



KUSCH
Engineered.

Seismic Brace Installation Details

Electrical Services

January 2025

NOTE: ANY SUBSTITUTION MUST BE APPROVED BY KUSCH PRIOR TO INSTALLATION

SECTION		BRACE TYPE		PAGE No.
1. SCHEDULES				
1.1	GENERAL - TYPICAL	ALL CABLE TYPES	CABLE BRACE COMPONENT SCHEDULE	3
1.2	GENERAL - TYPICAL	ALL POST & STRUT TYPES	STRUT BRACE COMPONENT SCHEDULE	4
2. OVERALL PRINCIPLES				
2.1	GENERAL - TYPICAL	ALL TYPES	TYPICAL INSTALLATION PRINCIPLES	5
3. TYPICAL BRACE DETAILS				
3.1	GENERAL - TYPICAL	ALL CABLE TYPES	CABLE BRACE INSTALLATION ANGLES	6
3.2	GENERAL - TYPICAL	ALL CABLE TYPES	CABLE BRACE CONNECTION TO PURLIN/TRUSS	7
3.3	GENERAL - TYPICAL	ALL CABLE TYPES	HANGER TO PURLIN CONNECTION	8
3.4	GENERAL - TYPICAL	ALL CABLE TYPES	CABLE BRACE INSTALLATION - JOINING CABLES	9
3.5	GENERAL - TYPICAL	ALL CABLE TYPES	CABLE BRACE ANCHORS	10
3.6	GENERAL - TYPICAL	ALL CABLE TYPES	ROD STIFFENER INSTALLATION	11
4. CABLE BRACES				
4.1	Cable Kit Installation	1 & 7	TWO-WAY CABLE BRACE	12
4.2	Trapeze with Cable Brace	3 & 5	TWO-WAY CABLE BRACE STACKED TRAY VARIATION	13
4.3	Trapeze with Cable Brace	2, 4, 6 & 8	FOUR-WAY CABLE BRACE	14
5. SWITCHBOARD RESTRAINT				
5.1	Switchboard Cabinet	FIXING DETAIL	SEISMIC RESTRAINT OF SWITCHBOARD CABINET	15
5.2	Switchboard Cabinet	FIXING DETAIL	SEISMIC RESTRAINT OF SWITCHBOARD CABINET (TOP) STRUCTURAL WALL	16
5.3	Switchboard Cabinet	FIXING DETAIL	SEISMIC RESTRAINT OF SWITCHBOARD CABINET (TOP) STUD WALL	17
5.4	Switchboard Cabinet	FIXING DETAIL	SEISMIC RESTRAINT OF SWITCHBOARD CABINET (WALL MOUNTED)	18
6. STRUT BRACES				
6.1	Cantilever Strut post	K1 C2 & C3	CANTILEVER POSTS	19
6.2	Cantilever posts	J, H, G - 1, 2 & 3	SP50, SP80 & SPI00 POSTS	20
6.3	Riser Support	RISERS	ELECTRICAL RISER SUPPORT	21
6.4	Wall Fixed Strut	P1, P3, P4 & P4T	P1,3,4 & 4T - WALL FIXED STRUT BRACES	22
6.5	Wall Fixed Strut	P4, P4e & P6	P4e & P6 - WALL FIXED STRUT BRACE	23
6.6	Wall Fixed Strut	P8, P9 & P9C	P8, 9 & 9C - STRUT BRACES	24

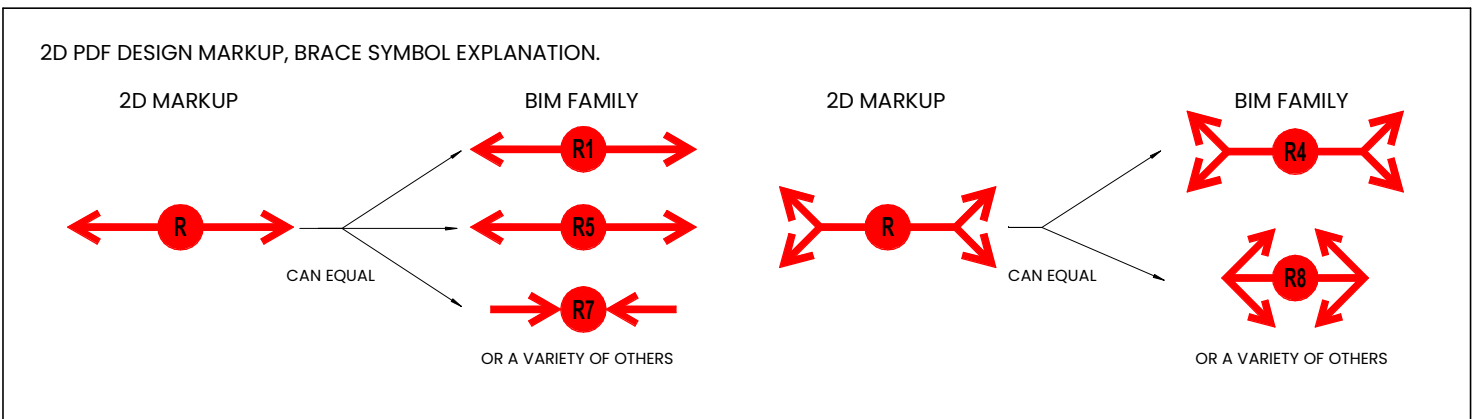
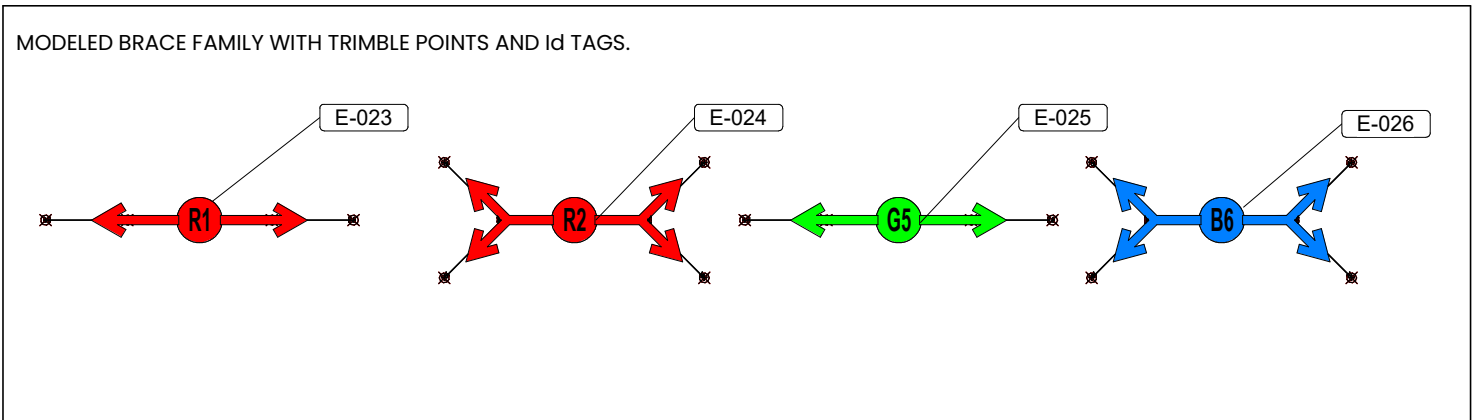
CABLE BRACE COMPONENT SCHEDULE

A COMPLETE BILL OF MATERIALS AND FULL COORDINATION CAN BE ACHIEVED WHEN THE PROJECT IS MODELED IN REVIT (BUILDING INFORMATION MODELING). HERE IS AN EXAMPLE SCHEDULE OF FAMILIES IN A PROJECT AND COMPONENTS WITHIN EACH FAMILY.

CABLE BRACE SCHEDULE - ELECTRICAL													
FAMILY	TYPE	Id#	CABLE KIT COLOUR	M10 ROD	41mm STRUT RAPEZE + STIFFENER STRUT	2m CABLE Qty	3m CABLE Qty	5m CABLE Qty	CABLE ANCHORS	ROD ANCHORS	ROD STIFFENER FIXING	41mm STRUT WASHER	M10 HEXNUT
TRAY 2WAY TYPICAL	1	E- 023	R	1720	1025	2	0	0	2	2	0	4	4
TRAY 4WAY	2	E- 024	R	2909	2340	4	0	0	4	2	6	4	4
TRAY 2WAY STACKED MIDMOUNT	5	E- 025	G	3171	3036	2	0	0	2	2	4	4	4
TRAY 4WAY STACKED MIDMOUNT	6	E- 026	B	3171	3036	4	0	0	4	2	4	8	8

UNIQUE ID
ENGINEERS' SPECIFICATION
VALUES WILL VARY WITH EACH INSTANCE
BILL OF MATERIALS FOR EACH TYPE

'Id#' IS A UNIQUE IDENTIFIER ASSIGNED TO EACH INSTANCE WITHIN A PROJECT TO AID IN QUALITY ASSURANCE, INSTALLATION TRACKING AND INSPECTION. THE Id# WILL BE TAGGED TO THE INSTANCE OF A BRACE FAMILY ON A PLAN VIEW.



TWO-WAY CABLE KITS OF THE SAME KIT COLOUR ARE INTERCHANGEABLE WITH THESE CONFIGURATIONS: TYPICAL, MID-MOUNT, INTERNAL.

FOUR-WAY CABLE KITS OF THE SAME KIT COLOUR ARE INTERCHANGEABLE WITH THESE CONFIGURATIONS: TYPICAL, MID-MOUNT, INTERNAL.

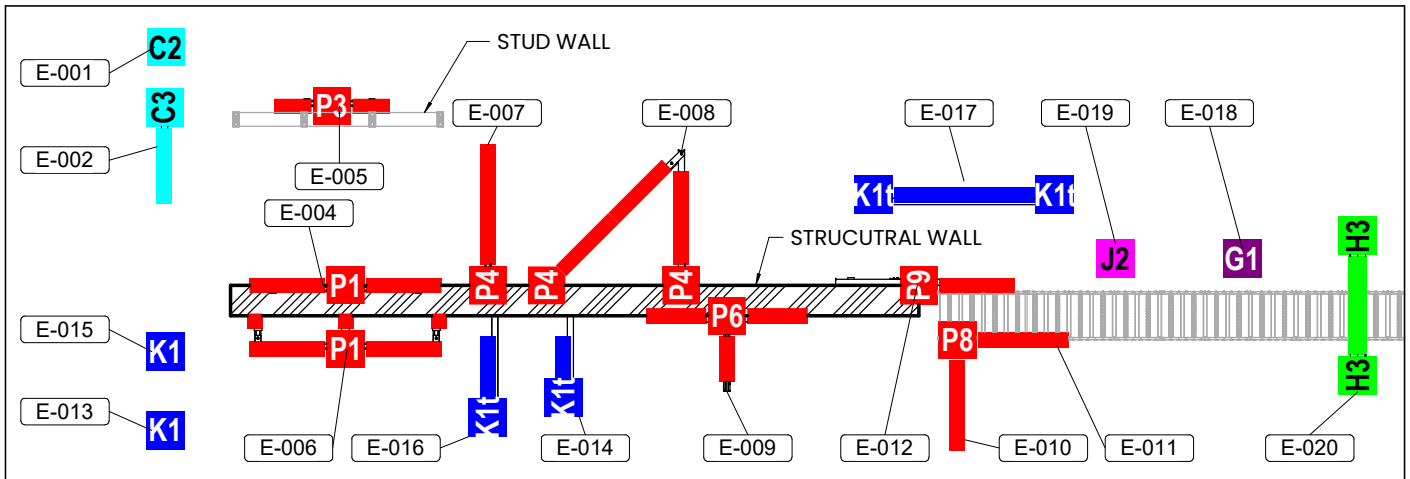
STRUT BRACE COMPONENT SCHEDULE

A COMPLETE BILL OF MATERIALS AND FULL COORDINATION CAN BE ACHIEVED WHEN THE PROJECT IS MODELED IN REVIT (BUILDING INFORMATION MODELING). HERE IS AN EXAMPLE SCHEDULE OF FAMILIES IN A PROJECT AND COMPONENTS WITHIN EACH FAMILY.

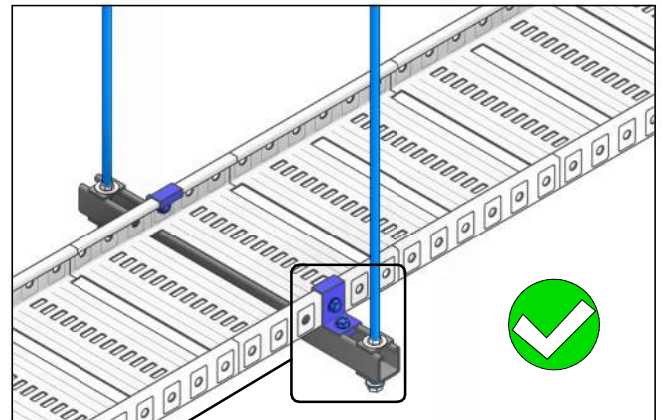
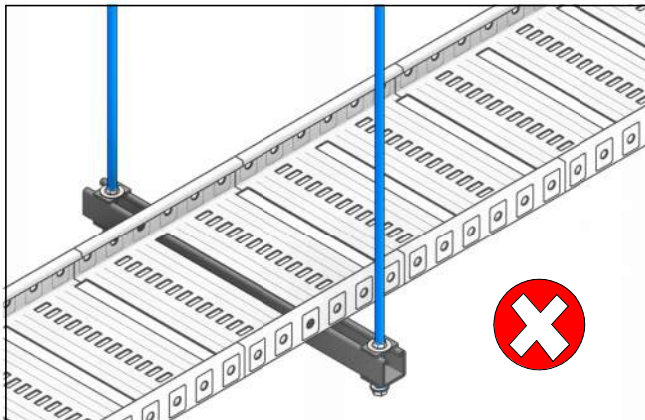
STRUT BRACE SCHEDULE ELECTRICAL																													
FAMILY	TYPE	Id#	M10 ROD	41mm STRUT	50x5 SLOTTED EA	KI_750	KI_1000	KI_1500	FMI026	FMI2346	FMI2324	FMI2072	FMI546	FMI346	FMI036	FMI031	41mm STRUT WASHER	SP50	SP80	SP100	SP50 2072 BASEPLATE	SP80 2072 BASEPLATE	SP100 2072 BASEPLATE	SPBOLT M10S	SPBOLT M12S	BASEPLATE ANCHORS	M10x35 HEX-HEAD BOLT	M10 HEXNUT	CHANNEL NUT
C2 POST	C2	E- 001		600	0							0														4	0	0	
C3_TRAY_PIPE	C3	E- 002		521																						4			
P1	P1	E- 004		1000					2	0			0														2	2	
P3	P3	E- 005		471					2	0			0														2	2	
P1 STANDOFF_3LEG	P3	E- 006		1880					0	3	0		0	2	1												10	10	
P4	P4	E- 007		933					1				0													1	1		
P4T	P4T	E- 008		2041					2	1			0													5	5		
P6_TRAY&PIPE	P6	E- 009		1000					1	0			0													1	2		
P8	P8	E- 010	1640	1127									2													2	2	2	
P8	P8	E- 011	1640	1127									2													2	2	2	
P9	P9	E- 012		1076					2	0			0													2	2		
K1 POST	K1	E- 013		0	0	0	0	1	0								0									4	0	0	
K1 TRAPEZE to Wall_SINGLE	K1T	E- 014		574		0	0	1	2																	5	2	2	
K1 POST w_STRUT	K1	E- 015		1000	0	0	0	1	0								2									4	0	2	
K1 TRAPEZE to Wall_DOUBLE	K1T	E- 016		1410		0	0	1	4																	6	4	4	
K1 TRAPEZE DOUBLE TALL	K1T	E- 017		5548		0	0	2	4																	8	8	4	
G1 POST	G1	E- 018		0														3000			2		2			8			
J2 POST	J2	E- 019		0															1200			1				6	4		
H3 HURDLE	H3	E- 020																		3820		2		28	8				

UNIQUE ID VALUES WILL VARY WITH EACH INSTANCE BILL OF MATERIALS FOR EACH TYPE VALUES WILL VARY WITH EACH INSTANCE BILL OF MATERIALS FOR EACH TYPE

'Id#' IS A UNIQUE IDENTIFIER ASSIGNED TO EACH INSTANCE WITHIN A PROJECT TO AID IN QUALITY ASSURANCE, INSTALLATION TRACKING AND INSPECTION. THE Id# WILL BE TAGGED TO THE INSTANCE OF A BRACE FAMILY ON A PLAN VIEW (EXAMPLE BELOW).



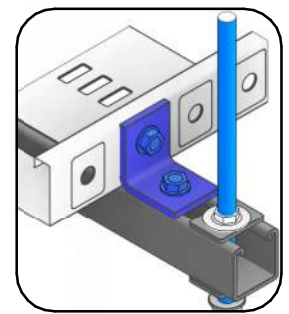
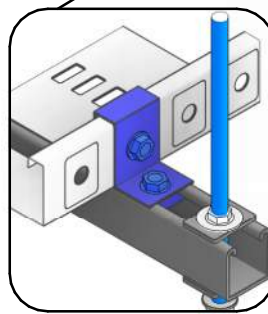
TYPICAL INSTALLATION PRINCIPLES



AT EVERY INSTANCE, USE:

- SEISMIC RATED CONCRETE ANCHORS AS APPROVED BY KUSCH
- 41mm STRUT WASHER AND LOCKING NUT ABOVE AND BELOW TRAPEZE
- STIFFENERS TO ROD AS PER ROD STIFFENER INSTALLATION GUIDELINES.
- M10 (MINIMUM) ROD HANGERS

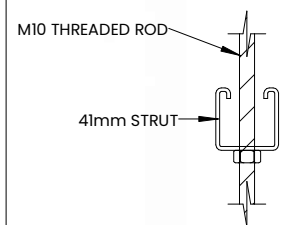
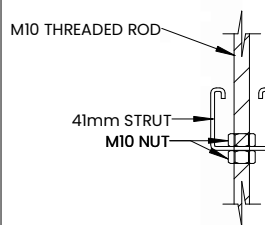
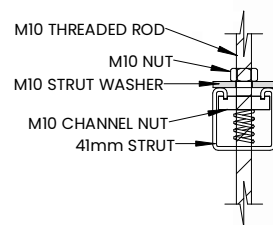
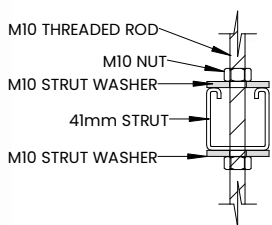
CABLE TRAY MUST BE INSTALLED WITH HOLD-DOWN BRACKETS AT EACH TRAPEZE HANGER



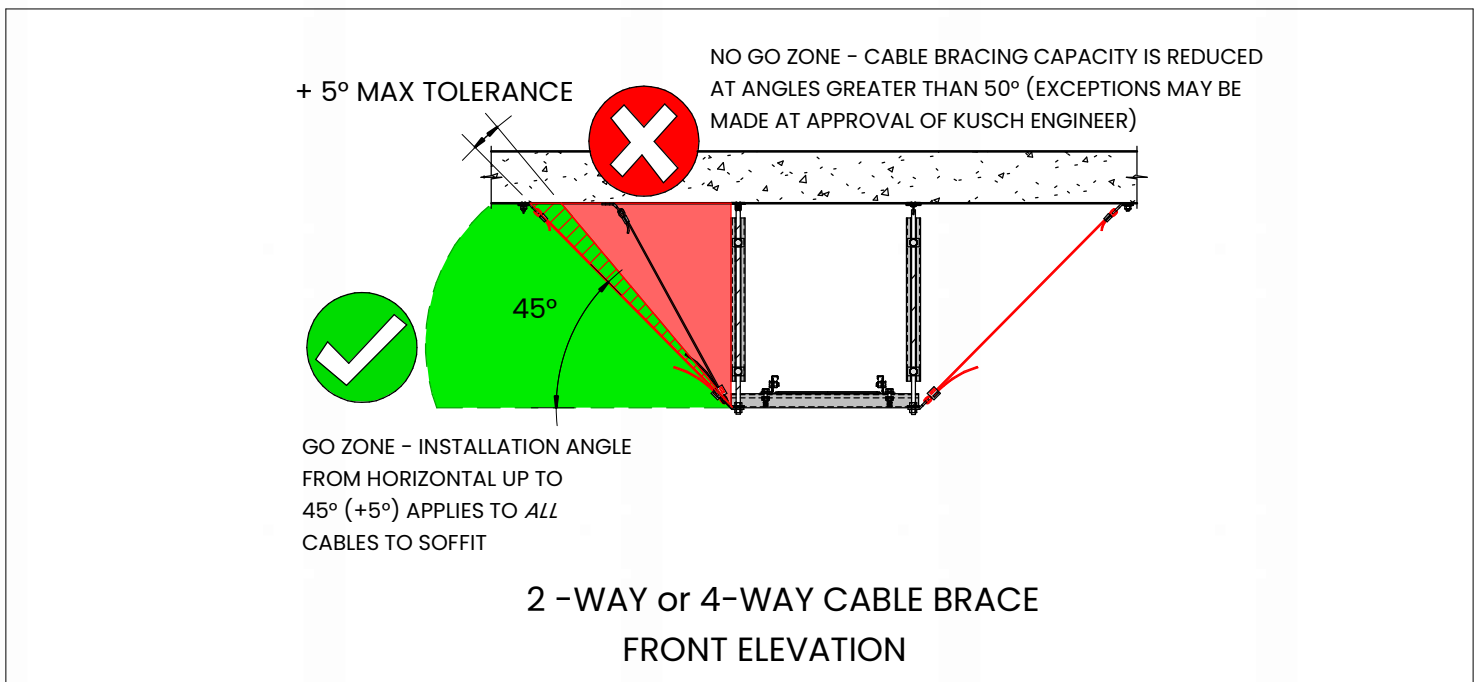
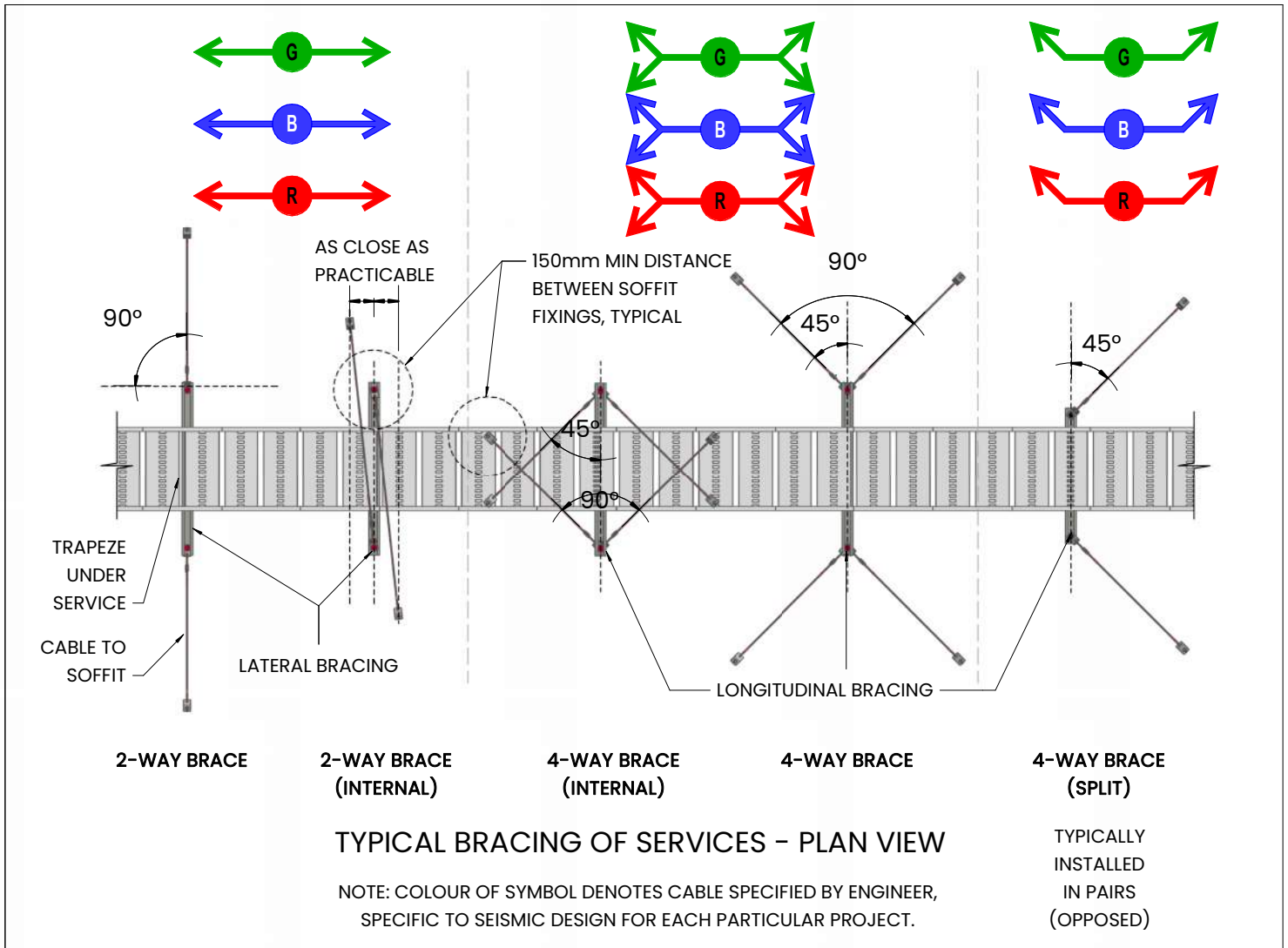
CABLE TRAY HOLD-DOWN BRACKETS WITH M10 NUT/BOLT TO BOTH CABLE TRAY AND 41mm STRUT TRAPEZE. TYPICALLY, DOME HEAD BOLTS TO TRAY ARE TO PREVENT BOLT HEAD TEARING CABLES AS THEY ARE PULLED.

ALTERNATIVELY, FM1026 ANGLE BRACKET WITH M10 DOME HEAD BOLTS THROUGH BOTH TRAY AND 41mm CHANNEL

PIPE AND TRAY TRAPEZE DETAIL SECTION



CABLE BRACE INSTALLATION ANGLES



CABLE BRACE CONNECTION TO PURLIN/TRUSS

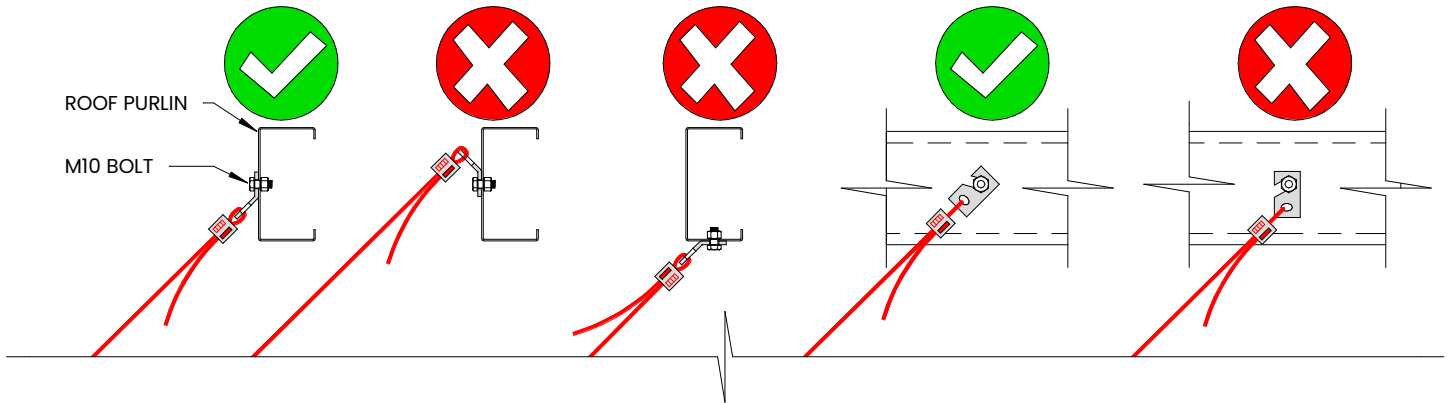
SEISMIC CABLE TO PURLIN CONNECTION DETAIL

BOLT BRACKET TO MIDDLE OF PURLIN WEB

DON'T PULL THE BRACKET ONTO ITSELF

AVOID CONNECTING TO THE PURLIN FLANGE

ALIGN THE BRACKET TO CABLE AXIS



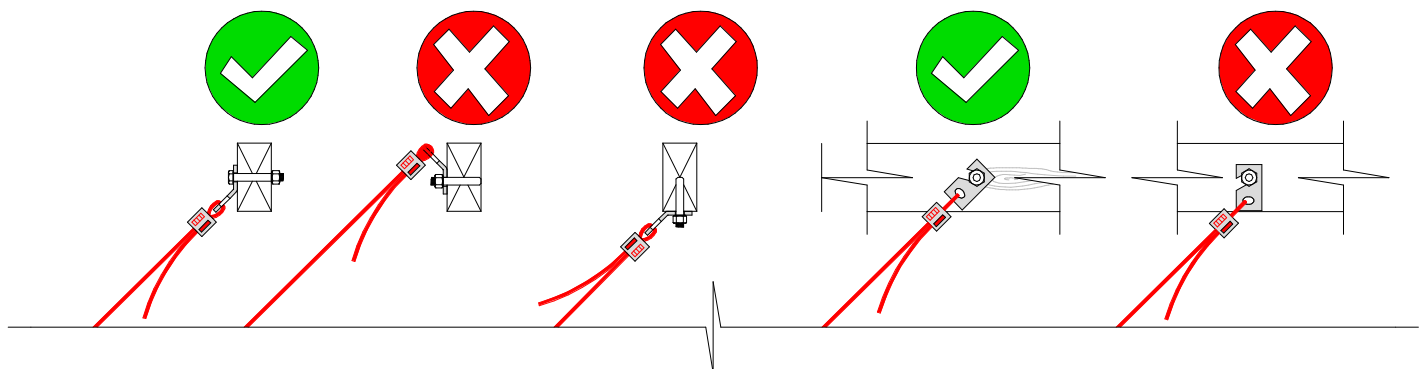
SEISMIC CABLE TO TIMBER TRUSS CONNECTION DETAIL

BOLT BRACKET TO MIDDLE OF TIMBER BEAM/TRUSS

DON'T PULL THE BRACKET ONTO ITSELF

AVOID CONNECTING TO THE SHORT SIDE OF THE TIMBER PROFILE

ALIGN THE BRACKET TO CABLE AXIS



IMPORTANT!



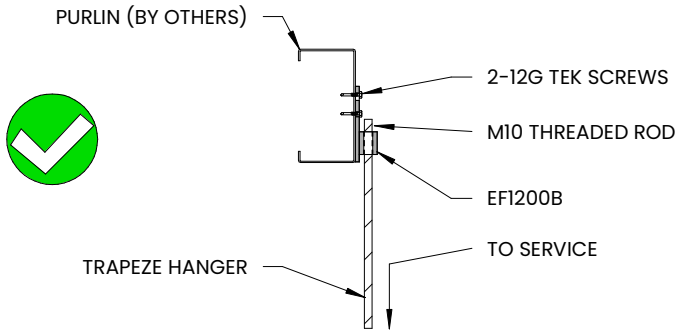
DO:

- HAND TIGHTEN CABLE USING ZIP-CLIP CABLE JOINER.
- ADJUST Zip-Clip CABLE JOINER USING RELEASE PINS IF REQUIRED.
- LEAVE A TAIL AT FREE END OF CABLE PASSING THROUGH Zip-Clip CABLE JOINER, MIN. 150mm.
- ALIGN 45° ANGLE BRACKETS AT EACH END SO THAT BOTH HOLES ARE ON ANGLE BRACKETS ARE IN LINE WITH CABLE, AND CABLE IS PULLING ON NEAREST HOLE.
- USE ROD STIFFENERS FOR HANGING RODS >750mm LONG.

DO NOT:

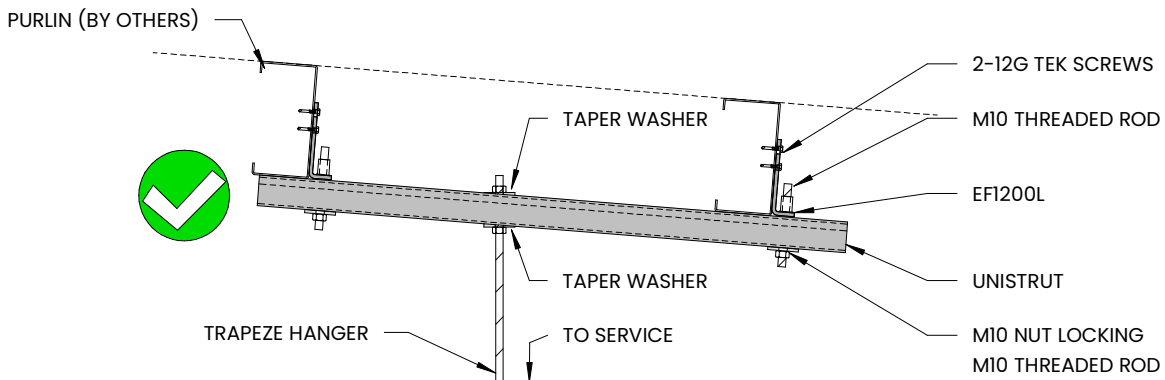
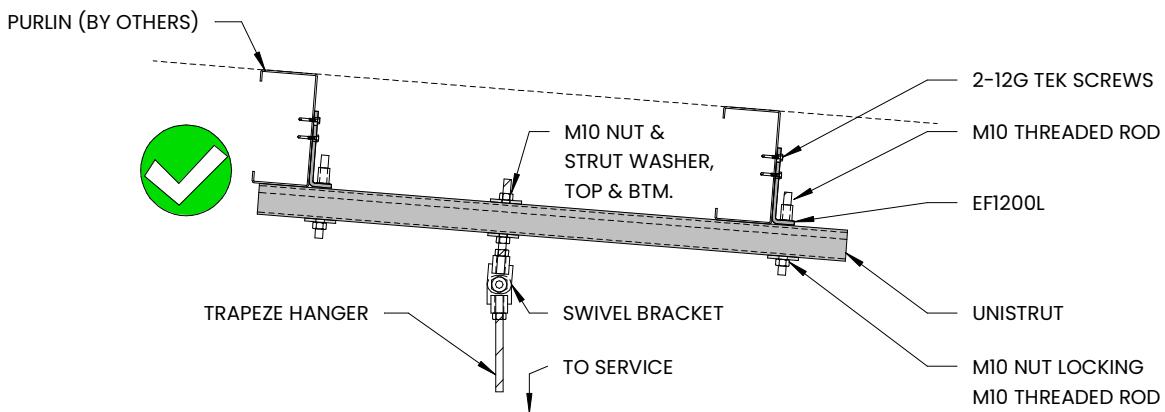
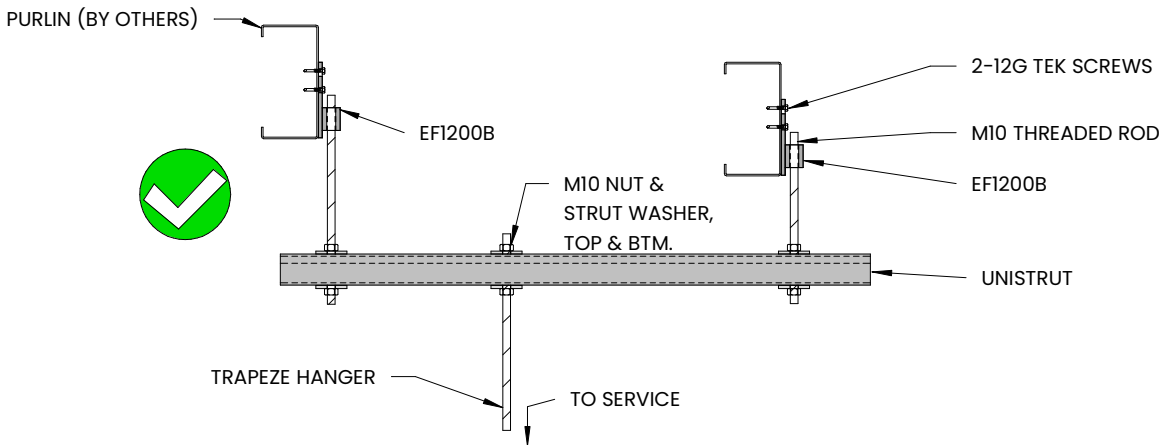
- DO NOT ALLOW CABLE TO CONTACT ANY SERVICE, STRUCTURE, PLANT, HANGING ROD, BRACE ETC. ALONG ITS ENTIRE LENGTH.
- DO NOT ATTACH 2off OR MORE CABLES TO 1off SB /NR 45° ANGLE BRACKET.
- DO NOT OVER-TIGHTEN CABLE IN ABSENCE OF ROD-STIFFENER. IF HANGING ROD BUCKLES, THE CABLE CANNOT PROVIDE ADEQUATE RESTRAINT.
- DO NOT BOLT 45° BRACKETS TO PURLIN FLANGES.

SERVICE HANGER DIRECTLY FROM PURLIN



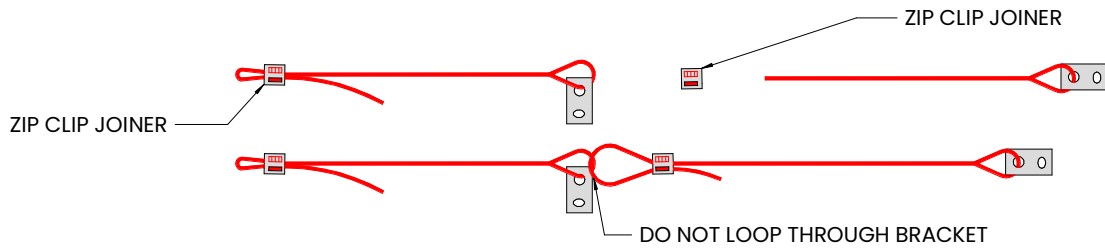
NOTE: FOR STAINLESS STEEL APPLICATIONS, 2-M10 NUTS REQUIRED, TYPICAL. (ABOVE AND BELOW EF1200B)

WHERE SERVICE HANGER IS NOT DIRECTLY BELOW PURLIN

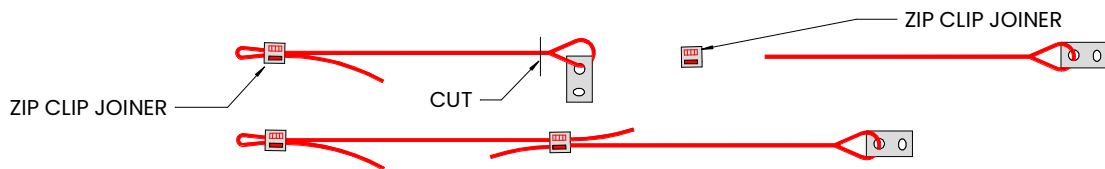






CABLE BRACE INSTALLATION - JOINING CABLES





OPTION 1: ELIMINATE BRACKET AND JOIN LOOP-TO-LOOP



OPTION 2: ELIMINATE BRACKET, REMOVE FIXED LOOP WITH WIRE CUTTERS AND JOIN WITH ZIP CLIP JOINER



 ZIP-CLIP SEISMIC RATED BRACE SCHEDULE C1 ANCHORS Brace Angle MAX 45°					
BRACE SYMBOL	Zip-Clip Cable Type	DEWALT Slab Connection	ICCONS Thru-bolt Slab Connection	HILTI HST3	ICCONS FM753 Slab Connection
	RED (2mm)	M10x90 PTB-ETA1-PRO	M10x90 Thru-bolt	M10x90 HST3	M10x90 ICCONS-FM753
	BLUE (3mm)		M12x140 Thru-bolt	M10x90 HST3	M10x90 ICCONS-FM753
	GREEN/YELLOW (4mm)		M12x140 Thru-bolt	M12x115 HST3	M12x110 ICCONS-FM753

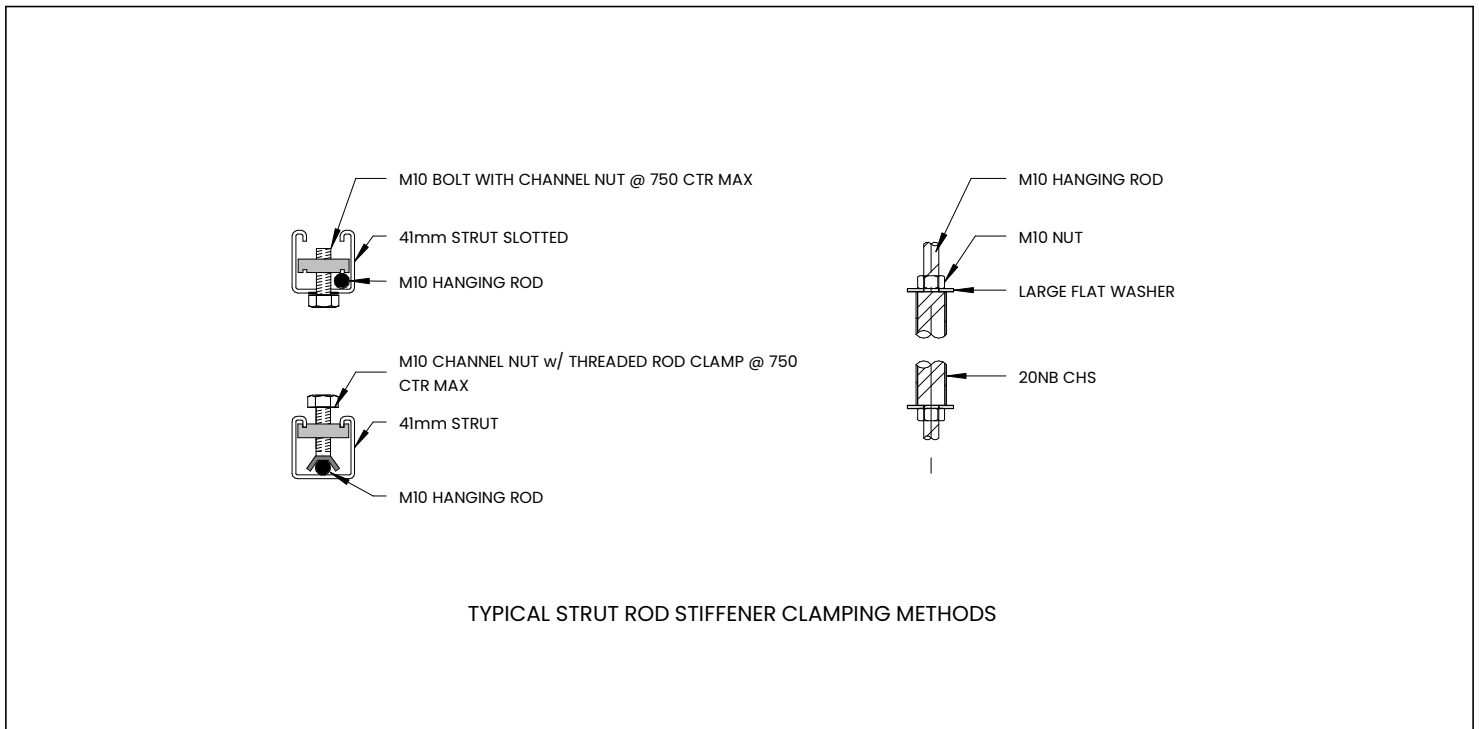
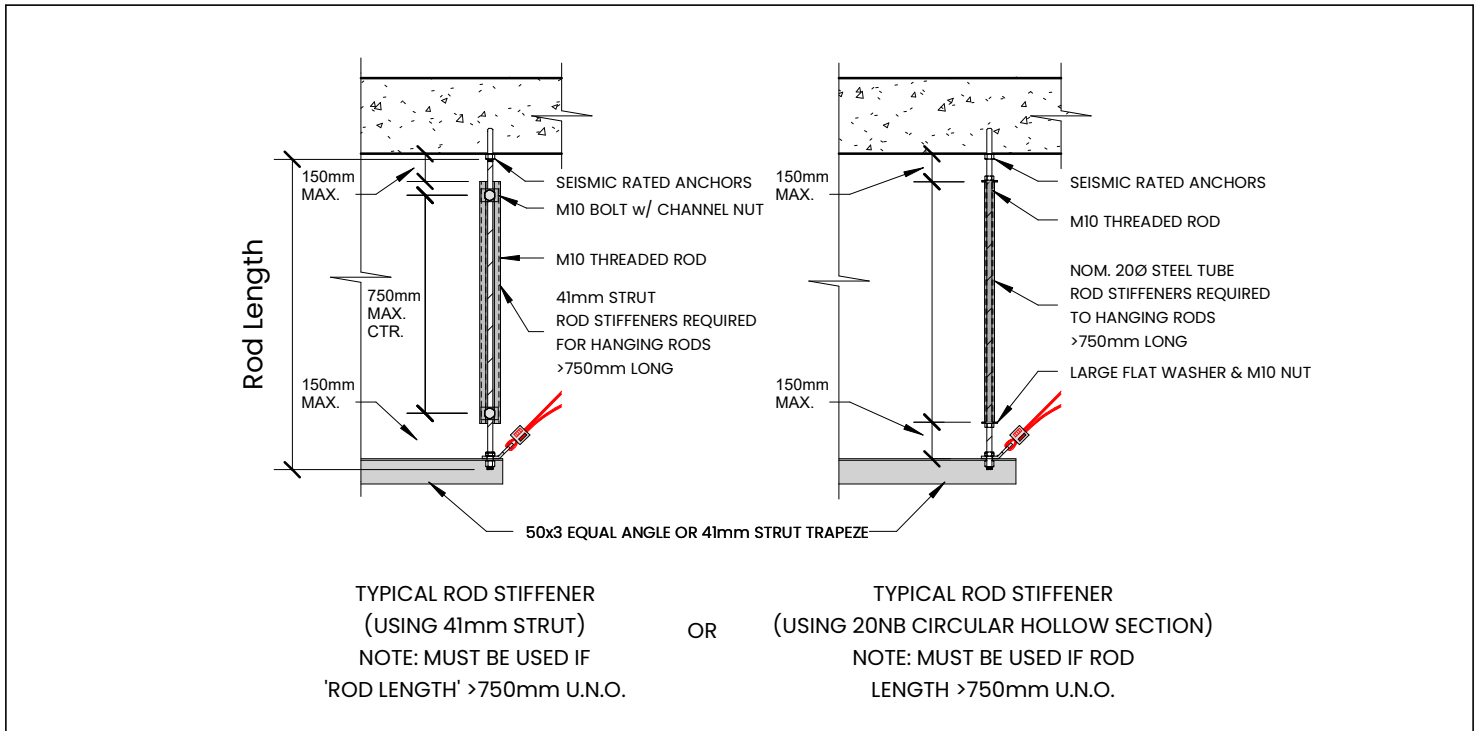
 ZIP-CLIP SEISMIC RATED BRACE SCHEDULE C2 ANCHORS Brace Angle MAX 45°				
Brace Symbol	Zip-Clip Cable Type	HILTI Slab Connection	ICCONS Thru-bolt Slab Connection	ICCONS FM753 Slab Connection
	RED (2mm)	M10x90 HST3	M10x90 Thru-bolt	M10x90 ICCONS-FM753
	BLUE (3mm)	M10x90 HST3	M12x140 Thru-bolt	M10x90 ICCONS-FM753
	GREEN/YELLOW (4mm)	M12x115 HST3		

USING M12x110 ICCONS FM753 FOR A BLUE KIT REQUIRES A SEPARATE PURCHASE OF AN ANGLE BRACKET WITH A 13mm DIAMETER HOLE

C2 ANCHORS ARE USUALLY REQUIRED IN IMPORTANCE LEVEL 4 (IL4) BUILDINGS.

PLEASE CONTACT KUSCH FOR CLARIFICATION IF YOU ARE UNSURE WHETHER C1 OR C2 ANCHORS ARE REQUIRED.

IF YOU WOULD LIKE TO USE AN ANCHOR NOT LISTED ABOVE, PLEASE CONTACT KUSCH AND WE CAN ASSESS THE ANCHOR TO DETERMINE IT'S SUITABILITY.

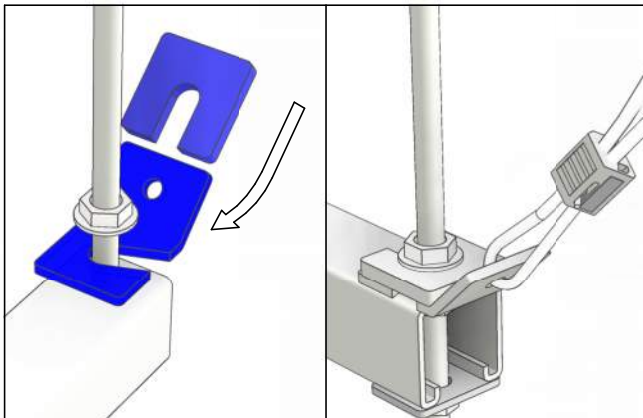
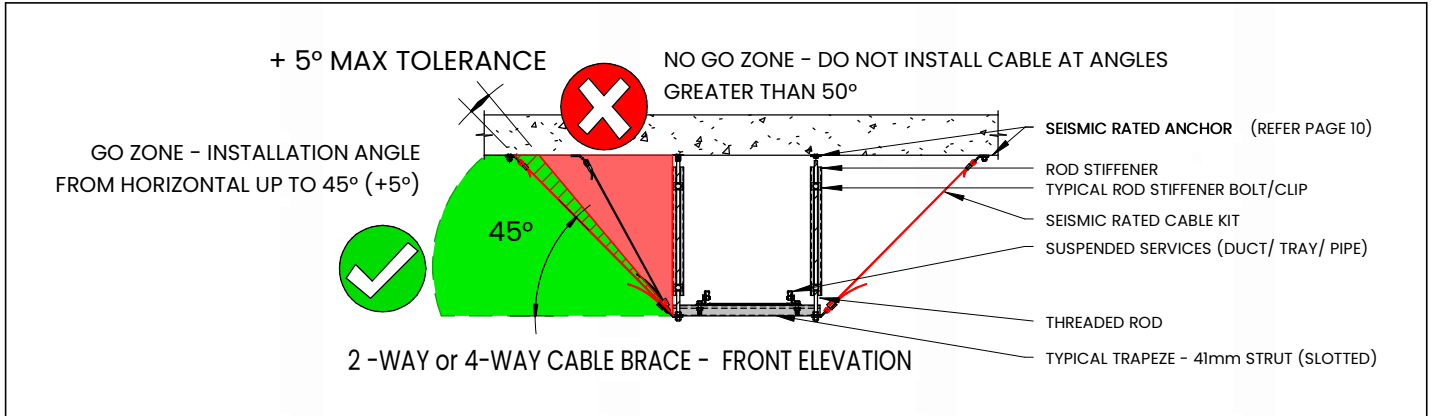


TWO-WAY CABLE BRACE

READ THESE INSTRUCTIONS IN CONJUNCTION WITH THE DETAILS ON PAGES 3-11 TO ACHIEVE OPTIMAL CAPACITY FROM CABLE.

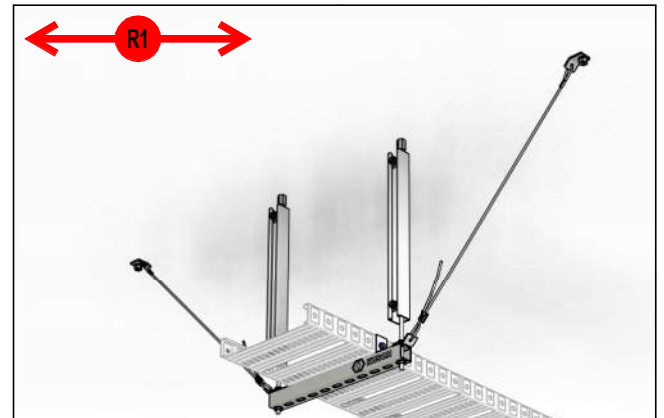


COLOURS DENOTE CABLE SPECIFIED BY SEISMIC DESIGN ENGINEER

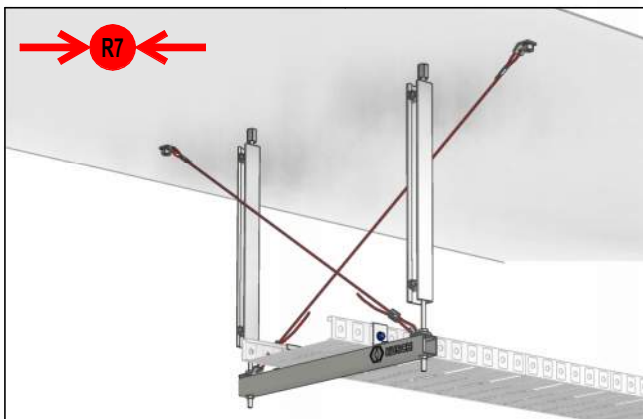


CABLE KIT BRACKET 'HOOKS' ONTO THREADED ROD. FIT SLOTTED SQUARE WASHER OVER THE CABLE BRACKET WITH EVERY KIT, IN THE ORIENTATION SHOWN.

TIGHTEN TOP LOCKING NUT AND THREAD CABLE THROUGH CABLE LOCK AND BRACKET. TIGHTEN CABLE AS PER KIT INSTRUCTIONS. STRUT WASHER AND LOCKING NUT UNDER 41mm TRAPEZE.



TYPICAL 2-WAY CABLE KIT TO TYPICAL TRAPEZE, SHOWN WITH ROD STIFFENERS FITTED. ALL TWO-WAY CABLE BRACES TO BE INSTALLED AT 90° TO DIRECTION OF SERVICE.



VARIATION TO TYPICAL 2-WAY CABLE FIXED TO TRAPEZE, ORIENTED INTERNALLY ALLOWS FOR GREATER CLEARANCE TO SERVICES

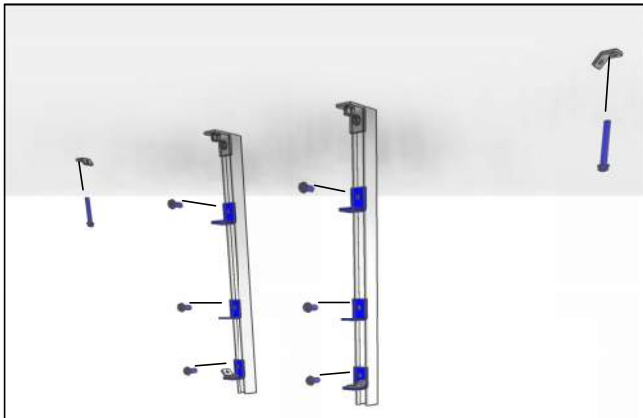
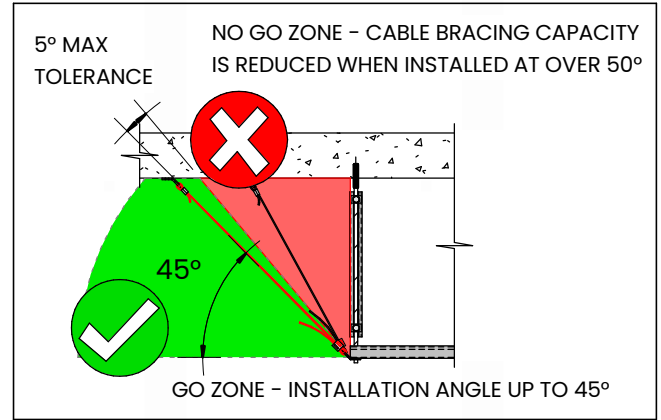
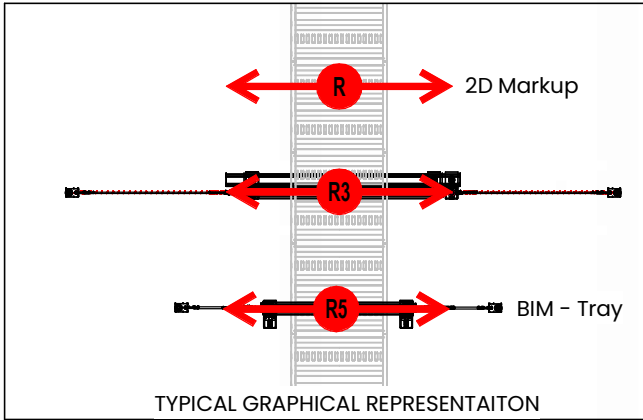
CABLE IN LINE WITH TRAPEZE - AS CLOSE AS PRACTICABLE, WHILE MAINTAINING MINIMUM 150mm BETWEEN SOFFIT FIXINGS.

TWO-WAY CABLE BRACE STACKED TRAY VARIATION

READ THESE INSTRUCTIONS IN CONJUNCTION WITH THE PLANS AND DETAILS ON PAGES 3-11 TO ACHIEVE OPTIMAL CAPACITY FROM CABLE.



COLOURS DENOTE CABLE SPECIFIED BY SEISMIC DESIGN ENGINEER

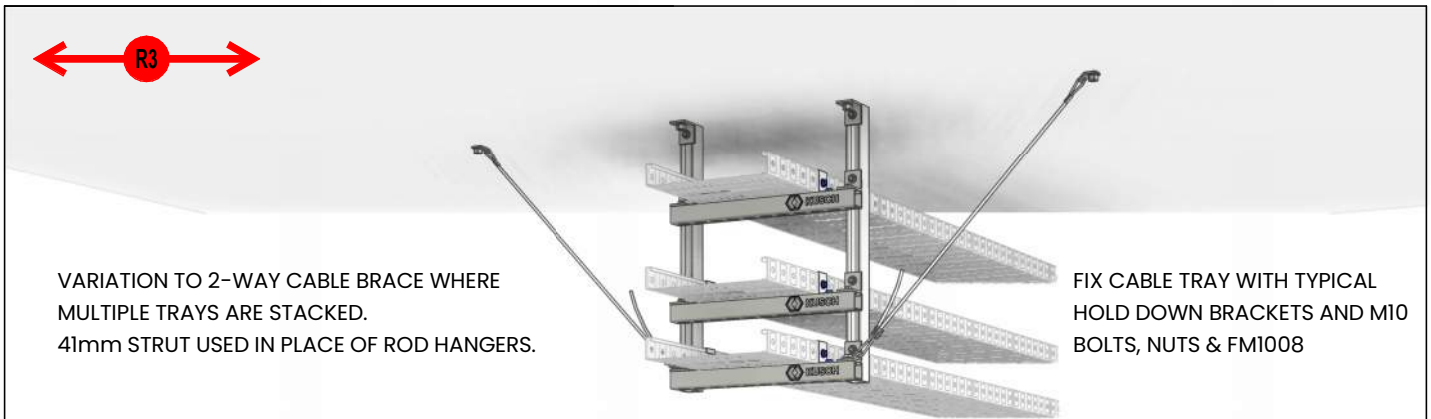


FIX FM1026 ANGLE BRACKETS TO SOFFIT WITH HILTI M10x90 HUS-H OR HILTI M10x90 HST3 OR M10x90 ICCONS FM753 OR APPROVED EQUIVALENT. ALL INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPEC. 80mm MIN. EDGE DISTANCE.

FIX 41mm STRUT HANGERS TO ANGLE BRACKETS WITH M10 BOLTS & M10 FM1008.

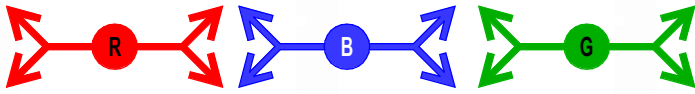
FIX FM1026 ANGLE BRACKETS TO 41mm STRUT HANGERS WITH M10 BOLTS & M10 FM1008.

FIX 41mm STRUT TRAPEZE TO ANGLE BRACKETS WITH M10 BOLTS & M10 FM1008.

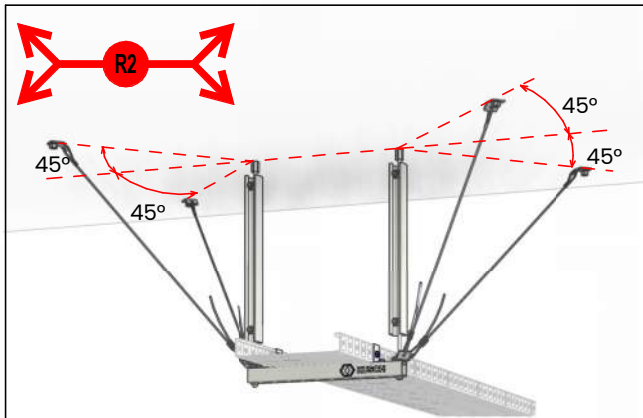
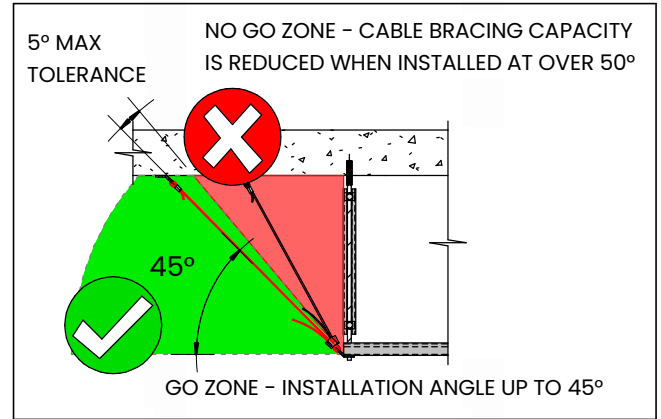
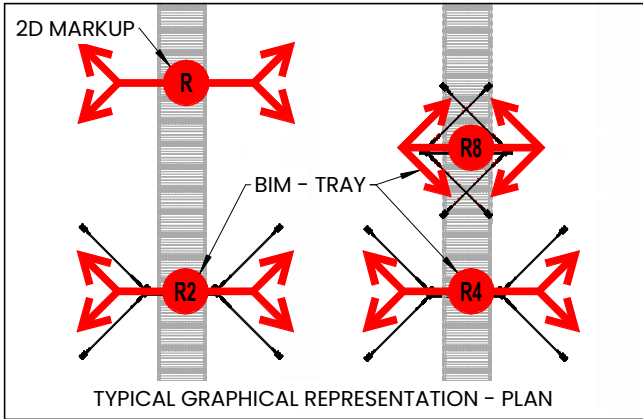


FOUR-WAY CABLE BRACE

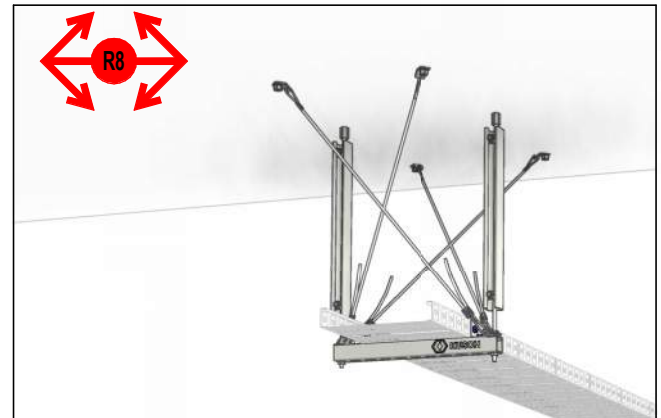
READ THESE INSTRUCTIONS IN CONJUNCTION WITH THE PLANS AND DETAILS ON PAGES 3-11 TO ACHIEVE OPTIMAL CAPACITY FROM CABLE.



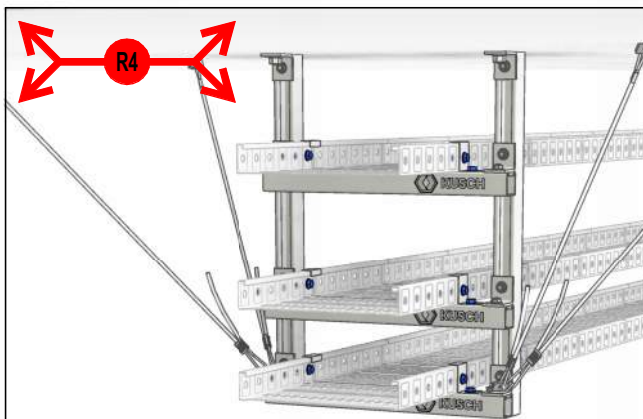
COLOURS DENOTE CABLE SPECIFIED BY SEISMIC DESIGN ENGINEER



TYPICAL 4-WAY CABLE TRAPEZE SHOWN WITH ROD STIFFENERS.
FIX CABLE TRAY w/ TYPICAL HOLD DOWN BRACKETS & M10 BOLTS, NUTS & FM1008

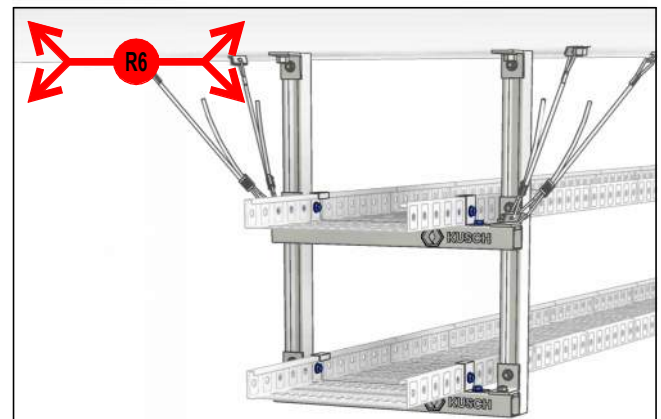


VARIATION TO 4-WAY, WITH INTERNALLY ORIENTED CABLES FIXED TO TRAPEZE, PROVIDES CLEARANCE TO ADJACENT SERVICES.



VARIATION TO TYPICAL TRAPEZE, STRUT HANGERS IN PLACE OF ROD PROVIDES GREATER STIFFNESS TO STACKED TRAY TRAPEZE. 4-WAY CABLES ORIENTED AS PER TYPICAL 4-WAY.

FIX FM1026 ANGLE BRACKETS w/ HILTI M10x90 HUS-H OR HILTI M10x90 HST3 OR M10x90 ICCONS FM753 OR APPROVED EQUIVALENT. ALL INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPEC. 80mm MIN. EDGE DISTANCE. FIX FM1026 ANGLE BRACKETS TO 41mm STRUT HANGERS WITH M10 BOLTS & M10 FM1008.

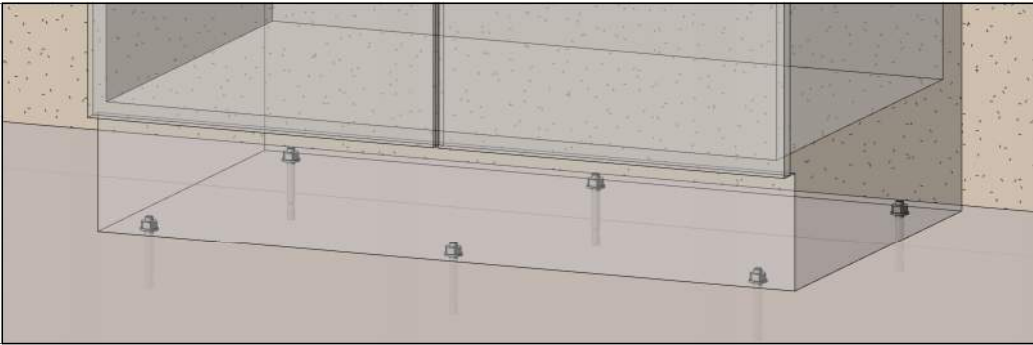


VARIATION TO TYPICAL TRAPEZE, STRUT HANGERS IN PLACE OF ROD PROVIDES GREATER STIFFNESS TO STACKED TRAY TRAPEZE. 4-WAY CABLES ORIENTED AS PER TYPICAL 4-WAY FIXED TO MID-HEIGHT TRAPEZE PROVIDES GREATER CLEARANCE TO ADJACENT SERVICES.

SEISMIC RESTRAINT OF SWITCHBOARD CABINET

INSTALL ALL CABINETS AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. THIS DRAWING IS FOR THE PURPOSES OF SEISMIC RESTRAINT AND IS IN ADDITION TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

OPTION 1



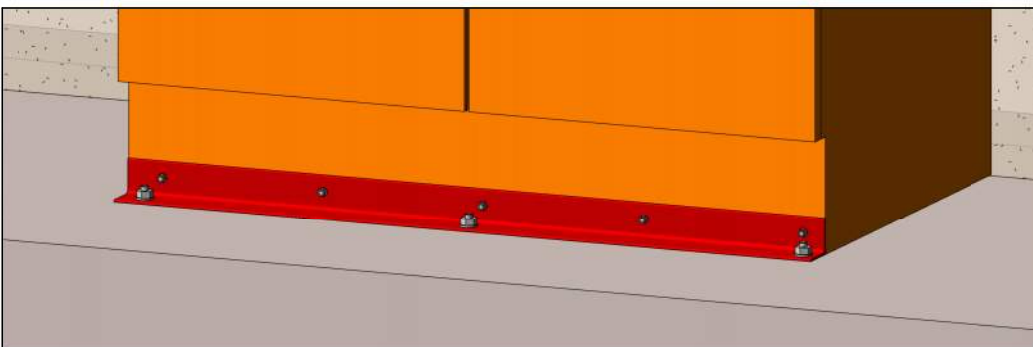
M10 SEISMIC ANCHORS TO CABINET BASE, PROVIDED THERE IS ACCESS AND THE MANUFACTURERS INSTALLATION INSTRUCTIONS ARE FOLLOWED. - NO FURTHER FIXING REQUIRED (INCLUDING TOP)



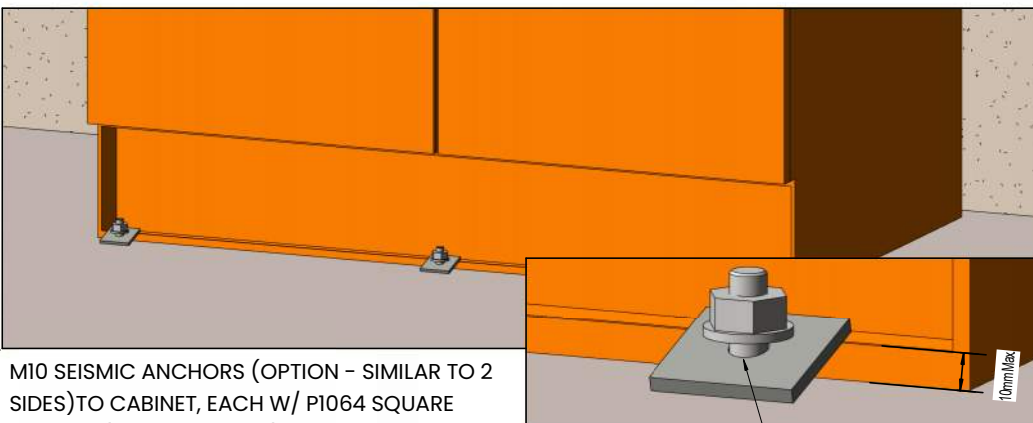
ANCHORS MAY BE 10° OFF VERTICAL (MAX.) TO AID INSTALLATION.

M10 SEISMIC ANCHORS TO CABINET BASE, WHERE PROVISION IS PROVIDED & MANUFACTURERS INSTALLATION INSTRUCTIONS ARE FOLLOWED. QTY TO SUIT, 900 CTS MAX., QTY - 2 MIN.

OPTION 2
(IN COMBINATION WITH TOP FIXING OPTIONS ON PAGE 16 & 17)



EQUAL ANGLE (50x2.5 EA) TO ENTIRE WIDTH OF CABINET. (OPTION - SIMILAR TO 2 SIDES)
M10 SEISMIC ANCHORS TO EA. QTY TO SUIT, 900 CTS MAX., QTY - 2 MIN.
12g TEK SCREWS TO CABINET. QTY TO SUIT, 450 CTS MAX., QTY - 3 MIN.



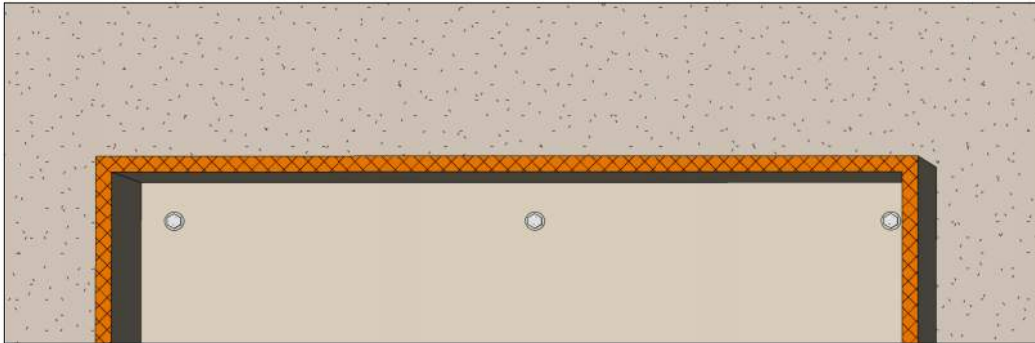
M10 SEISMIC ANCHORS (OPTION - SIMILAR TO 2 SIDES) TO CABINET, EACH W/ P1064 SQUARE WASHER (OR EQUIVALENT). QTY TO SUIT, 900 CTS MAX., QTY - 2 MIN.

ANCHORS MAY BE 10° OFF VERTICAL (MAX.) TO AID INSTALLATION.

SEISMIC RESTRAINT OF SWITCHBOARD CABINET (TOP) STRUCTURAL WALL

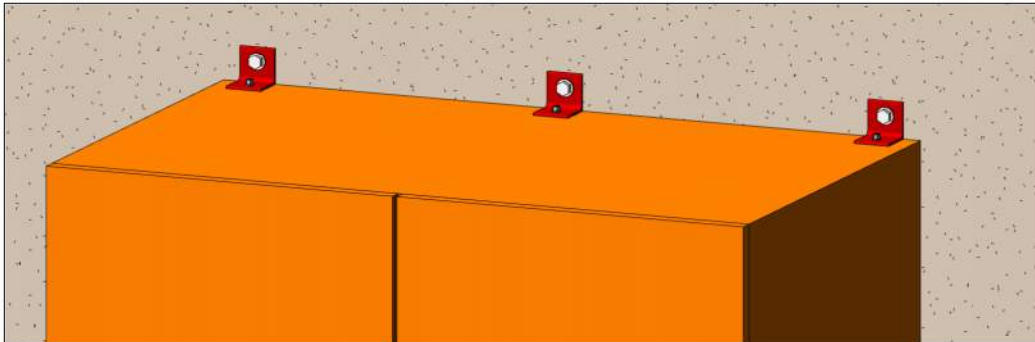
INSTALL ALL CABINETS AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. THIS DRAWING IS FOR THE PURPOSES OF SEISMIC RESTRAINT AND IS IN ADDITION TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

OPTION 1



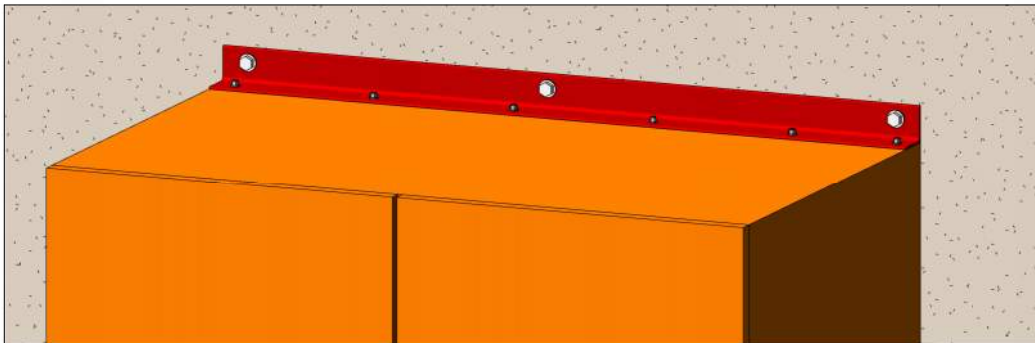
M10 BOLTS OR SEISMIC ANCHORS AT HIGH LEVEL. QUANTITY TO SUIT. 900 CTS MAX., MIN QTY - 2. (PROVIDED PROVISION IS MADE ACCORDING TO MANUFACTURERS INSTALLATION DIRECTION AND ACCESS IS AVAILABLE)

OPTION 2



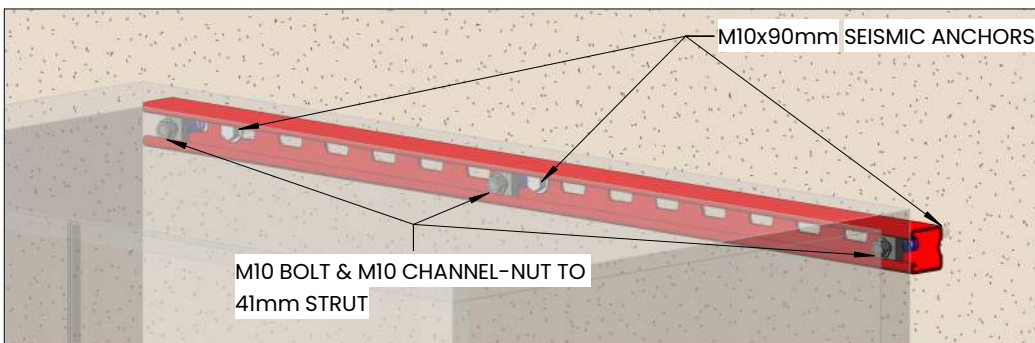
EQUAL ANGLE (50x2.5 EA) 50mm LONG (TYPICAL). M10 BOLT OR SEISMIC ANCHOR TO STRUCTURE, 900 CTS MAX., MIN. QTY - 2. 12g TEK SCREWS TO CABINET, 450 CTS MAX., MIN. QTY - 2.

OPTION 3



EQUAL ANGLE (50x2.5 EA) TO WIDTH OF CABINET. M10 BOLT OR SEISMIC ANCHOR TO STRUCTURE, 900 CTS MAX., MIN. QTY - 2. 12g TEK SCREWS TO CABINET, 450 CTS MAX., MIN. QTY - 2.

OPTION 4

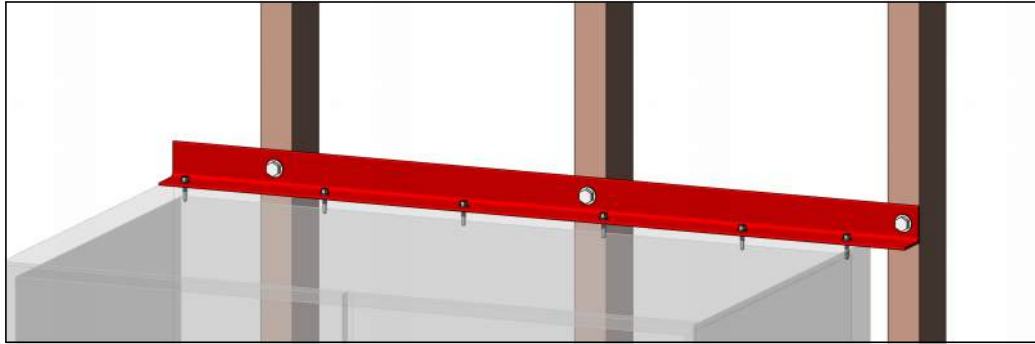


41mm STRUT TO WIDTH OF CABINET. M10 BOLT OR SEISMIC ANCHOR TO STRUCTURE, 900 CTS MAX., MIN. QTY - 2. M10 BOLTS & CHANNEL-NUTS TO CABINET, 450 CTS MAX., MIN. QTY - 2.

SEISMIC RESTRAINT OF SWITCHBOARD CABINET (TOP) STUD WALL

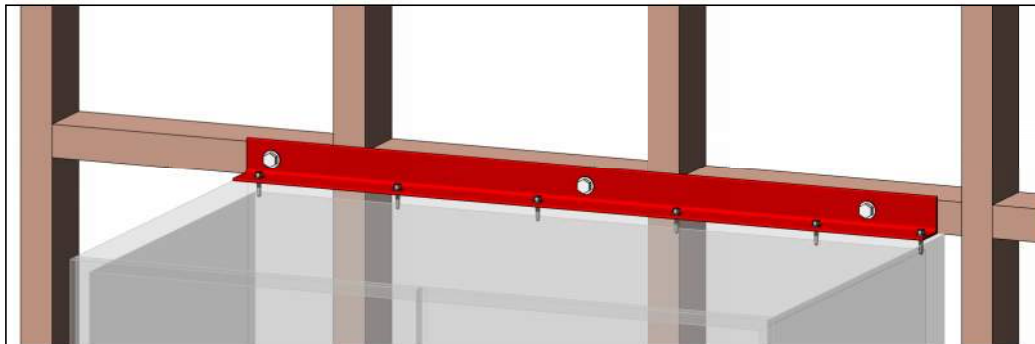
INSTALL ALL CABINETS AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. THIS DRAWING IS FOR THE PURPOSE OF SEISMIC RESTRAINT AND IS IN ADDITION TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. STRUCTURAL DESIGN OF STUD WALL MUST INCLUDE THE LOAD FROM PROPOSED SWITCHBOARD CABINET.

OPTION 1



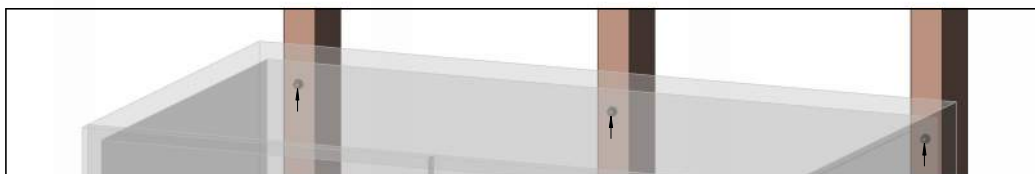
EQUAL ANGLE (50x2.5 EA) TO RUN THE ENTIRE LENGTH OF CABINET (WALL SHEETING OMITTED FOR CLARITY).
 12g TEK SCREWS TO CABINET, 450 CTS MAX., MIN. QTY - 2.
 - TIMBER STUD - M10 COACH BOLTS TO EACH TIMBER STUD.
 - STEEL STUD - 12g TEK SCREW TO EACH STEEL STUD.

OPTION 2



EQUAL ANGLE (50x2.5 EA) TO RUN THE ENTIRE LENGTH OF CABINET (WALL SHEETING OMITTED FOR CLARITY).
 12g TEK SCREWS TO CABINET, 450 CTS MAX., MIN. QTY - 2.
 - TIMBER NOGGING/TRIMMING - M10 COACH BOLTS, QTY TO SUIT 900 CTS MAX., QTY - 2 MIN.
 - STEEL NOGGING/TRIMMING - 12g TEK SCREWS, QTY TO SUIT 450 CTS MAX., QTY - 2 MIN.

OPTION 3



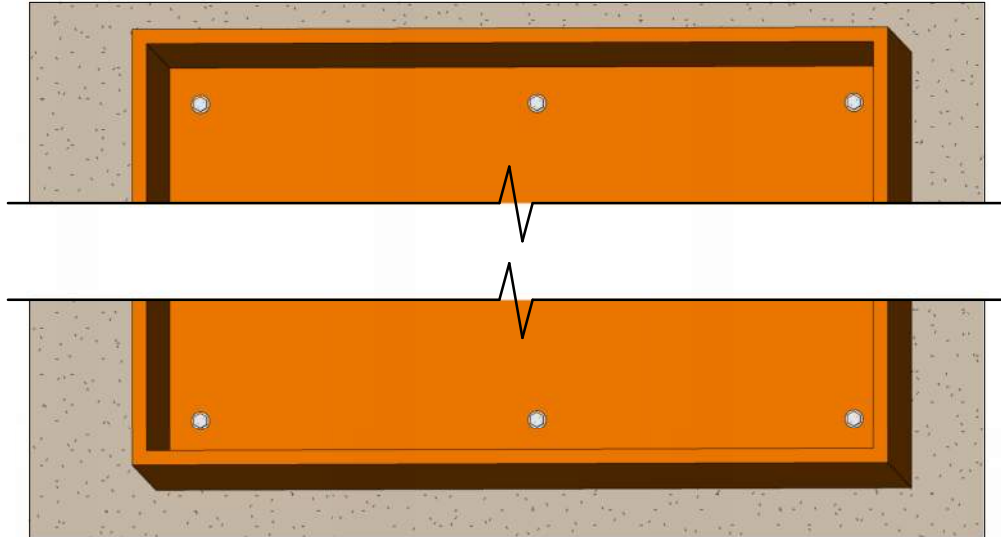
OPTION 4



FIXING DIRECTLY THROUGH CABINET (WALL SHEETING OMITTED FOR CLARITY).
 STUDS AT 450 CTS - SINGLE ROW OF M10 COACH BOLTS (TIMBER STUDS)/12g TEK SCREWS (STEEL STUDS) QTY - 2 Min.
 STUDS AT 600 CTS - DOUBLE ROW OF M10 COACH BOLTS (TIMBER STUDS)/12g TEK SCREWS (STEEL STUDS) QTY - 4 MIN.

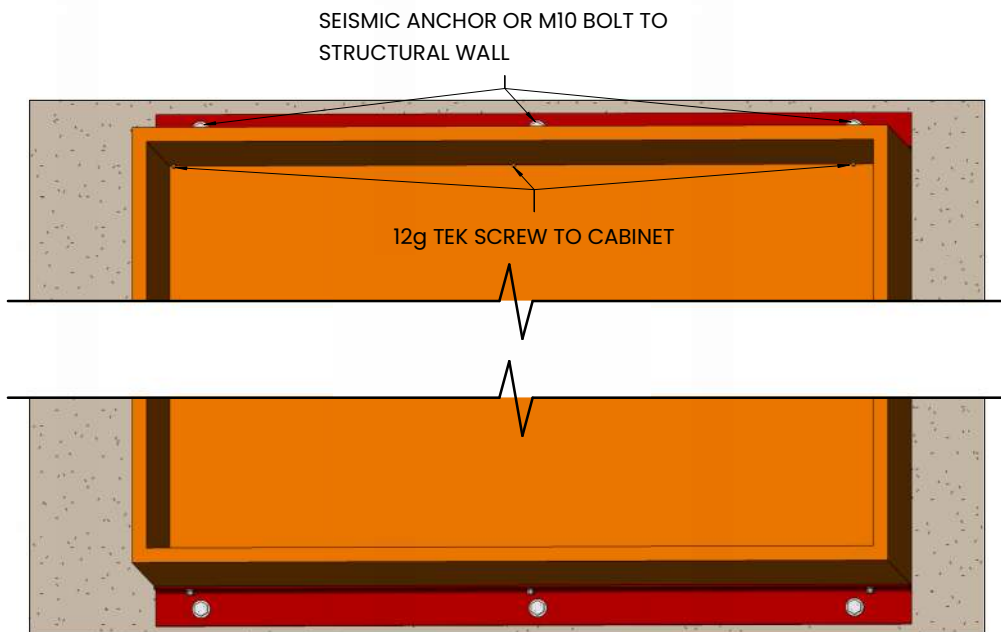
SEISMIC RESTRAINT OF SWITCHBOARD CABINET (WALL MOUNTED)

OPTION 1



M10 BOLTS OR SEISMIC ANCHORS TO STRUCTURAL WALL (EXCLUDES STUD WALL). QTY TO SUIT, 900MM CTS MAX., QTY - 4 MIN.

OPTION 2



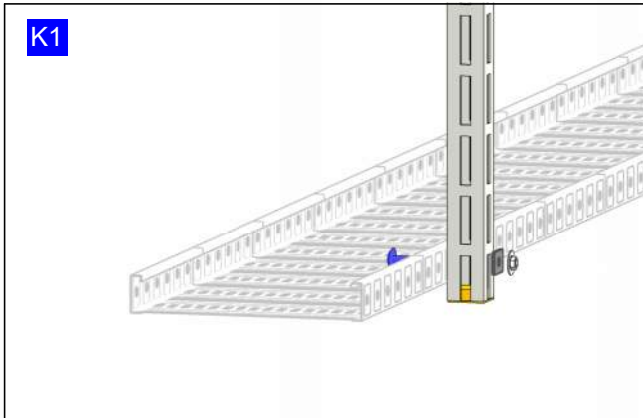
EQUAL ANGLE (50x2.5 EA) TO WIDTH OF CABINET AS PER DETAIL ON PAGE 16 FOR STRUCTURAL WALL OR DETAIL ON PAGE 17 FOR STUD WALL.

STRUCTURAL DESIGN OF STUD WALL MUST INCLUDE THE LOAD FROM PROPOSED SWITCHBOARD CABINET.

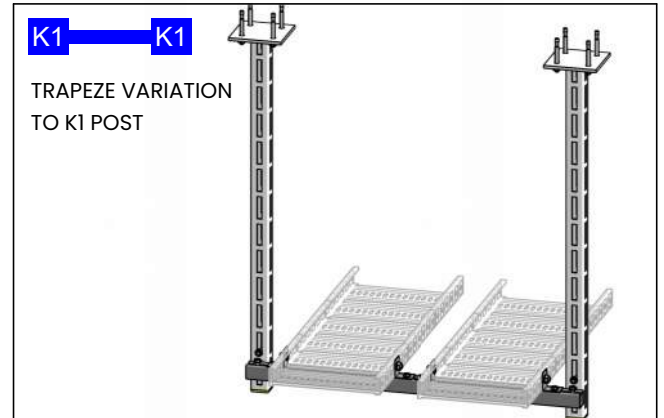
CANTILEVER POSTS

K1 C2 C3

NOTE: THE CAPACITY OF THESE BRACES ARE FACTORS OF SERVICE WEIGHT AND HEIGHT - PLEASE CONSULT YOUR KUSCH ENGINEER FOR ADVICE ON APPLYING THIS DESIGN TO YOUR PROJECT.

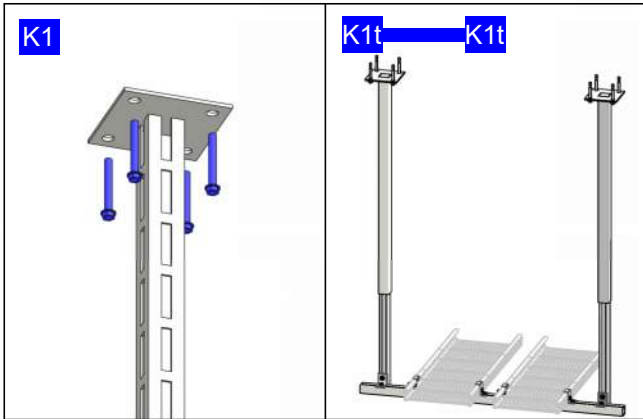


FIX TRAY TO POST WITH M10 DOME-HEAD BOLT AND STRUT WASHER THROUGH. ALTERNATIVLY, SP50-1068 (90°) BRACKET TO BOTH TRAY AND POST.



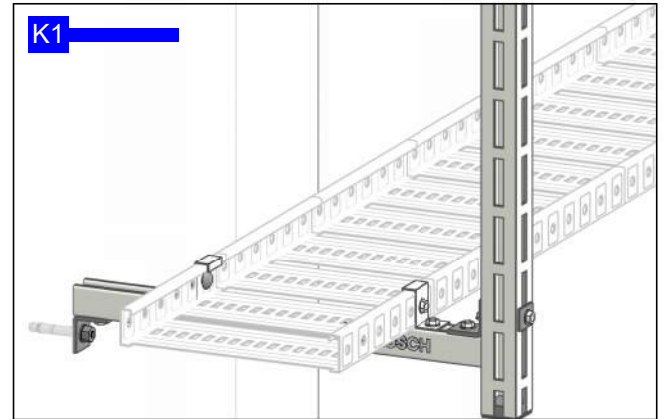
K1 K1
TRAPEZE VARIATION TO K1 POST

NOTE: SUPA50 POSTS ARE AVAILABLE IN 1500, 1000 & 750mm LENGTHS.

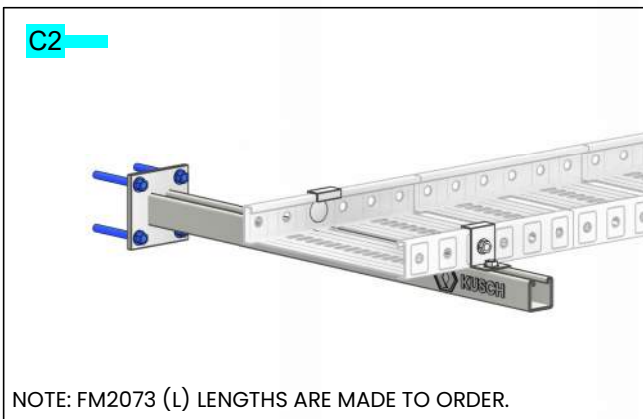


FIX 4- HILTI M10x90 HUS-H OR HILTI M10x90 HST3 OR M10x90 ICCONS FM753 OR APPROVED EQUIVALENT. ALL INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPEC. 80mm MIN. EDGE DISTANCE.

SLEEVE STRUT INSIDE KI FOR HEIGHTS GREATER THAN 1500. 2-M10 X 70 THROUGH STRUT AT 300 CTS MIN



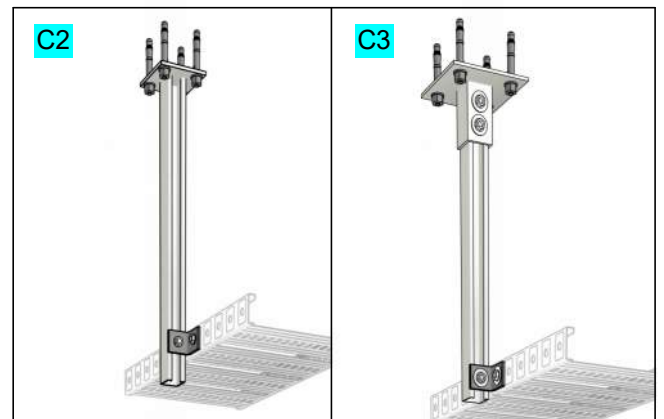
VARIATION OF K1 POST WHERE TRAPEZE IS ADDED TO THE POST WITH AN FM1026 ANGLE BRACKET AND M10 NUT AND BOLT. THIS ALLOWS POST TO CLEAR NEARBY OBSTICALS, OR TO FIX TO THE SOFFIT APPRIATELY. A FURTHER OPTION IS FOR THE OPPOSITE SIDE OF THE TRAPEZE TO FIX TO STRUCTURE, TYPICALLY WITH ANOTHER FM1026 ANGLE BRACKET.



C2

NOTE: FM2073 (L) LENGTHS ARE MADE TO ORDER.

FIX FM2073 WELDED 41mm STRUT WITH HILTI M10x90 HUS-H OR HILTI M10x90 HST3 OR M10x90 ICCONS FM753 OR APPROVED EQUIVALENT. ALL INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPEC. 80mm MIN. EDGE DISTANCE. FIXED WITH HOLD DOWN BRACKETS AND M10 BOLTS AND FM1008.



C2

C3

VARIATION OF WELDED BASEPLATE 41mm STRUT FIXED TO SOFFIT OR FLOOR WITH FM1026 ANGLE BRACKET AND M10 BOLTS TO TRAY

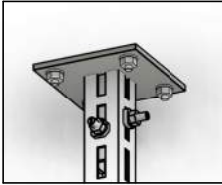
VARIATION WITH BOLTED BASEPLATE. 2-M10 BOLTS THROUGH FM2072 BASEPLATE.

SP50, SP80 & SP100 POSTS

SOFFIT-FIXED	J1	FLOOR-FIXED	H1	FLOOR-SOFFIT	G1	SUPA 50	M10 SPBOLTS WITH M12 ANCHORS
	J2		H2		G2	SUPA 80	M12 SPBOLTS WITH M16 ANCHORS
	J3		H3		G3	SUPA 100	M12 SPBOLTS WITH M16 ANCHORS

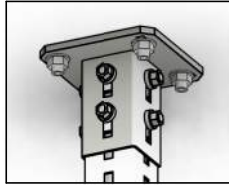
INSTALLATION DETAILS ON THIS PAGE CAN BE APPLIED TO ALL SUPA SIZES BY CHANGING BASEPLATE AND BOLT SIZE.

J1
H1



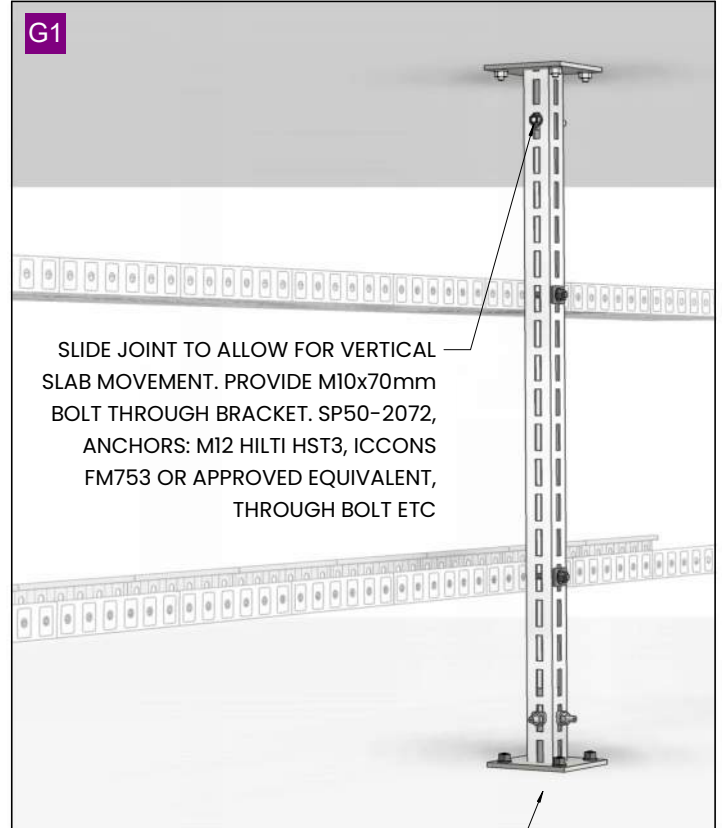
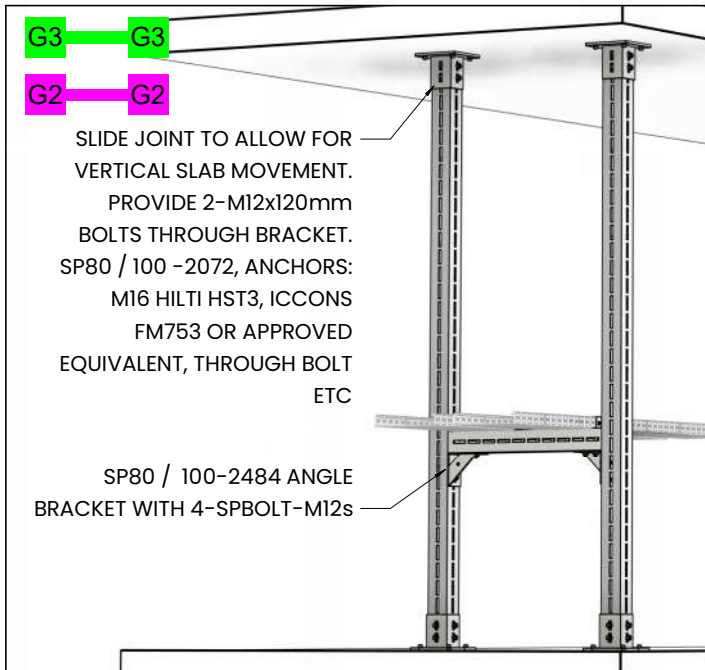
FIX SP50-2072 BASEPLATE TO SUPA WITH 2-SPBOLT-M10S. FIX BASEPLATE TO SOFFIT WITH 4-M12 HILTI HST3, ICCONS FM753 OR APPROVED EQUIVALENT SEISMIC RATED ANCHORS

J2 J3
H2 H3

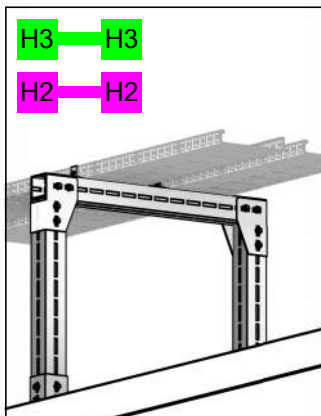


FIX SP80/100-2072 BASEPLATE TO SUPA WITH 6-SPBOLT-M12S. FIX BASEPLATE TO SOFFIT WITH 4-M16 HILTI HST3, ICCONS FM753 OR APPROVED EQUIVALENT SEISMIC RATED ANCHORS

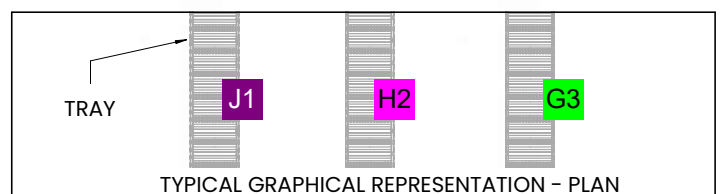
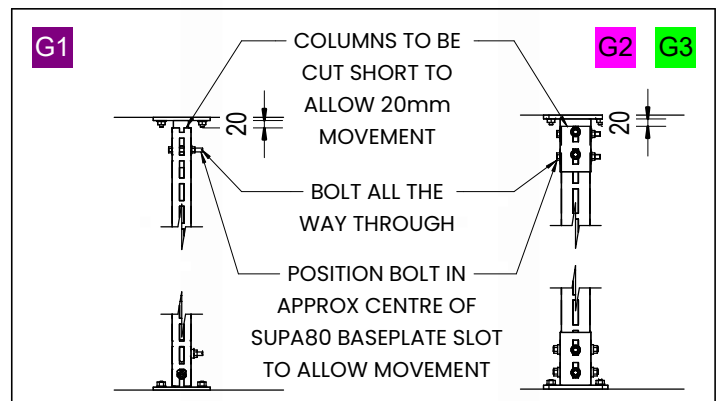
HURDLE VARIATION TO G3 / G2 POST

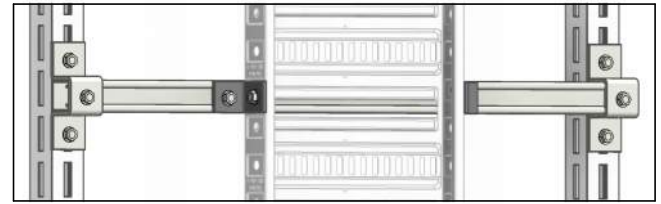
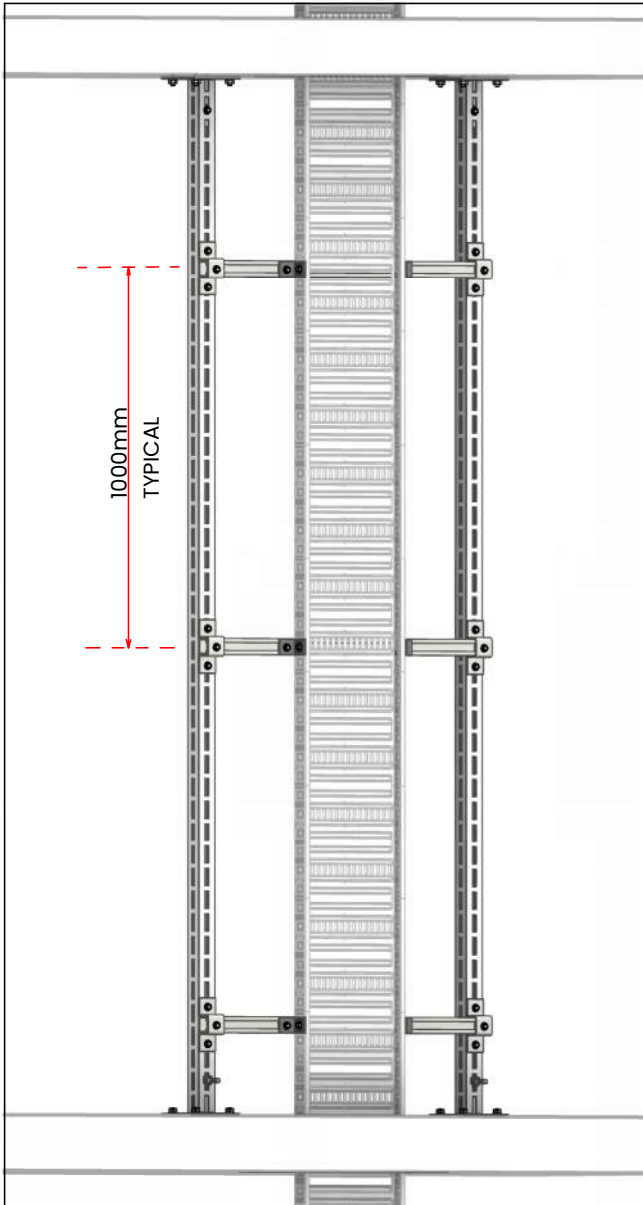


STANDARD SP50 BASEPLATE CONNECTION AS PER DETAIL AT TOP OF PAGE (NO SLIDE JOINT REQUIRED)



VARIATION TO H2 /H3 POST, WITH 2-SP80 / 100 -156 SHOE BRACKETS EACH WITH 8-SPBOLT-M12S. FIX TRAY TO HURDLE WITH TYPICAL HOLD-DOWN BRACKETS.

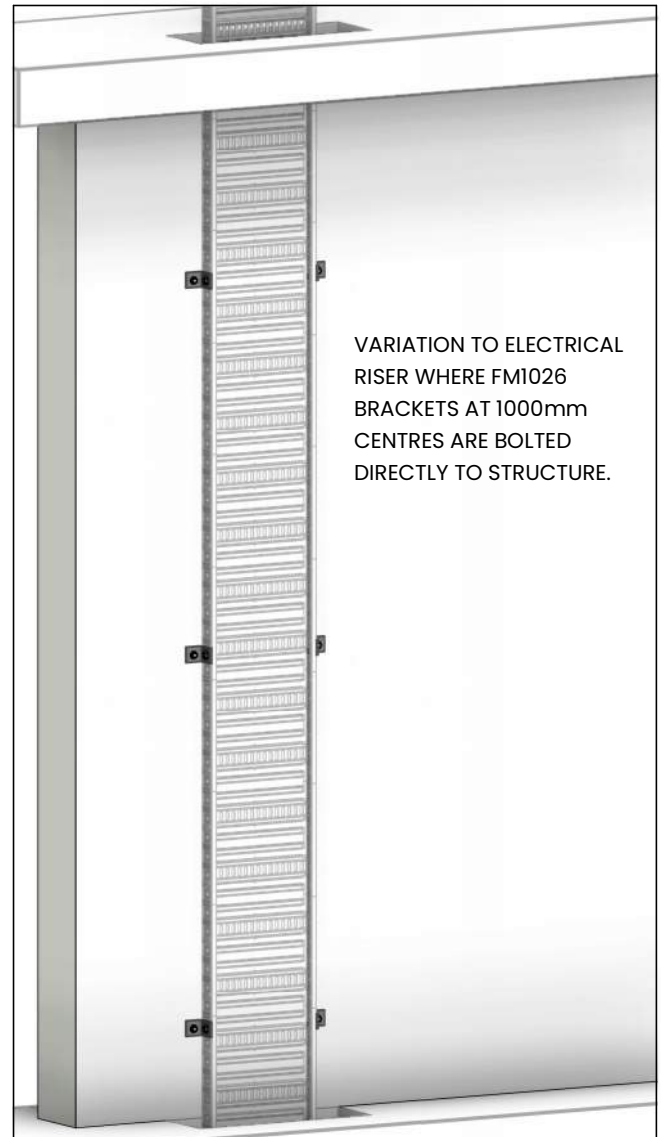




VARIATION OF ELECTRICAL RISER SUPPORT. FIX TRAY TO 41mm STRUT AT 1000mm CENTRES WITH FM1026 ANGLE BRACKETS, M10 BOLTS AND FM1008. FIX 41mm STRUT TO SP50 POST WITH FM1047 BRACKETS WITH 2-M10 BOLTS TO SP50 AND 1-M10 BOLT AND FM1008 TO 41mm STRUT.

BOTTOM SP50-2072 BASEPLATES WITH 4- SEISMIC RATED ANCHORS AND 2- SPBOLT M10.

TOP SP50-2072 BASEPLATES REQUIRE A SLIDE JOINT TO ALLOW FOR VERTICAL SLAB MOVEMENT. PROVIDE 2-M10x70mm BOLTS THROUGH BRACKET AND ALLOW 20mm CLEARANCE BETWEEN THE END OF THE POST AND THE SOFFIT SP50-2072, ANCHORS: M12 HILTI HST3, ICCONS FM753 OR APPROVED EQUIVALENT, THROUGH BOLT ETC



VARIATION TO ELECTRICAL RISER WHERE FM1026 BRACKETS AT 1000mm CENTRES ARE BOLTED DIRECTLY TO STRUCTURE.



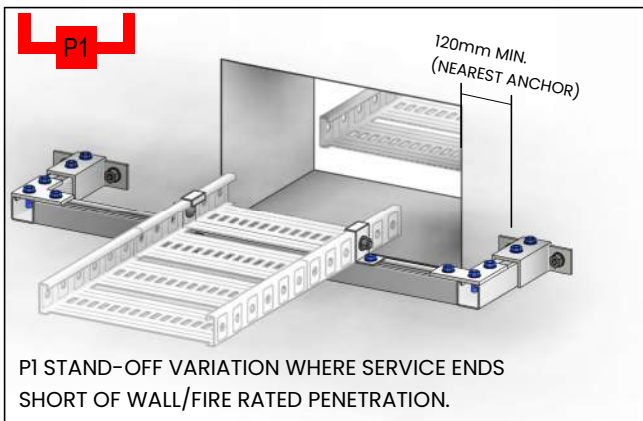
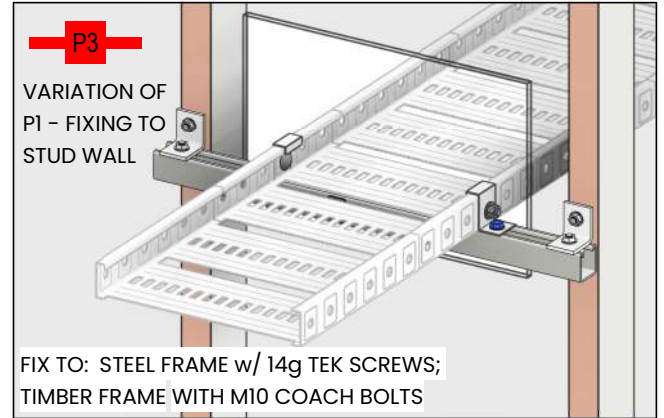
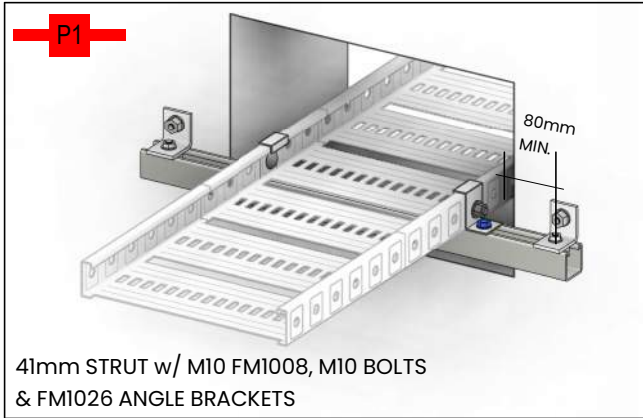
VARIATION TO ELECTRICAL RISER TO STUD WALL WHERE FM1026 BRACKETS AT 1000mm CENTRES ARE BOLTED 41mm STRUT WHICH IS BOLTED/SCREW-FIXED TO THE WALL STUDS. WALL LINING OMITTED FOR CLARITY.

P1,3,4 & 4T - WALL FIXED STRUT BRACES

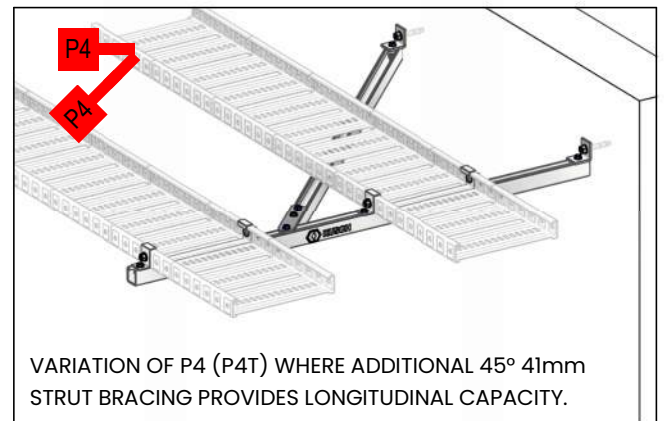


NOTE: THE CAPACITY OF THIS BRACE IS A FACTOR OF SERVICE WEIGHT AND WIDTH - PLEASE CONSULT YOUR KUSCH ENGINEER FOR ADVICE ON APPLYING THIS DESIGN TO YOUR PROJECT.

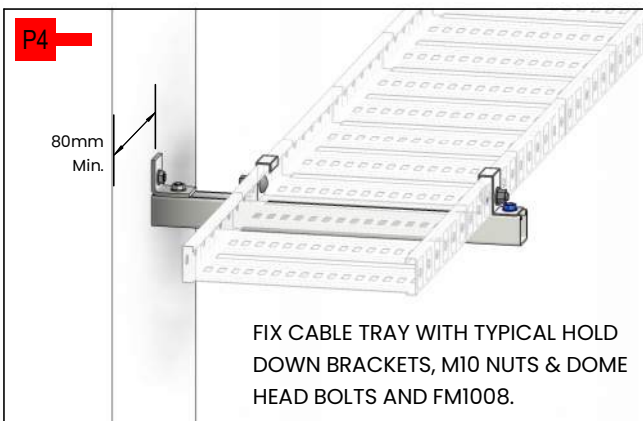
HOLD DOWN BRACKETS WITH DOME HEAD BOLTS TO TRAY, AND M10 BOLTS AND FM1008 TO 41mm STRUT APPLIES TO ALL SEISMIC BRACES.



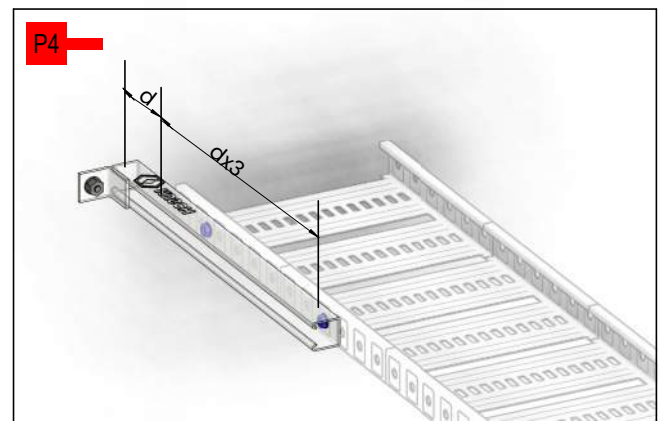
FM2346 BRACKET TO WALL WITH 2-M12 SEISMIC RATED ANCHORS AND 2-M12 BOLTS AND FM1008 TO SHORT PIECE OF 41mm STRUT.
FM1036 BRACKET WITH 3-M12 BOLTS AND FM1008 JOIN 41mm STRUT.



41mm STRUT WITH M10 FM1008, M10 BOLTS & FM1026 ANGLE BRACKETS. FM2324 BRACKET WITH 3-M10 BOLTS AND CHANNEL NUTS JOIN 41mm AT 45°.



P4 BRACE CAN BE PLACED AT TYPICAL TRAPEZE HANGER BY EXTENDING TRAPEZE TO WALL AND FIXING TO WALL WITH BRACKET.



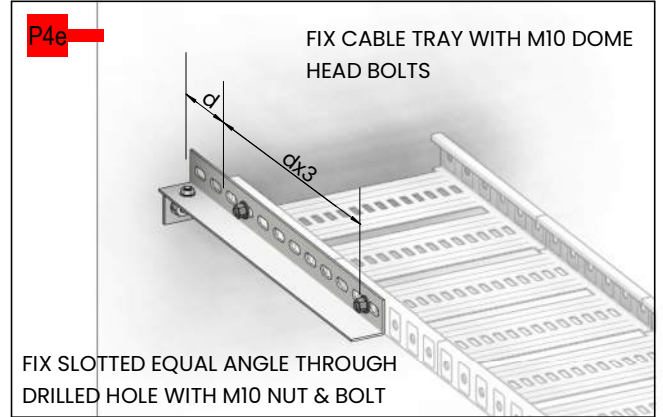
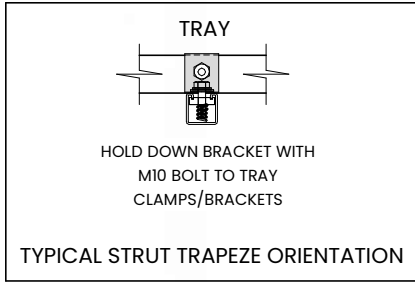
WHEN P4 IS PARALLEL TO TRAY, FIX WITH TWO M10 DOME HEAD BOLTS THROUGH DRILLED HOLES. ENSURE DISTANCE BETWEEN FIXINGS IS 3x DISTANCE FROM WALL U.N.O.

P4e & P6 - WALL FIXED STRUT BRACE

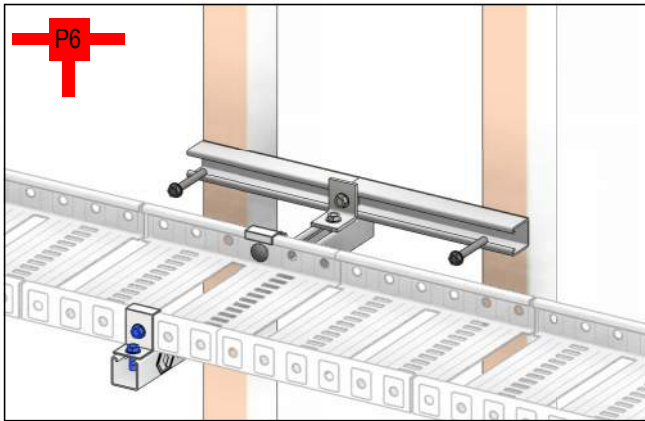


NOTE: THE CAPACITY OF THIS BRACE IS A FACTOR OF SERVICE WEIGHT AND WIDTH - PLEASE CONSULT YOUR KUSCH ENGINEER FOR ADVICE ON APPLYING THIS DESIGN TO YOUR PROJECT.

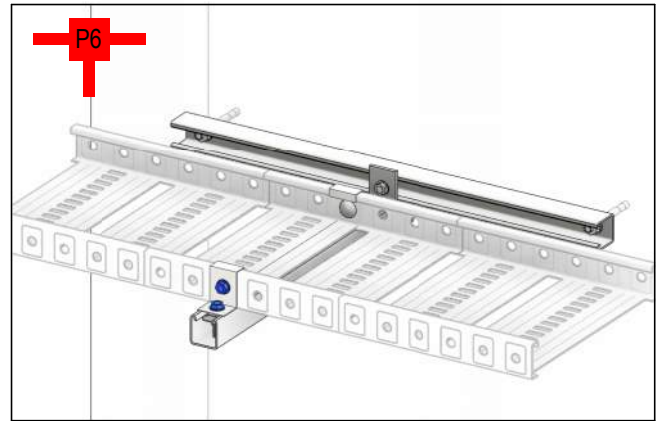
FIX FM1026 TO CONCRETE / CORE-FILLED BLOCK WALL WITH HILTI M10x90 HUS-H OR HILTI M10x90 HST3 OR M10x90 ICCONS FM753 OR APPROVED EQUIVALENT. (ALL ACCORDING TO MANUFACTURERS SPEC). (80mm MINIMUM FROM WALL EDGE)



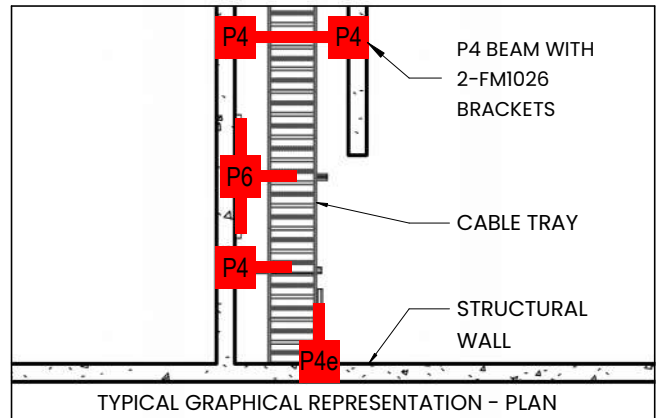
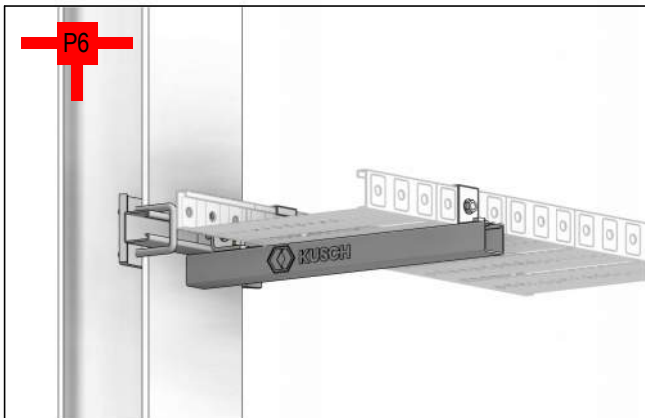
P6, VARIATION WHEN FIXING TO STUD WALL (WALL SHEETING HIDDEN FOR CLARITY)



FIX TO: STEEL FRAME - 14g TEK SCREWS; TIMBER FRAME - M10 COACH BOLTS



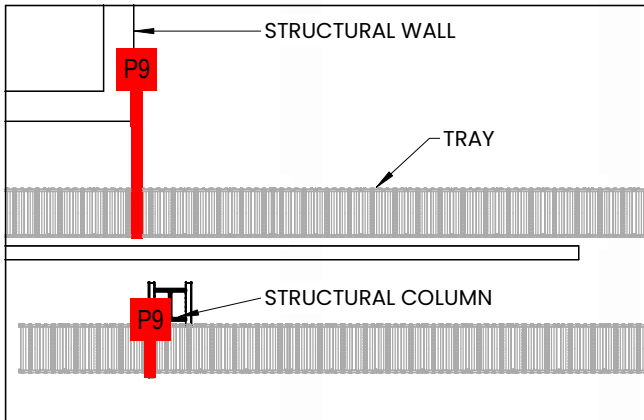
P6 VARIATION TO STRUCTURAL COLUMN WITH 2-FM174 CLAMPS



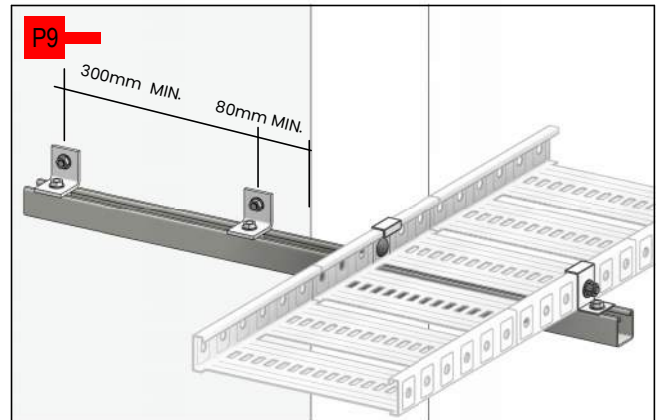
P8, 9 & 9C - STRUT BRACES



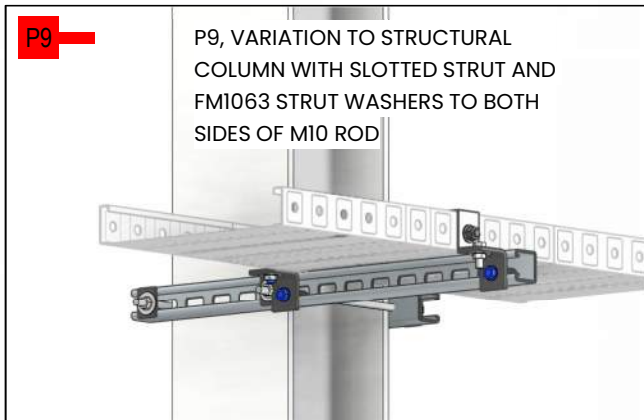
NOTE: THE CAPACITY OF THIS BRACE IS A FACTOR OF SERVICE WEIGHT AND WIDTH - PLEASE CONSULT YOUR KUSCH ENGINEER FOR ADVICE ON APPLYING THIS DESIGN TO YOUR PROJECT.



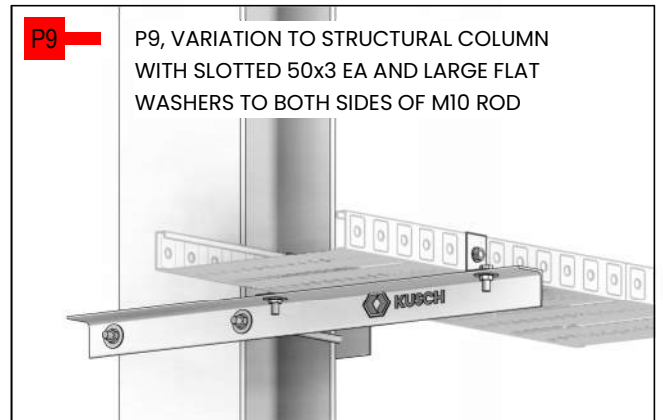
TYPICAL GRAPHICAL REPRESENTATION - PLAN



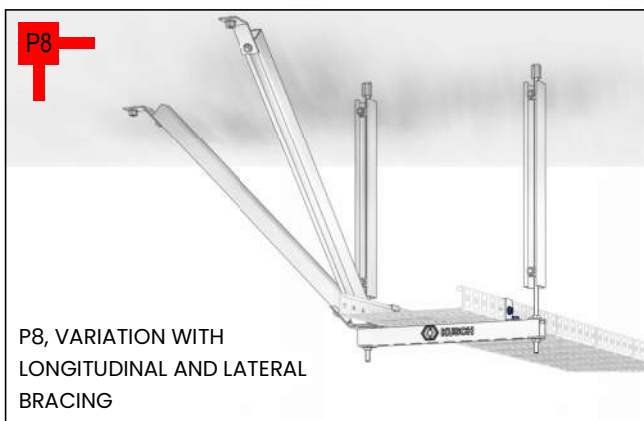
FIX TRAY w/ TYPICAL TRAY CLIPS, M10 BOLTS & FM1008



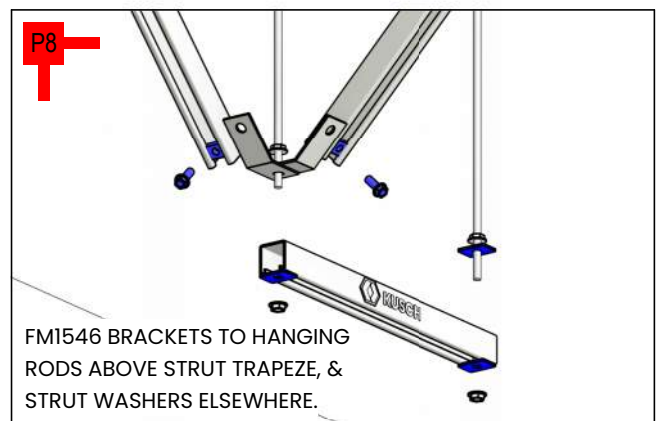
P9, VARIATION TO STRUCTURAL COLUMN WITH SLOTTED STRUT AND FM1063 STRUT WASHERS TO BOTH SIDES OF M10 ROD



P9, VARIATION TO STRUCTURAL COLUMN WITH SLOTTED 50x3 EA AND LARGE FLAT WASHERS TO BOTH SIDES OF M10 ROD



P8, VARIATION WITH LONGITUDINAL AND LATERAL BRACING



FM1546 BRACKETS TO HANGING RODS ABOVE STRUT TRAPEZE, & STRUT WASHERS ELSEWHERE.

