

Ethiopian Center for Disability and Development

Sedie Wereda in Sedie City (LOT 3)

No	Items	Unit	Total cost (ETB)
1	5m by 2.8m two rooms accessible Toilet construction in Sedie city Sedie primary school from the resource center and special need classes to the toilet with ramp as specified in the toilet BOQ	Birr	
2	Access route (a 75 m long by 1.5m width (including curb stone) RC concrete walkway ) from the main gate to the special need and resource center classes and from the special need and resource center classes class to the toilet	Birr	
3	Ramp 1, ( width = 1.5m elevation = 20cm & length = 4m ( 5 with 10cm thickness of C25 concrete slab and curb stone on both sides of the ramp and make an opening on the curb to provide a passage for water to leave the surface of the ramp at the special need class in Sedie Primary school	Birr	
4	Two Signages	Birr	
	<b>TOTAL Amount</b>	<b>Birr</b>	
	Rebate		
	Total Amount After Rebate		
	Vat 15%	Birr	
	<b>Grand Total</b>	<b>Birr</b>	



Specification & Bill of Quantities for Toilet Accessibility modification Works

Client: Ethiopian Center for Disability and Development

Location: Sodie Wereda in Sodie City, Ethiopia

Specific Place: Sodie Primary School

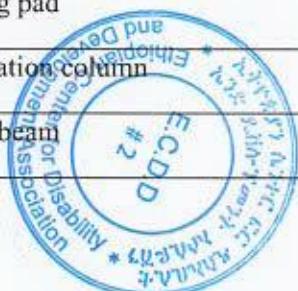
Prepared by: Habtamu S, Accessibility Engineer, ECDD

**(1) 5m by 2.8m Two Rooms Toilet Construction**

ITE M	DESCRIPTION	UNIT	QTY	RATE	Amount in ETB
<b>A. SUB-STRUCTURE</b>					
<b>1.EXCAVATION &amp; EARTH WORKS</b>					
1.01	Excavate for site clearing to a depth of 20cm to remove to soil and cut trees	m <sup>2</sup>	58.80		
1.02	Bulk excavation in ordinary soil not exceeding 700mm from NGL.	m <sup>3</sup>	10.26		
1.03	Trench Excavation up to depth of 1.15m below NGL	m <sup>3</sup>	53.82		
1.04	Back fill with non-expansive material & compact in layers not exceeding 20cm thickness.	m <sup>3</sup>	14.88		
1.05	Selected Fill under hard-core to maintain the desired level with selected borrowed material and compact in layers not exceeding 200mm.	m <sup>3</sup>	2.31		
1.06	Cart away surplus excavated material to a distance not exceeding 2kms.	m <sup>3</sup>	60.96		

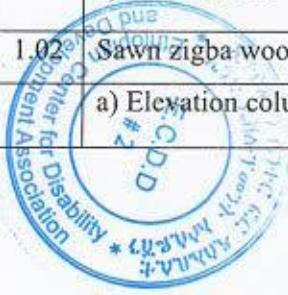


1.07	200mm. thick sound basaltic or equivalent stone hard-core finished and blinded with crushed stone.	$m^2$	14.00		
	<b><i>TOTAL CARRIED TO SUMMARY</i></b>				
	<b>2.CONCRETE WORKS</b>				
2.01	50mm thick lean concrete in C-5 with minimum cement content of 150kg/m <sup>3</sup> of concrete under:				
	a) footing pad	$m^2$			
	b)grade beam	$m^2$			
	c)Trench Masonry wall	$m^2$	11.76		
	d)150mm thick ground floor slab	$m^2$	9.32		
2.02	Reinforced concrete in class C-25 (with a 28-day 150mm cube crushing strength of 25MPa), cast into formworks and vibrated around rod reinforcement bars.(formwork & reinforcement bars are measured separately.) in: <i>"Type of cement to be ordinary Portland cement (OPC)"</i>				
	a) footing pad	$m^3$			
	b) foundation column	$m^3$			
	c) grade beam	$m^3$	1.872		
	d)150mm thick ground floor slab	$m^2$	9.32		
2.03	Sawn zigba wood form work for:				
	a) footing pad	$m^2$			
	b) foundation column	$m^2$			
	c) grade beam	$m^2$	12.72		



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	d) ground floor slab	$m^2$		
2.04	Reinforcement steel bars according to structural drawing. Price includes cutting, bending, placing in position and tying wires.			
	a) dia. 8mm deformed bar, c/c 250mm spacing for slab and c/c 150mm for grade beam	Kg	49.00	
	b) dia. 12mm deformed bar for grade beam	Kg	86.00	
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>3. MASONRY WORKS</b>			
3.01	500mm thick Stone masonry foundation wall bedded in cement mortar (1:3) in full joints.	$m^3$	4.68	
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>B. SUPER-STRUCTURE</b>			
	<b>1. CONCRETE WORKS</b>			
1.01	Reinforced concrete in class C-25 (with a 28-day 150mm cube crushing strength of 25MPa), cast into formworks and vibrated around rod reinforcement bars. ( formwork & reinforcement bars are measured separately.) in: "Type of cement to be ordinary Portland cement (OPC)"			
	a) Elevation column	$m^3$	0.95	
	b) Top tie beam	$m^3$	1.87	
	c) Lintel Beam	$m^3$	0.26	
1.02	Sawn zigba wood form work for:			
	a) Elevation column	$m^2$	12.00	



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	b) Top tie beam	$m^2$	13.12		
	c) Lintel Beam	$m^2$	2.76		
1.03	Reinforcement steel bars according to structural drawing. Price includes cutting, bending, placing in position and tying wires.				
	a) dia. 8mm deformed bar, c/c 150mm for elevation column and c/c 200mm for top tie beam	Kg	64.00		
	b) dia. 12mm deformed bar	Kg	70.00		
1.04	HCB wall beded with 1:4 cement sand mortar				
	a) 20cm thick external HCB wall	$m^2$	36		
	b) 15cm thick internal HCB wall	$m^2$	30.5		
<b><i>TOTAL CARRIED TO SUMMARY</i></b>					
<b>2. ROOFING</b>					
2.1	Supply, fabricate, and erect complete treated timber roof truss system including all members, bracing, connectors, anchorage, and accessories; trusses at c/c spacing 100 cm; complete as per approved drawings and EBCS.	no	6		
2.2	Supply and fix 5 cm x 7 cm treated timber purlins, rafter fixed to trusses at c/c spacing 90 cm including all nails, bolts, and fixing accessories; complete.	ml	25		
2.3	Supply and fix C-28 gauge corrugated galvanized iron (CIS) roof sheets including side and end laps, hook bolts/self-drilling	M2	17.00		



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	screws with rubber washers, cutting, waste, and watertight installation; measured horizontally. Including galvanized ridge covers and flashing works of matching gauge including hip ridges, valley flashings, abutment flashings, drip edges, sealants, overlaps, and fixings; complete and watertight.			
2.4	Supply and fix 0.25 mm thick Australian timber fascia board, 25 cm width, including fixing, jointing, edge finishing, one coat primer and two coats varnish; complete.	ml	5	
2.5	Supply and fix G-28 gauge galvanized steel capping, development length 33 cm, including laps, sealants, and fixings; complete.	ml	10.6	
2.6	Supply and fix galvanized steel gutter size 25 cm x 20 cm, development length 60 cm, including brackets/hangers, setting to slope, end caps, outlets, joints, sealants, one coat primer and two coats synthetic paint; complete.	ml	5	
2.7	Supply and fix UPVC downpipes fixed to external wall with leader straps at c/c 120 cm including bends, shoes, connectors, surface preparation and two coats synthetic paint; complete.	ml	9	
2.8	Supply and fix G-28 gauge galvanized steel soffit sheets to roof eaves behind fascia board, including framing, fixings,	M2	3.36	



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	jointing, and all accessories			
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>3. METAL WORK</b>			
	All doors are manufactured from LTZ 38mm profile frames. All works should be cut and assembled to sizes and shapes of the door schedule upon submitting workshop drawing by the contractor. Unit price includes the necessary iron monger anchor bolts cover plates approved lock , doors stoppers, other necessary accessories for completing the work and one coat of primer or antirust and two coats of synthetic paint. All according to door and window schedule as specified			
3.1	METAL DOOR			
	MD1) Size 1000 x 2100mm (2.1m <sup>2</sup> ). Where the door handle should be fixed at 1.10m above finished floor.	Pcs.	2	
3.2	Supply and Install 100mm diameter wire mesh in window section where the mesh opening must be minimum to prevent entrance of flies to the toilet room			
	Window opening Size 400 x 800mm (0.32m <sup>2</sup> ).	Pcs.	2	
3.3	Supply & fix dia. 40mm with 3mm thick, galvanized stainless steel with round edge, 650mm long, and 700mm high from finished floor surface CHS steel pipe fixed garb bar secured to the floor by means of anchoring pieces from same material	LS	4	



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	including all the necessary work procedures (apply antirust, metallic paint, anchorage)			
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>4. FLOORING</b>			
	48mm thick cement sand mortar mix (1:3) screed finished fine smooth to receive ceramic tile flooring. The levelness of the screed should be at a level of perfection to avoid visual wave on the finished surface.			
4.1	Supply and fix 300x300x20mm approved rough ceramic tile flooring glued with approved type adhesive to cement screed. Price shall include 48mm thick cement screed (1:3). Color and quality to be approved by the Engineer.	m <sup>2</sup>	14	
4.2	Supply and fix 100mm pvc skirting .Price shall including all the necessary works.	m	15.60	
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>5. PLASTERING WORKS</b>			
5.1	Apply three coats of plaster in cement mortar (1:3) up to fine finish to all internal and external wall surfaces. Plastering work shall include all surface pre-cleaning preparation, chiseling, polishing, job plastering, plastering to edges and cleaning at the end of finishing work.	m <sup>2</sup>	68.5	
5.2	Rendering for external wall. Plastering work shall include all surface pre-cleaning	m <sup>2</sup>	37	



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	preparation, chiseling, polishing and cleaning at the end of finishing work.			
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>6. PAINTING WORK</b>			
6.1	Apply in three coats of plastic emulsion paint to all internal and external plastered wall surfaces. The work shall include all surface pre-cleaning preparation, chiseling, polishing and cleaning at the end of painting work. Color shall be decided by the consultant in discussion with the client	m <sup>2</sup>	37	
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>7. CERAMIC WORK</b>			
7.01	Supply and lay 3 mm thick ceramic wall tiles of approved type bedded and jointed with ceramic approved adhesive as approved by the consultant or with cement sand mortar (1:3) grouted at joints with white cement wash. Price shall include 3 cm thick cement mortar backing or approved adhesive application before laying of the ceramic, polishing, cleaning and all other related necessary works. Color and Size Subject to engineer's approval.	m <sup>2</sup>	30.50	
	<b>TOTAL CARRIED TO SUMMARY</b>			
	<b>8. SANITERY INSTALLATION</b>			
	<b>SANITARY EQUIPMENT (FIXTURES)</b>			



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	All fixtures which differ from that specified below is subject to the owner's approval, based on samples, catalogues and brochures presented by the Contractor. Unit Price shall include all the necessary fixing brackets or hooks and all the necessary assistance civil works such as chiseling of walls, floors, beams and etc...			
	<b>ALL FIXTURES ARE APPROVED EUROPEAN BRAND</b>			
8.01	Supply and fix RAK or equivalent hand wash basins at 70cm height with stainless steel cold water mixer tap made of white vitreous china, complete with pedestal stand, mixing battery plug, chrome plated chain holder, P-smell trap with connection pipe and with all other necessary accessories.			
	Size :- 500 x400 mm	No	2.00	
8.02	Supply and fix RAK or equivalent wash down water closets made of white vitreous china with plastic seat and cover including all accessories.	No	2.00	
8.03	Supply and fix flexible water Hose pipe with all necessary accessories.	No	2.00	
8.04	Supply and fix RAK or equivalent toilet paper holder with chrome plated brass wall flanged roll with chrome plated fastening screws and other accessories.	No		



8.05	Supply and fix crystal glass mirrors for toilets and wash basins with copper back protection, size: 500/400 mm including chrome plated brass mirror clips with chromes plated screws and etc... for hand wash basins.	No	2.00	
8.06	Supply and fix RAK or equivalent soap holder in white vitreous china of size 150 x 150 mm complete with the necessary fixing and other accessories for hand wash basins.	No		
<b>WATER SUPPLY PIPE LINE AND VALVES</b>				
	Cold and hot water pipes shall be PPR pipes for cold and hot water respectively, and be fixed to slabs, walls, beams or etc...with metal straps or similar material. Unit price shall include all assistance civil works and necessary fittings such as T, bends etc. according to where shown on the drawing. All water pipes shall be tested two times the working pressure or 50 meters head, whichever is greater at the expense of the contractor.			
8.07	Supply and install PPR, PN-10 pipes to internal cold water distribution system as shown on the drawing. Complete with all the necessary fittings and accessories.			
	Dia. 15 mm	m	110.00	



8.08	Supply and fix chrome service angle valves of approved standard beforehand wash basins, water closets and other fixtures. Complete with unions, elastic water proofing, hand wheels of normal quality and with all other necessary accessories.			
	Dia. 15 mm	No	10.00	
	<b>WASTE, VENT AND RAIN WATER PIPES AND</b>			
	<b>ACCESSORIES</b>			
	All domestic waste, vent and storm water pipe lines shall be comply with BS45/4:1983 and DIN 19531 uPVC, PN-4 pipes and shall be provided with a minimum slope of 1.5%. Pipes and necessary fittings shall be standard quality and be free from damage during storage, construction and etc. Unit price shall include all the necessary assistance civil works, such as excavation carta way, fixing or hanging to walls, beams or slabs. etc., necessary fittings such as bends, Y, T, etc. Storm water PVC pipes shall resist the external temperature and the quality shall meet the purpose.			
8.09	Supply and lay internal & External uPVC, PN-4 waste pipes according to where shown on the drawings. Complete with all the necessary fittings.			
	Dia. 110 mm	m	30	



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8.10	Supply and fix dia 50mm vent caps made of uPVC at the roof terminal of vent pips. complete with all accessories and water proofing works				
	Dia. 50 mm	No.	2		
8.11	Fix floor drain 80mm brass plated necessary accessories all of approved standard. Price shall include all the necessary civil works.	No.	2.00		
<b><i>TOTAL CARRIED TO SUMMARY</i></b>					
<b>9. Ceiling</b>					
9.01	600mm X 60mm Plastic ceiling with all necessary fittings	$m^2$	14		
<b><i>TOTAL CARRIED TO SUMMARY</i></b>					
<b>10. Electrical Installation Works -</b>					
	All fixtures which differ from that specified below are subject to the owner's approval, based on samples, catalogues and brochures presented by the Contractor.				
10.1	Supply, install, test, and commission complete electrical installation works for the toilet building, including but not limited to: mini distribution board (DB) with main isolator and MCBS, internal wiring and labeling; HD PVC conduits (surface or concealed) with all fittings; PVC insulated copper cables for lighting and power circuits; lighting points complete with LED lamps and holders;	LS	1.00		



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	one-way light switches fixed at 1.20 m above finished floor level; single power outlet; earthing and bonding works connected to the existing earthing system. Unit Price shall include all the necessary testing, inspection, commissioning, making good of minor civil works (chiseling and drilling of walls, floors, beams, plaster repair), fixing brackets or hooks and final handover.			
	<b><i>TOTAL CARRIED TO SUMMARY</i></b>			
	<b>11.Ramp Works -</b>			
11.1	The ramp shall be constructed with 6.0% slope with a width of 2m. The ramp should also have a 50mm diameter and 2.5mm thick handrail where the vertical posts should be fixed at each 0.9m spacing and the horizontal bar at 0.1m, 0.60m and 0.90m height from the finished floor on both sides and it should be coated with antirust and metallic paint. The color of the handrail should contrast visually with the wall or the ramp. Price should include landing at directional changes and at entrance, pointing to all the masonry above ground, and all the necessary works required for accessibility.	LS	1.00	
	<b><i>TOTAL CARRIED TO SUMMARY</i></b>			



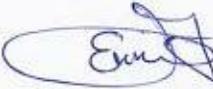
**(2) Access route (a 75m long by 1.5m width (including curb stone) RC concrete walkway )**

Item	Description	Unit	QTY	RATE	Total Cost ETB
	<u>1.Excavation &amp; earth work</u>				
1.1	Clear the site to an average depth of 300mm.	m <sup>2</sup>	112.5		
1.2	Excavate Bulk to a depth of 500mm for masonry, select, and hardcore with working space	m <sup>3</sup>	95		
1.3	Back fill with non-expansive material & compact in layers not exceeding 20cm thickness. (Make sure water is sprinkled uniformly over the layers to be compacted when required as per the site condition.)	m <sup>3</sup>	11.25		
1.4	250mm thick basaltic or sound approved stone Hard core and blinded with 20mm crushed aggregate.	m <sup>2</sup>	30.37	5	
1.5	Fill under hard-core to maintain the desired level with selected borrowed material and compact in layers not exceeding 200mm. (make sure water is sprinkled uniformly over the layers to be compacted when required as per the site condition.)	m <sup>3</sup>	7.59		
1.6	Cart away surplus excavated material to a distance not exceeding 5km from the site.	m <sup>3</sup>	117.5	0	
	<b>Total Carried to Summary</b>				
	<u>2. Concrete work</u>				



2.1	Reinforced Concrete class C-25, 400kgs of cement /m <sup>3</sup> of concrete filled into form work and vibrated around steel reinforcement (Form work and Rebar measured separately.				
	In 25mm thick lean concrete	m <sup>2</sup>	113		
	In 100mm thick ground floor slab, segment the concrete surface at each 2m. The top surface of the ramp should be rough to avoid a slippery surface.	m <sup>3</sup>	11.25		
	In 130mm thick and 150mm high Curb including plastering for making a smooth finished surface.	m <sup>3</sup>	2.93		
2.2	Put a 50mm diameter PVC pipe under the curbstone to carry the rain off out of the drainpipe and out in to the ground	No	13		
2.3	Steel reinforcement according to structural drawings including cutting, bending, tying wires & placing in position.				
	Φ8mm c/c 300mm deformed bar	Kg	148		
	Total Carried to Summary				
	<u>3. Form Work</u>				
3.1	Form work for Curb stone	m <sup>2</sup>	37.5		
	Total Carried to Summary				
	<u>4. Stone Masonry</u>				
4.1	500mm thick hard trachytic or equivalent masonry stone foundation wall bedded on cement & sand mortar mix (1:3) ratio	m <sup>3</sup>	18.75		



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below ground level. Masonry above ground should need pointing.				
Total Carried to Summary				
Total Summary For Walk way				
Total Summary For Ramp 1				
Ramp 1 (width =1.5m, elevation = 20cm & length= 4m (5%) with 10cm thickness of C25 concrete slab and curb stone on both sides of the ramp and make an opening on the curb to provide a passage for water to leave the surface of the ramp.				
Item	Description	Unit	Qty.	Rate
	<u>1.Excavation &amp; earth work</u>			
1.1	clear the site to an average depth of 200mm	m <sup>2</sup>	10.00	
1.2	Trench Excavation for 40cm thick and 35cm depth stone masonry with working space on both sides of the ramp	m <sup>3</sup>	1.96	
1.3	Back fill with non-expansive material & compact in layers not exceeding 40cm thickness including excavation for hard-core	m <sup>3</sup>	1.40	
1.4	250mm thick basaltic or sound approved stone Hard core and blinded with 20mm crushed aggregate.	m <sup>3</sup>	1.65	
1.5	Fill under hard-core to maintain the desired level with selected borrowed material and compact in layers not exceeding 200mm.	m <sup>2</sup>	6.00	



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1.6	Cart away surplus excavated material to a distance not exceeding 5km from the site.	$m^3$	2.56		
	<b>Total Carried to Summary</b>				
	<b><u>2. Concrete work</u></b>				
2.1	Reinforced Concrete class C-25, 400kgs of cement /m <sup>3</sup> of concrete filled into form work and vibrated around steel reinforcement (Form work and Rebar measured separately). Rebar Grade -40				
	In 50mm thick lean concrete C-5 concrete grade	$m^2$	6.00		
	In 100mm thick Ramp C-25 RC slabs. The top surface of the ramp should be rough to avoid a slippery surface.	$m^3$	0.60		
	Curb stone of 120mm high and 120mm wide on both sides of the ramp.	$m^3$	0.12		
2.2	Steel reinforcement including cutting, bending, tying wires & placing in position. (placing horizontally and vertically) for ramps and landings				
	Φ8mm deformed bar, with c/c 300mm spacing	Kg	49.50		
	Φ12mm deformed bar, with c/c 150mm spacing for RC ditch cover	Kg	31.70		
	<b>Total Carried to Summary</b>				
	<b><u>2. Form Work</u></b>				
3.1	30mm thick form work for Ramp and landing	$m^2$	1.40		
	<b>Total Carried to Summary</b>				
	<b><u>4. Stone Masonry</u></b>				



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4.1	400mm thick hard trachytic or equivalent masonry stone foundation wall bedded on cement & sand mortar mix (1:4) ratio below ground level and Apply three coats of plaster in cement mortar (1:4) up to fine finish to all internal wall surfaces. Plastering work shall include all surface pre-cleaning preparation, chiseling, polishing and cleaning at the end of finishing work.	$m^3$	2.00		
	Total Carried to Summary				

Total Summary For Ramp 1

(4) Signage					
ITE M	DESCRIPTION	UNIT	QT Y	RATE	Total Cost ETB
<b>A. SUB-STRUCTURE</b>					
	<b>1.EXCAVATION &amp; EARTH WORKS</b>				
1.01	Excavate for site clearing to a depth of 20cm to remove to soil	$m^2$	0.30		
1.02	Bulk excavation in ordinary soil not exceeding 1000mm from NGL.	$m^3$	0.30		
1.03	Selected Fill under the concrete to maintain the desired level with selected borrowed material and compact in layers not exceeding 200mm.	$m^3$	0.20		
1.04	Cart away surplus excavated material to a distance not exceeding 2kms.	$m^3$	0.36		
<b>TOTAL CARRIED TO SUMMARY</b>					



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	<b>2.CONCRETE WORKS</b>			
2.01	50mm thick lean concrete in C-5 with minimum cement content of 150kg/m <sup>3</sup> of concrete under:			
	a) footing pad	m <sup>2</sup>	0.13	
2.02	Reinforced concrete in class C-25 (with a 28-day 150mm cube crushing strength of 25MPa), cast into formworks and vibrated around rod reinforcement bars.(formwork & reinforcement bars are measured separately.) in: "Type of cement to be ordinary Portland cement (OPC)"			
	a) footing pad	m <sup>3</sup>	0.10	
2.03	Sawn zigba wood form work for:			
	a) footing pad	m <sup>2</sup>	0.00	
<b>TOTAL CARRIED TO SUMMARY</b>				
<b>B. SUPER-STRUCTURE</b>				
<b>1. METAL WORK(signage pole)</b>				
1.01	Supply & fix five poles with dia. 50mm with 3mm thick metal pipe mounted on anchor with 150mm curbs at its bottom and it is 2.5m high above the ground. (all metal surfaces should be coated with antirust and metallic paint)	No	2.00	
<b>TOTAL CARRIED TO SUMMARY</b>				
<b>2.SIGNAGE PLATE</b>				



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2.1	Supply and fix 60x30cm and 3mm thick aluminum cladding <b>pole mounted</b> sign board plate on which each letters should be 7cm written in UV print. The plate should be contrasted with blue black background surface and white letters. And the sign of donor's logo, ECDD and symbol of accessibility should be printed on one of the plates as required. All letters and logo has to be printed in UV print on both side (face) of the plate. On one signage pole, at least five plates supported in metallic frame should mount.	No	10.0		
	<b>TOTAL CARRIED TO SUMMARY</b>				



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