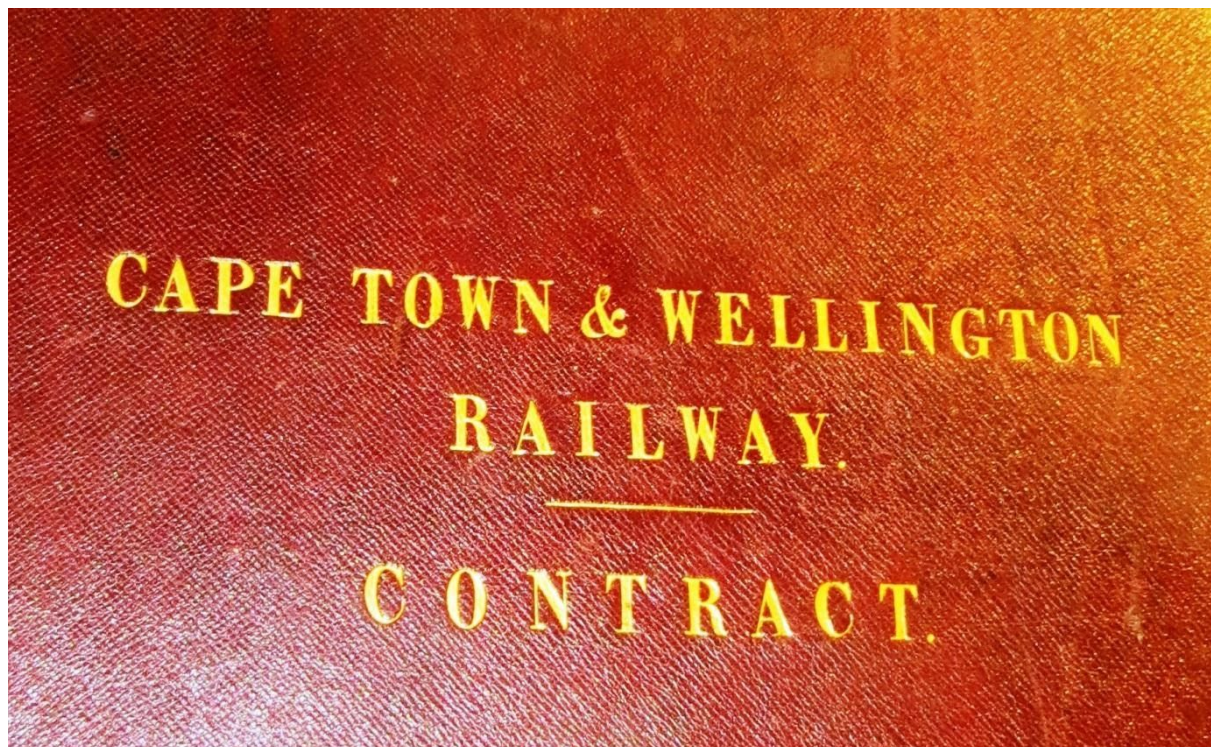
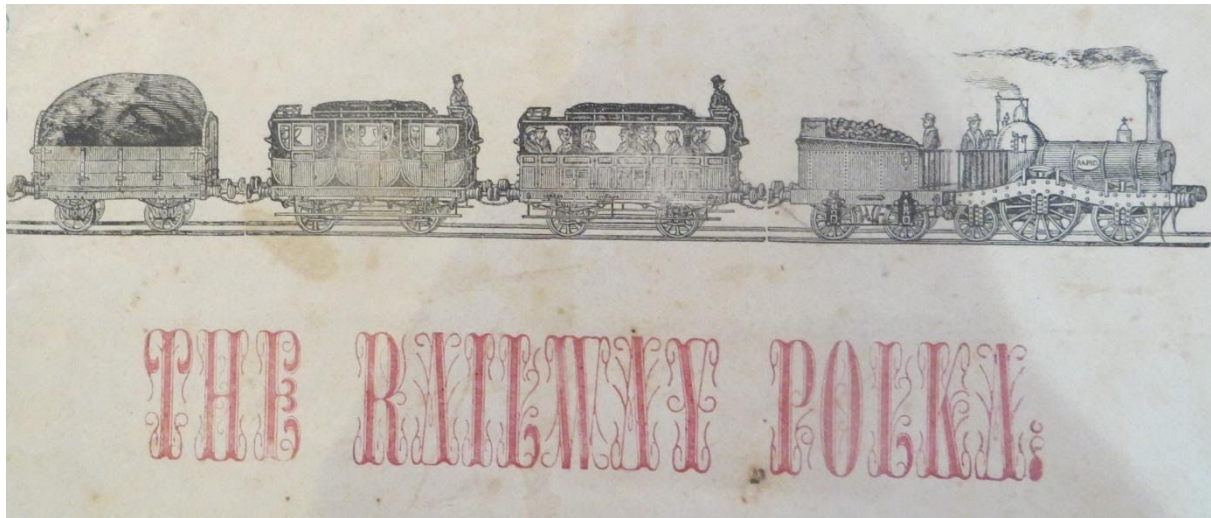


*For the attention of readers of the Heritage Portal*



**THE FIRST CAPE RAILWAY IN SOUTH AFRICA- ORIGINAL CONTRACT GOES ON SALE.**

*Here is some exciting news for the heritage community. Dr Ronald Levine , antiquarian book collector and dealer, is offering a remarkable Railway manuscript and some attachments for sale as a single lot, on the Antiquarian Auction in June 2020 (see [www.antiquarianauctions.com](http://www.antiquarianauctions.com) ) The central item, the manuscript, is an original Cape Railway contract in calligraphic script dated 1858 . This document is unique and I concur with the view of Dr Levine that this is one of the earliest and most important items of South African railway history or Railwayana . It is a South African heritage treasure and an extraordinary legacy item from the Cape colonial era of the 19<sup>th</sup> century. For this reason Dr Levine has restricted sale to South Africa, which will ensure that the*

*sale of the manuscript will comply with the National Heritage Resources Act and remain in South Africa.*

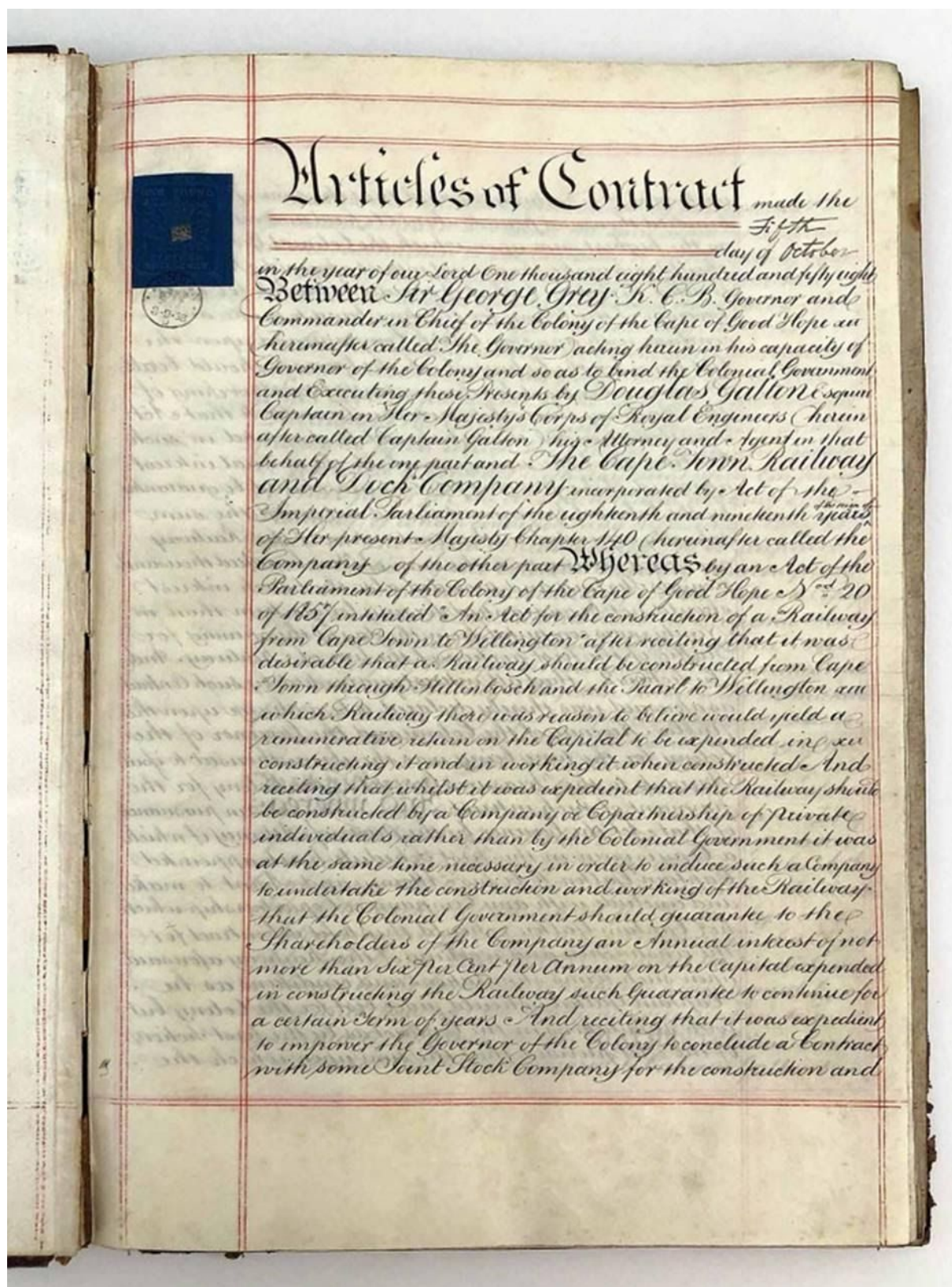
***SA Auction #83: 18 - 25 June 2020***

***Preview available on Friday, 12 June 2020***

***Auction #83***

***18 - 25 Jun***





**The first page of the contract in calligraphy- hand written on parchment.**

When Dr Levine shared the news of this auction with me, my curiosity was roused and I decided to read up and give the document some historical context.



*South Africa was relatively late to acquire its first railway lines . Railways networks, iron rails, and steam engines , carriages and good wagons came into their own in the early 19<sup>th</sup> century . Railways and the steam engines revolutionised long distance travel between towns and across continents. In Europe railways superseded canals for long distance goods traffic. For passengers railways offered convenience and speed of movement and rapidly took over from coaches pulled by horses. The fact that the capacity of steam engines was expressed in horse power reveals the link to increasingly obsolete coaches.*

*Railways launched a second industrial revolution and the potential of steam rapidly spread around the world. The first railway with a steam powered engine was the Stockton and Darlington Railway constructed by Robert Stephenson and Company, to convey passengers over 25 miles between these two north eastern English town in 1825. In the United States, the first steam locomotive, but running on wooden rails, dates back to 1829 and in 1830 the first steam locomotive as a revenue service was introduced in Charleston , South Carolina, running over a 6 mile route. Railways and the trains that ran on those iron rails could span continents. Over the next twenty years railway construction boomed; building steam engines , laying tracks, forging rivers, constructing culverts , designing bridges and penetrating mountains were the great engineering feats of the era. Dozens of companies were formed; everyone thought railway investments offered riches and the general public were caught up in bouts of share mania on stock exchanges in the major financial capitals.*

*For the most part railways were driven by private enterprise and the profit motive but government cooperation was necessary to deal with the legal frameworks, enable land purchases, sometimes through expropriation, and ultimately it was government that came to regulate and to own and run the railways. In 1947 one of the first acts of the new Labour Government in Britain was to nationalise the railway companies and create British Railways a nationalised system that then remained in place for the next forty years.*



**Blackie, the first steam locomotive of the Cape Town and Wellington Line - a national treasure. 2007 photograph, Cape Town station, Danie van der Merwe photographer -**

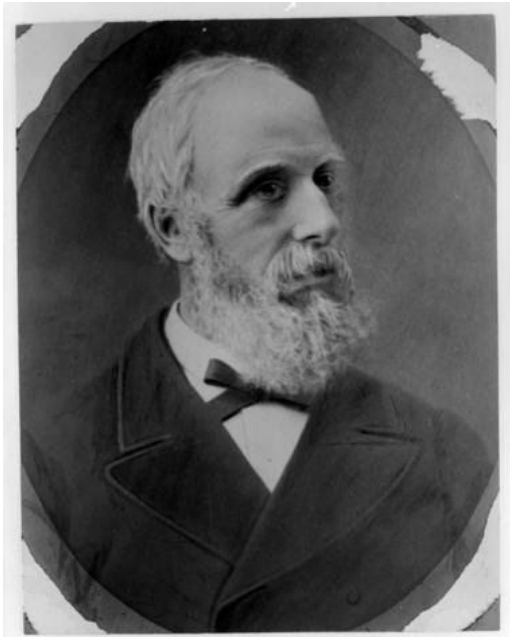
*Railways spread over all continents in the succeeding decades. France, Belgium, Germany Poland, Russia, Hungary , Spain, indeed all of Europe and then North America including Canada launched projects to construct railway systems and lay down lines which would become transcontinental systems. Railways and the speed of this new form of transport defined modernity.*

*Railways were also appealing to colonial interests of the British Empire. South Africa, Australia, India and New Zealand all wanted a slice of this engineering wonder. There were a few difficulties for a “distant” colony such as South Africa. Populations were sparsely settled in rural areas, the port towns were far apart , distances were far greater than in Europe and the geographical terrain was challenging. Coastal towns needed connecting, but the interior could not generate a demand for a railway service or system. Local roads were perhaps even more essential and necessary than railways . So were roads and railways compatible – were they competing or complementary transport system? Until 1910 South Africa was not a unified country and political interests, even in the Cape, divided into East and West. All industrial products had to be imported – there was no local iron industry and manufacturing , such as it was, concentrated on elementary consumer goods and the building trades. Mountain passes were challenging physical barriers. Charles Feinstein argues that the intractable transport problems were a barrier to trade. Who would pay for a railway? Who would build a railway network and who would operate and own the system? Could this be a profitable proposition? Investment needed to come from London but local interests needed to be players.*

*An accessible account of early Cape Railways is to be found in Jose Burman’s book, “Early Railways at the Cape” (1964) and chapter 2 gives the relevant background history. Let’s move on to some of the detail of unfolding events. Whilst attempts were made to form a Cape of Good Hope Western Railway Company in London in 1845, it did not succeed because road construction was deemed to be the first priority. The new-fangled invention, the railway, would simply compete for the scarce capital in the rather poor Cape colony, so another decade passed.*

*In 1853 the Cape Town Railway and Dock Company was formed. It was a London based company but with local connections. The Managing Director was G Lathom Browne, a man with railway experience. The consulting civil engineer was Sir Charles Fox , proposed a railway plan for the Cape involving an investment of £500 000. Even more importantly Fox had the right professional network in the railway world The Cape men had to drive any new and risky railway project . From the start there had to be Cape Colonial Government involvement and cooperation with local business interest, supported by overseas capital. By 1854 a local committee was well into investigating the railway proposal; a government Select Committee presented its report that concluded that a railway should be built by a private company, but with Government guaranteeing interest.*

*Burman observes that local interests talked but did not act and by 1857 there was another Government Select Committee to push for progress. It was the experienced railway engineer, John Scott Tucker who shaped the more detailed specific proposal to build this first Cape line, the Cape Town to Wellington railway line. The Cape Parliament approved the plan and it was agreed that the line that would run from Cape Town through Stellenbosch, on to Paarl and extend as far as Wellington.*



**William George Brounger, DRISA archive, South African Railways(Item PB0748\_004 - Mr William George Brounger MICE, pioneer of railways in South Africa.-**

**<https://atom.drisa.co.za/index.php/mr-william-george-brounger-mice-pioneer-of-railways-in-south-africa>**

***Enter a remarkable man, the civil engineer, William George Brounger , who was an Englishman born in 1820 . He was a pupil of Charles Fox and was involved in the construction of the London Birmingham railway when he was an apprenticed youngster of 18 years. He also worked on the 1951 Great Exhibition at Crystal Palace , London . He then gained further railway experience in Denmark. Fox saw Brounger as the right man for the Cape project and he took up the appointment of Resident Engineer for the Cape company. Within seven months of arriving at the Cape in 1857, Brounger completed a detailed survey of the proposed route and it is his map and plan that is included in our sale lot. Brounger 's biography does not appear in the Dictionary of South African Biography , though he does have an entry in the Rosenthal's Southern African Dictionary of National Biography and G R Bozzoli's book, Forging Ahead ( 1997) devotes half a chapter to his Cape career as a pioneering civil engineer Brounger is one of those little known heroes of South Africa's economic development.***

***Tenders were called for and it was the tender of the Cape Town Railway and Dock Company that was accepted and the contract signed on 5<sup>th</sup> October 1858. The professionalism of the plans of the route suggest why the Cape Town Railway and Dock Company was the favoured competitor.***

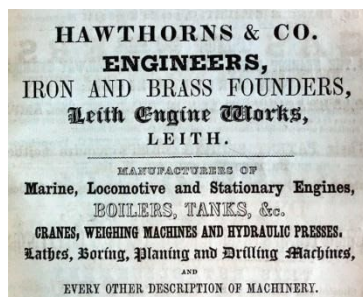
***This contract , (the manuscript on sale this month) marked the start of an inter-town railway. The contract is fascinating to read because it is an example of an early, very hopeful, public private partnership with the potential for success but also some obvious pitfalls. The line was to be a single railway track, with a projected investment of £400 000; the Cape Government was prepared to guarantee an interest of 6 per cent per annum. It was an attractive offer for London and Cape Town investors. After 20 years the Cape Government had the right to take over the line, which is what happened in 1872 with the formation of the Cape Government Railways***

***Meanwhile the first railway line actually constructed was in Durban, a short three mile line in Durban from the Point to the Market Square in the centre of the town, but the significance of the***

***Cape project is that it pre-dated the Durban initiative. It highlights how new infrastructure worked on a regional basis.***

***The Cape project, despite the magnificent and well thought through and very beautiful contract, with the careful Brounger maps and plans, proved to be a great deal more difficult to bring to fruition. Delays, slow progress, labour troubles and legal disputes extended the delivery date. Everything needed to build the line had to be imported from Britain, including engagement of the railway navvies; and the group of 159 labour recruits were shipwrecked en route to the Cape and though there was no loss of life, the rescued men were routed to Pernambuco, Brazil before they eventually arrived at Cape Town.***

***The first steam locomotive had to be imported, and the signing of the contract led to the manufacture of a small steam engine built in Scotland by Hawthorns and Company, Engineers of Leith. This company was a specialist Scottish engineering firm; they built railway engines specifically for Scottish railways but then the orders came in for the export of their locomotives. By 1872 they had produced some 400 steam engines and in that year production ceased.***



***An early Advert for the firm of Hawthorns and Co. of Leith Scotland.***



***The first locomotive in South Africa***



**Hawthorns & Co Leith Engine Works No. 162 built in 1859.**

**<http://steam-locomotives-south-africa.blogspot.com/2009/04/cape-town-railway-station-blackie.html>**

***The first steam locomotive for the new railway line arrived in Cape Town by ship in 1859. In those days locomotives had names, but we only know this pioneering engine by the name it acquired later, Blackie. We know that its engine driver, also an immigrant, was a William Dabbs. By 1860 the Cape Town company had purchased eight 4 ft 8 1/2 in (1,435 mm) broad gauge tender locomotives. These engines had names such as Fire Horse, Wellington, Sir George Gre, and were built to last and all these locomotives remained in service on the Wellington line for over 20 years and beyond even though the narrow gauge or Cape gauge lines were introduced from 1872. The Hawthorn engines were only retired from active service in 1881. The locomotives were delivered without cabs, (necessary for the engine driver in inclement weather) but cab sides and a roof were soon installed in addition to the weatherboard to offer better protection to the crew.***

***The locomotives were painted in a green livery, very similar in shade to that of the Great Western Railway in England. This green colour became the standard passenger livery of the Cape Government Railways (formed in 1872), right up to the establishment of the South African Railways in 1910. In England colour of trains and the uniforms of the staff were distinctive branding features differentiating the independent companies and lines. Colour coding became a form of marketing.***



***The first railway locomotive was declared a national monument in 1933 - this information is conveyed on a plaque mounted on a plinth at the base of the first railway locomotive in Cape Town station.***

**[https://en.wikipedia.org/wiki/Cape\\_Town\\_Railway\\_%26\\_Dock\\_0-4-2#/media/File:CWR\\_Blackie\\_\(0-4-2T\)\\_Plaque.JPG](https://en.wikipedia.org/wiki/Cape_Town_Railway_%26_Dock_0-4-2#/media/File:CWR_Blackie_(0-4-2T)_Plaque.JPG)**



*There was a cheerful celebratory ceremony when the first sod turning took place at Papendorp (now Woodstock) in the presence of the Cape Governor , Sir George Grey (also a signatory to the contract ) Music was part of the festivities and a Railway Polka was composed and dedicated to Grey . A copy of this original printed sheet music is also part of the auction lot. (see later in this article. )*

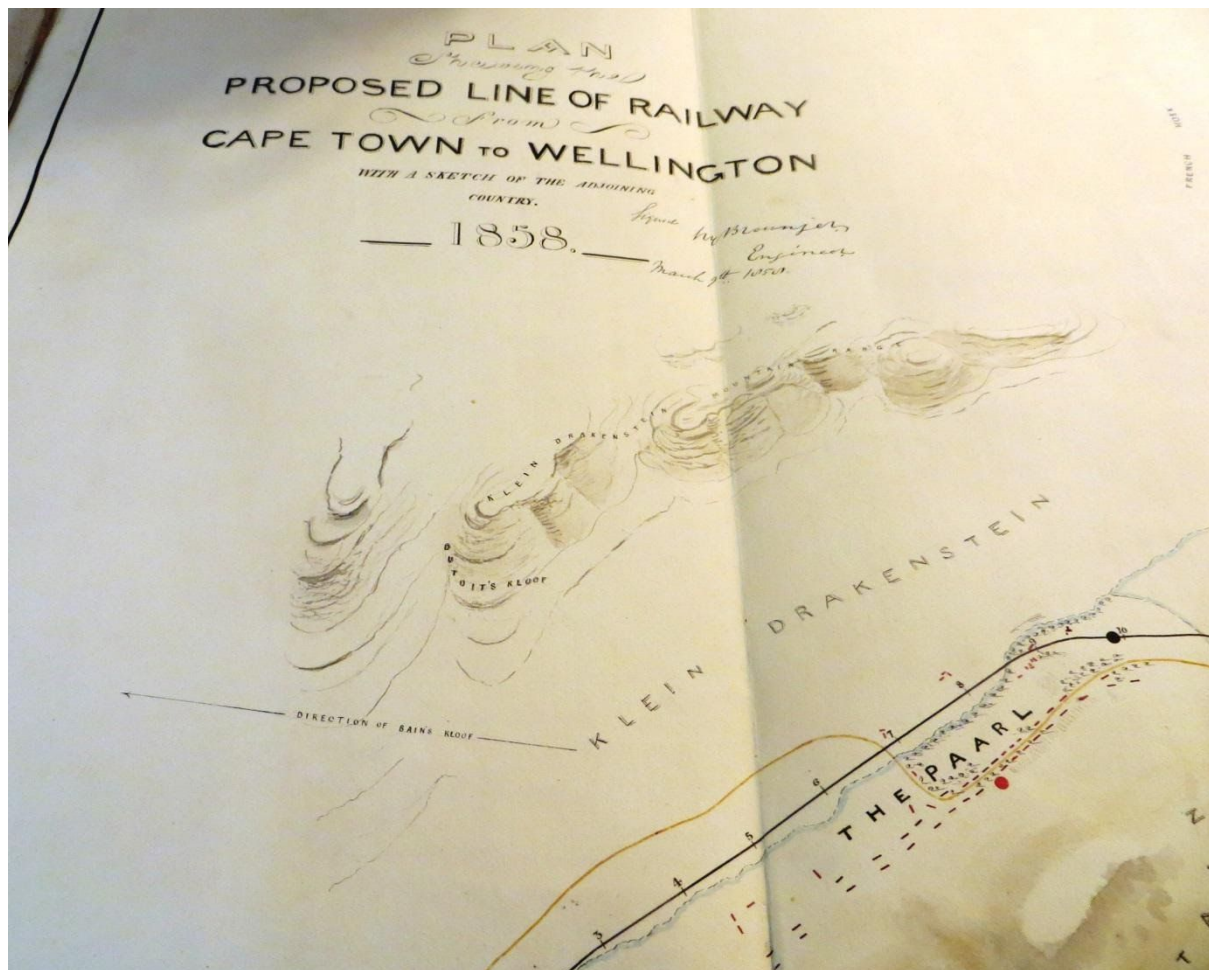
*The planned line was to run from Cape Town to Wellington, a mere 63 miles. E Pickering was the construction contractor but Mr Pickering failed as it took him two years to lay the first 3 kms of track . The Cape Town Railway and Dock Company then fired their contractor. This was where the project ran into trouble. One clear flaw lay in existence of the three different authorities , all involved in the project and with different objectives. Namely, the Cape Government, the entrepreneurial Cape Town Railway and Dock company and the contractor.*

*It was also a small local world of intense professional rivalries and Scott Tucker,( the man who had failed to win the company tender himself),, returned to the employ of the Cape Government and became the Colonial Engineer from 1859 . With the dismissal of Pickering, there was an instant and wild labour dispute and the Cape Argus reported that Pickering's men tore up iron rails and sleepers and ran one of the new locomotives, no 4, Wellington into a culvert and repairs were necessary.*

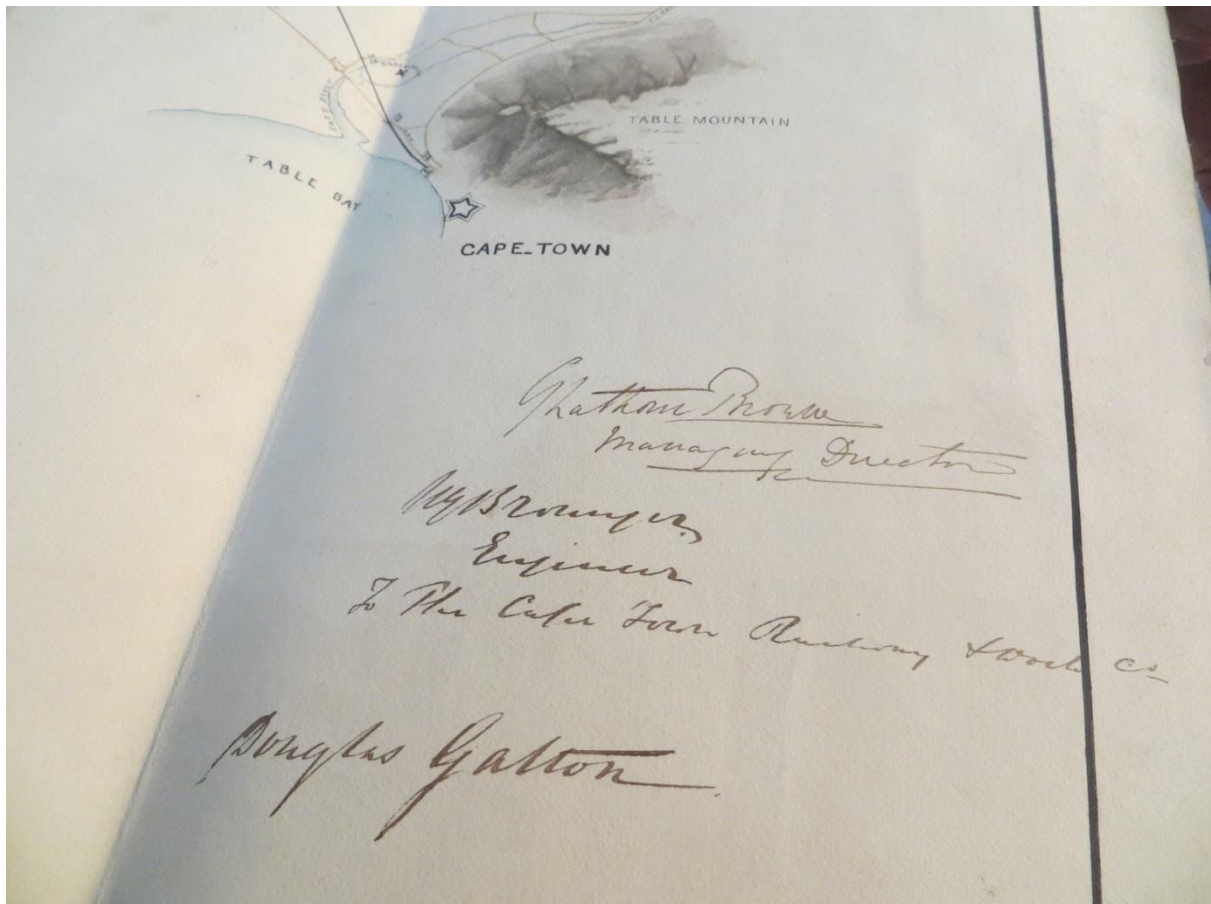
*There was a Supreme Court action and eventually William Brounger , the resident engineer of the Cape Town Railways and Dock Company ,again returned to a more active role and himself took over construction and he was also responsible for operating the railway.*

*Members of the public had the first opportunity to take a train ride on 26 December 1860 . What about speed? Steam power enabled the locomotives to achieve speeds of anywhere from 30 miles per hour ( 48 kms) to up to 60 miles an hour. On one occasion a train, with the new Cape Governor , Sir Philip Wodehouse ( appointed 1861) on board, reached 60 miles per hour (97 kilometres per hour) on the section between D'Urban Road (now Belville) and Salt River. Workshops were established at Salt River.*

*By February 1862 the line had reached Eerste River, then Stellenbosch and finally later in the year, the line arrived in Wellington. In 1863 a branch line was opened between Salt River and Wynberg. The project had reached conclusion . It is of huge importance that the contract has an annexure of plans of the proposed route of the line, with the surveyors attempting to choose the least difficult terrain.*



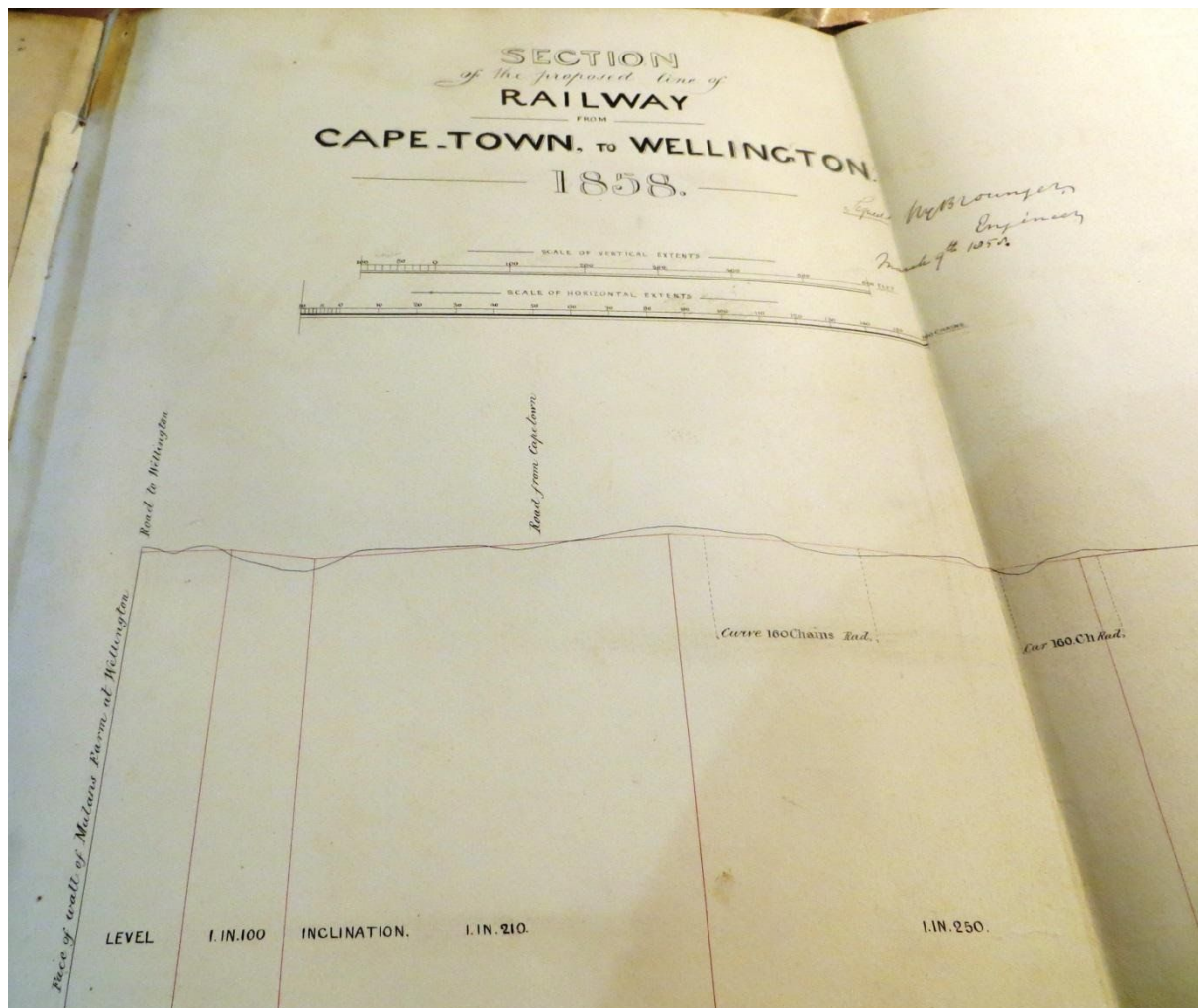
*The map illustrates that South African terrain presented a particular challenge for railway engineers because the continental terrain comprised a fairly narrow flat coastal plain, a steep escarpment and rugged inland mountain ranges had to be conquered before the wide plateau was reached. Initially, as in the case of this particular early railway project, the broad gauge was chosen at 4ft 8 ½ inches (1,435 mm). This was the standard British empire gauge, first designed for the relatively low level (not rising much above sea-level) English landscape. Africa was another proposition. As more comprehensive railways routes and linkages emerged in the 1870's, it was agreed that all new railways would be built to a narrow gauge of 3ft 6 inches (1,067 mm). This gauge became known as the Cape Gauge. It meant that the construction of lines through mountainous landscapes became easier and more cost efficient making use of these narrow width rails. The narrow gauge became the norm for Southern and Central African railways, but the width of the lines slowed down the speed possibilities until the development of the bogie that could handle the narrow gauge.*



*Key signatures on the plan of the line including that of the engineer, W G Brounger, 1858*

*In my opinion the fold out maps and plans are as stunning as the contract.*





*This is the section plan of the proposed railway line from Cape Town to Wellington, 1858.*

*Was the first railway project from Cape Town to Wellington a success? De Kiewiet explains how after 1863 the Cape economy went into decline. Confidence evaporated because the American Civil War led to a drop in cotton production and the cotton looms of Lancashire fell silent. A depression extended from 1862-1870. The earlier boom gave way to a burst property bubble. The South African economy of the 1860s was based on wool and a nascent Natal sugar industry, but while these were the staple raw material exports their yields did not cover the imports of industrial or consumer goods. Then it seemed that the route to the east via Cape Point was about to be superseded by the coming of the Suez Canal, under construction between 1859 and 1869 and opened in 1869. It seemed that the Cape and the rest of agricultural South Africa was on its way to remaining a colonial backwater, weakened by conflict between black and white in disputes over settlement, land rights with a series of so called Kaffir wars on the Eastern Cape Frontier.. This was a country of frontiers, hunting expeditions and creeping Boer settlements and indigenous land hunger in the other direction. The country needed roads to open up remote kranzes and cut through dongas and kloofs and carve out mountain passes. Railways were seemingly an unnecessary luxury.*

*The Cape Government certainly wanted the line once it had reached Wellington to continue further. The Cape Town Railway and Dock Company submitted a tender to*

*extend the Wellington line to Worcester for £500 000. Now there was a dispute about the question of the old guarantee of interest; the prospective railway companies wanted to be paid as the work progressed. The Cape Town Railway and Dock Company put in a claim for additional interest to the Cape Government, which in turn repudiated the claim. Oddly though, 1868 was the first year the CT R & D Company showed a reasonable profit (£8200). The story ends with a railway accident and a change in fortunes for the country because of the discovery of diamonds and the accelerating mineral revolution. In January 1869 a railway accident ( a derailment ) took place on the Wellington line and the company faced financial disaster when it began to receive numerous large claims for personal compensation for injuries. Although the company was free of legal claims and costs by the end of 1870 and showed good profitability the underlying difficulties that arose for a government when a private company operated the dominant form of public transport, opened up the road to negotiations and the formation of Cape /Government Railways in 1872.*

*In my opinion the hero of this tale was William George Brounger, the civil engineer who successfully delivered on the project and brought the railway line to Wellington.*  
<https://www.artefacts.co.za/main/Buildings/archframes.php?archid=5194>. *His biography appears in Artefacts . His dates 1820 -1901. Brounger returned to England in 1864 , but in 1870 again arrived in the Cape to work for the Cape Government railways as a surveyor of new lines in the Eastern Cape. In 1873 he was appointed Colonial Railway Engineer and was responsible for all railway construction and management when the Cape Government Railways was reorganized. By the 1870s the race was on to link the port cities to the diamond mecca, Kimberley, East London, Cape Town, Port Elizabeth all needed links. Brounger was in command and he also oversaw the switch from old iron rails to steel rails, a powerful technological advance once the steel industry had the capacity to handle mass production and the price of steel fell.*

.....

The following points are purposely left to open to competition :

- 1st—The rate of interest which the colonial government shall be required to guarantee;
- 2nd—The number of years during which the government guarantee shall subsist;
- 3rd—The number of years within which the party contracting shall be bound to complete and open the line ; and, as connected with this, the date at which the work shall be commenced.

A copy of these conditions, and further particulars, may be obtained upon application to Captain Douglas Galton, R.E., Board of Trade, Whitehall, S.W., to whose office the tenders must be sent on or before the 21st July next.

The Cape government does not bind itself to accept the lowest or any of the tenders.

(Sigd.) EDWARD BARNARD,  
Agent-General for Crown Colonies.

5, Cannon Row, Westminster,  
May 18, 1858.

Signed, sealed, and delivered in the  
presence of

(Sd.) FRANCIS T. BIRCHAM,  
Solicitor, Westminster.

(Sd.) GEORGE GREY,  
(Sd.) by DOUGLAS GALTON, (L.S.)  
his Attorney and Agent.

The common seal of the Company was affixed  
in the presence of

(Sd.) JOHN BORRADAILE,  
(Sd.) G. LATHOM BROWNE, } Directors.  
(L.S.)

*Final page of the Cape Government Blue Paper version of the contract showing the signatures - it would appear that this document was signed in London by Edward Barnard, the Agent-General for Crown Colonies .*

***This is the Lot entry on the Antiquarian Auction site  
Calligrapher for Sir George Grey - Cape of Good Hope and C.T.  
Railway & Dock Co.***

## ARTICLES OF CONTRACT FOR THE CONSTRUCTION OF THE CAPE TOWN TO WELLINGTON RAILWAY – ORIGINAL HANDWRITTEN MANUSCRIPT

Published: Westminster, 1858

Lot Preview

Reserve: \$4,500



**Estimate:** \$8000 - 12000

This remarkable item is the **original hand written contract for what is effectively the first inter town railway in South Africa**. Signed and sealed by Douglas Galton for Governor Sir George Grey and by G. Latham Browne for the Cape Town Railway and Dock Company, Westminster, 5 October 1858. **MANUSCRIPT IN INK in a fine calligraphic script on Vellum**. The margins are ruled in red. The document comprises 45 pages of closely written text on 23 leaves, elephant folio (482 x 312mm.), with two additional loosely inserted leaves of (matching) Supplementary Articles, Westminster, 21 December 1858, separately signed and sealed as above. Included in the bound document are manuscript copies of the First to Fifth Schedules (dated 22 March 1858 to 20th May 1858) referred to in the main Contract. The Fifth Schedule bears a third set of original signatures and seals. Twelve Impressed Duty Stamps (1 Pound or 10 Shillings) are present in the margins of several pages. **Together with a magnificent huge folded MANUSCRIPT PLAN/DRAWING OF THE PROPOSED LINE OF THE RAILWAY, ink and watercolour on paper**, signed by the engineer William Brounger, Douglas Galton and G. Latham Browne and dated 9 March 1858, 952 x 1320mm., mounted on parchment, and bound in at the rear. Also bound in at the rear is a 20 folding page to scale Section of the proposed Cape Town to Wellington line, dated 1858 and signed by Brounger on the first leaf, and again by him and Galton on the last leaf. The entire document is bound in red leather with gilt titles on the front board and with marbled endpapers and leather hinges.

**Condition.** Importantly, the documents themselves are in Very Good Plus to Fine condition. The manuscript plan is in fine condition. The leather binding is moderately rubbed and has edge wear. Both front and rear endpapers show remnants of paper reflecting removal of ? documents which had been affixed to these pages.

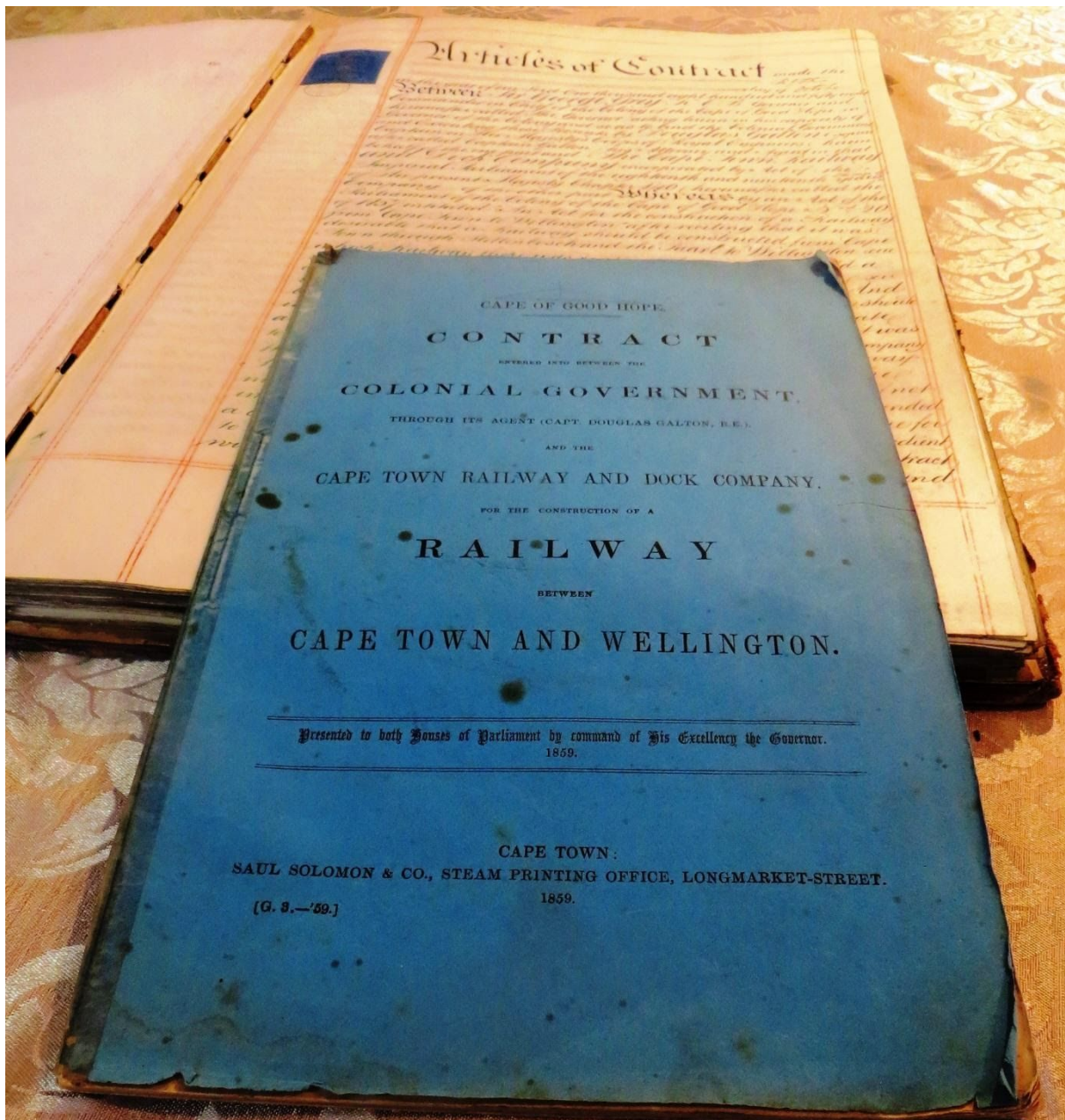
Sold with:

1. Cape of Good Hope. CONTRACT Entered Into Between The Colonial Government Through its Agent, Captain David Galton, R.E. and The Cape Town Railway and Dock Company For Construction of a Railway Between Cape Town and Wellington. This is **the official Blue Paper and printed version of the above original document (& is identical in text)** presented to Both Houses of Parliament in the Cape in 1859. 24pp. Slim folio in the original blue printed wraps. Saul Solomon & Co. Cape Town. 1859. The wraps are tape backed and with somewhat frayed edges and some stains but a good copy.
2. THE RAILWAY POLKA. Composed On the Occasion of Turning the Sod of The First Railway in South Africa and Dedicated With Permission to His Excellency Sir George Grey, K.C. B., Governor of The Cape Of Good Hope, by Master James C. Roome. Cape Town. 1859. 3pp. Sheet Music plus decorated printed cover, 350 x 260mm. Frayed and laid down on good quality paper and backed with the same paper.

This Lot is of the greatest importance and is **arguably the most important piece of manuscript South African "Railroadiana" extant**. The Cape Town to Wellington Railway line is effectively the first inter town railway line in South Africa. Although the short railway line in Natal from the Point to Durban (only about 2 miles in length) was completed before the Cape Town to Wellington line (26 June 1860, as against 13 February 1862 for the first stage of the Cape Line), this short Natal line hardly deserves the honour of being the first railway line of major note. Furthermore, the Natal Railway Company was only formed in 1859, so the Cape Town to Wellington proposal and contract (on offer here), was the first to be completed.

- **Binding Condition:** Very Good

- **Overall Condition:** Internally Fine
- **Size:** Elephant Folio



The printed version of the contract , in the form of the 1858 Blue Book, accompanies the leather bound hand written calligraphic version.

Dr Levine comments : *"It is with great pride that I offer this museum quality piece on this auction and in view of its importance and associated export restrictions, I believe it should remain in South Africa and am only offering it to South African bidders."*

Dr Levine has provided multiple images of this lot but he is willing to answer any questions which may arise from interested parties.

***The original contract in calligraphic script is on parchment . One of the signatories was Brounger, the engineer. This is the documentary evidence and a prize collector's item. It is of such importance that this document should reside in a museum or in the national archive. It was the start of the South African Railways system ; although the early years proved to be slow and uncertain, once diamonds were discovered in Kimberley and the rush to make fortunes and forge a modern south Africa was the economic imperative of the latter part of the 19<sup>th</sup> century. Modern transport was the key to access and the penetration of the African continent. It was not surprising that it was Rhodes' dream to construct a railway line from Cape Town to Cairo. Of course he wanted to "paint the map red" and extend the imperial dream. It led ultimately to the Second Anglo Boer War but also ultimately to unification and the creation of modern South Africa.***

***A comment on Provenance . When a rare collectable item of this significance comes onto the market the question of provenance arises. This particular manuscript can be traced back to the inventory and stock of Frank Thorold and Co , well known and most reputable Johannesburg antiquarian book dealers . Robin Fryde purchased Thorolds after the death of Frank Thorold in 1962 and the business remained in his possession until Robin's death in 2011. We know that Robin Fryde was the owner of this contract.***

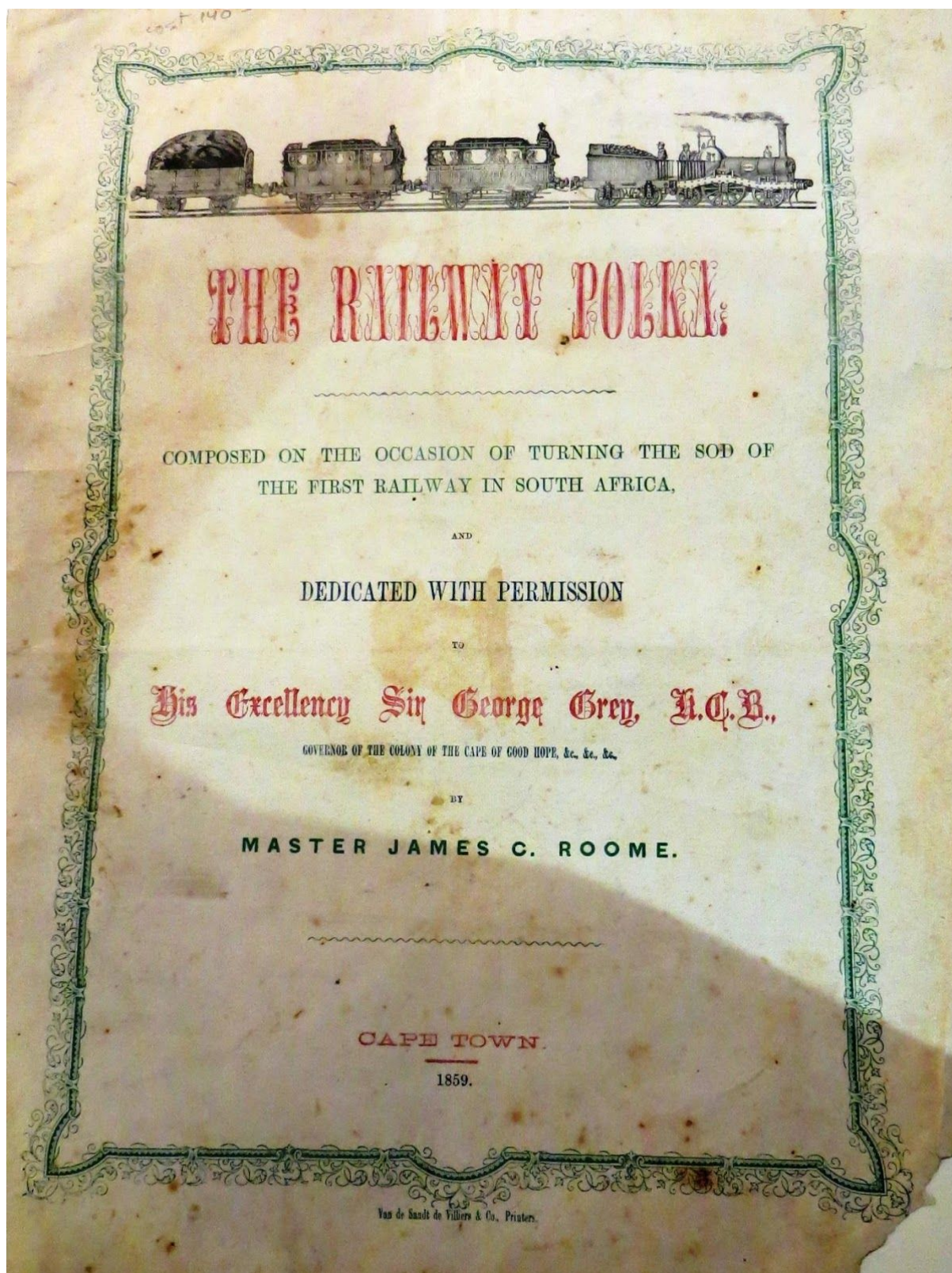
***It is a London document and in all probability, Robin Fryde purchased this document in London since the Cape Town Railway and Dock company was registered in London. Robin was a regular attendee at the major international book fairs.***

*The online viewing opens on Friday 12<sup>th</sup> June and the auction commences on Thursday 18<sup>th</sup> June and extends over a week.*

*The site for this sale is Antiquarianauctions. Com <https://antiquarianauctions.com/>*

***Included in the collection is this sheet music for the Railway Polka, composed on the occasion of the turning of the first sod on the first railway line; the composition by Master James Roome and dedicated to Sir George Grey , the Governor of the Cape Colony. .***





The Railway Polka composed by Master James C Roome, 1859 - part of the auction lot, but there is also an illustration of this music sheet in Jose Burman's book – Early railways at the Cape, page 18 and that photograph was of the Cape Archive copy of this sheet music.

**Acknowledgements and references**

I thank Dr Ronald Levine for sharing his manuscript contract with me and allowing me to take photographs. All photographs taken by Dr R Levine or Prof K Munro

#### **Other references**

Jose Burman. Early Railways at the Cape

C W de Kiewiet. A History of South Africa Social and Economic

Bozzoli, G.R. Forging ahead: South Africa's pioneering engineers. Johannesburg: Witwatersrand University Press, 1997.

Rosenthal, E. South African dictionary of national biography. London: Warne, 1966.

Feinstein, Charles : An Economic History of South Africa, Conquest, discrimination and Development, Cambridge University Press, 2005

Ball, Peter, Blood Sweat and Beers, the story of the railway navy - posted on line 6<sup>th</sup> January, 2017  
<http://www.theheritageportal.co.za/article/blood-sweat-and-beers-story-railway-navvy>

Grace's Guide to British Industrial History See entries on W G Brounger and Hawthorns and co of Leith. See [https://gracesguide.co.uk/William\\_George\\_Brounger](https://gracesguide.co.uk/William_George_Brounger)

Murray Tony, Past Master : William George Brounger , Father of the South African Railways. Civil Engineering, July 2017  
<http://aspasa.co.za/wp-content/uploads/2017/09/BLAST-FROM-THE-PAST-FATHER-OF-THE-SA-RAILWAYS.pdf>

Transnet Freight Heritage – 150 years of railway history.  
<http://www.transnetfreightrail-tfr.net/Heritage/150years/150YearsRail.pdf>.