



LEGEND:-

SYMBOL	DESCRIPTION	QUANTITY
---	PROPOSED 70sq.mm Cu/PVC/XLPE/PVC Cable	280
---	PROPOSED 120sq.mm Cu/PVC/XLPE/PVC Cable	597
---	PROPOSED 240sq.mm Cu/PVC/XLPE/PVC Cable	838
---	EXISTING Cable	-
D/B	DISTRIBUTION BOX	-
D/B	EXISTING DISTRIBUTION BOX TO BE REPLACED	55 Nos.
D/B	EXISTING DISTRIBUTION BOX TO BE MODIFIED	-

	PURPOSE OF SUBMISSION	REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B12 KULHUDHUFFUSHI SUBSTATION-4		DESIGN : ESM	SCALE : N.T.S
	FIRST REVISION	A	GKH	19/04/16			DRAWN : DAI	DRW NO. : J431-GOPA-032-GR-E-D-0004-RevA
					PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:	ISLAND NAME : KULHUDHUFFUSHI
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KULHUDHUFFUSHI SS4\_Existing

From	To	No. of Runs	Cable Size (sq.mm)	Length (M)	Cable Current Capacity (A)	Cable Current Capacity After Deration (0.6) (A)	Power (kW)	Current (A)	Cable Loading (%)	Voltage (%) at DB Main Bus	Total Voltage Drop (%) in Cable Section	% Voltage Drop upto Distribution Boards	% Voltage Drop Acceptable (Less Than 5%)	Remarks
<b>Feeder-1</b>	<b>DB-411</b>	1	4C x 50	280	215	129	36.57	64.88	50.30	96.64	3.36	3.36	YES	
DB-411	DB-411x1	1	4C x 35	92	180	108	4.95	9.22	8.50	96.43	0.21	3.57	YES	
DB-411	DB-412	1	4C x 50	83	215	129	25.02	46.45	36.00	95.93	0.71	4.07	YES	
DB-412	DB-412x1	1	4C x 35	73	180	108	4.93	9.26	8.60	95.76	0.16	4.24	YES	
DB-412	DB-413	1	4C x 35	122	180	108	14.92	27.94	25.90	95.10	0.83	4.90	YES	
DB-413	DB-413x1	1	4C x 35	128	180	108	4.92	9.32	8.60	94.81	0.29	5.19	NO	
DB-413	DB-414	1	4C x 35	86	180	108	4.92	9.32	8.60	94.91	0.19	5.09	NO	
<b>Feeder-2</b>	<b>DB-421</b>	1	4C x 70	150	265	159	36.23	64.52	40.60	98.71	1.29	1.29	YES	
DB-421	DB-422	1	4C x 70	93	265	159	30.64	55.43	34.90	98.02	0.69	1.98	YES	
DB-422	DB-423	1	4C x 35	117	180	108	25.40	46.30	42.90	96.71	1.32	3.29	YES	
DB-423	DB-424	1	4C x 35	95	180	108	19.99	37.10	34.30	95.85	0.85	4.15	YES	
DB-424	DB-424x1	1	4C x 25	80	150	90	4.93	9.27	10.30	95.61	0.24	4.39	YES	
DB-424	DB-425	1	4C x 35	64	180	108	9.88	18.57	17.20	95.56	0.29	4.44	YES	
DB-425	DB-426	1	4C x 25	91	150	90	4.93	9.29	10.30	95.29	0.28	4.71	YES	
<b>Feeder-3</b>	<b>DB-431</b>	1	4C x 95	109	315	189	30.45	54.65	28.90	99.40	0.60	0.60	YES	
DB-431	DB-432	1	4C x 70	90	265	159	25.23	45.60	28.70	98.85	0.54	1.15	YES	
DB-432	DB-433	1	4C x 70	80	265	159	20.07	36.52	23.00	98.47	0.39	1.53	YES	
DB-433	DB-434	1	4C x 70	75	265	159	15.00	27.41	17.20	98.19	0.27	1.81	YES	
DB-434	DB-435	1	4C x 35	82	180	108	9.98	18.29	16.90	97.83	0.36	2.17	YES	
DB-435	DB-436	1	4C x 35	77	180	108	4.97	9.15	8.50	97.66	0.17	2.34	YES	
<b>Feeder-4</b>	<b>DB-441</b>	1	4C x 70	66	265	159	30.46	54.64	34.40	99.52	0.48	0.48	YES	
DB-441	DB-442	1	4C x 70	96	265	159	25.27	45.59	28.70	98.94	0.58	1.06	YES	
DB-442	DB-443	1	4C x 70	71	265	159	20.10	36.52	23.00	98.60	0.34	1.40	YES	
DB-443	DB-444	1	4C x 35	60	180	108	15.04	27.42	25.40	98.20	0.40	1.80	YES	
DB-444	DB-445	1	4C x 35	85	180	108	9.98	18.30	16.90	97.82	0.38	2.18	YES	
DB-445	DB-446	1	4C x 35	134	180	108	4.97	9.16	8.50	97.52	0.30	2.48	YES	
<b>Feeder-4</b>	<b>DB-451</b>	1	4C x 70	82	265	159	61.58	110.10	69.20	98.80	1.20	1.20	YES	
DB-451	DB-451x1	1	4C x 50	126	215	129	30.46	55.20	42.80	97.52	1.28	2.48	YES	
DB-451x1	DB-451x2	1	4C x 70	89	265	159	24.96	46.04	29.00	96.97	0.54	3.03	YES	
DB-451x2	DB-451x3	1	4C x 70	58	265	159	9.90	18.40	11.60	96.83	0.14	3.17	YES	
DB-451x3	DB-451x4	1	4C x 70	52	265	159	4.94	9.20	5.80	96.77	0.06	3.23	YES	
DB-451x2	DB-451x5	1	4C x 70	230	265	159	9.94	18.45	11.60	96.41	0.56	3.59	YES	
DB-451x5	DB-451x6	1	4C x 70	92	265	159	4.94	9.23	5.80	96.30	0.11	3.70	YES	
DB-451	DB-452	1	4C x 70	84	265	159	25.18	45.78	28.80	98.29	0.51	1.71	YES	
DB-452	DB-453	1	4C x 70	90	265	159	20.04	36.66	23.10	97.85	0.44	2.15	YES	
DB-453	DB-454	1	4C x 70	90	265	159	14.96	27.52	17.30	97.52	0.33	2.48	YES	
DB-454	DB-455	1	4C x 50	97	215	129	9.95	18.36	14.20	97.19	0.33	2.81	YES	
DB-455	DB-456	1	4C x 35	76	180	108	4.95	9.19	8.50	97.03	0.17	2.97	YES	
<b>Feeder-5</b>	<b>DB-461</b>	1	4C x 120	738	360	216	41.88	74.64	34.60	95.37	4.63	4.63	YES	
DB-461	DB-461x1	1	4C x 35	87	180	108	14.88	28.03	26.00	94.78	0.59	5.22	NO	
DB-461x1	DB-461x2	1	4C x 35	86	180	108	9.85	18.71	17.30	94.39	0.39	5.61	NO	
DB-461x2	DB-461x3	1	4C x 35	87	180	108	4.90	9.36	8.70	94.20	0.20	5.80	NO	
DB-461	DB-462	1	4C x 120	105	360	216	19.78	37.33	17.30	95.05	0.33	4.95	YES	
DB-462	DB-463	1	4C x 70	97	265	159	14.80	28.03	17.60	94.69	0.36	5.31	NO	
DB-463	DB-464	1	4C x 70	100	265	159	9.83	18.70	11.80	94.44	0.25	5.56	NO	
DB-464	DB-465	1	4C x 50	99	215	129	4.90	9.36	7.30	94.27	0.17	5.73	NO	
<b>Feeder-6</b>	<b>DB-471</b>	1	4C x 70	497	265	159	47.98	84.70	53.30	94.38	5.62	5.62	NO	
DB-471	DB-472	1	4C x 70	18	265	159	39.60	75.37	47.40	94.20	0.18	5.80	NO	
DB-472	DB-473	1	4C x 70	76	265	159	34.61	66.00	41.50	93.53	0.67	6.47	NO	
DB-473	DB-473x1	1	4C x 70	72	265	159	14.70	28.30	17.80	93.26	0.27	6.74	NO	
DB-473x1	DB-473x2	1	4C x 16	88	115	69	4.90	9.45	13.70	92.84	0.42	7.16	NO	
DB-473x1	DB-473x3	1	4C x 35	88	180	108	4.88	9.43	8.70	93.06	0.20	6.94	NO	
DB-473	DB-473x4	1	4C x 16	86	115	69	4.90	9.43	13.70	93.13	0.41	6.87	NO	
DB-473	DB-474	1	4C x 35	100	180	108	9.81	18.88	17.50	93.08	0.46	6.92	NO	
DB-474	DB-475	1	4C x 35	85	180	108	4.88	9.45	8.70	92.88	0.19	7.12	NO	

	PURPOSE OF SUBMISSION		REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B12 KULHUDHUFFUSHI SUBSTATION-4		DESIGN : ESM		SCALE : N.T.S	
	FIRST REVISION		A	GKH	19/04/16			DRAWN : DAI		DRW NO. :J431-GOPA-032-GR-E-D-0004-RevA	
						PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:		ISLAND NAME : KULHUDHUFFUSHI	
								DATE: : 19APR16		PAGE : 2/4	



KULHUDHUFFUSHI SS4\_Proposed

From	To	No. of Runs	Cable Size (sq.mm)	Length (M)	Cable Current Capacity (A)	Cable Current Capacity After Deration (0.6) (A)	Power (kW)	Current (A)	Cable Loading (%)	Voltage (%) at DB Main Bus	Total Voltage Drop (%) in Cable Section	% Voltage Drop upto Distribution Boards	% Voltage Drop Acceptable (Less Than 5%)	Remarks
Feeder-1	DB-411	1	4C x 70	280	265	159	36.17	64.48	40.60	97.60	2.40	2.40	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable
DB-411	DB-411x1	1	4C x 35	92	180	108	4.96	9.17	8.50	97.39	0.20	2.61	YES	
DB-411	DB-412	1	4C x 50	83	215	129	25.11	46.16	35.80	96.89	0.71	3.11	YES	
DB-412	DB-412x1	1	4C x 35	73	180	108	4.95	9.21	8.50	96.73	0.16	3.27	YES	
DB-412	DB-413	1	4C x 35	122	180	108	14.98	27.76	25.70	96.07	0.82	3.93	YES	
DB-413	DB-413x1	1	4C x 35	128	180	108	4.94	9.26	8.60	95.78	0.29	4.22	YES	
DB-413	DB-414	1	4C x 35	86	180	108	4.93	9.26	8.60	95.88	0.19	4.12	YES	
Feeder-2	DB-421	1	4C x 70	150	265	159	36.23	64.52	40.60	98.71	1.29	1.29	YES	
DB-421	DB-422	1	4C x 70	93	265	159	30.64	55.43	34.90	98.02	0.69	1.98	YES	
DB-422	DB-423	1	4C x 35	117	180	108	25.40	46.30	42.90	96.71	1.32	3.29	YES	
DB-423	DB-424	1	4C x 35	95	180	108	19.99	37.10	34.30	95.85	0.85	4.15	YES	
DB-424	DB-424x1	1	4C x 25	80	150	90	4.93	9.27	10.30	95.61	0.24	4.39	YES	
DB-424	DB-425	1	4C x 35	64	180	108	9.88	18.57	17.20	95.56	0.29	4.44	YES	
DB-425	DB-426	1	4C x 25	91	150	90	4.93	9.29	10.30	95.29	0.28	4.71	YES	
Feeder-3	DB-431	1	4C x 95	109	315	189	30.45	54.65	28.90	99.40	0.60	0.60	YES	
DB-431	DB-432	1	4C x 70	90	265	159	25.23	45.60	28.70	98.85	0.54	1.15	YES	
DB-432	DB-433	1	4C x 70	80	265	159	20.07	36.52	23.00	98.47	0.39	1.53	YES	
DB-433	DB-434	1	4C x 70	75	265	159	15.00	27.41	17.20	98.19	0.27	1.81	YES	
DB-434	DB-435	1	4C x 35	82	180	108	9.98	18.29	16.90	97.83	0.36	2.17	YES	
DB-435	DB-436	1	4C x 35	77	180	108	4.97	9.15	8.50	97.66	0.17	2.34	YES	
Feeder-4	DB-441	1	4C x 70	66	265	159	30.46	54.64	34.40	99.52	0.48	0.48	YES	
DB-441	DB-442	1	4C x 70	96	265	159	25.27	45.59	28.70	98.94	0.58	1.06	YES	
DB-442	DB-443	1	4C x 70	71	265	159	20.10	36.52	23.00	98.60	0.34	1.40	YES	
DB-443	DB-444	1	4C x 35	60	180	108	15.04	27.42	25.40	98.20	0.40	1.80	YES	
DB-444	DB-445	1	4C x 35	85	180	108	9.98	18.30	16.90	97.82	0.38	2.18	YES	
DB-445	DB-446	1	4C x 35	134	180	108	4.97	9.16	8.50	97.52	0.30	2.48	YES	
Feeder-5	DB-451	1	4C x 70	82	265	159	61.58	110.10	69.20	98.80	1.20	1.20	YES	
DB-451	DB-451x1	1	4C x 50	126	215	129	30.46	55.20	42.80	97.52	1.28	2.48	YES	
DB-451x1	DB-451x2	1	4C x 70	89	265	159	24.96	46.04	29.00	96.97	0.54	3.03	YES	
DB-451x2	DB-451x3	1	4C x 70	58	265	159	9.90	18.40	11.60	96.83	0.14	3.17	YES	
DB-451x3	DB-451x4	1	4C x 70	52	265	159	4.94	9.20	5.80	96.77	0.06	3.23	YES	
DB-451x2	DB-451x5	1	4C x 70	230	265	159	9.94	18.45	11.60	96.41	0.56	3.59	YES	
DB-451x5	DB-451x6	1	4C x 70	92	265	159	4.94	9.23	5.80	96.30	0.11	3.70	YES	
DB-451	DB-452	1	4C x 70	84	265	159	25.18	45.78	28.80	98.29	0.51	1.71	YES	
DB-452	DB-453	1	4C x 70	90	265	159	20.04	36.66	23.10	97.85	0.44	2.15	YES	
DB-453	DB-454	1	4C x 70	90	265	159	14.96	27.52	17.30	97.52	0.33	2.48	YES	
DB-454	DB-455	1	4C x 50	97	215	129	9.95	18.36	14.20	97.19	0.33	2.81	YES	
DB-455	DB-456	1	4C x 35	76	180	108	4.95	9.19	8.50	97.03	0.17	2.97	YES	
Feeder-6	DB-461	1	4C x 240	738	540	324	40.96	73.72	22.80	97.24	2.76	2.76	YES	Existing 4C x 120 sq.mm LV Cable Replaced with New 4C x 240 sq.mm LVCable
DB-461	DB-461x1	1	4C x 35	87	180	108	14.98	27.69	25.60	96.65	0.58	3.35	YES	
DB-461x1	DB-461x2	1	4C x 35	86	180	108	9.92	18.48	17.10	96.27	0.38	3.73	YES	
DB-461x2	DB-461x3	1	4C x 35	87	180	108	4.94	9.24	8.60	96.08	0.19	3.92	YES	
DB-461	DB-462	1	4C x 120	105	360	216	19.92	36.88	17.10	96.91	0.32	3.09	YES	
DB-462	DB-463	1	4C x 70	97	265	159	14.90	27.68	17.40	96.56	0.36	3.44	YES	
DB-463	DB-464	1	4C x 70	100	265	159	9.90	18.47	11.60	96.31	0.24	3.69	YES	
DB-464	DB-465	1	4C x 50	99	215	129	4.94	9.24	7.20	96.15	0.17	3.85	YES	
Feeder-7	DB-471	1	4C x 120	497	360	216	46.78	83.49	38.70	96.52	3.48	3.48	YES	Existing 4C x 70 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable
DB-471	DB-472	1	4C x 70	18	265	159	39.91	74.28	46.70	96.34	0.18	3.66	YES	
DB-472	DB-473	1	4C x 70	76	265	159	34.88	65.05	40.90	95.68	0.66	4.32	YES	
DB-473	DB-473x1	1	4C x 70	72	265	159	14.82	27.89	17.50	95.42	0.27	4.58	YES	
DB-473x1	DB-473x2	1	4C x 16	88	115	69	4.93	9.31	13.50	95.01	0.41	4.99	YES	
DB-473x1	DB-473x3	1	4C x 35	88	180	108	4.92	9.30	8.60	95.22	0.20	4.78	YES	
DB-473	DB-473x4	1	4C x 16	86	115	69	4.94	9.29	13.50	95.28	0.40	4.72	YES	
DB-473	DB-474	1	4C x 35	100	180	108	9.89	18.60	17.20	95.23	0.45	4.77	YES	
DB-474	DB-475	1	4C x 35	85	180	108	4.92	9.31	8.60	95.04	0.19	4.96	YES	

	PURPOSE OF SUBMISSION		REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B12 KULHUDHUFFUSHI SUBSTATION-4		DESIGN : ESM		SCALE : N.T.S	
	FIRST REVISION		A	GKH	19/04/16			DRAWN : DAI		DRW NO. : J431-GOPA-032-GR-E-D-0004-RevA	
						PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:		ISLAND NAME : KULHUDHUFFUSHI	
								DATE: : 19APR16		PAGE : 3/4	

KULHUDHUFFUSHI-SS4-PROPOSED PV FEEDER

From	To	No. of Runs	Cable Size (sq.mm)	Length (M)	Cable Current Capacity (A)	Cable Current Capacity After Deration (0.6) (A)	Power (kW)	Current (A)	Cable Loading (% )	Voltage (%) at DB Main Bus	Total Voltage Drop (% ) in Cable Section	% Voltage Drop upto Distribution Boards	% Voltage Drop Acceptable (Less Than 5%)	Losses (% )	Remarks
JALAALUDDIN SCHOOL-PV	KULHUDHUFFUSHI- SUBSTATION -4	1	4C x 240	100	540	324	188	268.5	82.9	101.07	1.07	1.07	YES	1.06%	Proposed 4C x 240 sq.mm LVCable
ATOLL EDUCATION CENTRE-PV		1	4C x 120	100	360	216	106	151.2	70	101.22	1.22	1.22	YES	1.22%	Proposed 4C x 120 sq.mm LVCable

	PURPOSE OF SUBMISSION	REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B12 KULHUDHUFFUSHI SUBSTATION—4		DESIGN : ESM	SCALE : N.T.S
	FIRST REVISION	A	GKH	19/04/16			DRAWN : DAI	DRW NO. : J431-GOPA-032-GR-E-D-0004-RevA
					PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:	ISLAND NAME : KULHUDHUFFUSHI
							DATE: : 19APR16	PAGE : 4/4