



WOOL
HARVESTING
NOTE
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RECTANGULAR YARDS

The type of yards most commonly used throughout Australia has been rectangular yards, so called because the various facilities are contained within a rectangle.

The initial setting out of the yards follows familiar practice, being based on straight lines and right angles. This implies that the setting out and construction is regarded as being more straight forward than for yards requiring curves and irregular shapes.

Rectangular yards have been built to a wide variety of layouts, and a selection of types in use is included in this Note.



Photo 1. Rectangular yards with shade trees.

FEATURES OF RECTANGULAR YARDS

The yards are usually set out along the lines illustrated in Diagram 1.

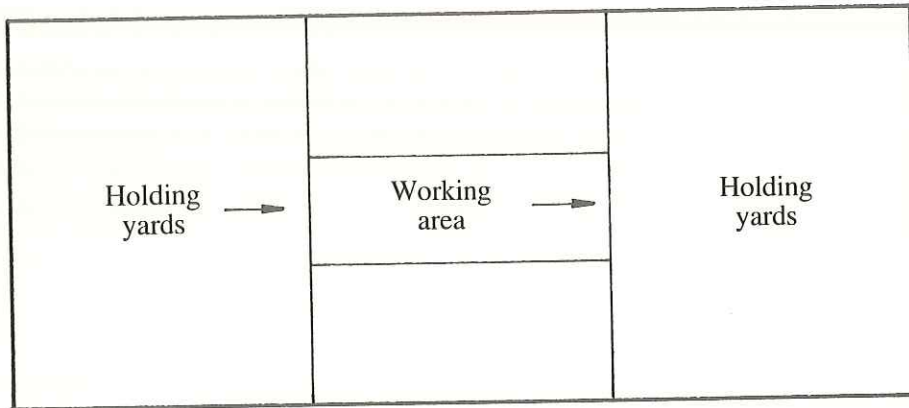


Diagram 1. General layout pattern for rectangular yards.

The sheep are brought into holding yards whose size is determined by the size of mob normally handled on the property. They are then directed through the working area which usually has a drafting race and working race where appropriate activities are carried out. The sheep then pass into another set of holding yards.

It is generally considered unwise to hold sheep in the areas on either side of the working area between the two sets of holding yards. Stationary sheep in these areas tend to restrict the flow of sheep through the working zone, and thus there are two relatively unused yards within the total rectangle.

Some layouts are such that sheep can only be moved in one direction through the working area for treatment. If another activity has to be carried out, then the sheep are returned to the starting point by way of the little used sections beside the working area. The sheep then pass through the working zone a second time, moving in the same direction as for the first treatment.

Other layouts allow sheep to move in both directions through the working area. Having been treated once, the sheep can be directed back through the working area, but now moving in the reverse direction for the second activity. This two-way operation in rectangular yards is impossible to obtain in yards based on circular principles.

To assist in efficient operation (that is, a high productivity measured in sheep throughput per man hour) the holding areas before and after the working zone should accommodate equal numbers of sheep. In addition, the layout of races and yards should encourage sheep to move from one point to the next. Wide gates are helpful in this respect, and the arrangement of the drafting and working races in conjunction with the holding yards is important.

In general, the gates in rectangular yards should be hinged from a post at the end of a fence, the closed position of the gate being a continuation of the same fence line. This is shown in Diagram 2.

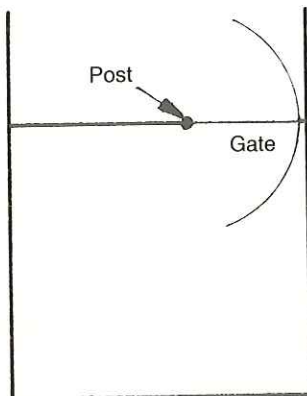


Diagram 2.

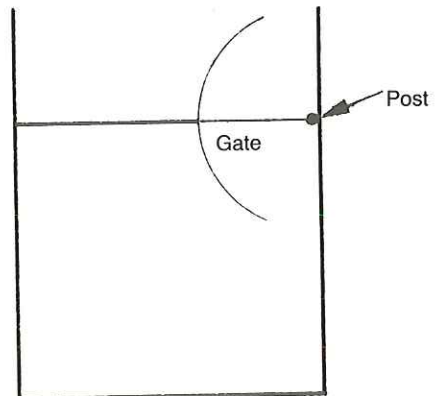


Diagram 3.

The alternative of hinging the gate from a post within the line of the fence (its closed position being at right angles to the fence as in Diagram 3) is not as satisfactory for two reasons.

Firstly, there is more likelihood of gate post movement due to the weight of the gate being largely unsupported. This results in the gate sagging at its outer end. With the arrangement shown in Diagram 2, the weight of the gate in the normal closed position is supported by the bracing effect of the yard fence.

Secondly, in transferring sheep from one yard to the next, the gate mounted as in Diagram 2 is more useful as a sweep to help move the last few sheep into a well filled yard.

When arranging the location of the drafting and working races, it is helpful if sheep entering these races can see other sheep ahead of them in one of the holding yards. These treated sheep help draw the others forward, and this assists in both filling and emptying the working race, as well as assisting in maintaining sheep flow when drafting. The more efficient designs for rectangular yards make use of this characteristic of sheep behaviour.

Another feature of rectangular yards is that, since the main fences are straight lines, the yards can be easily combined with the shearing shed. It is usually a simple matter to obtain good access to the shed for woolly sheep, as well as easy return of shorn sheep to the yards for any post-shearing activities.

Experience indicates that best results are obtained when the yards are oriented so that the drafting and working races lie in a north-south direction, with the sheep moving towards the north.

ADVANTAGES

Rectangular yards have been tried and tested over a long period so that time has enabled reliable layouts to be determined and proved.

Sheep movement is along straight line paths providing clear vision for the sheep.

The yards can be arranged to provide two-way operation through the main working areas.

They can be readily integrated with the shearing shed to provide an effective total sheep handling complex.

Setting out and construction is simpler and quicker than for other types of yards.

The working race can be filled and operated independently of the drafting race to the benefit of the work done in both areas.

Yards of adequate capacity can be provided for each outlet of a three-way draft.

DISADVANTAGES

Many sets of rectangular yards have been in existence for a long time. They may have been poorly laid out originally and now be in a state of disrepair, causing some people to conclude that all rectangular layouts suffer the same shortcomings.

The operator must walk a longer distance to get access to untreated sheep which may jam or otherwise fail to move through the working area.

The sheep start at one end of the rectangular yards, and finish at the other end after the relevant activities have been carried out. Time and effort are needed to return them to the start again for further work.

Where two-way operation is used, sheep do not follow the same flow paths through the yards, and movement in one direction is often not as good as in the other.

There are nearly always some undesirable acute angled corners in one or more of the yards, due to the need to provide inclined fences for forcing yards or for check pens after the draft.

SUGGESTED DATA

Sheep Densities

Holding Yards: Allow 1 sheep per square metre, and each yard should hold the average mob size.

Forcing Pen: Allow 3 sheep per square metre, and capacity should be 1.25 times that of the working race (or 2.5 times if a double working race is used) or hold about 20 sheep for drafting.

Dimensions

Drafting Race:	Length	3000 to 3600 mm with sides sheeted on the inner surface.
	Width	For vertical sides, 450 to 500 mm. For V-shaped race, 275 mm at bottom and 560 mm at top.
	Height	850 to 900 mm.
Working Race:	Length	10 to 15 metres.
	Width	For fixed sides, 600 to 800 mm depending on breed and type of sheep.
	Height	850 to 900 mm.
Gate Sizes:	General	As wide as possible, 1800 to 3000 mm being common.
	Drafting	900 to 1100 mm.

EXAMPLES

The layouts represented in this section have been adapted from yards erected in various parts of Australia for various scales of operation. In each case there is a descriptive section containing comments related to capacity, area and performance, followed by a plan of the yards. All dimensions shown are in millimetres, and a scale is indicated for each of the layouts allowing further dimensional data to be obtained.

LAYOUT NO. 1

CENTRE DRAFT AND SIDE WORKING RACE

CAPACITY

Adult Sheep

Merinos	— 800 woolled sheep
	— 900 off-shears
Crossbreds	— 750 woolled sheep
	— 850 off-shears

AREA

562 square metres (6,050 square feet)

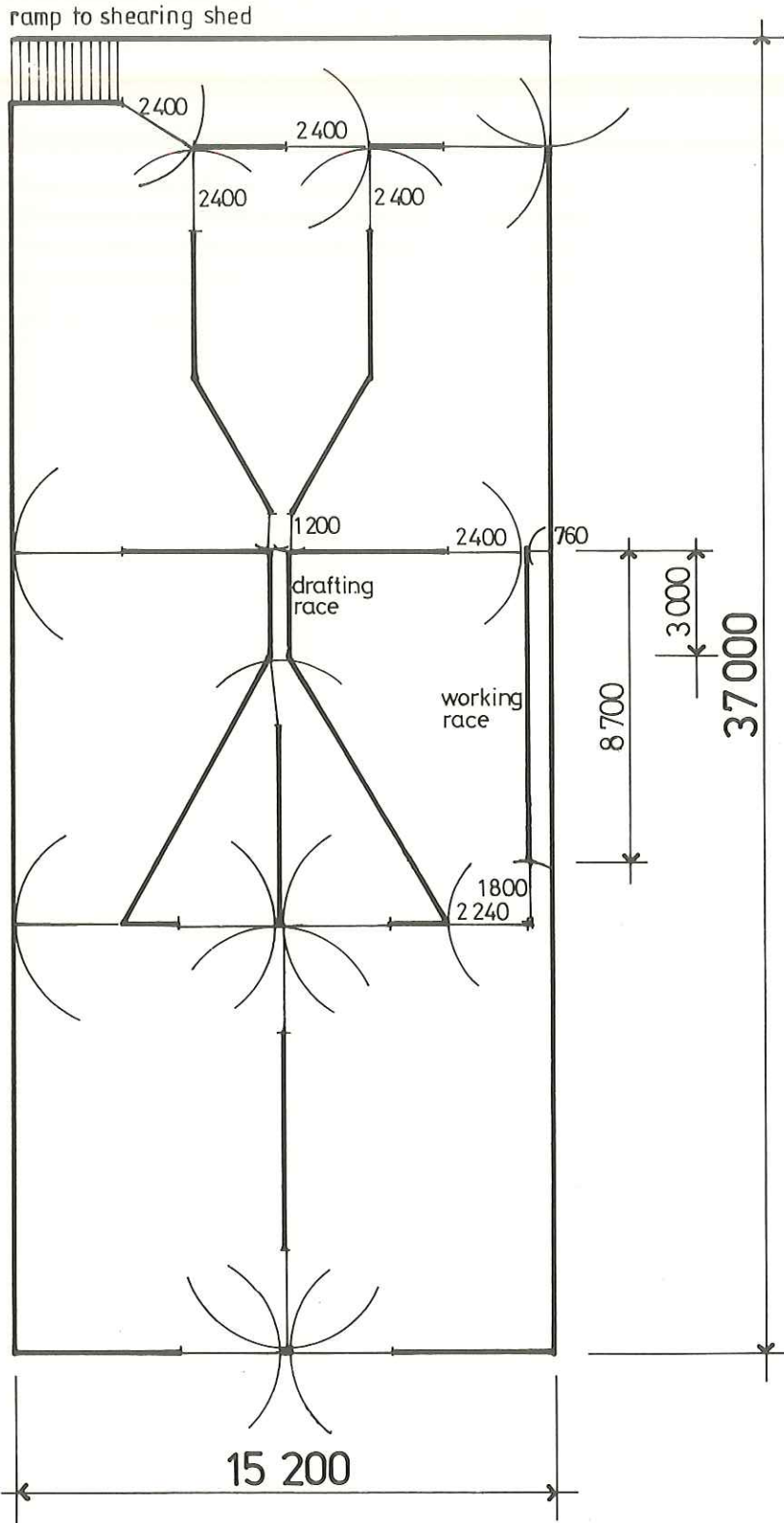
COMMENTS

This is a conventional rectangular design suited to most sites. Sheep move fairly freely with little hindrance. Both working race and drafting race can be worked from either end. Sheep can be put through the working race and draft from the main holding yards. The layout can be fitted in with the shearing shed very easily. Return of sheep from counting out pens is simple to carry out. The lane at the end of the check pens after the draft would provide excellent access to a dip.

Efficient working is possible with mobs of up to 525 woolled adult Merino sheep, or the equivalent for other breeds. At this mob size the greatest efficiency is reached. Above this number, more stops and sheep movements are necessary.

The working race is a little short for quick and efficient working and requires additional fills in comparison to longer races. This adds to the time taken in working sheep, particularly large mobs. The lack of forcing pens to the working race also makes filling slower. The large yards feeding the working race can make it difficult to fill the race when working flighty or stubborn sheep, or big wethers that are not used to being handled.

The drafting race is an acceptable length for Merinos, but a race 3600 mm long would be more suitable for general use. The force to the draft is a little large for easy starting of some sheep. The yards have no access gates on either side at the end of the drafting race. This makes it difficult for the drafter to move along the race to free any sheep that baulk or jam in the race. It would be advisable to include such gates.



ALL GATES 3 000 EXCEPT AS NOTED

No. 1



LAYOUT NO. 2

CENTRE DRAFT AND SIDE WORKING RACE WITH DIP INCORPORATED

CAPACITY

Adult Sheep

- Merinos — 1600 woolled sheep
— 1800 off-shears
- Crossbreds — 1500 woolled sheep
— 1700 off-shears

AREA

1348 square metres (14,500 square feet)

COMMENTS

These are effective yards for large mobs, and thus can be worked with little interruption or loss of time. There is therefore no undue stress on persons working the yards, particularly when drafting. The dip at the end of the working race works effectively.

The double working race means that these yards are most efficiently worked by two or more men. However, they can be effectively worked by one man without any undue effort.

Sheep flow, movement and hourly throughputs are fairly good. The yard capacities before and after the draft are very similar, which is advantageous. The pens available after the draft can accommodate most mobs into which an original mob would be drafted, so no stops are required to clear the draft.

Mobs of up to 1500 woolled Merino sheep (or equivalent mobs of sheep of other size) can be handled quite efficiently. At a mob size of about 1500 these yards reach their maximum efficiency, although some additional sheep movement is required to clear sheep from the working race.

The working race is a good length and so has adequate capacity. It works well as a double race. While location of the dip is reasonable for dipping, it hampers the movement of sheep out of the working race. Sheep held in the dip provide a good draw for the race, but drafting from the working race is still less easy than it would be from races in some other designs. In addition, if drafting from the race against the outer fence of the yards, one draft will run into the adjoining paddock.

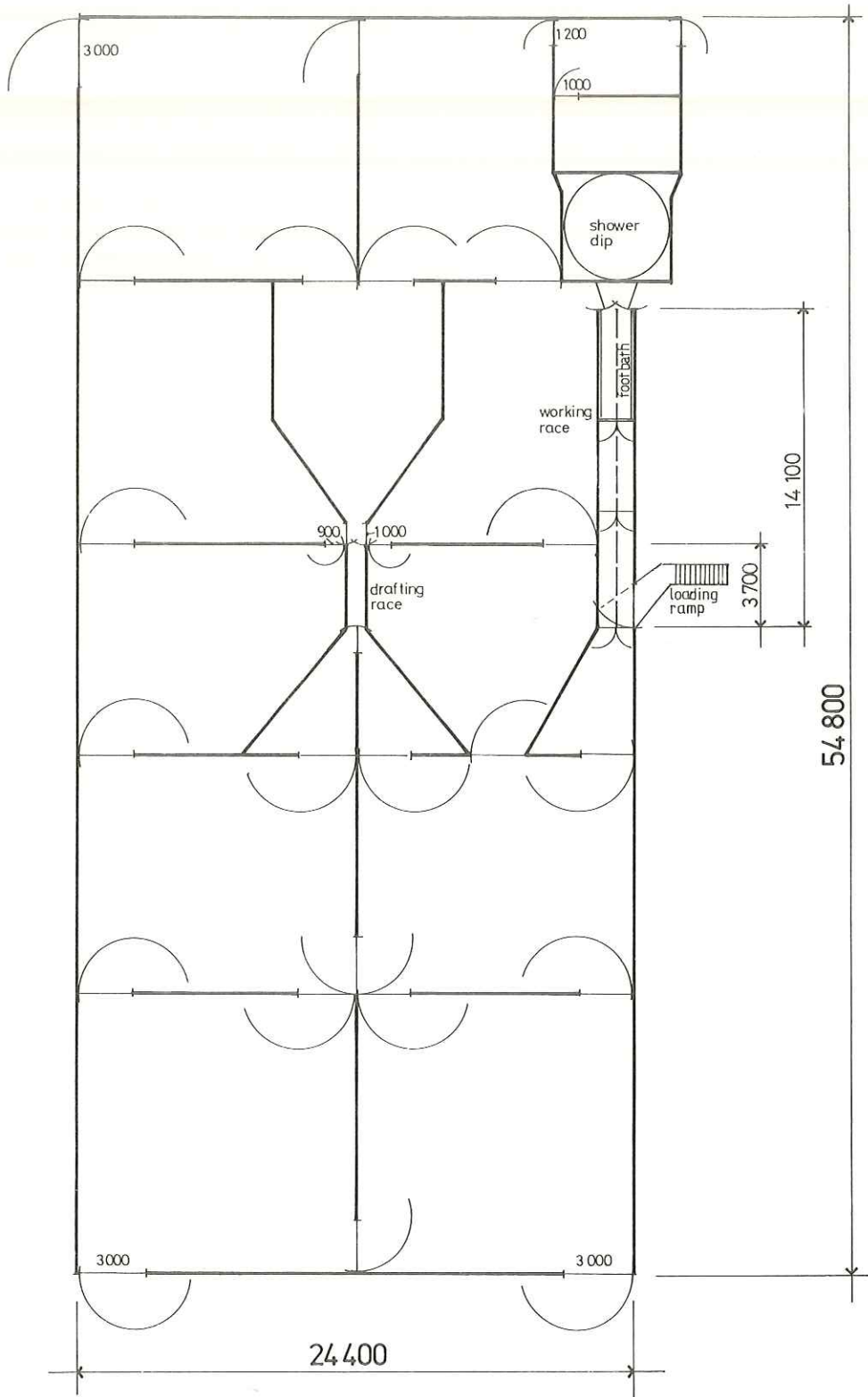
The holding capacity of the force to the working races is not a good match with the capacity of the double working race. The force pen holds enough sheep to fill one race and about half the second race. This means refilling the force each time one side of the race is filled. A small starting force, or a larger one with a capacity allowing both races to be filled, would be better.

It is possible to back draft sheep two ways through the drafting race. Sheep can sometimes be difficult to start for back drafting, but once started, generally flow easily. Although this design has this versatility, it lacks the two-way operation of the working race found in some other designs.

For yards of this capacity, many of the gateways are not wide enough. It is considered that gates 3000 mm wide would be more satisfactory.

The main holding yards before the forcing yards have their greatest dimension at right angles to the flow of sheep. This reduces the pressure that men and dogs can put on the sheep, and sheep can break away from the entrance to the forces. These yards should not be made wider, but may be more efficient if they were narrower and longer.

The drafting and working races are free from obstructions that hamper the movement of men working them. This design could be fitted in with a shearing shed fairly easily, although the return of shorn sheep from the count-out pens to the working race would not be very convenient.



ALL GATES 2400 EXCEPT AS NOTED

No. 2



LAYOUT NO. 3

CENTRE DRAFT, SIDE DOUBLE WORKING RACE, TWO-WAY OPERATION

CAPACITY:

Adult Sheep

Merinos	— 1650 woolled sheep
	— 2000 off-shears
Crossbreds	— 1550 woolled sheep
	— 1800 off-shears

AREA

1310 square metres (14,100 square feet)

COMMENTS

These are large and versatile yards that are efficient for handling mobs of up to 1000 woolled Merino sheep, or equivalent mobs of sheep of other size. They give a high hourly throughput. The yards, and particularly the double working race, have been designed for working with two or more men. Maximum efficiency is achieved with two men, but they are convenient for one man operation.

The yards can be worked in either direction. This is particularly effective with the working race, and similar hourly throughputs can be achieved from either end. The drafting race works very well in the intended direction, but back-drafting is somewhat less effective as sheep can be hard to start.

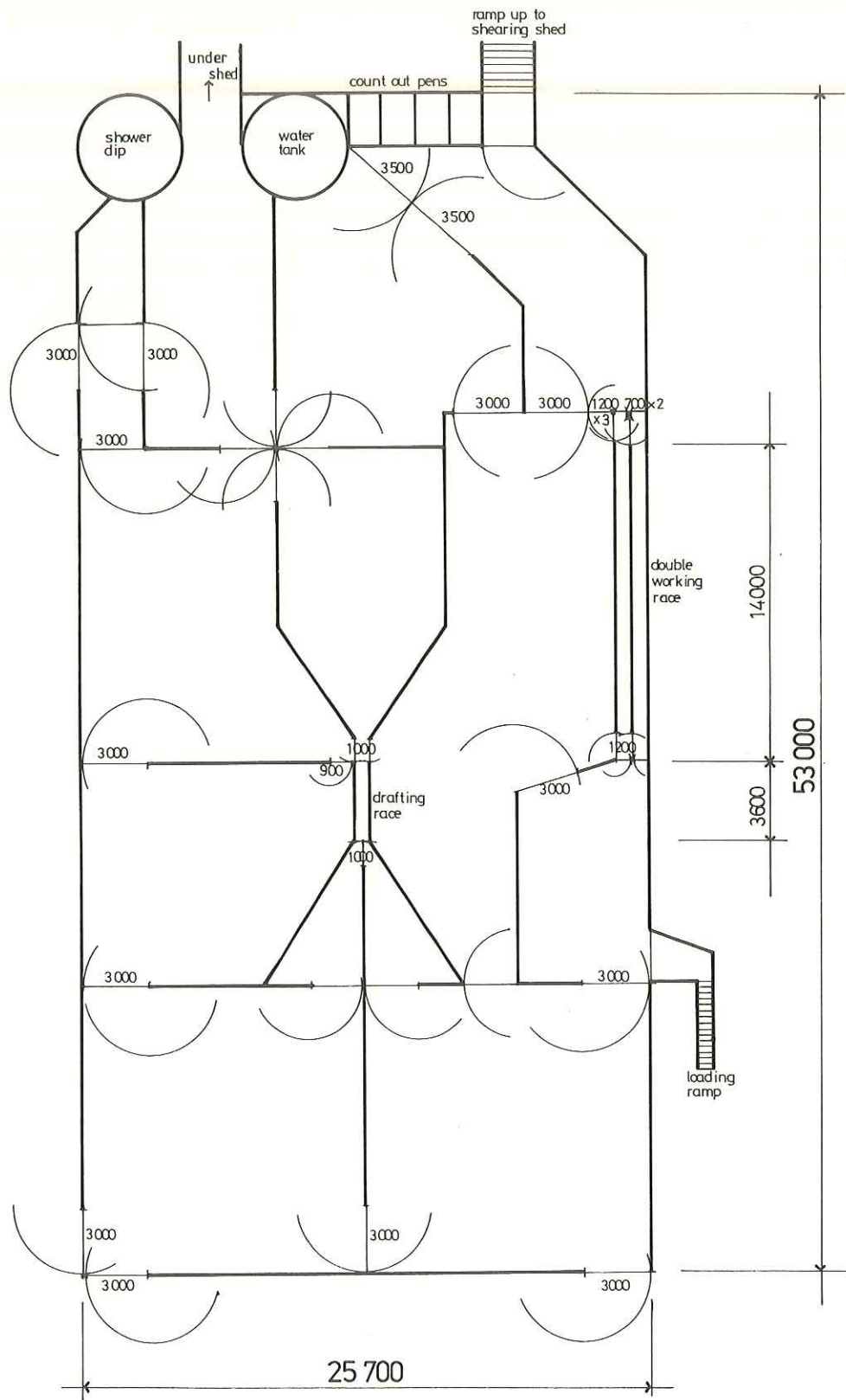
The main movement of sheep when using the yards is towards the shed. This could present problems in some situations, although in these particular yards, movement in this direction is still good. The success of movement towards the shed is possibly due to the fact that the main working areas are well back from the shed, and sheep have a spacious uncluttered view. However, general practice is to move sheep away from the shed.

Movement for dipping and shedding-up is very effective, although the number of yards through which sheep must pass is a little inconvenient and does slow down their movement. The two forcing pens to the dip also increase the number of sheep movements to this facility. However, they have proved very handy at times with stubborn sheep as they make it easier to pen them up and move them forward.

Sheep can be returned from the shearing shed and worked through the working race. Movement of sheep from the count-out pens to the working race is very direct and effective. If necessary, they can be drafted through the back draft. At times the holding pens of the shearing shed can be used as additional sheep storage, with the sheep being worked directly back through the yards.

The two-way drafts at either end of the double working race work very well. When working towards the shed, care should be taken to see that sheep are visible beyond the end of the race to act as a draw to improve the efficiency of filling the races. The forces at either end of the working race could be too large for easy starting of flighty or stubborn sheep.

These yards were fitted to an existing situation and are not as well balanced as would be desired. More sheep can be held after the draft than before, and so they cannot be worked to their fullest capacity. Adjacent holding yards would alleviate this.



ALL GATES 2 400 EXCEPT AS NOTED

No. 3



LAYOUT NO. 4

CENTRE DRAFT, SIDE DIP AND WORKING RACE, TWO-WAY OPERATION

CAPACITY

Adult Sheep

Merinos	— 1350 woolled sheep
	— 1500 off-shears
Crossbreds	— 1200 woolled sheep
	— 1400 off-shears

AREA

1555 square metres (16,740 square feet)

COMMENTS

These are efficient and versatile yards for handling mobs of up to 850 woolled Merino sheep, or equivalent mobs of sheep of other size. They give a high hourly throughput. The location of the circular shower dip provides very direct access and makes use of an area that is often difficult to use effectively.

These yards can be worked from both directions. This is particularly effective with the working race, and similar hourly throughputs can be achieved from either end. The drafting race offers very efficient working in the intended direction which is towards the shearing shed. Efficiency of back drafting is acceptable, but somewhat below that for forward drafting. Sheep can be hard to start on the back draft, but once moving they will flow reasonably well.

Sheep flow and movement is good throughout. One-man operation is easy, and high hourly throughput can be achieved without undue effort. The working race is of good length with adequate capacity. Efficient two-way drafting is possible for each end. Sheep run in freely, and the race clears easily. The drawing effect for each end of the race is not fully effective until the holding yard at the end holds sufficient sheep for those entering the race to see them. Initially this can be arranged by closing the forcing pen gate at the far end, and running untreated sheep into the pen beyond.

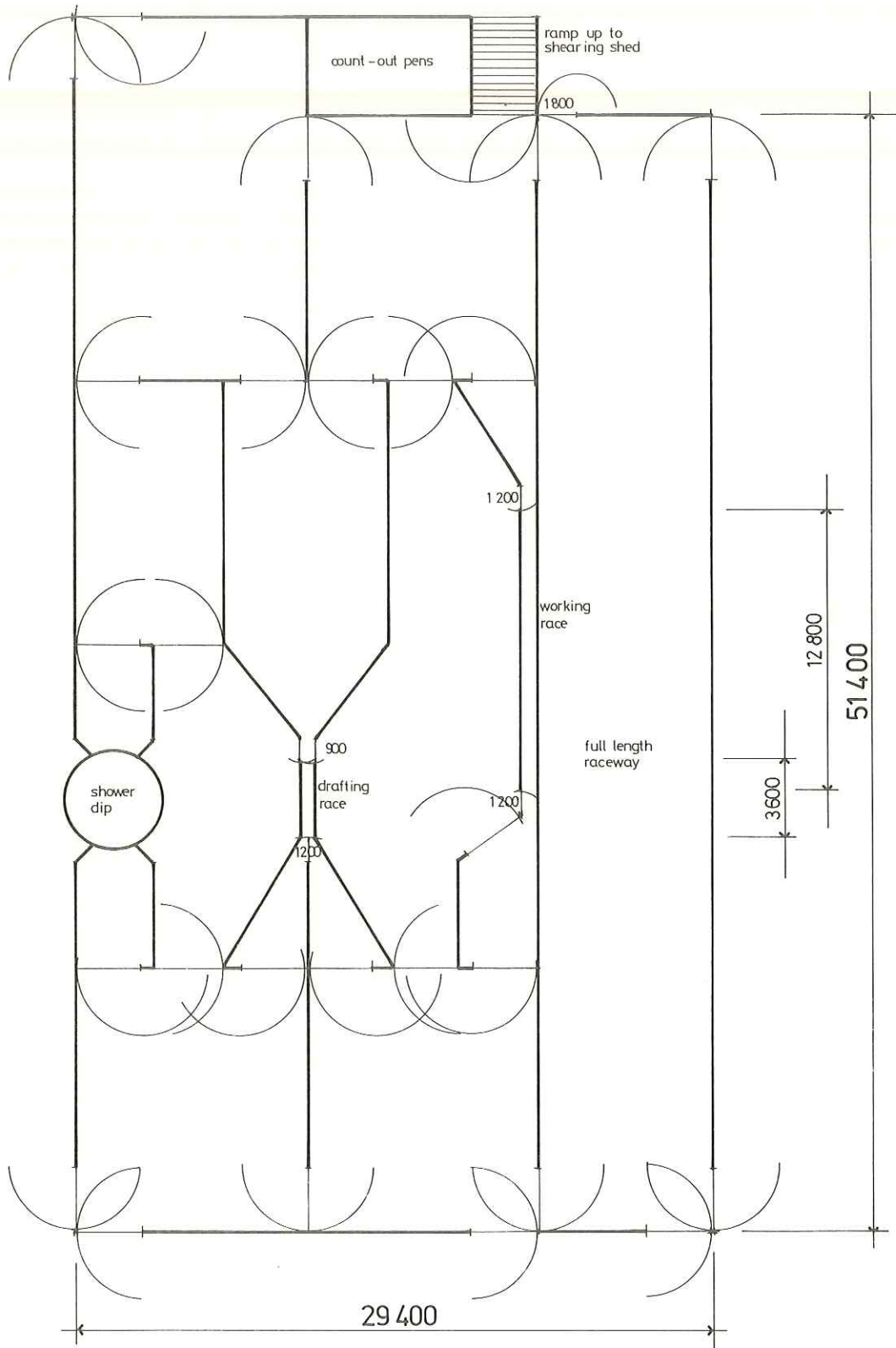
The yards combine well with the shearing shed. Shedding-up is effective, although the number of yards through which sheep must pass is a little inconvenient and slows down movement. There is no apparent problem in moving sheep towards the shed. The main working areas are well back, and the view ahead for the sheep is uncluttered. However, general practice is to move sheep in a direction away from the shed.

Sheep can be returned from the shed and run through the working race. Movement of sheep from the count-out pens to the working race is very direct and effective. If necessary, they can also be drafted through the back draft. If necessary, the holding pens of the shearing shed can be used as additional sheep storage.

The drafting race, working race and dip are all free of obstructions for the men working them. Access is open and convenient. Small personnel access gates in each force adjacent to the ends of the drafting race could improve access even more.

The yards have been designed to be worked in conjunction with a large holding yard at the bottom of the layout. As shown, the yards after the working areas have a much greater capacity than those before the working areas. This holding yard allows the yards to be worked to full capacity very easily, and it is then possible to handle 1600 woolled Merino sheep. The use of the full length side raceway, together with storage in and under the shed, allows up to 3000 sheep to be handled as one mob. Efficiency of handling such large mobs is lower than for the mob size recommended, but is comparable with that obtained for yards of other design.

Siting of these yards affects performance, and is less flexible than for other designs. These yards are most suited to a flat or gently sloping site with the working race running in a north-south direction, and the shearing shed at the north end. However, the northern end should be free of evergreen trees that cause extensive shadows and dark areas in winter.



29 400

12 800

51 400

3 600

1 200

ramp up to shearing shed

count-out pens

1 800

working race

full length raceway

drafting race

shower dip

1 200

900

1 200

ALL GATES 3000 EXCEPT AS NOTED

No. 4



LAYOUT NO. 5

CENTRE DRAFT, SIDE WORKING RACE AND ALL ANCILLARIES

CAPACITY

Adult Sheep

Merinos	— 1800 woolled sheep
	— 2100 off-shears
Crossbreds	— 1700 woolled sheep
	— 1900 off-shears

AREA

2140 square metres (23,020 square feet)

COMMENTS

These yards are self contained, and are very efficient for handling mobs of up to about 1500 woolled Merino sheep, or equivalent mobs of sheep of other breeds. They allow high hourly throughput, and have the added advantage that the largest mob size that can be handled with maximum efficiency is close to the estimated capacity.

The yards can be worked in both directions. This is particularly effective with the working race, and similar hourly throughputs can be achieved from either end. The drafting race offers efficient working in the intended direction. Efficiency of back drafting is acceptable, but somewhat below that of forward drafting because sheep can be hard to start.

Sheep flow and movement is excellent throughout. Sheep are presented ready for any subsequent activity regardless of the direction of movement.

Having the main movement of sheep towards the shearing shed does not appear to detract from the operation of these yards. The main working area is well back from the shed, and the view ahead for the sheep is clear and uncluttered. The size of the forcing pen of the working race at the shed end, and the shape of the force for back drafting, make working away from the shed less efficient than working towards the shed in this instance.

One-man operation is easy, and high hourly throughputs can be achieved without undue effort. Throughputs can be increased with two men, but the productivity per man decreases. However, it is still comparable with the best of the other designs that are worked by two men. There is little point in working these yards with three or more men, and it would only be in the cases of complex, or multi-operational situations that the additional men would be justified.

The working race is of good length with adequate capacity. Sheep run freely in both directions and the race clears easily at most times. The main difficulty is that the last sheep in the race may hang back when one man is using the race for drafting. This can be easily overcome by the appropriate use of dogs.

One point of observation is that the draw from either end of the working race is not fully effective until the holding yards at the far end of the race hold sufficient treated sheep for those entering the race to see them. This can be overcome by closing the gate to the forcing pen at the far end of the race and holding some untreated sheep in the pen beyond it.

The yards combine well with the shearing shed, but they can be erected independently of a shed. The number of yards through which sheep must pass to the shed is a little inconvenient and slows down movement. Use of the full length raceway can overcome this to a certain extent.

Shorn sheep can be returned from the shed and taken through the working race. Movement of sheep from the count-out pens is quick and effective. In addition, they can also be drafted through the back-draft. If necessary, the holding pens and under-shed area of the shearing shed can be used as additional storage.

The drafting race and working race are free of any obstructions which may hinder those working them, and access is open and convenient. The dip is not as accessible, and it is necessary to step over some fences.

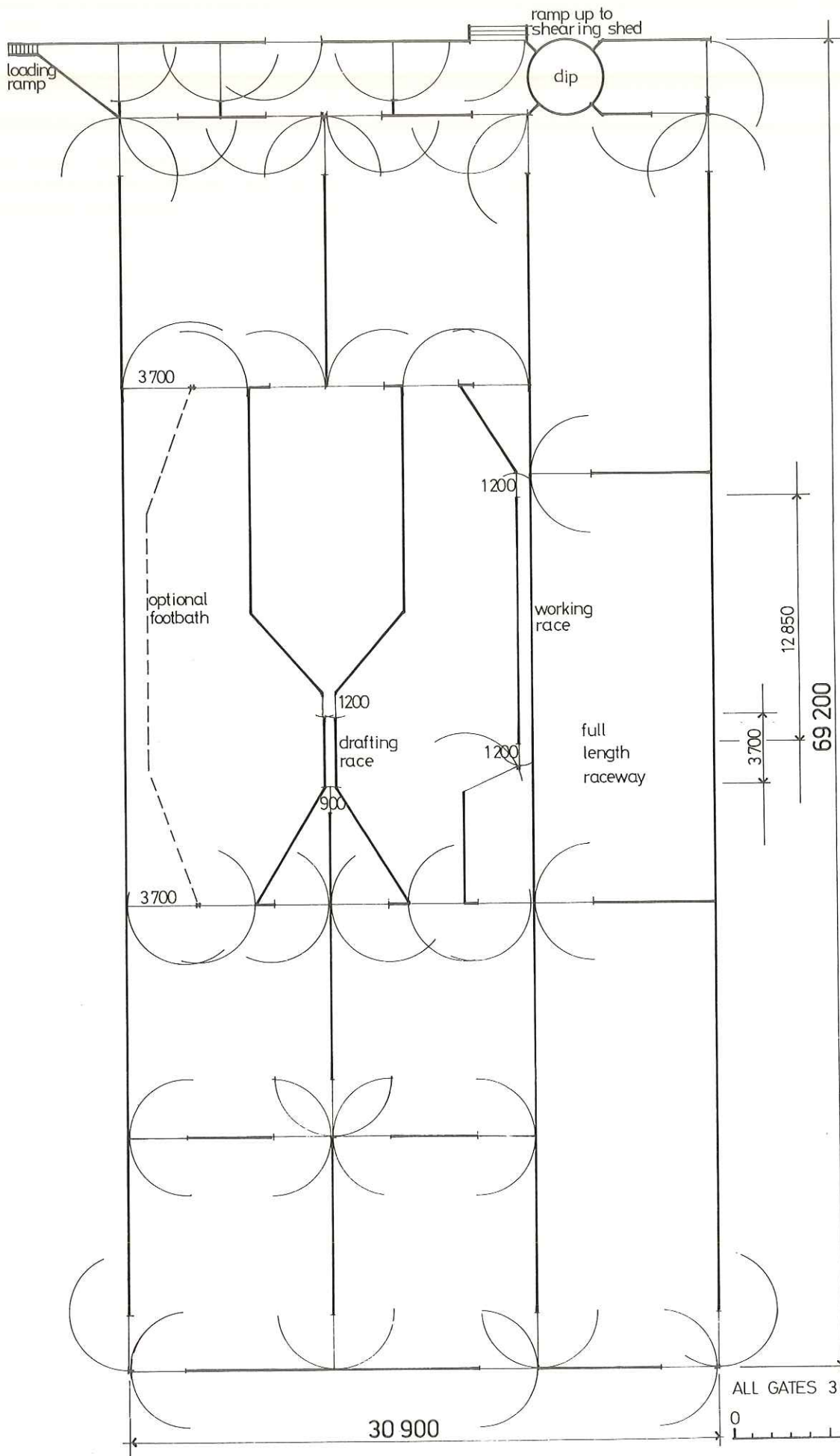
Movement of sheep along the full length raceway is good, although movement past the dip and up the ramp to the shed can be difficult with stubborn sheep and rams. The dip can obstruct the view of the ramp and shed door, and can present an annoying obstacle to operators when moving between the ramp and the raceway, particularly when starting sheep up the ramp.

The plan shows an optional footbath to be included if desired. This would also seem to be a suitable location for the dip, provided the force to the dip was located in place of the force to the footbath, and in line with those to the draft and working race. It would cause no obstruction to sheep movement, and make use of an area which is otherwise rather ineffective. The entrance to the shearing shed would also be improved by this change.

Positioning the working race is optional. It can be placed on either side of the yards depending on drainage and other considerations. Obviously the optional footbath (or the dip if it were put in this area) would then be put on the other side of the yards.

These yards are fairly expensive to build, and cost more per unit of sheep area than similar yards with one large holding yard in place of the first pair of yards at the main working end.

These yards are best suited to a flat or gently sloping site. A general north-south direction, with the shed to the north, is expected to give the best results. The northern end should be free of evergreen trees that cause extensive shadows and dark areas in winter.



No. 5

ALL GATES 3000 EXCEPT AS NOTED



30 900

12 850
3 700
69 200

LAYOUT NO. 6

CENTRE DRAFT AND WORKING RACE

CAPACITY

Adult Sheep

Merinos	— 550 woolled sheep
	— 650 off-shears
Crossbreds	— 525 woolled sheep
	— 600 off-shears

AREA

416 square metres (4,480 square feet)

COMMENTS

These are compact, medium-sized yards that utilise space fairly effectively. Common fences for drafting race and working race reduce construction costs. They are among the cheaper rectangular designs to construct in terms of cost per unit of sheep area.

They are best suited to flat, open sites. Sheep do not move as freely as in a number of other yard designs. More stops are needed for drafting as mob size approaches yard capacity. This interrupts the flow and considerably slows the drafting of mobs in excess of about 475 woolled Merino sheep, or the equivalent in other breeds. Sheep can only be worked effectively in one direction for drafting, and in the opposite direction when using the working race.

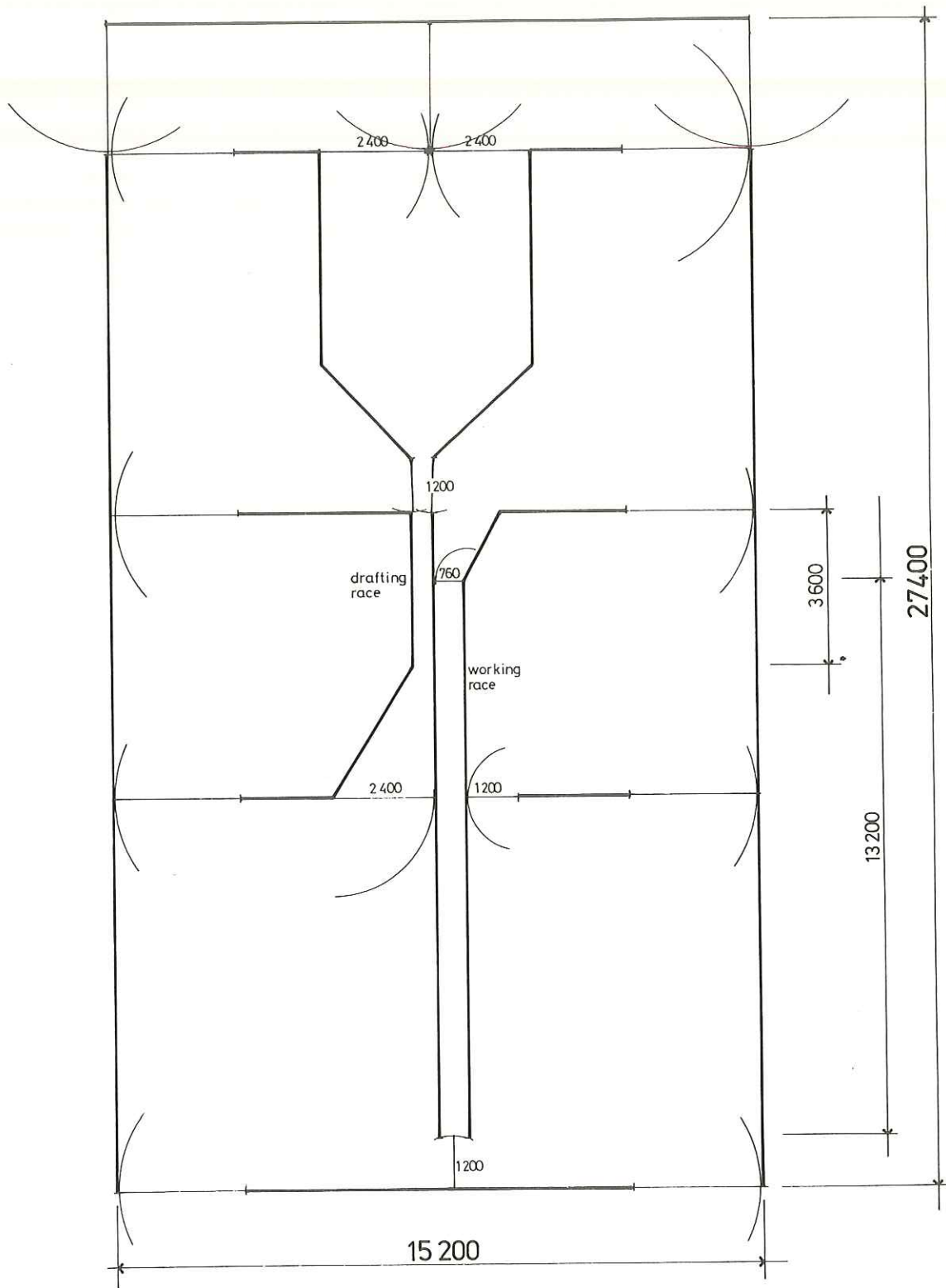
No forcing pen is provided for the working race. This means that the working race must be filled from a large yard, and this is more difficult and slower than where a forcing pen is provided. The problem is aggravated by the position of the fence to the centre check pen of the three-way draft. A small starting force would improve the situation a little, but the general flow in the large yard feeding the race mitigates against efficient sheep movement.

Flow through the working race is poor because there are no sheep at the end of the working race to draw other sheep into it. The fence at the end of the working race presents a barrier to the sheep, and they do not run out freely. Drafting at the end of the working race is inefficient, and can be difficult for one man. Sheep tend to balk frequently, and the last few sheep in the race can be most difficult to move up.

When sheep are released from the working race, the only pens in which they can be held are those on either side of the race. Consequently, they tend to congregate around the sheep in the race. The presence of these sheep near the sides of the working race distracts the sheep in the race, and slows down their movement both into and out of the race. Furthermore, once either of the pens beside the race is more than half full, it tends to hamper the movement of dogs and operators along the race.

Drop gates have not been found very satisfactory in working races. When the gate is lowered, one or more sheep can be caught underneath, and have to be forcibly moved before the gate can be lowered into its correct position. In addition, these gates are too slow to operate, and allow sheep too much time to move back. Much of the effort in packing the race is lost, particularly with older sheep, rams and fractious sheep. A two-way recessed swing gate with chain and slot catch would be far more effective.

A ramp to a shearing shed, and a force to a dip or loading ramp could easily be added to these yards. However, direct return of shorn sheep from count out pens is not easily provided.



ALL GATES 3000 EXCEPT AS NOTED

No. 6



LAYOUT NO. 7

CENTRAL DRAFT AND WORKING RACE WITH MULTI-DIRECTIONAL ACCESS

CAPACITY

Adult Sheep

Merinos	— 1200 woolled sheep
	— 1400 off-shears
Crossbreds	— 1125 woolled sheep
	— 1300 off-shears

AREA

900 square metres (9,690 square feet)

COMMENTS

This layout permits a great degree of flexibility in sheep movement. The multi-sided central yard permits sheep to be moved directly into the force to the draft from any one of several pens. These yards are very useful for drafting and re-organising small mobs of sheep. The working race is of acceptable length and capacity.

These yards are effective for handling mobs up to 900 woolled Merino sheep, or equivalent number of other breeds that occupy a similar area. Hourly throughput is not as high as in yards of other designs, particularly when mob size exceeds 900.

Filling the working race through the long narrow feed is very slow, and the race is hard to pack. Drafting from the working race is best done by taking one mob straight ahead, and the other to the large yard on the left of the race. The fact that sheep tend not to remain in front of the working race means that there is no positive attraction ahead of sheep in the race. This makes it slower to clear the last sheep in the race, as well as making the working race hard to fill.

There are a number of occasions where sheep must be moved back against the general flow, with each mob hampering the movement of the other. The end of the working race is close to a fence, and this balks sheep when drafting to the side yard to the left of the working race. For most effective working, the outer fences of the force pens for the draft, and the V-shaped entry to the draft, should be sheeted to restrict vision of the sheep to the straight ahead position. This adds to cost.

The forcing races are very hard for dogs to work. Being long and narrow, the dogs at the back have very little effect on sheep at the front. When dogs are worked back through the forcing races, the width allows sheep to turn around and push back on those trying to go forward. Once sheep have turned around then jamming occurs, as the races are too narrow for those sheep facing the right way to push past. This means the operator must spend time and effort sorting out the sheep.

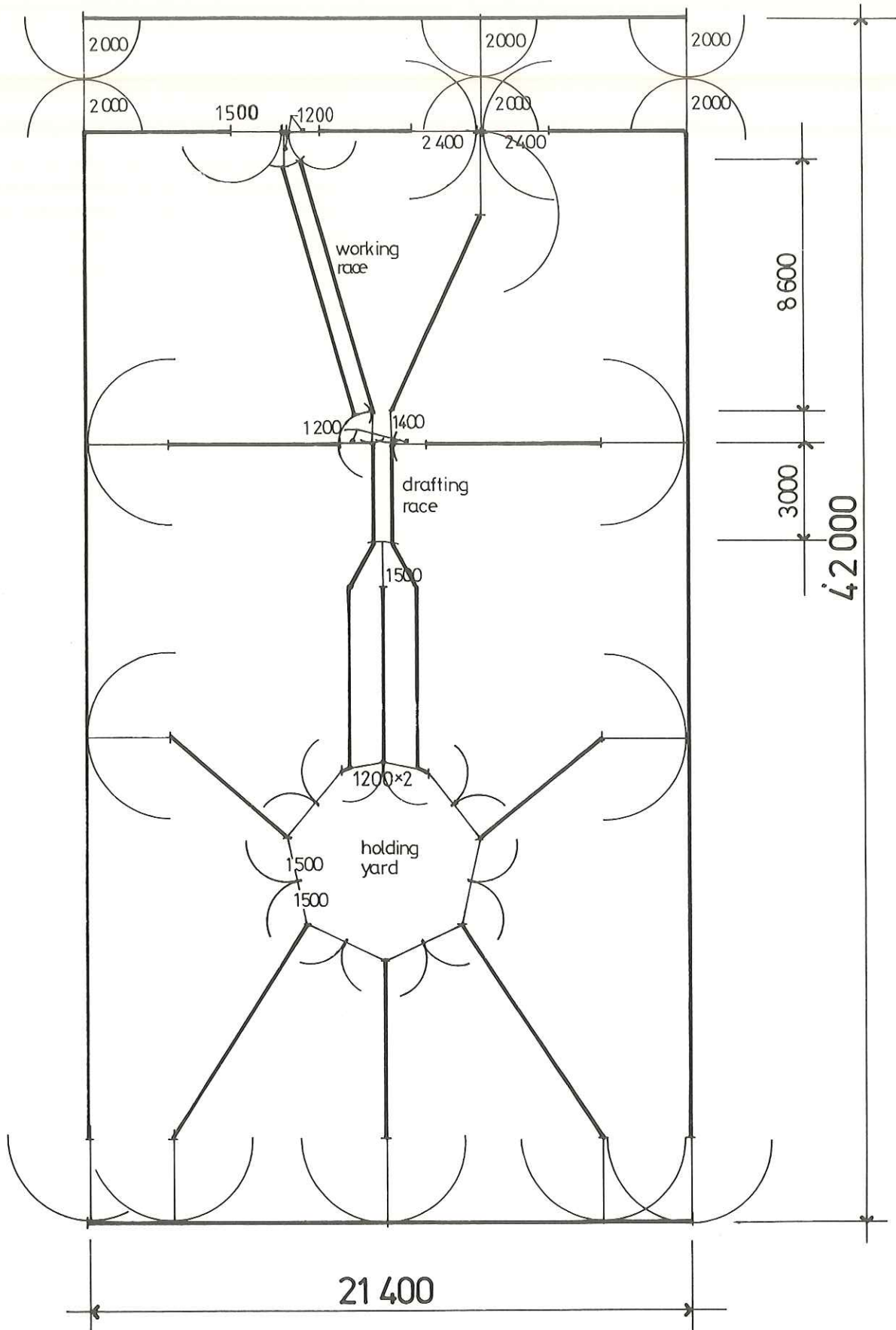
If both forcing races are used, operators have to step over fences several times in order to move sheep. Consequently one force tends to be used more than the other. This makes drafting very much a stop-start operation, and creates problems in matching sheep numbers in the force to those required to fill the working race.

The large size of the central holding yard, and its generally circular shape, makes filling of the forcing races difficult. Sheep tend to circle around rather than run towards the force, particularly when only one force is used.

The sets of double gates giving access to the central holding yard are not satisfactory. Sheep break back far too readily when closing the gates, with the result that this holding yard cannot be filled tightly. This is a particular disadvantage when starting work and endeavouring to fill the forcing races for the first time. Single gates 3000 mm wide would be more useful.

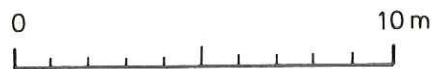
The drafting gates used with these yards are 1400 mm long, and this makes them difficult to use. It would be preferable to make them 1000 mm.

In order to provide access to the central holding yard, the surrounding yards have irregular shapes. This results in some acute angled corners which are undesirable. When the force is being used, sheep in adjoining yards tend to move away into some of these restricted areas and acute corners. The consequent risk of smothering is high, and the percentage of losses is greater than in yards of other design. It would be most inadvisable to put these yards on a site with a slope encouraging sheep movement into these areas.



No. 7

ALL GATES 3 000 EXCEPT AS NOTED



LAYOUT NO. 8

CENTRE DRAFT, SIDE WORKING RACE

CAPACITY

Adult Sheep

Merinos	— 750 woolled sheep
	— 900 off-shears
Crossbreds	— 700 woolled sheep
	— 850 off-shears

AREA

579 square metres (6,230 square feet)

COMMENTS

This is a simple design with several internal fences serving more than one facility. The working race is a useful length with an acceptable capacity. Access both into and under the shearing shed is very good, and sheep generally move well. Movement through the yards to the shed is clear and straightforward via gates on the right-hand side. There is also a direct approach from the draft to the shed when required. Return of sheep from counting out pens to yards is a simple matter, and sheep can be moved directly from the shed to the working race.

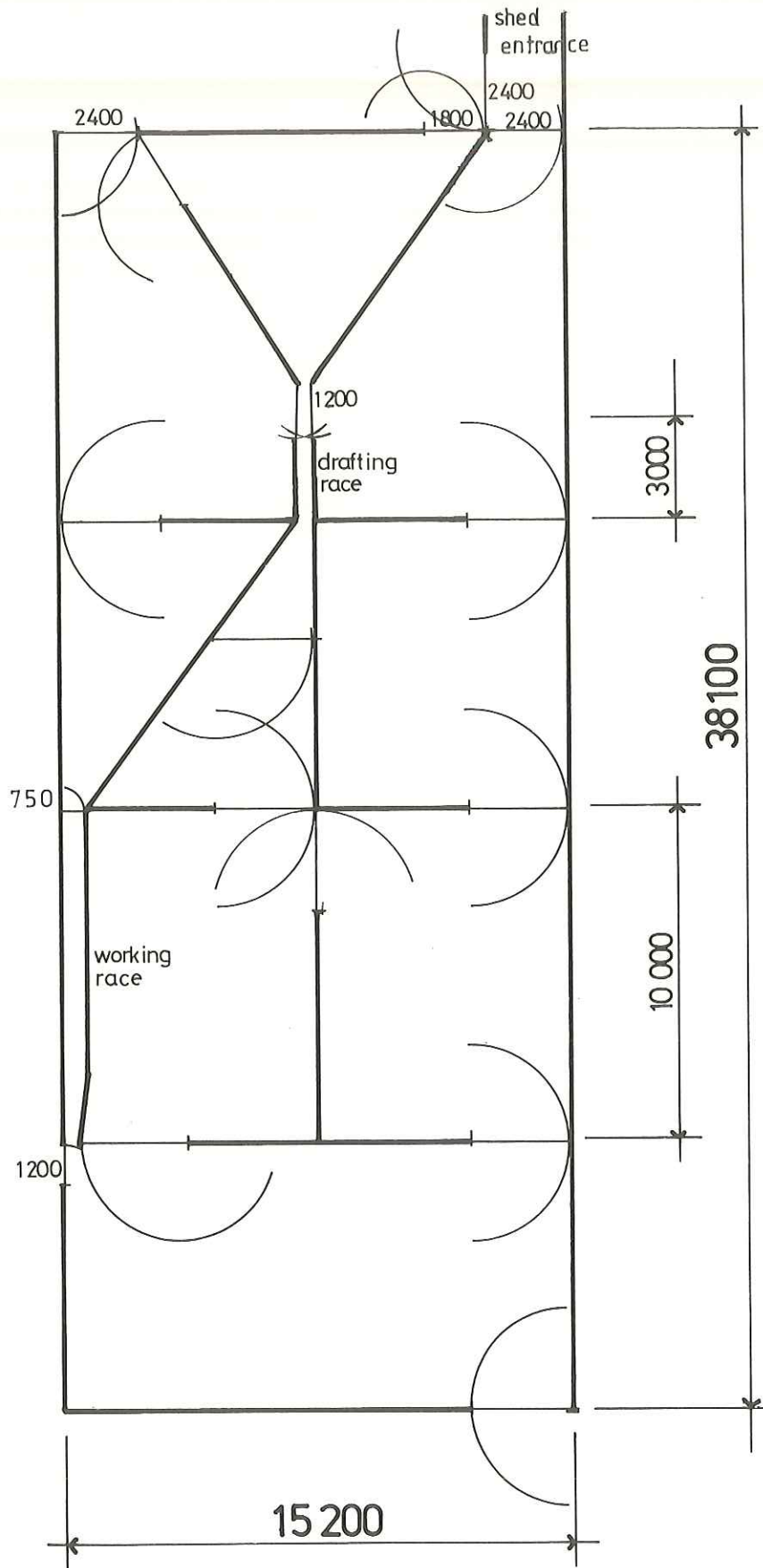
The layout is best suited to a flat open site. The area after the draft is too small in relation to the capacity of the yards before the draft. This necessitates frequent stops as the size of the mob approaches the capacity of the yards. However, the shearing shed can be used as convenient additional sheep storage. The drafting race would be better to be 3600 mm long for general use.

Sheep have to be moved through the entire yards and back again in order to use the working race. The area after the working race is limited, and this necessitates extra sheep movement. Although a two-way draft is shown at the end of the working race, only one outlet from the draft returns into the yards. Diagonal movement of sheep across the yards is not possible.

Sheep do not move as freely as in yards of other designs, and hourly throughput is only fair. Sheep do not move into the working race very well since the forcing pen is too large. Nor do they run out easily when emptying the race. This is particularly noticeable when drafting out of the working race, and is due to the fact that the sheep in the yard at the outlet end of the working race run to the far side away from the race. This leaves no sheep visible in front of the working race to draw other sheep towards them. Sheep only move well in the working race when this yard at the end is nearly full so that sheep in the yard are visible to sheep in the race.

Movement of operators around the entry ends of the draft and the working race is severely hampered by the fences in these areas. This leads to considerable fence hopping. Small personnel access gates would help, but the gates would still be somewhat of a nuisance in this particular design.

The drafting gates may be too long, as a length of 1000 mm is adequate. Long drafting gates create drag on sheep (particularly those passing through the centre draft) when the gates need to be moved to allow sheep out of the side exits. A sheep in the centre draft has less time to get out with long gates before one or both of the gates must be moved to control the next sheep.



ALL GATES 3000 EXCEPT AS NOTED



No.8

LAYOUT NO. 9
THREE-WAY CENTRE DRAFT

CAPACITY

Adult Sheep

Merinos	— 400 woolled sheep
	— 475 off-shears
Crossbreds	— 375 woolled sheep
	— 450 off-shears

AREA

298 square metres (3,200 square feet)

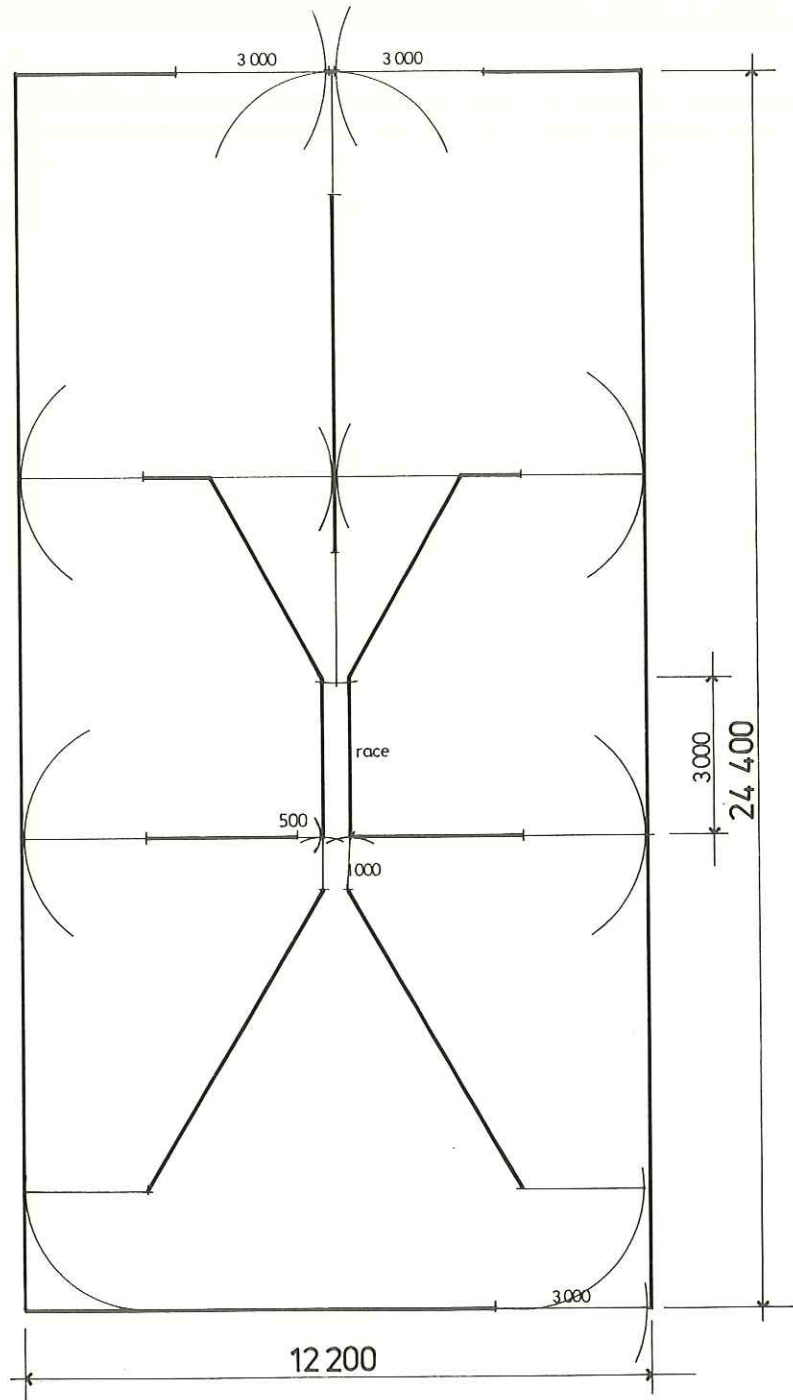
COMMENTS

These yards are suitable for small to medium mobs, and are simple in design and construction. Sheep move freely when handling mobs of 250-300 sheep. More stops are necessary during operation as mob size approaches yard capacity.

Hourly throughput is good for mobs up to 300, but decreases as mob size approaches the capacity of the yards.

There is no working race, and this reduces the usefulness of these yards.

As far as drafting is concerned, the force pens are a convenient size, and the race is a satisfactory length for Merinos. A length of 3600 mm would be better for general use. The holding areas before and after the draft are well matched, minimising the need to move sheep into other pens to accommodate the mobs being handled.



No. 9

ALL GATES 2 400 EXCEPT AS NOTED



LAYOUT NO. 10
SMALL RECTANGULAR YARDS

CAPACITY

Adult Sheep

Merinos — 250 woolled sheep
— 300 off-shears

Crossbreds — 225 woolled sheep
— 275 off-shears

AREA

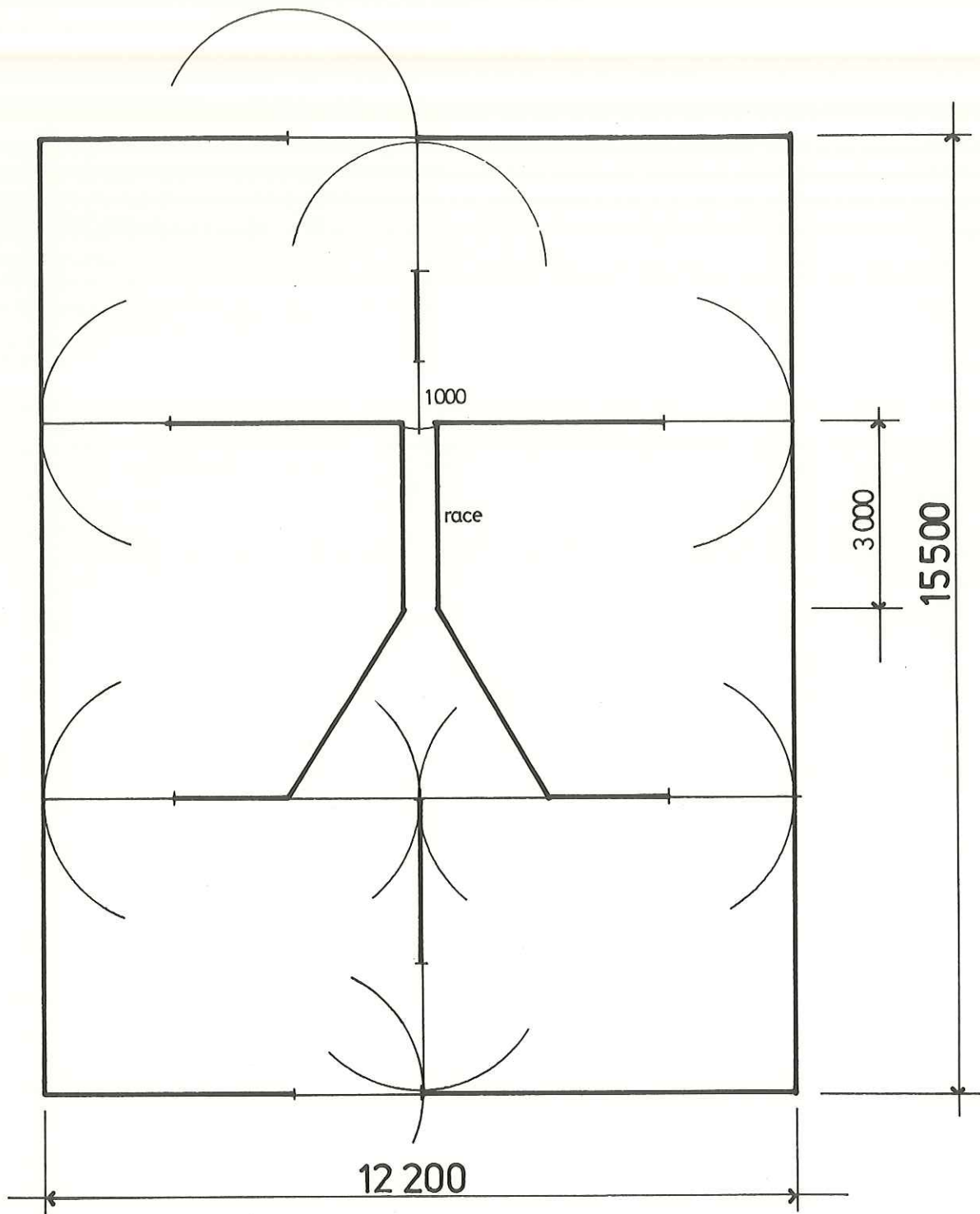
189 square metres (2,035 square feet)

COMMENTS

These yards are suitable for mobs likely to be run on a small property. They are simple to construct, with the area before and after the draft of similar capacity.

There is a two-way draft, and the length of the drafting race is suitable for drafting Merinos, but may need to be a little longer for satisfactory drafting of first and second cross lambs. Sheep are easy to start for drafting, and they move freely and flow well. Hourly throughput is good, and the system is easy for one person to work.

There is no working race, and this restricts the number of activities which can be carried out in these yards.



No. 10

ALL GATES 2100 EXCEPT AS NOTED



LAYOUT NO. 11

COMPACT YARD FOR SMALL MOBS

CAPACITY

Adult Sheep

- Merinos — 500 woolled sheep
— 650 off-shears
- Crossbreds — 450 woolled sheep
— 550 off-shears

AREA

444 square metres (4,780 square feet)

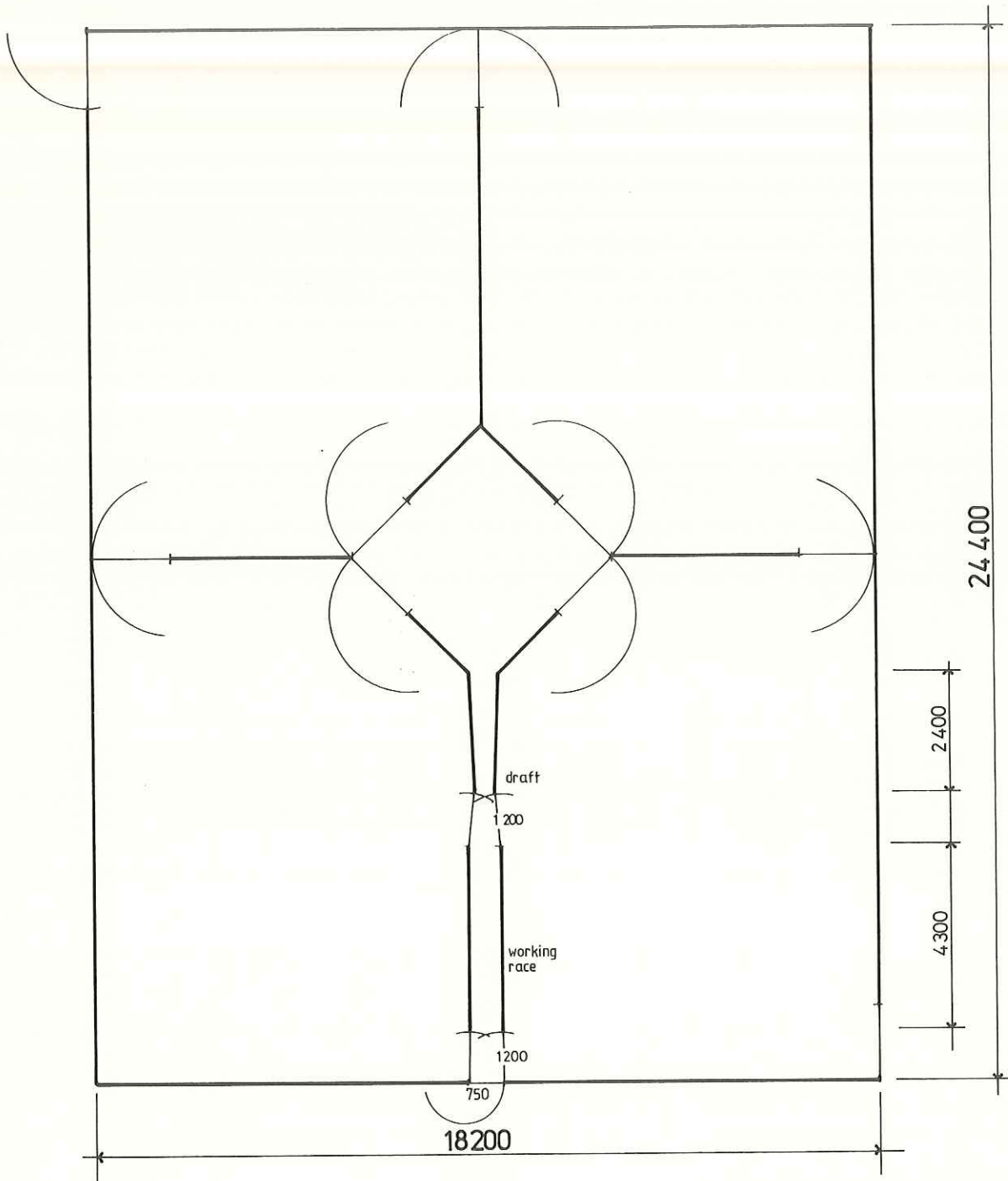
COMMENTS

These yards are small and compact. It is easy to move sheep from one yard to any other without being impeded by mobs in other yards.

However, there is a loss of efficiency in working these yards. Drafting and working races are short, and sheep do not flow freely.

The working race is too short to be really effective, and since it ends so close to a cross fence, there are no sheep visible beyond the race to act as a draw for other sheep entering the race. With it being so short, there are no problems with sheep running out, even when drafting back into the yards. However, sheep do tend to collide with the cross fence on many occasions. Filling the working race is more awkward since sheep must first be fed through the drafting race.

The draft is a three-way system, but because the holding capacity of the working race is so small, it is to all practical purposes only a two-way draft. The drafting gates would be more effective if they were reduced to 1000 mm in length.



ALL GATES 1800 EXCEPT AS NOTED

No. 11



LAYOUT NO. 12

COMPACT SHEEP YARD OF SIMPLE DESIGN

CAPACITY

Adult Sheep

Merinos	—	850 woolled sheep
	—	1100 off-shears
Crossbreds	—	800 woolled sheep
	—	900 off-shears

AREA

660 square metres (7,110 square feet)

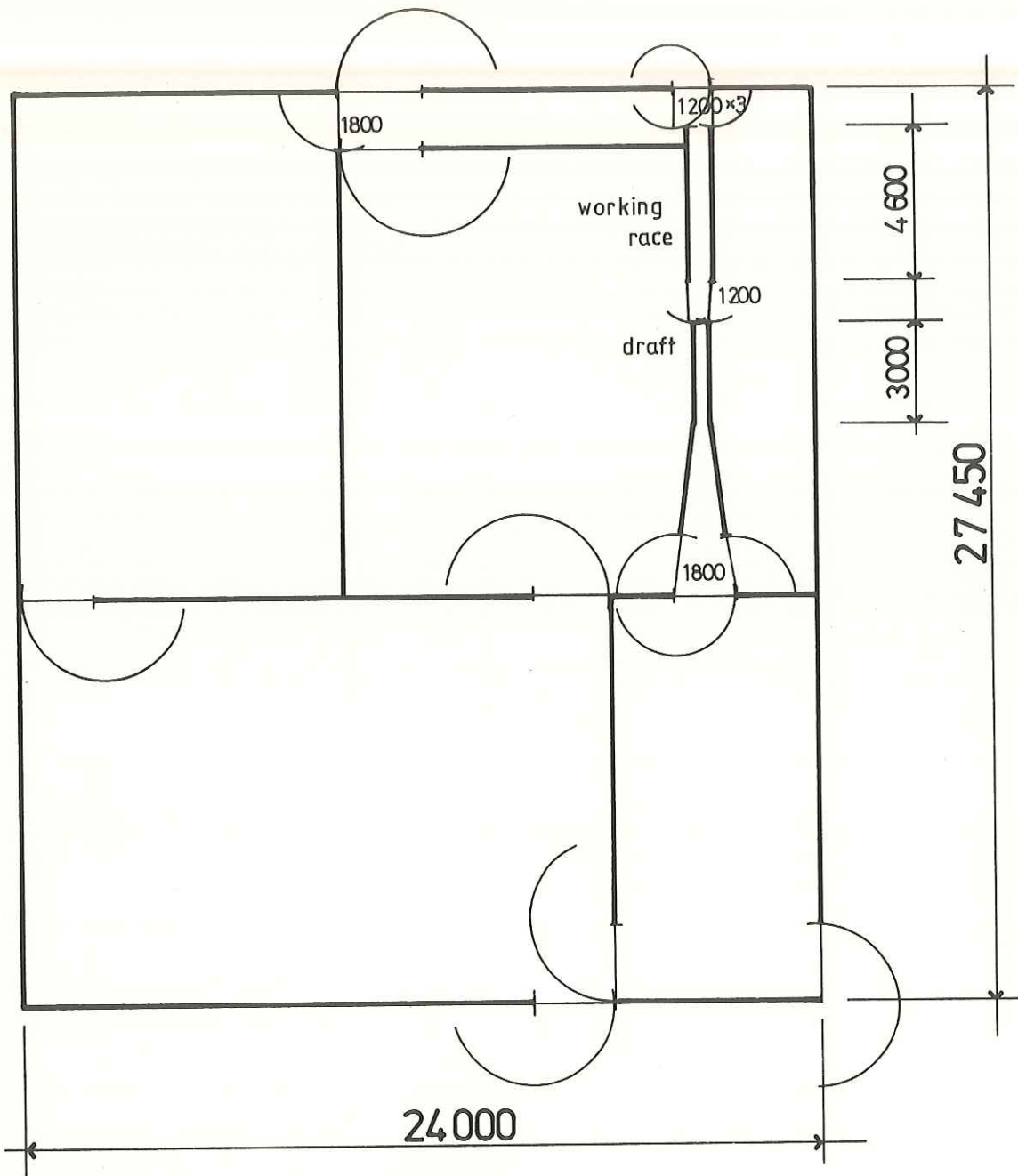
COMMENTS

These yards utilise space very effectively, but lack efficiency in operation. They are less costly to construct than some other designs, particularly in terms of cost per unit of sheep area.

Throughput is low, and there are numerous reasons for this. The position of the gate from the holding yard to the force makes sheep difficult to start into the force pen. The shape of the force pen also encourages baulking and jamming. The included angle between the two sides should be much greater.

The drafting gates would be more effective if they were shorter (usually 1000 mm). The length of the draft is adequate for Merinos, but may need to be longer for crossbred sheep and lambs. The check pen on the right of the draft is not large enough. To hold adequate sheep, they would need to fill up this yard back alongside the draft, and this is undesirable.

The working race is not long enough for the size of the mob likely to be handled. This means extra time is taken with filling the race, and filling via the narrower drafting race is not very efficient. The working race ends close to a cross fence, and so that there is no way of having sheep visible at the far end to act as an incentive for sheep entering the race. While it is possible to draft three ways from the end of the working race, one of the exits is into the paddock, while the two side drafts have associated check pens which have limited capacity.



24 000

27 450

working
race

draft

1800

1200x3

1200

1800

4 600

3 000

ALL GATES 2400 EXCEPT AS NOTED

No. 12



LAYOUT NO. 13

CENTRE DIAMOND SHEEP YARDS

CAPACITY

Adult Sheep

Merinos	—	900 woolled sheep
	—	1200 off-shears
Crossbreds	—	800 woolled sheep
	—	950 off-shears

AREA

692 square metres (7,445 square feet)

COMMENTS

This is a compact layout that uses space very effectively. It allows sheep to be moved from most yards to any other without being impeded by sheep already in any other yards. Sheep are presented for any other activity once the preceding one has been completed.

Entrance to a shearing shed, dip or loading race can be located at any one of a number of positions in the yards. The return of sheep from the count out pens to the yard can be worked in easily, and is generally direct and efficient.

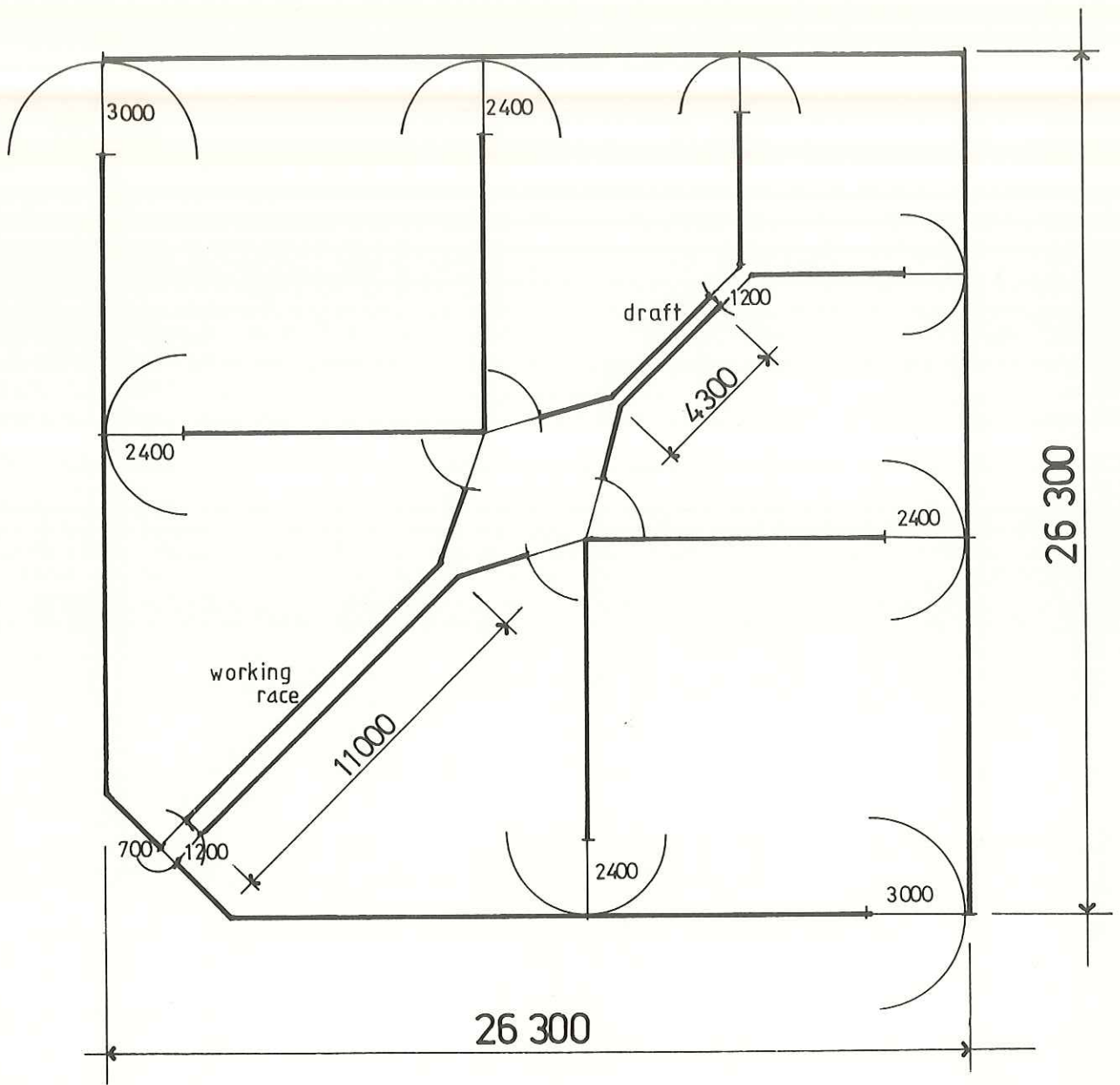
Hourly throughput for these yards is fair to good, although sheep do not flow as easily and freely as in some other yards. The check pens after the draft are a little small in relation to the capacity of the yards. Those on either side require movement of sheep back along the draft to utilise their capacity. This can cause distraction and congestion when working sheep in the pens before the draft, or from dogs barking in the force. This, and the inadequate size of the check pens, can mean unnecessary stops to clear the draft.

The drafting race is too long in this case. A race 3600 mm long with 1000 mm drafting gates would be better. These changes would give more space in the centre check pen.

The working race is of useful length and capacity. However, the draw and sheep movement in the race is not good. The fence across the corner at the end of the race tends to baulk sheep, particularly when drafting to both sides. There are no sheep in front of the working race to attract others through, and when sheep are drafted into either of the side yards, they distract sheep moving in the race, and this slows movement even further.

There is some double movement and loss of time when filling the centre diamond force pen for both the working and drafting races. The changes in direction of movement can cause some difficulties in getting sheep started. Because of this, and the position of gates, the diamond force is difficult to fill to capacity. The shape of the diamond force pen causes sheep to pack into the acute angled corners against either the drafting race or the working race, whichever is not in use. This constitutes a risk of smothering in some cases. Similar problems may be encountered with other acute corners in the yards around the diamond force. However, with most of the activity in those areas, sheep tend to keep away from these corners.

There is a mismatch between the capacity of the working race and the capacity of the diamond force. The force is very similar in area to the race and at best could only hold enough sheep to fill the race once. However, because the force is difficult to fill to capacity, it does not hold sufficient sheep to fill the race and a second run of sheep is required. This is not a desirable practice.



No. 13

ALL GATES 1800 EXCEPT AS NOTED

