

BILL OF QUANTITIES - SECTION- A (FOR NEW SIGNAGE WORK)

Sl No	Description	QTY	Unit	Rate	Amount
A	GLOW SIGN BOARD				
1.1	Providing and Fixing of Flexible Substrate of make, respective codes and specifications given in tender for use in Back lit signages. Cost of fascia (Backlit flex) including labour charges for plotting & pasting, tensioning ("L" angle system) with signages cabinet, electrical items, Digital Timer and fixing complete as per specification. Replacement Warranty for the Fascia materials for a period of 5 years. The Parent Manufacturer/their representative has to inspect the site and certify for quality, workmanship and materials in the Warranty card.	1	S.Ft		
a	SCAFFOLDING WORKS (No Extra charges for height below 25 ft)				
	Cost of Scaffolding for Hoisting Signages, for height above 25 fts. (1) No payments will be made for scaffolding for Signage installations / fascia change up to a height of 25 feet from the floor level to bottom of Signage. 2) If the signage is to be installed on roof top of a building, where space for working is available, no extra payments will be paid for the sake of lift / scaffolding charges. The area of Scaffolding will be measured from the bottom of signage to Ground level x Length of signage	1	S.Ft.		

BILL OF QUANTITIES FOR FASCIA CHANGE - SECTION-B

Sr.	Description	QTY	Unit	Rate	Amount(Rs.)
B	REPLACING OF OLD FLEX & VINYL OF EXISTING SIGNAGES (Backlit signage) (L1 WILL BE DECIDED FOR FLEX CHANGE RATE ONLY)				
1.1	Removal of Old Flex and Vinyl and providing new flex and vinyl is using the present art work approved and retaining the existing Boxing / MS Framing. Replacement Warranty for the Fascia materials for a period of 5 years. The Parent Manufacturer / their representative has to inspect the site and certify for quality, workmanship and materials in the Warranty card.	1	S.Ft.		

Date :

Sign & Stamp of Vendor

BILL OF QUANTITIES FOR NEW RETRO REFLECTIVE SIGN BOARDS - SECTION-C

Sr.	Description	QTY	Unit	Rate	Amount(Rs.)
C	RETRO REFLECTIVE SIGN BOARDS				
1.1	Manufacturing, supplying & installation of retro reflective sign boards made up of 2 mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D 4956-01 in approved colour combination including subject matter, (bi-lingual), symbols and borders etc. as per IRC:67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D- 4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5. Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. Warranty for the Retro Reflective Signboard for a period of 10 years.	1	S.Ft.		

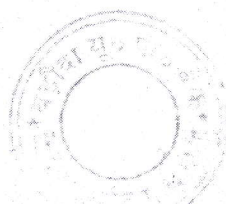
BILL OF QUANTITIES FOR NEW RETRO REFLECTIVE LOLLIPOP/INDICATOR BOARDS - SECTION-D

Sr.	Description	QTY	Unit	Rate	Amount(Rs.)
D	RETRO REFLECTIVE LOLLIPOP/INDICATOR BOARDS-DOUBLE SIDE				
1.1	Manufacturing, supplying & installation of retro reflective Lollipop/Indicator boards(double side) made up of 2 mm thick aluminium sheet(3X2 feet, Rectangular shape), Brand 3M, Avery Dennison, Conforming to ASTM D4956, with double M.S Tee section ISMT 50x50x6 mm of support length of 2500 mm. Warranty for boards for a period of 10 years.	1	S.Ft.		

BILL OF QUANTITIES FOR NEW RETRO REFLECTIVE LOLLIPOP/INDICATOR BOARDS - SECTION-E

Sr.	Description	QTY	Unit	Rate	Amount(Rs.)
E	VINYL LOLLIPOP/INDICATOR BOARDS-DOUBLE SIDE				
1.1	Manufacturing, supplying & installation of Vinyl Lollipop / Indicator boards(double side) made up of 2mm ACP Sheet (3X2 feet, Rectangular shape), Vinyl 3M (Scotch 3630 series, 3650 series, 7725 series) with double M.S Tee section ISMT 50x50x6 mm of support length of 2500 mm. Warranty for boards for a period of 5 years.	1	S.Ft.		

Date :



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BILL OF QUANTITIES FOR REPAIR & MAINTANCE - SECTION-F

F	Providing and Replacing of Electrical fittings & fixtures while replacing the Flex & Vinyl in case of damaged items. A sample quantity is mentioned below. Actual quantity as per site condition has to be Replaced and got certified from the Branch Head. (No Extra Charges for Wiring Etc. will be paid)	Unit	Qty	Rate	Total Amount
	1.1 LED Tube light - 36 Watt (PHILIPS / OSRAM / HAVELLS)	NOS	1		
	1.2 LED TUBE LIGHT DRIVER (PHILIPS / OSRAM / HAVELLS)	NOS	1		
	1.3 Installing Of Digital timer (L&T / MDS)	NOS	1		
	TOTAL (L1 will be decided on Total Amount) (A.1.1 - A.1.2 + a + B.1.1 + C.1.1 + D.1.1 + E.1.1) No Separate Vendor will be decided for Repairing work. Two Vendors who is lowest for New Signage and flex Change will accept the rate of lowest amount quoted amongst all the vendors for Repairing work				

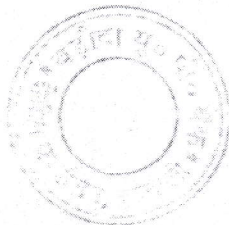
GST shall be paid extra as applicable.

Note:-

1. No extra payment shall be made for lift up to 25 ft. (bottom of the Signages) from floor level.
2. Scope of works at any location will be any one or more items from the above BOQ according to site condition.
3. Authorized Converter Certificate copy to be attached at the time of tender submission.
4. Vinyl/Flex/Retro Authorized distributor Material purchase order certificate to be produced at the time of invoice submission.
5. Flex/Vinyl/Retro Warranty certificate required at the time of invoice submission otherwise vendor payment will be hold by bank.
6. The Rates quoted will be valid for 2 Year. No Price Escalation will be considered.
7. Billing is based on actual square footage / quantity of the used material in Signages, certified by the Branch concern person / Branch Manager.

Date :

Sign & Stamp of Vendor



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TECHNICAL SPECIFICATIONS FOR NEW SUPPLY (SUGGESTED)

1. SPECIFICATIONS FOR FLEX SUBSTRATE AND VINYL TO BE USED FOR SIGNAGE

I. FASCIA-FLEXIBLE SUBSTRATE: The properties are given in Table 1 below.

It shall have UV resistors added while manufacturing to prevent the whiteners turning yellow due to constant exposure to UV rays. The flex and Vinyl should be warranted for a period of five years from the date of completion against yellowing/graying of flex, plasticizer migration, wicking of flex, fungus or mildew formation, vinyl peel-off, fading, shrinkage, cracking and crazing etc.

II. GRAPHICS: Graphics shall be computer-cut with translucent vinyl matching the colour combination of Baroda U.P. Bank.

III. The Colour specification for the signage : Colour Pantone number (Baroda Vermillion) 1665C

IV. Brand Make - 3M/Avery Dennison/LG Hausys/or Equivalent

TABLE - 1 PHYSICAL PROPERTIES OF FLEXIBLE SUBSTRATE		
Property	Specification	Test Method
Thickness	600 micron +/- 10 %	DIN 53353
Total Weight	700 gm/ sqmtr +/- 5 %	DIN 53353
Base Fabric	Polyester	
Yarn	1000 x 1000 Denier	DIN EN ISO 2060
Elongation	<50 %	ASTM 882
Tensile Strength (L/W)	150/ 140 Kg/ 2.5 CM	DIN 53354 (Cut Strip)
Tear Strength (L/W)	25 /20 Kg	DIN 53354 (Single Tongue)
Adhesion Strength (PVC + Fabric)	50 Kg/ 5 Cm	DIN 53357
Light Transmission	25 to 32 %	
Substrate	Polyester scrim embedded in a white pigmented vinyl (or PVC based)	

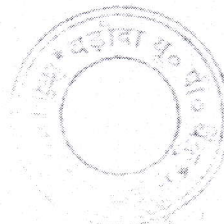


TABLE -2 PHYSICAL PROPERTIES OF TRANSLUCENT VINYL		
Property	Specification	Test Method
Thickness (Including adhesive)	80m \pm 10%	Micrometer
Tensile strength	400 ~ 1000 g/mm	ASTM 882
Elongation	100 ~ 300 %	ASTM 882
Peel adhesion(24hrs)	1,200g/in	180 peeling PSTC-1
Application temp.	10°C	18 to 25°C optimum, on clean substrate
Gloss	30 \pm 5	@60, in Machine Direction (ASTM D 2457)
Dimensional Stability	Max 0.5%	Adhered to Aluminum Plate, Length Direction (100C Oven, 2hr , Average)
Release liner thickness	0.17mm \pm 0.08mm	Micrometer
Colour	Baroda Vermillion - Pantone 1665 C	

Note:-

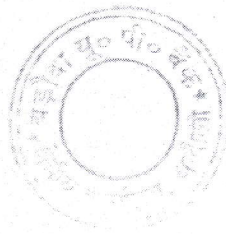
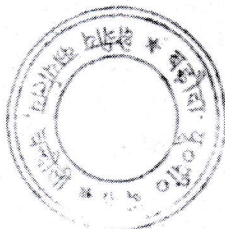
1. Written warranty shall be obtained for 5 years for per signage/site from the original manufacturer through vendors/ signage Contractor for Flex & Vinyl supply from date of installation. Vendors / Signage Contractor to submit tender specific authorization from Original Manufacturer for Flex / Vinyl.
2. Flex/ Vinyl Original Manufacturer should have presence in India either directly or through their subsidiaries by way of having its plants / sales offices in India.
3. Every signage warranty certificate submission shall be compulsory with execution invoice.
4. STANDARDS: All the materials shall conform to the required standards & safety aspects as specified in relevant ASTM/DIN/ BIS standards wherever applicable.
5. The sign boards have to be fixed at various heights from the ground level as per the requirement.

2. SIGN BOX SPECIFICATIONS :

1. **SIGN CABINET STRUCTURE - FRAME WORK:** The Box (structure) should be fabricated using square MS tube 1" x 1" of 18 gauge (of Jindal, TATA or approved equivalent make) with primer and enamel painted. ISI grade GI Sheet of 24 gauge duly powder coated for side, top and bottom and 26 gauge for back should be used. Thickness of back-lit sign board should be minimum 9". Bird-proof vent holes to be provided on the GI sheets provided on the sides of the board to dissipate hot air. Aluminium drip cap with 2" projection to be provided on the top front edge of the sign board to protect the fascia from rain. All internal metal portions of the sign cabinet to be painted with one coat of Antirust paint and 2 coats of whitecolour enamel paint.



- ii. **SIGN CABINET SUPPORT:** The sign cabinet should be provided with suitable arrangements for fixing to existing wall surface or existing supporting structures available with suitable clamps, brackets, anchor bolts etc. The arrangements should be adequate to support the weight of the cabinet and to keep it firmly in position. The minimum requirement is that the signage frame work shall be anchored to the sunshade below using 'L' angle of 25mmx25mmx5mm thick equal angle in L shape at an interval of every 5 feet (of TATA, Jindal or equivalent approved make). Further the board should be anchored from top to the back wall using suitable steel/GI wire of minimum 8mm thick. All exposed clamps, brackets etc shall be painted with two coats of synthetic enamel paint over a coat of primer. Nothing extra will be paid for fixing the cabinet in position.
 - iii. **WELDING SPECIFICATIONS:** Branded welding rods should be used for welding the joints. Welding rod should be preheated prior to welding. Preheating the welding rods enables uniform & smooth flow of the welding material in the joints. If welding is done with preheated rod there will be no formation of open fissures in the joint due to smooth flow of welding material. Open fissures cause weakening of joints. Welding has to be done across the full cross section of the MS hollow pipe.
 - iv. **PROTECTION OF THE FRAME:** The entire frame of the sign cabinet post welding has to be grinded around the welding joints to remove spurs and undulations if any created during welding. Post grinding the joints, the MS pipe has to be painted with zinc chromate primer and 2 coats of synthetic enamel paint of white shade.
 - v. **FASTENERS:** The fasteners used shall be uniform and at such spacing that it does not spoil the appearance of the signage looking from the bottom or the sides. The head of the screw shall have capping of stainless steel.
 - vi. **SIGN BOX TENSIONING SYSTEM:** A suitable tensioning system should be used for stretching flexible substrate on the front part of the sign box such that there should not be any shrinkage, cracking and crazing. Flex wrinkling/ bends shall not occur post tensioning. To ensure that the flexible substrate is tensioned uniformly an extruded aluminum tensioning system with Allan key tensioning system with rubber beading should be adopted. The sign face shall be tensioned with tensioning system all along the length and width of the sign.
3. **PROCESS OF PASTING VINYL STICKERS OVER THE FLEX SUBSTRATE:**
The pasting vinyl stickers over the flex substrate shall be undertaken with all care and techniques such as using pre mask tapes to the vinyl before initiating the fixing of the same over the flex, it shall be ensured that vinyl is properly aligned to the flex without any gaps at the outer edges, there are no air bubbles, etc., The workmanship shall be of high standards and engineering.
4. **FIXING OF THE SIGNAGES AND SAFETY AT SITE:** The signage providers shall duly assess the site condition for fixing securely by appropriate means using necessary clamp, hooks, fasteners and including minor civil works necessary at site. The entire signage so fixed at site shall withstand high wind pressures depending upon the actual locations / floor in which it is installed. It shall also be the responsibility of the signage solution provider for the safety of the installation, the signage till they accepted by the bank. While executing the work the labour force used shall comply to labour laws and all necessary safety measures shall be undertaken like using scaffolds, ladders, safety belts, helmets, gloves, appropriate tools. Suitable precautions shall be taken against overhead power lines, slippery surface or such other hazards which may be in the close proximity to the premises / site. Any damages to the signage during the process of installation will result in rejection of the signage and the same shall be replaced at their own cost.



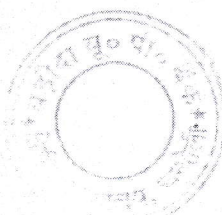
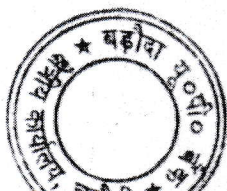
5. ELECTRICAL COMPONENTS:

Specifications of Single Sided LED Modular Lights:

Sr. No.	Parameters	Significance	Desirables
Specifications for LED Module			
1	Make of LED Chip	To have creditable and quality products	Nichia/Cree/Lumileds/Osram
2	Make of LED Module	To have creditable and quality products	Osram/Lighting Technologies/Tridonic
3	LED Module Product Name	To have creditable and quality products	Osram BackLED M Plus G15/LT Maze SLHO/Tri-donic ALEXXchain Crystal Classic P541
4	Colour CCT	CCT defines the color which the light will Emit. 2000-3000K : Warm White; 3000-5000K : Day light color 6000-7000K : Pure white color ; >7000K : Cool white color	6500Kelvin(K)
5	Certifications of LED Chip	To check brightness	LM 80
6	Beam Angle	A beam angle defines the distance at which the module can be kept behind the vinyl to have uniform brightness	>=150 Degree (Angle of Irradiation)
7	Mounting Technology	LED Mounting - compactness by SMD Module Mounting - Modules should not come out with heating and wind pressure.	Surface Mounted Device (SMD)
8	Watt/Module	Wattage per module helps to calculate total power our signage will consume.	0.72 W/ 0.75 W
9	LED Module Per Sqft in Signage	To check no. of LED's used in a Signage.	3 Module/ Per Sqft



10	System efficacy (Lm/W) or Lumin Output	It is a measure of the efficiency of a lighting system.	>95-100 Lm/W
11	Operating temperature	To ensure proper functioning of signages at various locations.	-40 degree C to + 65 degree Centigrade
12	LED Module life	It indicates the number of hours before the luminance drops to 70% of initial output.	Min 50000 Burning Hrs (L70/B50) at 85 degree Centigrade
13	Housing Module Material	Housing module material selected for holding the LED chip and lens.	Poly carbonate (PC) / RoHS (Reduction of hazardous substances) Compliant material to be used.
14	CRI (Colour Rendering Index)	The color rendering index (CRI) is the index of LED tube light compared with natural light.	>=80
15	Protection Class	IP defines the protection of Modules for Dust and water	IP66
16	Certifications & Standards for Modules	No Hazardous substance and meeting international standard.	BIS/LM79/LM80
17	LED Module Certification		Yes
18	Internal drivers in modules		Yes
19	Optics		The chip should have an optical lens.
Specifications for LED Driver			
20	LED Driver	Converts I/P AC voltage to DC voltage for LEDs.	Osram/Lighting Technologies/Tridonic
21	LED Driver Name	Converts I/P AC voltage to DC voltage for LEDs.	Osram OptotronicSeries/Lighting Technologies (LT)/Tridonic TALEXX converter
22	Driver Wattage (W)	Wattage at which driver is designed.	40W/60W/100W/120W
23	Surge protection (in KV inbuilt)	To protect the system from fluctuation in voltage.	Inbuilt Min 6 KV (Line to ground)
24	Supply voltage for drivers (Input Voltage)	Voltage range at which LED drivers function.	90 V-300 V
25	Protection		Over Voltage, Over Current, Over Temperature, Short circuit.



26	IP Rating	IP defines the protection of Modules for Dust and water	Min. IP67
27	Output Power		40W/60W/100W/120W
28	Standards for LED Driver	International standards.	CE (European Conformity)/CB/C-Tick / UL (Underwritten laboratory) EN 55015, EN 62031 EN 61000-3-2, EN 61000-33,, EN 61000-4-5, EN 61547, EN 61347-1, EN 61347-2-13 or As per IEC.
29	Cable for modules	Standard cable to avoid heat and fire.	AWG 18
30	Cable for drivers	Standard cable to avoid heat and fire.	AWG 18 / AWG 17
31	Warranty	To ensure quality and life of product.	5 Years warranty on LED modules and Drivers
32	THD (Total Harmonic Distortion)		< 10%
33	Short Circuit Protection		Automatic, Reversible
34	Over load Protection		Automatic, Reversible
35	Over temperature protection		Automatic, Reversible
36	UL/CE/ROHS/ENEC/BI S		Yes
37	Input Under Voltage		Shut down and auto- restart
38	Manufacturer		Osram/ Lighting Technologies/ Tridonic
Protection Rating		Description	
IP66		Fully protected from dust and protected against heavy seas or powerful jets of water	
IP67		Fully protected from dust and can also withstand being submerged in 1m (about 3.3 feet) of static water for up to 30 minutes	

Note

1. Written warranty shall be obtained for 5 years for per signage/site from the original Manufacturer through vendors/ signage Contractor for LED Modules & Power Supply from date of installation. Vendors / Signage Contractor to submit tender specific authorization from Original Manufacturer for LED Modules & Power Supply
2. Every signage warranty certificate submission shall be compulsory with execution invoice



3. STANDARDS: All the materials shall conform to the required standards & safety aspects as specified in relevant ASTM/BIS standards wherever applicable.
4. The sign boards have to be fixed at various heights from the ground level as per the requirement.

15. RETRO REFLECTIVE SIGN BOARDS & LOLLIPOP/INDICATOR BOARDS

Specification- Retro Reflective Sign Boards (Laminated)

Structure Pipe	1 inch
Sheet	Aluminium composite pannel (ACP) – 2 mm
Base	Retro Reflective sheet colour white
Retro sheet	HIP (High Intensity Prismatic), Type-4, Class B
Brand	3M, Avery Dennison, Conforming to ASTM D4956

Specification- Retro Reflective Lollipop/Indicator Boards (Laminated)- Double Side

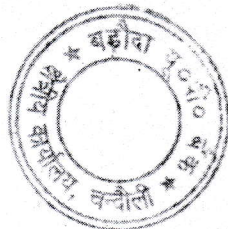
ACP Sheet	2mm (3X2 feet, Rectangular shape)
Base	Retro Reflective sheet colour white
Retro sheet	HIP (High Intensity Prismatic), Type-4, Class B
Brand	3M, Avery Dennison, Conforming to ASTM D4956
M.S. Tee Section	Double M.S Tee section ISMT 50x50x6 mm of support length of 2500 mm

Specification- Vinyl Lollipop/Indicator Boards (Laminated) - Double Side

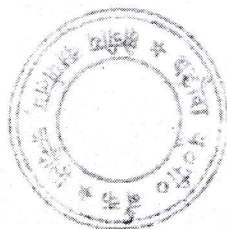
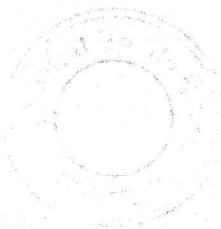
ACP Sheet	2mm (3X2 feet, Rectangular shape)
Base	Vinyl 3M (Scotchcal 3630 series, 3650 series, 7725 series)
M.S. Tee Section	Double M.S Tee section ISMT 50x50x6 mm of support length of 2500 mm

Note :-

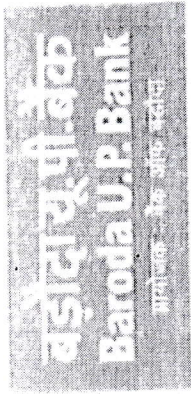
1. Written warranty shall be obtained for 10 years for per signage/site from the original Manufacturer through vendors/ signage Contractor for Retro Reflective Sign Boards/Indicator Boards and 5 years for Vinyl Indicator Boards per board/site from date of installation. Vendors / Signage Contractor to submit tender specific authorization from Original Manufacturer for ACP & Retro.
2. Every signage warranty certificate submission shall be compulsory with execution invoice
3. STANDARDS: All the materials shall conform to the required standards & safety aspects as specified in relevant ASTM/BIS standards wherever applicable.
4. The sign boards have to be fixed at various heights from the ground level as per the requirement.
5. References 10'X3', 12'X3', 15'X4', 20'X4' & 25' X 4'



Sample Design Logo



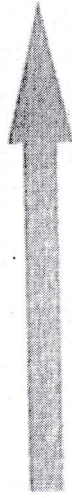
Sample Design Indicator Boards



बड़ौदा यू.पी. बैंक
Baroda U.P. Bank

प्रगतिशील - एक और मंजिल

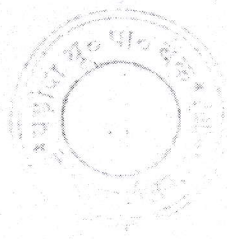
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Baroda U.P. Bank

प्रगतिशील - एक और मंजिल

शाखा : गोरखपुर



Sample Design Sign Boards

