
V	SHEAR
Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH
Wp	OPERATING WEIGHT
WS	WOOD SCREW
WT	WEIGHT

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Job No:	18025
Date:	05-01-2020
Page:	6 of 15

STEEL STORAGE CABINETS

DESIGN CRITERIA

SUPPORT & ATTACHMENT DESIGN IS PER 2019 CBC AT LRFD LEVEL FORCES. PERMANENT FLR SUPPORTED STORAGE CABINETS OVER 6 FT TALL, INCLUDING CONTENTS. PER TABLE 13.5-1 OF ASCE 7-16 SUPPLEMENT #1

a_p = 1.0 R_p = 2.5 I_p = 1.5 Ω_0 = 2.0 (CONC ANCHORS PER 2019 CBC SECTION 1617A.1.23)

MAX W_p AS SHOWN IN TABLE ON PG 8.

FOR CASE 1 - UPPER FLRS ABV THE BASE, z/h <= 0.9

S_{DS} = 2.15

$F_p = \frac{0.4 a_p S_{DS} W_p}{(Rp/Ip)} (1+2\ z/h) = 1.445\ W_p$ ASCE 7-16 (13.3-1)

F_p (MAX) = 1.6 S_{DS} IpW_p = 5.16 W_p ASCE 7-16 (13.3-2)

F_p (MIN) = 0.3 S_{DS} IpW_p = 0.968 W_p ASCE 7-16 (13.3-3)

$E_v+F_v = \pm 0.2\ S_{DS}\ W_p = 0.430\ W_p$ ASCE 7-16 (12.4-4)

FOR CASE 2 - SLAB AT OR BLW BASE, z/h = 0

S_{DS} = 2.15

$F_p = \frac{0.4 a_p S_{DS} W_p}{(Rp/Ip)} (1+2\ z/h) = 0.516\ W_p$ ASCE 7-16 (13.3-1)

F_p (MAX) = 1.6 S_{DS} IpW_p = 5.16 W_p ASCE 7-16 (13.3-2)

F_p (MIN) = 0.3 S_{DS} IpW_p = 0.968 W_p ASCE 7-16 (13.3-3)

$E_v+F_v = \pm 0.2\ S_{DS}\ W_p = 0.430\ W_p$ ASCE 7-16 (12.4-4)

F_p = 0.96 W_p (DESIGN VALUE)

LOAD COMBINATIONS

(1.2+0.2 S_{DS}) D+1.0E+L LRFD

(1.0+0.14 S_{DS}) D+0.7E ASD

LOAD COMBINATIONS WERE RUN FOR 100% OF HORIZ FORCE IN ONE DIRECTION & 30% OF HORIZ FORCE IN THE PERP DIRECTION.

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Job No:	18025
Date:	05-01-2020
Page:	7 of 15

STEEL STORAGE CABINETS

CABINET WEIGHTS

THE FOLLOWING TABLE PRESENTS THE OPERATING WTS (W_p) IN POUNDS FOR EA AVAILABLE CABINET UNIT SIZE. THE OPERATING WT IS THE SUM OF MAX ASSEMBLED UNIT WT OF THE CABINET PLUS CONTENT WT OF 20 PCF (PER 2019 CBC, TABLE 1607A.1, NOTE p, "OTHER MEDIA").

CABINET UNIT WEIGHT (LBS)

	DIMS					WEIGHTS		
MODEL #(1)	WIDTH W (IN)	LENGTH L (IN)	HEIGHT H (IN)	H_{CG} (IN)	VOLUME V (ft^3)	SELF WT DL (LBS)	CONTENT WT LL (LBS)	MAX Wp (LBS)
(A) SST181880LG	18	18	84	37.3	16	230	315	545
(B) SST181880RG	18	18	84	37.3	16	230	315	545
(C) SST182480LG	18	24	84	38	21	262	420	682
(D) SST182480RG	18	24	84	38	21	262	420	682
(E) SST241880LG	24	18	84	42.7	21	242	420	662
(F) SST241880RG	24	18	84	42.7	21	242	420	662
(G) SST242480LG	24	24	84	42.8	28	278	560	838
(H) SST242480RG	24	24	84	42.8	28	278	560	838
(I) SST183080HG	18	30	84	38.9	26	312	525	837
(J) SST183680HG	18	36	84	37.3	32	362	630	992
(K) SST184280HG	18	42	84	37.7	37	394	735	1129
(L) SST184880HG	18	48	84	39.8	42	407	840	1247
(M) SST243080HG	24	30	84	42.9	35	332	700	1032
(N) SST243680HG	24	36	84	46.1	42	398	840	1238
(O) SST244280HG	24	42	84	43	49	404	980	1384
(P) SST244880HG	24	48	84	43	56	439	1120	1559
(Q) SST261980LG	26	19.5	84	42.8	25	254	493	747
(R) SST261980RG	26	19.5	84	42.8	25	254	493	747
(S) SST263680HG-1C	26	36	84	43	46	344	910	1254
(T) SST263680HG-2C	26	36	84	43.1	46	416	910	1326

(1) HEIGHT TO CENTER OF GRAVITY (H_{CG}) & MAX OPERATING WEIGHT (MAX Wp) GOVERN DESIGN FOR EACH MODEL SHOWN.

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SHEET TITLE: CABINET WEIGHTS

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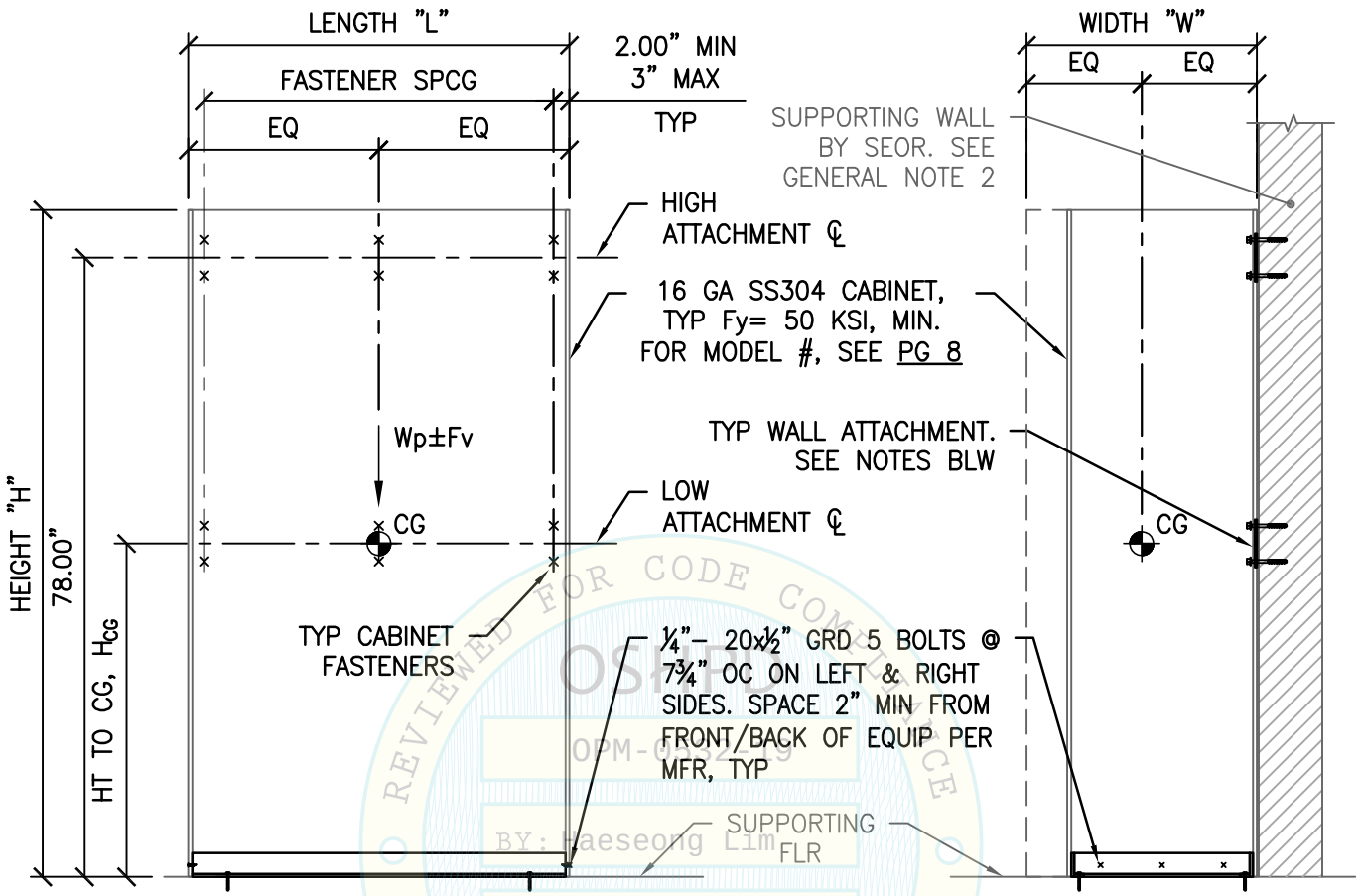
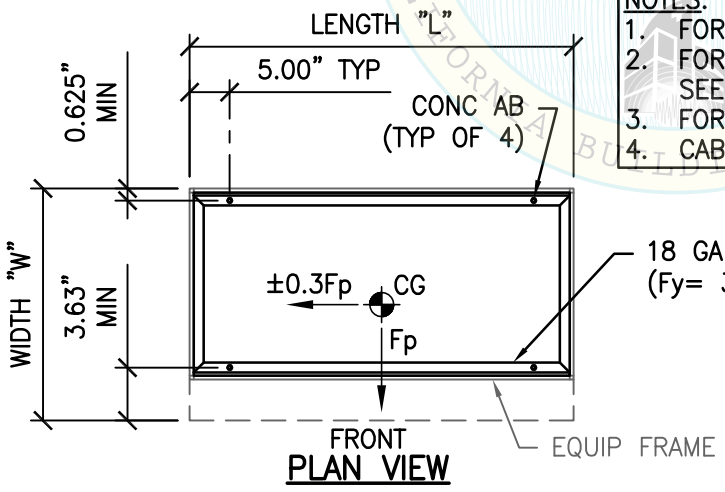
Job No:	18025
Date:	05-01-2020
Page:	8 of 15

STEEL STORAGE CABINETS



NOTES:
1. FOR ATTACHMENT TO STUD WALLS, SEE PGS 10 & 11.
2. FOR ATTACHMENT TO CONC & CMU WALLS, SEE PGS 12 & 13.
3. FOR ATTACHMENT TO CONC FLR, SEE PGS 14 & 15.
4. CABINET MUST BE ATTACHED TO WALL & FLR.



SHEET TITLE: CABINET PLAN & ELEVATIONS

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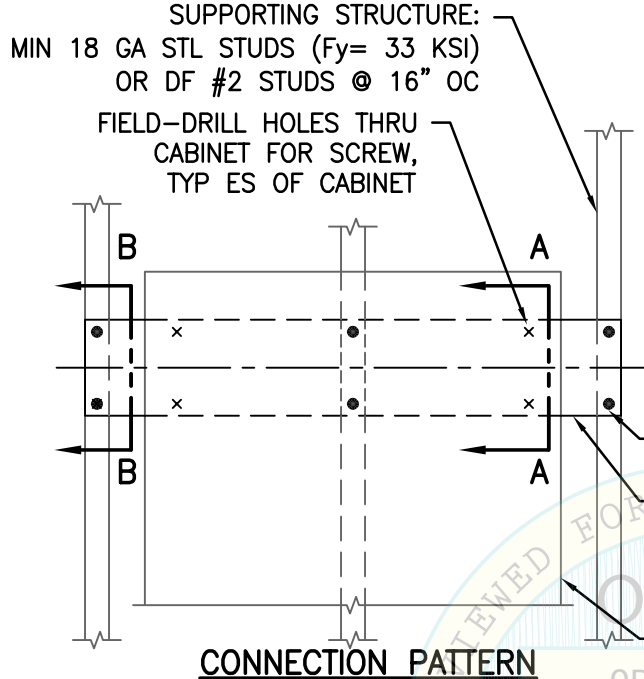
Date:	05-01-2020
Page:	9 of 15

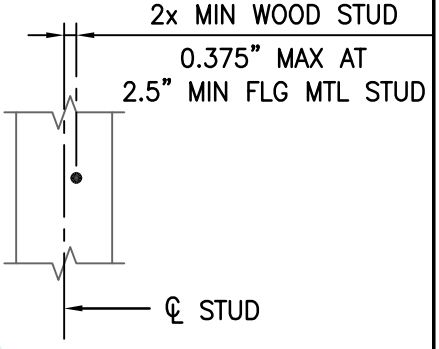
STEEL STORAGE CABINETS

	MAX **ASD** FORCES AT EA SCREW (LBS) PLATE TO STUDS			
	DF #2		16 GA MTL	
	T	V	T	V
CASE 1	246#	149#	123#	94#
CASE 2	165#	100#	125#	102#

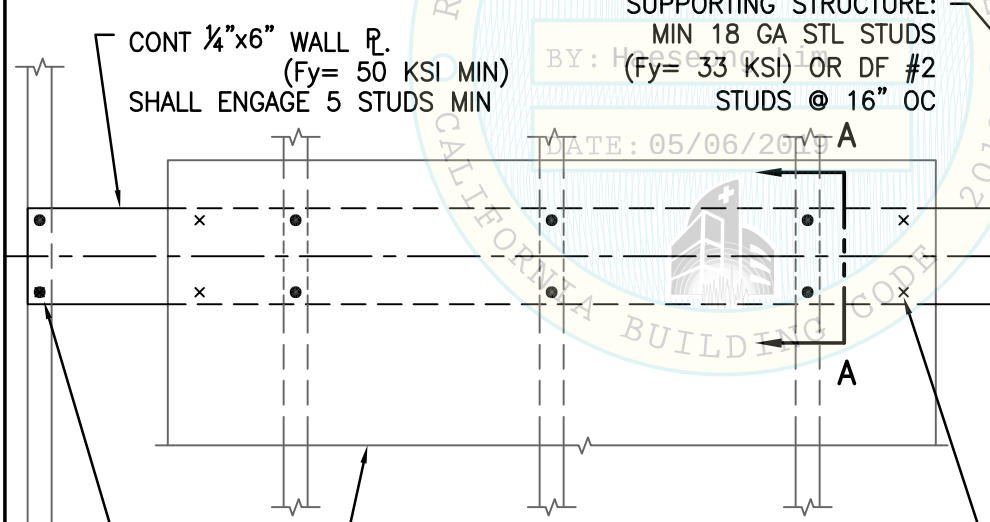
SCREW FORCES AT DF STUDS ARE FROM MODEL T. FORCES AT 16 GA STRUD ARE FROM MODEL T & K RESPECTIVELY



CONNECTION PATTERN
FOR CABINET WIDTH ≤ 32"



SCREW INSTALL VARIANCE



CONNECTION PATTERN
FOR CABINET WIDTH > 32"

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: ATTACHMENT TO STUD WALLS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
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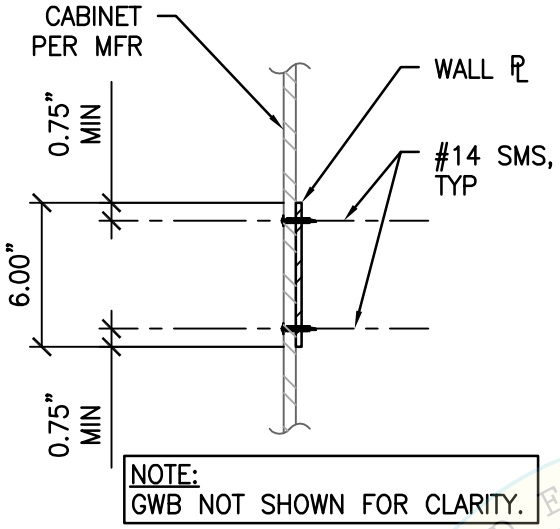
Date:	05-01-2020
Page:	10 of 15

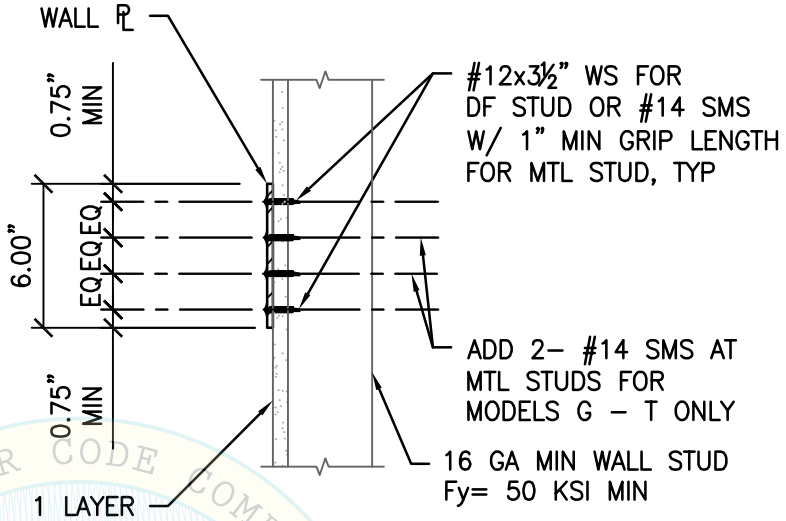
L:\Jobs18\18025 LogiQuip - Steel Cabinets OPM-04xx-13\ACAD\S1.dwg Time:May01,2020-11:15am Login:camachom Dimscale:1 LTScale:6

STEEL STORAGE CABINETS

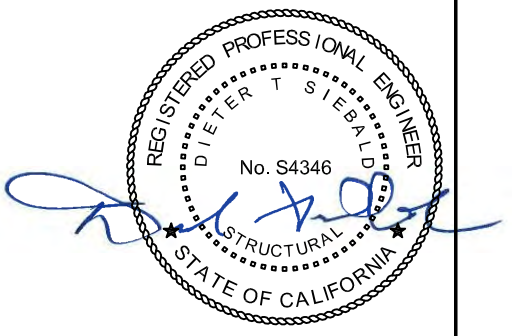
NOTES:
1. CABINET NOT SHOWN FOR CLARITY.
2. PRE-DRILL HOLES FOR #12 WOOD SCREWS



SECTION A-A
AT CABINET TO WALL ℄



SECTION B-B
AT WALL ℄ TO WALL STUD



SHEET TITLE: ATTACHMENT TO STUD WALLS

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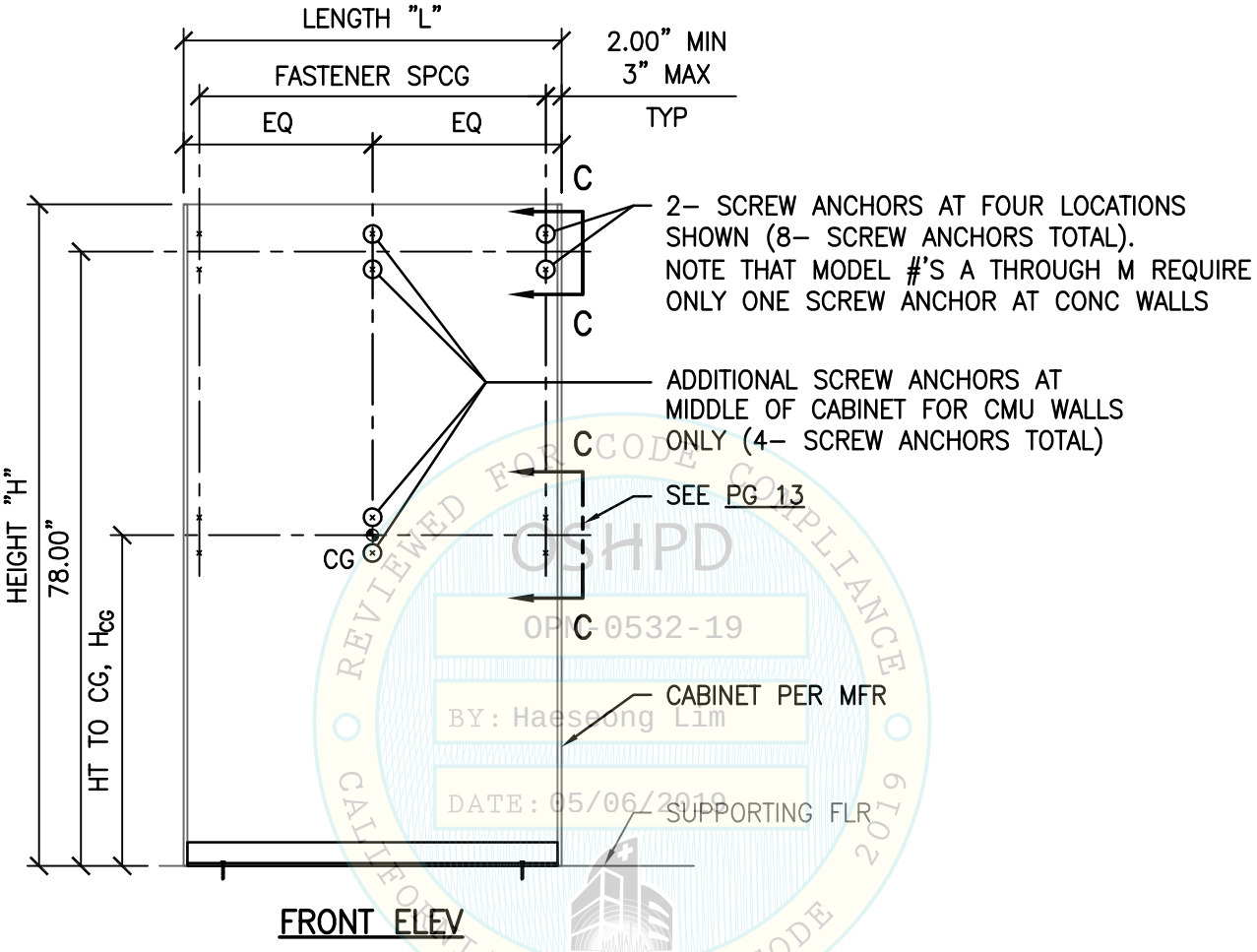
Job No:	18025
Date:	05-01-2020
Page:	11 of 15

STEEL STORAGE CABINETS



FRONT ELEV

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: ATTACHMENT TO CONCRETE OR CMU WALLS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
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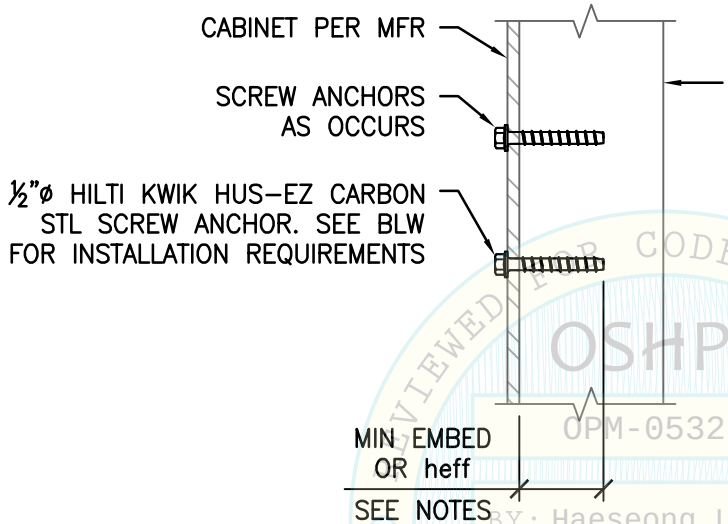
Job No:	18025
Date:	05-01-2020
Page:	12 of 15

STEEL STORAGE CABINETS

	MAX FORCES AT EA SCREW (LBS)			
	CONC WALL AT LRFD		CMU WALL AT ASD	
	$\Omega_o T_u$	$\Omega_o V_u$	$\Omega_o T$	$\Omega_o V$
CASE 1	1123#	751#	481#	351#
CASE 2	1102#	804#	403#	352#

FORCES AT THE CONC WALL ARE FROM MODELS T & J RESPECTIVELY. FORCES AT CMU WALL ARE FROM MODEL Q.



SECTION C-C
AT CABINET TO CONC OR CMU WALL

NOTES:
1. DO NOT CUT OR DAMAGE (E) REBAR.
2. IT IS THE RESPONSIBILITY OF THE SEOR TO VERIFY THAT THE CMU WALL REMAINS UNCRACKED. SEE GENERAL NOTE 2.
3. AT CMU WALL: INSTALL KWIK HUS-EZ W/ SPECIAL INSPECTION IN ACCORDANCE W/ ICC ESR-3056 & GENERAL NOTES 3&4. INSTALL IN THE FACE OF FULLY GROUTED CMU UNIT ONLY PER ICC ESR-3056 & TORQUE TO 34 FT-LBS. INSTALLATION IN MORTAR JTS IS PROHIBITED. SEE PG 4.
4. AT CONC WALL: INSTALL KWIK HUS-EZ W/SPECIAL INSPECTION IN ACCORDANCE W/ ICC ESR-3027 & GENERAL NOTES 3&4. TORQUE TO 45 FT-LBS.

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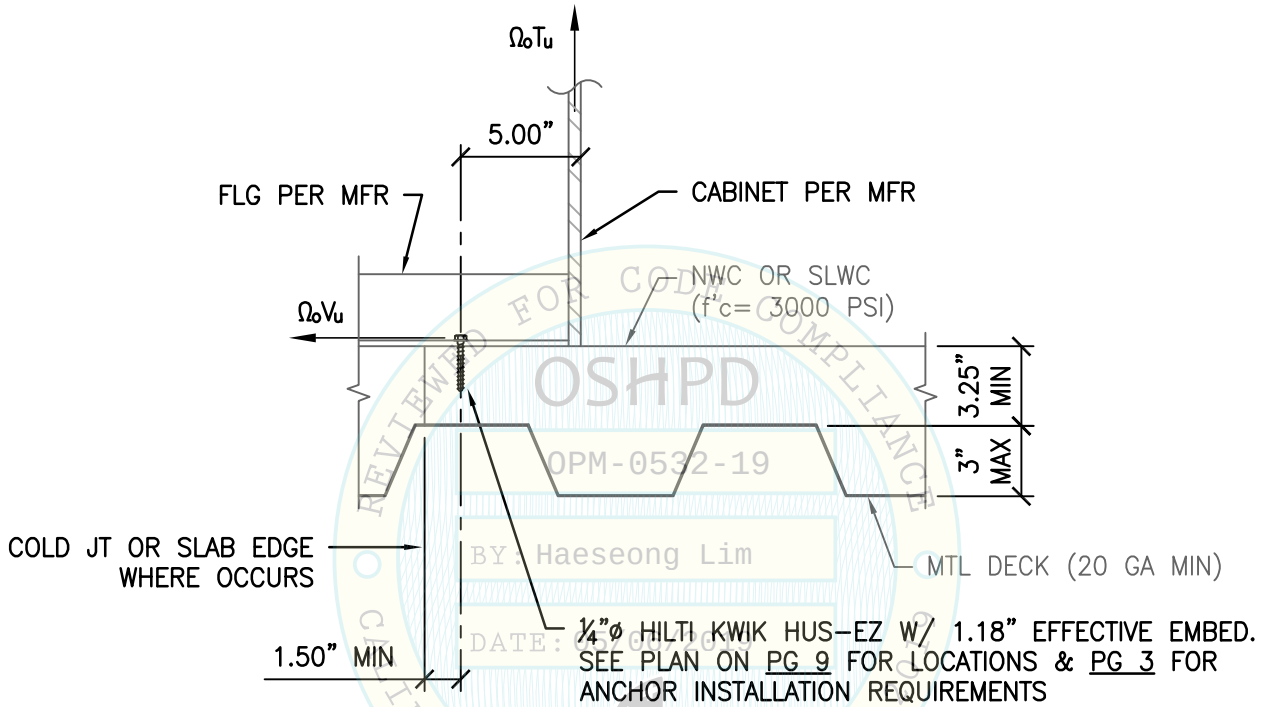
Job No:	18025
Date:	05-01-2020
Page:	13 of 15

L:\Jobs18\18025 LogiQuip - Steel Cabinets OPM-04xx-13\ACAD\S1.dwg Time:May01,2020-11:15am Login:camachom Dimscale:1 LTScale:6

STEEL STORAGE CABINETS

	MAX LRFD FORCES AT EA ANCHOR (LBS)	
	$\Omega_o T_u$	$\Omega_o V_u$
CASE 1	N/A	489#



REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
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STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: ATTACHMENT DETAIL
TO CONCRETE FILL OVER METAL DECK (CASE 1)

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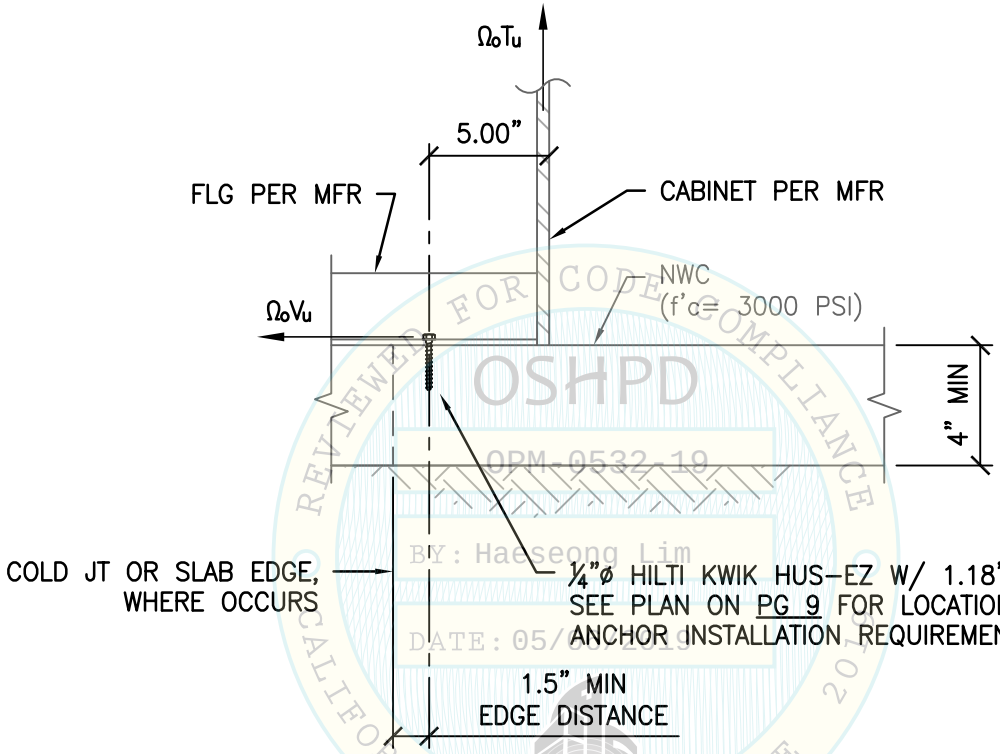
Job No:	18025
Date:	05-01-2020
Page:	14 of 15

STEEL STORAGE CABINETS

	MAX LRFD FORCES AT EA ANCHOR (LBS)	
	$\Omega_o T_u$	$\Omega_o V_u$
CASE 2	N/A	328#



REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: ATTACHMENT DETAIL
TO CONCRETE SLAB ON GRADE (CASE 2)

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Page:	15 of 15

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