
	PROPOSAL DESKRIPSI DAN VOLUME PELAKSANAAN UPGRADING SP-1, SP-3, SP-4, SP-5 DAN PEMBANGUNAN PRODUCED & TREATED WATER TANK DI WTIP AREA JIRAK EOR PROJECT					
NO	DESKRIPSI	UNIT	VOLUME	BIAYA BARANG & JASA		TOTAL (IDR)	KETERANGAN	
				KDN (IDR)	KLN (IDR)			
1	PERSIAPAN PEKERJAAN							
1.1	SP-1	SP-1	1	LOT				
1.2	SP-3	SP-3	1	LOT				
1.3	SP-4	SP-4	1	LOT				
1.4	SP-5	SP-5	1	LOT				
1.5	TANK (WTIP)	WTIP	1	LOT				
2	ENGINEERING							
	ENGINEERING	ALL	1	LOT				
3	BUILDING & SUPPORTING FACILITY							
3.1	A. PANEL AND SOLAR CELL BUILDING							
	SP-1							
	1. CIVIL WORK	SP-1	1	LOT				
	2. ELECTRICAL WORK	SP-1	1	LOT				
	3. INSTRUMENT WORK (RTU)	SP-1	1	LOT				
	Remote Terminal Unit (RTU) Monitoring & Controlling Power supply 24 VDC IP 65 LCD Display Battery built in min. 7 days Able to communication with SCADA by Fiber Optic Complete with accessories for fiber optic communication I/O FOR RTU SP-1: AI:22, AO:6, DI:20, DO:6	SP-1	1	LOT				
	SP-3							
	1. CIVIL WORK	SP-3	1	LOT				
	2. ELECTRICAL WORK	SP-3	1	LOT				
	3. INSTRUMENT WORK (RTU)	SP-3	1	LOT				
	Remote Terminal Unit (RTU) Monitoring & Controlling Power supply 24 VDC IP 65 LCD Display Battery built in min. 7 days Able to communication with SCADA by Fiber Optic Complete with accessories for fiber optic communication I/O FOR RTU SP-3: AI:9, AO:6, DI:21, DO:6	SP-3	1	LOT				
	SP-4							
	1. CIVIL WORK	SP-4	1	LOT				
	2. ELECTRICAL WORK	SP-4	1	LOT				
	3. INSTRUMENT WORK (RTU)	SP-4	1	LOT				
	Remote Terminal Unit (RTU) Monitoring & Controlling Power supply 24 VDC IP 65 LCD Display Battery built in min. 7 days Able to communication with SCADA by Fiber Optic Complete with accessories for fiber optic communication I/O FOR RTU SP-4: AI:3, AO:0, DI:15, DO:4	SP-4	1	LOT				
	SP-5							
	1. CIVIL WORK	SP-5	1	LOT				
	2. ELECTRICAL WORK	SP-5	1	LOT				
	3. INSTRUMENT WORK (RTU)	SP-5	1	LOT				
	Remote Terminal Unit (RTU) Monitoring & Controlling Power supply 24 VDC IP 65 LCD Display Battery built in min. 7 days Able to communication with SCADA by Fiber Optic Complete with accessories for fiber optic communication I/O FOR RTU SP-4: AI:13, AO:3, DI:16, DO:4	SP-5	1	LOT				
3.2	B. GUARD HOUSE							
	SP-1							
	1. CIVIL WORK	SP-1	1	LOT				
	2. ELECTRICAL WORK	SP-1	1	LOT				

	SP-3							
	1. CIVIL WORK	SP-3	1	LOT				
	2. ELECTRICAL WORK	SP-3	1	LOT				
	SP-4							
	1. CIVIL WORK	SP-4	1	LOT				
	2. ELECTRICAL WORK	SP-4	1	LOT				
	SP-5							
	1. CIVIL WORK	SP-5	1	LOT				
	2. ELECTRICAL WORK	SP-5	1	LOT				
4	PRODUCTION FACILITY							
4.1	A. PRODUCTION MANIFOLD							
	SP-1							
	1. CIVIL WORK	SP-1	1	LOT				
	2. INSTRUMENT WORK	SP-1	1	LOT				
	INLET MANIFOLD							
	PG-015-001	SP-1	1	EA				
	PG-197-001	SP-1	1	EA				
	PG-155-001	SP-1	1	EA				
	PG-110-001	SP-1	1	EA				
	PG-163-001	SP-1	1	EA				
	HEADER MANIFOLD							
	PG-SP1-001	SP-1	1	EA				
	PG-SP1-002	SP-1	1	EA				
	PG-SP1-003	SP-1	1	EA				
	TG/TW-SP1-001	SP-1	1	EA				
	TG/TW-SP1-002	SP-1	1	EA				
	TG/TW-SP1-003	SP-1	1	EA				
	TG/TW-SP1-004	SP-1	1	EA				
	3. PIPING WORK	SP-1	1	LOT				
	SP-3							
	1. CIVIL WORK	SP-3	1	LOT				
	2. INSTRUMENT WORK	SP-3	1	LOT				
	HEADER MANIFOLD							
	PG-117-001	SP-3	1	EA				
	PG-178-001	SP-3	1	EA				
	3. PIPING WORK	SP-3	1	LOT				
	SP-4							
	1. CIVIL WORK	SP-4	1	LOT				
	2. INSTRUMENT WORK	SP-4	1	LOT				
	INLET MANIFOLD							
	PG-183-001	SP-4	1	EA				
	PG-028-001	SP-4	1	EA				
	HEADER MANIFOLD							
	PG-SP4-001	SP-4	1	EA				
	PG-SP4-002	SP-4	1	EA				
	PG-SP4-003	SP-4	1	EA				
	TG/TW-SP4-001	SP-4	1	EA				
	TG/TW-SP4-002	SP-4	1	EA				
	TG/TW-SP4-003	SP-4	1	EA				
	TG/TW-SP4-004	SP-4	1	EA				
	3. PIPING WORK	SP-4	1	LOT				
	SP-5							
	1. CIVIL WORK	SP-5	1	LOT				
	2. INSTRUMENT WORK	SP-5	1	LOT				
	INLET MANIFOLD							
	PG-225-001	SP-5	1	EA				
	PG-078B-001	SP-5	1	EA				
	HEADER MANIFOLD							
	PG-SP5-001	SP-5	1	EA				
	PG-SP5-002	SP-5	1	EA				
	TG/TW-SP5-001	SP-5	1	EA				
	TG/TW-SP5-002	SP-5	1	EA				
	TG/TW-SP5-003	SP-5	1	EA				
	3. PIPING WORK	SP-5	1	LOT				
4.2	B. INJECTION MANIFOLD							
	SP-1							
	1. CIVIL WORK	SP-1	1	LOT				
	2. INSTRUMENT WORK	SP-1	1	LOT				
	SUBMANIFOLD							
	PG-SP1-001	SP-1	1	EA				
	PT-SP1-001	SP-1	1	EA				
	OUTLET SUBMANIFOLD							
	PG-100-003	SP-1	1	EA				
	PG-043-003	SP-1	1	EA				
	PG-044-003	SP-1	1	EA				
	PG-193-003	SP-1	1	EA				
	PG-076-003	SP-1	1	EA				
	FCV-100-001	SP-1	1	EA				
	FCV-043-001	SP-1	1	EA				
	FCV-044-001	SP-1	1	EA				
	FCV-193-001	SP-1	1	EA				
	FCV-076-001	SP-1	1	EA				
	FIT-100-001	SP-1	1	EA				
	FIT-043-001	SP-1	1	EA				
	FIT-044-001	SP-1	1	EA				
	FIT-193-001	SP-1	1	EA				
	FIT-076-001	SP-1	1	EA				
	PIT-100-001	SP-1	1	EA				
	PIT-043-001	SP-1	1	EA				
	PIT-044-001	SP-1	1	EA				
	PIT-193-001	SP-1	1	EA				
	PIT-076-001	SP-1	1	EA				

	PG-100-001	SP-1	1	EA				
	PG-043-001	SP-1	1	EA				
	PG-044-001	SP-1	1	EA				
	PG-193-001	SP-1	1	EA				
	PG-076-001	SP-1	1	EA				
	PG-100-002	SP-1	1	EA				
	PG-043-002	SP-1	1	EA				
	PG-044-002	SP-1	1	EA				
	PG-193-002	SP-1	1	EA				
	PG-076-002	SP-1	1	EA				
	PRV-100-001	SP-1	1	EA				
	PRV-043-001	SP-1	1	EA				
	PRV-044-001	SP-1	1	EA				
	PRV-193-001	SP-1	1	EA				
	PRV-076-001	SP-1	1	EA				
	3. PIPING WORK	SP-1	1	LOT				
	SP-3							
	1. CIVIL WORK	SP-3	1	LOT				
	2. INSTRUMENT WORK	SP-3	1	LOT				
	SUBMANIFOLD							
	PG-SP3-001	SP-3	1	EA				
	PT-SP3-001	SP-3	1	EA				
	OUTLET SUBMANIFOLD							
	PG-180-003	SP-3	1	EA				
	PG-170-003	SP-3	1	EA				
	FCV-180-001	SP-3	1	EA				
	FCV-170-001	SP-3	1	EA				
	FIT-180-001	SP-3	1	EA				
	FIT-170-001	SP-3	1	EA				
	PIT-180-001	SP-3	1	EA				
	PIT-170-001	SP-3	1	EA				
	PG-180-001	SP-3	1	EA				
	PG-170-001	SP-3	1	EA				
	PG-180-002	SP-3	1	EA				
	PG-170-002	SP-3	1	EA				
	PRV-180-001	SP-3	1	EA				
	PRV-170-001	SP-3	1	EA				
	3. PIPING WORK	SP-3	1	LOT				
	SP-5							
	1. CIVIL WORK	SP-5	1	LOT				
	2. INSTRUMENT WORK	SP-5	1	LOT				
	SUBMANIFOLD							
	PG-SP5-001	SP-5	1	EA				
	PT-SP5-001	SP-5	1	EA				
	OUTLET SUBMANIFOLD							
	PG-166-003	SP-5	1	EA				
	PG-181-003	SP-5	1	EA				
	PG-IW.02-003	SP-5	1	EA				
	FCV-166-001	SP-5	1	EA				
	FCV-181-001	SP-5	1	EA				
	FCV-IW.02-001	SP-5	1	EA				
	FIT-166-001	SP-5	1	EA				
	FIT-181-001	SP-5	1	EA				
	FIT-IW.02-001	SP-5	1	EA				
	PIT-166-001	SP-5	1	EA				
	PIT-181-001	SP-5	1	EA				
	PIT-IW.02-001	SP-5	1	EA				
	3. PIPING WORK	SP-5	1	LOT				
4.3	C. TANKS							
	C.1 PRODUCTION TEST TANK							
	SP-1							
	1. CIVIL WORK	SP-1	1	LOT				
	2. MECHANICAL WORK	SP-1	1	LOT				
	3. INSTRUMENT WORK	SP-1	1	LOT				
	INLET TANK							
	Coriolis Flow Meter FT-201-001	SP-1	1	EA				
	ON TANK							
	LI-201-001	SP-1	1	EA				
	LT-201-001	SP-1	1	EA				
	LSHH-201-001	SP-1	1	EA				
	LSLL-201-001	SP-1	1	EA				
	BV-201-001	SP-1	1	EA				
	OULET TANK							
	PDI-201-001	SP-1	1	EA				
	PUMPS							
	PSHL-201-001A	SP-1	1	EA				
	PSHL-201-001B	SP-1	1	EA				
	PSHL-201-001C	SP-1	1	EA				
	PG-201-001A	SP-1	1	EA				
	PG-201-001B	SP-1	1	EA				
	PG-201-001C	SP-1	1	EA				
	HS-201-001A	SP-1	1	EA				
	HS-201-001B	SP-1	1	EA				
	HS-201-001C	SP-1	1	EA				
	FIT-211-001	SP-1	1	EA				
	RO-201-001	SP-1	1	EA				
	4. PIPING WORK	SP-1	1	LOT				
	SP-3							
	1. CIVIL WORK	SP-3	1	LOT				
	2. MECHANICAL WORK	SP-3	1	LOT				
	3. INSTRUMENT WORK	SP-3	1	LOT				
	INLET TANK							
	Coriolis Flow Meter FT-204-001	SP-3	1	EA				
	ON TANK							
	LI-T-001	SP-3	1	EA				
	LT-001-001	SP-3	1	EA				

	LSHH-001-001	SP-3	1	EA				
	LSLL-001-001	SP-3	1	EA				
	BV-T-001	SP-3	1	EA				
	OULET TANK							
	PDI-001-001	SP-3	1	EA				
	PUMPS							
	PSHL-202-001A	SP-3	1	EA				
	PSHL-202-001B	SP-3	1	EA				
	PSHL-202-001C	SP-3	1	EA				
	PG-202-001A	SP-3	1	EA				
	PG-202-001B	SP-3	1	EA				
	PG-202-001C	SP-3	1	EA				
	HS-202-001A	SP-3	1	EA				
	HS-202-001B	SP-3	1	EA				
	HS-202-001C	SP-3	1	EA				
	FIT-212-001	SP-3	1	EA				
	RO-202-001	SP-3	1	EA				
	4. PIPING WORK	SP-3	1	LOT				
	SP-4							
	1. CIVIL WORK	SP-4	1	LOT				
	2. MECHANICAL WORK	SP-4	1	LOT				
	3. INSTRUMENT WORK	SP-4	1	LOT				
	INLET TANK							
	Coriolis Flow Meter FT-202-001	SP-4						
	ON TANK							
	LI-202-001	SP-4	1	EA				
	LT-202-001	SP-4	1	EA				
	LSHH-202-001	SP-4	1	EA				
	LSLL-202-001	SP-4	1	EA				
	BV-202-001	SP-4	1	EA				
	OULET TANK							
	PDI-202-001	SP-4	1	EA				
	PUMPS							
	PSHL-203-001A	SP-4	1	EA				
	PSHL-203-001B	SP-4	1	EA				
	PG-203-001A	SP-4	1	EA				
	PG-203-001B	SP-4	1	EA				
	HS-203-001A	SP-4	1	EA				
	HS-203-001B	SP-4	1	EA				
	FIT-213-001	SP-4	1	EA				
	RO-203-001	SP-4	1	EA				
	4. PIPING WORK	SP-4	1	LOT				
	SP-5							
	1. CIVIL WORK	SP-5	1	LOT				
	2. MECHANICAL WORK	SP-5	1	LOT				
	3. INSTRUMENT WORK	SP-5	1	LOT				
	INLET TANK							
	Coriolis Flow Meter FT-206-001	SP-5	1	EA				
	ON TANK							
	LI-203-001	SP-5	1	EA				
	LT-203-001	SP-5	1	EA				
	LSHH-203-001	SP-5	1	EA				
	LSLL-203-001	SP-5	1	EA				
	BV-203-001	SP-5	1	EA				
	OULET TANK							
	PDI-203-001	SP-5	1	EA				
	PUMPS							
	PSHL-204-001A	SP-5	1	EA				
	PSHL-204-001B	SP-5	1	EA				
	PG-204-001A	SP-5	1	EA				
	PG-204-001B	SP-5	1	EA				
	HS-204-001A	SP-5	1	EA				
	HS-204-001B	SP-5	1	EA				
	FIT-214-001	SP-5	1	EA				
	RO-204-001	SP-5	1	EA				
	4. PIPING WORK	SP-5	1	LOT				
	C.2 PRODUCED WATER TANK							
	1. CIVIL WORK	WTIP	1	LOT				
	2. MECHANICAL WORK	WTIP	1	LOT				
	C.3 TREATED WATER TANK							
	1. CIVIL WORK	WTIP	1	LOT				
	2. MECHANICAL WORK	WTIP	1	LOT				
4.4	D. PACKAGES							
	D.1 DEG FOAM PACKAGE							
	1. DEG FOAM PACKAGE SP-1	SP-1	1	LOT				
	2. DEG FOAM PACKAGE SP-3	SP-3	1	LOT				
	3. DEG FOAM PACKAGE SP-4	SP-4	1	LOT				
	4. DEG FOAM PACKAGE SP-5	SP-5	1	LOT				
	D.2 FOAM PACKAGE							
	1. FOAM PACKAGE SP-1	SP-1	1	LOT				
	2. FOAM PACKAGE SP-3	SP-3	1	LOT				
	3. FOAM PACKAGE SP-4	SP-4	1	LOT				
	4. FOAM PACKAGE SP-5	SP-5	1	LOT				
5	CIVIL							
	1. CIVIL WORK SP-1	SP-1	1	LOT				
	2. CIVIL WORK SP-3	SP-3	1	LOT				
	3. CIVIL WORK SP-4	SP-4	1	LOT				
	4. CIVIL WORK SP-5	SP-5	1	LOT				
6	ELECTRICAL SYSTEM							
	1. ELECT. SYSTEM SP-1	SP-1	1	LOT				
	2. ELECT. SYSTEM SP-3	SP-3	1	LOT				

	3. ELECT. SYSTEM SP-4	SP-4	1	LOT				
	4. ELECT. SYSTEM SP-5	SP-5	1	LOT				
7	INSTRUMENT SYSTEM (EXCLUDE FIELD INSTRUMENT)							
	1. INSTRUMENT SYSTEM SP-1	SP-1	1	LOT				
	INSTRUMENT CABLES							
	1P,1.5sqmm CU/PVC/IS/SWA/PVC-FRD	SP-1	1000	M				
	2P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-1	200	M				
	5P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-1	150	M				
	10P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-1	200	M				
	20P,1.5sqmm CU/PVC/IS/OS/SWA/PVC-FRD	SP-1	250	M				
	Grounding Cable	SP-1	500	M				
	Cable Gland Double Seal, Stainless Steel316SS NPT Threaded Type Suitable for Steel Wire Armour Ex-d(Ex proof type) C/W Shroud							
	M20	SP-1	73	EA				
	M25	SP-1	9	EA				
	M32	SP-1	5	EA				
	M50	SP-1	7	EA				
	Cable Lug							
	for 16 AWG wire, Copper Tined Coated Ring Type, c/w isolation 100 ea/pack	SP-1	3	Pack				
	for 16 AWG wire, Copper Tined Coated Pin Type, c/w isolation 100 ea/pack	SP-1	4	Pack				
	Wire Marker for 16 AWG, Non-Shrinkable PVC Tube White Color 20M/Roll	SP-1	2	Roll				
	Cable Marker 100Lx12W, Plate 316SS, 25 Digits c/w Tie Wrap 316SS Identification on the marker shall be engraved with cable number shown on the drawing	SP-1	58	EA				
	Tie Wrap, Nylon, UV Resistent, Black Color, 100ea/pack							
	258mm	SP-1	3	Pack				
	358mm	SP-1	1	Pack				
	Tie Wrap, Coated Stainless Steel, 200mm	SP-1	1	Pack				
	PVC Tape, PVC Black Color 2M/Roll, 19mm	SP-1	3	Roll				
	Insulation PVC Tube, PVC, Protection Tube for Shiled Wire, 20M/Roll, 1.5mm	SP-1	3	Roll				
	Grounding Rod, Copper Clad Steel, Sharp End c/w Coupling, 18mm dia. x 3000 mm	SP-1	10	EA				
	Split Bolt Connector, Copper Double Type c/w Accessories							
	16mm2 x 35mm2	SP-1	2	EA				
	35mm2 x 95mm2	SP-1	30	EA				
	Grounding Bar, Copper c/w isolator 10mm thk, 316SS Machine Bolt & Nut, 300mmL x 50mmW x 8mmThk	SP-1	1	EA				
	Grounding Lug, Copper Tin Coated, Clamp Type	SP-1						
	18mm2	SP-1	30	EA				
	35mm2	SP-1	7	EA				
	Grounding Clamp, Copper c/w Accessories							
	19mm Rod x 35 mm2 (Double type)	SP-1	2	EA				
	19mm Rod x 35 mm2 (Triple type)	SP-1	1	EA				
	Grounding Well, Concrete, 400x400x400x100	SP-1	3	EA				
	Grounding Well Cover, Material: Steel Plate/Checkered Plate HDG, C/W Grounding Marker 316SS, Red Color Engraved Letter (100x100x2 thk), 350x350x6 thk	SP-1	3	EA				
	Cable Route Marker 316 SS, Engraved with Red Color Symbol, c/w steel anchor bar 100 length & installed on concrete foundation, 100mmx100mmx1.2mm thk							
	--> Start Point	SP-1	2	EA				
	<- 90 Corner point	SP-1	1	EA				
	<- / 135 Corner Point	SP-1	1	EA				
	<-> Straight Point	SP-1	2	EA				
	Straight Perforated Tray c/w Cover, Cover Clamp & Accessories, Material: Steel Plate (2mm thk) Finish: HDG Coating Thick: 65 Micron							
	50W X 50H X 3000L	SP-1	22	EA				
	100W X 50H X 3000L	SP-1	4	EA				
	200W X 50H X 3000L	SP-1	8	EA				

	Coupling Plate (For perforated cable tray type) c/w Hex head bolt, nut & spring washer 304SS, Material: Steel Plate (2mm thk) Finish: hot dip galvanized, Coating thickness: 65 Micron, 13W X 45H X 95L	SP-1	30	SET				
	Stanchion c/w Base plate, rib plate and cover top plate Material:C arbon steel sch40, Finish: Hot dip galvanized, 2" x 1500L	SP-1	20	EA				
	Steel Channel, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea, 100mm x 50mm 6mm thk	SP-1	4	EA				
	Steel Equal Angle, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea 50mm x 50mm 6mm thk	SP-1	5	EA				
	Expansion Bolt, Material: Galvanized Expansion	SP-1	92	EA				
	Machine Bolt & Nut Material: CS Galvanized Expansion type c/w washer M8 x 40mmL	SP-1	13	EA				
	Steel Conduit Material: Carbon steel Finish: HDG 3000 Length/Ea 1/2"	SP-1	4	EA				
	Conduit Clamp Material: Carbon steel Finish: HDG ½"	SP-1	13	EA				
	Round Head Bolt & Nut Material: Galvanized	SP-1	110	EA				
	Protection Tile Red cement c/w instrument letter	SP-1	301	EA				
	Machine Bolt & Nut Material: Galvanized Expansion type c/w washer M8 x 40mmL	SP-1	4	EA				
	Tube Seamless Annealed Stainless Steel Tube ASTM A269 T 316, SS316L 1/2"OD x 0.049 WT	SP-1	70	M				
	Tube Plug 316SS ½" OD	SP-1	12	EA				
	Male Connector Double Ferrule, Compression Type, SS316 1/2" OD x 1/2" NPTM	SP-1	19	EA				
	Female Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-1	3	EA				
	Union Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-1	11	EA				
	Union Tee Double Ferrule, Compression Type, SS316 ½" OD	SP-1	11	EA				
	Needle Valve A182-F316 3000L 316SS-TR- STEM ½" OD	SP-1	23	EA				
	Tube Clamp (Single Type) SS304 For Tube Support ½" OD	SP-1	23	EA				
	Tube Clamp (Double Type) SS304 For Tube Support ½" OD	SP-1	1	EA				
	Front Ferrule 316 SS ½" OD	SP-1	11	EA				
	Back Ferrule 316 SS ½" OD	SP-1	11	EA				
	JUNCTION BOX							
	JB-AS-001	SP-1	1	SET				
	JB-AS-002	SP-1	1	SET				
	JB-AS-003	SP-1	1	SET				
	JB-DS-001	SP-1	1	SET				
	JB-DS-002	SP-1	1	SET				
	2. INSTRUMENT SYSTEM SP-3	SP-3	1	LOT				
	INSTRUMENT CABLES							
	1P,1.5sqmm CU/PVC/IS/SWA/PVC-FRD	SP-3	450	M				
	2P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-3	200	M				
	5P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-3	200	M				
	10P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-3	-	M				
	20P,1.5sqmm CU/PVC/IS/OS/SWA/PVC-FRD	SP-3	300	M				
	Grounding Cable	SP-3	400	M				
	Cable Gland Double Seal, Stainless Steel316SS NPT Threaded Type Suitable for Steel Wire Armour Ex-d(Ex proof type) C/W Shroud							
	M20	SP-3	38	EA				
	M25	SP-3	-	EA				
	M32	SP-3	9	EA				
	M50	SP-3	7	EA				
	Cable Lug							
	for 16 AWG wire, Copper Tined Coated Ring Type, c/w isolation 100 ea/pack	SP-3	2	Pack				
	for 16 AWG wire, Copper Tined Coated Pin Type, c/w isolation 100 ea/pack	SP-3	2	Pack				
	Wire Marker for 16 AWG, Non-Shrinkable PVC Tube White Color 20M/Roll	SP-3	2	Roll				
	Cable Marker 100Lx12W, Plate 316SS, 25 Digits c/w Tie Wrap 316SS Identification on the marker shall be engraved with cable number shown on the drawing	SP-3	22	EA				

	Tie Wrap, Nylon, UV Resistent, Black Color, 100ea/pack	SP-3						
	258mm	SP-3	2	Pack				
	358mm	SP-3	1	Pack				
	Tie Wrap, Coated Stainless Steel, 200mm	SP-3	-	Pack				
	PVC Tape, PVC Black Color 2M/Roll, 19mm	SP-3	2	Roll				
	Insulation PVC Tube, PVC, Protection Tube for Shiled Wire, 20M/Roll, 1.5mm	SP-3	2	Roll				
	Grounding Rod, Copper Clad Steel, Sharp End c/w Coupling, 18mm dia. x 3000 mm	SP-3	10	EA				
	Split Bolt Connector, Copper Double Type c/w Accessories							
	16mm2 x 35mm2	SP-3	2	EA				
	35mm2 x 95mm2	SP-3	19	EA				
	Grounding Bar, Copper c/w isolator 10mm thk, 316SS Machine Bolt & Nut, 300mmL x 50mmW x 8mmThk	SP-3	1	EA				
	Grounding Lug, Copper Tin Coated, Clamp Type	SP-3						
	18mm2	SP-3	19	EA				
	35mm2	SP-3	11	EA				
	Grounding Clamp, Copper c/w Accessories							
	19mm Rod x 35 mm2 (Double type)	SP-3	2	EA				
	19mm Rod x 35 mm2 (Triple type)	SP-3	1	EA				
	Grounding Well, Concrete, 400x400x400x100	SP-3	3	EA				
	Grounding Well Cover, Material: Steel Plate/Checkered Plate HDG, C/W Grounding Marker 316SS, Red Color Engraved Letter (100x100x2 thk), 350x350x6 thk	SP-3	3	EA				
	Cable Route Marker 316 SS, Engraved with Red Color Symbol, c/w steel anchor bar 100 length & installed on concrete foundation, 100mmx100mmx1.2mm thk							
	--> Start Point	SP-3	1	EA				
	<- 90 Corner point	SP-3	1	EA				
	<- / 135 Corner Point	SP-3	-	EA				
	<--> Straight Point	SP-3	1	EA				
	Straight Perforated Tray c/w Cover, Cover Clamp & Accessories, Material: Steel Plate (2mm thk) Finish: HDG Coating Thick: 65 Micron							
	50W X 50H X 3000L	SP-3	5	EA				
	100W X 50H X 3000L	SP-3	-	EA				
	200W X 50H X 3000L	SP-3	3	EA				
	Coupling Plate (For perforated cable tray type) c/w Hex head bolt, nut & spring washer 304SS, Material: Steel Plate (2mm thk) Finish: hot dip galvanized, Coating thickness: 65 Micron, 13W X 45H X 95L	SP-3	16	SET				
	Stanchion c/w Base plate, rib plate and cover top plate Material:C arbon steel sch40, Finish: Hot dip galvanized, 2" x 1500L	SP-3	11	EA				
	Steel Channel, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea, 100mm x 50mm 6mm thk	SP-3	2	EA				
	Steel Equal Angle, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea 50mm x 50mm 6mm thk	SP-3	2	EA				
	Expansion Bolt, Material: Galvanized Expansion	SP-3	48	EA				
	Machine Bolt & Nut Material: CS Galvanized Expansion type c/w washer M8 x 40mmL	SP-3	11	EA				
	Steel Conduit Material: Carbon steel Finish: HDG 3000 Length/Ea 1/2"	SP-3	2	EA				
	Conduit Clamp Material: Carbon steel Finish: HDG ½"	SP-3	7	EA				
	Round Head Bolt & Nut Material: Galvanized	SP-3	41	EA				
	Protection Tile Red cement c/w instrument letter	SP-3	110	EA				
	Machine Bolt & Nut Material: Galvanized Expansion type c/w washer M8 x 40mmL	SP-3	4	EA				
	Tube Seamless Annealed Stainless Steel Tube ASTM A269 T 316, SS316L 1/2"OD x 0.049 WT	SP-3	44	M				
	Tube Plug 316SS ½" OD	SP-3	8	EA				
	Male Connector Double Ferrule, Compression Type, SS316 1/2" OD x 1/2" NPTM	SP-3	10	EA				
	Female Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-3	3	EA				

	Union Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-3	7	EA				
	Union Tee Double Ferrule, Compression Type, SS316 ½" OD	SP-3	7	EA				
	Needle Valve A182-F316 3000L 316SS-TR-STEM ½" OD	SP-3	14	EA				
	Tube Clamp (Single Type) SS304 For Tube Support ½" OD	SP-3	17	EA				
	Tube Clamp (Double Type) SS304 For Tube Support ½" OD	SP-3	1	EA				
	Front Ferrule 316 SS ½" OD	SP-3	7	EA				
	Back Ferrule 316 SS ½" OD	SP-3	7	EA				
	JUNCTION BOX							
	JB-AS-01	SP-3	1	SET				
	JB-DS-03	SP-3	1	SET				
	JB-DS-04	SP-3	1	SET				
	3. INSTRUMENT SYSTEM SP-4	SP-4	1	LOT				
	INSTRUMENT CABLES							
	1P,1.5sqmm CU/PVC/IS/SWA/PVC-FRD	SP-4	150	M				
	2P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-4	150	M				
	5P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-4	100	M				
	10P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-4	-	M				
	20P,1.5sqmm CU/PVC/IS/OS/SWA/PVC-FRD	SP-4	100	M				
	Grounding Cable	SP-4	200	M				
	Cable Gland Double Seal, Stainless Steel316SS NPT Threaded Type Suitable for Steel Wire Armour Ex-d(Ex proof type) C/W Shroud							
	M20	SP-4	14	EA				
	M25	SP-4	-	EA				
	M32	SP-4	5	EA				
	M50	SP-4	3	EA				
	Cable Lug							
	for 16 AWG wire, Copper Tined Coated Ring Type, c/w isolation 100 ea/pack	SP-4	2	Pack				
	for 16 AWG wire, Copper Tined Coated Pin Type, c/w isolation 100 ea/pack	SP-4	2	Pack				
	Wire Marker for 16 AWG, Non-Shrinkable PVC Tube White Color 20M/Roll	SP-4	2	Roll				
	Cable Marker 100Lx12W, Plate 316SS, 25 Digits c/w Tie Wrap 316SS Identification on the marker shall be engraved with cable number shown on the drawing	SP-4	15	EA				
	Tie Wrap, Nylon, UV Resistent, Black Color, 100ea/pack	SP-4						
	258mm	SP-4	2	Pack				
	358mm	SP-4	1	Pack				
	Tie Wrap, Coated Stainless Steel, 200mm	SP-4	-	Pack				
	PVC Tape, PVC Black Color 2M/Roll, 19mm	SP-4	2	Roll				
	Insulation PVC Tube, PVC, Protection Tube for Shiled Wire, 20M/Roll, 1.5mm	SP-4	2	Roll				
	Grounding Rod, Copper Clad Steel, Sharp End c/w Coupling, 18mm dia. x 3000 mm	SP-4	10	EA				
	Split Bolt Connector, Copper Double Type c/w Accessories	SP-4						
	16mm2 x 35mm2	SP-4	2	EA				
	35mm2 x 95mm2	SP-4	9	EA				
	Grounding Bar, Copper c/w isolator 10mm thk, 316SS Machine Bolt & Nut, 300mmL x 50mmW x 8mmThk	SP-4	1	EA				
	Grounding Lug, Copper Tin Coated, Clamp Type							
	18mm2	SP-4	9	EA				
	35mm2	SP-4	1	EA				
	Grounding Clamp, Copper c/w Accessories	SP-4						
	19mm Rod x 35 mm2 (Double type)	SP-4	2	EA				
	19mm Rod x 35 mm2 (Triple type)	SP-4	1	EA				
	Grounding Well, Concrete, 400x400x400x100	SP-4	3	EA				
	Grounding Well Cover, Material: Steel Plate/Checkered Plate HDG, C/W Grounding Marker 316SS, Red Color Engraved Letter (100x100x2 thk), 350x350x6 thk	SP-4	3	EA				
	Cable Route Marker 316 SS, Engraved with Red Color Symbol, c/w steel anchor bar 100 length & installed on concrete foundation, 100mmx100mmx1.2mm thk							
	--> Start Point	SP-4	1	EA				
	<- 90 Corner point	SP-4	2	EA				

	<- / 135 Corner Point	SP-4	-	EA				
	<-> Straight Point	SP-4	1	EA				
	Straight Perforated Tray c/w Cover, Cover Clamp & Accessories, Material: Steel Plate (2mm thk) Finish: HDG Coating Thick: 65 Micron							
	50W X 50H X 3000L	SP-4	5	EA				
	100W X 50H X 3000L	SP-4	4	EA				
	200W X 50H X 3000L	SP-4	2	EA				
	Coupling Plate (For perforated cable tray type) c/w Hex head bolt, nut & spring washer 304SS, Material: Steel Plate (2mm thk) Finish: hot dip galvanized, Coating thickness: 65 Micron, 13W X 45H X 95L	SP-4	10	SET				
	Stanchion c/w Base plate, rib plate and cover top plate Material:C arbon steel sch40, Finish: Hot dip galvanized, 2" x 1500L	SP-4	4	EA				
	Steel Channel, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea, 100mm x 50mm 6mm thk	SP-4	2	EA				
	Steel Equal Angle, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea 50mm x 50mm 6mm thk	SP-4	2	EA				
	Expansion Bolt, Material: Galvanized Expansion	SP-4	22	EA				
	Machine Bolt & Nut Material: CS Galvanized Expansion type c/w washer M8 x 40mmL	SP-4	7	EA				
	Steel Conduit Material: Carbon steel Finish: HDG 3000 Length/Ea 1/2"	SP-4	2	EA				
	Conduit Clamp Material: Carbon steel Finish: HDG ½"	SP-4	7	EA				
	Round Head Bolt & Nut Material: Galvanized	SP-4	50	EA				
	Protection Tile Red cement c/w instrument letter	SP-4	200	EA				
	Machine Bolt & Nut Material: Galvanized Expansion type c/w washer M8 x 40mmL	SP-4	-	EA				
	Tube Seamless Annealed Stainless Steel Tube ASTM A269 T 316, SS316L 1/2"OD x 0.049 WT	SP-4	18	M				
	Tube Plug 316SS ½" OD	SP-4	3	EA				
	Male Connector Double Ferrule, Compression Type, SS316 1/2" OD x 1/2" NPTM	SP-4	2	EA				
	Female Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-4	2	EA				
	Union Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-4	2	EA				
	Union Tee Double Ferrule, Compression Type, SS316 ½" OD	SP-4	2	EA				
	Needle Valve A182-F316 3000L 316SS-TR-STEM ½" OD	SP-4	6	EA				
	Tube Clamp (Single Type) SS304 For Tube Support ½" OD	SP-4	4	EA				
	Tube Clamp (Double Type) SS304 For Tube Support ½" OD	SP-4	1	EA				
	Front Ferrule 316 SS ½" OD	SP-4	2	EA				
	Back Ferrule 316 SS ½" OD	SP-4	2	EA				
	JUNCTION BOX							
	JB-DS-05	SP-4	1	SET				
	4. INSTRUMENT SYSTEM SP-5	SP-5	1	LOT				
	INSTRUMENT CABLES							
	1P,1.5sqmm CU/PVC/IS/SWA/PVC-FRD	SP-5	550	M				
	2P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-5	150	M				
	5P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-5	150	M				
	10P,1.5sqmm CU/PVC/OS/SWA/PVC-FRD	SP-5	-	M				
	20P,1.5sqmm CU/PVC/IS/OS/SWA/PVC-FRD	SP-5	250	M				
	Grounding Cable	SP-5	400	M				
	Cable Gland Double Seal, Stainless Steel316SS NPT Threaded Type Suitable for Steel Wire Armour Ex-d(Ex proof type) C/W Shroud							
	M20	SP-5	44	EA				
	M25	SP-5	-	EA				
	M32	SP-5	9	EA				
	M50	SP-5	3	EA				
	Cable Lug							
	for 16 AWG wire, Copper Tined Coated Ring Type, c/w isolation 100 ea/pack	SP-5	2	Pack				
	for 16 AWG wire, Copper Tined Coated Pin Type, c/w isolation 100 ea/pack	SP-5	2	Pack				
	Wire Marker for 16 AWG, Non-Shrinkable PVC Tube White Color 20M/Roll	SP-5	2	Roll				

	Cable Marker 100Lx12W, Plate 316SS, 25 Digits c/w Tie Wrap 316SS Identification on the marker shall be engraved with cable number shown on the drawing	SP-5	30	EA				
	Tie Wrap, Nylon, UV Resistent, Black Color, 100ea/pack							
	258mm	SP-5	2	Pack				
	358mm	SP-5	1	Pack				
	Tie Wrap, Coated Stainless Steel, 200mm	SP-5	-	Pack				
	PVC Tape, PVC Black Color 2M/Roll, 19mm	SP-5	2	Roll				
	Insulation PVC Tube, PVC, Protection Tube for Shiled Wire, 20M/Roll, 1.5mm	SP-5	2	Roll				
	Grounding Rod, Copper Clad Steel, Sharp End c/w Coupling, 18mm dia. x 3000 mm	SP-5	10	EA				
	Split Bolt Connector, Copper Double Type c/w Accessories							
	16mm2 x 35mm2	SP-5	2	EA				
	35mm2 x 95mm2	SP-5	19	EA				
	Grounding Bar, Copper c/w isolator 10mm thk, 316SS Machine Bolt & Nut, 300mmL x 50mmW x 8mmThk	SP-5	1	EA				
	Grounding Lug, Copper Tin Coated, Clamp Type	SP-5						
	18mm2	SP-5	19	EA				
	35mm2	SP-5	15	EA				
	Grounding Clamp, Copper c/w Accessories							
	19mm Rod x 35 mm2 (Double type)	SP-5	2	EA				
	19mm Rod x 35 mm2 (Triple type)	SP-5	1	EA				
	Grounding Well, Concrete, 400x400x400x100	SP-5	3	EA				
	Grounding Well Cover, Material: Steel Plate/Checkered Plate HDG, C/W Grounding Marker 316SS, Red Color Engraved Letter (100x100x2 thk), 350x350x6 thk	SP-5	3	EA				
	Cable Route Marker 316 SS, Engraved with Red Color Symbol, c/w steel anchor bar 100 length & installed on concrete foundation, 100mmx100mmx1.2mm thk							
	--> Start Point	SP-5	1	EA				
	<- 90 Corner point	SP-5	1	EA				
	<- / 135 Corner Point	SP-5	-	EA				
	<--> Straight Point	SP-5	2	EA				
	Straight Perforated Tray c/w Cover, Cover Clamp & Accessories, Material: Steel Plate (2mm thk) Finish: HDG Coating Thick: 65 Micron							
	50W X 50H X 3000L	SP-5	5	EA				
	100W X 50H X 3000L	SP-5	3	EA				
	200W X 50H X 3000L	SP-5	3	EA				
	Coupling Plate (For perforated cable tray type) c/w Hex head bolt, nut & spring washer 304SS, Material: Steel Plate (2mm thk) Finish: hot dip galvanized, Coating thickness: 65 Micron, 13W X 45H X 95L	SP-5	22	SET				
	Stanchion c/w Base plate, rib plate and cover top plate Material:C arbon steel sch40, Finish: Hot dip galvanized, 2" x 1500L	SP-5	10	EA				
	Steel Channel, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea, 100mm x 50mm 6mm thk	SP-5	2	EA				
	Steel Equal Angle, Material: Carbon steel Finish: Hot dip galvanized 5500 length/Ea 50mm x 50mm 6mm thk	SP-5	5	EA				
	Expansion Bolt, Material: Galvanized Expansion	SP-5	48	EA				
	Machine Bolt & Nut Material: CS Galvanized Expansion type c/w washer M8 x 40mmL	SP-5	7	EA				
	Steel Conduit Material: Carbon steel Finish: HDG 3000 Length/Ea 1/2"	SP-5	2	EA				
	Conduit Clamp Material: Carbon steel Finish: HDG ½"	SP-5	7	EA				
	Round Head Bolt & Nut Material: Galvanized	SP-5	50	EA				
	Protection Tile Red cement c/w instrument letter	SP-5	284	EA				
	Machine Bolt & Nut Material: Galvanized Expansion type c/w washer M8 x 40mmL	SP-5	4	EA				

	Tube Seamless Annealed Stainless Steel Tube ASTM A269 T 316, SS316L 1/2"OD x 0.049 WT	SP-5	37	M				
	Tube Plug 316SS ½" OD	SP-5	7	EA				
	Male Connector Double Ferrule, Compression Type, SS316 1/2" OD x 1/2" NPTM	SP-5	9	EA				
	Female Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-5	2	EA				
	Union Connector Double Ferrule, Compression Type, SS316 ½" OD	SP-5	6	EA				
	Union Tee Double Ferrule, Compression Type, SS316 ½" OD	SP-5	6	EA				
	Needle Valve A182-F316 3000L 316SS-TR- STEM ½" OD	SP-5	12	EA				
	Tube Clamp (Single Type) SS304 For Tube Support ½" OD	SP-5	14	EA				
	Tube Clamp (Double Type) SS304 For Tube Support ½" OD	SP-5	1	EA				
	Front Ferrule 316 SS ½" OD	SP-5	6	EA				
	Back Ferrule 316 SS ½" OD	SP-5	6	EA				
	JUNCTION BOX							
	JB-AS-02	SP-5	1	SET				
	JB-DS-06	SP-5	1	SET				
8	PORTACAMP							
	1. FOUNDATION & PORTACAMP SP-1	SP-1	1	LOT				
	2. FOUNDATION & PORTACAMP SP-3	SP-3	1	LOT				
	3. FOUNDATION & PORTACAMP SP-4	SP-4	1	LOT				
	4. FOUNDATION & PORTACAMP SP-5	SP-5	1	LOT				
9	Testing, Precom-comm & Startup							
	1. Precom-comm & Startup SP-1	SP-1	1	LOT				
	2. Precom-comm & Startup SP-3	SP-3	1	LOT				
	3. Precom-comm & Startup SP-4	SP-4	1	LOT				
	4. Precom-comm & Startup SP-5	SP-5	1	LOT				
10	PP & PLO							
	1. PP & PLO SP-1, 3, 4, 5	ALL	1	LOT				
	SUBTOTAL							