

Water & Civil Division

Water AMI (Advanced Metering Infrastructure) Project

GUIDELINES FOR RDC (RADIO DATA CONCENTRATOR) INSTALLATION IN VILLA COMMUNITY

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Dubai Electricity & Water Authority

**GUIDELINES FOR RDC (RADIO DATA CONCENTRATOR)
INSTALLATION IN VILLA COMMUNITY**

Rev-0

27.04.2022

RADIO DATA CONCENTRATOR INSTALLATION STANDARD

1. Developers are required to allocate a plot of land having dimensions, 2m X 2m (LXW) adjacent to each pocket substation in the community for installation of AMI communication antenna on a high GI pole.
2. The installation of precast RCC foundation and associated excavation, levelling, backfilling and compaction works shall be in line with the typical installation Drawing: PEW-PL-21-774.
3. This area shall be properly reinstated with curbstones, interlocks and secured with U-shaped steel bollards.
4. A GI pole of 16-meter high shall be erected on the aforementioned foundation as proposed in the Drawing: PEW-PL-21-771 and as approved by the DEWA AMI team.
5. Necessary manpower and machinery shall be provided to install antennas, accessories on the pole and to pull RF cables.
6. Single pole is sufficient if the community area is about 500 square meters. Two or more poles are required if the community area is more than 500 square meters to create multiple communication zones overlapping each other by about 20 meters to eliminate dead zones.
7. Pole shall be installed with lightning arrester (ABB Furse or similar brand, Air Rod standard: BS EN 50164-2, UL96 (RA215, RA225) with base (Air Rod Base standard: IEC/BS EN 62561-1 (SD105-H), BS EN 62561-1 (SD003-H), UL96 (SD105-H) at the top. An insulated stranded copper conductor with a cross sectional area of 50 Sq. mm shall be connected to the lightning arrester and the earth rod inside the earth pit with suitable clamps at both ends.
8. An earth pit with solid copper earth rods shall be provided in each plot for lightning arrester.
9. Ground resistance for the earth rod shall be less than 2 ohms. A 100mm dia uPVC sleeve shall be extended from pole foundation precast to the earth pit for earth cable routing.
10. A separate earth pit shall be provided for structure grounding of the pole with ground resistance less than 2 ohms.
11. A Precast foundation shall be fixed as proposed in the Drawing: PEW-PL-21-776 for mounting RDC cabinet. The foundation shall have four Ø10mm, 90mm Stainless steel long threaded anchor bolts for securely fastening the cabinet. The second 100mm uPVC sleeve from pole foundation precast shall be extended up to the cabinet foundation for routing of RF cables from the antenna.
12. Front opening of the cabinet foundation shall be covered with 1mm thickness SS sheet and fixed with 4 numbers of M6 wedge anchor bolts.
13. 50mm heavy duty uPVC sleeve with pulling rope shall be laid from the cabinet foundation up to the DEWA Pocket substation for power cable routing. The conduit shall enter the pocket substation through the cable entry opening.
14. GRP cabinet shall be installed as per the standard installation Drawing: PEW-PL-21-775.

15. LV power cable (Armored, 3X4 SQMM) shall be installed from DEWA PK to GRP cabinet with proper gland and termination.
16. DEWA AMI team shall be consulted during the design approval and invited for site inspection at every stage during the construction and installation work to avoid any discrepancy.
17. Detailed shop drawing shall be submitted for DEWA approval before the commencement of work.

A. TYPICAL REFERENCE PICTURES



Pole & Cabinet



Interlock



Cabinet



Precast



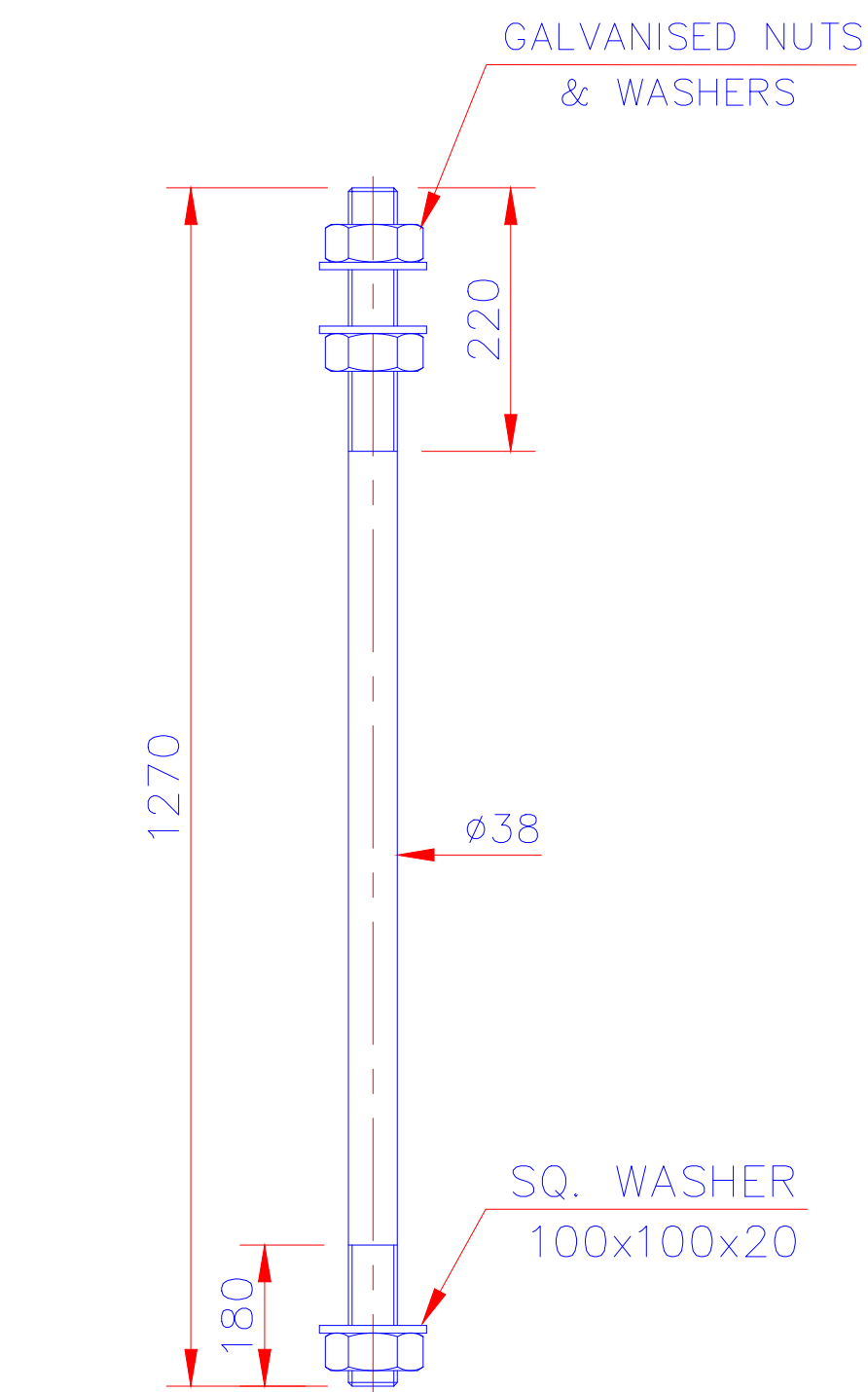
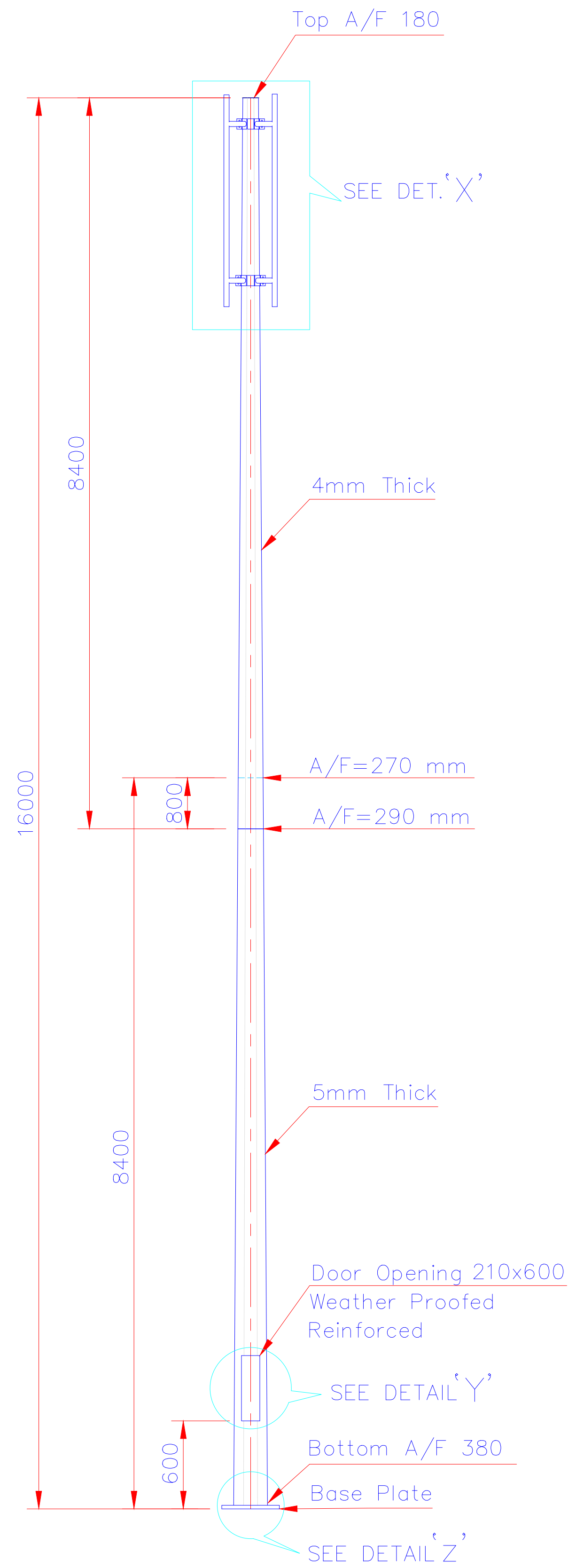
Lightening Arrester



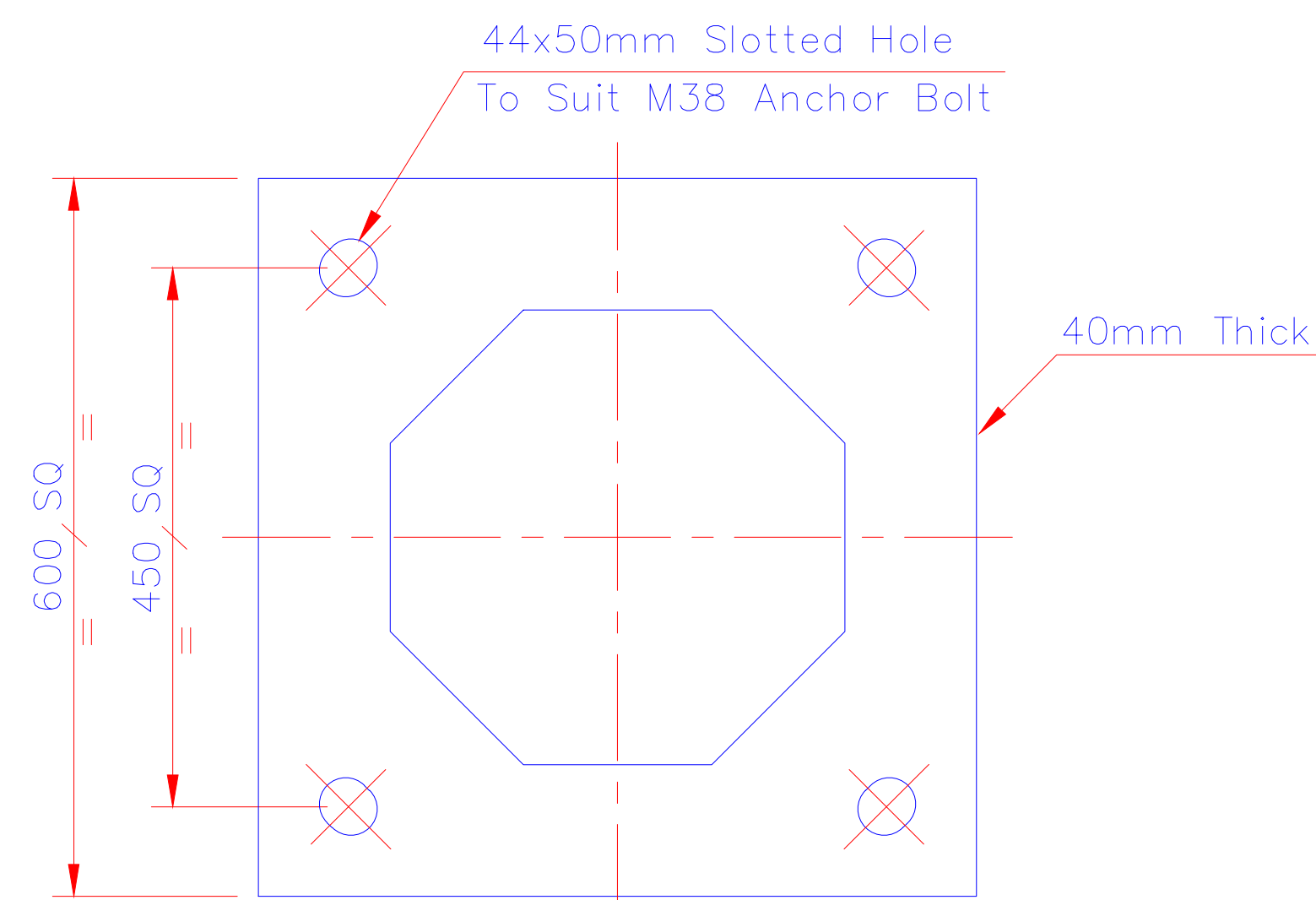
Lightning Arrester Base

B. REFERENCE DRAWINGS

1. PEW-PL-21-771 (16M Antenna Pole 1 of 3)
2. PEW-PL-21-772 (16M Antenna Pole 2 of 3)
3. PEW-PL-21-773 (16M Antenna Pole 3 of 3)
4. PEW-PL-21-774 (RDC Pole Foundation)
5. PEW-PL-21-775 (RDC Cabinet)
6. PEW-PL-21-776 (Cabinet Foundation)



ANCHOR BOLT
FULLY GALVANIZED



BASE PLATE

NOTES

1. DESIGN STANDARD : AASHTO
2. DESIGN WIND SPEED : 160km/h
3. WELDING: ACC. TO AWS D1.1
4. MILL TOLERANCES APPLY ON RAW MATERIAL



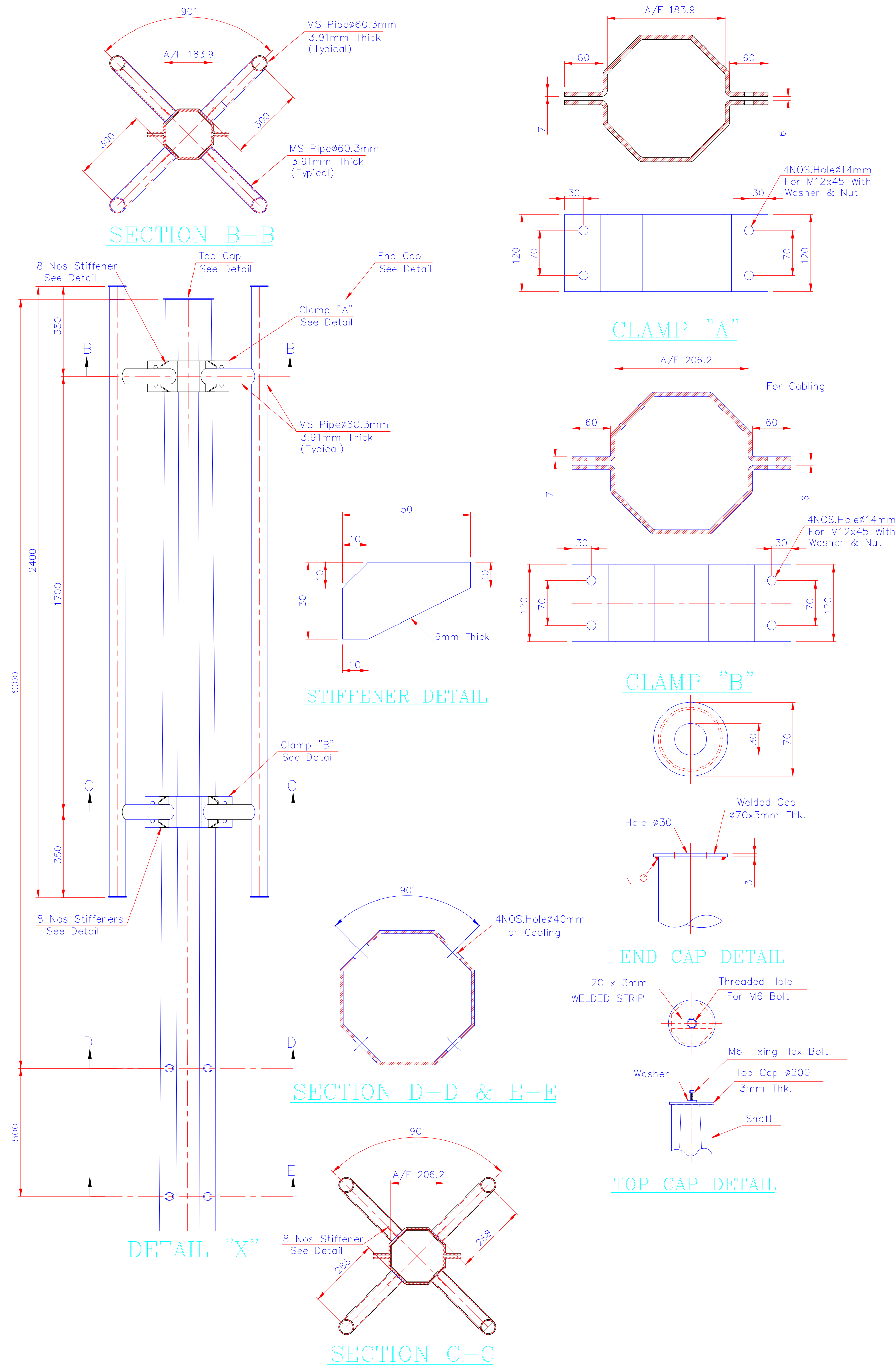
MATERIAL SPECIFICATION

SHAFT	BS S355 TO EN 10025
BASE PLATE	ASTM A588
ANCHOR BOLT	GRADE 90
ARM BRACKET	ASTM A53 or Equivalent
GALVANIZING	H.D.G. TO BS EN ISO 1461 (Minimum Average Of 100 Microns With No Point Being Less Than 85 Microns) Bolts & Smaller Accessories are H.D.G. TO ASTM A153

DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS, UNLESS OTHER-WISE NOTED		
TOLERANCES:		
DIAMETERS	A/F	±2.5%
POLE TOTAL LENGTH		±1.2 %
POLE STRAIGHTNESS		0.3%
OTHER		BS 5649 Part 2

REV.	DATE	DRN BY	CHD BY	AP'D BY	DESCRIPTION
AUTHORITY:					
 GOVERNMENT OF DUBAI P.O.BOX: 564, DUBAI - U.A.E. FAX: 324 4922 TEL.: 324 4444					
PROJECT:					
DEWA WATER AMI					
TITLE:					TENDER REF NO.
16m OCTAGONAL POLE - RDC (SHEET 1 OF 3)					-
CAD REFERENCE					
PREPARED BY: Mirsha		CHECKED BY: A. Kader		SCALE: N.T.S	
DESIGNED BY: M. Basim		APPROVED BY: A. Ajij		DATE: 01/07/2021	
DRAWING NO:				REV	
PEW-PL-21-771					



NOTES

1. DESIGN STANDARD : AASHTO
2. DESIGN WIND SPEED : 160km/h
3. WELDING: ACC. TO AWS D1.1
4. MILL TOLERANCES APPLY ON RAW MATERIAL



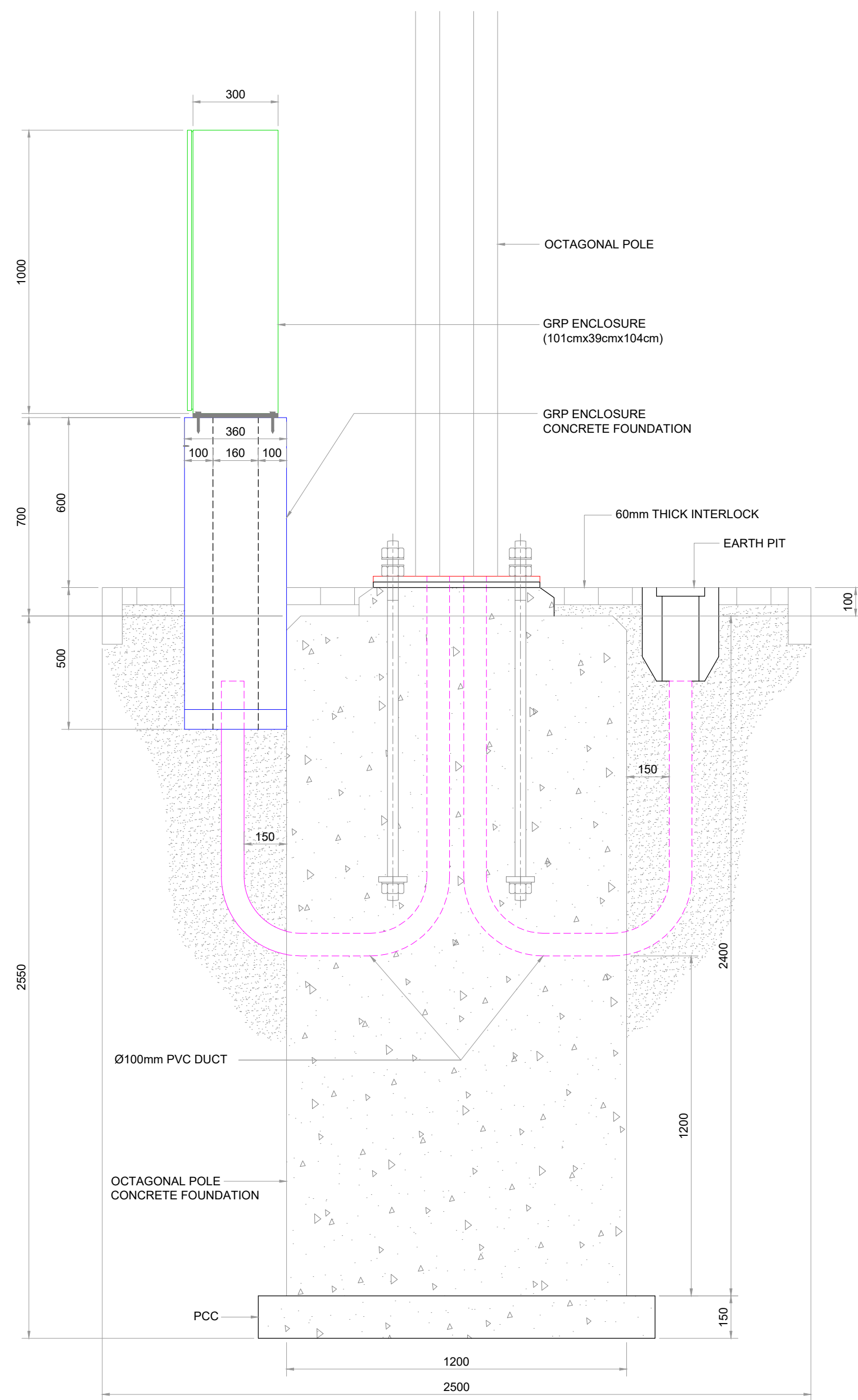
MATERIAL SPECIFICATION

SHAFT	BS S355 TO EN 10025
BASE PLATE	ASTM A588
ANCHOR BOLT	GRADE 90
ARM BRACKET	ASTM A53 or Equivalent
GALVANIZING	H.D.G. TO BS EN ISO 1461 (Minimum Average Of 100 Microns With No Point Being Less Than 85 Microns) Bolts & Smaller Accessories are H.D.G. TO ASTM A153

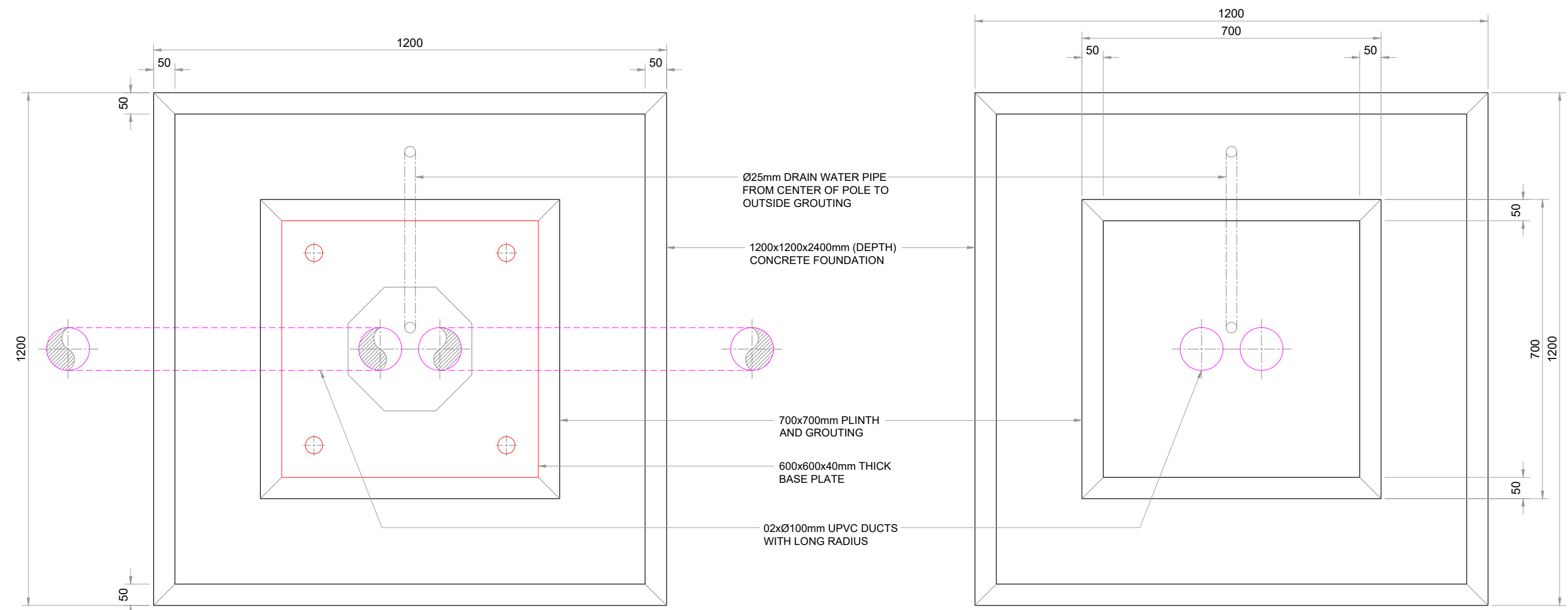
DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS, UNLESS OTHER-WISE NOTED		
TOLERANCES:		
DIAMETERS	A/F	±2.5%
POLE TOTAL LENGTH		±1.2 %
POLE STRAIGHTNESS		0.3%
OTHER		BS 5649 Part 2

REV.	DATE	DRN BY	CHD BY	APD BY	DESCRIPTION
AUTHORITY:					
					
PROJECT:					
DEWA WATER AMI					
TITLE:					TENDER REF. NO.
16m OCTAGONAL POLE - RDC (SHEET 3 OF 3)					-
CAD REFERENCE					
PREPARED BY: Mirsha	CHECKED BY: A. Kader	SCALE: N.T.S			
DESIGNED BY: M. Basim	APPROVED BY: A. Ajay	DATE: 01/07/2021			
DRAWING NO:					REV
PEW-PL-21-773					

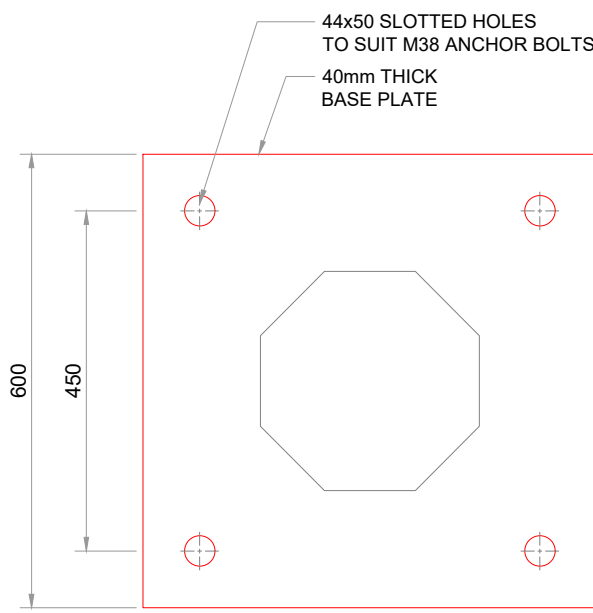


SECTIONAL ELEVATION

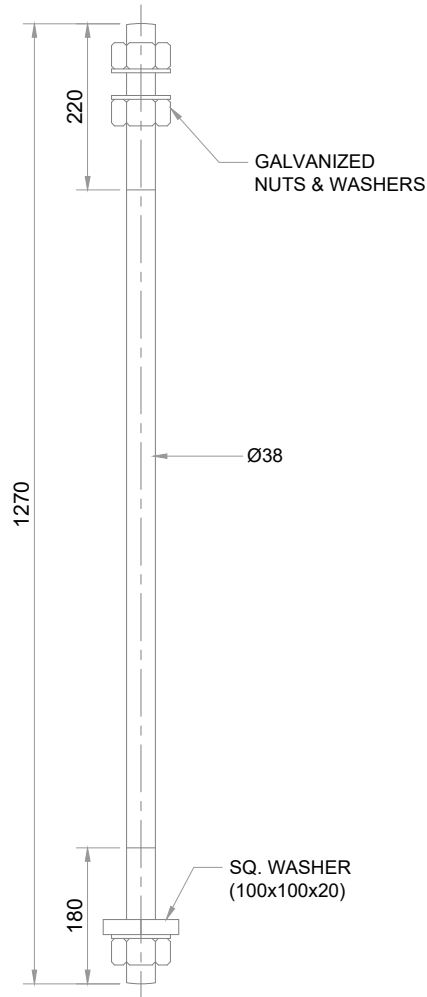


CONCRETE FOUNDATION PLAN

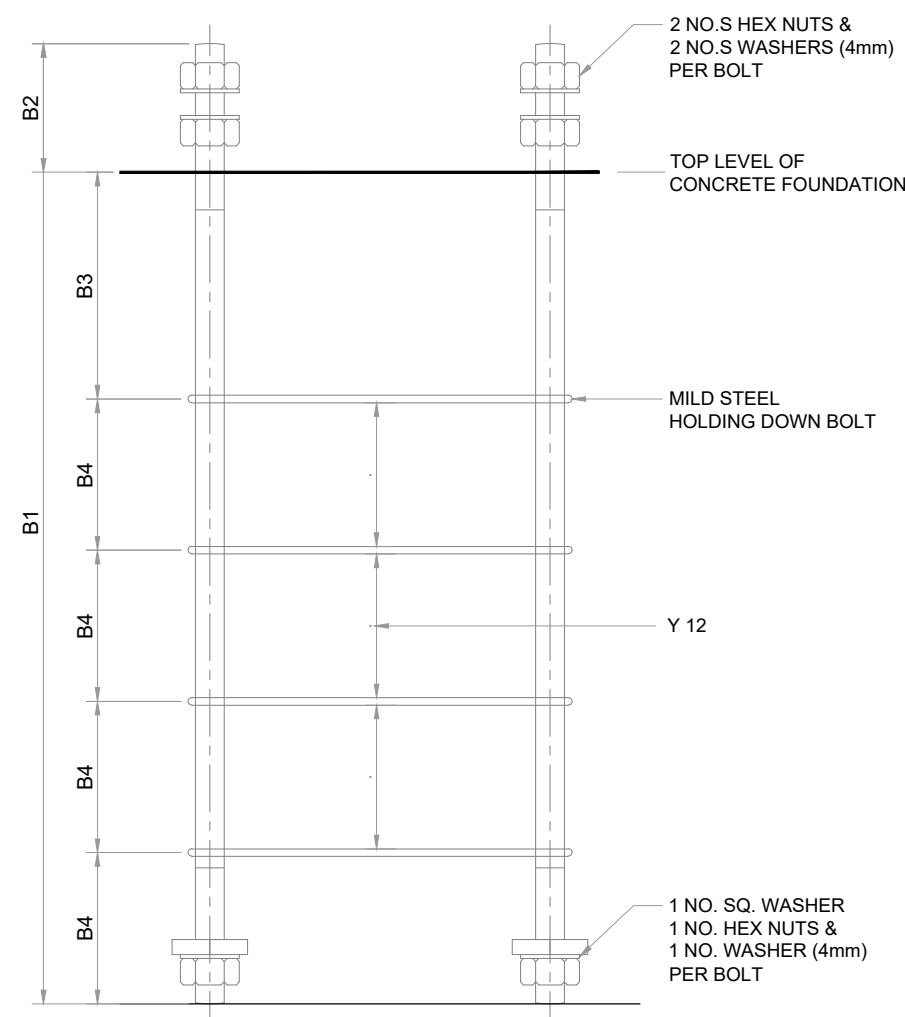
CONCRETE FOUNDATION PLINTH



BASE PLATE



ANCHOR BOLT
(FULLY GALVANIZED)

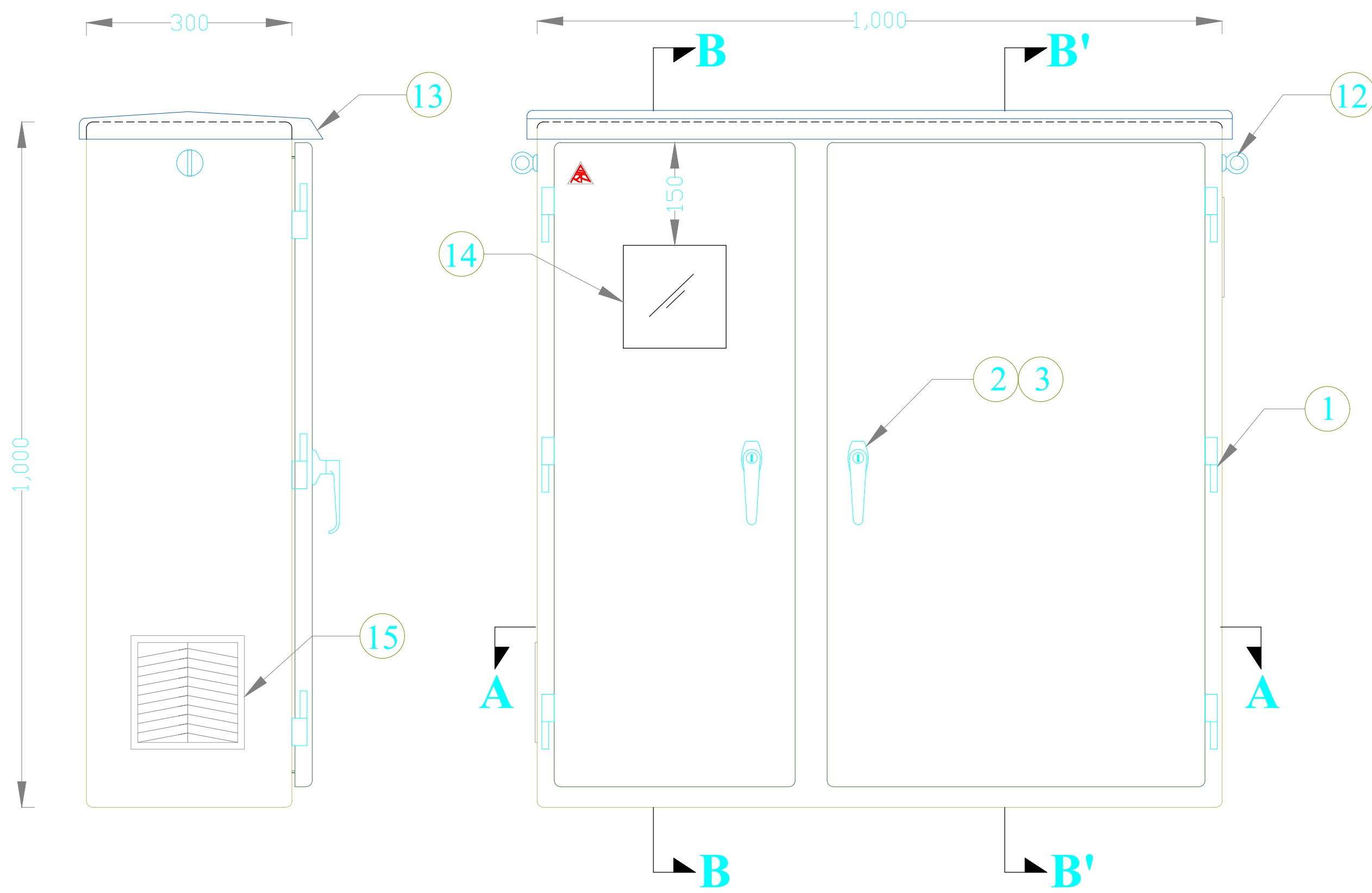


ANCHOR BOLT CRADLE DETAILS
(TYPICAL)

DIMENSION SCHEDULE										
COLUMN HEIGHT	FOUNDATION				BASE PLATE		BOLT			CONCRETE GRADE
	DEPTH	WIDTH	PVC DUCT FROM CONC. BOTTOM	PLINTH WIDTH	SIZE	THICKNESS	SPACING	LENGTH	DIAMETER	
16000	2400	1200	1200 MIN.	700	600x600	40	450x450	1270	38	C30

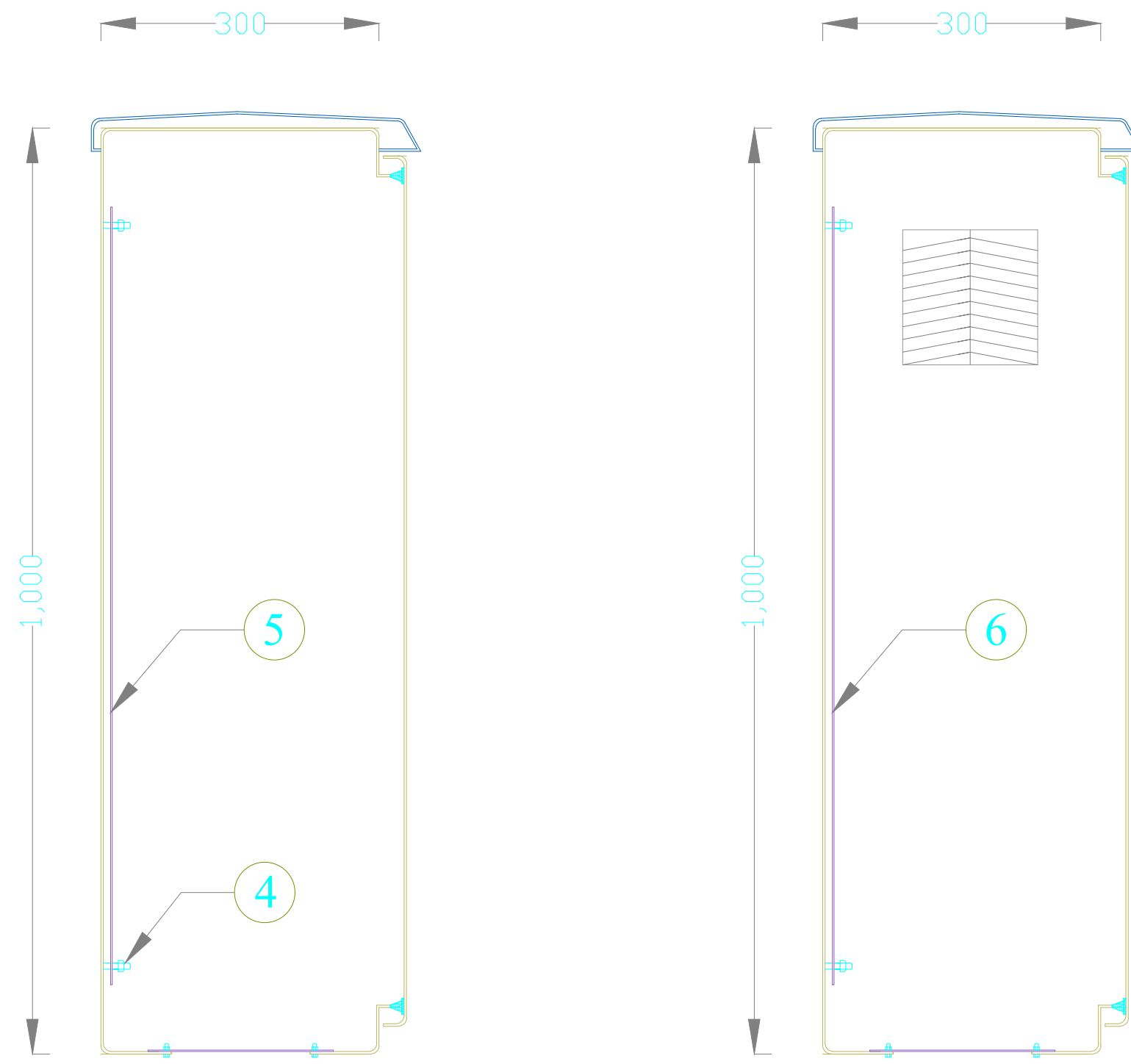
ANCHOR BOLT CRADLE DETAILS			
B1	B2	B3	B4
1100	170	300	200

REV.	DATE	DRN BY	CHD BY	AP'D BY	DESCRIPTION		
AUTHORITY:							
حكومة دبي دولة الإمارات العربية المتحدة GOVERNMENT OF DUBAI دولة كهرباء ومياه دبي DUBAI ELECTRICITY & WATER AUTHORITY P.O.BOX: 564, DUBAI - U.A.E. FAX: 324 4922 TEL.: 324 4444							
PROJECT:							
DEWA WATER AMI							
TITLE:					TENDER REF. NO.		
RDC POLE FOUNDATION DETAILS					-		
CAD REFERENCE							
PREPARED BY: <i>Mirsha</i>		CHECKED BY: <i>A. Kader</i>		SCALE: N.T.S			
DESIGNED BY: <i>M. Basim</i>		APPROVED BY: <i>A. Ajay</i>		DATE: 01/07/2021			
DRAWING NO:					REV		
PEW-PL-21-774							



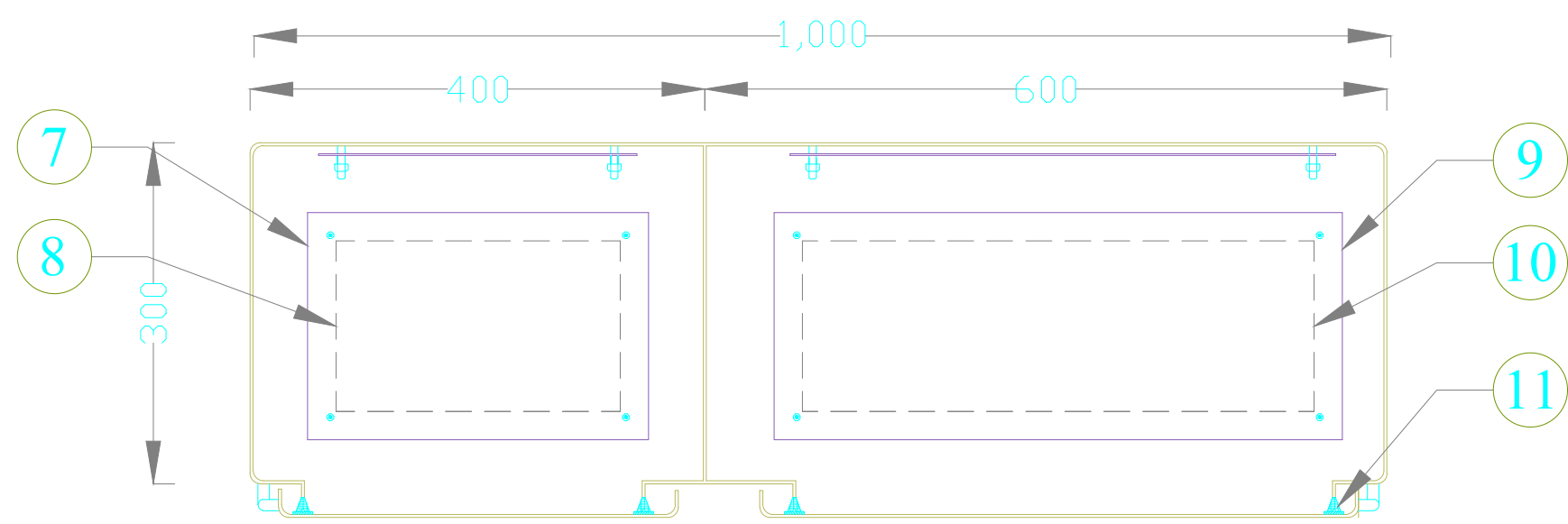
LEFT SIDE ELVATION

FRONT ELEVATION



SECTION B B

SECTION B' B'



SECTION A A

BILL OF MATERIALS

ITEM	DESCRIPTION	MATERIAL	DIMENSION	QTY
1	Lift-off hinges	Zinc Alloy	-	6
2	Handle Lock	Zinc Alloy	-	2
3	3 Point Cam & Tie Rod Set	Galvanized Iron	-	2
4	Mounting Stud	Galvanized Iron	M10 x 40	8
5	Mounting Plate	Galvanized Iron	800H x 280W x 2.8thk	1
6	Mounting Plate	Galvanized Iron	800H x 480W x 2.8thk	1
7	Gland Plate	GRP	300W x 200D x 4thk	1
8	Gland Plate Cutout		250W x 150D	1
9	Gland Plate	GRP	500W x 200D x 4thk	1
10	Gland Plate Cutout		450W x 150D	1
11	Gasket	EPDM & PVC	-	-
12	Lifting Hooks	Galvanized Iron	M12	4
13	Large Canopy	GRP	-	1
14	Glass Window	Polycarbonate	150 x 150	1
15	IP55 Filter	Polycarbonate/ABS Alloy	150 x 150	2
16				

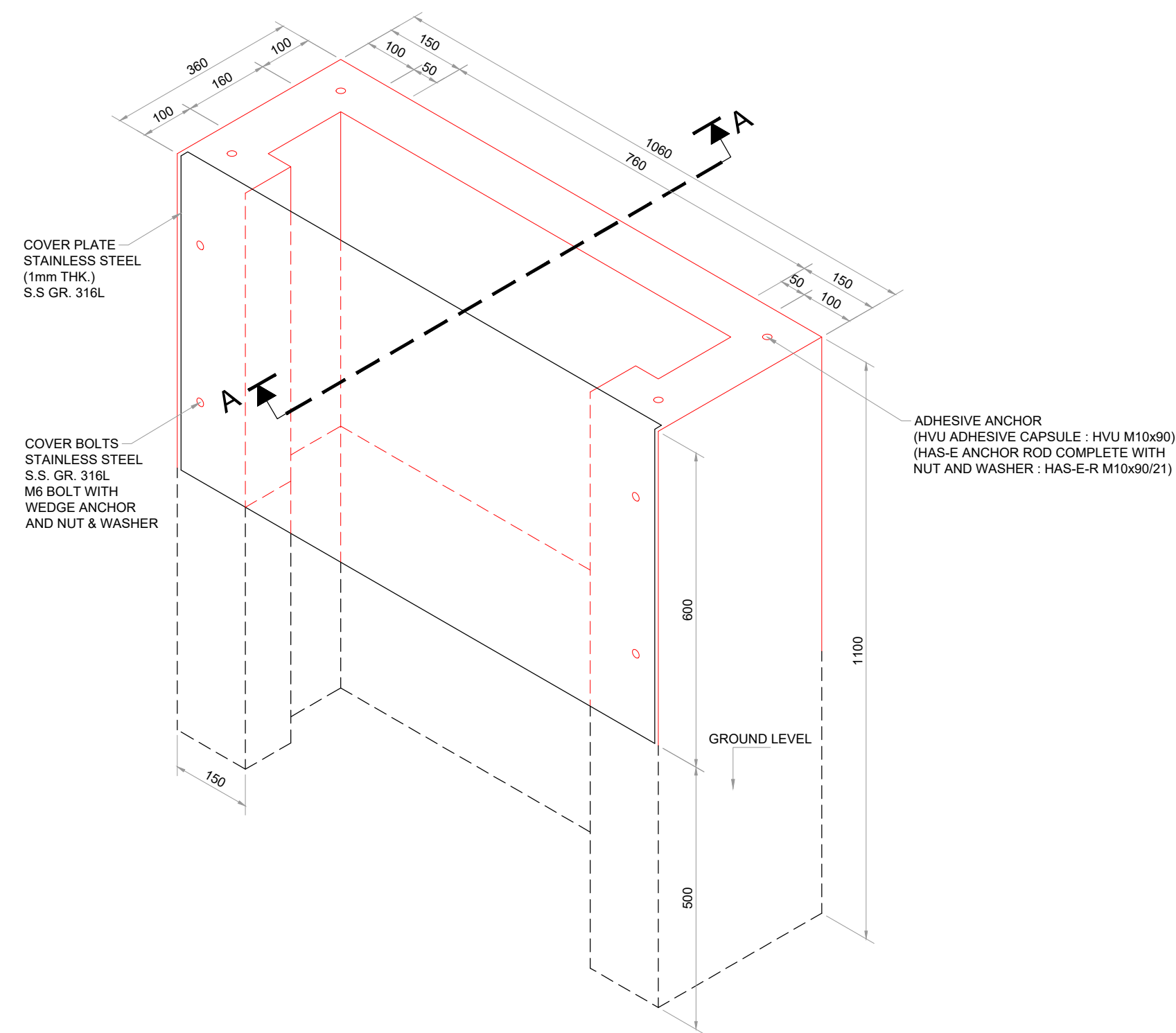
FEATURES

- Ingress Protection: IP 65, BS EN 60529:1992 Certified, (Construction only).
- UV Resistant: ASTM G154 Certified.
- Fire Retardant and Self Extinguishing: BS 476:Part 7:1997 Class 2 Certified.

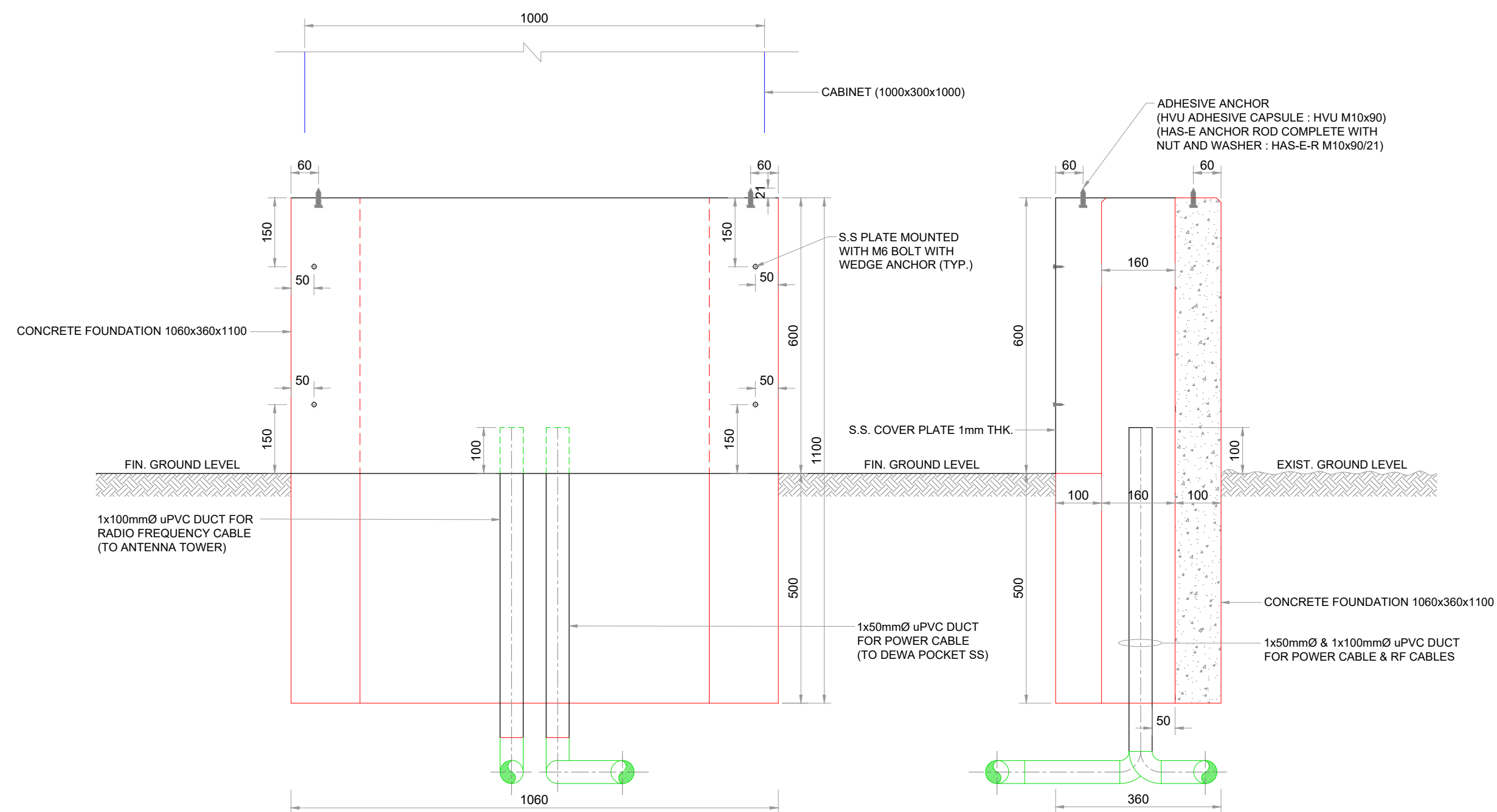
SURFACE FINISH & THICKNESS

- External finish: Plain semi gloss UV resistant grey color gelcoat finish to RAL7035.
- Internal finish: Reasonable smooth flow coated finish to grey color.
- Wall thickness: 4mm generally & 6mm at stress points.

REV.	DATE	DRN BY	CHD BY	AP'D BY	DESCRIPTION
AUTHORITY:					
					
PROJECT:					
DEWA WATER AMI					
TITLE:					TENDER RFX NO.
RDC GRP ENCLOSURE					-
CAD REFERENCE					
PREPARED BY: Mirsha		CHECKED BY: A. Kader		SCALE: N.T.S	
DESIGNED BY: M. Basim		APPROVED BY: A. Ajay		DATE: 01/07/2021	
DRAWING NO:					REV
PEW-PL-21-775					



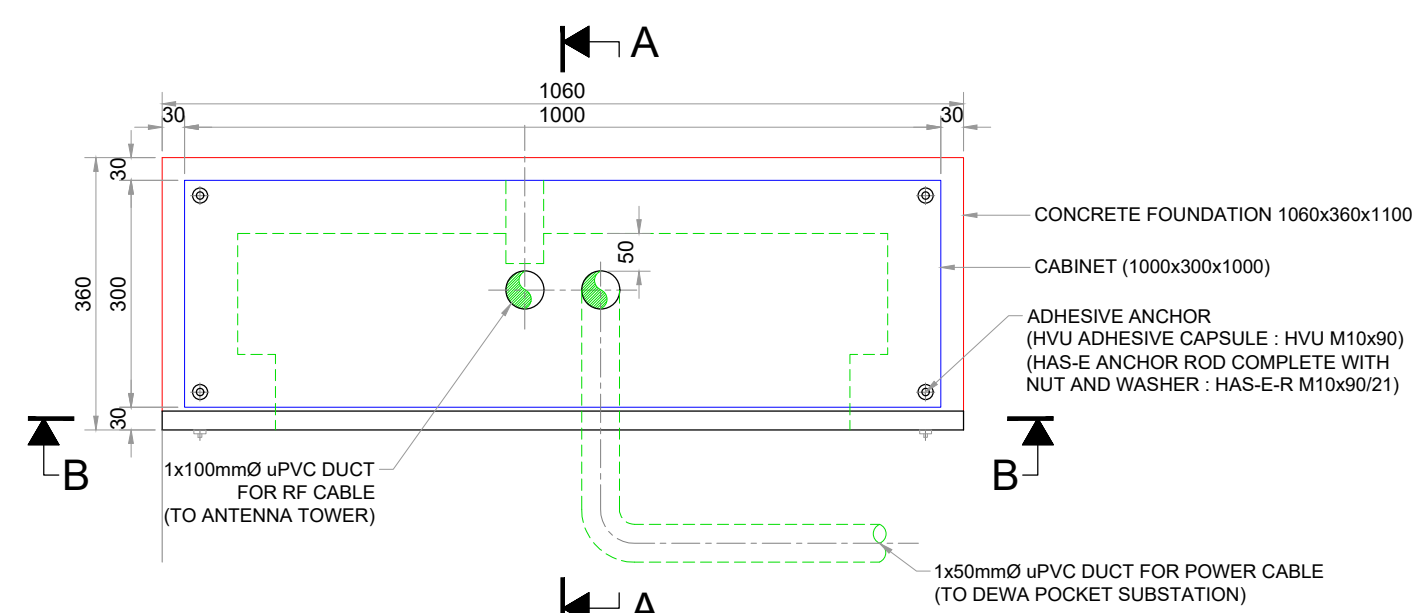
CABINET FOUNDATION DETAIL



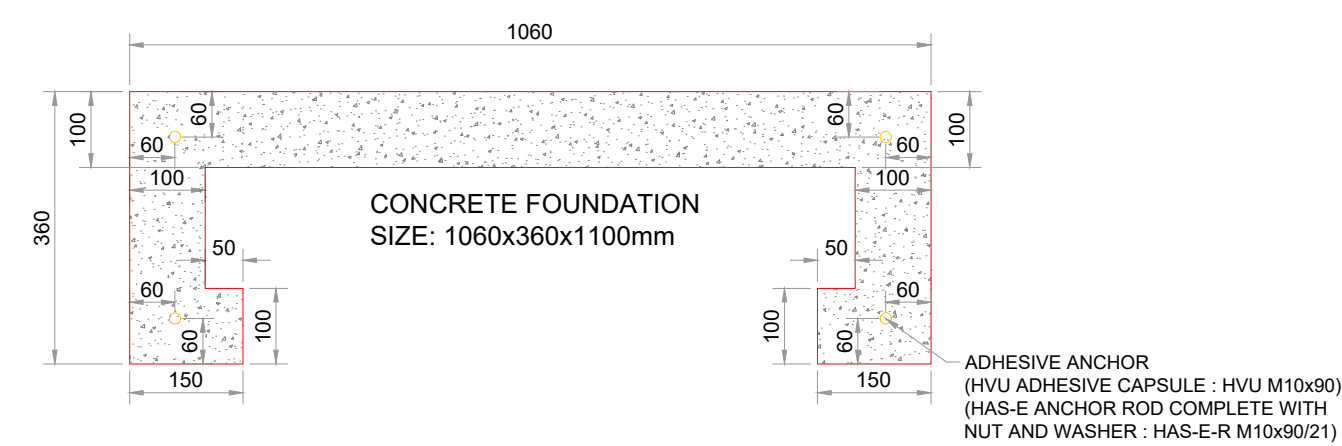
FRONT ELEVATION

SECTION A - A

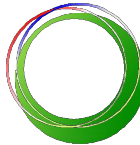
TYPICAL DETAILS FOR CABINET FOUNDATION
CONCRETE GRADE : C30



CABINET PLACEMENT DETAIL



FOUDATION TOP VIEW

REV.	DATE	DR'N BY	CH'D BY	AP'D BY	DESCRIPTION
AUTHORITY:					
					
GOVERNMENT OF DUBAI		P.O.BOX: 564, DUBAI - U.A.E. FAX: 324 4922 TEL.: 324 4444			
PROJECT:					
DEWA WATER AMI					
TITLE:					TENDER REF. NO.
RDC CABINET FOUNDATION DETAILS					-
					CAD REFERENCE
PREPARED BY: <i>Mirsha</i>		CHECKED BY: <i>A.Kader</i>		SCALE: N.T.S	
DESIGNED BY: <i>M. Basim</i>		APPROVED BY: <i>A. Ajay</i>		DATE: 01/07/2021	
		DRAWING NO:			REV
		PEW-PL-21-776			