

Report Book
11/6/2 527
1881/54

DEPARTMENT OF MINES.
SOUTH AUSTRALIA

Report No. MN/I 33/52

DM 1881/54

QUARRYING IN THE METROPOLITAN AREA

by

A.T. ARMSTRONG,

STATE MINING ENGINEER.

Copy No. 3 of 7 Copies

This Document consists of 14 pages.

3 plans

21st. March, 1957

DEPARTMENT OF MINES
SOUTH AUSTRALIA

Report No. MN/I 33/52

DM 1881/54

QUARRYING IN THE METROPOLITAN AREA.

by

A. T. ARMSTRONG,

STATE MINING ENGINEER.

TABLE OF CONTENTS.

ABSTRACT

INTRODUCTION

PRESENT OUTLOOK

Legal Aspect

Quarry Holdings

DISCUSSION

Proposed Legislation

Landholder.

Neighbouring Landholders

Householders

Effects of Quarrying on Scenery

Quarry Operators

The Extractive Industries

SUMMARY AND CONCLUSIONS

Appendix 1 Graph - Production of Quartzite, Metropolitan
and Total South Australian, 1935-1956

Appendix 2 Examples of Caveats on Stone Deposits

DEPARTMENT OF MINES
SOUTH AUSTRALIA.

D.M. 1881/54

Report No. MN/I 33/52

QUARRYING IN THE METROPOLITAN AREA.

ABSTRACT.

With a view to conserving supplies of stone and developing them in the best interests of the State, a review has been made of the resources in the metropolitan area. In this report recommendations are made for the introduction of legislation to "free" deposits not being exploited; and for the zoning of quarrying and other extractive industries in and around Adelaide to reduce to a minimum their nuisance effect and the possibility of damage to property.

INTRODUCTION

Since the Second World War there has been a marked increase in the production of crushed stone in the State.^{*} In the metropolitan area the increase in production has been coupled with a general demand for more information about stone deposits and the working of them. Surveys conducted by the Department - a number of them at owners' requests - show that there are reasonable supplies of workable stone; but not all of the deposits are being exploited or are even available for exploitation. Coupled with the problems associated with the working of the deposits are the numerous complaints from householders and civic-minded people regarding noise, damage from blasting, dust, and disfiguration of the hills.

*See Appendix 1.

PRESENT OUTLOOK.

Legal Aspect.

The mining and quarrying of the mineral deposits in this State are, with certain exceptions, controlled by the Mining Act. The Act applies to "mineral lands", and "private lands".

On mineral lands the mineral rights belong to the State. Claims and leases may be taken up and worked by any person holding a miners' right. On private lands the minerals are alienated from the Crown in fee simple. Claims and leases cannot be pegged at will on unworked deposits. Entry on such land may only be obtained

1. By private agreement with the owner of the mineral rights.
2. By obtaining the written authority of the occupier of the land, or
3. By applying to the Warden of the Department of Mines for authority to enter.

It will be noted, however, that under Section 69 AA of the Act, stone, sand, gravel, and shell are specifically excluded from the provisions relating to private lands. The owner has, therefore, the sole right of determining whether a stone deposit on his land is worked or not.

Some of the quarries in the metropolitan area are worked by the owners; others are worked under agreement with the owner on the royalty basis. In quite a number of instances, companies have acquired quarrying rights over stone deposits without any actual quarrying work being done over a period of years. Sometimes this may have been done to ensure continuity of operations for the company concerned, but quite often the move was undoubtedly made to keep intending, or force actual, competitors out of the industry.

The Departmental survey shows that there is a large reserve of stone tied up by agreement entered into by owners.

The exploitation of this reserve could satisfy many of the complaints made to the Department and civic bodies. From the point of view of health, complaints^{are} made regarding the noise and dust created by blasting and the use of heavy vehicles. Complaints are made about the danger to nearby residents from flying stones produced by blasting, and about the damage to property from the stone as well as from the vibration of the blasts. Added to these, is the general complaint that the beauty of the Adelaide Hills is being spoiled by the great gashes produced by quarry owners. The complainants say that they are aware that stone is needed for development, but in their opinion it could be obtained in the gullies out of sight of the city and away from houses. To a large extent this is true. The "freeing" of some stone deposits in the foothills could relieve the position as far as complaints are concerned, but there are many practical aspects of the matter to be considered before a workable arrangement is possible.

It is conservatively estimated that there is enough quartzite in the immediate surroundings of the city to last at the current rate of production for more than 100 years. The Quarry Industries group owns or has quarrying rights over about 83 per cent of the total reserve of quartzite. Of their holdings, one-third has not been or is not being worked. Their present sources of stone ensure ~~that~~ at least 100 years' supply at the current rate of production. The rights have varying periods of up to 15 years to run. On the other hand other quarry operators, such as O'Neill Constructions Ltd. and J.H. Leverington, are finding it very difficult to get sufficient good stone to satisfy requirements, and firms, such as Maryvale Quarries and White Rock Quarries, are very close to the end of their resources.

Preliminary inspection of the unworked deposits of stone taken into account in the estimated reserves, including those held by the Quarry Industries Group, indicate that the deposits are satisfactory as quarrying propositions. More detailed study, however, would be required before the relative merit of the various sites could be determined.

DISCUSSION.

Proposed Legislation.

The owner of land clearly has a right to quarry stone on his own property, or to arrange for or allow others to quarry it. Nevertheless, when it is in the interest of the State to have a mineral deposit worked, stone on private land should not be allowed to remain unexploited. As long as necessary stone is being continuously and bona fide quarried, the interests of both the State and owner are being served. But if an owner, for any reason specifically withholds the benefit of his deposit from the State, or a person by any agreement or arrangement prevents the working of a mineral necessary to the State, legislation is needed to bring that mineral or that particular deposit within the control of the State through the authority regulating mineral production.

Specific instances are noted in which a quarrying company has by a legal agreement acquired the quarrying rights over deposits of stone in the metropolitan area without exercising these rights. The company has extensive reserves of stone of its own. The object in acquiring the rights over other deposits of stone was clearly to stifle competition. The effects of the move go further. Not only is healthful competition restricted but the State is held to ransom in that it is not necessarily the best stone that is quarried or the cheapest. Further, through it arises an anomalous position, as exemplified in one instance^x, that an owner of an untouched deposit of stone could not work his own stone because of an agreement on quarrying rights made years previously by a former owner. In another instance^x, an owner of a stone deposit is precluded by long-standing agreement from getting an operator to work his stone now and so obtain an immediate income commensurate with the value of the deposit.

^x See Appendix 2

The proposed Bill, which is in effect a repeal of Section 69AA, would automatically bring stone, sand, gravel and shell into the general provisions of the Mines Act whereby entry on private lands could be obtained through a warden of mines. If a deposit of stone was not being continuously worked by an owner, the warden, on being satisfied regarding the necessity of working the stone, could grant an authority to enter upon the land and to quarry the stone. The Bill aims

- (1) To release for exploitation deposits of suitable stone which have been "tied up" by agreement, including
 - (a) those which the owner wants worked for him,
 - (b) those which the owner wants to work himself.
- (2) To release for exploitation deposits of stone which are necessary for the well-being of the State and which are now unworked because of the owner's refusal to allow quarrying on his land.
- (3) To help the bona fide quarry operator who has not an adequate reserve of stone to ensure the future of his business.
- (4) To ensure healthy competition in the industry.

It is evident that unrestricted access by the public to all stone deposits in the State would be bad for the community. For this reason, the control of stone deposits as mineral deposits by such an authority as the warden of mines is very desirable. Nevertheless, in considering the pros and cons of any application for an authority to enter land in the metropolitan area to work stone, more factors would have to be taken into account than those normally applicable to mineral deposits on private land elsewhere in the State. Such factors would closely concern the landholder himself, his neighbours and persons owning houses within a reasonable distance of the land containing a stone deposit, as well as the local governing authority.

Landholder.

The value of most metals and some minerals is determined largely by world supply and demand; the cheaper minerals rise and fall in value in accordance with local supply and demand. Stone, sand and clay are amongst the latter.

As long as there is sufficient local stone of good quality available and a healthy amount of competition, price and quality of the stone should be reasonable. With such conditions there would not appear to be any point in opening up more quarries. An owner of an unworked stone deposit could argue in these circumstances that an application for authority to enter on his land would not be justified. Such a stand would be quite logical. He could also object to an entry on his land if his stone were not as good as that on some other unworked property, or if the use to which he was putting the land served the community better. On the other hand, if a monopoly firm or owner were forcing prices up, or stifling competition or putting an inferior stone on the market while good stone was available to them, they should be made to free the stone for exploitation. All these factors could be considered by the various in judging any application for authority to enter upon private land.

Neighbouring Landholders.

The working of a quarry could create a certain amount of nuisance which would prevent the owner of an adjoining property having the full enjoyment of it. Not only could he and his vegetation be affected, but the traffic, noise and dust from quarrying could be detrimental to his cattle and sheep in nearby paddocks or to orchards or market gardens. Further, the opening of quarries in new areas could reduce the value of what might be considered potential residential areas.

Householders.

The neighbouring landowners come also into a bigger group affected by quarrying when consideration is given to people living near quarries. By far the greatest number of

complaints regarding quarrying come from householders. Some live within a few hundred yards of quarries; others live several miles away. It is not proposed here to give an itemised list of the various situations that can arise or to attempt to sort out who is in the right: the quarryman who was there first or the householder who built near the quarry, and expects to be left in free enjoyment of his house. But the Mining Branch, over a good number of years has received complaints regarding quarries, and has investigated them, and in no small way, by giving advice and directions to quarry owners, has helped towards a reduction of the householders' disabilities. It would not be out of place here to mention the general findings of the Branch.

First of all, noise more than anything else wakes people aware of the quarries. Persons experience a "startle reaction" from a blast of explosives which leads them from an awareness of the vibration effect of this blasting to the possible effect on their health, and then to the possibility of damage to houses. Persons are startled in the same way as they would be from fireworks. They often say they "jump two feet into the air" and the vibration "rattled the house". The two-foot leap is a patent exaggeration. Some vibration may be felt but is more often than not air-concussion rather than ground vibration. The officers of the Branch have found no cases where the ground vibration, let alone air-concussion, from ordinary quarry blasting has been high enough to damage property. In fact they have demonstrated on the spot with a vibrograph to householders that the vibration from passing coaches or passing traffic exceeds that produced by blasting in neighbouring quarries.

But this is not to say that excessive blasting could not damage houses. So in following up complaints, the Branch advises quarry operators in the more modern usages of explosives such as the use of millisecond delay detonators, and has gone so far as to reduce the height of quarry faces and prohibit the firing of unconfined shots. Complaints have been reduced very materially. A close watch is kept on quarries to see that no

damage results from blasting or the method of working. In any scheme to ensure continuity of supplies of stone to the city, the rights of householders must be respected.

Effects of Quarrying on Scenery.

In some quarters it is contended that some quarries in the Adelaide metropolitan area are scarifying the hillsides to such an extent that the beauty of the hills as seen from the city is greatly marred. Indubitably, Stonyfell Quarry does make a large gash in the landscape. At certain times of the year and from certain positions in the city, some people may think the view from the city is spoiled.

But it must be said in reply that the present brown grass on the hillside is not very beautiful, that the stone gash will mellow in time and that the city itself is often overcast with dust, smoke and haze. Also, if we must have quarries, we must have scars and we could not hide all the scars from the city or suburbs.

One very important point to remember is that the city needs stone. It would not be possible to cut down the production of stone from Stonyfell quickly without dislocating the whole of the city's road and building programme. Further, although deposits of suitable stone do exist out of sight of the city behind the first line of hills, it would be very expensive to move existing plants there, and some increase in the cost of delivery of crushed stone to the city could be expected in comparison with present costs.

Quarry Operators.

Quarry operators say that they are supplying a much needed commodity to the public; in fact the city could not carry on without them. It is not reasonable for people to complain of the scars on the hills or of the noise from blasting. The scars are the result of necessary work and so is the noise; also in connection with the noise and blasting generally, the

quarries were established long before the people built houses in the vicinity and the operators have prior rights.

There is much in what the operators say. If they were allowed to set by their quarries they have some rights as regards conduct of operations. People who build near them must be prepared to put up with the inconveniences of some noise and dust. However, generally speaking, it is the households who have the final say. The quarries are gradually pushed farther and farther back, or are closed, as the likelihood of danger to the public from quarrying work grows.

If a quarry operator was required to move to another site while he still had an adequate reserve of stone on his present site, and was able to quarry without danger to the public, he would rightly ask for some compensation. The amount of such compensation could be a considerable sum. Apart from the actual dismantling and erection of crushing plant, there would be the opening up of a fresh quarry to the point where full production could be achieved. There would be the inevitable increase in cost due to divided operations in the change-over period and possible loss of production. In most cases, after such a move in the Adelaide Hills, there should not be any increase in cost of production, but there could most likely be an increase in cartage cost to the city, approximately 8d. per ton mile.

The quarry that is most in the public mind and eye is Stonyfell. To stop production at Stonyfell and to open up at some point out of sight of the city would cost a minimum of £250,000, if the move involved the dismantling and re-erection of the plants.

The "Extractive" Industries.

Stone is classed with sand, gravel, clay and shale as the mineral substances of the so-called "extractive" industries. These minerals are essential for the building and manufacturing requirements of any progressive community. It is inevitable in most expanding towns and cities that the quarries and pits become encircled or hemmed in by new building projects, and

the problem of danger to the public, damage to property and occurring of the imminent crisis. The public must have its supply of stone, sand, gravel, clay and shale. It is a question of arranging for the extraction of these materials so as to keep prices as low as possible, and at the same time safeguard the rights of individual property owners, the quarry and pit owners, and the local governing authorities.

In Victoria, the Minister of Local Government set up a committee with representatives of the Mines Department, Public Works Department, Brick and Clay Products Association and the Town Planning Authority to carry out a survey near Melbourne with a view to the Crown resuming areas and holding them for use on lease to brick or tile manufacturers. The committee has not yet, to my knowledge, presented its report to the Minister. In New South Wales, town and country planning is carried out by the Department of Local Government and special regional County Councils who confer with various local shires and municipalities. In certain localities extractive industries have been sited in such a way as to leave the manufacturers with reasonable reserves of raw material. Many of the existing industries will be terminated when their present areas are worked out, but new areas can be opened subject to representation being made to the planning authority and approval being obtained. The Department of Mines assists the authority by making surveys of the areas concerned, and it also has control over the operations through the Mines Inspectorates.

There is need of a clear plan in Adelaide to link deposits of stone, clay, sand, gravel and shale together in a policy of exploitation that is common to the metropolitan area. An authoritative plan would assist the warden in any consideration of mining rights on private property. Such an overall plan also would ensure that the deposits of useful material are utilized to the best advantage of the community, while safeguarding the interests of adjoining property owners, households and of the local governing authority. It is suggested that an extractive

industries planning authority be formed with representatives from the producers of stone, sand, gravel, clay and shale; the Local Government Department; the Town Planning Authority; Municipal Councils and the Mines Department.

SUMMARY AND RECOMMENDATIONS

1. The production of crushed stone for road metal and concrete work in the Metropolitan area, and in the State as a whole, is increasing rapidly.
2. It is of vital importance to the community that supplies of good stone are available to fulfil the demands of the building trade and road making authorities in the expansion of the city and its industries.
3. On the one hand complaints are received from house and property owners that quarries are endangering people and damaging property. Complaints are also made that the beauty of the Adelaide Hills is being marred by the gashes produced by quarry operations.
4. On the other hand the quarry owners contend that they are supplying a much needed commodity to the community. People who build near established quarries must expect some disability, but the quarries do not endanger people or damage property. In any case the house builders would not be able to build, were it not for the quarry supplying materials for the purpose.
5. Further, before people blame the quarries for spoiling the hills, let them consider the cost of moving the quarries, the effect of a possible loss of production of stone during the transfer and the fact that a gash in the hills is not necessarily a blemish or, if it is, only a minor one.
6. There would appear to be need for a planning authority to guide the development of quarries and pits in the metropolitan area on a long range basis.
7. An Extractive Industries Planning Authority could be formed with representatives from the Local Government Department; Producers of stone, sand, gravel, shale and clay; the Town Planning Authority; Municipal Association; and the Mines Department.

8. Another complaint received in the Mines Department is that the larger quarry companies are tying up land by agreement so that the smaller quarrymen are not able to get access to the stone deposits to keep up production.
9. With regard to complaints from house and property owners, it is quite clear that the closer houses get to the quarries the greater the element of danger and the greater the risk of damage to property. Some quarries must eventually be closed by Inspectors of Mines and Quarries because of the dangers.
10. At present the Department is making continual tests of ground vibrations with a vibrograph to ensure that blasting operations do not damage property. The new blasting technique and improved quarry practice have greatly lessened complaints, which were in any case largely without proper justification.
11. If the quarry companies were to transfer operations to positions out of sight of the city and away from housing, special planning would be needed to ensure that there would be no dislocation of supplies of stone to the city. There would be a large sum of money involved in the transfer - in the case of Stonyfell quarry a minimum of £250,000. In addition, although there may not be any rise in the cost of production of the stone in the new quarries, there would be some increase in cartage costs to the city, approximately 8d. per ton mile.
12. The complaint that land is being tied up unnecessarily, so as to stifle competition, is fully justified. The Quarry Industries group has control of approximately 80 per cent of the total reserves of stone in the immediate vicinity of the city. On the land owned by the group or being worked by the group at the present time is two-thirds of their total reserve of stone. On this land it has enough stone to last at the present rate of production for at least 100 years.

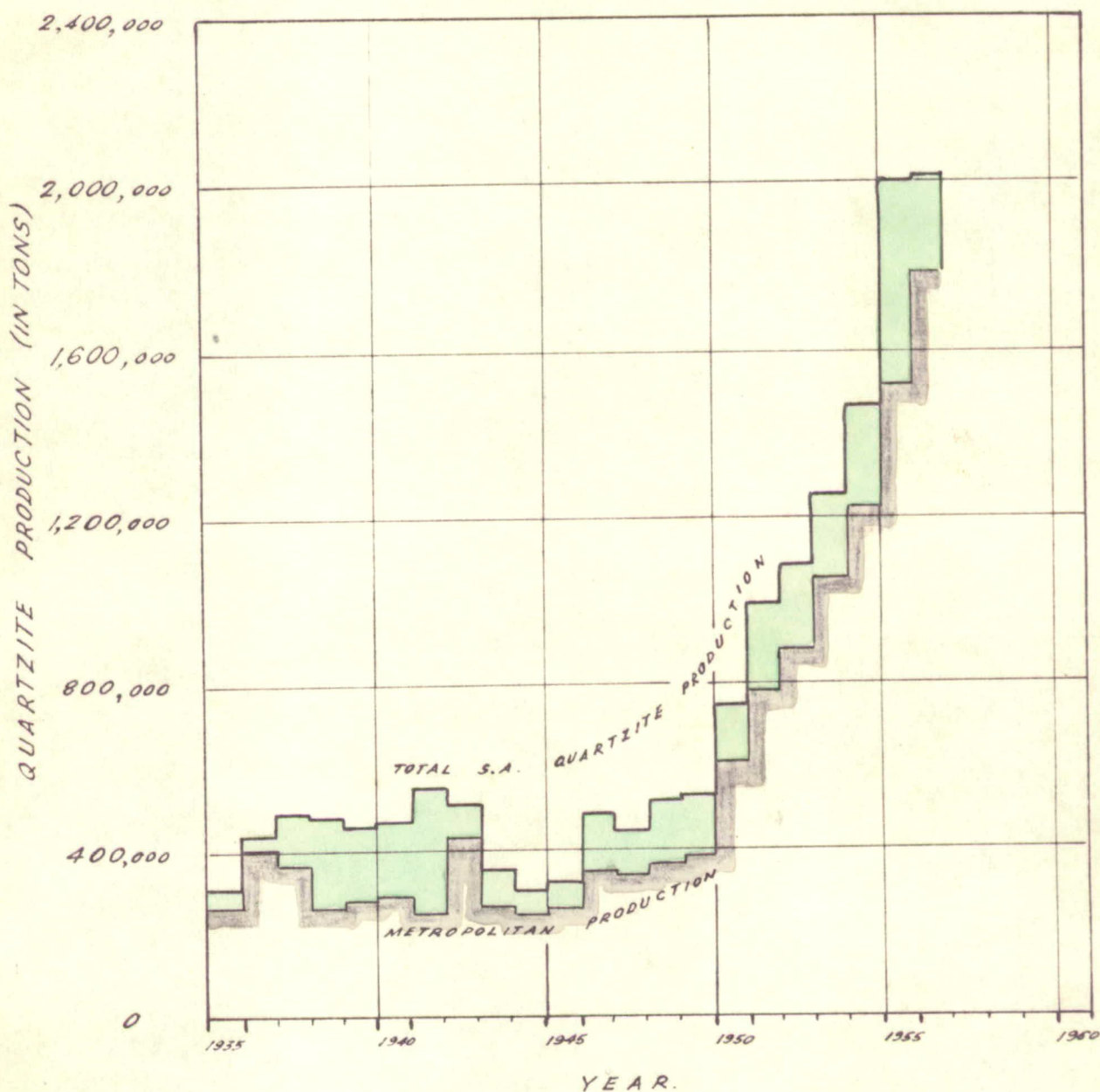
It could quite reasonably release the other one-third of its reserve of stone which is on private lands, the subject of agreements.

13. At the present time the owner of a stone deposit on private land has the sole right of determining whether the stone shall be worked or not, and he may transfer his right to another by agreement.
14. If Section 69 AA of the Mining Act were repealed, deposits of stone on private land would be classed with other mineral deposits, and the warden of mines could grant authority to persons to enter on private lands for the purpose of working stone not being utilized.
15. The effect of this legislation would be the release from agreement of those deposits of stone that were not being legitimately worked.
16. It is recommended that Section 69 AA of the Mining Act be repealed, and that an Extractive Industries Planning Authority be formed to plan the development of quarries and pits in the metropolitan area and to aid the Warden of Mines in his consideration of applications for authority to enter on private land.

21.3.57

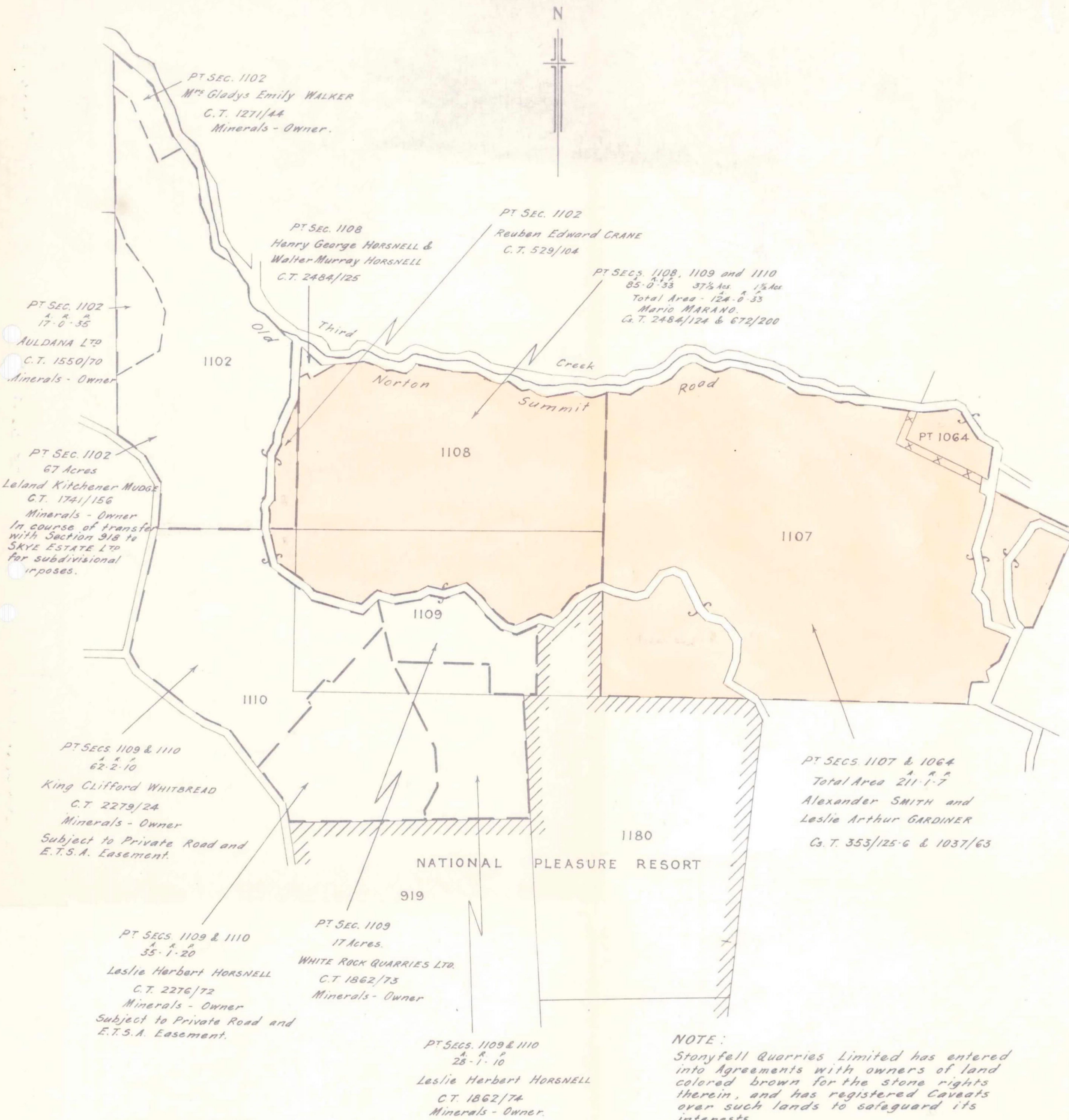
J. J. J. J.
STATE MINING ENGINEER.

Appendix 1



S.A. DEPARTMENT OF MINES

Approved	Permitted	Drawn T.M.J.T.	METROPOLITAN & TOTAL SOUTH AUSTRALIAN PRODUCTION OF QUARTZITE	D.M.	Scale
		CR.		Req.	S 1370 944.2
Director		Engr.			Date 9.11.56



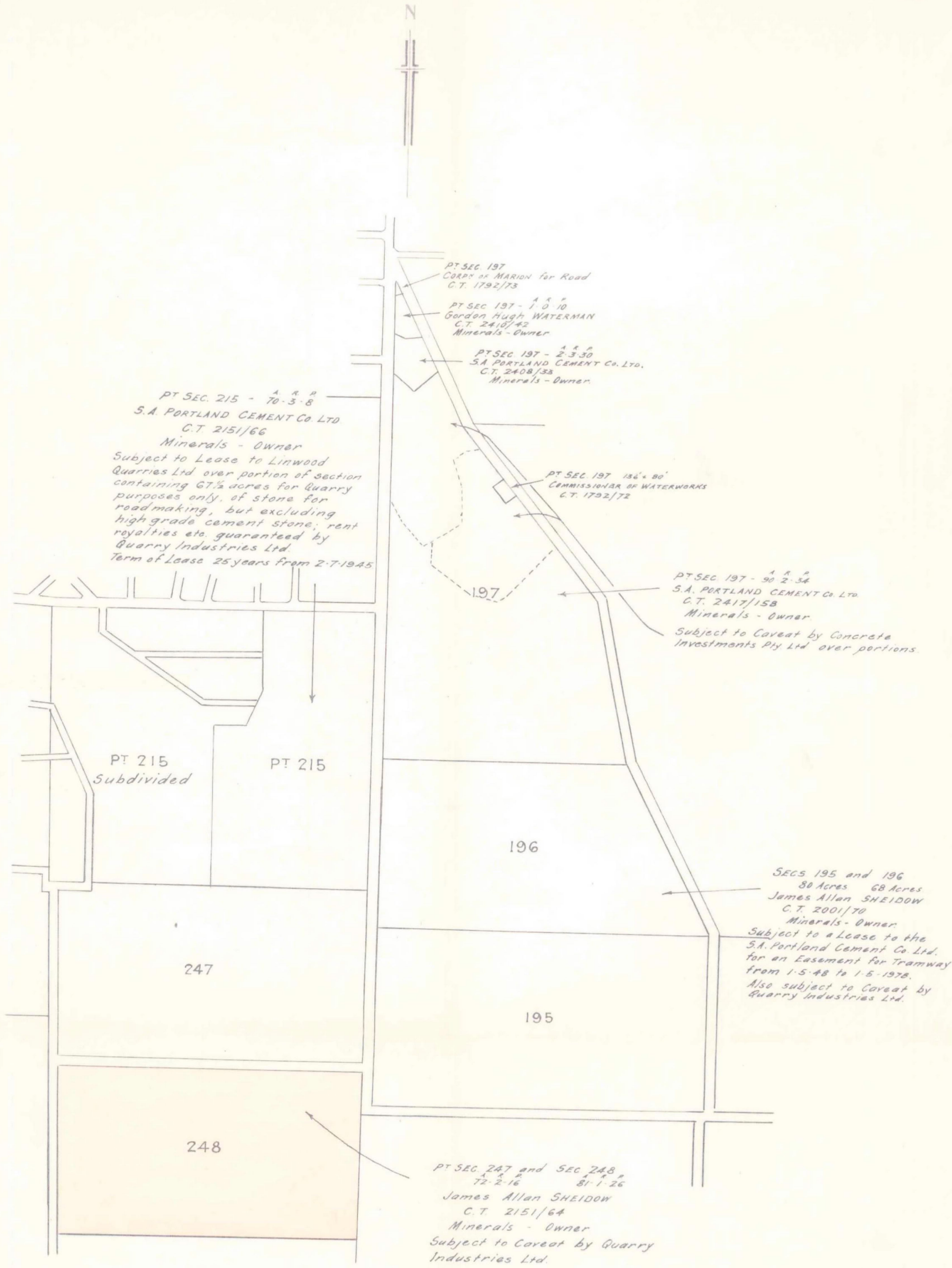
APPENDIX 2 (1)

1. Sec. 1108, owned by White Rock Quarries but the stone rights are held by Stonyfell Quarries Ltd. through agreement with previous owner. - Not being worked.
2. Sec. 1107, owned by Smith and Gardiner - not worked.
Stone rights held by Stonyfell Quarries Ltd.

NOTE:

Stonyfell Quarries Limited has entered into Agreements with owners of land colored brown for the stone rights therein, and has registered Caveats over such lands to safeguard its interests.
Application was made to remove Caveats over titles for Section 1107 and Part Section 1064, and 21 days Notice given by the L.T.O. for removal, but by Order of the Supreme Court dated 5-10-1956, such Notice was extended beyond the period of 21 days until further notice.

S.A. DEPARTMENT OF MINES				WHITEROCK QUARRIES HQ ADELAIDE OWNERSHIP OF LAND		Approved	Passed	Drn.	Scale: 10 Chains = 1"
No.	Amendment	Exd.	Date			Director		Tod. R.R.	56-272
								Chd.	Ha G
								Exd.	Date 12-11-56



APPENDIX 2 (2)

Sec. 248, owned by J.A. Sheidow, subject to agreement on quarry rights by Quarry Industries Ltd. Not worked

S.A. DEPARTMENT OF MINES				Approved		Passed		Scale: 10 Chains = 1"	
S. A. PORTLAND CEMENT Co. QUARRY HQ NOARLUNGA OWNERSHIP OF LAND				Director		Dm. Tcd. R.R. Ckd. Exd.		56-274 Ha 9 Date 12-11-56	
No.	Amendment	Exd.	Date						