DISTRIBUTION CONSTRUCTION STANDARDS

Date Published: 14 May 2020

PART 10 - SUBSTATIONS

G2 - DISTRIBUTION SUBSTATION NETWORK ARRANGEMENTS

For application to

Horizon Power

Electricity Distribution Networks

G2 - DISTRIBUTION SUBSTATION NETWORK ARRANGEMENTS – Drawing Register

Number	Description
G2-1/1	6.6kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-1/2	6.6kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-2/1	6.6kV Overhead Supply Customer Owned Substation, Typical Urban
G2-2/2	6.6kV Overhead Supply Customer Owned Substation Typical Urban
G2-3/1	6.6kV Underground Supply District and Sole Use Substation, Typical Urban
G2-4/1	6.6kV Underground Supply Customer Owned Subststion, Typical Urban
G2-4/2	6.6kV Underground Supply Customer Owned Substation, Typical Urban
G2-5/1	11kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-5/2	11kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-5/3	11kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-6/1	11kV Overhead Supply Customer Owned Substation, Typical Urban
G2-6/2	11kV Overhead Supply Customer Owned Substation, Typical Urban
G2-7/1	11kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-7/2	11kV Underground Supply District and Sole Use Substation, Typical Urban
G2-7/3	11kV Underground Supply District and Sole Use Substation, Typical Urban
G2-8/1	11kV Underground Supply Customer Owned Substation, Typical Urban
G2-8/2	11kV Underground Supply Customer Owned Substation, Typical Urban
G2-9/1	22kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-9/2	22kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-9/3	22kV Overhead Supply District and Sole Use Substation, Typical Urban
G2-10/1	22kV Overhead Supply District and Sole Use Substation, Typical Rural
G2-10/2	22kV Overhead Supply District and Sole Use Substation, Typical Rural
G2-11/1	22kV Overhead Supply Customer Owned Substation, Typical Urban
G2-11/2	22kV Overhead Supply Customer Owned Substation, Typical Urban
G2-12/1	22kV Overhead Supply Customer Owned Substation, Typical Rural
G2-13/1	22kV Underground Supply District and Sole Use Substation, Typical Urban and Rural
G2-13/2	22kV Underground Supply District and Sole Use Substation, Typical Urban and Rural
G2-13/3	22kV Underground Supply District and Sole Use Substation, Typical Urban and Rural
G2-14/1	22kV Underground Supply Customer Owned Substation, Typical Urban and Rural
G2-14/2	22kV Underground Supply Customer Owned Substation, Typical Urban and Rural
G2-15/1	33kV Overhead Supply District and Sole Use Substation, Typical Rural
G2-16/1	33kV Overhead Supply Customer Owned Substatin, Typical Rural

Number	Description
G2-17/1	33kV Underground Supply District and Sole Use Substation, Typical Urban and Rural
G2-17/2	33kV Underground Supply District and Sole Use Substation, Typical Urban and Rural
G2-17/3	33kV Underground Supply District and Sole Use Substation, Typical Urban and Rural
G2-18/1	33kV Underground Supply Customer Owned Substation, Typical Urban and Rural
G2-18/2	33kV Underground Supply Customer Owned Substation Typical Urban and Rural

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

6.6kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSTATION, TYPICAL URBAN

DRAWING No. G2-1/1

REVISION B

DATE FEB18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY		G3-02	N/A	N/A	N/A
ONE	160 to 630 MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY		N/A	N/A	N/A	N/A
ONE	160 to 1000 NON MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY FOR USE OF DROP OUT FUSES AS AN ALTERNATIVE FOR THIS ARRANGEMENT		G3-04	G3-08	G3-14	G3-18
ONE	160 to 1000 NON MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY		N/A	N/A	G3-13	G3-17

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

REFERENCE DRAWING

6.6kV OVERHEAD SUPPLY
DISTRICT AND SOLE USE
SUBSTATION, TYPICAL URBAN

REVISION	DATE
B	FEB18

DRAWING No.
G2-1/2

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.
THIS DRAWING IN NO WAY RELATES TO WESTERN POWER DRAWING WITH THE SAME NO.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
TWO	160 to 1000 NON MPS		G3-06	G3-10	G3-16	G3-20
SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.						
TWO	160 to 1000 NON MPS		N/A	N/A	G3-15	G3-19
SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.						

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

6.6kV OVERHEAD SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL URBAN

DRAWING No. G2-2/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
>1.5MVA up to 2MVA DEPENDING ON CIRCUMSTANCES THIS ARRANGEMENT MAY BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS ⩽2MVA BUT >1.5MVA		G3-22	G3-23
>1.5MVA up to 2MVA ALTERNATIVE TO ABOVE WHERE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE SECOND CABLE & ISOLATOR FOR IMPROVED SECURITY.		G3-22	G3-23
>2MVA up to 4MVA EACH SWITCHBOARD IS SUPPLIED OFF A SEPARATE FEEDER (TWO FEEDERS OPERATING RADIALLY).		G3-22	G3-23

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

6.6kV OVERHEAD SUPPLY
CUSTOMER OWNED
SUBSTATION, TYPICAL URBAN

DRAWING No.
G2-2/2

REVISION
B

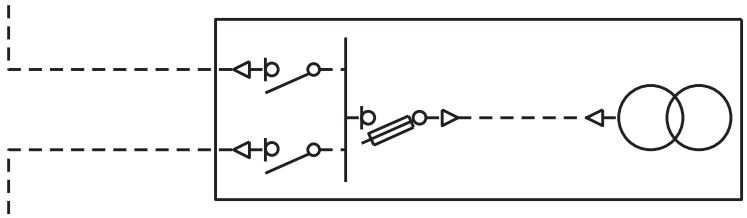
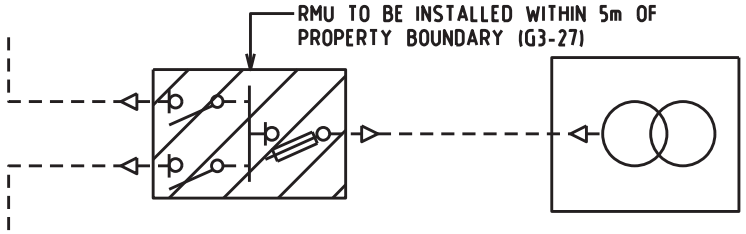
DATE
FEB18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
ABOVE 4MVA DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION.		G3-22	G3-23

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS		G3-01	N/A	N/A	N/A
REMOTE FUSE SWITCH AVAILABLE						
ONE	160 to 630 MPS		G3-02	N/A	N/A	N/A
MV SWITCHGEAR REQUIRED. SUBSTATION BE LOCATED WITHIN 30m OF PROPERTY BOUNDARY.						
ONE	160 to 630 MPS		N/A	N/A	N/A	N/A
MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY.						
ONE	160 to 1000 NON MPS		G3-03	G3-07	G3-13	G3-17
REMOTE FUSE SWITCH AVAILABLE						

REFERENCE DRAWING

6.6kV UNDERGROUND SUPPLY
DISTRICT AND SOLE USE
SUBSTATION, TYPICAL URBAN

DRAWING No
G2-3/1

REVISION
B

DATE
FEB18

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

6.6kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSTATION, TYPICAL URBAN

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
>1.5MVA up to 2MVA DEPENDING ON CIRCUMSTANCES THIS ARRANGEMENT MAY BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS ⩽2MVA BUT >1.5MVA.		G3-22	G3-23
>2MVA up to 4MVA EACH SWITCHBOARD IS SUPPLIED OFF A SEPARATE FEEDER (TWO FEEDERS OPERATING RADIALLY.		G3-22	G3-23

DRAWING No.	REVISION	DATE
G2-4/1	B	FEB18

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

6.6kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSTATION, TYPICAL URBAN

DRAWING No. G2-4/2

REVISION B

DATE FEB.18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
ABOVE 4MVA DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION.		G3-22	G3-23

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

11kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSTATION, TYPICAL URBAN

REVISION	DATE
B	FEB 18

DRAWING No. G2-5/1

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY.		G3-02	N/A	N/A	N/A
ONE	160 to 630 MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY.		N/A	N/A	N/A	N/A
ONE	160 to 1000 NON MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY.		G3-04	G3-08	G3-14	G3-18
ONE	160 to 1000 NON MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY.		N/A	N/A	G3-13	G3-17

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

11kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN

DRAWING No. G2-5/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		G3-06	G3-10	G3-16	G3-20
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		N/A	N/A	G3-15	G3-19
THREE OR FOUR	160 to 1000 NON MPS	WHERE THE TRANSFORMERS ARE TO BE LOCATED WITHIN 30m OF THE BOUNDARY, THE MV SWITCHROOM CAN BE ADJACENT TO THE TRANSFORMERS. HOWEVER WHERE THE TRANSFORMERS ARE TO BE LOCATED MORE THAN 30m FROM THE BOUNDARY THE MV SWITCHROOM IS TO BE LOCATED SEPARATELY FROM THE TRANSFORMERS & SHOULD BE WITHIN 5m OF THE BOUNDARY. WHERE LESS TRANSFORMERS CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE MINIMUM ARRANGEMENT.		N/A	N/A	N/A	G3-21

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

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NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
THREE OR FOUR	160 to 1000 NON MPS		N/A	N/A	N/A	G3-21
ALTERNATIVE TO PREVIOUS WHERE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE SECOND CABLE & ISOLATOR FOR IMPROVED SECURITY.						

11kV OVERHEAD SUPPLY
DISTRICT AND SOLE USE
SUBSATION, TYPICAL URBAN

DRAWING No.
G2-5/3

REVISION
B

DATE
FEB 18

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

11kV OVERHEAD SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL URBAN

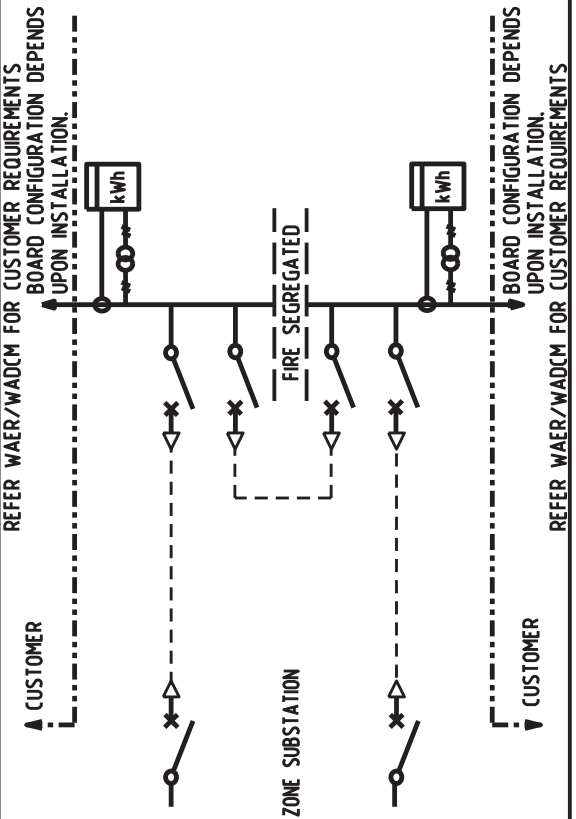
DRAWING No. G2-6/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
>2MVA up to 4MVA DEPENDING ON CIRCUMSTANCES THIS ARRANGEMENT MAY ALSO BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS ≤2MVA BUT > 1.5MVA		G3-22	G3-23
>2MVA up to 4MVA ALTERNATIVE TO ABOVE WHERE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE SECOND CABLE & ISOLATOR FOR IMPROVED SECURITY.		G3-22	G3-23
>4MVA up to 8MVA EACH SWITCHBOARD SUPPLIED OFF A SEPARATE FEEDER. (TWO FEEDERS OPERATING RADIALLY)		G3-22	G3-23

SUBSTATION ARRANGEMENT DRAWING	G-3-22		
MV SYSTEM ARRANGEMENT			
LOAD RANGE			
COMMENTS	ABOVE 8MVA	DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION	

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HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

11kV OVERHEAD SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL URBAN

REVISION	DATE
B	FEB 18

DRAWING No.

G2-6/2

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

11kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN

DRAWING No. G2-7/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS		G-3-01	N/A	N/A	N/A
REMOTE FUSE SWITCH AVAILABLE						
ONE	160 to 630 MPS		G-3-02	N/A	N/A	N/A
MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY						
ONE	160 to 630 MPS		N/A	N/A	N/A	N/A
MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY						
ONE	160 to 1000 NON MPS		G-3-03	G-3-07	G-3-13	G-3-17
REMOTE FUSE SWITCH AVAILABLE						

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

11kV UNDERGROUND SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN

DRAWING No. G2-7/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 1000 NON MPS		G3-04	G3-08	G3-14	G3-18
MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY						
ONE	160 to 1000 NON MPS		N/A	N/A	G3-13	G3-17
MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY						
TWO	160 to 1000 NON MPS		G3-06	G3-10	G3-16	G3-20
SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.						
TWO	160 to 1000 NON MPS		N/A	N/A	G3-15	G3-19
SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.						

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

11kV UNDERGROUND SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN

DRAWING No. G2-7/3

REVISION B

DATE FEB 18

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NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
THREE OR FOUR	160 to 1000 NON MPS		N/A	N/A	N/A	G3-21
WHERE THE TRANSFORMERS ARE TO BE LOCATED WITHIN 30m OF THE BOUNDARY, THE MV SWITCHROOM CAN BE ADJACENT TO THE TRANSFORMERS. HOWEVER WHERE THE TRANSFORMERS ARE TO BE LOCATED MORE THAN 30m FROM THE BOUNDARY THE MV SWITCHROOM IS TO BE LOCATED SEPARATELY FROM THE TRANSFORMERS & SHOULD BE WITHIN 5m OF THE BOUNDARY. WHERE LESS TRANSFORMERS CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE MINIMUM ARRANGEMENT.						

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

11kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL URBAN

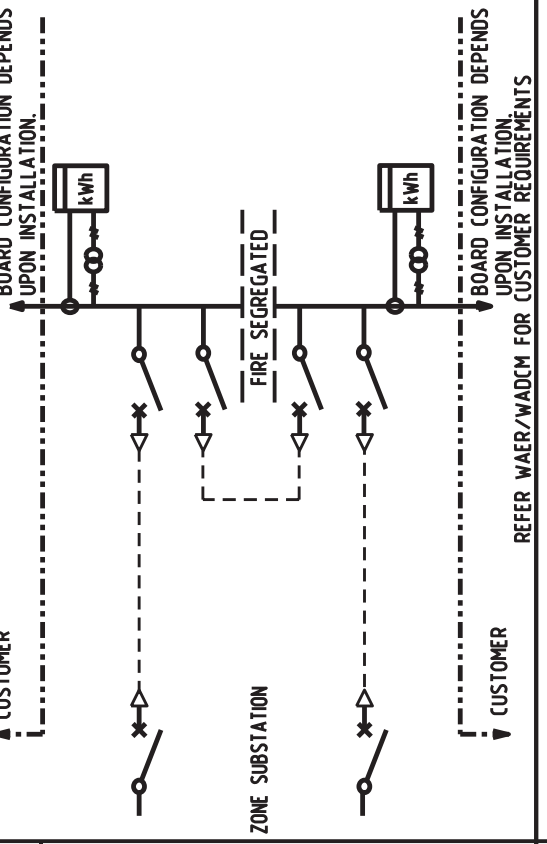
DRAWING No. G2-8/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT REFER WAER/WADCM FOR CUSTOMER REQUIREMENTS	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
>2MVA up to 4MVA DEPENDING ON CIRCUMSTANCES THIS ARRANGEMENT MAY ALSO BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS ≤2MVA BUT >1.5MVA		G3-22	G3-23
>4MVA up to 8MVA EACH SWITCHBOARD SUPPLIED OFF A SEPARATE FEEDER. (TWO FEEDERS OPERATING RADIALLY)		G3-22	G3-23

SUBSTATION ARRANGEMENT DRAWING	G3-22		
MV SYSTEM ARRANGEMENT			
LOAD RANGE			
COMMENTS	ABOVE 8MVA	DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION	

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HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

11kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL URBAN

REVISION	DATE
B	FEB 18

DRAWING No.

G2-8/2

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN

DRAWING No. G2-9/1

REVISION B

DATE FEB 18

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NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY - (REF NOTE 2)		G3-02	N/A	N/A	N/A
ONE	160 to 630 MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY		N/A	N/A	N/A	N/A
ONE	160 to 1000 NON MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY		G3-04	G3-08	G3-14	G3-18
ONE	160 to 1000 NON MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY		N/A	N/A	G3-13	G3-17

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN

DRAWING No. G2-9/2

REVISION B

DATE FEB 18

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NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		G3-06	G3-10	G3-16	G3-20
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		N/A	N/A	G3-15	G3-19
THREE OR FOUR	160 to 1000 NON MPS	WHERE THE TRANSFORMERS ARE TO BE LOCATED WITHIN 30m OF THE BOUNDARY, THE MV SWITCHROOM CAN BE ADJACENT TO THE TRANSFORMERS. HOWEVER WHERE THE TRANSFORMERS ARE TO BE LOCATED MORE THAN 30m FROM THE BOUNDARY THE MV SWITCHROOM IS TO BE LOCATED SEPARATELY FROM THE TRANSFORMERS & SHOULD BE WITHIN 5m OF THE BOUNDARY. WHERE LESS TRANSFORMERS CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE MINIMUM ARRANGEMENT.		N/A	N/A	N/A	G3-21

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY
DISTRICT AND SOLE USE
SUBSATION, TYPICAL URBAN

DRAWING No.
G2-9/3

REVISION
B

DATE
FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
THREE OR FOUR	160 to 1000 NON MPS		N/A	N/A	N/A	G3-21
ALTERNATIVE TO PREVIOUS WHERE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE SECOND CABLE & ISOLATOR FOR IMPROVED SECURITY.						

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY
DISTRICT AND SOLE USE
SUBSATION, TYPICAL RURAL

DRAWING No. G2-10/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS			G3-01	N/A	N/A	N/A
ONE	160 to 1000 NON MPS			G3-03	G3-07	G3-13	G3-17
TWO	160 to 1000 NON MPS			G3-05	G3-09	G3-15	G3-19

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL RURAL

DRAWING No. G2-10/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
THREE OR FOUR	500 to 1000 NON MPS	WHERE THE TRANSFORMERS ARE TO BE LOCATED WITHIN 30m OF THE BOUNDARY, THE MV SWITCHROOM CAN BE ADJACENT TO THE TRANSFORMERS. HOWEVER WHERE THE TRANSFORMERS ARE TO BE LOCATED MORE THAN 30m FROM THE BOUNDARY THE MV SWITCHROOM IS TO BE LOCATED SEPARATELY FROM THE TRANSFORMERS & SHOULD BE WITHIN 5m OF THE BOUNDARY. WHERE LESS TRANSFORMERS CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS AND THE MINIMUM ARRANGEMENT.		N/A	N/A	N/A	G3-21
THREE OR FOUR	500 to 1000 NON MPS	ALTERNATIVE TO ABOVE WHERE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE SECOND CABLE & ISOLATOR FOR IMPROVED SECURITY.		N/A	N/A	N/A	G3-21

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL URBAN

DRAWING No. G2-11/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
>2MVA up to 4MVA DEPENDING ON CIRCUMSTANCES THIS ARRANGEMENT MAY ALSO BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS ⩽2MVA BUT >1.5MVA		G3-22	G3-23
>2MVA up to 4MVA ALTERNATIVE TO ABOVE WHERE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE SECOND CABLE & ISOLATOR FOR IMPROVED SECURITY.		G3-22	G3-23
>4MVA up to 8MVA EACH SWITCHBOARD SUPPLIED FROM A SEPARATE LEG OF A Y SPLIT FEEDER. (MAY BE FROM THE SAME OR DIFFERENT FEEDERS)		G3-22	G3-23

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL URBAN

DRAWING No. G2-11/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING
>8MVA up to 15MVA SINGLE DEDICATED FEEDER FROM ZONE SUBSTATION TO THE CUSTOMER. (MINIMUM ARRANGEMENT)		G3-22
ABOVE 15MVA DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION NOTE:- CAN ALSO BE USED AS AN ALTERNATIVE TO ABOVE WHERE THE CUSTOMER IS PREPARED TO PAY THE ADDITIONAL COSTS. IN SUCH CASES ISOLATORS CAN BE USED IN PLACE OF CIRCUIT BREAKERS AND ONE BUS SECTION SWITCH MUST BE A N.O.P.		G3-22

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV OVERHEAD SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL RURAL

DRAWING No. G2-12/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING
> 2MVA up to 4MVA DEPENDING ON CIRCUMSTANCES THIS MAY ALSO BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS < 2MVA BUT > 1.5MVA		G3-27
> 4MVA up to 8MVA EACH SWITCHBOARD SUPPLIED FROM A SEPARATE LEG OF A Y SPLIT FEEDER. (MAY BE FROM THE SAME OR DIFFERENT FEEDERS) THIS ARRANGEMENT MAY ALSO BE USED FOR LOADS AS ABOVE WHERE THE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE ADDITIONAL METERING UNIT AND TWO ADDITIONAL ISOLATORS.		G3-27
> 8MVA up to 15MVA SINGLE DEDICATED FEEDER FROM ZONE SUBSTATION TO THE CUSTOMER.		G3-27
ABOVE 15MVA DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION. NOTE:- CAN ALSO BE USED AS AN ALTERNATIVE TO ABOVE WHERE THE CUSTOMER IS PREPARED TO PAY ADDITIONAL COSTS. IN SUCH CASES THE CUSTOMERS BUS SECTION WOULD BE A N.O.P. c/w LOCK BY HP		G3-27

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV UNDERGROUND SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-13/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS		G3-01	N/A	N/A	N/A
REMOTE FUSE SWITCH AVAILABLE						
ONE	160 to 630 MPS		G3-02	N/A	N/A	N/A
MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY						
ONE	160 to 630 MPS		N/A	N/A	N/A	N/A
MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY						
ONE	160 to 1000 NON MPS		G3-03	G3-07	G3-13	G3-17
REMOTE FUSE SWITCH AVAILABLE						

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV UNDERGROUND SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-13/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 1000 NON MPS	MV SWITCHGEAR REQUIRED, SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY		G3-04	G3-08	G3-14	G3-18
ONE	160 to 1000 NON MPS	MV SWITCHGEAR REQUIRED, SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY		N/A	N/A	G3-13	G3-17
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		G3-06	G3-10	G3-16	G3-20
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY. WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		N/A	N/A	G3-15	G3-19

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV UNDERGROUND SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-13/3

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
			DISTRICT		SOLE USE	
COMMENTS			NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
THREE OR FOUR	160 to 1000 NON MPS		N/A	N/A	N/A	G3-21
WHERE THE TRANSFORMERS ARE TO BE LOCATED WITHIN 30m OF THE BOUNDARY, THE MV SWITCHROOM CAN BE ADJACENT TO THE TRANSFORMERS. HOWEVER WHERE THE TRANSFORMERS ARE TO BE LOCATED MORE THAN 30m FROM THE BOUNDARY THE MV SWITCHROOM IS TO BE LOCATED SEPARATELY FROM THE TRANSFORMERS & SHOULD BE WITHIN 5m OF THE BOUNDARY. WHERE LESS TRANSFORMERS CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE MINIMUM ARRANGEMENT.						

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSTATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-14/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
>2MVA up to 4MVA DEPENDING ON CIRCUMSTANCES THIS ARRANGEMENT MAY ALSO BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS >1.5MVA BUT ⩽ 2MVA		G3-22	G3-23
>4MVA up to 8MVA EACH SWITCHBOARD SUPPLIED FROM A SEPARATE LEG OF A Y SPLIT FEEDER (MAY BE FROM THE SAME OR DIFFERENT FEEDERS)		G3-22	G3-23

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

22kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSTATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-14/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING
>8MVA up to 15MVA SINGLE DEDICATED FEEDER FROM ZONE SUBSTATION TO THE CUSTOMER. (MINIMUM ARRANGEMENT)		G3-22
ABOVE 15MVA DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION NOTE:- CAN ALSO BE USED AS AN ALTERNATIVE TO ABOVE WHERE THE CUSTOMER IS PREPARED TO PAY THE ADDITIONAL COSTS. IN SUCH CASES ISOLATORS CAN BE USED IN PLACE OF CIRCUIT BREAKERS AND ONE HP BUS SECTION SWITCH MUST BE A N.O.P.		G3-22

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

33kV OVERHEAD SUPPLY DISTRICT AND SOLE USE SUBSATION, TYPICAL RURAL

DRAWING No. G2-15/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS			G3-01	N/A	N/A	N/A
ONE	160 to 1000 NON MPS			G3-03	G3-07	G3-13	G3-17
TWO	160 to 1000 NON MPS			G3-05	G3-09	G3-15	G3-19

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

33kV OVERHEAD SUPPLY CUSTOMER OWNED SUBSATION, TYPICAL RURAL

DRAWING No. G2-16/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING
> 2MVA up to 4MVA DEPENDING ON CIRCUMSTANCES THIS MAY ALSO BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS < 2MVA BUT > 1.5MVA		G3-27
> 4MVA up to 8MVA EACH SWITCHBOARD SUPPLIED FROM A SEPARATE LEG OF A Y SPLIT FEEDER. (MAY BE FROM THE SAME OR DIFFERENT FEEDERS) THIS ARRANGEMENT MAY ALSO BE USED FOR LOADS AS ABOVE WHERE THE CUSTOMER IS PREPARED TO PAY THE FULL COST OF THE ADDITIONAL METERING UNIT AND TWO ADDITIONAL ISOLATORS.		G3-27
> 8MVA up to 15MVA SINGLE DEDICATED FEEDER FROM ZONE SUBSTATION TO THE CUSTOMER.		G3-27
ABOVE 15MVA DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION. NOTE:- CAN ALSO BE USED AS AN ALTERNATIVE TO ABOVE WHERE THE CUSTOMERIS PREPARED TO PAY ADDITIONAL COSTS. IN SUCH CASES THE CUSTOMERS BUS SECTION WOULD BE A N.O.P. c/w LOCK BY HP		G3-27

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

33kV UNDERGROUND SUPPLY
DISTRICT AND SOLE USE
SUBSTATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-17/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 630 MPS	REMOTE FUSE SWITCH AVAILABLE		G3-01	N/A	N/A	N/A
ONE	160 to 630 MPS	MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY		G3-02	N/A	N/A	N/A
ONE	160 to 630 MPS	MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY		N/A	N/A	N/A	N/A
ONE	160 to 1000 NON MPS	REMOTE FUSE SWITCH AVAILABLE		G3-03	G3-07	G3-13	G3-17

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

33kV UNDERGROUND SUPPLY DISTRICT AND SOLE USE SUBSTATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-17/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
ONE	160 to 1000 NON MPS	MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY - (REF NOTE 2)		G3-04	G3-08	G3-14	G3-18
ONE	160 to 1000 NON MPS	MV SWITCHGEAR REQUIRED. SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY - (REF NOTE 2)		N/A	N/A	G3-13	G3-17
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED WITHIN 30m OF PROPERTY BOUNDARY - (REF NOTE 2). WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		G3-06	G3-10	G3-16	G3-20
TWO	160 to 1000 NON MPS	SUBSTATION LOCATED MORE THAN 30m FROM PROPERTY BOUNDARY - (REF NOTE 2). WHERE ONE TRANSFORMER CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE APPROPRIATE SINGLE TRANSFORMER ARRANGEMENT.		N/A	N/A	G3-15	G3-19

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

33kV UNDERGROUND SUPPLY DISTRICT AND SOLE USE SUBSTATION, TYPICAL URBAN AND RURAL

REVISION	DATE
B	FEB 18

DRAWING No. G2-17/3

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

NUMBER OF TRANSFORMERS	RATING OF EACH TRANSFORMER (kVA)	COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING			
				DISTRICT		SOLE USE	
				NON-FIRE RATED	FIRE RATED	NON-FIRE RATED	FIRE RATED
THREE OR FOUR	160 to 1000 NON MPS	WHERE THE TRANSFORMERS ARE TO BE LOCATED WITHIN 30m OF THE BOUNDARY, THE MV SWITCHROOM CAN BE ADJACENT TO THE TRANSFORMERS. HOWEVER WHERE THE TRANSFORMERS ARE TO BE LOCATED MORE THAN 30m FROM THE BOUNDARY THE MV SWITCHROOM IS TO BE LOCATED SEPARATELY FROM THE TRANSFORMERS & SHOULD BE WITHIN 5m OF THE BOUNDARY. WHERE LESS TRANSFORMERS CAN PROVIDE FOR THE LOAD, THE CUSTOMER MUST PAY THE FULL COST DIFFERENCE BETWEEN THIS & THE MINIMUM ARRANGEMENT.		N/A	N/A	N/A	G3-21

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

33kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSTATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-18/1

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING	
		FIRE RATED	NON-FIRE RATED
> 2MVA up to 4MVA DEPENDING ON CIRCUMSTANCES THIS ARRANGEMENT MAY ALSO BE CONSIDERED FOR A MV CUSTOMER WHOSE LOAD IS ⩽2MVA BUT > 1.5MVA		G3-22	G3-23
> 4MVA up to 8MVA EACH SWITCHBOARD SUPPLIED FROM A SEPARATE LEG OF A Y SPLIT FEEDER (MAY BE FROM THE SAME OR DIFFERENT FEEDERS)		G3-22	G3-23

DISTRIBUTION CONSTRUCTION STANDARDS

HORIZON POWER

33kV UNDERGROUND SUPPLY CUSTOMER OWNED SUBSTATION, TYPICAL URBAN AND RURAL

DRAWING No. G2-18/2

REVISION B

DATE FEB 18

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

LOAD RANGE / COMMENTS	MV SYSTEM ARRANGEMENT	SUBSTATION ARRANGEMENT DRAWING
>8MVA up to 15MVA SINGLE DEDICATED FEEDER FROM ZONE SUBSTATION TO THE CUSTOMER. (MINIMUM ARRANGEMENT)		G3-22
ABOVE 15MVA DEDICATED FEEDERS FROM THE SAME ZONE SUBSTATION BUSBAR OPERATING ON CLOSED RING WITH DIRECTIONAL O/C & E/F OR PILOT PROTECTION NOTE:- CAN ALSO BE USED AS AN ALTERNATIVE TO ABOVE WHERE THE CUSTOMER IS PREPARED TO PAY THE ADDITIONAL COSTS. IN SUCH CASES ISOLATORS CAN BE USED IN PLACE OF CIRCUIT BREAKERS AND ONE HP BUS SECTION SWITCH MUST BE A N.O.P.		G3-22