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

OFFICE USE ONLY

APPLICATION #: OPM-0741

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal/Update

Manufacturer Information

Manufacturer: ABG Systems

Manufacturer's Technical Representative: Jonas Schreiner

Mailing Address: 145 Rue Barr, Montreal, QC H4T1W6

Telephone: (514) 980-6127 Email: jonas.schreiner@abgsys.com

Product Information

Product Name: White Basket Gravity Compact and White Box

Product Type: Linen and Uniform Dispensers and Collectors

Product Model Number: White Basket Gravity Compact and White Box

General Description: Linen and Uniform Dispensers and Collectors

Applicant Information

Applicant Company Name: Structural Integrity Associates, Inc. / TRU Compliance

Contact Person: John Svet

Mailing Address: 7245 S. Havana St, Suite 400, Centennial, CO 80112

Telephone: (858) 430-2057 Email: jsvet@structint.com

Title: Director, TRU Compliance

Registered Design Professonal Preparing Engineering Recommendations

Company Name: STRUCTURAL INTEGRITY ASSOCIATES, INC.

Name: LACHEZAR HANDZHIYSKI California License Number: S6515

Mailing Address: 5215 Hellyer Avenue, Suite 210, San Jose, CA 95138

Telephone: (669) 437-0200 Email: Lhandzhiyski@StructInt.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, 2022 (CBSC 2022) 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 2022 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: 6/25/2025

Name: William Staehlin Title: Senior Structural Engineer

Condition of Approval (if applicable):

OPM-0741
ABG SYSTEMS
WHITE BASKET COMPACT AND WHITE BOX

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

PROJECT # :	2300719	DATE:	3/14/2025
DRAWN :	JT	SHEET:	01 of 19
CHECKED :	JS		
REVIEWED :	LH		
SCALE:	NTS		OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKI
6515
STRUCTURAL
STATE OF CALIFORNIA

GENERAL NOTES:

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2022 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2022 CBC.
2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.
3. THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE WHERE S_{DS} IS NOT GREATER THAN 2.0 (z/h≤1) AND 2.5 (z/h=0). SEE DETAIL 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} = 2.5, a_P = 1, I_P = 1.5, R_P = 1.5, z/h = 0. SEE FOLLOWING SHEETS FOR Ω_o (WHITE BASKET COMPACT AND WHITE BOX).
   WHERE S_{DS} = 2.0, a_P = 1, I_P = 1.5, R_P = 1.5, z/h ≤ 1.0. SEE FOLLOWING SHEETS FOR Ω_o (WHITE BASKET COMPACT AND WHITE BOX).
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≤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 2022 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 RESULTS 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.
   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 6h_{ef} FROM THIS UNIT'S ANCHORS.
10. POST-INSTALLED ANCHORS
   A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT, LATEST EDITION.

Anchor Diameter	Concrete Type	Min. f'c (psi)	Anchor Type	ICC Report No.	Effective Embed. Depth (in.)	Min. Conc. Thickness (in.)	Min. Conc. Edge Dist. (in.)	Sheet
1/2"	Sand Light Weight	3000	ASTM F1554 GR. 36 Threaded Rod	N/A	Thru-Bolt	N/A	N/A	07,14,15
1/2"	Normal Weight	3000	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	3.25	5.5	5	04,12,13
1/2"	Normal Weight	3000	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	2	5.5	5	05
1/2"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	2	3.25	7.5	08
3/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	1.5	3.25	7.5	07,14,15

   B. INSTALL POST-INSTALLED ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS WITH PERIODIC SPECIAL INSPECTION AS REQUIRED BY CBC 2022 TABLE 1705A.3. REINFORCING STEEL DOWELS, THREADED RODS, AND ANCHORS SHALL BE FREE OF DUST, GREASE, RUST AND OTHER MATERIALS THAT WILL IMPAIR BOND WITH CONCRETE.
   C. USE ONLY NON-REBAR CUTTING DRILL BITS MEETING THE REQUIREMENTS OF ANSI B212.15-1994 (R2000) TO DRILL HOLES IN CONCRETE AND CONCRETE MASONRY UNITS. EXISTING REINFORCING STEEL AND PRESTRESSING TENDONS SHALL BE POSITIVELY LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. DO NOT CUT OR DAMAGE EXISTING REINFORCING STEEL AND PRESTRESSING TENDONS UNLESS APPROVED BY THE ENGINEER OF RECORD.
   D. WHERE EXISTING CONCRETE IS DAMAGED AND/OR DRILLED HOLES ABANDONED, THE DAMAGED CONCRETE OR ABANDONED HOLES SHALL BE REPAIRED OR FILLED WITH NO-SHRINK GROUT. BRING EACH CONDITION TO THE ATTENTION OF THE STRUCTURAL ENGINEER OF RECORD PRIOR TO IMPLEMENTING REPAIRS.
   E. BRING TO THE ATTENTION OF THE STRUCTURAL ENGINEER OF RECORD ANY POST-INSTALLED ANCHOR LOCATION THAT CANNOT COMPLY WITH THE PARAMETERS STATED HEREIN AND INDICATED IN THIS OPM.
   F. DO NOT DRILL HOLES WITHIN 4 INCHES OF EXISTING ELECTRICAL OUTLETS THAT ARE EMBEDDED IN SUBSTRATE.
   G. ADHESIVE ANCHORS MUST BE INSTALLED IN CONCRETE AGED A MINIMUM OF 21 DAYS (ACI 318-19 17.1.2).
   H. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.
   I. WHERE NEOPRENE WASHERS ARE REQUIRED IN FINAL INSTALLATION THE ANCHORS SHALL FIRST BE INSTALLED AND TESTED USING METAL WASHERS AND THE NEOPRENE WASHERS SHALL BE INSTALLED AFTER TESTING.

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By Structural Integrity Associates, Inc.
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PHONE 1-877-4SI-POWER

GENERAL NOTES

PROJECT # : 2300719 DATE: 3/14/2025

DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS

SHEET: 02 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER LAZAR V. HANDZHIYSKI C 76515 STRUCTURAL STATE OF CALIFORNIA

11. BOLTS THROUGH CONCRETE ON METAL DECK
    A. INSTALL THROUGH-BOLT ANCHORS WITH PERIODIC SPECIAL INSPECTION AS REQUIRED BY CBC 2022 TABLE 1705A.3.
    B. USE ONLY NON-REBAR CUTTING DRILL BITS MEETING THE REQUIREMENTS OF ANSI B212.15-1994 (R2000) TO DRILL HOLES IN CONCRETE AND CONCRETE MASONRY UNITS. EXISTING REINFORCING STEEL AND PRESTRESSING TENDONS SHALL BE POSITIVELY LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. DO NOT CUT OR DAMAGE EXISTING REINFORCING STEEL AND PRESTRESSING TENDONS UNLESS APPROVED BY THE ENGINEER OF RECORD.
    C. WHERE EXISTING CONCRETE IS DAMAGED AND/OR DRILLED HOLES ABANDONED, THE DAMAGED CONCRETE OR ABANDONED HOLES SHALL BE REPAIRED OR FILLED WITH NO-SHRINK GROUT. BRING EACH CONDITION TO THE ATTENTION OF THE STRUCTURAL ENGINEER OF RECORD PRIOR TO IMPLEMENTING REPAIRS.
    D. BRING TO THE ATTENTION OF THE STRUCTURAL ENGINEER OF RECORD ANY THROUGH-BOLT ANCHOR LOCATION THAT CANNOT COMPLY WITH THE PARAMETERS STATED HEREIN AND INDICATED IN THIS OPM.
    E. DO NOT DRILL HOLE WITHIN 4 INCHES OF EXISTING ELECTRICAL OUTLETS THAT ARE EMBEDDED IN SUBSTRATE.
    F. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.
    G. THROUGH-BOLTS BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER THE SNUG-TIGHT CONDITION IS ACHIEVED, UNLESS NOTED OTHERWISE. (THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT)
    H. THROUGH-BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.
    I. 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.
12. TESTING REQUIREMENTS
    A. TEST 50% OF INSTALLED ANCHORS. IF ANY ANCHOR FAILS TESTING, ALL ANCHORS OF THE SAME TYPE WHICH ARE INSTALLED BY THE SAME TRADE AND NOT PREVIOUSLY TESTED SHALL BE TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY.
    B. TEST LOADS SHALL BE THE MANUFACTURER'S RECOMMENDED PROOF LOADS AND INSTALLATION TORQUES AS APPROVED IN ICC-ES REPORTS AND PROVIDED AS FOLLOWS.

Anchor Diameter	Concrete Type	Anchor Type	ICC Report No.	Effective Embed. Depth (in.)	Proof Load (lbf)	Installation/Test Torque (lbf-ft.)
1/2"	Normal Weight	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	3.25	3325	50
1/2"	Normal Weight	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	2	1983	50
1/2"	Sand Light Weight	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	2	1190	50
3/8"	Sand Light Weight	Hilti Kwik Bolt TZ2 (Carbon Steel)	ESR-4266	1.5	1006	30

    C. ANCHORS SHALL BE TESTED BY THE TORQUE WRENCH METHOD USING A CALIBRATED TORQUE WRENCH WITHIN 1/2 TURN OF NUT.
    D. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE SPECIAL INSPECTOR/INSPECTOR OF RECORD.
13. SELF DRILLING SCREWS
    A. SELF-DRILLING SCREWS SHALL BE OF EQUAL OR GREATER STRENGTH TO THOSE SPECIFIED IN ICC-ES REPORT 1976.
    B. IN ORDER FOR SCREWS TO BE CONSIDERED FULLY EFFECTIVE, THE MINIMUM SPACING BETWEEN SCREWS MUST BE 3 TIMES THE NOMINAL SCREW DIAMETER AND THE MINIMUM EDGE DISTANCE MUST BE 1.5 TIMES THE NOMINAL SCREW DIAMETER.
    C. INSTALLATION OF SELF-DRILLING FASTENERS MUST BE IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND THE ICC-ES REPORT. THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS MUST BE AVAILABLE AT THE JOBSITE AT ALL TIMES DURING INSTALLATION.
14. WHITE BOX
    A. FOR WHITE BOX CONFIGURATIONS WITH NUMBER OF COLUMN SEGMENTS BETWEEN 1 AND 6, THE SAME ATTACHMENT METHODS SHOULD BE USED WHILE SCALING THE NUMBER OF SCREWS, BRACKETS, AND ANCHORS AS NEEDED TO MATCH THE NUMBER OF COLUMN SEGMENT UNITS.
15. LIVE LOADS ARE NOT CONSIDERED. MAXIMUM PRODUCT WEIGHT IS CONSIDERED AS DEAD LOAD.
16. ALL UNITS SHALL HAVE A LABEL STATING THE MAXIMUM WEIGHT OF CONTENTS. THE LABEL SHALL BE INSTALLED PER CBC 2022 1703A.5.4. THE LABELS SHALL BE PROVIDED BY THE MANUFACTURER.
    A. THE WHITE BASKET UNIT SHALL STATE "THE MAXIMUM WEIGHT OF CONTENTS SHALL NOT EXCEED 121 LBS."
    B. EACH COLUMN OF THE WHITE BOX, NOT INCLUDING THE CONTROL TOTEM, SHALL STATE "THE MAXIMUM WEIGHT OF CONTENTS SHALL NOT EXCEED 119 LBS."

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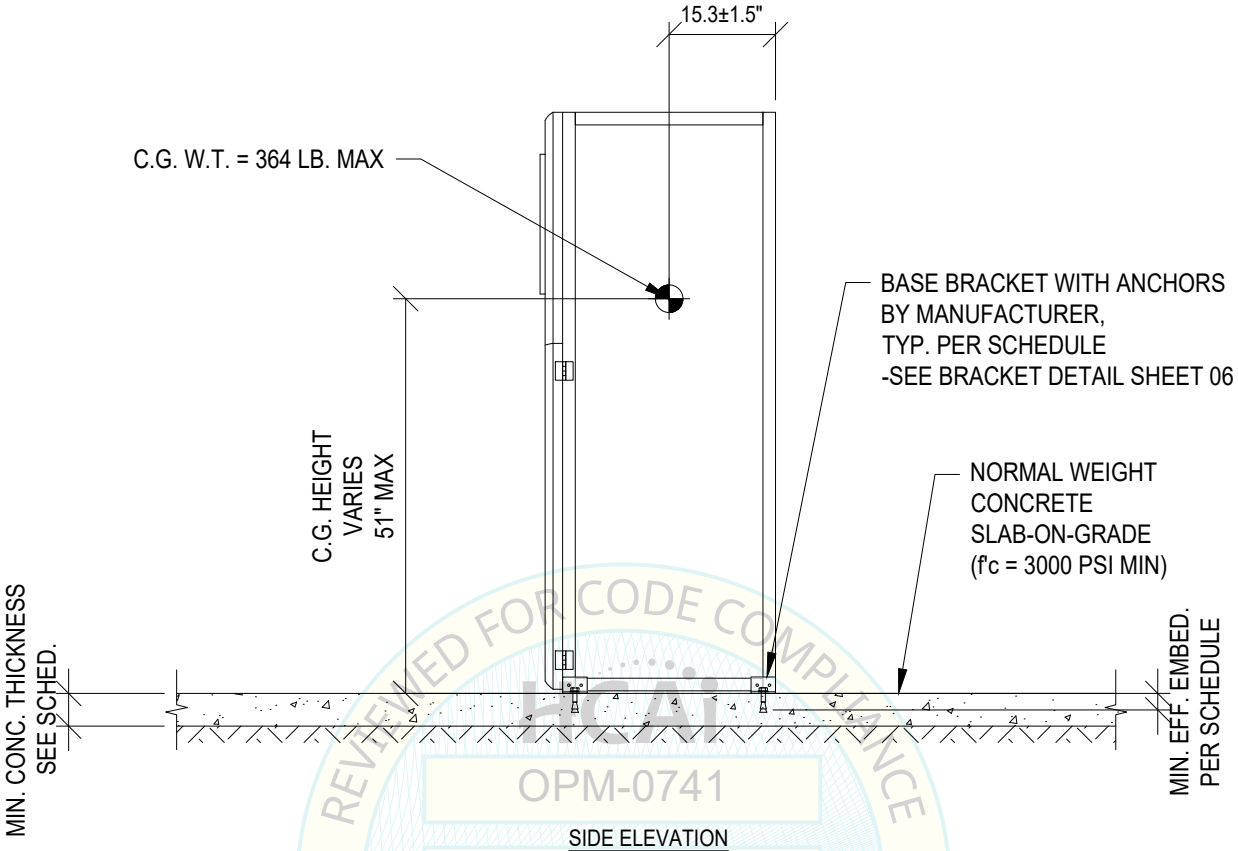
GENERAL NOTES

PROJECT # : 2300719 DATE: 3/14/2025
DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS
SHEET: 03 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER LACHEZAR V. HANDZHIYSKI S 6515 STRUCTURAL STATE OF CALIFORNIA



SIDE ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	NO. OF ANCHORS	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	BASE	KWIK BOLT TZ2 - CS	1/2	3.25	4266	4	5.5	5	2298*	492*	N/A
2.5	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	8	N/A	N/A	123**	580**	N/A

* VALUES INCLUDE Ω_o

**MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h = 0)
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. LOADS LISTED ARE THE MAXIMUM FOR AN INDIVIDUAL ANCHOR.
4. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING TO PROVIDE STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
5. SEE GENERAL NOTES: SHEET 2 AND 3.

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
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PHONE 1-877-4SI-POWER

ABG Systems White Basket Compact
(Slab-on-Grade, Freestanding Unit)

PROJECT # : 2300719 DATE: 3/14/2025

DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS

SHEET: 04 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKI
C 76515
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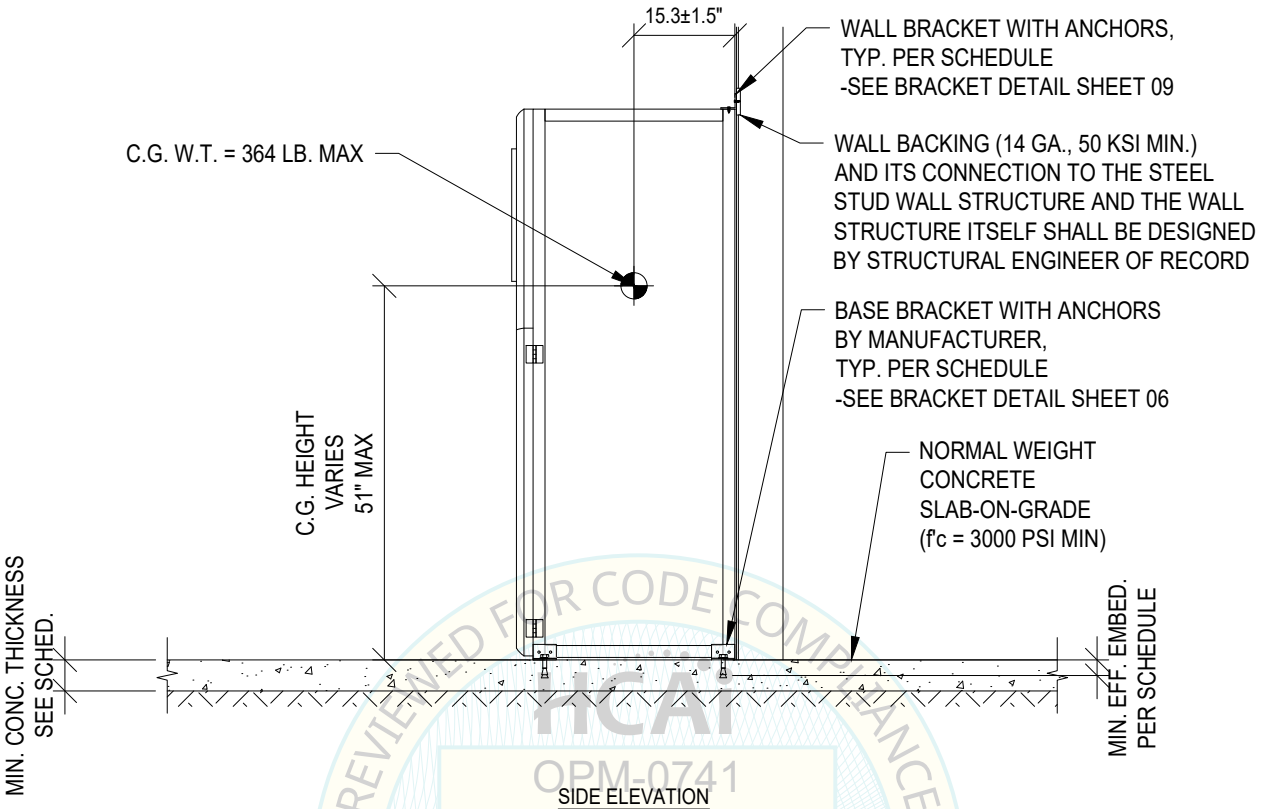

SIDE ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	NO. OF ANCHORS	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	BASE	KWIK BOLT TZ2 - CS	1/2	2	4266	4	5.5	5	62*	430*	N/A
2.5	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	8	N/A	N/A	95**	89**	N/A
2.5	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	4	N/A	N/A	289**	289**	N/A

* VALUES INCLUDE Ω_o
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3. LOADS LISTED ARE THE MAXIMUM FOR AN INDIVIDUAL ANCHOR.
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5. SEE GENERAL NOTES: SHEET 2 AND 3.

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
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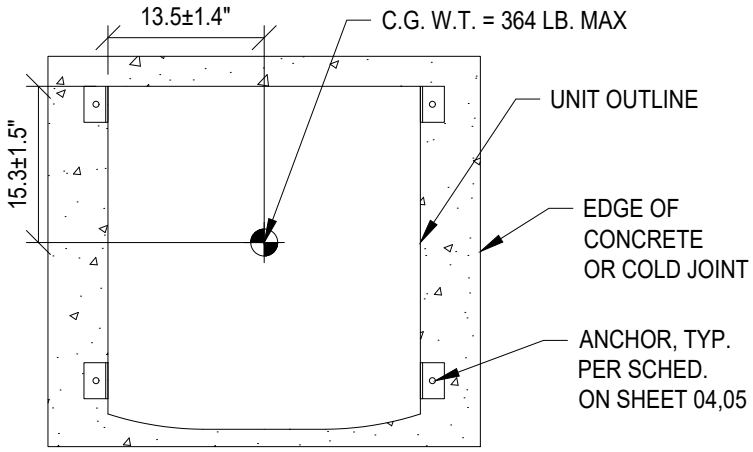
ABG Systems White Basket Compact (Slab-on-Grade, Against Wall)

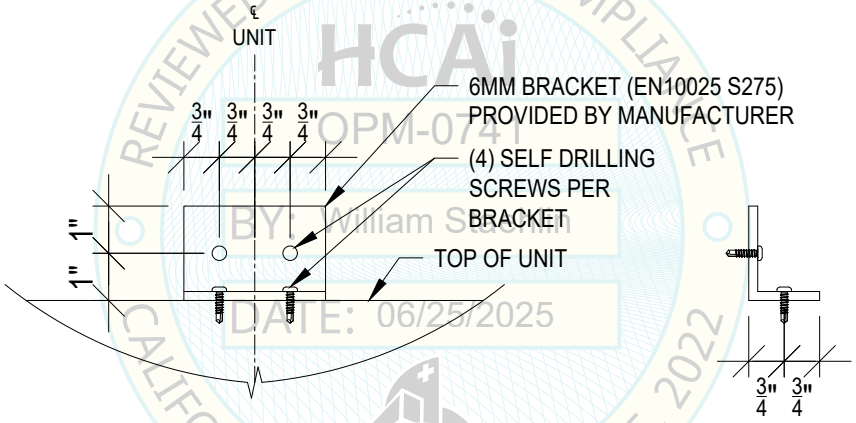
PROJECT # : 2300719 DATE: 3/14/2025
DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS
SHEET: 05 of 19

OPM-0741

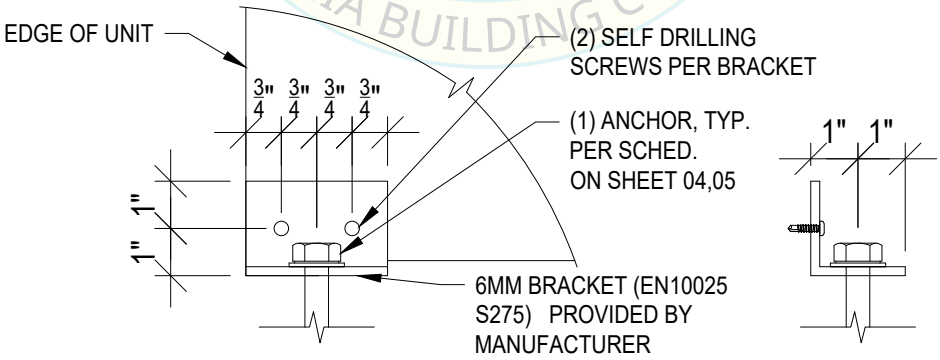
LICENSED PROFESSIONAL ENGINEER ★ LACHEZAR V. HANDZHIYSKY ★ S 6515 ★ STRUCTURAL ★ STATE OF CALIFORNIA



BASE ANCHORAGE LAYOUT



WALL BRACKET LAYOUT



BASE BRACKET LAYOUT

TRU COMPLIANCE
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5215 HELLYER AVENUE,
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SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Basket Compact
Anchorage Layout and Bracket Details (Slab-on-Grade)

PROJECT # :	2300719	DATE:	3/14/2025
DRAWN :	JT	SHEET:	06 of 19
CHECKED :	JS		
REVIEWED :	LH		
SCALE:	NTS		

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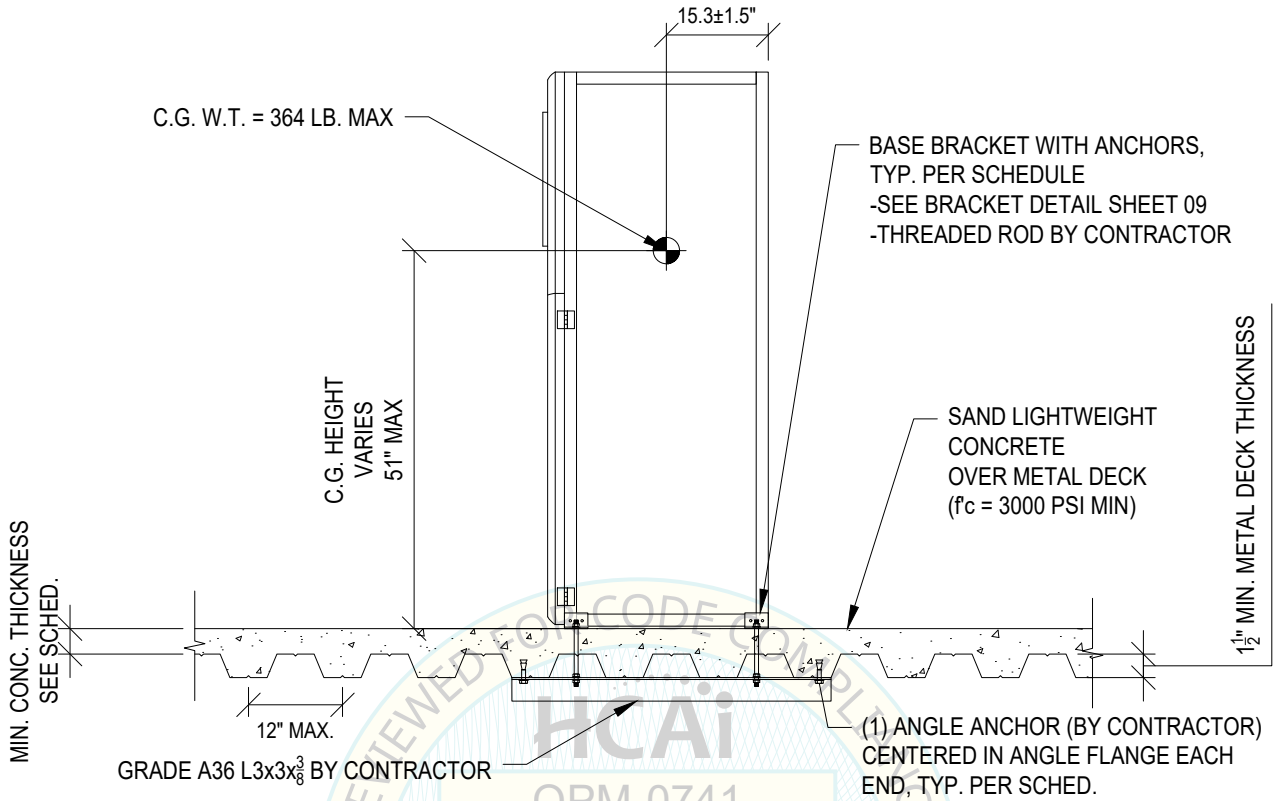

SIDE ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	NO. OF ANCHORS	MIN. CONC. THICKNESS (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.0	BASE	ASTM F1554 GR. 36 THREADED ROD	1/2	THRU-BOLT	N/A	4	3.25	2298*	492*	N/A
2.0	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	8	N/A	123**	580**	N/A
2.0	ANGLE	KWIK BOLT TZ2 - CS	3/8	1.5	4266	4	3.25	N/A	N/A	N/A

* VALUES INCLUDE Ω_o

**MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h ≤ 1.0)
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. LOADS LISTED ARE THE MAXIMUM FOR AN INDIVIDUAL ANCHOR.
4. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING TO PROVIDE STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
5. SEE GENERAL NOTES: SHEET 2 AND 3.

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ABG Systems White Basket Compact
(Concrete over Metal Deck, Freestanding Unit)

PROJECT # : 2300719 DATE: 3/14/2025

DRAWN : JT
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SHEET: 07 of 19

OPM-0741

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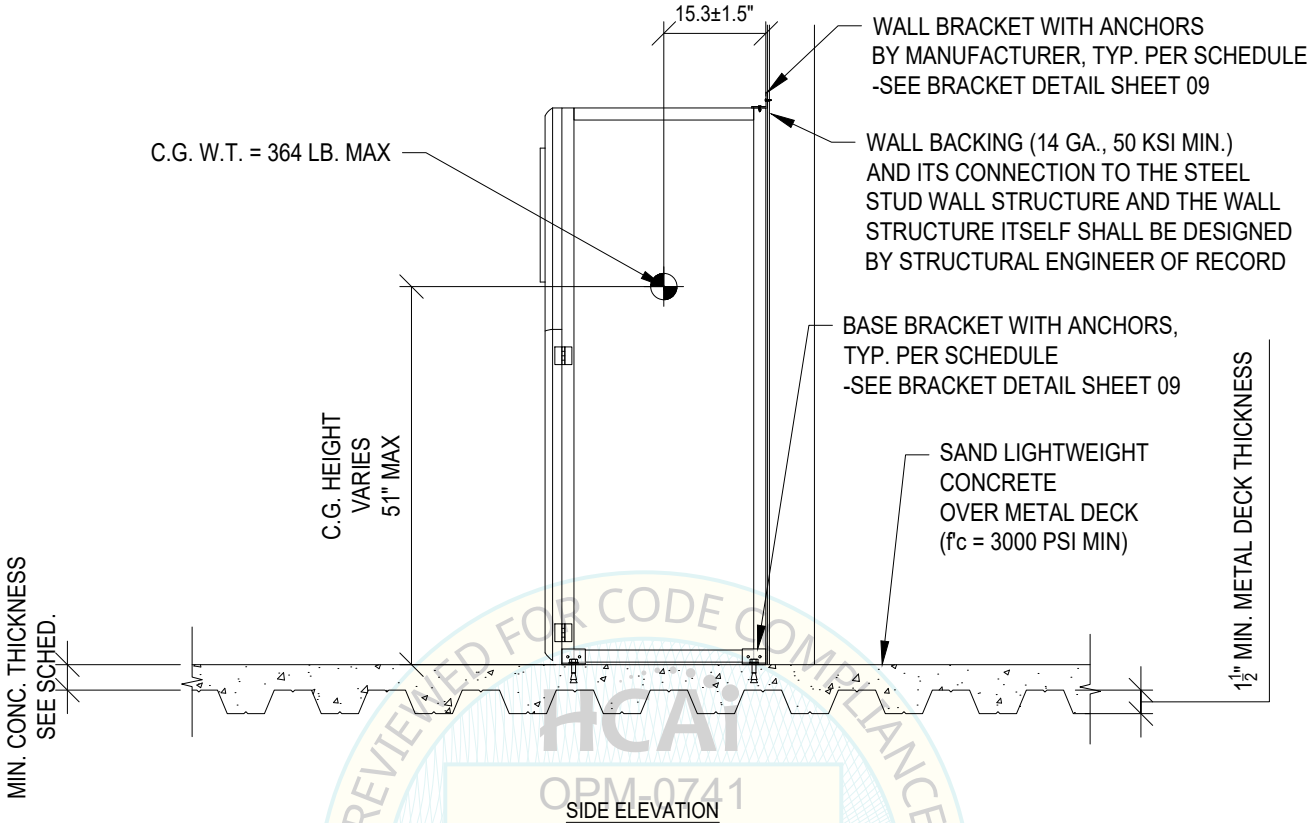

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MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	NO. OF ANCHORS	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	BASE	KWIK BOLT TZ2 - CS	1/2	2	4266	4	3.25	7.5	62*	430*	N/A
2.5	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	8	N/A	N/A	95**	89**	N/A
2.5	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	4	N/A	N/A	289**	289**	N/A

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1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h ≤ 1.0)
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. LOADS LISTED ARE THE MAXIMUM FOR AN INDIVIDUAL ANCHOR.
4. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING TO PROVIDE STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
5. SEE GENERAL NOTES: SHEET 2 AND 3.

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Basket Compact
(Concrete over Metal Deck, Against Wall)

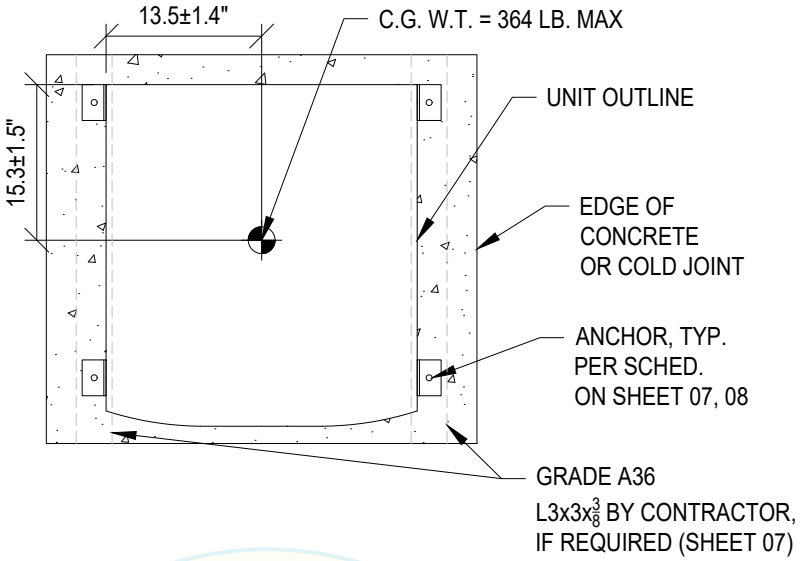
PROJECT # : 2300719 DATE: 3/14/2025

DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS

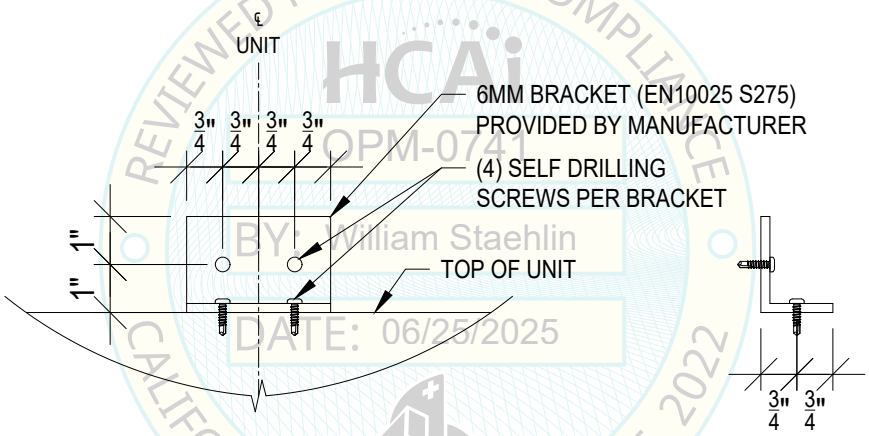
SHEET: 08 of 19

OPM-0741

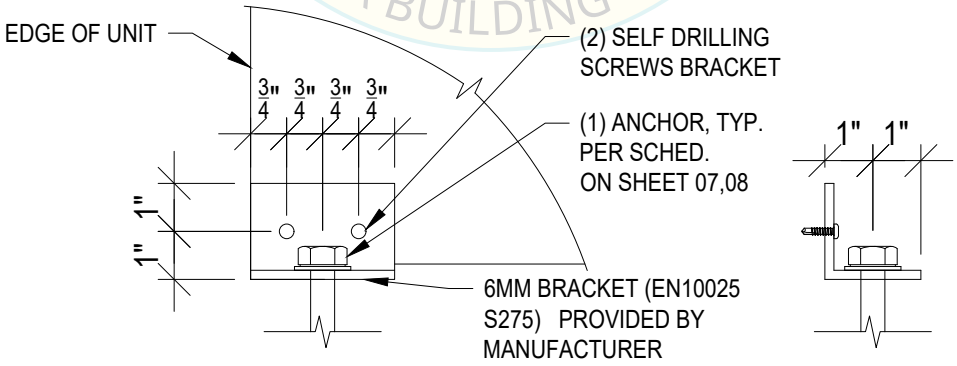
LICENSED PROFESSIONAL ENGINEER
LAZAR V. HANDZHIYSKI
6515
STRUCTURAL
STATE OF CALIFORNIA



BASE ANCHORAGE LAYOUT



WALL BRACKET LAYOUT



BASE BRACKET LAYOUT

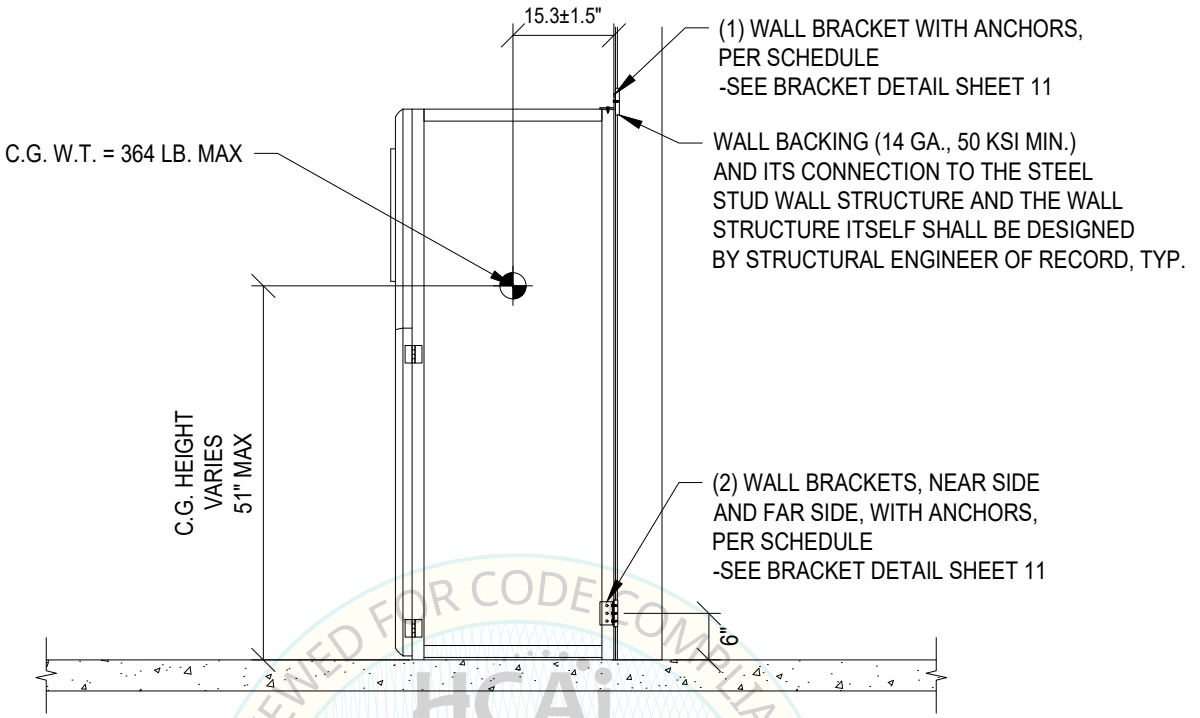
TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Basket Compact (Concrete over Metal Deck)
Anchorage Layout and Bracket Details

PROJECT # :	2300719	DATE:	3/14/2025
DRAWN :	JT	SHEET:	09 of 19
CHECKED :	JS		
REVIEWED :	LH		
SCALE:	NTS		

OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKY
S 6515
STRUCTURAL
STATE OF CALIFORNIA



SIDE ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	ANCHOR DIA. (IN.)	ANCHOR EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	NO. OF ANCHORS	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	12	N/A	N/A	252**	309**	N/A
2.5	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	6	N/A	N/A	252**	309**	N/A

* VALUES INCLUDE Ω_o
**MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:
1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h = 0)
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. LOADS LISTED ARE THE MAXIMUM FOR AN INDIVIDUAL ANCHOR.
4. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING TO PROVIDE STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
5. SEE GENERAL NOTES: SHEET 2 AND 3.

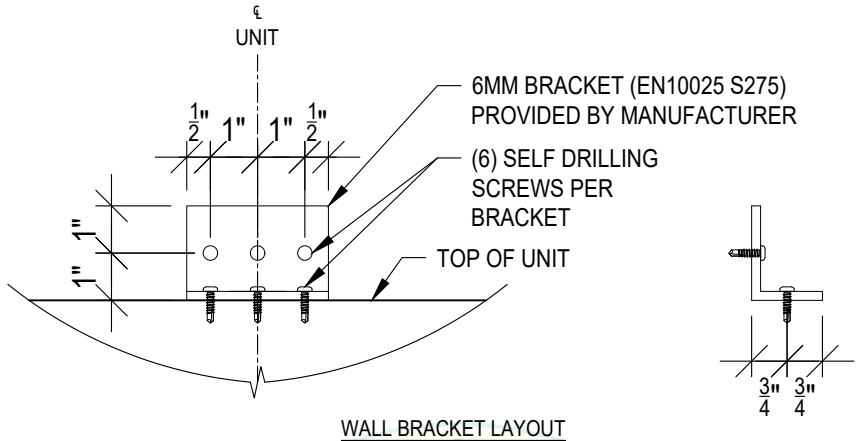
TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Basket Compact (Wall Only)

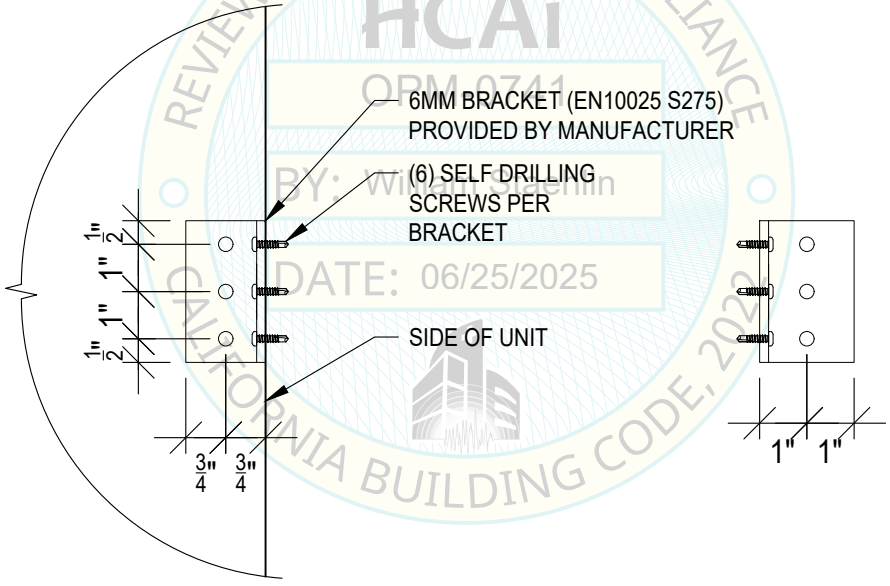
PROJECT # : 2300719 DATE: 3/14/2025
DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS
SHEET: 10 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKI
S 6515
STRUCTURAL
STATE OF CALIFORNIA



WALL BRACKET LAYOUT
TOP OF UNIT



WALL BRACKET LAYOUT
BASE OF UNIT

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Basket Compact
Anchorage Layout and Bracket Details (V

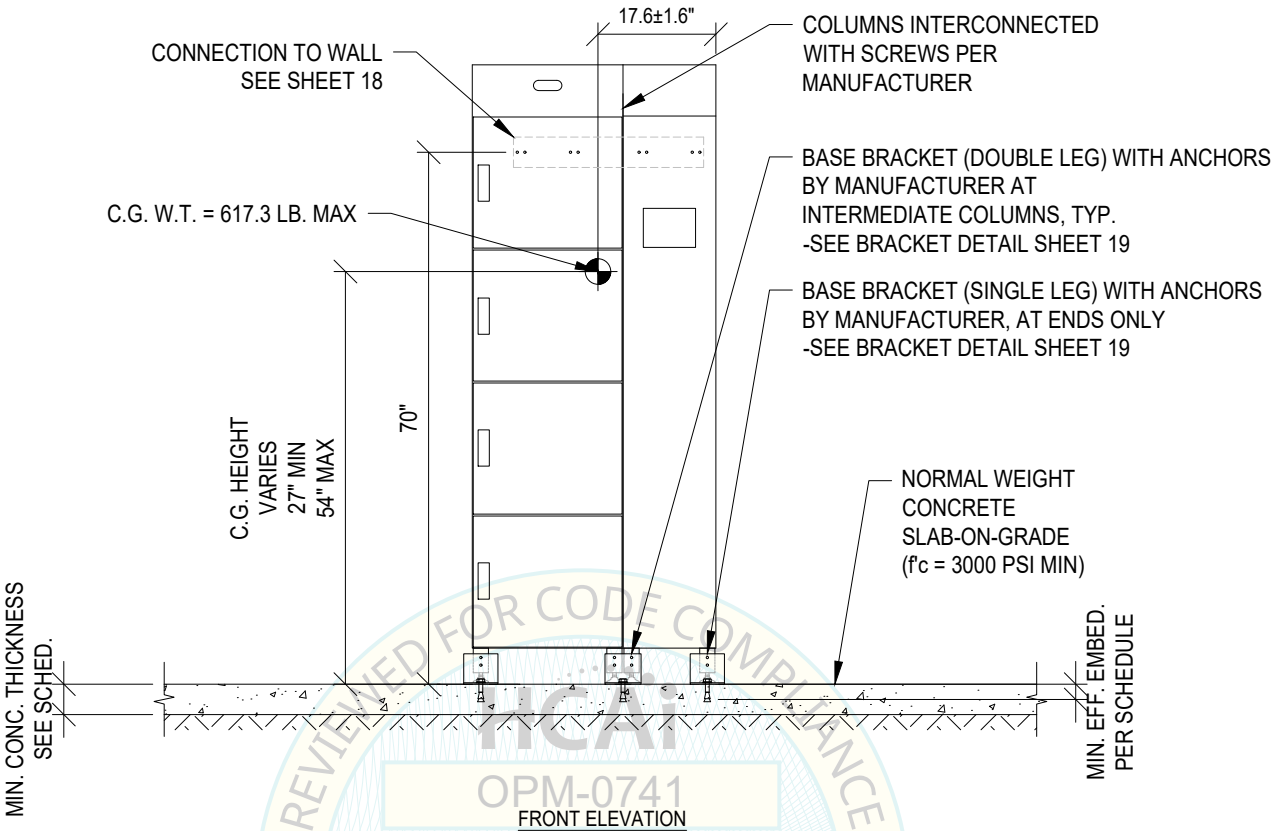
PROJECT # : 2300719 DATE: 3/14/2025

DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS

SHEET: 11 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER
KACHEZAR V. HANDZHIYSKI
S 6515
STRUCTURAL
STATE OF CALIFORNIA



FRONT ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	BASE	KWIK BOLT TZ2 - CS	1/2	3.25	4266	5.5	5	0*	930*	N/A
2.5	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	N/A	232**	151**	N/A
2.5	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	N/A	247**	144**	N/A

* VALUES INCLUDE Ω_o

**MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h = 0)
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. LOADS LISTED ARE THE MAXIMUM FOR AN INDIVIDUAL ANCHOR.
4. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING TO PROVIDE STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
5. SEE GENERAL NOTES: SHEET 2 AND 3.

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Box Single Column (Slab-On-Grade)

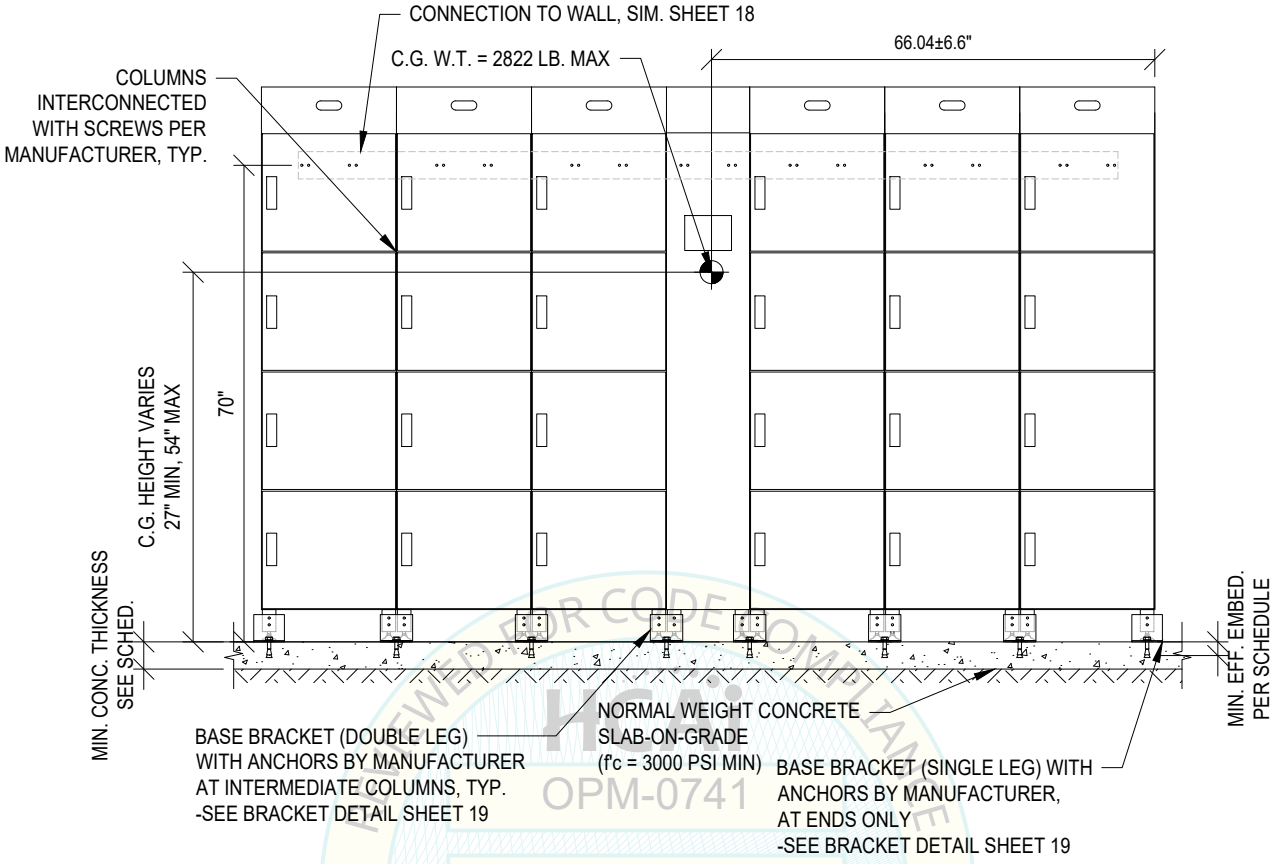
PROJECT # : 2300719 DATE: 3/14/2025

DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS

SHEET: 12 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKI
S 6515
STRUCTURAL
STATE OF CALIFORNIA



FRONT ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	BASE	KWIK BOLT TZ2 - CS	1/2	3.25	4266	5.5	5	0*	1350*	N/A
2.5	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	N/A	335**	259**	N/A
2.5	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	N/A	235**	188**	N/A

* VALUES INCLUDE Ω_o
**MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:
1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h = 0)
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5. SEE GENERAL NOTES: SHEET 2 AND 3.

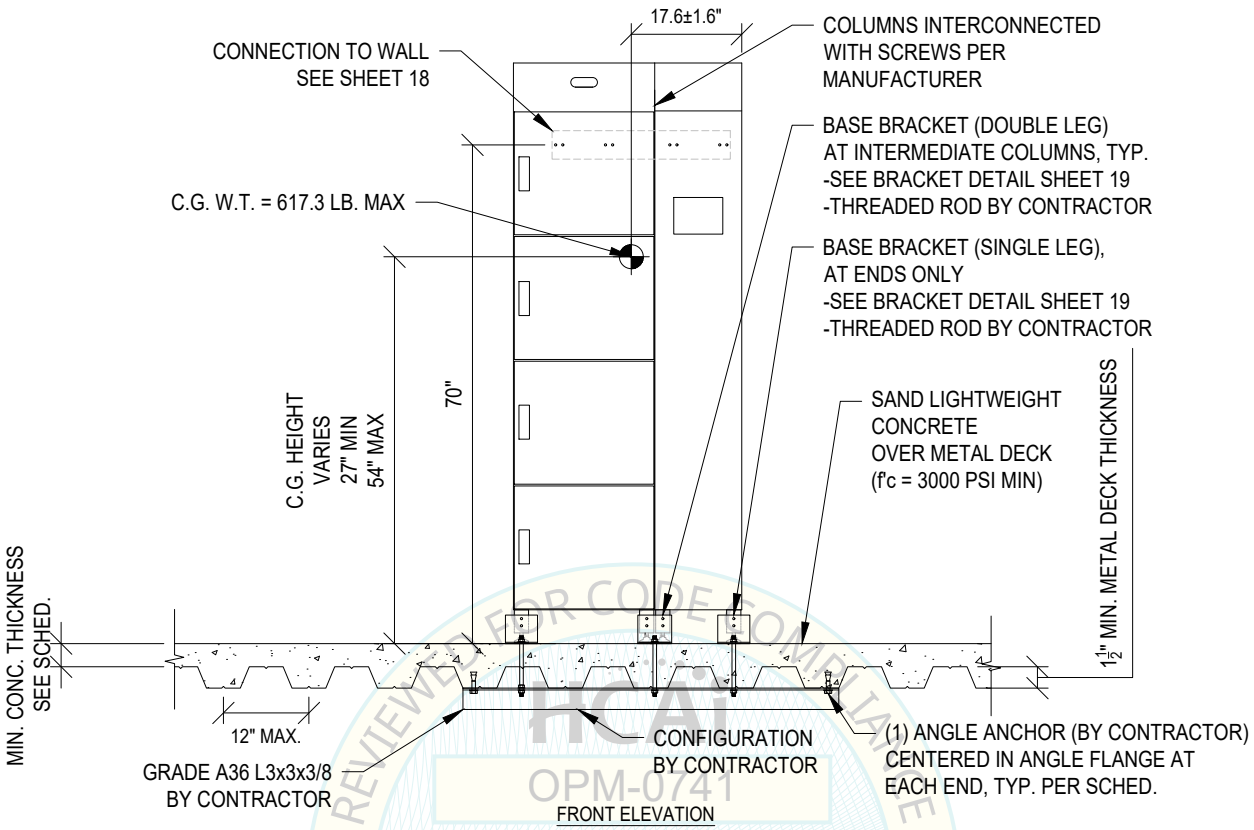
TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Box Six Columns (Slab-On-Grade)

PROJECT # : 2300719 DATE: 3/14/2025
DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS
SHEET: 13 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER LAZAR V. HANDZHIYSKI 26515 STRUCTURAL STATE OF CALIFORNIA



FRONT ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	MIN. CONC. THICKNESS (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.0	BASE	ASTM F1554 GR. 36 THREADED ROD	1/2	THRU-BOLT	N/A	3.25	0*	930*	N/A
2.0	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	232**	151**	N/A
2.0	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	247**	144**	N/A
2.0	ANGLE	KWIK BOLT TZ2 - CS	3/8	1.5	4266	3.25	N/A	N/A	N/A

* VALUES INCLUDE Ω_o

** MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h ≤ 1.0)
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5. SEE GENERAL NOTES: SHEET 2 AND 3.

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Box Single Column
(Concrete Over Metal Deck)

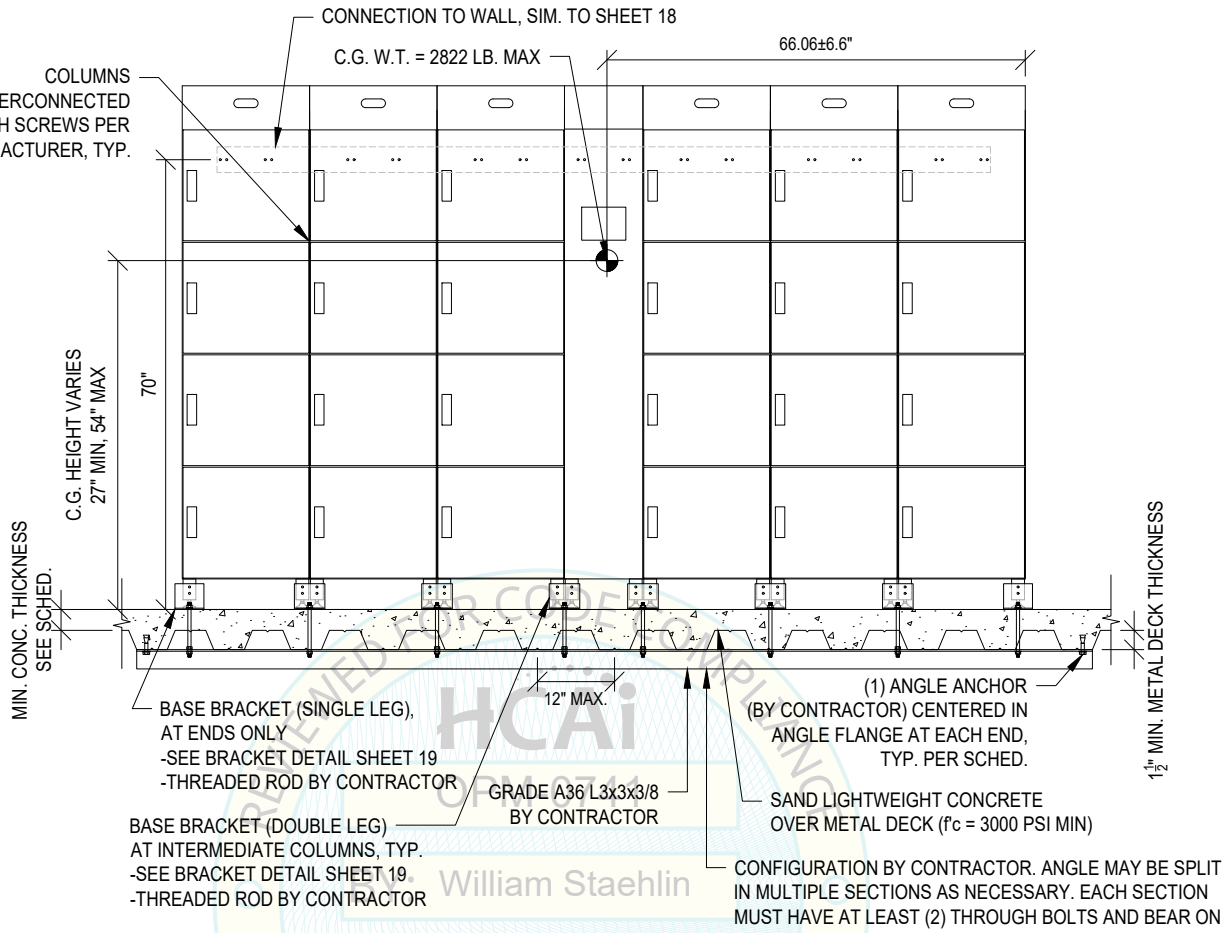
PROJECT # : 2300719 DATE: 3/14/2025

DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS

SHEET: 14 of 19

OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKI
S 6515
STRUCTURAL
STATE OF CALIFORNIA



FRONT ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	MIN. CONC. THICKNESS (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.0	BASE	ASTM F1554 GR. 36 THREADED ROD	1/2	THRU-BOLT	N/A	3.25	0*	1350*	N/A
2.0	BASE	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	335**	259**	N/A
2.0	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	235**	188**	N/A
2.0	ANGLE	KWIK BOLT TZ2 - CS	3/8	1.5	4266	3.25	N/A	N/A	N/A

* VALUES INCLUDE Ω_o
** MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:
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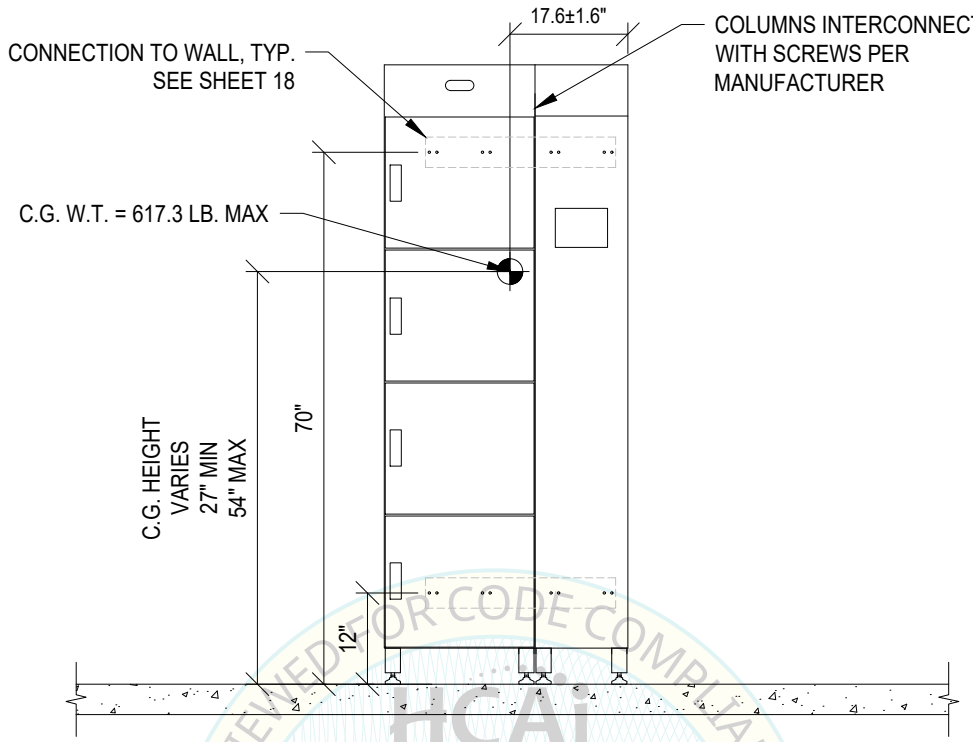
5. SEE GENERAL NOTES: SHEET 2 AND 3.

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Box Six Columns (Concrete Over Metal Deck)

PROJECT # : 2300719 DATE: 3/14/2025
DRAWN : JT
CHECKED : JS
REVIEWED : LH
SCALE: NTS
SHEET: 15 of 19

OPM-0741



FRONT ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	DIA. (IN.)	EFFECTIVE EMBED. DEPTH (IN.)	ESR NO.	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	N/A	135**	208**	N/A

* VALUES INCLUDE Ω_o
**MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:
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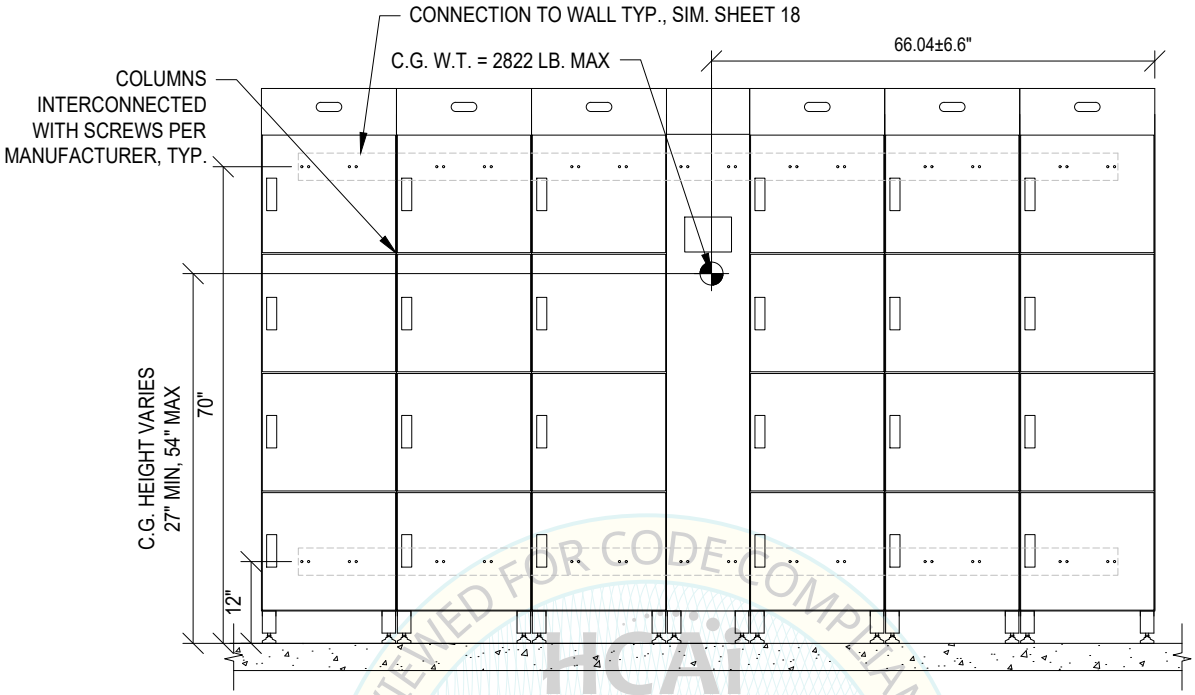
5. SEE GENERAL NOTES: SHEET 2 AND 3.



FRONT ELEVATION

MAX S_{DS} (G)	LOCATION	ANCHOR TYPE	ANCHOR DIA. (IN.)	ANCHOR EFFECTIVE EMBED. DEPTH (IN.)	ANCHOR ESR NO.	MIN. CONC. THICKNESS (IN.)	MIN. CONC. EDGE DIST. (IN.)	T_U (LBF)	V_U (LBF)	M_u (LBF-IN)
2.5	WALL	TEKS SELF-DRILLING SCREW	1/4	N/A	1976	N/A	N/A	170**	230**	N/A

* VALUES INCLUDE Ω_o
**MAXIMUM TENSION AND SHEAR ARE NOT CONCURRENT

NOTES:
1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16 CHAPTER 13. STRENGTH DESIGN IS USED. (a_p = 1, I_p = 1.5, R_p = 1.5, Ω_o = 2.0, z/h = 0)
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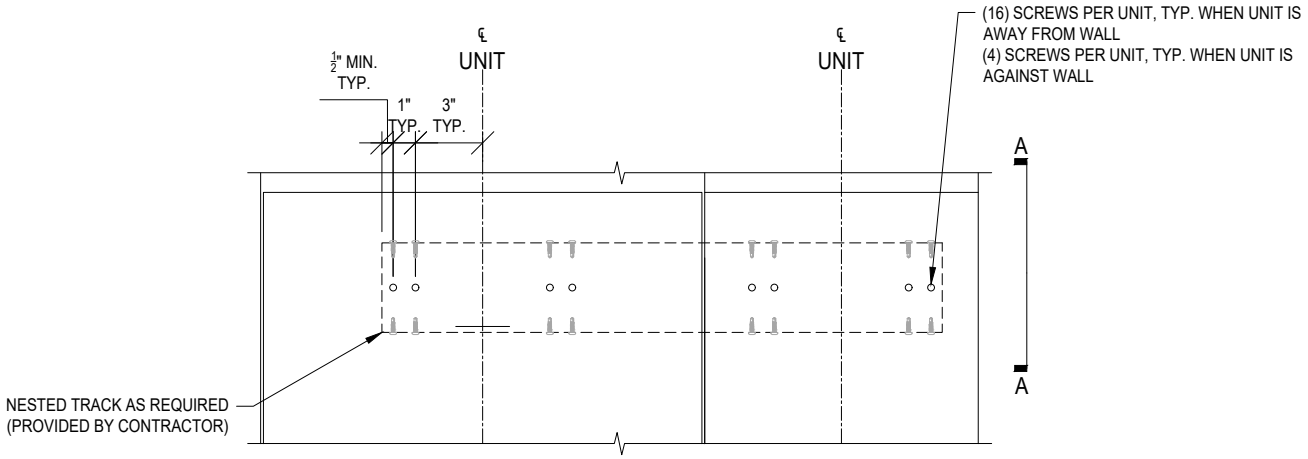
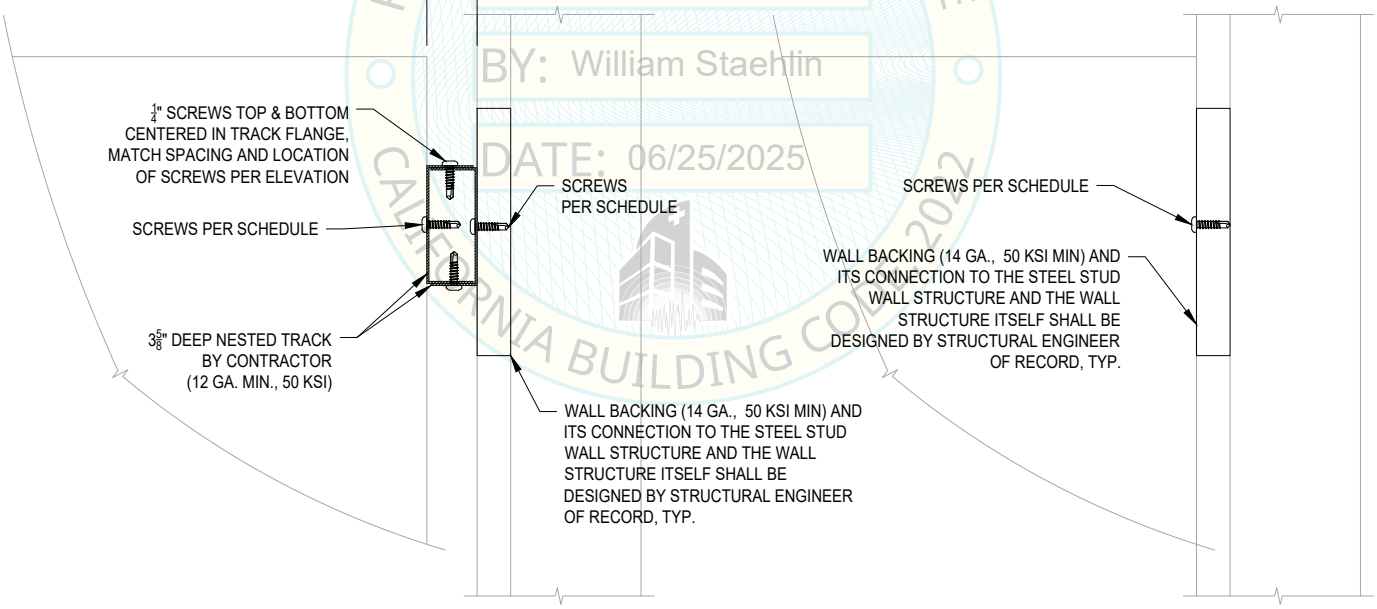
5. SEE GENERAL NOTES: SHEET 2 AND 3.



WALL CONNECTION LAYOUT



SECTION A-A, UNIT AWAY FROM WALL

SECTION A-A, UNIT AGAINST WALL

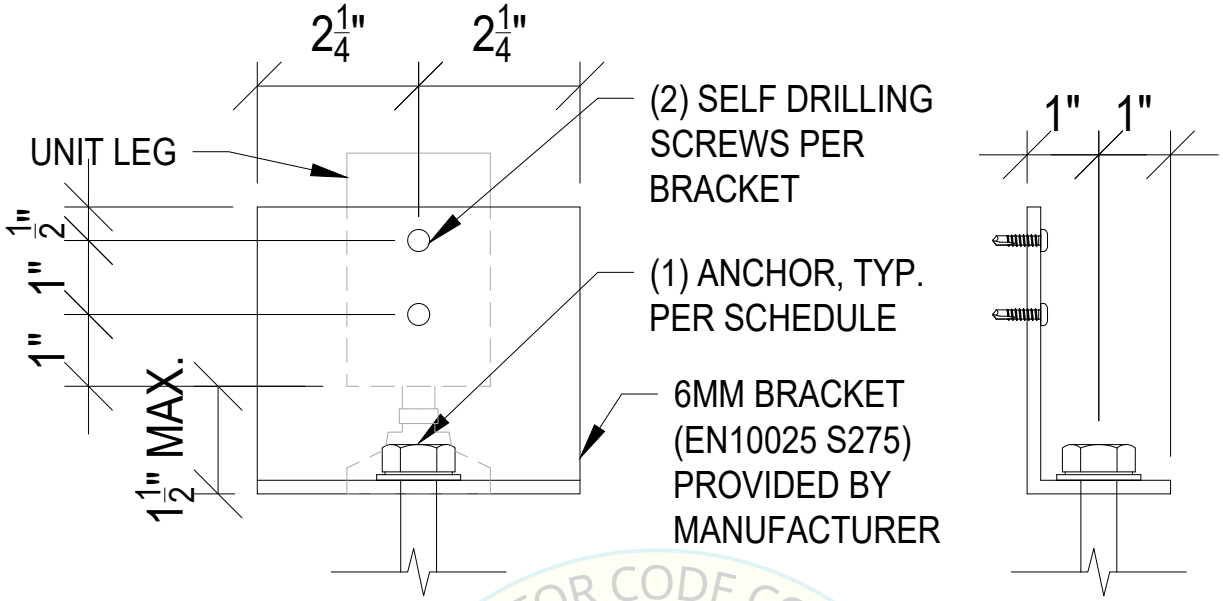
TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Box Wall Connection

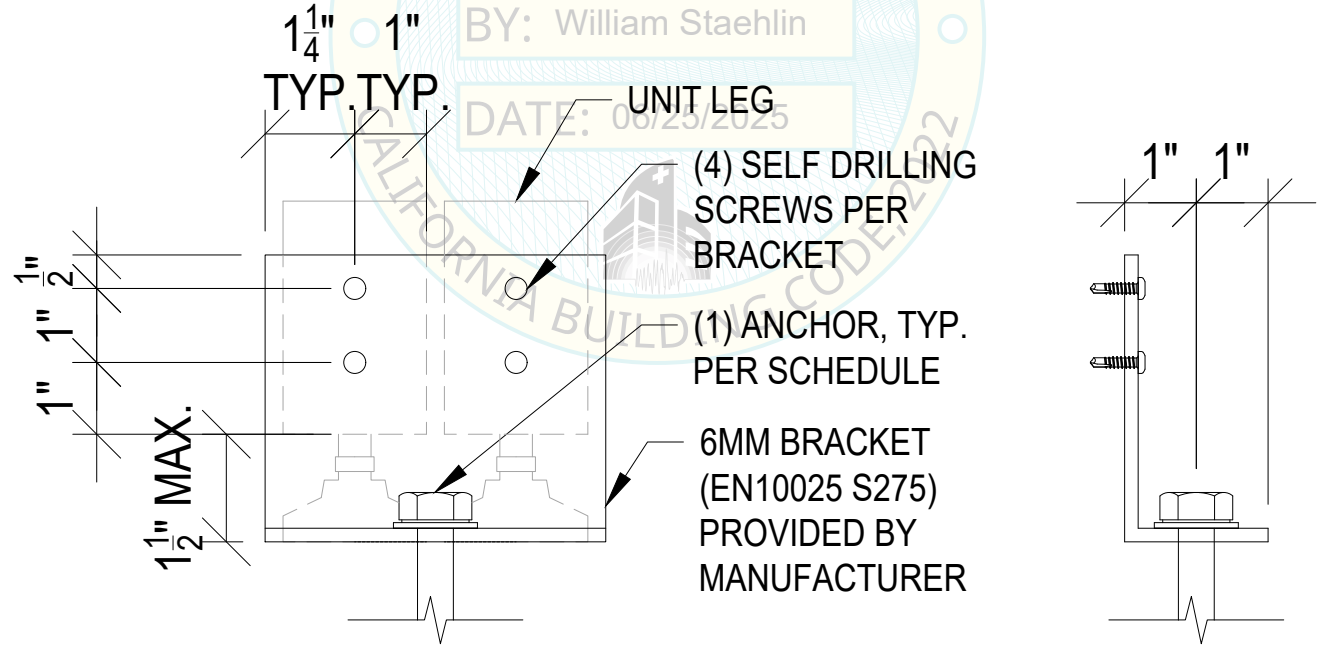
PROJECT # :	2300719	DATE:	3/14/2025
DRAWN :	JT	SHEET:	18 of 19
CHECKED :	JS		
REVIEWED :	LH		
SCALE:	NTS		

OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKY
S 6515
STRUCTURAL
STATE OF CALIFORNIA



BASE BRACKET LAYOUT (SINGLE LEG)



BASE BRACKET LAYOUT (DOUBLE LEG)

TRU COMPLIANCE
By Structural Integrity Associates, Inc.
5215 HELLYER AVENUE,
SUITE 210
SAN JOSE, CALIFORNIA 95138
PHONE 1-877-4SI-POWER

ABG Systems White Box Base Bracket

PROJECT # :	2300719	DATE:	3/14/2025
DRAWN :	JT	SHEET:	19 of 19
CHECKED :	JS		
REVIEWED :	LH		
SCALE:	NTS		

OPM-0741

LICENSED PROFESSIONAL ENGINEER
LACHEZAR V. HANDZHIYSKI
S 6515
STRUCTURAL
STATE OF CALIFORNIA