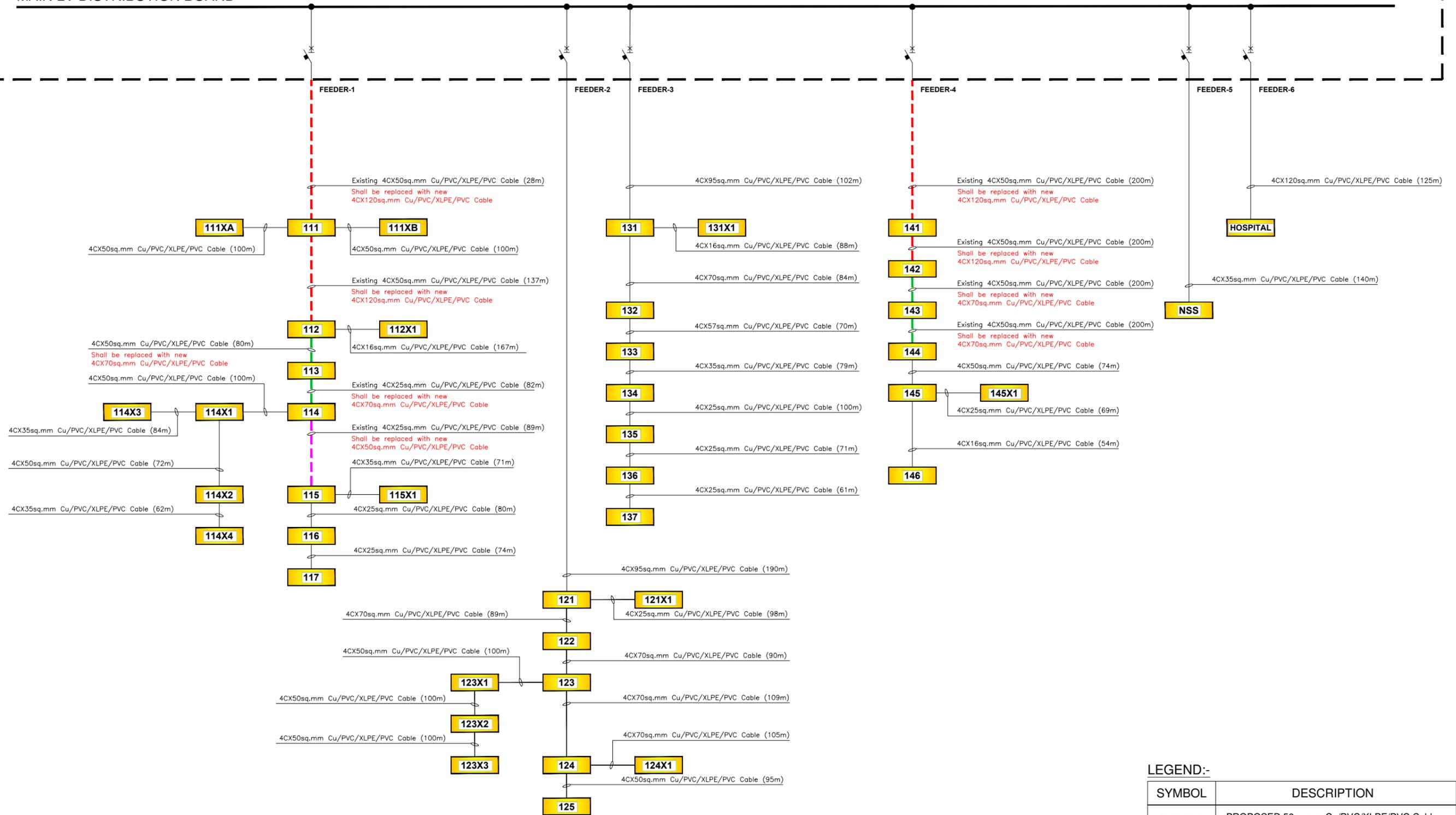


**SUBSTATION - 1 (KULHUDHUFFUSHI)  
MAIN LV DISTRIBUTION BOARD**



**NOTES:-**

1. THESE DRAWINGS ARE PRELIMINARY AND ARE FOR TENDERING PURPOSES ONLY.
2. CONTRACTOR SHALL CARRY OUT DETAILED SITE SURVEY AND ENGINEERING / STUDY TO EVALUATE AND PROPOSE THE EXTENT OF REPLACEMENT / MODIFICATION REQUIRED IN THE EXISTING DISTRIBUTION NETWORK. THIS IS SUBJECT TO REVIEW AND APPROVAL BY THE EMPLOYER DURING THE ENGINEERING PHASE OF THE PROJECT.

**LEGEND:-**

SYMBOL	DESCRIPTION	QUANTITY
--- (magenta dashed)	PROPOSED 50sq.mm Cu/PVC/XLPE/PVC Cable	89
--- (green dashed)	PROPOSED 70sq.mm Cu/PVC/XLPE/PVC Cable	562
--- (red dashed)	PROPOSED 120sq.mm Cu/PVC/XLPE/PVC Cable	565
---	EXISTING Cable	-
[D/B] (white)	DISTRIBUTION BOX	-
[D/B] (yellow)	EXISTING DISTRIBUTION BOX TO BE REPLACED	42 Nos.
[D/B] (green)	EXISTING DISTRIBUTION BOX TO BE MODIFIED	-

PURPOSE OF SUBMISSION	REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B12 KULHUDHUFFUSHI SUBSTATION-1		DESIGN : ESM	SCALE : N.T.S
INITIAL DOCUMENTS	A	GKH	28/03/16			DRAWN : MUM	DRW NO. : J431-GOPA-032-GR-E-D-0001-RevB
FIRST REVISION	B	GKH	19/04/16	PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:	ISLAND NAME : KULHUDHUFFUSHI
						DATE: : 19APR16	PAGE : 1/3

**KULHUDHUFFUSHI-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	% Voltage Drop Accepta	Remarks
<b>Kulhuffushi Feeder-1</b>	<b>DB-111</b>	1	4C x 50	28	215	129	79.95	140.80	109.10	99.26	0.74	0.74	YES	
DB-111	DB-111x1A	1	4C x 50	100	215	129	4.99	9.07	7.00	99.10	0.17	0.90	YES	
DB-111	DB-111x1B	1	4C x 50	100	215	129	4.99	9.07	7.00	99.10	0.17	0.90	YES	
DB-111	DB-112	1	4C x 50	137	215	129	64.19	113.60	88.10	96.36	2.90	3.64	YES	
DB-112	DB-112x1	1	4C x 16	167	115	69	4.97	9.27	13.40	95.58	0.78	4.42	YES	
DB-112	DB-113	1	4C x 50	80	215	129	51.79	95.10	73.70	94.95	1.41	5.05	NO	
DB-113	DB-114	1	4C x 25	82	150	90	45.87	85.79	95.30	92.62	2.32	7.38	NO	
DB-114	DB-114x1	1	4C x 50	100	215	129	19.63	38.09	29.50	91.92	0.70	8.08	NO	
DB-114x1	DB-114x2	1	4C x 50	72	215	129	9.73	19.06	14.80	91.67	0.25	8.33	NO	
DB-114x1	DB-114x3	1	4C x 35	84	180	108	4.86	9.52	8.80	91.73	0.19	8.27	NO	
DB-114x2	DB-114x4	1	4C x 35	62	180	108	4.85	9.54	8.80	91.53	0.14	8.47	NO	
DB-114	DB-115	1	4C x 25	89	150	90	19.78	38.24	42.50	91.50	1.12	8.50	NO	
DB-115	DB-115x1	1	4C x 35	71	180	108	4.85	9.55	8.80	91.34	0.16	8.66	NO	
DB-115	DB-116	1	4C x 25	80	150	90	9.75	19.16	21.30	91.00	0.50	9.00	NO	
DB-116	DB-117	1	4C x 25	74	150	90	4.84	9.59	10.70	90.77	0.23	9.23	NO	
<b>Kulhuffushi Feeder-2</b>	<b>DB-121</b>	1	4C x 95	190	315	189	51.61	92.14	48.80	98.23	1.77	1.77	YES	
DB-121	DB-121x1	1	4C x 25	98	150	90	4.98	9.14	10.10	97.94	0.29	2.06	YES	
DB-121	DB-122	1	4C x 70	89	265	159	40.52	73.89	46.50	97.36	0.87	2.64	YES	
DB-122	DB-123	1	4C x 70	90	265	159	35.10	64.72	40.70	96.58	0.77	3.42	YES	
DB-123	DB-123x1	1	4C x 50	100	215	129	14.92	27.78	21.50	96.07	0.51	3.93	YES	
DB-123x1	DB-123x2	1	4C x 50	100	215	129	9.89	18.54	14.40	95.73	0.34	4.27	YES	
DB-123x2	DB-123x3	1	4C x 50	100	215	129	4.93	9.28	7.20	95.56	0.17	4.44	YES	
DB-123	DB-124	1	4C x 70	109	265	159	14.87	27.73	17.40	96.18	0.40	3.82	YES	
DB-124	DB-124x1	1	4C x 70	105	265	159	4.93	9.24	5.80	96.06	0.13	3.94	YES	
DB-124	DB-125	1	4C x 50	95	215	129	4.93	9.25	7.20	96.02	0.16	3.98	YES	
<b>Kulhuffushi Feeder-3</b>	<b>DB-131</b>	1	4C x 95	102	315	189	40.91	73.20	38.70	99.25	0.75	0.75	YES	
DB-131	DB-131x1	1	4C x 16	88	115	69	5.01	9.08	13.20	98.84	0.40	1.16	YES	
DB-131	DB-132	1	4C x 70	84	265	159	30.53	55.05	34.60	98.63	0.62	1.37	YES	
DB-132	DB-133	1	4C x 70	57	265	159	25.31	45.96	28.90	98.28	0.35	1.72	YES	
DB-133	DB-134	1	4C x 35	79	180	108	20.22	36.84	34.10	97.58	0.71	2.42	YES	
DB-134	DB-135	1	4C x 25	100	150	90	15.07	27.69	30.80	96.67	0.91	3.33	YES	
DB-135	DB-136	1	4C x 25	71	150	90	9.93	18.48	20.50	96.24	0.43	3.76	YES	
DB-136	DB-137	1	4C x 25	61	150	90	4.94	9.25	10.30	96.05	0.18	3.95	YES	
<b>Kulhuffushi Feeder-4</b>	<b>DB-141</b>	1	4C x 50	200	215	129	37.42	65.87	51.10	97.55	2.45	2.45	YES	
DB-141	DB-142	1	4C x 50	200	215	129	31.24	56.71	44.00	95.44	2.11	4.56	YES	
DB-142	DB-143	1	4C x 50	200	215	129	25.42	47.44	36.80	93.68	1.75	6.32	NO	
DB-143	DB-144	1	4C x 50	200	215	129	19.91	38.05	29.50	92.28	1.40	7.72	NO	
DB-144	DB-145	1	4C x 50	74	215	129	14.65	28.56	22.10	91.89	0.39	8.11	NO	
DB-145	DB-145x1	1	4C x 25	89	150	90	4.86	9.53	10.60	91.68	0.22	8.32	NO	
DB-145	DB-146	1	4C x 16	54	115	69	4.86	9.53	13.80	91.63	0.26	8.37	NO	
<b>Kulhuffushi Feeder-5</b>	<b>HOSPITAL</b>	1	4C x 120	125	360	216	5.00	9.02	4.20	99.91	0.09	0.09	YES	
<b>Kulhuffushi Feeder-6</b>	<b>NSS</b>	1	4C x 35	140	180	108	5.02	9.04	8.40	99.69	0.31	0.31	YES	

	PURPOSE OF SUBMISSION	REV	AUTHORISED BY	DATE	DRAWING TITLE		DESIGN : ESM	SCALE : N.T.S
	INITIAL DOCUMENTS	A	GKH	28/03/16	NETWORK DIAGRAM FOR B12 KULHUDHUFFUSHI SUBSTATION-1		DRAWN : MUM	DRW NO. : J431-GOPA-032-GR-E-D-0001-RevB
	FIRST REVISION	B	GKH	19/04/16	PROJECT	CLIENT:	LICENCE NO:	ISLAND NAME : KULHUDHUFFUSHI
					PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	GOVERNMENT OF THE REPUBLIC OF MALDIVES	DATE: : 19APR16	PAGE : 2/3

**KULHUDHUFFUSHI-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)	Remarks
<b>Kulhuffushi Feeder-1</b>	<b>DB-111</b>	1	4C x 120	28	360	216	76.89	137.60	63.70	99.68	0.32	0.32	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable
DB-111	DB-111x1A	1	4C x 50	100	215	129	5.00	9.05	7.00	99.51	0.17	0.49	YES	
DB-111	DB-111x1B	1	4C x 50	100	215	129	5.00	9.05	7.00	99.51	0.17	0.49	YES	
DB-111	DB-112	1	4C x 120	137	360	216	61.60	110.40	51.10	98.41	1.27	1.59	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable
DB-112	DB-112x1	1	4C x 16	167	115	69	5.01	9.15	13.30	97.64	0.77	2.36	YES	
DB-112	DB-113	1	4C x 70	80	265	159	50.72	92.19	58.00	97.42	0.98	2.58	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable
DB-113	DB-114	1	4C x 70	82	265	159	45.15	83.09	52.30	96.52	0.91	3.48	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable
DB-114	DB-114x1	1	4C x 50	100	215	129	19.84	36.95	28.60	95.84	0.68	4.16	YES	
DB-114x1	DB-114x2	1	4C x 50	72	215	129	9.87	18.56	14.40	95.59	0.25	4.41	YES	
DB-114x1	DB-114x3	1	4C x 35	84	180	108	4.95	9.31	8.60	95.65	0.19	4.35	YES	
DB-114x2	DB-114x4	1	4C x 35	62	180	108	4.95	9.33	8.60	95.45	0.14	4.55	YES	
DB-114	DB-115	1	4C x 50	89	215	129	19.89	37.03	28.70	95.91	0.61	4.09	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 50 sq.mm LVCable
DB-115	DB-115x1	1	4C x 35	71	180	108	4.95	9.30	8.60	95.75	0.16	4.25	YES	
DB-115	DB-116	1	4C x 25	80	150	90	9.90	18.57	20.60	95.43	0.49	4.57	YES	
DB-116	DB-117	1	4C x 25	74	150	90	4.94	9.32	10.40	95.2	0.23	4.80	YES	
<b>Kulhuffushi Feeder-2</b>	<b>DB-121</b>	1	4C x 95	190	315	189	51.41	91.84	48.60	98.24	1.76	1.76	YES	
DB-121	DB-121x1	1	4C x 25	98	150	90	4.98	9.14	10.20	97.95	0.29	2.05	YES	
DB-121	DB-122	1	4C x 70	89	265	159	40.37	73.62	46.30	97.37	0.87	2.63	YES	
DB-122	DB-123	1	4C x 70	90	265	159	34.99	64.50	40.60	96.6	0.77	3.40	YES	
DB-123	DB-123x1	1	4C x 50	100	215	129	14.90	27.73	21.50	96.09	0.51	3.91	YES	
DB-123x1	DB-123x2	1	4C x 50	100	215	129	9.89	18.53	14.40	95.75	0.34	4.25	YES	
DB-123x2	DB-123x3	1	4C x 50	100	215	129	4.94	9.31	7.20	95.57	0.17	4.43	YES	
DB-123	DB-124	1	4C x 70	109	265	159	14.85	27.68	17.40	96.2	0.40	3.80	YES	
DB-124	DB-124x1	1	4C x 70	105	265	159	4.95	9.29	5.80	96.07	0.13	3.93	YES	
DB-124	DB-125	1	4C x 50	95	215	129	4.95	9.28	7.20	96.03	0.16	3.97	YES	
<b>Kulhuffushi Feeder-3</b>	<b>DB-131</b>	1	4C x 95	102	315	189	40.89	73.17	38.70	99.25	0.75	0.75	YES	
DB-131	DB-131x1	1	4C x 16	88	115	69	5.01	9.08	13.20	98.84	0.40	1.16	YES	
DB-131	DB-132	1	4C x 70	84	265	159	30.51	55.03	34.60	98.63	0.61	1.37	YES	
DB-132	DB-133	1	4C x 70	57	265	159	25.30	45.95	28.90	98.28	0.35	1.72	YES	
DB-133	DB-134	1	4C x 35	79	180	108	20.22	36.83	34.10	97.58	0.71	2.42	YES	
DB-134	DB-135	1	4C x 25	100	150	90	15.06	27.68	30.80	96.67	0.91	3.33	YES	
DB-135	DB-136	1	4C x 25	71	150	90	9.93	18.48	20.50	96.24	0.43	3.76	YES	
DB-136	DB-137	1	4C x 25	61	150	90	4.94	9.25	10.30	96.05	0.18	3.95	YES	
<b>Kulhuffushi Feeder-4</b>	<b>DB-141</b>	1	4C x 120	200	360	216	36.05	64.43	29.80	98.92	1.08	1.08	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable
DB-141	DB-142	1	4C x 120	200	360	216	30.61	55.37	25.60	97.99	0.93	2.01	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LVCable
DB-142	DB-143	1	4C x 70	200	265	159	25.32	46.25	29.10	96.76	1.23	3.24	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable
DB-143	DB-144	1	4C x 70	200	265	159	19.98	37.07	23.30	95.77	0.98	4.23	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LVCable
DB-144	DB-145	1	4C x 50	74	215	129	14.83	27.88	21.60	95.39	0.38	4.61	YES	
DB-145	DB-145x1	1	4C x 25	69	150	90	4.93	9.32	10.40	95.18	0.21	4.82	YES	
DB-145	DB-146	1	4C x 16	54	115	69	4.94	9.32	13.50	95.14	0.25	4.86	YES	
<b>Kulhuffushi Feeder-5</b>	<b>HOSPITAL</b>	1	4C x 120	125	360	216	5.00	9.02	4.20	99.91	0.09	0.09	YES	
<b>Kulhuffushi Feeder-6</b>	<b>NSS</b>	1	4C x 35	140	180	108	5.02	9.04	8.40	99.69	0.31	0.31	YES	

	PURPOSE OF SUBMISSION	REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B12 KULHUDHUFFUSHI SUBSTATION-1		DESIGN : ESM	SCALE : N.T.S
	INITIAL DOCUMENTS	A	GKH	28/03/16			DRAWN : MUM	DRW NO. : J431-GOPA-032-GR-E-D-0001-RevB
	FIRST REVISION	B	GKH	19/04/16	PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:	ISLAND NAME : KULHUDHUFFUSHI
							DATE: : 19APR16	PAGE : 3/3