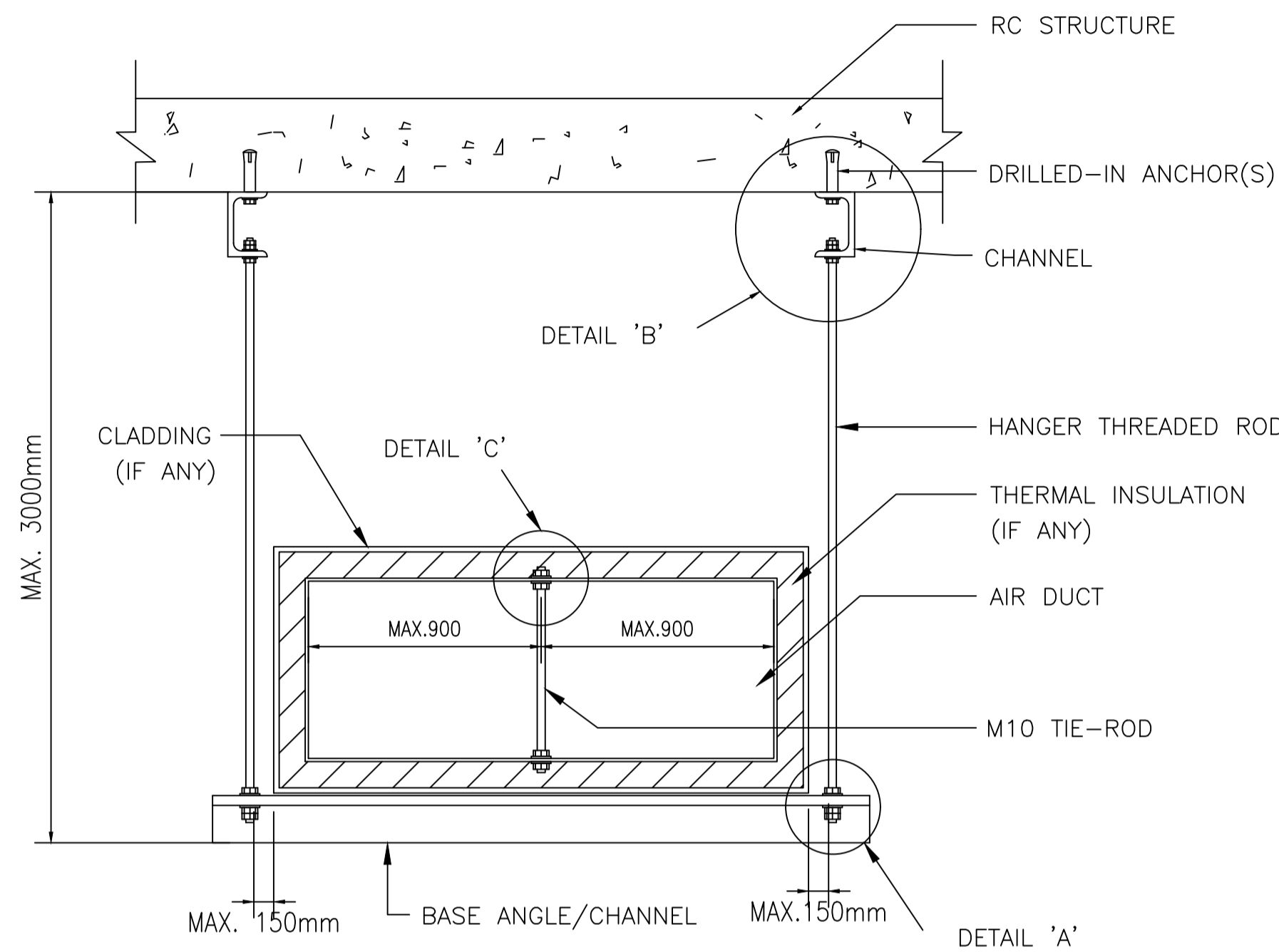
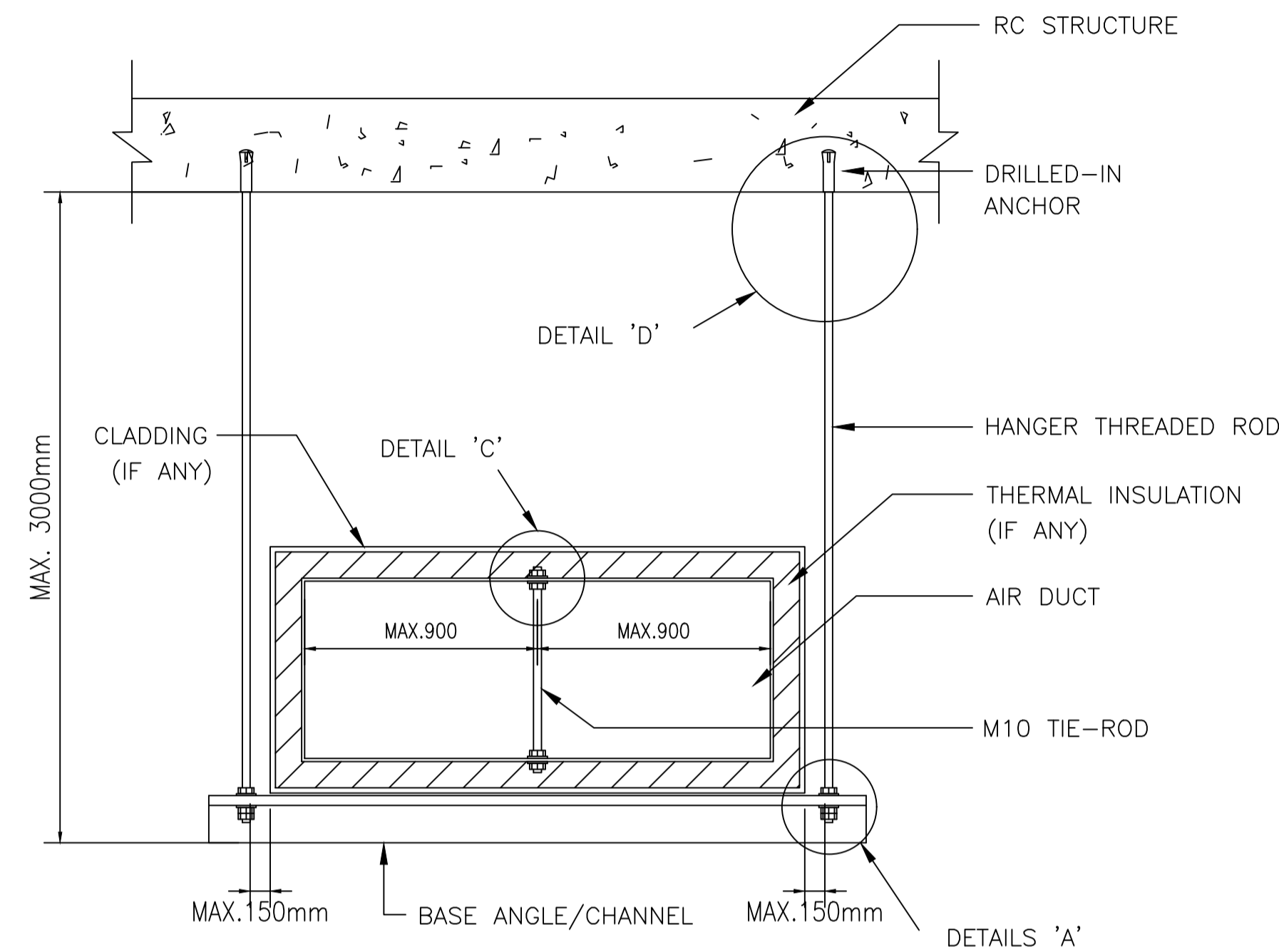


STRUCTURAL DETAILS FOR SUSPENDED AIR DUCT



TYPICAL HANGER DETAILS (METHOD 1)



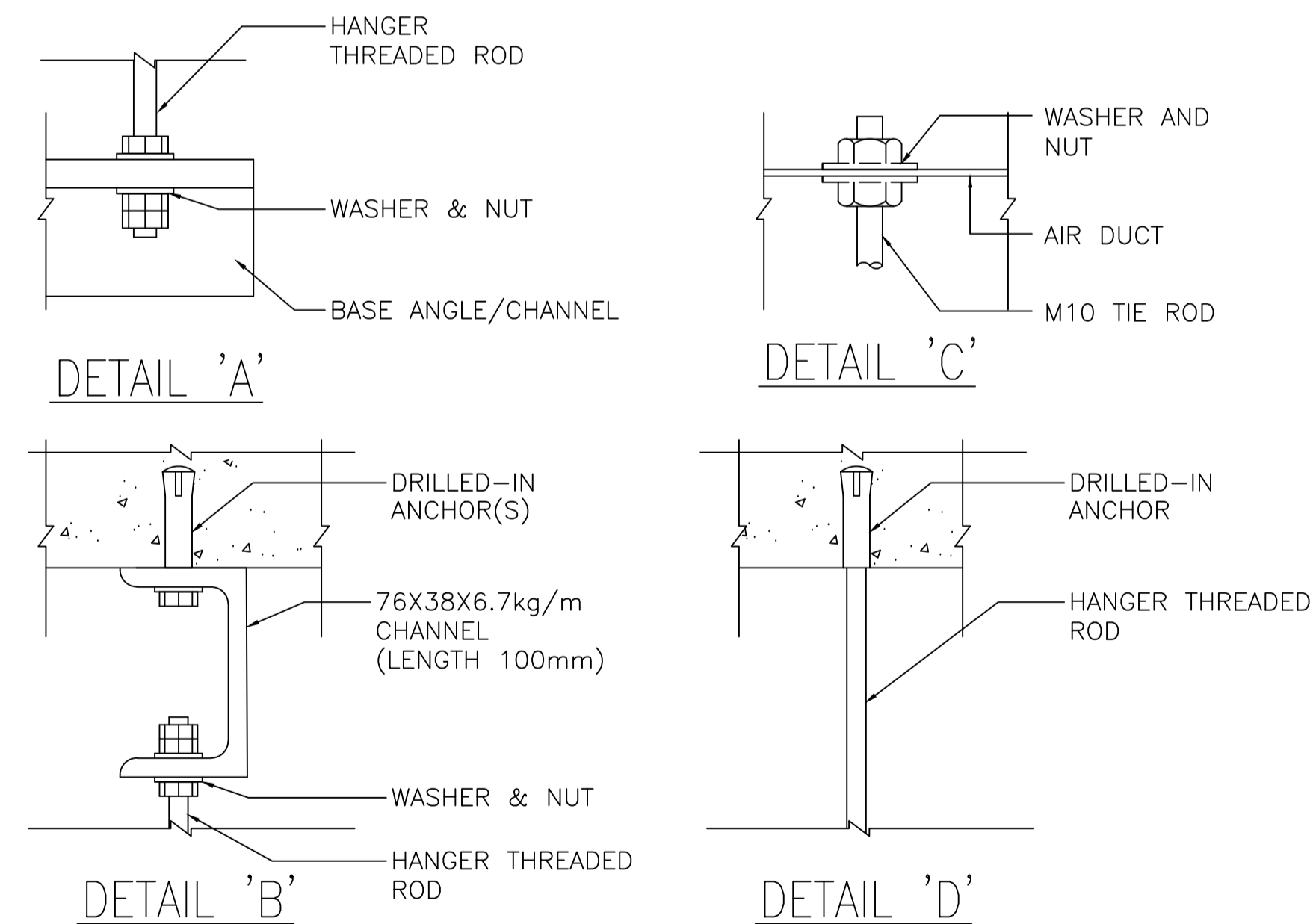
TYPICAL HANGER DETAILS (METHOD 2)

GENERAL NOTES

- THE DESIGN AND CONSTRUCTION OF SUPPORTING FRAMES SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
 - BUILDING (CONSTRUCTION) REGULATION
 - CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011
- ALL STRUCTURAL STEEL TO BE GRADE S275 COMPLYING WITH BS EN 10025:2004 OR Q235 COMPLYING WITH GB50017 CLASS 1 IN ACCORDANCE WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011.
- ALL STRUCTURAL STEEL TO BE HOT-DIP GALVANIZED TO AT LEAST 85 MICRONS THICK IN ACCORDANCE WITH BS EN ISO 1461 OR EQUIVALENT.
- REQUIREMENTS OF DRILLED-IN ANCHOR:
 - THE MINIMUM BASE MATERIAL THICKNESS TO BE 100mm.
 - THE MATERIAL SHOULD BE ANTI-CORROSION TYPE WITHOUT BI-METALLIC EFFECT WITH THE SUPPORTING FRAME
 - A SAFETY FACTOR OF 3 SHOULD BE APPLIED TO THE CHARACTERISTIC TENSILE CAPACITY IN DETERMINING THE ALLOWABLE TENSILE LOAD
- DESIGN AND INSTALLATION OF DRILLED-IN ANCHOR SHALL BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
- FOR THE DESIGN OF SUPPORTING FRAME FOR AXIAL FAN, CABINET FAN AND AIR HANDLING UNIT, NOTIONAL HORIZONTAL LOAD OF EITHER 0.5% OF FACTORED DEAD LOAD PLUS LIVE LOAD (IF APPLICABLE) OR A VALUE SPECIFIED IN THE PROPRIETARY PRODUCT CATALOGUE SHOULD BE CONSIDERED.
- ALL THREADED RODS TO BE GRADE 4.8 TO DIN 975 AND BS EN ISO 898-1 OR EQUIVALENT STANDARD, OR STRUCTURAL STEEL COMPLYING WITH NOTE 2 ABOVE.
- ALL THREADED RODS TO BE HOT-DIP GALVANIZED TO AT LEAST 50µm IN ACCORDANCE WITH BS EN ISO 1461/BS 7371 PART 6 OR TO BE ZINC-PLATED (ELECTROPLATED) TO AT LEAST 5µm IN ACCORDANCE WITH BS EN ISO 2081/BS EN ISO 4042 / BS 7371 PART 3.

AIR DUCT HANGER SCHEDULE

DUCT SIZE (INTERNAL WIDTH) (mm)	MAXIMUM DUCT SIZE (INTERNAL HEIGHT) (mm)	DUCT HANGER		MAXIMUM HANGER SPACING (mm)	ANCHOR SIZE	MIN. ALLOWABLE TENSILE LOAD PER ANCHOR (kN)	APPROXIMATE TOTAL DUCT WEIGHT (kg/m)
		BASE ANGLE/CHANNEL MIN. SIZE (mm)	HANGER THREADED ROD MIN. SIZE (mm)				
UP TO 1000	1000	50X50X5 ANGLE	M8	3000	M8	2.0	60
1001 - 1500	1500	60X60X8 ANGLE	M10	2500	M10	2.5	105
1501 - 2000	1500	76X38X6.7 CHANNEL	M10	2500	M10 (2 NOS.) / M12	2.5 / 3.0	140
2001 - 3000	1800	102X51X10.4 CHANNEL	M12	2500	M10 (2 NOS.)	2.5	235



BD REF

BIM REF

FSD REF

REV. DATE AMENDMENT

PROJECT SAMPLE

DRAWING TITLE
SUPPORTING FRAMES FOR SUSPENDED HORIZONTAL AIR DUCT INSIDE A BUILDING

SCALE

DRAWING NO. REV. NO.

SORUCE

90mm(W) x 40mm(H) space for COMPANY LOGO

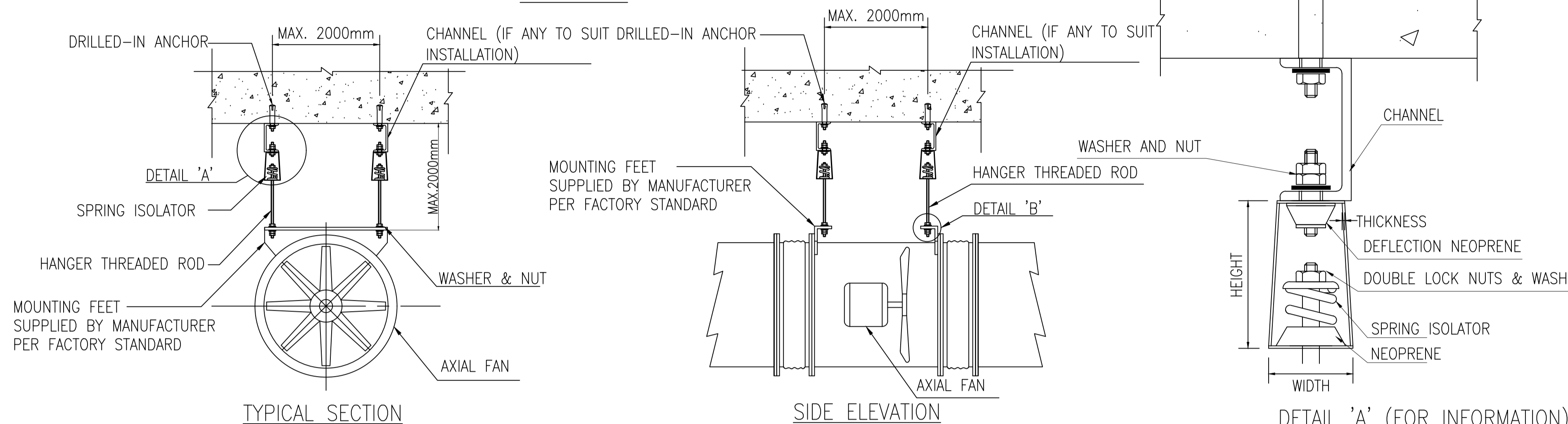
90mm(W) x 60mm(H) space for AP/RSE/RGE's signature/ and stamp chop

BD's OFFICIAL USE

90mm(W) x 150mm(H) space for BD's approval stamp/ certification of copies of approved plans (PNAP ADM-10 APP A)

STRUCTURAL DETAILS FOR SUSPENDED AXIAL FAN

TYPE A

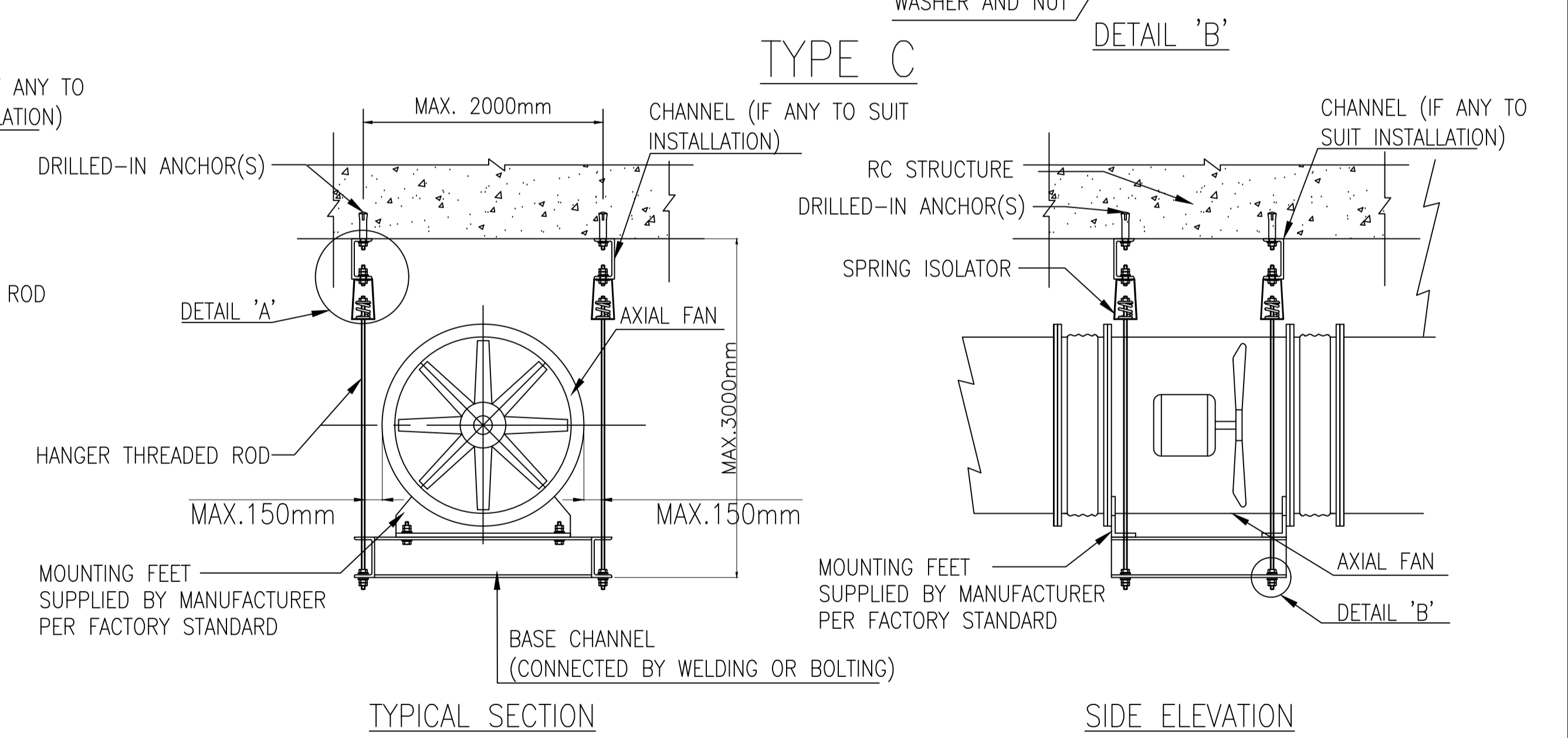
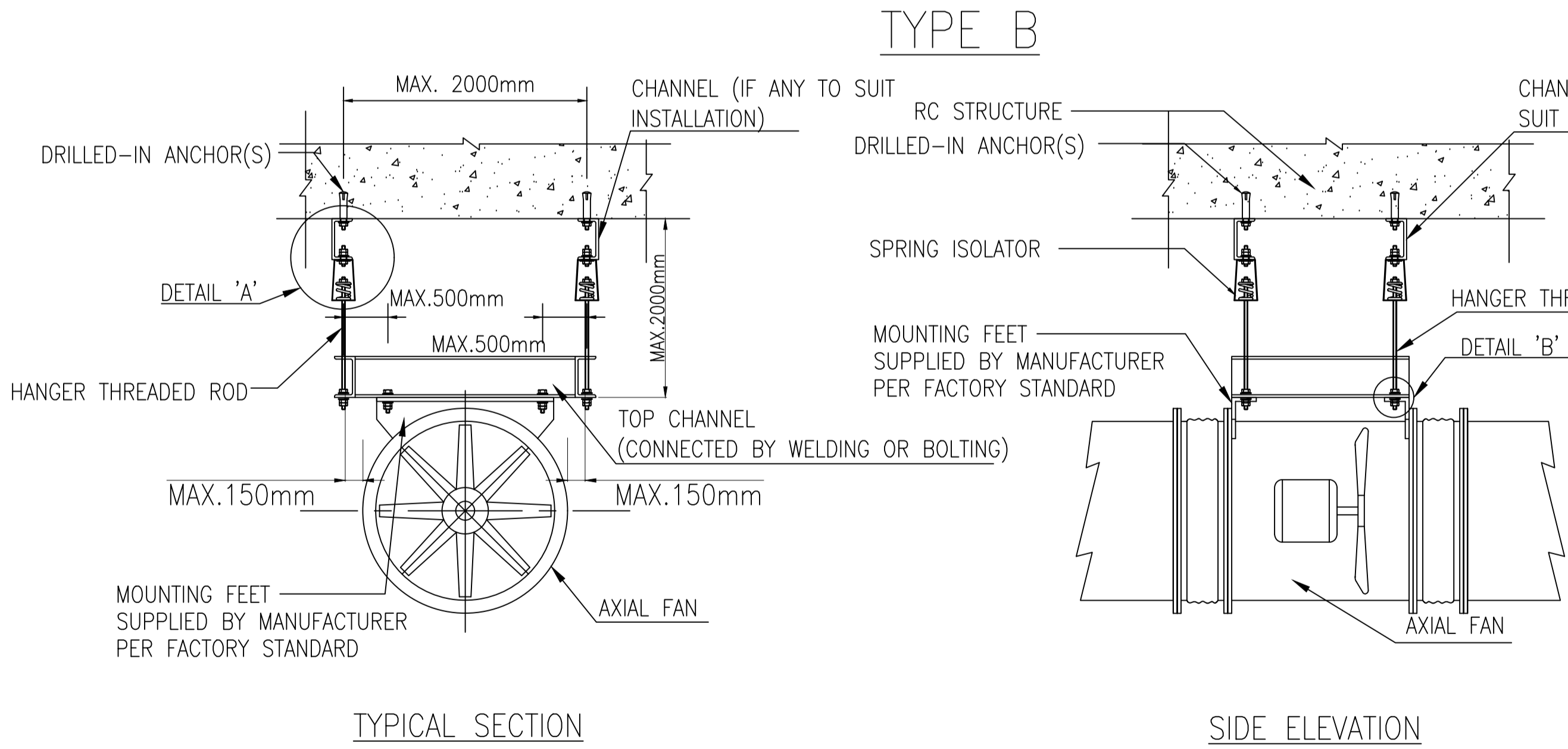
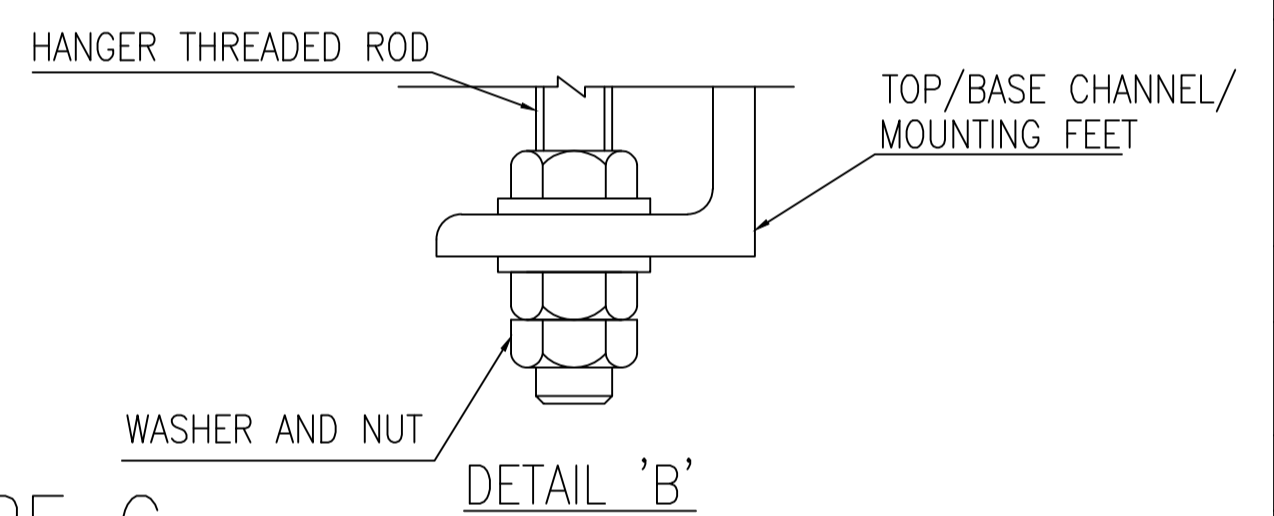


GENERAL NOTES

- THE DESIGN AND CONSTRUCTION OF SUPPORTING FRAMES SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
 - BUILDING (CONSTRUCTION) REGULATION
 - CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011
- ALL STRUCTURAL STEEL TO BE GRADE S275 COMPLYING WITH BS EN 10025:2004 OR Q235 COMPLYING WITH GB50017 CLASS 1 IN ACCORDANCE WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011.
- ALL STRUCTURAL STEEL TO BE HOT-DIP GALVANIZED TO AT LEAST 85 MICRONS THICK IN ACCORDANCE WITH BS EN ISO 1461 OR EQUIVALENT.
- REQUIREMENTS OF DRILLED-IN ANCHOR:
 - THE MINIMUM BASE MATERIAL THICKNESS TO BE 100mm.
 - THE MATERIAL SHOULD BE ANTI-CORROSION TYPE WITHOUT BI-METALLIC EFFECT WITH THE SUPPORTING FRAME
 - A SAFETY FACTOR OF 3 SHOULD BE APPLIED TO THE CHARACTERISTIC TENSILE CAPACITY IN DETERMINING THE ALLOWABLE TENSILE LOAD
- DESIGN AND INSTALLATION OF DRILLED-IN ANCHOR SHALL BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
- FOR THE DESIGN OF SUPPORTING FRAME FOR AXIAL FAN, CABINET FAN AND AIR HANDLING UNIT, NOTIONAL HORIZONTAL LOAD OF EITHER 0.5% OF FACTORED DEAD LOAD PLUS LIVE LOAD (IF APPLICABLE) OR A VALUE SPECIFIED IN THE PROPRIETARY PRODUCT CATALOGUE SHOULD BE CONSIDERED.
- ALL THREADED RODS TO BE GRADE 4.8 TO DIN 975 AND BS EN ISO 898-1 OR EQUIVALENT STANDARD, OR STRUCTURAL STEEL COMPLYING WITH NOTE 2 ABOVE.
- ALL THREADED RODS TO BE HOT-DIP GALVANIZED TO AT LEAST 50µm IN ACCORDANCE WITH BS EN ISO 1461/BS 7371 PART 6 OR TO BE ZINC-PLATED (ELECTROPLATED) TO AT LEAST 5µm IN ACCORDANCE WITH BS EN ISO 2081/BS EN ISO 4042 / BS 7371 PART 3.

AXIAL FAN HANGER SCHEDULE

TYPE A	FAN SIZE	FAN WEIGHT	HANGER THREADED ROD NO.	APPROXIMATE LOAD PER ROD	HANGER THREADED ROD MIN. SIZE	ANCHOR SIZE	MIN. ALLOWABLE TENSILE LOAD PER ANCHOR (kN)	CHANNEL MIN. SIZE	SPRING ISOLATOR DIMENSION		
									MAX. WIDTH	MAX. HEIGHT	MIN. THICKNESS
	UP TO 700mm	UP TO 200 kg	4	50 kg	M10	M10	2.5	76 X 38 X 6.7kg/m, LENGTH 100mm	132 mm	275 mm	3 mm
	UP TO 800mm	200 - 250 kg	4	65 kg	M10	M10	2.5	76 X 38 X 6.7kg/m, LENGTH 100mm	132 mm	275 mm	3 mm



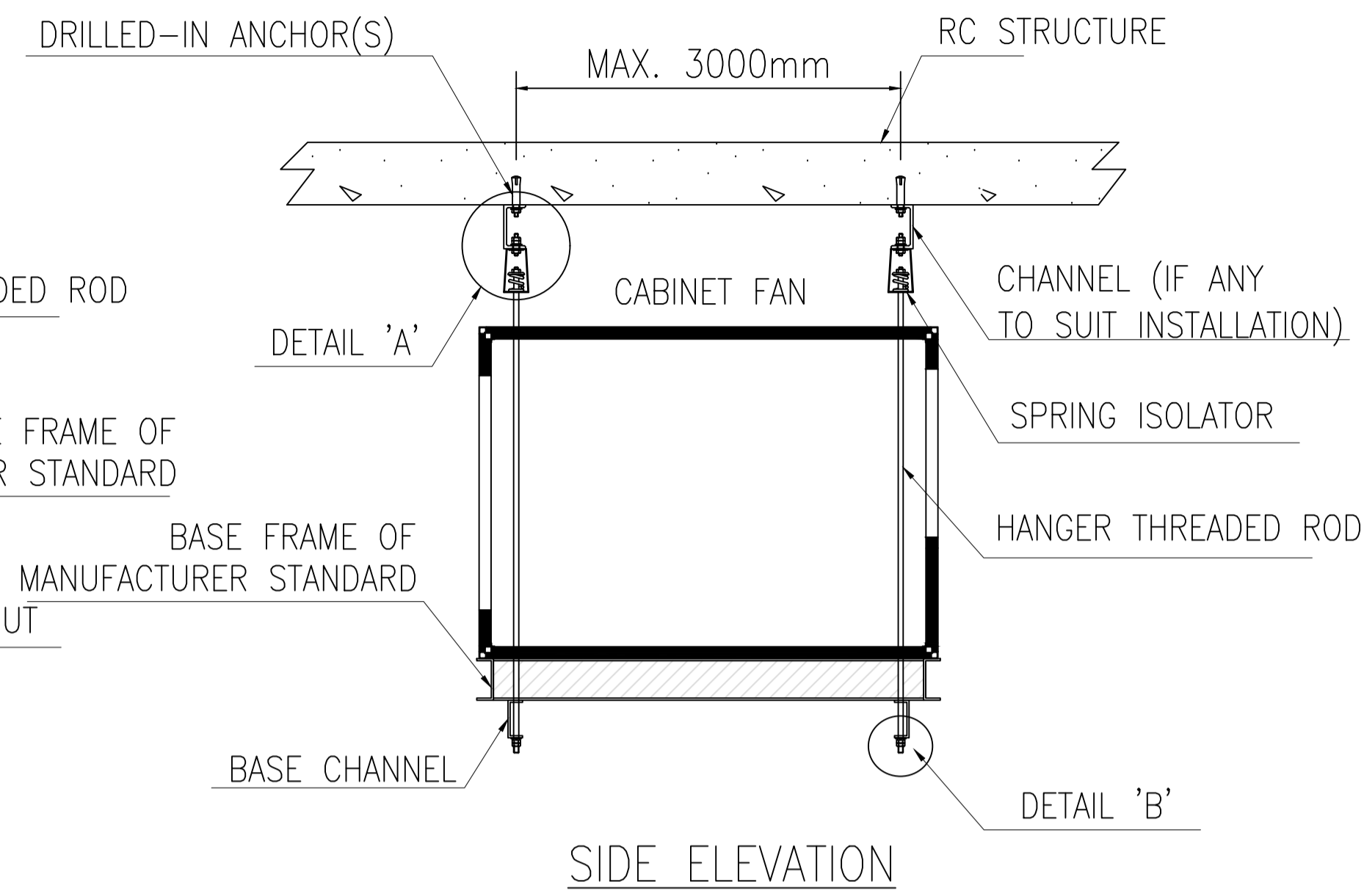
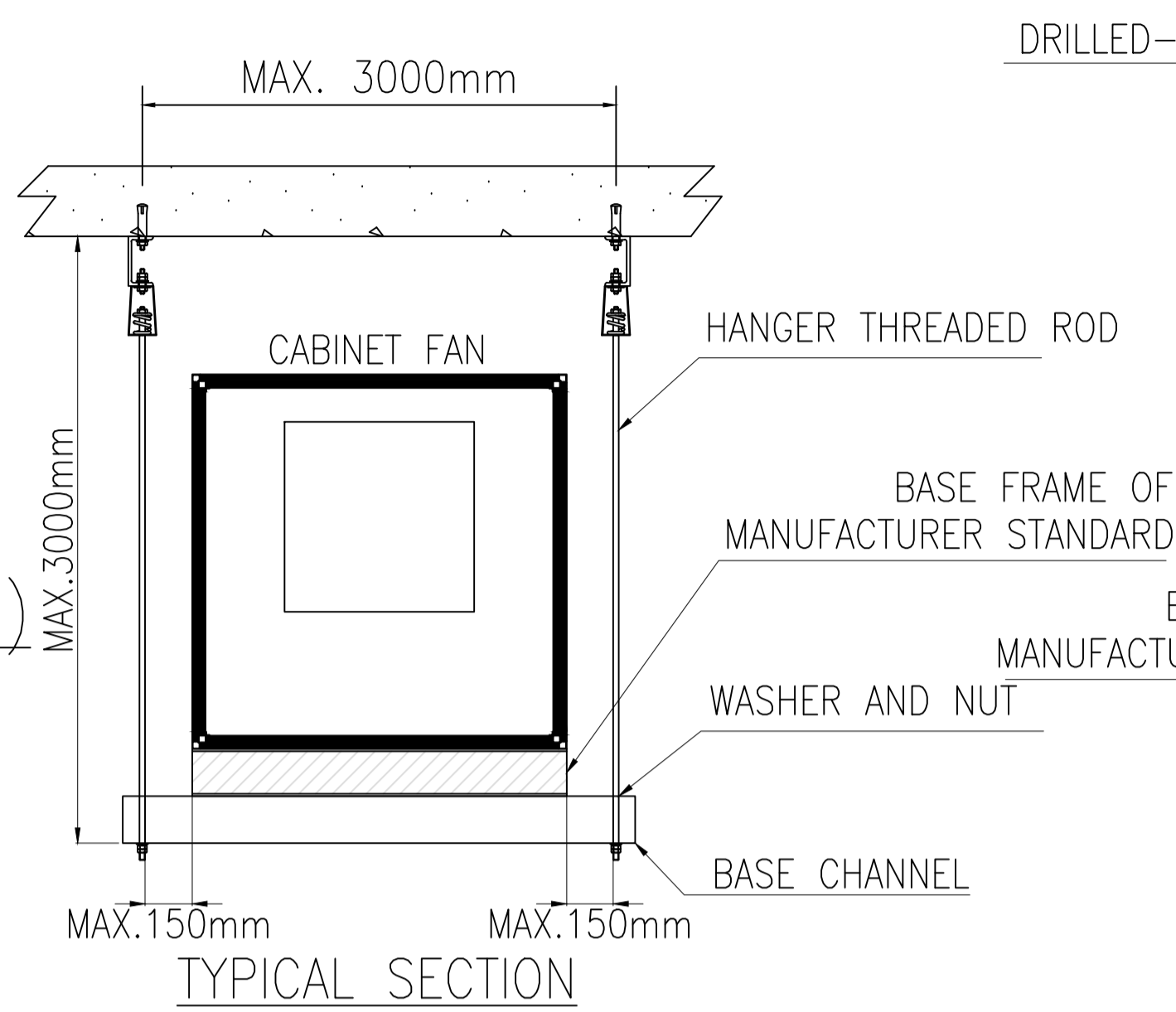
AXIAL FAN HANGER SCHEDULE

TYPE B & C	FAN SIZE	FAN WITH CHANNEL TOTAL WEIGHT	HANGER THREADED ROD NO.	APPROXIMATE LOAD PER ROD	HANGER THREADED ROD SIZE	ANCHOR SIZE	MIN. ALLOWABLE TENSILE LOAD PER ANCHOR (kN)	TOP / BASE CHANNEL	CHANNEL MIN. SIZE	SPRING ISOLATOR DIMENSION		
										MAX. WIDTH	MAX. HEIGHT	MIN. THICKNESS
	UP TO 1000mm	300 - 450 kg	4	115 kg	M12	M12	3.0	76 X 38 X 6.7kg/m	76 X 38 X 6.7kg/m, LENGTH 100mm	132 mm	275 mm	3 mm
	UP TO 1100mm	450 - 600 kg	4	150 kg	M16	M12 (2 NOS.)	3.0	152 X 76 X 18kg/m	102 X 51 X 10.4kg/m, LENGTH 200mm	132 mm	275 mm	3 mm
	UP TO 1250mm	600 - 800 kg	4	200 kg	M16	M12 (2 NOS.)	3.0	152 X 76 X 18kg/m	152 X 76 X 18kg/m, LENGTH 200mm	132 mm	275 mm	3 mm

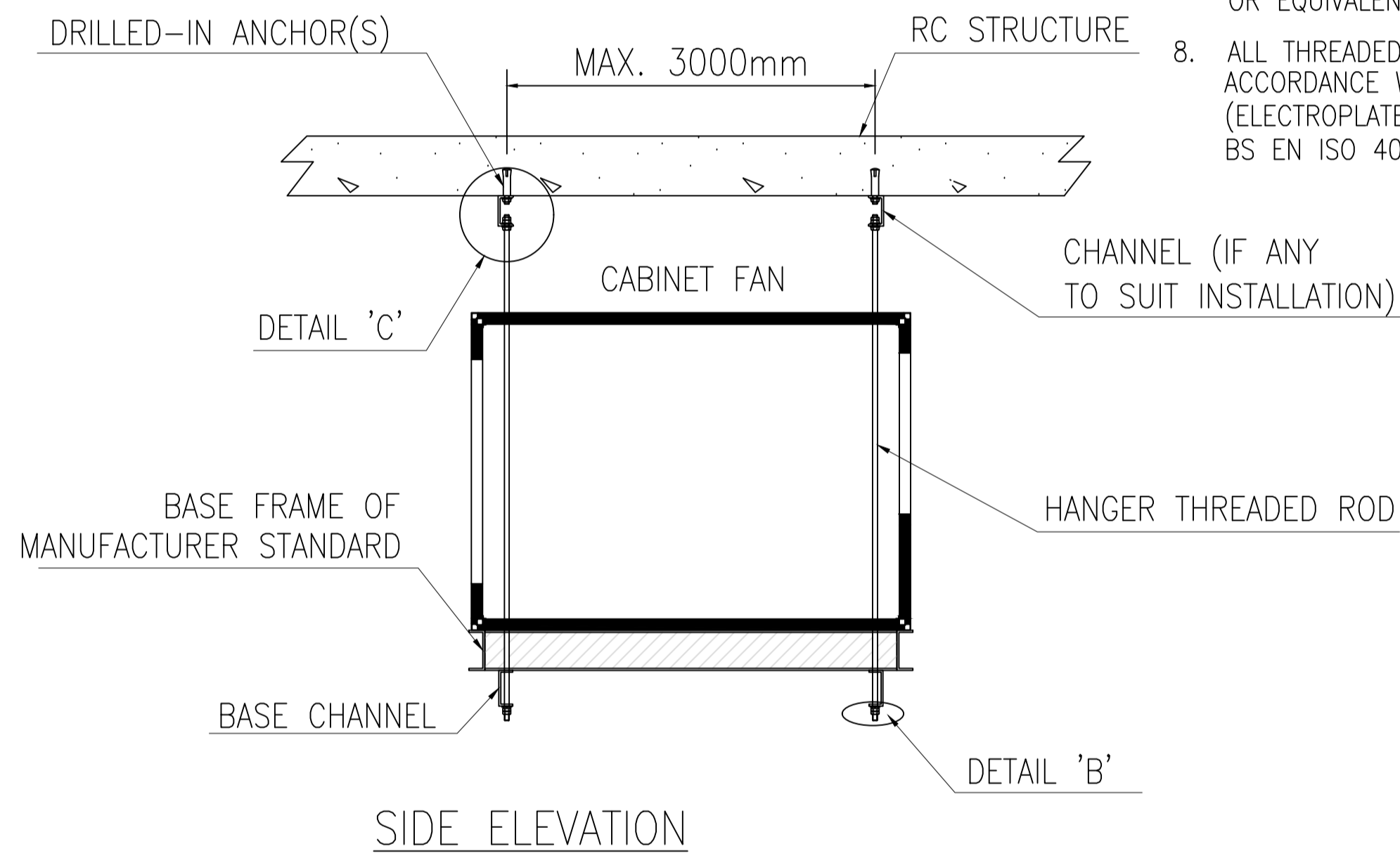
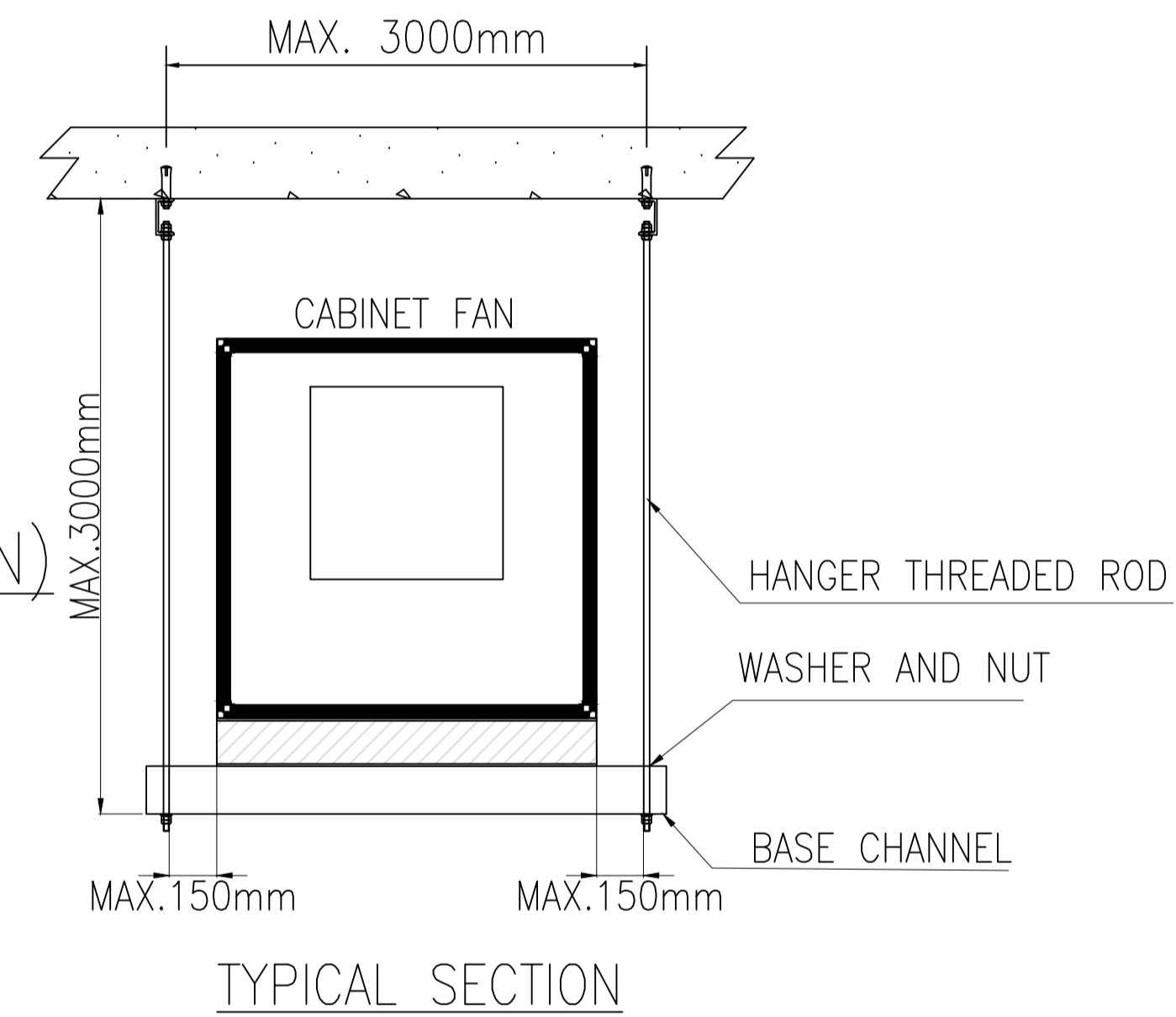
BD REF
BIM REF
FSD REF
REV. DATE AMENDMENT
PROJECT SAMPLE
DRAWING TITLE SUPPORTING FRAMES FOR SUSPENDED AXIAL FAN INSIDE A BUILDING
SCALE
DRAWING NO. REV. NO.
SORUCE
90mm(W) x 40mm(H) space for COMPANY LOGO
90mm(W) x 60mm(H) space for AP/RSE/RGE's signature/ and stamp chop
BD's OFFICIAL USE
90mm(W) x 150mm(H) space for BD's approval stamp/ certification of copies of approved plans (PNAP ADM-10 APP A)

STRUCTURAL DETAILS FOR SUSPENDED CABINET FAN

TYPE A
(WITHOUT INTERNAL
VIBRATION ISOLATION)

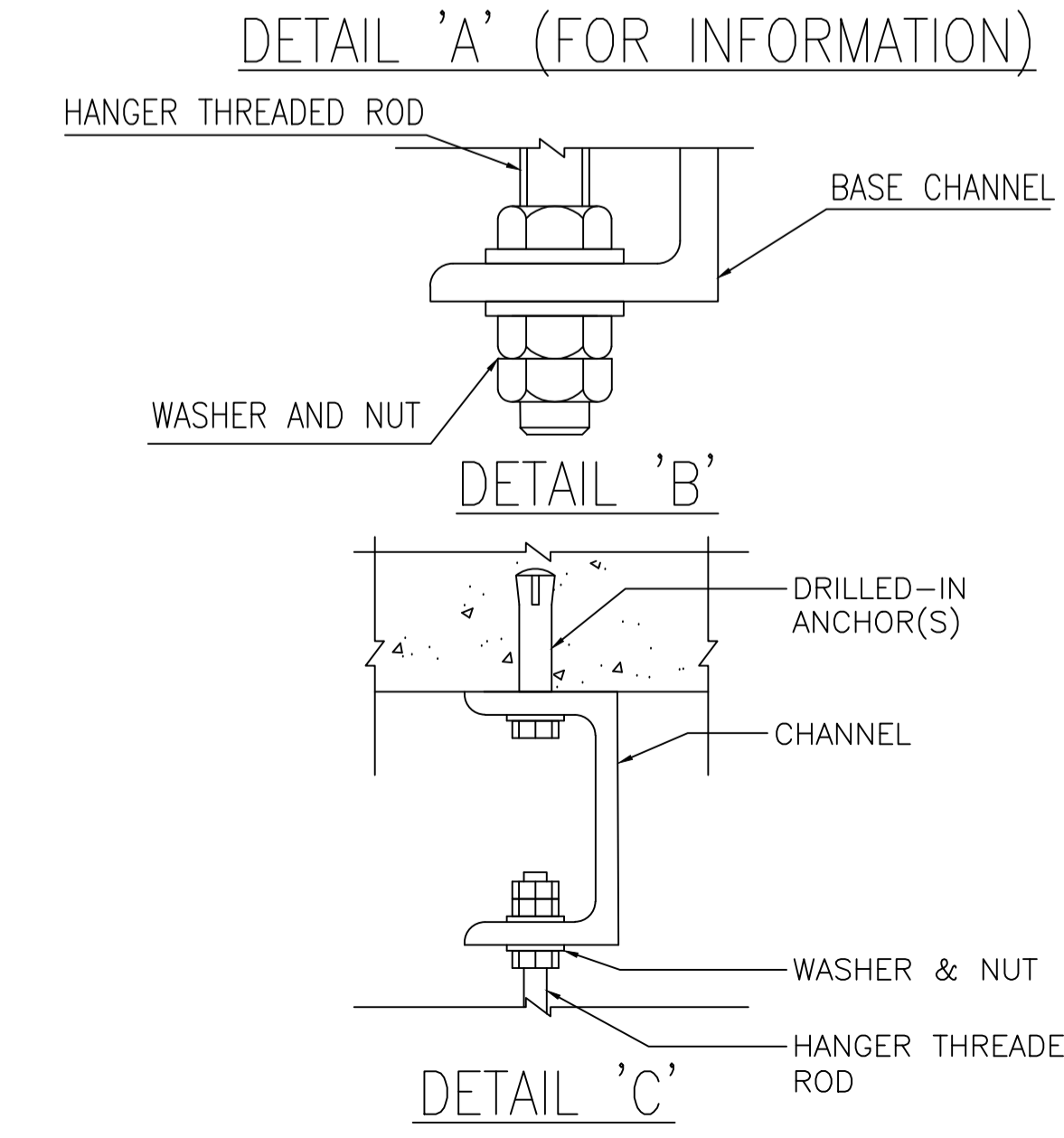
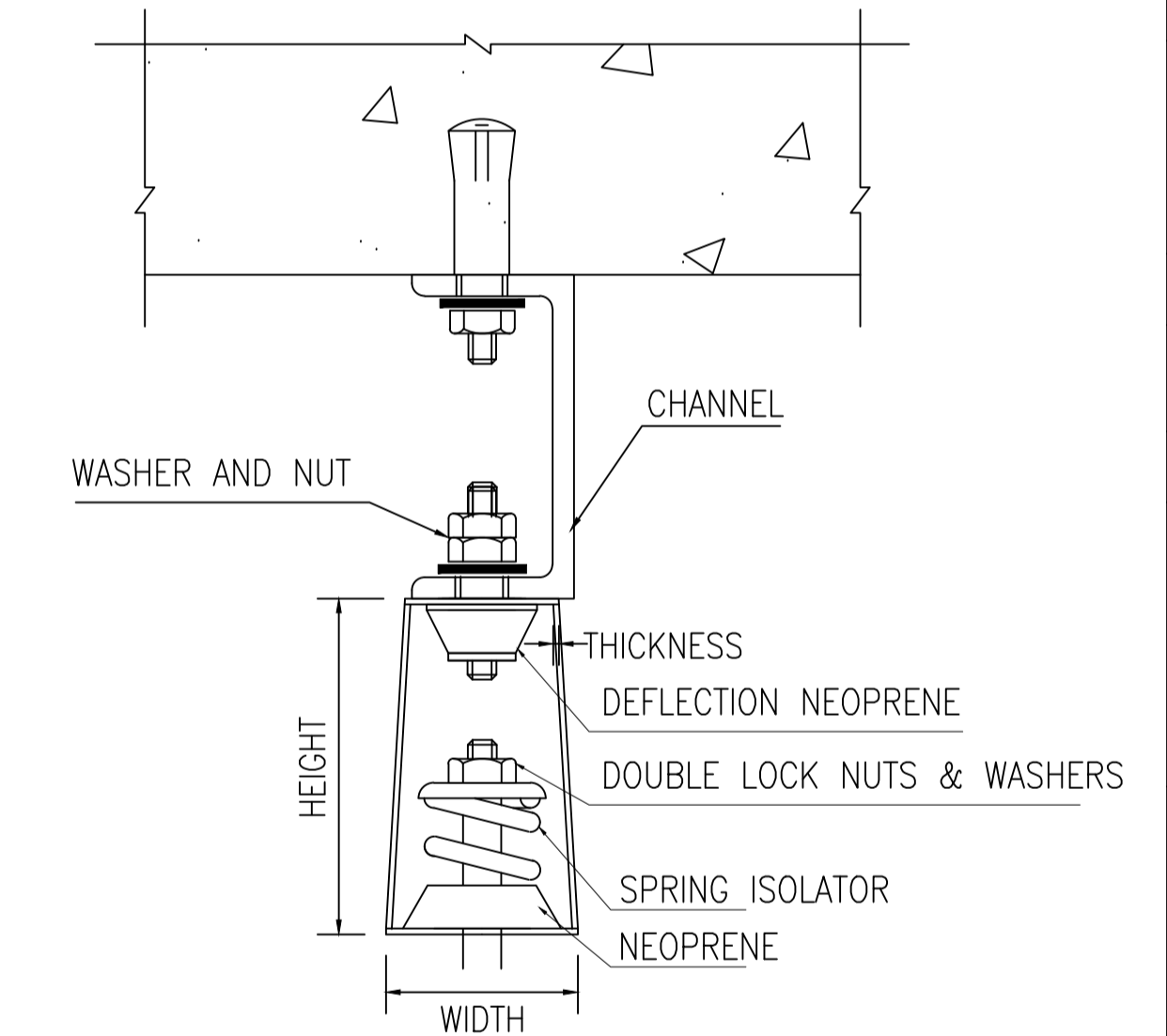


TYPE B
(WITH INTERNAL
VIBRATION ISOLATION)



GENERAL NOTES

- THE DESIGN AND CONSTRUCTION OF SUPPORTING FRAMES SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
 - BUILDING (CONSTRUCTION) REGULATION
 - CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011
- ALL STRUCTURAL STEEL TO BE GRADE S275 COMPLYING WITH BS EN 10025:2004 OR Q235 COMPLYING WITH GB50017 CLASS 1 IN ACCORDANCE WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011.
- ALL STRUCTURAL STEEL TO BE HOT-DIP GALVANIZED TO AT LEAST 85 MICRONS THICK IN ACCORDANCE WITH BS EN ISO 1461 OR EQUIVALENT.
- REQUIREMENTS OF DRILLED-IN ANCHOR:
 - THE MINIMUM BASE MATERIAL THICKNESS TO BE 100mm.
 - THE MATERIAL SHOULD BE ANTI-CORROSION TYPE WITHOUT BI-METALLIC EFFECT WITH THE SUPPORTING FRAME
 - A SAFETY FACTOR OF 3 SHOULD BE APPLIED TO THE CHARACTERISTIC TENSILE CAPACITY IN DETERMINING THE ALLOWABLE TENSILE LOAD
- DESIGN AND INSTALLATION OF DRILLED-IN ANCHOR SHALL BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
- FOR THE DESIGN OF SUPPORTING FRAME FOR AXIAL FAN, CABINET FAN AND AIR HANDLING UNIT, NOTIONAL HORIZONTAL LOAD OF EITHER 0.5% OF FACTORED DEAD LOAD PLUS LIVE LOAD (IF APPLICABLE) OR A VALUE SPECIFIED IN THE PROPRIETARY PRODUCT CATALOGUE SHOULD BE CONSIDERED.
- ALL THREADED RODS TO BE GRADE 4.8 TO DIN 975 AND BS EN ISO 898-1 OR EQUIVALENT STANDARD, OR STRUCTURAL STEEL COMPLYING WITH NOTE 2 ABOVE.
- ALL THREADED RODS TO BE HOT-DIP GALVANIZED TO AT LEAST 50µm IN ACCORDANCE WITH BS EN ISO 1461/BS 7371 PART 6 OR TO BE ZINC-PLATED (ELECTROPLATED) TO AT LEAST 5µm IN ACCORDANCE WITH BS EN ISO 2081/BS EN ISO 4042 / BS 7371 PART 3.



CABINET FAN HANGER SCHEDULE

AIR FLOW	FAN WEIGHT	HANGER THREADED ROD NO.	APPROXIMATE LOAD PER ROD	HANGER THREADED ROD SIZE	ANCHOR SIZE	MIN. ALLOWABLE TENSILE LOAD PER ANCHOR (kN)	CHANNEL MIN. SIZE	BASE CHANNEL MIN. SIZE	SPRING ISOLATOR DIMENSION (FOR TYPE A ONLY)		
									MAX. WIDTH	MAX. HEIGHT	MIN. THICKNESS
1 m ³ /s	200 kg	4	50 kg	M10	M10	2.5	76 X 38 X 6.7kg/m, LENGTH 100mm	76 X 38 X 6.7kg/m	132 mm	275 mm	3 mm
2 m ³ /s	300 kg	4	75 kg	M12	M12	3	76 X 38 X 6.7kg/m, LENGTH 100mm	76 X 38 X 6.7kg/m	132 mm	275 mm	3 mm
4 m ³ /s	350 kg	4	90 kg	M12	M12	3	76 X 38 X 6.7kg/m, LENGTH 100mm	76 X 38 X 6.7kg/m	132 mm	275 mm	3 mm
6 m ³ /s	450 kg	4	115 kg	M12	M12	3	76 X 38 X 6.7kg/m, LENGTH 100mm	102 X 51 X 10.4kg/m	132 mm	275 mm	3 mm
8 m ³ /s	570 kg	4	145 kg	M16	M12 (2 NOS.)	3	76 X 38 X 6.7kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m	132 mm	275 mm	3 mm
10 m ³ /s	700 kg	4	175 kg	M16	M12 (2 NOS.)	3	102 X 51 X 10.4kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m	132 mm	275 mm	3 mm
12 m ³ /s	1000 kg	4	250 kg	M16	M12 (2 NOS.)	3	102 X 51 X 10.4kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m	132 mm	275 mm	3 mm

REMARK:
VIBRATION ISOLATION FOR CABINET FAN IS PROVIDED BY MANUFACTURER PER FACTORY STANDARD

BD REF
BIM REF
FSD REF

REV.	DATE	AMENDMENT
PROJECT		
SAMPLE		

DRAWING TITLE
SUPPORTING FRAMES FOR
SUSPENDED CABINET FAN
INSIDE A BUILDING

SCALE
DRAWING NO. REV. NO.

SORUCE

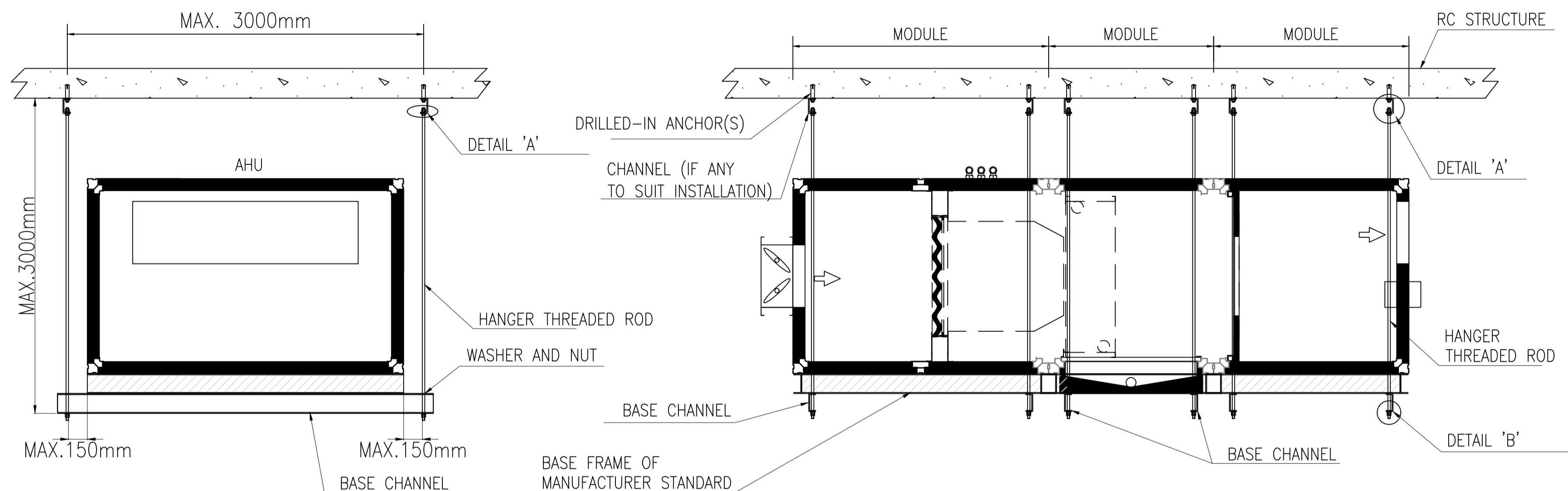
90mm(W) x 40mm(H) space
for COMPANY LOGO

90mm(W) x 60mm(H) space
for AP/RSE/RGE's
signature/ and stamp chop

BD's OFFICIAL USE

90mm(W) x 150mm(H) space
for BD's approval stamp/
certification of copies of
approved plans
(PNAP ADM-10 APP A)

STRUCTURAL DETAILS FOR SUSPENDED AIR HANDLING UNIT (AHU)



TYPICAL SECTION

SIDE ELEVATION

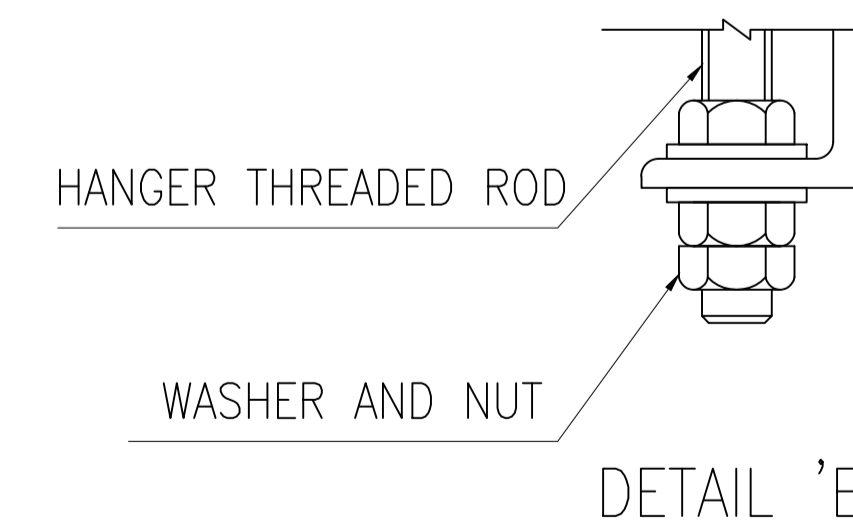
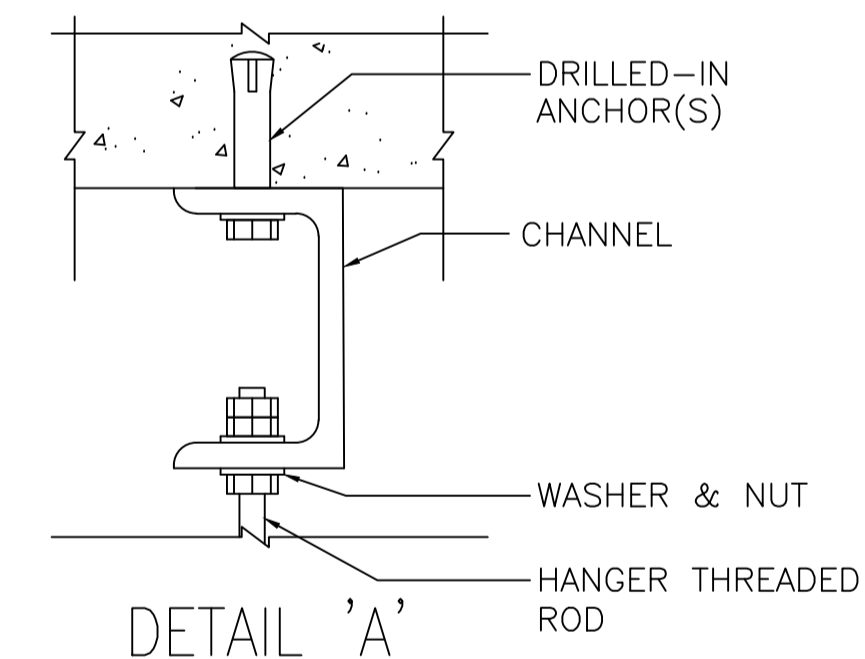
REMARK:
VIBRATION ISOLATION FOR AHU IS PROVIDED BY MANUFACTURER PER FACTORY STANDARD

GENERAL NOTES

- THE DESIGN AND CONSTRUCTION OF SUPPORTING FRAMES SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
 - BUILDING (CONSTRUCTION) REGULATION
 - CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011
- ALL STRUCTURAL STEEL TO BE GRADE S275 COMPLYING WITH BS EN 10025:2004 OR Q235 COMPLYING WITH GB50017 CLASS 1 IN ACCORDANCE WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011.
- ALL STRUCTURAL STEEL TO BE HOT-DIP GALVANIZED TO AT LEAST 85 MICRONS THICK IN ACCORDANCE WITH BS EN ISO 1461 OR EQUIVALENT.
- REQUIREMENTS OF DRILLED-IN ANCHOR:
 - THE MINIMUM BASE MATERIAL THICKNESS TO BE 100mm.
 - THE MATERIAL SHOULD BE ANTI-CORROSION TYPE WITHOUT BI-METALLIC EFFECT WITH THE SUPPORTING FRAME
 - A SAFETY FACTOR OF 3 SHOULD BE APPLIED TO THE CHARACTERISTIC TENSILE CAPACITY IN DETERMINING THE ALLOWABLE TENSILE LOAD
- DESIGN AND INSTALLATION OF DRILLED-IN ANCHOR SHALL BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
- FOR THE DESIGN OF SUPPORTING FRAME FOR AXIAL FAN, CABINET FAN AND AIR HANDLING UNIT, NOTIONAL HORIZONTAL LOAD OF EITHER 0.5% OF FACTORED DEAD LOAD PLUS LIVE LOAD (IF APPLICABLE) OR A VALUE SPECIFIED IN THE PROPRIETARY PRODUCT CATALOGUE SHOULD BE CONSIDERED.
- ALL THREADED RODS TO BE GRADE 4.8 TO DIN 975 AND BS EN ISO 898-1 OR EQUIVALENT STANDARD, OR STRUCTURAL STEEL COMPLYING WITH NOTE 2 ABOVE.
- ALL THREADED RODS TO BE HOT-DIP GALVANIZED TO AT LEAST 50µm IN ACCORDANCE WITH BS EN ISO 1461/BS 7371 PART 6 OR TO BE ZINC-PLATED (ELECTROPLATED) TO AT LEAST 5µm IN ACCORDANCE WITH BS EN ISO 2081/BS EN ISO 4042 / BS 7371 PART 3.

AHU HANGER SCHEDULE

AIR FLOW	MODULE NO.	A.H.U. WEIGHT	HANGER THREADED ROD NO.	APPROXIMATE LOAD PER ROD	THREADED ROD SIZE	ANCHOR SIZE	MIN. ALLOWABLE TENSILE LOAD PER ANCHOR (kN)	CHANNEL MIN. SIZE	BASE CHANNEL MIN. SIZE
1 m ³ /s	1	400 kg	4	100 kg	M12	M12	3.0	76 X 38 X 6.7kg/m, LENGTH 100mm	76 X 38 X 6.7kg/m
2 m ³ /s	1	600 kg	4	150 kg	M16	M12 (2 NOS.)	3.0	76 X 38 X 6.7kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m
3 m ³ /s	1	800 kg	4	200 kg	M16	M12 (2 NOS.)	3.0	76 X 38 X 6.7kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m
4 m ³ /s	2	1000 kg	8	125 kg	M16	M12 (2 NOS.)	3.0	76 X 38 X 6.7kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m
6 m ³ /s	2	1400 kg	8	175 kg	M16	M12 (2 NOS.)	3.0	76 X 38 X 6.7kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m
8 m ³ /s	3	1700 kg	12	140 kg	M16	M12 (2 NOS.)	3.0	76 X 38 X 6.7kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m
10 m ³ /s	3	2000 kg	12	165 kg	M16	M12 (2 NOS.)	3.0	102 X 51 X 10.4kg/m, LENGTH 200mm	102 X 51 X 10.4kg/m



REV. DATE AMENDMENT

PROJECT
SAMPLE

DRAWING TITLE
SUPPORTING FRAMES FOR
SUSPENDED AIR HANDLING UNIT
INSIDE A BUILDING

SCALE
DRAWING NO. REV. NO.

SORUCE

90mm(W) x 40mm(H) space
for COMPANY LOGO

90mm(W) x 60mm(H) space
for AP/RSE/RGE's
signature/ and stamp chop

BD's OFFICIAL USE

90mm(W) x 150mm(H) space
for BD's approval stamp/
certification of copies of
approved plans
(PNAP ADM-10 APP A)