

SOUTH AFRICAN HERITAGE RESOURCES AGENCY

CONSERVATION MANAGEMENT PLAN FOR “BLACKIE” A SPECIFICALLY DECLARED STEAM RAILWAY LOCOMOTIVE

SAHRA/HO/07/2014

DRAFT

b4

architects cc

27 March 2015

PO Box 5690
WALMER
Port Elizabeth

6065



architects cc

**CONSERVATION MANAGEMENT PLAN FOR “BLACKIE”
A SPECIFICALLY DECLARED STEAM RAILWAY LOCOMOTIVE**

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CONSERVATION MANAGEMENT PLAN FOR “BLACKIE”

1. INTRODUCTION

- 1.1. The South African Heritage Resources Agency (SAHRA) requires a Conservation Management Plan (CMP) for the preserved steam locomotive “Blackie”, built in England in 1859.
- 1.2. This locomotive was the first railway locomotive to be imported and run in South Africa.
- 1.3. “Blackie” was declared a National Monument in 1936.
- 1.4. “Blackie” was previously mounted on a plinth in the concourse of Cape Town railway station but was removed prior to the 2010 FIFA Soccer World cup renovations of the station, and was put in storage in Firgrove.
- 1.5. PRASA’s intention is to display this locomotive in a glass enclosure on Station Square in front of Cape Town Station, facing Adderley Street.
- 1.6. B4 Architects have been appointed by SAHRA to investigate the proposals put forward by PRASA for the preservation and display of this locomotive and to prepare a Conservation Management Plan to cover all aspects of the restoration, relocation, display, future maintenance, management and monitoring of the locomotive.

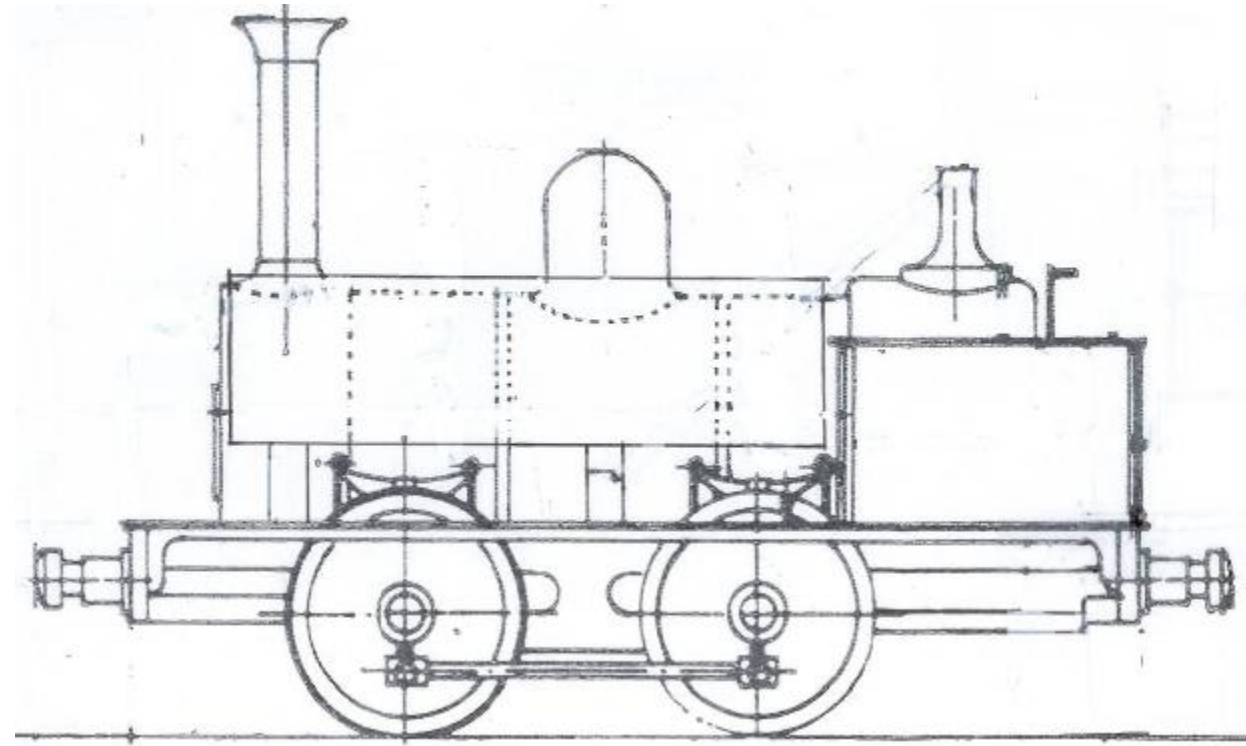


CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

2. BACKGROUND

2.1. THE LOCOMOTIVE

- 2.1.1. The locomotive was built by Hawthorns & Co. at their Leith works as a 0-4-0T (side tank) locomotive to the standard British rail gauge of 4' 8½" (1465 mm) with two cylinders mounted between the frames and to the order of Messrs E & J Pickering & Co., contractors at the Cape of Good Hope, who were engaged in the building of the first railway in the Cape.
- 2.1.2. The Makers Number was No. 162.
- 2.1.3. The locomotive was built in 1859.



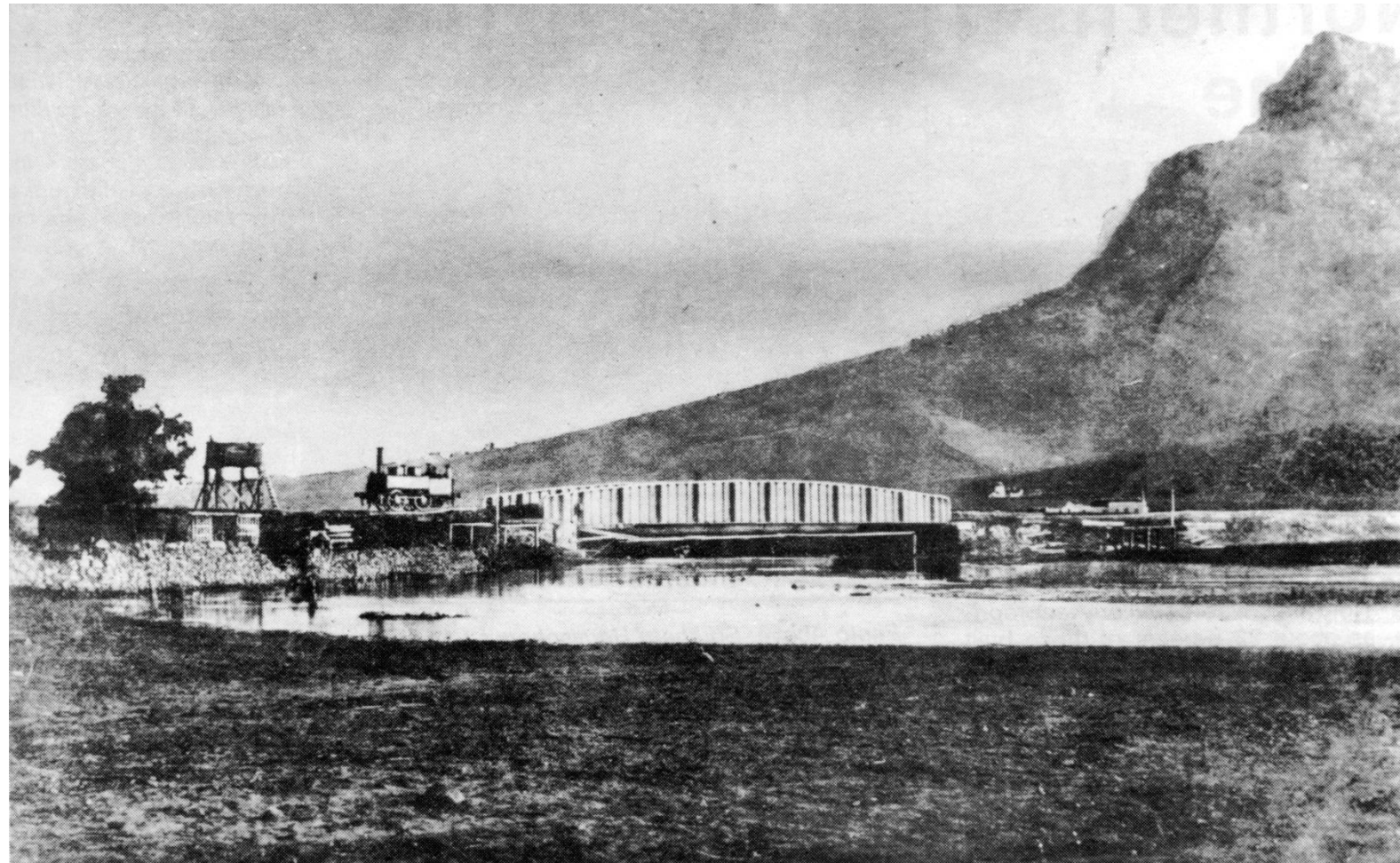
PROVISIONAL DIAGRAM OF BLACKIE IN ORIGINAL CONDITION AS A 0-4-0 WITH SIDE TANKS

2.2. ARRIVAL IN SOUTH AFRICA

- 2.2.1. Shipped by its manufacturers in Scotland to South Africa the locomotive was off-loaded from the brig *Charles* on 8th September 1859, making it the first railway locomotive to arrive in the country.
- 2.2.2. The landing of the engine involved "dismantling" it – although it was almost certainly dismantled prior to its loading in Scotland – and being landed by lighters before being manhandled to a site at Alfred's Square, part of what is now the Grand Parade, where a shed was erected around it and where it was assembled by William Dabbs, a Scottish artisan who had accompanied the loco to the Cape.
- 2.2.3. Once the engine was in working order Dabbs became its driver and is recorded as having been so for its entire service life in Cape Town.

2.3. OWNERSHIP, IDENTITY AND OPERATIONAL HISTORY

- 2.3.1. *Blackie* was ordered and paid for by the company contracted to build the railway line from, what at the time was known as Papendorp (today's Woodstock), to Wellington.
- 2.3.2. The contractors were E & J Pickering & Co. and the contracting company was the Cape Town Wellington Dock & Railway Co. (CTWDRC), usually referred to as either the Cape Town Wellington Railway or the Cape Town Railway & Dock Co.
- 2.3.3. The first sod for the line at the Cape had been turned on 31 March 1859 by the Governor, Sir George Grey, amidst scenes of great rejoicing, but the first section of track between Fort Knokke and Salt River was only opened on 8 February 1861 - Twenty-three months to open one and a half miles of track!
- 2.3.4. Due to extremely poor performance in carrying out their contract, the Pickering company was dismissed in October 1861 and the works and all machinery, including the then unnamed and unnumbered engine, were taken over directly by the CTWDRC but the take-over did not go down well with Pickering's and the contractor incited their workers to riot.
- 2.3.5. Prior to this the CTWDRC had ordered and received the first 8 locomotives for operating its services.
- 2.3.6. These engines were quite similar in appearance to *Blackie* but were fitted with outside cylinders, 4-wheel tenders and splashers over the driving wheels.
- 2.3.7. With these engines already numbered and in service the contractor's engine was allocated the next available number and joined the roster as No.9.



BLACKIE CROSSING THE SALT RIVER

- 2.3.8. Some histories incorrectly report that No.9 (*Blackie*) was badly damaged by the rioting Pickering workers and then repaired and modified. This is not correct - the locomotive attacked in this incident was one of the railway company's own tender engines, No.4 named *Wellington*.
- 2.3.9. On the 1st of January 1873 the newly-formed Cape Government Railways (CGR) took over the assets and liabilities of the CTWDRC and also leased the Wynberg Railway.
- 2.3.10. Shortly after the takeover, and after a number of discussions and submissions to the Cape Parliament, a decision was taken to convert the rail gauge for future expansion into the interior from the British standard gauge of 4' 8½" (1465 mm) to the cheaper to construct 3' 6" (1067mm) gauge (known as the Cape Gauge).
- 2.3.11. At the same time the existing railway line from Cape Town to Wellington via Stellenbosch and Paarl was to be converted to the new Cape gauge.
- 2.3.12. This conversion was completed in and, thus the existing locos would have no further use.
- 2.3.13. Engine no. 9 remained on the Wellington line until late in 1873.
- 2.3.14. However, in October 1873, the need for a small locomotive to assist in the construction work at the newly proclaimed harbour on the Kowie River at Port Alfred, resulted in the Chief Inspector of Public Works requesting a locomotive for use at Port Alfred, and on 24 December 1873 authority was granted for alterations to be made to the locomotive and for it to be shipped to Port Alfred.
- 2.3.15. In 1873/4 No.9 was taken into the works at Salt River and the locomotive was rebuilt and modified by the removal of the side tanks, the provision of a cab roof supported on four posts, the addition of a pair of carrying (non-powered) wheels under the cab. Thus the locomotive was converted into a 0-4-2.
- 2.3.16. Photographic evidence would suggest that either at that time or later a new boiler was fitted to the engine – this has been impossible to verify.
- 2.3.17. With this work completed the locomotive was dismantled and shipped to Port Alfred in 1874 to work on construction being undertaken on the West bank of the Kowie River.
- 2.3.18. The provision of the additional wheel set created a problem when the locomotive was put to work in Port Alfred as the longer wheel-base caused fouling on the curves and to alleviate this the middle set of wheels had their flanges removed and a 3 kph (2 mph) speed limit enforced.
- 2.3.19. *Blackie* served at Port Alfred until 1883 by which time it was considered to be life-expired.
- 2.3.20. The nameless No.9 had become known colloquially as *Blackie* during its life in and around Cape Town but gained the official name **Frontier** on delivery to the Kowie.

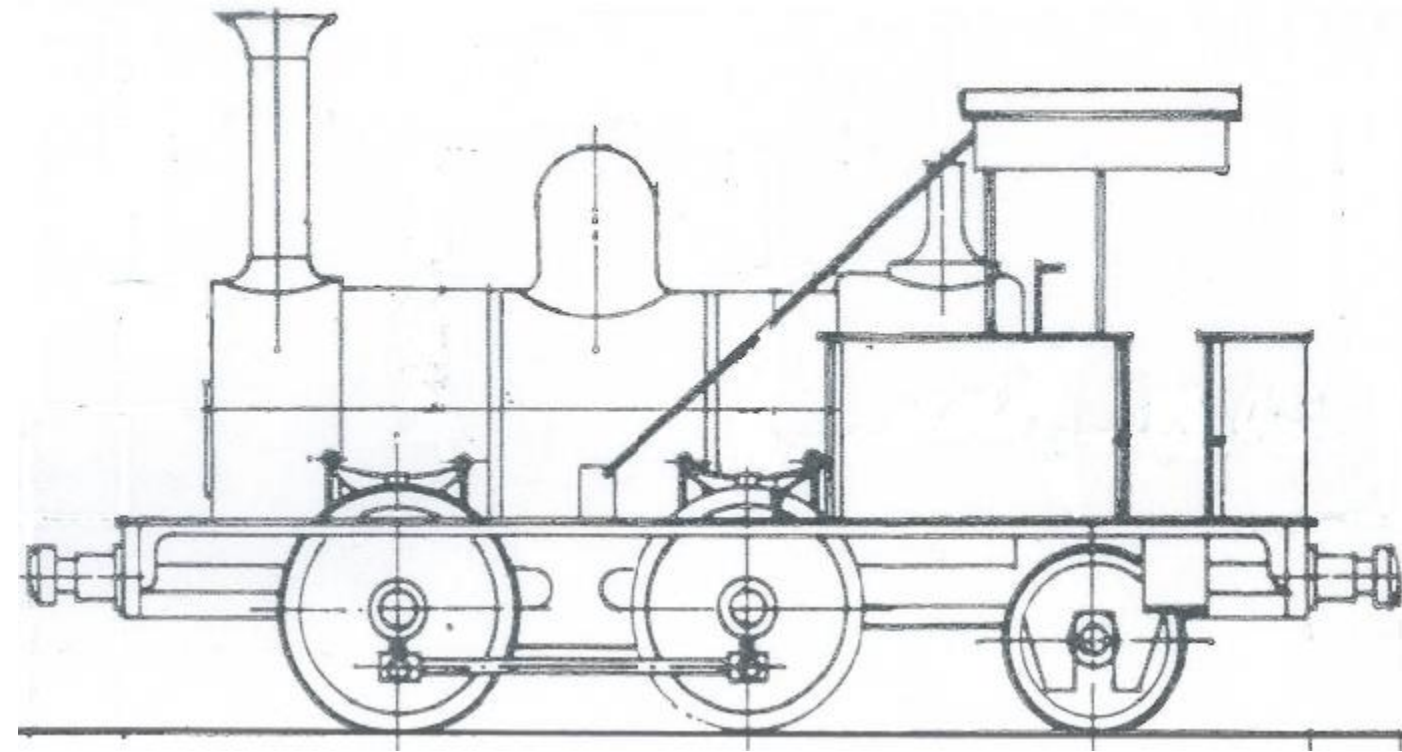
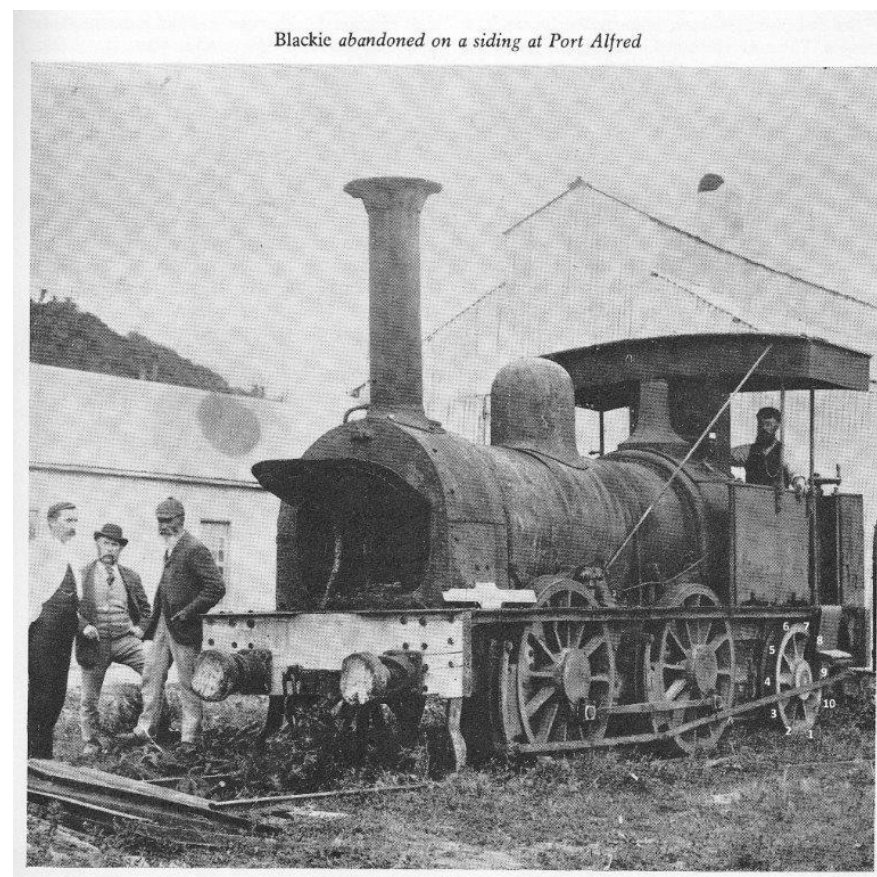
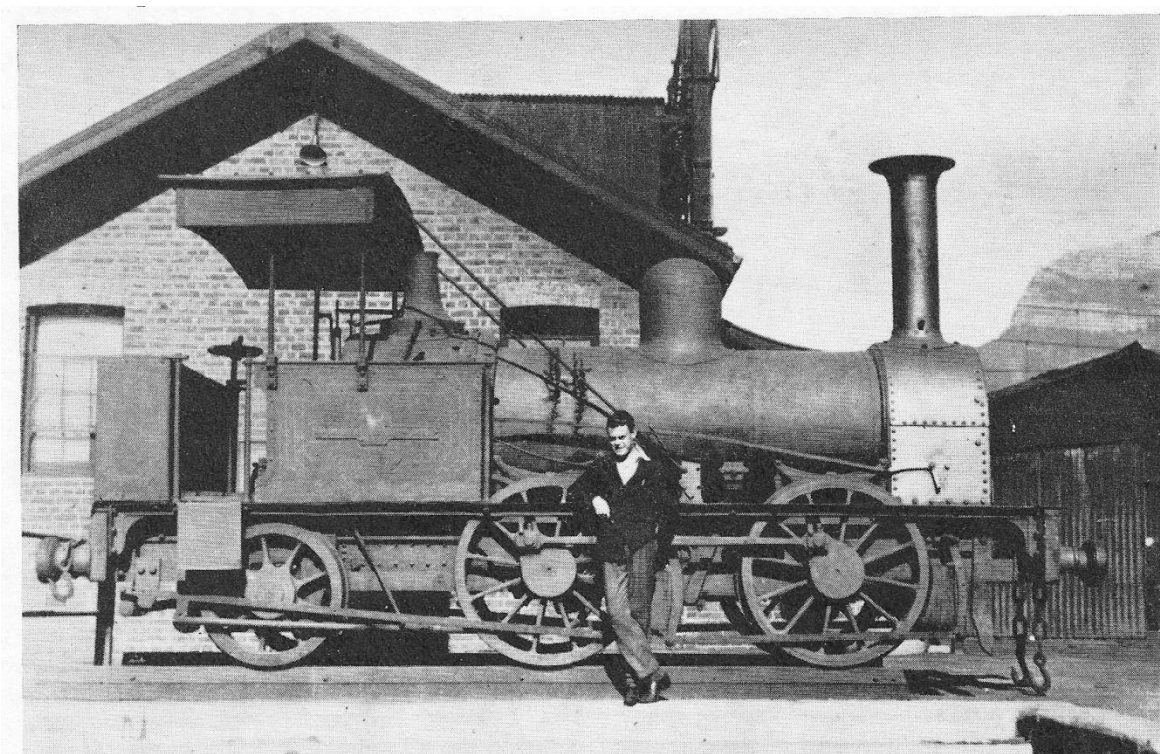


DIAGRAM OF BLACKIE IN MODIFIED CONDITION AS A 0-4-2 AS USED AT PORT ALFRED



2.4. PRESERVATION

- 2.4.1. After 1883 the engine was left to its fate, dumped in a siding, where it remained until 1897 when it was decided to move it to Grahamstown, give it a cosmetic overhaul and put it on display as one of the attractions at the large South African Exhibition which was to be held in Grahamstown where it was to remain on display until 1898 where-after it was put into local storage.
- 2.4.2. In 1913, after Union and the formation of the South African Railways, *Blackie* was brought back to Cape Town and again cosmetically restored – this time in Cape Government Railway colours – and put on a display on a plinth on the station concourse between platforms C and D.
- 2.4.3. During the electrification of the suburban lines at Cape Town in 1927-28 it was found the locomotive was in the way of the overhead equipment and the engineer in charge had the old locomotive removed by road to Salt River Workshops to be scrapped.
- 2.4.4. Fortunately Mr A W Westley, the mechanical engineer at Salt River Workshops at that time, realised the historic importance of No.9 and put it on a plinth near the main gate to the workshops.
- 2.4.5. In 1935 the Historical Monuments Commission put in place the process to proclaim it to be a National Monument (Government Notice 529 of 1936) and it was once again moved back to Cape Town station.
- 2.4.6. In due course it was again moved when the new Cape Town station was built in the early 1960's and placed in the main concourse.
- 2.4.7. The locomotive was removed from the concourse by PRASA and placed in storage during the 2009-10 revamp of the station ahead of the soccer World Cup.
- 2.4.8. The locomotive remains in storage at the present time, pending the completion of the arrangements for a new display position at the Cape Town station.



Old No 9 standing in the traverser yard at Salt River works in 1928 with the author, then an improver fitter, standing in front

PICTURE OF BLACKIE WITH FRANK HOLLAND AT SALT RIVER WORKSHOPS 1928

The locomotive is in the same condition that it is now in and is standing on the same type of rails

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

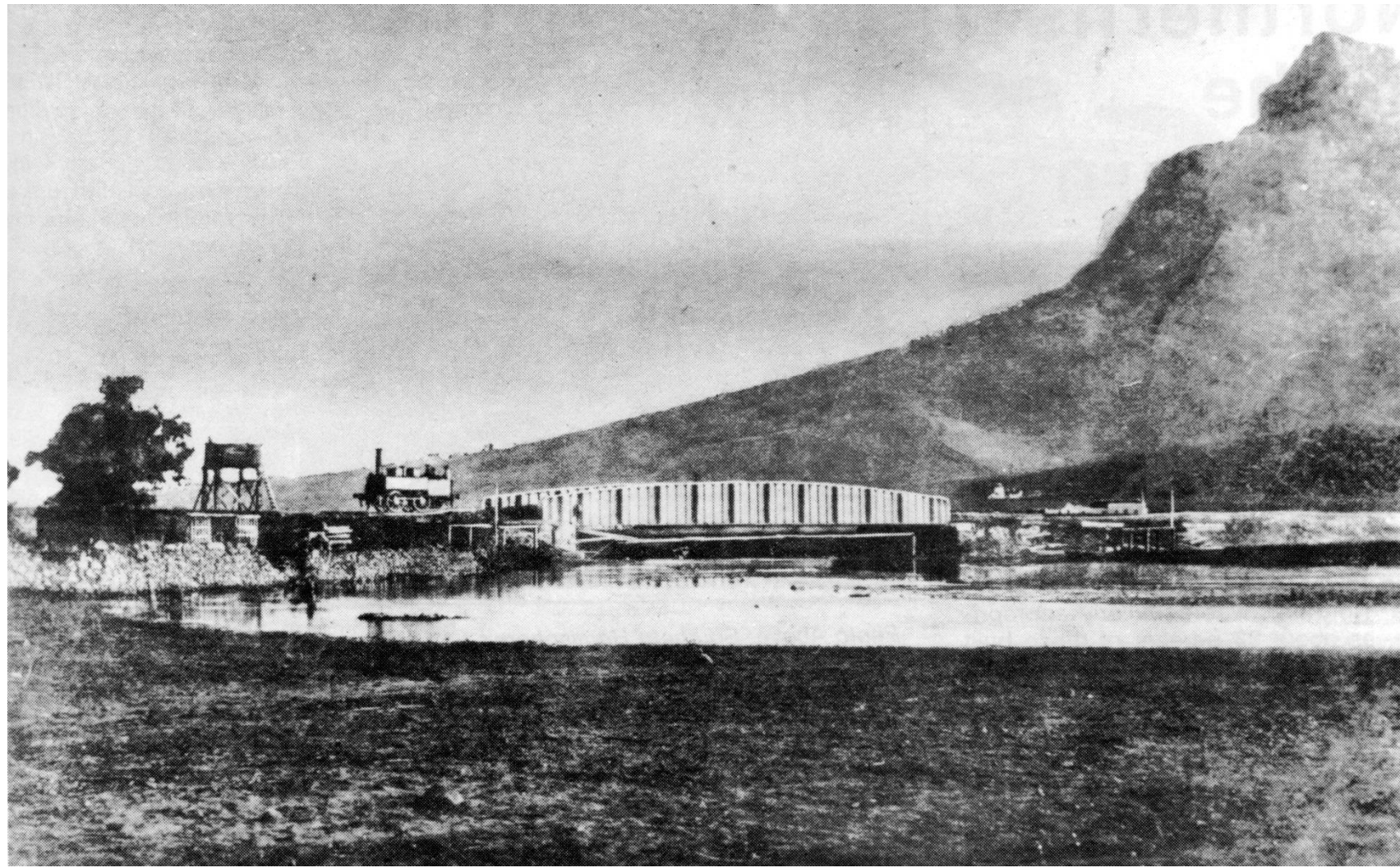
3. DEVELOPMENT OF THE RAILWAYS IN SOUTH AFRICA & SOCIAL IMPACT

- 3.1. We are currently finalising this additional section and it will be inserted by Tuesday 07 April 2015 and the updated document forwarded to PRASA.
- 3.2. This section will deal with the development of the 4' 8½" gauge railways in South Africa with a brief overview of railway developments up to Union in 1910.
- 3.3. We will also append Annexure B which will have a diagrammatic map of South Africa on year by year basis showing the growth of the railway system from 1859 to 1910.
- 3.4. We will have an overview of the transport system prior to the introduction of the railways as well as comment on the changes brought about following the introduction of the railways.
- 3.5. We will look at the social impact of the construction of the early railways as well as the impact on the travellers and the communities and the country as a whole.

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

4. HISTORICAL SIGNIFICANCE

- 4.1. "Blackie" was the first steam locomotive in South Africa, arriving in Cape Town in September 1859.
- 4.2. "Blackie" was built to the British standard gauge of 4' 8½" (1 435mm) which was the gauge used for the first railway lines constructed in South Africa.
- 4.3. "Blackie" was also the first locomotive to operate in South Africa, albeit on construction trains.
- 4.4. "Blackie", Engine No. 9, may well have been at the head of the first construction train to reach the planned railhead at Wellington on 4 November 1863, but whether this was so cannot be confirmed.
- 4.5. "Blackie" is the only 4' 8½" (1 435mm) gauge steam locomotive in existence that worked on the Cape Western Railway System of the Cape Government Railways.
- 4.6. "Blackie" is one of two 4' 8½" (1 435mm) gauge steam locomotives preserved in South Africa. The other locomotive is "Natal" which hauled the first public train between the Point and Durban in July 1860. "Natal" is currently plinthed in the concourse of the new Durban station.
- 4.7. "Blackie" was declared a National Monument in 1936.
- 4.8. "Blackie" was relocated to the current "new" Cape Town Station in the 1960's.



CONSERVATION MANAGEMENT PLAN FOR “BLACKIE”

5. DESCRIPTION OF THE LOCOMOTIVE

5.1. Description

5.2. The locomotive was originally built as a 0-4-0T Pannier Tank (side tank) locomotive with two cylinders mounted between the frames and an open cab – we are currently awaiting confirmation of this from the Hawthorn & Co. records held at the National Railway Museum at York in the United Kingdom.

5.3. The locomotive was subsequently modified to a 0-4-2T locomotive with a roofed cab.

5.4. In its current state the locomotive does not have side tanks – it at present does not have any water tank.

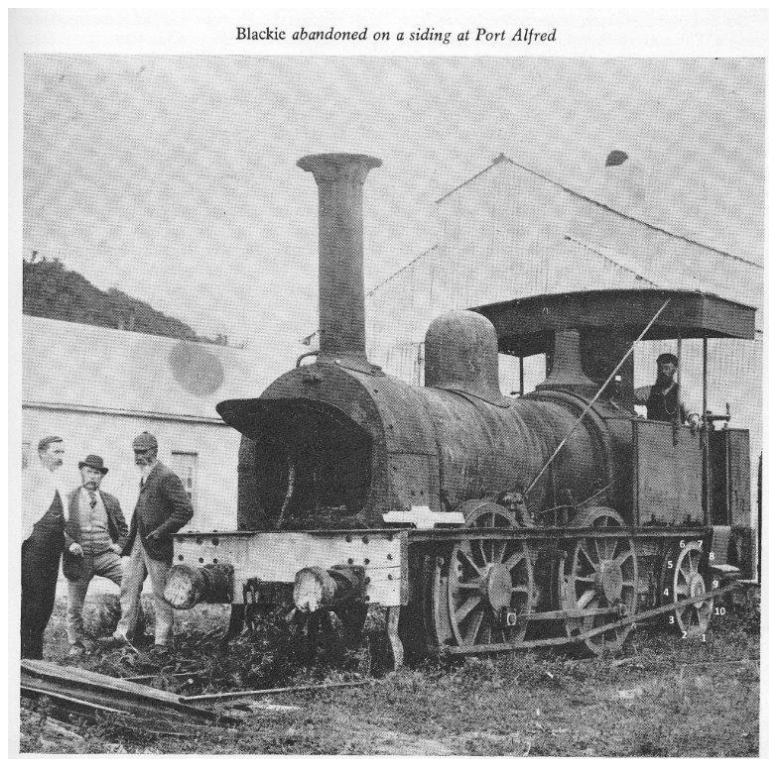
5.5. Dimensions (final, modified form)

| | | |
|--------------------------------|--------|---------|
| Length over buffers | 7,087m | 23' 3" |
| Height above rails (stack) | 3,556m | 11' 8" |
| Height above rails (cab) | 3,162m | 10' 4½" |
| Width (loco) | 1,905m | 6' 3" |
| Width (cab) | 2,565m | 8' 5" |
| Wheel-base over coupled wheels | 1,829m | 6' 0" |
| Wheel-base total | 3,607m | 11' 10' |
| Wheel gauge | 1,465m | 4' 8½" |
| Driving wheel diameter | 1,372m | 4' 6" |
| Trailing wheel diameter | 0,914m | 3' 0" |
| Boiler diameter | 1,181m | 3' 10½" |
| Boiler pitch | 1,549m | 5' 1" |

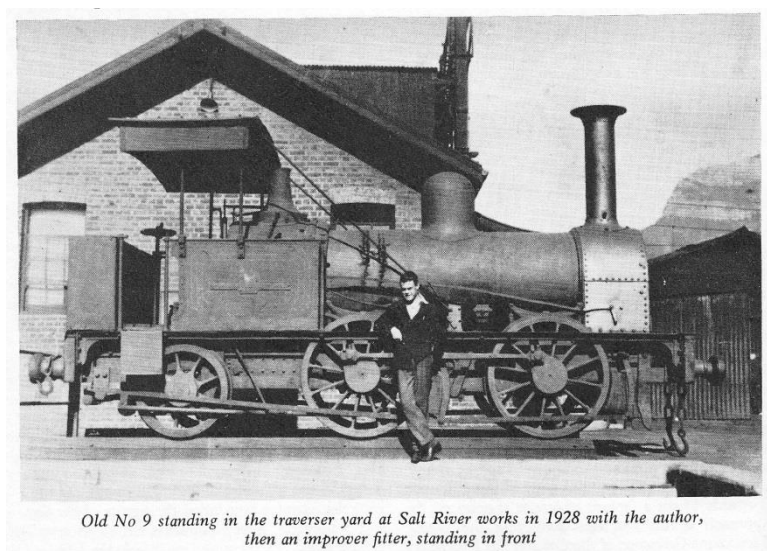
5.6. The current state of the locomotive is basically the same as it was when withdrawn from service at Port Alfred except for the rear carrying wheels.

5.7. From photographic evidence of the locomotive based on photographs taken when the locomotive was staged out of use at Port Alfred and later when the locomotive was plinthed at the Salt River Workshops in Cape Town it is noted that the rear carrying wheels were changed at some point in time after the photograph was taken at Port Alfred.

5.8. The rear wheels as seen in the Port Alfred photograph have 10 spokes.



5.9. The rear wheels as seen in the Salt River photograph taken in 1928 have 9 spokes.



5.10. The rear wheels as seen currently in storage at Firgrove have 9 spokes.



CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

6. STATUS QUO REPORT ON CONDITION OF THE LOCOMOTIVE

- 6.1. The locomotive was inspected on 04 February 2015 at the premises of ALE in Firgrove by Bruce Brinkman & Mark Robinson of B4 Architects with Regina Isaacs and Nolitha Ngcai of SAHRA.
- 6.2. The inspection at ALE in Firgrove was only partially successful as it is difficult to properly inspect the whole locomotive in its present position.
- 6.3. The locomotive is currently covered in black plastic sheeting with no protective material between the paintwork and the sheeting.
- 6.4. The locomotive although under cover inside a building is not in a climate controlled environment.
- 6.5. At present neither the cab roof or the smokestack (chimney) are fitted to the locomotive nor were these not available for viewing.



- 6.6. The locomotive is currently extremely dirty and will need to be properly cleaned before a final review of the condition of the paintwork can be finally determined – it does not seem to be too bad.
- 6.7. The underside of the locomotive and the motion are covered in dust and will need to be thoroughly cleaned.
- 6.8. From the information given to us the locomotive has been moved whilst in storage at ALE.
- 6.9. We are concerned that the current storage arrangements are causing undue strain on the locomotive structure as the rails on which it is resting are not adequately supported and have deflected (see attached photographs).
- 6.10. We recommend that additional supports be inserted under the rails below the rear driving wheels (centre wheels) to avoid any further possible damage – this has not yet been done.
- 6.11. The boiler seems to be the same boiler that was in place on the locomotive when it was last used in Port Alfred in 1883 - It is probably the original boiler although there is no works plate or boiler identification plate to substantiate this.
- 6.12. The boiler tubes are still in place although some of them have been plugged and sealed off.
- 6.13. The main steam pipes and exhaust blast pipe are missing from the smokebox.



6.14. Based on the inspection we believe that the insulation under the boiler cladding is still in place.

6.14.1. This insulation may include asbestos fibres – however this is not a health hazard as long as the boiler cladding remains in place and the cladding is maintained in good condition.

6.14.2. The removal of the cladding is a major task and will result in damage to both the paintwork and the sheet metal cladding.

6.15. There is currently no indication of any well tank for water under the locomotive – however it was not possible to gain access to the underside at the rear of the locomotive in order to determine where the water feed pipes start.

6.15.1. We surmise that a water tank was contained in the bunker space at the rear of the cab.



6.15.2. This aspect requires further investigation.

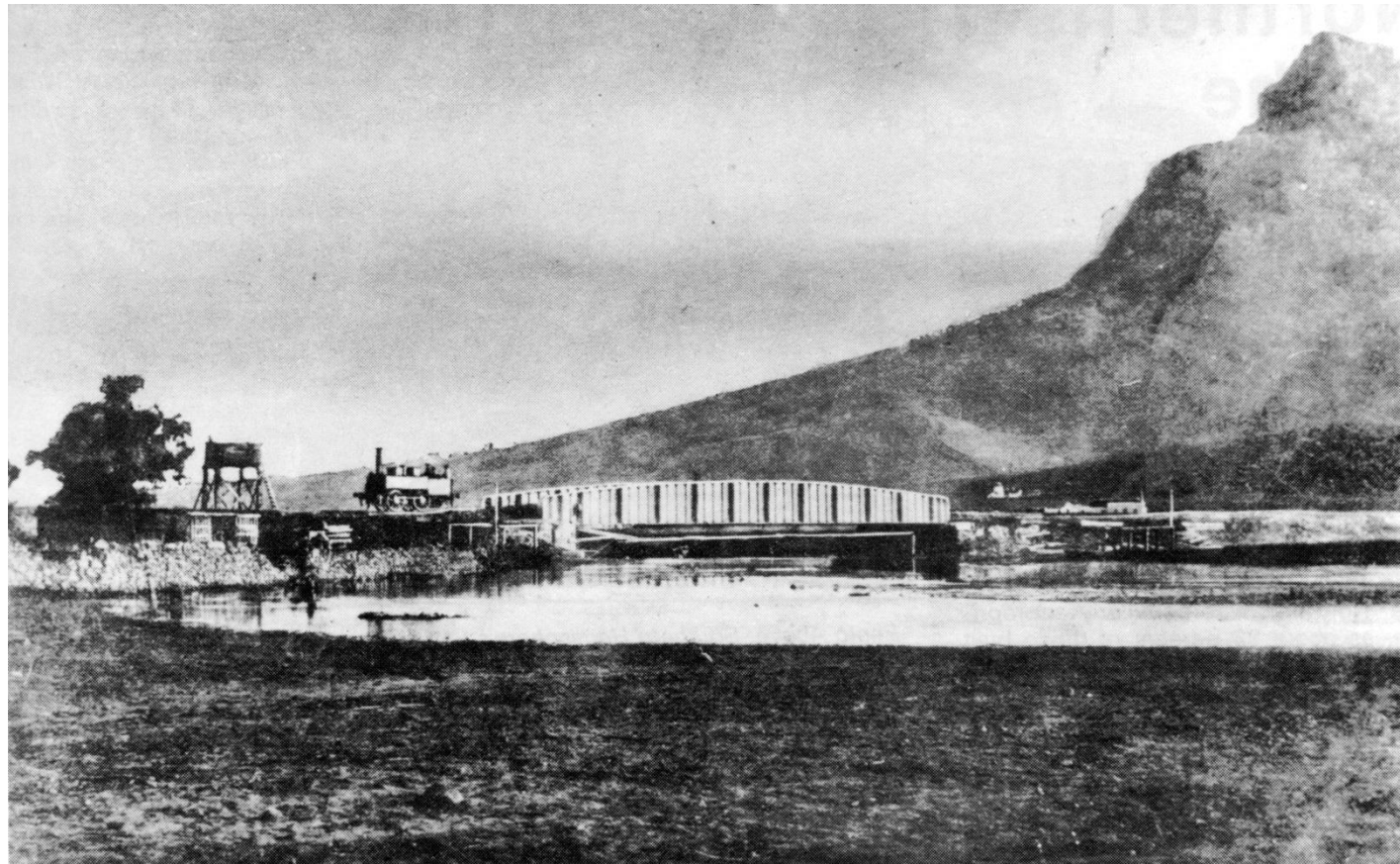
6.16. There are brackets on either side of the boiler which have bolt holes that are not currently used except for the cab stays.



6.16.1. There is also evidence that there was something fixed to the brackets on either side of the smokebox which corresponds to the early picture of "Blackie" which shows the locomotive as an 0-4-0 tank locomotive with pannier tanks.

6.17. Although the locomotive as preserved is a 0-4-2 without pannier tank or a well tank the joints where the extensions to the chassis join the original frames are not evident as they are hidden behind the horn blocks for the rear carrying wheels.

6.18. Based on the old photograph of "Blackie" as a 0-4-0 a number of differences in her appearance are evident:



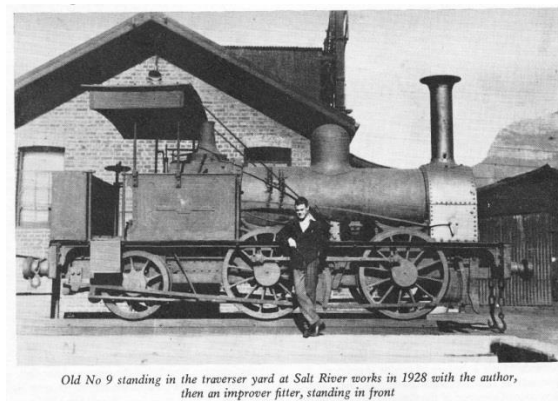
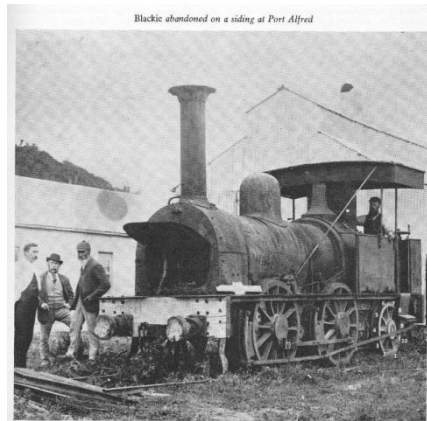
6.18.1. Originally had no cab roof.

6.18.2. Shortened cab area – no rear bunker or side access openings.

6.18.3. Side pannier tanks originally fitted.

6.18.4. Two rectangular boxes positioned above the boiler.

6.19. Thus the appearance of "Blackie" as now in storage is more or less how she looked when last in service at Port Alfred except for the rear carrying wheels being of a different pattern and that steel plates have been fitted over the timber buffer beams at the front and rear of the locomotive.



6.20. A final report on the condition of the locomotive can only be compiled after a further inspection once the locomotive has been properly cleaned and re-assembled with the cab and chimney in place.

CONSERVATION MANAGEMENT PLAN FOR “BLACKIE”

7. LIVERY FOR THE LOCOMOTIVE

7.1. ORIGINAL LIVERY

- 7.1.1. No contemporary record of the colour/colours of the locomotive on delivery has been discovered.
- 7.1.2. However it would seem that its colloquial nickname *Blackie* is almost certainly an indication that it was black.
- 7.1.3. As a contractor's piece of equipment it would certainly not have had any fancy and expensive paintwork applied which would reinforce this conclusion.

7.2. CURRENT DISPLAY LIVERY

- 7.2.1. The later application of a Cape Government Railways livery either dates back to its 1897 Grahamstown display days or, according to at least two narratives, to its return and restoration to go on display at Cape Town station in 1913.
- 7.2.2. It is currently in a Cape Government Railways livery (lined green).

7.3. RECOMMENDTION ON DISPLAY LIVERY FOR THE LOCOMOTIVE

- 7.3.1. Since the locomotive has been displayed in its current Cape Government Railways livery for between 80 and 100 years and this was the livery that it was in when it was proclaimed a national monument it is recommended that it continues to be displayed in a Cape Government Railways livery.



CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

8. REPAIRS / RESTORATION REQUIREMENTS

- 8.1. The locomotive "Blackie" was inspected on 04 February 2015, at the premises of ALE at Firgrove where it is in temporary storage.
- 8.2. The locomotive although under cover inside a building is not in a climate controlled environment.



- 8.3. From the information given to us the locomotive has been moved whilst in storage at ALE.
- 8.4. The locomotive is currently covered in black plastic sheeting with no protective material between the paintwork and the sheeting.
- 8.5. At present neither the cab roof or the smokestack (chimney) are fitted to the locomotive nor were these not available for viewing.
- 8.6. The locomotive is currently extremely dirty and will need to be properly cleaned before a final review of the condition of the paintwork can be finally determined – it looks to be in a reasonable condition and should not need any repainting.
- 8.7. The underside of the locomotive and the motion are covered in dust and fluff and will need to be thoroughly cleaned.



- 8.7.1. An initial cleaning must be done before the locomotive is removed from its temporary support cradle.
- 8.7.2. A final cleaning will need to be done when the locomotive is placed on display.

8.8. We are concerned that the current storage arrangements are causing undue strain on the locomotive structure as the rails on which it is resting are not adequately supported and have deflected.



- 8.8.1. We recommend that additional supports be inserted under the rails below the rear driving wheels (centre wheels) to avoid any further possible damage.
- 8.8.2. Provided that the rails on which "Blackie" is standing are propped up to ensure that they are level the locomotive should not need any structural repair work.
- 8.8.3. The final extent of any remedial work needed can only be determined once the locomotive has been relocated and reassembled.
- 8.9. Provided the locomotive is displayed under suitable conditions it should not need any special treatment or protective surface coatings.
 - 8.9.1. It is important that the locomotive is protected from direct sunlight.
- 8.10. From the visual inspection of the locomotive the boiler seems to be the same boiler that was in place on the locomotive when it was last used and we believe that the insulation under the boiler cladding is still in place.
 - 8.10.1. This insulation may include asbestos fibres – however this is not a health hazard as long as the boiler cladding remains in place and the cladding is maintained in good condition.
 - 8.10.2. The removal of the cladding is a major task and will result in damage to both the paintwork and the sheet metal cladding.
 - 8.10.3. We recommend that the boiler cladding and any insulation remain in place and that the locomotive be inspected on a regular basis to check on the integrity of the boiler cladding.
 - 8.10.4. Thus currently there are no hazardous materials that require removal and disposal.
- 8.11. As previously mentioned the locomotive does not seem to need repainting but any touch up painting and future remedial work will require paint to be colour matched to the existing paint colours.
 - 8.11.1. The paint used on the locomotive is not the original paint but was applied when the locomotive was placed on display and would have been to the then applicable South African Railways specifications.
 - 8.11.2. As these paints are no longer available it will be necessary to use current technology and request suitable products and application procedures from the major paint manufacturers such as Dulux and / or Plascon.
 - 8.11.3. Should it be necessary we can arrange for the Technical representatives from Dulux and Plascon to inspect the locomotive and submit their recommendations.
- 8.12. It is important that PRASA (or Transnet) keep proper records of any repair or restoration work so that future generations will know what work has been undertaken.
 - 8.12.1. A logbook should be kept which records not only any repair or restoration work but also all inspections.
- 8.13. We have received no input from PRASA regarding their plans for the reassembly and cleaning of the locomotive when it is relocated.
 - 8.13.1. Should PRASA require input we are prepared to assist them with this matter.

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

9. REQUIREMENTS FOR THE SATISFACTORY DISPLAY OF THE LOCOMOTIVE

9.1. In considering the display conditions proposed by PRASA the following points need to be considered in order to minimise the risks for damage or accelerated deterioration of the locomotive:

9.1.1. The effects of sunlight and possible fading of the paintwork over time and how display location should be provided with shade.

9.1.1.1. The locomotive needs to be protected from direct sunlight.

9.1.2. Control of humidity inside the display enclosure and the provision of suitable ventilation to minimise corrosion.

9.1.2.1. If the locomotive is to be displayed in the forecourt then it needs to be displayed inside a building that has acceptable climatic conditions any display enclosure must ensure that the Humidity level is controlled so that the Relative Humidity does not exceed approximately 40% and that the conditions are such that the Dew Point of the air within the enclosure is around 5° C.

9.1.2.2. This will require a dehumidification & climate control system.

9.1.3. Any display enclosure needs to provide adequate access to the display enclosure for the purposes of regular monitoring and cleaning as appropriate of the locomotive and interior glass surfaces, as well as for any maintenance required.

9.1.3.1. There needs to be sufficient space within the enclosure around the locomotive for maintenance staff to move about and clean both the inside of the enclosure as well as the locomotive without damaging the locomotive.

9.1.3.2. There also needs to be sufficient space above the locomotive between the cab roof and the underside of the display enclosure roof to allow for proper access for cleaning and maintenance to the lighting system.

9.1.4. Review of the specifications for the glass to the display enclosure.

9.1.4.1. The glass needs to be HPR laminated safety glass.

9.1.4.2. The glass is not to be tinted.

9.1.4.3. If thermal insulation is required the glazing needs to be a double glazed system.

9.1.5. Illumination of the locomotive during the hours of darkness.

9.1.5.1. The light sources should be concealed or shielded so as not to distract viewing.

9.1.5.2. The light should not reflect off the inner surfaces of the enclosure.

9.1.5.3. The lighting system must be designed so that there is no heat build-up on the locomotive from the display lighting.

9.1.6. Consideration of appropriate security for the locomotive.

9.1.6.1. Whether the locomotive is displayed within a display enclosure or displayed within a building or the concourse it needs to be protected by a perimeter alarm system and should also be under CCTV observation & monitoring linked to the alarm system.

9.1.6.2. There needs to be a Safety and security Management System in place.

9.1.7. Consideration of viewing conditions to enable the locomotive to be viewed satisfactorily under all conditions.

9.1.7.1. The locomotive must be visible both during daylight hours and at night.

9.1.7.2. If the locomotive is displayed in a glass display enclosure the enclosure must be designed to ensure that the locomotive is clearly visible without reflections distracting from the viewing under all lighting conditions.

9.1.8. Signage and Information displays

9.1.8.1. In order for "Blackie" to be a meaningful historic display the following points need to be considered:

9.1.8.1.1. Information signs to be provided as part of the display and incorporated in the design of any enclosure or display area.

9.1.8.1.2. It is recommended that an electronic video display be incorporated that will enable the history of "Blackie" and the development of the railways in South Africa to be displayed.

9.1.8.1.3. The social impact of the development of the railways should also be included in the display material.

9.1.9. A review of the process followed by PRASA in determining the proposed location and what alternate locations were considered and the reasons that they were eliminated is to be carried out.

9.1.10. Alternate locations are to be considered and assessed for suitability.

9.1.11. A review to be carried to determine whether the proposed location is the most suitable available location for the display of the locomotive or whether there is a better location.

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

10. OVERVIEW OF THE PRASA DISPLAY PROPOSAL

- 10.1. The attached drawings (Addendum A) show the location in the station forecourt proposed by PRASA together with plans of the proposed enclosure.
- 10.2. These drawings have been reviewed by B4 Architects and our comments and concerns are set out below:
 - 10.2.1. The design of the roof of the glass display enclosure will result in dirt accumulating on top of the enclosure and washing down the sides of the enclosure which will impede viewing and become a maintenance problem.
 - 10.2.2. The effects of sunlight and possible fading of the paintwork over time and how display location should be provided with shade.
 - 10.2.2.1. The proposal submitted by PRASA does not address the issue of protecting the locomotive from the effects of sunlight.
 - 10.2.2.2. The locomotive will be exposed to extreme temperature fluctuations and this will result in corrosive climatic conditions within the enclosure.
 - 10.2.2.3. Should PRASA still want to display the locomotive in the station forecourt then a proper structure will need to be erected that will provide shade and control exposure to direct sunlight whilst not obstructing the view of the locomotive.
 - 10.2.3. Control of humidity inside the display enclosure and the provision of suitable ventilation to minimise corrosion.
 - 10.2.3.1. The proposal submitted by PRASA does not address this issue.
 - 10.2.3.2. The provision of ventilation louvres at high level along the sides of the enclosure will interfere with the climate control and will allow dirt and dust to enter the enclosure.
 - 10.2.3.3. Without a proper climate control system condensation within the enclosure and on the locomotive will be a problem and could damage the locomotive.
 - 10.2.4. Access to the display enclosure for the purposes of regular monitoring and cleaning as appropriate of the locomotive and interior glass surfaces, as well as for any maintenance required.
 - 10.2.4.1. The PRASA proposal does not provide sufficient space within the enclosure around the locomotive for maintenance staff to move about and clean both the inside of the enclosure as well as the locomotive without damaging the locomotive.
 - 10.2.4.2. The PRASA proposal does not provide sufficient space above the locomotive between the cab roof and the underside of the display enclosure roof to allow for proper access for cleaning and maintenance to the lighting system.
 - 10.2.5. Review of the specifications for the glass.
 - 10.2.5.1. No details are contained on the PRASA drawings or have been provided subsequently by PRASA.
 - 10.2.5.2. PRASA maintain that the drawings are preliminary drawings.
 - 10.2.5.3. Limited structural information of how the enclosure is to be constructed.
 - 10.2.5.4. Based on the information available the proposed enclosure is not suitable.
 - 10.2.6. Review of the specifications for the illumination of the locomotive during the hours of darkness.
 - 10.2.6.1. The limited information of the lighting system that is shown on the PRASA drawings do not have any details of the specifications for the lighting.
 - 10.2.6.2. From inspection of the drawings the lighting system that is shown is not suitable.
 - 10.2.7. Consideration of appropriate security for the locomotive.
 - 10.2.7.1. No mention is made in the PRASA proposal of any perimeter alarm or CCTV system.
 - 10.2.8. Consideration of viewing conditions to enable the locomotive to be viewed satisfactorily under all conditions.
 - 10.2.8.1. We do not believe that the enclosure proposed by PRASA will satisfy the requirements for satisfactory viewing conditions due to the exposed nature of the glass enclosure and lack of climate control.
 - 10.2.8.2. The design of the roof of the glass display enclosure will result in dirt accumulating on top of the enclosure and washing down the sides of the enclosure which will impede viewing and become a maintenance problem.
 - 10.2.9. Review of signage proposed by PRASA.
 - 10.2.9.1. No information received from PRASA.
 - 10.2.10. A review of the process followed by PRASA in determining the proposed location and what alternate locations were considered and the reasons that they were eliminated.
 - 10.2.10.1. Pierre Cronjé of PRASA indicated to us that PRASA had considered locations within the Concourse but their Consultants had felt that any location within the Concourse would impact the pedestrian flows within the Station.
 - 10.2.10.2. Thus the external position in the Station Forecourt was proposed and agreed upon by PRASA.
 - 10.2.10.3. Unfortunately PRASA have not been able to provide any backup information regarding these decisions.

10.2.11. A review has been carried to determine whether the proposed location is the most suitable available location in Cape Town for the display of the locomotive.

10.2.12. Having inspected the proposed location in-situ with PRASA and SAHRA on 04 February 2015 as well as inspecting the Station Concourse we believe that there are alternate locations within the Station Concourse that should be considered.

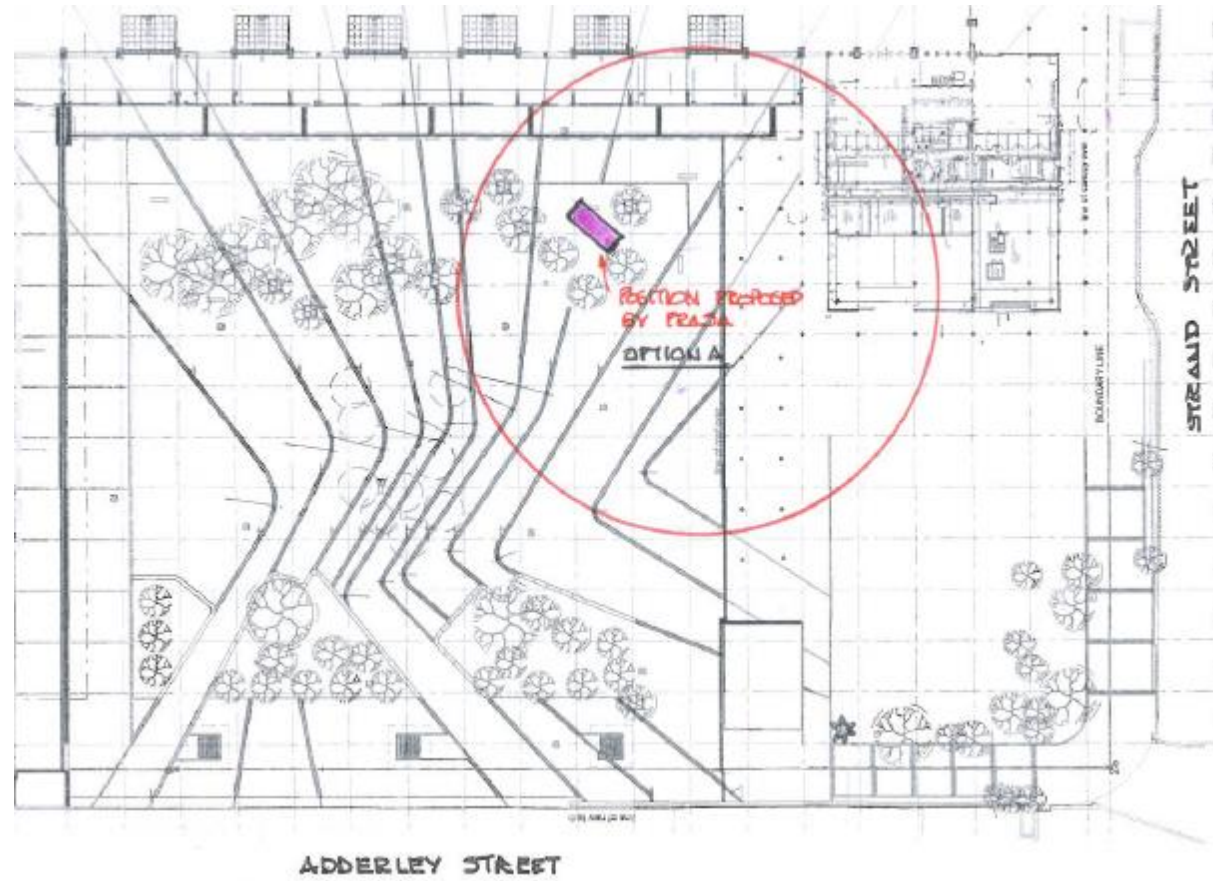
10.3. We do not believe that the enclosure proposed by PRASA will provide acceptable conditions for the display of the locomotive and recommend that alternate display options be considered.

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

11. INVESTIGATION & REVIEW OF ALTERNATE DISPLAY PROPOSALS

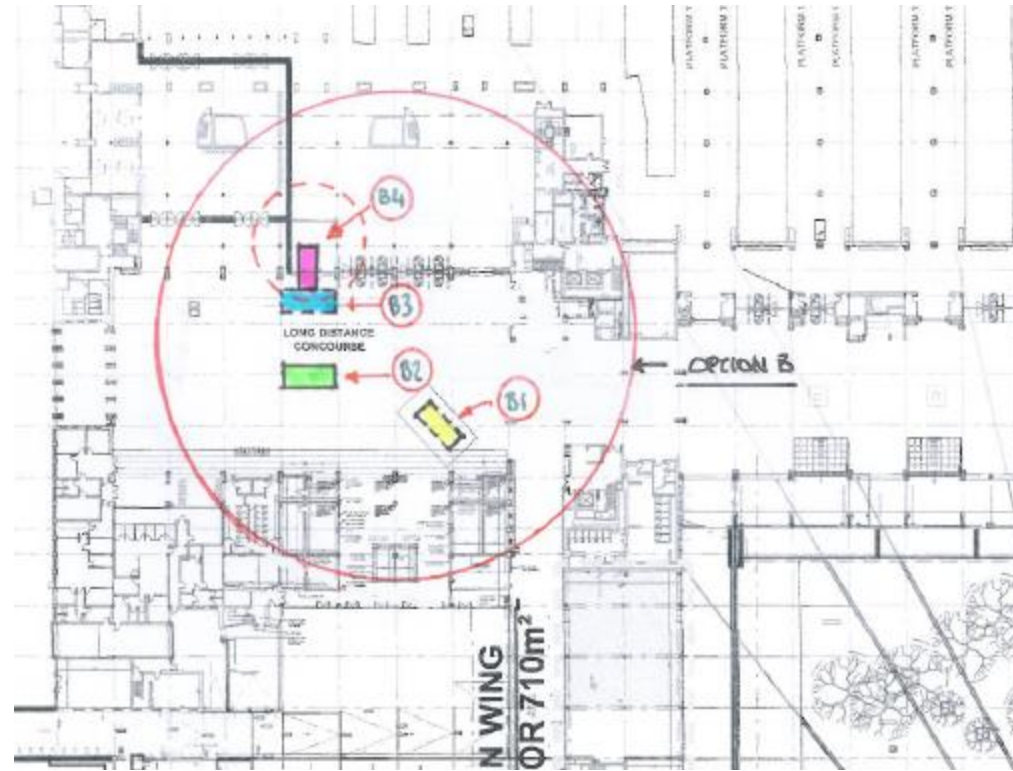
11.1. We have considered the following options for the location of "Blackie" for display purposes:

11.1.1. **OPTION A – Station Forecourt**



- 11.1.1.1. Option A1 – PRASA Proposed position and Display enclosure
- 11.1.1.2. Option A2 – PRASA Proposed position but with proper display building to house the locomotive – External access
- 11.1.1.3. Option A3 – PRASA Proposed position but with proper display building to house the locomotive – Internal access

11.1.2. **OPTION B - Position within the Station Concourse – (see attached diagram)**



11.1.2.1. Option B1 - Old Position

11.1.2.2. Option B2 - Central Position in Main Line Concourse

11.1.2.3. Option B3 – Offset towards Main Line platforms in Concourse

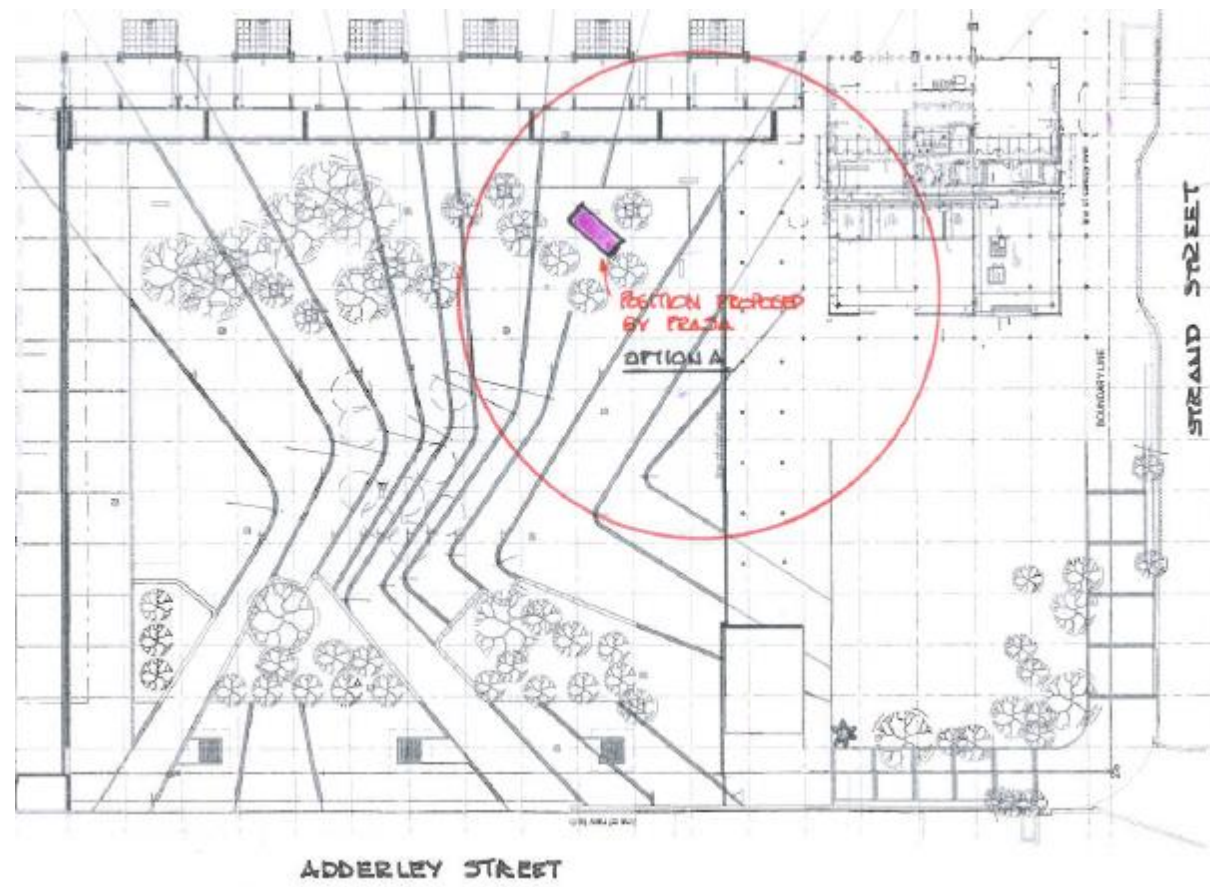
11.1.2.4. Option B4 – Alcove near Main Line platforms in Concourse

11.1.3. **OPTION C - Relocate to an alternate position within Cape Town**

11.2. We set out below an analysis of the relative strengths and weaknesses for each proposal.

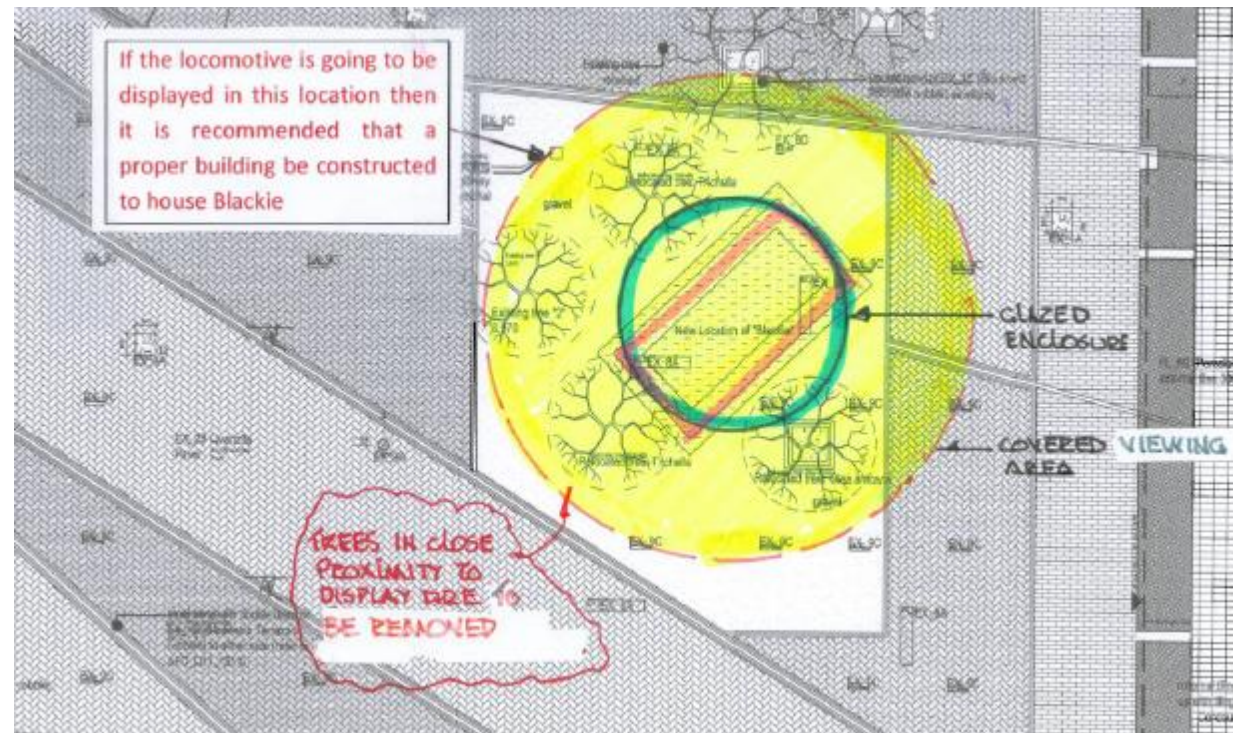
11.2.1. **OPTION A - FORECOURT POSITION**

11.2.1.1. Option A1 – PRASA Proposed position and Display enclosure



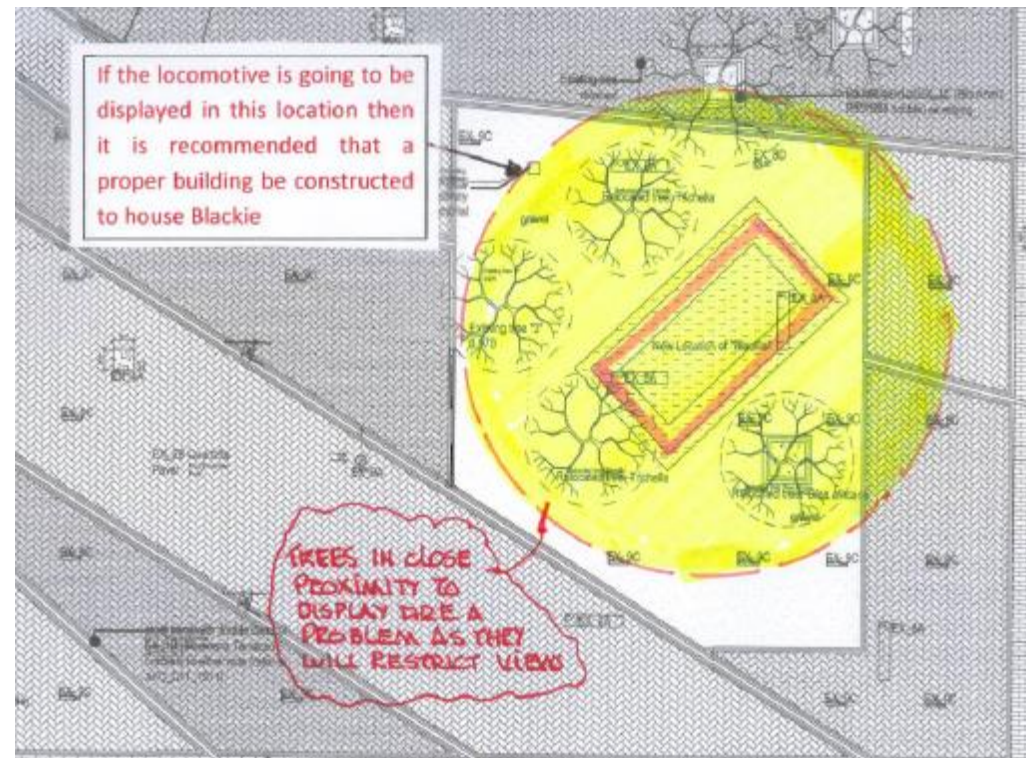
- 11.2.1.1.1. Good display position and would be in the position already approved by PRASA.
- 11.2.1.1.2. Would not interfere with pedestrian flow.
- 11.2.1.1.3. Display enclosure not suitable.
- 11.2.1.1.4. NOT an acceptable option.

11.2.1.2. Option A2 – PRASA Proposed position but with proper display building to house the locomotive – External access



- 11.2.1.2.1. Good display position and would be in the position already approved by PRASA.
- 11.2.1.2.2. Would not interfere with pedestrian flow.
- 11.2.1.2.3. Special building with external shaded area will have to be built around the display enclosure.
- 11.2.1.2.4. Building will have to be climate controlled.
- 11.2.1.2.5. Viewing of locomotive will be through glazing.
- 11.2.1.2.6. Costs could be a problem.
- 11.2.1.2.7. The costs are likely to be greater than creating a display within the Concourse.
- 11.2.1.2.8. Would be an acceptable option.

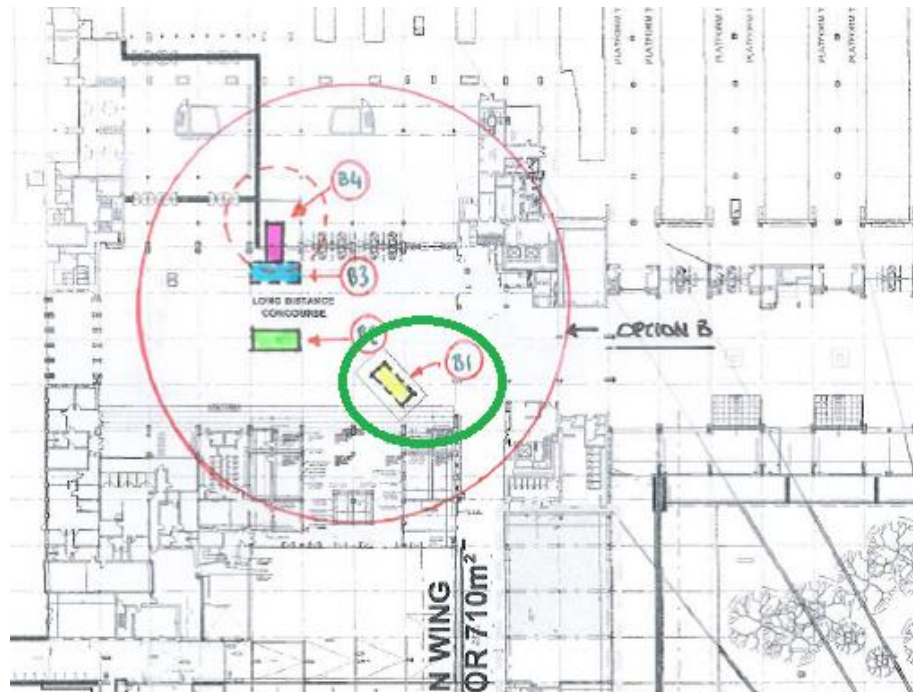
11.2.1.3. Option A3 – PRASA Proposed position but with proper display building to house the locomotive – Internal access



- 11.2.1.3.1. Good display position and would be in the position already approved by PRASA.
- 11.2.1.3.2. Would not interfere with pedestrian flow.
- 11.2.1.3.3. Special building to be built to house “Blackie” within an enclosed viewing area.
- 11.2.1.3.4. Building will have to be climate controlled.
- 11.2.1.3.5. Access to the building would have to be controlled and security systems put in place.
- 11.2.1.3.6. Good viewing conditions - viewing of locomotive will be by entry into the building.
- 11.2.1.3.7. Easy maintenance of the locomotive.
- 11.2.1.3.8. Ability to display other historical artefacts and documents relating to the development of the railways and railway station in Cape Town.
- 11.2.1.3.9. Costs and security management could be a problem.
- 11.2.1.3.10. The costs are likely to be greater than creating a display within the Concourse.
- 11.2.1.3.11. Would be an acceptable option.

11.2.2. OPTION B – STATION CONCOURSE

11.2.2.1. Option B1 – Old Position in Main Line Concourse

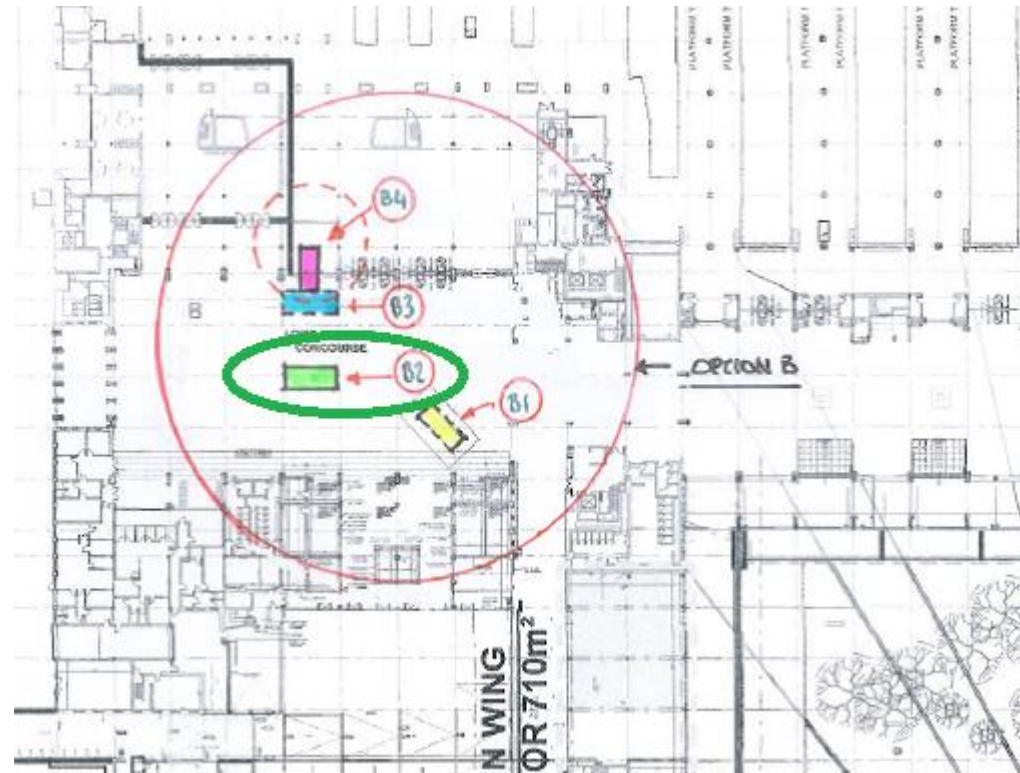


11.2.2.1.1. Position not acceptable to PRASA - Would interfere with pedestrian flow and access to retail food outlets.

11.2.2.1.2. Mosaic panel can remain in position and be repaired.

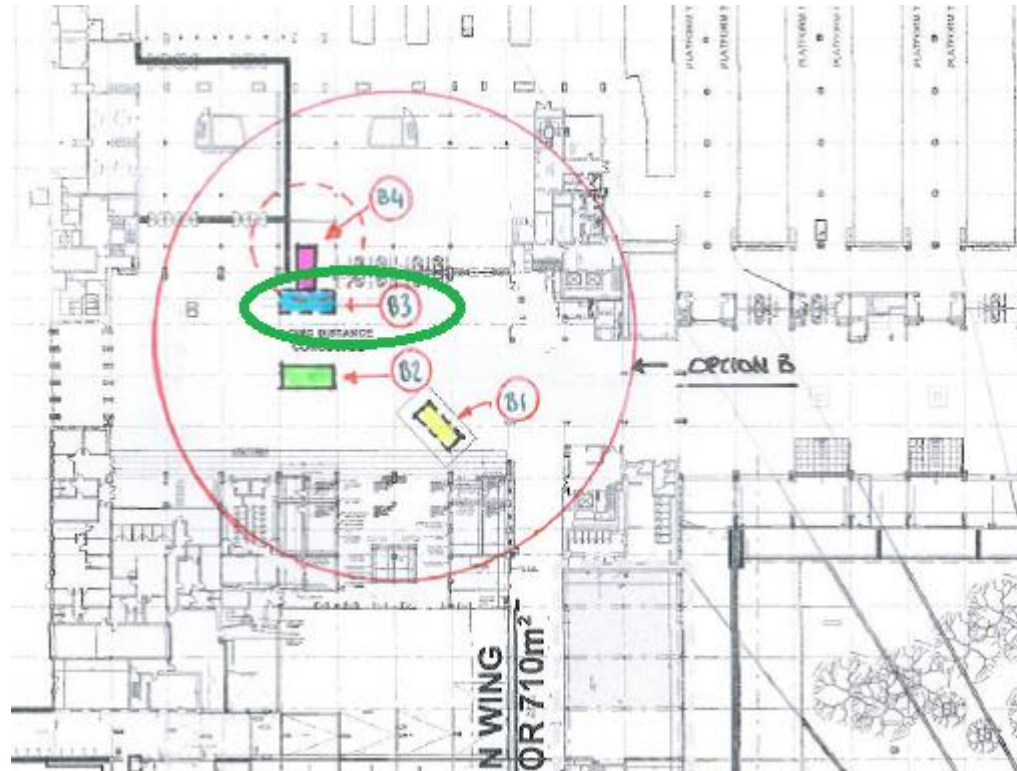
11.2.2.1.3. Would NOT be an acceptable option to PRASA.

11.2.2.2. Option B2 – Central Position in Main Line Concourse



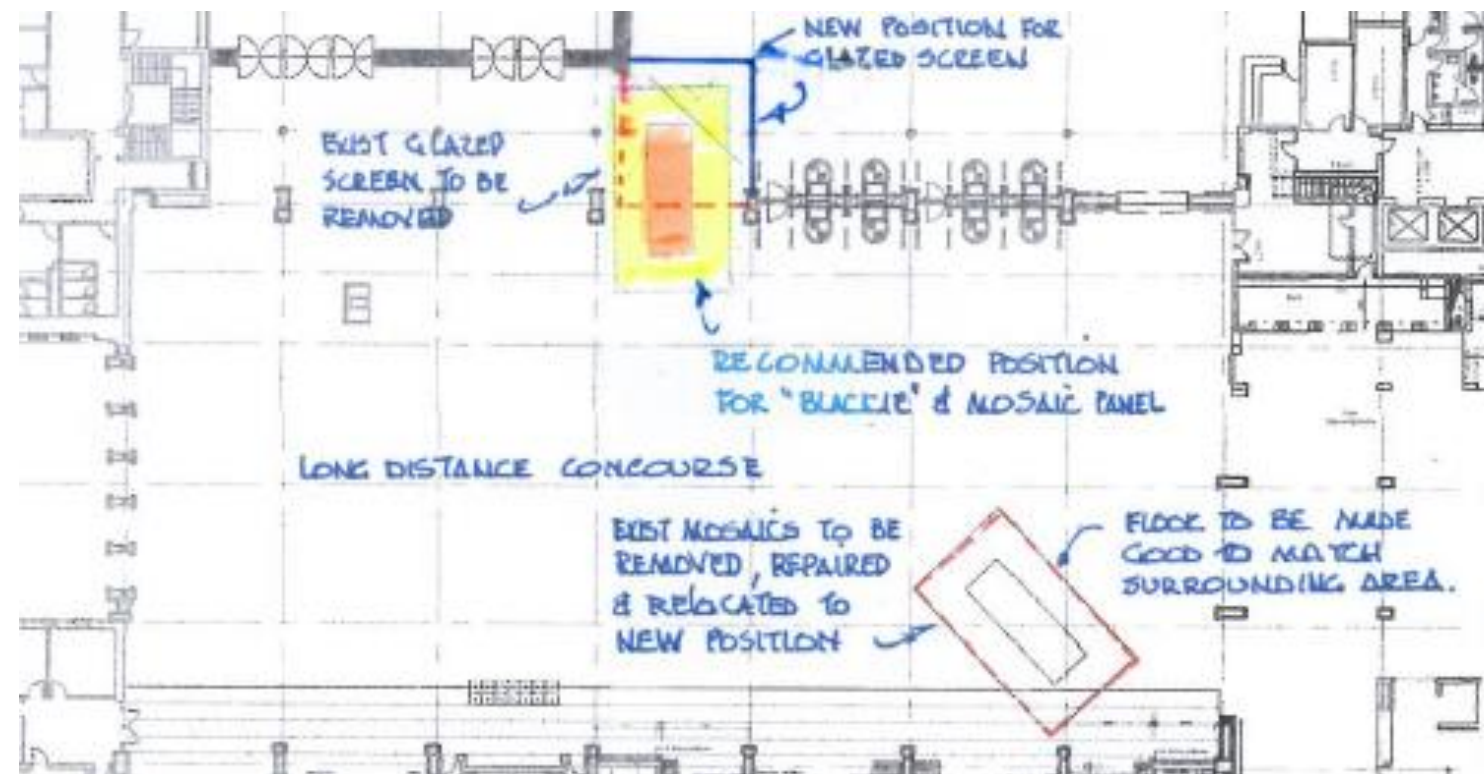
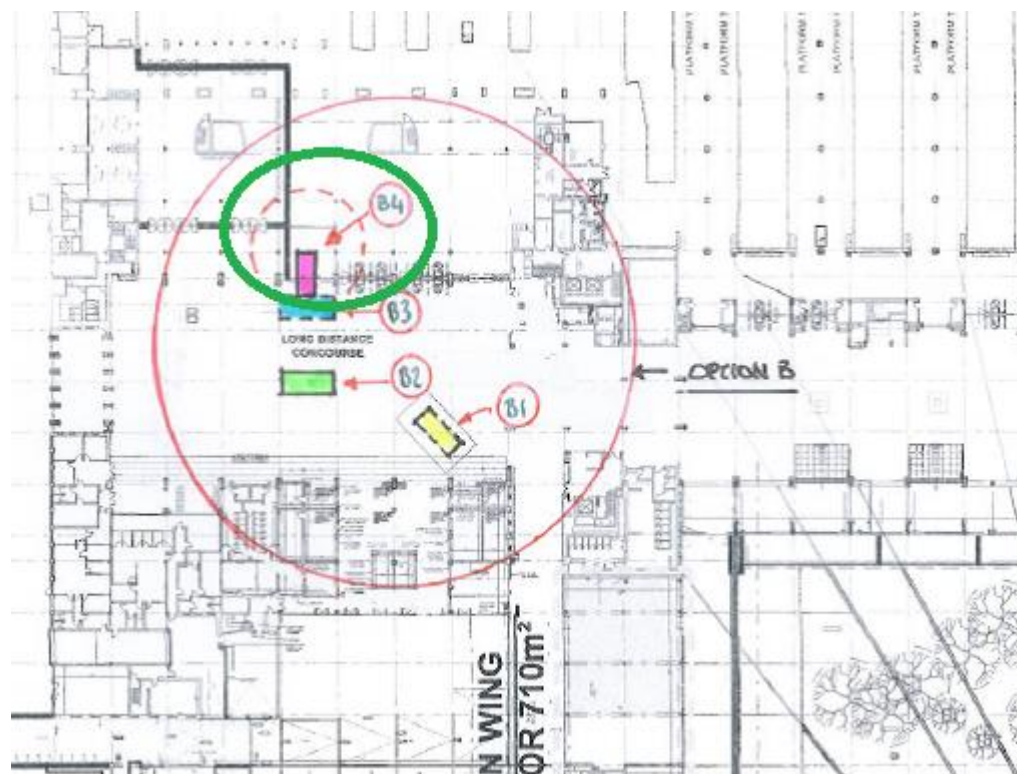
- 11.2.2.2.1. Mosaic panel will have to be uplifted and relocated.
- 11.2.2.2.2. Readily visible from all sides.
- 11.2.2.2.3. Will have some interference with pedestrian traffic flow in the Concourse but pedestrians can flow around display.
- 11.2.2.2.4. Will interfere with the overhead information boards in the middle of the concourse.
- 11.2.2.2.5. Would NOT be a recommended option.

11.2.2.3. Option B3 – Offset towards Main Line platforms in Concourse



- 11.2.2.3.1. Mosaic panel will have to be uplifted and relocated.
- 11.2.2.3.2. Visible from all sides.
- 11.2.2.3.3. Will have minimal interference with pedestrian traffic flow in the Concourse
- 11.2.2.3.4. Position probably acceptable to PRASA.
- 11.2.2.3.5. Not preferred option.
- 11.2.2.3.6. Could be an acceptable option.

11.2.2.4. Option B4 – Alcove near Main Line platforms in Concourse



- 11.2.2.4.1. Mosaic panel will have to be uplifted and relocated.
- 11.2.2.4.2. Will have no interference with pedestrian traffic flow in the Concourse.
- 11.2.2.4.3. Will require modifications to existing glazed screen between Long Distance and Metro waiting areas.
- 11.2.2.4.4. Visible from all sides - position will provide good display position with minimal interference with other activities within the Concourse.
- 11.2.2.4.5. Ceiling of Concourse will need to be repaired before "Blackie" is placed on display.
- 11.2.2.4.6. Position suggested by PRASA and acceptable to PRASA.
- 11.2.2.4.7. Does have cost implications due to the modifications to the existing glazed screen.
- 11.2.2.4.8. Would be an acceptable option
- 11.2.2.4.9. Preferred location within Concourse.



11.2.3. **OPTION C - Relocate to an alternate position within Cape Town**

11.2.3.1.1. If none of the above options are acceptable then alternate options within the City of Cape Town will have to be investigated.

11.2.3.1.2. The Western Cape Government has indicated that they could be interested in displaying “Blackie” in a new Museum they are setting up in the centre of Cape Town.

11.2.3.1.3. The problem with any site away from the Cape Town Station is that the historical link between the locomotive and the railway would be lost.

11.2.3.1.4. This option should only be considered as a last resort.

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

12. RECOMMENDED DISPLAY PROPOSALS

12.1. Based on the reviews of the different options the following options can be considered further.

12.1.1. Option A2 – PRASA Proposed position but with proper display building to house the locomotive – External access.

12.1.2. Option A3 – PRASA Proposed position but with proper display building to house the locomotive – Internal access.

12.1.3. Option B4 – Alcove near Main Line platforms in Concourse.

12.2. Comments

12.2.1. Options A3 and B4 will allow access around the locomotive with a cordon to keep the public away from the locomotive.

12.2.2. Option – A2 will contain the locomotive in a glass display case and allow viewing through the glazing from a covered surround.

12.2.3. Options A3 and B4 will allow for additional displays' to be incorporated together with the locomotive.

12.2.4. Option B4 will allow the mosaic panel to be relocated together with the locomotive.

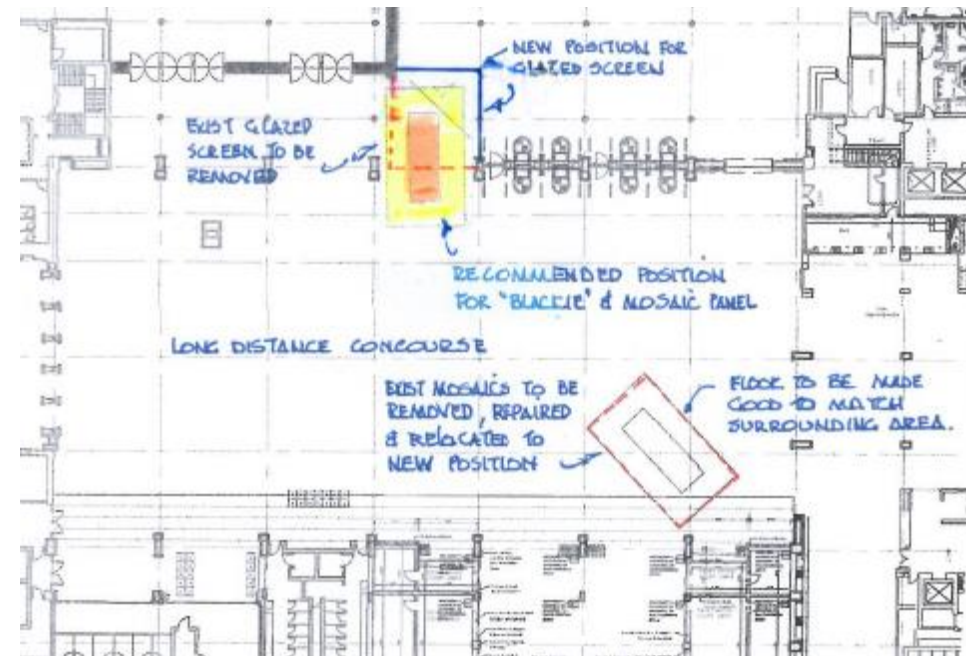
12.3. Implications

12.3.1. All these Options have cost implications that will be greater than those of the display enclosure originally proposed by PRASA.

12.3.2. These costs, together with the ongoing maintenance and operating costs need to be quantified so that an informed decision can be made on which of the above Options is the best way forward.

12.4. The original proposal from PRASA is NOT acceptable and a choice needs to be made from the above 3 options.

12.4.1. From a practical and cost perspective we believe that Option B4 should be the preferred option.



CONSERVATION MANAGEMENT PLAN FOR “BLACKIE”

13. RESTORATION / RELOCATION OF MOSAIC PANEL

- 13.1. The mosaic panel in the Concourse around the old display area is currently still in place although it has suffered some damage.
- 13.2. There are a number of options to be considered as regards to the future of the panel:
 - 13.2.1. Repair panel in its present location.
 - 13.2.2. Uplift the mosaics and create recess in floor so that panel can be re-laid with protective glass floor over the panel.
 - 13.2.3. Uplift the mosaics and relay them around “Blackie” in its new position.
 - 13.2.4. Uplift the mosaics and preserve at least one of the Cape Government railways logos in another location at the Station.
- 13.3. Our comments on the options are as follows:
 - 13.3.1. This option is not recommended as the mosaics will be subject to a lot of wear from pedestrian traffic and without the locomotive in place will have little significance.
 - 13.3.2. This option makes little sense as if the mosaics are uplifted they might as well be relocated to where “Blackie” is to be displayed.
 - 13.3.3. This is the preferred option and would be practical with display options A3 and B4 as previously recommended.
 - 13.3.4. This option could be utilised if display option A2 is implemented.
- 13.4. These mosaics have been part of the display of “Blackie” since the locomotive was first displayed in the old Cape Town Station and were relocated together with “Blackie” to the new Station.
- 13.5. We recommend that the services of a mosaic specialist be engaged by PRASA to carry out the uplifting and relocation of the mosaics.



CONSERVATION MANAGEMENT PLAN FOR “BLACKIE”

14. PREPARATION OF NEW DISPLAY LOCATION

14.1. PREPARATION OF NEW DISPLAY LOCATION

14.1.1. In order to prepare the new display location to receive “Blackie” the following items need to be attended to:

- 14.1.1.1. Dependant on the chosen location the construction of the display building or modifications to the glazed partitions in the existing Concourse needs to be completed.
- 14.1.1.2. If the Concourse option (Option B4) or the Display Building (Option A3) are chosen then the Mosaic panels need to be relocated.
- 14.1.1.3. If the Concourse option (Option B4) is chosen then a new display plinth will have to be manufactured and installed.
- 14.1.1.4. Suitable lighting for the display location will need to be installed.
- 14.1.1.5. A CCTV and security alarm system will need to be installed and commissioned.
- 14.1.1.6. Provision will have to be made for the transport and relocation of “Blackie” to the new position and for mounting the locomotive on the plinth.

14.2. COMMISSIONING OF NEW DISPLAY LOCATION

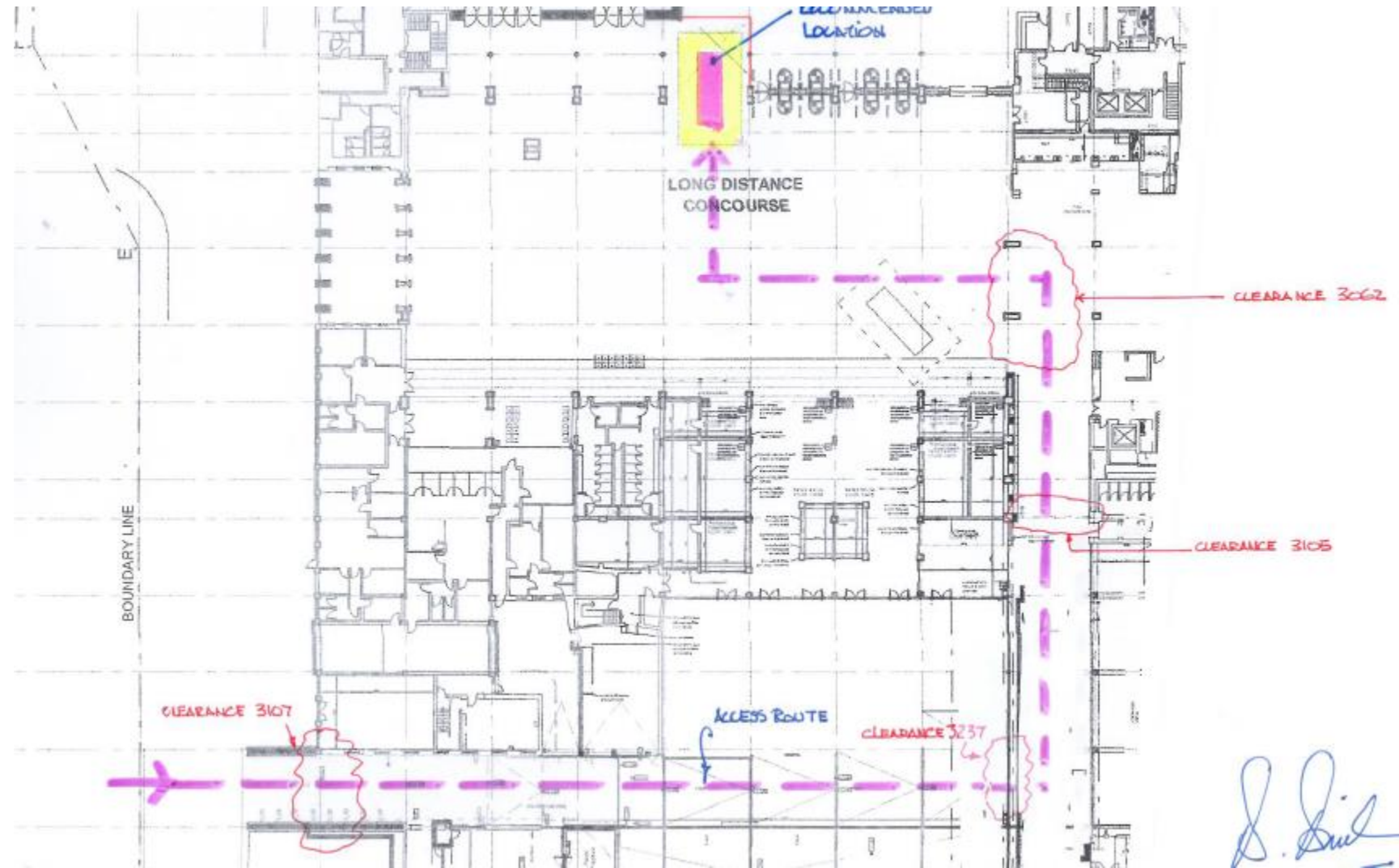
14.2.1. Following the positioning of “Blackie” on its plinth in the new position the following items will need to be attended to:

- 14.2.1.1. Re-instatement of the locomotive cab roof and smokestack on “Blackie”.
- 14.2.1.2. Completion of the lighting installation.
- 14.2.1.3. Installation of safety cordon where applicable.
- 14.2.1.4. Final cleaning of “Blackie”.
- 14.2.1.5. Installation of display signage.
- 14.2.1.6. Installation and commissioning of Information display system.
- 14.2.1.7. Inspection and sign-off by SAHRA that the display complies with the requirements.

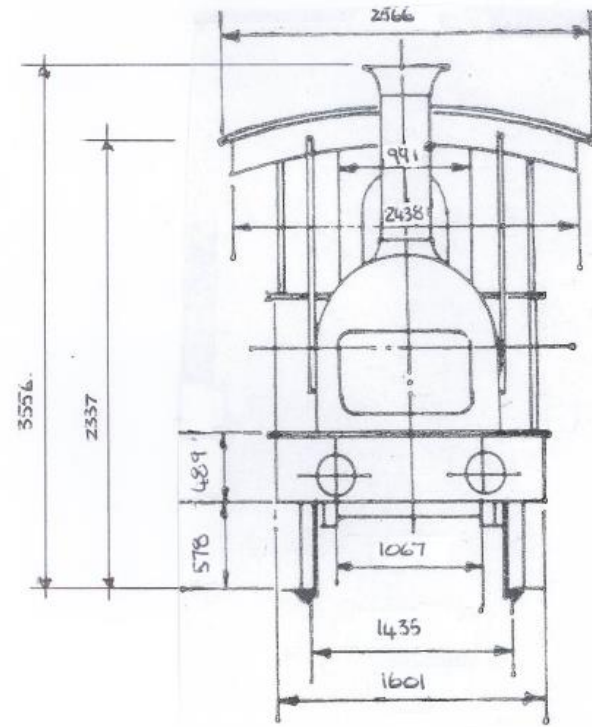
CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

15. RELOCATION & TRANSPORT PLAN

- 15.1. Other than the fact that "Blackie" is stored at ALE and that PRASA intend to use ALE to transport and relocate the locomotive back to the Cape Town Station, as they were responsible for removing "Blackie" and placing her in storage, we have had no detailed information from either PRASA or ALE as to how this process is to be done or managed.
- 15.2. We understand that the methods will be similar to those used when "Blackie" was removed from the station in 2009.
- 15.3. We have taken measurements of the critical access route that will need to be used should "Blackie" be relocated in the Station Concourse as per Option B4 – these measurements confirm that it will be possible to insert "Blackie" into the existing Concourse building without any structural modifications to the building.
 - 15.3.1. Due to the restricted nature of the access route the locomotive will have to be off-loaded from the transport cradle in the Museum Courtyard and then manoeuvred on skids and rollers into the Concourse – extreme care will need to be taken when traversing the critical clearance areas.



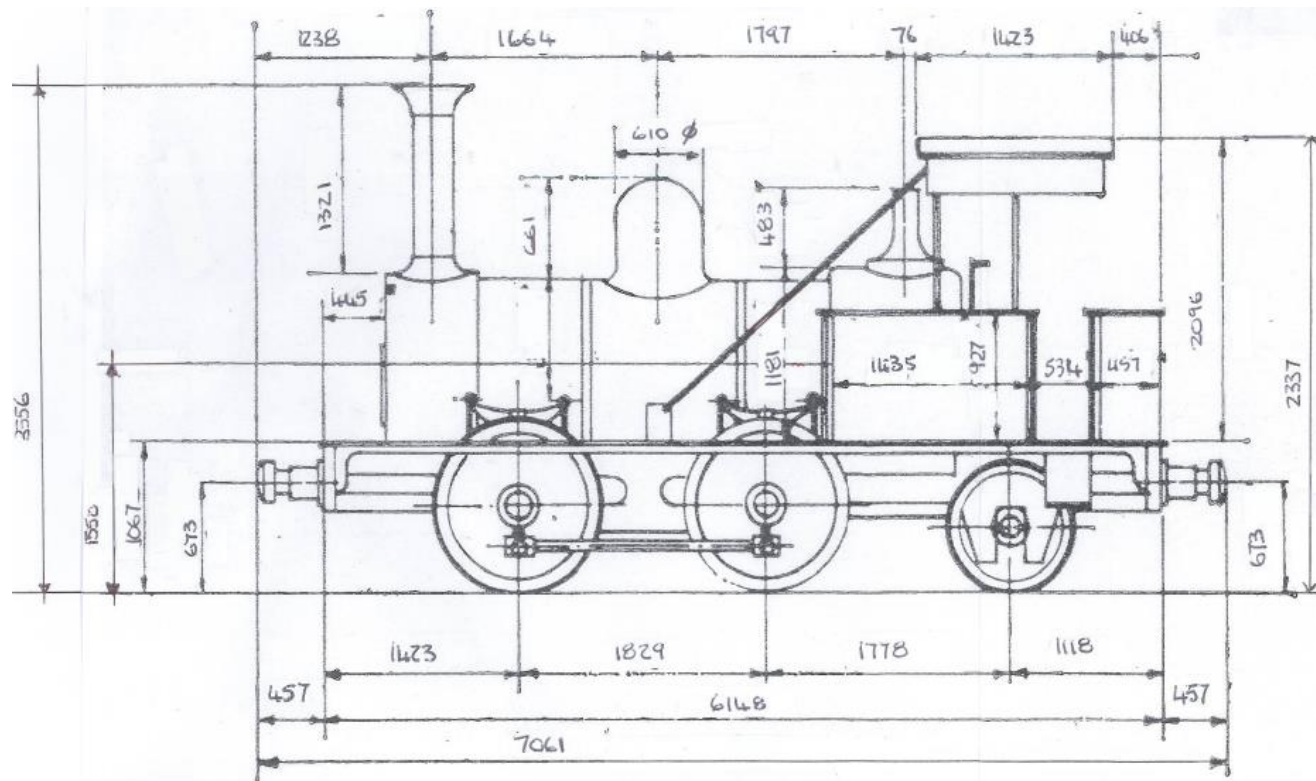
15.4. Critical Clearances



| OVERALL DIMENSIONS | |
|------------------------|-----------|
| Length over buffers | = 7061 mm |
| Height to top of stack | = 3556 mm |
| Width over cab roof | = 2566 mm |

| REDUCED DIMENSIONS | |
|-----------------------|-----------|
| Length over buffers | = 7061 mm |
| Height to top of dome | = 2905 mm |
| Width over body | = 1660 mm |

| TRANSPORT CLEARANCE DIMENSIONS | |
|--------------------------------|-----------|
| Length over buffers | = 7500 mm |
| Height to top of dome | = 3205 mm |
| Width over body | = 1660 mm |



- 15.5. Care will also have to be taken during the transporting of "Blackie" to ensure that the rails on which the locomotive is standing are properly supported to prevent the overstressing of the locomotive frame.
- 15.6. PRASA / ALE will have to provide SAHRA with their rigging and transport plan for review and approval before any movement takes place.
- 15.7. SAHRA will need to provide a monitor to watch over the movement process when it takes place.

CONSERVATION MANAGEMENT PLAN FOR “BLACKIE”

16. MAINTENANCE & MANAGEMENT PLAN

- 16.1. PRASA is responsible for the management and maintenance of “Blackie”.
- 16.2. PRASA needs to institute a Maintenance Management Plan to ensure that “Blackie” is properly looked after and maintained in the future.
- 16.3. The locomotive and display needs to be cleaned once a month to prevent the build-up of dirt and fluff – should display option A2 be chosen then this can be reduced to once every two months.
- 16.4. The locomotive and display need to be checked on a regular basis to ensure that there has been no interference with the display or damage to the locomotive.
- 16.5. It is also important that the display is checked on a regular basis to ensure that the lighting, CCTV security and alarm systems as well as the video information display are working.
 - 16.5.1. All these systems need to have proper maintenance plans in place and appropriate annual budgets allocated.
 - 16.5.2. PRASA needs to put maintenance procedures in place to attend to any problems as they occur so as to ensure that the display is well maintained and presented at all times.

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

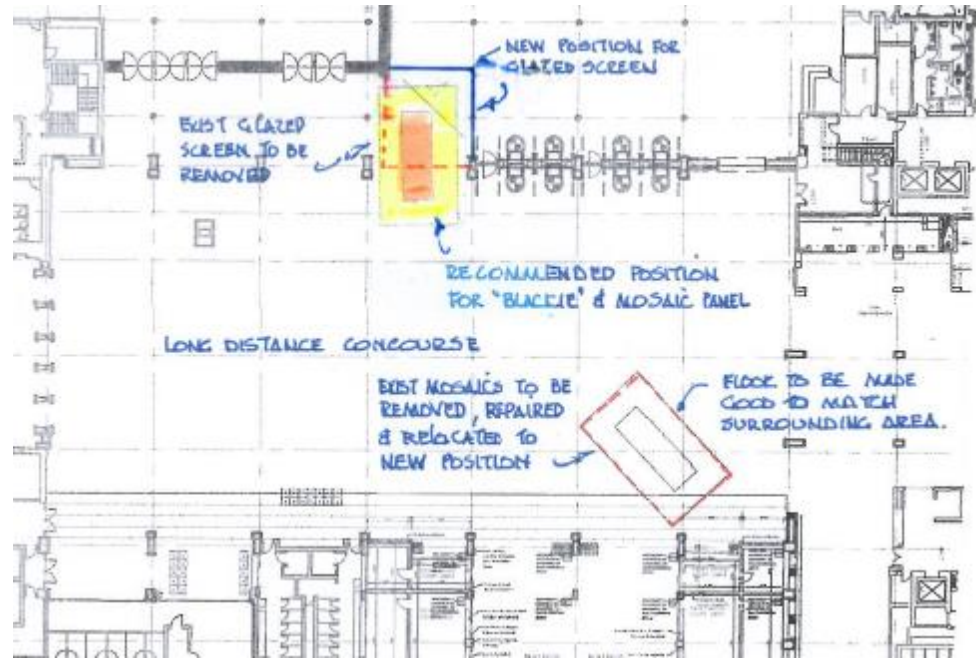
17. MONITORING & REPORTING PLAN

- 17.1. PRASA is to provide bi-annual reports to SAHRA to confirm that "Blackie" is being properly cared for and maintained in good condition.
- 17.2. SAHRA is to carry out an annual inspection of the locomotive and display area and provide PRASA with a report listing any items that require attention.
 - 17.2.1. PRASA to attend to any items requiring attention within 3 months.
 - 17.2.2. PRASA to notify SAHRA when such maintenance has been completed.
- 17.3. SAHRA where necessary will carry out Ad Hoc inspections to ensure that the locomotive and display are being properly looked after.

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

18. CONCLUSION

- 18.1. The original proposal from PRASA is NOT acceptable and a choice needs to be made from the 3 options proposed.
- 18.2. From a practical and cost perspective we believe that Option B4, the location inside the Concourse should be the preferred option.



- 18.3. SAHRA needs to advise PRASA of these recommendations.
- 18.4. PRASA needs to review the 3 options proposed by B4 Architects and submit their revised proposal to SAHRA for review.
- 18.5. Once this process has been completed we can review and comment on the revised the PRASA proposals (as well as their transport and relocation plan).

Bruce Brinkman

Bruce Brinkman

B4 Architects cc

CONSERVATION MANAGEMENT PLAN FOR "BLACKIE"

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| | | | | | |
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