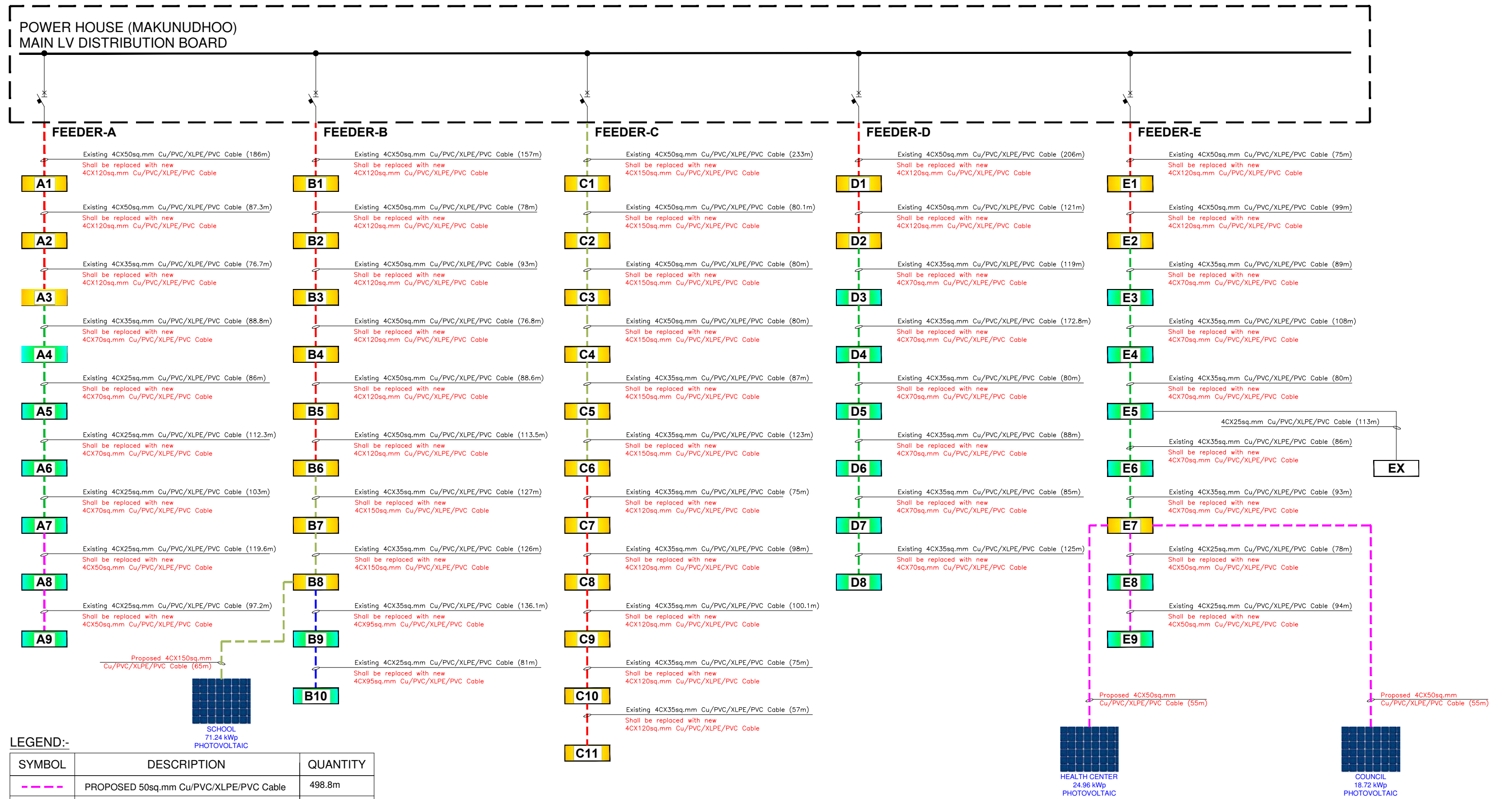


POWER HOUSE (MAKUNUDHOO)
MAIN LV DISTRIBUTION BOARD



	PURPOSE OF SUBMISSION	REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B17–MAKUNUDHOO		DESIGN : ESM	SCALE : N.T.S
	INITIAL DOCUMENTS	A	GKH	28/03/16			DRAWN : DAI	DRW NO. : J431–G0PA–025–GR–E–D–0001–RevB
	FIRST REVISION	B	GKH	17/04/16	PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:	ISLAND NAME : MAKUNUDHOO
							DATE: : 17APR16	PAGE : 1/4

MAKUNUDHOO-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
MAKUNUDHOO FEEDER-1	DB-A1	1	4C x 50	186	215	129	48.05	84.29	65.30	97.07	2.93	2.93	YES	
DB-A1	DB-A2	1	4C x 50	87.3	215	129	41.37	75.18	58.30	95.85	1.22	4.15	YES	
DB-A2	DB-A3	1	4C x 35	76.7	180	108	35.85	66.03	61.10	94.81	1.24	5.39	NO	
DB-A3	DB-A4	1	4C x 35	88.8	180	108	30.41	56.85	52.60	93.37	1.24	6.63	NO	
DB-A4	DB-A5	1	4C x 25	86	150	90	25.07	47.56	52.80	92.01	1.36	7.99	NO	
DB-A5	DB-A6	1	4C x 25	112.3	150	90	19.78	38.21	42.50	90.59	1.42	9.41	NO	
DB-A6	DB-A7	1	4C x 25	103	150	90	14.63	28.85	32.10	89.82	0.98	10.38	NO	
DB-A7	DB-A8	1	4C x 25	119.6	150	90	9.68	19.37	21.50	88.85	0.76	11.15	NO	
DB-A8	DB-A9	1	4C x 25	97.2	150	90	4.88	9.93	11.00	88.54	0.32	11.46	NO	
MAKUNUDHOO FEEDER-2	DB-B1	1	4C x 50	157	215	129	52.81	92.95	72.10	97.28	2.72	2.72	YES	
DB-B1	DB-B2	1	4C x 50	78	215	129	46.14	83.84	65.00	96.06	1.22	3.94	YES	
DB-B2	DB-B3	1	4C x 50	93	215	129	40.57	74.72	57.90	94.77	1.29	5.23	NO	
DB-B3	DB-B4	1	4C x 50	76.8	215	129	35.11	65.71	50.90	93.84	0.94	6.16	NO	
DB-B4	DB-B5	1	4C x 50	88.6	215	129	29.90	56.60	43.90	92.91	0.93	7.09	NO	
DB-B5	DB-B6	1	4C x 50	113.5	215	129	24.75	47.39	36.70	91.91	1.00	8.09	NO	
DB-B6	DB-B7	1	4C x 35	127	180	108	19.62	38.02	35.20	90.73	1.18	9.27	NO	
DB-B7	DB-B8	1	4C x 35	126	180	108	14.56	28.70	26.60	89.85	0.88	10.15	NO	
DB-B8	DB-B9	1	4C x 35	136.1	180	108	9.66	19.29	17.90	89.22	0.64	10.78	NO	
DB-B9	DB-B10	1	4C x 25	81	150	90	4.91	9.94	11.00	88.95	0.26	11.05	NO	
MAKUNUDHOO FEEDER-3	DB-C1	1	4C x 50	233	215	129	57.77	101.20	78.50	95.6	4.40	4.40	YES	
DB-C1	DB-C2	1	4C x 50	80.1	215	129	49.88	91.99	71.30	94.23	1.37	5.77	NO	
DB-C2	DB-C3	1	4C x 50	80	215	129	44.28	82.86	64.20	92.99	1.24	7.01	NO	
DB-C3	DB-C4	1	4C x 50	80	215	129	38.90	73.80	57.20	91.89	1.10	8.11	NO	
DB-C4	DB-C5	1	4C x 35	87	180	108	33.63	64.45	59.70	90.51	1.38	9.49	NO	
DB-C5	DB-C6	1	4C x 35	123	180	108	28.35	55.11	51.00	88.85	1.67	11.15	NO	
DB-C6	DB-C7	1	4C x 35	75	180	108	23.31	46.35	42.90	87.99	0.85	12.01	NO	
DB-C7	DB-C8	1	4C x 35	98	180	108	18.48	37.11	34.40	87.1	0.89	12.90	NO	
DB-C8	DB-C9	1	4C x 35	100.1	180	108	13.77	28.01	25.90	86.42	0.69	13.58	NO	
DB-C9	DB-C10	1	4C x 35	75	180	108	9.34	19.31	17.90	86.06	0.35	13.94	NO	
DB-C10	DB-C11	1	4C x 35	57	180	108	5.12	10.90	10.10	85.92	0.15	14.08	NO	
MAKUNUDHOO FEEDER-4	DB-D1	1	4C x 50	206	215	129	42.30	74.44	57.70	97.14	2.86	2.86	YES	
DB-D1	DB-D2	1	4C x 50	121	215	129	35.86	65.29	50.60	95.67	1.47	4.33	YES	
DB-D2	DB-D3	1	4C x 35	119	180	108	30.30	56.06	51.90	94.04	1.63	5.96	NO	
DB-D3	DB-D4	1	4C x 35	172.8	180	108	24.80	46.76	43.30	92.07	1.97	7.93	NO	
DB-D4	DB-D5	1	4C x 35	80	180	108	19.46	37.74	34.90	91.33	0.73	8.67	NO	
DB-D5	DB-D6	1	4C x 35	88	180	108	14.54	28.51	26.40	90.72	0.61	9.28	NO	
DB-D6	DB-D7	1	4C x 35	85	180	108	9.73	19.29	17.90	90.33	0.40	9.67	NO	
DB-D7	DB-D8	1	4C x 35	125	180	108	4.90	9.81	9.10	90.03	0.30	9.97	NO	
MAKUNUDHOO FEEDER-5	DB-E1	1	4C x 50	75	215	129	52.69	92.94	72.00	98.7	1.30	1.30	YES	
DB-E1	DB-E2	1	4C x 50	99	215	129	46.87	83.84	65.00	97.16	1.55	2.84	YES	
DB-E2	DB-E3	1	4C x 35	89	180	108	41.03	74.67	69.10	95.53	1.63	4.47	YES	
DB-E3	DB-E4	1	4C x 35	108	180	108	35.27	65.47	60.60	93.8	1.73	6.20	NO	
DB-E4	DB-E5	1	4C x 35	80	180	108	29.66	56.35	52.20	92.7	1.10	7.30	NO	
DB-E5	DB-E6	1	4C x 35	86	180	108	19.61	37.79	35.00	91.91	0.79	8.09	NO	
DB-E6	DB-E7	1	4C x 35	93	180	108	14.63	28.53	26.40	91.27	0.64	8.73	NO	
DB-E7	DB-E8	1	4C x 25	78	150	90	9.74	19.18	21.30	90.78	0.49	9.22	NO	
DB-E8	DB-E9	1	4C x 25	94	150	90	4.90	9.75	10.80	90.48	0.30	9.52	NO	
DB-E5	DB-E5_EX	1	4C x 25	113	150	90	4.92	9.57	10.60	92.35	0.35	7.65	NO	

	PURPOSE OF SUBMISSION		REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B17–MAKUNUDHOO		DESIGN : ESM		SCALE : N.T.S	
	INITIAL DOCUMENTS		A	GKH	28/03/16			DRAWN : DAI		DRW NO. : J431–G0PA–025–GR–E–D–0001–RevB	
	FIRST REVISION		B	GKH	17/04/16	PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:		ISLAND NAME : MAKUNUDHOO	
								DATE: : 17APR16		PAGE : 2/4	

MAKUNUDHOO-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
MAKUNUDHOO FEEDER-1	DB-A1	1	4C x 120	186	360	216	46.09	82.49	38.20	98.71	1.29	1.29	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-A1	DB-A2	1	4C x 120	87.3	380	216	40.45	73.45	34.00	98.17	0.54	1.83	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-A2	DB-A3	1	4C x 120	76.7	380	216	35.26	64.40	29.80	97.76	0.41	2.24	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-A3	DB-A4	1	4C x 70	88.8	265	159	30.14	55.27	34.80	97.11	0.65	2.89	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-A4	DB-A5	1	4C x 70	86	265	159	24.97	46.16	29.00	96.58	0.53	3.42	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-A5	DB-A6	1	4C x 70	112.3	265	159	19.89	37.00	23.30	96.03	0.55	3.97	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-A6	DB-A7	1	4C x 70	103	265	159	14.85	27.83	17.50	95.65	0.38	4.35	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-A7	DB-A8	1	4C x 50	119.6	215	129	9.87	18.58	14.40	95.24	0.41	4.76	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 50 sq.mm LV Cable
DB-A8	DB-A9	1	4C x 50	97.2	215	129	4.94	9.35	7.20	95.07	0.17	4.93	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 50 sq.mm LV Cable
MAKUNUDHOO FEEDER-2	DB-B1	1	4C x 120	157	380	216	50.97	91.33	42.30	98.80	1.20	1.20	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-B1	DB-B2	1	4C x 120	78	380	216	45.32	82.28	38.10	98.26	0.54	1.74	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-B2	DB-B3	1	4C x 120	93	380	216	40.10	73.22	33.90	97.69	0.57	2.31	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-B3	DB-B4	1	4C x 95	76.8	315	189	34.93	64.14	33.90	97.19	0.50	2.81	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LV Cable
DB-B4	DB-B5	1	4C x 95	88.6	315	189	29.82	55.06	29.10	96.70	0.49	3.30	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LV Cable
DB-B5	DB-B6	1	4C x 95	113.5	315	189	24.74	45.94	24.30	96.17	0.53	3.83	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LV Cable
DB-B6	DB-B7	1	4C x 95	127	315	189	19.70	36.81	19.50	95.70	0.47	4.30	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LV Cable
DB-B7	DB-B8	1	4C x 95	126	315	189	14.73	27.68	14.60	95.35	0.35	4.65	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LV Cable
DB-B8	DB-B9	1	4C x 95	136.1	315	189	9.80	18.51	9.80	95.10	0.25	4.90	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LV Cable
DB-B9	DB-B10	1	4C x 95	81	315	189	4.98	9.47	5.00	95.02	0.08	4.98	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 95 sq.mm LV Cable
MAKUNUDHOO FEEDER-3	DB-C1	1	4C x 150	233	405	243	55.59	99.85	41.10	98.34	1.66	1.66	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 150 sq.mm LV Cable
DB-C1	DB-C2	1	4C x 150	80.1	405	243	49.68	90.82	37.40	97.81	0.52	2.19	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 150 sq.mm LV Cable
DB-C2	DB-C3	1	4C x 150	80	405	243	44.49	81.78	33.70	97.35	0.47	2.65	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 150 sq.mm LV Cable
DB-C3	DB-C4	1	4C x 150	80	405	243	39.38	72.74	29.90	96.93	0.42	3.07	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 150 sq.mm LV Cable
DB-C4	DB-C5	1	4C x 150	87	405	243	34.33	63.70	26.20	96.53	0.40	3.47	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 150 sq.mm LV Cable
DB-C5	DB-C6	1	4C x 150	123	405	243	29.30	54.60	22.50	96.05	0.48	3.95	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 150 sq.mm LV Cable
DB-C6	DB-C7	1	4C x 120	75	380	216	24.37	45.60	21.10	95.77	0.29	4.23	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-C7	DB-C8	1	4C x 120	98	380	216	19.44	36.50	16.90	95.47	0.30	4.53	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-C8	DB-C9	1	4C x 120	100.1	380	216	14.56	27.43	12.70	95.24	0.23	4.76	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-C9	DB-C10	1	4C x 120	75	380	216	9.77	18.48	8.60	95.12	0.12	4.88	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-C10	DB-C11	1	4C x 120	57	380	216	5.05	9.61	4.40	95.07	0.05	4.93	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
MAKUNUDHOO FEEDER-4	DB-D1	1	4C x 120	206	380	216	40.98	73.31	33.90	98.73	1.27	1.27	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-D1	DB-D2	1	4C x 120	121	380	216	35.41	64.24	29.70	98.08	0.65	1.92	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-D2	DB-D3	1	4C x 70	119	265	159	30.20	55.12	34.70	97.21	0.87	2.79	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-D3	DB-D4	1	4C x 70	172.8	265	159	24.94	45.98	28.90	96.15	1.06	3.85	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-D4	DB-D5	1	4C x 70	80	265	159	19.75	36.92	23.20	95.76	0.39	4.24	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-D5	DB-D6	1	4C x 70	88	265	159	14.78	27.77	17.50	95.44	0.32	4.56	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-D6	DB-D7	1	4C x 70	85	265	159	9.86	18.62	11.70	95.23	0.21	4.77	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-D7	DB-D8	1	4C x 70	125	265	159	4.95	9.37	5.90	95.07	0.16	4.93	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
MAKUNUDHOO FEEDER-5	DB-E1	1	4C x 120	75	380	216	51.23	91.64	42.40	99.42	0.58	0.58	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-E1	DB-E2	1	4C x 120	99	380	216	45.90	82.60	38.20	98.74	0.69	1.26	YES	Existing 4C x 50 sq.mm LV Cable Replaced with New 4C x 120 sq.mm LV Cable
DB-E2	DB-E3	1	4C x 70	89	265	159	40.58	73.51	48.20	97.87	0.87	2.13	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-E3	DB-E4	1	4C x 70	108	265	159	35.19	64.41	40.50	96.94	0.92	3.06	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-E4	DB-E5	1	4C x 70	80	265	159	29.87	55.32	34.80	96.35	0.59	3.65	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-E5	DB-E6	1	4C x 70	86	265	159	19.81	36.96	23.20	95.93	0.42	4.07	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-E6	DB-E7	1	4C x 70	93	265	159	14.82	27.80	17.50	95.59	0.34	4.41	YES	Existing 4C x 35 sq.mm LV Cable Replaced with New 4C x 70 sq.mm LV Cable
DB-E7	DB-E8	1	4C x 50	78	215	129	9.87	18.59	14.40	95.32	0.27	4.68	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 50 sq.mm LV Cable
DB-E8	DB-E9	1	4C x 50	94	215	129	4.94	9.35	7.20	95.16	0.16	4.84	YES	Existing 4C x 25 sq.mm LV Cable Replaced with New 4C x 50 sq.mm LV Cable
DB-E5	DB-E5_EX	1	4C x 25	113	150	90	4.96	9.27	10.30	96.01	0.34	3.99	YES	

	PURPOSE OF SUBMISSION		REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B17–MAKUNUDHOO		DESIGN : ESM		SCALE : N.T.S	
	INITIAL DOCUMENTS		A	GKH	28/03/16			DRAWN : DAI		DRW NO. : J431–G0PA–025–GR–E–D–0001–RevB	
	FIRST REVISION		B	GKH	17/04/16	PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:		ISLAND NAME : MAKUNUDHOO	
								DATE: : 17APR16		PAGE : 3/4	

MAKUNUDHOO-PROPOSED PV FEEDER

From	To	No. of runs	Cable Size (sq.mm)	Length (M)	Losses (%)
POWER HOUSE	DB-B1	1	4C X150	150	3.86%
DB-B1	DB-B2	1	4C X120	120	
DB-B2	DB-B3	1	4C X120	120	
DB-B3	DB-B4	1	4C X120	120	
DB-B4	DB-B5	1	4C X120	120	
DB-B5	DB-B6	1	4C X120	120	
DB-B6	DB-B7	1	4C X150	150	
DB-B7	DB-B8	1	4C X150	150	
DB-B8	SCHOOL-PV	1	4C X150	150	
DB-B8	DB-B9	1	4C X95	95	
DB-B9	DB-B10	1	4C X95	95	2.57%
POWER HOUSE	DB-E1	1	4C X120	120	
DB-E1	DB-E2	1	4C X120	120	
DB-E2	DB-E3	1	4C X70	70	
DB-E3	DB-E4	1	4C X70	70	
DB-E4	DB-E5	1	4C X70	70	
DB-E5	DB-E6	1	4C X70	70	
DB-E5	DB-E5_EX	1	4C X25	25	
DB-E6	DB-E7	1	4C X70	70	
DB-E7	HEALTH CENTRE-PV	1	4C X50	50	
DB-E7	COUNCIL-PV	1	4C X50	50	
DB-E7	DB-E8	1	4C X50	50	
DB-E8	DB-E9	1	4C X50	50	

	PURPOSE OF SUBMISSION	REV	AUTHORISED BY	DATE	DRAWING TITLE NETWORK DIAGRAM FOR B17–MAKUNUDH00		DESIGN : ESM	SCALE : N.T.S
	INITIAL DOCUMENTS	A	GKH	28/03/16			DRAWN : DAI	DRW NO. : J431–G0PA–025–GR–E–D–0001–RevB
	FIRST REVISION	B	GKH	17/04/16	PROJECT PREPARING OUTER ISLANDS SUSTAINABLE DEVELOPMENT	CLIENT: GOVERNMENT OF THE REPUBLIC OF MALDIVES	LICENCE NO:	ISLAND NAME : MAKUNUDH00
							DATE: : 17APR16	PAGE : 4/4