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

OFFICE USE ONLY

APPLICATION #: OPM-0544

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☒ Renewal/Update

Manufacturer Information

Manufacturer: BRACELOK.com

Manufacturer's Technical Representative: Bryce Hodgson

Mailing Address: 2550 Haas St, Escondido, CA 92025

Telephone: (619) 917-1688 Email: bryce.hodgson@bracelok.com

Product Information

Product Name: Gridlok

Product Type: Suspended Ceiling Brace System

Product Model Number: GRD 10, GRD 10CT, GRD 10P

General Description: Rigid Brace System Designed to be used with suspended ceiling grid systems

Applicant Information

Applicant Company Name: BRACELOK.com

Contact Person: Bryce Hodgson

Mailing Address: 2550 Haas St, Escondido, CA 92025

Telephone: (619) 917-1688 Email: bryce.hodgson@bracelok.com

Title: PLENUM

Registered Design Professonal Preparing Engineering Recommendations

Company Name: DEGENKOLB ENGINEERS

Name: Alvaro Celestino California License Number: S5580

Mailing Address: 225 Broadway Suite 1325, San Diego, CA 92101

Telephone: (213) 309-2044 Email: acelestino@degenkolb.com

HCAI Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP OSP Number:

Certification Method

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

☐ Other(s) (Please Specify):

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

☒ Analysis

☐ Experience Data

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

HCAI Approval

Date: 12/21/2022

Name: Jeffrey Kikumoto Title: Senior Structural Engineer

Condition of Approval (if applicable):

GENERAL NOTES

I. GENERAL

1. THIS HCAI PRE-APPROVAL OF MANUFACTURE'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM MUST BE BASED ON THE CBC 2019.

2. THIS PRE-APPROVAL IS VALID THROUGHOUT THE STATE OF CALIFORNIA AND IS VALID FOR ACOUSTICAL TILE OR LAY IN PANEL CEILING GRIDS INSTALLED AT THE S_{DS} LIMITATIONS AS SHOWN ON SHEET S3.

3. THIS PRE-APPROVAL IS LIMITED TO CEILING ASSEMBLIES LISTED IN TABLE 1 ON SHEET S2; HAVING MAXIMUM DEAD WEIGHT OF 4 PSF, INCLUDING LIGHTING FIXTURES (LUMINERIES) AND MECHANICAL SERVICES, EACH WEIGHING LESS THAN 56 LBS AND ATTACHED TO THE CEILING FRAME SYSTEM. HEAVIER SYSTEMS AND THOSE SUPPORTING LATERAL FORCES FROM PARTITION WALLS ARE OUTSIDE THE SCOPE OF THIS OPM.

4. 45-DEGREE FLY PLATE PIECE ALLOWED TO BE BENT IN FIELD ONCE, A MAXIMUM OF 15 DEGREES IN ANY DIRECTION, TO CORRECT ANGLE. VERTICAL STRUT ALLOWED TO BE ROTATED (MAXIMUM OF 10 DEGREES) PER GRIDLOK ELEVATION 2/S5, OR VERTICAL PORTION OF FLY PLATE PIECE ALLOWED TO BE BENT IN FIELD ONCE (MAXIMUM OF 10 DEGREES) PER GRIDLOK ELEVATION 1/S5, TO POSITION THE VERTICAL STRUT. IN THE PROCESS OF BENDING, DO NOT DAMAGE OR DEFORM THE MAIN AND/OR CROSS RUNNERS.

II. RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD

1. VERIFY MATERIALS AND WORKMANSHIP TO CONFORM WITH THE 2019 EDITION OF THE CALIFORNIA BUILDING CODE AND THE REQUIREMENTS OF THIS PRE-APPROVAL DOCUMENT.
2. VERIFY THE ADEQUACY OF THE EXISTING FRAMING TO SUPPORT THE LOADS INDICATED ON TABLE 1, SHEET S3, IN ADDITION TO ALL OTHER LOADS.
3. VERIFY ANCHORS ARE AT ADEQUATE DISTANCES FROM OPENINGS AND EDGES OF SLABS AS NOTED IN THE GENERAL NOTES SECTION IV.
4. VERIFY ANCHORS ARE AT ADEQUATE DISTANCES FROM NEW OR EXISTING ANCHORS AS NOTED IN THE GENERAL NOTES SECTION IV.
5. DESIGN ANY SUPPLEMENTARY MEMBERS AND THEIR ATTACHMENTS OTHER THAN THOSE DETAILED WITHIN THIS PRE-APPROVAL.
6. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL.
7. VERIFY THAT THE SITE SEISMIC PARAMETERS DON'T EXCEED WHAT IS PERMITTED UNDER THIS OPM
8. WHEN USING HILTI KB1 EXPANSION ANCHOR INTO CMU WALL, SEOR MUST VERIFY:
   a) MASONRY IS NOT CRACKED AS DEFINED IN ICC-ES ACO1 §2.3; CALCULATION REQ'D TO SHOW MASONRY WALL WOULD NOT CRACK UNDER THE DESIGN EARTHQUAKE LOADS UNDER ALL SERVICE LOAD CONDITIONS; WALL HAS TO REMAIN ELASTIC.
   b) MASONRY WALL FULLY GROUTED IN ACCORDANCE w/ ER-677 §4.2.
   c) LIMITATIONS IN ACCORDANCE w/ ER-677 §2.0 IS SATISFIED.

III. COLD-FORMED METAL FRAMING

1. STUDS: ASTM C955 AND ASTM A1003, "C" SHAPED WITH LIPPED FLANGES AND PUNCHED WEB. PROVIDE G60 COATING MINIMUM.
   A. 43 MIL (18 GAGE) AND LIGHTER: GRADE 33 TYPE H
   B. 54 MIL (16 GAGE) AND HEAVIER: GRADE 50 TYPE H STUDS.

2. FRAMING DESIGNATIONS ON PLANS ARE BASED ON THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) PRODUCT TECHNICAL GUIDE (ICC-ESR-3064P).

3. SHEET METAL SCREWS: SELF-DRILLING, SELF-TAPPING, HDG PER ASTM A153. PAN OR HEX WASHER HEAD AS REQUIRED BY FINISH.
   A. PRODUCTS: ITW-BUILDEX TEKS SELF-DRILLING FASTENERS (ICC-ESR-1976), GRABBER DRIVALL (ICC-ESR-1271) UNLESS OTHERWISE NOTED IN THE FOLLOWING SHEETS
4. POWDER ACTUATED FASTENERS FOR HANGER WIRES: HILTI LOW-VELOCITY FASTENERS (ICC-ESR-2269).

BASE MATERIAL	FASTENERS	MINIMUM EMBEDMENT	MINIMUM EDGE DISTANCE	MINIMUM SPACING
STEEL	HILTI X-U	PER MANUF	1/2"	1"
CONCRETE	HILTI X-U	1"	3"	5 1/2"

WHERE DETAILS REFER TO 0.157" DIAMETER PAF, THE SHOT PINS ARE TO BE PER ESR 1799, 2024, 2138, OR 2269. INSTALL PER ICC REPORT. MIN EMBED IN SAND LIGHT WEIGHT CONCRETE (LWC) OVER METAL DECK AND SOLID NORMAL WEIGHT CONCRETE (NWC) SLAB TO BE 1 1/4". MIN SPACING TO BE 5.1" AND MIN EDGE DISTANCE TO BE 4".

5. PAF FOR HANGER WIRES MUST NOT BE USED IN PRE-STRESSED CONCRETE UNLESS NON-DESTRUCTIVE TESTING METHODS ARE USED TO LOCATE STRAND AND REINFORCEMENT PRIOR TO FASTENER INSTALLATION.

IV. MECHANICAL ANCHORS

1. EXPANSION ANCHORS INTO CONCRETE: HILTI KB-TZ2-CARBON STEEL (ICC ESR-4266). SCREW ANCHORS INTO CMU: HILTI KH-EZ (ICC ESR-3056).

2. INSTALL ANCHORS IN ACCORDANCE WITH LATEST ICC-ESR OR IAPMO REPORT, AS APPLICABLE, AND MANUFACTURER INSTRUCTIONS.

3. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE ANCHOR AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT APPROVED BY THE ENGINEER OF RECORD. NOTIFY THE ENGINEER OF RECORD IF ANY REINFORCING IS DAMAGED.

4. ANCHORS WILL BE PROOF-TESTED BY OWNER'S TESTING AND INSPECTION AGENCY. WITH A REPORT OF THE TEST RESULTS SUBMITTED TO HCAI.

5. IF ANY ANCHOR FAILS TESTING, REPLACE ANCHOR AND TEST ADDITIONAL ANCHORS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME INITIAL TESTING FREQUENCY.

6. TEST ANCHORS NO SOONER THAN 24 HOURS AFTER INSTALLATION.

7. ALL EMBEDMENT DEPTHS NOTED ON DRAWINGS ARE EFFECTIVE EMBEDMENT PER MANUFACTURER AND THE APPLICABLE ICC REPORT

8. TEST WEDGE ANCHORS PER THE FOLLOWING METHOD:
   A. TORQUE WRENCH METHOD: TEST ANCHORS TO THE TORQUE LOAD INDICATED IN THE TABLE BELOW WITHIN THE FOLLOWING LIMITS:
      a. ONE-HALF TURN OF THE NUT.

	WEDGE	
	ANCHOR DIA. (IN)	TORQUE LOAD (FT-LBS)
KB-TZ2	3/8	30
	1/2	50
	5/8	40

9. TEST SCREW ANCHORS PER THE FOLLOWING METHOD:
   A. DIRECT PULL TENSION TEST. ANCHOR IS ACCEPTABLE IF NO MOVEMENT IS OBSERVED AT THE TEST LOAD GIVEN IN THE TABLE BELOW. MOVEMENT MAY BE DETERMINED WHEN THE WASHER UNDERTHE NUT BECOMES LOOSE.

FULLY GROUTED CMU ANCHOR	ANCHOR DIA. (IN)	TENSION LOAD (LBS)
KH-EZ	1/2	2424
KH-EZ	5/8	2776

10. FOR POST INSTALLED ANCHORS USED FOR NONSTRUCTURAL APPLICATIONS, 50 PERCENT OR ALTERNATE BOLTS IN A GROUP, INCLUDING AT LEAST ONE-HALF THE ANCHORS IN EACH GROUP, MUST BE TESTED.

11. MINIMUM EDGE DISTANCE: SEE SHEET S11.

12. MINIMUM SPACING (FROM NEW OR EXISTING ADJACENT ANCHORS): SEE SHEETS S11, S12 AND S13.

V. STRUCTURAL TESTS, INSPECTIONS, AND OBSERVATIONS

1. AN INDEPENDENT APPROVED TESTING AGENCY AND SPECIAL INSPECTORS, CONFORMING TO 2019 CBC SECTION 1703A, WILL BE RETAINED BY THE OWNER TO PERFORM THE FOLLOWING TESTS AND INSPECTIONS. PROVIDE ACCESS AND FURNISH SAMPLES TO THE AGENCY AS REQUIRED.
2. THE FOLLOWING ITEMS REQUIRE TESTS AND INSPECTIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CHAPTER "STRUCTURAL TESTS AND INSPECTIONS" OF THE CODE.
   2.1 MECHANICAL ANCHORS:
      a. VERIFY TYPE OF ANCHOR, ANCHOR DIMENSIONS, CONCRETE TYPE AND COMPRESSIVE STRENGTH, PREDRILLED HOLE DIMENSIONS, ANCHOR SPACING, EDGE DISTANCE, SLAB THICKNESS AND ANCHOR EMBEDMENT.
      b. PROOF-TEST AS INDICATED IN THE MECHANICAL ANCHORS SECTION OF THESE GENERAL NOTES.

VI. DESIGN CRITERIA

1. APPLICABLE CODE: 2019 CALIFORNIA BUILDING CODE.
2. SEISMIC DESIGN:
   SEISMIC FORCE F_P (LRFD) = $\frac{0.4 * S_{DS} * a_p}{(R_p / I_p)} (1 + 2* z/h) W_p$
   WHERE:
   S_{DS} = VARIES — SEE SCHEDULE ON SHEET S3
   Ip = 1.5
   z/h ≤ 1.0
   Rp = 2.5 (FOR CEILINGS)
   ap = 1.0 (FOR CEILINGS)
   Ω = 2.0 (FOR CEILINGS)

REGISTERED PROFESSIONAL ENGINEER ALVARO CELESTINO No. S 5580 STRUCTURAL STATE OF CALIFORNIA 12/21/2022

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225 Broadway, Suite 1325
San Diego, CA 92101
619.515.0299 PHONE
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Title: GENERAL NOTES

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GENERAL NOTES, CONT

VII. HOW TO USE THIS PRE-APPROVAL

1. REVIEW AND UNDERSTAND ALL GENERAL NOTES AND FIGURES BEFORE PROCEEDING.

2. SELECT A GRIDLOK CLIP TO MATCH THE CEILING GRID ICC REPORT PER SHEET S2.

3. DETERMINE THE MAXIMUM ALLOWABLE GRIDLOK SPACING BASED ON THE SITE SEISMICITY (S_{DS}) FROM TABLE 1 ON SHEET S3.

   A. IF ADVANCESPAN CEILING SYSTEM WAS SELECTED IN STEP 2, DETERMINE MAXIMUM ALLOWABLE GRIDLOK SPACING BASED ON THE SITE SEISMICITY (S_{DS}) FROM TABLE 1 ON SHEET S3A.

4. BASED ON THE PLENUM HEIGHT 'H', AND THE CHOSEN GRIDLOK SPACING CHOSEN ON STEP 3 ABOVE, SELECT BRACE SIZE PER TABLE 1 ON SHEET S4A. BRACE STUDS MUST NOT BE REPLACED BY WIRE. IF FLYPLATE CLIP IS BENT TO ACCOMMODATE BRACE ANGLES ('Θ') DIFFERENT THAN 45°, SELECT BRACE SIZE PER TABLE 1 ON SHEET S4B. TABLE 1 ON S4B IS APPLICABLE TO ALL BRACE ANGLES FROM 30 TO 60 DEGREES.

5. BASED ON THE PLENUM HEIGHT 'H', AND THE CHOSEN GRIDLOK SPACING CHOSEN ON STEP 3 ABOVE, SELECT VERTICAL STRUT SIZE PER TABLE 2 ON SHEET S4A. VERTICAL STRUTS MUST NOT BE REPLACED BY WIRE. IF FLYPLATE CLIP IS BENT TO ACCOMMODATE BRACE ANGLES ('Θ') DIFFERENT THAN 45°, SELECT VERTICAL STRUT SIZE PER TABLE 2 ON SHEET S4B. TABLE 2 ON S4B IS APPLICABLE TO ALL BRACE ANGLES FROM 30 TO 60 DEGREES.

6. BASED ON THE DECK TYPE SELECT THE APPROPRIATE CONNECTION TO THE SUPPORTING STRUCTURE ABOVE PER TABLE 1 ON SHEET S4.

7. RDP TO DETERMINE THE IMPACT ON THE EXISTING STRUCTURE FROM THE GRIDLOK BASED ON THE PROVIDED 'F' ASD FORCE ON TABLE 1 ON SHEET S3 OR S3A.

SHEET LIST

TABLE 1: GRIDLOK ASSEMBLY SCHEDULE

CEILING GRID ASSEMBLY	GRIDLOK ASSEMBLY	ASSEMBLY DETAIL
WORTHINGTON ARMSTRONG VENTURE (ICC ESR-1308)	GRIDLOK-10P	1/S6
USG LLC (ICC ESR-1222)	GRIDLOK-10	1/S7
CERTAIN TEED CORPORATION (ICC ESR-3336)	GRIDLOK-10CT	1/S8
ADVANCESPAN CEILING SYSTEM AT CORRIDORS (MAIN RUNNERS: DXAS, DXTAS CROSS RUNNERS: DX216, DX424/DX422, DXT424/DXT422/DXT222 CHANNEL ASSEMBLY: US44)	GRIDLOK-10	1/S7

TABLE 1 NOTES:

1. ONLY CEILING GRIDS THAT MEET THE ICC REPORTS LISTED ABOVE ARE APPROVED FOR USE WITH THIS OPM. MATCH GRIDLOK ASSEMBLY CLIP WITH CEILING GRID TYPE PER TABLE ABOVE.

2. THE CEILING SYSTEMS ARE LIMITED TO INTERIOR APPLICATIONS.

3. ONLY HEAVY-DUTY MAIN TEES DEFINED IN ASTM SPECIFICATION C635 SHALL BE USED (DIRECT HUNG; MIN LOAD CARRYING CAPABILITY = 16.0 PLF; CEILING LOAD = 4 PSF).

4. THE MAIN RUNNERS AND CROSS RUNNERS OF THE CEILING SYSTEM AND THEIR SPLICES, INTERSECTION CONNECTORS, AND EXPANSION DEVICES SHALL BE DESIGNED & CONSTRUCTED TO CARRY A MEAN ULTIMATE TEST LOAD OF NOT LESS THAN 180 LBS IN COMPRESSION AND IN TENSION WHEN TESTED FOR TEST METHODS ASTM E3090/E3090M. THE TENSILE TEST SHALL ALLOW FOR A 5° OFFSET OF THE CONNECTION IN ANY DIRECTION. THE CONNECTORS AT SPLICES AND INTERSECTIONS SHALL BE THE MECHANICAL LOCKING TYPE.

REGISTERED PROFESSIONAL ENGINEER
ALVARO CELESTINO
No. S 5580
STRUCTURAL
STATE OF CALIFORNIA
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225 Broadway, Suite 1325
San Diego, CA 92101
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Title: GENERAL NOTES AND SCHEDULES

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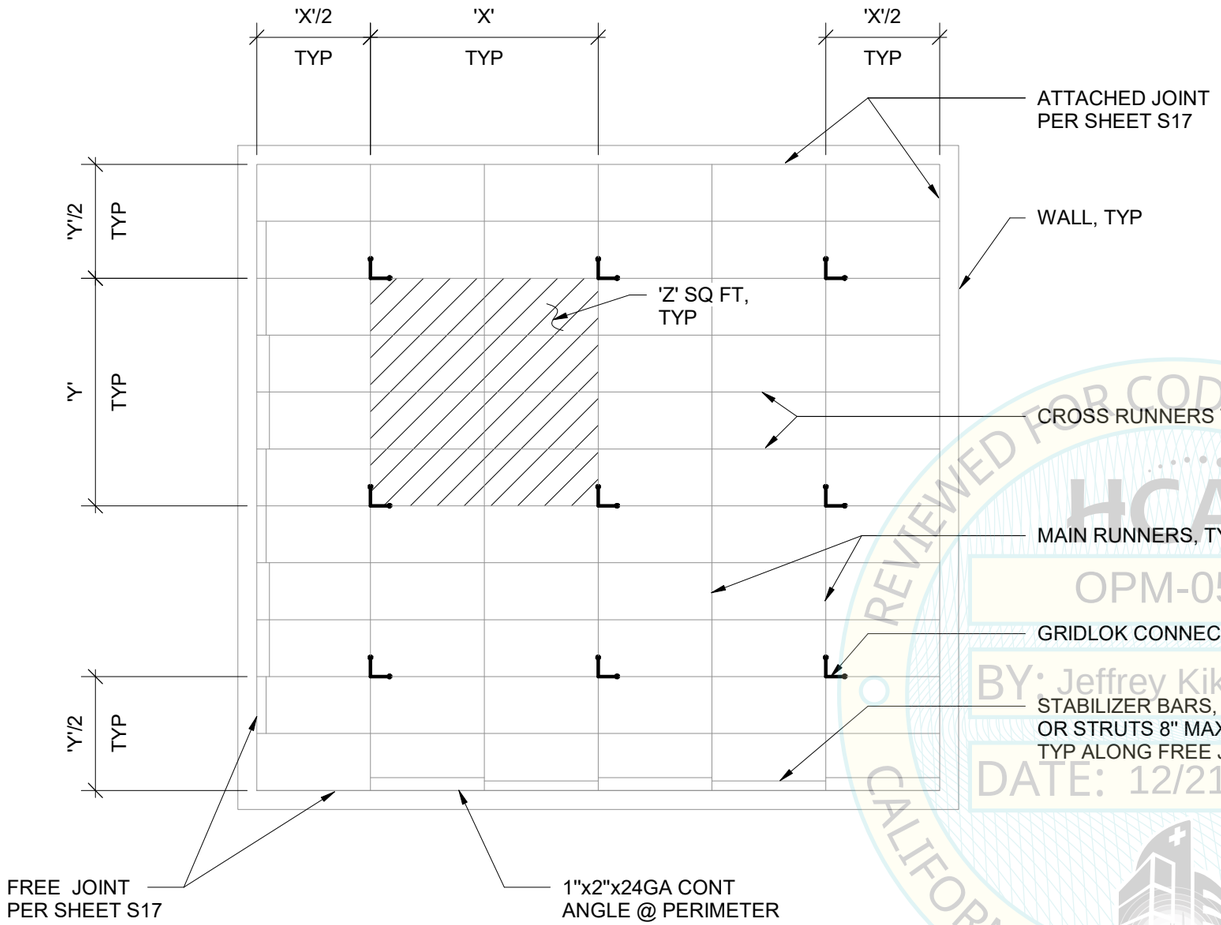

NOTES:
1. SEE TABLE 1 FOR ALLOWABLE S_{DS} VALUES FOR DIFFERENT VAULES OF 'X' 'Y' AND 'Z'.

1 SUSPENDED CEILING GRID BRACING PLAN VIEW

1/8" = 1'-0"

TABLE 1: GRIDLOK SPACING SCHEDULE

S_{DS}	'X' MAX	'Y' MAX	'Z' MAX	'F' ASD (LBS)
0.25 - 1.00	12'-0"	12'-0"	144 SF	291 LB
1.00 - 1.38	12'-0"	12'-0"	144 SF	400 LB
1.39 - 2.00	12'-0"	8'-0"	96 SF	387 LB
2.01 - 2.50	8'-0"	8'-0"	64 SF	323 LB

TABLE 1 NOTES:

1. TABLE 1 ABOVE MAY BE USED FOR ALL FLOOR ELEVATIONS (z/h) IN A BUILDING, WHERE 'z' IS THE ELEVATION OF THE FLOOR AND 'h' IS THE ELEVATION OF THE ROOF, BOTH WITH RESPECT TO GRADE LEVEL.
2. MAXIMUM ALLOWABLE BRACE SPACING FOR DIFFERENT VALUES OF S_{DS} ARE BASED ON A MAXIMUM ALLOWABLE (ASD) GRIDLOK SYSTEM CAPACITY OF 400 LB.
3. 'F' REFERS TO THE MAXIMUM ALLOWABLE DESIGN HORIZONTAL LOAD (ASD) FOR THE SEISMICITY AND SPACING INDICATED

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Title:
GENERAL PLAN AND SCHEDULES

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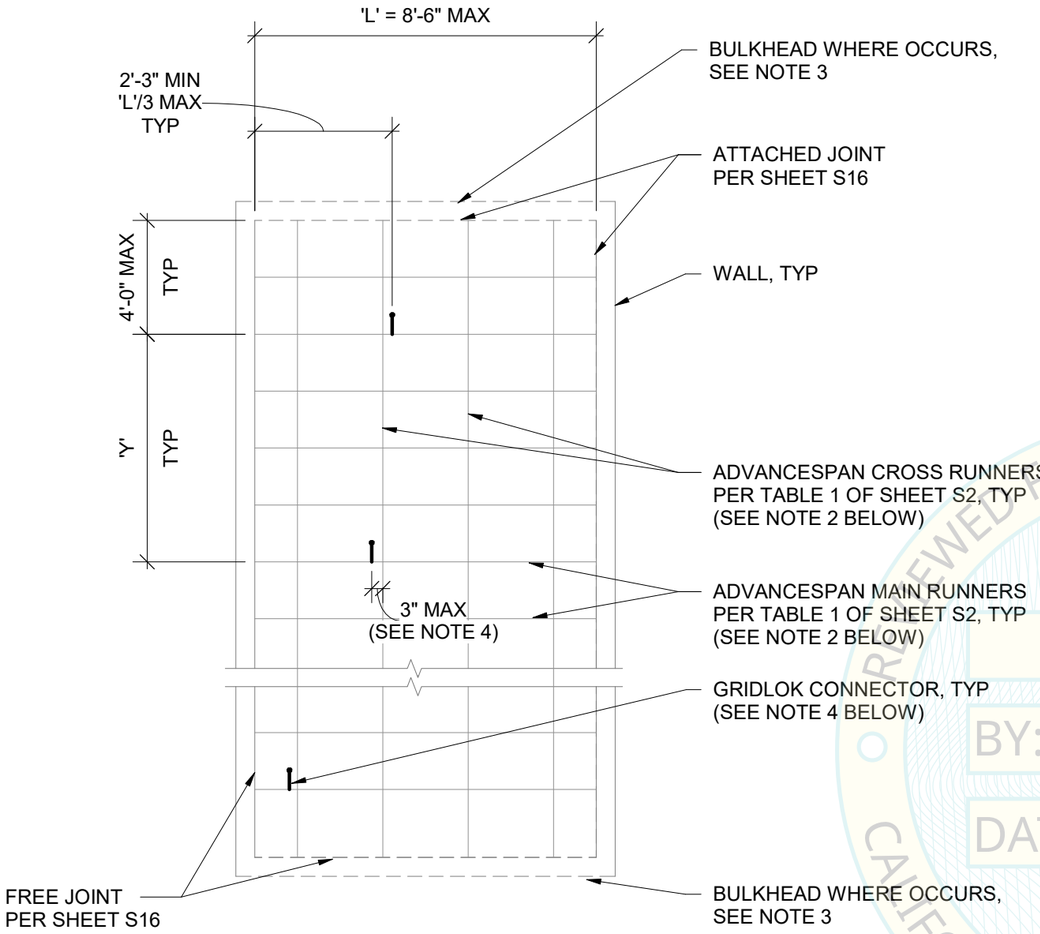

NOTES:

1. SEE TABLE 1 FOR ALLOWABLE S_{DS} VALUES FOR VALUES OF 'Z'.
2. RDP TO COORIDNATE SPACING OF MAIN AND CROSS RUNNERS AT CORRIDOR
3. RDP IS RESPONSIBLE FOR THE DESIGN OF THE BULKHEADS, IF ANY
4. LOCATE GRIDLOK ALONG MAIN RUNNER BETWEEN 2'-3" AND 'L'/3 FROM THE FREE EDGE AND WITHIN 3" FROM THE INTERSECTION OF THE MAIN AND CROSS RUNNERS TO THE CENTER OF GRIDLOK CLIP.

1 SUSPENDED CEILING GRID BRACING PLAN VIEW FOR ADVANCESPAN CEILING SYSTEM

1/8" = 1'-0"

TABLE 1: GRIDLOK SPACING SCHEDULE FOR ADVANCESPAN

S_{DS}	'Y' MAX	'F' ASD (LBS)
0.25 - 2.00	12'-0"	308 LB
2.01 - 2.50	N/A FOR ADVANCESPAN	

TABLE 1 NOTES:

1. TABLE 1 ABOVE MAY BE USED FOR ALL FLOOR ELEVATIONS (z/h) IN A BUILDING, WHERE 'z' IS THE ELEVATION OF THE FLOOR AND 'h' IS THE ELEVATION OF THE ROOF, BOTH WITH RESPECT TO GRADE LEVEL.
2. MAXIMUM ALLOWABLE BRACE SPACING FOR DIFFERENT VALUES OF S_{DS} ARE BASED ON A MAXIMUM ALLOWABLE (ASD) GRIDLOK SYSTEM CAPACITY OF 400 LB.
3. 'F' REFERS TO THE MAXIMUM ALLOWABLE (ASD) HORIZONTAL FORCE APPLIED TO THE GRIDLOK CONNECTOR FOR THE SEISMICITY AND SPACING INDICATED.
4. FOR ADVANCESPAN CEILING SYSTEMS, ONLY ONE GRIDLOK BRACE PARALLEL TO THE CROSS RUNNERS PER GRIDLOK IS REQUIRED. A GRIDLOK BRACE PARALLEL TO THE MAIN RUNNERS IS NOT REQUIRED. ONE VERTICAL STRUT IS REQUIRED AT EVERY GRIDLOK.
5. SELECT BRACE AND STRUT SIZES PER SHEET S2 NOTES VII.4 AND VII.5, RESPECTIVELY.

REGISTERED PROFESSIONAL ENGINEER
ALVARO CELESTINO
No. S 5580
STRUCTURAL
STATE OF CALIFORNIA
12/20/2022

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225 Broadway, Suite 1325
San Diego, CA 92101
619.515.0299 PHONE
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Title: GENERAL PLAN AND SCHEDULES FOR ADVANCESPAN CEILING SYSTEM AT CORRIDORS

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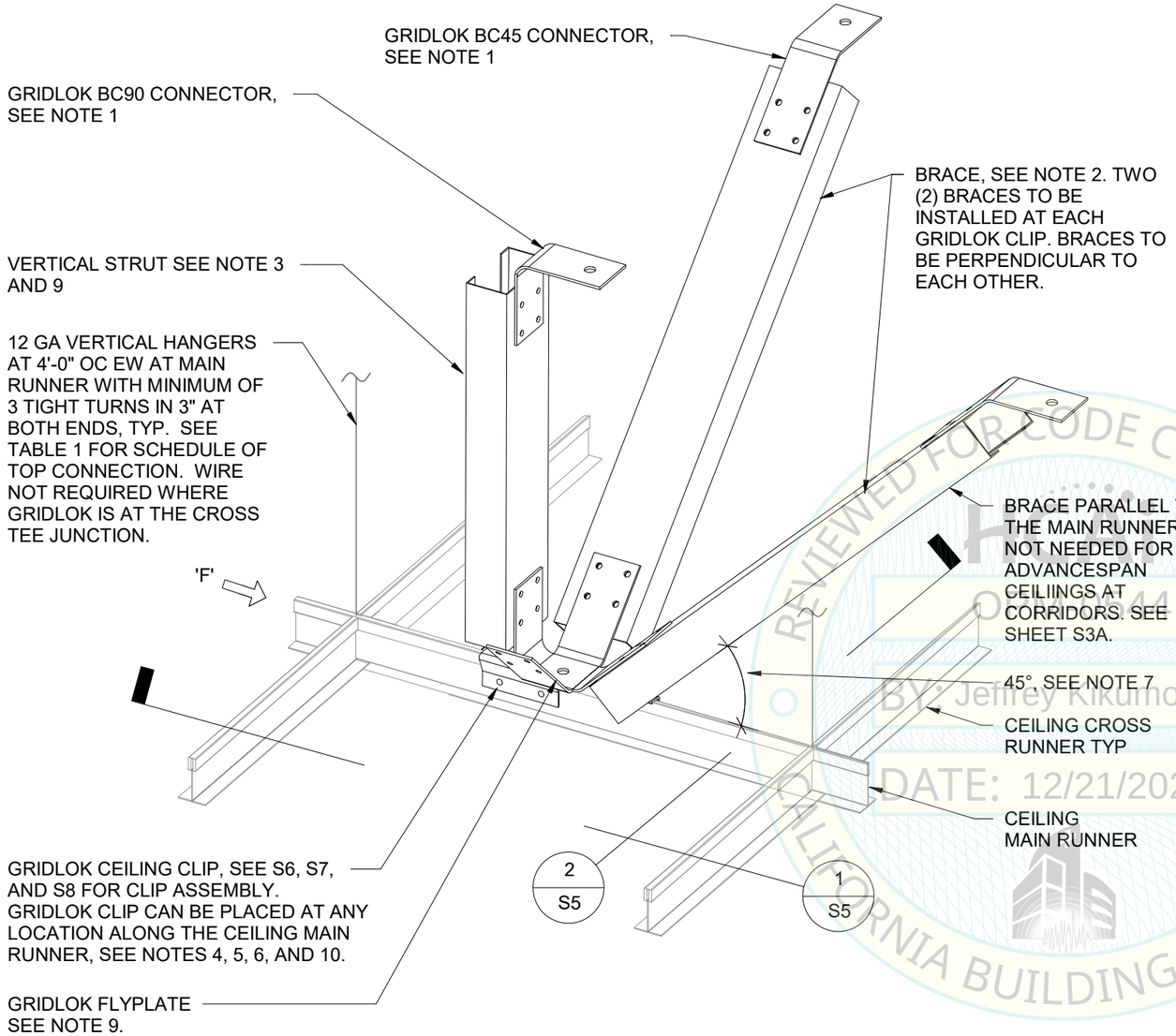
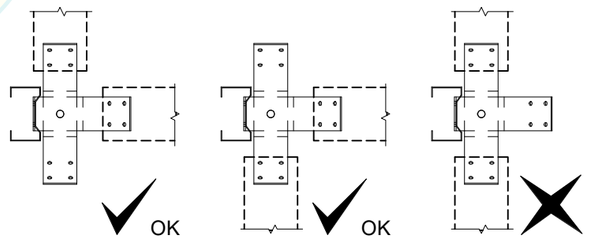


1 GRIDLOK ASSEMBLY (ISOMETRIC)
NTS

TABLE 1: GRIDLOK CONNECTION SCHEDULE		
STRUCTURAL CONDITION OF FLOOR/ROOF ABOVE SUSPENDED CEILING	**HANGER WIRE DETAIL**	**BC45 BRACE AND BC90 STRUT TOP CONNECTION DETAIL**
CONCRETE SLAB, BEAM, OR JOIST	2/S18	1/S11
CONCRETE OVER W3 DECK	1/S18	1/S12, 2/S12
CONCRETE OVER B DECK	1/S18	1/S13, 2/S/13
STRUCTURAL STEEL	1/S20	1/S14
SAWN TIMBER	2/S20	1/S15

NOTES:

1. SEE TABLE 1 FOR SCHEDULE OF CONNECTION DETAIL OF GRIDLOK BC45 AND BC90 CONNECTORS TO THE FLOOR ABOVE FOR DIFFERENT STRUCTURAL SYSTEMS.
2. SEE TABLE 1 ON S4A FOR SCHEDULE OF PLENUM HEIGHT 'H' BASED ON BRACE ANGLE, 'Θ' = 45 DEGREES, BRACE SIZE AND CHOSEN GRIDLOK SPACING. IF ALTERNATIVE BRACE ANGLE 'Θ' USED PER NOTE 7, SEE TABLE 1 ON S4B.
3. SEE TABLE 2 ON S4A FOR SCHEDULE OF PLENUM HEIGHT 'H' BASED ON BRACE ANGLE, 'Θ' = 45 DEGREES, VERTICAL STRUT SIZE AND CHOSEN GRIDLOK SPACING. IF ALTERNATIVE BRACE ANGLE 'Θ' USED PER NOTE 7, SEE TABLE 2 ON S4B.
4. THE GRIDLOK ASSEMBLY CAN BE PLACED ANYWHERE ALONG THE MAIN RUNNER.
5. THE GRIDLOK FLY-PLATE CAN BE ROTATED AT ANY ANGLE, FROM 0 TO 360 DEGREES, WHEN THE CENTERLINE OF THE GRIDLOK IS WITHIN 3" FROM THE INTERSECTION OF THE MAIN AND CROSS RUNNERS.
6. THE GRIDLOK FLY-PLATE PIECE CAN BE ROTATED IN 90-DEGREE INTERVALS PROVIDED THE BRACES ARE ALIGNED WITH THE MAIN AND CROSS RUNNERS.
7. 45-DEGREE FLY PLATE PIECE ALLOWED TO BE BENT IN FIELD ONCE, A MAXIMUM OF 15 DEGREES IN ANY DIRECTION, TO CORRECT ANGLE, NO REBENDING.
8. VERTICAL STRUT ALLOWED TO BE ROTATED A MAXIMUM OF 10 DEGREES PER GRIDLOK ELEVATION 2/S5.
9. VERTICAL PORTION OF FLY PLATE PIECE ALLOWED TO BE BENT IN FIELD ONCE PER GRIDLOK ELEVATION 1/S5, TO POSITION THE VERTICAL STRUT, A MAXIMUM OF 10 DEGREEES, NO REBENDING.
10. FOR ADVANCESPAN CEILINGS (SEE SHEET S3A), LOCATE GRIDLOK ALONG MAIN RUNNER AND WITHIN 3" FROM THE INTERSECTION OF THE MAIN AND CROSS RUNNERS.



3 2-DIRECTION BRACE LAYOUT ARRANGEMENTS (PLAN VIEW)
N.T.S.

REGISTERED PROFESSIONAL ENGINEER
ALVARO CELESTINO
No. S 5580
STRUCTURAL
STATE OF CALIFORNIA
12/21/2022

DEGENKOLB ENGINEERS
225 Broadway, Suite 1325
San Diego, CA 92101
619.515.0299 PHONE
www.degenkolb.com

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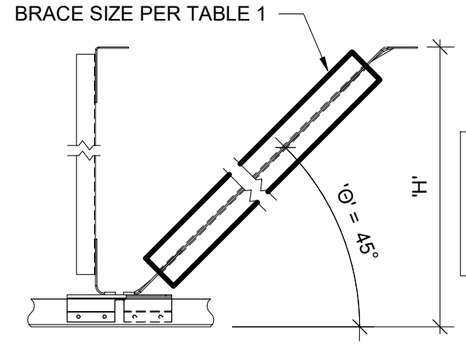
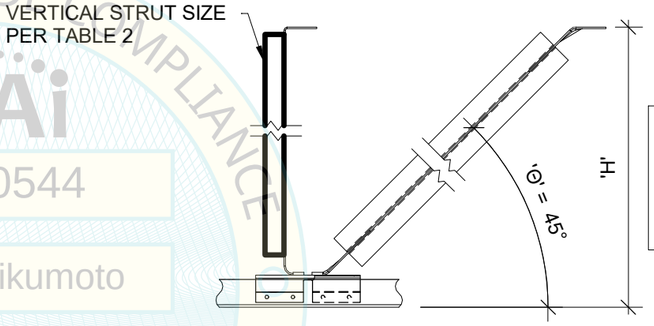
TABLE 1: MAXIMUM PLENUM HEIGHT 'H' FOR DIFFERENT BRACE SIZES, BRACE ANGLE 'Θ' = 45 DEGREES, AND S_{DS} VALUES					
GRIDLOK SPACING	BRACE SIZE / S_{DS}	250S125-33	250S162-33	362S162-33	(2) 250S162-33 BACK-TO-BACK
12'-0"x12'-0"	0.25 - 1.00	4'-6"	6'-0"	7'-6"	9'-6"
12'-0"x12'-0"	1.01 - 1.38	N/A	5'-0"	6'-6"	
8'-0"x12'-0"	1.39 - 2.00	N/A	5'-0"	6'-6"	
8'-0"x8'-0"	2.01 - 2.50	N/A	5'-6"	7'-6"	
5'-8"x12'-0" (ADVANCESPAN)	0.25 - 2.00	N/A	5'-0"	6'-6"	

TABLE 2: MAXIMUM PLENUM HEIGHT 'H' FOR DIFFERENT VERTICAL STRUT SIZES, BRACE ANGLE 'Θ' = 45 DEGREES, AND S_{DS} VALUES				
GRIDLOK SPACING	VERTICAL STRUT SIZE / S_{DS}	250S125-33	250S162-33	362S162-33
12'-0"x12'-0"	0.25 - 1.00	7'-0"	9'-6"	9'-6"
12'-0"x12'-0"	1.01 - 1.38	6'-6"	8'-0"	
8'-0"x12'-0"	1.39 - 2.00	6'-0"	8'-0"	
8'-0"x8'-0"	2.01 - 2.50	7'-0"	9'-0"	
5'-8"x12'-0" (ADVANCESPAN)	0.25 - 2.00	6'-6"	8'-0"	



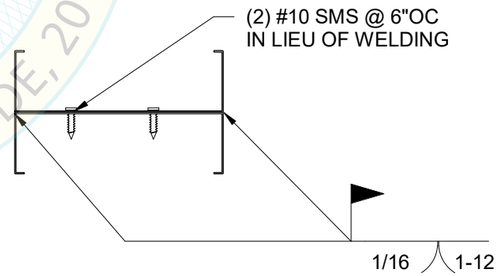
PLENUM HEIGHT 'H' IS THE VERTICAL DISTANCE BETWEEN THE CEILING ELEVATION AND BOTTOM OF DECK ELEVATION AS SHOWN.



PLENUM HEIGHT 'H' IS THE VERTICAL DISTANCE BETWEEN THE CEILING ELEVATION AND BOTTOM OF DECK ELEVATION AS SHOWN.

TABLE 1 AND 2 NOTES:

1. SEE S5 AND FIGURES IN THIS SHEET FOR DEFINITION OF 'H' AND BRACE ANGLE 'Θ'.
2. SEE DETAIL 1/S4A FOR BRACE CONNECTION WHERE BACK-TO-BACK BRACES ARE REQUIRED.
3. 'GRIDLOK SPACING' CHOSEN PER TABLE 1 ON SHEET S3.
4. VERTICAL STRUT ALLOWED TO BE ROTATED A MAXIMUM OF 10 DEGREES PER GRIDLOK ELEVATION 2/S5.
5. VERTICAL PORTION OF FLY PLATE PIECE ALLOWED TO BE BENT IN FIELD ONCE PER GRIDLOK ELEVATION 1/S5, TO POSITION THE VERTICAL STRUT, A MAXIMUM OF 10 DEGREEES, NO REBENDING.



1 BACK-TO-BACK BRACE SECTION
3" = 1'-0"

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Title: SCHEDULES FOR 'Θ' = 45°

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
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Date	12/20/2022		

Sheet S4A OF Sheets

45° ONLY

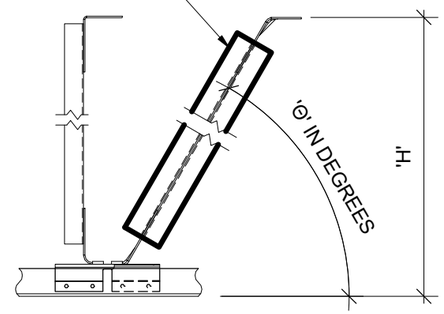
TABLE 1: MAXIMUM PLENUM HEIGHT 'H' FOR DIFFERENT BRACE SIZES, BRACE ANGLE 'Θ', AND S_{DS} VALUES

GRIDLOK SPACING	BRACE SIZE / 'Θ' IN DEG / S_{DS}	250S125-33[7]			250S162-33[7]			362S162-33[7]			(2) 250S162-33 BACK-TO-BACK[7]		600S350-54	(2) 362S250-43 BACK-TO-BACK[7]
		30°-40°	41°-50°	51°-60°	30°-40°	41°-50°	51°-60°	30°-40°	41°-50°	51°-60°	30°-40°	41°-60°	30°-60°	30°-60°
12'-0"x12'-0"	0.25 - 1.00	N/A	4'-6"		4'-6"	5'-6"		5'-0"	6'-6"		7'-6"	9'-6"	9'-6"	9'-6"
12'-0"x12'-0"	1.01 - 1.38	N/A	N/A		N/A	4'-6"			6'-0"					
8'-0"x12'-0"	1.39 - 2.00	N/A	N/A		N/A	4'-6"			6'-6"					
8'-0"x8'-0"	2.01 - 2.50	N/A	N/A		N/A	5'-0"			6'-6"					
5'-8"x12'-0" (ADVANCESPAN)	0.25 - 2.00	N/A	N/A		N/A	4'-6"			6'-0"					

TABLE 2: MAXIMUM PLENUM HEIGHT 'H' FOR DIFFERENT VERTICAL STRUT SIZES, BRACE ANGLE 'Θ', AND S_{DS} VALUES

GRIDLOK SPACING	VERTICAL STRUT SIZE / 'Θ' IN DEG / S_{DS}	250S125-33			250S162-33			362S162-33		362S200-33
		30°-40°	41°-50°	51°-60°	30°-40°	41°-50°	51°-60°	30°-50°	51°-60°	30°-60°
12'-0"x12'-0"	0.25 - 1.00	7'-0"	7'-0"	5'-6"	9'-6"	8'-6"	7'-0"	9'-6"	9'-6"	9'-6"
12'-0"x12'-0"	1.01 - 1.38		5'-6"	N/A	8'-6"	7'-6"	6'-0"		8'-0"	
8'-0"x12'-0"	1.39 - 2.00		5'-6"	N/A	9'-0"	7'-6"	6'-0"	9'-6"	8'-0"	9'-6"
8'-0"x8'-0"	2.01 - 2.50		6'-6"	5'-0"	9'-6"	8'-0"	6'-6"		9'-0"	
5'-8"x12'-0" (ADVANCESPAN)	0.25 - 2.00		5'-6"	N/A	8'-6"	7'-6"	6'-0"		8'-0"	

BRACE SIZE PER TABLE 1



PLENUM HEIGHT 'H' IS THE VERTICAL DISTANCE BETWEEN THE CEILING ELEVATION AND BOTTOM OF DECK ELEVATION AS SHOWN.

VERTICAL STRUT SIZE PER TABLE 2

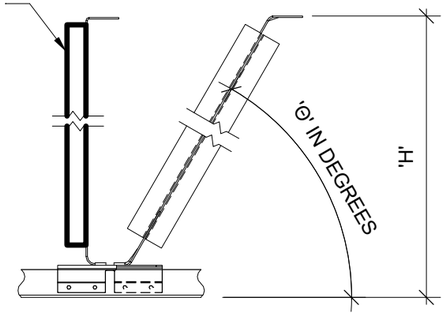


TABLE 1 AND 2 NOTES:
1. SEE S5 AND FIGURES IN THIS SHEET FOR DEFINITION OF 'H' AND BRACE ANGLE 'Θ'.
2. SEE DETAIL 1/S4A FOR BRACE CONNECTION WHERE BACK-TO-BACK BRACES ARE REQUIRED.
3. 'GRIDLOK SPACING' CHOSEN PER TABLE 1 ON SHEET S3.
4. 45-DEGREE FLY PLATE PIECE TO BE BENT IN FIELD ONCE, A MAXIMUM OF 15 DEGREES IN ANY DIRECTION, TO CORRECT ANGLE, NO REBENDING. WHERE BENDING IS REQUIRED.
5. VERTICAL STRUT ALLOWED TO BE ROTATED A MAXIMUM OF 10 DEGREES PER GRIDLOK ELEVATION 2/S5.
6. VERTICAL PORTION OF FLY PLATE PIECE ALLOWED TO BE BENT IN FIELD ONCE PER GRIDLOK ELEVATION 1/S5, TO POSITION THE VERTICAL STRUT, A MAXIMUM OF 10 DEGREEES, NO REBENDING.
7. WHEN BRACE ANGLE 'Θ' IS GREATER THAN 55 DEGREES, INCREASE BRACE SIZE TO MIN 43 MIL THICKNESS.

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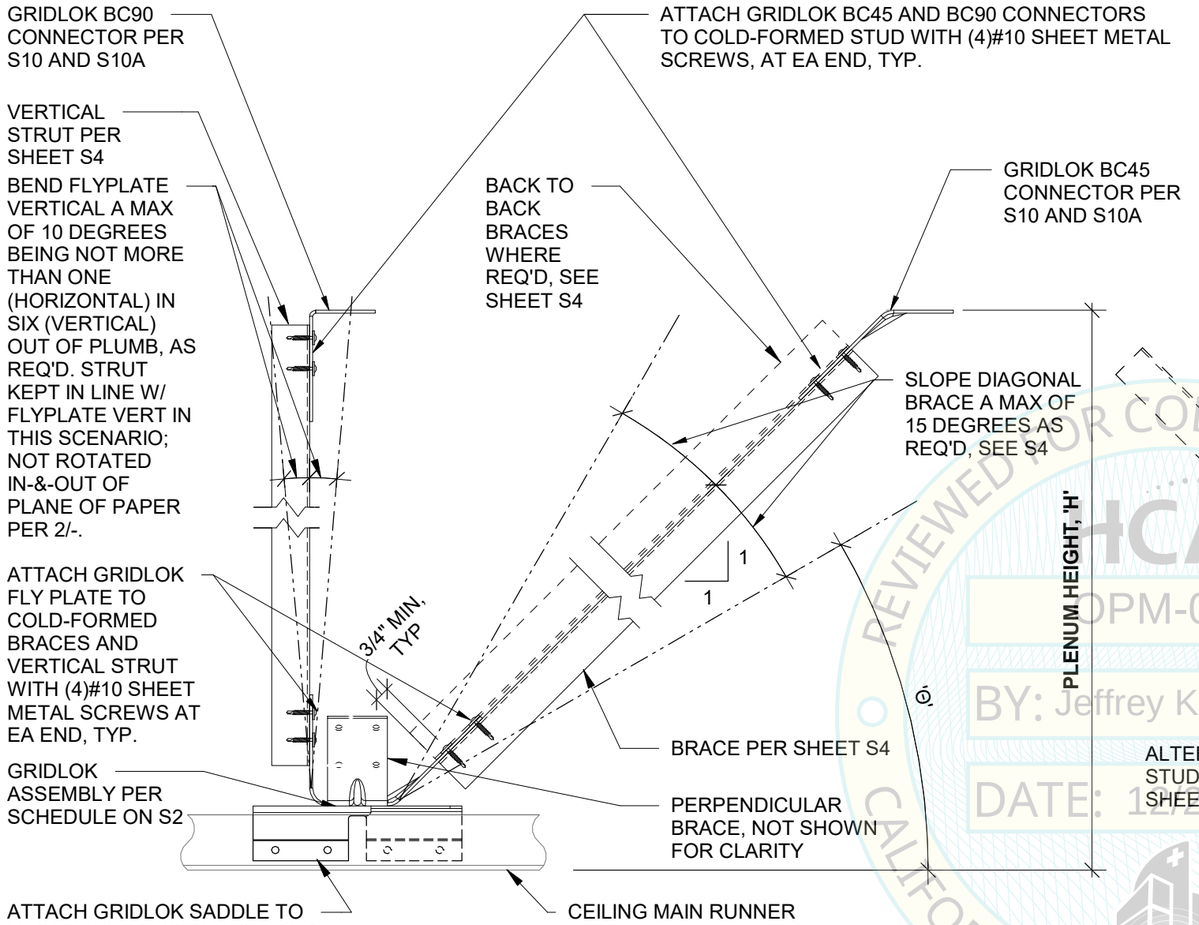
Title: SCHEDULES FOR 'Θ' DIFFERENT THAN 45°

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
Check:	AC	Scale:	NTS
Date	12/20/2022		

Sheet S4B OF Sheets

30° - 60°

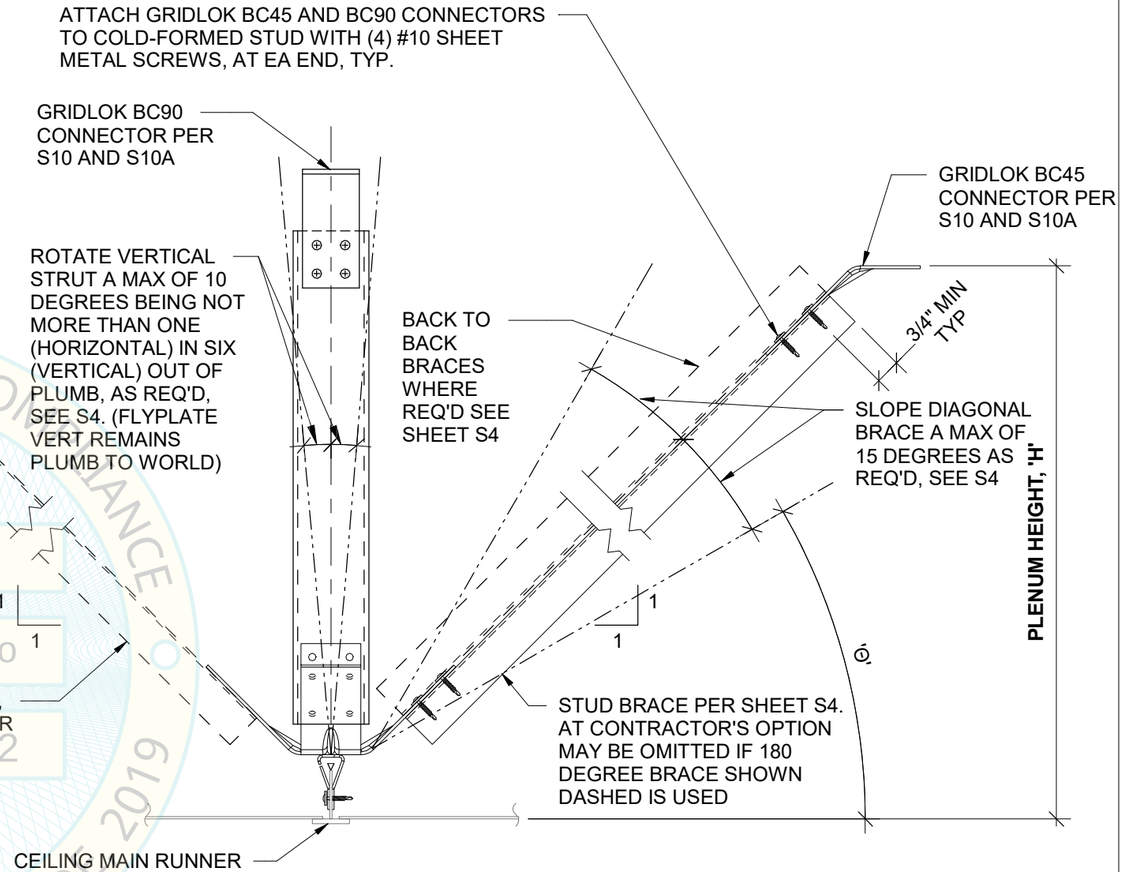


SIDE

NOTES:
1. SEE TABLE 1 ON SHEET S4 FOR SCHEDULE OF CONNECTION DETAIL OF GRIDLOK BC45 AND BC90 CONNECTORS TO THE FLOOR ABOVE FOR DIFFERENT DECK TYPES.

1 GRIDLOK ELEVATION

NTS



FRONT

NOTES:
1. SEE TABLE 1 ON SHEET S4 FOR SCHEDULE OF CONNECTION DETAIL OF GRIDLOK BC45 AND BC90 CONNECTORS TO THE FLOOR ABOVE FOR DIFFERENT DECK TYPES.
2. SEE DETAIL 1/S5 FOR INFO NOT SHOWN OR NOTED.

2 GRIDLOK ELEVATION

NTS

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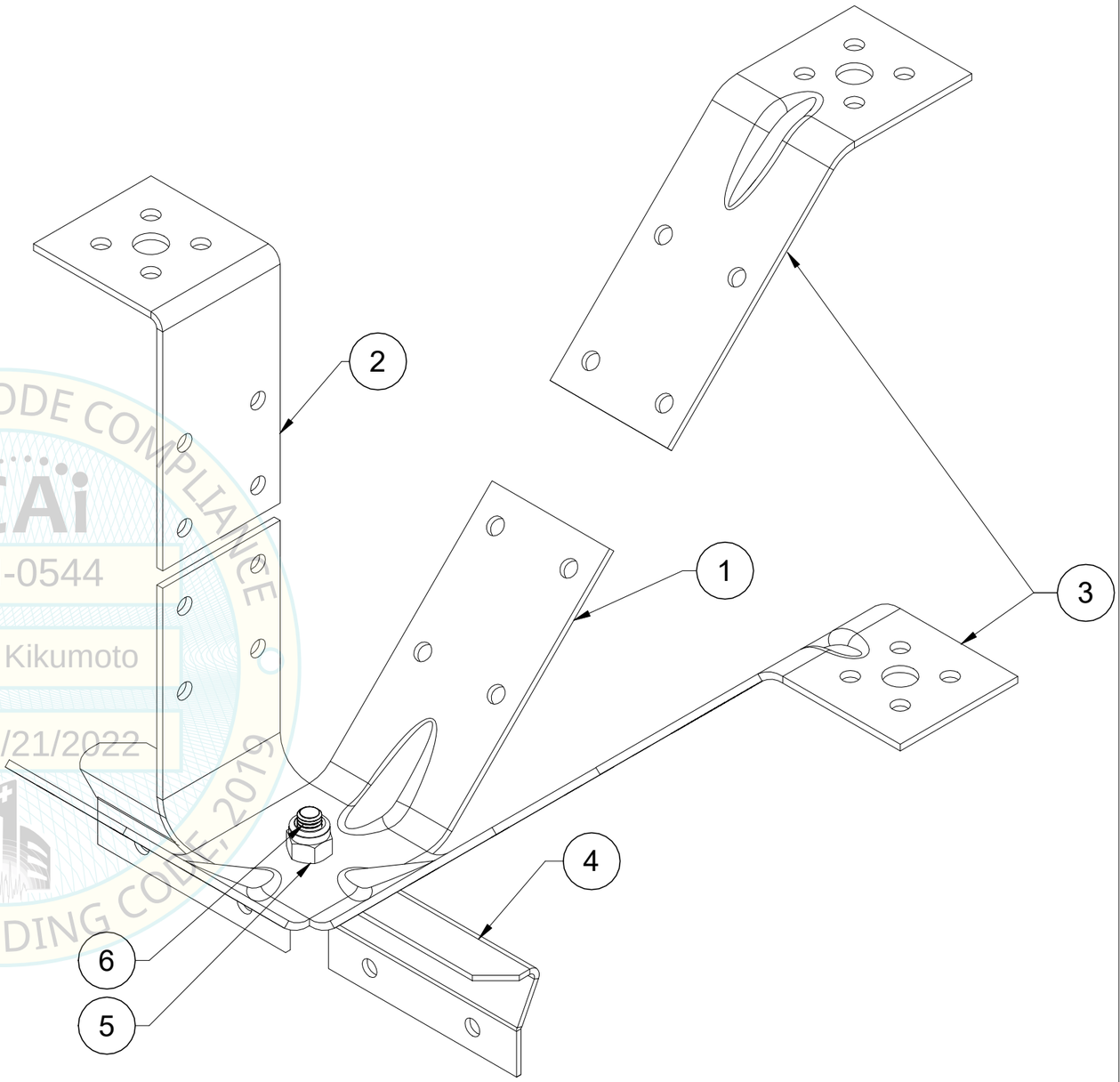
Title:
SECTIONS

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
Check:	AC	Scale:	NTS
Date	12/20/2022		

Sheet
S5
OF Sheets

ITEM NO.	PART NO.	GRIDLOK-10 P / QTY	DETAIL
1	GRIDLOK-FLY-PLATE	1	2/S9
2	GRIDLOK-BC90-CONNECTOR	1	1/S10 & 1/S10A
3	GRIDLOK-BC45-CONNECTOR	2	2/S10 & 2/S10A
4	GRIDLOK-10 P-SADDLE	1	1/S9
5	ISO 7041-M8-S	1	-
6	PEM FH-M8-18 X-S	1	-



NOTES:
1. SEE SCHEDULE ON S2 FOR ACCEPTABLE CEILING GRID ASSEMBLY TO BE USED WITH GRIDLOK-10P ASSEMBLY.

1 GRIDLOK-10 P ASSEMBLY
3/32" = 1'-0"

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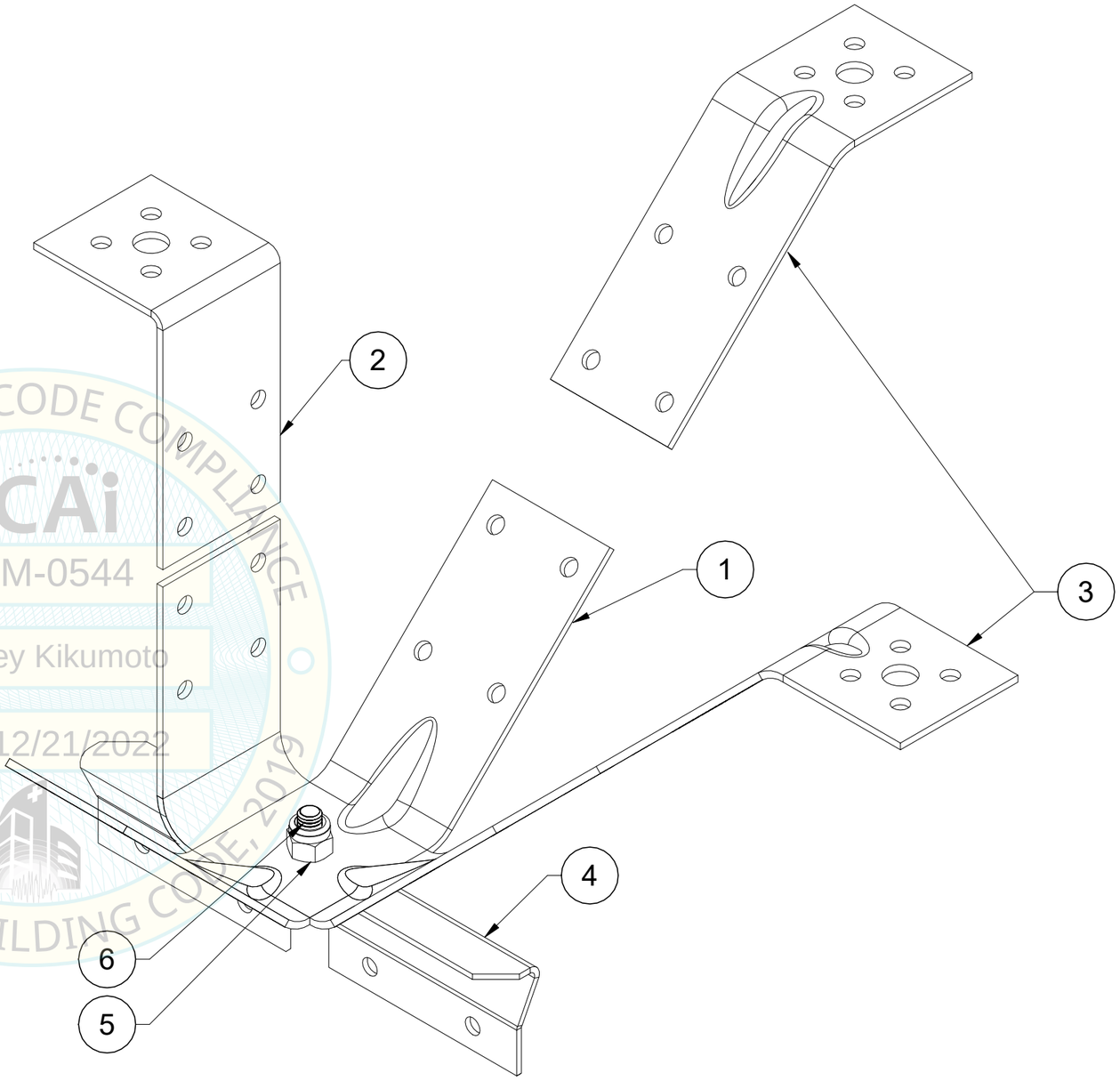
Title:
GRIDLOK-10P ASSEMBLY DETAILS

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
Check:	AC	Scale:	AS INDICATED
Date	12/20/2022		

Sheet
S6
OF Sheets

ITEM NO.	PART NO.	GRIDLOK-10 / QTY	DETAIL
1	GRIDLOK-FLY-PLATE	1	2/S9
2	GRIDLOK-BC90-CONNECTOR	1	1/S10 & 1/S10A
3	GRIDLOK-BC45-CONNECTOR	2	2/S10 & 2/S10A
4	GRIDLOK-10-SADDLE	1	3/S9
5	ISO 7041-M8-S	1	-
6	PEM FH-M8-18 X-S	1	-



NOTES:
1. SEE SCHEDULE ON S2 FOR ACCEPTABLE CEILING GRID ASSEMBLY TO BE USED WITH GRIDLOK-10 ASSEMBLY.

1 GRIDLOK-10 ASSEMBLY

3/32" = 1'-0"

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Title:
GRIDLOK-10 ASSEMBLY DETAILS

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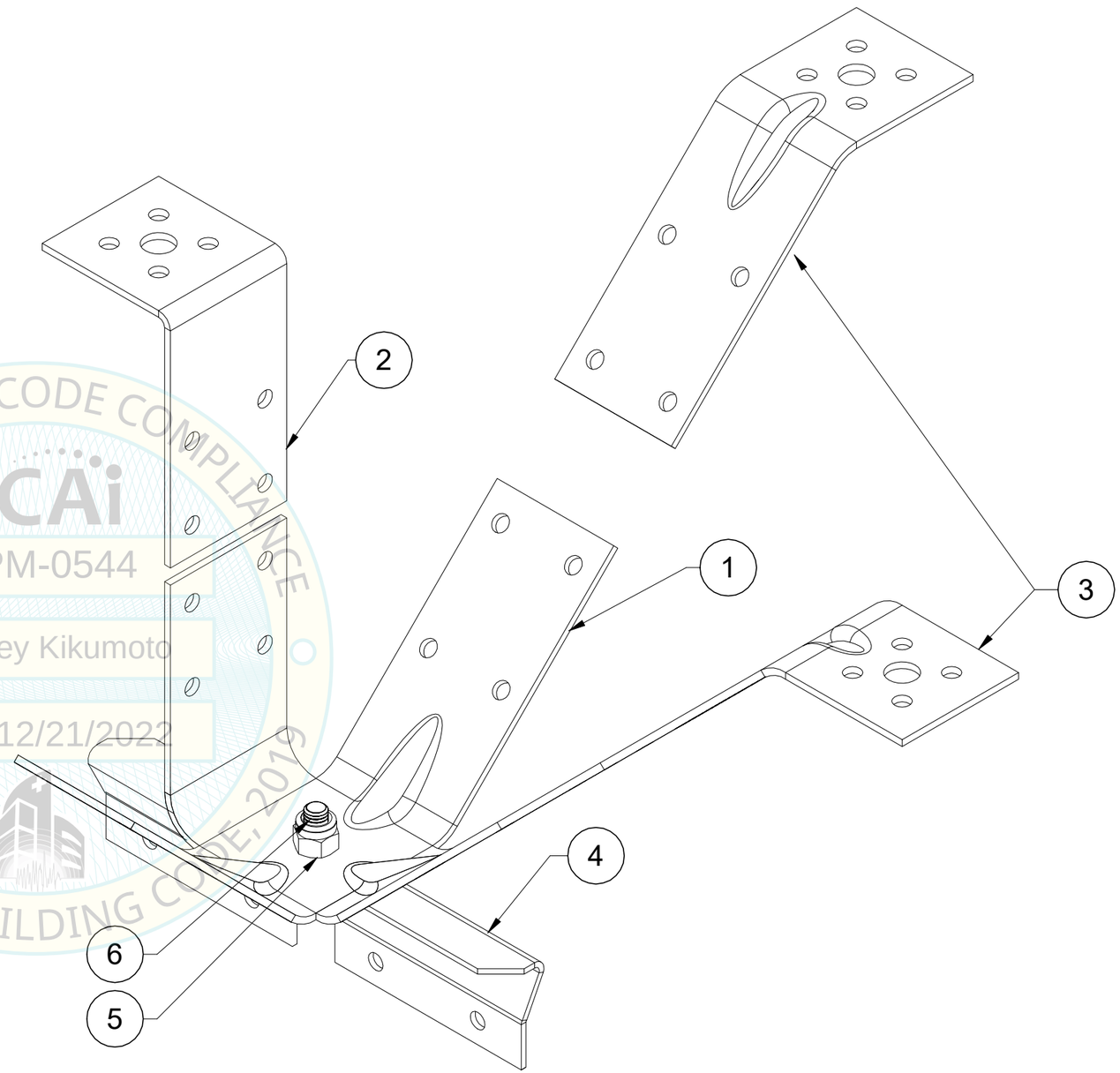
ITEM NO.	PART NO.	GRIDLOK-10 CT / QTY	DETAIL
1	GRIDLOK-FLY-PLATE	1	2/S9
2	GRIDLOK-BC90-CONNECTOR	1	1/S10 & 1/S10A
3	GRIDLOK-BC45-CONNECTOR	2	2/S10 & 2/S10A
4	GRIDLOK-10CT-SADDLE	1	3/S9
5	ISO 7041-M8-S	1	-
6	PEM FH-M8-18 X-S	1	-



NOTES:
1. SEE SCHEDULE ON S2 FOR ACCEPTABLE CEILING GRID ASSEMBLY TO BE USED WITH GRIDLOK-10CT ASSEMBLY.

1 GRIDLOK-10CT ASSEMBLY

3/32" = 1'-0"

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Title:
GRIDLOK-10CT ASSEMBLY DETAILS

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Sheet
S8
OF Sheets

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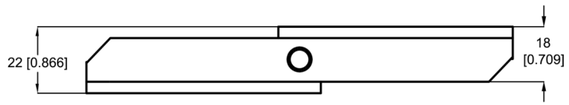
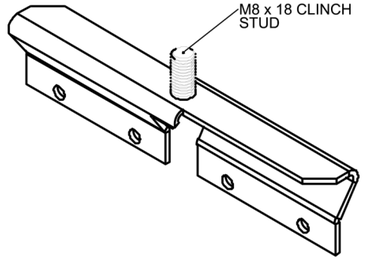
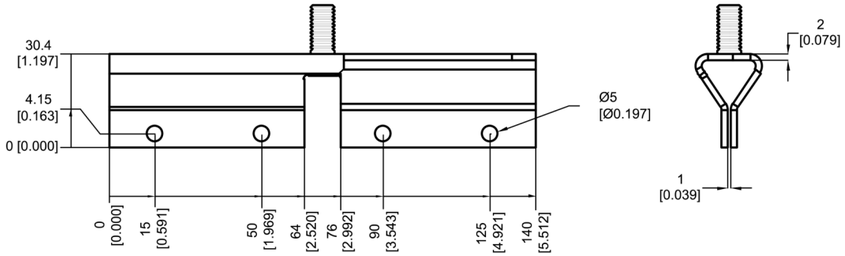
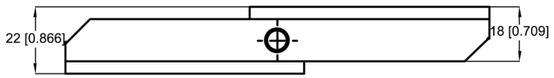


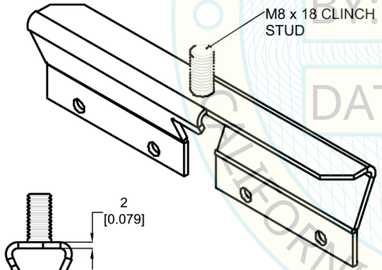


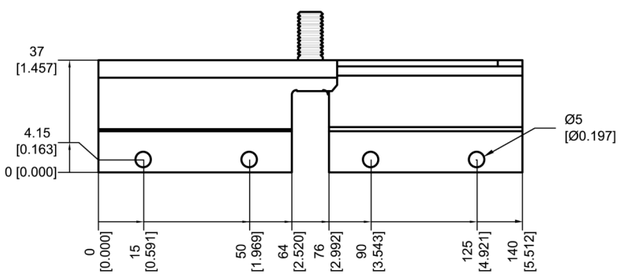


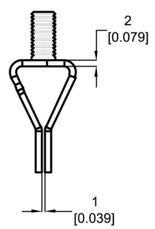
3 GRIDLOK 10 AND GRIDLOK 10-CT SADDLE CONNECTOR

N.T.S.



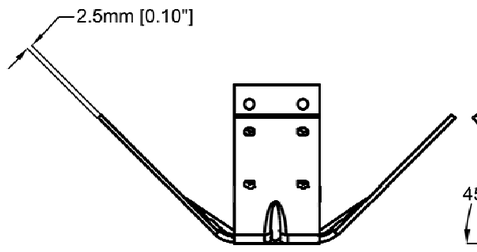


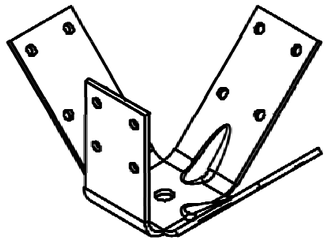


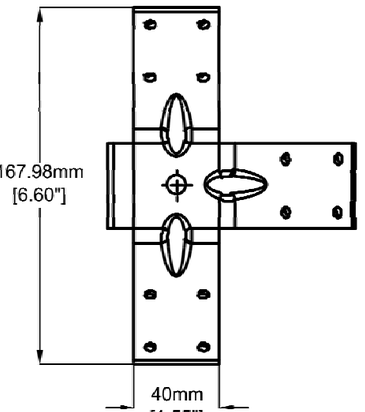


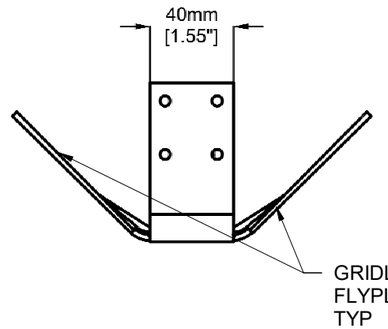
1 GRIDLOK 10-P SADDLE CONNECTOR

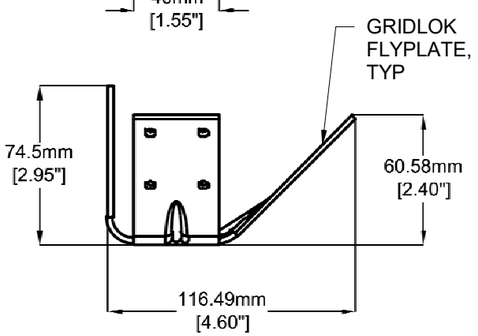
NTS











2 GRIDLOK FLY-PLATE CONNECTOR

N.T.S.

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Title:
GRIDLOK PARTS

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Sheet S9 OF Sheets

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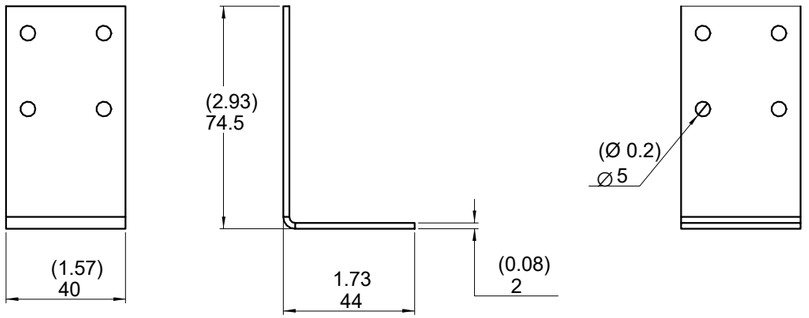

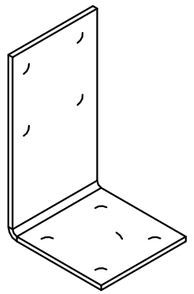

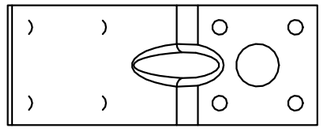

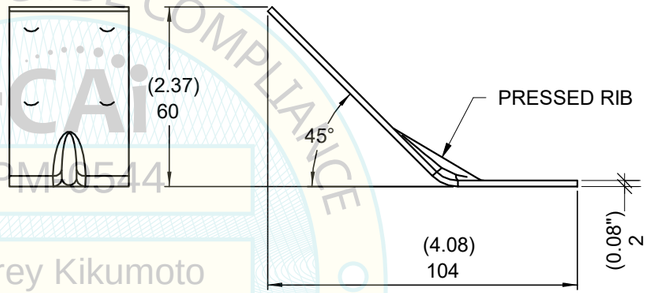

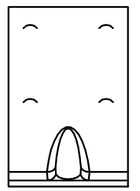

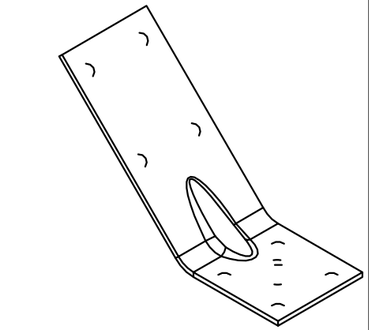

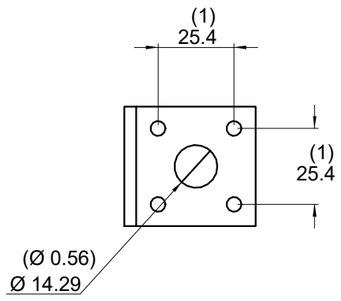

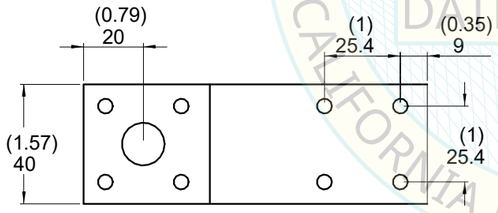

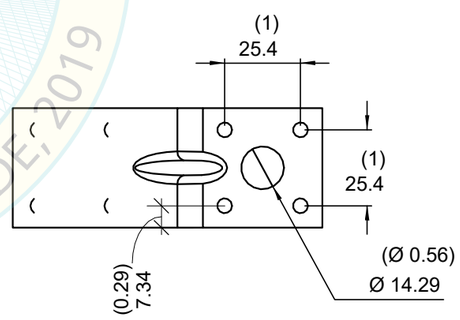

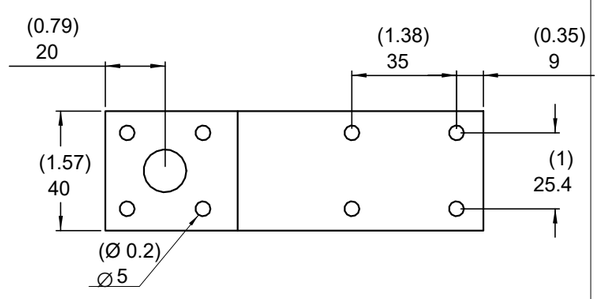

NOTE:
VERTICAL PORTION OF TOP STRUT CONNECTOR ALLOWED TO BE BENT IN FIELD ONCE (SIMILAR TO GRIDLOK ELEVATION 1/S5), TO POSITION THE VERTICAL STRUT, A MAXIMUM OF 10 DEGREES, NO REBENDING.

1 GRIDLOK TOP STRUT CONNECTOR (BC90) FOR 1/2" Ø BOLTS
N.T.S.

NOTE:
45 DEGREE PORTION OF TOP BRACE CONNECTOR ALLOWED TO BE BENT IN FIELD ONCE, A MAXIMUM OF 15 DEGREES IN ANY DIRECTION TO CORRECT ANGLE, NO REBENDING.

2 GRIDLOK TOP BRACE CONNECTOR (BC45) FOR 1/2" Ø BOLTS
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Title:
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NOTE:
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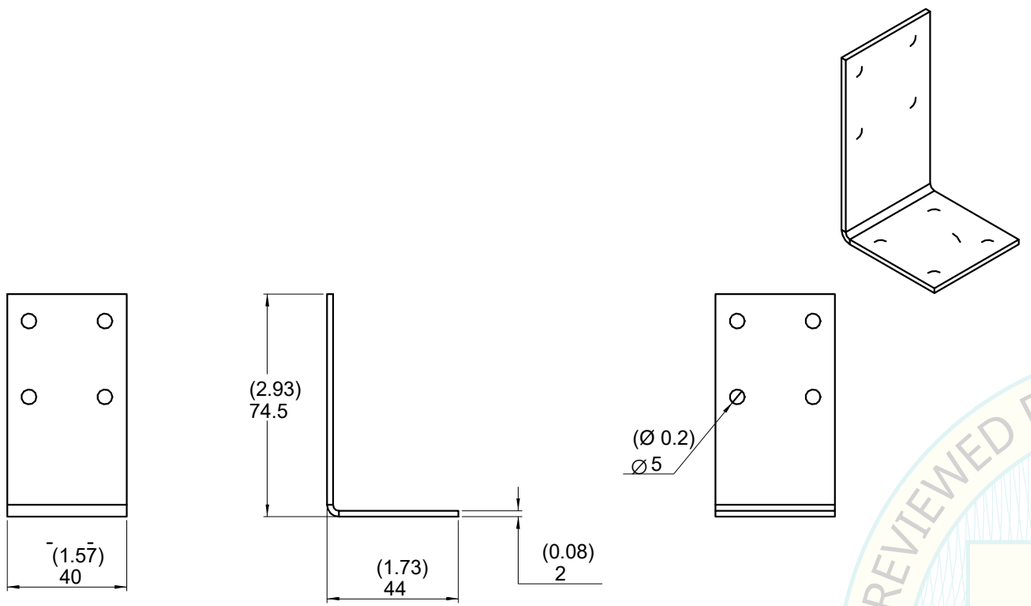
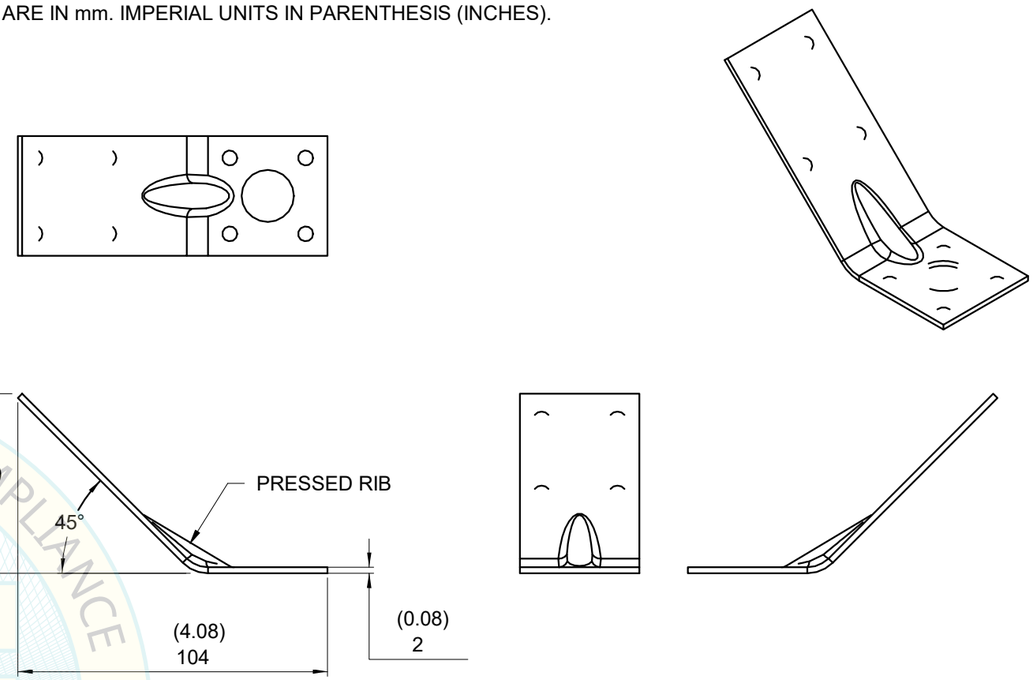
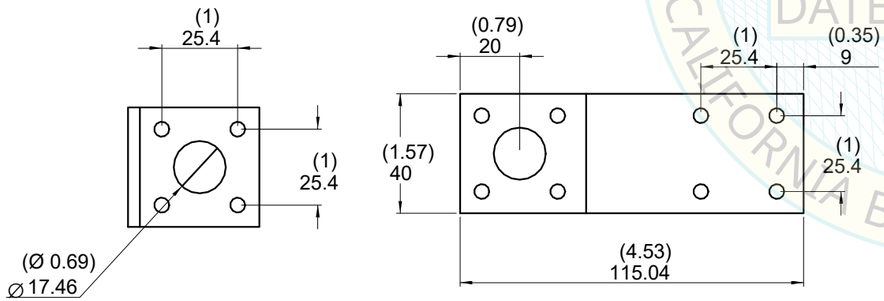


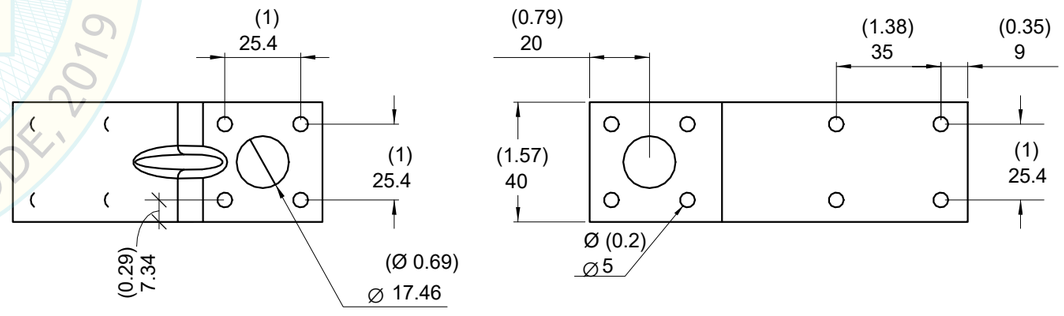




NOTE:
VERTICAL PORTION OF TOP STRUT CONNECTOR ALLOWED TO BE BENT IN FIELD ONCE (SIMILAR TO GRIDLOK ELEVATION 1/S5), TO POSITION THE VERTICAL STRUT, A MAXIMUM OF 10 DEGREES, NO REBENDING.

1 GRIDLOK TOP STRUT CONNECTOR (BC90) FOR 5/8" Ø BOLTS

N.T.S.



NOTE:
45 DEGREE PORTION OF TOP BRACE CONNECTOR ALLOWED TO BE BENT IN FIELD ONCE, A MAXIMUM OF 15 DEGREES IN ANY DIRECTION TO CORRECT ANGLE, NO REBENDING.

2 GRIDLOK TOP BRACE CONNECTOR (BC45) FOR 5/8" Ø BOLTS

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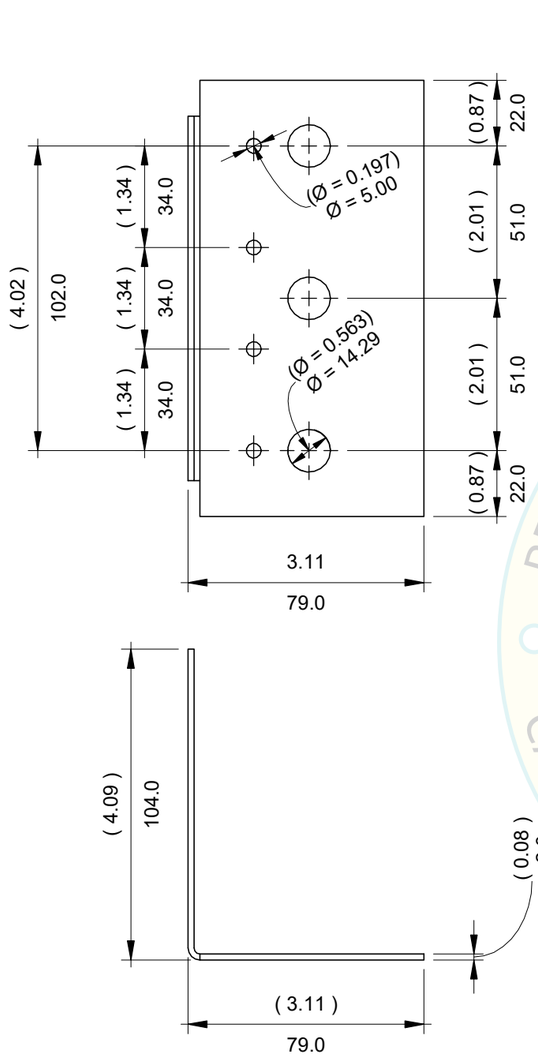

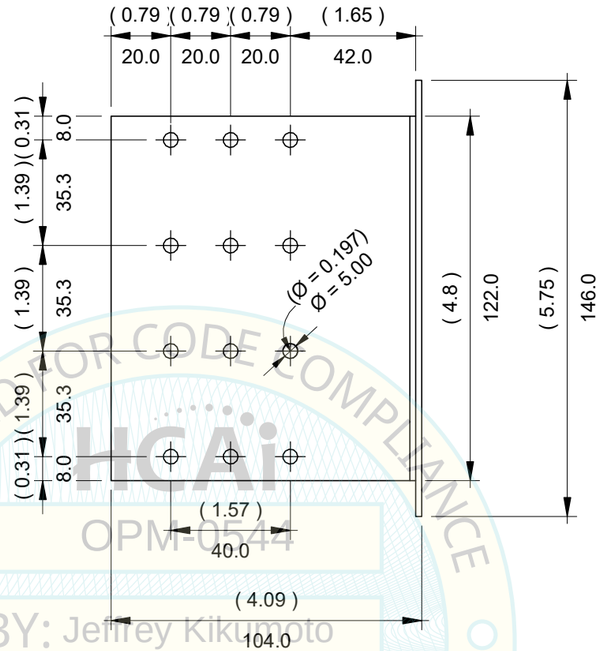

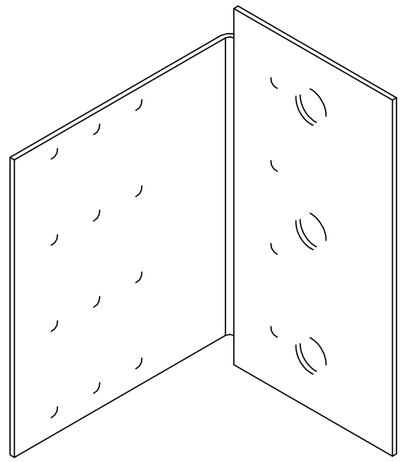

1 GRIDLOK WALL CONNECTOR (BC30)
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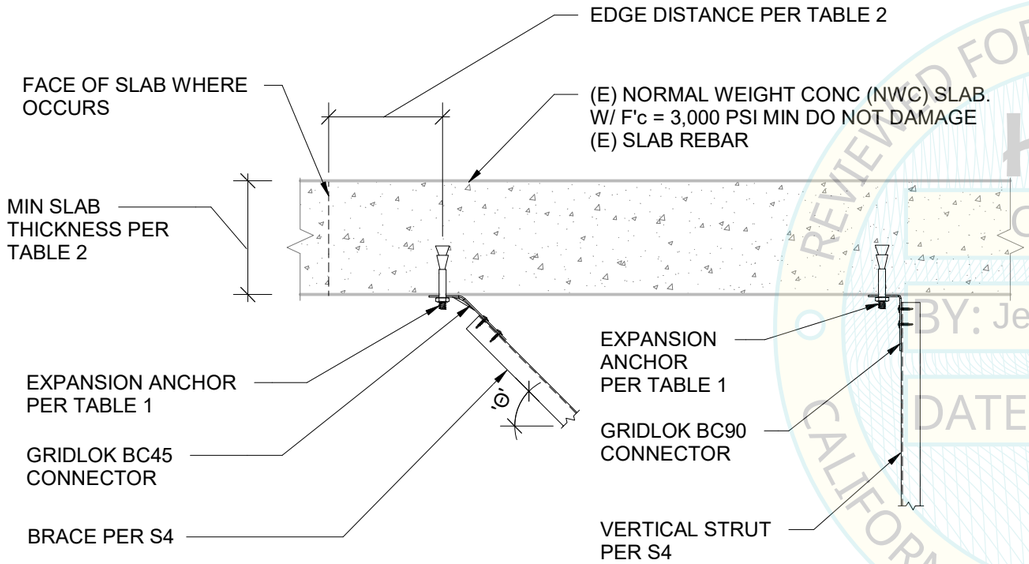

TABLE 1: MAXIMUM S_{DS} VALUES PER EXPANSION ANCHOR DIAMETER, GRIDLOK SPACING, AND BRACE ANGLE 'Θ'

ANCHOR Ø / 'Θ' IN DEG / GRIDLOK SPACING	1/2" W/ 2" EMBED			1/2" W/ 3 1/4" EMBED
	30°-45°	46°-50°	51°-60°	30°-60°
12'-0"x12'-0"	1.38	1.28	0.96	1.38
12'-0"x8'-0"	2.00	1.92	1.44	2.00
8'-0"x8'-0"	2.50	2.50	2.16	2.50
5'-8"x 12'-0" (ADVANCESPAN)	2.00			2.00

TABLE 1 NOTES:
1. GRIDLOK SPACING AS CHOSEN PER SHEET S3.

TABLE 2: EXPANSION ANCHOR CONCRETE SLAB INSTALLATION CRITERIA

NOMINAL ANCHOR DIAMETER (IN)	1/2"	1/2"
EFFECTIVE MIN EMBEDMENT (IN)	2	3 1/4
MIN MEMBER THICKNESS NWC SLAB OR BEAM ONLY (IN)	4.5	6
MIN ANCHOR SPACING (IN)	6 3/4	9 3/4
MIN EDGE DISTANCE (IN)	6	7 1/2

NOTES:

1. SEE TABLE 2 FOR EXPANSION ANCHOR CONCRETE SLAB INSTALLATION CRITERIA.

1 CONNECTION TO CONCRETE SLAB

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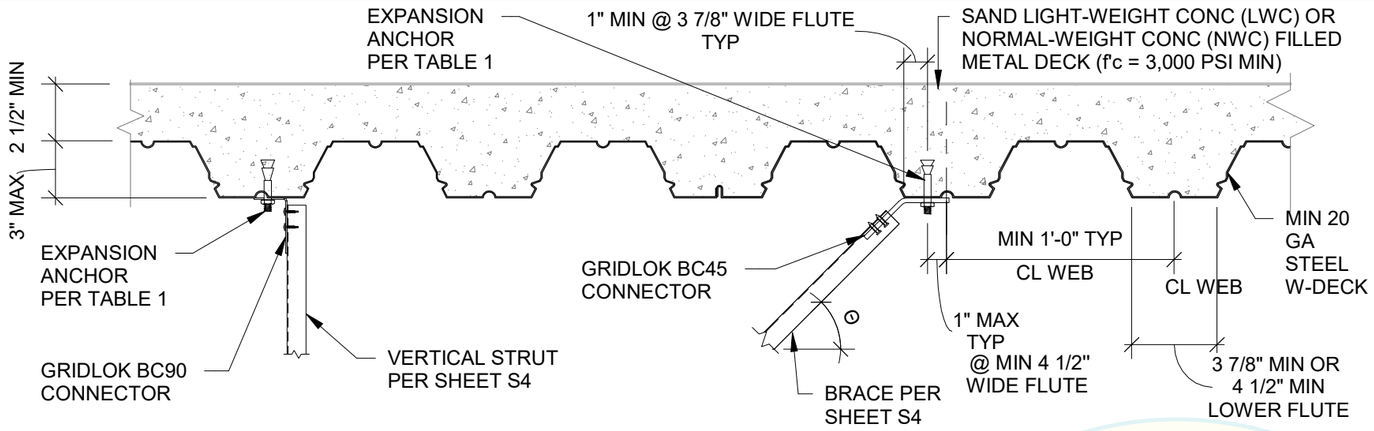
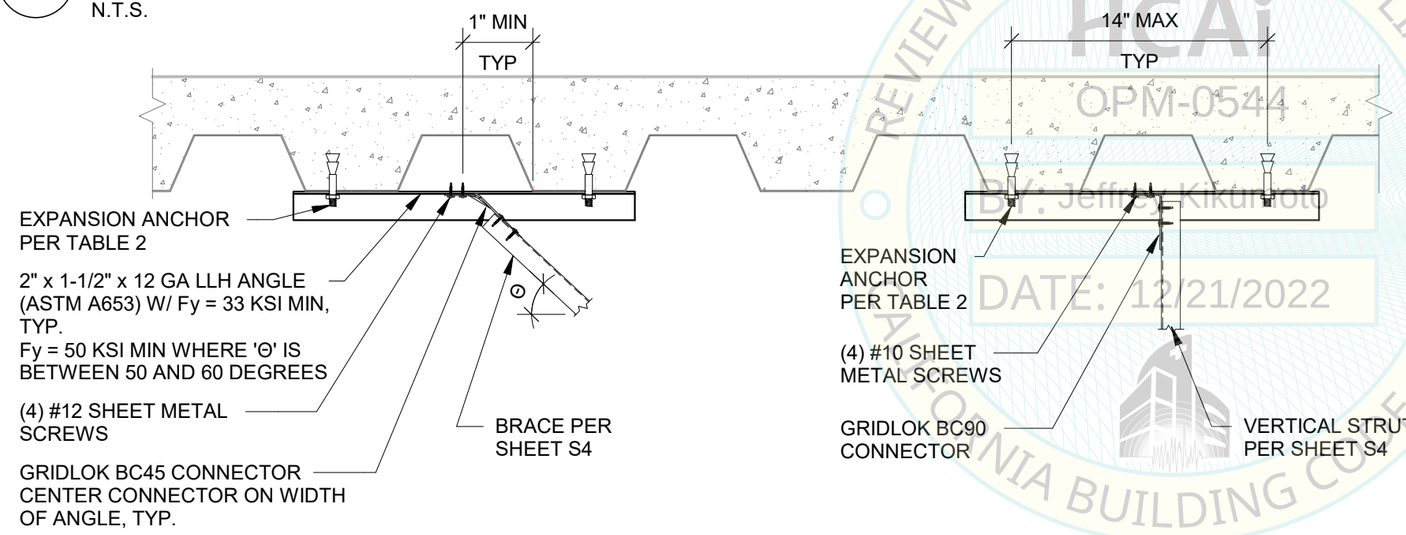


1 CONNECTION AT W3 DECK LOWER FLUTE (OPTION 1)

N.T.S.



NOTES.
1. SEE GENERAL NOTES FOR ANCHOR REQUIREMENTS.
2. SEE DETAIL 1 FOR REMAINING INFORMATION NOT SHOWN ON DETAIL 2.
3. SEE TABLE 3 FOR EXPANSION ANCHOR W3 DECK INSTALLATION CRITERIA

2 CONNECTION BETWEEN W3 DECK LOWER FLUTES (OPTION 2)

N.T.S.

TABLE 1: MAXIMUM S_{DS} VALUES PER EXPANSION ANCHOR DIAMETER, GRIDLOK SPACING, AND BRACE ANGLE 'Θ' (OPTION 1)

GRIDLOK SPACING \ ANCHOR Ø	1/2" W/ 2" EMBED					1/2" W/ 3 1/4" EMBED	
'Θ' IN DEG	30°-40°	41°-44°	45°	46°-50°	51°-60°	30°-50°	51°-60°
12'-0"x12'-0"	1.05	0.96	0.94	0.83	0.63	1.38	1.02
12'-0"x8'-0"	1.58	1.44	1.41	1.25	0.95	2.00	1.53
8'-0"x8'-0"	2.36	2.16	2.12	1.87	1.42	2.50	2.30
5'-8"x12'-0" (ADVANCESPAN)	2.00			1.76	1.33	2.00	2.00

TABLE 2: MAXIMUM S_{DS} VALUES PER EXPANSION ANCHOR DIAMETER, GRIDLOK SPACING, AND BRACE ANGLE 'Θ' (OPTION 2)

GRIDLOK SPACING \ ANCHOR Ø	1/2" W/ 2" EMBED		1/2" W/ 3 1/4" EMBED
'Θ' IN DEG	30°-50°	51°-60°	30°-60°
12'-0"x12'-0"	1.38	1.26	1.38
12'-0"x8'-0"	2.00	1.89	2.00
8'-0"x8'-0"	2.50		2.50
5'-8"x12'-0" (ADVANCESPAN)	2.00		2.00

TABLE 1 AND 2 NOTES:
1. GRIDLOK SPACING AS CHOSEN PER SHEET S3.
2. EFFECTIVE MIN EMBEDMENT (h_{ef}) PER TABLE 3.

TABLE 3: EXPANSION ANCHOR W3 DECK INSTALLATION CRITERIA

NOMINAL ANCHOR DIAMETER (IN)	1/2"	1/2"
EFFECTIVE MIN EMBEDMENT (IN)	2	3 1/4
MIN ANCHOR SPACING (IN)	6 3/4	9 3/4

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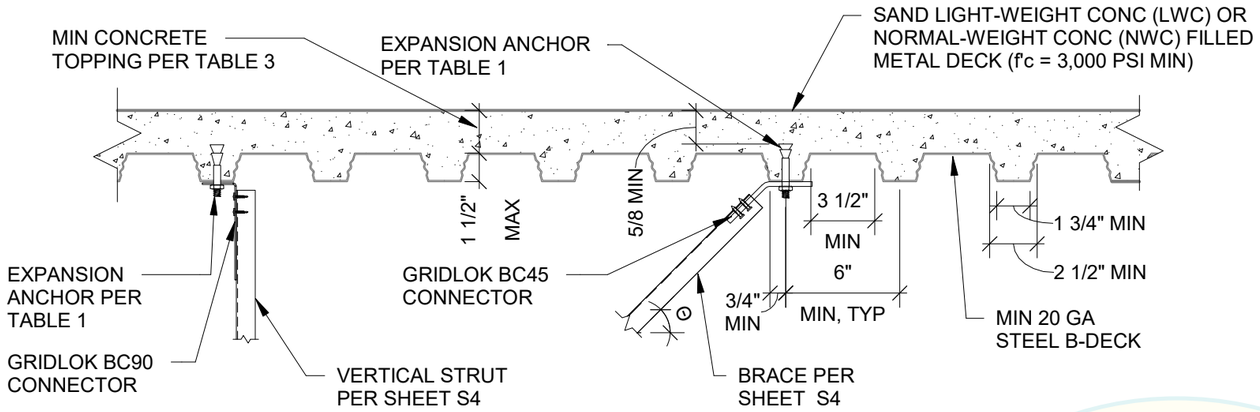

1 CONNECTION AT B DECK LOWER FLUTE (OPTION 1)

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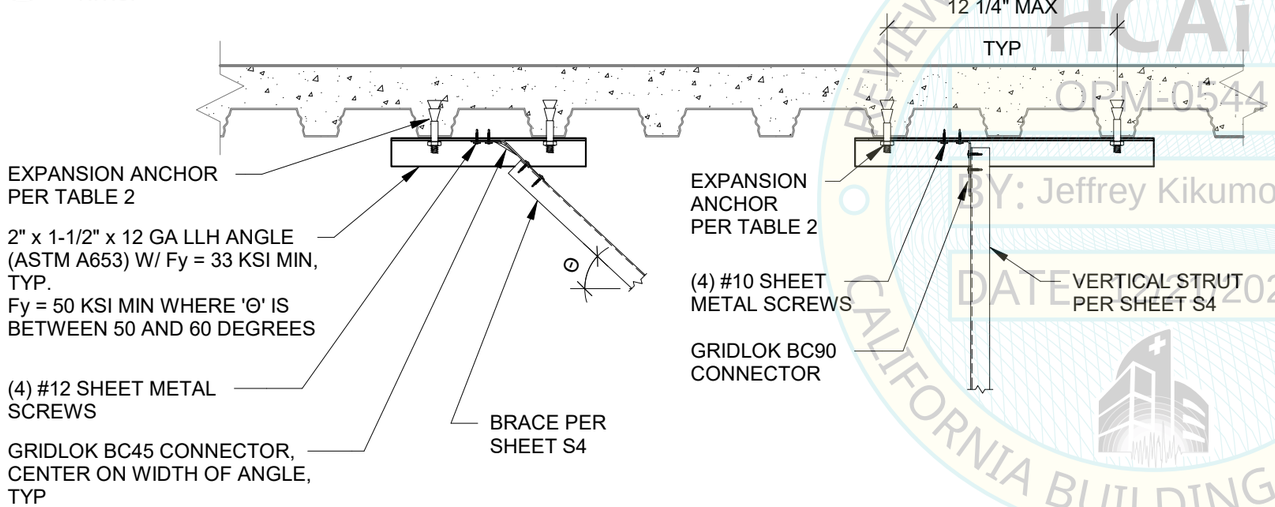

NOTES.
1. SEE GENERAL NOTES FOR ANCHOR REQUIREMENTS.
2. SEE DETAIL 1 FOR REMAINING INFORMATION NOT SHOWN ON DETAIL 2.
3. SEE TABLE 3 FOR EXPANSION ANCHOR B DECK INSTALLATION CRITERIA

2 CONNECTION BETWEEN B DECK LOWER FLUTES (OPTION 2)

N.T.S.

TABLE 1: MAXIMUM S_{DS} VALUES PER EXPANSION ANCHOR DIAMETER, GRIDLOK SPACING, AND BRACE ANGLE 'Θ' (OPTION 1)

ANCHOR Ø / GRIDLOK SPACING — 'Θ' IN DEG	1/2" W/ 2" EMBED					5/8" W/ 2 3/4" EMBED				
	30°-40°	41°-44°	45°	46°-50°	40°-60°	30°-40°	41°-44°	45°	46°-50°	51°-60°
12'-0"x12'-0"	0.90	0.80	0.78	0.66	0.48	1.38	1.35	1.30	1.13	0.82
12'-0"x8'-0"	1.35	1.20	1.17	0.99	0.72	2.00		1.95	1.70	1.23
8'-0"x8'-0"	2.03	1.80	1.76	1.49	1.08	2.50				1.85
5'-8"x12'-0" (ADVANCESPAN)	1.91	1.69	1.65	1.40	1.02	2.00				1.74

TABLE 2: MAXIMUM S_{DS} VALUES PER EXPANSION ANCHOR DIAMETER, GRIDLOK SPACING, AND BRACE ANGLE 'Θ' (OPTION 2)

ANCHOR Ø / GRIDLOK SPACING — 'Θ' IN DEG	1/2" W/ 2" EMBED			5/8" W/ 2 3/4" EMBED
	30°-45°	46°-50°	51°-60°	30°-60°
12'-0"x12'-0"	1.38	1.32	0.96	1.38
12'-0"x8'-0"	2.00	1.98	1.44	2.00
8'-0"x8'-0"	2.50		2.16	2.50
5'-8"x12'-0" (ADVANCESPAN)	2.00			2.00

TABLE 1 AND 2 NOTES:
1. GRIDLOK SPACING AS CHOSEN PER SHEET S3.
2. EFFECTIVE MIN EMBEDMENT (h_{ef}) PER TABLE 3.

TABLE 3: EXPANSION ANCHOR B DECK INSTALLATION CRITERIA

NOMINAL ANCHOR DIAMETER (IN)	1/2"	5/8"
EFFECTIVE MIN EMBEDMENT (IN)	2	2 3/4
MIN ANCHOR SPACING (IN)	6 3/4	8 1/4
MIN CONCRETE TOPPING (IN)	2 1/4	3 1/4

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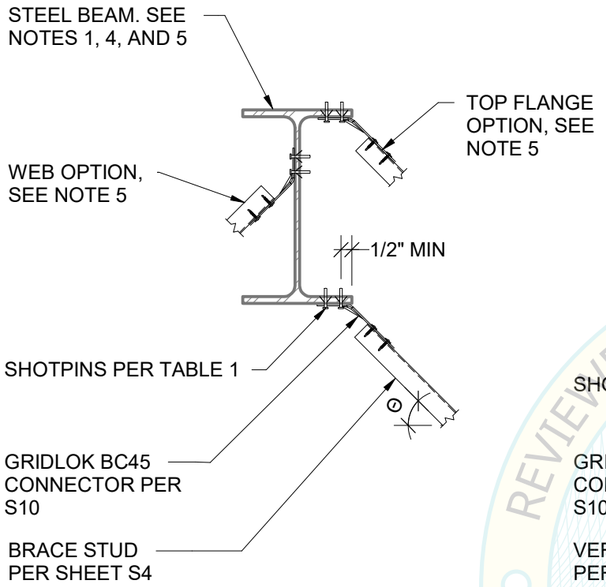

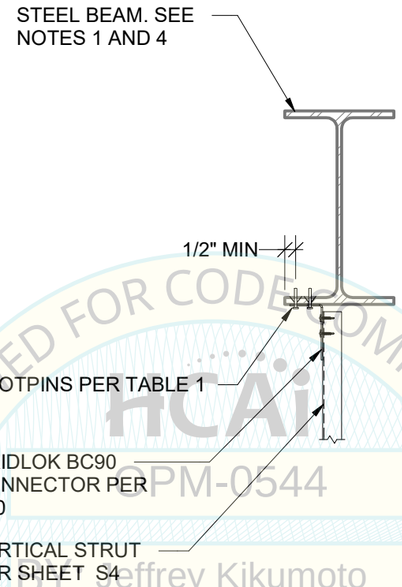

TABLE 1: MAXIMUM S_{DS} VALUES PER NUMBER OF SHOTPINS, GRIDLOK SPACING, AND BRACE ANGLE 'Θ'

GRIDLOK SPACING \ NUMBER OF SHOTPINS	2 (SEE TABLE NOTE 1)					4
'Θ' IN DEG	**30°-40°**	**41°-44°**	**45°**	**46°-50**	**51°-60°**	**30°-60°**
12'-0"x12'-0"	1.15	1.08	1.06	0.96	0.74	1.38
12'-0"x8'-0"	1.73	1.61	1.58	1.43	1.11	2.00
8'-0"x8'-0"	2.50	2.42	2.38	2.15	1.67	2.50
5'-8"x12'-0" (ADVANCESPAN)	2.00				1.57	2.00

TABLE 1 NOTES:
1. SHOTPINS INSTALLED IN STAGGERED HOLES ON DIAGONAL.
2. GRIDLOK SPACING AS CHOSEN PER SHEET S3.

NOTES:

1. BEAM FLANGE THICKNESS SHALL NOT BE LESS THAN 1/4" OR MORE THAN 3/8".
2. FRAMING MEMBERS SHALL BE DESIGNED TO CARRY CEILING LOADS, RDP TO VERIFY.
3. RDP IN RESPONSIBLE CHARGE, I.O.R. AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER, SEE ANSI /AISC 341-10.
4. MINIMUM Fy = 36 KSI FOR STEEL BEAM
5. RDP IN RESPONSIBLE CHARGE TO CONFIRM THAT STRUCTURAL STEEL BEAM IS SUFFICIENT TO DEVELOP THE LOAD WHERE THE BRACE IS PERPENDICULAR TO THE BEAM.
6. FOR PAF INSTALLED IN STEEL, THE FASTENER PENETRATION SHALL HAVE THE ENTIRE POINTED END OF THE FASTENER DRIVEN THROUGH THE STEEL MEMBER, EXCEPT AS NOTED IN CURRENT REPORTS FROM TESTING AGENCIES ACCEPTABLE TO HCAI.

1 CONNECTION TO STRUCTURAL STEEL
1 1/2" = 1'-0"

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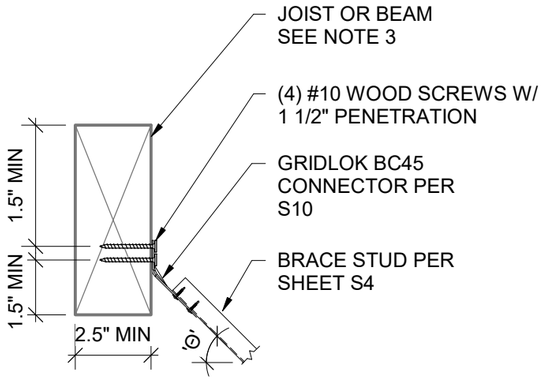

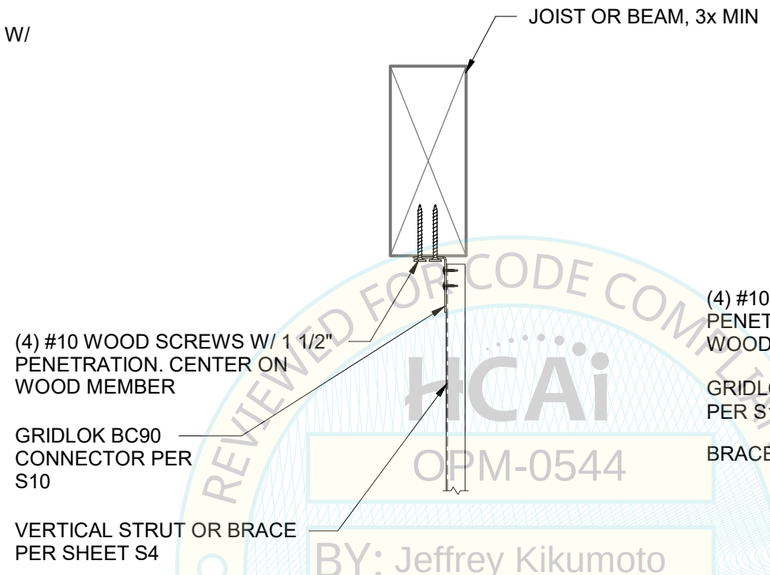

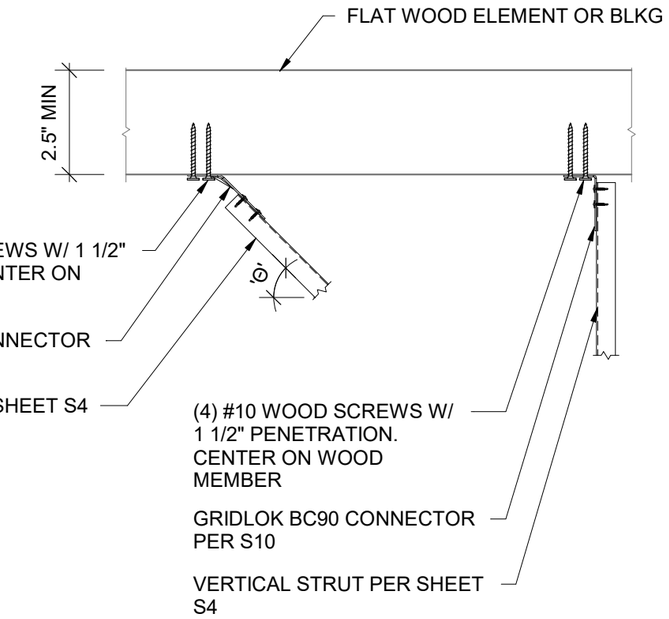

NOTES:

1. FRAMING MEMBERS SHALL BE DESIGNED TO CARRY CEILING LOADS, RDP TO VERIFY.
2. SCREWS SHOWN ARE BASED ON DOUGLAS FIR LARCH WOOD MEMBERS. (WOOD SCREWS TO BE IN CONFORMANCE w/ ANSI B18.6.1)
3. RDP IN RESPONSIBLE CHARGE TO CONFIRM THAT THE WOOD BEAM IS SUFFICIENT TO CARRY THE LOAD FROM THE BRACE.
4. ALL BRACE ANGLES, 'Θ', RANGING FROM 30° TO 60° ARE APPLICABLE.

1 CONNECTION TO SAWN TIMBER

1 1/2" = 1'-0"

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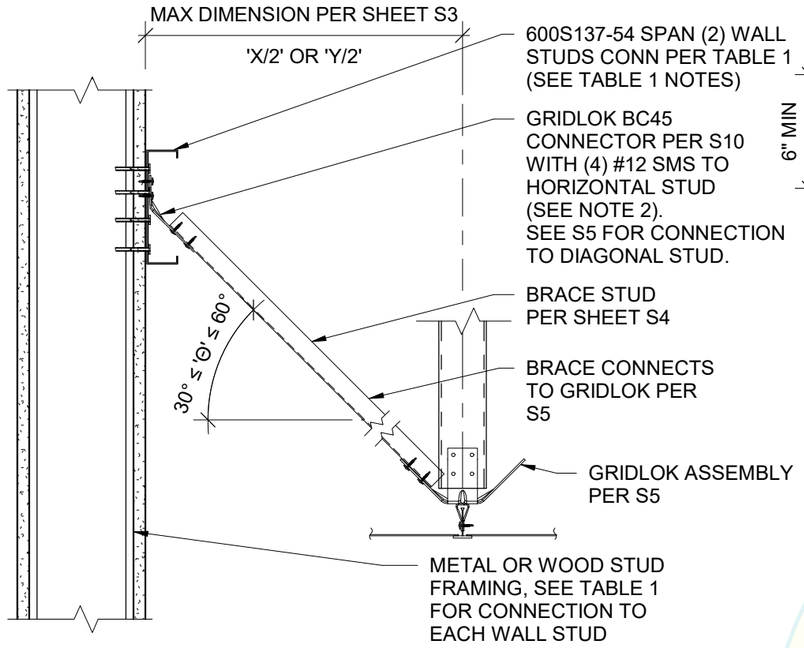
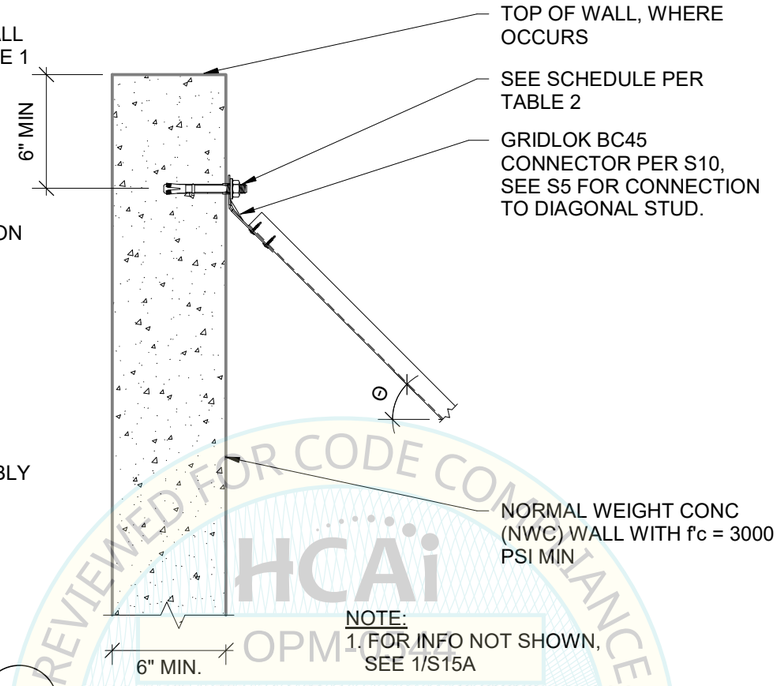


1 CONNECTION TO METAL/ WOOD STUD WALL

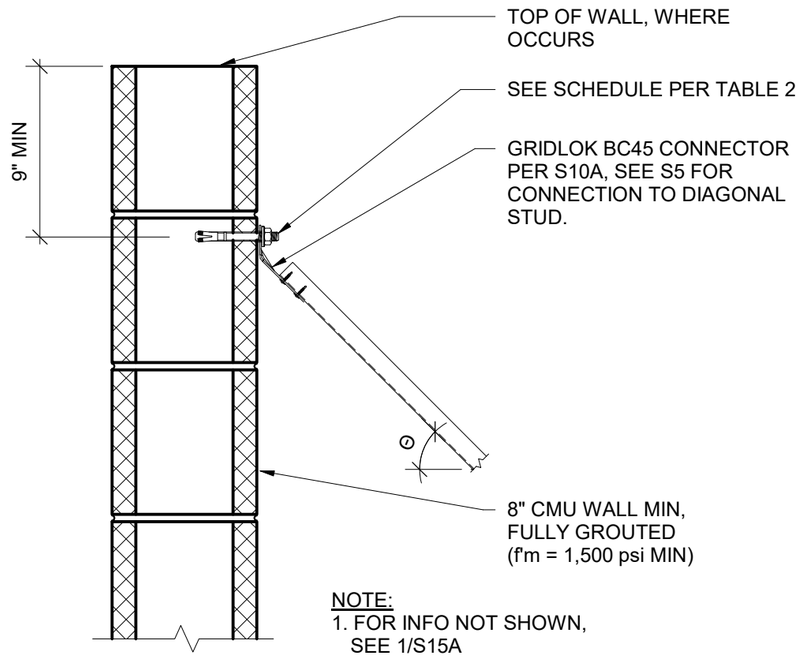
N.T.S.



NOTE:
1. FOR INFO NOT SHOWN, SEE 1/S15A

2 CONNECTION TO CONCRETE WALL

N.T.S.



NOTE:
1. FOR INFO NOT SHOWN, SEE 1/S15A

3 CONNECTION TO CMU WALL

N.T.S.

TABLE 1: SCREW SCHEDULE

WALL STUD/ GAUGE	MAX LAYER OF GYP BD	CONN TO EACH WALL STUD
METAL STUDS 20 GA MIN (33 KSI)[1]	1	(8) #10 SMS
	2	(10) #10 SMS
METAL STUDS 18 GA MIN (33 KSI)	1	(5) #12 SMS
	2	(6) #12 SMS
WOOD STUDS, 2x MIN.	2	(6) #14 WOOD SCREWS W/ MIN 2 1/2" PENETRATION TO EA STUD[2]

TABLE 1 NOTES:
1. WHERE (8) SCREWS OR MORE ARE REQUIRED, USE 800S137-54 IN LIEU OF 600S137-54.
2. FOR BRACE ANGLES, 'Θ', RANGING BETWEEN 30° TO 55°, (5) #14 WOOD SCREWS ALLOWED TO BE USED
3. FOR WOOD CONN, SEE NOTES ON S15 FOR ATTACHMENTS.

TABLE 2: ANCHOR SCHEDULE

WALL TYPE	ANCHOR TYPE	DIAMETER (IN)	EFFECTIVE MIN EMBEDMENT (IN)
CONCRETE	KB-TZ2	1/2	3 1/4
CMU	KH-EZ	5/8	5

TABLE 2 NOTES:
1. HILTI KH-EZ MUST BE INSTALLED IN THE FACE OF CMU SHELLS A MINIMUM OF 1-3/8" FROM ANY VERTICAL MORTAR JOINT & LIMITED TO ONE ANCHOR PER CELL.
2. WHEN USING HILTI KH-EZ ANCHOR ATTACHMENT TO CMU WALL, SEOR MUST VERIFY:
   A. MASONRY IS NOT CRACKED AS DEFINED IN ICC-ES AC01 §102; CALCULATION REQ'D TO SHOW MASONRY WALL WOULD NOT CRACK UNDER DESIGN EQ LOADS UNDER ALL SERVICE LOADS CONDITIONS; WALL HAS TO REMAIN ELASTIC.
   B. PRODUCT USE REQUIREMENTS IN ACCORDANCE WITH ESR-3056 IS SATISFIED.
3. OVERSTRENGTH FACTOR AS REQUIRED FOR ANCHORAGE TO CONCRETE AND CMU.

NOTES:
1. RDP SHALL DESIGN OR VERIFY WALLS FOR THE CEILING LOADS
2. TABLE 1 AND 2 ARE APPLICABLE TO ALL BRACE ANGLES, 'Θ', RANGING FROM 30° TO 60°.
3. WALL CONNECTION PERMITTED ONLY AT ATTACHED CEILING JOINT. SEE S3.

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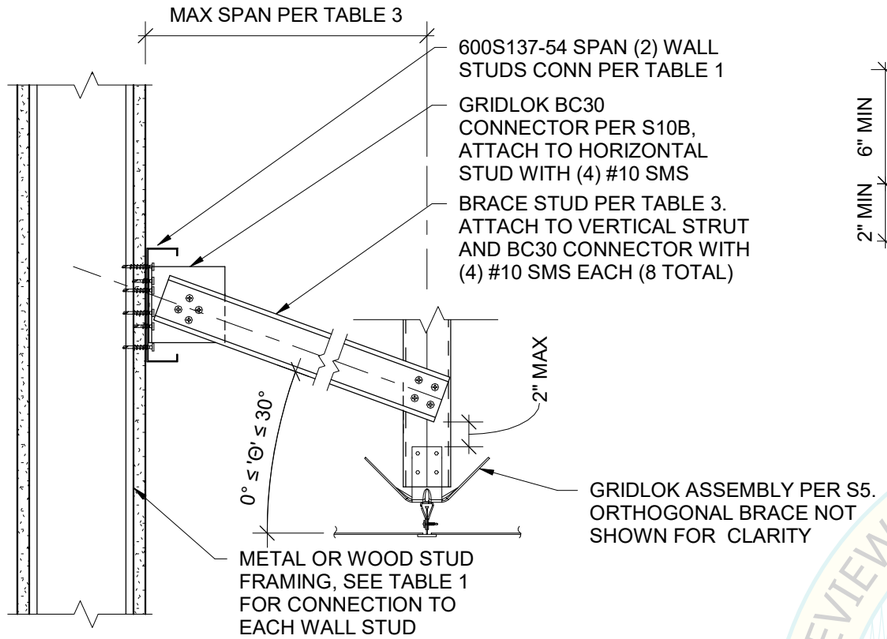
Title:
WALL CONNECTION DETAILS

30° - 60°

Drawn:	JEB	Job number:	B8769007.01
Design:	JEL	Rev:	
Check:	AC	Scale:	AS INDICATED
Date	12/20/2022		

Sheet S15A OF Sheets

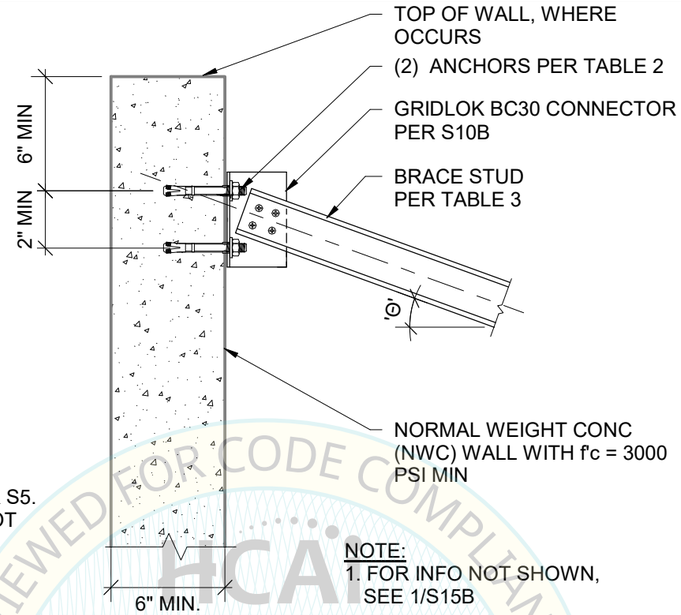


1 CONNECTION TO METAL/ WOOD STUD WALL

N.T.S.

TABLE 1: SCREW SCHEDULE		
WALL STUD/ GAUGE	**MAX LAYER OF GYP BD**	**CONN TO EACH WALL STUD**
METAL STUDS 20 GA MIN (33 KSI)	1	(5) #10 SMS
	2	(6) #10 SMS
METAL STUDS 18 GA MIN (33 KSI)	1	(4) #10 SMS
	2	(4) #10 SMS
WOOD STUDS, 2x MIN.	2	(4) #10 WOOD SCREWS W/ MIN 2" PENETRATION TO EA STUD

TABLE 1 NOTES:
1. FOR WOOD CONN, SEE NOTES ON S15 FOR ATTACHMENTS.



NOTE:
1. FOR INFO NOT SHOWN, SEE 1/S15B

2 CONNECTION TO CONCRETE WALL

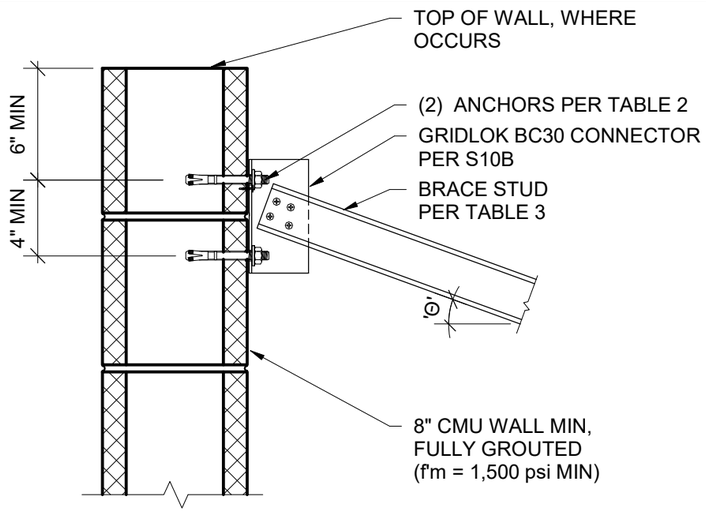
N.T.S.

TABLE 2: ANCHOR SCHEDULE			
WALL TYPE	**ANCHOR TYPE**	**DIAMETER (IN)**	**EFFECTIVE MIN EMBEDMENT (IN)**
CONCRETE	KB-TZ2	1/2	3 1/4
CMU	KH-EZ	1/2	4 1/4

TABLE 2 NOTES:
1. HILTI KH-EZ MUST BE INSTALLED IN THE FACE OF CMU SHELLS A MINIMUM OF 1-3/8" FROM ANY VERTICAL MORTAR JOINT & LIMITED TO ONE ANCHOR PER CELL.
2. WHEN USING HILTI KH-EZ ANCHOR ATTACHMENT TO CMU WALL, SEOR MUST VERIFY:
   A. MASONRY IS NOT CRACKED AS DEFINED IN ICC-ES AC01 §102; CALCULATION REQ'D TO SHOW MASONRY WALL WOULD NOT CRACK UNDER DESIGN EQ LOADS UNDER ALL SERVICE LOADS CONDITIONS; WALL HAS TO REMAIN ELASTIC.
   B. PRODUCT USE REQUIREMENTS IN ACCORDANCE WITH ESR-3056 IS SATISFIED.
3. OVERSTRENGTH FACTOR AS REQUIRED FOR ANCHORAGE TO CONCRETE AND CMU.

3 CONNECTION TO CMU WALL

N.T.S.



NOTE:
1. FOR INFO NOT SHOWN, SEE 1/S15B

TABLE 3: BRACE STUD SCHEDULE	
MAX SPAN	**BRACE STUD SIZE**
6'-6"	250S162-33 (20 GA)
14'-0"	400S300-54 (16 GA)

SHEET NOTES:

1. RDP SHALL DESIGN OR VERIFY WALLS FOR THE CEILING LOADS
2. TABLE 1 AND 2 ARE APPLICABLE TO BRACE ANGLES, 'Θ', RANGING FROM 0° TO 30°.
3. WALL CONNECTION PERMITTED ONLY AT ATTACHED CEILING JOINT. SEE S3.

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Title:
WALL CONNECTION DETAILS (ALTERNATE CONNECTION ABOVE GRIDLOK)

0° - 30°

Drawn:	JEB	Job number:	B8769007.01
Design:	JEL	Rev:	
Check:	AC	Scale:	AS INDICATED
Date	12/20/2022		

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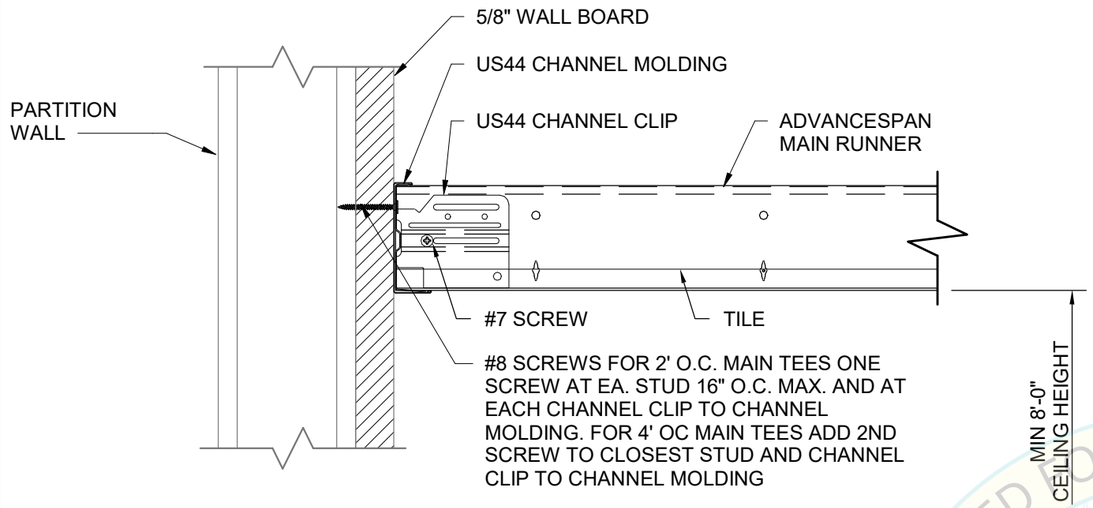
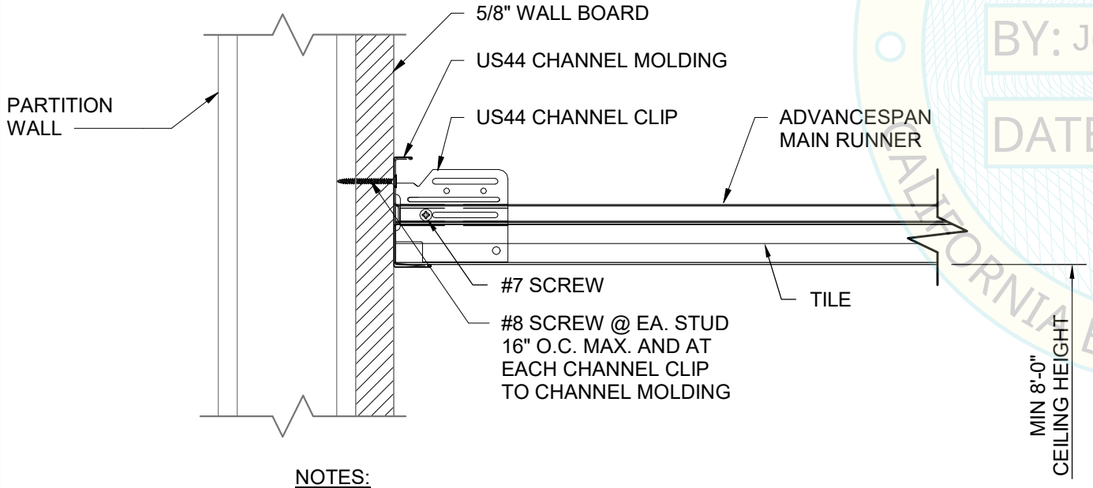


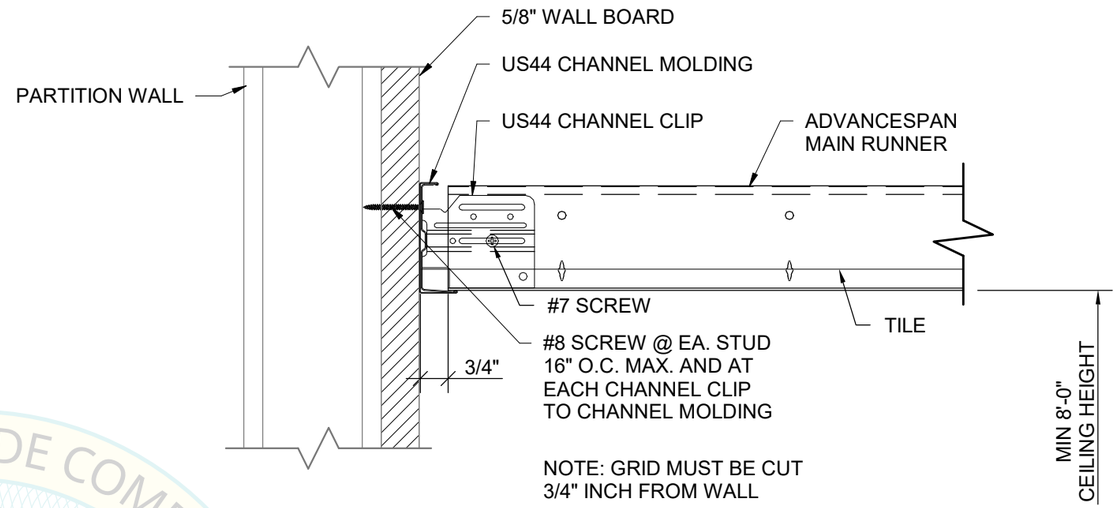
NOTES:
1. ADVANCESPAN CHANNEL ASSEMBLY AND RUNNERS PER TABLE 1 OF SHEET S2

1 ATTACHED SIDE - MAIN RUNNER



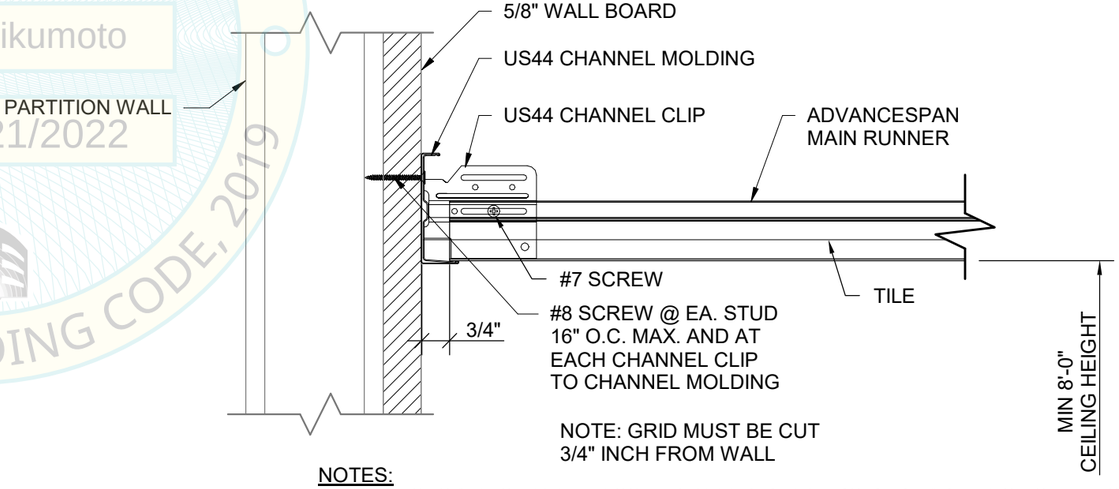
NOTES:
1. ADVANCESPAN CHANNEL ASSEMBLY AND RUNNERS PER TABLE 1 OF SHEET S2

2 ATTACHED SIDE - CROSS RUNNER



NOTES:
1. ADVANCESPAN CHANNEL ASSEMBLY AND RUNNERS PER TABLE 1 OF SHEET S2
2. GRID MUST BE CUT 3/4" INCH FROM WALL

3 FREE SIDE - MAIN RUNNER



NOTES:
1. ADVANCESPAN CHANNEL ASSEMBLY AND RUNNERS PER TABLE 1 OF SHEET S2
2. GRID MUST BE CUT 3/4" FROM WALL

4 FREE SIDE - CROSS RUNNER

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Title: ADVANCESPAN CHANNEL ASSEMBLY

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Design:	PGM/LH	Rev:	
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Date	12/20/2022		

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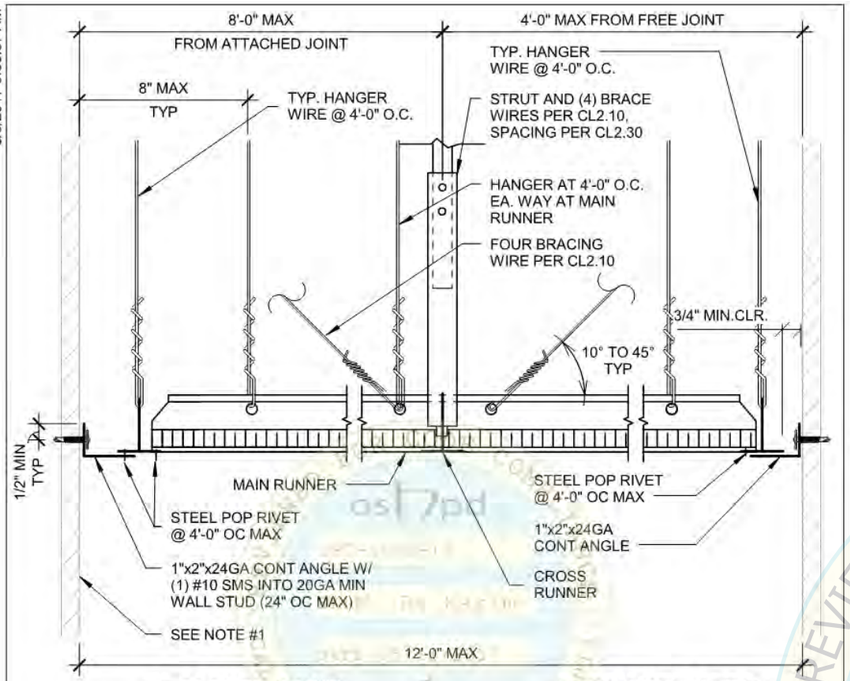

ATTACHED JOINT **EXPANSION JOINT**

ACCEPTABLE EXITWAY DETAILS

NOTES:

1. PERIMETER WALLS SHALL BE DESIGNED TO CARRY TRIBUTARY LATERAL FORCES PER TABLE BELOW. RDP TO VERIFY. RDP TO SPECIFY CONNECTION OF BACKING TO STUDS

S_{DS}	Fp
$S_{DS} \leq 1.15$	9.3 plf
$1.15 < S_{DS} \leq 1.73$	14.0 plf
$1.73 < S_{DS} \leq 2.50$	20.9 plf

2. SEISMIC BRACING WIRES AND STRUTS IN ACCORDANCE WITH PAGES CL2.20, CL2.21, AND CL2.22 SHALL BE PERMITTED IN LIEU OF DESIGNING PERIMETER WALLS FOR SEISMIC FORCES AND BRACING SYSTEM SHOWN ON PAGE CL2.30 AND THIS PAGE.

3. STEEL POP RIVET SHALL HAVE MINIMUM ALLOWABLE SHEAR STRENGTH OF 120# AND ULTIMATE SHEAR STRENGTH OF 300#.

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS			OPD No:
Sheet Title : TYPICAL CEILING SECTION AT EXITWAY CORRIDORS			CL2.50

1 TYPICAL CEILING SECTION AT EXITWAY CORRIDORS

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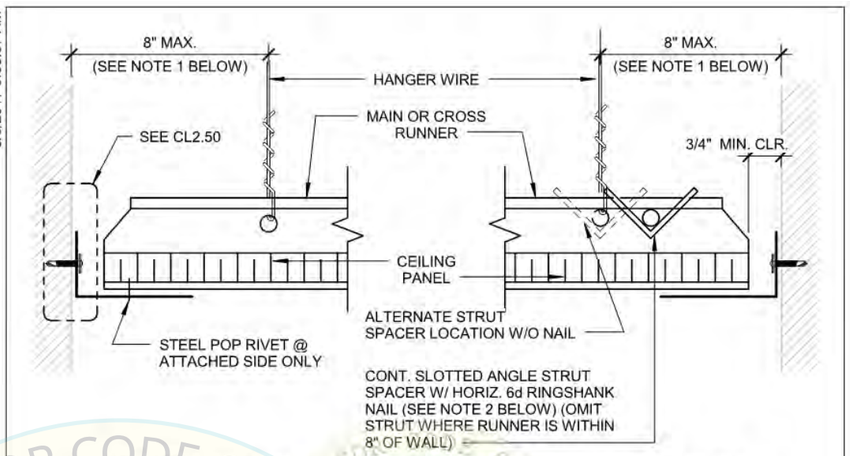
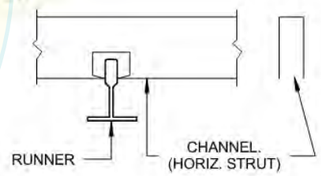


ATTACHED JOINT **FREE JOINT**

1. PROVIDE #12 GAGE HANGER WIRES AT THE ENDS OF ALL MAIN AND CROSS RUNNERS WITHIN EIGHT (8) INCHES OF THE SUPPORT OR WITHIN ONE-FOURTH (1/4) OF THE LENGTH OF THE END TEE, WHICHEVER IS LESS, FOR THE PERIMETER OF THE CEILING AREA. PERIMETER WIRES ARE NOT REQUIRED WHEN THE LENGTH OF THE END TEE IS EIGHT (8) INCHES OR LESS.
2. NAILS AT ENDS OF HORIZONTAL STRUTS ARE TO BE PLACED WITH NAIL HEAD TOWARD CENTER LINE OF SPAN OF STRUT.
3. SPACERS MAY BE SLOTTED APPROVED ANGLES OR CHANNELS WITH "DIAMOND POINTS" OF SPRING STEEL WHICH SNAP TIGHT TO PREVENT MOVEMENT OF STRUT.
4. STEEL POP RIVETS SHALL HAVE MINIMUM ALLOWABLE SHEAR STRENGTH OF 120# AND ULTIMATE SHEAR STRENGTH OF 300#.



APPROVED SPACER

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS			OPD No:
Sheet Title : CEILING PERIMETER INCLUDING NON-EXITWAY CORRIDORS			CL2.60

2 CEILING PERIMETER INCLUDING NON-EXITWAY CORRIDORS

SHEET NOTES:

1. NOTES AND DETAIL CALLOUTS IN SPECIFIC DETAILS TAKE PRECEDENCE OVER THE "OPD" DETAILS CALLED OUT ON THIS SHEET.

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Title: OPD-0002-13 DETAILS (CL2.60, CL2.50)

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
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Date	12/20/2022		

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12. EXPANSION JOINTS, SEISMIC SEPARATIONS, AND PENETRATIONS:

a. EXPANSION JOINTS SHALL BE PROVIDED IN THE CEILING AT INTERSECTIONS OF CORRIDORS AND AT JUNCTIONS OF CORRIDORS WITH LOBBIES OR OTHER SIMILAR AREAS.

b. FOR CEILING AREAS EXCEEDING 2500 SQUARE FEET, A SEISMIC SEPARATION JOINT SHALL BE PROVIDED TO DIVIDE THE CEILING INTO AREAS NOT EXCEEDING 2500 SQ. FT.

c. PENETRATIONS THROUGH THE CEILING FOR SPRINKLER HEADS AND OTHER SIMILAR DEVICES THAT ARE NOT INTEGRALLY TIED TO THE CEILING SYSTEM IN THE LATERAL DIRECTION SHALL HAVE A TWO (2) INCH OVERSIZED RING, SLEEVE OR ADAPTER THROUGH THE CEILING TILE TO ALLOW FREE MOVEMENT OF ONE (1) INCH IN ALL HORIZONTAL DIRECTIONS. A FLEXIBLE SPRINKLER HOSE FITTING THAT CAN ACCOMMODATE ONE (1) INCH OF CEILING MOVEMENT SHALL BE PERMITTED TO BE USED IN LIEU OF THE OVERSIZED RING, SLEEVE OR ADAPTER. SUCH FLEXIBLE SPRINKLER HOSE SHALL BE ADEQUATELY SUPPORTED FROM SOFFIT SO AS NOT TO EXCEED THE MAXIMUM TRIBUTARY WEIGHT OF THE CEILING.

13. LATERAL FORCE BRACING:
LATERAL FORCE BRACING IS REQUIRED IN ACCORDANCE WITH THIS SECTION FOR ALL CEILING AREAS, UON.

EXCEPTION: LATERAL FORCE BRACING MAY BE OMITTED FOR SUSPENDED ACOUSTICAL CEILING SYSTEMS WITH A CEILING AREA OF 144 SQ. FT. OR LESS, WHEN PERIMETER SUPPORT IN ACCORDANCE WITH ASTM E580 ARE PROVIDED AND PERIMETER WALLS ARE DESIGNED TO CARRY THE CEILING LATERAL FORCES.

a. PROVIDE LATERAL-FORCE BRACING ASSEMBLIES CONSISTING OF A STRUT AND FOUR (4) #12 GAGE BRACING WIRES ORIENTED 90 DEGREES FROM EACH OTHER.

b. LATERAL-FORCE BRACING ASSEMBLIES SHALL BE SPACED IN ACCORDANCE WITH CL2.20 THROUGH CL2.22 AND CL2.30 FROM EACH WALL AND AT THE EDGES OF ANY CHANGE OF ELEVATION OF THE CEILING.

c. THE SLOPE OF BRACING WIRES MAY BE FROM 10 TO 45 DEGREES BUT MAY NOT EXCEED 45 DEGREES FROM THE PLANE OF THE CEILING AND WIRES SHALL BE TAUT.

d. STRUTS SHALL BE ADEQUATE TO RESIST THE VERTICAL COMPONENT INDUCED BY THE BRACING WIRES, AND SHALL NOT BE MORE THAN 1 (HORIZONTAL) IN 6 (VERTICAL) OUT OF PLUMB.

14. ATTACHMENT OF HANGER AND BRACING WIRES:

a. FASTEN #12 HANGER WIRES WITH NOT LESS THAN THREE (3) TIGHT TURNS IN 3 INCHES. HANGER WIRE LOOPS SHALL BE TIGHTLY WRAPPED AND SHARPLY BENT TO PREVENT ANY VERTICAL MOVEMENT OR ROTATION OF THE MEMBER WITHIN THE LOOPS.

b. FASTEN #12 BRACING WIRES WITH FOUR (4) TIGHT TURNS. MAKE ALL TIGHT TURNS WITHIN A DISTANCE OF 1 1/2" INCHES.

c. HANGER OR BRACING WIRE ANCHORED TO THE STRUCTURE SHOULD BE INSTALLED IN SUCH A MANNER THAT THE DIRECTION OF THE ANCHOR ALIGNS AS CLOSELY AS POSSIBLE WITH THE DIRECTION OF THE WIRE.

d. SEPARATE ALL CEILING HANGER AND BRACING WIRES AT LEAST SIX (6) INCHES FROM ALL UNBRACED DUCTS, PIPES CONDUITS, ETC.

e. HANGER WIRES SHALL NOT BE ATTACHED TO OR BEND AROUND INTERFERING MATERIAL OR EQUIPMENT. PROVIDE TRAPEZE OR OTHER SUPPLEMETARY SUPPORT MEMBERS AT OBSTRUCTIONS TO TYPICAL HANGER SPACING. PROVIDE ADDITIONAL HANGERS, STRUTS OR BRACES AS REQUIRED AT ALL CEILING BREAKS, SOFFITS, OR DISCONTINUOUS AREAS.

f. HANGER WIRES THAT ARE MORE THAN 1 (HORIZONTAL) IN 6 (VERTICAL) OUT OF PLUMB SHALL REQUIRE PROJECT SPECIFIC DESIGN.

g. WHEN DRILLED-IN CONCRETE ANCHORS OR PAF ARE USED IN REINFORCED CONCRETE FOR HANGER WIRES, 1 OUT OF 10 WIRE/ ANCHOR ASSEMBLIES SHALL BE FIELD TESTED FOR 200 LBS. IN TENSION. WHEN DRILLED-IN CONCRETE ANCHORS ARE USED FOR BRACING WIRES, 1 OUT OF 2 WIRE/ANCHOR ASSEMBLIES SHALL BE FIELD TESTED FOR 440 LBS. IN TENSION IN THE DIRECTION OF THE WIRE. PAF IN CONCRETE ARE NOT PERMITTED FOR BRACING WIRES.

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS		OPD No:
Sheet Title : GENERAL NOTES - PAGE 3 OF 4		CL0.02

1 GENERAL NOTES - PAGE 3 OF 4

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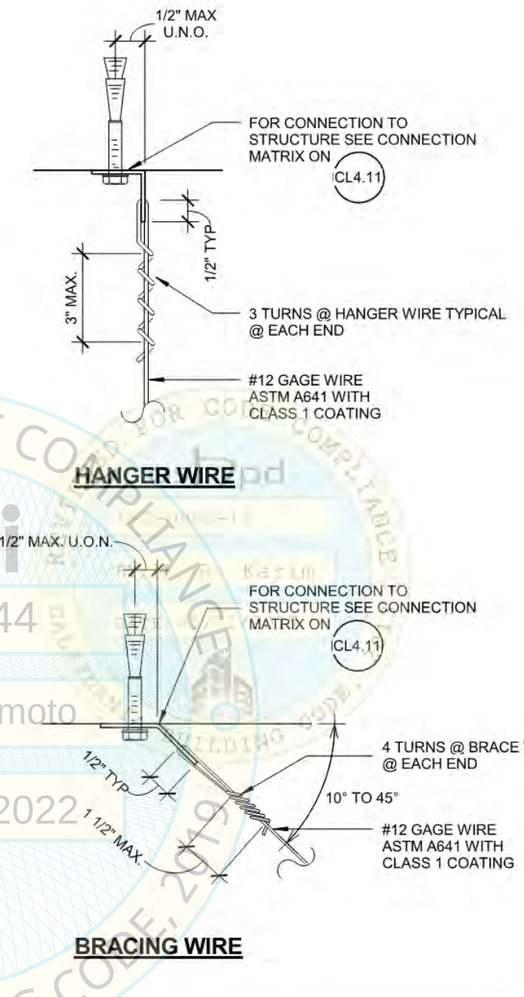

HANGER WIRE

BRACING WIRE

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS		OPD No:
Sheet Title : HANGER AND BRACING WIRE CONNECTION - TYPICAL WIRE TURNS		CL4.10

2 HANGER AND BRACING WIRE CONNECTION - TYPICAL WIRE TURNS

SHEET NOTES:

1. NOTES AND DETAIL CALLOUTS IN SPECIFIC DETAILS TAKE PRECEDENCE OVER THE "OPD" DETAILS CALLED OUT ON THIS SHEET.

2. FOR THE SCOPE OF THIS OPM, BRACING WIRES HAVE BEEN REPLACED BY THE GRIDLOK BRACING SYSTEM AND ARE NOT APPLICABLE FOR USE UNDER THIS OPM. GRIDLOK BRACES TO BE INSTALLED AT 45 DEGREES AS INDICATED ON SPECIFIC DETAIL SHEETS.

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Title: OPD-0002-13 DETAILS (CL0.02, CL4.10)

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Date	12/20/2022		

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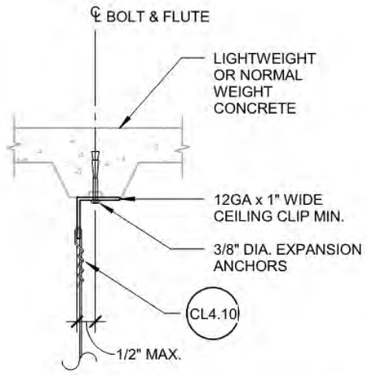
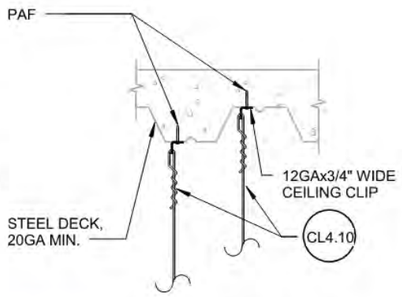


OPTION 1



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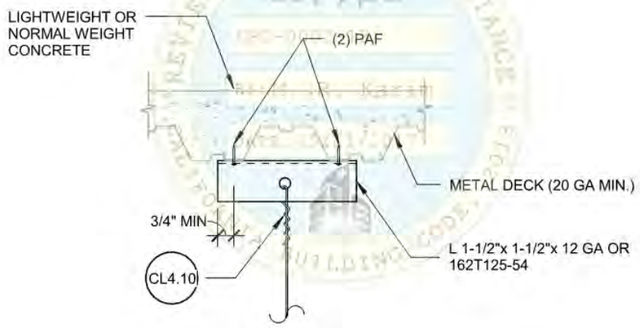

OPTION 3

NOTES:

1. LOAD TEST IN ACCORDANCE WITH GENERAL NOTE 14(g), PAGE CL0.02 SHALL BE REQUIRED
2. REFER TO CL4.10 FOR ADDITIONAL DETAILS

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS			OPD No:
Sheet Title : HANGER WIRE CONNECTION TO CONCRETE OVER METAL DECK			CL4.21

1 HANGER WIRE CONNECTION TO CONCRETE OVER METAL DECK

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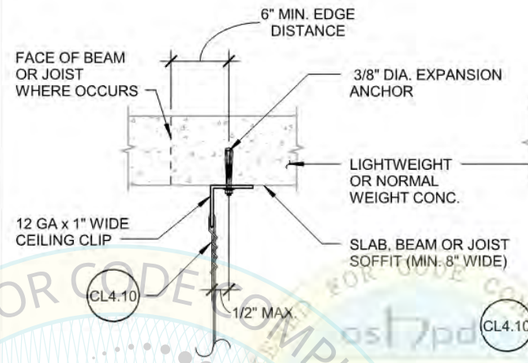
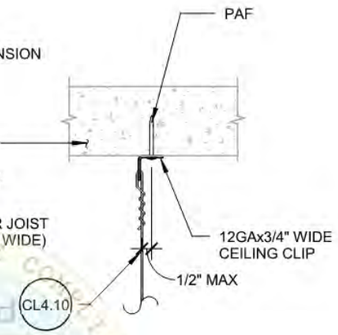


OPTION 1



OPTION 2

NOTES:

1. LOAD TEST IN ACCORDANCE WITH GENERAL NOTE 14(g), PAGE CL0.02 SHALL BE REQUIRED
2. PRIOR TO INSTALLATION, REINFORCING/PRESTRESSING BAR LOCATIONS SHALL BE DETERMINED BY NON-DESTRUCTIVE TESTING
3. REFER TO CL4.10 FOR ADDITIONAL DETAILS

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS			OPD No:
Sheet Title : HANGER WIRE CONNECTION TO CONCRETE SLAB, BEAM, OR JOIST			CL4.22

2 HANGER WIRE CONNECTION TO CONCRETE SLAB, BEAM, OR JOIST

SHEET NOTES:

1. NOTES AND DETAIL CALLOUTS IN SPECIFIC DETAILS TAKE PRECEDENCE OVER THE "OPD" DETAILS CALLED OUT ON THIS SHEET.
2. FOR THE SCOPE OF THIS OPM, BRACING WIRES HAVE BEEN REPLACED BY THE GRIDLOK BRACING SYSTEM AND ARE NOT APPLICABLE FOR USE UNDER THIS OPM.

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Title: OPD-0002-13 DETAILS (CL4.21, CL4.22)

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
Check:	AC	Scale:	NTS
Date	12/20/2022		

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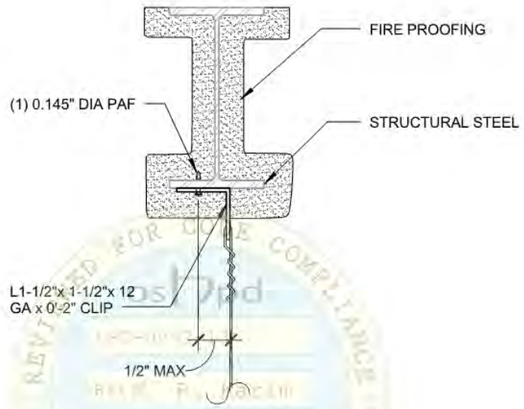


HANGER WIRE

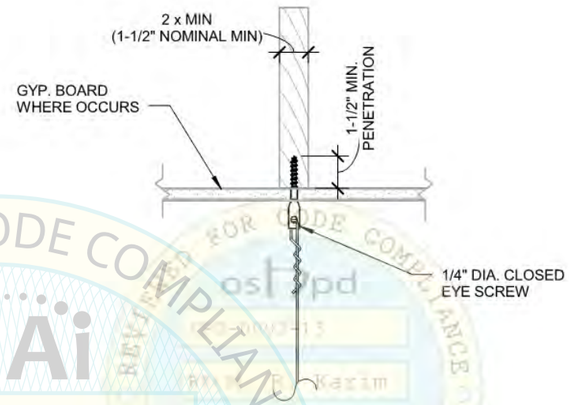
NOTES :

1. BEAM FLANGE THICKNESS SHALL NOT BE LESS THAN 3/16" OR MORE THAN 3/8"
2. FRAMING MEMBERS SHALL BE DESIGNED TO CARRY THE CEILING LOADS, RDP TO VERIFY
3. RDP IN RESPONSIBLE CHARGE, I.O.R. AND CONTRACTOR SHALL VERIFY THAT NO PAF IS INSTALLED IN THE PROTECTED ZONE OF ANY STEEL MEMBER, SEE ANSI/AISC 341-10.

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS		OPD No:
Sheet Title : HANGER WIRE CONNECTION TO STRUCTURAL STEEL		CL4.23

1 HANGER WIRE CONNECTION TO STRUCTURAL STEEL

5/9/2017 9:06:09 AM



HANGER WIRE

NOTES:

1. FRAMING MEMBERS SHALL BE DESIGNED TO CARRY THE CEILING LOADS, RDP TO VERIFY
2. RDP SHALL VERIFY THAT SCREWS AT THE BOTTOM FLANGE OF TRUSS IS ACCEPTABLE

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS		OPD No:
Sheet Title : HANGER WIRE CONNECTION TO SAWN TIMBER		CL4.24

2 HANGER WIRE CONNECTION TO SAWN TIMBER

SHEET NOTES:

1. NOTES AND DETAIL CALLOUTS IN SPECIFIC DETAILS TAKE PRECEDENCE OVER THE "OPD" DETAILS CALLED OUT ON THIS SHEET.
2. FOR THE SCOPE OF THIS OPM, BRACING WIRES HAVE BEEN REPLACED BY THE GRIDLOK BRACING SYSTEM AND ARE NOT APPLICABLE FOR USE UNDER THIS OPM.

REGISTERED PROFESSIONAL ENGINEER
ALVARO CELESTINO
No. S 5580
STRUCTURAL
STATE OF CALIFORNIA
12/21/2022

DEGENKOLB ENGINEERS
225 Broadway, Suite 1325
San Diego, CA 92101
619.515.0299 PHONE
www.degenkolb.com

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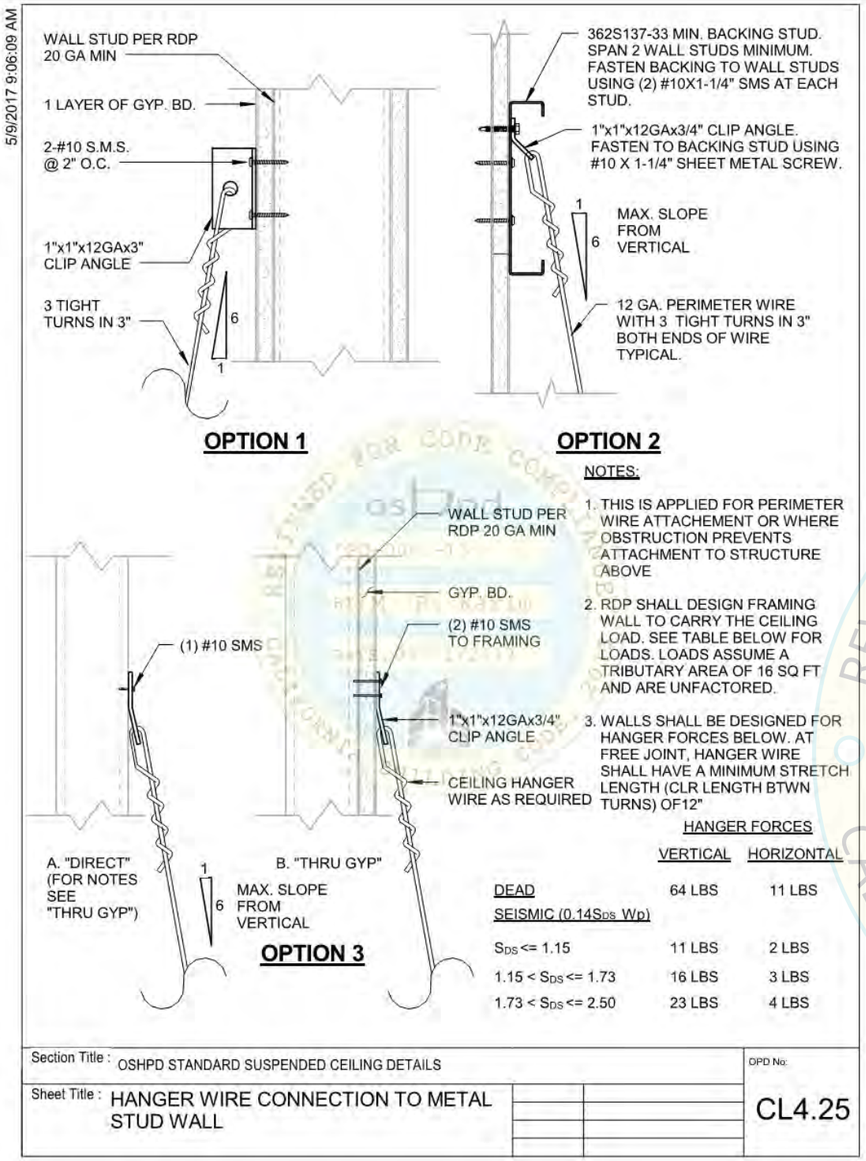
Title: OPD-0002-13 DETAILS (CL4.23, CL4.24)

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
Check:	AC	Scale:	NTS
Date	12/20/2022		

Sheet S20 OF Sheets

5/9/2017 9:06:09 AM



NOTES:

1. THIS IS APPLIED FOR PERIMETER WIRE ATTACHEMENT OR WHERE OBSTRUCTION PREVENTS ATTACHMENT TO STRUCTURE ABOVE
2. RDP SHALL DESIGN FRAMING WALL TO CARRY THE CEILING LOAD. SEE TABLE BELOW FOR LOADS. LOADS ASSUME A TRIBUTARY AREA OF 16 SQ FT AND ARE UNFACTORED.
3. WALLS SHALL BE DESIGNED FOR HANGER FORCES BELOW. AT FREE JOINT, HANGER WIRE SHALL HAVE A MINIMUM STRETCH LENGTH (CLR LENGTH BTWN TURNS) OF12"

HANGER FORCES

	VERTICAL	HORIZONTAL
DEAD	64 LBS	11 LBS
SEISMIC (0.14S_{DS} Wp)		
S_{DS} <= 1.15	11 LBS	2 LBS
1.15 < S_{DS} <= 1.73	16 LBS	3 LBS
1.73 < S_{DS} <= 2.50	23 LBS	4 LBS

Section Title : OSHPD STANDARD SUSPENDED CEILING DETAILS

OPD No:

Sheet Title : HANGER WIRE CONNECTION TO METAL STUD WALL

CL4.25

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1 HANGER WIRE CONNECTION TO METAL STUD WALL

SHEET NOTES:

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REGISTERED PROFESSIONAL ENGINEER ALVARO CELESTINO No. S 5580 STRUCTURAL STATE OF CALIFORNIA 12/20/2022

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Title: OPD-0002-13 DETAILS (CL4.25)

Drawn:	JEB	Job number:	B8769007.01
Design:	PGM/LH	Rev:	
Check:	AC	Scale:	NTS
Date	12/20/2022		

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