

APPENDIX 1: MTO FOR ELECTRICAL AND INSTRUMENT CABLE TRAY/ LADDER ON DHN

No.	Description	Unit	Quantity	Model, P/N	Manufacturer/ Origin	Delivery Time	Remarks
I	ELECTRICAL CABLE TRAY/LADDER AND ACCESSORIES						
1	CABLE LADDERS						
	HEAVY DUTY, PULTRUDED GLASS REINFORCED PLASTIC (GRP) TYPE. FLAME RETARDANT, ZERO HALOGEN AND SUNLIGHT RESISTANT. CABLE LADDER WITH 6MM THICK,150MM DEPTH, 300MM PERFORATED RUNG SPACING.WORKING LOAD CLASSIFICATION SHALL BE BASED ON IEC 61537 AND TESTED IN BS476. CABLE LADDER SHALL INCLUDE GRP SPLICE CONNECTORS, SS316 VERTICAL HOLD DOWN ANGLE BRACKETS, SS316 COVER CLAMPS FOR COVER, LOCKING SCREWS, BOLTS AND ALL OTHER NECESSARY ACCESSORIES FOR INSTALLATION AS PER MANUFACTURE STANDARD. ALL ASSEMBLY FASTENERS, BOLTING SETS SHALL BE SS316.						
1.1	STRAIGHT LADDER (3 METRES PER SECTION / LENGTH)						
1.1.1	150MM WIDTH	LENGTH	10				
1.1.2	300MM WIDTH	LENGTH	61				
1.1.3	450MM WIDTH	LENGTH	19				
1.1.4	600MM WIDTH	LENGTH	18				
1.1.5	750MM WIDTH	LENGTH	24				
1.1.6	900MM WIDTH	LENGTH	3				
1.2	90° FLAT ELBOW C/W COVERS						
1.2.1	300MM WIDTH, 450MM RADIUS	PC	6				
1.2.2	450MM WIDTH, 450MM RADIUS	PC	2				
1.2.3	600MM WIDTH, 450MM RADIUS	PC	1				
1.2.4	750MM WIDTH, 450MM RADIUS	PC	1				
1.3	45° FLAT ELBOW C/W COVERS						
1.3.1	300MM WIDTH, 450MM RADIUS	PC	2				
1.3.2	750MM WIDTH, 450MM RADIUS	PC	1				
1.4	EQUAL TEE C/W COVERS						
1.4.1	300MM WIDTH, 300MM RADIUS	PC	1				
1.4.2	300MM WIDTH, 450MM RADIUS	PC	1				
1.4.3	600MM WIDTH, 450MM RADIUS	PC	2				
1.4.4	750MM WIDTH, 450MM RADIUS	PC	1				
1.5	UNEQUAL TEE C/W COVERS						
1.5.1	300MM WIDTH 1 x 150MM WIDTH 2 x 300MM WIDTH 3 x 450MM RADIUS	PC	1				
1.5.2	300MM WIDTH 1 x 450MM WIDTH 2 x 450MM WIDTH 3 x 450MM RADIUS	PC	1				
1.5.3	450MM WIDTH 1 x 150MM WIDTH 2 x 450MM WIDTH 3 x 450MM RADIUS	PC	2				
1.5.4	450MM WIDTH 1 x 300MM WIDTH 2 x 450MM WIDTH 3 x 450MM RADIUS	PC	1				
1.5.5	600MM WIDTH 1 x 300MM WIDTH 2 x 450MM WIDTH 3 x 450MM RADIUS	PC	1				
1.5.6	600MM WIDTH 1 x 450MM WIDTH 2 x 600MM WIDTH 3 x 450MM RADIUS	PC	1				
1.5.7	750MM WIDTH 1 x 450MM WIDTH 2 x 450MM WIDTH 3 x 450MM RADIUS	PC	2				
1.6	REDUCER (LEFT HAND) C/W COVERS						
1.6.1	300MM WIDTH 1 - 150MM WIDTH 2	PC	1				
1.6.2	450MM WIDTH 1 - 300MM WIDTH 2	PC	1				
1.6.3	600MM WIDTH 1 - 450MM WIDTH 2	PC	1				
1.6.4	750MM WIDTH 1 - 300MM WIDTH 2	PC	1				
1.6.5	750MM WIDTH 1 - 600MM WIDTH 2	PC	1				
1.7	REDUCER (RIGHT HAND) C/W COVERS						
1.7.1	300MM WIDTH 1 - 150MM WIDTH 2	PC	1				
1.7.2	750MM WIDTH 1 - 300MM WIDTH 2	PC	1				
1.8	OUTSIDE RISER C/W COVERS						
1.8.1	150MM WIDTH, 30 DEG., 450MM RADIUS	PC	1				

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1.8.2	150MM WIDTH, 90 DEG., 300MM RADIUS	PC	1				
1.8.3	150MM WIDTH, 90 DEG., 450MM RADIUS	PC	1				
1.8.4	300MM WIDTH, 45 DEG., 300MM RADIUS	PC	1				
1.8.5	300MM WIDTH, 45 DEG., 450MM RADIUS	PC	2				
1.8.6	300MM WIDTH, 30 DEG., 450MM RADIUS	PC	4				
1.8.7	300MM WIDTH, 90 DEG., 450MM RADIUS	PC	2				
1.8.8	450MM WIDTH, 45 DEG., 450MM RADIUS	PC	4				
1.8.9	450MM WIDTH, 90 DEG., 300MM RADIUS	PC	1				
1.8.10	600MM WIDTH, 30 DEG., 450MM RADIUS	PC	2				
1.8.11	750MM WIDTH, 45 DEG., 450MM RADIUS	PC	2				
1.9	INSIDE RISER C/W COVERS						
1.9.1	150MM WIDTH, 30 DEG., 450MM RADIUS	PC	1				
1.9.2	150MM WIDTH, 90 DEG., 450MM RADIUS	PC	2				
1.9.3	300MM WIDTH, 30 DEG., 450MM RADIUS	PC	5				
1.9.4	300MM WIDTH, 45 DEG., 300MM RADIUS	PC	1				
1.9.5	300MM WIDTH, 45 DEG., 450MM RADIUS	PC	2				
1.9.6	300MM WIDTH, 90 DEG., 450MM RADIUS	PC	1				
1.9.7	450MM WIDTH, 45 DEG., 450MM RADIUS	PC	4				
1.9.8	600MM WIDTH, 30 DEG., 450MM RADIUS	PC	2				
1.9.9	750MM WIDTH, 45 DEG., 450MM RADIUS	PC	2				
1.9.10	750MM WIDTH, 90 DEG., 450MM RADIUS	PC	1				
2	CABLE LADDER ACCESSORIES						
2.1	STRAIGHT LADDER COVER, 3MM THK., 3M LENGTH PER PIECE C/W SPECIAL CLIPS, COVER CLAMP.						
2.1.1	150 WIDTH	LENGTH	10				
2.1.2	300 WIDTH	LENGTH	61				
2.1.3	450 WIDTH	LENGTH	19				
2.1.4	600 WIDTH	LENGTH	18				
2.1.5	750 WIDTH	LENGTH	24				
2.1.6	900 WIDTH	LENGTH	3				
2.2	SPLICE CONNECTORS AND ALL REQUIRED ACCESSORIES, BOLTS, NUTS, WASHERS, MATERIAL TO COMPLETE INSTALLATION FOR CABLE LADDERS LISTED IN THE ITEM 1.	Lot	1				Vendor to calculate the required quantity of accessories (including 20% spare) and supply sufficient accessories for the complete installation of all proposed cable ladders.
3	CABLE TRAY AND ACCESSORIES (GRP)						
	- HEAVY DUTY CABLE TRAY PERFORATED , GLASS REINFORCED PLASTIC (GRP) TYPE. FIRE RESISTANT, ZERO HALOGEN AND SUNLIGHT RESISTANT. CABLE TRAY WITH 3MM THICK,50 MM DEPTH. WORKING LOAD CLASSIFICATION SHALL BE BASED ON IEC 61537 AND TESTED IN ACCORDANCE. WITH ASTM E-84 OR BS476. - CABLE TRAY SHALL INCLUDE GRP SPLICE CONNECTORS, SS316 VERTICAL HOLD DOWN ANGLE BRACKETS, SS316 COVER CLAMPS FOR COVER, LOCKING SCREWS, BOLTS AND ALL OTHER NECESSARY ACCESSORIES FOR INSTALLATION AS PER MANUFACTURE STANDARD. ALL ASSEMBLY FASTENERS, BOLTING SETS SHALL BE SS316 .						
3.1	STRAIGHT TRAY (3 METRES PER SECTION / LENGTH)						
3.1.1	50MM WIDTH	LENGTH	120				
3.1.2	100MM WIDTH	LENGTH	197				
3.2	STRAIGHT TRAY COVER 3MM THK 10 MM HEIGHT (3 METRES PER SECTION / LENGTH)						
3.2.1	50MM WIDTH	LENGTH	84				

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No.	Description	Unit	Quantity	Model, P/N	Manufacturer/Origin	Delivery Time	Remarks
3.2.2	100MM WIDTH	LENGTH	170				
3.3	FLEXIBLE PLANE ELBOW C/W COVERS						
3.3.1	50MM WIDTH	PC	36				
3.3.2	100MM WIDTH	PC	47				
3.4	FLEXIBLE RISER C/W COVERS						
3.4.1	50MM WIDTH	PC	12				
3.4.2	100MM WIDTH	PC	13				
3.5	SPLICE CONNECTORS AND ALL REQUIRED ACCESSORIES, BOLTS, NUTS, WASHERS, MATERIAL TO COMPLETE INSTALLATION FOR CABLE TRAYS LISTED IN THE ITEM 3	Lot	1				Vendor to calculate the required quantity of accessories (including 20% spare) and supply sufficient accessories for the complete installation of all proposed cable ladders.
4	CABLE TRAY AND ACCESSORIES (SS316)						For flare boom
	HEAVY DUTY CABLE TRAY PERFORATED OF STAINLESS STEEL (SS316) TYPE. CABLE TRAY WITH 1.5MM THICKNESS, 50MM DEPTH. COMPLETED WITH COVERS THICKNESS 1.0 MM, COVER CLAMPS, HEX HEAD BOLTS & SPRING WASHERS, HOLD DOWN CLAMPS, LADDER SPLICE CONNECTOR (ALL MATERIAL IS SS316), EARTHING JUMPER. CABLE TRAY SHALL BE SUITABLE FOR OFFSHORE/MARINE INSTALLATION (VENDOR SHALL PROVIDE DETAIL SPECIFICATION, NECESSARY QUANTITY FOR ALL ACCESSORIES, BOLTS, NUTS, WASHERS FOR COMPLETED, TRAY/LADDER INSTALLATION. ALL MATERIAL IS SS316).						
4.1	CABLE TRAY, STRAIGHT RUN (3 METRES PER SECTION/ LENGTH)						
	100MM WIDTH	LENGTH	20				
4.2	CABLE TRAY, STRAIGHT RUN COVER (3 METRES PER SECTION/ LENGTH)						
	100MM WIDTH	LENGTH	20				
4.3	SS316 VERTICAL HOLD DOWN ANGLE BRACKETS, LOCKING SCREWS, BOLTS AND ALL OTHER NECESSARY ACCESSORIES FOR INSTALLATION AS PER MANUFACTURE STANDARD. ALL ASSEMBLY FASTERNES BOLTING SETS SHALL BE SS316.	Lot	1				Vendor to calculate the required quantity of accessories (including 20% spare) and supply sufficient accessories for the complete installation of all proposed cable ladders.
II	INSTRUMENT CABLE TRAY/LADDER AND ACCESSORIES						
1	CABLE LADDER AND ACCESSORIES						
	- CABLE LADDER SHALL BE HEAVY DUTY, GLASS REINFORCED PLASTIC(GRP) TYPE, FLAME RETARDANT, ZERO HALOGEN AND SUNLIGHT RESISTANT. CABLE LADDER WITH 150MM DEPTH, 6MM THICKNESS, 300MM PERFORATED RUNG SPACING AND 3 METRES LENGTH STRAIGHT CABLE LADDER, CABLE LADDER SHALL BE NEMA 20C AS PER NEMA FG 1 STANDARD AND TESTED IN BS476 ACCORDANCE WITH ASTM E-84 OR BS476. - CABLE LADDER SHALL INCLUDE GRP SPLICE CONNECTORS , SS316 VERTICAL HOLD DOWN ANGLE BRACKETS, SS316 COVER CLAMPS FOR COVER, LOCKING SCREWS, BOLTS AND ALL OTHER NECESSARY ACCESSORIES FOR INSTALLATION AS PER MANUFACTURE STANDARD .ALL ASSEMBLY FASTENERS BOLTING SETS SHALL BE SS316						
1.1	STRAIGHT LADDER (3 METRES PER SECTION / LENGTH)						
1.1.1	150MM WIDTH	LENGTH	67				
1.1.2	300MM WIDTH	LENGTH	114				
1.1.3	450MM WIDTH	LENGTH	18				
1.1.4	600MM WIDTH	LENGTH	17				
1.1.5	750MM WIDTH	LENGTH	10				
1.1.6	900MM WIDTH	LENGTH	17				

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No.	Description	Unit	Quantity	Model, P/N	Manufacturer/Origin	Delivery Time	Remarks
1.2	CABLE LADDER COVER (3 METRES PER SECTION / LENGTH)						
1.2.1	150MM WIDTH	LENGTH	67				
1.2.2	300MM WIDTH	LENGTH	114				
1.2.3	450MM WIDTH	LENGTH	18				
1.2.4	600MM WIDTH	LENGTH	17				
1.2.5	750MM WIDTH	LENGTH	10				
1.2.6	900MM WIDTH	LENGTH	17				
1.3	90 DEG. FLAT ELBOW C/W COVER						
1.3.1	150MM WIDTH	PC	10				
1.3.2	300MM WIDTH	PC	22				
1.3.3	450MM WIDTH	PC	1				
1.3.4	600MM WIDTH	PC	2				
1.3.5	900MMWIDTH	PC	4				
1.4	45 DEG. FLAT ELBOW C/W COVERS						
1.4.1	150MM WIDTH	PC	2				
1.4.2	300MM WIDTH	PC	2				
1.5	30 DEG. FLAT ELBOW C/W COVERS						
1.5.1	300MM WIDTH	PC	5				
1.6	OFFSET REDUCER C/W COVERS						
1.6.1	300 x 150MM (RIGHT HAND REDUCER)	PC	5				
1.6.2	450 x 300MM (RIGHT HAND REDUCER)	PC	1				
1.6.3	450 x 300MM (LEFT HAND REDUCER)	PC	1				
1.6.4	600 x 300mm (LEFT HAND REDUCER)	PC	2				
1.6.5	750 x 450MM (LEFT HAND REDUCER)	PC	1				
1.6.6	750 x 450MM (STRAIGHT REDUCER)	PC	1				
1.6.7	900 x 300MM (RIGHT HAND REDUCER)	PC	1				
1.7	EQUAL TEE C/W COVERS						
1.7.1	150MM WIDTH	PC	5				
1.7.2	300MM WIDTH	PC	16				
1.7.3	450MM WIDTH	PC	4				
1.7.4	750MM WIDTH	PC	1				
1.7.5	600MM WIDTH	PC	4				
1.7.6	900MM WIDTH	PC	2				
1.8	30 DEGREE RISER (INSIDE & OUTSIDE) C/W COVERS						
1.8.1	150MM WIDTH (OUTSIDE)	PC	6				
1.8.2	150MM WIDTH (INSIDE)	PC	6				
1.8.3	300MM WIDTH (OUTSIDE)	PC	20				
1.8.4	300MM WIDTH (INSIDE)	PC	20				
1.8.5	600MM WIDTH (OUTSIDE)	PC	6				
1.8.6	600MM WIDTH (INSIDE)	PC	6				
1.8.7	900MM WIDTH (OUTSIDE)	PC	2				
1.8.8	900MM WIDTH (INSIDE)	PC	2				
1.9	45 DEGREE RISER (INSIDE & OUTSIDE) C/W COVERS						
1.9.1	150MM WIDTH (OUTSIDE)	PC	1				
1.9.2	150MM WIDTH (INSIDE)	PC	1				
1.9.3	300MM WIDTH (OUTSIDE)	PC	12				
1.9.4	300MM WIDTH (INSIDE)	PC	12				
1.9.5	600MM WIDTH (OUTSIDE)	PC	2				
1.9.6	600MM WIDTH (INSIDE)	PC	2				
1.10	60 DEGREE RISER (INSIDE & OUTSIDE) C/W COVERS						

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No.	Description	Unit	Quantity	Model, P/N	Manufacturer/ Origin	Delivery Time	Remarks
1.10.1	300MM WIDTH (OUTSIDE)	PC	2				
1.10.2	300MM WIDTH (INSIDE)	PC	2				
1.11	90 DEGREE RISER (INSIDE & OUTSIDE) C/W COVERS						
1.11.1	150MM (OUTSIDE)	PC	4				
1.11.2	300MM (OUTSIDE)	PC	5				
1.11.3	300MM (INSIDE)	PC	6				
1.11.4	450MM (OUTSIDE)	PC	2				
1.11.5	450MM (INSIDE)	PC	2				
1.11.6	600MM (OUTSIDE)	PC	1				
1.11.7	600MM (INSIDE)	PC	1				
1.11.8	750MM (OUTSIDE)	PC	1				
1.11.9	750MM (INSIDE)	PC	1				
1.11.10	900MM (OUTSIDE)	PC	2				
1.11.11	900MM (INSIDE)	PC	2				
1.12	UNEQUAL TEE C/W COVERS						
1.12.1	600MM x 300MM	PC	1				
1.12.2	900MM x 300MM	PC	1				
1.12.3	900MM x 600MM	PC	1				
1.13	SPLICE CONNECTORS AND ALL REQUIRED ACCESSORIES, BOLTS, NUTS, WASHERS, MATERIAL TO COMPLETE INSTALLATION FOR CABLE LADDERS LISTED IN THE ITEM 1	Lot	1				Vendor to calculate the required quantity of accessories (including 20% spare) and supply sufficient accessories for the complete installation of all proposed cable ladders.
2	TUBING/CABLE TRAY AND ACCESSORIES						
	- PERFORATED CABLE TRAY SHALL BE HEAVY DUTY, GLASS REINFORCED PLASTIC(GRP) TYPE, FLAME RETARDANT, ZERO HALOGEN AND SUNLIGHT RESISTANT. CABLE LADDER WITH 50MM DEPTH, 3MM THICKNESS, 3 METRES LENGTH STRAIGHT PER SECTION/LENGTH, CABLE TRAY SHALL BE NEMA 20C AS PER NEMA FG 1 STANDARD AND TESTED IN BS476 ACCORDANCE WITH ASTM E-84 OR BS476. ALL ASSEMBLY FASTENERS BOLTING SETS SHALL BE SS316 - CABLE TRAY SHALL INCLUDE GRP SPLICE CONNECTORS, SS316 VERTICAL HOLD DOWN ANGLE BRACKETS, SS316 COVER CLAMPS FOR COVER, LOCKING SCREWS, BOLTS AND ALL OTHER NECESSARY ACCESSORIES FOR INSTALLATION AS PER MANUFACTURE STANDARD .ALL ASSEMBLY FASTENERS BOLTING SETS SHALL BE SS316						
2.1	STRAIGHT TRAY (3 METRES PER SECTION / LENGTH)						
2.1.1	50MM WIDTH	LENGTH	120				18 Lengths for Telecom
2.1.2	75MM WIDTH	LENGTH	36				
2.1.3	100MM WIDTH	LENGTH	50				9 Lengths for Telecom
2.1.4	150MM WIDTH	LENGTH	34				
2.1.5	300MM WIDTH	LENGTH	56				
2.1.6	450MM WIDTH	LENGTH	6				
2.1.7	600MM WIDTH	LENGTH	6				
2.1.8	900MM WIDTH	LENGTH	2				
2.2	FLEXIBLE PLANE ELBOW C/W COVERS						
2.2.1	100mm	PC	25				
2.2.2	150mm	PC	26				
2.2.3	300mm	PC	6				
2.2.4	450mm	PC	2				
2.3	FLEXIBLE RISER C/W COVERS						
2.3.1	100mm	PC	17				

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No.	Description	Unit	Quantity	Model, P/N	Manufacturer/Origin	Delivery Time	Remarks
2.3.2	150mm	PC	2				
2.3.3	300mm	PC	18				
2.4	CABLE TRAY COVER (3 METRES PER SECTION / LENGTH)						
2.4.1	50MM WIDTH	LENGTH	54				
2.4.2	75MM WIDTH	LENGTH	35				
2.4.3	100MM WIDTH	LENGTH	25				
2.4.4	150MM WIDTH	LENGTH	26				
2.4.5	300MM WIDTH	LENGTH	28				
2.4.6	450MM WIDTH	LENGTH	5				
2.4.7	600MM WIDTH	LENGTH	5				
2.4.8	900MM WIDTH	LENGTH	2				
2.6	SPLICE CONNECTORS AND ALL REQUIRED ACCESSORIES, BOLTS, NUTS, WASHERS, MATERIAL TO COMPLETE INSTALLATION FOR CABLE TRAYS LISTED IN THE ITEM 2	Lot	1				Vendor to calculate the required quantity of accessories (including 20% spare) and supply sufficient accessories for the complete installation of all proposed cable ladders.