

ANNEXURE C :
BILL OF QUANTITIES
(CIVIL, MEP, HVAC, LANDS CAPING)

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
FOR THE DEPARTMENT OF INTERNATIONAL RELATIONS & COOPERATION**

Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 1</u>				
/ 2		<u>BILL NO. 1 EARTH WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
2.6		<u>Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.</u>				
1 / 2.6.1		All kinds of soil.	m3	1 281		
2.9		<u>Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.</u>				
2 / 2.9.1		Ordinary rock	m3	4 744		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 1 Earthworks SAS/JVNC/GTAC/DIRCO				

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Brought Forward					INR	
	/ 2.26	<u>Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.</u>				
	2.26.1	<u>All kinds of soil</u>				
3	/ i	1.5m to 3.0m	m3	2 521		
4	/ ii	3.0m to 4.5m	m3	1 242		
5	/ 2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	m3	4 139		
6	/ 1.1.2 (8)	Carriage of Earth by mechanical transport including loading, unloading and Stacking including royalty & carriage up to 5 KM complete.	m3	1 886		
7	/ 2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	m3	140		
	2.28	<u>Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift upto 1.5 m.</u>				
8	/ 2.28.1	All kinds of soil.	m2	1 401		
	2.34	<u>Supplying chemical emulsion in sealed containers including delivery as specified</u>				
9	/ 2.34.1	Chlorpyrifos/ Lindane emulsifiable concentrate of 20%	Litres	142		
Carried Forward					INR	
Section 1 - New Chancery Building Bill No. 1 Earthworks SAS/JVNC/GTAC/DIRCO						

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 1</u>				
/ 4		<u>BILL NO. 2 CONCRETE WORKS</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
4.1		<u>Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :</u>				
1 / 4.1.3		1:2:4 (1 cement : 2 coarse sand(zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	m3	46		
2 / 4.1.5		1:3:6 (1 Cement : 3 coarse sand(zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources).	m3	150		
4.3		<u>Centering and shuttering including strutting, propping etc. and removal of form work for :</u>				
3 / 4.3.1		Foundations, footings, bases for columns.	m2	113		
		Carried Forward				
		Section 1 - New Chancery Building Bill No. 2 Concrete Works SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
4	/ 4.11	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20mm nominal size derived from natural sources).	m2	38		
5	/ 4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification - per 50 kg cement	No	10		
6	/ 4.13	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	m2	38		
7	/ 4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	m2	84		
		Carried Forward to Summary of Section No. 1			INR	
		Section 1 - New Chancery Building Bill No. 2 Concrete Works SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 1</u>				
/ 5		<u>BILL NO. 3 REINFORCED CEMENT CONCRETE WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
5.9		<u>Centering and shuttering including strutting, propping etc. and removal of form for :</u>				
1 / 5.9.1		Foundations, footings, bases of columns, etc. for mass concrete.	m2	385		
2 / 5.9.2		Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	m2	2 520		
3 / 5.9.3		Suspended floors, roofs, landings, balconies and access platform.	m2	2 777		
4 / 5.9.4		Shelves (Cast in situ)	m2	19		
5 / 5.9.5		Lintels, beams, plinth beams, girders, bressumers and cantilevers	m2	1 504		
6 / 5.9.6		Columns, Pillars, Piers, Abutments, Posts and Struts.	m2	1 336		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 3 Reinforced Cement Concrete Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
7	/ 5.9.7	Stairs, (excluding landings) except spiral-staircases.	m2	249		
8	/ 5.9.15	Small lintels not exceeding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.	m2	56		
	5.9.16	<u>Edges of slabs and breaks in floors and walls</u>				
9	/ 5.9.16.1	Under 20 cm wide	m	835		
10	/ 5.9.19	Weather shade, Chajjas, corbels etc., including edges.	m2	50		
	5.11	<u>Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).</u>				
11	/ 5.11.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	m2	188		
	5.22	<u>Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.</u>				
12	/ 5.22.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	108 982		
	5.22A	<u>Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.</u>				
13	/ 5.22A.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	122 809		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 3 Reinforced Cement Concrete Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	Derived item (5.40)	<u>Providing and laying in position ready mixed concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge.</u> NOTE- (1) Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of BMC and RMC.				
	Der. item (5.40.1)	<u>All works upto plinth level.</u>				
14	/ Der. item (5.40.1.1)	Concrete of M25 grade with minimum cement content of 330 kg /cum	m3	1		
15	/ Der. item (5.40.1.2)	Concrete of M30 grade with minimum cement content of 350 kg /cum	m3	871		
16	/ Der. item (5.40.1.3)	Concrete of M35 grade with minimum cement content of 370 kg /cum	m3	40		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 3 Reinforced Cement Concrete Work SAS/JVNC/GTAC/DIRCO				

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Brought Forward			INR	
	Der. item (5.40.2)	<u>All works above plinth level upto floor V level.</u>		
17	/ Der. item (5.40.2.1)	Concrete of M25 grade with minimum cement content of 330 kg /cum	m3	82
18	/ Der. item (5.40.2.2)	Concrete of M30 grade with minimum cement content of 350 kg /cum	m3	587
19	/ Der. item (5.40.2.3)	Concrete of M35 grade with minimum cement content of 370 kg /cum	m3	101
20	/ 5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein - in 100kg (Quintal)	No	324
Carried Forward to Summary of Section No. 1				
Section 1 - New Chancery Building Bill No. 3 Reinforced Cement Concrete Work SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 1</u>				
/ 6		<u>BILL NO. 4 BRICK WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
6.1		<u>Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:</u>				
1 / 6.1.2		Cement mortar 1:6 (1 cement : 6 coarse sand)	m3	7		
2 / 6.38		Providing and laying autoclaved aerated Concrete (AAC) blocks masonry with 100mm / 125 mm thick with Grade 1 AAC blocks of density 551 to 650 kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	m3	142		
		Carried Forward				
		Section 1 - New Chancery Building Bill No. 4 Brickwork SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR		
3	/ 6.44	Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	m	112			
4	/ 6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	m3	400			
		Carried Forward to Summary of Section No. 1					
		Section 1 - New Chancery Building Bill No. 4 Brickwork SAS/JVNC/GTAC/DIRCO			INR		

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 1</u>				
	/ 8	<u>BILL NO. 5 MARBLE & GRANITE WORKS</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	8.2	<u>Providing and fixing 18mm thick gang saw cut (premoulded and prepolished) machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.</u>				
1	/ 8.2.2.2	Granite stone slab colour black, Cherry/Ruby red , Area of slab over 0.50 sqm	m2	19		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
2	/ 8.4	Extra for fixing marble / granite stone over and above corresponding basic item, in facia and drops of width upto 150mm with epoxy resin baesd adhesive including cleaning etc. complete.	m2	36		
3	/ 8.5	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/Stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edge etc. complete.	No	25		
8.1		<u>Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.</u>				
4	/ 8.10.2	Granite Stone of approved shade	m2	4		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	8.11	<u>Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.</u>				
5	/ 8.11.1	18 mm thick Italian Marble stone slab,Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	m2	1 148		
6	/ 8.31	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	m2	359		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
8.32		<u>Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building, for all heights and all levels etc. including: (a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design. (b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc.</u>				
7		(c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanised with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory,				
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. The Contractor shall provide curtain wall with aluminium composite panel cladding, and including base frame work for ACP having all the performance characteristics all complete , as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. up to two decimal places. <u>External Stone Cladding</u> <u>Providing and fixing 20mm thick stone in cladding/ dado/ bands/ architraves/ strips/ cill/ soffits/ jambs in specified sizes as per drawing of approved colour and quality for external walls/ columns and wherever specified with chemical adhesives (Mapai or Karakol) 5-6mm thickness, maintaining grooves in stone slabs as per the drawing and joints including backer rod, drilling, anchoring, grouting, scaffolding, edge polishing, chamfering etc., complete.</u>	m2	25		
NS-1						
8	/ i	Moca Crème leather finish stone (Basic Rate 400 Rs./ Sqft.)	m2	1 661		
9	/ ii	Additional cost for increasing the thickness of the stone to 25mm and CNC engraving of patter with engraving depth of 10mm. Pattern as per elevation drawing	m2	412		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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10	/ NS-2	Brought Forward			INR	
		Extra for Filling the joints of Stone Cladding having joints of filling the same with non-staining, non-streaking silicon joint sealants (Elastosil 355 of Wacker/ Dow Corning 991 or approved equivalent) include application of silicone coating consisting of silane and siloxane based dilutable with Solvent (Orthoxylene) 1:16 (1 Silicon : 16 Orthoxylene) water repellent coating of Wacker Silicone Product code no BS-290 or approved equivalent on all external surfaces of stone by spraying complete in all respect before installation of the cladding.	m2	1 661		
		Carried Forward to Summary of Section No. 1			INR	
		Section 1 - New Chancery Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 1</u>				
	/ 9	<u>BILL NO. 6 WOOD & PVC WORK</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	9.1	<u>Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).</u>				
1	/ 9.1.1	Second class teak wood	m3	5		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	9.21	<u>Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:</u>				
2	/ 9.21.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	m2	169		
3	/ N.S. item added	Additional cost for replacing 35mm thick door with 40mm thick.	m2	169		
4	/ 9.23	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	m2	169		
	9.40.1	<u>Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete : 2nd class teak wood</u>				
5	/ 9.40.1.1	50 x12mm	m	392		
6	/ N.S. item added	Additional cost for increasing the size of the beading to 65mmx12mm	m	392		
7	/ 9.53	Providing 40 x 5mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	No	600		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
10	/ N.S item added	Providing and installing 60mm thick Hardwood shutter (White Ash wood) as per design. Wooden planks for the shutter shall be kiln dried and seasoned and shall be finger jointed with appropriate class adhesives to create a shutter of uniform thickness. The door shall be equipped with the following. Cost shall include the items below: (i) a heavy duty door closer to close the door automatically; (ii) a five-lever security lock (e.g CHUBB CASTLE MORTICE DEADLOCK TYPE 3G110) for similar type for locking up after hours. (iii) an electronic strike mechanism (e.g “eff eff 141kL left/right, 8vAC” (normally closed version – unlatches when energized) or similar type that provides the person outside with an audio indication that the door has been unlocked. However, the lock shall not unlock by means of a single impulse, but only while the control is being pressed. Once the button is not being pressed, the door shall be locked again	m2	9		
	9.165	<u>SS Hardware</u> <u>Providing and fixing bright /matt finished Stainless Steel handles of approved quality & make with necessary screws etc all complete.</u>				
11	/ 9.165.1	125 mm	No	5		
	NS-3	<u>Providing and fixing Stainless Steel tower bolts of approved make with necessary screws etc. complete :</u>				
12	/ i	300x10mm	No	3		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	NS-4	<u>Providing and fixing Stainless Steel hanging floor door stopper of approved make with necessary screws etc. complete.</u>				
13	/ i	Single rubber stopper	No	70		
14	/ NS-5	Providing and fixing Concealed Door Closer With Track Arm (SS Finish), Slide in SS Cover Stainless Steel door closer, door weight upto 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	No	70		
15	/ NS-6	Providing and fixing of Mortise Lock with Handles Stainless Steel Finish (Solid Casted) with necessary screws etc. complete as per design & approved by Engineer in Charge.	No	67		
16	/ NS-7	Providing and fixing stainless steel sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete : 300x16 mm	No	2		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
17	/ 9.161	Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side & 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120gm/m ²) suitable for mounting 120 min Fire Rated Glazed Door Shutters. The frame shall be filled with Mineral wool Insulation having density min 96Kg/m ³ . The frame will have a provision of G.I. Anchor fastners 14 nos (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with Factory made Template for SS Ball Bearing Hinges of Size 100x89x3mm for fixing of fire rated glazed shutter . The frame shall be finished with a approved fire resistant primer or Powder coating of not less than 30 micron in desired shade as per the directions of Engineer - in- charge . (Cost of SS ball bearing hinges is excluded).	m	206		
18	/ 9.162	Providing and fixing 60 mm thick glazed fire resistant door shutters of 120 min Fire Rating confirming to IS:3614 (Part II) or EN1634-1:1999, tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, top rail & side rail 60 mm x 60 mm wide and bottom rail of 110 mm x 60mm made out of 1.6mm thick G.I. sheet (zinc coating not less than 120gm/m ²) duly filled mineral wool insulation having density min 96 kg/ m ³ and fixing with necessary stainless steel ball bearing hinges of size 100x89x3mm of approved make, including applying a coat of approved fire resistant primer or powder coating not less than 30 micron etc all complete as per direction of Engineer-in-charge (panelling to be paid for seperately).	m2	103		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
19	/ 9.164	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/m ²) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-in-charge with glass of required thickness having 120 minutes of fire resistance both integrity & radiation control (EW120) and minimum 20 minutes of insulation (EI20). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 for testing and calibration scopes shall be eligible. The maximum glazing size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm.	m2	15		
20	/ 9.139	Providing and fixing panic bar / latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of reputed brand and manufacture to be approved by the Engineer- in- charge, all complete.	No	10		
21	/ N.S item	Providing and installing High security doors at locations as specified in detail drawing conforming to IS11188.1991 for Strong Room doors. The door specifications shall be as follows: Wall Opening - 2200x1220mm Clear Opening - 2203x910 Door Swing - 1045mm				
		Carried Forward Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
		Grill Gate Swing - 1040mm (i)Class I Door Slab The 18 mm thick composite slab made up of a layer of flame and arc resistant alloy with protection against fire and attack of power drilling, Oxy- acetylene flame and Arc cutting. It is further fortified by a composite 62 mm layer of fire retardant Barrier material. This dual protection is provided over the entire Lock case area. The total thickness of protective layer is 85 mm over the locks and other vital parts. (ii)Frame shall be constructed of 10 mm thick M.S. plate for fabricating one piece bent angle door frame. For strength and rigidity the door frame shall be suitably reinforced along the height and width. (iii)Doors shall be fitted with 2 Nos. dual control high precision 8-lever IOCKS. Stainless steel keys shall be supplied in duplicate. An imported Lagard 4- wheel numerical lock which offers nearly 100 million combinations for setting and resetting shall be provided. (iv)Doors shall be fitted with two sensitive reliable re- locking devices one for each of the locks. In case any attempt is made through the keyhole either using any tool or with the help of explosives then these devices get activated and deadlock the bolt work for added protection. (v)To secure the door, 12 shooting bolts (each of 38 mm diameter} are provided, six in front and six at the rear which slide behind the tough welded rebate. These bolts can be activated simultaneously by the movement of the handle. (vi)Grille Gate - For convenience of working In the strong room, a grille gate shall be provided which is secured				
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		with high precision 8-levar lock, operable from both sides Stainless steel keys are provided In duplicate. (viii)All steel components shall go thorough a 12 tank anti-corrosion treatment. Steel, untouched by human hands and free from grease and rust shall be treated for formation of rust preventing iran-phosphate film. This vital film shall be protected through a process of passivation - the end stage of the treatment. Immediately, the steel components are given coats of rust inhibiting paint for further protection against rust.	No	9		
		Carried Forward to Summary of Section No. 1 Section 1 - New Chancery Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 1</u>				
/ 10		<u>BILL NO. 7 STEEL WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
10.6		<u>Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters.</u>				
1	/ 10.6.1	80x1.25 mm M.S. laths with 1.25 mm thick top cover	m2	22		
2	/ 10.7	Providing and fixing ball bearing for rolling shutters.	No	4		
		Carried Forward				
		Section 1 - New Chancery Building Bill No. 7 Steel Works SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	10.8	<u>Extra for providing mechanical device chain and crank operation for operating rolling shutter.</u>				
3	/ 10.8.1	Exceeding 10.00 Sqm and upto 16.8 Sqm in the area.	m2	22		
	10.16	<u>Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.</u>				
4	/ 10.16.2	Hot finished seamless type tubes	kg	53 979		
5	/ 10.2	Providing and fixing bolts including nuts and washers complete	kg	1 080		
	9.48	<u>Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.</u>				
6	/ 9.48.2	Fixed to openings /wooden frames with rawl plugs screws etc.	kg	2 018		
7	/ 10.18	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	No	25		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 7 Steel Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	10.25	<u>Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required</u>				
8	/ 10.25.1	In stringers, treads, landings etc. of stair cases including use of chequered plate wherever required, all complete.	kg	750		
9	/ 10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	kg	864		
	10.27	<u>Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge.</u>				
10	/ 10.27.2	10 x 80 mm	No	249		
11	/ 10.28	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	kg	2 242		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 7 Steel Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	19.15	<u>Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design :</u>				
12	/ 19.15.1	With 20x20 mm square bar	No	40		
	19.19	<u>Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality 19.19.1 L D- 2.5 H D - 20</u>				
13	/ 19.19.3.1	Circular shape 560 mm internal diameter	No	4		
		<u>Glass Railing</u>				
	NS-9	<u>Providing and fixing in position Toughened Glass Railing with Aluminium framework to Balconies and parapet walls etc. 1000 mm height from Finished floor level comprising of 35mm x 80mm 2.60 mm Aluminium handrail powder coated profile (Approximate sizes) to approved shade. The handrail shall be supported on the glass. The glass railing shall consist of 2 layers of 6mm thick toughened glass with a sandwiched layer of 1.4mm thick PVB layer (Centri Glass) laminated together. The railing shall be installed in the skirting / wall using aluminium u channel 100mm deep grouted to the base concrete using appropriate fasteners and casted along with the concrete. The glass shall be inserted into the U channel upto the full depth of the channel and sealed in place using structural sealants.</u>				
14		700mm high railing	m	57		
		Carried Forward to Summary of Section No. 1				
		Section 1 - New Chancery Building Bill No. 7 Steel Works SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 1</u>				
/ 11		<u>BILL NO. 8 FLOORING WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
11.3		<u>Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.</u>				
1 / 11.3.1		40mm thick with 20mm nominal size stone aggregate.	m2	414		
2 / 11.6.1		18 mm thick Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.	m2	15		
		Carried Forward				
		Section 1 - New Chancery Building Bill No. 8 Flooring Works SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward				INR	
	11.2	<u>Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).</u>					
3	/ 11.20.3	Dark shade pigment using ordinary cement	m2	25			
	11.23	<u>Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with</u>					
4	/ 11.23.5	Udaipur green marble	m2	50			
5	/ 11.24	Extra for pre finished nosing to treads of steps of marble / granite stone.	m2	305			
6	/ 11.25	Extra for marble / granite stone flooring in treads of steps and risers using single length up to 2.00 metre.	m2	142			
	11.26	<u>Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :</u>					
7	/ 11.26.1	25 mm thick.	m2	178			
		Carried Forward				INR	
		Section 1 - New Chancery Building Bill No. 8 Flooring Works SAS/JVNC/GTAC/DIRCO					

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		Brought Forward			INR	
8	/ 11.27	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	m2	8		
9	/ 11.38	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sq.m including pointing the joints with white cement and matching pigments etc., complete.	m2	71		
11.41		<u>Providing & Laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and confirming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.</u>				
10	/ 11.41.2	Size of Tile 600x600 mm	m2	10		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 8 Flooring Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	11.46	<u>Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.</u>				
11	/ Derived item 11.46.2	Size of Tile 450x600 mm	m2	1 116		
	/ 11.41A	<u>Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.</u>				
	11.41A.3	<u>Glazed Vitrified tiles Matt/Antiskid finish of size</u>				
12	/ 11.41A.3.1	Size of Tile 600 x 600 mm	m2	130		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 8 Flooring Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR		
	11.49A	<u>Providing and laying full body vitrified tile in floor of minimum thickness 15 mm with water absorption less than 0.06% and conforming to IS: 15622, of approved make, brand and manufacturer, laid on 20 mm thick base cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.30 kg / sqm including grouting the joints with white cement and matching pigments etc. The slab must be cut with the zero chipping diamond cutter only. Laying of slab will be done with the help of notch trowel, wedge, clips of required thickness, vacuum cups for lifting, leveling system and rubber mallet for placing the slab gently and easily.</u>					
13	/ i	Size of tile 800x2400mm of all colours and shades	m2	140			
	11.52	<u>Providing and laying machine cut, mirror polished Marble stone flooring, in required design (Simple geometrical, abstract etc.) and in patterns in combination with Italian marble stones of different colours, shades and finished surface texture etc., in linear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.</u>					
14	/ 11.52.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	m2	985			
		Carried Forward			INR		
		Section 1 - New Chancery Building Bill No. 8 Flooring Works SAS/JVNC/GTAC/DIRCO					

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		Brought Forward			INR		
	11.55	<u>Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :</u>					
15	/ 11.55.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	m2	583			
	11.56	<u>Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.</u>					
16	/ 11.56.1	Polished Granite stone slab colour of Black, Cherry/Ruby Red or equivalent	m2	311			
		Carried Forward			INR		
		Section 1 - New Chancery Building Bill No. 8 Flooring Works SAS/JVNC/GTAC/DIRCO					

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		Brought Forward			INR	
17	/ NS-10	<u>Carpet Flooring</u> Providing, supplying of carpet in the specified areas as per patterns specifications as below : Construction - Loop Pile, Surface Texture - Textured Patterned Loop Pile, Gauge - 1/12" (47.2/10), Stiches per Inch minimum - 11, Dye Method - Solution Dyed (no print or no cromoproject / inject print), Backing Material - Fibre Reinforced Thermoplastic Composite Hard Backing (no Bitumen or Cushion Backing), Face Weight - 19 oz / yard square, Density - minimum 6300/ cubic yard. The tiles are to be laid on hard, levelled surface which is free from dirt & moisture etc. Surface to be complete as per manufacturers specification.(basic rate of carpet tile 210/- per Sft). The same to be quoted including cost of upto 4mm self levelling to be inclusive in the prices. The carpet to be protected with 100 microns plastic covering till handover and full shampooing upon handover is to be included in the cost.	m2	437		
18	/ 16.75	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-incharge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	m3	73		
		Carried Forward to Summary of Section No. 1 Section 1 - New Chancery Building Bill No. 8 Flooring Works SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 1</u>				
	/ 12	<u>BILL NO. 9 ROOFING</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
		<u>SHEET ROOFING</u>				
1	/ 12.21.1	Providing and laying gola 75x75mm in cement concrete M15 grade including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design in 75x75 mm deep chase.	m	203		
2	/ 12.22	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	No	10		
		Carried Forward				
		Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR		
	2.35.3	<u>New Technologies and Materials</u>					
3	/ 26.65	Providing and fixing roofing consists of 0.80 mm thick galvanised steel deck sheet conforming to IS: 277-1992 used as permanent shuttering over which MS wire mesh 3 mm laid at 100x100 mm grid including edge trim covered with concrete. This metal deck will be supported on structural steel beam with shear studs. (Structural steel like Beam, column, joists	m2	58			
		<u>CEILING</u>					
4	/ 9.3.1	Providing wood work in frames of false ceiling, partitions etc. sawn and fixed in position with necessary stainless steel screws etc. Sal wood.	m3	0.4			
	12.31	<u>Providing 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level, over first class kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame (frame work to be paid separately):</u>					
5	/ 12.31.1	Flat surfaces	m2	72			
6	/ 12.32	Extra for sunk or raised mouldings in the plaster of Paris (Gypsum anhydrous) ceiling.	m2	72			
7	/ 12.34	Providing fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183, density 24kg / m3, 50mm thick, wrapped in 200 G Virgin Polythene bags, fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5 mm x 24 gauge wire mesh, for top most ceiling of building.	m2	58			
	12.45	<u>Providing and fixing false ceiling at all height including providing and</u>					
		Carried Forward			INR		
		Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO					

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		Brought Forward <u>fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter</u>			INR	
		Carried Forward Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
8	/ 12.45.3	<u>channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with : at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square</u> 12.5 mm thick tapered edge gypsum moisture resistant board.	m2	419		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
12.53		<u>Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main 'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x 28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size (24x24x3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calcium silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening "for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required.</u>				
9	/ i	Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T', bottom exposed with 24 mm of all T sections				
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		shall be pre-painted with polyester baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge. Note :- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/ opening (cut outs) having area less than 0.30 sqm. The calcium silicate ceiling tile shall have NRC value of 0.50 (Minimum), light reflection > 85%, non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity <0.043 w/mK.	m2	152		
10	/ 12.55	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface upto 3 cuts complete, including providing skirting upto 150 mm height along the parapet walls in the same manner.	m2	458		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	26.27	<u>Providing and fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance > 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 & 7) in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised @ 80 gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size 24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-incharge.</u>				
11	/ 26.27.2	With 20 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.7)	m2	943		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
12	/ NS-11	Wooden ceiling finish with veneer: Providing and fixing IS 710 12 mm thick plywood false ceiling as per drawing & instruction of EIC & sample approved (complete with frame work). finish with 4 mm th veneer gurjan base ply Semi glossy malamine finish polish. Plywood shall be fixed with required fabrication work and ply frame work with all necessary accessories Rate shall include cost of making of all cutouts for light fixtures, gadgets, gizmo, pelmets, grooves, beads and also provide support/template where ever required The rate shall be in sq.mt for all floors and at all heights including all costs the shop drawing (or a sample mock of 5 Sqm minimum of the frame work and ceiling) shall be approved from EIC. 5mm Groove shall be provided at the junction of the false ceiling & the wall. (considering all levels with require all fabricataion work and fitting from RCC slab to false ceiling 100 to 1000 mm)	m2	200		
		Carried Forward to Summary of Section No. 1 Section 1 - New Chancery Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 1</u>				
	/ 13	<u>BILL NO. 10 FINISHING WORK</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	13.4	<u>12 mm cement plaster of mix :</u>				
1	/ 13.4.1	1:4 (1 cement: 4 coarse sand)	m2	50		
	13.16	<u>6 mm cement plaster of mix :</u>				
2	/ 13.16.1	1:3 (1 cement: 3 fine sand)	m2	859		
3	/ 13.21	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers - per bag of 50KG Cement Used in Mix	No	909		
4	/ 13.21	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers - per bag of 50KG Cement Used in Mix	No	219		
		Carried Forward				
		Section 1 - New Chancery Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
5	/ 13.78	Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ per liter respectively conforming to IS: 2547 (Part- 1 & II) 1976, applied on hacked / uneven background such as bare brick/block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. complete.	m2	4 303		
6	/ N.S item added	Additional for applying a layer of fibre mesh along the complete surface of the wall. The fibre mesh shall be sandwiched between a base coat of gypsum plaster of not more than 6mm. The fibre mesh shall be secured on to the surface of the wall with appropriate fastners during the first coat is wet. A second layer of Gypsum plaster of appropriate thickness shall be applied on teh fibre mesh to cover the surface evenly.	m2	4 303		
7	/ 13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	m2	859		
	13.41	<u>Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.</u>				
8	/ 13.41.1	New work (two or more coats) over and including water thinnable priming coat with cement primer having VOC content less than 50 gram / litre	m2	50		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	13.45	<u>Finishing walls with textured exterior paint of required shade :</u>				
9	/ 13.45.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	m2	50		
	13.62	<u>Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :</u>				
10	/ 13.62.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	m2	5 602		
11	/ 13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	m2	5 631		
	13.83	<u>Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.</u>				
12	/ 13.83.2	Two coats	m2	5 581		
	13.85	<u>Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.</u>				
13	/ 13.85.1	With ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 grams/ litre	m2	645		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
14	/ 13.85.3	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	m2	5 548		
15	/ 5.3	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	m2	1 670		
	13.116	<u>Polishing in high gloss/matt finish melamine clear polish on wood work in required color/wooden shade texture with following process in the sequence as detailed below:</u> 1. The surface to be polished is rubbed with sand paper 80/120 no. and then with sand paper of 160/180 nos. 2. Applying two coats of sealer with spray gun and allowing sufficient drying time for 1st coat and 2nd coat is allowed to dry for 8 to 12 hrs. 3. On drying of sealer coat, wet rubbing with emery cloth of finer grading with ample water to remove excess sealer layer and make the surface further smooth after this wet rubbing, then surface is applied with special grade melamine fillers to fill all the small and big holes/grooves etc. Filler coat to be allowed to dry for 4 to 6 hrs on which again a light wet rubbing is done this surface is further allowed to dry for 12 hrs.				
		Carried Forward Section 1 - New Chancery Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
16		4. On this, 1st coat of melamine polish is applied with spray gun using melamine clear polish and melamine thinner in required proportion. This 1st coat is allowed to dry for 24 hrs then this dry surface is again fine wet rubbed smooth, which is further allowed to dry for 12 hrs. The final melamine polish is applied with compressor pressure spray gun using melamine clear polish and melamine thinner mixed in required proportion complete as per direction of Engineer-in-Charge. (Final coat to be done in 1 or 2 layers without gap of time.)	m2	142		
		Carried Forward to Summary of Section No. 1			INR	
		Section 1 - New Chancery Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 / / 21 12 / 44 / 45 /	<u>SECTION NO. 1</u> <u>BILL NO. 11 ALUMINIUM WORK</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)					
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
1	/ Single item made for all aluminium work	Providing and fixing aluminium system doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate Z sections and other sections as per drawing and specs provided on the Door Window schedule conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt, weather silicon sealant over backer rod of approved quality etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws. The cost shall include all sliders, neoprene gaskets, hinges, pivots, floor springs, Multi point locking system, hermetically sealed double glass units (DGU - 6mm toughened glass on outer side + 12mm cavity with Argon gas filling with required spacer at the middle + 6mm toughened glass inside, SHGC = 0.24 or less; U value = 1.6 w/sqmK or less; VLT 40% or more, colour as per selection for all windows except ground floor) including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. and all fittings & hardware all complete as per architectural drawings and the directions of Engineer-in-charge : Glass thickness mentioned above shall be cross checked and calculated against deflection by the vendor and quoted accordingly. All calculations shall be submitted along with the shop drawings for approval prior to execution.	m2	427		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
2	/ Single item made for all aluminium work	Providing and fixing aluminium system doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate Z sections and other sections as per drawing and specs provided on the Door Window schedule conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt, weather silicon sealant over backer rod of approved quality etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws. The cost shall include all sliders, neoprene gaskets, hinges, pivots, floor springs, Multi point locking system, hermetically sealed laminated double glass units (5mm toughened glass+1.52mm PVB Layer+5mm toughened laminated glass+12mm cavity with Argon gas filling with required spacer in the middle+ 6mm toughened glass inside, SHGC =0.24 or less; U Value =1.6 w/sqmK or less; VLT 40% or more, colour as per selection For all windows in Ground floor) including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. and all fittings & hardware all complete as per architectural drawings and the directions of Engineer-in-charge : Glass thickness mentioned above shall be cross checked and calculated against deflection by the vendor and quoted accordingly. All calculations shall be submitted along with the shop drawings for approval prior to execution.	m2	135		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO				

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3	/ N.S	Brought Forward	INR	
		Additional cost for entrance door with 10mm laminated armour-plated glass door that opens inwards (or should local fire regulations require it, outwards). Double doors require one half being properly anchored in a fixed position. The door shall be controlled from the reception counter and shall be equipped with the following. Cost shall include the items below: (i) a heavy duty door closer to close the door automatically; (ii) a five-lever security lock (e.g CHUBB CASTLE MORTICE DEADLOCL TYPE 3G110) for similar type for locking up after hours. (iii) a latch lock that can be opened from the outside by means of a key and from the inside by means of a handle that offers free mechanical exit; (iv) a push plate/bar for access (v) an electronic strike mechanism (e.g "eff eff 141kL left/right, 8vAC" (normally closed version – unlatches when energized) or similar type that provides the person outside with an audio indication that the door has been unlocked. However, the lock shall not unlock by means of a single impulse, but only while the control is being pressed. Once the button is not being pressed, the door shall be locked again; (vi) an electromagnet to keep the door open for daily use, but with activation from reception, the door will lock automatically in an emergency; (vii) Heavy duty hinges shall be used. If the door opens outward, dog bolts are to be fitted; (ix) an intercom system for communication from outside.	m2	7
		Carried Forward to Summary of Section No. 1	INR	
		Section 1 - New Chancery Building Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO		

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Item No	DSR		Unit	Quantity	Rate	Amount
1	29 /	<u>SECTION NO. 1</u>				
	/ 22	<u>BILL NO. 12 WATER PROOFING</u>				
	12 /	<u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
1	/ 22.5	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. (The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.)	m2	128		
Carried Forward					INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	NS-15	<u>Laying of EPDM Membrane on RAFT/HORIZONTAL SURFACE (Specifications are for reference only. All work shall be done by an authorised Waterproofing installer as per manufacturer's specifications and shall be Guaranteed with a 10year bond. All EPDM waterproofing shall be done by a single vendor using the same manufacturer's products)</u>				
2	/ i	Cleaningthe entire PCC Surfaceof any Loose material, Dirt, dust, laitance, adhesion inhibiting material, rounded sharp edged aggregates etc and making the surface clean.	m2	994		
3	/ ii	Providing and laying specially formulated single-ply 60 mil (1.4 mm) Sika or Equivalent EPDM Membrane non-reinforced black membrane which shall be laid loosely on the PCC. Overlap joint shall be made using Serrvoseal or Equivalent ressure Sensitive Secur Tape technology as specified by the manufacturer of teh EPDM Membrane. Membrane shall have minimum of 75 mm side and end laps which shall be sealed with highly formulated double sided Pressure Sensitive SECURE TAPE or Equivalent. The EPDM Membrane shall be able to resist 40mtr.Water pressurehead ,with tensile strength of > 11.0 mpa, elongation > 465%. Water vapour diffusion of < 24'000 microns, Tear resistance toASTMD624, dimensional change<- 0.7%.100%, UV resistance, Ozone resistance according to ASTMD1149. Makes: Serrvoseal/ Sika / Firestone	m2	994		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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4	/ iii	Brought Forward			INR	
		Extra for covering top of membrane with Geotextile, 120 gsm non woven, 100% polyester of thickness 1 to 1.25 mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation.	m2	994		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	NS-16	<u>Application of EPDM Membrane on Vertical Surface / Retaining Walls (Specifications are for reference only. All work shall be done by an authorised Waterproofing installer as per manufacturer's specifications and shall be Guaranteed with a 10year bond. All EPDM waterproofing shall be done by a single vendor using the same manufacturer's products)</u>				
5	/ i	Providing and laying specially formulated single-ply 60 mil (1.4 mm) Sika or Equivalent EPDM Membrane non-reinforced black membrane shall be spot bonded. Overlap joint shall be made using Serrvoseal or Equivalent ressure Sensitive Secur Tape technology as specified by the manufacturer of teh EPDM Membrane. Membrane shall have minimum of 75 mm side and end laps which shall be sealed with highly formulated double sided Pressure Sensitive SECURE TAPE or Equivalent. The EPDM Membrane shall be able to resist 40mtr.Water pressurehead ,with tensile strength of > 11.0 mpa, elongation > 465%. Water vapour diffusion of < 24'000 microns, Tear resistance toASTMD624, dimensional change<- 0.7%.100%, UV resistance, Ozone resistance according to ASTMD1149. . Providing and applying foam flashing for corner joint Sealing like Columns and Pedestals etc. The membrane shall be Fixed on the walls using fastners& aluminum strips. Makes: Serrvoseal/ Sika / Firestone	m2	754		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
6	/ ii	Supply and application of medium duty Dimple sheetdrainage boards with 8mm dimple and of size 20m x 1m stuck with a synthetic rubber adhesive on the membrane surface, having compressive strength of 200 kg / sqmt as per the manufacture's recommendation before backfilling.	m2	754		
7	/ 22.26	Providing and applying of swellable type water stop tape, 19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meter. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.	m	97		
8	/ 26.35.3	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/ masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in- Charge. (The payment shall be made on the basis of actual weight of approved grout injected.) Epoxy injection grout in concrete/RCC work of approved make .	kg	189		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		<u>Non Tower Area Waterproofing</u>				
9	/ 14.91.1	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3 mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ litre and viscocity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc, and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane : 3 mm thick	m2	394		
10	/ 14.92	Extra for covering top of membrane with Geotextile, 120 gsm non woven, 100% polyester of thickness 1 to 1.25 mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation.	m2	394		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	NS-17	<u>Terrace Waterproofing</u> <u>(Specifications are for reference only.</u> <u>All work shall be done by an</u> <u>authorised Waterproofing installer as</u> <u>per manufacturer's specifications</u> <u>and shall be Guarenteed with a</u> <u>10year bond. All EPDM waterproofing</u> <u>shall be done by a single vendor</u> <u>using the same manufacturer's</u> <u>products)</u>				
11	/ i	Surface Preparation - The concrete Surface to be made free from all thedepression / undulations, dust dirt, laitance and all the adhesion inhibiting material. Depressions, holes, and any undulations on the entire surface if any must be treated / filled with high strength polymer modified mortar/ micro concrete and the surface should be fully repaired and leveled.	m2	458		
12	/ ii	Providing and laying 1.5mm EPDM Waterproofing or Equivalent EPDM Membrane non-reinforced black membrane which shall be laid loosely on the terrace. Overlap joint shall be made using Serrvo seal or Equivalent Pressure Sensitive Secur Tape technology.Membrane shall have minimum of 450 mm side and end laps which shall be sealed with highly formulated double sided Serrvo seal Pressure Sensitive SECURE TAPE or Equivalent. The EPDM Membrane shall be able to resist 40mtr.Water pressure head ,with tensile strength of > 11.0 mpa, elongation > 465%. Water vapour diffusion of < 24'000 microns, Tear resistance toASTMD624,DieC dimensional change<- 0.7%.100%UVresistance,Ozone resistance according to ASTMD1149,membrane shall be taken.	m2	458		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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13	/ iii	Brought Forward			INR	
		Supply and laying of insulation Boards of 50 mm thick Sarnatherm 21 XPS Extruded Polystyrene Board, having thermal conductivity 0.028 w/mK at 10°C mean temp. with 31-35 kg/m3 density and compressive strength > 250 kpa	m2	458		
		Carried Forward to Summary of Section No. 1			INR	
		Section 1 - New Chancery Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 1</u>				
		<u>BILL NO. 13 MISCELLANEOUS WORK</u>				
		<u>PREAMBLES</u>				
12 /		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
		Carried Forward				
		Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
1	/ Item modified and item be	<u>Perforated Aluminium Louvers</u> Providing and installing aluminium floor height louvers as per Architecture drawings consisting of internal aluminium framework of appropriate size based on the height of the louvers. The internal tubular frame shall be designed with input from appropriate structural consultant along with submission of calculations. The internal frame shall be secured to the existing structure with Appropriate SS connectors and shall be designed to rotate along an axis that shall be connected to all other louvers with an axel and pulley system. A connected lever should be able to rotate all louvers equally and shall have a locking mechanism. The system shall be designed to take into account all wind loads. The framework shall be cladded with perforated aluminium sheetwork of minimum 3mm thickness and secured to the frame with concealed rivets. The complete louver shall be power coated to a minimum of 50microns. The measurement of once face of the louvers shall be taken for purpose of payment.	m2	103		
		Carried Forward Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
2	/ NS-21	<u>Seamless Geometric Jali Screen</u> Providing and installing 150mm average depth aluminium screen made up of 12-15mm thick 100-150mm deep hollow panels made up of aluminium composite panel sheets as per approved shade & grain. All hollow panels shall be interlocked to form the desired screen module as per the drawing attached. No screws shall be visible from the external or the internal face of the building. The screen module shall be installed on the building facade using a framework of Mild Steel T sections with tubular MS bracing. The MS frameworks sections shall be secured to the lintel, Parapet and other structural elements of the building with anchor plates of appropriate thickness with chemical fasteners(Hilti or eq.). The digitised panels shall be installed on vertical T section members using a clamping system that can be services easily by the building maintenance team. The screen and the supporting structure shall be tested against wind pressure at the designated height. The facade area of the screen shall be measured for the purpose of payments. The cost shall include the aluminium screen and the cost for the complete framework behind including the cost of finishing the steel framework with satin finish metal coat paint finish all complete.	m2	235		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
3	/ NS item	Providing and installing vertical Aluminium profile sections as per drawing attached for conference block envelope. The aluminium sections shall be installed over a MS frameworks that shall be paid for separately in steel works. All aluminium louvers shall be extruded profiles and bent to the curve of the structure. The sections shall be powder coated to the desired shade with a minimum thickness of 50 microns. The sections shall have the required space to add vertical LED profile lights along the internal surface such that the lights are not visible when lit. The profiles shall be connected to the substructure with concealed SS screws and shall be able to withstand all wind loads.	kg	4 000		
4	/ NS-22	Designing, supplying, fabricating and erecting in position, point fixed Glass for Top on Pergola with 8mm clear float Toughened + 1.52 PVB Clear Laminate + 8mm clear float Toughened glass of Saint Gobain/Equivalent make. The system should be designed to withstand the wind pressure of 100 kg/sq.mtr confirming to IS: 875-1987 (Part III). The entire glazed canopy will be flush on the level and SS Spider fittings in true line and slope. All holes in the glass shall be drilled in cone shape. All the glass expansion joints to be sealed with clear UV proof structural silicon sealant. All the gaps between glass to be sealed weather sealant. The cost includes all labour, materials, bolts and nuts, tools, tackles, hoisting machines, equipment's, transportation, etc complete. The system shall be tested to performance as per specification including all material tests. The quote rate shall include all design, engineering & shop drawing.	m2	58		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
5	/ NS-23	Providing and fixing factory made Modular Ward Robe of required size (as per space available) made with 18mm thick Pre-laminated (BSL) Exterior Grade HDHMR Board, (exposed surface will be of decorative type Pre-lamination Board on side & other side white / ivory lamination) on all side i.e. front, back both sides, Bottom & top, partition, shelves, drawers (2 nos) etc complete. All the edge of shutter board will be finished with PVC edge banding 2.00mm thick and shelves / partition with 0.80mm thick. The cost shall include providing recessed LED profile light with driver all complete. Light profile shall be of not more than 16mm wide, 6mm deep along the front edge of the carcass along the complete height (Both Sides). Shelves (2 nos)per wardrobe) shall be prelaminated HDHMR board of minimu 18mm thickness supported with SS pins onto the carcass. Ward Robe will be fitted with stainless steel self closing hinges of soft closing type including multi point locking provisions, tower bolt, vertical profile handle along the edge of the shutter, 2 nos soft closing quadra telescopic drawer sliders, 2 nos drawers with multipurpose locks, SS hanger rod, Magnetic catcher (2 nos per shutter) etc. complete as per direction of Engineer-in-charge. (for payment purpose shutter area will be measured in sqm)	m2	10		
6	/ NS-24	Providing & placing factory made modular Vanities for bathrooms with openable shutters and sufficient number of drawers made using prelaminated, boiling water proof (Marine Grade) 18mm thick carcass. All shelves shall be supported on approved quality SS pins and shall be adjustable for different heights as per requirements. Shutters to be at least 18mm thick prelaminated marine grade waterproof				
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		board. All laminate for the carcass shall be 0.8mm thick and as per selection. Laminate for the shutters shall be as per selection and a minimum of 1mm thickness. Each shutter shall be fixed to the frame work/carcass using appropriate number of hinges (Blum, Hafele/Hettich approved make) i/c soft/Auto closing hinges as per requirement fixed with SS screws, nails etc complete and these shutters are provided with an approved quality of Godrej Arc 128 mm pitch. Finished components shall be tested for the critical quality parameters, Adhesion and impact test which enhances the life of cabinetry. Shelves to be of minimum 18mm thk prelaminated HDHMR with PVC edge banding along all cut edges. Accessories (Godrej or equivalent make, payment for which will be made separately) to be fixed in the drawer/Cabinet with suitable provision with panels of bottom and rear shelves with thickness of 0.6mm as per technical requirement. The carcass shall be secured to the wall behind with appropriate SS screws and fixing hardware (Ebco or eq.). Brushed aluminium G/J profile recessed handle profile shall be provided along the horizontal length of the shutter / drawer instead of the surface handles. The work shall be executed as per drawing and direction of Engineer-in-charge. Only face area of openable shutter and drawer shall be measured for payment. Cabinet with depth of 560mm (Approx). <u>Modular kitchen -Under storage cabinets</u> Providing & placing factory made modular kitchen cabinets with openable shutters and sufficient number of drawers made prelaminated, boiling water proof (Marine Grade) 18mm thick	m2	10		
7	/ NS-25					
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward carcuss. It also includes the Tall unit of 2000 mm height. All shelves shall be supported on approved quality SS pins and shall be adjustable for different heights as per requirements. Shutter to be at least 18mm thick prelaminated marine grade waterproof board. All laminate for the carcass shall be 0.8mm thick and as per selection. Laminate for the shutters shall be as per selection and a minimum of 1mm thickness. Each shutter shall be fixed to the frame work/carcass using appropriate number of hinges (Blum, Hafele/Hettich approved make) i/c soft/Auto closing hinges as per requirement fixed with SS screws, nails etc complete and these shutters are provided with an approved quality of Godrej Arc 128 mm pitch. Finished components shall be tested for the critical quality parameters, Adhesion and impact test which enhances the life of kitchen. Shelves to be of minimum 18mm thk prelaminated HDHMR with PVC edge banding along all cut edges. Modular kitchen accessories (Godrej or equivalent make, payment for which will be made separately) to be fixed in the drawer/Cabinet with suitable provision with panels of bottom and rear shelves with thickness of 0.6mm as per technical requirement. The carcass of floor units and Tall units will be supported by 100mm height vertical adjustable legs (Hettich or equivalent approved) which will be covered with PVC skirting (Rehau or equivalent make) in brushed aluminium finish attached by hardware of skirting. .The unit shall be fixed to the floor/ wall/ slab using metal screws of appropriate size and rawl plugs. The work shall be executed as per drawing and direction of Engineer-in-charge. Only face area of openable shutter and drawer shall be measured for payment. Cabinet with depth of 560mm(Approx).				INR		
		Carried Forward Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO	m2	9		INR		

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		Brought Forward			INR	
8	/ NS-26	<u>Modular Kitchen : Wall units</u> Providing & placing factory made modular kitchen cabinets with openable shutters and sufficient number of drawers made prelaminated, boiling water proof (Marine Grade) 18mm thick carcuss. All shelves shall be supported on approved quality SS pins and shall be adjustable for different heights as per requirements. Shutters to be at least 18mm thick prelaminated marine grade waterproof board or glass shutters as per selection. All laminate for the carcuss shall be 0.8mm thick and as per selection. Laminate for the shutters shall be as per selection and a minimum of 1mm thickness. Each shutter shall be fixed to the frame work/carcass using appropriate number of hinges (Blum, Hafele/Hettich approved make) i/c soft/Auto closing hinges as per requirement fixed with SS screws, nails etc complete and these shutters are provided with an approved quality of Godrej Arc 128 mm pitch. Finished components shall be tested for the critical quality parameters, Adhesion and impact test which enhances the life of kitchen. Shelves to be of minimum 8mm toughened glass / 18mm thk prelaminated HDHMR with PVC edge banding along all cut edges. Modular kitchen accessories (Godrej or equivalent make, payment for which will be made separately) to be fixed in the drawer/Cabinet with suitable provision with panels of bottom and rear. The unit shall be hanged on to the the wall using metal screws of appropriate size and rawl plugs. The work shall be executed as per drawing/and direction of Engineer-in-charge. Only face area of openable shutter and drawer shall be measured for payment. Cabinet with depth of 300 mm(Approx).	m2	10		
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
9	/ NS-27	<u>Kitchen Accessories.</u> Providing and fixing Utensil Kit of Godrej Make of size 600mm in 304 SS grade i/c a set of soft closing baskets 2 Plain SS wire baskets 150 mm with required SS screw for fixing above component of godrej make or equivalent, complete as per drawing in the existing space, sample prepared in sample flat at site and direction of Engineer-in-charge.	No	4		
10	/ NS-28	<u>Access Control Area Doors</u> ACCESS CONTROL AREA DOORS - size 1.05 (w) x 2.1(h) Mtr. Both doors shall be mounted in door frames that overlaps the walls in such a way that the walls have to be broken down together with the frame. These doors shall comply with the following minimum specifications: (i) be 35mm thick Flush doors covered by 1.25mm steel plates on both sides, or similar or better strength type. (ii) Open outwards from the area being protected; (iii) Be fitted with heavy duty door closes to close the doors automatically; (iv) Be fitted with five-lever security locks (CHUBB CASTLE MORTICE DEADLOCK TYPE 3G110) or similar type for locking up after hours; (v) Be fitted with mechanical code latch locks with key override and turning handle on the outside. The strike plate supplied with the above mentioned lock is to be replaced with an electronic strike mechanism (E.g "eff eff 141kL left/right, 8vAC" (normally closed version – unlatches when energised) or similar type that provides the person outside with an audio indication that the door has been unlocked. However, the lock shall not unlock by means of a single impulse, but only while the control button is being pressed. Once				
		Carried Forward			INR	
		Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward the button is not pressed, the door shall be locked again. The inside of the door shall be fitted with a turning handle for free mechanical exit (e.g. ILCO UNICA 1021-2B-26D-8X: with keys and combinations) or similar type. (vi) A 3mm thick stainless steel plate 300mm x 300mm, covering the electronic strike mechanism in the door frame shall be attached in such a way that unauthorized access from the outside is prevented. A strong pull handle on the outside shall be bolted on through the plate and through the door to a second 300mm X 300mm thick stainless steel push plate on the inside so that the plate on the outside shall not be removable; NB: AS THE ONE STEEL PLATE SHOULD OVERLAP THE LOCKING MECHANISM THESE TWO STEEL PLATES SHOULD NOT BE IDENTICAL. THE HOLES FOR THE HANDLES SHALL MAKE PROVISION FOR THE CORING OF THE ELECTRIC STRIKE MECHANISM. (vii) Be fitted with heavy duty hinges and hinges bolts (E.G CHUBB SECURITY HINGE BOLT TYPE WS 12) or similar type in order to prevent the locked doors from being removed in the pins are removed from the hinges; and (viii) Between the height of 1.4m and 1.65m, a 250mm X 250mm large and 27mm thick laminated glass window shall be mounted in the doors in 3mm T-iron frameworks. The glass and framework should only be replaceable from inside the secured areas.			INR	
			No	3		
		Carried Forward to Summary of Section No. 1 Section 1 - New Chancery Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 2		<u>BILL NO. 1 EARTH WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
2.6		<u>Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.</u>				
1 / 2.6.1		All kinds of soil.	m3	389		
2.9		<u>Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.</u>				
2 / 2.9.1		Ordinary rock	m3	1 275		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 1 Earthworks SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	/ 2.26	<u>Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.</u>				
	2.26.1	<u>All kinds of soil</u>				
3	/ i	1.5m to 3.0m	m3	683		
4	/ 2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	m3	1 492		
5	/ 1.1.2 (8)	Carriage of Earth by mechanical transport including loading, unloading and Stacking including royalty & carriage up to 5 KM complete.	m3	172		
6	/ 2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	m3	31		
	2.28	<u>Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift upto1.5 m.</u>				
7	/ 2.28.1	All kinds of soil.	m2	583		
	2.34	<u>Supplying chemical emulsion in sealed containers including delivery as specified</u>				
8	/ 2.34.1	Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	Litres	54		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 1 Earthworks SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 4		<u>BILL NO. 2 CONCRETE WORKS</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
4.1		<u>Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :</u>				
1 / 4.1.3		1:2:4 (1 cement : 2 coarse sand(zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	m3	24		
2 / 4.1.5		1:3:6 (1 Cement : 3 coarse sand(zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources).	m3	53		
4.3		<u>Centering and shuttering including strutting, propping etc. and removal of form work for :</u>				
3 / 4.3.1		Foundations, footings, bases for columns.	m2	62		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 2 Concrete Works SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
4	/ 4.11	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20mm nominal size derived from natural sources).	m2	53		
5	/ 4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification - per 50 kg cement	No	14		
6	/ 4.13	Providing & applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	m2	53		
7	/ 4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	m2	72		
		Carried Forward to Summary of Section No. 2			INR	
		Section 2 - Official Residence Building Bill No. 2 Concrete Works SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 5		<u>BILL NO. 3 REINFORCED CEMENT CONCRETE WORK</u>				
		<u>PREAMBLES</u>				
12 /		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
5.9		<u>Centering and shuttering including strutting, propping etc. and removal of form for :</u>				
1	/ 5.9.1	Foundations, footings, bases of columns, etc. for mass concrete.	m2	78		
2	/ 5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	m2	678		
3	/ 5.9.3	Suspended floors, roofs, landings, balconies and access platform.	m2	918		
4	/ 5.9.4	Shelves (Cast in situ)	m2	63		
5	/ 5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	m2	635		
6	/ 5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts.	m2	558		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 3 Reinforced CementConcrete Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
7	/ 5.9.7	Stairs, (excluding landings) except spiral-staircases.	m2	57		
8	/ 5.9.15	Small lintels not exceeding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.	m2	18		
	5.9.16	<u>Edges of slabs and breaks in floors and walls</u>				
9	/ 5.9.16.1	Under 20 cm wide	m	357		
10	/ 5.9.19	Weather shade, Chajjas, corbels etc., including edges.	m2	50		
	5.11	<u>Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).</u>				
11	/ 5.11.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	m2	698		
	5.22	<u>Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.</u>				
12	/ 5.22.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	24 489		
	5.22A	<u>Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.</u>				
13	/ 5.22A.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	44 683		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 3 Reinforced CementConcrete Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	Derived item (5.40)	<u>Providing and laying in position ready mixed concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge.</u> NOTE- (1) Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of BMC and RMC.				
	Der. item (5.40.1)	<u>All works upto plinth level.</u>				
14	/ Der. item (5.40.1.1)	Concrete of M25 grade with minimum cement content of 330 kg /cum	m3	170		
15	/ Der. item (5.40.1.2)	Concrete of M30 grade with minimum cement content of 350 kg /cum	m3	68		
16	/ Der. item (5.40.1.3)	Concrete of M35 grade with minimum cement content of 370 kg /cum	m3			rate only
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 3 Reinforced CementConcrete Works SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 6		<u>BILL NO. 4 BRICK WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
6.1		<u>Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:</u>				
1 / 6.1.2		Cement mortar 1:6 (1 cement : 6 coarse sand)	m3	6		
2 / 6.38		Providing and laying autoclaved aerated Concrete (AAC) blocks masonry with 100mm / 125 mm thick with Grade 1 AAC blocks of density 551 to 650 kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	m3	84		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 4 Brickwork SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR		
3	/ 6.44	Brick edging 7cm wide 11.4 cm deep to plinth protection with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	m	96			
4	/ 6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	m3	146			
		Carried Forward to Summary of Section No. 2					
		Section 2 - Official Residence Building Bill No. 4 Brickwork SAS/JVNC/GTAC/DIRCO			INR		

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 2</u>				
	/ 8	<u>BILL NO. 5 MARBLE & GRANITE WORKS</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	8.2	<u>Providing and fixing 18mm thick gang saw cut (premoulded and prepolished) machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, making grooves at junctions, mouldings and polishing to edge to give high gloss finish etc. complete at all levels.</u>				
1	/ Derived item (8.2.2.2)	Italian marble of any colour and shade, Area of slab over 0.50 sqm	m2	36		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
2	/ 8.4	Extra for fixing marble / granite stone over and above corresponding basic item, in facia and drops of width upto 150mm with epoxy resin baesd adhesive including cleaning etc. complete.	m	62		
3	/ 8.5	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/Stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edge etc. complete.	No	15		
8.1		<u>Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.</u>				
4	/ 8.10.2	Granite Stone of approved shade	m2	1		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward				INR	
	8.11	<u>Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (veneer work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.</u>					
5	/ 8.11.1	18 mm thick Italian Marble stone slab,Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	m2	407			
6	/ N.S item Added	Extra for replacing standard mortar fixing with chemical adhesive (Mapai or kerakol) of not more than 5-6mm thickness for installation of stone. This shall also include use of Jointing chemical 'Akeme 1050' along the edge of the stone including addition of pigments where required to match the colour of the stone. The joint shall be protected by using masking tapes on the junction of stone after installation and prior to floor polishing process.	m2	407			
7	/ N.S item Added	Additional for Diamond polishing the stone. The process shall include the following process:	m2	407			
		Carried Forward				INR	
		Section 2 - Official Residence Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO					

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		Brought Forward			INR	
		1. Grinding to remove lippage using metal bonded diamond to highly level floor 2. Repair of cavities and joints using resin from Akemi 3. Grinding with grit-60 RBD to remove scratches 4. Application of liquid resin to fillup pinholes or fine cracks. This also reduces chances of future cracks 5. Honing till grit 800 RBD 6. Fine honing till grit 3000 RBD 7. Fine grinding till grit 12000 8. Scrubbing of the floor with shampoo 9. Treating marble with Nobile polishing powder to achieve high gloss 10. Scrubbing the floor with shampoo to remove excess and unreacted powder 11. Crystallization of the marble with terranova 12. Buffing with white pad				
8	/ 8.31	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	m2	25		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
8.32		<u>Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building, for all heights and all levels etc. including: (a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design. (b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc.</u>				
9		(c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanised with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory,				
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. The Contractor shall provide curtain wall with aluminium composite panel cladding, and including base frame work for ACP having all the performance characteristics all complete , as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. up to two decimal places. <u>External Stone Cladding</u> <u>Providing and fixing 20mm thick stone in cladding/ dado/ bands/ architraves/ strips/ cill/ soffits/ jambs in specified sizes as per drawing of approved colour and quality for external walls/ columns and wherever specified with chemical adhesives (Mapai or Karakol) 5-6mm thickness, maintaining grooves in stone slabs as per the drawing and joints including backer rod, drilling, anchoring, grouting, scaffolding, edge polishing, chamfering etc., complete.</u>	m2	10		
NS-1						
10	/ i	Moca Crème leather finish stone (Basic Rate 400 Rs./ Sqft.)	m2	1 041		
11	/ ii	Additional cost for increaing the thickness of the stone to 25mm and CNC engraving of patter with engraving depth of 10mm. Pattern as per elevation drawing	m2	50		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO				

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12	/ NS-2	Extra for Filling the joints of Stone Cladding having joints of filling the same with non-staining, non-streaking silicon joint sealants (Elastosil 355 of Wacker/ Dow Corning 991 or approved equivalent) include application of silicone coating consisting of silane and siloxane based dilutable with Solvent (Orthoxylene) 1:16 (1 Silicon : 16 Orthoxylene) water repellent coating of Wacker Silicone Product code no BS-290 or approved equivalent on all external surfaces of stone by spraying complete in all respect before installation of the cladding.	m2	1 041	INR
		Carried Forward to Summary of Section No. 2 Section 2 - Official Residence Building Bill No. 5 Marble & Granite Works SAS/JVNC/GTAC/DIRCO			INR

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 9		<u>BILL NO. 6 WOOD & PVC WORK</u>				
		<u>PREAMBLES</u>				
12 /		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
9.1		<u>Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).</u>				
1 / 9.1.1		Second class teak wood	m3	2		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	9.21	<u>Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:</u>				
2	/ 9.21.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	m2	95		
3	/ N.S. item added	additional cost for replacing 35mm thick door with 40mm thick.	m2	95		
4	/ 9.23	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	m2	95		
	9.40.1	<u>Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete : 2nd class teak wood</u>				
5	/ 9.40.1.1	50x12 mm	m	441		
6	/ N.S. item added	Additional cost for increasing the size of the beeding to 65mmx12mm	m	441		
7	/ 9.53	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	No	124		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	9.127	<u>Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.</u>				
8	/ 9.127.1	1.5 mm thick.	m2	28		
	9.127	<u>Extra for Providing and fixing flush doors with decorative veneering on top of non decorative ISI marked flush door shutters with 3mm V grooves as per detail drawing conforming to IS: 2202 (Part I)</u>				
9	/ N.S item added	4mm thk, Ash Veneer (century or eq.)	m2	163		
		<u>SS Hardware</u>				
	9.165	<u>Providing and fixing bright /matt finished Stainless Steel handles of approved quality & make with necessary screws etc all complete. As per DW schedule</u>				
10	/ 9.165.1	125 mm	No	38		
	NS-3	<u>Providing and fixing Stainless Steel tower bolts of approved make with necessary screws etc. complete :</u>				
11	/ i	300x10mm	No	35		
	NS-4	<u>Providing and fixing Stainless Steel hanging floor door stopper of approved make with necessary screws etc. complete.</u>				
12	/ i	Single rubber stopper	No	39		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
13	/ NS-5	Providing and fixing Concealed Door Closer With Track Arm (SS Finish), Slide in SS Cover Stainless Steel door closer, door weight upto 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete. As per DW schedule	No	37		
14	/ NS-6	Providing and fixing of Mortise Lock with Handles Stainless Steel Finish (Solid Casted) with necessary screws etc. complete as per design & approved by Engineer in Charge. As per DW schedule	No	34		
15	/ NS-7	Providing and fixing stainless steel sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete : 300x16 mm	No	3		
16	/ 9.161	Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side & 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120gm/m ²) suitable for mounting 120 min Fire Rated Glazed Door Shutters. The frame shall be filled with Mineral wool Insulation having density min 96Kg/m ³ . The frame will have a provision of G.I. Anchor fastners 14 nos (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with Factory made Template for SS Ball Bearing Hinges of Size 100x89x3mm for fixing of fire rated glazed shutter . The frame shall be finished with a approved fire resistant primer or Powder coating of not less than 30 micron in desired shade as per the directions of Engineer - in- charge . (Cost of SS ball bearing hinges is excluded).	m	12		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
17	/ 9.162 Delivered	Providing and fixing 60 mm thick non glazed fire resistant door shutters of 120 min Fire Rating confirming to IS:3614 (Part II) or EN1634-1:1999, tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, top rail & side rail 60 mm x 60 mm wide and bottom rail of 110 mm x 60mm made out of 1.6mm thick G.I. sheet (zinc coating not less than 120gm/m ²) duly filled mineral wool insulation having density min 96 kg/ m ³ and fixing with necessary stainless steel ball bearing hinges of size 100x89x3mm of approved make, including applying a coat of approved fire resistant primer or powder coating not less than 30 micron etc all complete as per direction of Engineer-in-charge (panelling to be paid for seperately).	m2	5		
18	/ N.S item added	The door shall Have a mechanical turning handle as a locking mechanism. The locking mechanism shall have at least 4 X 12mm hardened steel pins that penetrate the doorframe 10mm deep. The door shall not be removable from the outside if the hinge pins are removed. The locking mechanism itself shall be locked by a three-way non manipulatory combination lock with one million combinations. There must also be a 5 lever security lock Heavy Duty that locks directly into the doorframe.	No	1		
		Carried Forward to Summary of Section No. 2			INR	
		Section 2 - Official Residence Building Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 10		<u>BILL NO. 7 STEEL WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
10.16		<u>Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.</u>				
1 / 10.16.2		Hot finished seamless type tubes	kg	7 598		
2 / 10.2		Providing and fixing bolts including nuts and washers complete	kg	152		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 7 Steelworks SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
3	/ 10.18	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	No	30		
	10.25	<u>Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required</u>				
4	/ 10.25.1	In stringers, treads, landings etc. of stair cases including use of chequered plate wherever required, all complete.	kg	2 500		
5	/ 10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	kg	187		
	10.27	<u>Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge.</u>				
6	/ 10.27.2	10 x 80 mm	No	32		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 7 Steelworks SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	9.48	<u>Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.</u>				
7	/ 9.48.2	Fixed to openings /wooden frames with rawl plugs screws etc.	kg	1 417		
8	/ N.S. item added	Providing & fixing fly proof fibre mesh to windows, clerestory windows, sliding windows & doors with aluminium sliding sash type framework installed over the aluminium profile including all accessories all complete.	m2	36		
		<u>Glass Railing</u>				
	NS-9	<u>Providing and fixing in position Toughened Glass Railing with Aluminium framework to Balconies and parapet walls etc. 1000 mm height from Finished floor level comprising of 35mm x 80mm 2.60 mm Aluminium handrail powder coated profile (Approximate sizes) to approved shade. The handrail shall be supported on the glass. The glass railing shall consist of 2 layers of 6mm thick toughened glass with a sandwiched layer of 1.4mm thick PVB layer (Centri Glass) laminated together. The railing shall be installed in the skirting / wall using aluminium u channel 100mm deep grouted to the base concrete using appropriate fasteners and casted along with the concrete. The glass shall be inserted into the U channel upto the full depth of the channel and sealed in place using structural sealants.</u>				
9		1000 Mtr high railing	m	87		
10		400mm high railing	m	25		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 7 Steelworks SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR		
11	/ NS-9.1	Providing and fixing in position Toughened Glass Railing using circular Stainless Steel Grade 304, 25mm dia study secured to MS sections / waist slab of the staircase using appropriate chemical fastners (Hilti or Eq.). The heigh of the railing shall be 1000 mm high measure from the centre of each step and shall comprising of 35mm x 80mm 2.60 mm Aluminium handrail powder coated profile (Approximate sizes) to approved shade. The handrail shall be supported on the glass. The glass railing shall consist of 2 layers of 6mm thick toughened glass with a sandwiched layer of 1.4mm thick PVB layer (Centri Glass) laminated together.	m	20			
	NS-9.2	<u>Providing and installing safety railing for the walkway bridge connecting the Chancery podium with the residence. The structure of the railing shall be made up of MS sections place at an average distance of 1.0mtrs finished in desired shade with satin finish automotive paint. The space between the vertical sections (Railing surface) shall be 8+1.52+8mm thick toughened laminated milky glass(Centri Glass) that shall not allow view of the person crossing the bridge. The glass shall be secured to the MS sections using 25mm dia. SS studs placed at a minimum of 3 locations along the height of the MS sections. Refer to drawing of bridge.</u>					
12		1.5 mtr high railing with 35mm x 80mm 2.60 mm Aluminium handrail powder coated profile (Approximate sizes) to approved shade.	m	10			
13		1.0 mtr high railing with 35mm x 80mm 2.60 mm Aluminium handrail powder coated profile (Approximate sizes) to approved shade.	m	19			
		Carried Forward to Summary of Section No. 2					
		Section 2 - Official Residence Building Bill No. 7 Steelworks SAS/JVNC/GTAC/DIRCO			INR		

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 11		<u>BILL NO. 8 FLOORING WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
11.3		<u>Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.</u>				
1 / 11.3.1		40mm thick with 20mm nominal size stone aggregate.	m2	239		
11.2		<u>Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).</u>				
2 / 11.20.3		Dark shade pigment using ordinary cement	m2	10		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR		
11.23		<u>Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-in-charge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with :</u>					
3 / 11.23.5		Udaipur green marble	m2	10			
4 / 11.24		Extra for pre finished nosing to treads of steps of marble / granite stone.	m	117			
5 / 11.25		Extra for marble / granite stone flooring in treads of steps and risers using single length up to 2.00 metre.	m2	56			
11.41		<u>Providing & Laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and confirming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.</u>					
6 / 11.41.2		Size of Tile 600x600 mm	m2	10			
		Carried Forward			INR		
		Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO					

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		Brought Forward			INR	
	11.46	<u>Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.</u>				
7	/ Derived item 11.46.2	Size of Tile 450x600 mm	m2	308		
	/ 11.41A	<u>Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.</u>				
	11.41A.3	<u>Glazed Vitrified tiles Matt/Antiskid finish of size</u>				
8	/ 11.41A.3.1	Size of Tile 600 x 600 mm	m2	5		
9	/ 11.41A.3.2	Size of Tile 600 x 1200 mm	m2	86		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR		
	11.49A	<u>Providing and laying full body vitrified tile in floor of minimum thickness 15 mm with water absorption less than 0.06% and conforming to IS: 15622, of approved make, brand and manufacturer, laid on 20 mm thick base cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.30 kg / sqm including grouting the joints with white cement and matching pigments etc. The slab must be cut with the zero chipping diamond cutter only. Laying of slab will be done with the help of notch trowel, wedge, clips of required thickness, vacuum cups for lifting, leveling system and rubber mallet for placing the slab gently and easily.</u>					
10	/ i	Size of tile 800x2400mm of all colours and shades	m2	35			
	11.52	<u>Providing and laying machine cut, mirror polished Marble stone flooring, in required design (Simple geometrical, abstract etc.) and in patterns in combination with Italian marble stones of different colours, shades and finished surface texture etc., in linear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.</u>					
11	/ 11.52.1	18 mm thick Italian Marble stone slab, Perlato, Rosso verona, Fire Red or Dark Emperadore etc.	m2	371			
		Carried Forward			INR		
		Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO					

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		Brought Forward			INR	
12	/ N.S item Added	Additional cost for providing screed in floor to reduce transfer of sound from floor to floor. The thickness of the screed shall up upto 75mm thick including levelling and curing for a minimum of 28 days before application of flooring	m2	371		
13	/ N.S item Added	Extra for replacing standard mortar fixing with chemical adhesive (Mapai or kerakol) of not more than 5-6mm thickness for installation of stone. This shall also include use of Jointing chemical 'Akeme 1050' along the edge of the stone including addition of pigments where required to match the colour of the stone. The joint shall be protected by using masking tapes on the junction of stone after installation and prior to floor polishing process.	m2	371		
14	/ N.S item Added	Additional for Diamond polishing the stone. The process shall include the following process: 1. Grinding to remove lippage using metal bonded diamond to highly level floor 2. Repair of cavities and joints using resin from Akemi 3. Grinding with grit-60 RBD to remove scratches 4. Application of liquid resin to fillup pinholes or fine cracks. This also reduces chances of future cracks 5. Honing till grit 800 RBD 6. Fine honing till grit 3000 RBD 7. Fine grinding till grit 12000 8. Scrubbing of the floor with shampoo 9. Treating marble with Nobile polishing powder to achieve high gloss 10. Scrubbing the floor with shampoo to remove excess and unreacted powder 11. Crystallization of the marble with terranova 12. Buffing with white pad	m2	371		
		Carried Forward Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR		
	11.55	<u>Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineerin- Charge :</u>					
15	/ 11.55.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	m2	169			
	11.56	<u>Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.</u>					
16	/ 11.56.1	Polished Granite stone slab colour of Black, Cherry/Ruby Red or equivalent	m2	10			
		Carried Forward			INR		
		Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO					

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		Brought Forward			INR	
17	/ 11.53	Providing and fixing Glass mosaic tiles on finished plain wall surface of size 20 mm x 20 mm x 4 mm in all colour, design , fixing in customized design as per direction of Engineer in charge. The glass mosaic tiles shall be fixed on the wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operations, material and required pattern approved by Engineer-in-charge.	m2	95		
18	/ NS-10	<u>Engineered Wood Flooring</u> Providing,fitting and fixing wooden flooring from Uniproducts (India) Ltd.of thickness 14mm made of pure wood(Engineered Wood) of different types with a top layer of 3mm thick hard wood and Under layer of 2mm thickness made of polythene and foamsheet laid on existing concrete floor complete as directed and specified. Engineered Wood (New) from Uniproducts(India) Ltd. i) Walnut Brand	m2	254		
19	/ NS	Providing and laying flamed finish Granite stone copings on balcony and pool upstands on internal and external side of the glass railings including sealing the junction of all such coping stone tops and recessed aluminium frame for support of glass. This shall include the projection of the stone copings beyond the wall and making necessary drip course Of minimum 6mmx6mm all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base	m2	28		
		Carried Forward Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
20	/ NS	Providing and laying flamed finish Granite stone copings on balcony and pool upstands on internal and external side of the glass railings including sealing the junction of all such coping stone tops and recessed aluminium frame for support of glass. This shall include the projection of the stone copings beyond the wall and making necessary drip course of minimum 6mmx6mm all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base	m2	41		
21	/ NS	Making drip course along stone projections of minimum 6mmx6mm including cleaning and finishing the groove all complete.	m	300		
22	/ NS	Additional over item 15 for pasting granite stone 18x40mm along the bottom edge of granite coping including making recesses to install LED profile light along the bottom side of the coping.	m			Rate Only
		Carried Forward to Summary of Section No. 2				
		Section 2 - Official Residence Building Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 12		<u>BILL NO. 9 ROOFING</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
1 / 12.21.1		Providing and laying gola 75x75mm in cement concrete M15 grade including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design in 75x75 mm deep chase.	m	146		
2 / 12.22		Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	No	7		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	12.31	<u>Providing 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level, over first class kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame (frame work to be paid separately):</u>				
3	/ 12.31.1	Flat surfaces	m2	304		
4	/ 12.32	Extra for sunk or raised mouldings in the plaster of Paris (Gypsum anhydrous) ceiling.	m2	304		
5	/ 9.3.1	Providing wood work in frames of false ceiling, partitions etc. sawn and fixed in position with necessary stainless steel screws etc. Sal wood.	m3	2		
	12.45	<u>Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230</u>				
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		<u>mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with : at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square</u>				
6	/ 12.45.3	12.5 mm thick tapered edge gypsum moisture resistant board.	m2	71		
7	/ NS-11	Same as above but Providing and Fixing of 12 mm thick MDF board ceiling with paint instead of Gypsum Board for Item No-6 etc complete as per design and instruction Only finished surface area shall be measured for payment.	m2	82		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
12.53		<u>Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main 'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x 28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size (24x24x3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calcium silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening "for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required.</u>				
8	/ i	Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T', bottom exposed with 24 mm of all T sections				
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		shall be pre-painted with polyester baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge. Note :- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/ opening (cut outs) having area less than 0.30 sqm. The calcium silicate ceiling tile shall have NRC value of 0.50 (Minimum), light reflection > 85%, non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity <0.043 w/mK.	m2	105		
9	/ 12.55	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300mm x 20 mm) with SRI (solar refractive index) > 78, solar reflection > 0.70 and initial emittance > 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement & marble powder in ratio of 1:1, including rubbing and polishing of the surface upto 3 cuts complete, including providing skirting upto 150 mm height along the parapet walls in the same manner.	m2	236		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
10	/ NS-11	Wooden ceiling finish with veneer: Providing and fixing IS 710 12 mm thick plywood false ceiling as per drawing & instruction of EIC & sample approved (complete with frame work). finish with 4 mm th veneer gurjan base ply Semi glossy malamine finish polish. Plywood shall be fixed with required fabrication work and ply frame work with all necessary accessories Rate shall include cost of making of all cutouts for light fixtures, gadgets, gizmo, pelmets, grooves, beads and also provide support/template where ever required The rate shall be in sq.mt for all floors and at all heights including all costs the shop drawing (or a sample mock of 5 Sqm minimum of the frame work and ceiling) shall be approved from EIC. 5mm Groove shall be provided at the junction of the false ceiling & the wall. (considering all levels with require all fabricataion work and fitting from RCC slab to false ceiling 100 to 1000 mm)	m2	42		
		Carried Forward to Summary of Section No. 2 Section 2 - Official Residence Building Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
/ 13		<u>BILL NO. 10 FINISHING WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
13.4		<u>12 mm cement plaster of mix :</u>				
1 / 13.4.1		1:4 (1 cement: 4 coarse sand)	m2	1 091		
13.16		<u>6 mm cement plaster of mix :</u>				
2 / 13.16.1		1:3 (1 cement: 3 fine sand)	m2	202		
3 / 13.21		Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers per bag of 50KG Cement Used in Mix	No	171		
4 / N.S. Item added		Additional for adding recron fibre in external plaster.	m2	1 091		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
5	/ 13.78	Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ per liter respectively conforming to IS: 2547 (Part- 1 & II) 1976, applied on hacked / uneven background such as bare brick/block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. complete.	m2	1 398		
6	/ N.S item added	Additional for applying a layer of fibre mesh along the complete surface of the wall. The fibre mesh shall be sandwiched between a base coat of gypsum plaster of not more than 6mm. The fibre mesh shall be secured on to the surface of the wall with appropriate fastners during the first coat is wet. A second layer of Gypsum plaster of appropriate thickness shall be applied on teh fibre mesh to cover the surface evenly.	m2	1 398		
7	/ 13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	m2	202		
	13.41	<u>Distempering with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.</u>				
8	/ 13.41.1	New work (two or more coats) over and including water thinnable priming coat with cement primer having VOC content less than 50 gram / litre	m2	25		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	13.45	<u>Finishing walls with textured exterior paint of required shade :</u>				
9	/ 13.45.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	m2	50		
	13.62	<u>Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :</u>				
10	/ 13.62.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	m2	1 170		
11	/ 13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	m2	1 722		
	13.83	<u>Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.</u>				
12	/ 13.83.2	Two coats	m2	1 672		
	13.85	<u>Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.</u>				
13	/ 13.85.1	With ready mixed pink or grey primer on wood work (hard and soft wood) having VOC content less than 50 grams/ litre	m2	229		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
14	/ 13.85.3	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	m2	1 672		
15	/ 5.3	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	m	715		
	13.116	<u>Polishing in high gloss/matt finish melamine clear polish on wood work in required color/wooden shade texture with following process in the sequence as detailed below:</u> 1. The surface to be polished is rubbed with sand paper 80/120 no. and then with sand paper of 160/180 nos. 2. Applying two coats of sealer with spray gun and allowing sufficient drying time for 1st coat and 2nd coat is allowed to dry for 8 to 12 hrs. 3. On drying of sealer coat, wet rubbing with emery cloth of finer grading with ample water to remove excess sealer layer and make the surface further smooth after this wet rubbing, then surface is applied with special grade melamine fillers to fill all the small and big holes/grooves etc. Filler coat to be allowed to dry for 4 to 6 hrs on which again a light wet rubbing is done this surface is further allowed to dry for 12 hrs.				
		Carried Forward Section 2 - Official Residence Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO			INR	

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16	Brought Forward	INR	INR
3. On drying of sealer coat, wet rubbing with emery cloth of finer grading with ample water to remove excess sealer layer and make the surface further smooth after this wet rubbing, then surface is applied with special grade melamine fillers to fill all the small and big holes/grooves etc. Filler coat to be allowed to dry for 4 to 6 hrs on which again a light wet rubbing is done this surface is further allowed to dry for 12 hrs.	m2	229	
Carried Forward to Summary of Section No. 2			
Section 2 - Official Residence Building Bill No. 10 Finishing Work SAS/JVNC/GTAC/DIRCO			

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Item No	DSR		Unit	Quantity	Rate	Amount
29 / / 21 12 / 44 / 45 /	<u>SECTION NO. 2</u> <u>BILL NO. 11 ALUMINIUM WORK</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)					
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
1	/ Single item made for all aluminium work	Providing and fixing aluminium system doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate Z sections and other sections as per drawing and specs provided on the Door Window schedule conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt, weather silicon sealant over backer rod of approved quality etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws. The cost shall include all sliders, neoprene gaskets, hinges, pivots, floor springs, Multi point locking system, hermetically sealed double glass units (DGU - 6mm toughened glass on outer side + 12mm cavity with Argon gas filling with required spacer at the middle + 6mm toughened glass inside, SHGC = 0.24 or less; U value = 1.6 w/sqmK or less; VLT 40% or more, colour as per selection) including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. and all fittings & hardware all complete as per architectural drawings and the directions of Engineer-in-charge : Glass thickness mentioned above shall be cross checked and calculated against deflection by the vendor and quoted accordingly. All calculations shall be submitted along with the shop drawings for approval prior to execution.	m2	116		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
2	/ Single item made for all aluminium work	Providing and fixing aluminium system doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate Z sections and other sections as per drawing and specs provided on the Door Window schedule conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt, weather silicon sealant over backer rod of approved quality etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws. The cost shall include all sliders, neoprene gaskets, hinges, pivots, floor springs, Multi point locking system, hermetically sealed laminated double glass units (5mm toughened glass+1.52mm PVB Layer+5mm toughened laminated glass+12mm cavity with Argon gas filling with required spacer in the middle+ 6mm toughened glass inside, SHGC =0.24 or less; U Value =1.6 w/sqmK or less; VLT 40% or more, colour as per selection) including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. and all fittings & hardware all complete as per architectural drawings and the directions of Engineer-in-charge : Glass thickness mentioned above shall be cross checked and calculated against deflection by the vendor and quoted accordingly. All calculations shall be submitted along with the shop drawings for approval prior to execution.	m2	94	INR	
		Carried Forward to Summary of Section No. 2 Section 2 - Official Residence Building Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
1	29 /	<u>SECTION NO. 2</u>				
	/ 22	<u>BILL NO. 12 WATER PROOFING</u>				
	12 /	<u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	/ 22.5	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. (The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.)	m2	44		
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	NS-15	<u>Laying of EPDM Membrane on RAFT/HORIZONTAL SURFACE (Specifications are for reference only. All work shall be done by an authorised Waterproofing installer as per manufacturer's specifications and shall be Guaranteed with a 10year bond. All EPDM waterproofing shall be done by a single vendor using the same manufacturer's products)</u>				
2	/ i	Cleaningthe entire PCC Surfaceof any Loose material, Dirt, dust, laitance, adhesion inhibiting material, rounded sharp edged aggregates etc and making the surface clean.	m2	212		
3	/ ii	Providing and laying specially formulated single-ply 60 mil (1.4 mm) Sika or Equivalent EPDM Membrane non-reinforced black membrane which shall be laid loosely on the PCC. Overlap joint shall be made using Serrvoseal or Equivalent ressure Sensitive Secur Tape technology as specified by the manufacturer of teh EPDM Membrane. Membrane shall have minimum of 75 mm side and end laps which shall be sealed with highly formulated double sided Pressure Sensitive SECURE TAPE or Equivalent. The EPDM Membrane shall be able to resist 40mtr.Water pressurehead ,with tensile strength of > 11.0 mpa, elongation > 465%. Water vapour diffusion of < 24'000 microns, Tear resistance toASTMD624, dimensional change<- 0.7%.100%, UV resistance, Ozone resistance according to ASTMD1149. Makes: Serrvoseal/ Sika / Firestone	m2	212		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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4	/ iii	Brought Forward Extra for covering top of membrane with Geotextile, 120 gsm non woven, 100% polyester of thickness 1 to 1.25 mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation.	m2	212	INR	
		Carried Forward Section 2 - Official Residence Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	NS-16	<u>Application of EPDM Membrane on Vertical Surface / Retaining Walls (Specifications are for reference only. All work shall be done by an authorised Waterproofing installer as per manufacturer's specifications and shall be Guaranteed with a 10year bond. All EPDM waterproofing shall be done by a single vendor using the same manufacturer's products)</u>				
5	/ i	Providing and laying specially formulated single-ply 60 mil (1.4 mm) Sika or Equivalent EPDM Membrane non-reinforced black membrane shall be spot bonded. Overlap joint shall be made using Serrvoseal or Equivalent ressure Sensitive Secur Tape technology as specified by the manufacturer of teh EPDM Membrane. Membrane shall have minimum of 75 mm side and end laps which shall be sealed with highly formulated double sided Pressure Sensitive SECURE TAPE or Equivalent. The EPDM Membrane shall be able to resist 40mtr.Water pressurehead ,with tensile strength of > 11.0 mpa, elongation > 465%. Water vapour diffusion of < 24'000 microns, Tear resistance toASTMD624, dimensional change<- 0.7%.100%, UV resistance, Ozone resistance according to ASTMD1149. . Providing and applying foam flashing for corner joint Sealing like Columns and Pedestals etc. The membrane shall be Fixed on the walls using fastners& aluminum strips. Makes: Serrvoseal/ Sika / Firestone	m2	243		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
6	/ ii	Supply and application of medium duty Dimple sheetdrainage boards with 8mm dimple and of size 20m x 1m stuck with a synthetic rubber adhesive on the membrane surface, having compressive strength of 200 kg / sqmt as per the manufacture's recommendation before backfilling.	m2	243		
7	/ 22.26	Providing and applying of swellable type water stop tape, 19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meter. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.	m	24		
8	/ 26.35.3	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/ masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in- Charge. (The payment shall be made on the basis of actual weight of approved grout injected.) Epoxy injection grout in concrete/RCC work of approved make .	kg	61		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
		<u>Non Tower Area Waterproofing</u>				
9	/ 14.91.1	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3 mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ litre and viscocity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc, and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane : 3 mm thick	m2	1		
10	/ 14.92	Extra for covering top of membrane with Geotextile, 120 gsm non woven, 100% polyester of thickness 1 to 1.25 mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation.	m2	1		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	NS-17	<u>Terrace Waterproofing</u> <u>(Specifications are for reference only.</u> <u>All work shall be done by an</u> <u>authorised Waterproofing installer as</u> <u>per manufacturer's specifications</u> <u>and shall be Guarenteed with a</u> <u>10year bond. All EPDM waterproofing</u> <u>shall be done by a single vendor</u> <u>using the same manufacturer's</u> <u>products)</u>				
11	/ i	Surface Preparation - The concrete Surface to be made free from all thedepression / undulations, dust dirt, laitance and all the adhesion inhibiting material. Depressions, holes, and any undulations on the entire surface if any must be treated / filled with high strength polymer modified mortar/ micro concrete and the surface should be fully repaired and leveled.	m2	236		
12	/ ii	Providing and laying 1.5mm EPDM Waterproofing or Equivalent EPDM Membrane non-reinforced black membrane which shall be laid loosely on the terrace. Overlap joint shall be made using Serrvo seal or Equivalent Pressure Sensitive Secur Tape technology.Membrane shall have minimum of 450 mm side and end laps which shall be sealed with highly formulated double sided Serrvo seal Pressure Sensitive SECURE TAPE or Equivalent. The EPDM Membrane shall be able to resist 40mtr.Water pressure head ,with tensile strength of > 11.0 mpa, elongation > 465%. Water vapour diffusion of < 24'000 microns, Tear resistance toASTMD624,DieC dimensional change<- 0.7%.100%UVresistance,Ozone resistance according to ASTMD1149,membrane shall be taken.	m2	236		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 2</u>				
		<u>BILL NO. 13 MISCELLANEOUS WORK</u>				
		<u>PREAMBLES</u>				
12 /		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
		Carried Forward				
		Section 2 - Official Residence Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
		<u>Seamless Geometric Jali Screen</u>				
1	/ NS-19	Providing and installing 150mm average depth aluminium screen made up of 12-15mm thick 100-150mm deep hollow panels made up of aluminium composite panel sheets as per approved shade & grain. All hollow panels shall be interlocked to form the desired screen module as per the drawing attached. No screws shall be visible from the external or the internal face of the building. The screen module shall be installed on the building facade using a framework of Mild Steel T sections with tubular MS bracing. The MS frameworks sections shall be secured to the lintel, Parapet and other structural elements of the building with anchor plates of appropriate thickness with chemical fasteners(Hilti or eq.). The digitised panels shall be installed on vertical T section members using a clamping system that can be services easily by the building maintenance team. The screen and the supporting structure shall be tested against wind pressure at the designated height. The facade area of the screen shall be measured for the purpose of payments. The cost shall include the aluminium screen and the cost for the complete framework behind including the cost of finishing the steel framework with satin finish metal coat paint finish all complete.	m2	154		
2	/ NS-20	Providing and Laying of light weight aircrete cellular concrete blocks conforming to IS : 6598 of density approximately 700 to 750 kg/cu.m density laid and of approved quality in sunken slabs/ raised floors including filling of voids, crushing to required sizes, transporting etc. all complete to the satisfaction of Engineer-in-charge.	m3	15		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
3	/ NS-21	Providing and fixing factory made Modular Ward Robe of required size (as per space available) made with 18mm thick Pre-laminated (BSL) Exterior Grade HDHMR Board, (exposed surface will be of decorative type Pre-lamination Board on side & other side white / ivory lamination) on all side i.e. front, back both sides, Bottom & top, partition, shelves, drawers (2 nos) etc complete. All the edge of shutter board will be finished with PVC edge banding 2.00mm thick and shelves / partition with 0.80mm thick. The cost shall include providing recessed LED profile light with driver all complete. Light profile shall be of not more than 16mm wide, 6mm deep along the front edge of the carcass along the complete height (Both Sides). Shelves (2 nos)per wardrobe) shall be prelaminated HDHMR board of minimu 18mm thickness supported with SS pins onto the carcass. Ward Robe will be fitted with stainless steel self closing hinges of soft closing type including multi point locking provisions, tower bolt, vertical profile handle along the edge of the shutter, 2 nos soft closing quadra telescopic drawer sliders, 2 nos drawers with multipurpose locks, SS hanger rod, Magnetic catcher (2 nos per shutter) etc. complete as per direction of Engineer-in-charge. (for payment purpose shutter area will be measured in sqm)	m2	83		
4	/ NS-23	Providing & placing factory made modular Vanities for bathrooms with openable shutters and sufficient number of drawers made using prelaminated, boiling water proof (Marine Grade) 18mm thick carcass. All shelves shall be supported on approved quality SS pins and shall be adjustable for different heights as per requirements. Shutters to be at least 18mm thick prelaminated marine grade waterproof				
		Carried Forward Section 2 - Official Residence Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
		board. All laminate for the carcass shall be 0.8mm thick and as per selection. Laminate for the shutters shall be as per selection and a minimum of 1mm thickness. Each shutter shall be fixed to the frame work/carcass using appropriate number of hinges (Blum, Hafele/Hettich approved make) i/c soft/Auto closing hinges as per requirement fixed with SS screws, nails etc complete and these shutters are provided with an approved quality of Godrej Arc 128 mm pitch. Finished components shall be tested for the critical quality parameters, Adhesion and impact test which enhances the life of cabinetry. Shelves to be of minimum 18mm thk prelaminated HDHMR with PVC edge banding along all cut edges. Accessories (Godrej or equivalent make, payment for which will be made separately) to be fixed in the drawer/Cabinet with suitable provision with panels of bottom and rear shelves with thickness of 0.6mm as per technical requirement. The carcass shall be secured to the wall behind with appropriate SS screws and fixing hardware (Ebco or eq.). Brushed aluminium G/J profile recessed handle profile shall be provided along the horizontal length of the shutter / drawer instead of the surface handles. The work shall be executed as per drawing and direction of Engineer-in-charge. Only face area of openable shutter and drawer shall be measured for payment. Cabinet with depth of 560mm(Approx). <u>Modular kitchen -Under storage cabinets</u> Providing & placing factory made modular kitchen cabinets with openable shutters and sufficient number of drawers made prelaminated, boiling water proof (Marine Grade) 18mm thick	m2	25		
5	/ NS-23	Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward carcuss. It also includes the Tall unit of 2000 mm height. All shelves shall be supported on approved quality SS pins and shall be adjustable for different heights as per requirements. Shutters to be at least 18mm thick prelaminated marine grade waterproof board. All laminate for the carcuss shall be 0.8mm thick and as per selection. Laminate for the shutters shall be as per selection and a minimum of 1mm thickness. Each shutter shall be fixed to the frame work/carcass using appropriate number of hinges (Blum, Hafele/Hettich approved make) i/c soft/Auto closing hinges as per requirement fixed with SS screws, nails etc complete and these shutters are provided with an approved quality of Godrej Arc 128 mm pitch. Finished components shall be tested for the critical quality parameters, Adhesion and impact test which enhances the life of kitchen. Shelves to be of minimum 18mm thk prelaminated HDHMR with PVC edge banding along all cut edges. Modular kitchen accessories (Godrej or equivalent make, payment for which will be made separately) to be fixed in the drawer/Cabinet with suitable provision with panels of bottom and rear shelves with thickness of 0.6mm as per technical requirement. The carcass of floor units and Tall units will be supported by 100mm height vertical adjustable legs (Hettich or equivalent approved) which will be covered with PVC skirting (Rehau or equivalent make) in brushed aluminium finish attached by hardware of skirting. .The unit shall be fixed to the floor/ wall/ slab using metal screws of appropriate size and rawl plugs. The work shall be executed as per drawing and direction of Engineer-in-charge. Only face area of openable shutter and drawer shall be measured for payment. Cabinet with depth of 560mm(Approx).			INR		
		Carried Forward Section 2 - Official Residence Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO			INR		

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		Brought Forward			INR	
6	/ NS-24	<u>Modular Kitchen : Wall units</u> Providing & placing factory made modular kitchen cabinets with openable shutters and sufficient number of drawers made prelaminated, boiling water proof (Marine Grade) 18mm thick carcuss. All shelves shall be supported on approved quality SS pins and shall be adjustable for different heights as per requirements. Shutters to be at least 18mm thick prelaminated marine grade waterproof board or glass shutters as per selection. All laminate for the carcuss shall be 0.8mm thick and as per selection. Laminate for the shutters shall be as per selection and a minimum of 1mm thickness. Each shutter shall be fixed to the frame work/carcass using appropriate number of hinges (Blum, Hafele/Hettich approved make) i/c soft/Auto closing hinges as per requirement fixed with SS screws, nails etc complete and these shutters are provided with an approved quality of Godrej Arc 128 mm pitch. Finished components shall be tested for the critical quality parameters, Adhesion and impact test which enhances the life of kitchen. Shelves to be of minimum 8mm toughened glass / 18mm thk prelaminated HDHMR with PVC edge banding along all cut edges. Modular kitchen accessories (Godrej or equivalent make, payment for which will be made separately) to be fixed in the drawer/Cabinet with suitable provision with panels of bottom and rear. The unit shall be hanged on to the the wall using metal screws of appropriate size and rawl plugs. The work shall be executed as per drawing/and direction of Engineer-in-charge. Only face area of openable shutter and drawer shall be measured for payment. Cabinet with depth of 300 mm(Approx).	m2	28		
		Carried Forward			INR	
		Section 2 - Official Residence Building Bill No. 13 Miscellaneous Work SAS/JVNC/GTAC/DIRCO				

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	29 /	<u>SECTION NO. 3</u>				
	/ 2	<u>BILL NO. 1 EARTH WORKS</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	2.8	<u>Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m.</u>				
1	/ 2.8.1	All kinds of soil.	m3	3		
		Carried Forward				
		Section 3 - Guard House Bill No. 1 Earthworks SAS/JVNC/GTAC/DIRCO				
					INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 4		<u>BILL NO. 2 CONCRETE WORKS</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
4.1		<u>Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :</u>				
1 / 4.1.8		1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	m3	2		
2 / 4.11		Providing and laying damp-proof course 50 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	m2	2		
3 / 4.12		Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification - per 50 kg cement	No	1		
		Carried Forward				
		Section 3 - Guard House Bill No. 2 Concrete Works SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
4	/ 4.13	Applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7 kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	m2	2		
5	/ 4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6graded stone aggregate 20mm nominal size) over 75mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth	m2	8		
		Carried Forward to Summary of Section No. 3				
		Section 3 - Guard House Bill No. 2 Concrete Works SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 5		<u>BILL NO. 3 REINFORCED CEMENT CONCRETE WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
5.9		<u>Centering and shuttering including strutting, propping etc. and removal of form for :</u>				
1 / 5.9.1		Foundations, footings, bases of columns, etc. for mass concrete.	m2	10		
2 / 5.9.2		Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	m2			Rate Only
3 / 5.9.3		Suspended floors, roofs, landings, balconies and access platform.	m2	8		
4 / 5.9.4		Shelves (Cast in situ)	m2	2		
5 / 5.9.5		Lintels, beams, plinth beams, girders, bressumers and cantilevers	m2	13		
6 / 5.9.6		Columns, Pillars, Piers, Abutments, Posts and Struts.	m2	11		
		Carried Forward			INR	
		Section 3 - Guard House Bill No. 3 Reinforced CementConcrete Works SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
7	/ 5.9.15	Small lintels not exceeding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.	m2	1		
	5.9.16	<u>Edges of slabs and breaks in floors and walls</u>				
8	/ 5.9.16.1	Under 20 cm wide	m	12		
	5.22	<u>Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth & above plinth level.</u>				
9	/ 5.22.6	Thermo-Mechanically Treated bars.	kg	764		
	5.33	<u>Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge.</u> (Note :- Cement content considered in this item is @ 330 kg/Cum. Excess/less cement used as per design mix is payable/recoverable separately).				
10	/ 5.33.1	All works upto plinth level.	m3	3		
11	/ 5.33.2	All works above plinth level upto floor V level.	m3	3		
		Carried Forward to Summary of Section No. 3			INR	
		Section 3 - Guard House Bill No. 3 Reinforced CementConcrete Works SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 6		<u>BILL NO. 4 BRICK WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
6.1		<u>Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:</u>				
1 / 6.1.2		Cement mortar 1:6 (1 cement : 6 coarse sand)	m3	0.3		
6.34		<u>Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor V level in :</u>				
2 / 6.34.2		Cement mortar 1:6 (1 cement : 6 Coarse sand)	m3	6		
		Carried Forward				
		Section 3 - Guard House Bill No. 4 Brickwork SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	6.45	<u>Half brick masonry with non modular fly ash bricks of class designation 10, conforming to IS :12894, in super structure above plinth and upto floor V level.</u>				
3	/ 6.45.2	Cement mortar 1:4 (1 cement : 4 coarse sand)	m2			Rate only
4	/ 6.15	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry (with F.P.S. bricks).	m2			Rate only
		Carried Forward to Summary of Section No. 3			INR	
		Section 3 - Guard House Bill No. 4 Brickwork SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 8		<u>BILL NO. 5 MARBLE & GRANITE WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
/ 8.2		<u>Providing and fixing 18mm thick gang saw cut (premoulded and prepolished) machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.</u>				
8.2.2		<u>Granite of any colour and shade</u>				
1 / 8.2.2.2		Area of slab over 0.50 Sqm.(For Counter)	m2	2		
		Carried Forward			INR	
		Section 3 - Guard House Bill No. 5 Marble & Granite Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
2	/ 8.4	Extra for fixing marble / granite stone over and above corresponding basic item, in facia and drops of width upto 150mm with epoxy resin baesd adhesive including cleaning etc. complete.	m	3		

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 9		<u>BILL NO. 6 WOOD & PVC WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
9.21		<u>Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:</u>				
1	/ 9.21.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	m2	4		
2	/ 9.23	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	m2	4		
		Carried Forward				
		Section 3 - Guard House Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	9.48	<u>Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.</u>				
3	/ 9.48.1	Fixed to steel windows by welding	kg	14		
	9.97	<u>Providing and fixing aluminium tower bolts ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with necessary screws etc. complete :</u>				
4	/ 9.97.1	300x10 mm	No	4		
5	/ 9.97.4	150x10 mm	No			Rate Only
	9.96	<u>Providing and fixing aluminium sliding door bolts, ISI marked anodised anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :</u>				
6	/ 9.96.1	300x16 mm	No	2		
	9.1	<u>Providing and fixing aluminium handles of approved make anodized (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade with necessary screws etc. complete.</u>				
7	/ 9.100.1	125 mm	No	4		
8	/ 9.100.2	100mm	No			Rate Only
		Carried Forward			INR	
		Section 3 - Guard House Bill No. 6 Wood & PVC Work SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 10		<u>BILL NO. 7 STEEL WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
10.13		<u>Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.</u>				
1 / 10.13.1		Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	kg	56		
10.25		<u>Steel work welded in built up sections/ framed work, including cutting,hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.</u>				
2 / 10.25.2		In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	kg	50		
		Carried Forward to Summary of Section No. 3				
		Section 3 - Guard House Bill No. 7 Steel Work SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 11		<u>BILL NO. 8 FLOORING WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
11.26		<u>Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) :</u>				
1 / 11.26.1		25 mm thick.	m2	1		
2 / 11.27		Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	m2	1		
3 / 11.31		Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab.	m	2		
		Carried Forward			INR	
		Section 3 - Guard House Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR		
4	/ 11.32	Extra for Kota stone/ sand stone in treads of steps and risers using single length up to 1.05 metre.	m2	1			
	11.41	<u>Providing & Laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and confirming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc, complete.</u>					
5	/ 11.41.2	Size of Tile 600x600 mm	m2	6			
	11.46	<u>Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.</u>					
6	/ 11.46.2	Size of Tile 600x600 mm	m2	1			
		Carried Forward to Summary of Section No. 3			INR		
		Section 3 - Guard House Bill No. 8 Flooring Work SAS/JVNC/GTAC/DIRCO					

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 12		<u>BILL NO. 9 ROOFING</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
1 / 12.21		Providing and laying gola 75x75mm in cement concrete M15 grade including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design in 75x75 mm deep chase.	m	10		
2 / 12.22		Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	No	1		
		Carried Forward				
		Section 3 - Guard House Bill No. 9 Roofing SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
29 /		<u>SECTION NO. 3</u>				
/ 13		<u>BILL NO. 10 FINISHING WORK</u>				
12 /		<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
44 /		<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
45 /		Rates for all items shall include 18% Goods and Services Tax (GST)				
13.4		<u>12 mm cement plaster of mix :</u>				
1 / 13.4.2		1:6 (1 cement: 6 coarse sand)	m2	22		
13.5		<u>15 mm cement plaster on rough side of single or half brick wall of mix :</u>				
2 / 13.5.2		1:6 (1 cement: 6 coarse sand)	m2	43		
13.16		<u>6 mm cement plaster of mix :</u>				
3 / 13.16.1		1:3 (1 cement: 3 fine sand)	m2	8		
4 / 13.21		Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers - per 50kg	No	8		
		Carried Forward				
		Section 3 - Guard House Bill No. 10 Finishing SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR		
	13.41	<u>Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade</u>					
5	/ 13.41.1	New work (two or more coats) over and including priming coat with cement primer.	m2	29			
	13.47	<u>Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade :</u>					
6	/ 13.47.1	New work (Two or more coats applied @ 1.43 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)	m2	43			
	13.48	<u>Finishing walls with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :</u>					
7	/ 13.48.2	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @0.90 ltr/10 sqm over an under coat of primer applied @0.75 ltr/ 10 sqm of approved brand or manufacture	m2	8			
	13.85	<u>Applying priming coat :</u>					
8	/ 13.85.1	With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood)	m2	8			
9	/ 13.50.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	m2	2			
	13.62	<u>Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :</u>					
10	/ 13.62.1	Two or more coats on new work	m2	10			
		Carried Forward			INR		
		Section 3 - Guard House Bill No. 10 Finishing SAS/JVNC/GTAC/DIRCO					

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Brought Forward			INR
11	/ 13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete	m2 72
12	/ 5.3	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	m 23
Carried Forward to Summary of Section No. 3 Section 3 - Guard House Bill No. 10 Finishing SAS/JVNC/GTAC/DIRCO			INR

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Item No	DSR		Unit	Quantity	Rate	Amount
29 / / 21 12 / 44 / 45 /	<u>SECTION NO. 3</u> <u>BILL NO. 11 ALUMINIUM WORK</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)					
		Carried Forward			INR	
		Section 3 - Guard House Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR	
	/ 21.1	<u>Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate Z sections and other sections of approved make conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed echanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. Glazing and paneling to be paid for separately) :</u>				
	21.1.1	<u>For fixed portion.</u>				
1	/ 21.1.1.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	21		
	21.1.2	<u>For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)</u>				
2	/ 21.1.2.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	kg	27		
		Carried Forward			INR	
		Section 3 - Guard House Bill No. 11 Aluminium Work SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
29 / / 22 12 / 44 / 45 / 22.7		<u>SECTION NO. 3</u> <u>BILL NO. 12 WATER PROOFING</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Providing & laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75kg/sqm of cement admixed with water proofing compound confirming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25mm to 115mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound confirming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement of 1:5 (1 cement : 5 coarse sand) admixed</u>				
		Carried Forward Section 3 - Guard House Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
		<u>with water proofing compound confirming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300mm height including rounding of junctions of walls and slabs. c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/sqm of cement admixed with water proofing compound confirming to IS : 2645 and approved by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar 1:4 (1 cement : 4 coarse sand) admixed with water proofing compound confirming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-charge:</u>				
1	/ 22.7.1	With average thickness of 120mm and minimum thickness at khurra as 65mm.	m2	6		
		Carried Forward to Summary of Section No. 3			INR	
		Section 3 - Guard House Bill No. 12 Waterproofing SAS/JVNC/GTAC/DIRCO				

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 1 COMPACT UNITIZED SUBSTATION (OUTDOOR TYPE)</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Manufacture, inspection, supply, testing at works, forwarding to site of Compact Unitized substation IP-55 protected, made of galvanised iron, 2mm thick CRCA steel sheet enclosed mounted on hot deep Galvanized , ISMC channel, IP 54 Protected & IP23D tested, proper ventilated and thermal class K10, with interlocked arrangement, with proper shade of paint and arcing withstand test of 18.4 kA for 1 sec. consisting of following as per specification complete as required:</u> <u>11kV HT VCB Panel</u> Indoor type floor mounted metal clad, 11 kV, 630A VCB Panel with totally enclosed electrically interlocked with CSS enclosure, horizontal drawout, horizontal isolation type breaker as per IS 13118, as per specifications, having capacities as mentioned below, single break, trip free mechanism, manually charged and closing breaker suitable for use on 11kV, 3Phase, 50Hz A.C. supply with short circuit fault level of 350 MVA, complete with self contained electrically interlocked rack in and rack out mechanism, air insulated & encapsulated Aluminum bus bars of 800Amp capacity, breaker featured with mechanical ON/ OFF indicator with hand trip device, spring release coil, shunt trip coil and auxiliary switch of 4NO + 4NC and equipped with following switchgears and accessories i/c connections suitable for 3Cx 150*sq.mm and Outgoing shall be direct connect with transformer complete as required . (Note - Cost of end termination not included in this item.)			
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 1 Compact Unitised Substation (Outdoor Type) SAS/JVNC/GTAC/DIRCO			

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Brought Forward Incommer as well Outgoing - Consisting of followings- 630 Amp. TP VCB with earth switch. 1 No. 11kV/110√3Volts PT Class 0.5 accuracy and 200VA burden with 1 No. digital type Voltmeter (0-12 kV) with inbuilt selector switch,protective with HRC fuse . 1 No. 0-100A Digital Ameter with inbuilt selector switch Digital electronic Trivector meter with RS 485 port. 1 No. Microprocessor based numerical relay with O/L, E/F and highset S/C protection compatible. Breaker control switch 220 V AC spring charging motor Set of R/Y/B indicating lamps. Set of ON/OFF/TRIP indicating lamps. Clear lamp for Trip Circuit healthy supply. Aux. relays for Anti Pumping & indication. Trip Circuit spervision relay. Master Trip Circuit Relay Dual core dual ratio 3 CTs 40/5A of 15VA burden and accuracy Class -0.5 for metering and class 5P10 for protection. Individual alarm annunciator with 8 windows and buzzer, ACK, rest, test push button for individual transformer faults and electrical faults in respective window. <u>BUSBAR</u> 800 Amp aluminium Bus Bar. Carried Forward Section 4 - Electrical Works Bill No. 1 Compact Unitised Substation (Outdoor Type) SAS/JVNC/GTAC/DIRCO		INR	
		INR	

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Brought Forward Suitable space for termination of 1 No. 3 C x 185 sq.mm XLPE cable. <u>11/0.433 KV TRANSFORMER</u> supply of 400 KVA 3 phase, 11 / 0.433 KV outdoor oil type Sealded transformer copper wound with DYN II connection and neutral brought out for earthing. The transformer shall be provided with (-) 15% and (+)5% in steps of 1.25% each, On load tap changer with RTCC Panel on HT side . The transformer shall be supplied with all accessories complete as per specifications. <u>L T ISOLATOR</u> Supply of 800 amps 4 Pole fixed type manually operated air circuit breaker with microprocessor release unit, for short circuit, over current and earth fault protection with adjustable setting as per specification and with following accessories : Phase indicating light shall be protected by 2 amps MCB's- 3 Set Breaker ON/ OFF/ TRIP indicating lights with control MCB's- 1 Set 110 V AC Shunt trip coil. - 1 Set Auto-manual / test selector / switch - 1 Set Breaker control switch - 1 Set Auxiliary contacts required for necessary interlocking of breakers. Digital voltmeter with inbuilt selector switch- 1 set Digital ameter with inbuilt selector switch- 1 set <u>Bus Bars</u> 1000 Amps TPN aluminium bus bars with heat shrinkable insulation sleeve 1 Set Carried Forward Section 4 - Electrical Works Bill No. 1 Compact Unitised Substation (Outdoor Type) SAS/JVNC/GTAC/DIRCO		INR	
		INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u>			
	<u>BILL NO. 2 SAFETY EQUIPMENTS:</u>			
	<u>PREAMBLES</u>			
	<u>Goods and Services Tax</u>			
	Rates for all items shall include 18% Goods and Services Tax (GST)			
	<u>Supply, installation, testing and commissioning of all safety Equipments.</u>			
1	Supplying of Rubber hand gloves suitable for 11 kV.	Pairs	1.0	
2	Supply & fixing of Rescue Hook, Discharge Rod of 11Kv grade required in panel room	Sets	1.0	
3	Supplying and fixing of Shock treatment chart both in Regional, Hindi, Tamil & English and framed with 5mm thick glass as required.	No	2	
4	Supply & fixing MV danger notice plate of 200 mm x 150mm, made of mild steel sheet of at least 2mm thick & vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	No	10	
5	Supply & fixing HT danger notice plate of 250 mm x 200mm, made of mild steel sheet of at least 2mm thick & vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	No	2	
6	Supply of First aid box containing material as prescribed by St. John Ambulance brigade OR Indian Red Cross complete as required.	No	1	
7	Providing of Insulation mat 1 meter wide & 2.5mm thick to withstand 36kV dielectric strength as per IS 15652-2006	m	20	
8	Providing of insulating mat 1 meter wide & 6mm thick to withstand 3.3kV dielectric strength as per IS 15652-2006	m	3	
	Carried Forward			
	Section 4 - Electrical Works Bill No. 2 Safety Equipments SAS/JVNC/GTAC/DIRCO		INR	

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Brought Forward			INR
9	Providing HT Single Line Diagram in wooden frame with glass.in A1 Size	No	1
10	Providing LT Single Line Diagram in wooden frame with glass.in A1 Size	No	1
11	Supply & fixing of 2nos. Sand bucket with stand and other accessories.	Sets	1.0
12	Supply & fixing of 1nos. Dos & don't chart and other accessories.	No	1
13	Supply & fixing of 1nos. Exit sign board and other accessories.	No	20
Carried Forward to Summary of Section No. 4			INR
Section 4 - Electrical Works			
Bill No. 2			
Safety Equipments			
SAS/JVNC/GTAC/DIRCO			

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 3 MAIN LT PANEL'S & DISTRIBUTION BOARDS</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) Supply ,installation, testing and commissioning of Main LT Panel/ Main distribution panels , fabricated out of 14 gauge CRCA sheet steel in cubicle compartmentised modular 3b construction, free standing floor mounted, dust and vermin proof with reinforcement of suitable size angle iron, channel, `T' sections and / or flats wherever necessary. 16 gauge CRCA sheet steel shall be used for final distribution panels. 3 mm thick cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before powder coating as per specifications and final approved shade. 2 Nos. earthing terminals shall be provided for all distrtribution panels. Panels shall be suitable for 415V, 3 phase, 4 wire, 50 HZ supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel in the form of shop drawings before fabrication. Galvanised hardwares with zinc passivation shall be used in fabrication of panels. <u>MAIN LT PANEL</u> <u>Incommer for 400kVA Transformer Supply -1 sets.</u> 800 Amps 4 Pole Electrically operated fully drawout type air circuit breaker with ON/OFF/TRIP indicating lamps with HRC Fuse and over current short circuit and earth fault microprocessor releases with LSIG protection (Type 2A of MG or equivalent make) - 1 set.			
	Carried Forward Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO		INR	

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Brought Forward Electronic energy meter (Conserve – EM 6400 with RS485 port or equivalent) of accuracy class-I, with 3 Nos.800/5 amps 15VA CT class 0.5 accuracy- 1 Set Phase indicating light shall be protected by 2 Amps HRC Fuse - 3 Sets Breaker ON / OFF / TRIP indicating lights with control HRC Fuse. - 1 Set Under voltage release - 1 Set 24 V DC Shunt trip coil. -1 Set Breaker control switch - 1 Set Auto-manual selector switch - 1 Set Phase reversal relay - 1 Set Auxiliary contacts required for necessary interlocking of breakers. required CTs for APFCR- 1 Set. <u>Bus Bar</u> 1000 A TPN electrolytic Aluminium bus bar with heat shrinkable insulation sleeve. <u>Outgoings</u> 100 amps 4 POLE MCCB - 6 No. 160 amps 4 POLE MCCB - 3 No. 200 amps 4 POLE MCCB - 5 No. 250 amps 4 POLE MCCB - 2 No. <u>Spare MCCB's as following :</u> 100 amps 4 POLE MCCB - 1 No. 200 amps 4 POLE MCCB - 1 No. Carried Forward Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO		INR	
		INR	

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	Brought Forward		INR	
	Notes: Incommer breaker CT's & PT's shall have .5 class accuracy. All Outgoing breakers shall have ON/OFF indication light. All MCCBs shall be of 35 KA breaking capacity with overload,short-circuit and earth fault protection. Wiring with space heater, thermostat and control MCB shall be provided all vertical sections of Panel. LED light shall be provide in each section of Panel Suitable danger board shall be provided.			
1	Main LT Panel _as described above. - <u>140 KVAR CAPACITOR AUTOMATIC CONTROL PANEL</u> Incoming 400 Amps 4 Pole MCCB- 1 set. Electronic energy meter (Secheinder – EM 6400 with RS485 port or equivalent) of accuracy class-I, with 3 Nos. 600/5 amps 15VA CT class 1.0 accuracy - 1 Set Phase indicating light shall be protected by MCB Fuse's. - 3 Sets Power factor compensating relay (including power factor meter) in 8 steps for automatic cut off or add on capacitor units to keep the power factor at 0.97 with variation of loads. All associated auxiliary contactors / relays / timer / auto manual selector switches to be provided - 1 Set. <u>Bus Bars</u> 600 amps TPN Aluminium bus bars with coloured heat Shrinkable insulated sleeves. - 1 set	Sets	1.0	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO			

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Brought Forward <u>Outgoings -I</u> Outgoing feeders consisting of following accessories. 40 amps TPN MCCB - 1 Set 40 amps or capacitor duty 440 volts 50Hz contactors. - 1 Sets “ON” /”OFF” push buttons and indicating lamps. - 1 Sets 5 KVAR Mixed heavy duty MPP capacitor unit with 7% dutune filter as specified - 1 No. <u>Outgoings -II</u> Outgoing feeders consisting of following accessories. 40 amps TPN MCCB - 1 Set 40 amps or capacitor duty 440 volts 50Hz contactors. - 1 Sets “ON” /”OFF” push buttons and indicating lamps. - 1 Sets 10 KVAR Mixed heavy duty MPP capacitor unit with 7% dutune filter as specified - 1 No. <u>Outgoings -III</u> Outgoing feeders consisting of following accessories. 40 amps TPN MCCB - 2 Set 40 amps or capacitor duty 440 volts 50Hz contactors. - 2 Sets “ON” /”OFF” push buttons and indicating lamps. - 2 Sets 12.5 KVAR Mixed heavy duty MPP capacitor unit with 7% dutune filter as specified - 2 No. Carried Forward Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO		INR	
		INR	

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	Brought Forward		INR	
	<u>Outgoings -IV</u> Outgoing feeders consisting of following accessories. 100 amps TPN MCCB -2 Set 70 amps or capacitor duty 440 volts 50Hz contactors. - 2 Sets “ON” /”OFF” push buttons and indicating lamps. - 2 Sets 25 KVAR Mixed heavy duty MPP capacitor unit with 7% dutune filtor as specified - 2No. <u>Outgoings -V</u> Outgoing feeders consisting of following accessories. 125 amps TPN MCCB - 1 Set 125 amps or capacitor duty 440 volts 50Hz contactors. - 1 Sets “ON” /”OFF” push buttons and indicating lamps. - 1 Sets 50 KVAR Mixed heavy duty MPP capacitor unit with 7% dutune filtor as specified - 1 No. Note: All MCCB’s shall be of 35 KA breaking capacity.			
2	Capacitor automatic control panel (140 KVAR) as described above.	Sets	1.0	
	<u>MDB -1 (LOC-: GROUND FLOOR)</u> <u>Incoming</u> 1 No.200 Amps 4Pole MCCB WITH 200 Amps 4Pole AUTOTRANSFER SWITCH with following accessories: 100A 4 Pole On Load Change Over Switch			
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	96 x 96 mm sq. 0-500 Volt digital VAF meter with inbuilt selector switch Phase indicating light shall be protected by 2 Amps SP MCB's. -3 Set. <u>Busbar</u> 250 Amps TPN aluminium bus bars with heat shrinkable insulation sleeve. - 1 Set <u>Outgoing</u> 63 A 4Pole MCB - 4 No. 40 A 4Pole MCB - 1 No. <u>Spare MCB's of the following :</u> 63 A 4 Pole MCB - 1 No. 40 A 4Pole MCB - 1 No. Note: All MCCB's shall be of 16 KA breaking capacity. All MCB's shall be of 16 KA breaking capacity.			
3	MDB -1 _ described as above <u>MDB -2</u> <u>Incoming</u> 1 No.200 Amps 4Pole MCCB AUTOTRANSFER SWITCH with following accessories: 200A 4 Pole On Load Change Over Switch 96 x 96 mm sq. 0-500 Volt digital VAF meter with inbuilt selector switch Phase indicating light shall be protected by 2 Amps SP MCB's. -3 Set.	Sets	1.0	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>Busbar</u> 300 Amps TPN aluminium bus bars with heat shrinkable insulation sleeve. - 1 Set <u>Outgoing</u> 40 A 4 Pole MCB - 1 No. 63 A 4 Pole MCB - 4 No. 63 A 4 Pole MCCB - 3 No. <u>Spare MCB's of the following :</u> 40 A 4 Pole MCB - 1 No. 63 A 4 Pole MCCB - 1 No. Note: All MCCB's shall be of 16 KA breaking capacity. All MCB's shall be of 16 KA breaking capacity.			
4	MDB -2_ described as above	Sets	3.0	
	<u>MDB -T1 (Terrace Floor)</u> <u>Incoming</u> 1 No.200 Amps 4Pole MCCB WITH AUTOTRANSFER SWITCH with following accessories: 96 x 96 mm sq. 0-500 Volt digital VAF meter with inbuilt selector switch Phase indicating light shall be protected by 2 Amps SP MCB's. -3 Set. <u>Busbar</u> 300 Amps TPN aluminium bus bars with heat shrinkable insulation sleeve. - 1 Set			
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>Outgoing</u> 40 A 4 Pole MCB - 5No. 63 A 4 Pole MCCB - 10No. <u>Spare MCB's of the following :</u> 40 A 4 Pole MCB - 1No. 63 A 4 Pole MCCB - 1No. Note: All MCCB's shall be of 16 KA breaking capacity. All MCB's shall be of 16 KA breaking capacity.			
5	MDB -T1 Terrace Floor _ described as above <u>MDB -U1-2No. 40KVA (UPS PANEL)</u> Incommer - (ups input) <u>2 No. 160Amps 4 POLE MCCB with following accessories:</u> 96 x 96 mm sq. 0-500 Volt digital VAF meter with inbuilt selector switch Phase indicating light shall be protected by 2 Amps SP MCB's. -3 Set. <u>Incommer - (ups output)</u> 2 No. 125Amps 4 POLE MCCB with following accessories: 96 x 96 mm sq. 0-500 Volt digital VAF meter with inbuilt selector switch Phase indicating light shall be protected by 2 Amps SP MCB's. -3 Set.	Sets	1.0	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>Busbar</u> 150 Amps TPN AL. bus bars with heat shrinkable insulation sleeve. - 1 Set <u>Outgoing</u> 32 A DP MCB - 11 No. <u>Spare MCB's of the following :</u> 32 A DP MCB - 3 No. Note: All MCCB's shall be of 16 KA breaking capacity. All MCB's shall be of 10 KA breaking capacity.			
6	MDB -U1 (UPS PANEL) _ described as above <u>CONTROL PANELS FOR FAN SECTIONS & AXIAL FANS</u> Design, manufacture, supply, installation, testing and commissioning of the following cubicle type, wall mounted control panels including anchoring into the wall, wiring and earthing terminating into MPCB in each panel shall be provided by the electrical contractor. All outgoing shall be provided with Stop / Manual /Auto selector switch to facilitate operation through BAS. All starters shall be provided with potential free Contact for Connections to Building Automation System. Over-load relay, suitable for motor duty and able to withstand fault level of suitable KA rating. single phase preventer (Electronics type) as per the ratings given below. Terminal block for power distribution. Power Contactor.	Sets	1.0	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	Phase indicating lights and indicating light for ON/OFF/TRIP status phase sequence relay shall also be provided. 96 mm x 96 mm voltmeter and ammeter. For on/off/remote and local operation, 3 pole single throw switch shall be provided in each panel to facilitate override of the automatic operation. All starters shall be provided with suitable potential free contact for connections to the Building Automation System. The number of control panels shall be as follows.				
7	32A TPN MCB with 3HP Three phase DOL starter with overload relay and single phase preventer . Each of these compartment shall contain indicating lamp with ON/ OFF/ TRIP status for fan sections/axial fans.	No	10		
8	32A TPN MCB with 2HP Three phase DOL starter with overload relay and single phase preventer . Each of these compartment shall contain indicating lamp with ON/ OFF/ TRIP status for fan sections/axial fans.	No	1		
9	32A TPN MCB with 1.5HP Three phase DOL starter with overload relay and single phase preventer . Each of these compartment shall contain indicating lamp with ON/ OFF/ TRIP status for fan sections/axial fans.	No	4		
10	16A TPN MCB with 0.5HP Single phase DOL starter with overload relay. Each of these compartment shall contain indicating lamp with ON/ OFF/ TRIP status for In line fan .	No	10		
	<u>SUMP STARTER 1 TO 2</u>				
	It shall control two pumps P-1 and P-2. The operation sequence will be as under P-1 & P-2 to stop at L-1 P-1 to start at L-2				
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
	P-2 to start at L-3 (At L-3 both pump will be running) audible alarm at L-4(50 mtr range). Hooter for annunciation. Where L-1 < L-2 < L-3 < L-4 (level of water in the sump) (probes /sensors to control operation) There shall be selector sw to interchange the starting sequence between P1&P2. (Selection mode) <u>Incoming</u> 1 No. 40 Amps 4Pole MCB with following accessories: Digital electronic Ameter with and 40/5 Amps 15 VA, CL 1 CTs . - 2Set Phase indicating light shall be protected by 2 Amps SP MCB's. -3 Set. Auto/Manual selector switch -1 set Selector switch for two pumps -1 set <u>Outgoing</u> 2No. 5-8A TP+N MPCB with 5 HP Three phase DOL starter with overload relay, Sensor including required wiring, Analogue Ameter with Required CTs and single phase preventer for Raw water transfer pump. Each of these compartment shall contain indicating lamp with ON/ OFF/ TRIP/low /High Level status for Motor. Rating : P1= 5 HP, 3 phase DOL starter, 415 V +Sensor Rating : P2= 5 HP, 3 phase, 415 V +Sensor			
11	The Sump pump control module shall be complete with all interconnections, risers, internal wiring, labels, terminal block etc complete as required.	No	2	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>FINAL DISTRIBUTION BOARDS</u>				
	Supply, installation, testing and commissioning of the following seven segment FDB's fabricated out of 1.6 mm thick, CRCA sheet steel in dust and vermin proof, double door construction, powder coated with approved shade and segregate phases. Approved covers with padlocking arrangement, recessed in wall or surface mounted final distribution boards of the following description:				
	<u>Type A</u>				
12	TPN DB, 30 Nos. 10/16/20 Amps SP MCB's as outgoing with 3 Nos. 40/63 amps. DP RCCB's of 100 mA leakage current and 1 No. 40/63 Amps 4 pole MCB isolator as incomer with separate neutral link for each phase.	No	13		
	<u>Type B</u>				
13	SPN DB 8 No. 10/16 Amps SP MCB as outgoing with 1 No. 32 Amps DP RCCB of 100 mA leakage current including neutral link as incomer.	No	15		
	External Landscape lighting DB (Out door Type)				
	<u>Incomer</u>				
	63 Amps 4 pole MCB isolator as incomer				
	40 A 4Pole MCB - 2 No.				
	<u>Outgoing</u>				
	9 Nos. 32 Amps DP MCB with 3 No. 63 Amps TP contactor with 3 No. 0-24 hours timer with auto / manual Operation and 1 No. 63 Amps 4 pole MCCB isolator as incomer.				
14	DB for external / landscape lighting as described above	No	2		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 3 Main LT Panel's & Distribution Boards SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
15	Supply, installation, testing and commissioning of 63 Amps 4 pole MCCB with operating handle (16 KA) breaking capacity in outdoor type 1.6 mm thick MS enclosure of approved make design and painted with approved paint shade.	No	2	
16	Supply, installation, testing and commissioning of 63 Amps 4 pole MCB's in MS Painted enclosure of approved make design and painted with approved paint shade.	No	1	
17	Supply, installation, testing and commissioning of 40 Amps 4 pole MCB's in MS Painted enclosure of approved make design and painted with approved paint shade.	No	1	
18	Supply, installation, testing and commissioning of 63 Amps DP MCB's in MS Painted enclosure of approved make design and painted with approved paint shade.	No	1	
19	Supply, installation, testing and commissioning of 40 Amps DP MCB's in Painted MS enclosure of approved make design and painted with approved paint shade.	No	1	
20	Supply and fixing in position 1000 mm wide Insulation matting of 1100 volts grade as per electricity rules (exact length mats to be worked out as per site requirement).	m	10	
Carried Forward to Summary of Section No. 4				
Section 4 - Electrical Works				
Bill No. 3				
Main LT Panel's & Distribution Boards				
SAS/JVNC/GTAC/DIRCO				

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 4 EARTHING INSTALLATION</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) Rates shall also include the following : All fixing accessories such as brass saddles, brass screws rawl plugs etc. Jointing by rivetting and brazing after rivetting in case of copper and welding / bolting in case of GI earthing. Cutting chases holes and making good the same wherever required. Effecting adequate and proper interconnections. Use of copper thimbles. Earthing system shall comply to IS:3043-1987. All earthing pits shall be interconected. All equipment motors, DB's, panels to be connected on either ends (double earthing) with suitable strip / wires. Copper earthing shall be provided for DG Set , UPS Neutral & LV system only. GI earthing shall be provided for All panels, DG set's and body. <u>EARTHING INSTALLATION</u>			
	Carried Forward Section 4 - Electrical Works Bill No. 4 Earthing Installation SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
	<u>Supply, Testing & Commissioning, fixing of following bare GI tapes / wires including all necessary fixing accessories and effecting connections as per specifications.</u>				
1	50 x 6 mm thick GI tape	m	300		
2	25 x 6 mm thick GI tape.	m	600		
3	25 x 3 mm thick GI tape.	m	50		
4	8 SWG GI wire	m	1 200		
	<u>Supply, fixing, testing and commissioning of following bare copper tape / wire including all necessary fixing accessories and effecting connection as per specification.</u>				
5	40 x 6 mm thick copper tape.	m	50		
6	Providing and making earthing pits with required qty of (Chemical to enhance earth bonding improving compound) using 17 mm dia copper earth electrode in rod of 3 Mtrs Length including inspection chamber, masonry chamber 300 x 300 mm with concrete base, CI / heavy chequered plate manhole cover with frame.	No	8		
7	Providing and making earthing pits with required qty of (Chemical to enhance earth bonding improving compound) using 19mm dia GI earth electrode rod of 3 Mtrs Length including inspection chamber, masonry chamber 300 x 300 mm with concrete base, CI / heavy chequered plate manhole cover with frame.	No	16		
	<u>Providing, laying, testing and commissioning of following 1100 volts grade PVC insulated sheathed copper conductor unarmoured cable including copper thimbles, fixing hardware as required.</u>				
8	Single core 6 sq.mm Green colour cable	m	200		
	<u>Supply, laying, testing and commissioning of GI pipe under road / paved area crossing etc. including excavation back filling ramming and making good.</u>				
9	50 mm dia pipe.	m	15		
	Carried Forward			INR	
Section 4 - Electrical Works Bill No. 4 Earthing Installation SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
10	75 mm dia pipe.	m	10		
Carried Forward to Summary of Section No. 4 Section 4 - Electrical Works Bill No. 4 Earthing Installation SAS/JVNC/GTAC/DIRCO					INR

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 5 LIGHTNING PROTECTION SYSTEM</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) Rates shall also include the following: All fixing accessories such as brass saddles, brass screws rawl plugs etc. Jointing by rivetting and brazing after rivetting Cutting chases, holes and making good the same wherever required. Effecting adequate and proper interconnections. Use of copper thimbles. Lightning protection system shall comply to IS 2309 - 1989. All earthing pits shall be interconnected. <u>LIGHTNING PROTECTION SYSTEM</u> <u>SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF LIGHTNING ARRESTOR INCLUDING ALL ACCESSORIES:-</u>			
1	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required	Sets	8.0	
	Carried Forward Section 4 - Electrical Works Bill No. 5 Lightning Protection System SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
2	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or on surface of wall for lightning conductor complete as required. (For horizontal run)	m	250		
3	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or on surface of wall for lightning conductor complete as required. (For vertical run)	m	200		
4	Providing and fixing Testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long, with 4 Nos. of G.I. bolts, nuts, chuck nuts and spring washers etc. complete as required.	Sets	8.0		
5	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	m	400		
6	Supply Installation, Testing & Commissioning of Advance Maintenance Free earthing environment friendly Chemical Earthing system consisting of 1no. of 3 mtr length, 40 mm dia pipe earth electrode made of GI with terminals to connect conductor with 1bag (25Kgs) of environment freindly back fill compound with DMC Pit Cover.	Sets	4.0		
Carried Forward to Summary of Section No. 4				INR	
Section 4 - Electrical Works					
Bill No. 5					
Lightning Protection System					
SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 6 SUPPLY AND INSTALLATION OF LIGHTING FIXTURES</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) The rates shall include all components that may be required to make the installation complete in all respects such as : Suitable length of GI down rod, hanger and connecting wires where called for. Internal wiring between accessories. Wires for connecting the fixtures to the point through connector block. All metal blocks to serve as base of fixtures. Bonding with earth wires. Drilling holes in supports wherever required. Fixing clamps, GI bolts and nuts, brass screws, saddles, rawl bolts and other fixing accessories as required. Testing of all fixtures & fans before and after installation.			
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>SUPPLY AND INSTALLATION OF LIGHTING FIXTURES</u>			
1	Supply, Installation, Testing & commissioning of Recessed Mounted 10W LED Down Lighter with non integral / integral driver having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	38	
2	Supply, Installation, Testing & commissioning of Recessed Mounted 10W LED Down Lighter with non integral / integral dimmable and tunable driver having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	75	
3	Supply, Installation, Testing & commissioning of Recessed mounted 15 W LED Down Lighter fixture with non integral / integral driver, LED of 1 to 3 W each assembled on single MCPCB, having 50000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 80 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory. i/c connection wire, testing etc. to complete the job.	No	7	
	Carried Forward			
	Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward		INR	
4	Supply, Installation, Testing & commissioning of Recessed mounted 15 W LED Down Lighter fixture with non integral / integral dimmable and tunable driver, LED of 1 to 3 W each assembled on single MCPCB, having 50000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 80lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory. i/c connection wire, testing etc. to complete the job.	No	400	
5	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 36W Ceiling Light with non integral / integral driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	4	
6	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 36W Ceiling Light with non integral / integral dimmable and tunable driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	125	
Carried Forward			INR	
Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
7	Supply, Installation, Testing & commissioning of Surface mounted 10W Mirror light with non integral / integral driver having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	28	
8	Supply, Installation, Testing & commissioning of Surface mounted 10W Mirror light with non integral / integral dimmable and tunable driver having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	2	
9	Supply, Installation, Testing & commissioning of Wall mounted 10W LED Bulk head light fixture, LED of 1 to 3 W each assembled on single MCPCB, having & having 50000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 80 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory. i/c connection wire, testing etc. to complete the job.	No	76	
Carried Forward			INR	
Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
10	Supply, Installation, Testing & commissioning of Wall mounted 10W LED Bulk head light fixture with non integral / integral dimmable and tunable driver, , LED of 1 to 3 W each assembled on single MCPCB, having & having 50000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 80lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Housing made of CRCA powder coated frame with glare free diffused polycarbonate cover. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory. i/c connection wire, testing etc. to complete the job.	No	2	
11	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 20W Wall Mounted Tube Light with non integral / integral driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	9	
12	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 20W Wall Mounted Tube Light with non integral / integral dimmable and tunable driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	2	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
13	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 20W Ceiling Tube Light with non integral / integral driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	42	
14	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 5W/Meter Cove Light with non integral / integral dimmable and tunable driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	m	226	
15	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of Occupancy Sensor with non integral / integral driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of Occupancy Sensor should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	8	
16	Supply, Installation, Testing & commissioning of 60W Chandelier Light with non integral / integral dimmable and Tunable driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of Chandelier light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	3	
Carried Forward			INR	
Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
17	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 10W Study Lamp Light with non integral / integral driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of Study Lamp light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	7	
18	Supply, Installation, Testing & commissioning of Surface Mounted Led 10W Track Light with non integral / integral dimmable and tunable driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of Track light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	8	
19	Supply, Installation, Testing & commissioning of 12W Ceiling Recessed Down Light with non integral / integral dimmable and tunable driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of ceiling light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	91	
20	Supply, Installation, Testing & commissioning of Surface Mounted Led tube rod comprising of 10W Wall Mounted Light with non integral / integral driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of Wall Mounted light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	20	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO			

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Brought Forward			INR
21	Supply, Installation, Testing & commissioning of Recessed Led, 12W Water Proof Light with non integral / integral driver, having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with efficacy > 100 lm/W. LED driver PF 0.95 & THD < 20%. The colour rendering index of Water Profile light should be more than 70. Submission LM 80-08 Form LED Source Manufacturer & LM79-08 / IS16106 from NABL approved lab. Manufacturer mandatory i/c connection wire, testing etc. to complete the job.	No	18
22	Wiring for Ceiling Fan Point with 3x1.5 sqmm PVC insulated copper conductor 1100 volts grade stranded flexible "FRLS" wires in concealed or surface mounted 20/25 mm dia 1.6 mm thick PVC "FRLS" conduits, including providing Fan hook box, 6amps switch and 100 watts electronic step type fan regulator of approved make in common GI box. (Circuit wiring Not included)	No	17
23	Supply, Installation, Testing & commissioning of 300MM Exhaust fan in approved colour by engineering Incharge with louvers.	No	10
24	Supply, Installation, Testing & commissioning of Occupancy sensor.	No	10
Carried Forward to Summary of Section No. 4 Section 4 - Electrical Works Bill No. 6 Supply and Installation of Lighting Fixtures SAS/JVNC/GTAC/DIRCO			INR

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 7 CIRCUIT CUM POINT WIRING</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) The rates for all point wiring items shall also include supplying and fixing of the following: Conduits, conduit specials, brass bushes and other fittings. Approved GI saddles and grouting the same for exposed conduit work. 1.2 mm thick Outlet boxes and junction box. All fixing accessories such as clips, brass screws etc. Embedding conduits and accessories in walls and floors etc. during construction and / or cutting chases (with chase cutting machine) and making good the same as necessary in the case of concealed conduit work. Switch, socket outlet and necessary blank plates wherever required. PVC insulated copper conductor stranded flexible wire of Green colour with yellow bands for earthing of fixtures, outlet boxes and third pin of socket outlet. Preparing of outlet boxes and junction boxes where ever damaged. All "FRLS" wires shall be PVC insulated copper conductor stranded flexible 1100 volts grade and shall be of approved make.			
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 7 Circuit Cum Point Wiring SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>Wiring for 250 volts single phase and neutral 6 Amps switched socket outlet with 2.5 sq.mm PVC insulated copper conductor 1100 volts grade stranded flexible FRLS wires in concealed or surface mounted 25 mm dia 2.0mm thick PVC FRLS conduit including providing and fixing of 6 Amps 3 pin switch socket outlet of approved make and design in 1.6 mm thick GI box with grid plate and earthing of third pin of the socket with 2.5 Sq. mm PVC insulated copper conductor stranded flexible FRLS wire , complete in all respect.</u>				
7	Primary point for 6 amps switched socket outlet	No	50		
8	Same as item no. 2.1 above but secondary point looped with primary point	No	230		
	<u>Wiring for 250 volts single phase and neutral 2No. 6 Amps switched socket outlet with 2.5 sq.mm PVC insulated copper conductor 1100 volts grade stranded flexible FRLS wires in concealed or surface mounted 25 mm dia 2.0mm thick PVC FRLS conduit including providing and fixing of 2No. 6 Amps 3 pin switch socket outlet of approved make and design in 1.6 mm thick GI box with grid plate and earthing of third pin of the socket with 2.5 Sq. mm PVC insulated copper conductor stranded flexible FRLS wire , complete in all respect.</u>				
9	Primary point for 2No. 6 amps switched socket outlet	No	30		
10	Same as item no. 3.1 above but secondary point looped with primary point	No	40		
	<u>Wiring for 250 volts single phase and neutral 6/16 Amps switched socket outlet with 2.5 sq.mm PVC insulated copper conductor 1100 volts grade stranded flexible FRLS wires in concealed or surface mounted 25 mm dia 2.0mm thick PVC FRLS conduit including providing and fixing of 6/16 Amps 3 pin switch socket outlet of approved make and design in 1.6 mm thick GI box with grid plate and earthing of third pin of the socket with 2.5 Sq. mm PVC insulated copper conductor stranded flexible FRLS wire , complete in all respect.</u>				
11	Primary point for 6/16 amps switched socket outlet	No	124		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 7 Circuit Cum Point Wiring SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
12	Same as item no. 4.1 above but secondary point looped with primary point	No	124		
13	Wiring for AC point with 3x4 sq. mm. insulated copper conductor 1100 volts grade stranded flexible wires of approved make in concealed or surface mounted 25 mm dia 1.6 mm thick PVC Conduit including providing & fixing of 25 amps flush mounted with 25A SP MCB type switch at the floor level in 1.2 mm thick GI box and 16 amps 3 pin flush mounted outlet near AC indoor Unit point and also include 4 sq. mm. insulated copper conductor 1100 volts grade stranded flexible wires from outlet to upto outdoor Unit .	No	20		
14	Wiring for Geyser point with 3x4 sq. mm. insulated copper conductor 1100 volts grade stranded flexible wires of approved make in concealed or surface mounted 25 mm dia 1.6 mm thick PVC Conduit including providing & fixing of 25 amps flush mounted with 25A SP MCB type switch at operating Height in 1.2 mm thick GI box and 25 amps 3 pin flush mounted outlet near Geyser indoor Unit point and also include 4 sq. mm. insulated copper conductor 1100 volts grade stranded flexible wires from outlet to upto outdoor Unit .	No	25		
15	Wiring for Exhaust fan point with 3x1.5 sq. mm. insulated copper conductor 1100 volts grade stranded flexible "FRLS" wires of approved make in concealed or surface mounted 20/25 mm dia 1.6mm thick PVC Conduit including providing and fixing of 6 amps flush mounted switch at the normal switch level in 1.2 mm thick GI box and 6 amps 3 pin flush mounted socket near exhaust fan and earthing of exhaust fan through the third pin of the socket outlet.(Circuit wiring Not included)	No	10		
	<u>Supply and fixing of 2.0mm thick PVC FRLS Conduits in following sizes including cost of junction boxes, bends, elbows, sockets, tees etc. laying in slab cutting chasis and making good or surface mounted including all fixing hardware.</u>				
16	20 mm dia	m	100		
17	25 mm dia	m	200		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 7 Circuit Cum Point Wiring SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Providing and fixing of following PVC insulated copper conductor 1100 volt grade stranded flexible FRLS wire in conduit including providing and fixing of conduits concealed or surface mounted making connections complete.</u>				
18	3 Nos. 2.5 sq.m PVC insulated copper conductor 1100 volts grade stranded flexible FRLS wires in 25 mm dia 2mm thick PVC conduit.	m	100		
19	3 Nos. 4 sq.mm PVC insulated copper conductor 1100 volts grade stranded FRLS wires in 25 mm dia thick PVC conduit.	m	70		
20	3 Nos.6 sq.mm PVC insulated copper conductor 1100 volts grade stranded FRLS wires in 25 mm dia thick PVC conduit.	m	80		
21	Supply, installation, testing and commissioning of 6 amps 5 pin universal switch socket outlet in 1.2 mm thick GI box as per site requirement.	No	5		
22	Supply, installation, testing and commissioning of 16 amps 5 pin universal switch socket outlet in 1.2 mm thick GI box as per site requirement.	No	5		
Carried Forward to Summary of Section No. 4				INR	
Section 4 - Electrical Works					
Bill No. 7					
Circuit Cum Point Wlring					
SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 8 CABLES, MAINS AND SUB MAINS</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) The rate shall also include the following : Providing and fixing junction boxes with covers including painting. Effecting adequate and proper connections at terminations. Providing all fixing accessories such as clamping devices nuts, bolts and screws. Wherever the cables are of aluminium and bus bars of copper bimetallic lugs shall be used. All cable shall be laid with one diameter gap. All cables shall be IS approved. Fire retardent paint one meter on both side of wall penetration and at termination as per specifications. All cutouts / Sleeves shall be sealed with fire redardant sealent as per specification. <u>CABLES, MAINS AND SUB MAINS</u> <u>Supplying and laying following size 11 KV grade XLPE (E) aluminium conductor armoured cables laid over MS supports in trenches.</u>			
1	3 C x 150 sq.mm 11 KV XLPE (E) cable	m	100	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 8 Cables Mains and Sub Mains SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>Supplying and making cable end terminations for the following size of 11 KV grade, XLPE (E) aluminium conductor armoured cable including termination kit complete heat shrinkable sleeve etc.</u>				
2	3 C x 150 sq.mm 11 KV XLPE (E) cable (Outdoor type)	No	4		
	<u>Supplying & laying of following 1100 volt grade PVC sheathed XLPE insulated aluminium conductor armoured cable as per specification in existing cable trays with suitable clamps, saddles fixing bolts including connecting testing and commissioning.</u>				
3	3.5 core 240 sq.mm	m	200		
4	3.5 core 120 sq.mm	m	300		
5	3.5 core 95 sq.mm	m	100		
6	4 core 25 sq.mm	m	130		
	<u>Supplying & laying of following 1100 volt grade PVC sheathed XLPE insulated copper conductor unarmoured/armoured flexible cable as per specification in existing cable trays with suitable clamps, saddles fixing bolts including connecting testing and commissioning.</u>				
7	4 core 16 sq.mm CU armoured flexible cable	m	600		
8	4 core 10 sq.mm CU armoured cable	m	300		
9	1 core 16 sq.mm CU Unarmoured flexible cable	m	100		
10	4 core 6 sq.mm CU armoured cable	m	300		
11	3 core 6 sq.mm CU armoured cable	m	50		
12	4 core 4 sq.mm CU armoured cable	m	50		
13	3 core 4 sq.mm CU armoured cable	m	500		
14	4 Core 2.5 sq mm CU armoured cable	m	40		
15	7 Core 2.5 sq mm CU armoured cable	m	200		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 8 Cables Mains and Sub Mains SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
16	2 Core 1.0 sq mm CU unarmoured flexible cable	m	300		
17	4 Core 1.0 sq mm CU unarmoured flexible cable	m	300		
18	6 Core 1.0 sq mm CU unarmoured flexible cable	m	200		
19	8 Core 1.0 sq mm CU unarmoured flexible cable	m	200		
	<u>Cable end termination of the following PVC insulated sheathed PVC/XLPE CU/aluminium conductor armoured cables of 1100 volt grade including supplying and fixing of crimping aluminium lugs, double compression glands with earthing facility at both ends of cables etc. complete as required.</u>				
20	3.5 core 240 sq.mm aluminium conductor armoured cables	No	8		
21	3.5 core 120 sq.mm aluminium conductor armoured cables	No	12		
22	3.5 core 95sq.mm aluminium conductor armoured cables	No	4		
23	4 core 25 sq.mm aluminium conductor armoured cables	No	4		
24	4 core 16 sq.mm aluminium conductor armoured cables	No	32		
25	4 core 10 sq.mm aluminium conductor armoured cables	No	20		
26	3/4 core 6 sq.mm aluminium conductor armoured cables	No	20		
27	3/4 core 4 sq.mm aluminium conductor armoured cables	No	16		
28	4 Core 2.5 sq.mm Control cable	No	8		
29	7 Core 2.5 sq.mm Control cable	No	8		
30	2 Core 1.0 sq mm CU unarmoured flexible cable	No	40		
31	4 Core 1.0 sq mm CU unarmoured flexible cable	No	40		
32	6 Core 1.0 sq mm CU unarmoured flexible cable	No	50		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 8 Cables Mains and Sub Mains SAS/JVNC/GTAC/DIRCO				

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Brought Forward			INR
33	8 Core 1.0 sq mm CU unarmoured flexible cable	No	60
<u>Providing and fixing of the following size HDP Pipe.</u>			
34	100 mm. dia.	m	70
<u>Providing and fixing of the following size medium class GI pipe sleeves.</u>			
35	40 mm. dia.	m	20
<u>Supply and fixing of perforated type GI cable trays of the following sizes as per specification.</u>			
36	750 mm x 75 x 75 x 2 mm thick	m	60
37	450 mm x 40 x 40 x 2 mm thick	m	25
38	300 mm x 40 x 40 x 2 mm thick	m	40
39	200 mm x 40 x 40 x 2 mm thick	m	70
40	150 mm x 40 x 40 x 2 mm thick	m	110
41	100 mm x 40 x 40 x 2 mm thick	m	30
Carried Forward to Summary of Section No. 4			INR
Section 4 - Electrical Works			
Bill No. 8			
Cables Mains and Sub Mains			
SAS/JVNC/GTAC/DIRCO			

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 9 CONDUITING WIRING AND CABLING FOR TELEPHONE/DATA SYSTEM</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) Supply, installation, testing and commissioning of all conduiting and cabling for telephone system including providing and fixing of the following: All necessary specials and fittings, brass bushes etc. Approved cover plates for inspection, junction and outlet boxes. 1.2 mm thick outlet boxes and junction boxes. All fixing accessories such as clips, nails, screws etc. Providing and fixing approved saddles, hooks and grouting the same as required, in the case of all exposed conduit work. Embedding conduits and accessories in wall, floors etc. during construction and / or cutting chases and making good as necessary in the case of all concealed conduit work. Providing 14 SWG GI pull wire in all conduit work. <u>CONDUITING WIRING AND CABLING FOR TELEPHONE/DATA SYSTEM</u>			
	Carried Forward Section 4 - Electrical Works Bill No. 9 Conduiting Wlring and Cabling For Telephone/Data Syste SAS/JVNC/GTAC/DIRCO		INR	

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Brought Forward			INR	
	<u>Supply, installation, testing and commissioning of flush mounted outlets wired to T 568 A or B with British style faceplate. The plastic shall be high impact, flame-retardant, UL rate thermoplastic. Dust cover/ blank shall be provided to protect unused faceplate openings. Termination caps and plastic over should be provided to protect jack wiring. Quoted price shall be inclusive of 1.6 mm thick GI Boxes.</u>			
1	Supply, Installation, Testing and Commissioning of CAT6A information outlet (I/O) for Data, Voice & Wi-Fi at user end etc. UL & ETL certified, complete as required.	No	204	
2	Supply, Installation, Testing & Commissioning of CAT6A U/UTP LSZH Cable 8 X 23 AWG solid bare copper Electrolytic Grade Copper Conductors Twisted as 4 Pairs; The twisted pairs are insulated with polyethylene or polyolefin material and LSZH Outer Jacket, Category 6A, confirming to ANSI-TIA 568-C.2 for Category 6A & ISO/IEC 11801 for Class EA Supports 10/100/1000Base-T, 155Mbps ATM, IEEE 802.3an (10GBase-T) Solid bare copper 23 AWG (0.57 ± 0.01 mm) Box of 305 meters .	m	12 240	
3	Supply, Installation, Testing & Commissioning of CAT6E U/UTP LSZH Cable 8 X 23 AWG solid bare copper Electrolytic Grade Copper Conductors Twisted as 4 Pairs; The twisted pairs are insulated with polyethylene or polyolefin material and LSZH Outer Jacket, Category 6A, confirming to ANSI-TIA 568-C.2 for Category 6A & ISO/IEC 11801 for Class EA Supports 10/100/1000Base-T, 155Mbps ATM, IEEE 802.3an (10GBase-T) Solid bare copper 23 AWG (0.57 ± 0.01 mm) Box of 305 meters .	m	2 400	
	<u>Providing and fixing in position the following 25 mm dia 1.6mm Thick PVC conduit concealed or exposed as called for including all accessories i.e. bends, junction boxes with cover plates of approved make and design.</u>			
4	25 mm dia conduit	m	5 500	
5	20 mm dia conduit	m	3 000	
Carried Forward			INR	
Section 4 - Electrical Works Bill No. 9 Conduiting Wlring and Cabling For Telephone/Data Syste SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
6	Supply, Installation, Testing & Commissioning of loaded 24 port CAT 6A shielded panel, Panel should have shutter on jack, 1U height, Black with cable support bar, should have UL certificate, clear label marks and earthing plug for CAT6A cable termination at rack end etc. complete as reqd.	No	8	
7	Supply, Installation, Testing and Commissioning of 42U (800mm (W)/1000 mm (D)) floor mount rack with 4nos. unidirectional wheels, steel sheet enclosure with glassed front door, perforated powder coated rear door side panels with top cover, 4x ventilations fans, cable entry at cut outs and gland plates, 2 cable managers, stationary shelf, 1 nos vertical mounted powers strip each with 6 nos 6 power socket with 25A Switch/ SPMCB and indicator of ON and all necessary hardware accessories complete etc. as required.	No	2	
8	Supply, Installation, Testing and Commissioning of 9U wall mount rack with fans, 2 cable managers, stationary shelf, 2 Nos. of hardware pkts etc., complete as required.	No	1	
9	Supply, Installation, Testing and Comissioning of L2 Managed switch having port density 24 Nos of 100M/1G Port and 4 Nos of 10G Port, 1X RJ45 console, 1x USB Console port, 128 Gbps switching bandwidth including stack ports and 95 Mpps forwarding rate, 16K MAC address support, Support L2 feature STP, RSTP, MSTP. Support 802.1Q VLAN, port based VLAN, 2K Active VLAN entries, MAC based VLAN, Support IEEE 802.3ad LACP. upgradable L3 features - Static Routing, RIPv2, RIPv3, OSPFv3, VRRP, BFD, OpenFlow 1.3.1/REST API. should support Stacking support of 40Gbps per switch. Switch would be stacked with PoE switch in the rack. Must have Common criteria certification NDcPP/ NDPP/ TEC certified (DoT, India). Switch should be quoted with 5years OEM warranty and 5 years remote TAC support. All Switches, Industrial Switches, WiFi Solution should be of same make.	No	4	
Carried Forward				
Section 4 - Electrical Works Bill No. 9 Conduiting Wlring and Cabling For Telephone/Data Syste SAS/JVNC/GTAC/DIRCO			INR	

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	Brought Forward			INR	
10	Supply, Installation, Testing & Commissioning of L3 Core Switch should have Min 32 x 40G/ 100G Based QSFP28 port, minimum 400 Gbps of stacking bandwidth from day 1, Must have Common criteria certification NDcPP/ NDPP, Internal Replaceable Power and Fan Support fully populated. Min 6.4 Tbps switching backplane, Min 16 GB RAM, 8 GB Flash and 64GB SSD, 32Mb Packet Buffer, Min 98K Mac address, Min 100K IPv4 Routes, 7K Multicast Routes and Min 30K IPv6 Routes, QSFP28 port should be able to be configured as 25G SFP28 port individually. 1X RJ45 console, 1x USB Console port, 1x Dedicated OOB port, should support hitless stack failover, hot removal and insertion of stack members, should support OpenFlow 1.3/Openstack /REST API and Python Programmability. Switch should be quoted with 5 years OEM warranty and 5 years OEM TAC support. The Switch should support Virtual Stacking up to 2 Switches or provided equivalent network cards in Physical Chassis. The Switch should support L3 protocols RIPv2, RIPv3, OSPFv3, BGPv4, OSPF or IS-IS, BFD, VXLAN. All Switches (L3, Distribution, Access) & WiFi Solution should be of from same OEM. Make: CISCO / JUNIPER / HP	No	1		
11	Supply, laying, Testing and Commissioning of armoured 12 core Singlemode OFC cable for interfloor switches connectivity in the existing pipe/ open duct/ cable tray/ surface etc., complete as required.	m	150		
12	Supply, Installation, Testing & Commissioning of 24 port SM loaded LIU with LC adaptor plates, pigtail cables, Splice tray, cable holder and 4 nos of cable entry exist point with rubber grommet along with the LIU, Powder Coated, 1U etc complete as required. Optical Fiber Connector Part 1: Type LC and should have 25 years of product warranty.	No	2		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 9 Conduiting Wiring and Cabling For Telephone/Data System SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
13	Supply, Installation, Testing & Commissioning of Fiber Patch Cords, LC-LC Duplex, Singlemode and Multimode OS2 Rugged, 3MT LC-LC Style Single mode and Multimode, LSZH Sheath as per flame test method IEC 60332-1, IEC 60754-1, IEC 61034-1, Duplex Patch Cord, Bend Insensitive, Fiber Optic Patch Cable (LC-LC), 10/15 Feet. Long, ISO/IEC-11801-OS2 9µ Duplex with Stainless steel flexible armour to provide additional crush resistant and rodent attack prevention fiber optic patch cords shall include simplex or duplex LC, LC connectors on both ends Patch Cord cable with minimum allowable Tensile strength(N) of 450 (short Term) and 350 (Long Term) and minimum allowable Crush Load strength (N/100mm) of 2000(short Term),1000(Long Term) It should have 2 fiber count with Inner Sheath OD of 2.0±0.1 mm, Stainless Steel Flexible Spiral Armored with Outer jacket OD of 4.8 ± 0.5mm RoHS compliant fiber optic patch cords shall include simplex or duplex LC, LC connectors on both ends.	No	4		
14	Supply, Installation, Testing and Commissioning of Cat6A UnShielded LSZH Patch Cords Modular Cord shall meet and exceed channel specification of ANSI/TIA 568-C.2, ISO/IEC 11801 Standard.Flexible Stranded Bare Copper, 24 AWG available length 1 mtrs.	No	6		
15	Supply, Installation, Testing and Commissioning of Cat6A UnShielded LSZH Patch Cords Modular Cord shall meet and exceed channel specification of ANSI/TIA 568-C.2, ISO/IEC 11801 Standard.Flexible Stranded Bare Copper, 24 AWG available length 3 mtrs.	No	4		
	<u>IP-PABX SYSTEM</u>				
16	Supply, Installtion, Testing and Comissioning of Pure IP at core server Based voice solution with 04 Port Voicemail, 04 Port FXS, 04 Port FXO, 1 PRI Trunk lines (30 Ch) Circuit with CLIP Facility, 2000 IP users License, 01 Nos. IP Operator Console,100 Party Conference, Speed Dial, Music on Hold, Internal/ External ring difference, Call Barring, Call Pickup, TEC should be with GR Number, Redundant server in active- Active mode etc complete as reqd.	No	1		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 9 Conduiting Wlring and Cabling For Telephone/Data Syste SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
17	Supplying, installation, testing & commissioning of Gen 8 or more Rack Server: Intel Xeon E5-2407 (2.2Ghz/ 4 Core/ 10MB/ 6.4GT-s QPI/ 80W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5) Turbo/ 2x Smart Socket Guides for fast processor installation/ Ethernet 1GB 4-port 366i Adapter/ smart Array P420/ 1GB FBWC Controller/ 8-SFF/ 12.7mm SATA DVD ROM JB Ki/ 1x 460W CS Gold Ht Plg Pwr Supply Kit/ 1U Gen 8 Management Arm Cable/ 3-3-3 4h 24X7 complete with accessories complete in all respect.Gen8 E5-2407 Kit 16GB 2RX4 PC3L-12800R-11 KIT 900GB 6G SAS 10K 2.5in SC ENT HDD 460W HE Hot Plug AC Power Supply Kit Microsoft Windows Server 2012 Standard ROK 1 Make: Dell / HP	No	1		
18	Supply Installation, Testing and Commissioning of Integrated Viocemail System 4 Level IVR software with 6 different languages and 4 time schedule (As per OEM) etc complete as reqd.	Sets	1.0		
19	Supplying, Installation, testing and Commissioning of SIP Phone, 1 VOIP accounts, Two-port 10/100 Ethernet Switch, integrated PoE, Full-duplex speaker phone, Headset, Wall mountable, XML remote phonebook, 2 Line keys with LED etc. Wall mountable Message waiting indicator etc. complete as reqd.	No	50		
20	Supplying, Installation, testing and Commissioning of SIP Phone, 2 VOIP accounts, Two-port 10/100 Ethernet Switch, integrated PoE, Full-duplex speaker phone, Headset, Wall mountable, XML remote phonebook, 2 Line keys with LED etc. Wall mountable Message waiting indicator etc complete as reqd.	No	12		
21	Supplying, Installation, testing and Commissioning of 6 Line IP Phone with 3 Nos. 20 Key expansion module, Backlit keypad Hands-free, full duplex, Headset support Easy to use soft keys/ LCD prompts, Directory dialing, Navigation wheel, Call history, Backlit LCD screen, Security lock key XML open interface etc. complete as reqd.	No	2		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 9 Conduiting Wlring and Cabling For Telephone/Data Syste SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
22	Supplying, Installation, testing and Commissioning of 6 Line IP Phone Backlit keypad Hands-free, full duplex, Headset support Easy to use soft keys/ LCD prompts, Directory dialing, Navigation wheel, Call history, Backlit LCD screen, Security lock key XML open interface etc complete as reqd. No <u>Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc.direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.</u>		1		
23	63 mm dia (OD-63 mm & ID-51 mm nominal) m <u>Wi-Fi SYSTEMS</u>		100		
24	Supply, Installation, Testing and Commissioning of wireless Controller supporting 802.11ax and up to 2000 AP's (scalable for failover/HA configuration in active-standby in future), should support Hitless Failover and automated load balancing, support controllers clustering to enable seamless experience across Wi-Fi zone in the event of failure or significant crowd density, with Wireless IPS, Rogue management, RF management and optimization with Dynamic Channel Assignment on both 2.4GHz and 5Ghz.support automate deployment with Zero-touch Provisioning and Hierarchical Configuration, capability to use an AP infrastructure and terminate two different SSIDs on two different controllers. OEM warranty for 5 Years. (OEM Should be same for Switches, Wi- Fi, SFP & Wireless Controller). Make: CISCO / JUNIPER / HP No		1		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 9 Conduiting Wlring and Cabling For Telephone/Data Syste SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 10 SECURITY SYSTEM</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)			
1	Supply, Installation, Testing & Commissioning of HD IP indoor Dome camera with 1/2.8 inch CMOS Sensor or better, 5 Megapixels or better@ 25fps, Sensitivity 0.38 lx (color) 0.05 lx (mono), IR range 50 mtrs, Dynamic range 120 db, True day/ night, Automatic Electronic Shutter, Video compression ; M-JPEG, H.265 , H.264 White balance, BLC/WDR, supporting Edge/ server based Video Analytics (Object Classes: Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Class Trigger Rules: Object Detected, Perimeter, Linger, Dwell, Abandoned / Removed, Enter, Exit, Crowd, Queue Object Sub-Classes: Person Clothing Colour, Vehicle Colour), Privacy Mask, Auto Varifocal Lens (zoom/ focus) 2.7mm to 13.5mm , True day/ night with P-Iris, MTBF (Mean time between failure) minimum 100000 hours, Two-way, full duplex Audio, Audio compression (live and recording); Camera should have dual inbuilt mic and external option also Support 1TB Memory or more with SD Card data encryption i/c pre-installed 1 TB Memory card, 3-axis adjustment (pan/ tilt/ rotation), ONVIF Profile S,G,T & M, CE, UL, FCC Class A Certified. IP66 and IK10 along with mounting accessories as per site requirement complete etc as reqd. TLS 1.2 (256 bit cipher minimum) ,Protocols - WS-Discovery, DNS, DDNS, RTP, TLS, RTSP, ICMP, Unicast, Multicast, NTP, SMTP, WS-Security, SNMP, CIFS, FSTP, UPnP™, SIP, Camera processor Memory 1GB RAM and 512MB Flash.	No	58	
	Carried Forward Section 4 - Electrical Works Bill No. 10 Security System SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward		INR	
2	Supply, Installation, Testing & Commissioning of Outdoor IR 1080p 60fps HD PTZ camera with 1/2.8 progressive scan, Effective pixels 1920x1080 approx, 2M pixels @60fps, 30x Optical Zoom, (4.3-4.5)mm to (129-135)mm lens, 12x Digital Zoom, Minimum Illumination-Sense up on Color 0.15 lux, Mono:0.001 lux, Wide Dynamic Range 120db, Edge/server based Video Analytics AI Object Classification Classes: Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Sub-Classes: Person: Upper Clothing Color/ Lower Clothing Color Car, Bus, Motorbike and Truck: Vehicle Color Class Rules: Object Detected, Perimeter, Linger, Dwell, Abandoned / Removed, Enter, Exit, Crowd, Queue Pan Range 360° continuous. Tilt Range 0° to 90°, Manual Continuous Speed 0.25° ~ 100°/s scaled in proportion to zoom position IR distance 200 mtrs, IR can be internal or external with full 360° PAN coverage, Audio- In/ Out, Support 1 TB Memory or more i/c pre-installed 1 TB Memory card, POE+/ UPoE+ or 24V AC Power Input support for indoor/ Outdoor application, Defog, MTBF (Mean time between failure) minimum 100000 hours, IP66, ONVIF Profiles S, G, T & M, CE, UL, ISO 14001 Certified along with power supply along with mounting accessories as per site requirement complete etc as reqd. Smart Defog, Electronic Image Stabilization, WS-Discovery, , WS-Security, IEEE 802.1x, PEAP, EAP-TLS, EAPoL, SSH, HTTPS, SOAP, WSAddressing, CIFS, SNMP, UPNP, RTSP, LLDP, ; TLS, 1.2 (256 bit cipher minimum); Security Overview Page (status and configuration); RTSP Authentication; IEEE 802.1X Client; Remote Accessible Audit logs; Role-Based Access Control, Video Encryption for local storage and streaming, NEMA 4x	No	2	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 10 Security System SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
3	Supply, Installation, Testing & Commissioning of Outdoor IR 1080p 60fps HD PTZ camera with 1/2.8 progressive scan, Effective pixels 1920x1080 approx, 2M pixels @60fps, 30x Optical Zoom, (4.3-4.5)mm to (129-135)mm lens, 12x Digital Zoom, Minimum Illumination-Sense up on Color 0.15 lux, Mono:0.001 lux, Wide Dynamic Range 120db, Edge/server based Video Analytics AI Object Classification Classes: Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Sub-Classes: Person: Upper Clothing Color/ Lower Clothing Color Car, Bus, Motorbike and Truck: Vehicle Color Class Rules: Object Detected, Perimeter, Linger, Dwell, Abandoned / Removed, Enter, Exit, Crowd, Queue Pan Range 360° continuous. Tilt Range 0°to 90°, Manual Continuous Speed 0.25° ~ 100°/s scaled in proportion to zoom position IR distance 200 mtrs, IR can be internal or external with full 360° PAN coverage, Audio- In/ Out, Support 1 TB Memory or more i/c pre-installed 1 TB Memory card, POE+/ UPoE+ or 24V AC Power Input support for indoor/ Outdoor application, Defog, MTBF (Mean time between failure) minimum 100000 hours, IP66, ONVIF Profiles S, G, T & M, CE, UL, ISO 14001 Certified along with power supply along with mounting accessories as per site requirement complete etc as reqd. Smart Defog, Electronic Image Stabilization, WS-Discovery, , WS-Security, IEEE 802.1x, PEAP, EAP-TLS, EAPoL, SSH, HTTPS, SOAP, WSAddressing, CIFS, SNMP, UPNP, RTSP, LLDP, ; TLS, 1.2 (256 bit cipher minimum); Security Overview Page (status and configuration); RTSP Authentication; IEEE 802.1X Client; Remote Accessible Audit logs; Role-Based Access Control, Video Encryption for local storage and streaming, NEMA 4x	No	2	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 10 Security System SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
4	Supply, Installation, Testing & Commissioning of HD Outdoor IR IP box/ bullet camera with automatic license number plate recognition system i/c software and hardware for installation at entry & exit gates. It should have facility to retrieve alpha numeric details of the vehicle such as date, time and entry/ exit from the stored data and images. camera should have 1/2.8 inch CMOS Sensor or better, 5 mega pixels or better@ 30fps, Colour: 0.005 Lux @ F1.6, AGC ON, 50 IRE; 0.008 Lux @ F1.6, AGC ON, 50 IRE; 0 Lux IR On IR range 50 mtrs, Dynamic range 120 dB, True day/ night, Automatic Electronic Shutter, Video compression H.265; M-JPEG, White balance, BLC/WDR, Privacy Mask, Auto Varifocal Lens (zoom/focus), 2.7 mm to 13.5 mm lens or better MTBF (Mean time between failure) 100000 hours,, Support 1 TB Memory or more i/c pre-installed 1 TB or better Memory card, IP66, ONVIF Profile S,G,T & M, CE, UL, FCC Class A Certified. IP66, IK 10 along with mounting accessories as per site requirement complete etc as reqd.TLS 1.2 (256 bit cipher minimum) ,Protocols - WS-Discovery, DNS, DDNS, RTP, TLS, RTSP, ICMP, Unicast, Multicast, NTP, SMTP, WS-Security, SNMP, CIFS, FSTP, UPnP™, SIP,Camera processsor Memory 1GB RAM and 512MB Flash. AI Analytics for license plate recognition should be included either edge based or server based as part of camera supply.	No	8	
	Carried Forward		INR	
Section 4 - Electrical Works Bill No. 10 Security System SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
5	"Supply, Installation, Testing & Commissioning of IP based Network Open Platform Video Management software including the following: Software version capable of supporting minimum 100 nos. cameras & future expandable to required size, Should include 1no. Base license and licenses for Minimum 100 Cameras (N+1), Unlimited client (Desktop/Web/Mobile) Licenses to be supplied, Unlimited Server Licenses to be supplied, The Client shall support minimum 5 x 5 Live & Playback View, Supported camera Brands & Models as per makes in Tender Specs, Auto Detect multi-brand Camera devices during setup, System Login must support Windows Active Directory Secure Connection, VMS should be part of Global Top 5 VMS list as per IHS Report, Compression Technology supported must be MJPEG, MPEG4, MXPEG, H.264 & H.265, To ensure openness, VMS, Cameras and Video Analytics may not be from the same manufacturer, Support ONVIF S, G, T & M Profile supported by IP Devices, Should be Full Member of ONVIF or Affiliate to Parent Company or Contributing membership level, Software features should include Virtual Matrix Alarms, Map Support, logs / alarms, memory management, Software should have capability to support Camera's edge Analytics or seamless integration with 3rd party vendors if required later on stage., Failover and standby functionality, Support upto 28 International Language, VMS shall already support IP cameras from at least fifty (50) major vendors. Bidders shall clearly list in their proposal the brands and models already integrated into VMS thru dedicated camera drivers, Support Device firmware upgrade of single and multiple devices in bulk from within the VMS Client, Support to Manage device password on one or multiple devices from within the VMS Client, All necessary approvals as required at the discretion & final directions of Consultants /Client /End-user / Eng In charge., Vendor to 100% comply to VMS specification. Server quantity to be proposed as per OEM recommendation, (N+1) is mandatory. Integration with below systems should be offered : (a) VMS - ACS Integration (b) VMS - POS/Retail Integration (c) VMS - PIDS Integration (d) VMS in-built Video Summarization / Synopsis / Forensic Tool (e) Video Analyitcs (edge/ 3rd Party) (f) VMS - BMS Integration (g) ANPR & Gate Automation System.			
			SUM	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 10 Security System SAS/JVNC/GTAC/DIRCO			

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Brought Forward		INR	
6	Supply, Installation, Testing & Commissioning of 100 TB SAN storage solution. Each Storage box shall have Dual redundant Active-Active Controllers. Each Controller shall have minimum dual core 2.2 GHz CPU. Storage should support minimum 4 ports 10Gb iSCSI BaseT/ 4 ports 10Gb iSCSI SFP+/ 4 ports 16Gbps FC/ 4 ports 12Gbps SAS per controller. Backend Connectivity 12Gbps SAS with redundant hot swappable power supplies and cooling fans. (in case of failure of primary box of 800 TB NAS box, recording of all cameras should be automatically starts recording on secondary box of 800 TB NAS box without single second gap in recording) i/c termination etc. complete as reqd. and as per direction of Engineer-In-Charge. Recording parameter : Resolution- 5 MP, FPS- 25, Motion- Yes, Storage- 35 days.	No	1
7	Supply, Installation, Testing and Commissioning of 3x2 4K 55" LED Professional Display Wall, brightness: 550 cd/m2, Input/Output: 2x HDMI Input, 1xUSB, Audio Input/ Output, Control: 1xRJ-45(Ethernet), 20 watt inbuilt speaker, 5 meter HDMI cable complete etc. as required.	No	2
Carried Forward to Summary of Section No. 4 Section 4 - Electrical Works Bill No. 10 Security System SAS/JVNC/GTAC/DIRCO		INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 11 FIRE ALARM SYSTEM</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Supply, installation, testing and commissioning of 4 Loop Microprocessor based intelligent analogue addressable, modular, expandable networkable, following loop (each loop consist of minimum 125detector & 125devices) fire alarm control panel with minimum 640 character LCD display, multiple access levels, event history file in non-volatile memory (EEPROM).The panel shall support programmable relay for controlling lifts, staircase pressurizations fans, lift shaft & lift lobby pressurization fans, toilets exhaust fans, ventilation fans, monitoring of fire sprinkler and fire hydrant pump controlled by powerful Boolean logic equation. The panel shall have minimum five independent hazard release circuit built-in the panel.the panel shall have in built facility for voice evacuation system and two way communication and also interface with Public Addressing system and automation system .</u>			
1	The panel shall have 240 volts AC power supply, automatic battery charger, 24 volts, sealed lead acid maintenance free batteries sufficient for 24 hours normal working and then be capable of operating the system for 4 hours during emergency condition. The panel shall be UL/EN listed. Tenderer to provide interfacing connectivity (BAC Net/modbus gateway) in Fire Panel for integrating with building management system complete as per specification	No	1	
	Carried Forward Section 4 - Electrical Works Bill No. 11 Fire Alarm System SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
2	Supply , Installation , Testing and Commissioning of Network Repeater Panel with minimum 10" Color Touch Screen display with QWERTY Keypad, mapping minimum 2,00,000 points on network. The NRP shall act as an independent node communicating on the peer to peer network and shall not be dependant on the Fire Panel CPU for operation. Failure of Fire Panel CPU shall not result in failure of NRP operation UL & FM Approved.	Sets	2.0		
3	Supply, Installation, Testing & Commissioning of Addressable Multi-criteria Photo-Thermal Detector with sensitivity range of 0.5 to 4.0% obs/ft. The intelligent multi criteria detection device shall include the ability to combine the signal of the thermal sensor with the signal of the photoelectric signal in an effort to react hastily in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a false alarm condition by examining the characteristics of the thermal and smoke sensing chambers and comparing them to a database of actual fire and deceptive phenomena. The detector shall have twin bi-colour LED for 360 deg viewing. Addressing shall be with user friendly rotary decimal switches. UL268, 7th Edition & FM Approved.	No	9		
4	Supply, Testing & Commissioning, fixing of Analog addressable Photo electric smoke detector with mounting based LED, address switch to programme the detectors complete as required.	No	202		
5	Supply, installing, testing and commissioning of Rise Heat Detector rated at 8.3 deg C/min. The detector shall have twin bi-colour LED for 360 deg viewing. Addressing shall be with user friendly rotary decimal switches UL268, 7th Edition & FM Approved.	No	15		
6	Supply , Installation , Testing and Commissioning of Beam Detector with suitable Monitor Module. The beam detector shall be used for High Ceiling application with a detection range upto 100 mtrs having 4 manual & 2 auto sensitivity settings. The beam detector shall be True addressable installed on the SLC circuite & communicate directly with the panel without any interface module UL & FM Approved.	No	2		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 11 Fire Alarm System SAS/JVNC/GTAC/DIRCO					

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
FOR THE DEPARTMENT OF INTERNATIONAL RELATIONS & COOPERATION**

	Brought Forward			INR	
7	Supply, Installation, Testing & Commissioning of Isolator Module for Isolating short / dewired / loose circuits with automatic resetting arrangement. Isolator Base can also be proposed, however in that case needs to be considered with each detector & module. The device shall have an LED which shall blink in normal state & get steady on activation to monitor the heath status of the device. Module shall be supplied with mounting plate from OEM for ease of installation & maintenance.	No	16		
8	Supply, installing, testing and commissioning of Addressable Relay Control Module for AHU, Access Control, Lifts, Staircase Pressurization, Fire Suppression & other Third Party Outputs. The relay module shall provide contact rated at 24v DC, 2A. The device shall have an LED which shall blink in normal state & get steady on activation to monitor the heath status of the device. Addressing shall be with user friendly rotary decimal switches. Module shall be supplied with mounting plate from OEM for ease of installation & maintenance UL & FM Approved.	No	20		
9	Supply, Installation, Testing & Commissioning of Addressable Monitor Module for Sprinklers, Panic Bars & other Third Party Inputs. The monitor module shall monitor potential free contacts. The device shall have an LED which shall blink in normal state & get steady on activation to monitor the heath status of the device. Addressing shall be with user friendly rotary decimal switches. Module shall be supplied with mounting plate from OEM for ease of installation & maintenance UL & FM Approved.	No	4		
10	Supply , Installation , Testing and Commissioning of Addressable Manual Call Point (Pull down / Break Glass Type). The device shall have an LED which shall blink in normal state & get steady on activation to monitor the heath status of the device UL & FM Approved.	No	10		
11	Supply , Installation , Testing and Commissioning of Hooter Sounder cum Strobe rated at 80 dBA @ 3m for Audible annunciation and 115cd flashintg at 1 Hz for visual indication. UL & FM Approved.	No	15		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 11 Fire Alarm System SAS/JVNC/GTAC/DIRCO					

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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	Brought Forward			INR	
12	Supply , Installation , Testing and Commissioning of Response Indicator (RI) High visibility LED, Wide viewing angle for increased visibility, Discreet design for incorporation in to any décor. RI should be of same make as detectors & devices.	No	6		
13	Supply , Installation , Testing and Commissioning of Addressable Fire Fighter's Telephone Jack with suitable supervised module for two way communication between Remote Fire Fighter & Fire Command Center. UL Listed.	No	4		
14	Supply , Installation , Testing and Commissioning of Fire Fighter's Telephone Handset for two way communication between Remote Fire Fighter & Fire Command Center.	No	4		
	<u>Supplying and drawing following sizes of FRLS PVC insulated copper conductor, two core fire survivable armoured cable suitable for 850 Deg temptaure for four hours as required.</u>				
15	2 x 2.5 sq. mm	m	5 220		
	<u>Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.</u>				
16	25 mm	m	50		
Carried Forward to Summary of Section No. 4				INR	
Section 4 - Electrical Works					
Bill No. 11					
Fire Alarm System					
SAS/JVNC/GTAC/DIRCO					

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u>			
	<u>BILL NO. 12 PUBLIC ADDRESS SYSTEM</u>			
	<u>PREAMBLES</u>			
	<u>Goods and Services Tax</u>			
	Rates for all items shall include 18% Goods and Services Tax (GST)			
1	Supply, Installation, Testing & Commissioning of 6W Ceiling Speaker with max SPL1M/1W 96dB . Frequency response of 80Hz-20KHz with a dispersion angle of 160 deg. The speaker should have tapings at 6W/3W/1.5W	No	11	
2	Supply, Installation, Testing & Commissioning of 15W Wall mount Speaker with max SPL1M/1W 96dB . Frequency response of 160Hz-20KHz. The speaker should have tapings at 6W/3W.	No	15	
3	Supply, installation, testing and commissioning of rack mounted dual Channel Digital Power Amplifier capable of delivering 300 W RMS power output or 480 W RMS burst output; complete with 100 V Line Matching Transformer, built-in fan for temperature control, Distortion typically 0.03% @ 1 KHz, Hum and Noise 90 dB below rated output selection facility, provision for hookup with Fire Alarm Panel, complete with connections and required circuitry	No	3	
4	Supply, installation, testing and commissioning of 19" equipment rack made out of 2 mm thick CRCA sheet duly powder coated; in-built amplifier mounting; amplifier, controller, suitable for housing of above control equipment.			SUM
5	Supply, installation, testing and commissioning of volume control unit with bypass arrangement for speakers including providing and fixing of 1.6 mm thick GI box enclosures complete as required.	No	1	
6	Supply, installation, testing and commissioning of DVD Player with interconnecting wire complete as required.	No	1	
	Carried Forward			INR
	Section 4 - Electrical Works Bill No. 12 Public Address System SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
7	Supply, installation, testing and commissioning of micro phone for remote location and interface with controller including communication cable and all accessories.	No	1	
	<u>Supplying and drawing following sizes of FRLS PVC insulated copper tinned conductor, twin twisted cable in the existing surface/ recessed steel/ PVC conduit as required.</u>			
8	2 x 1.5 sq. mm	m	1 416	
	<u>Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.</u>			
9	25 mm	m	1 200	
Carried Forward to Summary of Section No. 4				
Section 4 - Electrical Works				
Bill No. 12				
Public Address System				
SAS/JVNC/GTAC/DIRCO				

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 13 UPS SYSTEM</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) Note: Quoted price shall be inclusive of the following: Approved rating single core copper conductor cable connecting as batteries. All equipment shall be housed in individual cabinets. Battery backup must be given for full resistive load. Battery should be sealed maintenance free type. Battery monitoring system shall be provided. <u>Supply, installation, Testing and commissioning of the following UPS SYSTEM as per specifications and complete in all respects.</u>			
1	40 KVA 3 phase input (415 V + 15%), three phase output (415 V + 1%) in Parellel mode with isolation transformer with 30 minutes battery backup each complete with battery rack & inter connector for batteries & Isolation switch for each bank battery. Sets	2.0		
2	40 KVA 3 phase input (415 V + 15%), three phase output (415 V + 1%) in stand alone mode with isolation transformer with 4hrs battery backup each complete with battery rack & inter connector for batteries & Isolation switch for each bank battery. Sets	1.0		
	Carried Forward to Summary of Section No. 4 Section 4 - Electrical Works Bill No. 13 UPS System SAS/JVNC/GTAC/DIRCO			
			INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 14 LIGHTING CONTROL SYSTEM FOR CHANCERY</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)			
1	Supply Installation Testing and commissioning of 4 Channel 0-10V Dimmer to dim 0-10 Volt drivers and ballasts.Should support Maximum Per Channel, 5 Amps @ 120 to 240 Volts AC, 1050 Watts @ 230 Volts AC; 0.5 HP; 16 Amps Resistive.Should support Module Total 20 Amps @ 120 to 240 Volts AC, 50/60 Hz; 4600 Watts @ 230 Volts AC.Should have 4x isolated dimming control outputs along with 4x Isolated Class 1 SPST relay switch circuits with 5 Amps maximum per channel Relay Rating.Should have override input for external contact closure to momentarily override level.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, UL, CEC Title 24 2013 Compliant.Should be from same OEM as Main control system.	No	28	
	Carried Forward Section 4 - Electrical Works Bill No. 14 Lighting Control System - Chancery SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
2	Supply Installation Testing and commissioning of 8-Channel relay.Should support Maximum Per Channel 10A incandescent @ 120 to 240VAC, 5A fluorescent @ 120 to 240VAC, 0.5 HP @ 120 to 240VAC, 5A at 30VDC, 16A Resistive.Should support Module Total 80A incandescent @ 120 to 240VAC, 40A fluorescent @ 120 to 40VAC.Should have 8x Isolated Class 1 SPST relay switch circuits with 0A incandescent, 5A fluorescent, 16A resistive, 0.5 HP @ 240VAC (per channel) Rating.Should have 8x port isolated inputs (Rated 12-24VDC), for momentary pushbuttons, each input will cause the associated relay to toggle on/off.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar ommunication.Should be CE, FCC Compliant.Should be from same OEM as Main control system.	No	4		
3	Supply Installation Testing and commissioning of photosensor for open- and closed-loop applications.Should be able to measure ambient light level from all light sources.Should be able to create 60° cone of coverage for open-loop and closed loop applications.Should support open-loop light sensitivity with three ranges: 3-300 fc, 30-3000 fc, and 60-6000 fc and Closed-loop light sensitivity ranging from 3-300 fc.Should have 0 to 10VDC analog control output Should be suitable for indoor, outdoor, and wet locations.Should be from same OEM as Main control system. Should be UL Compliant.	No	41		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 14 Lighting Control System - Chancery SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
4	Supply Installation Testing and commissioning of ceiling mounted Occupancy Sensor supporting both ultrasonic and passive infrared (PIR) sensing technologies.Should be able to cover 1800 Square feet and 360-degree coverage pattern.Should be able to enable ultrasonic motion detection for Side A, Side B, or both sides to avoid false occupancy readings.Should be able to provides independent sensitivity adjustment for each sensor type for optimum performance in any space.Should be built-in photosensor, to detects the amount of ambient light in the room.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar omunication.Should be CE, FCC, UL Compliant.Should be from same OEM as Main control system.	No	77		
5	Supply Installation Testing and commissioning of 10 button Keypads.Should be able to configure with 4 buttons to 10 Buttons.Should be able to program for single tap, double-tap, or press-and-hold events Should have provision for custom engraving from the same OEM.Each button should have individual LED indicator to show press/unpressed.Should have 2x inputs for low voltage contact closure devices such as door switches and motion detectors.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, FCC, UL Compliant.Should be from same OEM as Main control system	No	62		
6	Supply Installation Testing and commissioning of 60-Watt Power Supply from same OEM as Main control system.Should support standard DIN rail for installation.Should be CE, FCC, UL Compliant.	No	12		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 14 Lighting Control System - Chancery SAS/JVNC/GTAC/DIRCO					

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	Brought Forward		INR
7	Supply, Installation, Testing and commissioning of DIN rail mount AV Control System with control ports.Should have Quad Core processor / multicore CPU / Ultra-Fast processor, for faster processing and advanced automated system requirements.Should be able to control two rooms simultaneously, for future proof and backup purpose.Should have network security protocols Active Directory® service authentication, 802.1X network access control, TLS, SSH and HTTPS to ensure IT policies compliance. And need to be configured and shown during installation.Should be JITC/FIPS/NIAP certified.Should have BACnet communication protocol, which allow integration with third-party building management systems (HVAC, security, and other systems) over Ethernet.Should have minimum 1 GB SDRAM and minimum 8 GB flash memory Should have minimum, 4x IR/serial, 2x Bidirectional RS-232, RS-422, 485 port, 8x I/O, 4x low voltage relay.Should be TAA compliant / IC3S (Indian Common Criteria Certification) compliant / Common Criteria Should have ethernet port with TCP/IP, UDP/IP, DHCP, SSL, SFTP (SSH File Transfer Protocol), IPv4, IPv6. Compliance: UL, CE, FCC, RoHS/WEEE. (Additional BIS to be shared if applicable).Control processor must not require any internet connectivity for configuration, programming and running. Should be shipped with license to control the room from PC/Laptop using UI.	No	4
8	Supply Installation Testing and commissioning of 3-segment configurable power distribution.Should be able to support 75 Watts at each segment.Should support standard DIN rail for installation. Should be CE, FCC Compliant.Should be from same OEM as Main control system.	No	8
	Carried Forward		INR
Section 4 - Electrical Works Bill No. 14 Lighting Control System - Chancery SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
9	Supply Installation Testing and commissioning of device with 8 Vertiports I/O ports.Should be able to provide interface for 3rd-party sensors, detectors, contact closures, and alarms.Should support Digital input rated 0-24 Volts DC, input impedance 20k ohms, logic threshold 1.25 Volts DC, and Digital Output: 250 mA sink from maximum 24 Volts DC.Should support Analog Input rated for 0-10 Volts DC, protected to 24 Volts DC maximum, input impedance 20k ohms. Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, UL, FCC Compliant.Should be from same OEM as Main control system.	No	7	
10	Supply Installation Testing and commissioning of 3-segment configurable power distribution.Should be able to support 75 Watts at each segment.Should support standard DIN rail for installation. Should be CE, FCC Compliant.Should be from same OEM as Main control system.	No	8	
Carried Forward to Summary of Section No. 4 Section 4 - Electrical Works Bill No. 14 Lighting Control System - Chancery SAS/JVNC/GTAC/DIRCO				INR

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 15 LIGHTING CONTROL SYSTEM FOR RESIDENCE</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)			
1	Supply Installation Testing and commissioning of 4 Channel 0-10V Dimmer to dim 0-10 Volt drivers and ballasts.Should support Maximum Per Channel, 5 Amps @ 120 to 240 Volts AC, 1050 Watts @ 230 Volts AC; 0.5 HP; 16 Amps Resistive.Should support Module Total 20 Amps @ 120 to 240 Volts AC, 50/60 Hz; 4600 Watts @ 230 Volts AC.Should have 4x isolated dimming control outputs along with 4x Isolated Class 1 SPST relay switch circuits with 5 Amps maximum per channel Relay Rating.Should have override input for external contact closure to momentarily override level.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, UL, CEC Title 24 2013 Compliant.Should be from same OEM as Main control system.	No	10	
	Carried Forward Section 4 - Electrical Works Bill No. 15 Lighting Control System - Residence SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
2	Supply Installation Testing and commissioning of 8-Channel relay.Should support Maximum Per Channel 10A incandescent @ 120 to 240VAC, 5A fluorescent @ 120 to 240VAC, 0.5 HP @ 120 to 240VAC, 5A at 30VDC, 16A Resistive.Should support Module Total 80A incandescent @ 120 to 240VAC, 40A fluorescent @ 120 to 240VAC.Should have 8x Isolated Class 1 SPST relay switch circuits with 0A incandescent, 5A fluorescent, 16A resistive, 0.5 HP @ 240VAC (per channel) Rating.Should have 8x port isolated inputs (Rated 12-24VDC), for momentary pushbuttons, each input will cause the associated relay to toggle on/off.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, FCC Compliant.Should be from same OEM as Main control system.	No	14		
3	Supply Installation Testing and commissioning of 4 Channel Universal Dimmer for forward, reverse phase dimming with Auto load detection.Should support maximum Per Channel 5A @ 120 to 240VAC, 50/60 Hz, 1150 W @ 230VAC.Should support Module Total 10A @ 120 to 240VAC, 50/60 Hz, 2300 W @ 230VAC.Should support Forward Phase (leading edge), Reverse Phase (trailing edge) Electronic Low Voltage, Incandescent, Neon/Cold Cathode, Magnetic Low Voltage, Dimmable 2-Wire Fluorescent, and Non-Dim Lighting.Should have override input for external contact closure to momentarily override level.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, UL, FCC Compliant.Should be from same OEM as Main control system.	No	6		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 15 Lighting Control System - Residence SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
4	Supply Installation Testing and commissioning of ceiling mounted Occupancy Sensor supporting both ultrasonic and passive infrared (PIR) sensing technologies.Should be able to cover 1800 Square feet and 360-degree coverage pattern.Should be able to enable ultrasonic motion detection for Side A, Side B, or both sides to avoid false occupancy readings.Should be able to provides independent sensitivity adjustment for each sensor type for optimum performance in any space.Should be built-in photosensor, to detects the amount of ambient light in the room.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, FCC, UL Compliant.Should be from same OEM as Main control system.	No	4		
5	Supply Installation Testing and commissioning of 10 button Keypads.Should be able to configure with 4 buttons to 10 Buttons.Should be able to program for single tap, double-tap, or press-and-hold events Should have provision for custom engraving from the same OEM.Each button should have individual LED indicator to show press/unpressed.Should have 2x inputs for low voltage contact closure devices such as door switches and motion detectors.Should support standard DIN rail for installation and have unique ID for each device to be addressable and able to communicate with control system via RJ45/RS-495/similar communication.Should be CE, FCC, UL Compliant. Should be from same OEM as Main control system	No	27		
6	Supply Installation Testing and commissioning of 60-Watt Power Supply from same OEM as Main control system.Should support standard DIN rail for installation.Should be CE, FCC, UL Compliant.	No	2		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 15 Lighting Control System - Residence SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
7	Supply, Installation, Testing and commissioning of DIN rail mount AV Control System with control ports.Should have Quad Core processor / multicore CPU / Ultra-Fast processor, for faster processing and advanced automated system requirements.Should be able to control two rooms simultaneously, for future proof and backup purpose.Should have network security protocols Active Directory® service authentication, 802.1X network access control, TLS, SSH and HTTPS to ensure IT policies compliance. And need to be configured and shown during installation.Should be ITC/FIPS/NIAP certified.Should have BACnet communication protocol, which allow integration with third-party building management systems (HVAC, security, and other systems) over Ethernet.Should have minimum 1 GB SDRAM and minimum 8 GB flash memoryShould have minimum, 4x IR/serial, 2x Bidirectional RS-232, RS-422, 485 port, 8x I/O, 4x low voltage relay.Should be TAA compliant / IC3S (Indian Common Criteria Certification) compliant / Common Criteria Should have ethernet port with TCP/IP, UDP/IP, DHCP, SSL, SFTP (SSH File Transfer Protocol), IPv4, IPv6. Compliance: UL, CE, FCC, RoHS/WEEE. (Additional BIS to be shared if applicable).Control processor must not require any internet connectivity for configuration, programming and running.Should be shipped with license to control the room from PC/Laptop using UI.	No	1		
8	Supply Installation Testing and commissioning of 3-segment configurable power distribution.Should be able to support 75 Watts at each segment.Should support standard DIN rail for installation. Should be CE, FCC Compliant.Should be from same OEM as Main control system	No	1		
Carried Forward to Summary of Section No. 4				INR	
Section 4 - Electrical Works					
Bill No. 15					
Lighting Control System - Residence					
SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 16 ACCESS CONTROL SYSTEM</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)			
	Carried Forward Section 4 - Electrical Works Bill No. 16 Access Control System SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
1	Supply Installation Testing and commissioning of fully integrated Contactless Face recognition Terminal Controller & reader . The panel should have following capability: Multiple Authentication Methods : Face, RFID Cards, Mobile Access, QR & Bar Code, RF Option : 125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire, DESFire EV1/EV2/EV3(1), FeliCa CPU 1.5 GHz Quad Core Memory 32 GB Flash + 4 GB RAM Crypto Chip Supported LCD Type 5.5" IPS color LCD LCD Resolution 720 x 1280 pixels Sound 16 bit Operating Temperature-20 °C ~ 50 °C (-4 °F ~ 122 °F) Operating Humidity 0 % ~ 80 %, non-condensing Camera 2 MP 2 IP Rating IP65 IK Rating IK06 Authentication Distance 0.3 ~ 1.0 m (11.8"~39") Authentication Height 1.4 ~ 1.9 m (55.1"~74.8") Matching Speed Within 0.2 seconds Live Face Detection (Anti-Spoofing) Supported Max. User 100,000 Max. Credential (1:N) Face: 50,000 / Fingerprint: 100,000 Max. Credential (1:1) Face: 100,000 / Card: 100,000 / PIN: 100,000 / Fingerprint: 100,000 Max. Text Log 5,000,000 Max. Image Log 50,000 Ethernet Supported (10/100/1000 Mbps, auto MDI/MDI-X) RS-485 1 ch Master / Slave (Selectable) RS-485 Communication Protocol OSDP V2 Compliant Wiegand 1 ch Input, 1 ch Output TTL Input 3 ch Inputs Relay 1 Relay Intercom Supported RTSP (Real Time Streaming Protocol) Supported USB USB 2.0 (Host) USB expansion port Supported Tamper Supported	No	1		
2	Supply Installation Testing and commissioning of fully integrated Contactless Exit Button	No	30		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 16 Access Control System SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
3	Supply Installation Testing and commissioning of 600 LBS Single Leaf Electromagnetic lock along with required brackets	No	22	
4	Supply Installation Testing and commissioning of 600 LBS Double Leaf Electromagnetic lock along with required brackets	No	18	
5	Supply Installation Testing and commissioning of Access Machine Mounting Stand on Tripod/Turnstile/Flap Barrier/Swing Barrier/P Gate with SS material grade	No	2	
6	Supply Installation Testing and commissioning of Biometric access controller with following capabilities: - Performance & Capacity:- Handles up to 500,000 users, 1 million fingerprint templates, and 5 million event logs. - Fingerprint matching speed: 400,000 match/sec. - Supports 500,000 RF cards and 500,000 PINs. - Communication Interfaces:- Ethernet: 10/100 Mbps (Auto MDI/MDI-X). - RS-485: 5 channels (OSDP V2 compliant). - Wiegand: 4 channels. - Input/Output Capabilities:- Relay Outputs: 4 relays. - TTL Inputs: 8 channels (supervised input or TTL selectable). - TTL Outputs: 8 channels. - AUX Inputs: 2 channels (AC Power Fail and Tamper). - Hardware & Power:- CPU: 1.4 GHz Octa-Core. - Memory: 8 GB Flash + 1 GB RAM. - Power: 12 Vdc (Max current: 3 A), with power output of 12 Vdc (Max 1.5 A). - Operating Conditions:- Temperature range: 0°C to 50°C. - Certifications:- UL 294, CE, FCC, ROHS, REACH, WEEE, and others.	No	1	
7	Supply of 4 Core 1 Sqmm Access Cable	m	1 000	
Carried Forward			INR	
Section 4 - Electrical Works Bill No. 16 Access Control System SAS/JVNC/GTAC/DIRCO				

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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	Brought Forward			INR	
8	Supply Installation Testing and commissioning of Multi Zone Metal Door Frame Detector with following Capabilities: -18 Zone of Detection -Touch LCD For Visualisation -Adjustable Operating Frequency -Adjustable Alarm Timing -Adjustable Sensitivity -Alarm & Pass Counter -LCD Bar on panel indicating volume of metal. -Zone detection with LED indication on both sides (left & right)	No	2		
9	Supply Installation Testing and commissioning of Full Height Turnstile with following specification: -Pass width : 600mm -Material : Body $\delta=1.2\text{mm}$ / fence $\phi=1.0\text{mm}$ SS304 -molding full-height turnstile movement -Drive Unit : Anti-burn solenoid -Communication Interface : Dry contact & RS485 -Pass rate : 35-50 persons/minute -Temperature : $-20^{\circ}\text{C}\sim+70^{\circ}\text{C}$ -Humidity : $\leq 90\%$ No condensation -IP : IP4X -automatic reset function -function of opening doors automatically under power-off state -anti-tail, anti-reverse pass function - CE Certified 2006/42/EC; 2014/30/EU; 2014/35/EU; EN 61000-6-3 (2007); EN 61000-6-2 (2005); EN ISO12001	No	2		
	Carried Forward			INR	
	Section 4 - Electrical Works Bill No. 16 Access Control System SAS/JVNC/GTAC/DIRCO				

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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	Brought Forward		INR	
10	Supply Installation Testing and commissioning of Hand Held Metal Detector with following specification: -Operating Frequency : 25Khz -Power Consumption : 60mw -Voltage : 2.4v-3.5v -Operational Current : 100-200ma -Battery Type : 9V 6F22 Battery -Standby Current : 25ma -Charging Time : >10H -Working Hours : 40H -Working Temperature : -25C - 60C - Light Indicator -Double Alarm Mode	No	2	
11	Supply Installation Testing and commissioning of Bi- directional Turnstile with following specification: Passage width : 520mm Throughput rate : 35 p/m Power supply : 100 ~ 240V Operational voltage : 24V Max power consumption : 30 W Frequency : 50 ~ 60hz Protection level : IP44 Working temperature : -25°C ~ +70°C Electro - magnetic drive : DC	No	2	
Carried Forward			INR	
Section 4 - Electrical Works Bill No. 16 Access Control System SAS/JVNC/GTAC/DIRCO				

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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	Brought Forward		INR	
12	Supply Installation Testing and commissioning of Boom Barrier with following specification: -Electromechanical automatic barrier -Lane width support 2 to 6 meters -Opening time 2.2 to 4 seconds -Motor type 24V -Switching power supply -No -Type of use : Intensive/very intensive -Movement control Encoder -Barrier configuration 2 separate springs -Top cover Removable -Control board position: Under the cap -Manual unlock : Special key -Operating temperature range :-20°C to +55°C -Protection rating :IP54 -Boom type::ES + PS compatible -Barrier clamp, casing for hand protection -Lower and upper protective rubber strip -Base plate -Rest fork for booms -2 Way Push Button -Pair of photocell -LOOP DETECTOR -Long Range RFID Reader - Compliances : a. EN60335-1:2012+A11:2014 b. EN60335-2-103:2015 c. EN62233:2008 d. EN61000-6-3:2007+A1:2007 e. EN61000-6-2:2005 f. EN300 220-2:2018 g. 2014/53/EU h. 2011/65/EU i. 2015/863/EU j. 2017/2102/EU k. 2006/42/CE	No	2	
	Carried Forward to Summary of Section No. 4			
	Section 4 - Electrical Works			
	Bill No. 16			
	Access Control System			
	SAS/JVNC/GTAC/DIRCO			
			INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 17 INTRUSION DETECTION SYSTEM AT RESIDENCY</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)			
1	Supply Installation Testing and commissioning of fully integrated Intrusion Alarm Panel with With the ability to adapt to large and small applications. The panel should have following capability: Number of points : 599 Number of areas : 32 Number of events : 10,192 Number of on-board outputs: 8 Number of users : 2,001 Number of custom functions : 32 Remote Programming CApacity Inbuilt Ethernet Port for Communication Dual Network Communication topology 3rd party Integratio facility Inbuilt Scheduled Events Esecution Dual Authentication security Current consumption (mA) 180 mA – 260 mA Input voltage (VAC) 16.50 VAC – 18 VAC Maximum auxiliary output current (mA) 1,400 mA Nominal voltage (VDC) 12 VDC GSM Communication Inbuilt UL & CE Certified The panel should be complete in terms of Enclosures, Power supplies & Batteries	No	1	
	Carried Forward			
	Section 4 - Electrical Works Bill No. 17 Intrusion Detection System - Residence SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
2	Supply Installation Testing and commissioning of Intrusion Keypad The Panel should have 2 Line LCD Display. The panel should have should have Arm/ready to arm, all/part, trouble, and power status indicators The keypad has a built-in sounder that produces several distinct audible warning tones. Each audible tone sounds different, so users can recognize an event by hearing its unique tone. The keypad should have support from multiple languages Should be CE, UL Compliant. Should be from same OEM as Main control system.	No	4		
3	Supply Installation testing & Commissioning of 8 point expansion device that connects to the control panel The eight inputs which may be Normally Open (NO), or Normally Closed (NC) with 1k Ω EOL resistor(s) for supervision. This module should be fully supervised and should communicate back to the control panel all point status changes. Should be CE, UL Compliant. The module expansion points should operate the same as the points on the control panel.	No	7		
4	Supply Installation testing & Commissioning of shock detector The sensor should have 3-Axis Vibration detection Detection The sensor should have dual color LED indication The sensor should have a Self Learning mode for Sensitivity Adjustment Sensitivity should be configurable to drilling, Sawing or similar types of vibration The sensor should be CE Compliant	No	22		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 17 Intrusion Detection System - Residence SAS/JVNC/GTAC/DIRCO					

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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	Brought Forward			INR	
5	Supply Installation testing & Commissioning of Magnetic Contact Sensor The sesnsor should have deactivated rhodium reed switch The sensor Switch Configuration should be of Single pole single throw (SPST) type with Maximum The sesnsor should have Contact Resistance: 150 $\mu\Omega$ (micro-ohm) The sesnsor should have Contact Capacity: 10 VAC The sesnsor should have Electrostatic Cap: 0.3 PF The sensor should be UL & CE Compliant	No	7		
6	Supply Installation testing & Commissioning of Acoustic Glass Break Sensor The sensor should uses microprocessor-based sound analysis technology to listen for the specific frequencies associated with breaking glass. The sensor should detect breakage of plate, tempered, laminated and wired glass types. The sensor should have Automatic environmental test circuitry The sensor should be CE & UL compliant.	No	3		
7	Supply Installation testing & Commissioning of Outdoor PIR Curtain sensor The sensor should have Digital Anti-Masking capability The sensor should have 5m detector length Limit The sensor should have a detectable range of 0.3 - 1.5 m/s (1' - 4'11"/s) The detector should have a 190° horizontal flexibility The detector should have Multi Dimension Analysis Logic The detector should be CE & UL Compliant	No	5		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 17 Intrusion Detection System - Residence SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
8	Supply Installation testing & Commissioning of Outdoor PIR Boundry sensor The sensor should have Digital Anti-Masking capability The sensor should have coverage of 4 zones, 2 zones on each side The sensor should have the detection range of 2.5-12m on each side. Each side can be configured independently. The sensor should have a detectable range of 0.3 - 2.0 m/s (1' - 6'7"/s) The detector should have variable sentivity The detector should have Multi Dimension Analysis Logic The detector should be CE & UL Compliant	No	4		
9	Supply Installation testing & Commissioning of Outdoor Siren & Strobe The unit should have Twin Piezo Sounders Producing 115dB(A) The unit should have High Brightness LED Strobe The unit should be IP65 Sealed Electronics Module The unit should have Wall, Lid & Screw Tamper Detection The unit should have Battery Monitoring with Fault Output The unit should be PD6662:2010 Grade 3 Class IV The unit should be EN50131-1, EN50131-4 Grade 3 Class IV	No	1		
10	Supply Installation testing & Commissioning of wired panic hold up button When activated he unit sends a panic alarm signal to the monitoring system. The unit should be CE Compliant	No	6		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 17 Intrusion Detection System - Residence SAS/JVNC/GTAC/DIRCO					

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	Brought Forward		INR
11	Supply of Intrusion Alarm Cable Size : 7/0.39 X 6 Core Sheathed Cable Inner Conductor : Annealed Bare Copper Conductor Type : Multi Strand Size : 1 \ 0.13 mm (7 wires of 0.13 mm) Core Dia : 0.90 mm (nominal)	m	2 000
Carried Forward to Summary of Section No. 4 Section 4 - Electrical Works Bill No. 17 Intrusion Detection System - Residence SAS/JVNC/GTAC/DIRCO			INR

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 4</u> <u>BILL NO. 18 PERIMETER INTRUSION DETECTION SYSTEM</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST)			
1	Supply Installation Testing and commissioning of fully integrated Intrusion Alarm Panel with With the ability to adapt to large and small applications. The panel should have following capability: Number of points : 599 Number of areas : 32 Number of events : 10,192 Number of on-board outputs: 8 Number of users : 2,001 Number of custom functions : 32 Remote Programming CApacity Inbuilt Ethernet Port for Communication Dual Network Communication topology 3rd party Integratio facility Inbuilt Scheduled Events Esecution Dual Authentication security Current consumption (mA) 180 mA – 260 mA Input voltage (VAC) 16.50 VAC – 18 VAC Maximum auxiliary output current (mA) 1,400 mA Nominal voltage (VDC) 12 VDC GSM Communication Inbuilt UL & CE Certified The panel should be complete in terms of Enclosures, Power supplies & Batteries	No	1	
	Carried Forward		INR	
	Section 4 - Electrical Works Bill No. 18 Perimeter Intrusion Detection System SAS/JVNC/GTAC/DIRCO			

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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	Brought Forward			INR	
2	Supply Installation Testing and commissioning of Intrusion Keypad The Panel should have 2 Line LCD Display. The panel should have should have Arm/ready to arm, all/part, trouble, and power status indicators The keypad has a built-in sounder that produces several distinct audible warning tones. Each audible tone sounds different, so users can recognize an event by hearing its unique tone. The keypad should have support from multiple languages Should be CE, UL Compliant. Should be from same OEM as Main control system	No	4		
3	Supply Installation testing & Commissioning of point expansion device that connects to the control panel The module should provide point identification of initiating devices This module should be fully supervised and should communicate back to the control panel all point status changes. The module Supervises wiring to devices for circuit integrity Should be CE, UL Compliant. The module expansion points should operate the same as the points on the control panel.	No	4		
4	Supply Installation testing & Commissioning of expansion module that connects to the control panel The module should point identification for up to 100 connected addressable initiating devices This module should be fully supervised and should communicate back to the control panel all point status changes. The module Supervises wiring to devices for circuit integrity Should be CE, UL Compliant. The module expansion points should operate the same as the points on the control panel.	No	1		
Carried Forward				INR	
Section 4 - Electrical Works Bill No. 18 Perimeter Intrusion Detection System SAS/JVNC/GTAC/DIRCO					

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	Brought Forward		INR	
5	Supply Installation testing & Commissioning of Photo Electric Detector with power supply The module should have detection range of 60m/200ft. The module should have Quad beam detection The module should have Double modulated beam to enhance signal discrimination against potential interferences The module should have 4 channel beam frequency selector The module should have Alignment level indicator The module should have Automatic transmit power control The module should be IP65 rated The sensor should be UL Compliant	No	2	
6	Supply Installation testing & Commissioning of Photo Electric Detector with power supply The module should have detection range of 100m/350ft. The module should have Quad beam detection The module should have Double modulated beam to enhance signal discrimination against potential interferences The module should have 4 channel beam frequency selector The module should have Alignment level indicator The module should have Automatic transmit power control The module should be IP65 rated The sensor should be UL Compliant	No	2	
7	Supply of Intrusion Alarm Cable Size : 7/0.39 X 6 Core Sheathed Cable Inner Conductor : Annealed Bare Copper Conductor Type : Multi Strand Size : 1 \ 0.13 mm (7 wires of 0.13 mm) Core Dia : 0.90 mm (nominal)	m	500	
Carried Forward to Summary of Section No. 4				INR
Section 4 - Electrical Works Bill No. 18 Perimeter Intrusion Detection System SAS/JVNC/GTAC/DIRCO				

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Item No		Quantity	Rate	Amount															
	<u>SECTION NO. 5</u> <u>BILL NO. 1 HVAC WORKS CHANCERY</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>AC EQUIPMENT</u> <u>Supply,Installing,testing & commissioning of modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling, having all hermetically sealed inverter type Scroll Compressor (s), minimum two compressors for above 14HP modules, microprocessor based Controller ,top discharge type condensing unit(s),with R410A Refrigerant ,vibration isolators,with suitable foundation etc.complete as required.The unit shall deliver the rated capacity at AHRI Conditions and work even at 52°C ambient temperature without tripping.The unit shall be suitable to work on 400V+/-10%,3 Phase,50 Hz AC power supply.The unit shall be filled with first charge of the refrigerant and ready for use as required. The COP at AHRI conditions shall be 4.2 and IEER not less than 6.5 Actual capacity of below ODU to be deliver at 45°C ambient condition</u> <u>Outdoor Units</u> <table> <tr> <td>1</td><td>36 HP</td><td>No</td><td>1</td><td></td></tr> <tr> <td>2</td><td>26 HP</td><td>No</td><td>1</td><td></td></tr> <tr> <td>3</td><td>24 HP</td><td>No</td><td>2</td><td></td></tr> </table> <u>VRV DUCTABLE UNIT</u>	1	36 HP	No	1		2	26 HP	No	1		3	24 HP	No	2				
1	36 HP	No	1																
2	26 HP	No	1																
3	24 HP	No	2																
	Carried Forward Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO		INR																

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	Brought Forward			INR	
	<u>Supply, installation ,testing and commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted ductable type Indoor unit equipped with washable synthetic media pre-filter ,fan section with low noise fan/dynamically balanced blower ,multi speed motor, coil section with DX copper coil,electronic expansion valve,corded remote control,outer cabinet,vibration isolators,drain pan,other necessary supports etc.,suitable for operation on single phase AC supply 230V±10% ,50Hz complete as required.The unit shall have automatic force shut down provision in case of fire on receiveing signal from BMS System.The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature.</u>				
4	7.98 TR Ceiling Suspended unit	No	2		
5	6.4 TR Ceiling Suspended unit	No	2		
6	5.4 TR Ceiling Suspended unit	No	2		
7	4.5 TR Ceiling Suspended unit	No	2		
	<u>CASSATTE UNIT</u>				
	<u>Supply, installation ,testing and commissioning of following minimum capacity 1-way flow VRV/VRF Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration isolation, cord less remote control etc., suitable for operation on single phase 230 V ± 10%, 50Hz AC supply, complete, as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature.</u>				
8	0.8 TR four way cassatte unit	No	6		
9	1.0 TR four way cassatte unit	No	9		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
10	1.28 TR four way cassatte unit	No	4		
11	1.6 TR four way cassatte unit	No	4		
12	2.1 TR four way cassatte unit	No	4		
13	2.5 TR four way cassatte unit	No	1		
	<u>HI-WALL UNITS</u>				
	<u>Supply, installation, testing and commissioning of following minimum capacity VRV/VRF High wall type Indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, outer cabinet, cord less remote control, drain pan, necessary accessories etc., suitable for operation on 230 V ± 10%, 50 Hz, single phase AC supply, complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature.</u>				
14	1.0 TR Hi wall unit	No	3		
15	2.0 TR Hi wall unit	No	2		
	<u>ERV UNIT (ENERGY RECOVERY VENTILATION)</u>				
	<u>Supply, Installation, testing and commissioning of ceiling suspended double skin type Energy Recovery ventilation unit with 42mm thick insulation having multiple stage of filtration on supply side ERV have 3A Energy Recovery Wheel and EC Fans Suitable for power supply 220-240V/1Ph/50-60 Hz</u>				
16	500 CFM	No	2		
17	400 CFM	No	2		
18	350 CFM	No	2		
19	300 CFM	No	1		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
20	250 CFM	No	1		
21	200 CFM	No	1		
	<u>Y-Branches</u>				
	<u>Supply,Installation, testing and commissioning of Refne joint (Y-Branches) branch distributors with Variable refrigerant flow distribution couplings for refrigerant piping in copper piping. The bidder shall consider the required diameter of the refnet joint as required for the system to get connected by refrigerant piping of suitable guage for it to function satisfactorily without leakage through the joints. cost shall also include insulation of 19mm / 13mm thick nitrile rubber closed type tubular form.</u>				
22	(Y-Branches)	No	100		
23	Supply,installation, tesing & commistioning of channel iron 75mm x 40 mm x 6 mm (7.14 Kg/Meter) for VRV outdoor Unit as per specification.	kg	300		
24	Supply,Installation, testing and commissioning of Suitable capacity of Digital Centralized controller including wiring and all acesseries for VRV system for both indoor & outdoor unit as per technical spcification			SUM	
	<u>Control & Transmission Wiring:- Supply, laying and installation of control Cable copper in suitable conduits between indoor and out door unit. Including fixing clamps & proper connections to equipments etc. complete as required</u>				
25	2C x 0.75 Sq.mm	m	1 000		
26	Supply,Installation, testing and commissioning of Display and sensors for CO2 and PM 2.5 & PM 1	No	5		
	<u>REFRIGERENT & DRAIN PIPING</u>				
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Supplying, installing, testing and commissioning interconnecting refrigerant copper pipe work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation (Class-"O") between each set of indoor & outdoor units as per specifications, all piping inside the building shall be properly supported with MS hanger. refrigerant pipe insulation shall be cover with UL certified UV protective coating with 7 mill fiber glass cloth with two Coat system. Protective Coating shall be UL classified and should conform to UL for surface burning characteristics.The Protective Coating should conform to ASTM D 5590 standard for fungal resistance.</u>				
27	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	120		
28	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	200		
29	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	140		
30	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	240		
31	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	60		
32	22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	50		
33	28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	m	40		
34	34.9 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	m	80		
35	41.3 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	m	30		
	<u>CONDENSATE DRAIN PIPING</u>				
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Supplying, installing, testing and commissioning, rigid PVC piping complete with fittings, supports as per specifications and duly insulated with 6 mm thick closed cell nitrile rubber insulation.</u>				
36	25 mm dia	m	220		
37	32 mm dia	m	140		
38	40 mm dia	m	80		
	<u>AIR DISTRIBUTION</u>				
	<u>Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.</u>				
	<u>(It shall be as per SMACNA standards)</u>				
39	Thickness 24 G Galvanized Sheet Steel Ducting	m2	680		
40	Supply, fabrication, installation and testing the flexible connections constructed of fire resistance flexible double canvas sleeve as per the approved shop drawings.	m2	1		
41	Supply, Installation, Testing and Commissioning of GI volume control dampers duct damper complete with neoprene rubber gasket ,nuts ,bolts,screws linkage, flanges etc, as per specifications.	m2	2		
42	Supply, Installation, Testing and Commissioning of Collar Damper as per specifications	m2	1		
43	Supply & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications	m2	2		
44	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required	m2	1		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
45	Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core	m2	1		
46	Supply, Installation, Testing & Commissioning of linear supply cum return air grilles complete with fixed inner core	m2	12		
47	Supply, installation, testing and balancing of powder coated /Anodised extruded aluminium construction louvers with bird screen for fresh/exhaust air as per specifications and approved drawings.	m2	8		
<u>THERMAL INSULATION & ACCOUSTIC LINING</u>					
<u>Supply & fixing of following thickness duly laminated aluminium foil of matt finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joint Shall be sealed with 50mm wide and 3mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required above. Valves should have pressure rating of 25 Bar minimum</u>					
48	19 mm	m2	600		
49	Supply and fixing of acoustic lining of supply air duct and plenum with 25mm thick resin bonded glass wool having density of 32kg/m3 with 25mm x 25mm GI Section of 1.25m thick, at 600mm centre to centre covered with Reinforced Plastic tissues and 0.5mm thick perforated aluminium sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications.	m2	100		
<u>VENTILATION</u>					
<u>AXIAL FLOW FANS</u>					
Carried Forward				INR	
Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
	<u>Supply, Installation, Testing and Commissioning of Long Casing (motor should completely accommodated inside the casing) AXIAL FANS for exhaust air suitable for installing in any position in Horizontal or vertical. Fan shall be AMCA Certified. The motor shall be of class F/H (H class wherever specified in the item, to withstand a temperature of 250 degree celcius for 2 hours) suitable for 415 V $\pm$ 10% volts three phase 50cycle, AC supply & meeting criterion as per ASHRAE standard 90.1-2010 and high efficiency (IS 12615). The fan shall be equipped with mounting bracket Inlet & outlet cone required at discharge. The fan shall be low RPM (less than 1450 RPM) and capacities shall be as follows:-</u> Duty :-Axial Flow Fan for Lift Well Pressurization Air Quantity : 5000 CFM Static Pressure : 25 mm wg				
50	Fan Motor H.P: 2.5 H.P Class-F Motor	No	1		
	Duty :-Axial Flow Fan for Lift Well Pressurization Air Quantity : 6000 CFM Static Pressure : 25 mm wg				
51	Fan Motor H.P: 2.5 H.P Class-F Motor	No	1		
	Duty :-Axial Flow Fan for Lift Lobby Pressurization Air Quantity : 7500 CFM Static Pressure : 25 mm wg				
52	Fan Motor H.P: 2.5 H.P Class-F Motor	No	1		
	Duty :-Axial Flow Fan for Staircase Pressurization Air Quantity : 7500 CFM Static Pressure : 25 mm wg				
53	Fan Motor H.P: 2.5 H.P Class-F Motor	No	1		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
	<u>PROPELLER FAN</u> <u>Supplying, installing, testing and commissioning of direct driven PROPELLER FANS for exhaust air . Each fan shall be complete with permanent split capacitor or shaded pole motor, mounting plate with light weight type PVC /aluminium impellers with aerofoil contours for high efficiency & low noise and with wooden frames & gravity louvers for weather protection as required. Fan selection arrangement and Electrical characteristics shall be as follows :</u>			
54	220 CFM, 200 RPM fan suitable for 220 ± 5% volts 50 cycles, 1 phase AC <u>INLINE FANS</u> <u>Supplying, installing, testing and commissioning of INLINE FANS suitable for installing in any position in vertical or horizontal ducts. The casing shall be double skin, internally acoustically lined and constructed of galvanised steel. The fan shall be DIDW with forward curve impeller fitted with maintenance free external rotor motor. The motor shall be suitable for 220±5% /415±10% volt single phase /three phase 50 cycles AC supply & meeting criterion as per ASHRAE standard 90.1-2010 and high efficiency (IS 12615). Quoted price shall be inclusive of electronic speed regulator and wiring between fan & speed regulator for single phase fans. Incase of 3 phase fans quoted price shall be inclusive of DOL starter panel (As per motor HP meeting our parametres) with cabling between starter panel and fan. The incoming power supply to speed regulator / starter panel shall be provided by electrical contractor. Fan along with cabinet should be AMCA certified. Noise level should not exceed 65 DB at 3 meter in room condition. PCC/RCC foundation with plaster, other mounting arrangement, Antivibration arrangement of cushy foot mountings etc. complete in all respect shall be in contractor's scope.</u> Duty Store Exhaust Air Quantity : 250 CFM	No	2	
	Carried Forward		INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO			

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Brought Forward			INR
55	Static Pressure : 20 mm wg Duty Toilet Exhaust Air Quantity : 200 CFM	No	2
56	Static Pressure : 20 mm wg Duty - Toilet Male Air Quantity : 150 CFM	No	4
57	Static Pressure : 20 mm wg	No	2
Carried Forward to Summary of Section No. 5 Section 5 - Heating Ventilation and Air-Conditioning Bill No. 1 HVAC - Chancery SAS/JVNC/GTAC/DIRCO			INR

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Item No		Quantity	Rate	Amount															
	<u>SECTION NO. 5</u> <u>BILL NO. 2 HVAC WORKS OFFICIAL RESIDENCE</u> <u>PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>AC EQUIPMENT</u> <u>Supply,Installing,testing & commissioning of modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling, having all hermetically sealed inverter type Scroll Compressor (s), minimum two compressors for above 14HP modules, microprocessor based Controller ,top discharge type condensing unit(s),with R410A Refrigerant ,vibration isolators,with suitable foundation etc.complete as required.The unit shall deliver the rated capacity at AHRI Conditions and work even at 52°C ambient temperature without tripping.The unit shall be suitable to work on 400V+/-10%,3 Phase,50 Hz AC power supply.The unit shall be filled with first charge of the refrigerant and ready for use as required. The COP at AHRI conditions shall not be less than 4.2 and IEER not less than 6.5 Actual capacity of beloow ODU to be deliver at 45°C ambient condition</u> <u>Outdoor Units</u> <table> <tr> <td>1</td><td>12 HP</td><td>No</td><td>1</td><td></td></tr> <tr> <td>2</td><td>10 HP</td><td>No</td><td>1</td><td></td></tr> <tr> <td>3</td><td>4 HP</td><td>No</td><td>1</td><td></td></tr> </table> <u>VRV DUCTABLE UNIT</u>	1	12 HP	No	1		2	10 HP	No	1		3	4 HP	No	1				
1	12 HP	No	1																
2	10 HP	No	1																
3	4 HP	No	1																
	Carried Forward Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO		INR																

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	Brought Forward			INR	
	<u>Supply, installation ,testing and commissioning of following minimum capacity and external static pressureVRF/VRVceiling mounted ductable type Indoor unit equipped with washable synthetic media pre-filter ,fan section with low noise fan/dynamically balanced blower ,multi speed motor, coil section with DX copper coil,electronic expansion valve,corded remote control,outer cabinet,vibration isolators,drain pan,other necessary supports etc.,suitable for operation on single phase AC supply 230V±10% ,50Hz complete as required.The unit shall have automatic force shut down provision in case of fire on receiveing signal from BMS System.The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature.</u>				
4	3.1 TR Ceiling Suspended unit	No	1		
5	2.64 TR Ceiling Suspended unit	No	1		
6	2.1 TR Ceiling Suspended unit	No	4		
7	1.65 TR Ceiling Suspended unit	No	3		
8	1.33 TR Ceiling Suspended unit	No	1		
	<u>CASSATTE UNIT</u>				
	<u>Supply, installation ,testing and commissioning of following minimum capacity 1-way flow VRV/VRF Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration isolation, cord less remote control etc., suitable for operation on single phase 230 V ± 10%, 50Hz AC supply, complete, as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature.</u>				
9	1.6 TR one way cassatte unit	No	3		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
10	1.0 TR one way cassatte unit	No	1		
11	Supply, installation ,testing and commissioning of one-way cassette unit Inverter Type - 1.6 TR (R410 A) supply air cooled unit	No	1		
12	Supply, installation ,testing and commissioning of Hi wall unit Inverter Type - 1.0 TR (R410 A) supply air cooled unit	No	1		
	<u>ERV UNIT (ENERGY RECOVERY VENTILATION)</u>				
	<u>Supply, Installation, testing and commissioning of ceiling suspended double skin type Energy Recovery ventilation unit with 42mm thick insualtion having multiole stage of filtration on supply side ERV have 3A Energy Recovery Wheel and EC Fans Suitable for power supply 220-240V/1Ph/50-60 Hz</u>				
13	382 CFM	No	1		
14	294 CFM	No	1		
	<u>TREATED FRESH AIR UNIT</u>				
	<u>Supply, Installation, testing and commissioning of factory fabricated double skin type Treated Fresh Air Units (BMS compatible) as per specifications given below:-</u>				
	TFA Construction:- It shall be made out of min. 0.8 mm pre-plasticized/pre-coated Galvanised steel sheet outside & 0.8 mm plain GSS sheet inside with 43 mm thick PUF insulation factory injected between them by injection moulding m/c, with density not less than 38 kg/Cum between them. Drain pan (made out of 1.25 mm stainless steel (SS Grade 304) sheet insulated with 19 mm think closed cell insulation(Nitrile/XLPE) & thermal break profile. as per specification anti vibration pads shall be provided & cost for the same shall be included in this item.Necessary foundation required will be required and cost shall be excluded.				
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	Supply Air Stream:- 1) Filter section consisting of pre filter and microvee/fine filter . Pre-filter section shall be with non woven synthetic media of 10 micron particle size with an efficiency of 90%, fine/microvee filter section will be with filters of non woven synthetic media of 3 micron particle size of efficiency 99%. 2) Plug Fan (with min. 70% efficiency) with blower motor, drive and flexible duct connection. 3) 8 row deep cooling coil 4) Necessary potential free contacts shall be provided for BMS operation. 5) Discharge plenum section. COIL- Copper tubes and Aluminium fins 12-13 fin./inch, Coil size shall be selected for air velocity of 500 ft/minute & velocity across filters at 500 ft/minute. Motors shall be suitable for 415 ± 10% volts, 50 Hz, 3 phase AC supply & high efficiency(EFF-1/IE-2). Vibration isolation shall be as per specifications and as shown on the drawings.				
15	T.F.A. AHU 150 CFM.@25mm wg	No	1		
	<u>Y-Branches</u>				
	<u>Supply,Installation, testing and commissioning of Refne joint (Y-Branches) branch distributors with Variable refrigerant flow distribution couplings for refrigerant piping in copper piping. The bidder shall consider the required diameter of the refnet joint as required for the system to get connected by refrigerant piping of suitable guage for it to function satisfactorily without leakage through the joints. cost shall also include insulation of 19mm / 13mm thick nitrile rubber closed type tubular form.</u>				
16	(Y-Branches)	No	50		
17	Supply,installation, tesing & commistioning of channel iron 75mm x 40 mm x 6 mm (7.14 Kg/Meter) for VRV outdoor Unit as per specification.	kg	250		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
18	Supply, Installation, testing and commissioning of Suitable capacity of Digital Centralized controller including wiring and all accessories for VRV system for both indoor & outdoor unit as per technical specification			SUM	
	<u>Control & Transmission Wiring:- Supply, laying and installation of control Cable copper in suitable conduits between indoor and out door unit. Including fixing clamps & proper connections to equipments etc. complete as required</u>				
19	2C x 0.75 Sq.mm	m	400		
20	Supply, Installation, testing and commissioning of Display and sensors for CO2 and PM 2.5 & PM 1	No	2		
	<u>REFRIGERENT & DRAIN PIPING</u>				
	<u>Supplying, installing, testing and commissioning ,interconnecting refrigerant copper pipe work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation (Class-"O") between each set of indoor & outdoor units as per specifications, all piping inside the building shall be properly supported with MS hanger. refrigerant pipe insulation shall be cover with UL certified UV protective coating with 7 mill fiber glass cloth with two Coat system. Protective Coating shall be UL classified and should conform to UL for surface burning characteristics. The Protective Coating should conform to ASTM D 5590 standard for fungal resistance.</u>				
21	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	60		
22	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	90		
23	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	80		
24	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	65		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
25	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	30		
26	22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 13 mm thick insulation	m	25		
27	28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	m	40		
	<u>CONDENSATE DRAIN PIPING</u>				
	<u>Supplying, installing, testing and commissioning, rigid PVC piping complete with fittings, supports as per specifications and duly insulated with 6 mm thick closed cell nitrile rubber insulation.</u>				
28	25 mm dia	m	60		
29	32 mm dia	m	40		
	<u>AIR DISTRIBUTION</u>				
	<u>Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.</u> <u>(It shall be as per SMACNA standards)</u>				
30	Thickness 24 G Galvanized Sheet Steel Ducting	m2	250		
31	Supply, fabrication, installation and testing the flexible connections constructed of fire resistance flexible double canvas sleeve as per the approved shop drawings.	m2	1		
32	Supply, Installation, Testing and Commissioning of GI volume control dampers duct damper complete with neoprene rubber gasket ,nuts ,bolts,screws linkage, flanges etc, as per specifications.	m2	1		
33	Supply, Installation, Testing and Commissioning of Collar Damper as per specifications	m2	1		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
34	Supply & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications	m2	1		
35	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required	m2	1		
36	Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core	m2	1		
37	Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	m2	1		
38	Supply, Installation, Testing & Commissioning of linear supply cum return air grilles complete with fixed inner core	m2	4		
39	Supply, installation, testing and balancing of powder coated /Anodised extruded aluminium construction louvers with bird screen for fresh/exhaust air as per specifications and approved drawings.	m2	1		
	<u>THERMAL INSULATION & ACCOUSTIC LINING</u>				
	<u>Supply & fixing of following thickness duly laminated aluminium foil of matt finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joint shall be sealed with 50mm wide and 3mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required above. Valves should have pressure rating of 25 Bar minimum</u>				
40	19 mm	m2	220		
	Carried Forward			INR	
	Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
41	Supply and fixing of accoustic lining of supply air duct and plenum with 25mm thick resin bonded glass wool having density of 32kg/m3 with 25mm x 25mm GI Section of 1.25m thick, at 600mm centre to centre covered with Reinforced Plastic tissues and 0.5mm thick perforated aluminium sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications. <u>VENTILATION</u> <u>PROPELLER FAN</u> <u>Supplying, installing, testing and commissioning of direct driven Ceiling Suspended PROPELLER FANS for exhaust air . Each fan shall be complete with permanent split capacitor or shaded pole motor, mounting plate with light weight type PVC /aluminium impellers with aerofoil contours for high efficiency & low noise and with wooden frames & gravity louvers for weather protection as required. Fan selection arrangement and Electrical characteristics shall be as follows :</u>	m2	60		
42	220 CFM, 200 RPM fan suitable for 220 ± 5% volts 50 cycles, 1 phase AC	No	8		
Carried Forward to Summary of Section No. 5 Section 5 - Heating Ventilation and Air-Conditioning Bill No. 2 HVAC - Residence SAS/JVNC/GTAC/DIRCO				INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 6</u> <u>BILL NO. 1 SUPPLY OF SANITARY FIXTURE AND C.P. FITTINGS</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Supply of white vitreous china wall mounting water closet of approved shape including providing and fixing concealed cistern and plate with dual flush capacity 2/4 litre, including seat cover and cistern fitting nut , bolt and gasket etc. complete. (western wall mounting water closet)</u>			
1	WC for Chancery Block as per annexure D-Chancery attached	No	18	
2	Disable Friendly WC as per annexure D - Chancery attached	No	7	
3	WC for OR as per annexure D- OR attached	No	10	
4	Supply of low flow type two way bib cock and flow restrictor 6 LPM at 3 Bar Pressure as per approved make complete in all respect as per engineer in the charge. (Only for EWC.)	No		Rate Only
	Carried Forward Section 6 - Plumbing & Drainage Bill No. 1 Supply of Sanitary Fittings SAS/JVNC/GTAC/DIRCO		INR	

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Brought Forward			INR
	<u>Supply of white vitreous china wash basin with CP brass waste assembly, CP cast brass bottle trap with CP extension piece, wall flanges and rubber adapters for waste connection complete including CI/MS brackets and duly painted, wall flange and union complete, including nuts, washers including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:</u>		
5	White vitreous rectangular/circular type Over counter wash basin for OR as per annexure D attached	No	12
6	White vitreous rectangular/circular type Under counter wash basin for Chancery Building as per annexure D attached	No	26
7	White vitreous rectangular/circular typewall mount wash basin f as per annexure D- Chancery & OR attached	No	6
8	Supply of white vitreous china urinal including installation of electrical based infrared sensor flushing with water (500 ml max. consumption), having water inlet from back side, including concealed drainage fixing to wall as may be required with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge. Refer to Annexure D-Chancery attached:	No	8
	<u>Supply of stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.</u>		
9	White Agaria Marble Stone	No	4
	<u>Supply of Wall Mounted C.P. Brass single lever Basin Mixer with:</u>		
10	Spout of required size including cutting and making good the wall wherever required. as per annexure D - Chancery & OR attached	No	14
Carried Forward			INR
Section 6 - Plumbing & Drainage Bill No. 1 Supply of Sanitary Fittings SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
11	Sensor based spout as per annexure D attached	No	28		
	<u>Supply of Stainless Steel AISI 304 (18/8) kitchen sink as per IS: 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required</u>				
12	Double bowl Kitchen sink as per annexure D - OR attached	No	1		
13	Single bowl in Chancery as per annexure D - Chancery attached	No	4		
14	Single bowl as per annexure D - OR attached	No	3		
15	Single bowl with drainboard as per annexure D - OR attached	No	1		
	<u>Supply of Wall Mounted C.P. Brass Sink Mixer single hole / single lever with:</u>				
16	Swinging casted spout of required size including cutting and making good the wall wherever required. as per annexure D - Chancery & OR attached	No	5		
17	Swinging casted spot with pullout extention as per annexure D - Chancery attached	No	4		
18	Supply of 15mm nominal bore of C.P. brass long body bib cock of approved quality conforming to IS:8931 as per direction of Engineer-Incharge: (For Janitor Sink)	No			Rate only
19	Supply of 15 mm dia of C.P. brass angle valve of standard design and of approved make conforming to IS:8931 as per manufacturers specification and direction of Engineer-in-charge. as per annexure D - Chancery & OR attached	No	73		
20	Supply of C.P. brass flexible or 375 mm with angle valve to tap connection pipe of approved quality as per manufacturers specification and direction of Engineer-in-charge.	No	38		
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 1 Supply of Sanitary Fittings SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
21	Supply of 15mm pillar tap of wash basin of approved quality and direction of Engineer-in-charge.	No		Rate only
22	Supply of 15mm nominal bore (Only for road washing, car washing & floor washing like basement & stilt) of C.P. brass bib cock of approved quality conforming to IS:8931 and direction of Engineer-in-charge.	No		Rate only
23	Supply of C.P brass toilet paper holder of approved quality and direction of Engineer-in-charge. as per annexure D - Chancery & OR attached	No	35	
24	Supply of Health faucet with 1 m of C.P. brass flexible pipe and direction of Engineer-in-charge. as per annexure D - Chancery & OR attached	No	35	
25	Supply of C.P. brass robe hook approved quality and direction of Engineer-in-charge. as per annexure D - Chancery & OR attached	No	48	
26	Supply of liquid soap dispenser with auto sensor suitable for operation with less than 5 pounds of force complete with spout, shank, and fluid bottle complete in all respects including cutting and making good the walls required. as per annexure D attached	No	28	
27	Supply of fully automatic "NO TOUCH" durable & shock proof hand drier of approved make & manufacture suitable to operate on 220 volts, single phase 50 hz, A.C. power supply, 1500 Watt and directly plugged to power point complete in ABS plastic body having drying time 20-30 seconds complete as per direction of Engineer in Charge. (Only for public's toilet)	No		Rate only
	<u>Supply of following capacity of vertical or horizontal storage type hot water heater fixed to wall with anchor bolts & nuts, 15mm CP brass angle stop cock and 15mm CP brass non-return valve complete including making connections with 15mm dia CP connecting pipes on inlet and outlet, suitable length of power cable and 15 amps plug direction of Engineer-in-charge.</u>			
28	Capacity: 25 Ltr. (Only for bath areas) as per annexure D attached	No	3	
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 1 Supply of Sanitary Fittings SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
29	Capacity: 15 Ltr. (Only for Kitchen/Pantry areas) as per annexure D attached	No	7	
30	Capacity : 180 Ltr. Heat pump water heater (For centralised application) as per annexure D attached.	No	2	
	<u>Supply of C.P. brass shower assembly comprising of the following :</u>			
31	One no. concealed 3-way Diverter, one no, C.P. bath spout , shower rose with arm, hand shower with bracket, Lenier drain all complete including cutting and making good the wall wherever required as per Annexure D - Chancery	No	2	
32	Supply of shower assembly comprising of the following :one no. concealed 3-way Diverter, separate Thermostat, one no, C.P. bath spout , shower rose with arm, hand shower with bracket, lenier drain all complete including cutting and making good the wall wherever required as per Annexure D - OR	No	7	
33	Supply of Bath tub including thermostat driven bath mixer as per annexure D - OR	No	2	
34	Supply of 600mm Long size CP brass towel rail with CP brackets fixed to wooden cleats, PVC rawl plug with CP brass screws etc. including cutting and making good the wall wherever required. as per annexure D attached	No	10	
35	Supply of Chromium Plated towel ring Rectangular shape with concealed fittings arrangement of approved quality and colour, of approved brand & manufacture complete as per direction of Engineer in Charge.	No	13	
36	Supply of CP Brass soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.	No	13	
37	Supply of CP Brass towel rack with concealed fitting arrangements, as per Annexure D - OR	No	7	
38	Supply of Garbage crusher including all accessories, pipes, connections, clamps etc. as per Annexure D - OR	No	7	
	Carried Forward			
	Section 6 - Plumbing & Drainage Bill No. 1 Supply of Sanitary Fittings SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward		INR	
39	Supply of Stainless steel Grade 304, recess mounted Sanitary Napking Dispenser including Paper roll holder, Waste receptacle & Disposable bag dispenser including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: all complete. As per annexure D - Chancery	No	6	
40	Supply of Stainless steel Grade 304, recess mounted Toilet seat dispenser including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: as per annexure D - Chancery:	No	11	
41	Supply of Stainless steel Grade 304, recess mounted Washroom pannel consisting of in built Hand Dryer + Tissue Dispenser + Waste Receptacle including all internal electrical & nechanical equipment including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: all completet. As per annexure D - Chancery	No	17	
42	Supply of Stainless Steel Grade 304, Recess Moounted Tissue Dispenser + Waste Receptacle including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: all complete. As per annexure D - Chancery	No	4	
43	Supply of Stainless steel Grade 304, recess Mounted hand dryer ncluding all internal electrical & nechanical equipment including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: all completet. As per annexure D- Chancery:	No	4	
44	Supply of Stainless Settl Grade 304, Diaper changing station including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: all complete. As per annexure D - Chancery	No	4	
45	Supply of all safety equipment including , 90° Grab bar, Hinged arm grab rail, Manual call bells (2 nos), Vertical grab bar and any other accessories as per NBC requirement for Diable friendly toilet including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: all complete. As per annexure D - Chancery	No	4	
Carried Forward				
Section 6 - Plumbing & Drainage Bill No. 1 Supply of Sanitary Fittings SAS/JVNC/GTAC/DIRCO			INR	

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	Brought Forward		INR	
46	Supply of ready made Shower cubicles including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:all complete. As per detail specifications and drawings as per anneuxure D - Chancery attached. Refer to detail drawings for the public toilets for any clarity.	No	12	
47	Supply of retractable shower seat crafted with high-quality insulated stainless steel. Measuring 298mm x 202mm x 35mm, with a load carrying capacity of 150 kg load. the Stainless steel frameworks shall be concealed with premiumm-grade ABS construction ensures long-lasting performance and durability. Supply shall include all mounting kits & instruction mauals as provided by the manufacturer including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:	No	7	
Carried Forward to Summary of Section No. 6				
Section 6 - Plumbing & Drainage				
Bill No. 1				
Supply of Sanitary Fittings				
SAS/JVNC/GTAC/DIRCO				

**NEW CHANCERY AND OFFICIAL RESIDENCE IN NEW DELHI INDIA
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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 6</u> <u>BILL NO. 2 INSTALLATION OF SANITARY FIXTURE AND C.P. FITTINGS</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Receiving ,Handling Fixing ,Testing and Commissioning of white vitreous china wall mounting water closet of approved shape including providing and fixing concealed cistern and plate with dual flush capacity 2/4 litre, including seat cover and cistern fitting nut , bolt and gasket etc. complete. (western wall mounting water closet)</u>			
1	WC for Chancery Block as per annexure 2 attached	No	18	
2	Disable Friendly WC as per annexure 2 attached	No	7	
3	WC for OR as per annexure 1 attached	No	10	
4	Receiving ,Handling Fixing ,Testing and Commissioning of low flow type two way bib cock and flow restrictor 6 LPM at 3 Bar Pressure as per approved make complete in all respect as per engineer in the charge. (Only for EWC.)	No		Rate Only
	Carried Forward Section 6 - Plumbing & Drainage Bill No. 2 Installation of Sanitary Fittings SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
	<u>Receiving ,Handling Fixing ,Testing and Commissioning of white vitreous china wash basin with CP brass waste assembly, CP cast brass bottle trap with CP extension piece, wall flanges and rubber adapters for waste connection complete including CI/MS brackets and duly painted, wall flange and union complete, including nuts, washers including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:</u>				
5	White vitreous rectangular/circular type Over counter wash basin for OR as per annexure 1 attached	No	12		
6	White vitreous rectangular/circular type Under counter wash basin for Chancery Building as per annexure 2 attached	No	26		
7	White vitreous rectangular/circular typewall mount wash basin f as per annexure 1 & 2 attached	No	6		
8	Receiving ,Handling Fixing ,Testing and Commissioning of white vitreous china urinal including installation of electrical based infrared sensor flushing with water (500 ml max. consumption), having water inlet from back side, including concealed drainage fixing to wall as may be required with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge. Refer to Annexure 2 attached:	No	8		
	<u>Receiving ,Handling Fixing ,Testing and Commissioning of stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.</u>				
9	White Agarria Marble Stone	No	4		
	Carried Forward			INR	
Section 6 - Plumbing & Drainage Bill No. 2 Installation of Sanitary Fittings SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
	<u>Receiving ,Handling Fixing ,Testing and Commissioning of Wall Mounted C.P. Brass single lever Basin Mixer with:</u>				
10	Spout of required size including cutting and making good the wall wherever required. as per annexure 1 & 2 attached	No	14		
11	Sensor based spout as per annexure 1 & 2 attached	No	28		
	<u>Receiving ,Handling Fixing ,Testing and Commissioning of Stainless Steel AISI 304 (18/8) kitchen sink as per IS: 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required</u>				
12	Double bowl Kitchen sink as per annexure 1 attached	No	1		
13	Single bowl in Chancery as per annexure 2 attached	No	4		
14	Single bowl as per annexure 1 attached	No	3		
15	Single bowl with drainboard as per annexure 1 attached	No	1		
	<u>Receiving ,Handling Fixing ,Testing and Commissioning of Wall Mounted C.P. Brass Sink Mixer single hole / single lever with:</u>				
16	Swinging casted spout of required size including cutting and making good the wall wherever required. as per annexure 1 & 2 attached	No	5		
17	Swinging casted spot with pullout extention as per annexure 2 attached	No	4		
18	Receiving ,Handling Fixing ,Testing and Commissioning of 15mm nominal bore of C.P. brass long body bib cock of approved quality conforming to IS:8931 as per direction of Engineer-Incharge: (For Janitor Sink)	No			Rate Only
19	Receiving ,Handling Fixing ,Testing and Commissioning of 15 mm dia of C.P. brass angle valve of standard design and of approved make conforming to IS:8931 as per manufacturers specification and direction of Engineer-in-charge. as per annexure 1 & 2 attached	No	73		
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 2 Installation of Sanitary Fittings SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
20	Receiving ,Handling Fixing ,Testing and Commissioning of C.P. brass flexible or 3/4" with angle valve to tap connection pipe of approved quality as per manufacturers specification and direction of Engineer-in-charge.	No	38	
21	Receiving ,Handling Fixing ,Testing and Commissioning of 15mm pillar tap of wash basin of approved quality and direction of Engineer-in-charge.	No		Rate Only
22	Receiving ,Handling Fixing ,Testing and Commissioning of 15mm nominal bore (Only for road washing, car washing & floor washing like basement & stilt) of C.P. brass bib cock of approved quality conforming to IS:8931 and direction of Engineer-in-charge. (Assume)	No		Rate Only
23	Receiving ,Handling Fixing ,Testing and Commissioning of C.P brass toilet paper holder of approved quality and direction of Engineer-in-charge. as per annexure 1 & 2 attached	No	35	
24	Receiving ,Handling Fixing ,Testing and Commissioning of Health faucet with 1 m of C.P. brass flexible pipe and direction of Engineer-in-charge. as per annexure 1 & 2 attached	No	35	
25	Receiving ,Handling Fixing ,Testing and Commissioning of C.P. brass robe hook approved quality and direction of Engineer-in-charge. as per annexure attached	No	48	
26	Receiving ,Handling Fixing ,Testing and Commissioning of liquid soap dispenser with auto sensor suitable for operation with less than 5 pounds of force complete with spout, shank, and fluid bottle complete in all respects including cutting and making good the walls required. as per annexure attached	No	28	
27	Receiving ,Handling Fixing ,Testing and Commissioning of fully automatic "NO TOUCH" durable & shock proof hand drier of approved make & manufacture suitable to operate on 220 volts, single phase 50 hz, A.C. power supply, 1500 Watt and directly plugged to power point complete in ABS plastic body having drying time 20-30 seconds complete as per direction of Engineer in Charge. (Only for public's toilet)	No		Rate Only
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 2 Installation of Sanitary Fittings SAS/JVNC/GTAC/DIRCO			

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Brought Forward			INR
	<u>Receiving ,Handling Fixing ,Testing and Commissioning of following capacity of vertical or horizontal storage type hot water heater fixed to wall with anchor bolts & nuts, 15mm CP brass angle stop cock and 15mm CP brass non-return valve complete including making connections with 15mm dia CP connecting pipes on inlet and outlet, suitable length of power cable and 15 amps plug direction of Engineer-in-charge.</u>		
28	Capacity: 25 Ltr. (Only for bath areas) as per annexure attached	No	3
29	Capacity: 15 Ltr. (Only for Kitchen/Pantry areas) as per annexure attached	No	7
30	Capacity : 180 Ltr. Heat pump water heater (For centralised application) as per annexure attached.	No	2
	<u>Receiving ,Handling Fixing ,Testing and Commissioning of C.P. brass shower assembly comprising of the following :</u>		
31	One no. concealed 3-way Diverter, one no, C.P. bath spout , shower rose with arm, hand shower with bracket, Lenier drain all complete including cutting and making good the wall wherever required as per Annexure 2	No	2
32	one no. concealed 3-way Diverter, separate Thermostat, one no, C.P. bath spout , shower rose with arm, hand shower with bracket, lenier drain all complete including cutting and making good the wall wherever required as per Annexure 1	No	7
33	Bath tub including thermostat driven bath mixer as per annexure 1	No	2
34	Receiving ,Handling Fixing ,Testing and Commissioning of 600mm Long size CP brass towel rail with CP brackets fixed to wooden cleats, PVC rawl plug with CP brass screws etc. including cutting and making good the wall wherever required. as per annexure attached	No	10
Carried Forward			INR
Section 6 - Plumbing & Drainage Bill No. 2 Installation of Sanitary Fittings SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
35	Receiving ,Handling Fixing ,Testing and Commissioning of Chromium Plated towel ring Rectangular shape with concealed fittings arrangement of approved quality and colour, of approved brand & manufacture complete as per direction of Engineer in Charge.	No	13	
36	Receiving ,Handling Fixing ,Testing and Commissioning of CP Brass soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.	No	13	
37	Receiving ,Handling Fixing ,Testing and Commissioning of CP Brass towel rack with concealed fitting arrangements, as per Annexure 1	No	7	
38	Receiving ,Handling Fixing ,Testing and Commissioning of Garbage crusher including all accessories, pipes, connections, clamps etc. as per Annexure 1	No	7	
39	Receiving ,Handling Fixing ,Testing and Commissioning of Stainless steel Grade 304, recess mounted Sanitary Napking Dispenser including Paper roll holder, Waste receptacle & Disposable bag dispenser including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:all complete. As per annexure 2:	No	6	
40	Receiving ,Handling Fixing ,Testing and Commissioning of Stainless steel Grade 304, recess mounted Toilet seat dispenser including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:as per annexure 2:	No	11	
41	Receiving ,Handling Fixing ,Testing and Commissioning of Stainless steel Grade 304, recess mounted Washroom pannel consisting of in built Hand Dryer + Tissue Dispenser + Waste Receptacle including all internal electrical & nechanical equipment including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge: all completet. As per annexure 2:	No	17	
Carried Forward				
Section 6 - Plumbing & Drainage Bill No. 2 Installation of Sanitary Fittings SAS/JVNC/GTAC/DIRCO			INR	

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	Brought Forward		INR	
42	Receiving ,Handling Fixing ,Testing and Commissioning of Stainless Steel Grade 304, Recess Mounted Tissue Dispenser + Waste Receptacle including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:all complete. As per annexure 2:	No	4	
43	Receiving ,Handling Fixing ,Testing and Commissioning of Stainless steel Grade 304, recess Mounted hand dryer including all internal electrical & mechanical equipment including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:all complete. As per annexure 2:	No	4	
44	Receiving ,Handling Fixing ,Testing and Commissioning of Stainless Steel Grade 304, Diaper changing station including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:all complete. As per annexure 2	No	4	
45	Receiving ,Handling Fixing ,Testing and Commissioning of all safety equipment including , 90° Grab bar, Hinged arm grab rail, Manual call bells (2 nos), Vertical grab bar and any other accessories as per NBC requirement for Diable friendly toilet including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:all complete. As per annexure 2	No	4	
46	Receiving ,Handling Fixing ,Testing and Commissioning of ready made Shower cubicles including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:all complete. As per detail specifications and drawings as per annexure 2 attached. Refer to detail drawings for the public toilets for any clarity.	No	12	
47	Receiving ,Handling Fixing ,Testing and Commissioning of retractable shower seat crafted with high-quality insulated stainless steel. Measuring 298mm x 202mm x 35mm, with a load carrying capacity of 150 kg load. the Stainless steel frameworks shall be concealed with premium-grade ABS construction ensures long-lasting performance and durability. Supply shall include all mounting kits & instruction manuals as provided by the manufacturer including cutting and making good the walls/ floors wherever required as per direction of Engineer-Incharge:	No	7	
Carried Forward to Summary of Section No. 6				INR
Section 6 - Plumbing & Drainage				
Bill No. 2				
Installation of Sanitary Fittings				
SAS/JVNC/GTAC/DIRCO				

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 6</u> <u>BILL NO. 3 INTERNAL DRAINAGE (Soil, Waste, Vent and Rain Water Pipes & Fittings)</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Providing and fixing uPVC pipes type - B conforming to IS: 13592 for soil, waste and vent pipes including all fittings rubber ring type (plain or with access door) e.g bends, junctions, cowls, offsets, access pieces, jointing with rubber ring joints with lubricant etc. fixed with clamps to walls with cement concrete 1:2:4 blocks complete in all respects .</u>			
1	65 mm dia	m	1	
2	110 mm dia	m	495	
3	160 mm dia	m	1	
	Carried Forward Section 6 - Plumbing & Drainage Bill No. 3 Internal Drainage System SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
	<u>Providing, fixing, jointing and testing in position the following uPVC pipes conforming to IS: 4985 of 6 kg/sqcm pressure rating including all fittings, solvent weld joints, testing complete for drainage system cut to required length to be laid under floor and exposed including covering all around with cement concrete and making good the same complete as required.</u>				
4	32 mm dia	m	1		
5	40 mm dia	m	34		
6	50 mm dia	m	6		
7	63 mm dia	m	12		
8	Providing and fixing UPVC inlet hopper with two or three inlets fittings to receive waste pipes from fixtures waste. The hopper shall be fabricated from 110 mm dia upto 600 mm long upvc pipe complete etc. as per engineer in charge.	No	1		
	<u>Providing and fixing uPVC 'P' & 'U' trap of self cleansing design without vent arm with provision for connecting pvc inlet fittings complete including cost of cutting and making good the walls and floors wherever required.</u>				
9	110 mm inlet and 110 mm outlet.	No	65		
10	Providing and fixing uPVC floor drain with supporting clamp ceiling or in sunken portion including cutting and making good the walls and floors wherever required complete in all respects.	No	6		
	<u>Providing & Fixing, Testing & Commissioning of Heavy class S.S. grating with Cockroach proof SS strainer of approved design including setting in floor with cement mortar to match with floor finish as per architect requirement suitable for waster and FT.</u>				
11	100 mm x 100 mm	No			Rate only
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 3 Internal Drainage System SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Providing and fixing Brass clean out plug comprising of uPVC socket joint to pipe and cast brass plug with suitable inlet key for opening male threaded joint with uPVC pipe & socket. Including lead caulked complete as required.</u>				
12	110 mm dia Pipe	No	45		
13	160 mm dia Pipe	No			Rate Only
	<u>Providing and fixing uPVC pipes type - B conforming to IS: 13592 for Rain water pipes including all fittings rubber ring type (plain or with access door) e.g bends, junctions, cowls, offsets, access pieces, jointing with rubber ring joints with lubricant etc. fixed with clamps to walls with cement concrete 1:2:4 blocks complete in all respects.</u>				
14	50 mm OD	m			Rate Only
15	75 mm OD	m			Rate Only
16	110 mm OD	m	495		
17	160 mm OD	m			Rate Only
	<u>Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.</u>				
18	450 x 450 mm	No	20		
19	300 x 300 mm	No			Rate Only
20	Providing and fixing M.S structural work fabricated from standard sections e.g M.S rounds, angles, plates, channels, R.S. joints, GI clamps including cutting to size, drilling, welding, insert plates, dash fasteners of required specification in R.C.C. structural masonry members as directed by Engineer- in- charge including cutting and making good the walls and floors and painting with two coats of enamel paint over primer coat after rubbing and cleaning for pipe supports, clamps, M.S ladder and Manhole tank covers etc. wherever required .	kg	150		
	Carried Forward to Summary of Section No. 6				INR
	Section 6 - Plumbing & Drainage				
	Bill No. 3				
	Internal Drainage System				
	SAS/JVNC/GTAC/DIRCO				

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 6</u> <u>BILL NO. 4 INTERNAL WATER SUPPLY SYSTEM</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, conforming to IS: 15778:2007 of SDR 11 Grade. having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.</u> <u>Concealed work, including cutting chases and making good the walls etc.</u>			
1	15 mm dia	m	513	
2	20 mm dia	m	318	
3	25 mm dia	m	241	
4	32 mm dia	m	100	
	Carried Forward Section 6 - Plumbing & Drainage Bill No. 4 Internal Water Supply System SAS/JVNC/GTAC/DIRCO		INR	

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		Brought Forward		INR	
5	40 mm dia	m	84		
6	50 mm dia	m	24		
	<u>Providing and fixing in position G.I. pipe and fittings of heavy class (c) conforming to IS:1239 (for waste pipe from individual fixtures to floor trap / floor drain & vent pipe) Including fixing at wall / ceiling level supported by galvanized clamps and hangers etc., cutting chases in wall and filling with 1:1 cement mortar, painting two coats of anti-corrosive bitumastic paint over one coat of primer wapping with one layer of 400 microne sheet and finally one apply one coat of anti-corrosive paint. (For sum pump riser)</u>				
7	50 mm dia	m			Rate Only
8	65 mm dia	m	20		
	<u>Providing, Fixing, Testing & Commissioning of full way lever operated forged brass ball valve of brass body with forged brass hard chromeplated steel ball tested to a pressure rating of PN 16 with threaded / flanged joints complete with nuts, bolts, gaskets, washers union etc.</u>				
9	15 mm dia	m	9		
10	20 mm dia	m	15		
11	25 mm dia	m	18		
12	32 mm dia	m	6		
13	40 mm dia	m	2		
14	50 mm dia	m			Rate Only
		Carried Forward		INR	
Section 6 - Plumbing & Drainage Bill No. 4 Internal Water Supply System SAS/JVNC/GTAC/DIRCO					

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	Brought Forward			INR	
	<u>Providing & fixing C.I butterfly valve (upto 150mm dia with hand lever operation & above with gear box operation) conforming to IS:13095. Tested to a pressure not less than 16 Kg/Sq.cm. Including rubber gasket, flanges, nuts, bolts, washers & painting complete as required.</u>				
15	65 mm dia	No	2		
	<u>Providing and fixing motorised butterfly valve rating PN 1.0 with float type sensors suitable for 240 volts with working pressure rating of not less than 5 kg/cm2 with control panel and sensors to open valve when water level is low in tanks and to close when water level is high in water tanks including butterfly valves, necessary cables, conduits, upto junction box etc. complete. (upto 6 mt qty approx.)</u>				
16	32 mm dia (Flushing Water Supply Riser)	No	1		
	<u>Providing and fixing C.I. dirt box strainer with nuts, bolts, rubber insertions etc. complete conforming to IS : 2373 : (For Overhead tank)</u>				
17	80 mm dia	No	1		
Carried Forward to Summary of Section No. 6				INR	
Section 6 - Plumbing & Drainage					
Bill No. 4					
Internal Water Supply System					
SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 6</u> <u>BILL NO. 5 EXTERNAL WATER SUPPLY SYSTEM</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Excavating trenches of required width for pipes, cables,etc including excavation for sockets and dressing of sides ramming of bottoms depth upto 1.5 m including getting out the excavated soil and then returning the soil as required in layers not exceeding 20 cm. in depth including consolidating each deposited layer by ramming watering etc. and disposing of surplus excavated soils as directed within a lead of 50 m.</u> all kinds of soil			
1	Pipes, cables etc, not exceeding 65 mm dia.	m	273	
2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	m	188	
	Carried Forward Section 6 - Plumbing & Drainage Bill No. 5 External Water Supply System SAS/JVNC/GTAC/DIRCO		INR	

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Brought Forward			INR	
	<u>Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.</u>			
3	65 mm dia	m	273	
	<u>Providing and fixing electronic water Mtr. with direct reading dial in KL with all internal parts in gunmetal or brass, flanged distance piece for easy removal in future, 65mm dia strainer, 100 mm dia Bourden type pressure gauge and isolation cock complete in all respects.</u>			
4	65 mm dia	No	1	
	<u>Providing and fixing C.I. dirt box strainer for bulk type water meter with nuts, bolts, rubber insertions etc. complete conforming to IS : 2373 :</u>			
5	65 mm dia	No	2	
	<u>Constructing masonry Chamber 60x45x50 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for water meter & butterfly valve complete with C.I. double flap surface box 400x200x200 mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand:10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :</u>			
6	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	No	2	
Carried Forward			INR	
Section 6 - Plumbing & Drainage Bill No. 5 External Water Supply System SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
7	Providing and making connection to municipal water main including cutting the existing line and fixing required fitting with loose collars and lead joints including excavation, bailing out water, back filling, fixing strainer etc. complete in all respects. (excluding obtaining approval from Municipal) <u>Providing and fixing cast iron double flanged butterfly valves conforming to IS 13095 PN 1.6 complete with bolts, nuts, 3.0 mm thick compressed asbestos gasket.</u>		Item		
8	65 mm dia <u>Providing and fixing cast iron double flanged horizontal/verical type non return valves PN 1.6 including nuts, bolts, 1.5 mm thick compressed gasket complete to IS 5312.</u>	No	1		
9	65 mm dia	No	1		
Carried Forward to Summary of Section No. 6 Section 6 - Plumbing & Drainage Bill No. 5 External Water Supply System SAS/JVNC/GTAC/DIRCO				INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 6</u> <u>BILL NO. 6 EXTERNAL SEWERAGE AND STORM WATER DRAINAGE SYSTEMS</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Providing and fixing uPVC pipes SN 4/SN 8 (IS 15328) NU-Drain Pipes for underground sewerage system including all fittings with solvent cement joint interconnection as directed manufacturer's recommendations. (For sewer line)</u> 1 200 mm dia m 83 <u>Providing and fixing uPVC pipes SN 4 (IS 15328) NU-Drain Pipes for underground storm water drainage system including all fittings with solvent cement joint interconnection as directed manufacturer's recommendations. (For storm line)</u> 2 200 mm dia m 79 <u>Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round uPVC. pipes including bed concrete as per standard design :</u> 3 200 mm dia m 162 Carried Forward INR Section 6 - Plumbing & Drainage Bill No. 6 External Sewage & Stormwater SAS/JVNC/GTAC/DIRCO			

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Brought Forward			INR
4	Constructing brick masonry road Catch Basin chamber 45x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500 x 450 mm pre-cast CI Cover with horizontal grating with frame complete as per standard design :	No	11
	<u>Extra depth for rectangular manhole with bricks of class designation 75 conforming to IS: 1077 including excavation, refilling centering shuttering and disposal of surplus earth complete in all respects as directed by Engineer-incharge complete as per standard design.</u>		
5	450 x 450mm	m	2
	<u>Constructing brick masonry manhole Inside size 90x80 cm and 45 cm deep in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cementconcrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :</u>		
	<u>Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :</u>		
6	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	No	14
	<u>Extra depth for manhole internal dia 0.90 (at bottom) beyond 1.67 m :</u>		
7	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	m	3
Carried Forward			INR
Section 6 - Plumbing & Drainage Bill No. 6 External Sewage & Stormwater SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design :</u>				
8	With 20x20 mm square bar	No	28		
	<u>Excavating trenches of required width for pipes, cables,etc including excavation for sockets and dressing of sides ramming of bottoms depth upto 1.5 m including gting out the excavated soil and then returning the soil as required in layers not exceeding 20 cm. in depth including cosolidating each deposited layer by ramming watering etc. and disposing of surplus excavated soils as directed within a lead of 50 m</u>				
9	all kinds of Soil Pipes, cables etc, not exceeding 80 mm dia.	m	55		
10	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	m	200		
	<u>Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500 x 450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design :</u>				
11	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	No	1		
	<u>Hervesting Pits</u>				
12	Making rain water harvesting pit in circular shape, finished size upto 3.0 meter dia and 2.0 meter depth and also include boring with uPVC pipe 150mm dia and 3.5meter depth with 5 to 10mm thick garvells upto 0.9mm thick and over it 100mm thick layer of coarse sand of 1.5 to 2mm thickness .The pipe shall be 2.5 meter perforated and 1Meter Non perforated with upper side end cover. The cost shall Including digging and back fill with good finish with as per drawing or as per direction of engineer - in- charge.	No	2		
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 6 External Sewage & Stormwater SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
13	Making desilting chamber with Grease Trape in rectangular shape, finished size upto 0.45 m x 0.60 m x 0.75m and 150mm dia and 0.75m long uPVC Pipe for inter connection with hervesting pit Including the all civil work in position with P.C.C & Bricks and earth work in all type of soil laying in position with required centering and shuttering , erecting brick work in FPS bricks of class designation of cement mortar in 1 :6, laying 12 to 15 mm thick cement plaster of 1 : 2 : 4 (1 Cement : 2 Coarse sand : 4 fine Sand) and Heavy FRP Man hole cover as per drawing or as per direction of engineer - in- charge.	No	2	
Carried Forward to Summary of Section No. 6 Section 6 - Plumbing & Drainage Bill No. 6 External Sewage & Stormwater SAS/JVNC/GTAC/DIRCO				INR

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 6</u> <u>BILL NO. 7 PUMPS AND EQUIPMENTS</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>WATER TREATMENT PLANT</u> Design, Supplying, Installing, Testing & Commissioning of Water treatment plant handling capacity of 12 KLD. The entire plant will be constructed in RCC (civil work by other agency) and will be located underground in the premises. The Plant shall be completed with a central Electrical Power and Control panel fully pre/site wired and with all power and control cables to all pumps and equipment including all instrumentation, level and other controls. The plant is proposed to be installed in the basement accessible from the pump room itself for future maintenance. No opening shall be provided on main slab. Note: 1.WTP contractor has to provide necessary details regarding the above said works. All the structural work shall be subject to the approval of structural consultant. 2. providing Testing and commissioning reports for all equipments. 3. All pump and motor Installed in the Building shall have an efficiency equivalent to BEE-5 Star Rating or IE-Class-3. <u>MULTIGRADE PRESSURE SAND FILTER :</u>			
	Carried Forward Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward		INR	
	<u>Supply, installation, testing and commissioning of vertical self supporting Multigrade Pressure Sand Filter. Filter vessel shall be constructed of FRP/composite material with inner shell of integrated Polyethylene with Fiber Reinforced Plastic as per manufacturer standard. The inner distribution system and the under bed draw off system shall be of Hub & Lateral type/Riser tube with top & bottom strainers of Polypropylene material. Filter shall be supplied with initial charge of Filter media like special graded sand with supporting media like silex, gravel etc. The filter shall complete with pressure gauge at inlet & outlet, sample cock, PVC face piping/interconnected PVC piping, multiport valve and all necessary accessories complete with by pass arrangement including piping, valves & accessories.</u> Capacity : 12 M3/Hr. Filtration rate : 13 M3/M2/hr. Working pressure : 3.5 Kg/cm2 Test pressure : 5 Kg/Sq.cm			
1	Filter dia approximate : 1100mm <u>ACTIVATED CARBON FILTER :</u>	Sets	1.0	
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>Supply, installation, testing and commissioning of vertical self supporting Activated Carbon Filter. Activated Carbon Filter vessel shall be constructed of FRP/composite material with inner shell of integrated Polyethylene with Fiber Reinforced Plastic as per manufacturer standard. The inner distribution system and the under bed draw off system shall be of Hub & Lateral type/Riser tube with top & bottom strainers of Polypropylene material. Filter shall be supplied with initial charge of media like Activated Carbon Media of 900 iodine value, with supporting media like silex, gravel etc. The filter shall be complete with pressure gauge at inlet & outlet, sample cock, PVC face piping/interconnected piping, automatic timer based multiport valve (control valve) and all necessary accessories. Complete with by pass arrangement including piping, valves & accessories.</u> Capacity : 12 M3/Hr. Filtration rate : 13 M3/M2/hr. Working pressure : 3.5 Kg/cm2 Test pressure : 5 Kg/Sq.cm			
2	Filter dia approximate : 1100mm	Sets	1.0	
3	Supply, installation, testing & commissioning of level indicators and controllers for automatic operation of the complete system with high/low level alarm complete with auxiliary NO/NC contacts. .		Item	
4	Providing and fixing all MS interconnecting piping and isolation control valves, non return valves etc. for making the system complete. Provision to be kept for connection of future pumps and equipment's. (Painting with two or more coats of synthetic enamel paint of required shade)		Item	
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
5	Supplying, installing, testing and commissioning of Chlorine dosing system consisting of one HDPE tank of 500 liters capacity with a positive displacement diaphragm dosing pump having variable flow rate of 0-12 lph. The motor shall be suitable for operation at 240 V/single phase/50 Hz. Supply. The pump shall be supplied complete with necessary polypropylene piping, valves, strainers, low level switch and injection fittings. The pump shall be speed & stroke control. Sets <u>Domestic Water Hydro Pumps with VFD: (CHANCERY BUILDING)</u> <u>Supplying, installing, testing and commissioning of In-Line, Multistage, Vertical centrifugal (direct coupled) pumps with SS-304 casing and impeller and SS-316 shaft, CI base & head TEFC motor (with mechanical seal) including common suction header with flange for inlet connection, common outlet, header with flange for outlet connections and interconnecting piping with isolating valves, non-return valves, pressure</u> Recharged diaphragm pressure vessel with food grade membrane, charging connection, flexible bellow in each suction & delivery connection, connected to outlet header with necessary flanges, gaskets, isolating valves, nuts/bolts etc. complete. Vendor to confirm that size / actual volume of pressure vessel is proposed considering 25% margin on the allowed pump start / stop. Set of accessories such as pressure switches, pressure transducers, inter connecting power and control cabling etc. complete (as per EHS Norms) Common Variable Frequency Drive	1.0		
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	External Pump mounted or wall mounted microprocessor PID controller and frequency inverter integrated in a single body or as separate components with pressure sensor transmitter minimum two lined LCD display, diodes to indicate pump ready, pump running and fault and capable to communicate with other controllers following MODBUS-RTU or BACNET Class-2 protocol through RS485 port. System should be capable to compensate for frictional losses at lower flows. All alarms should be displayed in the controller. System should be equipped with dry running protection. Hydro pneumatic system as described above and as under given capacities: (Vendor to submit performance curves and technical catalog of the proposed model for review & information). The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head.				
6	Pump Capacity 200LPM. @ 35 m head (2W+1S) <u>Domestic Water Hydro Pumps with VFD:(For Residence)</u> <u>Supplying, installing, testing and commissioning of In-Line, Multistage, Vertical centrifugal (direct coupled) pumps with SS-304 casing and impeller and SS-316 shaft, CI base & head TEFC motor (with mechanical seal) including common suction header with flange for inlet connection, common outlet, header with flange for outlet connections and interconnecting piping with isolating valves, non-return valves, pressure</u> Recharged diaphragm pressure vessel with food grade membrane, charging connection, flexible bellow in each suction & delivery connection, connected to outlet header with necessary flanges, gaskets, isolating valves, nuts/bolts etc. complete. Vendor to confirm that size / actual volume of pressure vessel is proposed considering 25% margin on the allowed pump start / stop.	Sets	1.0		
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	Set of accessories such as pressure switches, pressure transducers, inter connecting power and control cabling etc. complete (as per EHS Norms) Common Variable Frequency Drive External Pump mounted or wall mounted microprocessor PID controller and frequency inverter integrated in a single body or as separate components with pressure sensor transmitter minimum two lined LCD display, diodes to indicate pump ready, pump running and fault and capable to communicate with other controllers following MODBUS-RTU or BACNET Class-2 protocol through RS485 port. System should be capable to compensate for frictional losses at lower flows. All alarms should be displayed in the controller. System should be equipped with dry running protection. Hydro pneumatic system as described above and as under given capacities: (Vendor to submit performance curves and technical catalog of the proposed model for review & information). The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head.				
7	Pump Capacity 150LPM. @ 20 m head (2W+1S)	Sets	1.0		
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO				

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Brought Forward <u>Supply, installation, testing & commissioning of single stage single entry drainage pumps connected to TEFC submersible motor suitable to handle basement drainage having the following capacities, complete with 3 phase squirrel cage submersible motor of required HP for 415 + 10% volts, 3 phase, 50 Hz. A.C. supply cooled by surrounding liquid, submersible cable upto main panel within the plant room, dry running preventor, G.I. guide pulling chain, all the necessary piping and accessories, valves, delivery header etc. as required complete in all respects. The rate will include electrical panel with cyclic operation as supplied by the manufacturers. The rate will also include a three level sensor, controller and level indication (low, mid and high) system with a sounder for high level. The pumps will start as follows: (a) At mid level pump 1 will start. (b) At high level pump2 will start and there will be a sounder alarm.</u> The above installation shall be complete with sump pump lifting assembly, ready made electro – galvanized MS lifting chain, GI pipe header complete with discharge manifold, flanges, tee, elbow etc. complete including GI pipe upto the top of sump and including GI union. Header shall be sized for both pump working under delivery velocity of 1.5 m/sec. The above pump sets must be supplied complete with following accessories. GI Piping of 80mm dia for individual pump delivery line and 100mm dia for common delivery line, to be terminated outside the sump. 80mm dia Butterfly valve.-- 2 Nos 80 mm dia reflux valve.-- 2 Nos Electrical switch panel with DOL starter having all necessary accessories & safety devices of standard specifications. Automatic built-up water level controller with necessary length of cable upto control panel. Pump Capacity : 250 LPM		INR	
Carried Forward Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
	Pumping Head : 12-15 m				
8	Set of Pumps : 2 Nos (1W+1S) Including Basement	Sets	2.0		
	<u>Supply, installation, testing and commissioning of double flanged Water Flow Meter complete with digital display provision & including Pulse generator and Remote Totalizer compatible with BMS complete in all respect as per the technical specifications. (Make :- Rockwin / khrono Marshall / Lehry)</u>				
9	100 mm dia	No	1		
10	65 mm dia	No	1		
11	50 mm dia	No	1		
	<u>Domestic water Transfer Pump</u>				
	<u>Providing and fixing In-line vertical/horizontal multistage centrifugal clear water pump set SS-304 casing, SS-304 impeller, SS-304 shaft, CI base with CED coating, complete directly coupled with TEFC induction motor of class "F" insulation & efficiency class EFF-1, 2900 RPM, suitable for operation on 415 volts $\pm 10\%$, 3 phase, 50 Hz, A.C. supply (with mechanical seal), motor rating IE-3, pressure gauges with gunmetal isolation cocks, vibration elimination pads, etc. mounted on a MS base frame bolted to cement concrete foundation including suction header, discharge header, isolation valve & matching companion flanges, etc. complete in all respects and as per specification with the following capacities:</u>				
	Domestic water Transfer Pump : 2 (1W + 1S)				
	Capacity : 150LPM of Each Pump				
	Head : 35 M				
12	Note:-1 set consists of 2 nos. of pumps (1Working + 1Standby)	Sets	1.0		
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO				

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		Brought Forward		INR	
		<u>Providing and fixing compact monoblock submersible pumps of suitable rating, with non-clog free flow open well CI impeller, solid handling capacity of upto at least 50mm suitable for operation on 415 volts +10% , 3 Phase, 50Hz, A.C supply, speed 2900 RPM including oil chamber, guide wire for lifting & lowering of pump, M.S. galvanized lifting chain, complete. The pump sets shall be supplied with required accessories & as per specification with the following :</u> (e) Electrical control panel having all necessary accessories & safety devices of standard specifications and suitable for receiving incommer cable from main plumbing panel to connctet pump panel complete as required. -1 No. Discharge - 200 LPM Each			
13	Total head	- 25 Meters (minimum), Basement	Sets	2.0	
		<u>Providing and fixing compact monoblock submersible sump pumps of suitable rating, with non-clog free flow open impeller, solid handling capacity of upto at least 50mm suitable for operation on 415 volts +10% , 3 Phase, 50Hz, A.C supply, speed 2900 RPM including oil chamber, guide wire for lifting & lowering of pump, M.S. galvanized lifting chain, complete. The pump sets shall be supplied with required accessories & as per specification with the following :</u> (e) Electrical control panel having all necessary accessories & safety devices of standard specifications and suitable for receiving incommer cable from main plumbing panel to connctet sump pump panel complete as required. (Panels with sump pumps near each sump as per site conditions). --1 No. Each set consist of 2 nos.of pumps - 1 working & 1 stand by (Complete set as above with 2 nos. pumps including cost for valves, piping, Control Panel and Cabling, Level Controllers etc as required and as specified) 2.The entire system alongwith pumps & control panel must be sourced from single manufacturer only for unit responsibility.			
		Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
	Domestic water Tranfer Pump : 3 (2W + 1S)			
	Capacity : 200LPM of Each Pump			
	Head : 20 M			
14	Note:-1 set consists of 2 nos. of pumps (1Working + 1Standby)	Sets	2.0	
	<u>Providing and fixing reinforced neoprene rubber vibration eliminators/expansion joints (to provide relief from stresses at pipe flanges) suitable for upto 20 kg/cm2 pressure, as per specification of the manufacturers complete as required and as specified complete as per directions of the engineer-in-charge.</u>			
15	50mm dia	No	4	
	<u>Providing & fixing of Stainless Steel double flange suction " Y" type strainer fabricated out of minimum 1.2 mm thick Stainless Steel sheet with 3 mm dia. perforation holes including nuts, bolts and 3 mm thick rubber insertion complete & tested to 16 Kg/Sq.cm pressure complete as required and as specified complete as per directions of the engineer-in-charge.</u>			
16	50mm dia	Sets	2.0	
	<u>Providing and fixing C.I butterfly valve, class PN 1.6 as per I.S:13095 or BS:5155, including necessary nuts, bolts, gaskets / flanges etc., complete as required and specified by the engineer-in-charge.</u>			
17	50mm dia	Sets	4.0	
18	Providing and fixing M.S. grating and preferably in 600mm long pieces, fabricated with 16x16mm square bars, @ 20mm clear spacing and welded to angle iron 25x25x5mm and placed firmly on angle iron frame of 30x30x5mm with 25x3mm hold fasts approximately 75mm long welded at intervals of 500mm including two or more coats of synthetic enamel paint of approved quality and shade over one coats of primer and set in cement mortar 1:3 (1 cement : 3 coarse sand) complete as per attached details for drain.	m	5	
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage			
	Bill No. 7			
	Water Treatment Plant			
	SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>Providing and fixing heavy duty G.I. pipe (For Suction & Delivery of pumps and equipment) conforming to IS. 1239 upto 150 mm and IS 3589 for dia 200 mm and above with reducers, tees, flanges, elbow, crosses, union etc. and fixing the pipes on wall / ceiling / beam / floor including Clamping/Supporting the same, including painting with 2 coats of synthetic enamel paint as per the site requirement and shall be duly painted with two coats of approved quality synthetic enamel paint & shade over a readymix primer coat complete as required & as per directions of the engineer-in-charge for the following sizes:</u>				
19	50mm dia	m	25		
	<u>Providing & fixing C.I horizontal/vertical type non return valve (dual plate) conforming to IS:5312 with C.I. body, SS Disc, SS stem, EPDM seal, complete with companion flanges, bolts, nuts, washers & inserted rubber gasket complete as required to I.S:5312, Part-I, dual plate type, class PN 1.6.</u>				
20	50mm dia	No	2		
	Carried Forward			INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO				

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Brought Forward <u>Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of motor control centre shall be fabricated out of 14 gauge CRCA sheet steel in form in 3b formation with reinforcement of suitable size angle iron, channel 'T' sections irons and / or flats wherever necessary. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of red oxide primer and final approved shade of powder coated paint. 2 No. earthing terminals shall be provided for 3 phase, 4 wire, 50 Hz supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel before fabrication. Cadmium Plated hardware shall be used in fabrication of panels. Quoted rates shall inclusive of cables, cable trays, earthing (in accordance to specification) with earthing from panel to each motor / equipment.</u> <u>Incoming</u> 100 amps TPN MCCB with the following accessories: a. 0-500 volts 96 x 96 mm square voltmeter with selector switch protected by 2 amps TP MCB. 1 Set b. 0-100 amps 96 x 96 mm square ammeter with selector switch and 100/5 amps 10 VA CL:1 CTs. 1 Set c. Phase indicating lamps protected by 2 amp SP MCB 3 Set <u>Bus Bar</u> 150 amps TPN (25 KA) aluminium bus bar with heat shrinkable insulation sleeves.		INR	
Carried Forward Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward		INR	
	<u>Outgoings</u> a. 4 No. suitable rating MPCB for 2.5 KW DOL starter and outgoing feeder to Water treatment pump motor (including 1No. standby). Each compartment shall contain auto / manual selector switch and indicating / push button lamps with MCB for ON / OFF / TRIP of motor. b. 16 amps TPN MCB's 1 No. (For chemical dosing pump) e. Spare MCB's of following capacities: i. 40 amps TPN MCB's 1 No. ii. 63 amps TPN MCB's 1 No. Necessary cable alleys, internal wiring, and interlocking, earthing for all equipment shall also be included. Notes: a. All MCCBs shall be of 25 KA breaking capacity and suitable for motor duty application. b. Provision shall be made for providing potential free contacts to all pumps starters for connection to BAS c. Provision shall be made to ensure system protection from dry running of the pump			
21	MCC - 1 For Plumbing System as described above.	Sets	1.0	
	<u>SUMP STARTER</u> It shall control two pumps P-1 and P-2. The operation sequence will be as under P-1 & P-2 to stop at L-1 P-1 to start at L-2 P-2 to start at L-3 (At L-3 both pump will be running) audible alarm at L-4(50 mtr range). Hooter for annunciation.			
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	Where L-1 < L-2 < L-3 < L-4 (level of water in the sump) (probes /sensors to control operation) There shall be selector sw to interchange the starting sequence between P1&P2. (Selection mode) <u>Incoming</u> 1 No. 40 Amps 4Pole MCB with following accessories: Digital electronic Ameter with and 40/5 Amps 15 VA, CL 1 CTs . - 2Set Phase indicating light shall be protected by 2 Amps SP MCB's. -3 Set. Auto/Manual selector switch -1 set Selector switch for two pumps -1 set <u>Outgoing</u> 2No. 5-8A TP+N MPCB with 5 HP Three phase DOL starter with overload relay, Sensor including required wiring, Analogue Ameter with Required CTs and single phase preventer for Raw water transfer pump. Each of these compartment shall contain indicating lamp with ON/ OFF/ TRIP/low /High Level status for Motor. Rating : P1= 5 HP, 3 phase DOL starter, 415 V +Sensor Rating : P2= 5 HP, 3 phase, 415 V +Sensor			
22	The Sump pump control module shall be complete with all interconnections, risers, internal wiring, labels, terminal block etc complete as required.	No	2	
23	Supply and fixing in position 1 m wide Insulation mat made of elastomeric polymers Material (Class -A) of 415V grade as per IS 15642-2006 . Thickness of insulation mat shall be not less than 2 mm to withstand 1.1 KV dielectric strength AS PER IS 15652 : 2006. It should be complete as per specifications & directions of Engineer-in-charge. It should be complete as per specifications & directions of Engineer-in-charge.	m	5	
	Carried Forward		INR	
	Section 6 - Plumbing & Drainage Bill No. 7 Water Treatment Plant SAS/JVNC/GTAC/DIRCO			

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Brought Forward			INR
24	Supply and fixing in position the best quality Danger Boards of approved shape and size as specified by Local Electricity Authorities written in English & Local Languages.	No	2
25	Supply and fixing in position the approved "Shock Treatment Charts" written in English and Local Language. These charts shall be framed in teak wood frame and covered with glass.	No	2
Carried Forward to Summary of Section No. 6			INR
Section 6 - Plumbing & Drainage			
Bill No. 7			
Water Treatment Plant			
SAS/JVNC/GTAC/DIRCO			

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 7</u> <u>BILL NO. 1 LIFT INSTALLATION</u> <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>GENERAL NOTES :</u> All items of work under this Contract shall be executed strictly to fulfill the requirements laid down in the specifications, which shall include type of equipment, material, methods of installation, type of controls, approved shop drawings and the relevant standards. The rate for each item of work in the Schedule of Quantities shall, unless expressly stated otherwise, shall also include the following: a. All fixing materials, accessories, appliances, tools, plants, equipment, transport, labour and incidentals required in preparation of and in the full and entire execution, testing, commissioning and completion of the work called for in the item as per Specifications and Drawings. b. Wastage on materials and labour. c. Loading, transporting, unloading, handling / double handling, hoisting to all levels, setting, fitting and fixing in position, protecting, disposal of debris and all other labour necessary in and for the full and entire execution and to fully complete the job in accordance with the contract documents, good practice and recognized principles. d. Liabilities, obligations and risks arising out of Conditions of Contract. Carried Forward Section 7 - Lift And Stacked Parking Installation Bill No. 1 Lift Installation SAS/JVNC/GTAC/DIRCO			
			INR	

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Brought Forward e. All requirements of specifications, whether such requirements are mentioned in the item or not. The specifications and drawings where available, are to be read as complimentary to and part of the Schedule of Quantities and any work called for in one shall be taken as required for all. f. In the event of conflict between schedule of quantities and other documents including the specifications, the most stringent shall apply and the interpretation of the consultants shall be final and binding. The unit rate for each equipment or materials shall be including Excise duty, Octroi, Packing & forwarding charges, freight up to site, transit insurance, loading & unloading, storage, CST/VAT, Custom duty, Port clearance, any other statutory levies, installation, testing & commissioning. The extension for (total) amounts against each item shall be based on the quantities indicated in this Schedule. The quantities given in this schedule are provisional, the Owner reserves the right to increase or decrease the quantities or to totally omit any items of work and the Contractor shall not be entitled to claim any extras or damages on these grounds. These variations shall be permitted until such time Contractors shop drawings are approved. This schedule shall be fully priced and the extensions and totals duly checked. The rates for all items shall be filled in INK. No alteration whatsoever is to be made to the text or quantities of this Schedule unless such alteration is authorized in writing by the Consultants. Any such alterations, notes or additions shall unless authorized in writing be disregarded when tender documents are considered. Carried Forward Section 7 - Lift And Stacked Parking Installation Bill No. 1 Lift Installation SAS/JVNC/GTAC/DIRCO		INR	
		INR	

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	Brought Forward		INR	
	In the event of an error occurring in the amount column of the Schedule, as a result of wrong extension of the unit rate and quantity, the unit rate quoted by the tenderer shall be regarded as firm and the extensions shall be amended on the basis of the rates. Any error in totaling in the amount column and in carrying forwarded totals shall be corrected. Any error, in description or in quantity, or omission of items from this schedule shall not vitiate this contract but shall be corrected and deemed to be a variation required by the Consultants. Obtaining of lift license and Handing over to client shall be the sole responsibility of Contractor. <u>ELEVATORS</u> <u>Notes:</u> (i) Necessary wiring/control wiring, conduit/raceway if required for satisfactory operation of elevators shall be in the scope of lift vendor. (ii) Size of car should be fit in lift well. <u>Design, manufactures, supply,installation, sting,commissioning, approvals / laisoning (All local / state/ central statutory bodies) and handing over in satisfactory working conditions of elevators as per specification.</u>			
1	15 Passenger (1020Kg.) simplex Passenger Elevator (PL-1) with 2050 mm x 1775 mm shaft, MRL consisting of ACVVVF Panel, 4080mm over head,1500mm Pit including with wiring, 1.0 MPS speed, 6No. Stops (B, Gr,1,2,3 & Terrace Floor), 18.095m travelling distance, 1500 mm x1600 mm car size with 900x2100mm car entrance and door opening for structure with Automatic with Centre opening ACVVVF Motor Door operator with electronic / infrared sensor door detector, all floor opening in same side ,Finish and Floor as per specification. The lift should have an access key card operation installed and integrated with the security system.	No	1	
	Carried Forward		INR	
	Section 7 - Lift And Stacked Parking Installation Bill No. 1 Lift Installation SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
2	10 Passenger (680Kg.) simplex Passenger Elevator (PL-1) with two side opening, 1950 mm x 1800 mm shaft, MRL consisting of ACVVVF Panel, 4080mm over head, 1500mm Pit including with wiring, 1.0 MPS speed, 2No. Stops (B & 3rd Floor), 14.315m travelling distance, 1200 mm x 1400 mm car size with 900x2100mm car entrance and door opening for structure with Automatic with Centre opening ACVVVF Motor Door operator with electronic / infrared sensor door detector, all floor opening in same side, Finish and Floor as per specification. The lift should have an access keycard operation installed and integrated with the security system.	No	1	
3	8 Passenger (544Kg.) simplex Passenger Elevator (PL-1) with 1760 mm x 1580 mm shaft, MRL consisting of ACVVVF Panel, 4080mm over head, 1500mm Pit including with wiring, 1.0 MPS speed, 4No. Stops (B, Gr, 1 & Terrace Floor), 12.58m travelling distance, 1000 mm x 1300 mm car size with 800x2100mm car entrance and door opening for structure with Automatic with Centre opening ACVVVF Motor Door operator with electronic / infrared sensor door detector, all floor opening in same side, Finish and Floor as per specification. The lift should have an access keycard operation installed and integrated with the security system.	No	1	
4	50Kg simplex Dumbweight with 850 mm x 850 mm shaft, 1500mm machine Room consisting of Manual operated Panel, 1500mm over head, 100mm Pit including with wiring, 0.25 MPS speed, 2No. Stops (Gr & First Floor), 4.08m travelling distance, 450 mm x 450 mm car size with 450x600mm car entrance and Manual door opening with manual Operated shutter Door, all floor opening in same side, Finish and Floor as per architect complete all respect as per specification.	No	1	
Carried Forward to Summary of Section No. 7				
Section 7 - Lift And Stacked Parking Installation				
Bill No. 1				
Lift Installation				
SAS/JVNC/GTAC/DIRCO				

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 7</u> <u>BILL NO. 2 STACKED PARKING</u> <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>GENERAL NOTES :</u> (a) Key Hold Operation (b) Wheel Stopper (c) Sensor to define the system heigh with car (d) Emergency stop (f) NRV Valve (g) Safety mechanisum during travel of the platform			
	Carried Forward Section 7 - Lift And Stacked Parking Installation Bill No. 2 Stacked Parking SAS/JVNC/GTAC/DIRCO		INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 8</u> <u>BILL NO. 1 WET RISER SYSTEM - PUMPING EQUIPMENTS</u> <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Supply, Installation, Testing and Commissioning of Electric Driven Main Fire Pump suitable for auto operation & consisting of following: complete in all respect as required.</u> Horizontal Split casing type, centrifugal, multistage, pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal to ensure a minimum pressure of 3.5 kg/sq. cm. at highest and farthest outlet at specified flow of 1620 LPM at 60 Mtr. head confirming to IS 1520-1980. Suitable HP squirrel cage induction motor, TEFC synchronous speed 1450 RPM (with permissible slip), suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 protection for enclosure, horizontal foot mounted type with Class-' F' insulation, confirming to IS-325-1978.			
1	Common base frame fabricated out of M.S channel of suitable size, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation (minimum 6" above from ground floor) duly plastered, with anti vibration pads etc. complete as per manufacturer's design & standards and as per detailed specifications.	Sets	1.0	
	Carried Forward Section 8 - Fire Fighting/Protection Works Bill No. 1 Wet Riser System - Pumping Equipment SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward		INR	
	<u>Supply, Installation, Testing and Commissioning of Diesel Engine Driven Main Fire Pump suitable for auto operation and consisting of following: complete in all respect as required.</u> Horizontal Split casing type, centrifugal, multistage pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal to ensure a minimum pressure of 3.5 kg/sq.cm. at highest and farthest outlet at specified flow of 1620 LPM at 60 Mtr. head confirming to IS 1520-1980. <u>Suitable HP 1500 RPM, 4 stroke, cold starting type Diesel Engine with Heat Exchanger confirming to relevant BIS & IS Standards, complete with all required accessories / system, fuel oil filter, lubricant oil pump with filter, 2 Nos. starting batteries of 180 AH capacity each with suitable angle iron stand, engine starting panel having all the controls meters, gauges, tachometer, hour meters, starting switch with keys for manual starting, auto starting mechanism, 24 Volts electric starting equipment, Diesel Tank for 8 hrs continuous running of diesel engine, having minimum capacity of 200 Ltrs. (tank made out of 3mm thick M.S. Sheet with filling Cap, drain Cock, diesel indicator duly mounted on M.S. angle) exhaust pipe extended upto 1 mtr. outside pump house, duly insulated with 50 mm. thick glass wool with 1.0 mm. thick aluminium sheet cladding, exhaust residential silencer, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required.</u>			
2	M.S. fabricated Common base frame, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation (minimum 6" above from ground floor) duly plastered, with anti vibration pads etc. complete as per manufacturer's design & standards and as per detailed specifications.	Sets	1.0	
	Carried Forward		INR	
	Section 8 - Fire Fighting/Protection Works Bill No. 1 Wet Riser System - Pumping Equipment SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>Supplying, Installation, Testing and Commissioning of Electric Driven Pressurization Pump (Jockey Pump) suitable for auto operation and consisting of following: complete in all respects as required.</u> Horizontal type, centrifugal end suction type pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal, gland packing and flow of 180 LPM at 60 Mtr. head confirming to IS:1520-1980. Suitable HP squirrel cage induction motor TEFC type 2900 RPM suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 class of protection for enclosure, horizontal foot mounted type with Class -'F' insulation, confirming to IS:325-1978.				
3	Common base frame fabricated out of M.S channel of suitable size, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation (minimum 6" above from ground floor) duly plastered, with anti vibration pads etc. complete as per manufacturer's design & standards and as per detailed specifications. <u>Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal ball valve complete with all accessories etc. as required of the following sizes</u>	Sets	1.0		
4	2 Meter high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump complete with all pressure switches as per specifications as reqd.	No	1		
Carried Forward to Summary of Section No. 8					INR
Section 8 - Fire Fighting/Protection Works Bill No. 1 Wet Riser System - Pumping Equipment SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 8</u> <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>BILL NO. 2 PIPING, VALVES AND ACCESSORIES</u> <u>Providing & fixing of heavy class M.S. pipes conforming to IS: 1239/3589 complete with fittings including trenching and refilling etc. (external work) including all fittings and accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or cutting and welding joints. Providing thrust block at distance specified as per specifications. (Pipe shall be provided with anti corrosive protective treatment with coal tar/asphalt tape confirming to IS: 10221 standard complete as per specification). All work complete as per specification and as directed by Engineer-In-Charge. (All the fitting i.e. tee /elbow etc. for Valve connections etc. will be flanged joints)(Heavy duty pipe)</u>			
1	150 mm dia	m	10	
	<u>SLTC of M.S. pipe on surface</u>			
	Carried Forward Section 8 - Fire Fighting/Protection Works Bill No. 2 Piping Valves & Accessories SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR
	<u>Supplying, laying, fixing, testing and commissioning of following sizes (NB) of class 'C' M.S. pipes confirming to IS 1239 and 3589 including cutting, threading, welding etc. and providing all fittings e.g. elbows, reducers, clamps, hangers, flanges, gaskets, nuts, bolts and washers etc. including painting of pipes and fittings with red paint over a coat of ready mixed primer, both of approved quality and shade including cutting holes and chases in brick or RCC walls/slabs and making good the same etc. complete in all respect as required. (The Welding shall not be done for piping less than 50 mm dia.) (heavy duty pipe)</u>			
2	25 mm dia	m	625	
3	32 mm dia	m	30	
4	40 mm dia	m	70	
5	50 mm dia	m	70	
6	65 mm dia	m	156	
7	80 mm dia	m	110	
8	100 mm dia	m	41	
9	150 mm dia	m	232	
10	200 mm dia (6mm thick)	m	10	
	<u>Supplying and fixing Single Headed Internal Hydrant Valve oblique pattern with instantaneous Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with 80 mm dia flanged inlet, with ABS cap and chain complete with all accessories etc. as required.</u>			
11	Single headed Stainless Steel	No	10	
	Carried Forward			INR
Section 8 - Fire Fighting/Protection Works Bill No. 2 Piping Valves & Accessories SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Supplying of Butterfly valves of PN 16 rating of following sizes with EPDM rubber lining seat and CF-8 stainless steel disc duly ISI marked and stainless steel stem with lever/gear operation and cast iron body in powder coated finish for fire fighting application complete in all respects confirming to IS: 13095 as required.</u>				
12	Single headed Stainless Steel	No	2		
	<u>Supplying of Butterfly valves of PN 16 rating of following sizes with EPDM rubber lining seat and CF-8 stainless steel disc duly ISI marked and stainless steel stem with lever/gear operation and cast iron body in powder coated finish for fire fighting application complete in all respects confirming to IS: 13095 as required.</u>				
13	80 mm dia	No	1		
14	100 mm dia	No	1		
15	150 mm dia	No	12		
	<u>Providing of Cast Iron Non Rising Spindle Gate Sluice valve PN 16 (Flanged) rating hand wheel operated, stain less steel stem with gun metal parts, Nut, bolts & washers etc. complete as required as per specification conforming to IS:14846.</u>				
16	150 mm dia	No	1		
	<u>Providing, Installation, Testing and Commissioning of double flanged cast iron Dual Plat Check Valve, PN 16 of following sizes confirming to IS : 5312 complete with EPDM rubber lining seat and stainless steel disc, rubber gasket, GI bolts, nuts, washers etc. as required.</u>				
17	80 mm dia	No	1		
18	100 mm dia	No	1		
19	150 mm dia	No	4		
	Carried Forward			INR	
	Section 8 - Fire Fighting/Protection Works Bill No. 2 Piping Valves & Accessories SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Supply, Installation, Testing and Commissioning 63 mm dia. 15 Mtr. Long RRL hose pipe with 63 mm dia. male and female stainless steel couplings duly binded with GI wire rivets etc. ISI marked, IS 636 (type-A) as required.</u>				
20	Stainless Steel (Grade 304)	No	12		
	<u>Supplying, Installation, Testing and Commissioning of CI body flanged (both ends) type serviceable suction / Y strainer with (stainless steel / brass mesh) conforming to relevant IS specifications amended upto date complete including providing and fixing nuts, bolts, washers, gaskets etc. complete as required.</u>				
21	150 mm dia	No	2		
22	200 mm dia	No	1		
23	Supply, Installation, Testing and Commissioning of 100 mm dia Borden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having calibration of 0-16 Kg / cm ² .	No	12		
	<u>Supplying and Fixing First Aid Hose Reel, wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, confirming to IS 884/1995 with upto date amendments, complete with the following as required.</u>				
	36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585				
	20 mm dia. ball valve & nozzle.				
	Drum and brackets for fixing the equipments on wall.				
24	Connection from riser with 40 mm dia (Gun metal) stop valve & M.S. Pipe.	No	10		
	Carried Forward			INR	
	Section 8 - Fire Fighting/Protection Works Bill No. 2 Piping Valves & Accessories SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Supplying and fixing Stainless Steel branch pipe with 20mm dia nozzle conforming to IS:903. suitable for instantaneous connections to hose pipe coupling etc. as required.</u>				
25	Stainless Steel (Grade 304)	No	12		
	<u>Supplying and fixing instantaneous Fire Brigade Inlet Connection (FBIC) comprising of Cast Iron body and Cast Iron instantaneous male inlet coupling confirming to IS:904 with plug and cap with chain as required with nuts & bolts and high pressure rubber gasket, suitable for 150 mm dia MS pipe connection etc. complete as required.</u>				
26	2 way - 150 mm dia M.S. Pipe	Sets	1.0		
27	4 way - 150 mm dia M.S. Pipe	Sets	1.0		
	<u>Providing and fixing 15 mm dia. quartzoid type Sprinkler Head with quartzoid bulb and set to operate at specified temperature.</u>				
28	Pendent, 68° C, Chrome plated (Power coated adjustable rosette)	No	289		
29	Upright, 68° C, Chrome plated	No	1		
30	Sidewall sprinkler (Normal coverage)	No	1		
31	Providing, fixing ,testing and commissioning of Pressure switches in pipe line including connection etc as required.	No	5		
	<u>Supplying and fixing vane type water flow switch suitable for installation on 50 mm to 150 mm dia line for a service pressure upto 20 kg/sq. cm. of Potter / System sensor /Angus</u>				
32	150 mm dia	No	5		
	<u>SITC of sprinkler installation valve</u>				
	Carried Forward			INR	
	Section 8 - Fire Fighting/Protection Works Bill No. 2 Piping Valves & Accessories SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Supplying, fixing, testing and commissioning of installation control valve of Cast Iron body and brass /bronze working parts comprising of water motor alarm, bronze seat clapper and clapper arm, hydaulically driven mechanical gong bell to sound continuous alarm when the Wet riser / Sprinkler system activates, pressure gauge, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 150 mm dia. complete as required.</u>				
33	150 mm dia	No	1		
	<u>Providing, fixing, testing and commissioning of Sprinkler Flexible Joint of 25mm diameter, consisting of - Flexible Tube (SS 304), S.S. Slip nut, Isolated Ring & O Ring - for Sprinklers Drop, which shall include necessary supports with a maximum working pressure of 14 kgf/cm2 and temperature rating of 225oF UL/ FM Listed. The length of Flexible Sprinklers Pipe shall be :- (Assume)</u>				
34	700 mm	No	1		
35	1000 mm	No	1		
36	1200 mm	No	1		
37	1500 mm	No	1		
Carried Forward to Summary of Section No. 8				INR	
Section 8 - Fire Fighting/Protection Works					
Bill No. 2					
Piping Valves & Accessories					
SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 8</u> <u>BILL NO. 3 HYDRANTS SYSTEM</u> <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Supplying and fixing fire hose cabinet fabricated from 16 gauge M.S. Sheet with single or double glazed front door (with 4 mm thick glass) and locking arrangement, painted fire red with stove enamelled paint "FIRE HOSE" written on front including necessary supports approximate size.</u>			
1	a) 600x450x300 mm deep.	No	2	
2	Providing & fixing angle iron (40mm x 40mm x 5mm) door frame and MS sheet (2mm thick) cum glass shutter of size 2.1 mtr x 1.2 mtr (N.S) with 25mm x 25mm x 3 mm angle frame all around & stiffened in between i/c hinges, handle, locking arrangement, painting with approved synthetic enamel paint i/c sign writing on glass at internal hydrant including providing & Fixing MS sheet 2mm thick on remaining portion above door to close opening i/c painting etc as required.	No	10	
3	Providing and fixing single C.I. suction collecting head as per IS: 904-1983, hose coupling (draw out connection) with female outlet as per 903 complete with 150 mm dia. G.I. Suction pipe (with puddle flange) with a foot valve with strainer complete as per drawings.	No	1	
4	Providing, Installation, Testing and Commissioning of Gun Metal / Bronze Ball Valves screwed ends of following sizes as required. (For sprinkler drain)	No	10	
	Carried Forward			
	Section 8 - Fire Fighting/Protection Works Bill No. 3 Hydrants System SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
	<u>Providing and fixing resilient rubber neoprene lined single arch vibration eliminators suitable for raw water upto 45 deg. C. temperature working pressure 7 kg/ sq.cm and test pressure 14 kg/sq.cm.</u>				
5	80mm dia	No	1		
6	100mm dia	No	1		
7	150 mm dia	No	3		
	<u>Providing and fixing M.S. epoxy coated puddle flanges of required size to water tanks as per standard details fabricated from heavy duty pipe and 6 mm thick M.S. Plate & 600 mm length with 3 coats of food grade epoxy paint.</u>				
8	150 mm dia	No	2		
9	200 mm dia	No	1		
10	Supplying and fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926.	No	10		
11	Providing, fixing, testing & commissioning of MS air cushion tank on top of riser fabricated from 6mm thick MS plate, 200 mm in diameter and 1.2 m in height with dished ends fabricated from 8mm thick MS plate with Air release valve with stop cock, flanged inlet connection and drain arrangement with 25mm dia valve, pressure gauge with gun metal stop cock complete with all accessories as required and conforming to IS 4736-1968.	No	3		
	<u>Providing and fixing heavy duty SS Floor grating with frame of approved design including setting in floor with cement motor to match with floor finish as per architect requirement. (for FHC drain pipe)</u>				
12	Size 100 mm x 100 mm	No	48		
Carried Forward to Summary of Section No. 8				INR	
Section 8 - Fire Fighting/Protection Works					
Bill No. 3					
Hydrants System					
SAS/JVNC/GTAC/DIRCO					

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 8</u>			
	<u>BILL NO. 4 FIRE EXTINGUISHERS</u>			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Goods and Services Tax</u>			
	Rates for all items shall include 18% Goods and Services Tax (GST)			
	<u>Providing and fixing mechanical foam type (ISI marked) fire extinguishers consisting of welded M.S. cylindrical body squeeze lever discharge valve 30 cm long high pressure discharge hose, discharge nozzle, suspension bracket as per ISI marked finished externally with red enamel paint and fixed to wall with brackets complete with internal charger.</u>			
1	Capacity 9 lit.	No	1	
2	Capacity 50 lit.(Trolley mounted)	No	1	
	<u>Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed conforming IS : 15683:2006</u>			
3	4.5kg capacity cylinder	No	11	
4	9kg capacity cylinder	No		Rate Only
	Carried Forward			
	Section 8 - Fire Fighting/Protection Works Bill No. 4 Fire Extinguishers SAS/JVNC/GTAC/DIRCO		INR	

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Brought Forward			INR
<u>Providing and fixing water based CO2 type extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve 30 cms long high pressure discharge hose, discharge nozzle, suspension bracket, ISI marked as per IS:934 finished externally with red enamel paint and fixed to wall with brackets complete with internal charges.</u>	No	1	
Capacity 9 KG			
<u>Providing and fixing ISI marked portable fire extinguishers of the following type.</u>			
Dry Chemical Powder ABC type of 6 Kg as per IS:15683	No	16	
Carried Forward to Summary of Section No. 8			INR
Section 8 - Fire Fighting/Protection Works			
Bill No. 4			
Fire Extinguishers			
SAS/JVNC/GTAC/DIRCO			

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 8</u> <u>BILL NO. 5 FIRE FIGHTING ELECTRICAL PANEL</u> <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) <u>Design, manufacture, supplying fixing in position of the following front operated cubicle type, front access, dead back, 2mm thick steel enclosed free standing, dust and vermin proof, switchboard with IP42 protection with hinged and lockable doors complete with interconnections, tinned copper crimping lugs, bonding to earth and painting, suitable for use at 415 volts, 3 phase 4 wire 50 Hertz system, and suitable for a fault level of 25 kA symmetrical at 415 volts.</u> <u>Incoming</u> 1No. 250 A 4Pole Auto tranfer switch with 1 No. 250 amps 4P Ics= Icu 35 kA, Moulded Case Circuit Breaker with Thermal release unit with ROH having following protection; • Overload (adjustable thermal) • Short-circuit (fixed magnetic) <u>Metering & Indication</u> 1 set of R,Y,B phase indicating lamps each with 3 nos. 6A SP MCBs. VAF digital electronic meter with inbuilt selector switch and 250/5 Amps suitable VA, CL 1 CTs . - 1 Set			
	Carried Forward		INR	
	Section 8 - Fire Fighting/Protection Works Bill No. 5 Fire Fighting Electrical Panel SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>Bus Bars</u>				
	300 Amps 4 Pole Aluminium bus bars with heat coloured shrinkable insulation sleeve. - 1 Set				
	Outgoing				
	1 No. 200 amps TPN MCCB outgoing feeders with 50 kW DOL starters out going feeders to wet riser pump motor. The compartment shall contain CT operated digital electronic ammeter of 0-200 amps range with selector switch and indicating lamp with MCBs for 'ON/OFF' TRIP' status of motor.				
	1 No.40 amps TPN MCCB, 5.0 HP Direct online starter with single phase preventer and outgoing feeder to jockey pump motor. The compartment shall contain CT operated digital electronic ammeter of 0-40 amps and indicating lamps with MCBs for 'ON/OFF' TRIP' status of pump motors.				
	Providing and fixing 1No. Auto start panel activated with pressure switch for diesel engine complete with all accessories, batteries, battery charger of suitable rating, MCB timers, push buttons, microprocessor based alarm annunciator, wiring and cabling including connection to diesel engine complete as required ready for working.				
	Notes: a. All MCCBs shall be of 35 KA breaking capacity and suitable for motor duty application.				
	b. Provision shall be made for providing potential free contacts to all pumps starters for connection to BAS				
	<u>c. Provision shall be made to ensure system protection from dry running of the pump</u>				
1	(Firefighting Electrical Panel)_as described above.	Sets	1.0		
	<u>Supply laying & fixing on existing cable Tray of XLPE insulated and PVC sheathed copper/aluminium conductor armoured cable of 1.1 KV grade confirming to IS : 7098:1988 with upto date amendments of following sizes</u>				
2	3 core, 70 Sq.mm armoured aluminium cable	m	50		
	Carried Forward			INR	
	Section 8 - Fire Fighting/Protection Works Bill No. 5 Fire Fighting Electrical Panel SAS/JVNC/GTAC/DIRCO				

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Brought Forward				INR
3	3 core, 6 Sq.mm. armoured copper cable	m	50	
4	4 core, 2.5 Sq.mm. armoured copper cable	m	50	
5	7 core, 2.5 Sq.mm. armoured copper cable	m	50	
<u>Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (galvanisation thickness not less than 50 microns) with perforation not more than 17.5%. as required.</u>				
6	100 mm width X 50 mm depth X 1.6 mm thickness	m	50	
7	150 mm width X 50 mm depth X 1.6 mm thickness	m	50	
8	300 mm width X 50 mm depth X 1.6 mm thickness	m	20	
9	Providing & fixing of 25mm x 5mm GI strip on surface or recess for earth connection as required.	m	100	
10	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	m	250	
Carried Forward to Summary of Section No. 8				INR
Section 8 - Fire Fighting/Protection Works Bill No. 5 Fire Fighting Electrical Panel SAS/JVNC/GTAC/DIRCO				

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Bill No	Section No. 8				
	Section 8 - Fire Fighting/Protection Works				
	SECTION SUMMARY - Section 8 - Fire Fighting/Protection Works				
			Page No		Amount
	1	Wet Riser System - Pumping Equipment	325		
	2	Piping Valves & Accessories	331		
	3	Hydrants System	333		
	4	Fire Extinguishers	335		
	5	Fire Fighting Electrical Panel	338		
	Carried to Final Summary				
	Section 8 - Fire Fighting/Protection Works				
	SAS/JVNC/GTAC/DIRCO				
			INR		

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 9</u> <u>BILL NO. 1 SEWAGE TREATMENT PLANT</u> <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) Approval from pollution board including consent to operate at initial & various other stages of works including preparation of report / drawings as per pollution board requirement, arrangement of raw sewage. Contractor shall include the cost of all chemicals consumed and the cost of such items of works which are not explicitly mentioned above, but are mandatory to have pollution board approval. Liasioning shall be in the scope of vendor & Recipted Fee in Client Scope. <u>Design, supplying, installing, testing & commissioning of Sewage Treatment Plant capacity 12 KLD, MBBR Based Technology. The plant shall be installed below the ground. All Process tanks to be constructed in MSEP.</u> Note: Design and drawing of RCC Structure shall be provided by the STP vendor. Nature of Waste - Domestic Sewage. Daily average flow - 12 KLD Application:- For Flushing and Irrigation system. <u>Anticipated effluent parameters before treatment:</u> PH - 6.5-8.5 BOD5 - 250-400 mg/ltr COD - 600-800 mg/ltr. Carried Forward Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			
			INR	

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Brought Forward			INR	
SS	- 200-450 mg/ltr.			
Oil & Grease	- upto 20 mg/ltr			
Ecoli	- >106 MPN			
Colour	- objectionable			
<u>Desired Sewage discharge standard after teritary treatment:</u>				
PH	- 6 – 8.5			
BOD5	- < 10 Mg/lit.			
S. Solids	- < 10 Mg/lit.			
COD	- < 50 Mg/lit.			
Oil & Grease	- < 5 Mg/lit.			
Coliform count	< 103 at the CCT outlet			
Total Nitrogen	< 2 PPM			
T-Phosphorus	<2 PPM			
Hardness	<50 mg/l			
Alkalinity (Calcium Carbonate)	200mg/l			
<u>Sewage treatment plant shall includes the following items manufactured in Mild Steel Epoxy Coated and shall be skid mounted. It is a compact water treatment plant based on MBBR process including the following items:</u>				
Bar Screen Chamber (MSEP) x 1 No				
Oil & Grease chamber (MSEP) x 1 No				
Sewage Equalization tank (MSEP) x 1 No				
MBBR Tanks (MSEP) x 1 No				
Carried Forward			INR	
Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
	Secondary Settling / sludge basin Tank (MSEP) x 1 No			
	Filter Feed Tank (MSEP) x 1 No			
	UF feed Tank (MSEP) x 1 No			
	Sludge Holding Tank (MSEP) x 1 No			
1	Total Cost of Prefabricated Structure including all the items listed above complete with installation		SUM	
2	Supply, installation, testing & commissioning of 2 Nos. Stainless Steel (SS 304) Perforated Corrugated Bar Screen (Basket type) of sizes as per drawing with suitable lifting chain type manual arrangement arrangement.			
	Coarse screen - 22mm spacing Fine screen - 6 mm spacing	Sets	1.0	
	<u>Providing, fixing, testing & commissioning of centrifugal non-clog type sewage handling pumps capable of handling solids upto 32-35 mm for raw sewage transfer from equalization tank to MBBR tanks. The pump shall have CI casing & impeller, CS shaft, TEFC induction motor including pressure gauge, lifting arrangement for the pump, all necessary piping , suction and delivery header valves, NRV, level controller with wiring to control the level of sump automatically. etc. Receiving tanks shall be completed with inlet, outlet, drain arrangement (Pipe + Valves).</u>			
	<u>Sewage Transfer Pumps (for transferring sewage from last sump to STP - cutter type</u>			
	(2 Nos. - 1 W +1 S) 3 Phase			
	Flow rate (each) = 2.5 m3 / hr			
	Head = minimum 10 Mtr			
	Solid Handling = 30-32mm			
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
3	STP as manufactured by WILO/ CGL/KSB or equal and approved <u>Sewage Transfer Pumps (for transferring sewage from last sump to STP - cutter type</u> Note: By pass arrangement (During maintenance of STP) including suitable sizes of valves / GI/uPVC pipe to be left at 2 mtr. distance from plant room (or as per site condition) at ground level for connection to existing plumbing line (Cost of this item should be included .)	Sets	1.0		
4	(2 Nos. - 1 W +1 S) 3 Phase Flow rate (each) = 0.6 m3 / hr Head = minimum 10 Mtr Solid Handling = 30-32mm STP as manufactured by WILO/ CGL/KSB or equal and approved	Sets	1.0		
5	2 Nos. twin type rotary air blowers (1W + 1S) casing - CI, shaft- Alloy Steel, capable of delivering approx 30 cum/hr of free air at 0.50 kg/sq.cm driven through "V" belt or directly coupled through flexible coupling to a TEFC motor of suitable HP Suitable for 415 ± 10% volts, 3 phase, 50 cycles A/C supply. <u>Make - ABL/Beta/Everest</u>	Sets	1.0		
6	Providing and fixing all piping (as described below) and isolation control valves for making the system complete. All valve shall have flanged joints. Flange connection shall be provided wherever required. uPVC - All Submerged piping for air / water MS Epoxy (Class 'C') - (i) Air header piping (ii) Non submerged air piping uPVC- All exposed inter connecting piping .Make: Tata/Jindal/Astral/Ashirwad/Prince			SUM	
	Carried Forward			INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
	<u>Note : Air dispersion system shall be provided for Equilization tank, MBBR tanks & Sludge holding tanks. Make :ENWECO/ MICO/ Universal</u>			
7	Non-clog type air dispersion system capable of handling 3-5 cfm of air with oxygen transfer efficiency of 3-4% per/meter water depth. Air dispersion grid shall be assembled in modular form so that they can be replaced / repaired easily from platform at the top. (Imported fine bubble membrane diffusers) <u>Supply, installation, testing and commissioning of MBBR biodeck media to be installed in MBBR Tanks and PVC tube deck settling media to be installed in Tanks alongwith suitable sludge removal arrangement either by pumps or any other suitable arrangement. [MBBR System to be in two reactors]Manufactured by ENWECO/MICO/Universal or equal and approved</u>		SUM	
8	Minimum quantity of MBBR Media	Item		
9	Minimum Quantity of Tube deck Media-	Item		
	<u>Providing, fixing, testing and commissioning of Horizontal centrifugal pumps. The pumps shall be made of CI casing, CI Impellar, CS shaft & sleeve, Mechanical Seal are connected to a TEFC induction motor mounted on a common channel base frame with coupling guard, 150 mm dia pressure gauge with GM isolation cock, suitable vibration eliminator pads of approved design. Motor to be suitable for 400/440 V, 3 Phase, 50 cycles AC power supply, including all necessary piping, suction and delivery header, individual suction & delivery of pump valves, NRV, pressure gauge and other accessories complete as required in all respect as manufactured by Wilo/Kirloskar/Grundfos or equal and approved</u>			
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>Filter Feed Pumps: Make : Wilo/Kirloskar/ Grundfos</u>			
	Capacity : 2.0Cum/hr.			
	Head : 25 Mtrs			
	Type of Pump : Horizontal Centrifugal pump			
10	No. of Pumps (1 W+1S) 3 Phase	Sets	1.0	
	<u>Filter Backwash Pump: Make : Wilo/Kirloskar/ Grundfos</u>			
	Capacity : 4.0Cum/hr.			
	Head : 12-15 Mtrs			
	Type of Pump : Horizontal Centrifugal pump			
11	No. of Pumps (1 W) 3 Phase	Sets	1.0	
	<u>Supply, installation, testing and commissioning of vertical self supporting Multigrade Pressure Sand Filter. Filter shall be constructed of FRP/composit material with inner shell of integrated Polyethylene with Fiber Reinforced Plastic as per manufacturer standard. The inner distribution system and the under bed draw off system shall be of Hub & Lateral type/Riser tube with top & bottom strainers of Polypropylene material. Filter shall be supplied with initial charge of Filter media like special graded sand with supporting media like silex, gravel etc. The filter shall complete with pressure gauge at inlet & outlet, sample cock, uPVC face piping/interconnected uPVC piping, multiport control valve and all necessary accessories as required, complete in all respect.</u>			
	Multigrade pressure sand filter			
	Flow rate : 2.0 Cum/hr			
	Filtration velocity : 15 cum/hr/sqm			
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant			
	Bill No. 1			
	Sewage Treatment Plant			
	SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	Max. operating pressure: 3.5 kg/sq.cm Test pressure: 5.5 kg/sq.cm			
12	Multigrade pressure sand filter as manufactured by Aquanomics/ Pentair/Starlite/ Tata or equal and approved <u>Supply, installation, testing and commissioning of vertical self supporting Activated Carbon Filter. Activated Carbon Filter shall be constructed of FRP/composit material with inner shell of integrated Polyethylene with Fiber Reinforced Plastic as per manufacturer standard. The inner distribution system and the under bed draw off system shall be of Hub & Lateral type/Riser tube with top & bottom strainers of Polypropylene material. Filter shall be supplied with initial charge of media like Activated Carbon Media and gravel etc. The filter shall be complete with pressure gauge at inlet & outlet, sample cock, PVC face piping/interconnected piping, multiport control valve and all necessary accessories as required, complete in all respect.</u> Activated Carbon Filter Flow Rate : 2.0 Cum/hr Filtration Velocity : 12cum/hr/sqm Max. operating pressure: 3.5 kg/sq.cm Test pressure: 5.5 kg/sq.cm	Sets	1.0	
13	Activated Carbon Filter as manufactured by Aquanomics/ Pentair/ Aventura/ tata or equal and approved	Sets	1.0	
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
14	Supply, installing, testing & commissioning of Ultrafiltration system capacity-2 M3/hr. The system shall be mounted on a common base frame constructed of SS-304. The system shall be complete with Feed pump- 2 Nos (1W+1S), Backwash pump-1 Nos (1W), CEB system, dosing pumps, Motorised valve/pneumatic valves, air compressor, PLC based control panel and all necessary instrumentation required to operate the plant in auto mode. The maximum allowable flux through the membranes shall be 50LMH . Make- Enki/ Qua/ Grafil	Sets	1.0		
15	Supply, installing, testing & commissioning of Ultraviolet dis-infection unit for tertiary treated water (with flow rating 2 m3/hr) with bypass arrangement . The dis-infection chamber shall be constructed of SS 316 on all wetted parts. The UV lamp shall be of low pressure mercury vapour type with hard glass enclosure, the sockets shall be water tight & vibration resistant. The lamp life shall be rated for 9000 hours. The access to the UV lamp shall be without the need to interrupt the ballast circuit with all necessary accessories as required, complete in all respect. Make: Alfa/ creative/ or equal and approved	Sets	1.0		
	<u>Providing, fixing, testing and commissioning of horizontal, centrifugal Sludge disposal pump for the disposal of sludge to sludge holding tank and anoxic recirculation. The pumps shall have CI casing, bronze/SS Impeller & SS shaft & sleeve with mechanical rotary shaft seal connected by a flexible tier type coupling to TEFC induction motor suitable for 415+10% Volts, 3 Phase, 50Hz, AC Power Supply mounted on a common channel base-plate with coupling guard, 150 mm dia pressure gauge with GM isolation cock, suitable vibration eliminator pads under foundation of approved design, dry running protection including all necessary piping, valves, level controller complete with probs and other accessories complete as required.</u>				
	Capacity/Flow rate - 2.00M3/hr (anoxic recirculation)				
	Pumping Head - 15 Mtr				
16	Nos. of Pump =1Nos. (1 Working)	Sets	1.0		
	Capacity/Flow rate - 2.0M3/hr (sludge Transfer)				
	Carried Forward			INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	Pumping Head - 15 Mtr				
17	Nos. of Pump =1Nos. (1 Working)	Sets	1.0		
18	Supply, installation, testing and commissioning of agitator mixer for anoxic tank	Sets	1.0		
19	Providing, installing, testing and commissioning of Water Flow meter Electro magnetic type suitable for 0- 4000 LPH - suitable sizes /dia (for sewerage Inlet) with all necessary accessories as required, complete in all respect. Make - Aster/ Wateronics or equal and approved	No	1		
20	Providing, installing, testing and commissioning of Water online turbine type Flow meter suitable for 0- 4000 LPH - suitable sizes /dia (for Treated water Line) with all necessary accessories as required, complete in all respect. Make - Kranti/Aster/Lehri or equal and approved	No	1		
	<u>Filter Press with Screw Pump</u>				
	Supply, Installation, Testing and Commissioning of Filter Press with Screw Pump as per following details				
	No. of Plates - 12 x 12 x 11				
	MOC - CI				
	Type - Manual				
	Screw Pump with flow 1M3/hr, Head 40mtr - Qty 2 no.				
	Make of the screw pump Roto/Helicon				
21	Note : With Piping provision for alternate screw pump and sludge transfer (same pump shall be used) .	Sets	1.0		
22	Providing, installtion testing and commissioning of Chlorine dosing system at the Filter Feed tank consisting of one HDPE tank of 100 litres capacity	No	1		
	Carried Forward			INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO				

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	Brought Forward		INR	
	<u>Metering type pump Flow 0-6 lph, Make -E Dose/LMI/ Pentair</u> 23 Instrumentation including pH meter, pressure gauges, level controllers. Make: Forbes Marshal/Yokogawa/Aster or equal and approved <u>Treated Water Hydro pneumatic System for Supply & Distribution</u> <u>Supply, Installation, Testing And Commissioning Of Compact Self Contained Skid Mounted Hydro pneumatic System As Follows:</u> a. Vertical, In-Line, Multisage, centrifugal pumps with SS-304 casing and impeller and SS shaft, CI base & head TEFC motor (with mechanical seal) (Vendor to submit performance curves and technical catalog of the proposed model for review & information) Pumps shall be factory assembled and factory tested with 1 VFD common. The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head. b. External Pump mounted or wall mounted microprocessor PID controller and frequency inverter integrated in a single body or as separate components with pressure sensor transmitter minimum two lined LCD display, diodes to indicate pump ready, pump running and fault and capable to communicate with other controllers following MODBUS-RTU or BACNET Class-2 protocol through RS485 port. System should be capable to compensate for frictional losses at lower flows. All alarms should be displayed in the controller. System should be equipped with dry running protection Quantity : 1 Set with common VFD		SUM	
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	c. Complete (Skid mounted wall mounted / floor mounted) electrical control panel comprising of all accessories such as PLCs, pressure switches, pressure transducers, control wiring and any other necessary imports etc. (list to be provided by the vendor) d. Precharged diaphragm pressure vessel with food grade membrane, charging connection, connected to outlet header with necessary flanges, gaskets, isolating valves, nuts/bolts etc. complete. e. Set of accessories such as pressure switches, pressure transducers, inter connecting power and control cabling etc. complete f. Accessories like pressure gauge, MS base frame (Synthetic enamel painted over a coat of primer) g. GI suction and delivery header with flanges for inlet connection, common outlet header with flanges for outlet connections as required, and inter connecting piping with flexible connections, eccentric type reducers etc. all necessary indigenous accessories as required to complete the installation. Flushing Water Hydro pneumatic System with flot sensor and motorised valve and pressure switch with remote operated DOL starter consisting of R,YB Indicator,selector switch,Power contcator,sigle phasing preventor and Analouge ammeter. No. of pumps 2 (1 Working + 1 Standby) Water Flow Rate : 1.0 m3/hr. (each) Head : 50 m Purpose : Flushing Water Transfer			
24	1 Set : No. of pumps 2 (1 Working + 1 Standby)	Sets	1.0	
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>Irrigation Water Hydro pneumatic System with remote operated DOL starter consisting of R,YB Indicator,selector switch,Power contcator,sigle phasing preventor and Analouge ammeter with 24hrs segment timer.</u> No. of pumps 2 (1 Working + 1 Standby) Water Flow Rate : 0.5 m3/hr. (each) Head : 45 m Purpose : Irrigation Water Transfer			
25	1 Set : No. of pumps 2 (1 Working + 1 Standby) <u>Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of motor control centre fabricated out of 14 gauge CRCA sheet steel. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of red oxide primer and final approved shade of powder coated paint. 2 Nos. earthing terminals shall be provided for 3 phase, 4 wire, 50 Hz supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel before fabrication. Quoted rates shall be inclusive of cables (in accordance to specification) with earthing from panel to each motor / equipment.</u> <u>Motor Control Centre</u> Incoming 200 amps TPN MCCB with the following accessories: a. 0-500 volts 96 x 96 mm square electronic voltmeter with selector switch shall be protected by 2 amps TP MCB. 1 Set	Sets	1.0	
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	b. 0-100 amps 96 x 96 mm square electronic ammeter with selector switch and 100./5 amps 10 VA CL:1 CTs. 1 Set c. Phase indicating lamps shall be protected by 2 amp SP MCB 3 Sets Bus Bar Outgoing 300 amps TPN (15 KA) copper bus bar with heat shrinkable insulation sleeves. a. Required Nos of required capacity TPN MCB for direct on line starter/star delta starters and out going feeders to all the pumps/blowers etc. (including standbys). Each compartment shall contain auto / manual selector switch and indicating lamp with MCB's for 'ON/OFF/TRIP' status of motor b.necessary cable alleys, internal / cabling, wiring, cabling from MCC to various pumps / equipment and interlocking, earthing for all equipment shall also included. c.All MCCBs/MCBs shall be of 15 KA breaking capacity and suitable for motor duty application. d.All motor starters shall be provided with Automatic level controller e.DOL starters shall be used for mototrs below 10HP and Star-Delta Starters for other motors . provision shall be made for providing potential free contacts to all pumps starters g. Energy Meter to be provided with Panel			
26	MCC for all STP equipment's/pumps as described above providing and fixing electrical cables, cable trays, control cabling, earthing etc. with in the STP from electrical panel to the equipment's complete in all respect as per direction of Engineer in charge .		SUM	
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	<u>BIO-Digester</u>			
27	Supplying, installing, testing & commissioning of Bio-digester Plant of m3/day. Design Parameters includes C/N ratio of 20 to 30, Hydraulic retention time of 1 to 30 days, PH of 6.5 to 8, Temperature of 15 to 45°C, mixing ratio of 10 to 20 %. acti-zyme loading suitable for 3 m3/day with Screen chambers with SS Screen, Screening Bars (excluding excavation, back filling & disposal of surplus earth MS / Civil construction work) complete in all respect. <u>Treated Water for Supply & Distribution</u> <u>Supply, Installation, Testing and Commissioning of Compact Self Contained Skid Mounted Transfer pump as Follows:</u> Vertical, In-Line, Multisage, centrifugal pumps with SS-304 casing and impeller and SS shaft, CI base & head TEFC motor (with mechanical seal) (Vendor to submit performance curves and technical catalog of the proposed model for review & information) Pumps shall be factory assembled and factory tested. The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head. GI suction and delivery header with flanges for inlet connection, common outlet header with flanges for outlet connections as required, and inter connecting piping with flexible connections, eccentric type reducers etc. all necessary indigenous accessories as required to complete the installation. <u>Irrigation Water Transfer</u> <u>No. of pumps 2 (1 Working + 1 Standby)</u> Water Flow Rate : 0.25 m3/hr. (each) Head : 30 m	Item		
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			

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	Brought Forward		INR	
	Purpose : Flushing Water Transfer			
28	1 Set : No. of pumps 2 (1 Working + 1 Standby) Sets	1.0		
	<u>Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of Outdoor type Starter Panel fabricated out of 14 gauge CRCA sheet steel. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of red oxide primer and final approved shade of powder coated paint. 2 Nos. earthing terminals shall be provided for 3 phase, 4 wire, 50 Hz supply system. Approval shall be taken for each panel before fabrication.</u>			
	Incoming			
	63 amps TPN MCCB with the following accessories:			
	a. 0-500 volts 96 x 96 mm square electronic voltmeter with selector switch shall be protected by 2 amps TP MCB. 1 Set			
	b. 0-60 amps 96 x 96 mm square electronic ammeter with selector switch and 60./5 amps 10 VA CL:1 CTs. 1 Set			
	c. Phase indicating lamps shall be protected by 2 amp SP MCB 3 Sets			
	d. 70A 4Pole contactor AC-3 Duty - 1 Sets			
	e. 24hrs segment Timer - 1 Sets			
	f. ON/OFF/Selector Switch- 3 Sets			
	Bus Bar			
	Outgoing			
	100 amps TPN (15 KA) AL bus bar with heat shrinkable insulation sleeves.			
	Carried Forward		INR	
	Section 9 - Sewage Treatment Plant			
	Bill No. 1			
	Sewage Treatment Plant			
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	Brought Forward a. 2 Set of required direct on line starter for 3HP Pump and out going feeders to all the pumps/blowers etc. (including standbys). Each compartment shall contain auto / manual selector switch and indicating lamp with MCB's for 'ON/OFF/TRIP' status of motor b.All MCCBs/MCBs shall be of 15 KA breaking capacity and suitable for motor duty application. c.All motor starters shall be provided with Automatic level controller d.provision shall be made for providing potential free contacts to all pumps starters e. Energy Meter to be provided with Panel			INR	
29	Starter Panel as described above	Sets	1.0		
	Carried to Final Summary Section 9 - Sewage Treatment Plant Bill No. 1 Sewage Treatment Plant SAS/JVNC/GTAC/DIRCO			INR	

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 10</u>			
	<u>PREAMBLES</u>			
	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Goods and Services Tax</u>			
	Rates for all items shall include 18% Goods and Services Tax (GST)			
	<u>BILL NO. 1 ROADWORKS</u>			
1	Clearing grass and removal of the rubbish up to a distance of 50 m outside the periphery of the area cleared.	m2	3 311	
2	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-incharge. Ordinary Rock	m3	482	
3	Earth work in rough excavation, banking excavated earth in layers not exceeding 20cm in depth, breaking clods, watering, rolling each layer with ½ tonne roller or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up in embankments for roads, flood banks, marginal banks and guide banks or filling up ground depressions, lead upto 50 m and lift upto 1.5 m : All kinds of soil.	m3	50	
	Carried Forward			
	Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO		INR	

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	Brought Forward			INR	
4	Banking excavated earth in layers not exceeding 20 cm in depth, breaking clods, watering, rolling each layer with ½ tonne roller, or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up, in embankments for roads, flood banks, marginal banks, and guide banks etc., lead upto 50 m and lift upto 1.5 m : All kinds of soil.	m3	50		
5	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	m3	226		
6	Carriage of Earth by mechanical transport including loading, unloading and Stacking including royalty & carriage up to 5 KM complete.	m3	256		
7	Supplying and filling in plinth with Local Jamuna sand under floors including, watering, ramming consolidating and dressing complete.	m3	25		
	<u>Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :</u>				
8	1:3:6 (1 Cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources)	m3	41		
9	1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	m3	29		
	<u>Centering and shuttering including strutting, propping etc. and removal of form work for :</u>				
10	Foundations, footings, bases for columns.	m2	51		
	Carried Forward			INR	
	Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO				

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Brought Forward			INR
11	Providing and placing in position 100 mm thick factory made machine batched & machine mixed Precast RCC Rectangular Covers on drains of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100mm c/c on both ways , neat cement punning on finished surface, properly encased on all edges with 1.6 mm thick , 100 mm wide MS sheet duly painted over priming coat , reinforcement to be welded at edges with MS sheet and providing 2 Nos. 12 mm dia bar for hooks etc i/c cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge. <u>Centering and shuttering including strutting, propping etc. and removal of form for :</u>	m2	161
12	Foundations, footings, bases of columns, etc. for mass concrete.	m2	145
13	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc. <u>Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.</u>	m2	452
14	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	13 083
Carried Forward			INR
Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
	<u>Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.</u> <u>All works upto plinth level.</u>				
15	Concrete of M25 grade with minimum cement content of 330 kg /cum	m3	133		
16	Add for using extra 100kg cement in the items of design mix over and above the specified cement content therein.	No	27		
	<u>Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:</u>				
17	Cement mortar 1:6 (1 cement : 6 coarse sand)	m3	7		
	<u>Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required</u>				
18	In stringers, treads, landings etc. of stair cases including use of chequered plate wherever required, all complete.	kg	75		
19	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	kg	150		
	Carried Forward			INR	
	Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
20	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	m2	23		
	<u>Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineerin- Charge :</u>				
21	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	m2	50		
22	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent	m2	17		
23	Providing and fixing Glass mosaaic tiles on finished plain wall surface of size 20 mm x 20 mm x 4 mm in all colour, design , fixing in customized design as per direction of Engineer in charge. The glass mosaaic tiles shall be fixed on the wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operations, material and required pattern approved by Engineer-in-charge.	m2	31		
	<u>20 mm cement plaster of mix :</u>				
24	1:4 (1 cement: 4 fine sand)	m2	60		
	Carried Forward			INR	
	Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
25	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm. depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres.	m2	1 447		
26	Supplying and Stacking of Good Earth by mechanical transport including loading, unloading including royalty & carriage up to 5 KM complete.	m3	1 052		
27	Spreading of sludge, dump manure and/or good earth in required thickness and extra for compaction of earth work as per direction of officer-in-charge (cost of sludge, dump manure and/ or good earth to be paid separately).	m3	1 052		
28	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	m3	172		
29	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	m3	101		
	Carried Forward			INR	
	Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
30	Construction of dry lean cement concrete sub base over a prepared sub-grade with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per specifications, cement content not to be less than 150 Kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer-in-charge.	m3	50		
31	Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer-in-charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately). Note: Cement content considered in M-30 is @ 340Kg/Cum. Excess/Less cement used as per design mix is payable, recoverable separately. Cement concrete manufactured in automatic batching plant (RMC plant) i/c transportation to site in transit mixer.	m3	135		
32	Extra for providing and mixing hardening compound of approved quality as per manufacturer's specification in cement concrete.	Litres	56		
33	Providing and fixing in position 10mm wide x 10mm depth pre-moulded joint filler in expansion joints.	m	480		
34	Providing and laying in position 10mm wide x 10mm depth bitumen hot sealing compound for expansion joints etc. Using grade 'A' sealing compound.	m	480		
	Carried Forward			INR	
	Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO				

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	Brought Forward			INR	
	<u>Painting runway/taxi track/apron marking with adequate nos of coats to give uniform finish with road marking paint of superior make as approved by the Engineer-in-charge, i/c cleaning the surface of all dirt, scales, oil, grease and other foreign material etc. and lining out complete.</u>				
35	New work (Two or more coats)	m2	102		
36	Providing, laying and making kerb channel 30 cm wide and 50 mm thick with cement concrete 1:3:6 (1 cement: 3 coarse sand:6 graded stone aggregate 20 mm nominal size) over 75mm bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth etc. complete and as per direction of Engineer-in-charge.	m2	25		
37	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	m3	15		
38	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge. 80 mm thick C.C. paver block of M-35 grade with approved color design and pattern.	m2	472		
	Carried Forward			INR	
	Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO				

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Brought Forward		INR
<u>Supplying and stacking at site.</u>		
53 mm to 22.4 mm size stone aggregate	m3	30
Stone screening 11.2 mm nominal size (Type B)	m3	6
Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate, watering and compacting to the required density .	m3	30
Providing and laying 500x500x40 mm thick Turf paver (Turf pave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and base course and filling with 150 mm thick jamuna sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of Engineer-in-charge.	m2	301
Extra for covering top of membrane with Geotextile, 120 gsm non woven, 100% polyester of thickness 1 to 1.25 mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation.	m2	602
<u>Providing and laying Non Pressure NP-4 class (Heavy duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete</u>		
450 mm dia RCC pipes.	m	25
Carried to Final Summary		INR
Section 10 - Roadworks Bill No. 1 Roadworks SAS/JVNC/GTAC/DIRCO		

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 11</u>				
	/ 15	<u>BILL NO. 1 DISMANTLING AND DEMOLITIONS</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	15.7	<u>Demolition</u>				
1	/ 15.3	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	m3	35		
2	/ 15.5	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer in-charge.	m3	7		
		Carried Forward				
		Section 11 - Boundary Wall Bill No. 1 Demolitions SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 11</u>				
	/ 5	<u>BILL NO. 2 REINFORCED CEMENT CONCRETE WORK</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	5.9	<u>Centering and shuttering including strutting, propping etc. and removal of form for :</u>				
1	/ 5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	m2	196		
2	/ 5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts.	m2	324		
	5.22A	<u>Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.</u>				
3	/ 5.22A.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	kg	6 336		
		Carried Forward				
		Section 11 - Boundary Wall Bill No. 2 Reinforced Cement Concrete Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
	Derived item (5.40)	<u>Providing and laying in position ready mixed concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge.</u> NOTE- (1) Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of BMC and RMC.				
	/ Der. item (5.40.2)	All works above plinth level upto floor V level.				
4	/ Der. item (5.40.2.1)	Concrete of M25 grade with minimum cement content of 330 kg /cum	m3	52		
5	/ 5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein in 100kg each (Quintal)	No	11		
		Carried Forward to Summary of Section No. 11			INR	
		Section 11 - Boundary Wall Bill No. 2 Reinforced Cement Concrete Work SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 11</u>				
	/ 6	<u>BILL NO. 3 BRICK WORK</u>				
	12 /	<u>PREAMBLES</u>				
		Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
1	/ 6.47	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	m3	120		
		Carried Forward to Summary of Section No. 11				
		Section 11 - Boundary Wall Bill No. 3 Brickwork SAS/JVNC/GTAC/DIRCO			INR	

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 11</u>				
	/ 10	<u>BILL NO. 4 STEEL WORK</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
	10.25	<u>Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required</u>				
1	/ 10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	kg	2 796		
		Carried Forward				
		Section 11 - Boundary Wall Bill No. 4 Steel Work SAS/JVNC/GTAC/DIRCO			INR	

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		Brought Forward			INR	
2	/ 16.53	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)	m	216		
		Carried Forward to Summary of Section No. 11			INR	
		Section 11 - Boundary Wall Bill No. 4 Steel Work SAS/JVNC/GTAC/DIRCO				

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Item No	DSR		Unit	Quantity	Rate	Amount
	29 /	<u>SECTION NO. 11</u>				
	/ 13	<u>BILL NO. 5 FINISHING WORK</u>				
		<u>PREAMBLES</u>				
	12 /	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.				
	44 /	<u>SUPPLEMENTARY PREAMBLES</u>				
		<u>Goods and Services Tax</u>				
	45 /	Rates for all items shall include 18% Goods and Services Tax (GST)				
		<u>Cement Plaster in two coats</u>				
1	/ 13.12	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) and a top layer 6 mm thick cement plaster 1:3 (1 cement : 3 coarse sand) finished rough with sponge.	m2	259		
2	/ 13.21	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers -per 50 kg cement	No	47		
Carried Forward					INR	
		Section 11 - Boundary Wall Bill No. 5 Finishing Work SAS/JVNC/GTAC/DIRCO				

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		Brought Forward			INR		
		<u>Exterior Finishing</u>					
3	/ 13.45.1	Finishing walls with textured exterior paint of required shade : New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	m2	259			
4	/ 13.62.1	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	m2	139			
		<u>Cement Plaster with a floating coat of neat cement</u>					
5	/ 13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	m2	259			
		Carried Forward to Summary of Section No. 11					
		Section 11 - Boundary Wall Bill No. 5 Finishing Work SAS/JVNC/GTAC/DIRCO			INR		

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 12</u>			
	<u>BILL NO. 1 LANDSCAPING</u>			
	<u>PREAMBLES</u>			
	Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents.			
	<u>SUPPLEMENTARY PREAMBLES</u>			
	<u>Goods and Services Tax</u>			
	Rates for all items shall include 18% Goods and Services Tax (GST)			
	<u>PAVING:</u>			
1	Precast concrete kerbs: Figure 12 30 MPa Average and 25 MPa Minimum including bedding, jointing, concrete hunching, backfilling.	m	285	
	<u>STREET FURNITURE</u>			
2	Smartstone Concrete Bench l:1800mm, H: 450mm, W: 450, Finish: Polished	No	10	
	<u>PLANTING SHRUBS & LAWN</u>			
	<u>SOIL PREPARATION (Mixing and spreading of good soil):</u>			
3	Shape insitu material from stockpiles, compact in layers of 150mm to 87 % Mod AASHTO density	m3		Rate Only
4	Top layer - Sift insitu stockpile sources, and spread top soiling 100 mm thick	m3	39	
5	Cultivation and preparation of areas to be planted (100mm)	m2	39	
	Carried Forward		INR	
	Section 12 - Landscaping Bill No. 1 Landscaping SAS/JVNC/GTAC/DIRCO			

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	Brought Forward			INR	
6	Supply and apply NPK compost and Fertilizer 5:1:5	kg	39		
7	Supply and apply Superphosphate Fertilizer at 100g/m ²	kg	39		
8	Supply and apply Bonemeal Fertilizer at 100g/m ²	kg	39		
9	Supply and cultivate compost at 1 m ³ /20 m ²	m ³	19		
10	Final shaping by hand with rakes and spades	m ²	385		
	<u>SOIL PREPARATION:TREES</u>				
11	Excavate and prepare tree holes with fertilizers listed below: Each hole must be greater of 1x1x1 meter or twice as wide and 1.5 times as deep as the root ball of the tree to be planted	No	10		
12	Agriculture fertilizer Tablets (Agriform) at 3 tablets per tree	No	30		
13	Bone meal at 100g per tree hole	kg	1		
14	Seamungus or similar approved apply as a pre-plant application (mixed with excavated soil) at 500g per tree hole	kg	5		
15	Compost, mix with excavated soil at a compost rate of 1 m ³ / 10 trees	m ³	3		
	<u>PLANTING LAWN & SHRUBS</u>				
16	Supply and plant shrubs 10 L to Landscape Architects specification	m ²	300		
17	Lawn: Doob Grass	m ²	85		
	<u>PLANTING TREES</u>				
18	Supply and install wood stakes and ties	No	20		
19	Tree species to be specified - 200 L	No	10		
	Carried Forward			INR	
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	Brought Forward			INR	
	<u>RAISED PLANTER (Refer to Landscaping Drawings)</u>				
20	Construction of planter walls	m2	85		
21	Concrete bedding (75mm)	m	37		
22	Stone Top	m	61		
23	Ref 100 Steel Reinforcing Welded Mesh - foundation	m2	275		
24	Stone finish	m3	49		
25	Waterproofing: Waterproofing paint (Brickseal, Dampseal, Waterproofing Membrane, Multiseal, Tankseal, Wallseal)	m2	275		
	<u>IRRIGATION</u>				
	<u>Irrigation System</u>				
26	Provide a budgetary allowance of INR930 000.00 (Nine Hundred and Thirty Thousand Rupees) for irrigation system including installation of mainlines, spraylines, driplines turf valves, water connection points, round valves with lid, complete with automation as per engineer's designs and specifications.		Item		930 000.00
	<u>WATER FEATURE (Refer to Landscaping Drawings)</u>				
	<u>Wall</u>				
27	Construction of water feature walls	m2	18		
28	Concrete bedding (75mm)	m	22		
29	Stone Top	m	5		
30	Ref 100 Steel Reinforcing Welded Mesh - foundation	m2	18		
31	Waterproofing: Waterproofing paint (Brickseal, Dampseal, Waterproofing Membrane, Multiseal, Tankseal, Wallseal)	m2	18		
	Carried Forward			INR	
	Section 12 - Landscaping Bill No. 1 Landscaping SAS/JVNC/GTAC/DIRCO				

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Item No		Quantity	Rate	Amount
	<u>SECTION NO. 13</u> <u>BILL NO. 1PROVISIONAL SUMS</u> <u>PREAMBLES</u> Tenderers are to refer to the Delhi Schedule of Rates guideline (Latest Edition) and Work shall be executed according to Central Public Works department / Bureau of Indian Standards (CPWD/BIS) Specifications unless otherwise stated in the Tender documents. <u>SUPPLEMENTARY PREAMBLES</u> <u>Goods and Services Tax</u> Rates for all items shall include 18% Goods and Services Tax (GST) All prime cost amounts and provisional sums are net and include for delivery to site of all articles concerned Unless a specific percentage mark up for attendance is indicated in the rate column, the amounts priced by the contractor for attendance against each Provisional Sum shall be deemed to be Lump Sum and shall not be adjusted unless the scope of the sub-contract varies significantly.			
	Carried Forward Section 13 - Provisional Sums Bill No. 1 Provisional sums SAS/JVNC/GTAC/DIRCO		INR	

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Brought Forward		INR	
<u>Attendance upon sub-contractors</u> The item "Allow for attendance" following each provisional sum is for costs incurred by the Contractor in providing free of charge to the Sub-contractor the following : 1. Services such as water, electricity, etc 2. Hoisting of Selected Sub-contractor's material where required 3. Casing and protection of the Selected Sub-contractor's work after completion thereof 4. Making good in all trades and final cleaning down on completion only 5. Every facility to enable the Selected Sub-contractor to carry out his work in a workmanlike manner in proper order and sequence 6. Reasonable site security measures 7. Programming and co-ordination of the works including obtaining all necessary particulars of Selected Sub-contractor's work timeously Loss of profit: Should any of the specialist items listed in this Bill be substantially reduced or omitted, no claim for "loss of profit" on any of the specialists listed, will be considered			
<u>Special attendance on nominated/selected subcontractors</u> Where "special attendance" such as unloading, storing, placing in position, providing special power supplies, specific hoisting, crange and scaffolding requirements, provision of temporary casing and/or other specific protection of the works, special security and clearing away rubbish is required, a separate item describing the specific requirements in detail is to be provided for the pricing of such requirements			
Carried Forward		INR	
Section 13 - Provisional Sums Bill No. 1 Provisional sums SAS/JVNC/GTAC/DIRCO			

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Brought Forward			INR	
<u>Number of Selected Sub-contracts</u>				
The Contractor's attention is drawn to the fact that the indicated individual provisional sums may consist of a number of Selected Sub-contracts, all of which will be executed by separate Selected Sub-contractors. The Contractor must therefore allow in his tender for any cost implication this may bring about, as no claims in this regard will be entertained				
<u>NET PROVISIONAL SUMS FOR WORKS TO BE EXECUTED BY SELECTED OR NOMINATED SUB-CONTRACTORS</u>				
<u>SOLAR INSTALLATION</u>				
1	Provide the sum of INR5 900 000.00 (Five Million Nine Hundred Thousand Rupees) for Solar Installation to be expended as directed by the Engineer in Charge in whole or part and omitted if not used	Item		5 900 000.00
2	Profit on above item.		%	
3	Attendance on ditto.		%	
<u>FURNITURE, FITTINGS AND EQUIPMENT</u>				
4	Provide the sum of INR45 000 000.00 (Forty Five Million Rupees) for provision of Furniture, Fittings & Equipment to be expended as directed by the Engineer in Charge in whole or part and omitted if not used	Item		45 000 000.00
5	Profit on above item.		%	
6	Attendance on ditto.		%	
<u>SIGNAGE</u>				
7	Provide the sum of INR2 500 000.00 (Two Million Five Hundred Thousand Rupees) for provision of signage to be expended as directed by the Engineer in Charge in whole or part and omitted if not used.	Item		2 500 000.00
8	Profit on above item.		%	
9	Attendance on ditto.		%	
Carried to Final Summary			INR	
Section 13 - Provisional Sums Bill No. 1 Provisional sums SAS/JVNC/GTAC/DIRCO				

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10	Section 10 - Roadworks	364		
11	Section 11 - Boundary Wall	374		
12	Section 12 - Landscaping	378		
13	Section 13 - Provisional Sums	381		
	Sub Total		INR	
	<u>CONTINGENCIES</u>			
	Provide 10% for Contingencies to be used or deducted in full at the approval of the client			
		%		
	Provide a sum of INR10 000 000.00 (Ten Million Rupees) only for Forex Fluctuation to be used or deducted in full at the approval of the client			
		Item		
	Carried Forward		INR	
	SAS/JVNC/GTAC/DIRCO			

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