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

OFFICE USE ONLY

APPLICATION #: OPM-0457-19

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal/Update

Manufacturer Information

Manufacturer: Sysmex America Inc.

Manufacturer's Technical Representative: Nick Honda

Mailing Address: 577 Aptakisic Road, Lincolnshire, IL 60069

Telephone: (888) 879-7639 Email: HondaN@sysmex.com

Product Information

Product Name: XN-9100 ANALYZER SYSTEM

Product Type: Other electrical and mechanical components

Product Model Number: N/A

General Description: Automated Hematology Analyzer

Applicant Information

Applicant Company Name: EASE LLC.

Contact Person: Tiffany Tonn

Mailing Address: 1515 FAIRVIEW AVE, STE 205, MISSOULA, MT 59801

Telephone: (406) 541-3273 Email: tiffany@easeco.com

Title:

Registered Design Professonal Preparing Engineering Recommendations

Company Name: EASE

Name: Jonathan Roberson California License Number: S4197

Mailing Address: 5877 Pine Ave., Suite 210, , Chino Hills, CA 91709

Telephone: (909) 606-7622 Email: jon@EASECo.com

OSHPD 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 OSHPD prior to testing.

☒ Analysis

☐ Experience Data

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

OSHPD Approval

Date: 1/21/2021

Name: Haesong Lim Title: Senior Structural Engineer

Condition of Approval (if applicable):

EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

5877 Pine Ave, Ste. 210
Chino Hills, CA. 91709
Phn: (909) 606-7622

Office of Statewide Health Planning and Development

PREAPPROVAL OF MANUFACTURER'S CERTIFICATION

OPM-0457

THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE

MANUFACTURER: **SYSMEX**

EQUIPMENT NAME: **XN-9100 SERIES**

Date: 7/15/20

GENERAL NOTES

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2019 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2019 CBC
2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER LISTED ABOVE FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.
3. THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE WHERE S_{DS} IS NOT GREATER THAN 2.20. SEE DETAIL & NOTE #4 FOR APPLICABILITY
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, z/h = 0 AT CONCRETE SLAB & z/h $\leq$ 1 AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω_o
5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. CONCRETE SLAB ON METAL DECK DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION IN THE BUILDING. (i.e. z/h $\leq$ 1)
8. CONCRETE SLAB DETAIL VALID FOR DEMANDS SHOWN AT OR BELOW GRADE. (i.e. z/h = 0)
9. **RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING**

   A. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.

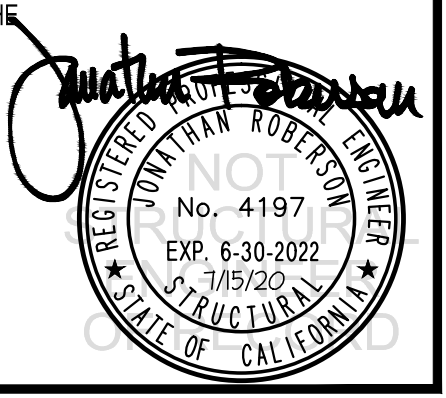
   B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.

   C. VERIFY THAT PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES (E_h, E_v) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.

   D. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR REPORT AND THIS OPM.

   E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 2).

   F. 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 6hef FROM THIS UNIT'S ANCHORS.



10. **EXPANSION ANCHORS:**

A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

Anchor Diameter	Concrete Type	Min. f'c (psi)	Anchor Type	ICC Report No.	Min. Embed.	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Torque Test	Direct Tension Test
1/2"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	6.75"	12"	See Detail "A"	40 FT-LB	N/A
1/2"	Normal Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	3.25"	3"	24"	6"	40 FT-LB	2174 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 24" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

C. TESTING AND SPECIAL INSPECTION OF EXPANSION ANCHORS 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.

(i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST AT LEAST 50% OF THE ANCHORS.

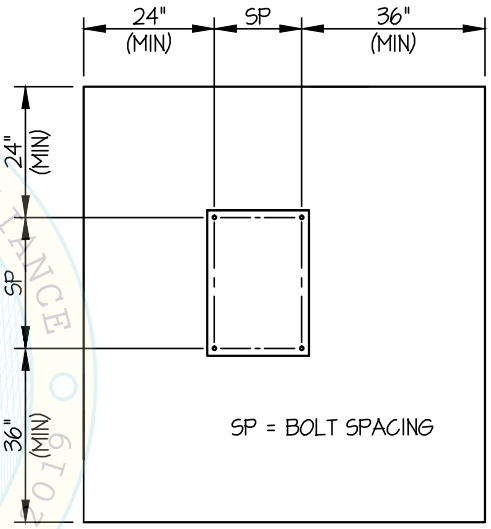
(ii) ACCEPTANCE CRITERIA:

- DIRECT TENSION TEST: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.
- TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE : 1/2 TURN OF THE NUT

(iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSION ANCHORS.

E. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.



TYPICAL CONCRETE EDGE DETAIL

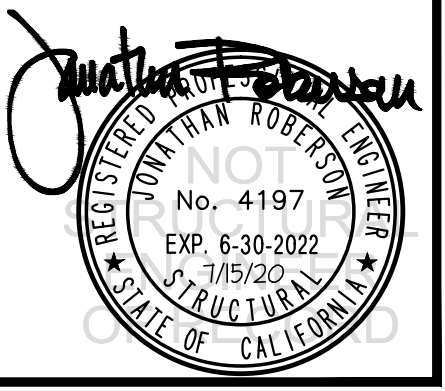
11. BOLTS THROUGH CONCRETE ON METAL DECK

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 1/16" LARGER THAN BOLT SIZE

C. (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.

D. THROUGH-BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION AND TESTING (THROUGH BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TENSION TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.



SYSMEX

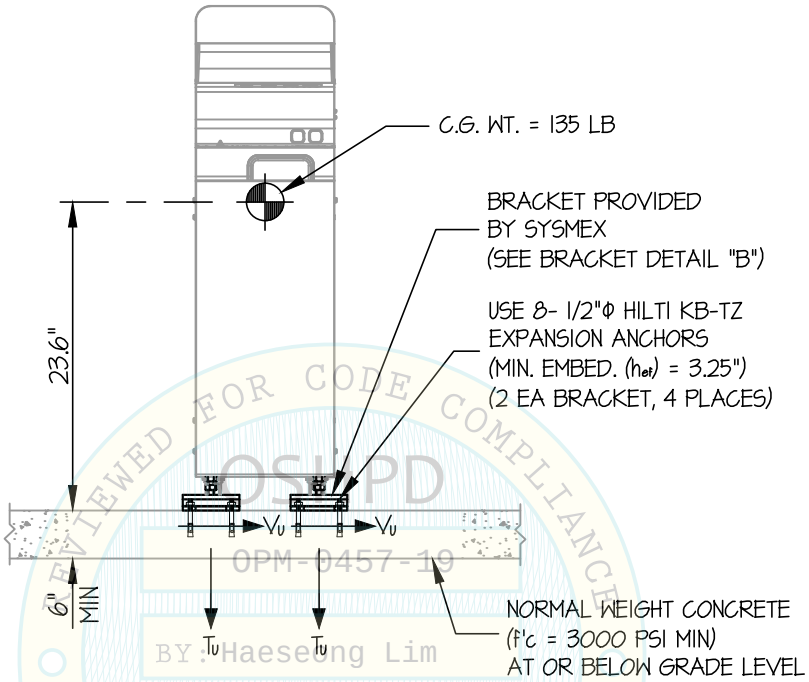
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 3 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



Tu = 447 LB/BOLT (MAX)
Vu = 66 LB/BOLT (MAX)
(VALUES INCLUDE Ωo)

FRONT ELEVATION
(XN-9100 (BT-ST) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

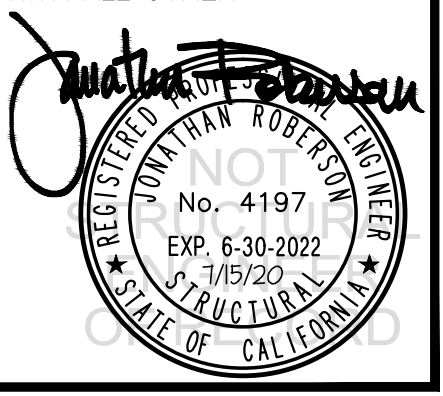
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

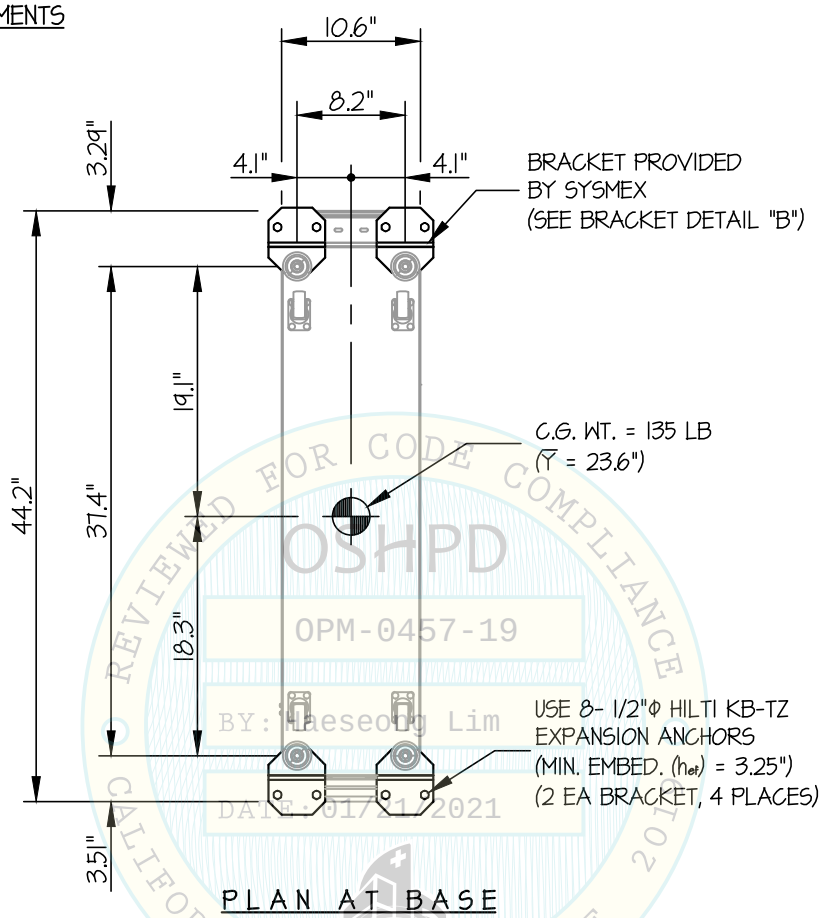
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

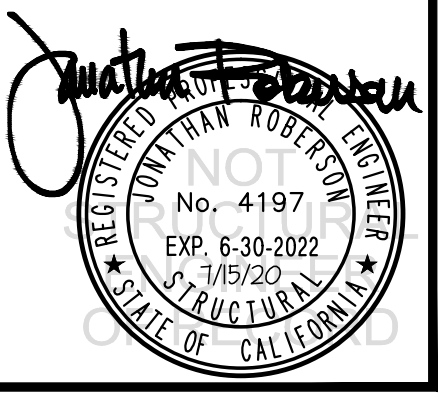
SHEET 4 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE
(XN-9100 (BT-ST) MODEL)



SYSMEX

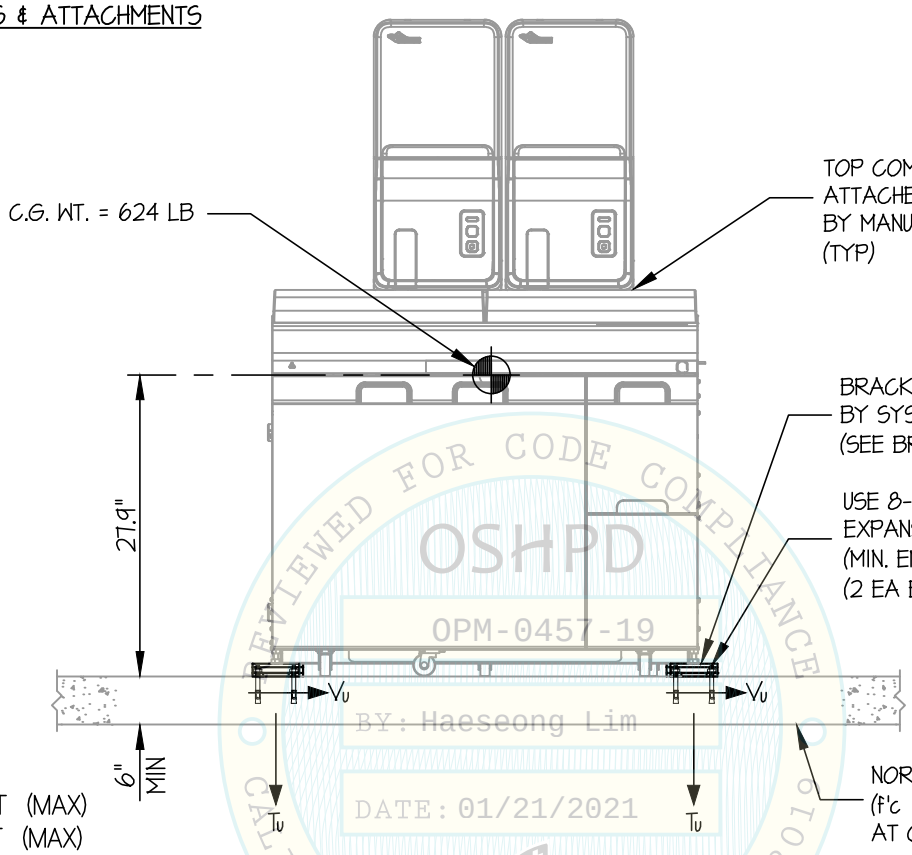
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 5 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



Tu = 834 LB/BOLT (MAX)
Vu = 314 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (CV-55) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

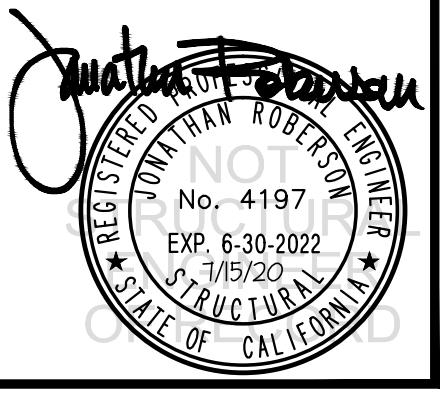
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

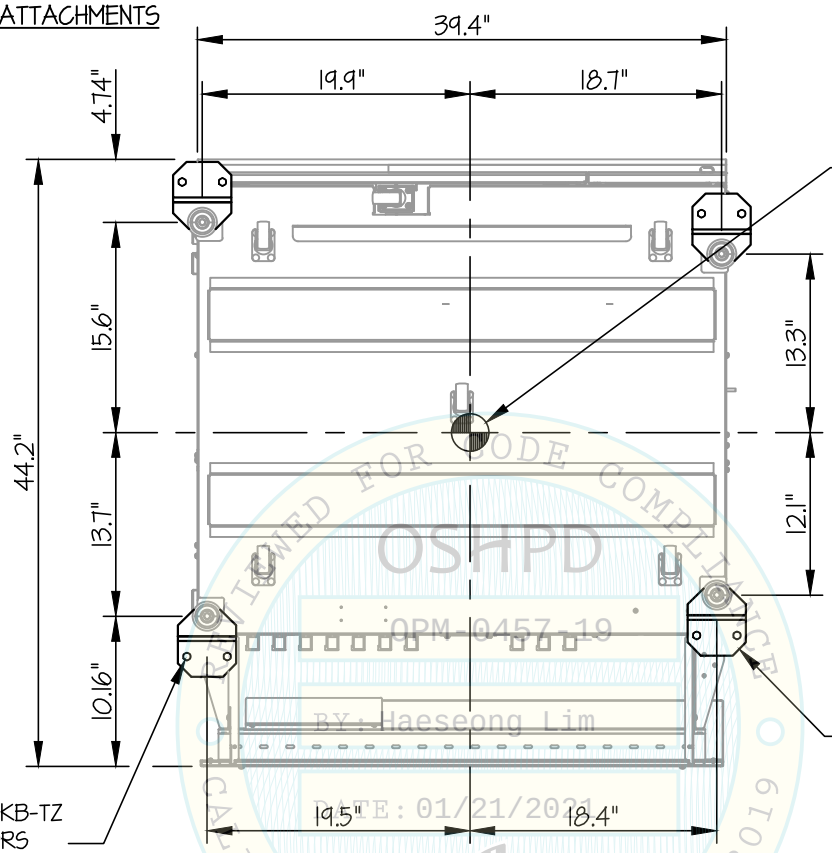
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 6 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE
(XN-9100 (CV-55) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

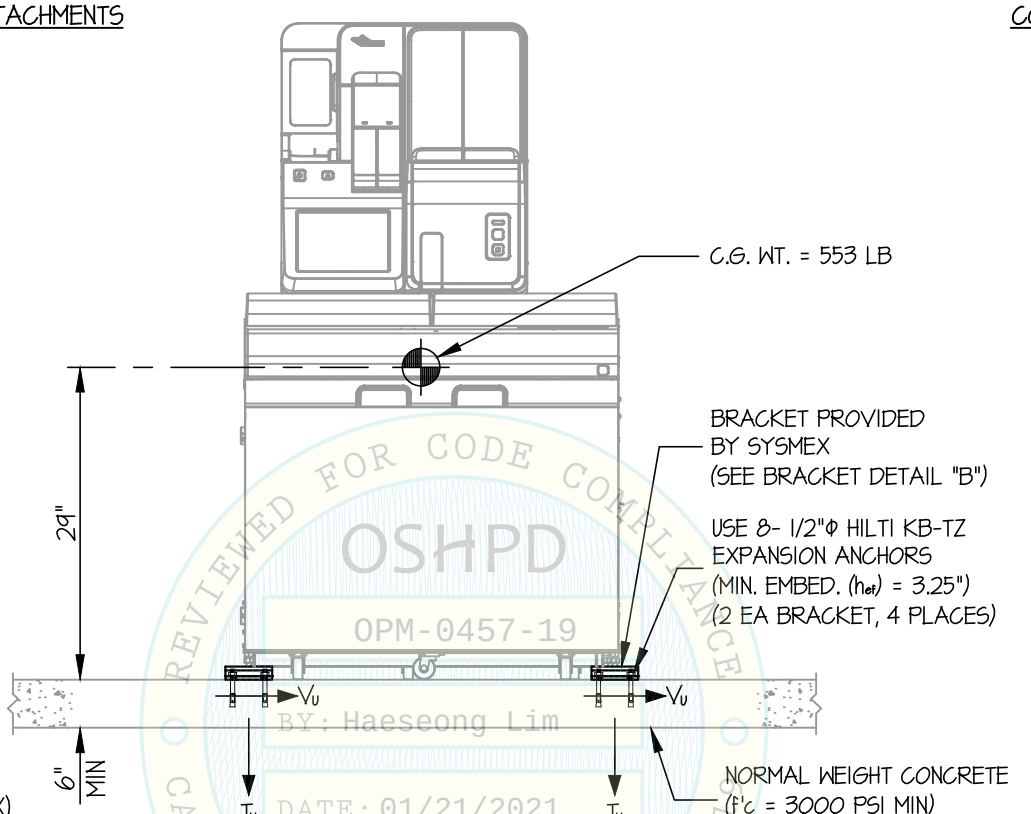
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 7 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



Tu = 672 LB/BOLT (MAX)
Vu = 248 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (CV-65) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

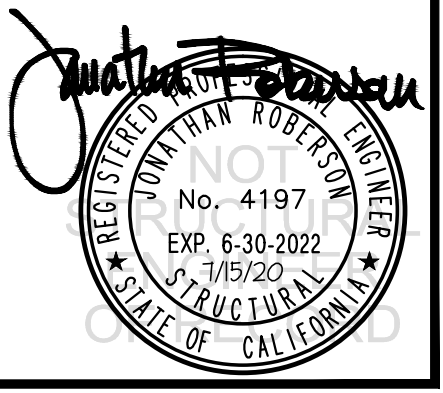
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

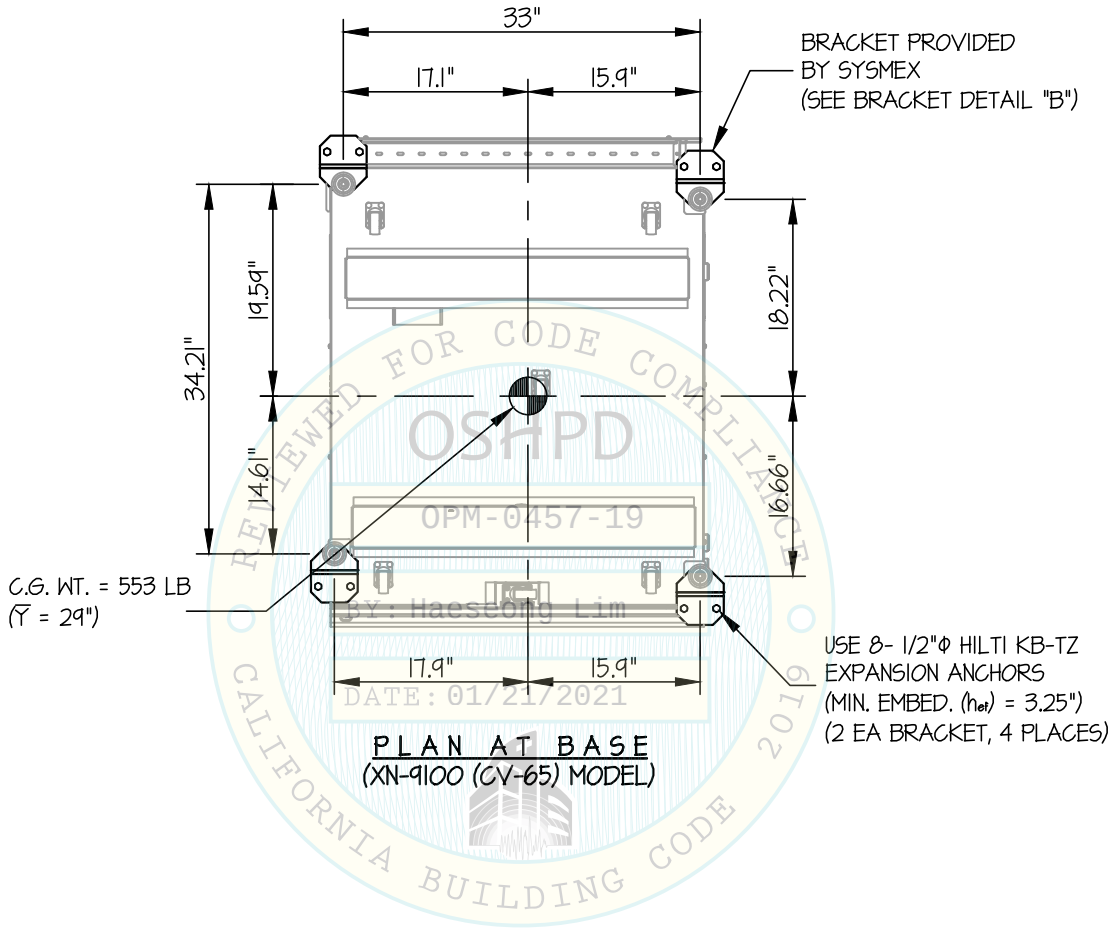
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 8 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE
(XN-9100 (CV-65) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
STRUCTURAL
STATE OF CALIFORNIA
7/15/20

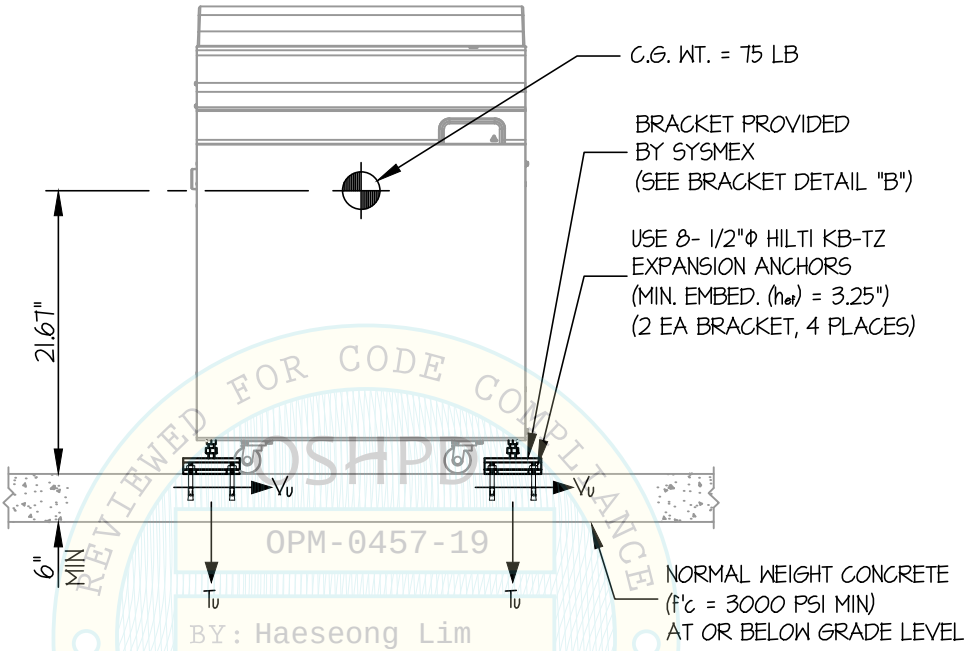
SYSMEX

XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 9 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS — CONCRETE SLAB



FRONT ELEVATION
(XN-9100 (CV-70) MODEL)

T_u = 321 LB/BOLT (MAX)
V_u = 42 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

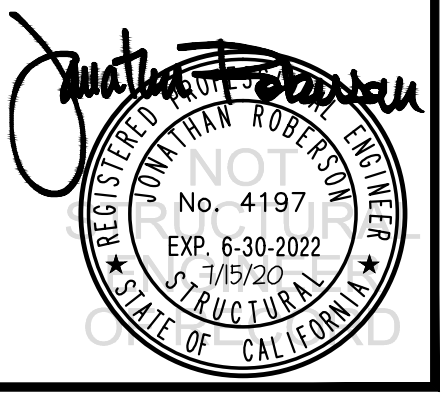
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

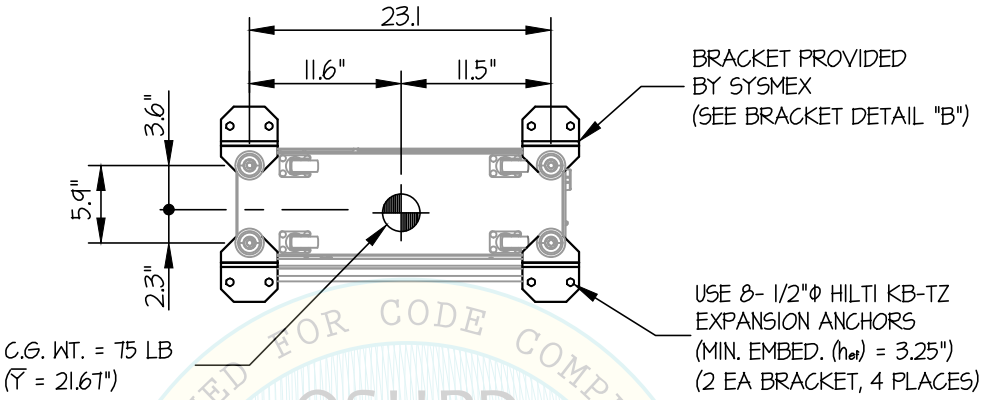
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

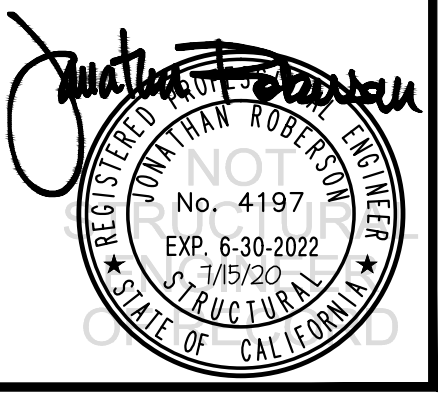
SHEET 10 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE
(XN-9100 (CV-70) MODEL)



SYSMEX

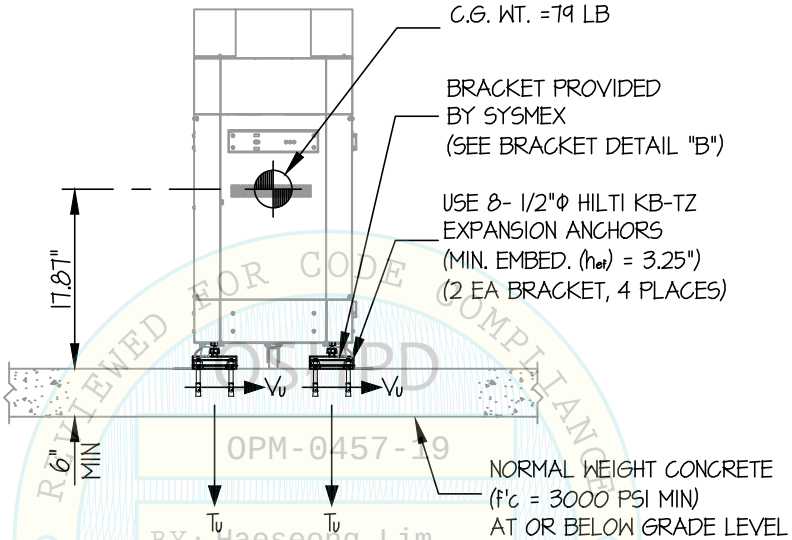
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 11 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



Tu = 163 LB/BOLT (MAX)
Vu = 38 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (TU-40) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

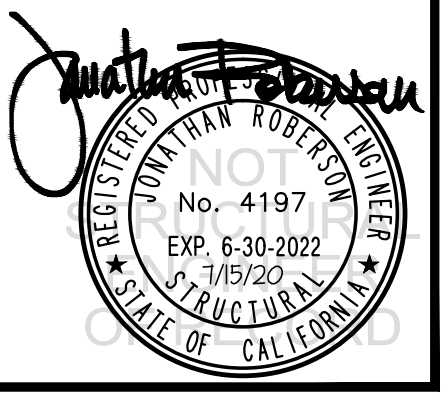
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

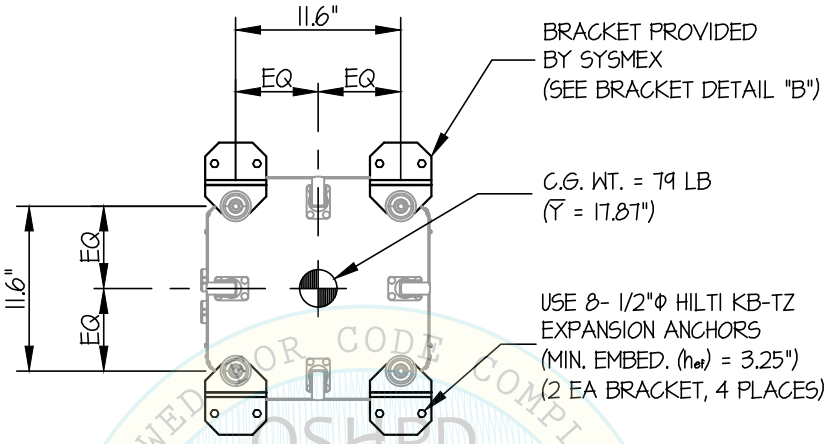
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

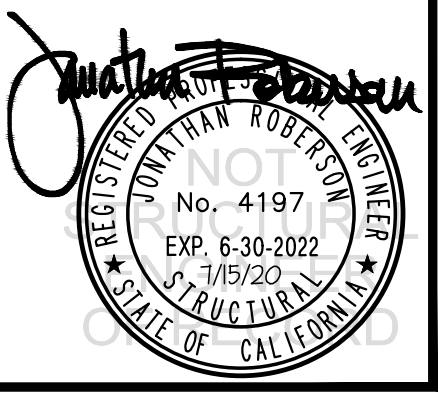
SHEET 12 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE
(XN-9100 (TU-40) MODEL)



SYSMEX

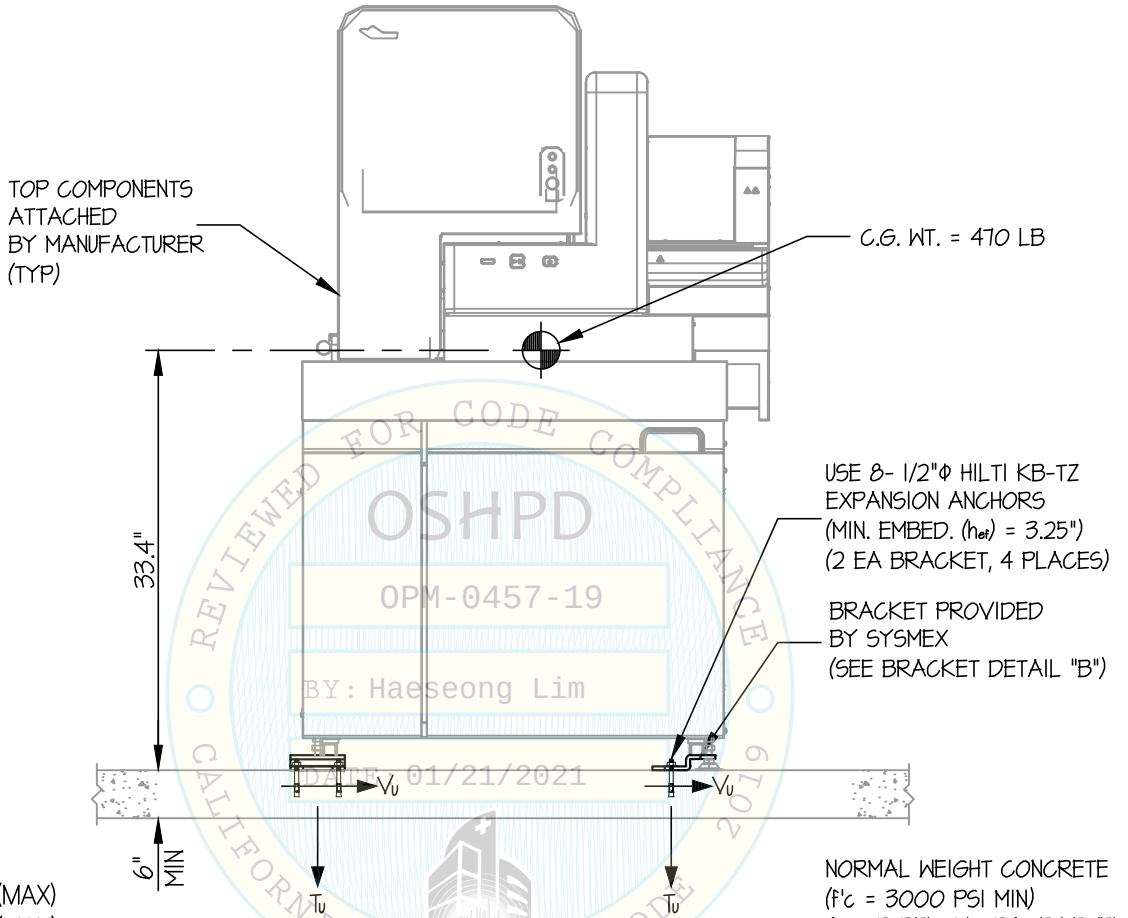
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 13 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



Tu = 672 LB/BOLT (MAX)
Vu = 258 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (DI-60+CF-70+WG-80) MODEL)
(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

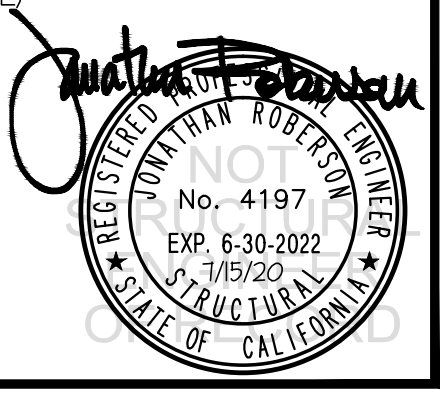
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

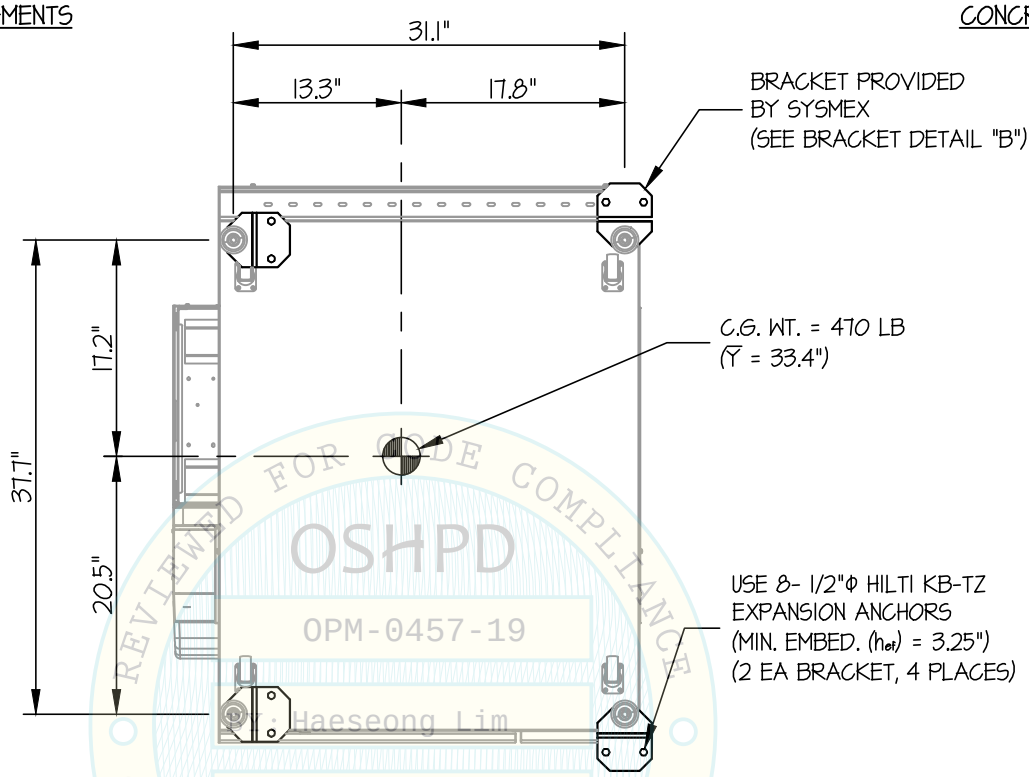
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 14 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE

(XN-9100 (DI-60+CF-70+WG-80) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

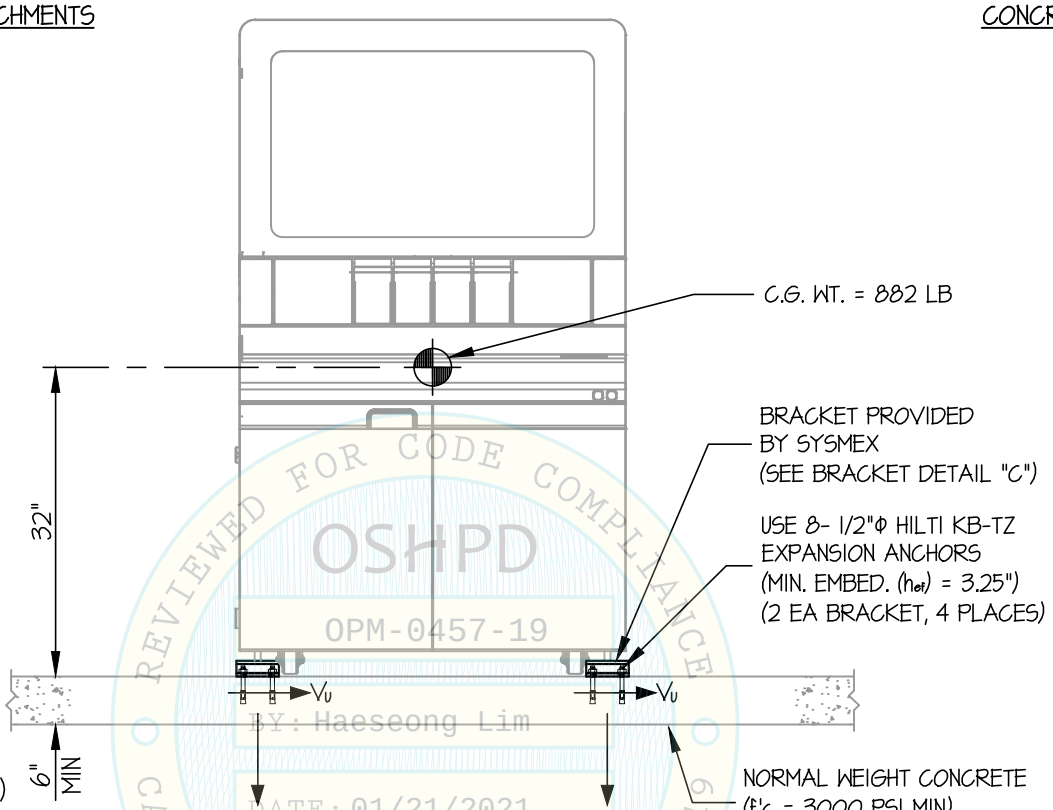
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 15 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



Tu = 1092 LB/BOLT (MAX)
Vu = 388 LB/BOLT (MAX)
(VALUES INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (TS-10) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

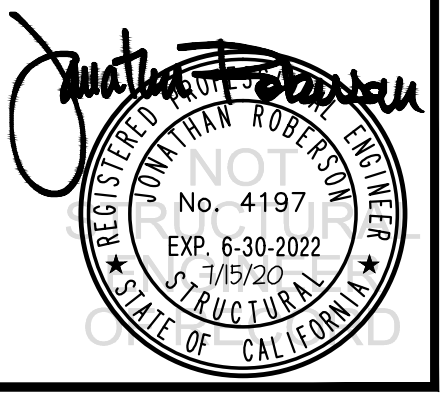
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

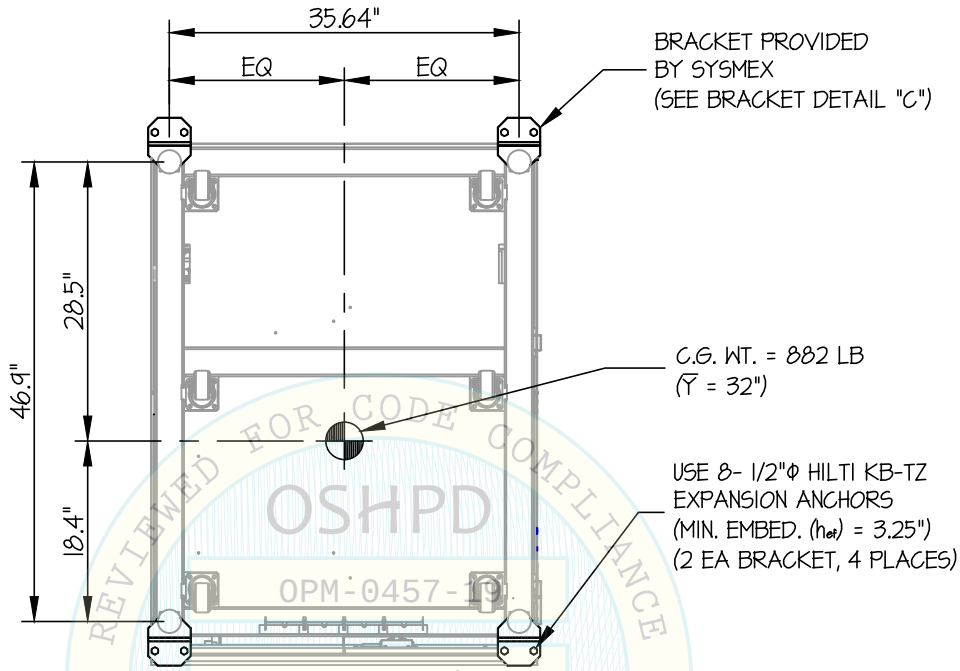
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

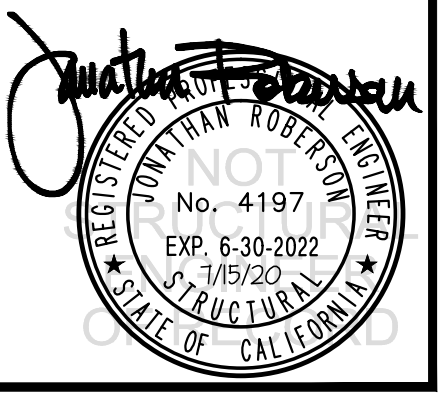
SHEET 16 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE
(XN-9100 (TS-10) MODEL)



SYSMEX

XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 17 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

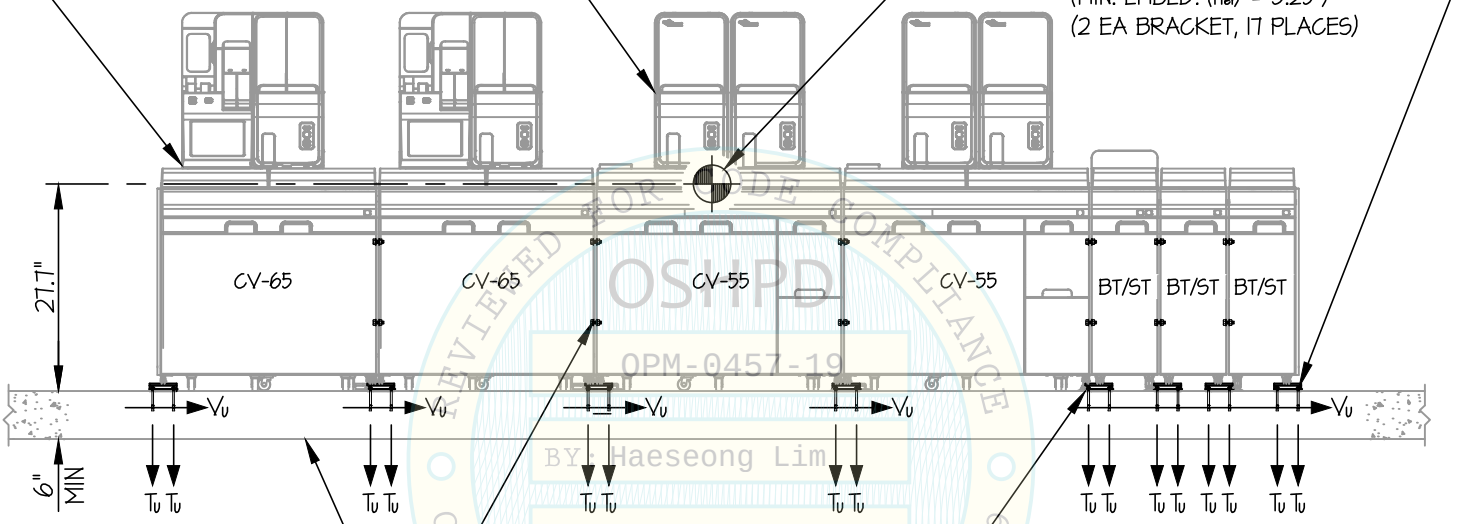
NOTE: AT (A307) BOLT BETWEEN UNITS ADD WASHERS WHEN NECESSARY TO MAINTAIN FULL THREAD ENGAGEMENT FOR NUT & WASHER

DESIGN OF SUPPORTS & ATTACHMENTS FOR MONITORS EXCLUDED

C.G. WT. = 2759 LB

TOP COMPONENTS ATTACHED BY MANUFACTURER (TYP)

USE 34- 1/2"Φ HILTI KB-TZ EXPANSION ANCHORS (MIN. EMBED. (h_{ef}) = 3.25") (2 EA BRACKET, 17 PLACES)



NORMAL WEIGHT CONCRETE (f'c = 3000 PSI MIN) AT OR BELOW GRADE LEVEL

ADJACENT UNITS ARE CONNECTED AT TWO POINTS FRONT & BACK, (24) TOTAL, BY MFR USING 3/8"Φ A307 BOLTS W/ FLAT WASHERS & NUTS

BRACKET PROVIDED BY SYSMEX (SEE BRACKET DETAIL "B")

Tu = 822 LB/BOLT (MAX)
Vu = 758 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_0)

PLAN AT BASE

(XN-9100 (STANDARD CONFIGURATION) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

CONCRETE SLAB

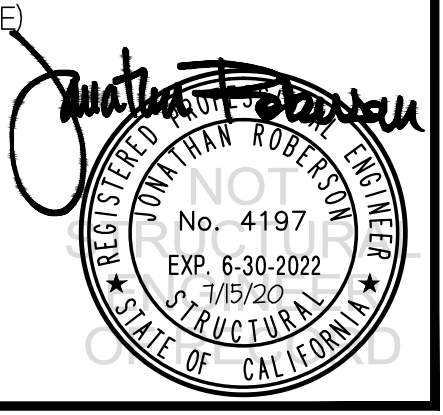
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h = 0)

   HORIZONTAL FORCE (E_h) = 0.99 W_p
   HORIZONTAL FORCE (E_{mh}) = 1.49 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

XN-9100 SERIES

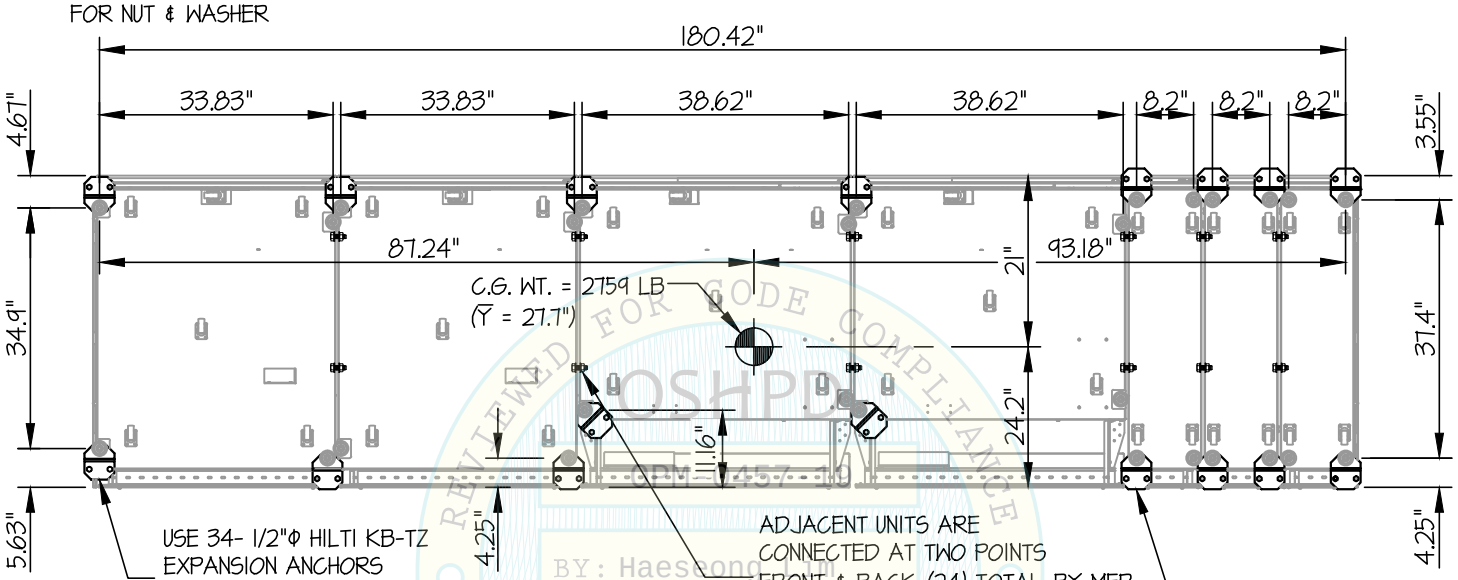
DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 18 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB

NOTE: AT (A307) BOLT BETWEEN UNITS ADD WASHERS WHEN NECESSARY TO MAINTAIN FULL THREAD ENGAGEMENT FOR NUT & WASHER



PLAN AT BASE

(XN-9100 (STANDARD CONFIGURATION) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

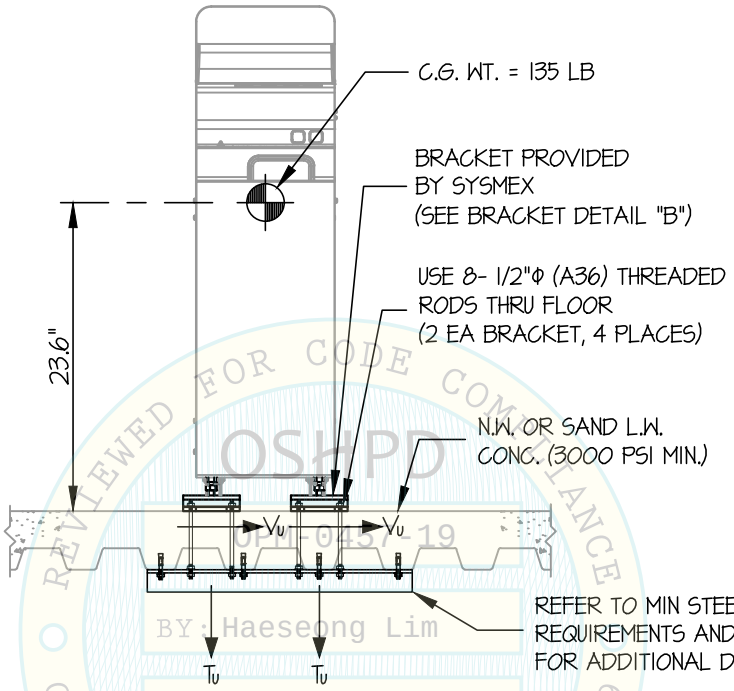
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 19 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



Tu = 813 LB/BOLT (MAX)
Vu = 118 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_o)

FRONT ELEVATION
(XN-9100 (BT-ST) MODEL)
(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

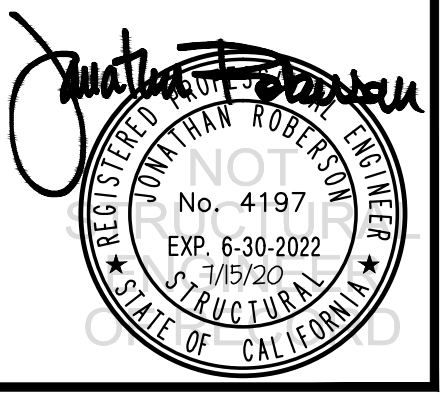
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 2.64 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.96 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

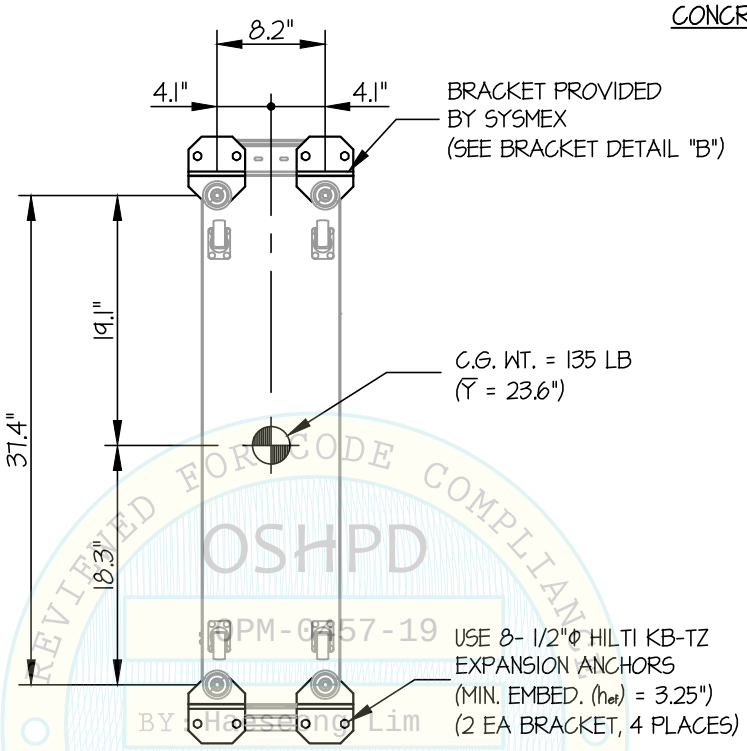
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 20 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(XN-9100 (BT-ST) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

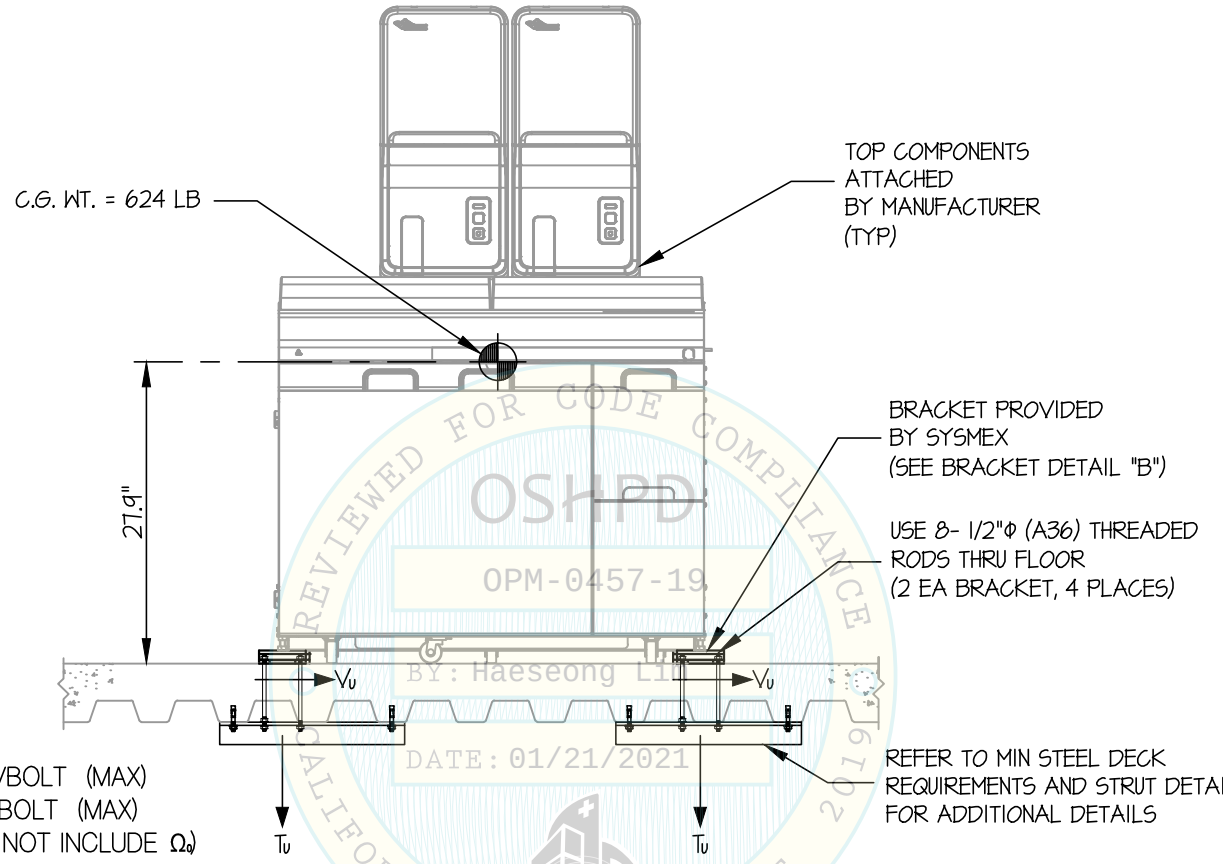
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 21 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



Tu = 1566 LB/BOLT (MAX)
Vu = 558 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (CV-55) MODEL)
(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

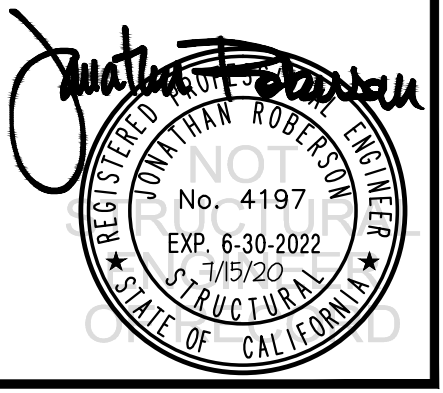
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 2.64 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.96 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

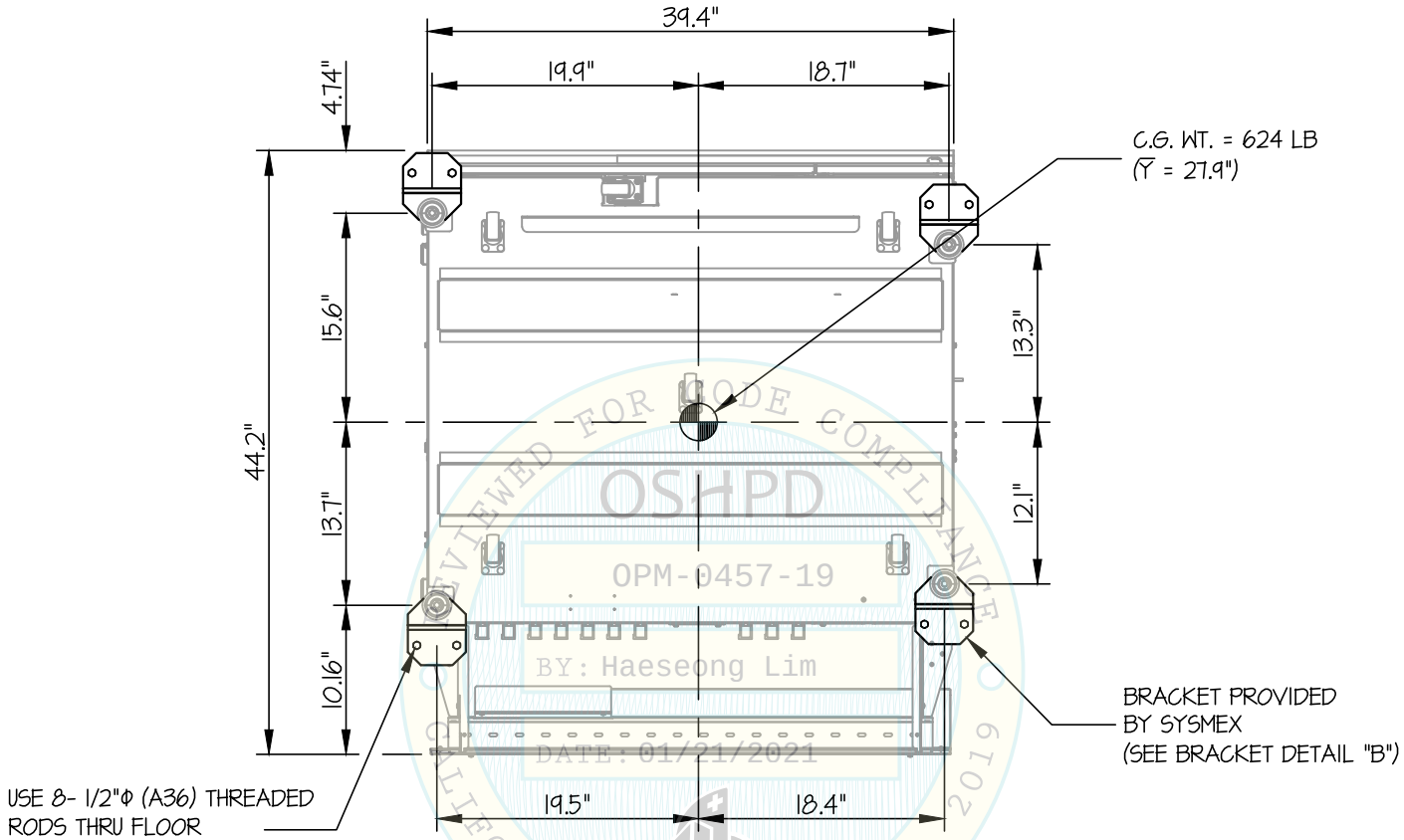
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 22 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(XN-9100 (CV-55) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

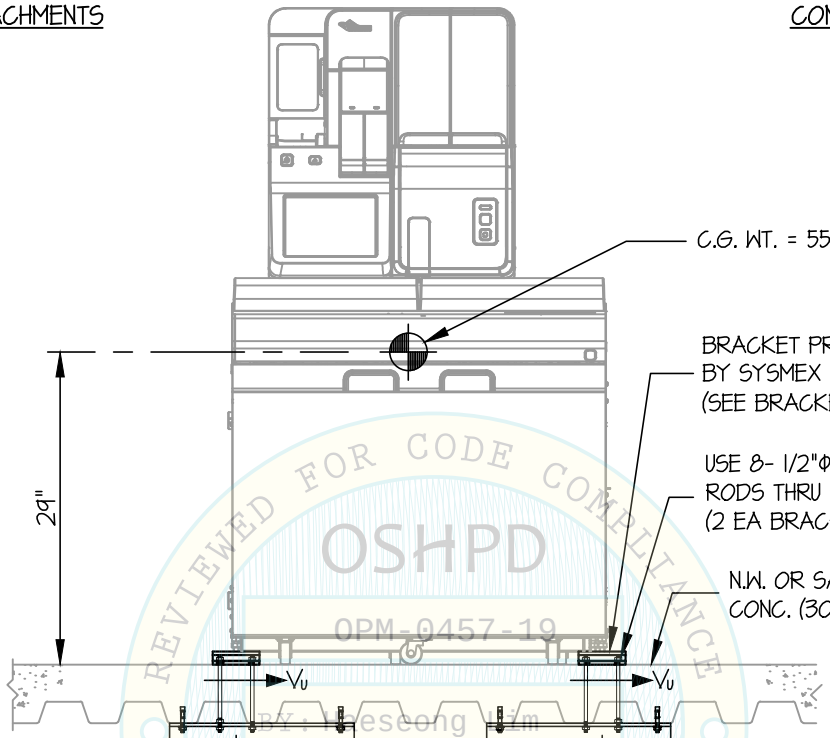
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 23 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



Tu = 1278 LB/BOLT (MAX)
Vu = 441 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ωo)

FRONT ELEVATION
(XN-9100 (CV-65) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

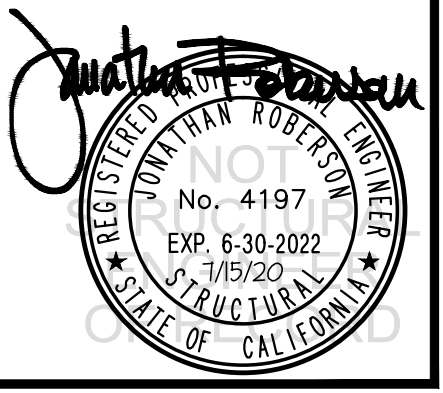
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 2.64 Wp
   HORIZONTAL FORCE (E_{mh}) = 3.96 Wp (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 Wp

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

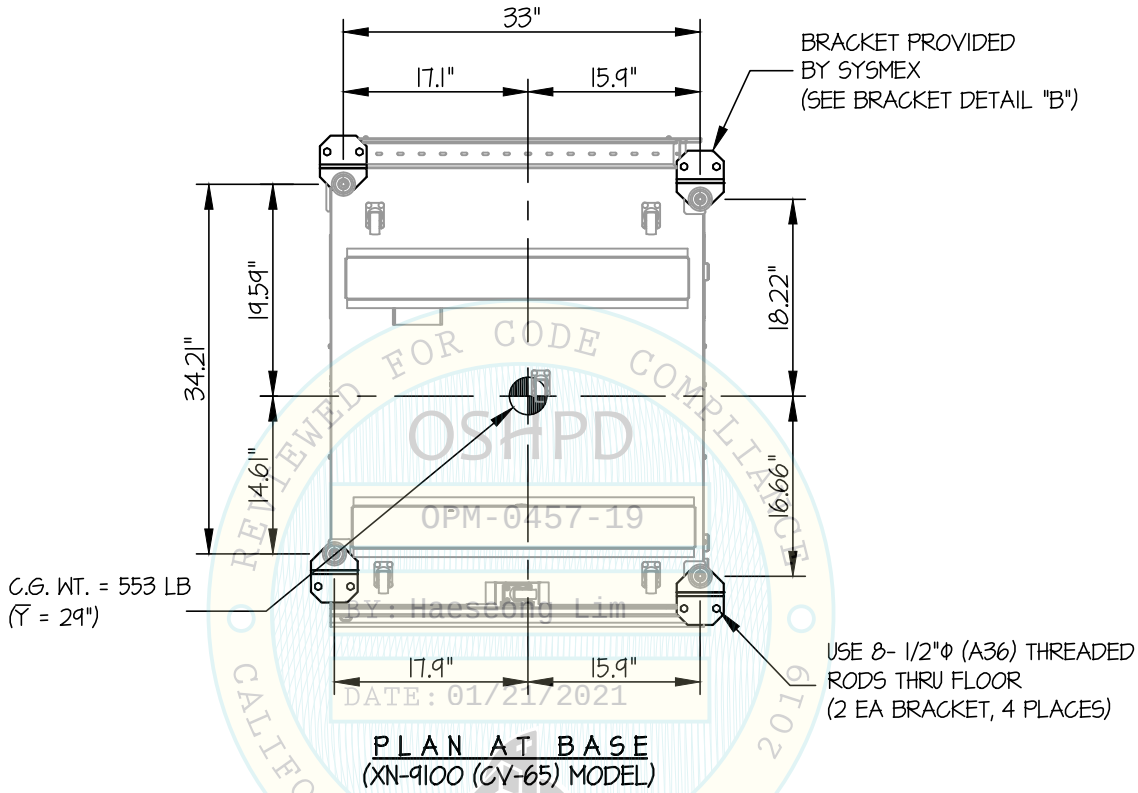
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 24 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(XN-9100 (CV-65) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

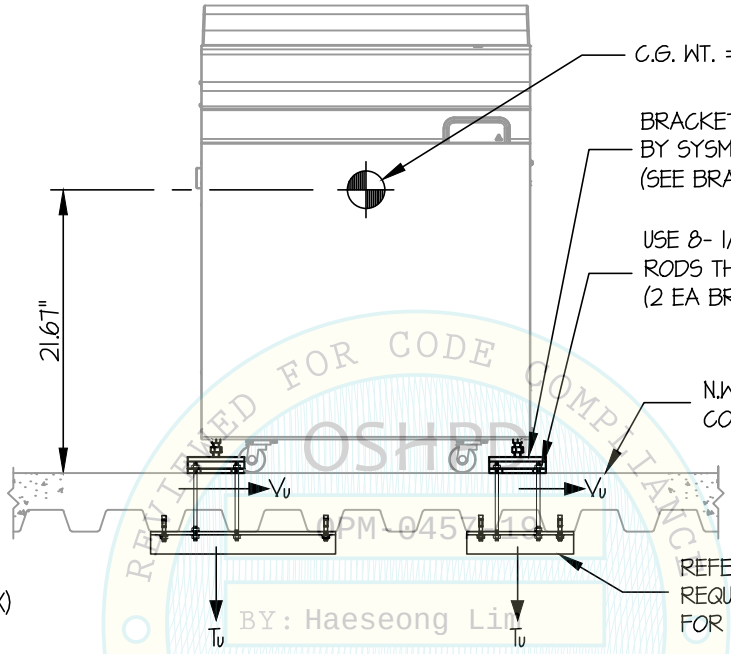
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 25 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



Tu = 583 LB/BOLT (MAX)
Vu = 75 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (CV-70) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 2.64 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.96 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
STRUCTURAL
STATE OF CALIFORNIA
7/15/20

NOT STRUCTURALLY ENGINEERED

SYSMEX

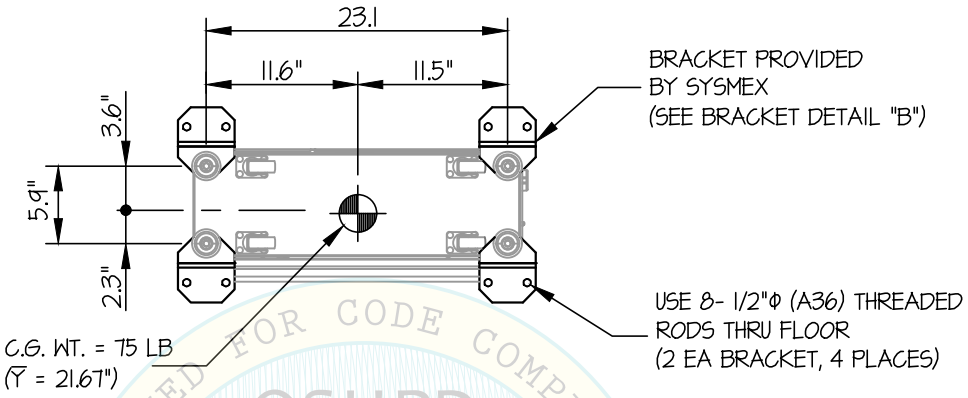
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

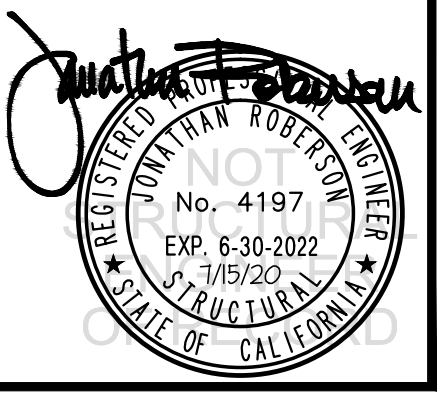
SHEET 26 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(XN-9100 (CV-70) MODEL)



SYSMEX

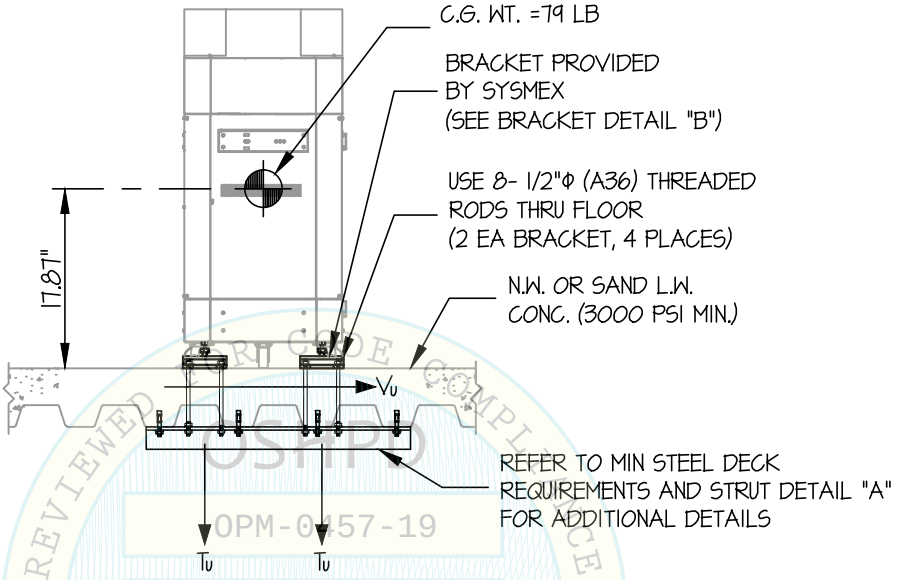
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 27 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



Tu = 300 LB/BOLT (MAX)
Vu = 52 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ωo)

FRONT ELEVATION
(XN-9100 (TU-40) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

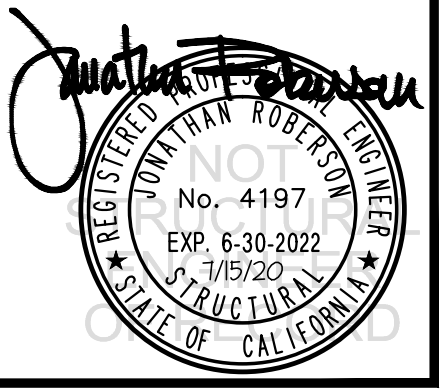
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, $z/h \leq 1$)

   HORIZONTAL FORCE (E_h) = 2.64 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.96 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

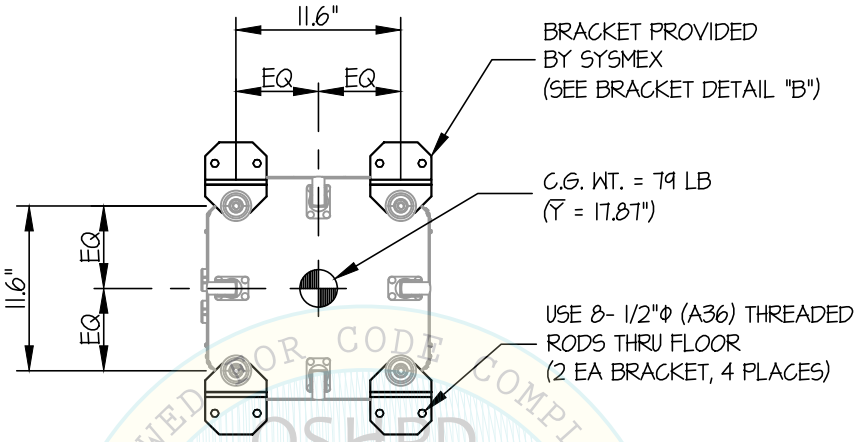
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

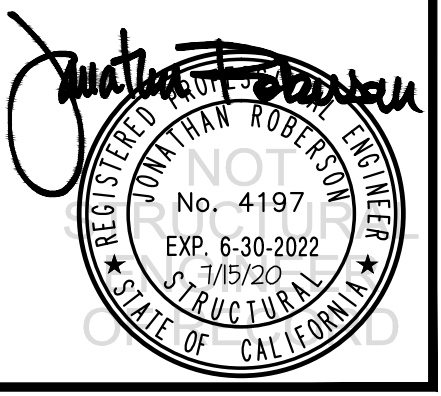
SHEET 28 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(XN-9100 (TU-40) MODEL)



SYSMEX

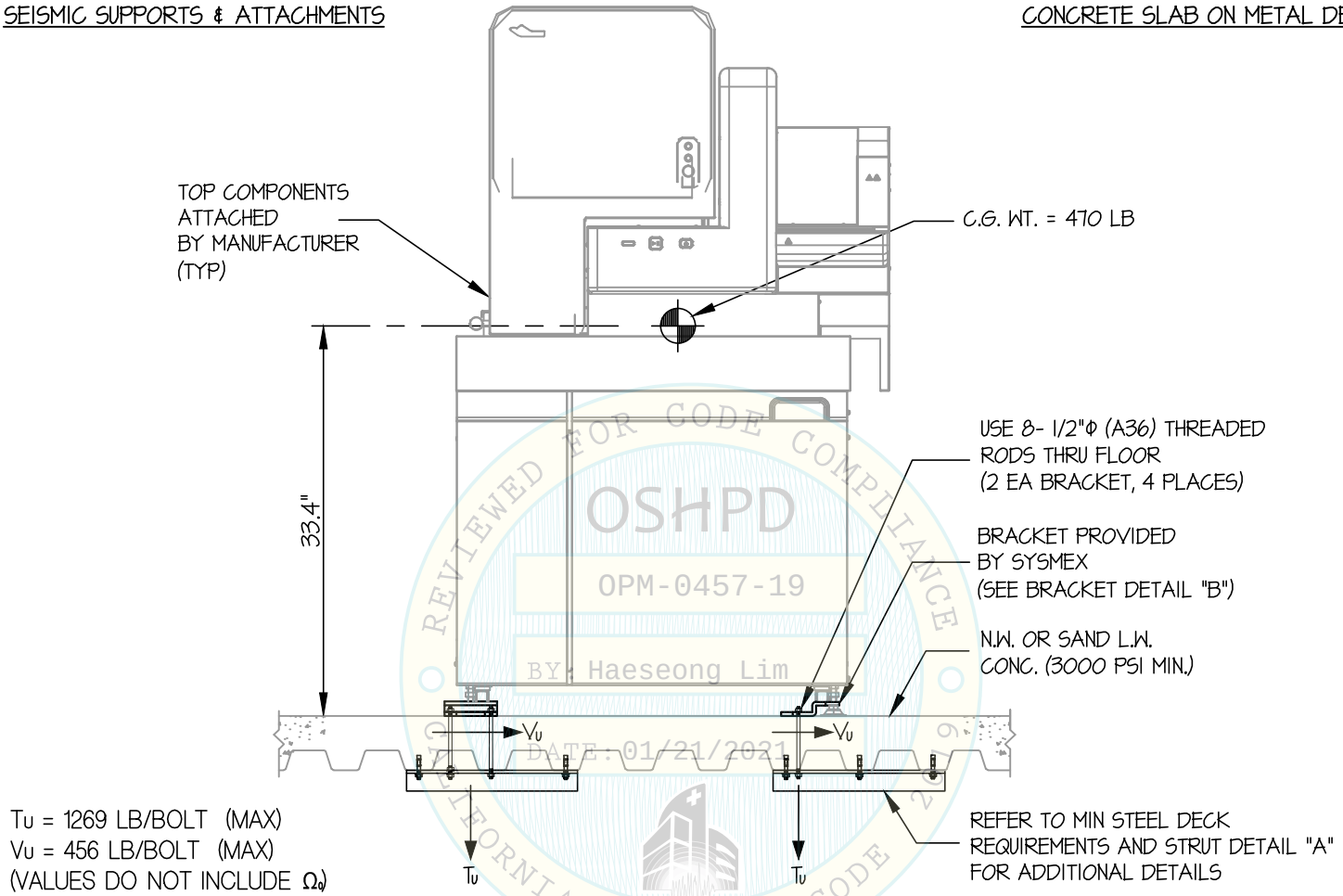
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 29 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



Tu = 1269 LB/BOLT (MAX)
Vu = 456 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_o)

FRONT ELEVATION
(XN-9100 (DI-60+CF-70+WG-80) MODEL)
(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

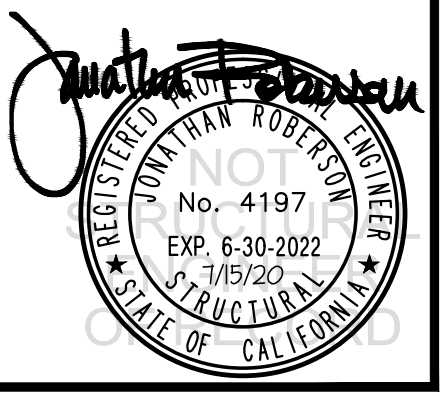
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, $z/h \leq 1$)

   HORIZONTAL FORCE (E_h) = 2.64 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.96 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

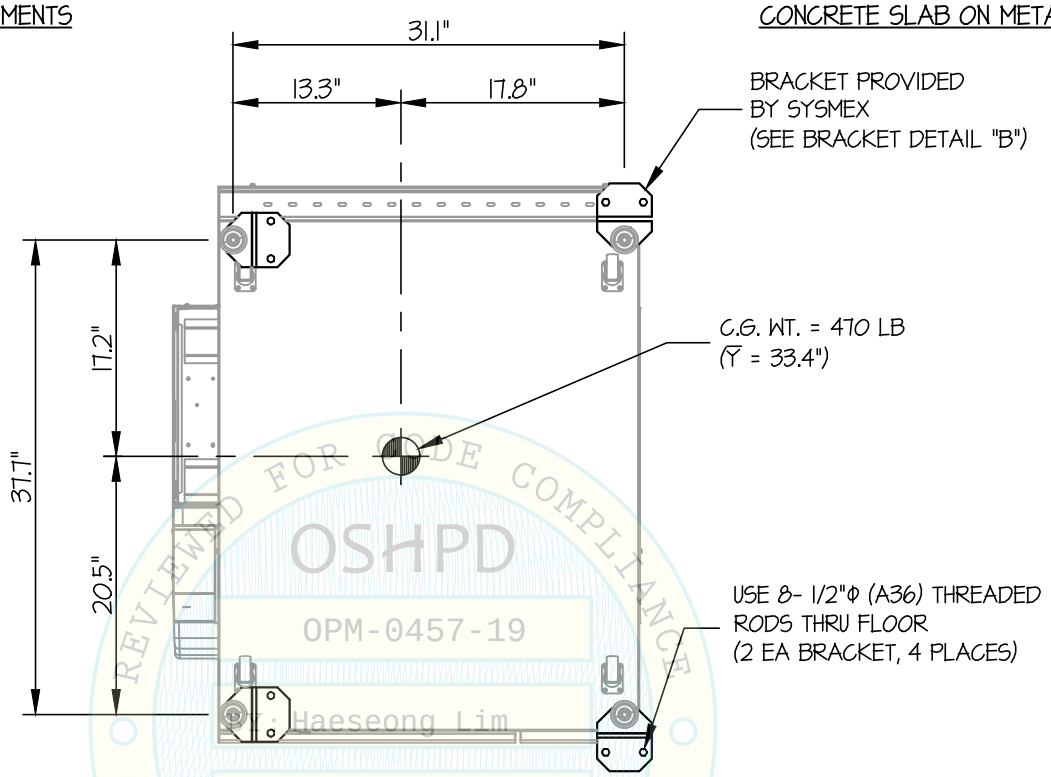
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 30 OF 37 SHEETS

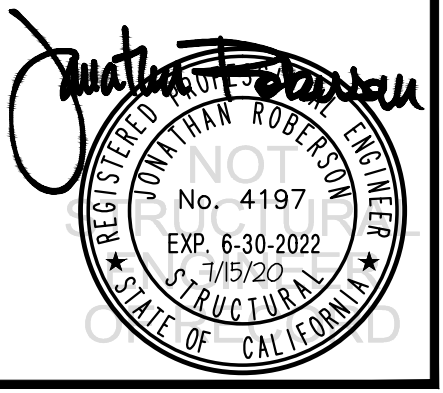
SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE

(XN-3100 (DI-60+CF-70+WG-80) MODEL)



SYSMEX

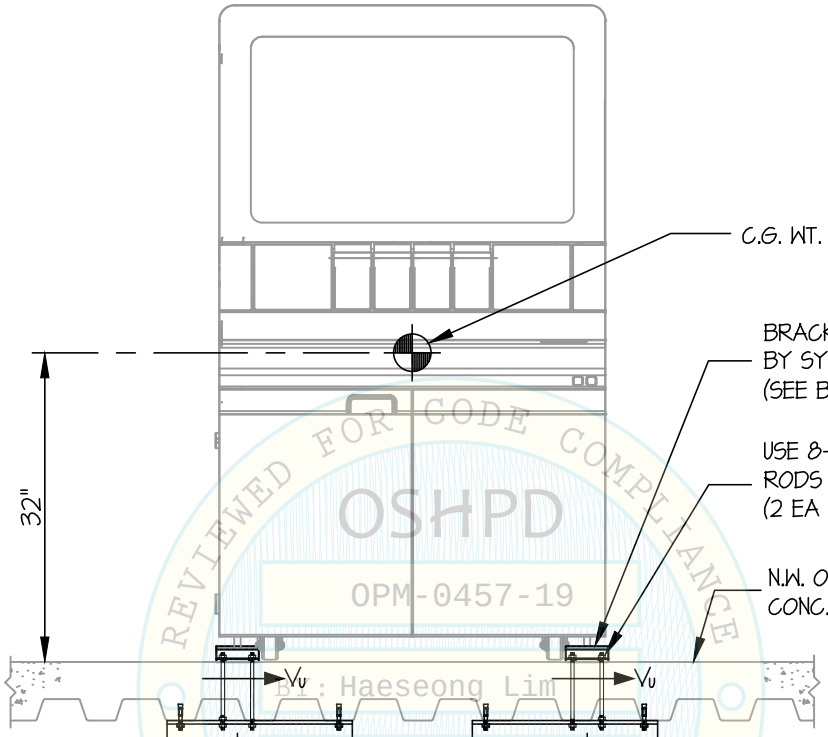
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 31 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



Tu = 2077 LB/BOLT (MAX)
Vu = 688 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ωo)

FRONT ELEVATION
(XN-9100 (TS-10) MODEL)

(SUPPORT & ATTACHMENTS PREAPPROVED FOR STAND-ALONE UNIT)

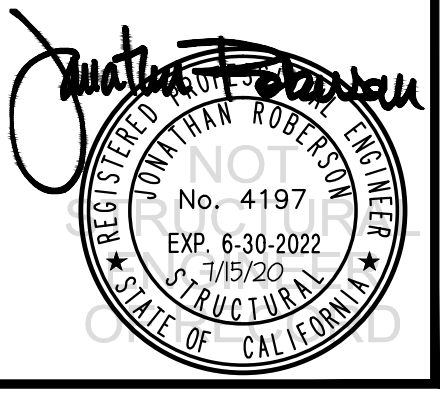
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_o = 1.5, $z/h \leq 1$)

   HORIZONTAL FORCE (E_h) = 2.64 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.96 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

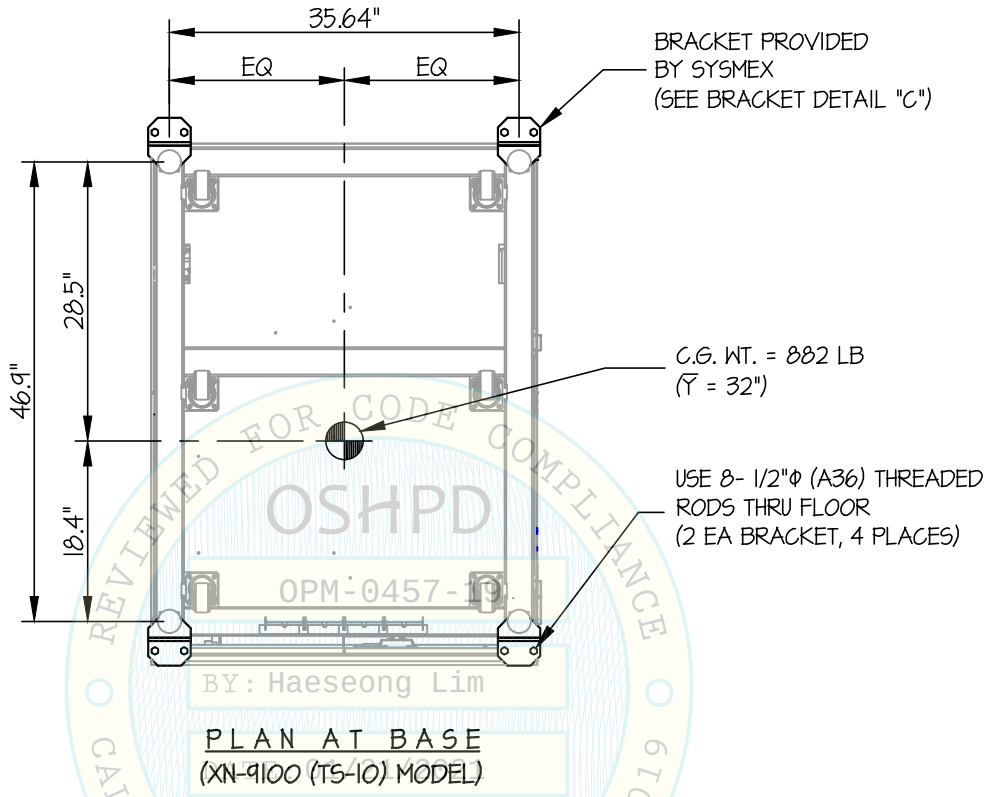
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 32 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(XN-9100 (TS-10) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

XN-9100 SERIES

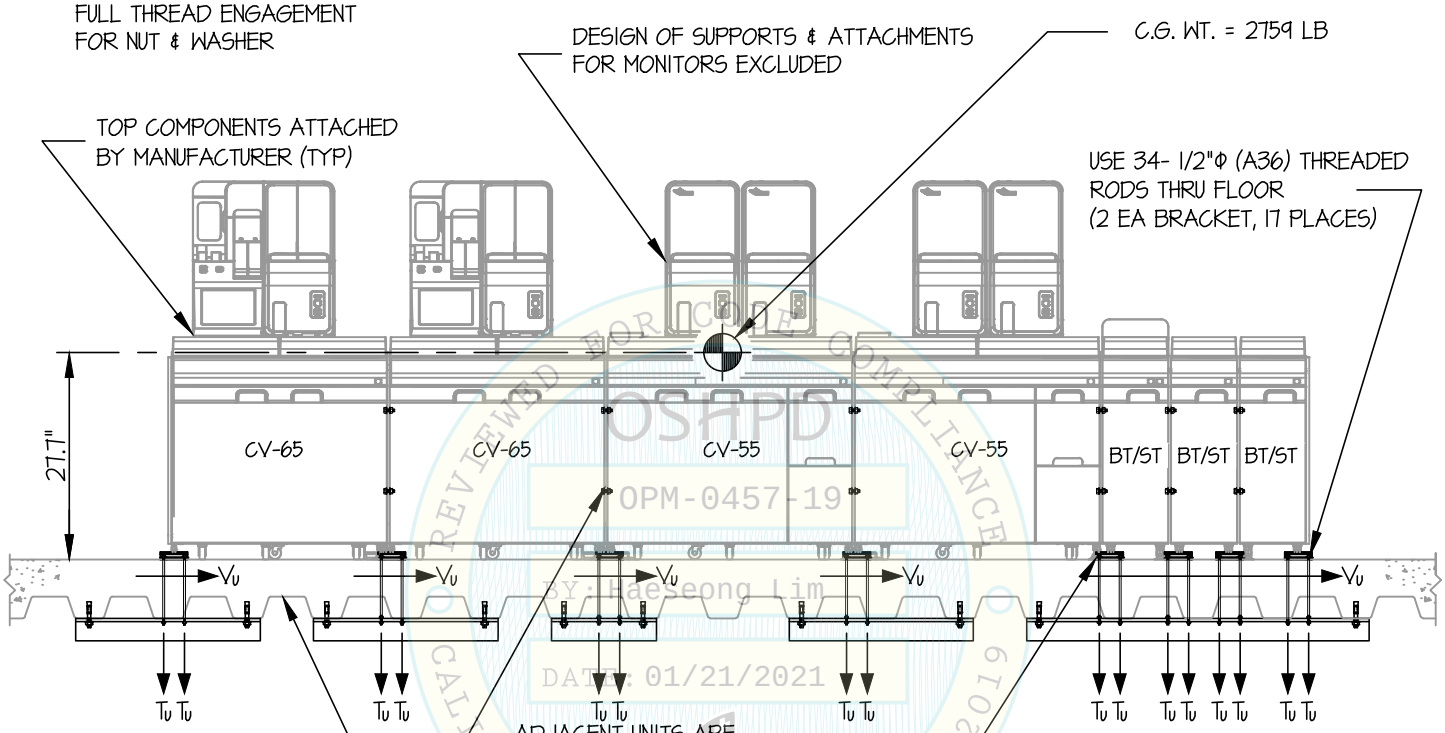
DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 33 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK

NOTE: AT (A307) BOLT BETWEEN UNITS ADD WASHERS WHEN NECESSARY TO MAINTAIN FULL THREAD ENGAGEMENT FOR NUT & WASHER



Tu = 1571 LB/BOLT (MAX)
Vu = 1342 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_0)

FRONT ELEVATION
(XN-9100 (STANDARD CONFIGURATION) MODEL)

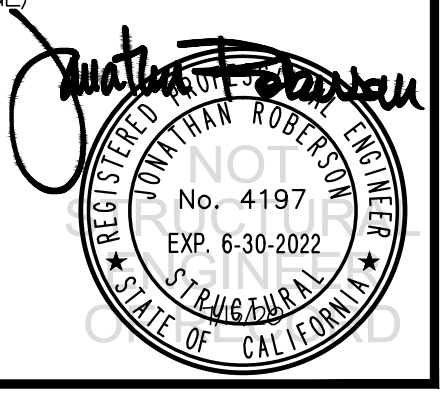
NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 2.64 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.96 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.44 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.



SYSMEX

XN-9100 SERIES

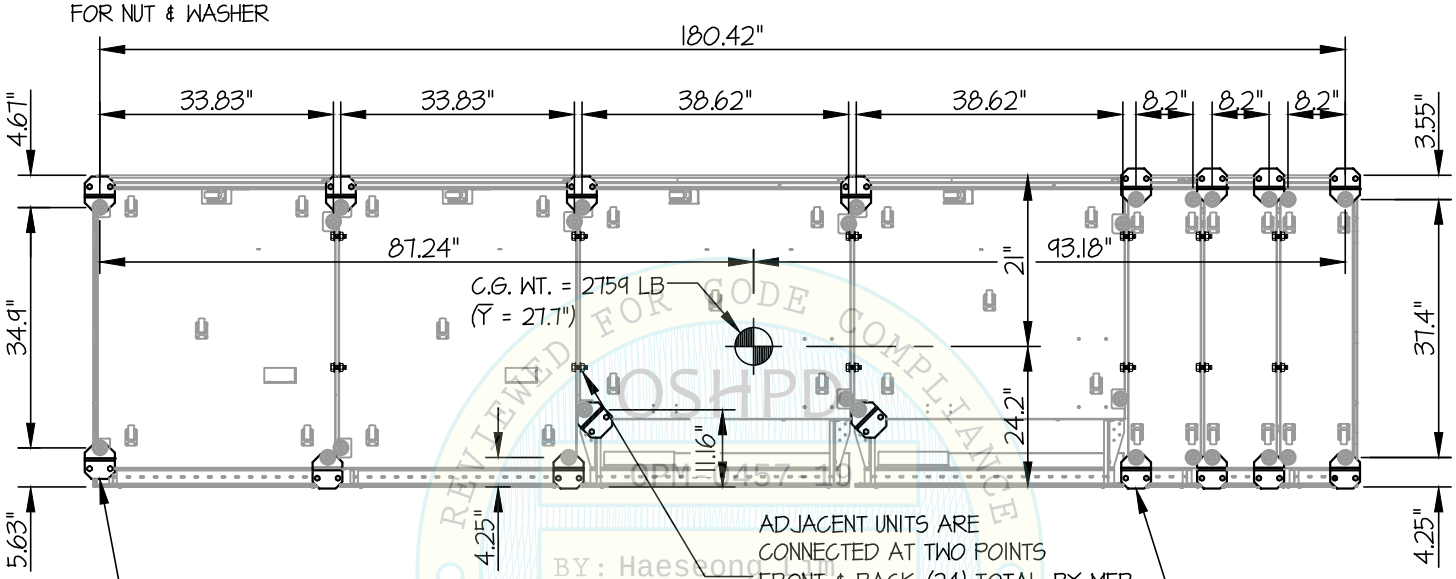
DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 34 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK

NOTE: AT (A307) BOLT BETWEEN UNITS ADD WASHERS WHEN NECESSARY TO MAINTAIN FULL THREAD ENGAGEMENT FOR NUT & WASHER



PLAN AT BASE

(XN-9100 (STANDARD CONFIGURATION) MODEL)

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
7/15/20
STRUCTURAL
STATE OF CALIFORNIA

SYSMEX

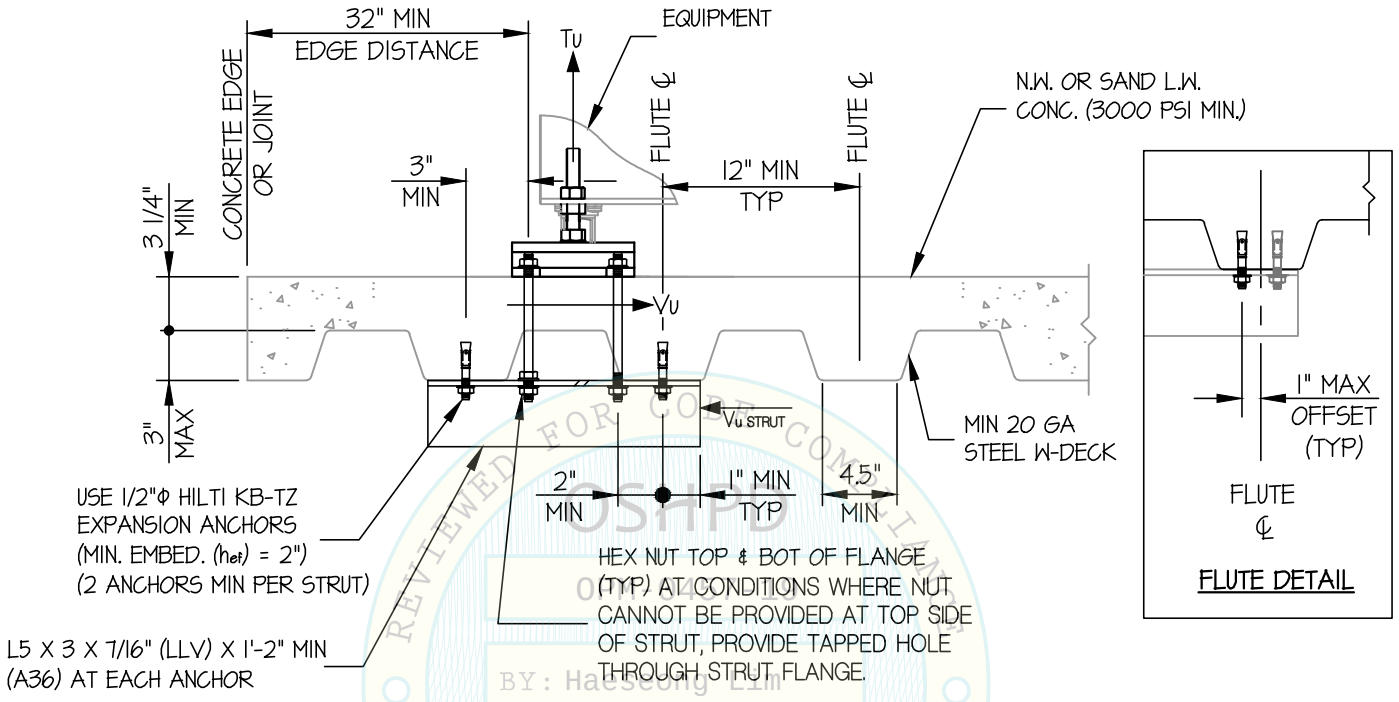
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

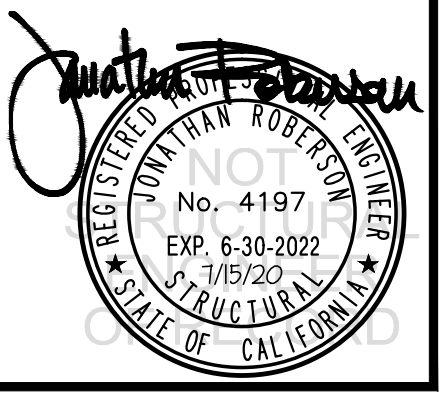
SHEET 35 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE DETAIL



MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL (A)



SYSMEX

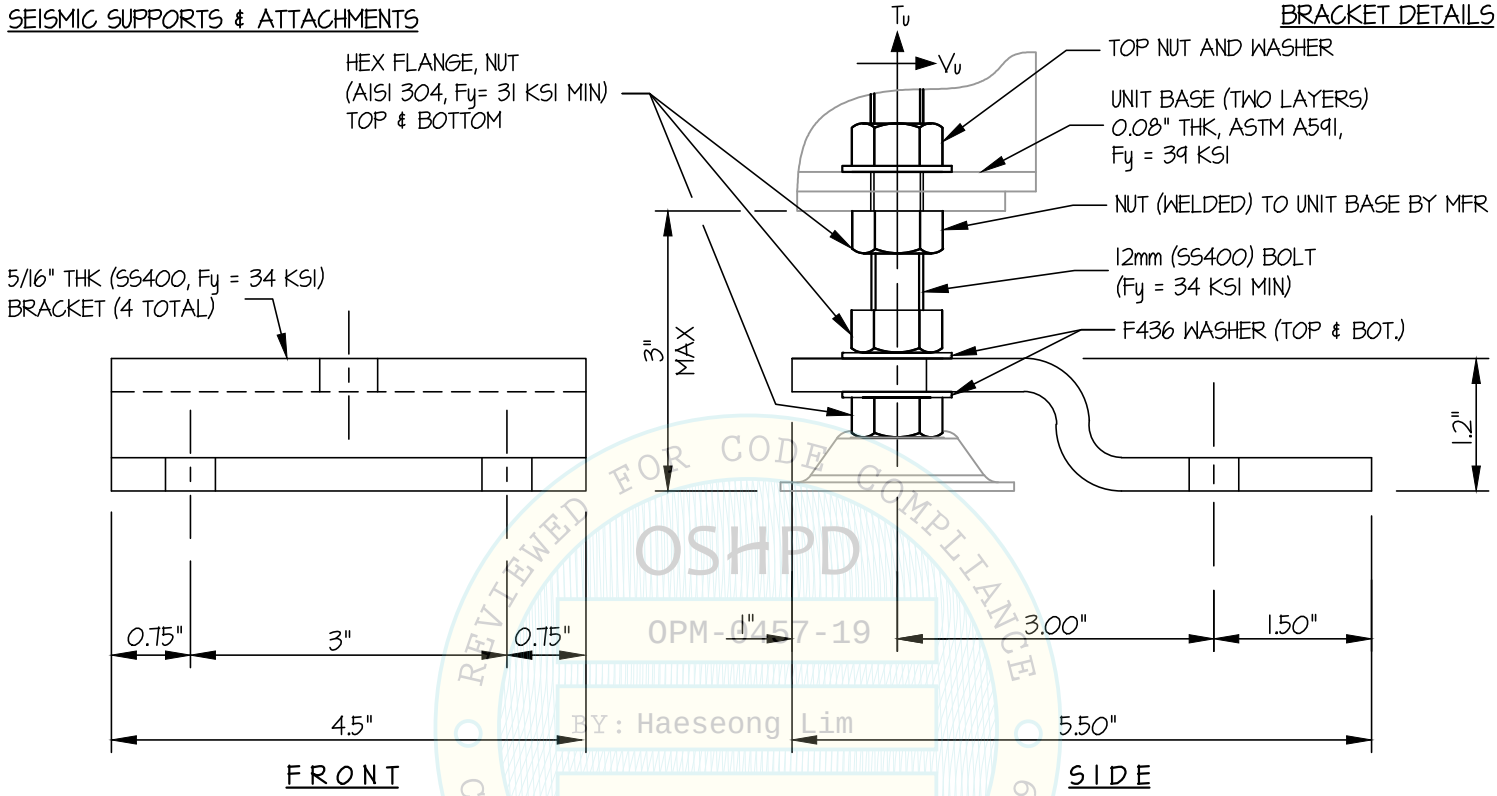
XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

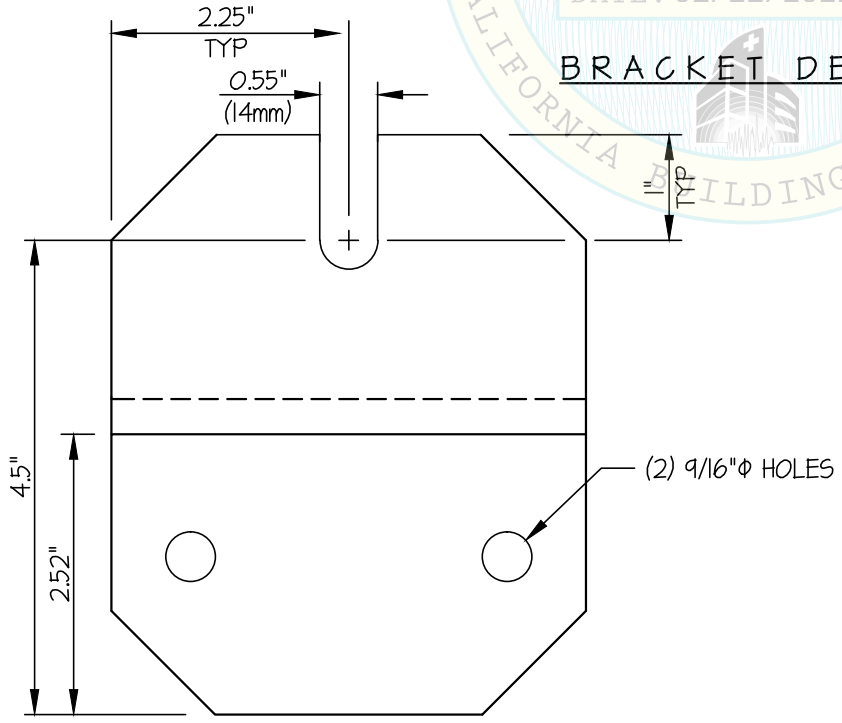
SHEET 36 OF 37 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

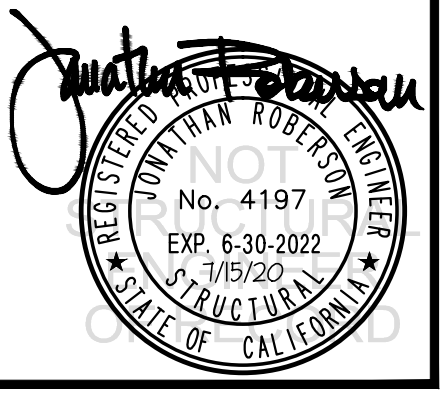
BRACKET DETAILS



NOTE: TO BE PROVIDED BY SYSMEX FOR XN-9100 SERIES MODELS (EXCEPT TS-10)



BRACKET DETAIL (B)



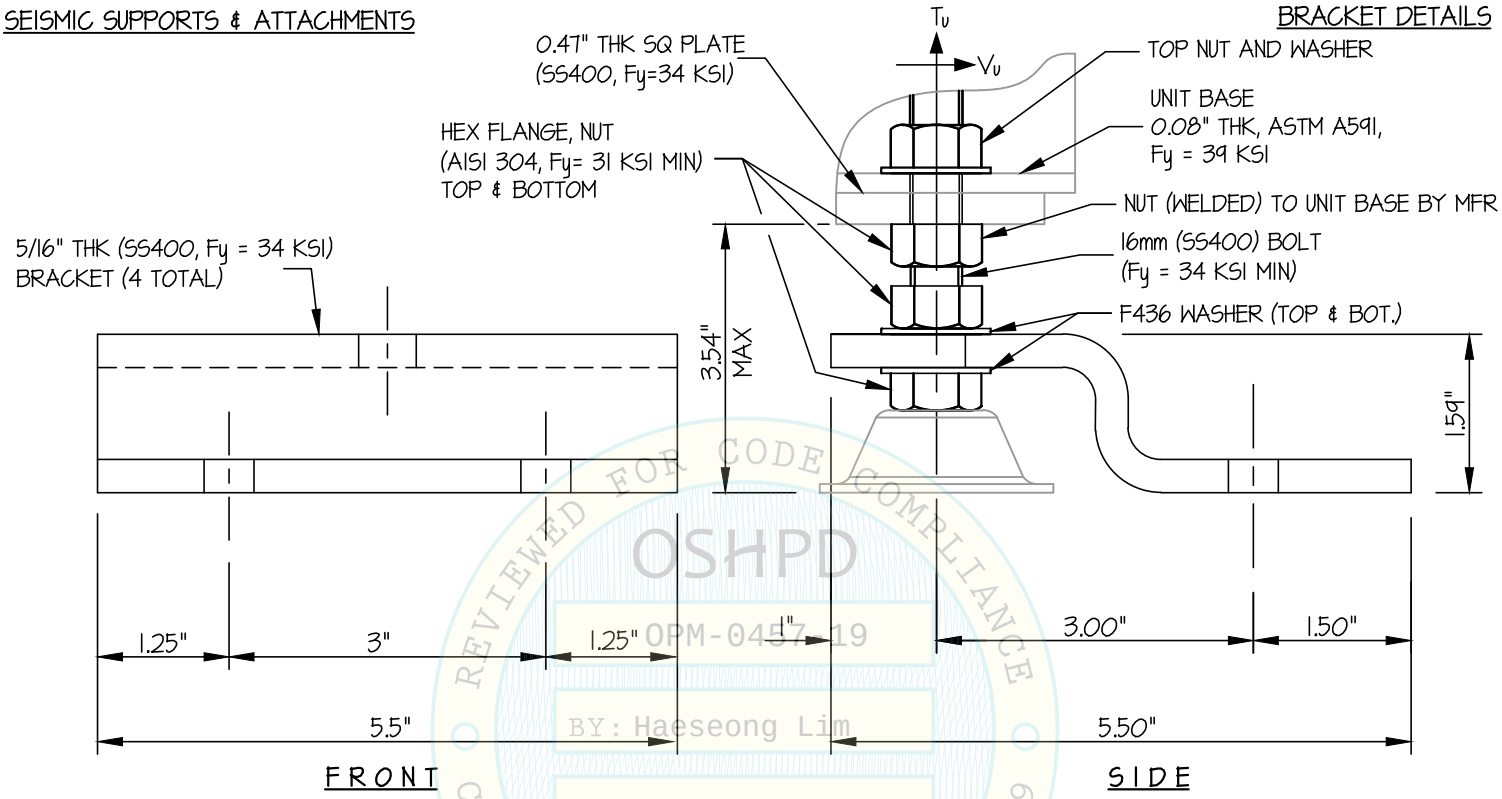
SYSMEX

XN-9100 SERIES

DES. J. ROBERSON
JOB NO. 11-1706
DATE 7/15/20

SHEET 37 OF 37 SHEETS

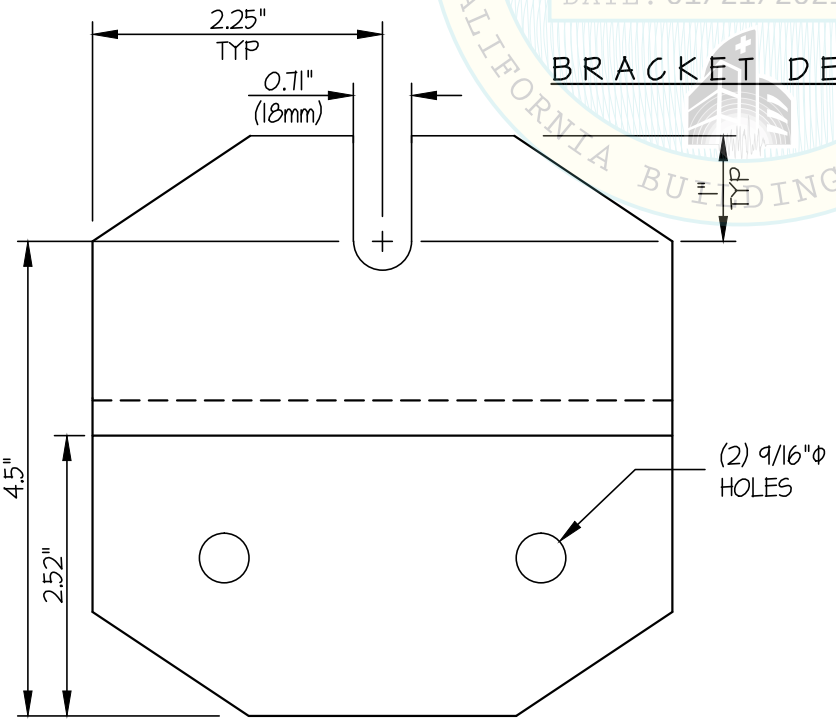
SEISMIC SUPPORTS & ATTACHMENTS



BRACKET DETAILS

NOTE: TO BE PROVIDED BY SYSMEX FOR XN-9100 (TS-10) MODEL ONLY

BRACKET DETAIL C



PLAN AT BRACKET