



Kenya Airports Authority

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KAA/OT/WAP/0227/2023-2024

24th May, 2024

To: All Tenderers

**RE: PROPOSED REHABILITATION OF PAVEMENTS FOR
RUNWAY AT WILSON AIRPORT**

TENDER NO. KAA/OT/WAP/0227/2023-2024

ADDENDUM NO. 3

The following are tender clarifications/addendum issued in accordance with clause 8 regarding the above tender.

No.	Query	Response
1	A raising from the site visit meeting held on 21 st May 2024 the BOQ change	Bidders are hereby informed that the BOQ has been expunged and replaced in its entirety with the attached annexed BOQ
2	Pre-bid meeting minutes and project drawings	Attached Minutes from site visit and project drawing

The closing/opening date is hereby extended to **6th June 2024** from **30th May, 2024** at **11:00 am**

Kindly ensure your tender is valid for a period of **126 days** and your tender security is valid for a period of **156 days** from the NEW closing/opening date of **6th June, 2024** at **11.00. a. m.**

This addendum forms part of the bidding document and is binding on all bidders. All other conditions remain the same.

Vincent Korir
GM (PROCUREMENT AND LOGISTICS)
For: MANAGING DIRECTOR/CEO

MINUTES OF THE PRE-TENDER SITE VISIT FOR TENDER NO. KAA/OT/WAP/0226/2023-2024 PROPOSED REHABILITATION OF PAVEMENTS FOR TAXIWAYS CHARLIE, VIP APRON & APRON 3 AT WILSON AIRPORT AND TENDER NO. KAA/OT/WAP/0227/2023-2024 PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY AT WILSON AIRPORT ON 21ST MAY, 2024

I. ATTENDANCE

Members Present

No.	Name	Designation
1.	OMARIBA DUKE OMONDI	FRONTIER ENGINEERING LTD
2.	JOSEPH AURA	PEFAM CONSTRUCTION COMPANY LTD
3.	ENG. DANIEL A. ODHIAMBO	HALANE CONSTRUCTION COMPANY
4.	ENG. PATRICK K. NJOGU	WAK CONSTRUCTION LTD
5.	ENG. WISIAN MOCHA	PRIDE ENTERPRISES LTD
6.	SARJAL EBEREI	NARIABA ENT. LTD
7.	STANLEY K. MAIYO	KABUITO CONTRACTORS LTD
8.	MARTIN KIPKOECH	GLISTAR ENTERPRISES
9.	LUCIA KITUKU	SS MEHTA & SONS LTD
10.	MWAURA KARANJA	CONTRALINKS SOLUTIONS
11.	JACKSON KIMANI	OASIS TECHNICAL & CONSULTING LTD
12.	RUTTOH K. ERNEST	HYOUNG & CO(EA) LTD
13.	ENG. BEATRICE ONGORO	KAA
14.	TIMOTHY KATAKA	KAA
15.	ENG. MOSES OSURE	KAA
16.	REGINA OMBATI	KAA

II. AGENDA

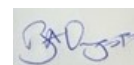
- 1. Opening remarks**
- 2. Site visit**
- 3. Closing remarks**

III. MINUTES

MIN.	DESCRIPTION	ACTION
1.0	Opening Remarks	INFO

	<p>The meeting commenced at 11am. with Eng. Osure welcoming the members present. The bidders were reminded to sign attendance sheet as proof of attendance. The scope of works for each of the two projects was outlined and detailed explanation given to the bidders.</p>	
2.0	<p>Site visit</p> <p>A site visit was conducted for the bidders to acquaint themselves with the site conditions at Runway 14-32, proposed Taxiway D, Runway 07-25, Apron 1, Apron 3 & Taxiway C. During the site visit detailed explanation of the scope was outlined. The bidders were reminded to observe the following: -</p> <ul style="list-style-type: none"> • To note the specification given for AC and that the penetration grade bitumen shall be 60/70 modified polymer; and to quote their rates accordingly. • Maintenance of the runway(s) in use, for aircraft operations, will be carried out throughout the contract period. • KAA will provide an access gate for ferrying materials in to the site. • Successful bidder to process passes for his personnel and vehicle permits into the site. • Damping is to be done away from the airport. • Ensure provision for radio communication and training for personnel. • Under Bill 4 item on milling, the bidder to ensure that rates are specific to milling and not excavation. <p>During the site visit and from assessing the state of the runways it was agreed there may be need for an overlay as part of the maintenance to be carried out. An addendum to the tender will be uploaded on the KAA website as appropriate.</p> <p>The bidders were advised to publish their concerns on extension of the tendering period through the KAA website at http://kaa.go.ke/corporate/procurement/</p>	KAA/ BIDDERS
3.0	<p>Closing remarks</p> <p>There being no AOB, Eng. Beatrice thanked the bidders for participating in the pre-tender site visit. The bidders were issued with duly signed and stamped certificate of tenderers visit to site.</p>	KAA

Secretary: Regina Ombati.....Chairperson: Eng. Beatrice Ongoro.....



BILL OF QUANTITIES

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.1	PRELIMINARIES				
Item No.	Description	Units	Qty	Rate(KSh)	Amount (KSh)
I.01	Provide and maintain a furnished Engineer's Representative's office as shown in the drawings or as instructed by the Engineer for use during the duration of the contract. Ownership to revert to the Client at the end of the Contract. Maintenance shall include provision of electricity, water and high-speed internet.	LS	I		
I.02	Provide an Ablution Block as per the drawing	LS	I		
I.03	Provide and install reinforced concrete Septic Tank of 25,000 ltrs capacity for the office to be decommissioned upon completion of works	LS	I		
I.04	Provide and maintain Engineer's Representative's Laboratory as shown in the drawings or as instructed by the Engineer for use during the duration of the contract. Ownership to revert to the Client at the end of the Contract. Maintenance shall include provision of electricity, water and high-speed internet.	LS	I	5,000,000.00	5,000,000.00
I.05	Allow a Prime Cost Sum of Kshs.30,000,000/= for materials testing and Soils Alignment Investigations	Item	I	30,000,000.00	30,000,000.00
I.06	Include percentage of P.C Sum in item I.05 for contractor's overheads and profit.	%	I		
I.07	Allow a prime cost Sum of Ksh.8,000,000.00 for Engineer's miscellaneous account.	Item	I	8,000,000.00	8,000,000.00

I.08	Include percentage of P.C sum in item I.07 for contractor's overheads and profit.	%	I		
I.09	Allow a prime cost sum of KSh. 50,000,000.00 for wages and allowances of a site supervisor and Engineer's site staff including overtime whose employment shall be determined by the employer.	Item	I	50,000,000.00	50,000,000.00
I.10	Include percentage of P.C sum in item I.09 for contractor's overheads and profit.	%	I		
I.11	Provide with driver, fuel, service and maintain, comprehensively insure 2No. Brand new 4WD Station Wagon vehicle, diesel engine capacity 2800-3000 cc producing a min Torque of 500Nm with ABS, Hill Assist Control, cruise control features for exclusive use of the Engineer inclusive of the first 5,000 km per vehicle month to Engineer's approval. Vehicle to revert back to the Contractor	Veh. Month	48		
I.12	Extra over item I.11 for mileage over 5,000km per vehicle month inclusive of all fuels, lubricants, servicing and maintenance insurances and driver.	KM	24,000		
I.13	Provide with driver, fuel, service and maintain, comprehensively insure 3No. Brand new 4WD Double cab pickup vehicle, diesel engine capacity 2800-3000 cc producing a min Torque of 500Nm with ABS, Hill Assist Control, cruise control features for exclusive use of the Engineer inclusive of the first 5,000 km per vehicle month to Engineer's approval. Vehicle to revert back to the Contractor	Veh. Month	72		
I.14	Extra over item I.13 for mileage over 5,000km per vehicle month inclusive of all fuels, lubricants, servicing and maintenance insurances and driver.	KM	36,000		

I.15	Provide Automatic Total Station with an accuracy of 0.9 Seconds complete with Prism, Tripod with levelling bubble and software for exclusive use by the Engineer's representative for the entire duration of the contract as per special specifications.	Month	18		
I.16	Provide project signboard being 1200mm x 600mm Gauge 14 (1.99mm thick) mild steel plate welded onto 50mm x 50mm x 3mm square hollow sections frame, 2.5m frame with 0.5m fixed below ground, and painted approved colours for the duration of the project including the defects liability period	No.	1		
I.17	Provide and supply a laptop Intel Core i7-10750H 10 th Gen, 32 GB DDR4-1333/1600 1TB 7200 RPM SSD Hard Disk, TFT Size 15.6 Inch (3840 x2160) 4K UHD Wireless Optical Mouse with mouse pad as instructed by the Engineer. To revert to the Contractor at the end of the Contract.	No.	6		
I.18	Provide and maintain approved branded desktop computer with the following: Intel Core i7 processor, 20" TFT screen display, 1000 TB SATA HDD storage, 16 GB DDR RAM, DVD ±RW multi-layer drive, NIC card, 540M graphics card complete with all accessories and pre-loaded with licensed Windows 7 Ultimate 64-bit OS, latest MS Office and MS Project. The PC should have full multimedia capabilities. To revert to the Contractor at the end of the Contract.	No.	2		
I.19	Provide supply mobile phones with 48MP main camera and 1TB storage as directed by the Engineer.	No.	6		
I.20	Provide KES 50,000 as airtime for every month for project communication for the duration of the project	Month	18		
I.21	Allow PC SUM for Relocation of Power Line and other services	PC	1	10,000,000.00	10,000,000.00

I.22	Include percentage of P.C sum in item I.21 for contractor's overheads and profit.	%	I		
I.23	Allow PC SUM for EIA studies and Public Participation	PC	I	2,000,000.00	2,000,000.00
I.24	Include percentage of P.C sum in item I.23 for contractor's overheads and profit.	%	I		
I.25	Allow PC SUM for Social Safe Guards and Reporting	PC	I	2,000,000.00	2,000,000.00
I.26	Include percentage of P.C sum in item I.25 for contractor's overheads and profit.	%	I		
I.27	Allow PC SUM for Capacity building and Training of Engineer's staff	PC	I	10,000,000.00	10,000,000.00
I.28	Include percentage of P.C sum in item I.27 for contractor's overheads and profit.	%	I		
Total of Bill Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY I4/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.4	SITE CLEARANCE AND TOP SOIL STRIPPING				
Item No.	Description	Units	Qty	Rate(Kshs)	Amount (Kshs)
No separate payment shall be made for the overhaul material and the cost of such haulage shall be included in the rate and /or prices.					
4.01	Light Bush Clearing	Ha	30.0		
4.02	Removal of topsoil to spoil. Depth not exceeding 200mm.	m ³	45,400		
4.03	Demolition to spoiling of concrete /Masonry structures as instructed by the Engineer	m3	2,000.00		
4.04	Demolition to steel structures and cart away as instructed by the Engineer	Tonnes	20.00		
4.05	Removal of barbed wire or chain-link fence and cart away as instructed by the Engineer	m ²	1,050.00		
4.06	Mill Asphalt Concrete surface and stockpile or dispose as instructed by the Engineer.	m ³	7,200.00		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.5	EARTH WORKS				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
No separate payment shall be made for the overhaul material and the cost of such haulage shall be included in the rate and /or prices. It is the contractor's responsibility to identify quarries, borrow pits and spoil areas.					
5.01	Provide, lay and compact soft material in layers not exceeding 150mm in Fill as directed by the Engineer	m ³	150,000		
5.02	Provide, lay and compact fill in hard material in layers not exceeding 200mm as directed by the Engineer	m ³	12,600		
5.03	Extra over items 5.01 and 5.02 for compaction of top 300mm to 100% MDD (AASHTO T99)	m ³	9,500		
5.04	Cut to Spoil in soft material	m ³	50,200		
5.05	Cut to Spoil in hard	m ³	12,600		
5.06	Compaction of existing ground to a depth of 150mm to 95% MDD (AASHTO T99)	m ³	10,300		
5.07	Provide and place approved subgrade material compacted to 98% MDD in layers of 150mm to the satisfaction of the Engineer	m ³	10,200		
5.08	Provide, lay and compact to refusal rockfill in layers not exceeding 300mm or as directed by Engineer.	m ³	18,900		

5.09	Provide approved (300g/m2) filter fabric under, over or around rockfill .	m ²	1,900		
5.10	50mm Top soiling to specification	m ³	22,300		
5.11	Grassing to specifications	m ²	222,300		
5.12	Treat the top surface of all hardcore and aggregate fillings with METRO 200SC (or equivalent approved termicide), after dilution (1:800) at the rate of 5 liters per square metre or any other equal and approved insecticide treatment. application to be undertaken by a person registered with Pest Control Products Board (PCBP) and approved by the Engineer.	m ²	408,000		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.8	CULVERT AND DRAINAGE WORKS				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
No separate payment shall be made for the haulage of surplus or unsuitable excavated material and the cost of such haulage shall be included in the rates/prices.					
8.01	Excavate for culverts and subsoil drains in soft material.	m ³	20,500		
8.02	Excavate for inlet, outfall, mitre and catch water drains in soft material.	m ³	39,300		
8.03	Extra over items 8.01 & 8.02 for excavation in hard material.	m ³	17,800		
8.04	Selected fill material	m ³	1,100		
8.05	Cleaning of fully silted 600mm dia Culverts	m	800		
8.06	Cleaning of fully silted 900mm dia Culverts	m	800		
8.07	Flushing of fully blocked covered road gully drains of all diameters not more than 250mm dia	m	100		
8.08	Supply and install 300mm x 300mm x 50mm Heavy Duty Cast Iron grating to roadside gully traps	No.	50		
8.09	Supply and install 450mmx 300mmx 50mm Heavy Duty Cast Iron grating to roadside gully traps	No.	50		
8.10	Supply and install 300mmx 300mm composite/ polymer fiber glass reinforced resin grating to roadside gully traps	No.	50		
8.11	Flushing and cleaning of fully blocked covered road gully drains of all diameters not more than 450mm dia	m	200		

8.12	Flushing and cleaning of fully blocked 900mm dia closed drains	m	600		
8.13	Approved crushed rock fill in subsoil drains and rock fill under culverts	m ³	100		
8.14	Provide, lay and joint 1200 mm inner diameter (ID) precast concrete pipes including bed, surround and haunches.	Lm	200		
8.15	Provide, lay and joint 900 mm inner diameter (ID) precast concrete pipes including bed, surround and haunches.	Lm	160		
8.16	Provide, lay and joint 600 mm inner diameter (ID) precast concrete pipes including bed, surround and haunches.	Lm	1,200		
8.17	Provide and place class 15/20 reinforced concrete to headwalls, wing walls, aprons, to pipe culverts including formwork and reinforcement.	m ³	1,800		
8.18	Provide and place class 20/20 reinforced concrete to headwalls, wing walls, aprons, to pipe culverts including formwork and reinforcement.	m ³	100		
8.19	Provide and fix steel fabric reinforcement to BS 4483 size A193 where directed by the Engineer.	m ²	800		
8.20	Provide and install 300mm DIA perforated PVC pipe Class D to Sub Soil drains.	m	200		
8.21	Provide and install 150mm DIA perforated PVC pipe Class D to Sub Soil drains.	m	200		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.12	NATURAL MATERIAL BASE AND SUBBASE				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
No overhaul will be paid separately under this item and the cost for haulage will be deemed to have been included in the rates (METHOD A).					
12.01	Provide, place, spread and compact natural gravel min soaked 4 day CBR 30% at 95% MDD (AASHTO T180) compaction for subbase.	m ³	10,200		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.13	GRADED CRUSHED STONE FOR BASE AND SUBBASE				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
No overhaul will be paid separately under this item and the cost for haulage will be deemed to have been included in the rates (METHOD A).					
13.01	Provide Graded Crushed Stone, mix haul, spread and compact as Graded Crushed Stone layer to pavement for base layer.	m ³	13,600		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.14	CEMENT AND LIME TREATED SUBBASE AND BASE				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
14.01	Provide, transport to site, store and spread Ordinary Portland Cement to GCS or gravel material for S. base and base or as specified and as instructed by the Engineer at 30- 60 kg/m3 at the point of works including all handlings.	Tonne	1,900		
14.02	Provide, transport to site, store and spread hydrated lime to gravel material for S. base and base to improve PI or as specified and as instructed by the Engineer at the point of works including all handlings.	Tonne	10		
14.03	Allow for mixing in cement and/or lime into natural gravel.	m ³	13,600		
14.04	Allow for curing and protection of treated layers as specified	m ²	67,800		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.15	BITUMINOUS SURFACE TREATMENT AND SURFACE DRESSING				
Item No.	Description	Units	Quantity	Rate (Kshs)	Amount (Kshs)
15.01	Prepare surface of runway, taxiway, apron and shoulders, provide and spray MC-30 as a prime coat cutback bitumen at a rate of 0.8 -1.0 lt/m ² as prime coat.	Lts	70,900		
15.02	Prepare primed surfaces, provide and spray KI-60 bitumen emulsion as tack coat at a spray rate of 0.8 - 1.0 lt/m ² as directed by Engineer.	Lts	136,000		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.16	BITUMINOUS MIXES				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
16.01	INITIAL MAINTENANCE Provide, place and compact Asphalt Concrete Type 1 or Type 2 with 4.5-5.5% nominal 60/70 bitumen content by weight to total mix as wearing Course on Runway, Taxiway & Apron as directed by Engineer.	m ³	2,700		
16.02	Provide, place and compact DBM with 5-6% nominal 60/70 bitumen content by weight to total mix as wearing Course on Runway, Taxiway & Apron as directed by Engineer.	m ³	4,500		
16.03	Provide, place and compact max 4.5% SBS Polymer modified Asphalt Concrete with 4.5-5.5 % nominal 60/70 bitumen content by weight to total mix as wearing Course on Runway, Taxiway & Apron as directed by Engineer.	m ³	3,000		
16.04	Provide, place and compact Superpave Asphalt Concrete with max 5.5 % nominal 60/70 bitumen content by weight to total mix as wearing Course on Runway, Taxiway & Apron as directed by Engineer.	m ³	100		
16.05	RUNWAY MAINTENANCE Contractor to ensure surface is free of potholes and to ensure visible Runway marking for the duration of the Contract	months	24		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.17	CONCRETE WORKS				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
17.01	Provide, place and compact concrete class 15/20 for blinding layer at the column bases	m ³	700		
17.02	Provide, place, vibrate and fully cure, hardened concrete Class 25/20 complete with fly ash, plasticizers, retarders.	m ³	100		
17.03	Provide, place, vibrate and fully cure, hardened concrete Class 30/20 complete with fly ash, plasticizers, retarders.	m ³	100		
17.04	Provide, lay and compact hardened concrete pavement Class 45/20 complete with fly ash, plasticizers, retarders and Formwork	m ³	2,500		
17.05	Prepare surface of fresh concrete to achieve fine finish, time to achieve grooves cure and protect as instructed and to the approval of the Engineer.	m ²	6,100		
	<u>Steel Reinforcement</u>				
	<u>Provide, bend and fix into positions high yield steel bars to BS 4461 the following reinforcements as directed and as shown on the drawings provided herein.</u>				
17.06	Reinforcement bars of high yield strength to BS 4461, size 16mm and above	Ton	10.00		
17.07	Ditto as in 17.06 but bar size below 16mm	Ton	10.00		

17.08	Supply and install approved 30mm dia by 500mm long stainless steel Dowel Bars to concrete panels as instructed by the Engineer	No.	6,800		
17.09	Cut and shape 20mm wide and 50mm deep expansion joint into the existing concrete as instructed by the Engineer	m	6,100		
17.10	Supply and install Thioflex 600 or similar approved Polysulphide joint sealant as instructed by the Engineer	m	4,100		
17.11	Provide and place 25mm thick "Flexcell" low compression joint filler to expansion joints	m	4,100		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.20	ROAD FURNITURE				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
20.01	Excavate holes for fencing posts footing not exceeding 1.50 m deep, average 1.0m deep in hard and soft material; ram base to receive 'Class 20' concrete bases; include carting away	m ³	200		
20.02	Ditto but for chain-link anchoring posts	m ³	200		
20.03	Mass concrete; Class 20 in footings	m ³	200		
20.04	Ditto but for chain-link anchoring posts	m ³	200		
20.05	Supply and install precast reinforced intermediate posts size 125 x125mm overall height 2.4m with cranked top of 475mm long as per detailed drawing including labour for 6mm diameter holes and bolts and 8mm galvanized mild steel bars with 12.5 S.W.G. stirrups at 350mm c/c as per detailed drawing to Engineer’s approval and satisfaction.	No.	780		
20.06	Ditto but precast reinforced straining posts size 125x125mm all through; overall height 2.4m with cranked top of 475mm long as per detailed drawing including labour for 6mm diameter holes and bolts and 8mm galvanized mild steel bars with 12.5 S.W.G. stirrups at 350mm c/c as per detailed drawing with and including provision to receive struts to detail drawing to Engineer's approval.	No.	260		

20.07	100 x 80mm precast reinforced concrete struts to detail anchor on to concrete base and straining posts at approved level and 45 degrees to the horizontal to detail drawings and Engineer's approval.	No.	520		
20.08	High tensile galvanized barbed wire 12 1/2 G (2.5mm diameter) threaded through posts secured by galvanized binding wire to Engineer's approval.	Lm	9,300		
20.09	Supply, fabricate and install galvanized heavy duty metal gate overall size 6000 x 2400mm high; in two equal leaves; with and including 100 x 100 x 6mm SHS fixed firmly to the ground in approved concrete base; 8 gauge welded wire mesh covering fixed to 50 x 50 x 4mm SHS and tower locking heavy gauge bolt (including VIRO Cylinder 104); 3 lines of 12.5 gauge barbed wire at the top of each leaf; all as per attached drawings and approval of Project Manager. Gate to be painted in three coats of approved protective paint.	No.	2		
20.10	High tensile galvanized straining wire 9 Gauge through concrete posts (m/s) including hook bolts.	Lm	12,400		
20.11	Supply materials, fabricate and install galvanized heavy duty metal gate overall size 1000 x 2400mm high pedestrian gate with and including 75 x 75 x 4mm SHS fixed firmly to the ground in approved concrete base; 8 gauge welded wire mesh covering fixed to 50 x 50 x 4mm SHS and tower locking heavy gauge bolt (including VIRO Cylinder 104); 3 lines of 12.5 gauge barbed wire at the top; all as per attached drawings and approval of Project Manager. Gate to be painted in three coats of approved protective paint. Rate inclusive of casting of beam.	No.	2		

20.12	Supply and fix 2.4m high galvanized chain-link; gauge 9.5; 50x50mm mesh onto precast concrete posts (m/s); fastening with 5 No. lines of galvanized wire (m/s); threaded through and including mesh and hook bolts; secured by binding wire; all as per the drawings.	Lm	3,100		
20.13	Excavate 150mm by 300 mm for ground beam	m ³	220		
20.14	Mass concrete; Class 20 in ground beam	m ³	220		
20.15	Prepare surface and paint with approved reflectorized white and yellow road marking paints for pavement marking as directed by the Engineer	m ²	8.640		
Total Carried Forward to Summary Sheet					

Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT				
Contract No.	KAA/OT/WAP/0227/2023-2024				
Bill of Quantities					
Bill No.22	DAYWORKS				
Item No.	Description	Units	Quantity	Rate(Kshs)	Amount (Kshs)
	LABOUR				
	All items for labour must be priced. Only the actual time engaged upon the work will be paid for. NOTE: The rate inserted herein shall include all costs of labour as well as overtime, travelling, time and cost of accommodation, social security, contributions, use and maintenance of small tools of trade, supervision, insurance, overheads, profits and any other cost allowance.				
22.01	Unskilled Labour	Hrs	100		
22.02	Carpenter/ stone mason	Hrs	100		
	MATERIALS				
	All materials should comply with the specification. The rates inserted herein are to include for delivery to site, storage, handling, overheads and profit				
22.03	Ordinary Portland Cement	Tonne	5		
22.04	Hydrated Lime	Tonne	5		
22.05	Aggregates for Concrete				
	a) Sand	m³	5		
	b) Coarse aggregate (12mm)	m³	5		
	c) Coarse aggregate (20mm)	m³	5		

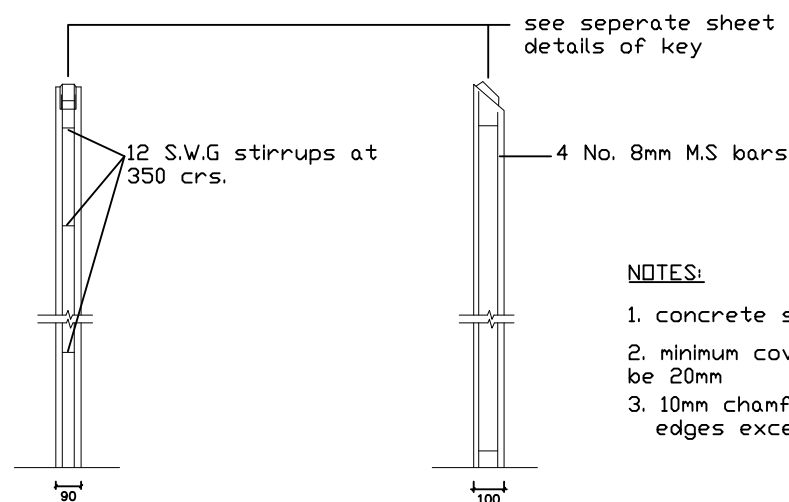
22.06	Shuttering Timber				
	Class F1 finish	m ²	100		
	Class F3 finish	m ²	100		
22.07	Mild Steel				
	a) Up to and including 16mm diameter	Tonne	2		
	b) Over 16mm diameter size	Tonne	2		
22.08	High Yield Steel				
	a) Up to and including 16mm diameter	Tonne	2		
	b) Over 16mm diameter size	Tonne	2		
22.09	Bitumen				
	a) 80/100 Penetration Grade Bitumen	Litre	400		
	b) MC 30 Cutback Bitumen	Litre	400		
	c) MC 3000 Cutback Bitumen	Litre	400		
	d) K 1-70 Bitumen Emulsion	Litre	400		
	e) Kerosene	Litre	400		
22.10	Asphalt Concrete Type I				
	a) 0/14mm grading	m ³	8		
	b) 0/20mm grading	m ³	8		
22.11	Class 2-3 Chippings for Bituminous Surface Dressing				
	a) 0/6 mm (quarry dust)	m ³	8		
	b) 6/10mm	m ³	8		
	c) 10/14mm	m ³	8		
	d) 14/20mm	m ³	8		

22.12	Approved quarry waste	Tonne	8		
22.13	Hard-core	Tonne	8		
22.14	Building Stone	Tonne	8		
22.15	Gravel				
	a) Natural Base or Sub Baas (Minimum CBR- 30%)	m ³	10		
22.16	Gabion Mesh (2.0x1.0x1.0)m	m ²	110		
22.17	Rock fill to Gabions	m ³	20		
22.18	Barbed Wire heavy gauze	Lm	100		
22.19	Ordinary Steel Nails (All sizes)	Kg	100		
22.20	Treated Wooden fencing post 100mm diameter by 1000mm long	No.	100		
22.21	250x150mm half-battered precast concrete kerbs	Lm	100		
22.22	125x100mm pre cast concrete road channel	Lm	100		
	<u>PLANT & EQUIPMENT</u>				
	Where items of major plant listed in the schedule of Day works are specified by type (e.g. Cat D7, Cat 120H) the power rating of such plant is that manufactured within the two years prior to the date of tender. Any plant employed upon day works which have power rating lower than that stated above shall be paid for at rates lower than those schedule of day works. The deduction in the payable rates shall be in proportion to the power rating below the specified above plant.				
22.23	Excavator with min 170 Hp and 1m ³ bucket capacity	Hr	50		

22.24	Backhoe with min 170 Hp and 1m ³ bucket capacity	Hr	50		
22.25	Cat D6 bull dozer or equivalent with Dozer/ Ripper attachment.	Hr	5		
22.26	Cat 140H motor grader or equivalent complete with scarifier.	Hr	50		
22.27	Vibrating roller (10 tonnes).	Hr	50		
22.28	Hand propelled vibrating roller.	Hr	100		
22.29	Hand held Lawn mower	Hr	100		
22.30	Cat 950G wheel loader or equivalent.	Hr	100		
22.31	15 tonne tipper lorry.	Hr	50		
22.32	10 tonne tipper lorry.	Hr	50		
22.33	2cm/hr dewatering pump	Hr	30		
22.34	Concrete mixer 0.3 - 0.7 m ³ /min.	Hr	30		
22.35	Pneumatic self-propelled roller -15 tonnes	Hrs	30		
22.36	As item 22.33 but 10 tons.	Hrs	30		
22.37	smooth steel roller.16-18 tons	Hrs	30		
22.38	As item 22.35 but 12 tonne.	Hrs	30		
22.39	As item 22.35 but 10 tonne.	Hrs	30		
22.40	One ton hand-propelled vibrating roller.	Hrs	30		
22.41	Hand held rammer compactor or equivalent.	Hrs	30		
22.42	Traxcavator with loader attachments-1.7m ³	Hrs	30		
22.43	As item 22.40 but 13m ³	Hrs	30		
22.44	As item 22.40 but 1.1m ³	Hrs	30		
22.45	As item 22.40 but 0.6m ³	Hrs	10		
22.46	One to one & a half tonne capacity pick-up.	Hrs	30		
22.47	Compressor dia. (250 c.f.m.) complete with all tools, hoses, steels etc.	Hrs	30		
22.48	Concrete vibrator (poker type).	Hrs	30		

22.49	Self-propelled water tanker 6,000-10,000 litre minimum capacity with pick-up pump.	Hrs	30		
22.50	Mechanical broom	Hrs	30		
22.51	Pressure bitumen distributor 4500-8000 litres capacity.	Hrs	30		
22.52	Mechanical chips spreader	Hrs	30		
Total Carried Forward to Summary Sheet					

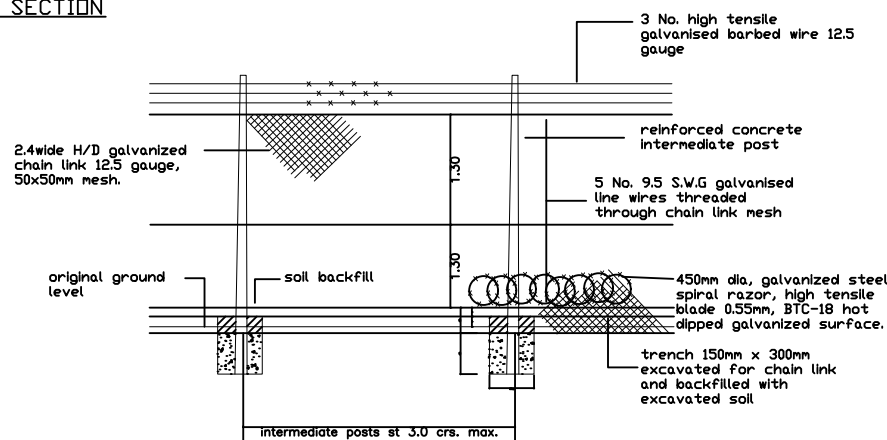
Project	PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY 14/32 AT WILSON AIRPORT	
Contract No.	KAA/OT/WAP/0227/2023-2024	
Bill of Quantities		
	SUMMARY	
Item No.	DESCRIPTION	AMOUNT
1	GENERAL: Office administration and overheads/Preliminaries	
4	SITE CLEARANCE	
5	EARTHWORKS	
8	CULVERT AND DRAINAGE WORKS	
12	NATURAL MATERIAL BASES AND SUBBASE	
13	GRADED CRUSHED STONE FOR BASE AND SUBBASE	
14	CEMENT AND LIME TREATED SUBGRADE,SUBBASE AND BASE	
15	BITUMINOUS SURFACE TREATMENT AND SURFACE DRESSING	
16	BITUMINOUS MIXES	
17	CONCRETE WORKS	
20	ROAD FURNITURE	
22	DAYWORKS	
	Sub Total 1	
	Add 7.5% of Sub-Total 1 of Bills as Provisional Sum for contingencies to be expended in the whole or part or deleted by the Engineer	
	Sub Total 2	
	Add 16% of Sub-Total 2 for Value Added Tax (VAT)	
	Sub-Total - 3	
	GRAND TOTAL CARRIED TO FORM OF TENDER	



1. concrete shall be class 20 (10)
2. minimum cover to reinforcement shall be 20mm
3. 10mm chamfers shall be formed along all edges except on the key face



TYPICAL SECTION



SECURITY FENCE

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4. All drainage crossing Pavements to be encased in concrete to Civil Engineer's details.

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PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY AT WILSON AIRPORT

STANDARD FENCE DETAILS

Eng. Moses Osure


HK. Malika

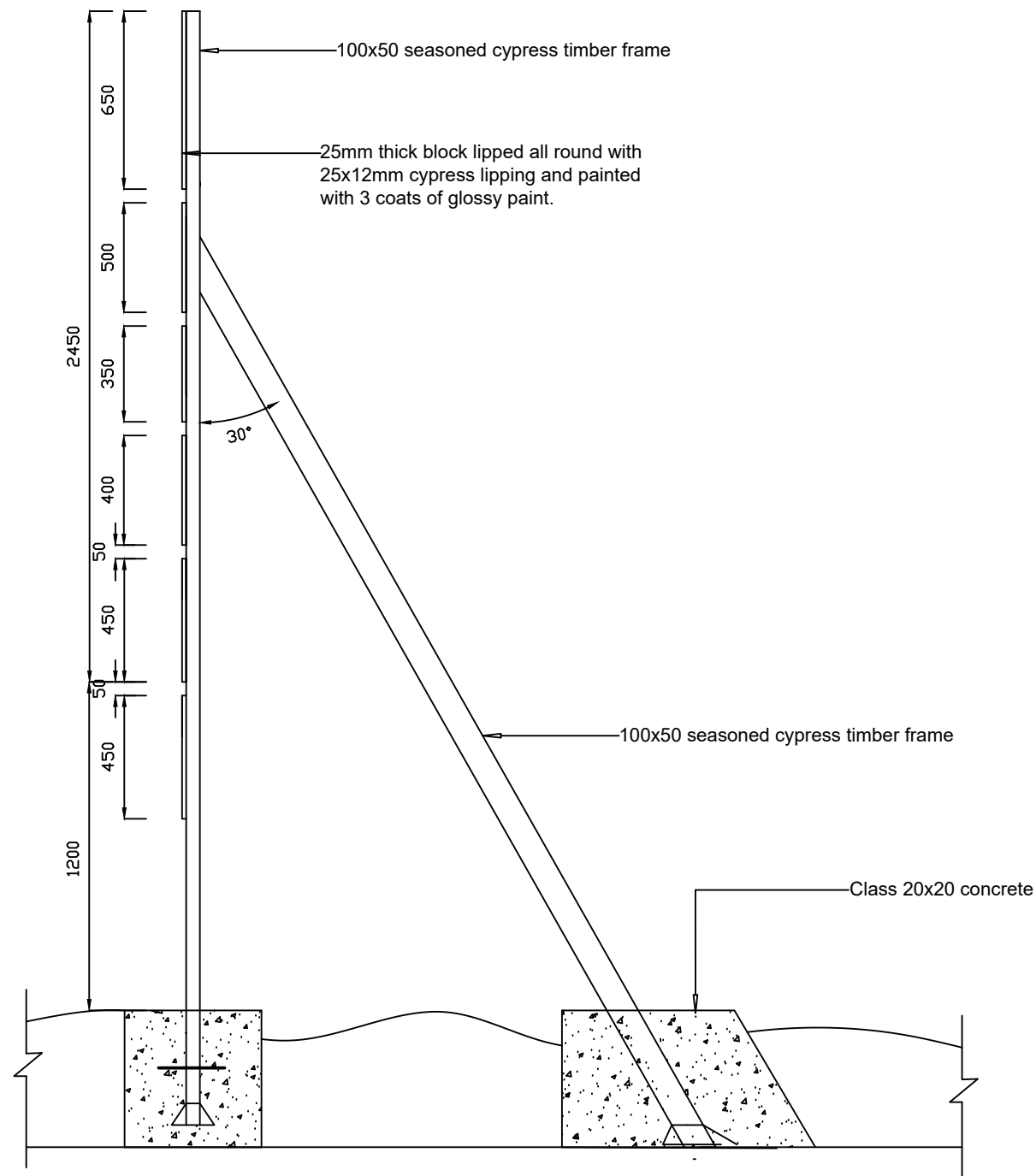
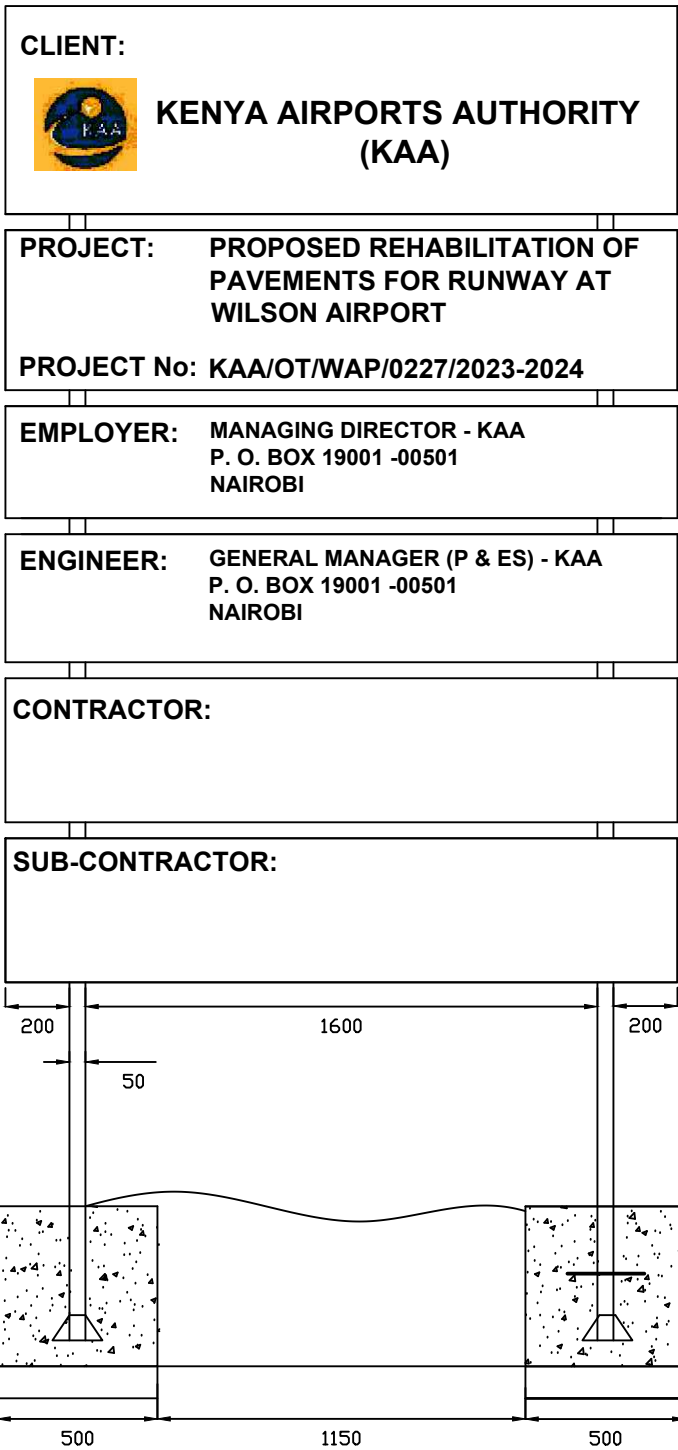
Eng, J. Wagai

MANAGER (AD&C)

Dr. Eng. Meshack Ochieng, PhD

GENERAL MANAGER(P&ES)

Date. MAY 2024	Scale. 1.50
Project No. KAA/OT/WAP/0227/2023-2024	Drawing No.
Rev.	North. 



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Date.	REVISION /ISSUE	No.



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Project.

PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY AT WILSON AIRPORT

Drawing Title.

PROJECT SIGNBOARD

Designed by.

Eng. Moses Osure

Drawn.

Malika

Checked.

Eng. Julius Wagai

MANAGER (AD&C)

Approved.

Dr. Eng. Meshack Ochieng, PhD

GENERAL MANAGER(P&ES)

Date.

MAY 2024

Scale.

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Project No.

KAA/OT/WAP/0227/2023-2024

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North.



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Project.

PROPOSED REHABILITATION OF PAVEMENTS FOR RUNWAY AT WILSON AIRPORT

Drawing Title.

PROJECT SITE OFFICE

Designed by.

Eng. Moses Osure

Drawn.

Malika

Checked.

Eng. Julius Wagai

MANAGER (AD&C)

Approved.

Dr. Eng. Meshack Ochieng, PhD

GENERAL MANAGER(P&ES)

Date.

MAY 2024

Scale.

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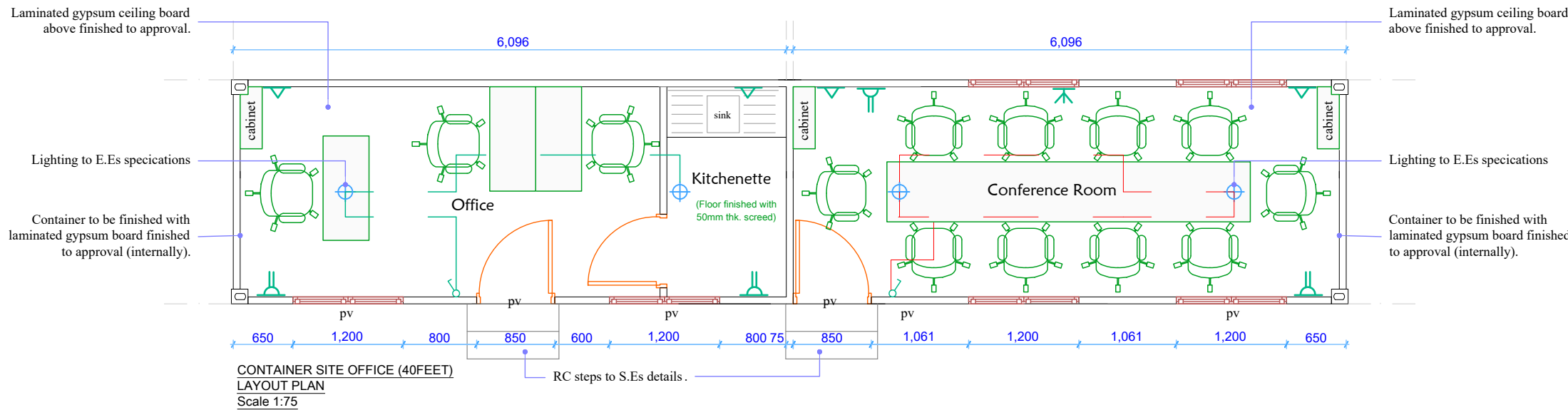
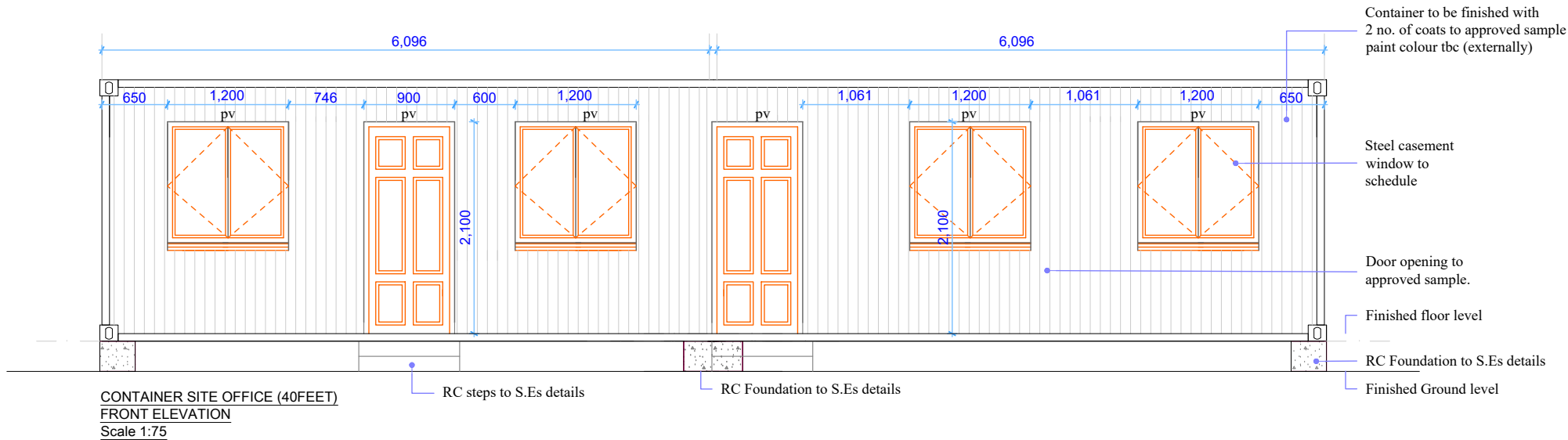
Project No.

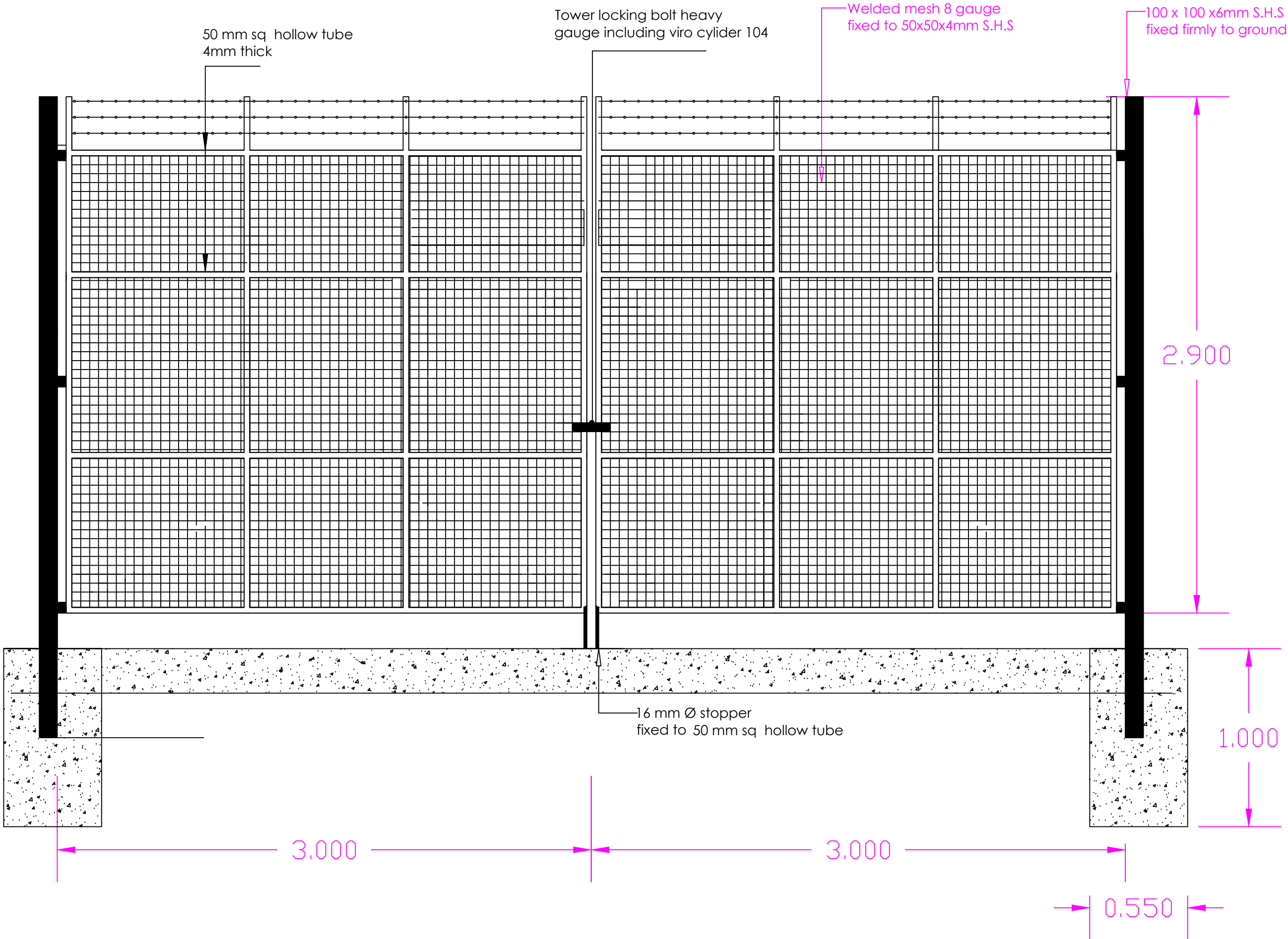
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Project.

**PROPOSED REHABILITATION OF
PAVEMENTS FOR RUNWAY
AT WILSON AIRPORT**

Drawing Title.

ELEVATION - STANDARD GATE

Designed by.

Eng. Moses Osure

Drawn.

Malika

Checked.

Eng. Julius Wagai

MANAGER (AD&C)

Approved.

Dr. Eng. Meshack Ochieng, PhD

GENERAL MANAGER(P&ES)

Date.

MAY 2024

Scale.

1.50

Project No.

KAA/OT/WAP/0227/2023-2024

Drawing No.

Rev.

North.



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