



KERAJAAN MALAYSIA

STANDARD DRAWINGS FOR ROAD WORKS

Section 7 : Road Lighting



Ketua Pengarah Kerja Raya
Jabatan Kerja Raya Malaysia
Jalan Sultan Salahuddin
50582 Kuala Lumpur

PENDAHULUAN

Standard Drawings for Road Works merupakan salah satu dokumen teknikal rasmi jabatan yang dijadikan panduan dan rujukan dalam pelaksanaan projek jalan khususnya di tapak pembinaan. Lukisan Piawai yang lengkap dan komprehensif berupaya untuk membantu menghasilkan projek yang menepati kualiti, masa dan kos yang ditetapkan. Oleh itu, *Standard Drawings for Road Works* (Pindaan 2016) telah dikemaskini dan disusun kepada sepuluh (10) seksyen mengikut kategori lukisan yang ditetapkan seperti berikut :

- *Section 1 : General*
- *Section 2 : Traffic Signs*
- *Section 3 : Drainage Works*
- *Section 4 : Pavement*
- *Section 5 : Concrete Pavement*
- *Section 6 : Road Furniture*
- *Section 7 : Road Lighting*
- *Section 8 : Traffic Signal System*
- *Section 9 : Motorcycle Lane*
- *Section 10 : Pedestrian Bridges*

Standard Drawings for Road Works – Section 7 : Road Lighting ini diterbitkan dan diedar sebagai lukisan piawai baru yang mana ianya tidak terdapat di dalam Lukisan Piawai *Traffic Signs Standard Drawings for Road Construction (Terbitan 1989)*. Lukisan Piawai *Road Lighting* ini telah disiapkan dengan mengambilkira keperluan semasa sejajar dengan perkembangan teknologi terkini.

Lukisan Piawai *Road Lighting* ini telah dibentangkan dan diluluskan dalam Mesyuarat Jawatankuasa Pemandu Pengurusan Bil. 5/2016 bertarikh 11 Mei 2016 dan diedarkan melalui Surat Arahan Ketua Pengarah Kerja Raya Malaysia.

Walaupun demikian, maklumbalas masih digalakkan daripada pengguna-pengguna supaya Lukisan Piawai *Road Lighting* ini dapat dibuat penambahbaikan sekiranya perlu. Sebarang maklumbalas berkenaan *Standard Drawings for Road Works – Section 7 : Road Lighting* boleh dimajukan kepada Bahagian Pembangunan Inovasi & Standard seperti alamat di bawah:-

Cawangan Jalan
Ibu Pejabat JKR Malaysia
Tingkat 21, Menara PJD
No. 50, Jalan Tun Razak
50400 Kuala Lumpur.
E-mel : ussj.jkr@1govuc.gov.my

PENGHARGAAN

Standard Drawings for Road Works – Section 7: Road Lighting ini telah disediakan oleh pegawai daripada Bahagian Perunding Rekabentuk (Kumpulan E), Cawangan Kejuruteraan Elektrik (CKE). Berikut merupakan nama-nama pegawai yang terlibat secara langsung dalam pengemaskinian Lukisan Piawai *Road Lighting* ini: -

Pn. Noorfadzilah binti Ramlee

En. Shahrul Affendy bin Abu Bakar

En. Farizal Bin Ibrahim

En. Khairuddin bin Mahmad Sha'udi

Pn. Marniza binti Zainol Abidin

Pihak penerbitan juga ingin mengucapkan ribuan terima kasih kepada pihak yang terbabit di atas komitmen yang diberikan dengan penghasilan Lukisan Piawai ini. Penghargaan juga ingin dirakamkan kepada pegawai-pegawai JKR yang telah memberi maklumbalas sepanjang penyediaan Lukisan Piawai ini.

KANDUNGAN

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PENGHARGAAN

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KANDUNGAN

1.0 TATACARA PENGGUNAAN STANDARD DRAWINGS FOR ROAD WORKS
2.0 SENARAI LUKISAN PIAWAI ROAD LIGHTING

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1
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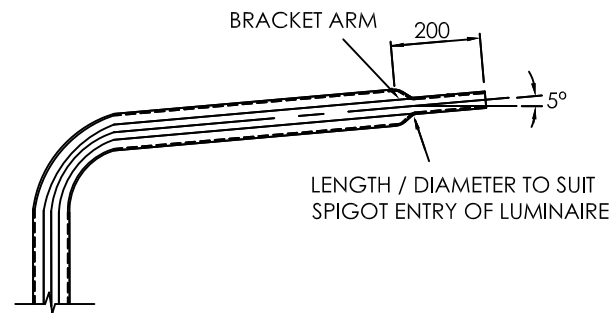
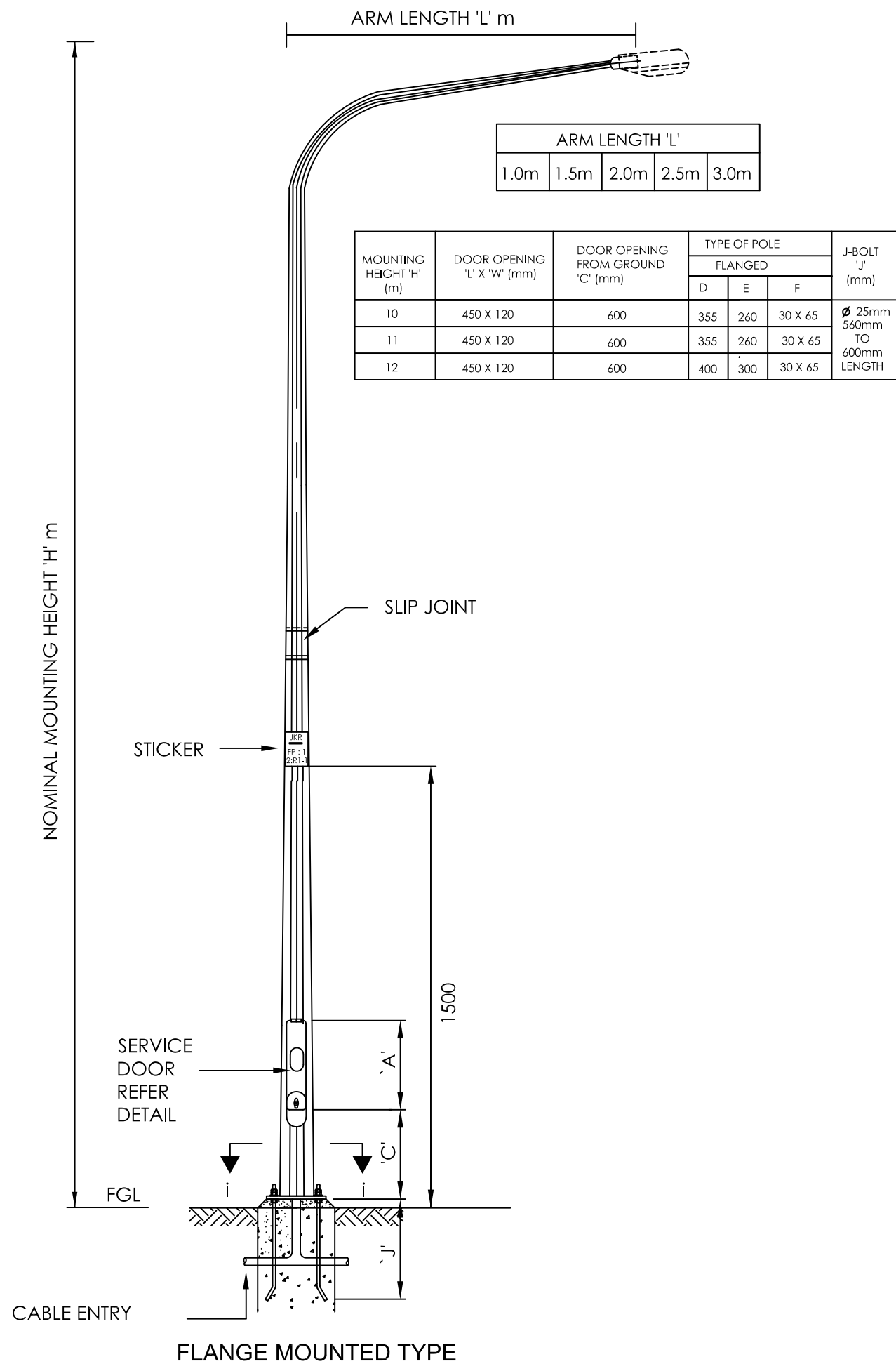
1.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	1/17
2.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	2/17
3.	SINGLE ARM ROUND TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	3/17
4.	DOUBLE ARM ROUND TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	4/17
5.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	5/17
6.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	6/17
7.	SINGLE ARM ROUND TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	7/17
8.	DOUBLE ARM ROUND TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	8/17
9.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	9/17
10.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	10/17
11.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	11/17
12.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	12/17
13.	TECHNICAL INFORMATION AND STICKER FOR ROAD LIGHTING COLUMN	13/17
14.	FEEDER PILLAR HOUSING	14/17
15.	DETAILS OF FEEDER PILLAR	15/17
16.	MODULAR TERMINATION BOX	16/17
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TATACARA PENGGUNAAN *STANDARD DRAWING FOR ROAD WORKS*

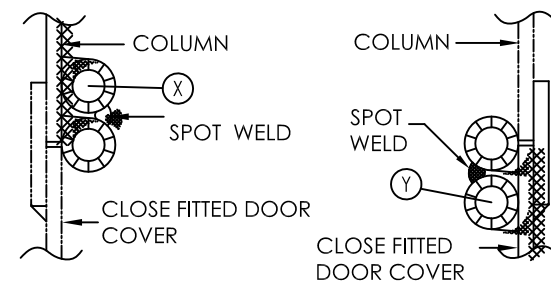
1. Adalah diberi peringatan bahawa *Standard Drawing For Road Works* (Lukisan Piawai Bagi Kerja-Kerja Jalan) ini merupakan garis panduan umum bagi lukisan piawai dan hanya digunakan sebagai rujukan bagi pelaksanaan projek jalan atau penyenggaraan jalan.
2. Tuan / Puan yang ingin menggunakan lukisan piawai ini sebagai rujukan, mestilah terlebih dahulu menyemak lukisan tersebut bagi memastikan ianya sesuai digunakan untuk projek atau kerja-kerja yang berkenaan.
3. Jika sekiranya selepas disemak didapati lukisan ini sesuai dengan projek yang berkenaan, Tuan / Puan hendaklah menandatangani ruangan perakuan semakan dan pengesahan di penjuru bawah sebelah kanan lukisan terbabit.
4. Namun begitu, sekiranya didapati lukisan piawai tidak sesuai dengan projek Tuan / Puan dan perlu pengubahsuaian, pihak Tuan/Puan adalah diminta untuk mengambil tindakan berikut :-
 - Meminda dan melukis semula lukisan piawai mengikut kesesuaian projek Tuan/ Puan.
 - Empat (4) individu utama iaitu pegawai perekabentuk, pegawai pelukis, pegawai penyemak dan pegawai pelulus perlu menandatangani lukisan yang telah dipinda.

SENARAI LUKISAN PIAWAI *ROAD LIGHTING*

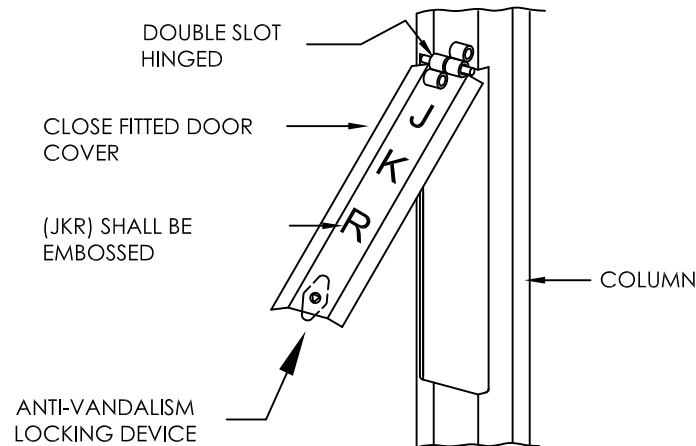
NO.	TAJUK LUKISAN	BILANGAN LUKISAN
1.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 701 -1
2.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 702 -1
3.	SINGLE ARM ROUND TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 703 - 1
4.	DOUBLE ARM ROUND TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 704 - 1
5.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 705 - 1
6.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 706 - 1
7.	SINGLE ARM ROUND TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 707 -1
8.	DOUBLE ARM ROUND TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN	KPKR/R/J/STD AM 708 - 1
9.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	KPKR/R/J/STD AM 709 - 1
10.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	KPKR/R/J/STD AM 710 - 1
11.	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	KPKR/R/J/STD AM 711 - 1
12.	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN (HIGH LEVEL SERVICE DOOR)	KPKR/R/J/STD AM 712-1
13.	TECHNICAL INFORMATION AND STICKER FOR ROAD LIGHTING COLUMN	KPKR/R/J/STD AM 713-1
14.	FEEDER PILLAR HOUSING	KPKR/R/J/STD AM 714-1
15.	DETAILS OF FEEDER PILLAR	KPKR/R/J/STD AM 715-1
16.	MODULAR TERMINATION BOX	KPKR/R/J/STD AM 716-1
17.	TERMINATION BOARD	KPKR/R/J/STD AM 717-1



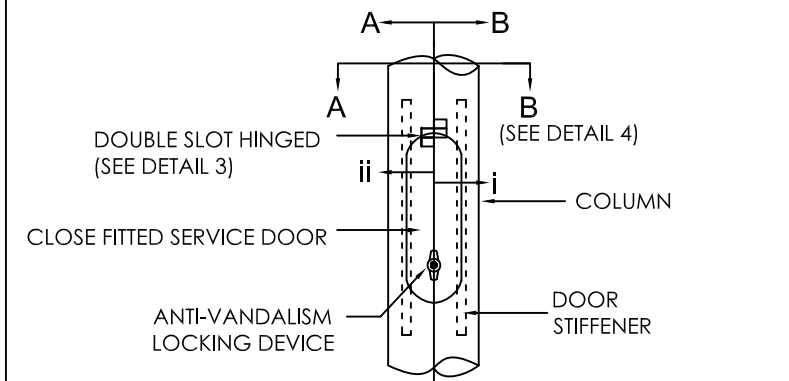
DETAIL 1: SPIGOT END OF BRACKET ARM



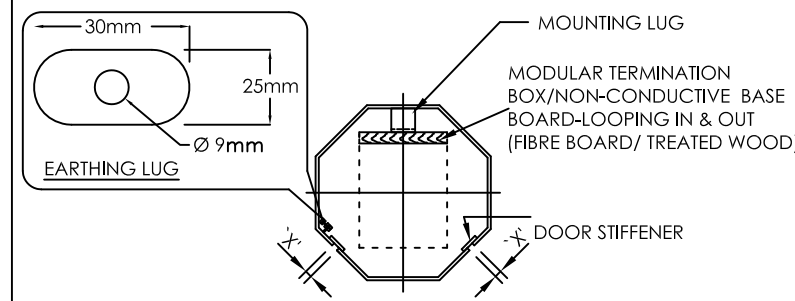
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



DETAIL 5: HINGED DOOR ISOMETRIC VIEW

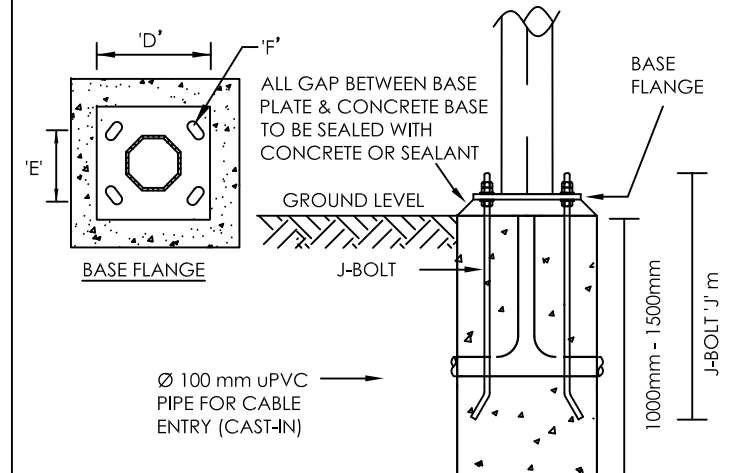


DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR



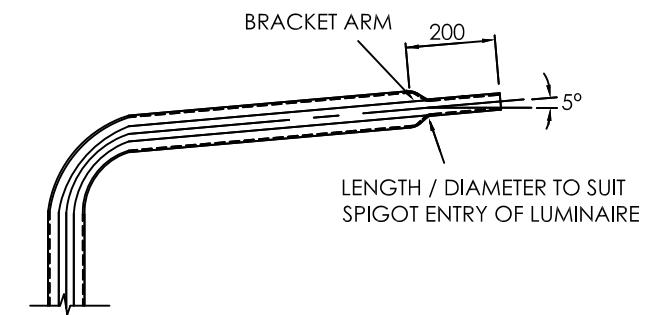
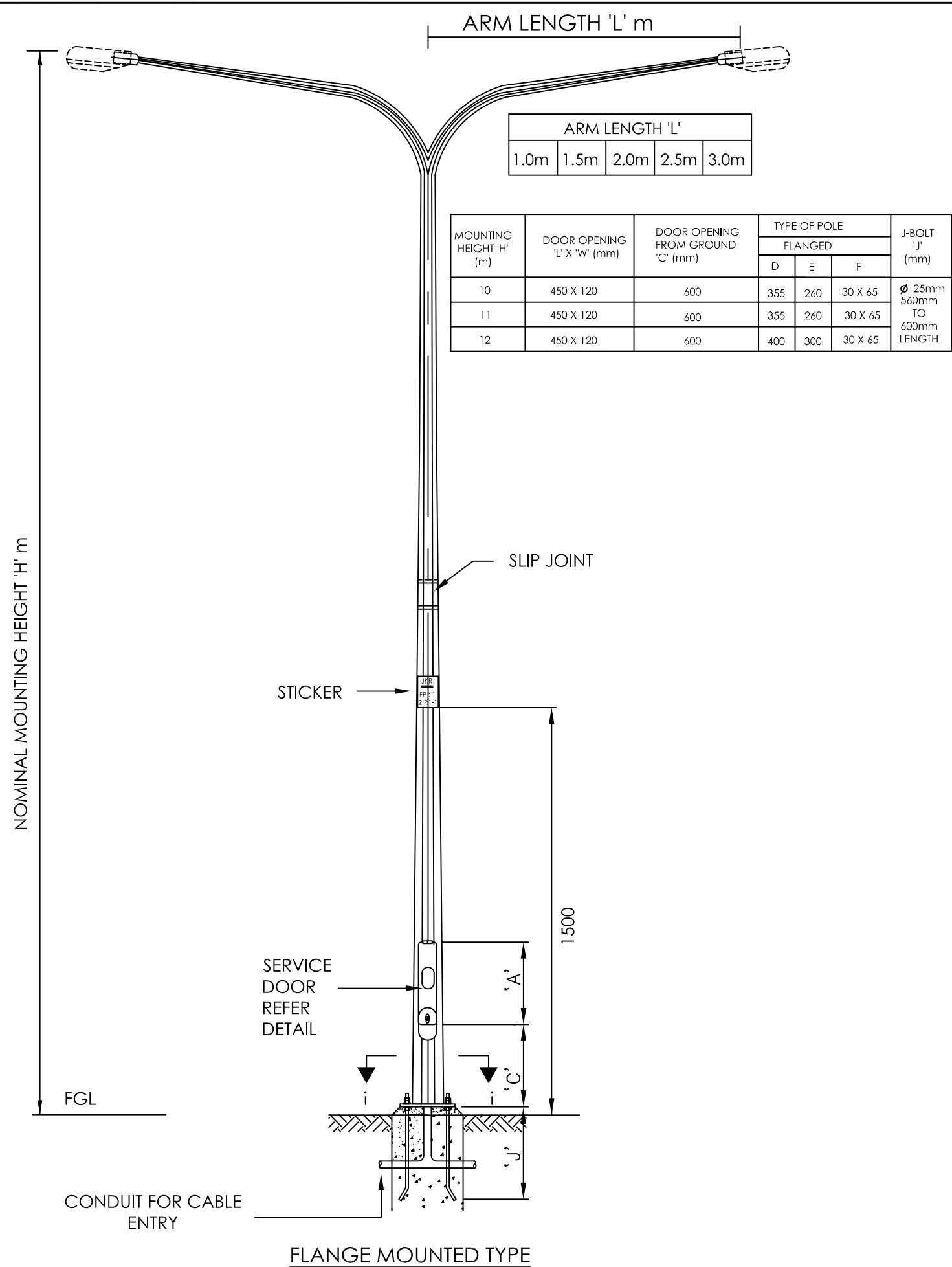
DOOR COVER TO BE MECHANICALLY PUNCH AND THE CLEARANCE - 'X' - AROUND DOOR SHOULD NOT EXCEED 1mm

DETAIL 4: BASE BOARD FOR TERMINAL PANEL

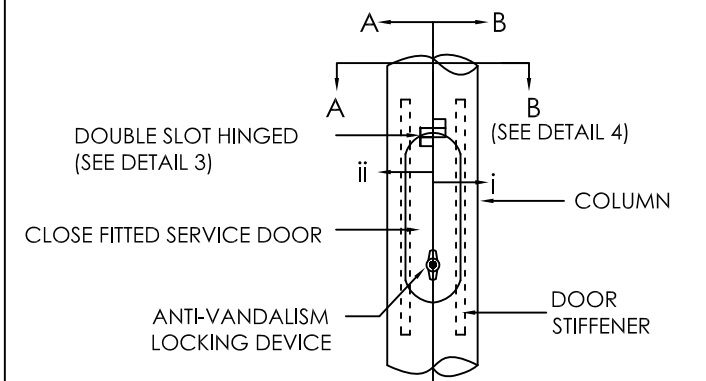


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

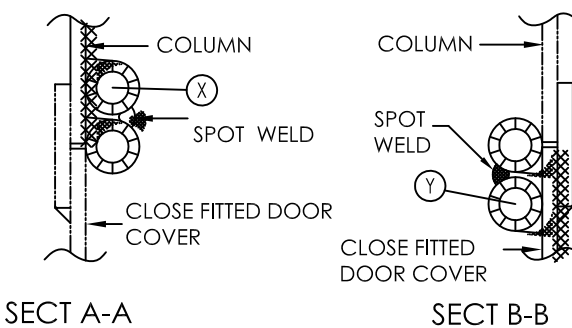
TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK : NOORFABZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK Ir. MOHD HAZRI BIN SHAARI	PENGARAH KANAN DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE(WITH ARM TYPE) HDG STEEL COLUMN		NAMA :	JAWATAN :
			JURUTERA ELEKTRIK PENGUASA : SHAHRLUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA : KHAIRUDDIN BIN MAHAMAD SHA'UDI		TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPKR/J/R/STD/AM 701-1	BIL. HELAIAN : 1/17	
PINDAAN			NOT TO SCALE UKURAN						



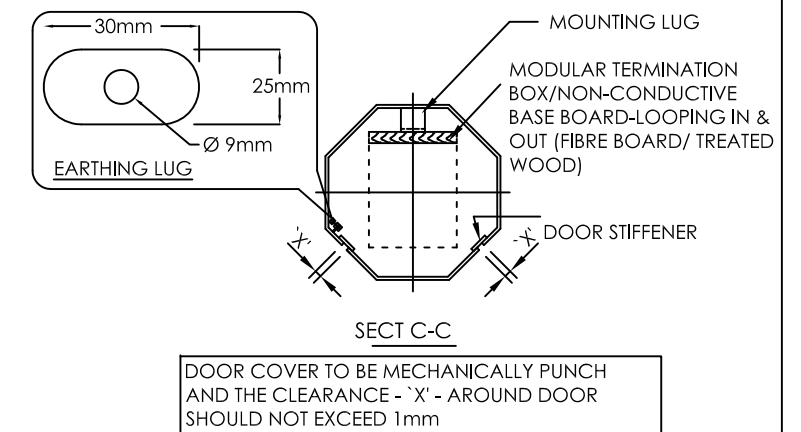
DETAIL 1: SPIGOT END OF BRACKET ARM



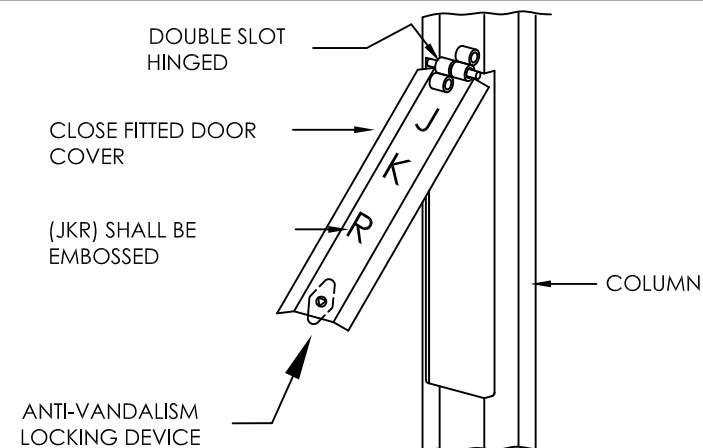
DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR



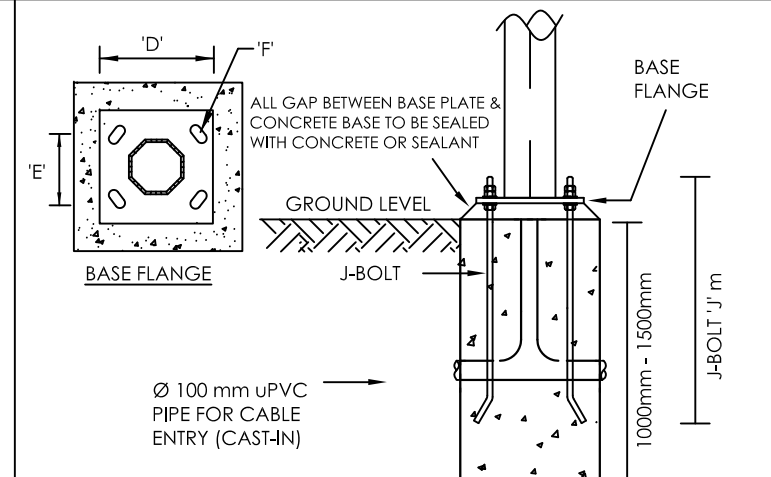
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



DETAIL 4: BASE BOARD FOR TERMINAL PANEL

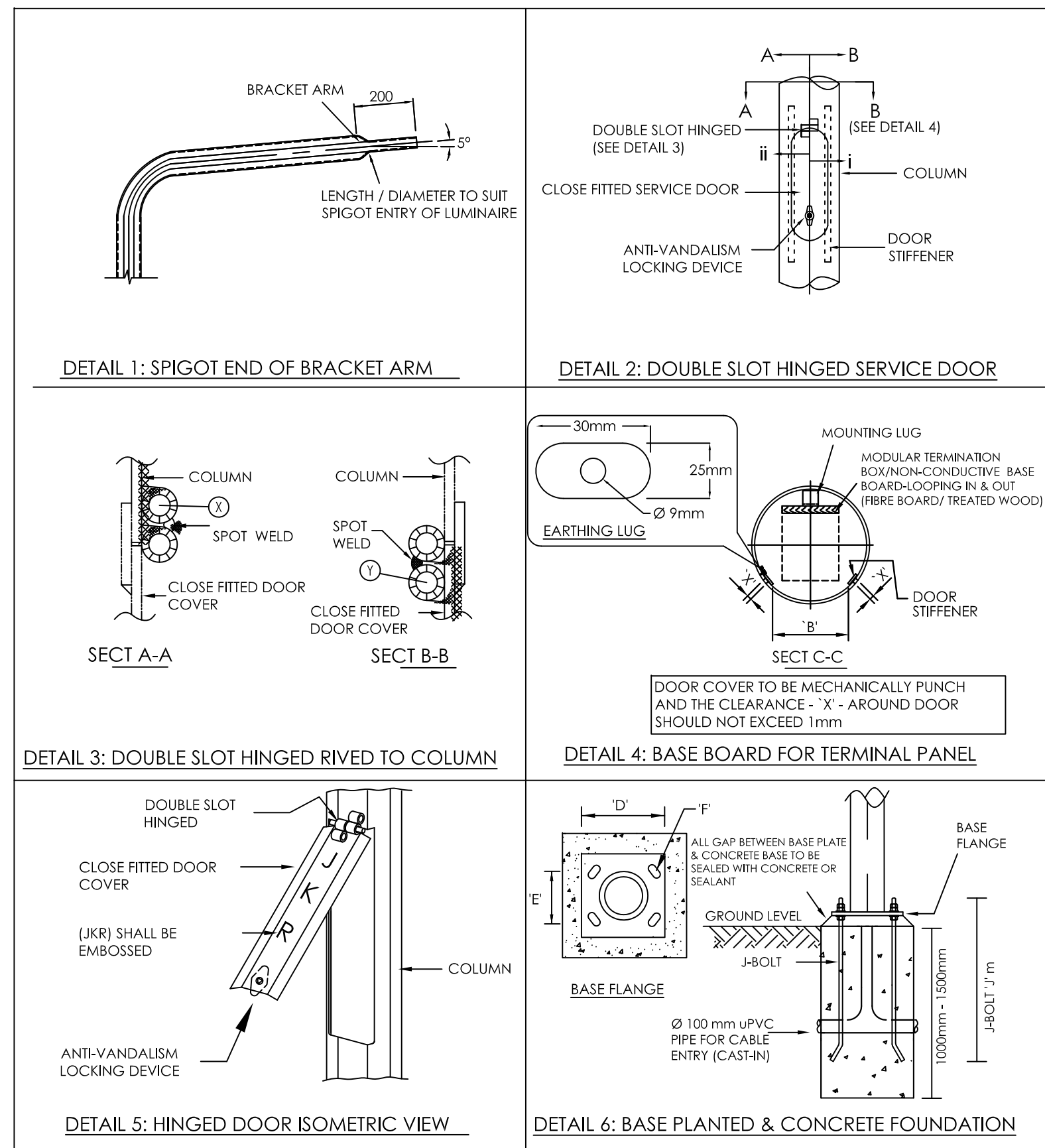
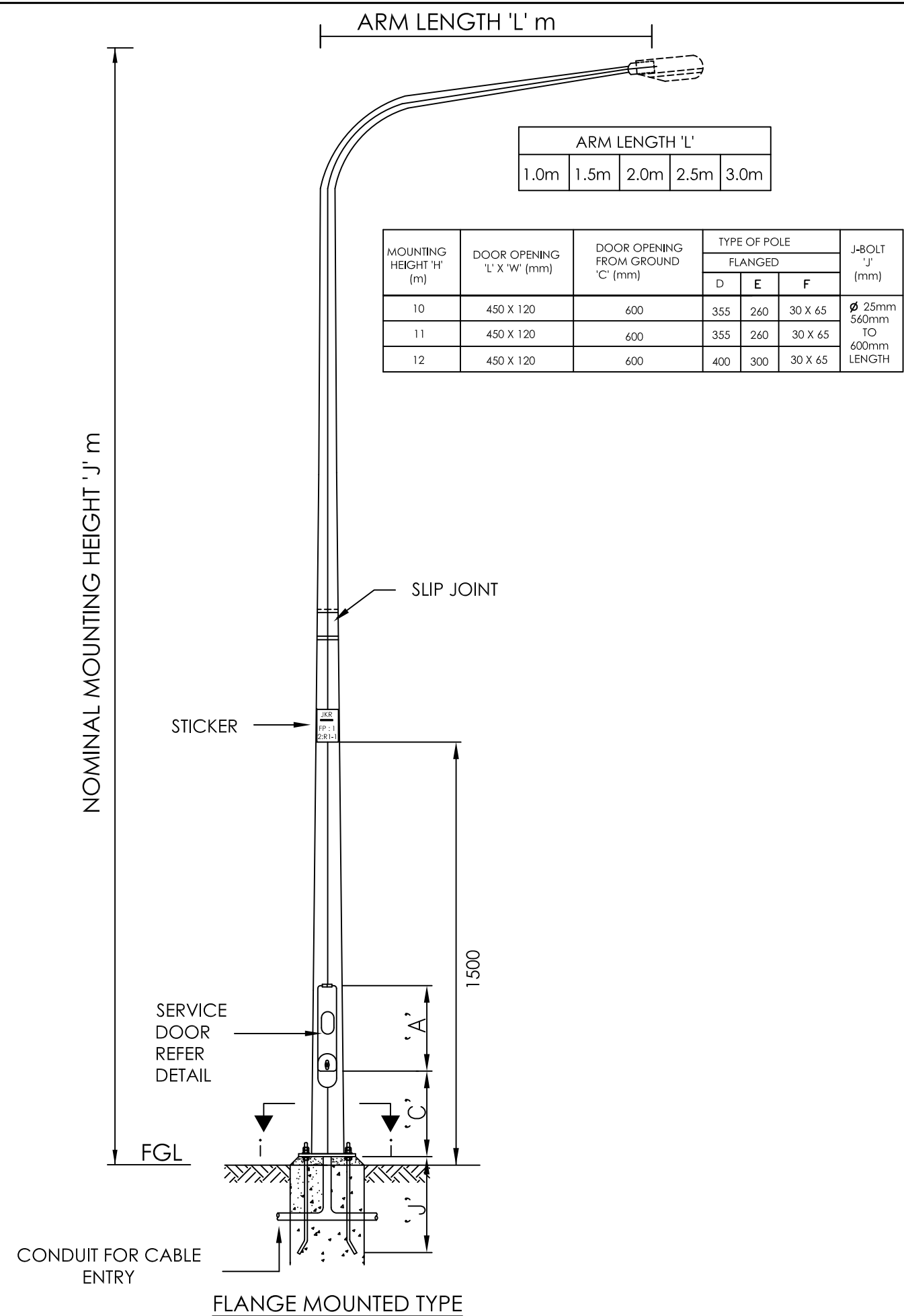


DETAIL 5: HINGED DOOR ISOMETRIC VIEW

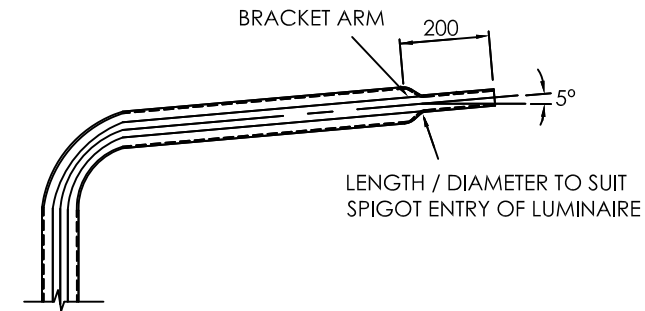
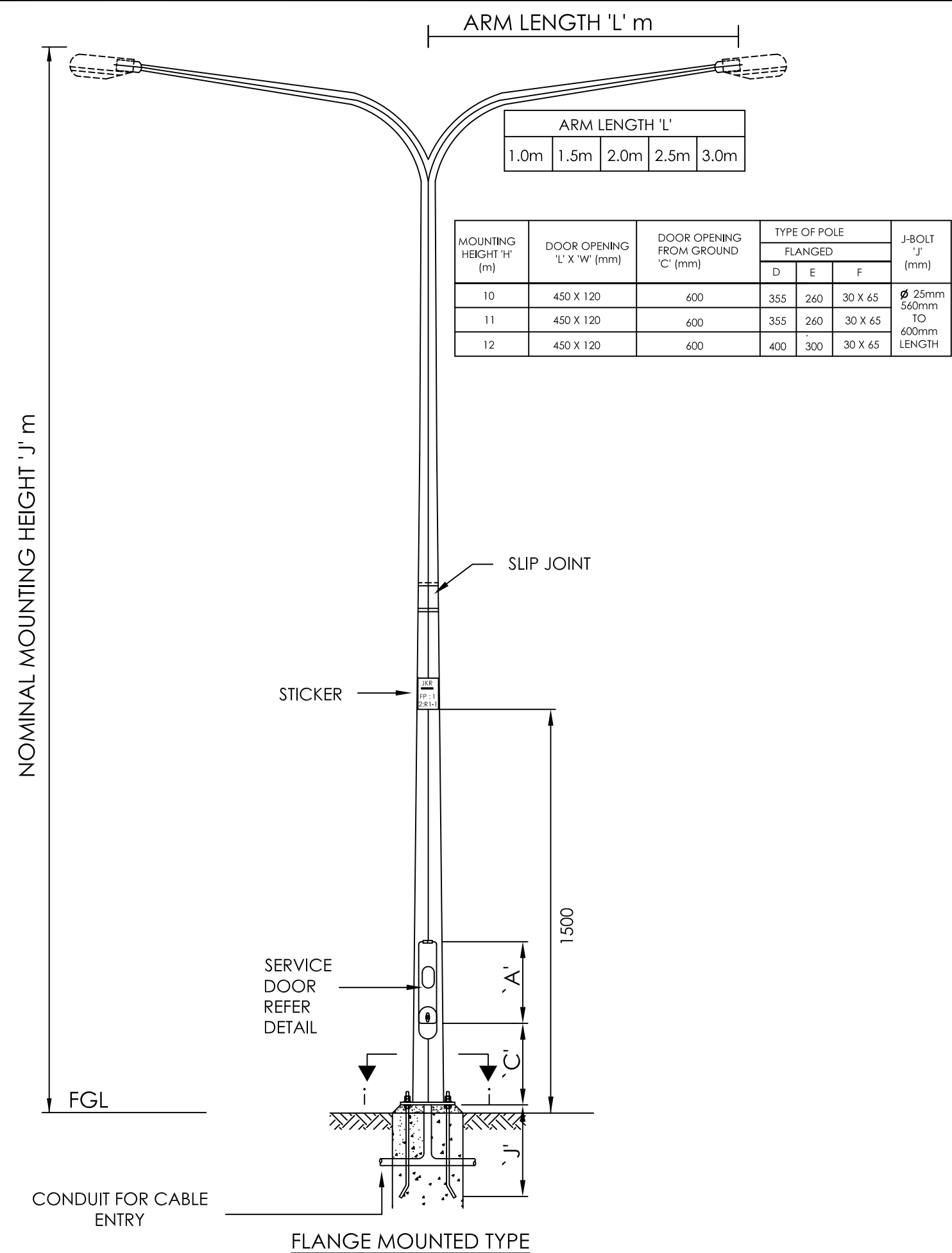


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

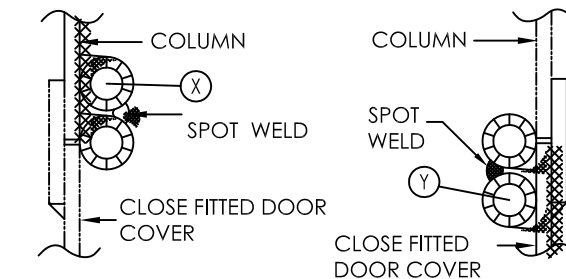
TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK : NOORFADZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK : Ir. MOHD NAZRI BIN SHAARI	PENGARAH KANAN : DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN		NAMA :	
			JURUTERA ELEKTRIK PENGUASA : SHAHARUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA : KHAIRUDDIN BIN MAHMAD SHA'UDI		TARIKH: NOVEMBER 2015 BIL. LUKISAN : KPKR/J/R/STD/AM 702 - 1		JAWATAN :	
PINDAAN			NOT TO SCALE UKURAN			BIL. HELAIAN : 2/17			



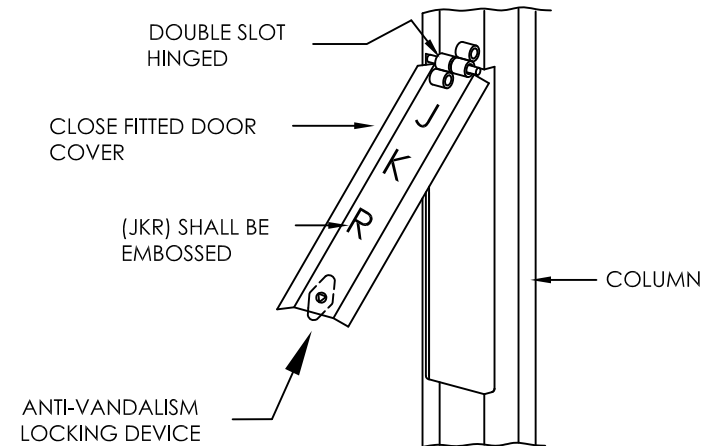
TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK : NOORFADZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK Ir. MOHD HAZRI BIN SHAARI	PENGARAH KANAN DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	SINGLE ARM ROUND TAPERED FLANGED TYPE(WITH ARM TYPE) HDG STEEL COLUMN		NAMA :	
			JURUTERA ELEKTRIK PENGUASA: SHAHROL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA: KHAIRUDDIN BIN MAHMAD SHA'UDI		TARIKH: NOVEMBER 2015		BIL. LUKISAN : KPKR/J/R/STD/AM 703 - 1	JAWATAN :
PINDAAN			NOT TO SCALE UKURAN			BIL. HELAIAN : 3/17			



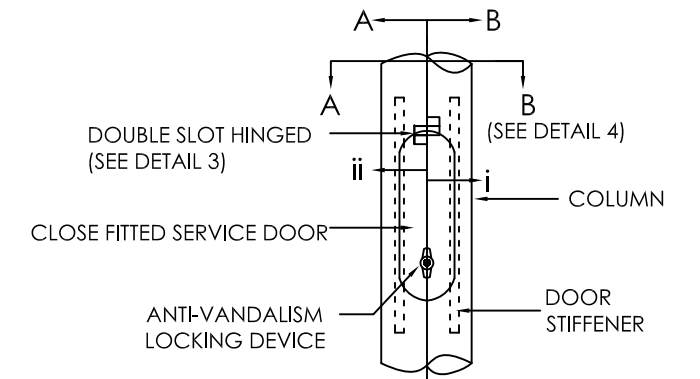
DETAIL 1: SPIGOT END OF BRACKET ARM



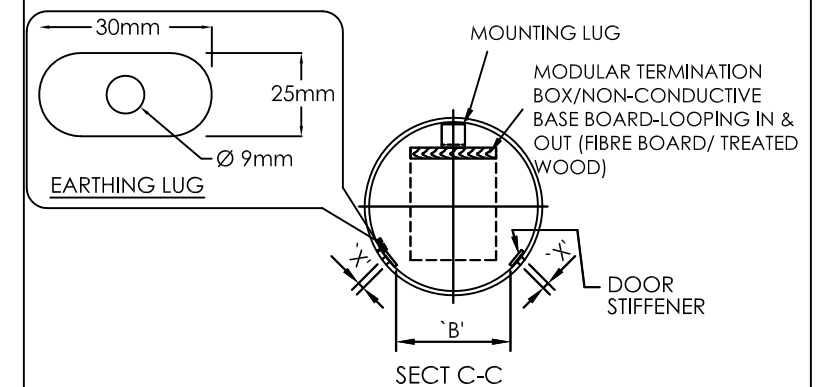
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



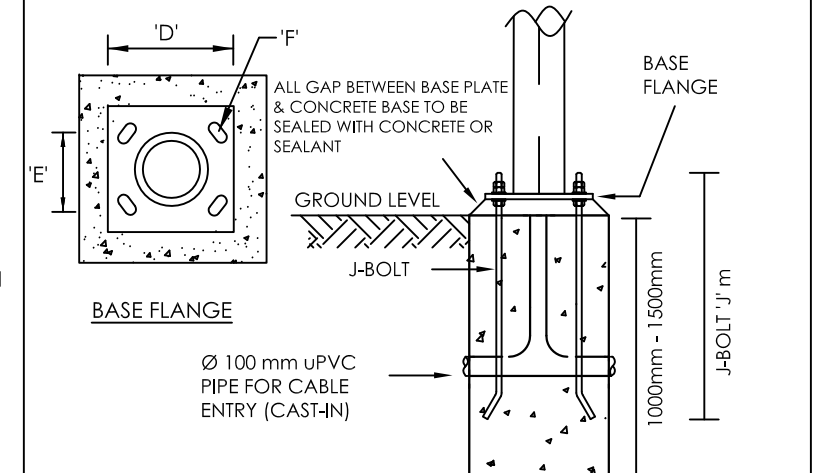
DETAIL 5: HINGED DOOR ISOMETRIC VIEW



DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR

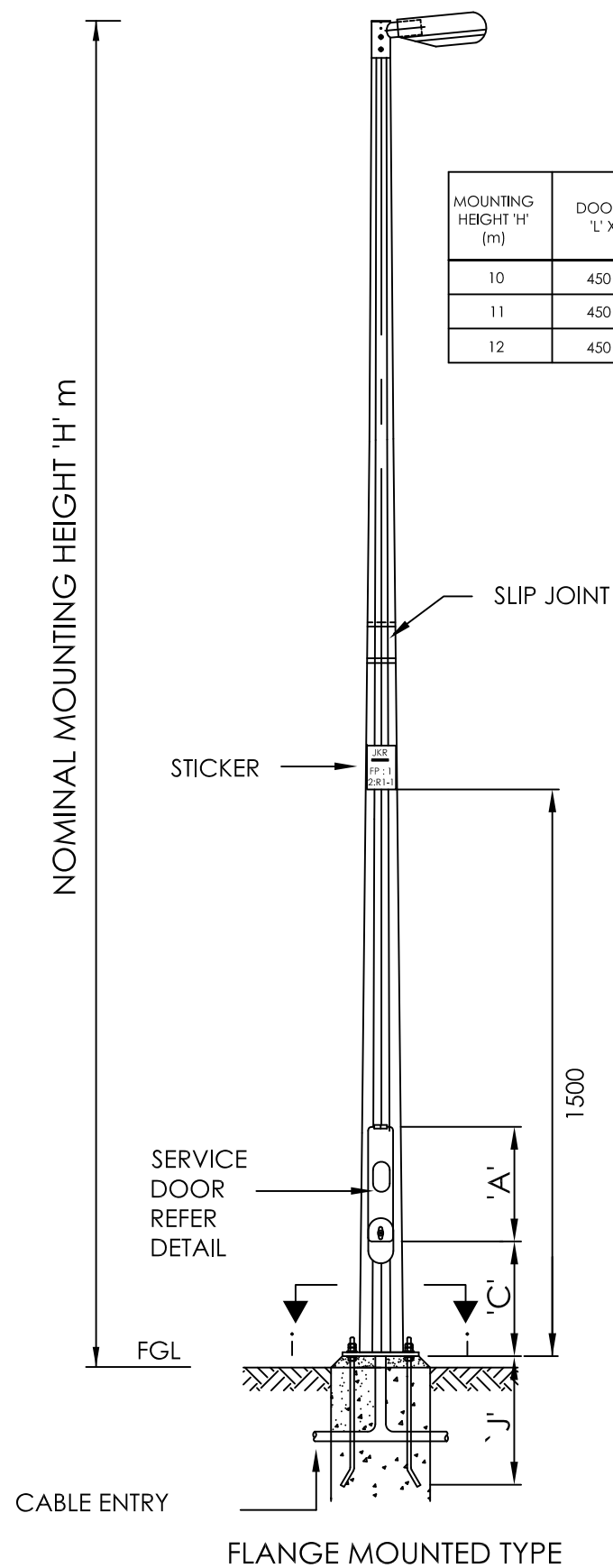


DETAIL 4: BASE BOARD FOR TERMINAL PANEL

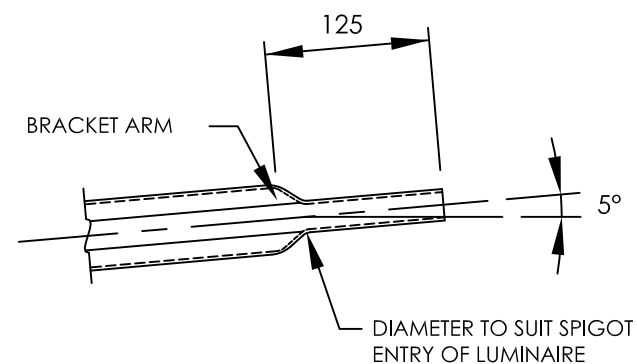


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

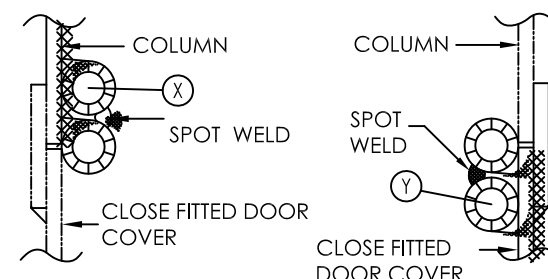
TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN NAMA : JAWATAN :
			KETUA JURUTERA ELEKTRIK : NOORFAZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK : Ir. MOHD MAZRI BIN SHAARI	PENGARAH KANAN : DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	DOUBLE ARM ROUND TAPERED FLANGED TYPE(WITH ARM TYPE) HDG STEEL COLUMN		
			JURUTERA ELEKTRIK PENGUASA : SHAHRUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA : KHAIRUDDIN BIN MAHMAD SHA'UDI		TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPKR/J/R/STD/AM 704 - 1 BIL. HELAIAN : 4/17	



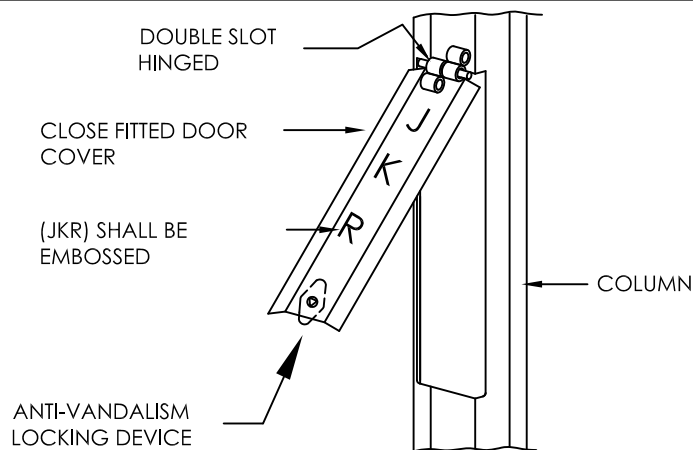
MOUNTING HEIGHT 'H' (m)	DOOR OPENING 'L' X 'W' (mm)	DOOR OPENING FROM GROUND 'C' (mm)	TYPE OF POLE			J-BOLT 'J' (mm)
			FLANGED			
			D	E	F	
10	450 X 120	600	355	260	30 X 65	Ø 25mm 560mm TO 600mm LENGTH
11	450 X 120	600	355	260	30 X 65	
12	450 X 120	600	400	300	30 X 65	



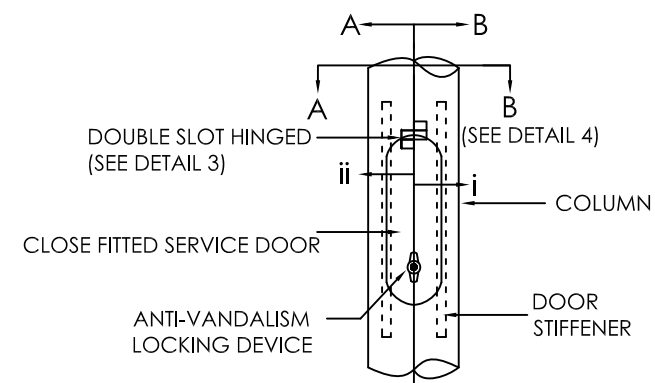
DETAIL 1: SPIGOT END OF BRACKET ARM



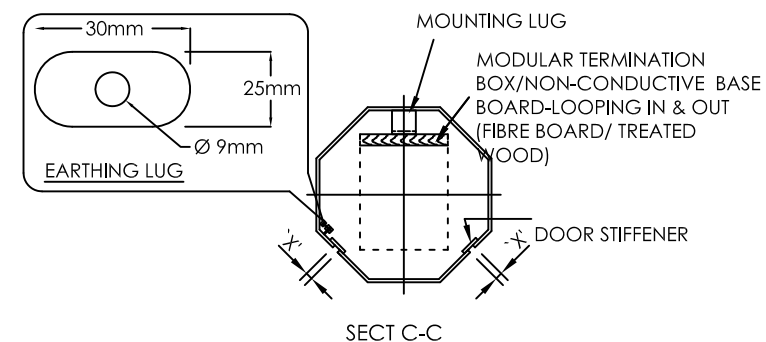
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



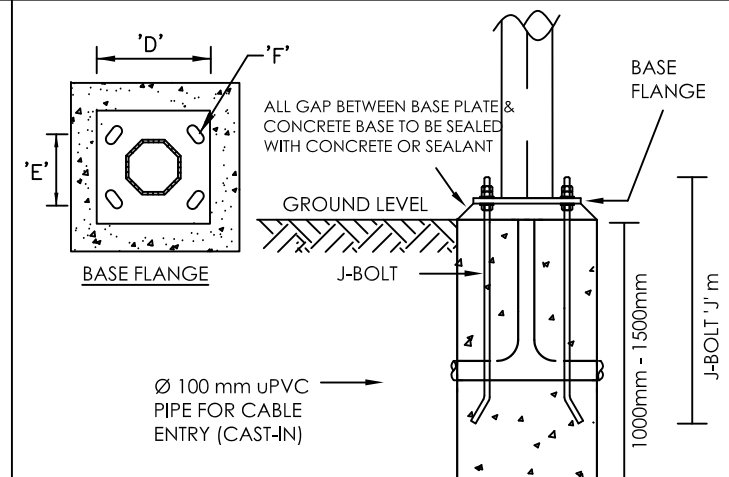
DETAIL 5: HINGED DOOR ISOMETRIC VIEW



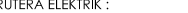
DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR

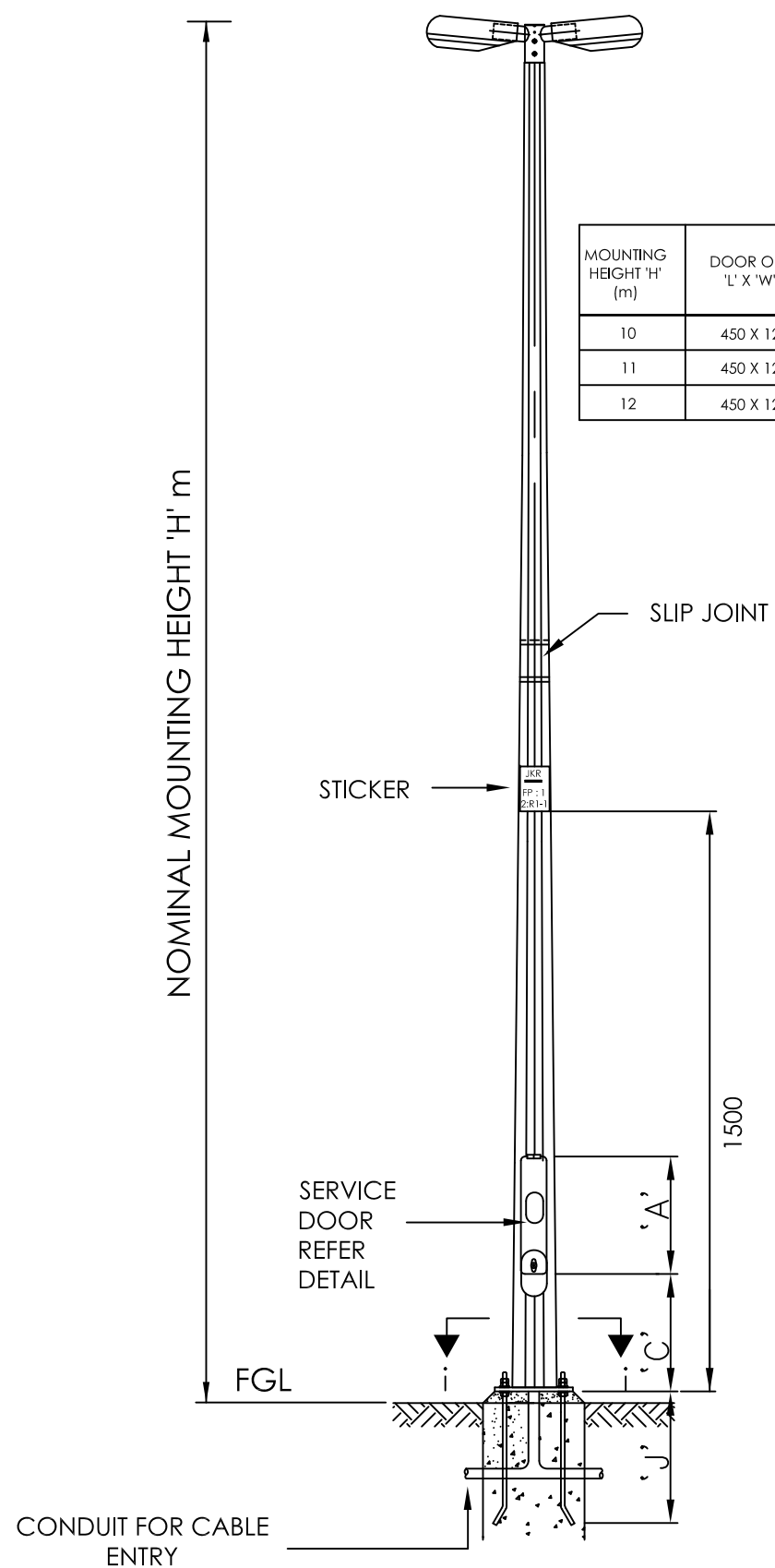


DETAIL 4: BASE BOARD FOR TERMINAL PANEL



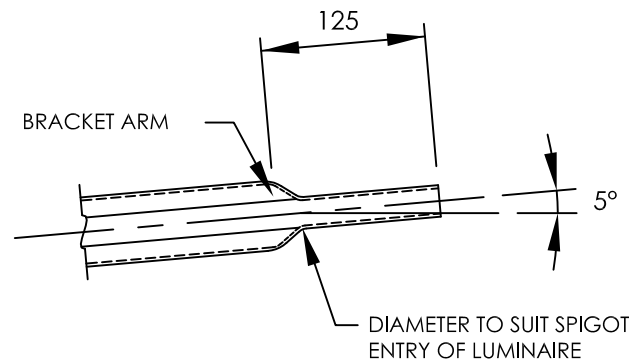
DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

TARIKH	BUTIRAN	RUJUKAN	NOT TO SCALE UKURAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN
				KETUA JURUTERA ELEKTRIK :  NOORFADZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK  Ir. MOHD MAZRI BIN SHAA'RI	PENGARAH KANAN  DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN			
				JURUTERA ELEKTRIK PENGUASA:  SHAHROL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA :  MARNIZA BT. ZAINOL ABIDIN					
	PINDAAN						TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPKR/J/R/STD/AM 705 - 1	BIL. HELAIAN : 5/17	
							NAMA : JAWATAN :			

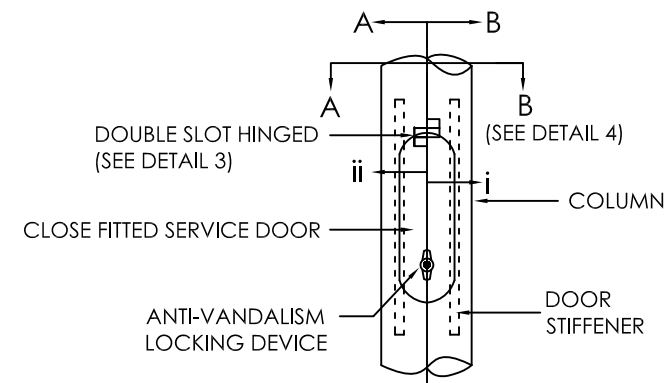


MOUNTING HEIGHT 'H' (m)	DOOR OPENING 'L' X 'W' (mm)	DOOR OPENING FROM GROUND 'C' (mm)	TYPE OF POLE			J-BOLT 'J' (mm)
			FLANGED			
			D	E	F	
10	450 X 120	600	355	260	30 X 65	Ø 25mm 560mm TO 600mm LENGTH
11	450 X 120	600	355	260	30 X 65	
12	450 X 120	600	400	300	30 X 65	

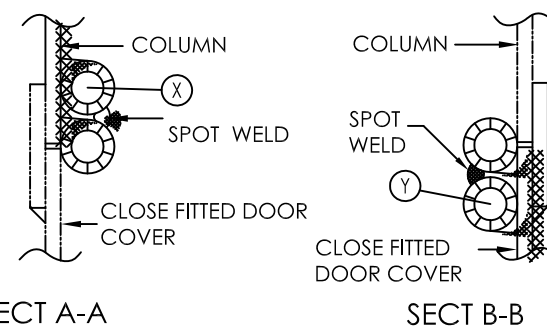
FLANGE MOUNTED TYPE



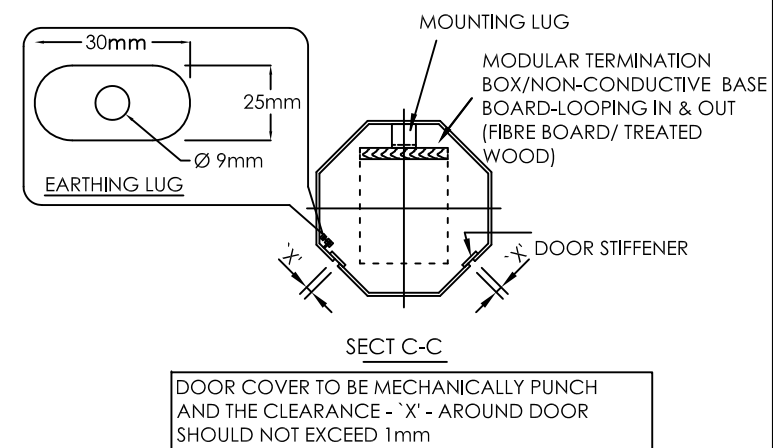
DETAIL 1: SPIGOT END OF BRACKET ARM



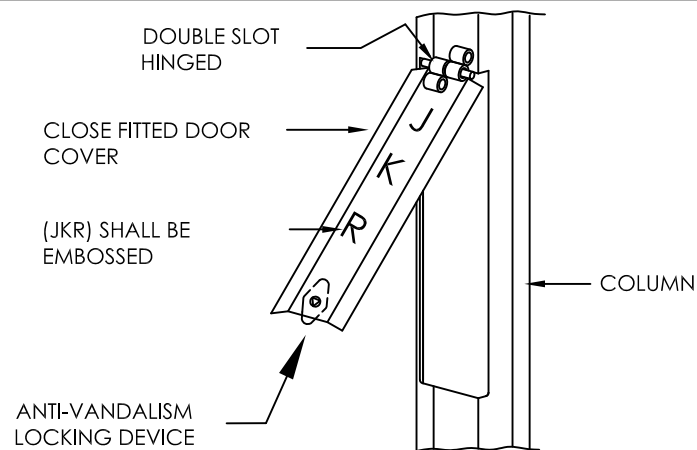
DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR



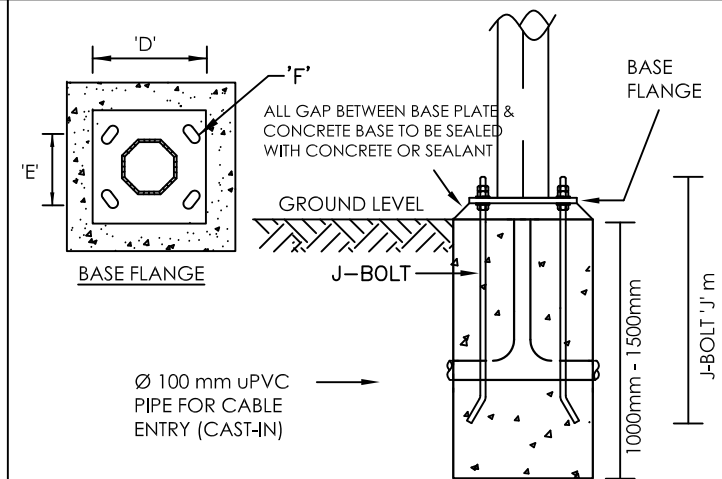
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



DETAIL 4: BASE BOARD FOR TERMINAL PANEL

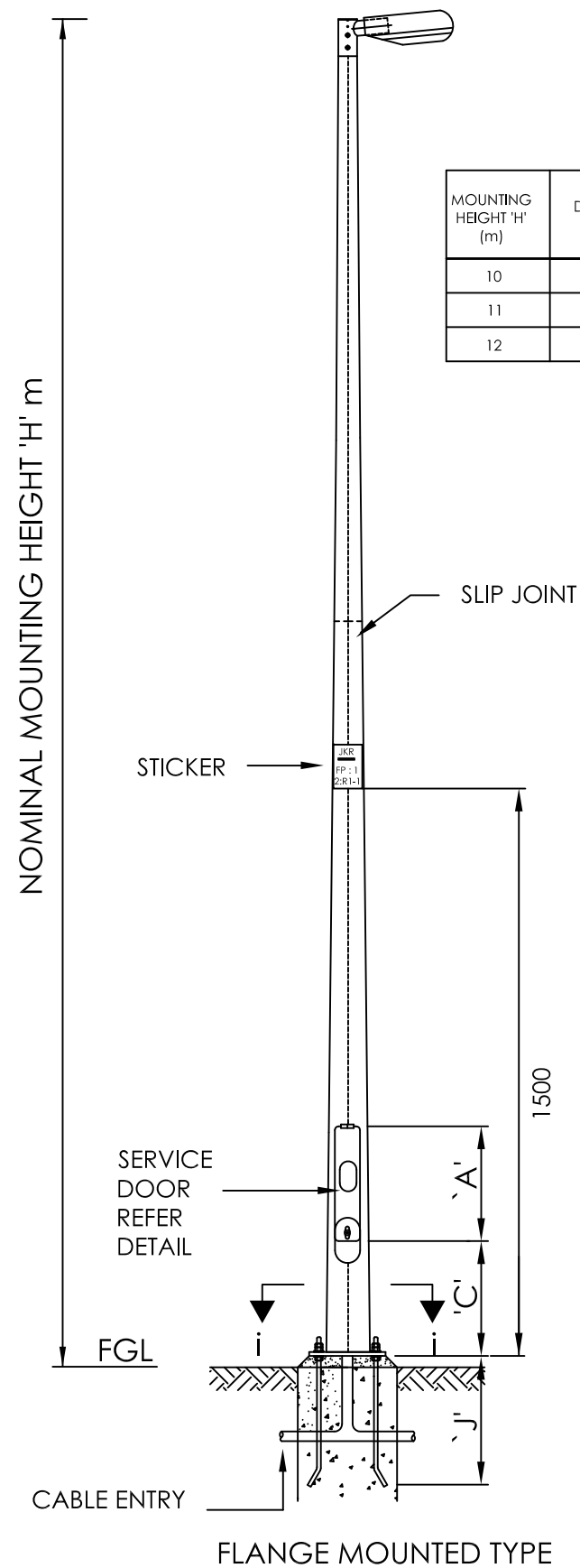


DETAIL 5: HINGED DOOR ISOMETRIC VIEW

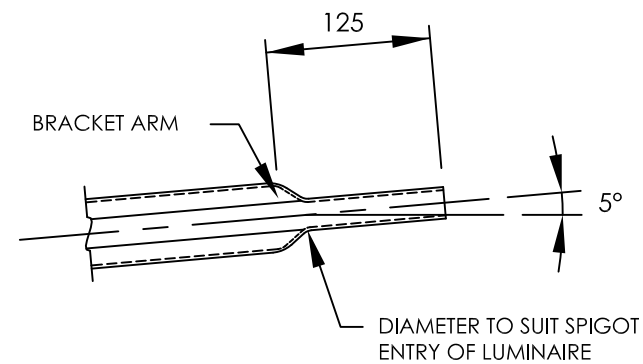


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

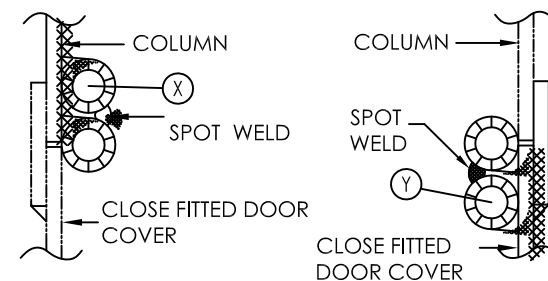
TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN NAMA : JAWATAN :	
			KETUA JURUTERA ELEKTRIK : NOORFAZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK Ir. MOHD MAZRI BIN SHAARI	PENGARAH KANAN DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE(WITHOUT ARM TYPE) HDG STEEL COLUMN			
PINDAAN			NOT TO SCALE UKURAN	JURUTERA ELEKTRIK PENGUASA : SHAHARUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA : MARNIZA BT ZAINOL ABIDIN	TARIKH: NOVEMBER 2015		BIL. LUKISAN : KPKR/J/R/STD/AM 706 - 1	BIL. HELAIAN : 6/17



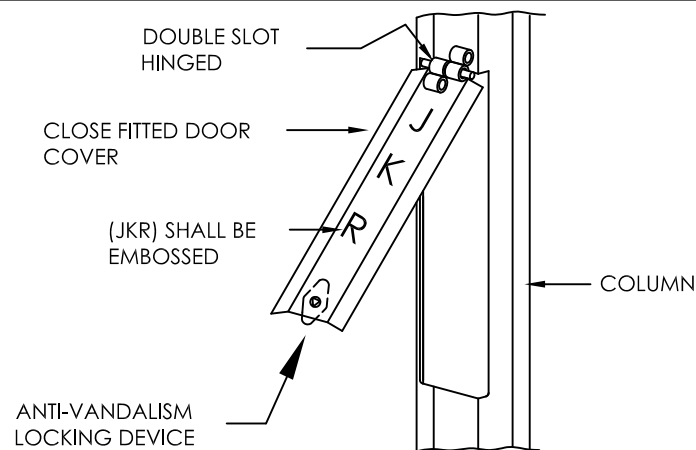
MOUNTING HEIGHT 'H' (m)	DOOR OPENING 'L' X 'W' (mm)	DOOR OPENING FROM GROUND 'C' (mm)	TYPE OF POLE FLANGED			J-BOLT 'J' (mm)
			D	E	F	
10	450 X 120	600	355	260	30 X 65	Ø 25mm 560mm TO 600mm LENGTH
11	450 X 120	600	355	260	30 X 65	
12	450 X 120	600	400	300	30 X 65	



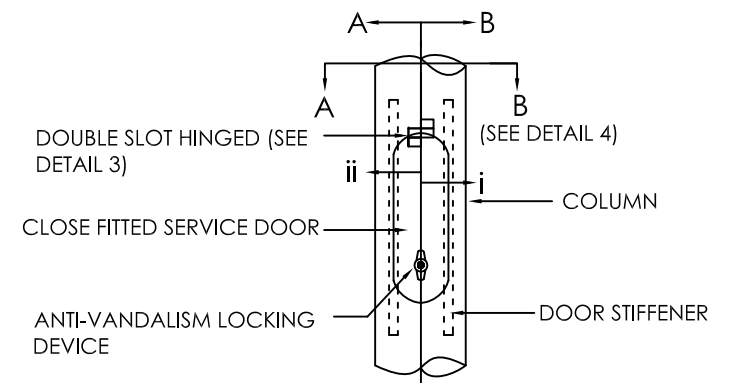
DETAIL 1: SPIGOT END OF BRACKET ARM



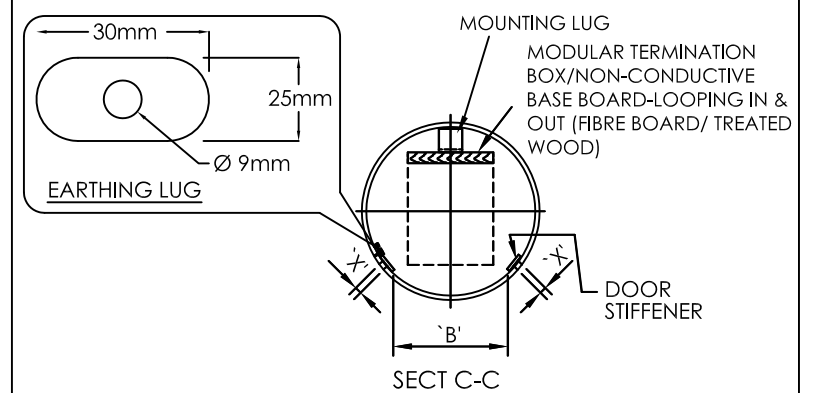
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



DETAIL 5: HINGED DOOR ISOMETRIC VIEW

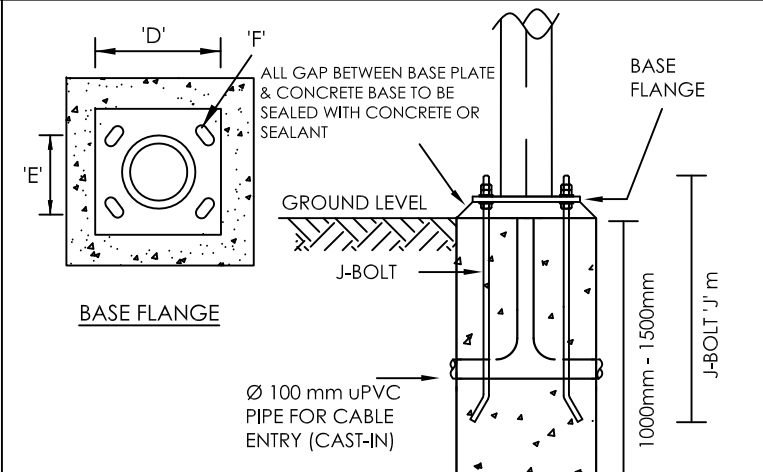


DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR



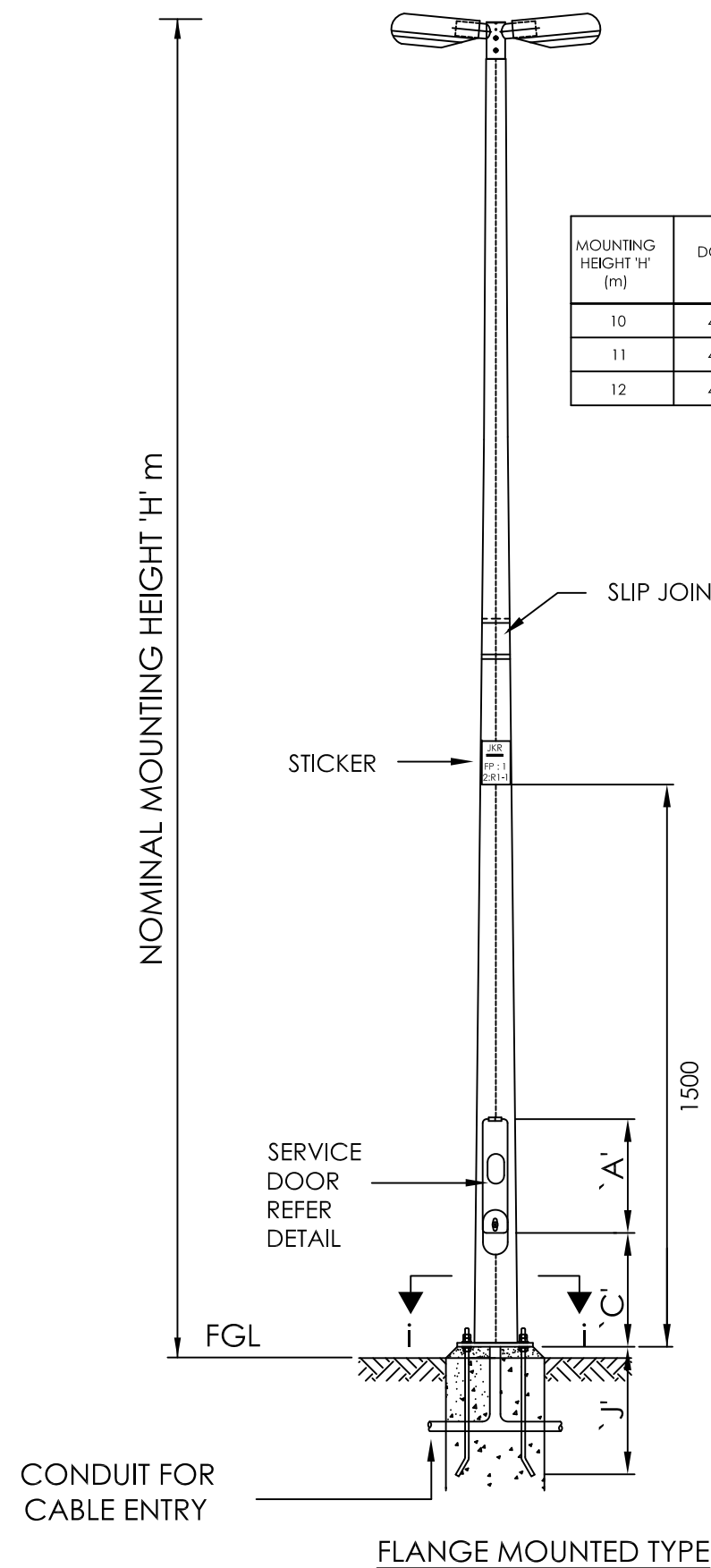
DOOR COVER TO BE MECHANICALLY PUNCH AND THE CLEARANCE - 'X' - AROUND DOOR SHOULD NOT EXCEED 1mm

DETAIL 4: BASE BOARD FOR TERMINAL PANEL

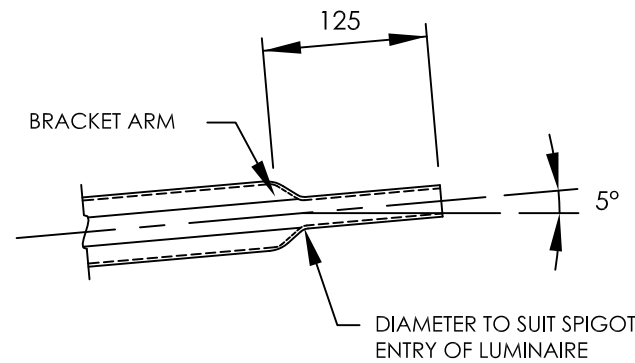


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

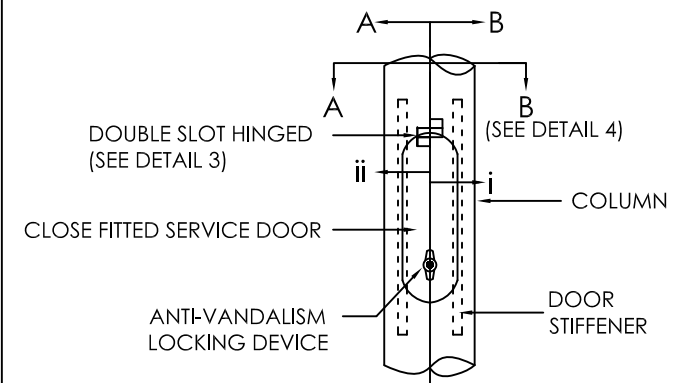
TARIKH	BUTIRAN	RUJUKAN	NOT TO SCALE UKURAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN
				KETUA JURUTERA ELEKTRIK :  NOORFADZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK  Ir. MOHD NAZRI BIN SHAARI	PENGARAH KANAN  DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	 JABATAN KERJA RAYA MALAYSIA			
				JURUTERA ELEKTRIK PENGUASA:  SHAHIRUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA :  MARNIZA BT ZAINOL ABIDIN		DOUBLE ARM ROUND TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN			
	PINDAAN						TARIKH: NOVEMBER 2015 BIL. LUKISAN : KPKR/J/R/STD/AM 707 - 1 BIL. HELAIAN : 7/17			
							NAMA : JAWATAN :			



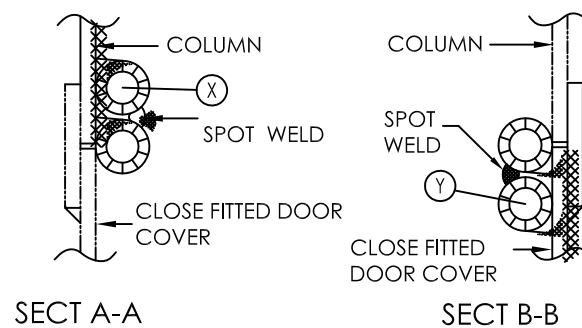
MOUNTING HEIGHT 'H' (m)	DOOR OPENING 'L' X 'W' (mm)	DOOR OPENING FROM GROUND 'C' (mm)	TYPE OF POLE FLANGED			J-BOLT 'J' (mm)
			D	E	F	
10	450 X 120	600	355	260	30 X 65	Ø 25mm 560mm TO 600mm LENGTH
11	450 X 120	600	355	260	30 X 65	
12	450 X 120	600	400	300	30 X 65	



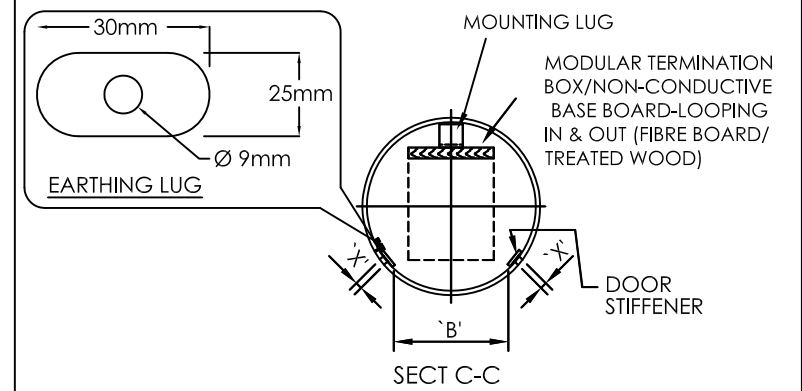
DETAIL 1: SPIGOT END OF BRACKET ARM



DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR

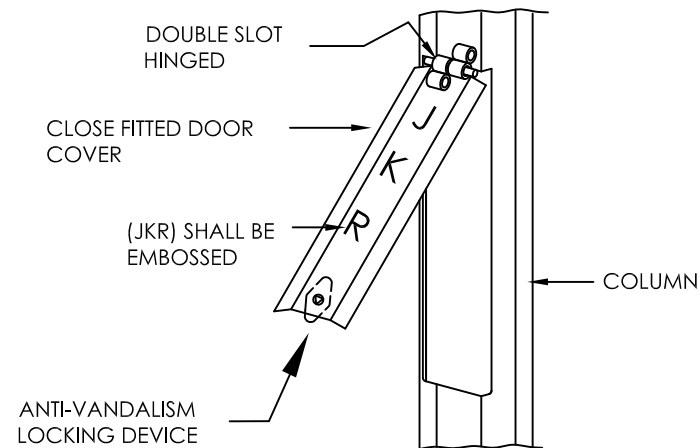


DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN

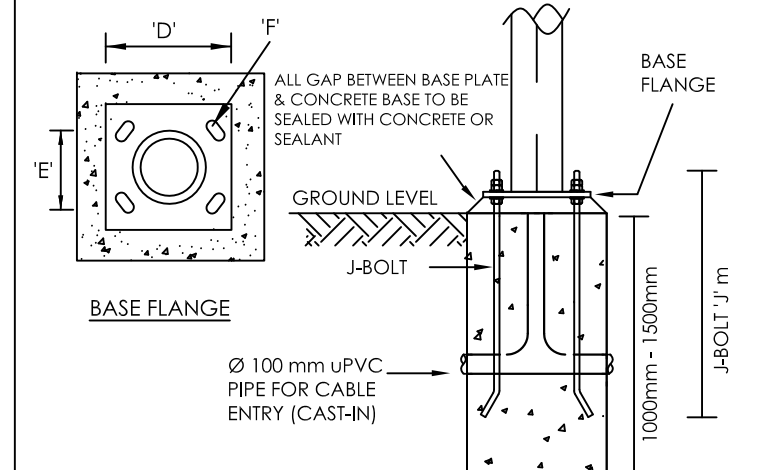


DOOR COVER TO BE MECHANICALLY PUNCH
AND THE CLEARANCE - 'X' - AROUND DOOR
SHOULD NOT EXCEED 1mm

DETAIL 4: BASE BOARD FOR TERMINAL PANEL

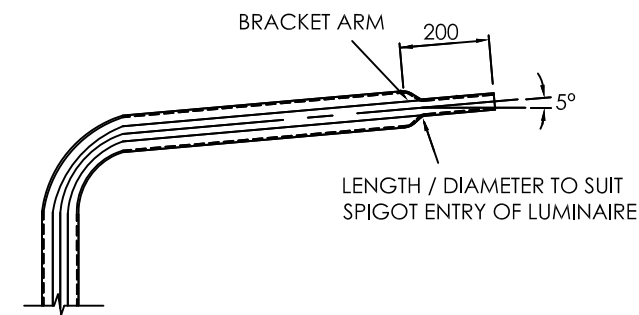
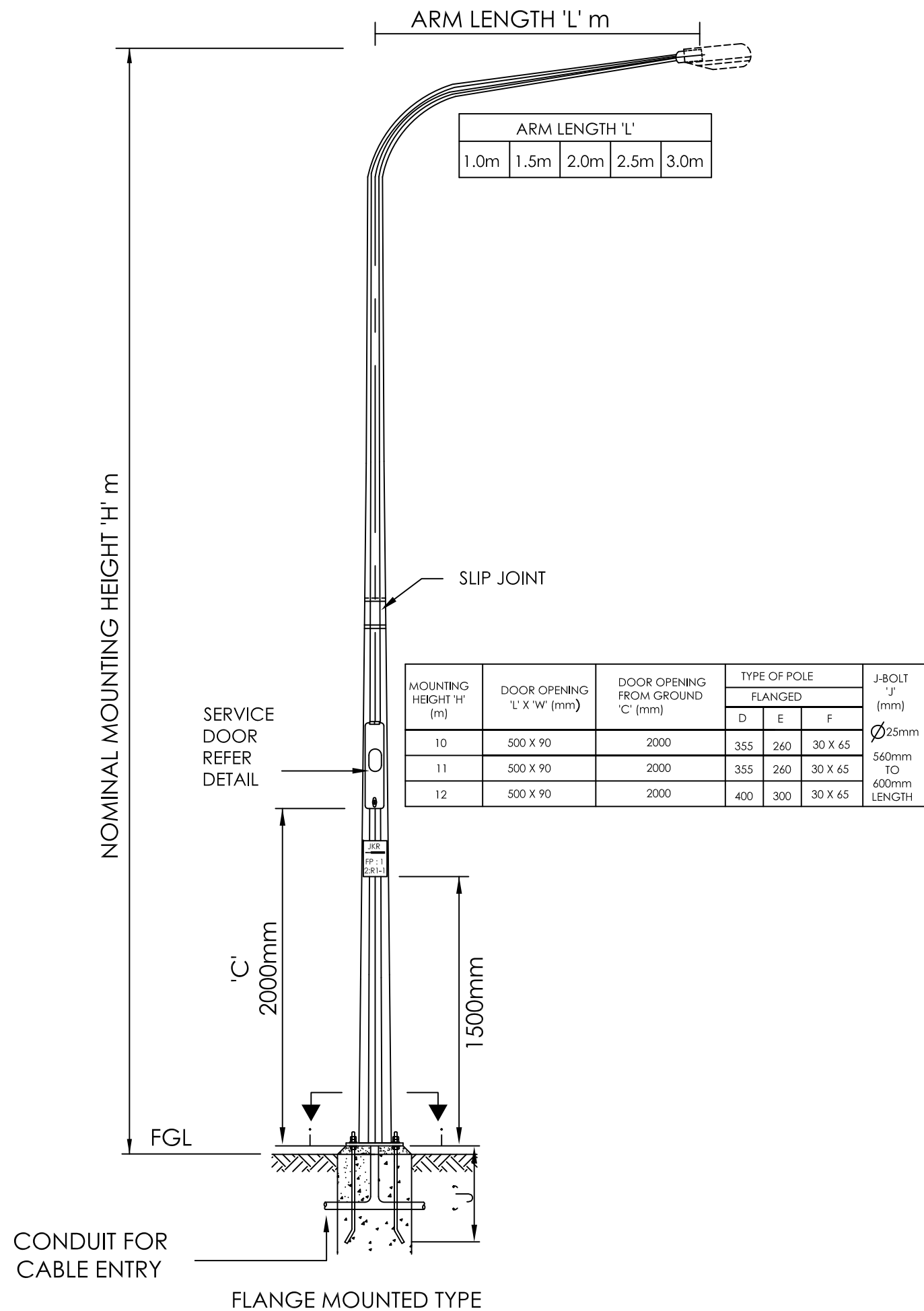


DETAIL 5: HINGED DOOR ISOMETRIC VIEW

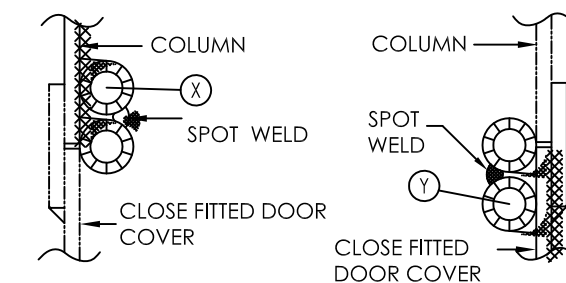


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGENALKAN BAHAWA LUKISAN PIKAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK : NOORFADZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK Ir. MOHD NAZRI BIN SHAARI	PENGARAH KANAN DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	DOUBLE ARM ROUND TAPERED FLANGED TYPE(WITH ARM TYPE) HDG STEEL COLUMN		NAMA :	
			JURUTERA ELEKTRIK PENGUASA: SHAHKUL AFRIZUL BIN ABU DANAR	PENOLONG JURUTERA : MARNIZA BT ZAINOL ABIDIN		TARIKH: NOVEMBER 2015 BIL. LUKISAN : KPKR/J/R/STD/AM 708 - 1		JAWATAN :	
PINDAAN			NOT TO SCALE UKURAN			BIL. HELAIAN : 8/17			



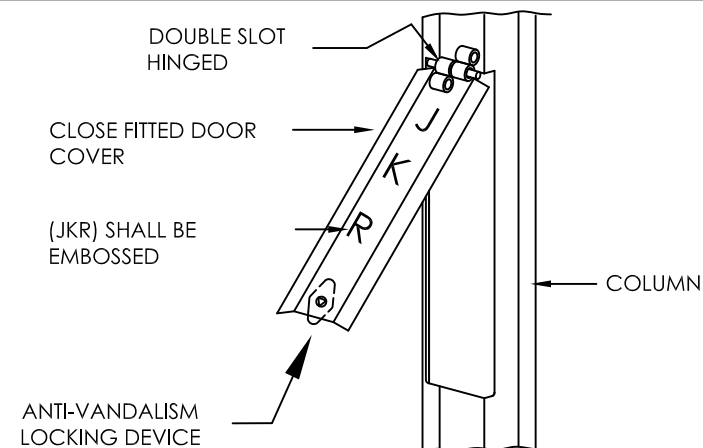
DETAIL 1: SPIGOT END OF BRACKET ARM



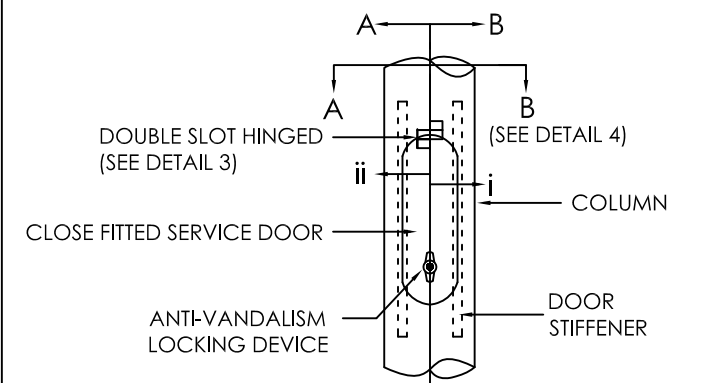
SECT A-A

SECT B-B

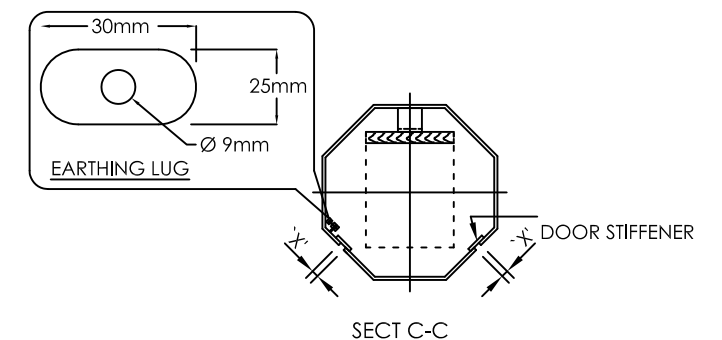
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



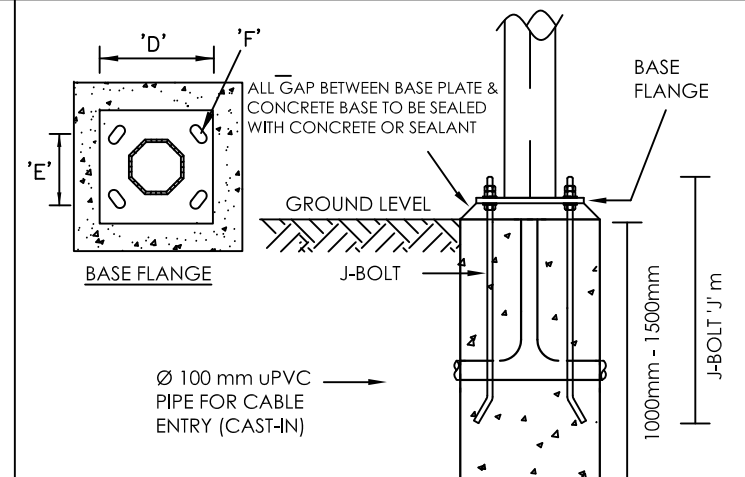
DETAIL 5: HINGED DOOR ISOMETRIC VIEW



DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR

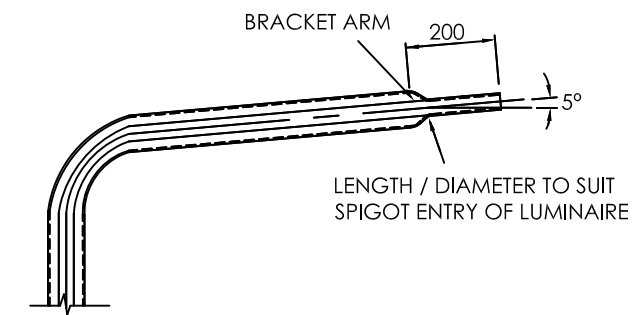
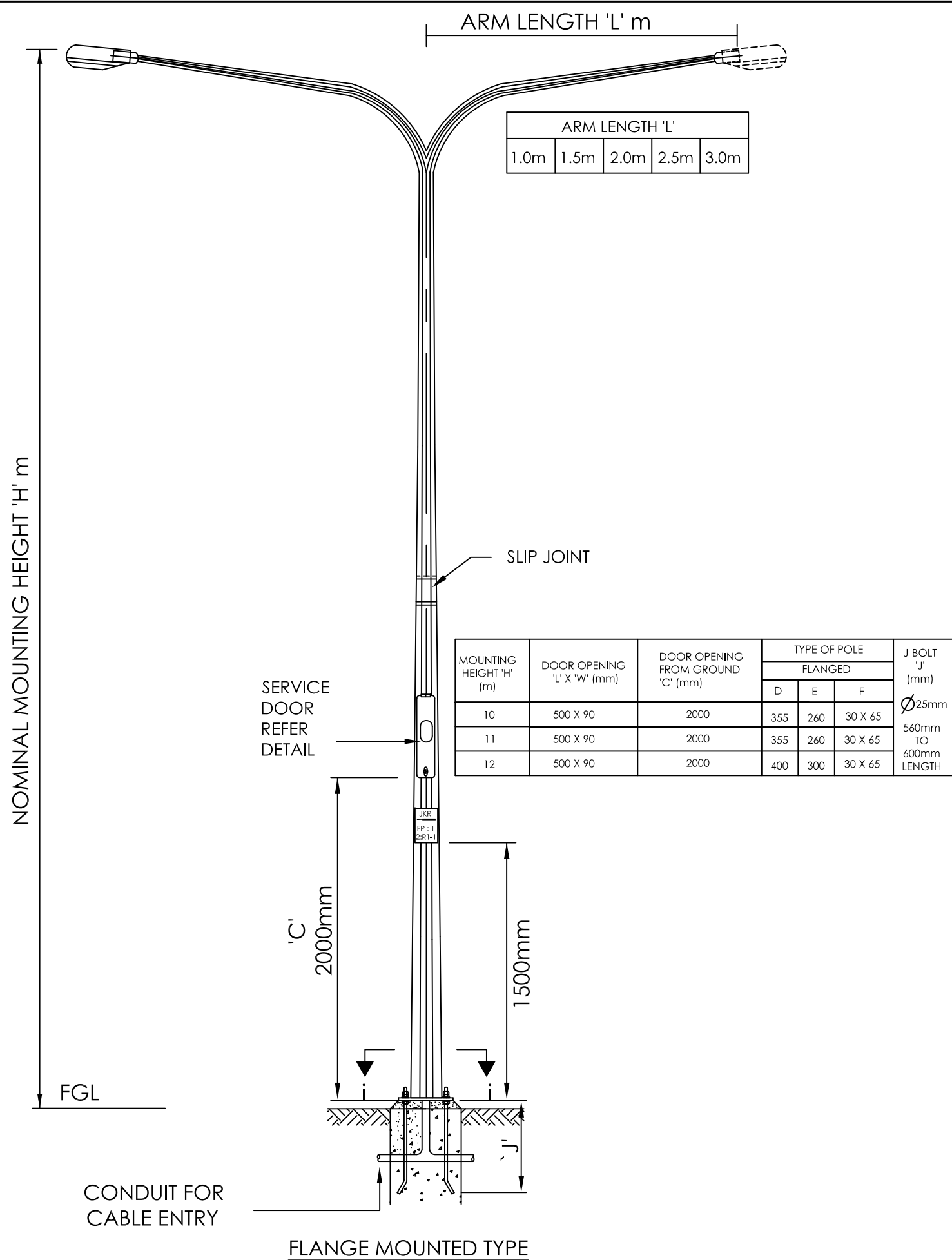


DETAIL 4: BASE BOARD FOR TERMINAL PANEL

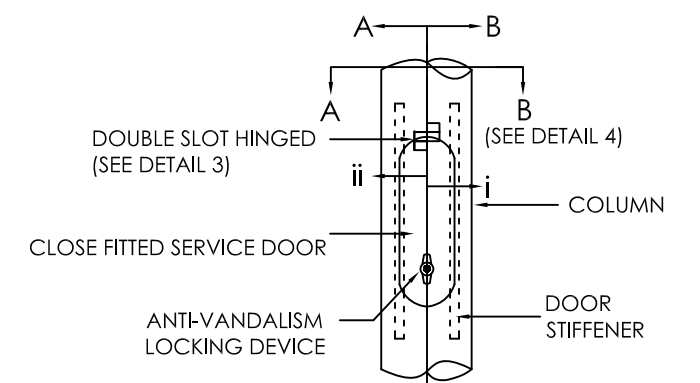


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

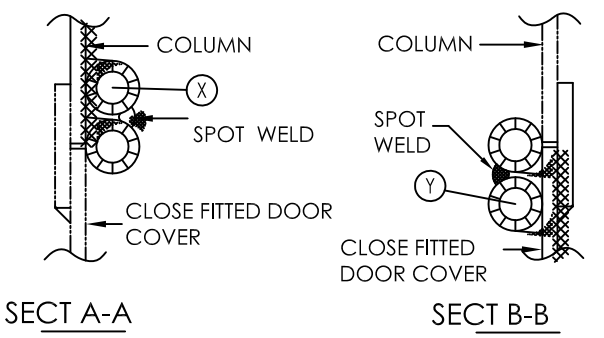
TARIKH	BUTIRAN	RUJUKAN	NOT TO SCALE UKURAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN
				KETUA JURUTERA ELEKTRIK :  NOORFAIZLAH BIN IBRAHIM	PENGARAH PERUNDING REKABENTUK  Ir. MOHD MAZRI BIN SHAARI	PENGARAH KANAN  DATO' Ir. HJ. MOHD FAZLI BIN OSMAN	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITH ARM TYPE) HDG STEEL COLUMN - HIGH LEVEL SERVICE DOOR			
				JURUTERA ELEKTRIK PENGUASA:  SHAHARUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA :  FARIZAL BIN IBRAHIM		TARIKH: NOVEMBER 2015			
							BIL. LUKISAN : KPKR/J/R/STD/AM 709 - 1			
							BIL. HELAIAN : 9/17			
PINDAAN							NAMA : JAWATAN :			



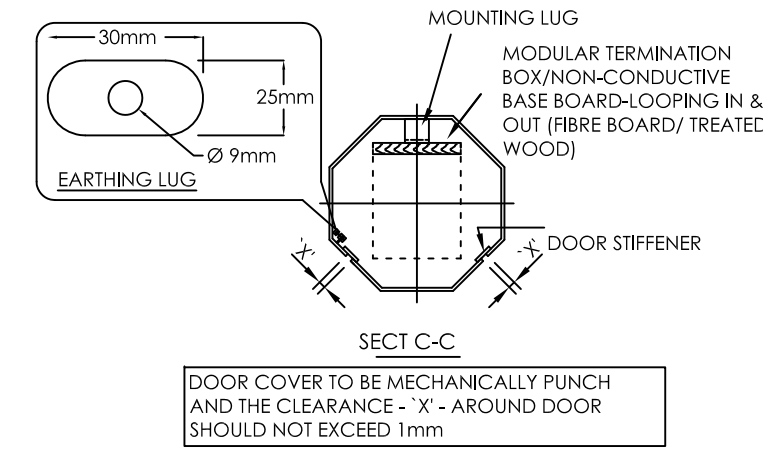
DETAIL 1: SPIGOT END OF BRACKET ARM



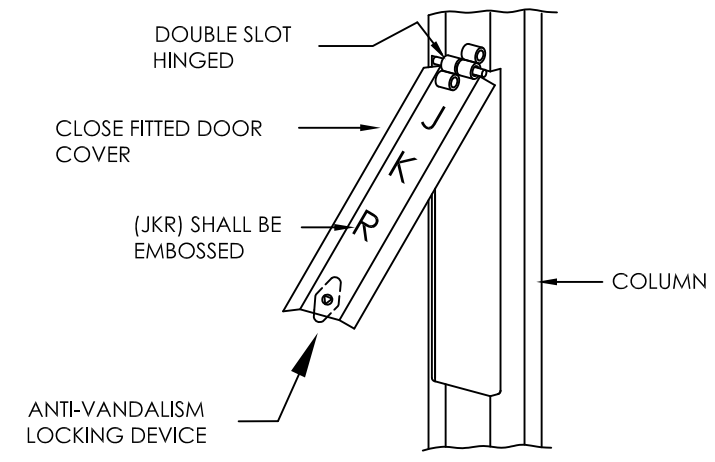
DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR



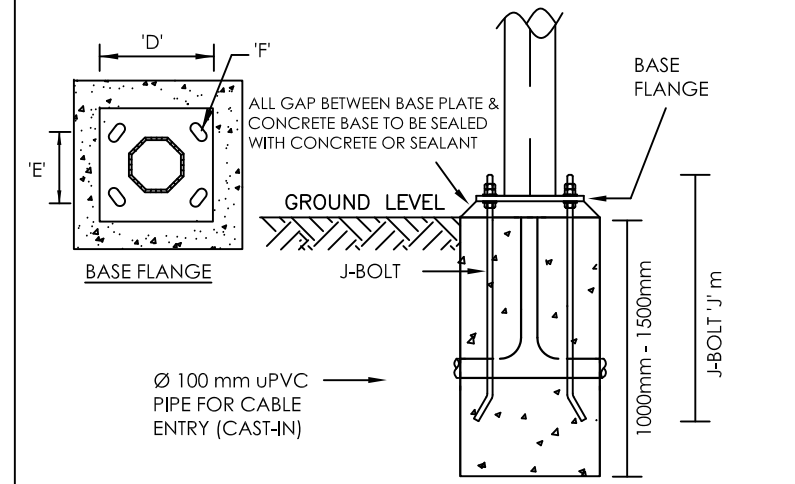
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



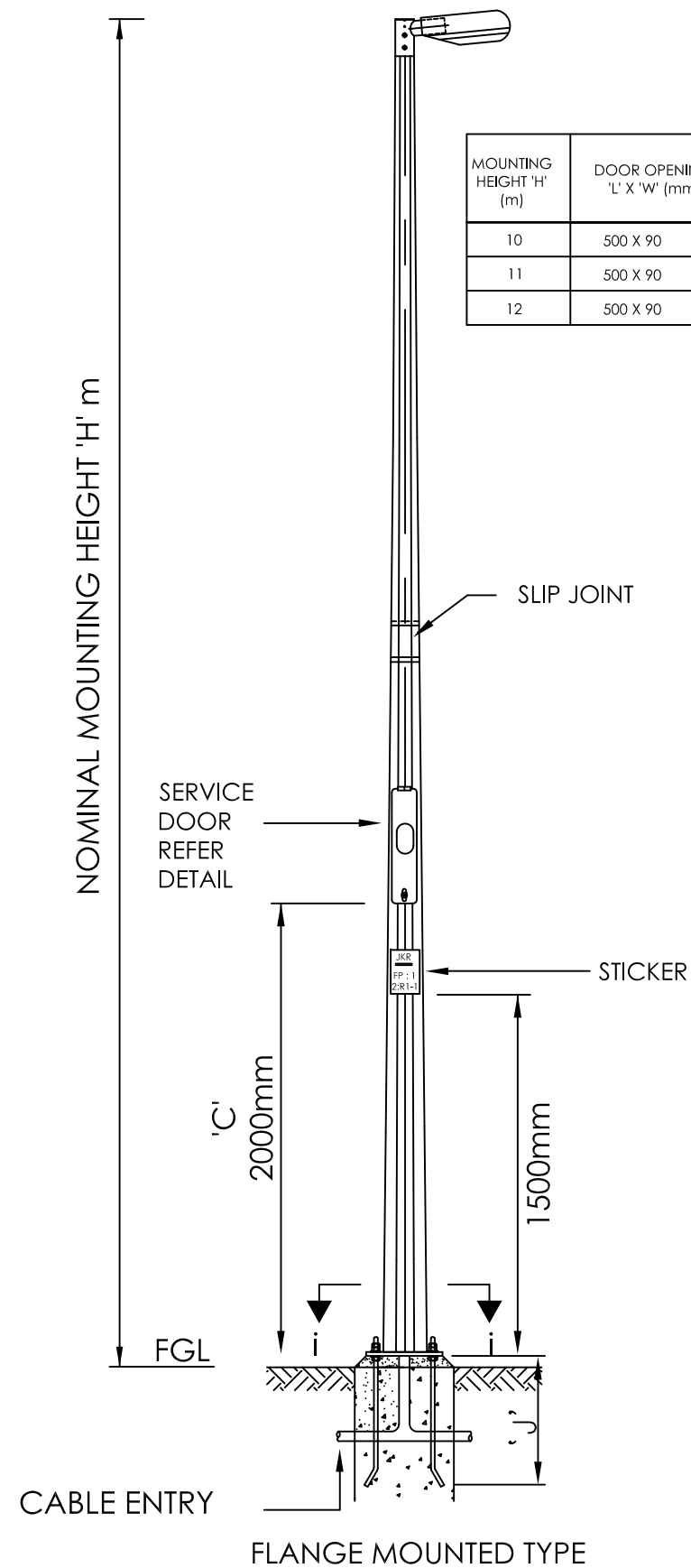
DETAIL 4: BASE BOARD FOR TERMINAL PANEL



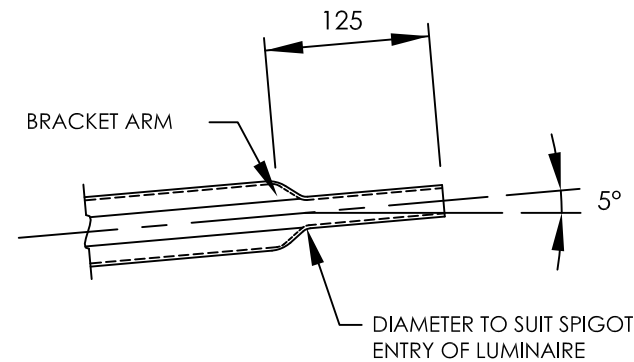
DETAIL 5: HINGED DOOR ISOMETRIC VIEW



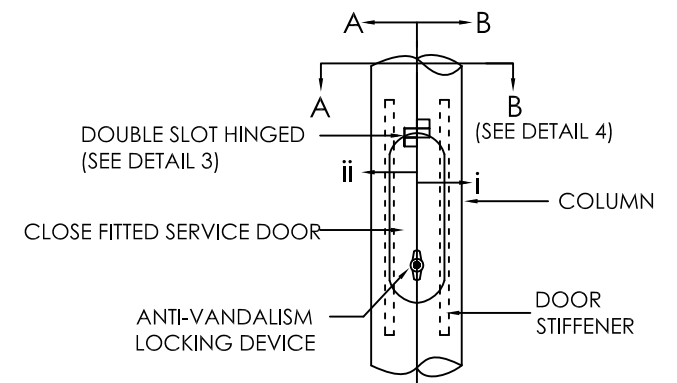
DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION



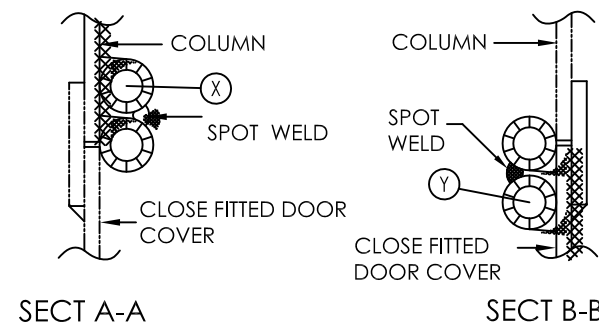
MOUNTING HEIGHT 'H' (m)	DOOR OPENING 'L' X 'W' (mm)	DOOR OPENING FROM GROUND 'C' (mm)	TYPE OF POLE			J-BOLT 'J' (mm)
			FLANGED			
			D	E	F	
10	500 X 90	2000	355	260	30 X 65	Ø 25mm 560mm TO 600mm LENGTH
11	500 X 90	2000	355	260	30 X 65	
12	500 X 90	2000	400	300	30 X 65	



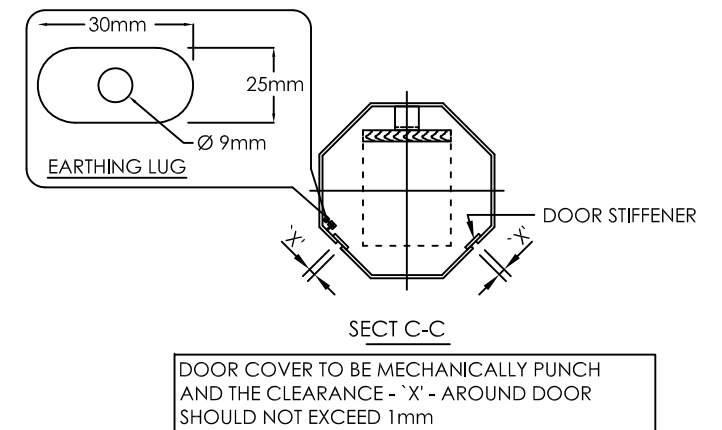
DETAIL 1: SPIGOT END OF BRACKET ARM



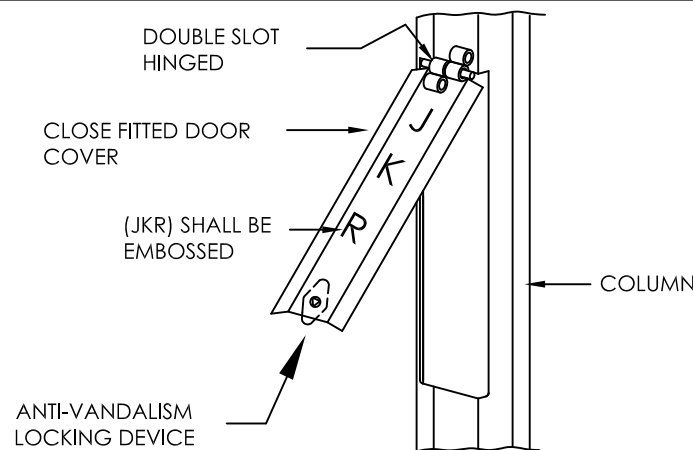
DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR



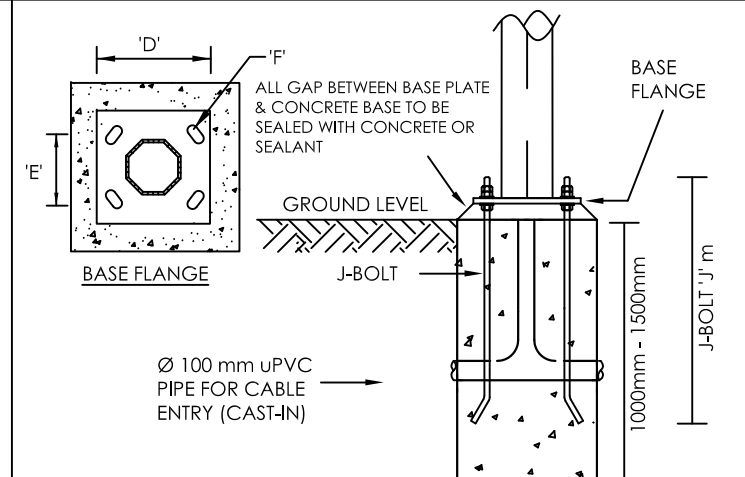
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



DETAIL 4: BASE BOARD FOR TERMINAL PANEL

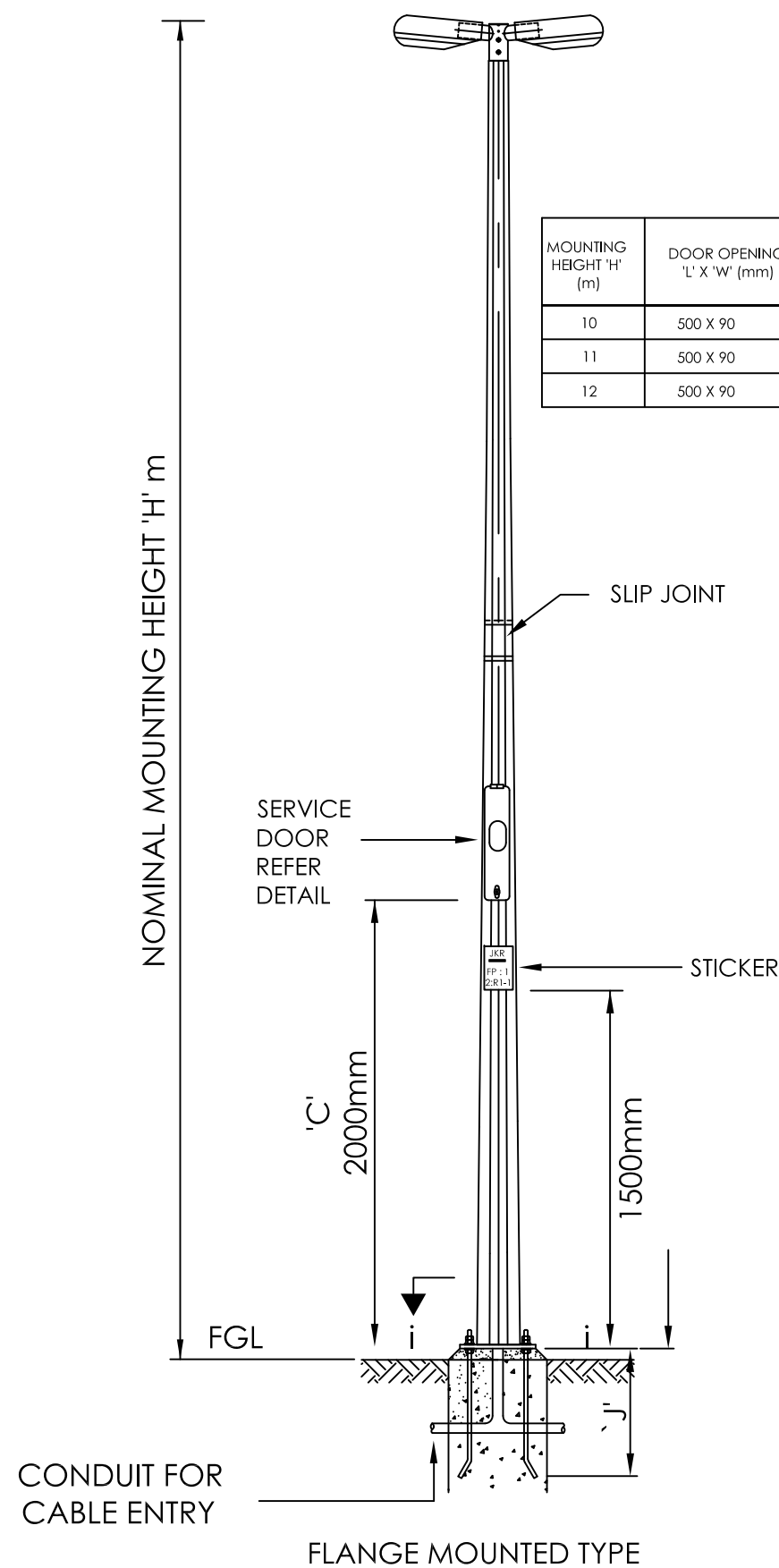


DETAIL 5: HINGED DOOR ISOMETRIC VIEW

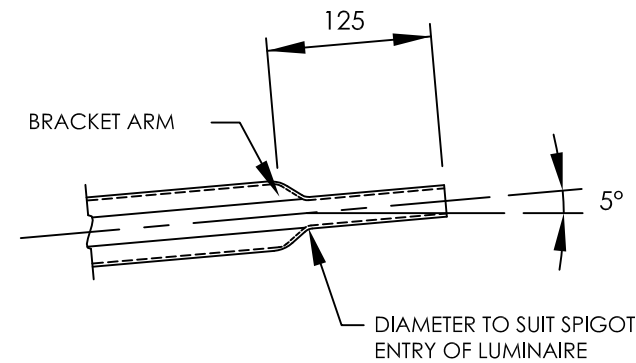


DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

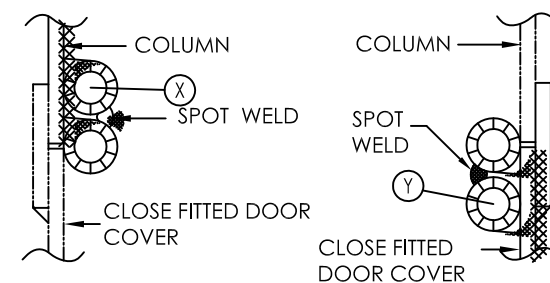
TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK : NOOR FADZILAH BIN RAMLEE	PENGARAH PERUNDING REKABENTUK Ir. MOHD NAZRI BIN SHAARI	PENGARAH KANAN DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	SINGLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN - HIGH LEVEL SERVICE DOOR		NAMA :	
			JURUTERA ELEKTRIK PENGUASA : SHAHRUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA : MARNIZA / FARIZAL		TARIKH: NOVEMBER 2015		BIL. LUKISAN : KPKR/J/R/STD/AM 711-1	JAWATAN :
	PINDAAN		NOT TO SCALE UKURAN			BIL. HELAIAN : 11/17			



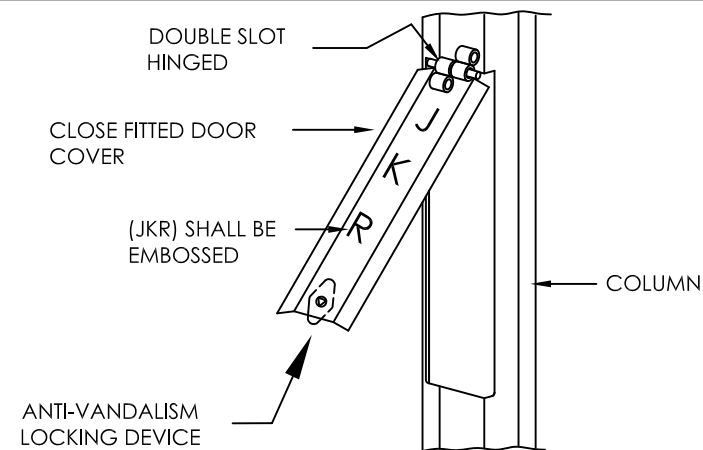
MOUNTING HEIGHT 'H' (m)	DOOR OPENING 'L' X 'W' (mm)	DOOR OPENING FROM GROUND 'C' (mm)	TYPE OF POLE FLANGED			J-BOLT 'J' (mm)
			D	E	F	
10	500 X 90	2000	355	260	30 X 65	Ø 25mm 560mm TO 600mm LENGTH
11	500 X 90	2000	355	260	30 X 65	
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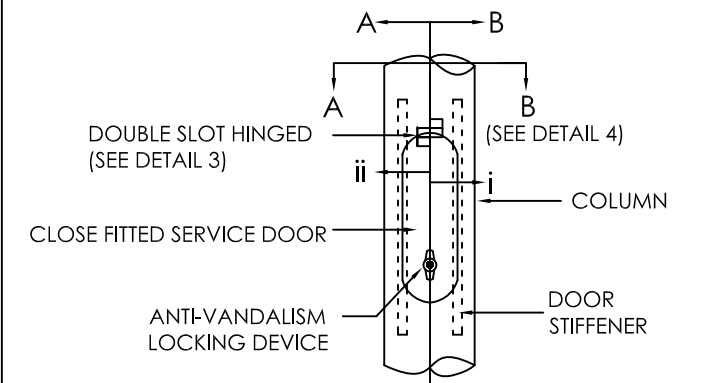
DETAIL 1: SPIGOT END OF BRACKET ARM



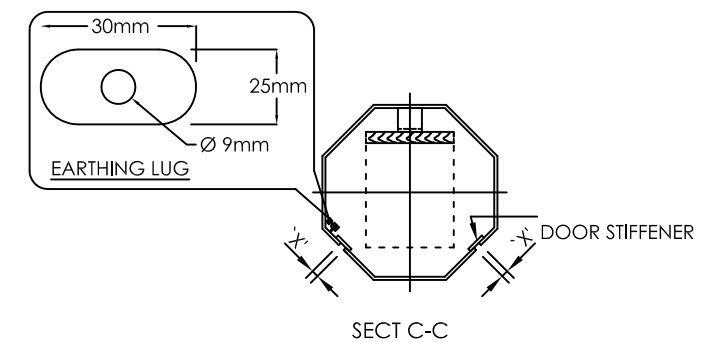
DETAIL 3: DOUBLE SLOT HINGED RIVED TO COLUMN



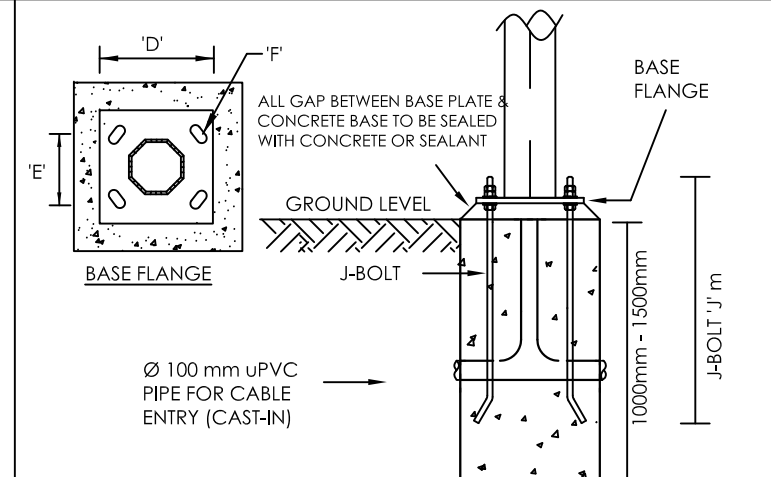
DETAIL 5: HINGED DOOR ISOMETRIC VIEW



DETAIL 2: DOUBLE SLOT HINGED SERVICE DOOR



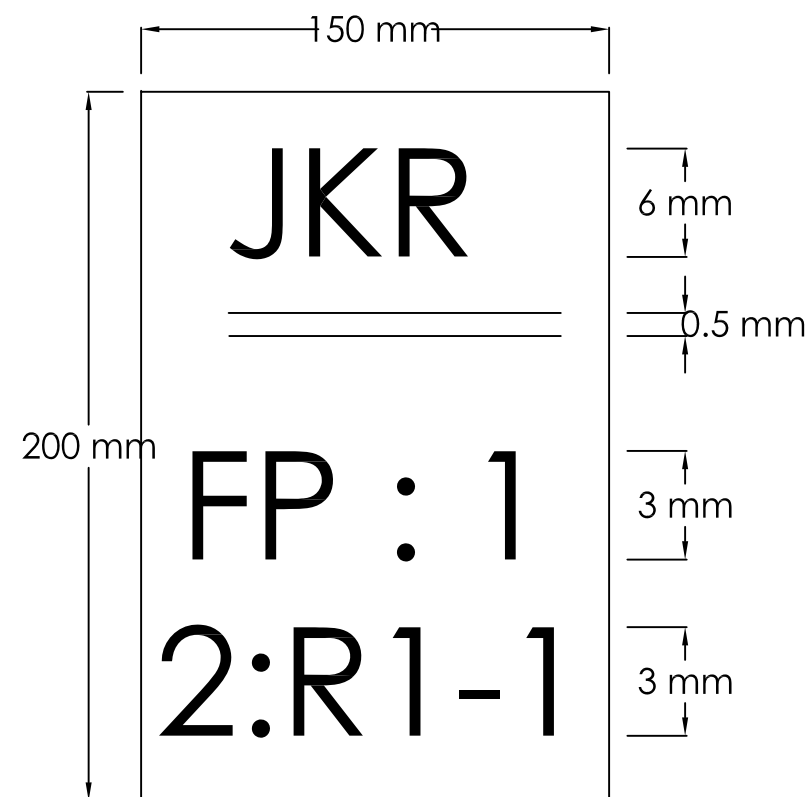
DETAIL 4: BASE BOARD FOR TERMINAL PANEL



DETAIL 6: BASE PLANTED & CONCRETE FOUNDATION

TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA		SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK : NOORFAZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK Ir. MOHD NAZRI DIN JAMALI	PENGARAH KANAN DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	DOUBLE ARM OCTAGONAL TAPERED FLANGED TYPE (WITHOUT ARM TYPE) HDG STEEL COLUMN - HIGH LEVEL SERVICE DOOR		NAMA :	
			JURUTERA ELEKTRIK PENGUASA : SHAHROL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA : MARNIZA / FARIZAL		TARIKH: NOVEMBER 2015 BIL. LUKISAN : KPKR/J/R/STD/AM 712 - 1		JAWATAN :	
PINDAAN			NOT TO SCALE UKURAN			BIL. HELAIAN : 12/17			

TECHNICAL INFORMATION AND STICKER
FOR ROAD LIGHTING COLUMN



LEGEND :-

FP:1 ~ FEEDER PILLAR NUMBER.
2 ~ CIRCUIT NUMBER .
R1-1 ~ COLUMN NUMBER
PVC TYPE ~ HIGH PERFORMANCE PVC FILM
WITH SPECIAL POLYMER.
COLOUR ~ BACKGROUND-GOLDEN YELLOW
(BS 381C).
FONT- BLACK.

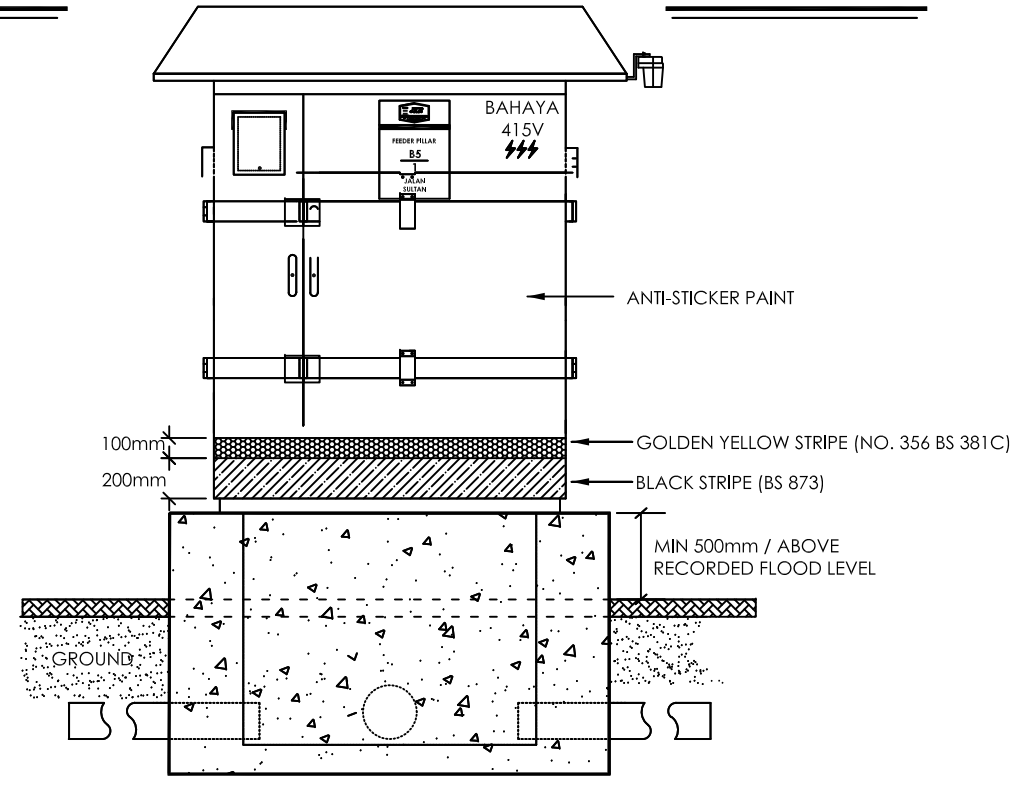
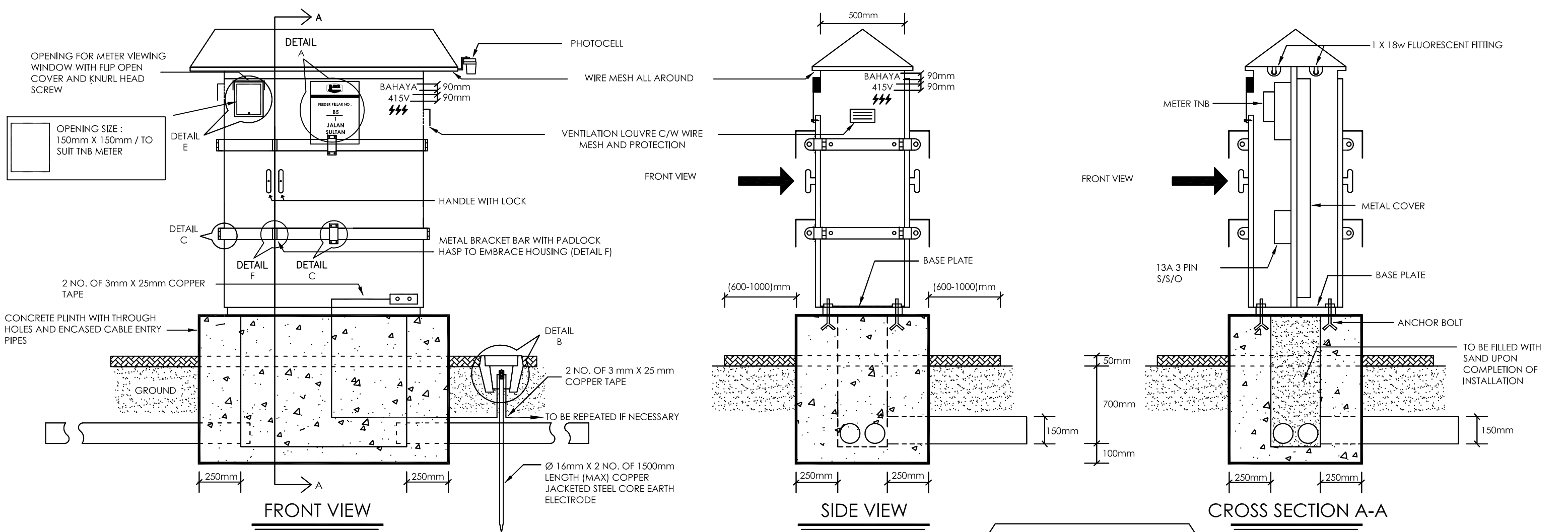
TECHNICAL INFORMATION

1. COLUMN DESIGN CONFORMS TO BS 5649.
 2. BASIC WIND SPEED - 35 m/s
 3. STEEL COLUMN MATERIAL CONFORMS TO BS EN 10025 Fe 430 OR Fe 510.
OTHER STEEL ACCESSORIES CONFORMS TO Fe 360.
 4. COLUMN SEAM WELDING CONFORMS TO BS 5135 BY AUTOMATIC
CONTINUOUS WELDING PROCESS.
 5. COLUMNS ARE HOT-DIP GALVANIZED TO BS 729 WITH
MINIMUM AVERAGE COATING WEIGHT OF 460 gm/m
FOR ANY INDIVIDUAL TEST AREA.
 6. ALL DIMENSIONS IN mm UNLESS INDICATED OTHERWISE.
 7. QUALITY CONTROL PROCEDURE : THE SUPPLIER/MANUFACTURER
AND GALVANIZER OF THE COLUMN SHALL BE ISO 9001 ACCREDITED.
 8. MANDATORY TESTING AT :-
MANUFACTURER'S FACTORY
- TYPE TEST TO BS 5649
PART 8
 - GALVANIZING TEST
 - MATERIAL TEST

ONE (1) SET OF ALL PRINCIPAL TEST RECORDS, TEST CERTIFICATES INCLUDING
QUALITY CONTROL TEST RESULTS, SHALL BE SUPPLIED FOR ALL TEST, CARRIED
OUT IN ACCORDANCE WITH THE SPECIFICATION, AND DULY WITNESS AND
ENDORSED BY THE RELEVANT AUTHORITY/CONSULTANT.

NOTE: LIGHTING COLUMN SHALL BE INSTALLED AT MINIMUM 600mm AWAY FROM
PAVED SHOULDER / GUARDRAIL AS RECOMENDED IN NTJ 29/2015.

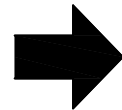
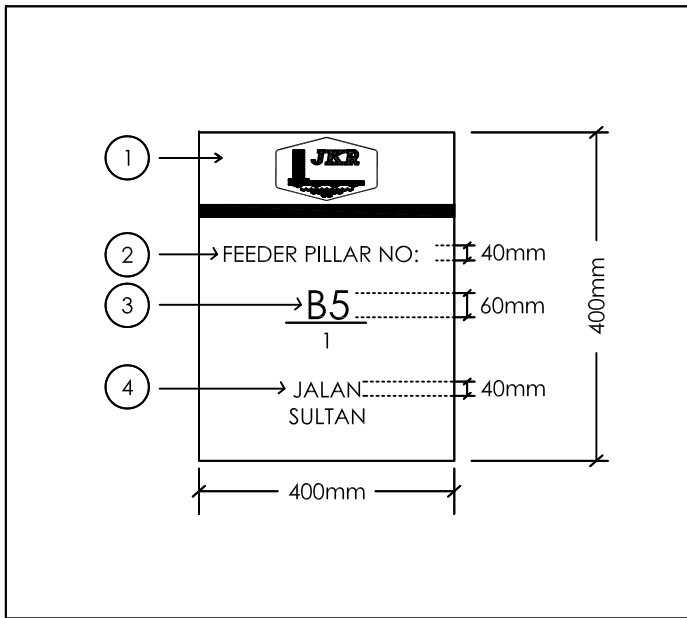
TARIKH	BUTIRAN	RUJUKAN	NOT TO SCALE UKURAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGENSAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN NAMA : JAWATAN :
				KETUA JURUTERA ELEKTRIK :  NOORADZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK  Ir. MOHD HAZRI BIN SHAARI	PENGARAH KANAN  DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	ROAD LIGHTING COLUMN DETAIL			
				JURUTERA ELEKTRIK PENGUASA:  SHAHRUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA :  MARNIZA BT. ZAINOL ABIDIN		TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPKR/J/R/STD/AM 713 - 1	BIL. HELAIAN : 13/17	
PINDAAN										



STANDARD PAINTING FOR JKR'S FEEDER PILLAR

TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK :	PENGARAH PERUNDING REKABENTUK	PENGARAH KANAN	FEEDER PILLAR HOUSING			NAMA :	
			NOORFADZILAH BINTI RAMLEE	Ir. MOHD NAZRI BIN SHAARI	DATO' Ir. HJ. MOHD FAZLI BIN OSMAN				JAWATAN :	
			JURUTERA ELEKTRIK PENGUASA:	PENOLONG JURUTERA :						
	PINDAAN		SHAHROL AFFENDY BIN ABU BAKAR	FARIZAL BIN IBRAHIM		TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPKR/J/R/STD/AM 714 - 1	BIL. HELAIAN : 14/17		

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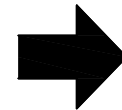
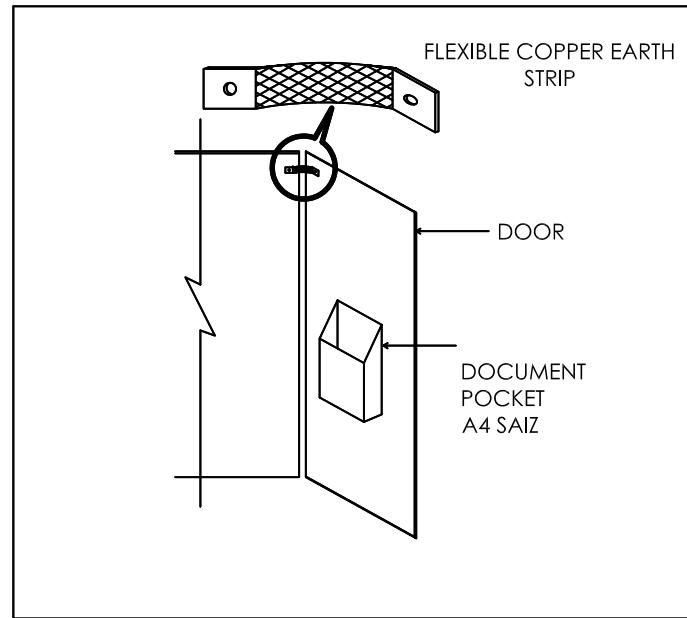


DETAIL A

LABEL FOR FEEDER PILLAR

- ▶ Using yellow and black colour (JKR).
- ▶ Label to be sprayed on housing before anti-sticker paint coating / label using metal plate and riveted to the housing after anti-sticker paint coating.
- ① GOLDEN YELLOW - No. 356 British Standard 381C
- ② BLACK - Part 1 clause 1.3.2 and 1.3.3 British Standard 873.
 - ▶ Feeder Pillar
- ③ Label
 - ▶ B/F - State Road (according to state code) / Federal Road.
 - B5**
 - ▶ 5 - Road No.
 - ▶ 1 - Feeder Pillar No.
- ④ Name of the road according to Local Authority.

4

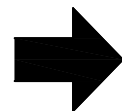
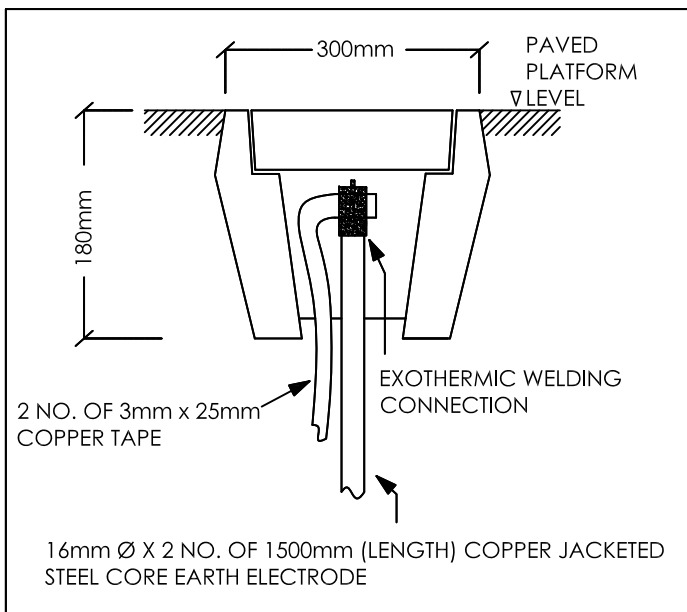


DETAIL D

FEEDER PILLAR / CONTROLLER DOOR

- ▶ Bonding of feeder pillar door using flexible copper earth bonding strip.

2

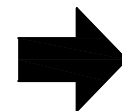
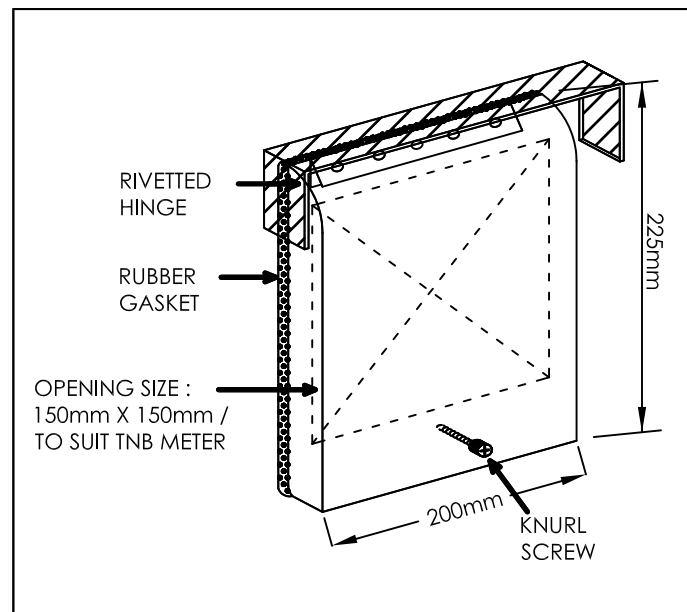


DETAIL B

CONCRETE EARTH INSPECTION CHAMBER

- ▶ 300 mm(W) X 300 mm(L) X 180 mm(D)
- ▶ Heavy duty precast concrete earth chamber with removable concrete cover.
- ▶ To be repeated if necessary

5

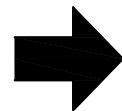
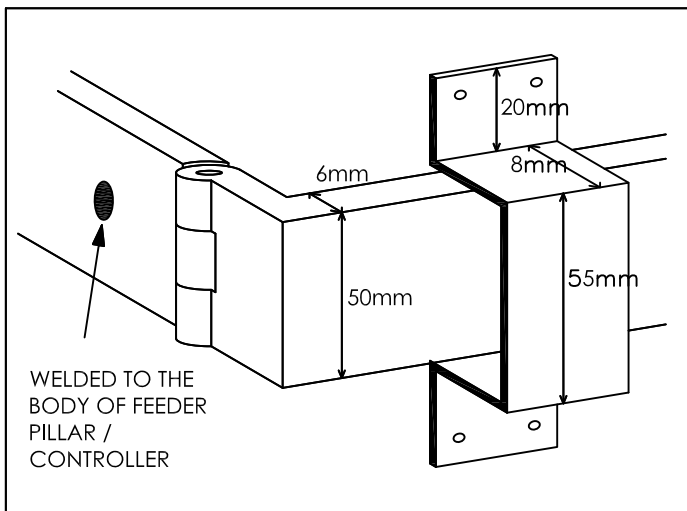


DETAIL E

COVER FOR TNB METER

- ▶ Flip open cover with gasket, knurlhead screw for TNB meter.
- ▶ Material for Flip-open Cover shall be made of Fibreglass

3

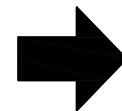
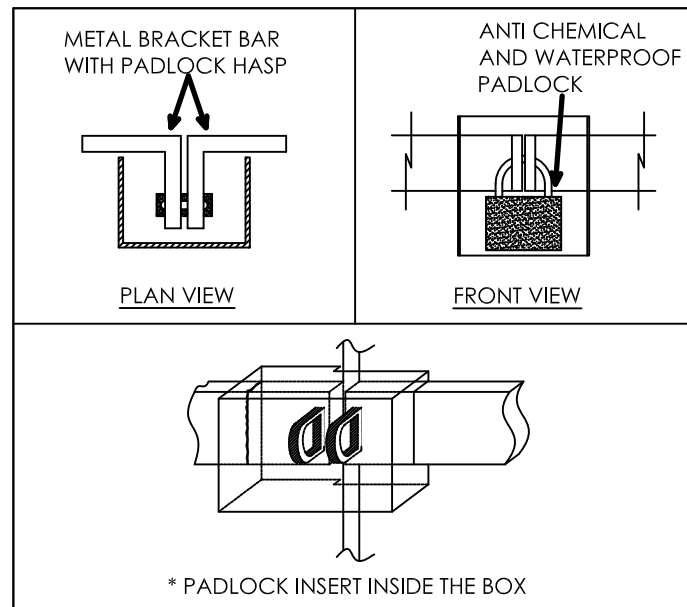


DETAIL C

METAL BAR AND HINGE

- ▶ Metal bar and hinge is fixed to the body of feeder pillar
- ▶ Support bracket for metal bar

6



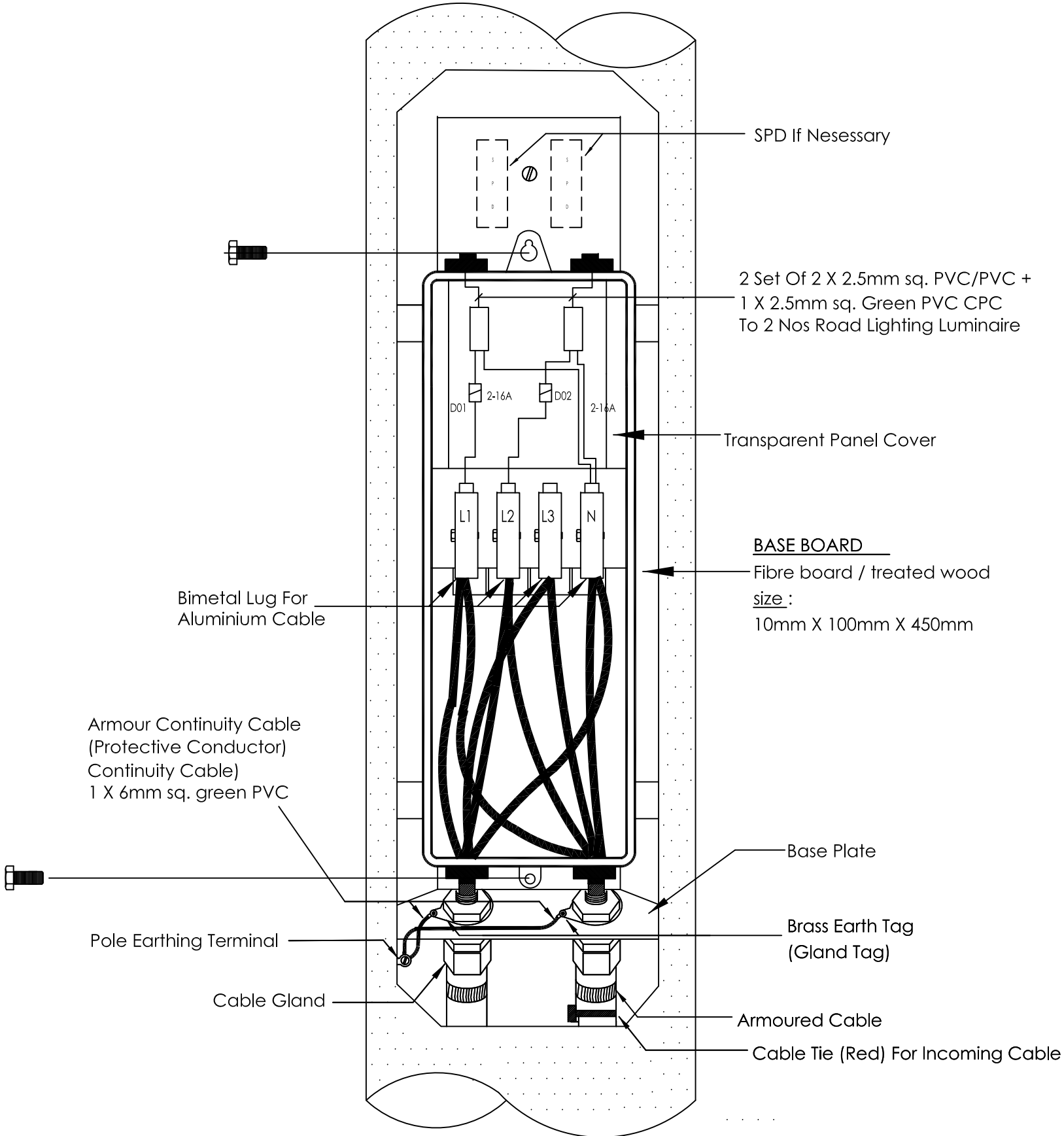
DETAIL F

COVERED PADLOCK HASP

- ▶ Covered hasp c/w anti-chemical, weatherproof padlock.

TARIKH	BUTIRAN	RUJUKAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN	
			KETUA JURUTERA ELEKTRIK : NOORFADZILAH BINTI RAMLEE	PENGARAH PERUNDING REKABENTUK IR. MOHD NAZRI BIN SHAARI	PENGARAH KANAN DATO' IR. HJ. MOHD FAZLI BIN OSMAN	DETAILS OF FEEDER PILLAR			NAMA :	JAWATAN :
			JURUTERA ELEKTRIK PENGUASA: SHAHROL AFFENDI BIN ABU BAKAR	PENOLONG JURUTERA : FARIZAL BIN IBRAHIM		TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPKR/J/R/STD/AM 715 - 1	BIL. HELAJAN : 15/17		
PINDAAN			NOT TO SCALE UKURAN							

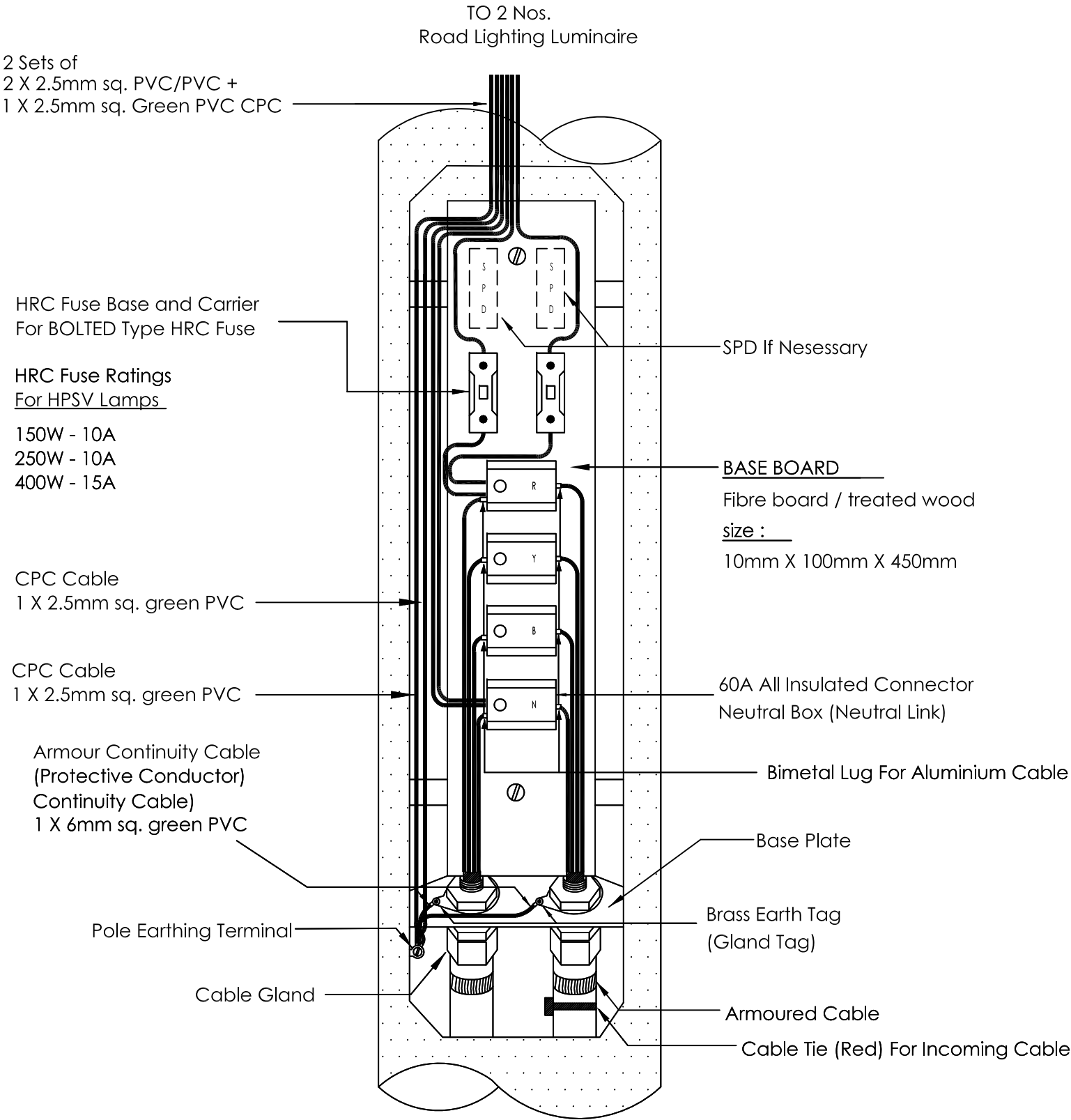
MODULAR TERMINATION BOX



MODULAR TERMINATION BOX COMPLETE WITH
LOOPING IN & OUT CABLE IN ROAD LIGHTING COLUMN

TARIKH	BUTIRAN	RUJUKAN	NOT TO SCALE UKURAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN
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				JURUTERA ELEKTRIK PENGUASA:  SHAHRU' AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA:  KHAIRUDDIN BIN MAHAMAD SHA'UDI					
PINDAAN							TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPKR/J/R/STD/AM 716 - 1	BIL. HELAIAN : 16/17	

TERMINATION BOARD



TERMINATION AND LOOPING IN & OUT CABLE
(RECOMMENDED FOR ROAD LIGHTING COLUMN WITH SERVICE DOOR AT 2M HEIGHT)

TARIKH	BUTIRAN	RUJUKAN	NOT TO SCALE UKURAN	CAWANGAN KEJURUTERAAN ELEKTRIK			JABATAN KERJA RAYA MALAYSIA			SAYA DENGAN INI TELAH MENYEMAK DAN MENGESAHKAN BAHAWA LUKISAN PIAWAI INI BOLEH DIGUNAPAKAI KE ATAS PROJEK BERKENAAN NAMA : JAWATAN :
				KETUA JURUTERA ELEKTRIK :  NOORFADZLAN BIN RAMLEE	PENGARAH PERUNDING REKABENTUK  Ir. MOHD HAZRI BIN SHAARI	PENGARAH KANAN  DATO' Ir. Hj. MOHD FAZLI BIN OSMAN	TERMINATION BOARD			
				JURUTERA ELEKTRIK PENGUASA:  SHAHRUL AFFENDY BIN ABU BAKAR	PENOLONG JURUTERA :  KHAIRUDDIN BIN MAHAMAD SHA'UDI		TARIKH: NOVEMBER 2015	BIL. LUKISAN : KPR/J/R/STD/AM 717 - 1	BIL. HELAIAN : 17/17	
	PINDAAN									

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