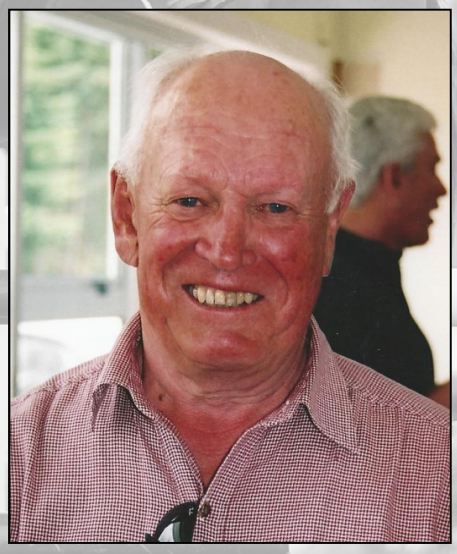
Basic Course Design Guide for Beginners

By LB Jarden



Foreword by John Cottle

This booklet has been written by Leicester B Jarden – FEI Level 3 Course Designer and 2012 Winner of the Pilmer Plate (Awarded for displaying the highest ideals of good sportsmanship).

Compiled by Philippa Howells.

First published in 2017

Ground Floor, 86 Customhouse Quay, PO Box 6146
Marion Square, Wellington 6141, New Zealand

F O R E W O R D

"I have been lucky enough to face the challenge of Leicester Jarden's courses from my beginnings on ponies through to World Cup classes and Championship Grand Prix's.

To Leicester Jarden, course designing is an art and a science.

In this book he describes in a readable and clear manner the details and rules that make up the 'scientific' side of course design.

It is much harder to explain about flair and imagination which distinguishes an artist like him.

He is a thinking man's course designer, which he portrays in this very interesting and extremely formative book.

I would recommend this book as a must read for not only course designers, but also for judges and officials and all those interested in participating in show jumping."

John Cottle

TABLE OF CONTENTS

1. The Rhythm of the Jump

Horse jumping is an old sport as it is known to man. Natural athleticism of a horse comes into full play and it could be claimed that every horse knows how to jump, it is just man who interferes with the horse's basic ability.

With training, the horse soon learns to adjust its natural ability to cope with the demands of the rider, especially in terms of balance and the position of the rider on the horse. The job of the course designer is to combine the skill of the rider and the natural ability of the horse to maximize the potential of any given combination.

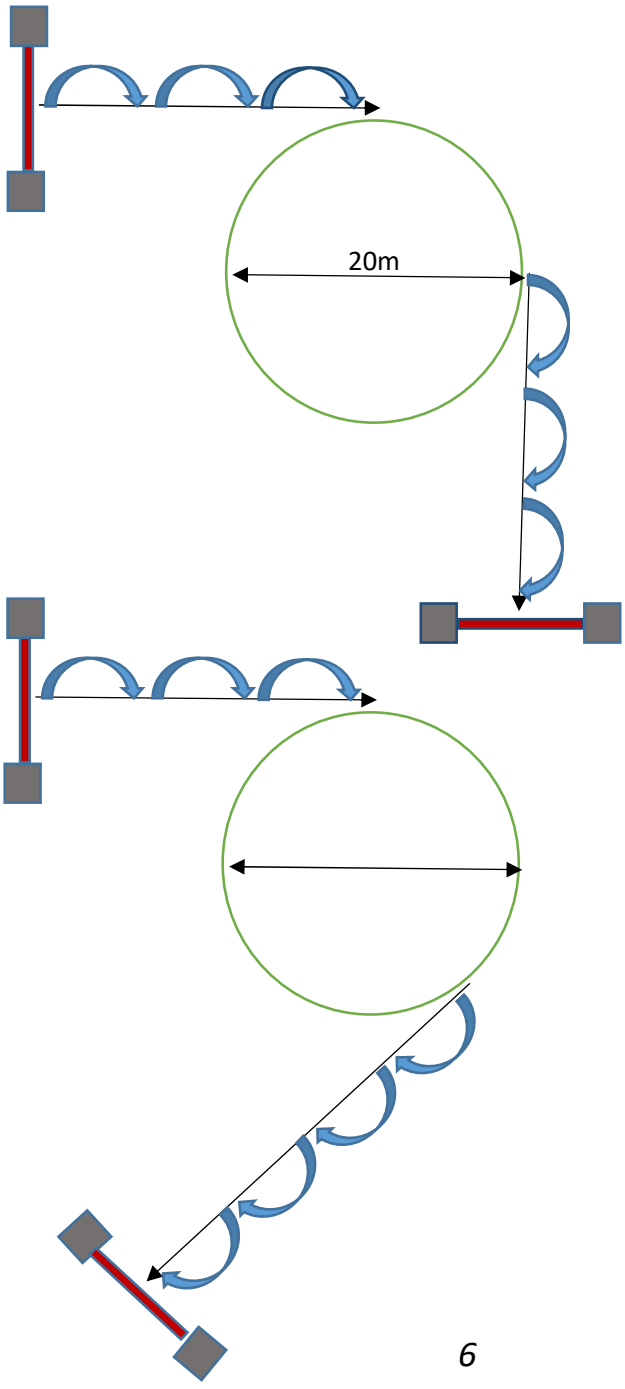
Course building is often demanding, sometimes tedious, time consuming, but always rewarding.

The value of the course designer is an inestimable factor in the context of the competition. It is accepted that under today's FEI conditions, any course will be within the parameters of those laid down by the organisers. FEI rules have been developed over many years to ensure the basic fairness of the sport to all concerned.

The creativity and originality of the course designer must come to the fore in any well designed track. There is ample scope within the rules for hundreds of variations on any given theme, but paramount must always be the safety and security of the horse and thereby the rider.

2. Basic Flow of the Course

Any course of 8 – 10 jumps will invariably include 1 – 2 changes of rein, and be even and flowing in its track. Show jumping is about rhythm, which is based on flow. The more flowing the track, the more pleasurable it is to ride. Corners should be based on the principle of a 20 metre circle, as is commonly used in dressage.



Always work on a minimum of 3 straight strides from a jump into a 90 degree turn, and a minimum of 3 straight strides to the jump.

When coming around the circle more than 90 degrees, then you will need to allow for more strides out of the turn to the next jump.

3. Variations of Design

Basically there are only three types of jumps: vertical, oxer, and triple bar. Any of these three could be found at any given time on a reasonable, balanced course. A well designed course should include these three types of obstacles, spread evenly around the course, with at least 50% being oxers.

1. **The Vertical**
   The vertical fence is the most basic form of the jumping fence, and is usually designed with just rails or a combination of rails and a filler.

2. **The Triple Bar**
   The triple bar is generally regarded as one of the easier fences, and and is built using 3 rails in front (or rail plus fill), one or two rails in the centre and one rail on the back. Care should be taken to ensure that the triple bar is not made to look hollow. This can be achieved by moving the centre rail closer to the front, thus giving the fence a more rounded look.

3. **The Oxer**
   The oxer derives its name from a fence designed primarily to keep oxen in the paddock and was often built with one or more rails in front. Oxers in lower classes should be of an ascending nature in an inviting profile with the top rail clearly visible.

The nicest first fence will be an inviting ascending oxer heading towards the entrance gate, which encourages the horse to go forward freely and without hindrance. Good course designers should incorporate any of these three obstacles on a course, not necessarily in any given order. Particular requirements apply to the first fence which should be free and open, able to be jumped on either rein.

4. Combination Jumps

Combination jumps comprise of several elements and can be built in a number of different ways, the most basic of which is a two stride double of verticals. The guiding factor must always be the degree of difficulty in relation to other jumps on the track. A combination which is well constructed and has an inviting appearance will encourage better jumping than one that is based either in a demanding situation or is set on an impossible corner which does nothing for the flow of the course.

At its simplest, a double is comprised of 3 rails in each vertical fence and forms an easy and approachable jump. Care should be taken to set the ground line as low as practicable in order to frame the jump in the most advantageous way.

When using oxers care must be taken to have at least half of the back rail clearly visible. The siting of combinations is quite critical to the flow of the track and as a rule should occur at fence 4 or shortly after.

The number of variables in a double or triple combination is almost limitless, but always be mindful of the care of the horse. The most favored combination of a treble would be one stride between the first and second jump, and two strides between the second and third jumps – the thought being that it gives the horse more scope to correct any striding faults.

As a general rule a double combination would not be placed earlier than on jump number 4 in training classes.

A triple bar in a combination is not appropriate for classes below 1.25m, and if used, should only be used in the first element.

A two stride combination, is easier than a one stride combination as there is more time to react to any problem that may arise.

- It is generally conceded that the easiest combination would be a two stride vertical followed by another vertical.
- Only use a fill in the first element of a combination. If you use fill in the second or third element the horse may take too much notice and jump poorly.
- At beginner's level it is quite acceptable to design with only one combination.

Usually one combination is adequate for a training track and two double combinations for Open 1.10m/1.15m class and up.

Generally, it is easier to ride a combination placed after a related line, than one before.

Levels of difficulty in combinations:

- Easiest: vertical to vertical (one or two strides)
- Vertical to oxer, oxer to vertical
- Oxer to oxer – not recommended.

Table of distances (Source FEI)

One Stride Combinations

Type of Opening Fence	***Vertical***	***Oxer***	***Triple Bar***
Vertical	7.70 – 8.00m	7.50 – 7.80m	X
Oxer	7.60 – 7.80m	X	X
Triple Bar	7.70 – 8.00m	X	X

Two Stride Combinations

Type of Opening Fence	***Vertical***	***Oxer***	***Triple bar***
Vertical	10.70 – 11.00m	10.50 – 10.80m	X
Oxer	10.60 – 10.80m	X	X
Triple Bar	10.70 – 11.00m	X	X

5. Related Lines

Related lines are an important part of course designing especially for younger horses. A related line is a straight or curved line with two or more related obstacles, with four or more strides – try to avoid 3 stride lines, as is not recommended for training competitions – save for special occasion, e.g. World Cup class. They form an important part of a jumping test, but always try to create level rhythmic distances. Correct distances and solvable questions will help build confidence in young horses and less experienced riders.

Distances for Related Lines

No. of Strides	***From – To***	***Average***	***Show Hunter***
3	14.30 – 15.00m	14.65m	14.65m
4	17.90 – 18.60m	18.25m	18.30m
5	21.50 – 22.50m	22.00m	21.95m
6	25.00 – 26.00m	25.50m	25.60m
7	28.50 – 29.50m	29.00m	29.25m

6. Flags

The position of the start and finish flags should be carefully noted as they form an integral part of course design.

Flags should be used to mark the boundaries of the course and should be situated in the range of 6 – 15 meters to and from the first and last fence. They should be placed as near as possible as at right angles to the course proper. Great latitude should be given to the placing of the flags as it is sometimes impossible to place then in the desired position, in which case compromises can be made. Every endeavor must be made to comply with the rules in this respect, even to the extent of having a person flagging the start and/or finish.

It is well known that passing on the wrong side of the start or finish flags could incur faults or elimination if not corrected. Too often course designers tend to cramp up the space available for flags rather than being generous in the space allocated. If in doubt keep the flags wide apart.

7. Jump-Offs

Competitors who are placed equal after the first round of the competition may take part in the jump-off.

Jump-offs fall into two main categories:

- Instant jump-offs
- Standards jump-offs

Instant

This must take place after the preliminary round, the bell must be rung to start the competitor on the course.

In an instant jump-off, provision can be made in the original course for two additional fences which may be increased in height or spread. If the original course includes a combination the jump off must include a combination. The number of obstacles may be reduced to a minimum of six, but their, type and colour must not be altered. The distance between elements of a combination may never be altered.

Standard Jump-Off

In principle, a jump-off may take under the same rules and table of the original competition. The starting order must remain the same as the original order.

Obstacles in a jump-off may only be increased in height and/or spread, if the competitors in the first round complete the course without penalties. If the original course includes a combination the jump-off must also include at least one also. Number of obstacles may be reduced to a minimum of six – combinations count as one obstacle. The shape, type and colour of the obstacles may not be altered. It is permitted to leave out one of the elements of a combination but not the centre element, order of obstacles for a jump-off. Order of obstacles for a jump-off may be altered compared to the original course.

Competitors who are eliminated before the jump-off, will be placed last compared to the competitors who have completed the jump-off.

General

A jump-off is more of a speed contest than the original course and should include some tighter corners, rider options, some galloping, and is a test of speed and jumping ability. In other instances, a number of obstacles may be increased in height and/or spread, but not necessarily every fence.

8. Setting Out at the Show

The first task is to check the ground.

- Are there any holes or others dangers that may affect the course?
- Is the arena rope in position - which it should be at the start of layout?
- Is the position of the gate and judge's box clearly marked?

You should walk over the ground to orientate yourself with any obstacles, lines of trees or other impediments.

Once satisfied that the ground conditions and that the arena is in accordance with your plan, you can start to build.

The first thing is to set out the numbers. Some people don't bother with the numbers but just put out the jumps. But numbers are easier to move and it gives you a chance to get an overview of what you are about to build without making major alterations.

Once the numbers have been placed you can set the rails. Placing one rail for a vertical, two rails for an oxer and three rails for a triple bar. The same goes for setting out a double and a treble if used, so that measuring of distances can be made while poles are on the ground. Once you are satisfied with the general layout you can check the position of the rails for the combinations and related lines.

Jumps in combinations need to be 'square,' as should lines. To square combinations:

1. Measure down each side using the measurement you have selected for the combination/line.
2. Next measure that the diagonal distances between jumps is equal
3. First measure from the left side of the first jump to the right side of the second jump (diagonal), then from the right side of the first jump to the second jump (opposite diagonal).
4. Check that the diagonal measurements are the same. It makes it easier to square the fence by sliding one rail across to the plans desired mark.

Start with an inviting slightly lower first jump with a good ground line as the first fence. All obstacles should have a standing filler, especially for training classes where a more ascending obstacle would be appropriate. You should avoid impressive fill in the first obstacle for training classes. The introduction of a Liverpool in lower classes is important and should be encouraged. A narrow Liverpool below an upright going towards the gate in the last third of the track should be an excellent learning experience for a young horse.

At the start of every class, course designers should be available near the judge's box until they are satisfied that the time allowed for the course is correct.

It is recommended to change the track between classes, especially with large classes. This will help significantly to save the ground and keep spectators interested.

9. Equipment

Jump stands come in a variety of shapes and sizes – the main overriding factor must always be SAFETY for both horse and rider. A standard jump stand will be approximately 1800mm high x 900mm wide.

A heap of rails and whatever is on the ground may look innocuous enough, but it can be a constant danger for a falling horse or rider. It is essential that all stands, fillers and other material be free from sharp corners and cutting edges in the case of an accident.

Jump Cups

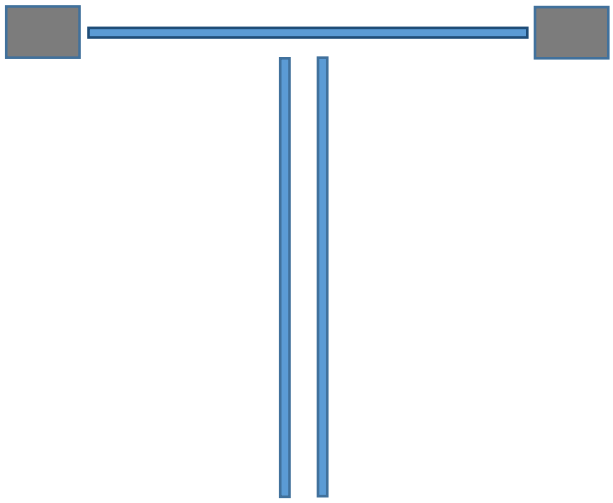
Most jump cups are now made of plastic. Each wing-stand is fitted with a metal strip with holes in it, into which cups slide – known as 'key-hole'.

For safety reasons a breakaway must be used for back rails of all spread fences. For a triple bar, the centre and back rails must always be on breakaway cups.

Plastic cups are curved at the top to hold the pole, but flat on the bottom so they can be turned down for planks, gates and other fillers.

10. Building the Jumps

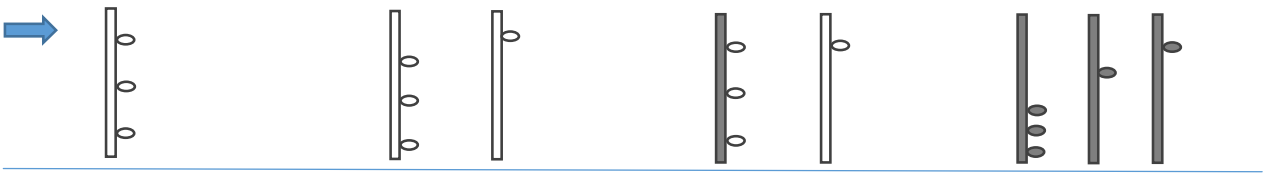
Place a stand at either end of the pole, being careful not to move the measured distances of the rails. Place the cups in the stands, remembering breakaway cups must be used on the back of an oxer, especially in a triple bar. The rest of the jump gear can be placed at an angle beside the measured rail, so as not to confuse the helpers, until the whole course is laid out. For example:



The bottom rail must always be off the ground for the horse's safety, for example 150mm. Loose rails could be dangerous and cause confusion for the helpers when rebuilding the jumps.

- Ladders are very useful, either low down at ground level or in the body of the jump.
- Oxers should be at least as wide as high.
    - With square oxers, the top rails are at the same height, while for ascending oxers, the front rail is lower than the back.

Types of Fences



11. Drawing to Scale

When a clear picture of what is required has been formed, you can start with the design of a jumping course. It is essential to draw the course to scale on paper, as this will ensure the obstacles are located in the correct positions.

Use the following items to assist with this process:

- Pencil
- Scale ruler
- Graph paper

Having the course drawn to scale will help with correctly locating the obstacles in the direct position in the arena and will assist the course designer in getting the helpers started in building the course in a quick and efficient manner.

Course design with the help of a computer aided drafting programme makes a change in approach in how course are designed. Changes are relatively easily produced as the programme automatically draws the course to scale.

Drafting programmes have greatly improved the presentation of the course and a computer can be a great help to start with outlining some areas with pen and paper. When designing by hand, draw your design to scale on paper. An A4 sized paper will fit a scale of 1 to 400 in most cases. Multiple classes have to be designed for each day, so start with the most important class, and then work back through the other classes. Once the Master Plan has been created this will form the basis for course the following day.

12. Course Plan

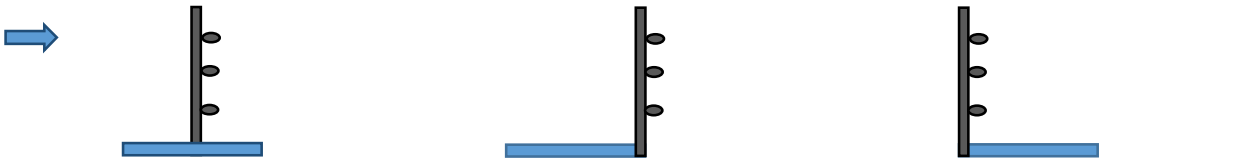
A course plan MUST be available at the gate with a copy for the judges at the start of the class and should indicate:

- The gate
- Start and finish lines
- Type of class (Article Number)
- Length of course
- Speed
- Time allowed
- Time limit
- Obstacles with their numbers and direction of jumping
- Jump-off obstacles if required.

13. Liverpools

A liverpool should be included as soon as possible, as young horses need to become accustomed to jumping them early on. A narrow one is ideal for the lower heights, and centered under a vertical heading towards the gate, and well into the track.

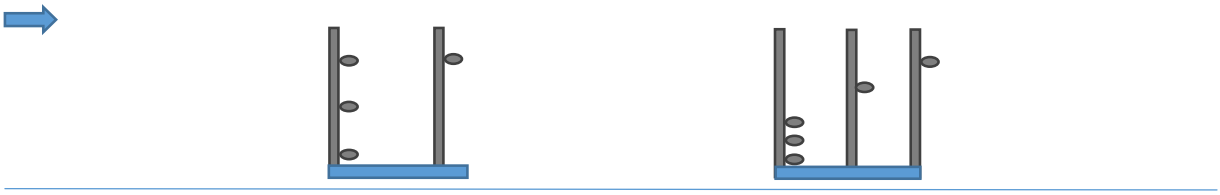
Ways a Liverpool can be used:



Centered under the fence – best for training competitions.

Out in front

Behind the fence



14. Time Allowed

All courses need to have a time allowed, and a time limit (which is twice the time allowed) calculated – this is done by measuring the track using a measuring wheel. Some classes, for example, a Table C have requirements for time allowed. In this case if the track is less than 600m, then 120 seconds (2 minutes) is the maximum time, and if longer than 600m then the maximum time will be 180 seconds (3 minutes).

All classes under 1.05m for horses and 0.80m for ponies must be run at 300mpm, while other heights can be run at a minimum of 325mpm to a maximum of 400mpm. The average speed used is 350mpm.

Some types of classes will have a set speed for which the class needs to be run at.

Factors to consider when setting the time:

- Ground conditions
- Skill level of horses and/or riders
- Young horse class – measure more generously

15. Good Design

The key to a good design is have flowing lines that allow the horse and rider to establish rhythm and maintain this throughout the course. It is important therefore to stick to a few basic key principles such as:

- Using a minimum 20m diameter circle through turns and curved lines
- Allow three straight lines before and after an obstacle
- Allowing two or three changes of rein
- Starting towards the gate with the first one or two obstacles
- Avoid impressive fill in early obstacles and combinations
- Place combinations in a general direction of the gate
- Avoid large spread obstacles to and from the gate
- Distribute the obstacles evenly around the arena
- Approximately half the obstacles will be on the left rein and the rest on the right rein

You must keep in mind that the overall complexity of the track must be in keeping with the type and level of the competition.

Keep it Simple!

16. Other Resources

Article Number/Table

Article	*Table*
238.1.1	A1
238.1.2	AM3
238.1.3	AM4
238.2.1	A2
238.2.2	AM5
239	C

2 Phase	
Article	*Table*
274.5.1	A1
274.5.2	AM3
274.5.3	AM5
274.5.4	AM3/TC J/O
274.5.5	AM5/TC J/O
274.5.6	AGREGATE

Table of combination distances (Source FEI)

One Stride Combinations

Type of Fence	*Vertical*	*Oxer*	*Triple Bar*
Vertical	7.70 – 8.00m	7.50 – 7.80m	X
Oxer	7.60 – 7.80m	X	X
Triple Bar	7.70 – 8.00m	X	X

Two Stride Combinations

Type of Fence	*Vertical*	*Oxer*	*Triple bar*
Vertical	10.70 – 11.00m	10.50 – 10.80m	X
Oxer	10.60 – 10.80m	X	X
Triple Bar	10.70 – 11.00m	X	X

For Ponies shorten each stride by 30 – 50cm.

Distances for Related Lines

No. of Strides	*From – To*	*Average*	*Show Hunter*
3	14.30 – 15.00m	14.65m	14.65m
4	17.90 – 18.60m	18.25m	18.30m
5	21.50 – 22.50m	22.00m	21.95m
6	25.00 – 26.00m	25.50m	25.60m
7	28.50 – 29.50m	29.00m	29.25m

Calculation of Time Allowed

300m per minute

Tens	*m*	*0*	*10*	*20*	*30*	*40*	*50*	*60*	*70*	*80*	*90*
Hundreds	**1**	20	22	24	26	28	30	32	34	36	38
	2	40	42	44	46	48	50	52	54	56	58
	3	60	62	64	66	68	70	72	74	76	78
	4	80	82	84	86	88	90	92	94	96	98
	5	100	102	104	106	108	110	112	114	116	118
	6	120	122	124	126	128	130	132	134	136	138
	7	140	142	144	46	148	150	152	154	156	158
	8	160	162	164	166	168	170	172	174	176	178
	9	180	182	184	186	188	190	192	194	196	198

325m per minute

Tens	*m*	*0*	*10*	*20*	*30*	*40*	*50*	*60*	*70*	*80*	*90*
Hundreds	**1**	19	21	23	24	26	28	30	32	34	36
	2	37	39	41	43	45	47	48	50	52	54
	3	56	58	60	61	63	65	67	69	71	72
	4	74	76	78	80	82	84	85	87	89	91
	5	93	95	96	98	100	102	104	106	108	109
	6	111	113	115	117	119	120	122	124	126	128
	7	130	132	133	135	137	139	141	143	144	146
	8	148	150	152	154	156	157	159	161	163	165
	9	167	169	170	172	174	176	178	180	181	183

350m per minute

Tens	*m*	*0*	*10*	*20*	*30*	*40*	*50*	*60*	*70*	*80*	*90*
Hundreds	**1**	18	19	21	23	24	26	28	30	31	33
	2	35	36	38	40	42	43	45	47	48	50
	3	52	54	55	57	59	60	62	64	66	67
	4	69	71	72	74	76	78	79	81	83	84
	5	86	88	90	91	93	95	96	98	100	102
	6	103	105	107	108	110	112	114	115	117	119
	7	120	122	124	126	127	129	131	132	134	136
	8	138	139	141	143	144	146	148	150	151	153
	9	155	156	158	160	162	163	165	167	168	170

375m per minute

Tens	*m*	*0*	*10*	*20*	*30*	*40*	*50*	*60*	*70*	*80*	*90*
Hundreds	**1**	16	18	20	21	23	24	26	28	29	31
	2	32	34	36	37	39	40	42	44	46	47
	3	48	50	52	53	55	56	58	60	61	63
	4	64	66	68	69	71	72	74	76	77	79
	5	80	82	84	85	87	88	90	92	93	95
	6	96	98	100	101	103	104	106	108	109	111
	7	112	114	116	117	119	120	122	124	125	127
	8	128	130	132	133	135	136	138	140	141	143
	9	144	146	148	149	151	152	154	156	157	159

400m per minute

Tens	*m*	*0*	*10*	*20*	*30*	*40*	*50*	*60*	*70*	*80*	*90*
Hundreds	**1**	15	17	18	20	21	23	24	26	27	29
	2	30	32	33	35	36	38	39	41	42	44
	3	45	47	48	50	51	53	54	56	57	59
	4	60	62	63	65	66	68	69	71	72	74
	5	75	77	78	80	81	83	84	86	87	89
	6	90	92	93	95	96	98	99	101	102	104
	7	105	107	108	110	111	113	114	116	117	119
	8	120	122	123	125	126	128	129	131	132	134
	9	135	137	138	140	141	143	144	146	147	149

A P P E N D I X

Sample Course Plans

Auckland Manukau GP Show

Class no: 1 | Open Horse | Competition over one round | 13/11/2015 | Start at: 12:00PM

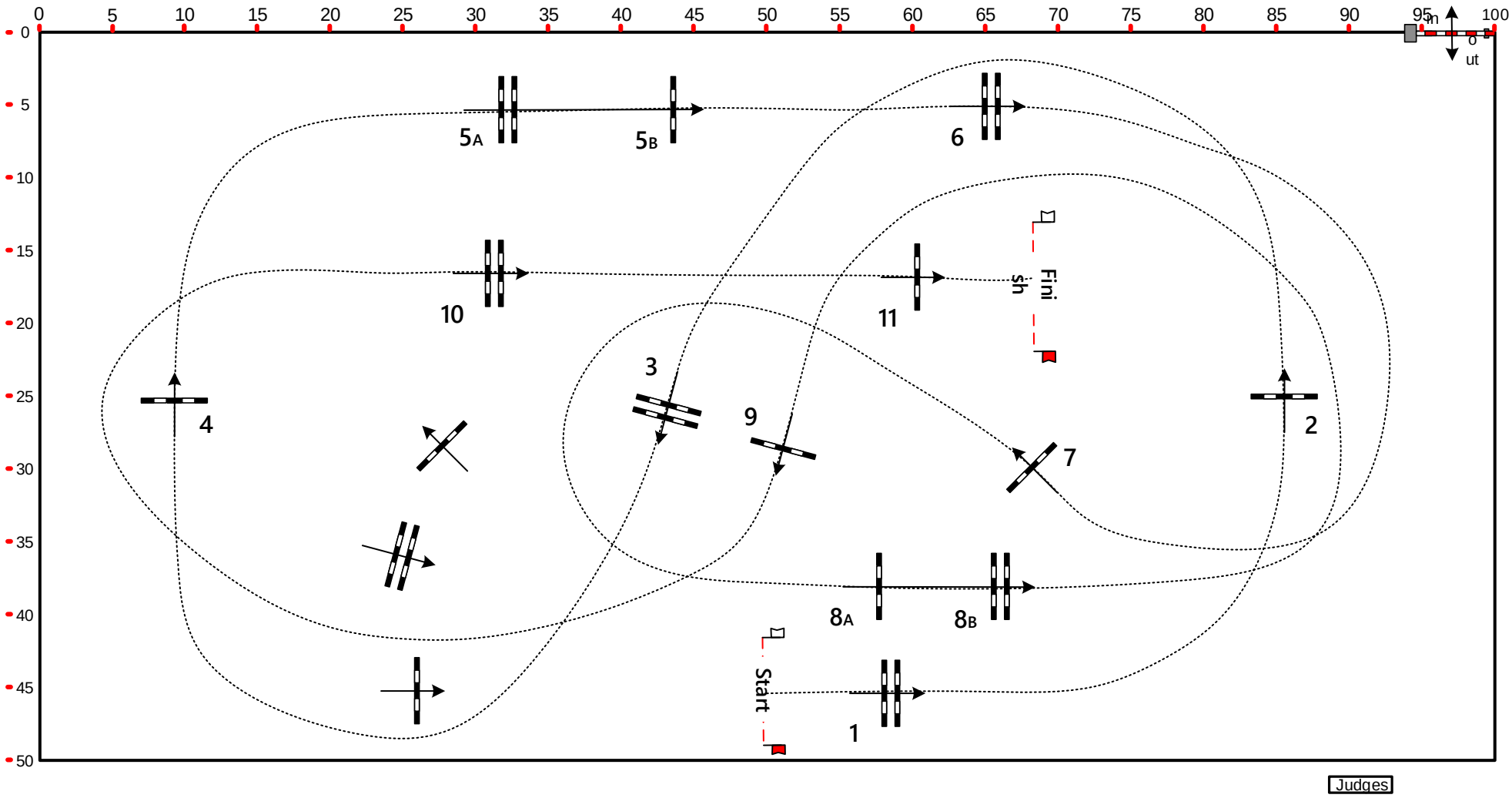
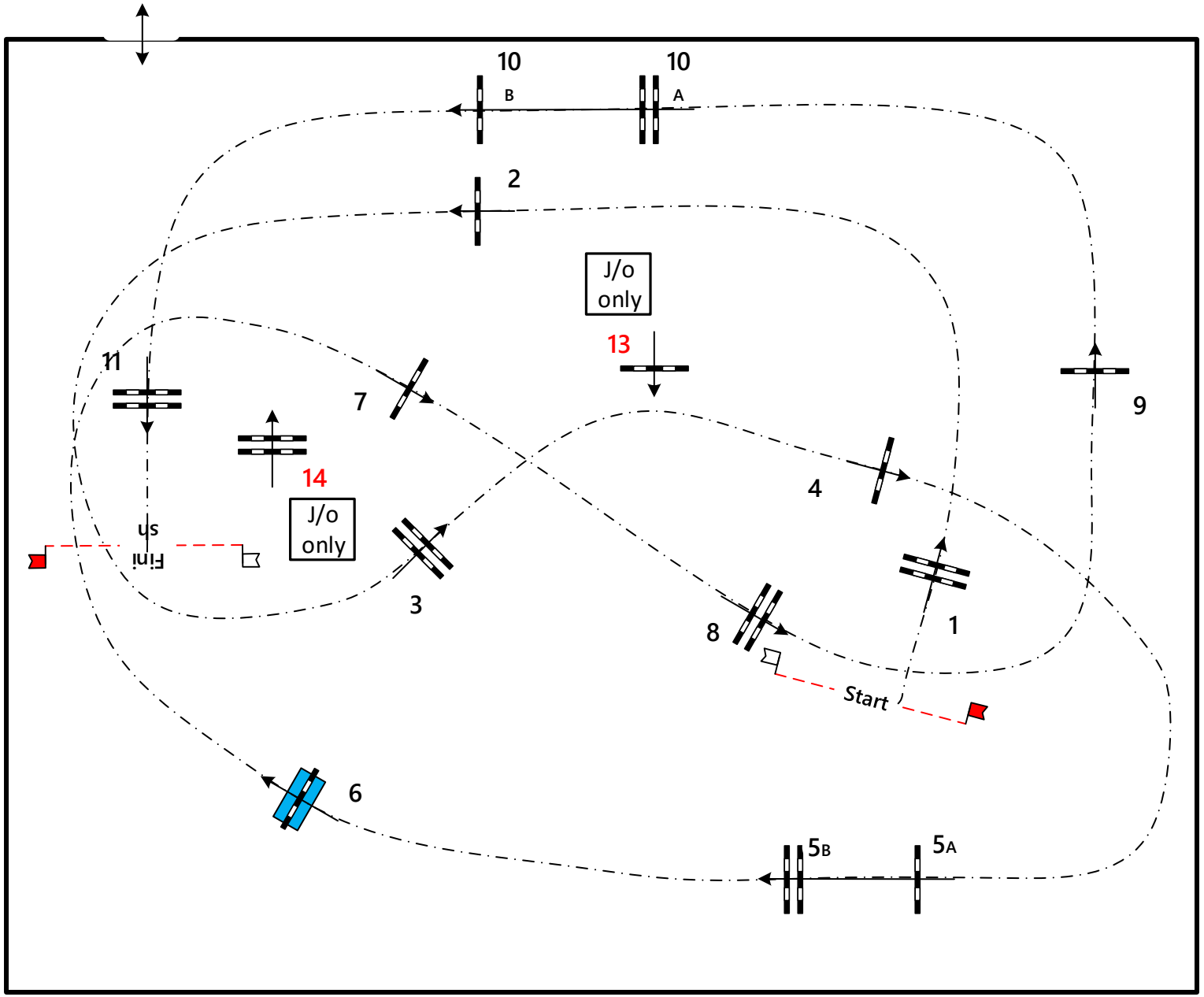


Table:	A	Speed in m/min.:	350	Obstacles:	11	Jump off:	
National rules:	238,2,1	Length in m.:	550	Efforts:	13	Length in m.:	0
FEI rules:	238,2,1	Time allowed in sec.:	95			Time allowed in sec.:	0
Height in m.	1.20	Time limit in sec.:	190			Time limit in sec.:	0

SCALE: 1:400

Course Designer:

NORTHLAND AREA SHOW



SCALE: 1:400

Course designer:

Class no: 1

24/10/2015

Welcome Stakes

Competition with one jump off

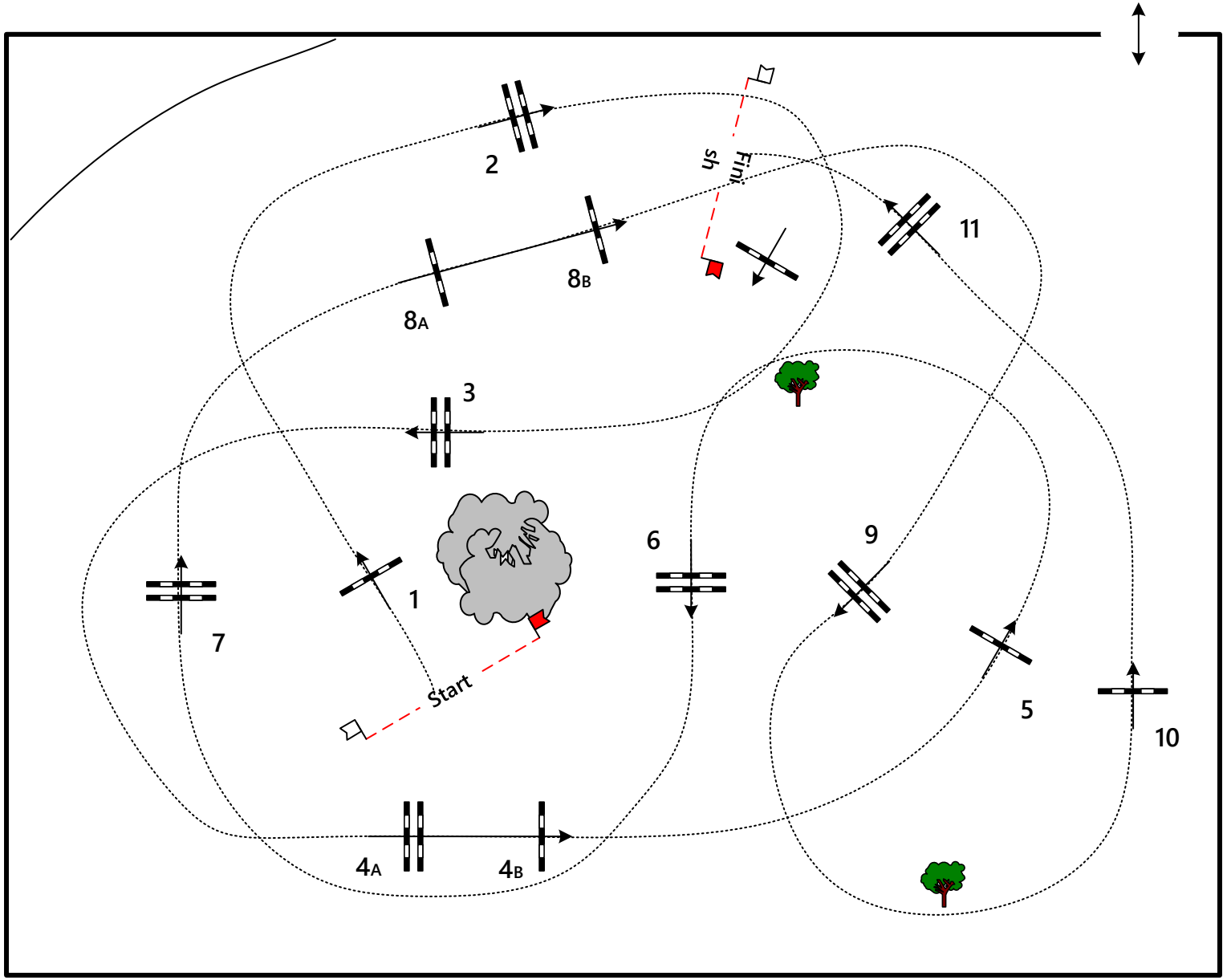
Start at: 9:00AM

Table:	A
National rules:	238.2.2
FEI rules:	238.2.2
Height in m.	1.15
Speed in m/min.:	350
Length in m.:	500
Time allowed in sec.:	86
Time limit in sec.:	172
Obstacles:	11
Efforts:	13

Jump of:
3-4-5a-5b-8-9-13-14

Length in m.:	280
Time allowed in sec.:	48
Time limit in sec.:	96

North Island Jumping Champs



SCALE: 1:400

Class no: 12

26/03/2016

Open Horse

Competition over one round

Start at: 1:00PM

Table:	A
National rules:	239
FEI rules:	239
Height in m.	1.15
Speed in m/min.:	
Length in m.:	
Time allowed in sec.:	
Time limit in sec.:	120
Obstacles:	12
Efforts:	14

Jump of:

Length in m.:
Time allowed in sec.:
Time limit in sec.:

Course Designer:

Taupo Xmas Classic 2016

Class no: 18

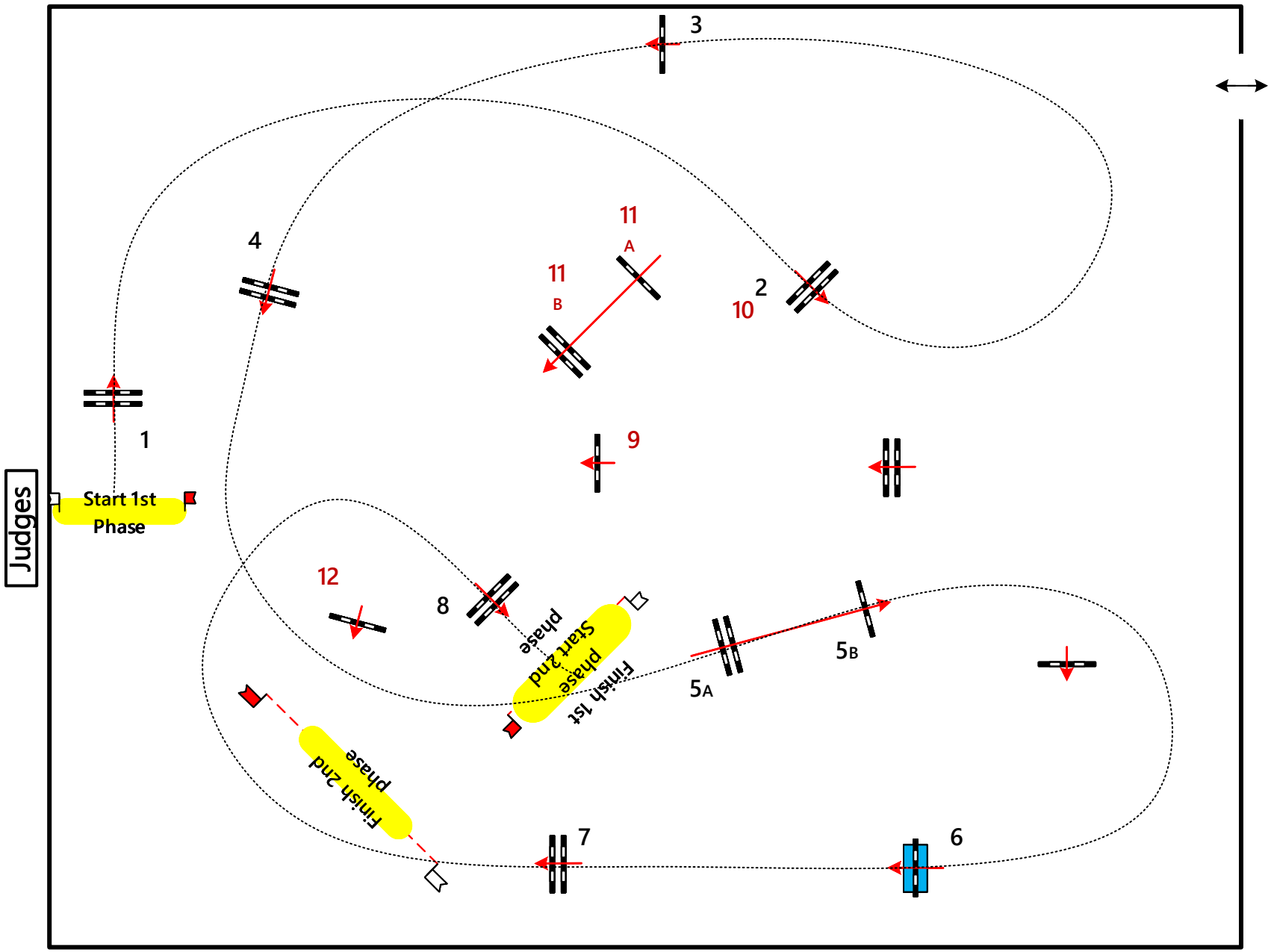
16/12/2016

Open Horse

Competition in two phases

Start at: 8:00am

Table:	A
National rules:	274.5.2
FEI rules:	274.5.2
Height in m.	1.2
Speed in m/min.:	350
Length in m.:	400
Time allowed in sec.:	69
Time limit in sec.:	138
Obstacles:	8
Efforts:	9



2nd Phase

9-10-11a-11b-12

Length in m.:	230
Time allowed in sec.:	40
Time limit in sec.:	80

SCALE: 1:450

Course designer:

Auckland Manukau GP Show

Class no: 1 | Open Horse | Competition over one round | 13/11/2015 | Start at: 12:00PM

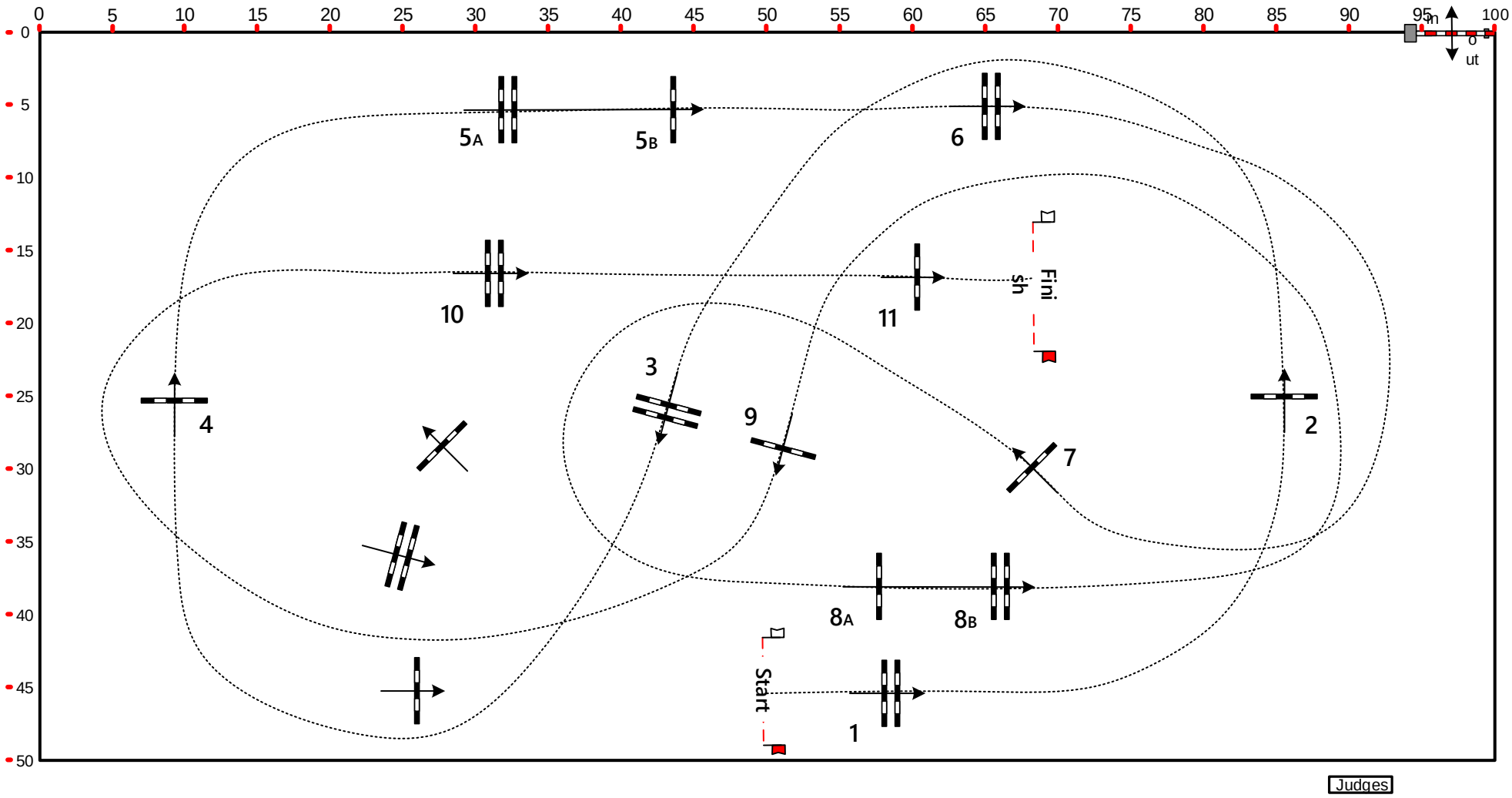
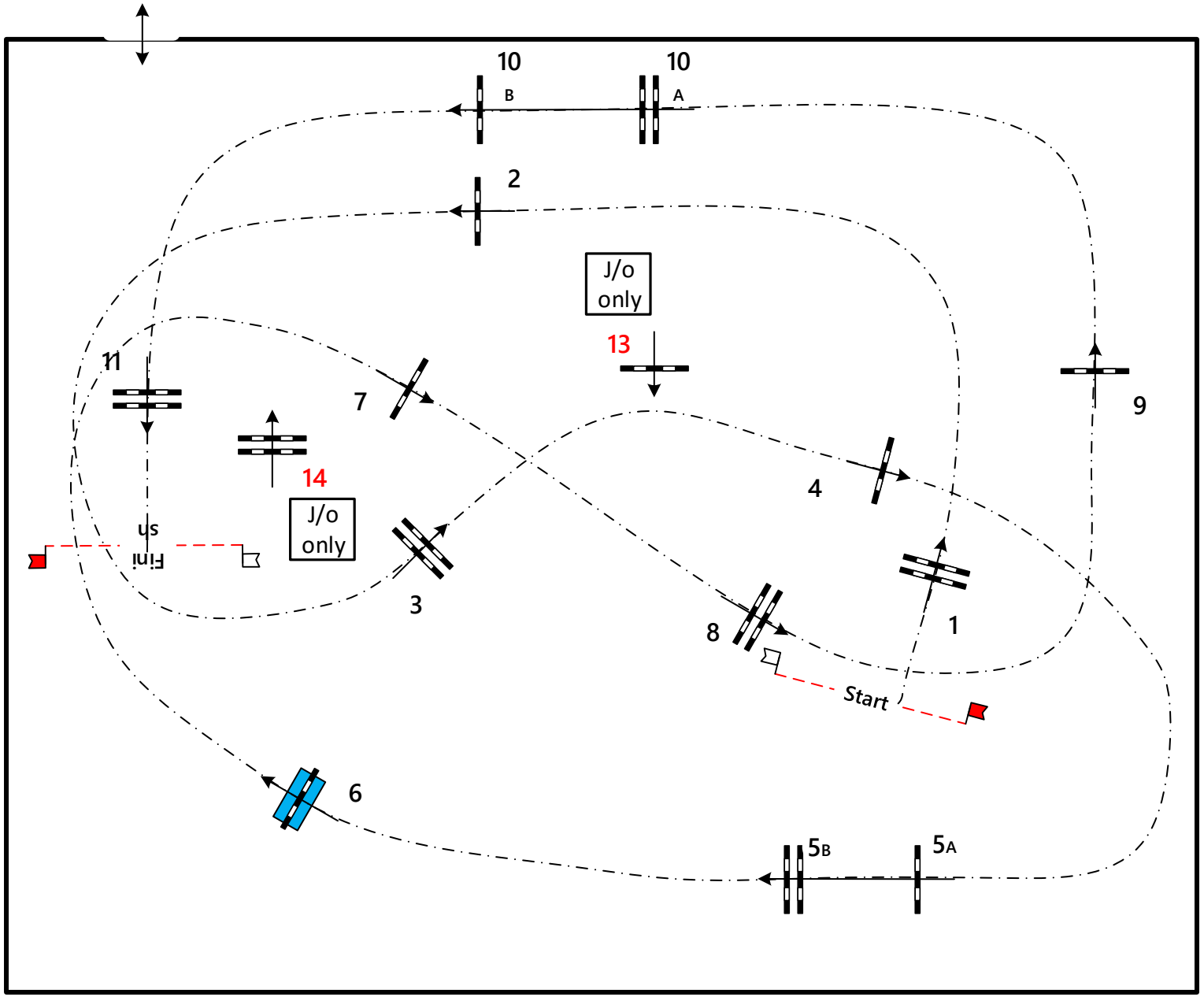


Table:	A	Speed in m/min.:	350	Obstacles:	11	Jump off:	
National rules:	238,2,1	Length in m.:	550	Efforts:	13	Length in m.:	0
FEI rules:	238,2,1	Time allowed in sec.:	95			Time allowed in sec.:	0
Height in m.	1.20	Time limit in sec.:	190			Time limit in sec.:	0

SCALE: 1:400

Course Designer:

NORTHLAND AREA SHOW



SCALE: 1:400

Course designer:

Class no: 1

24/10/2015

Welcome Stakes

Competition with one jump off

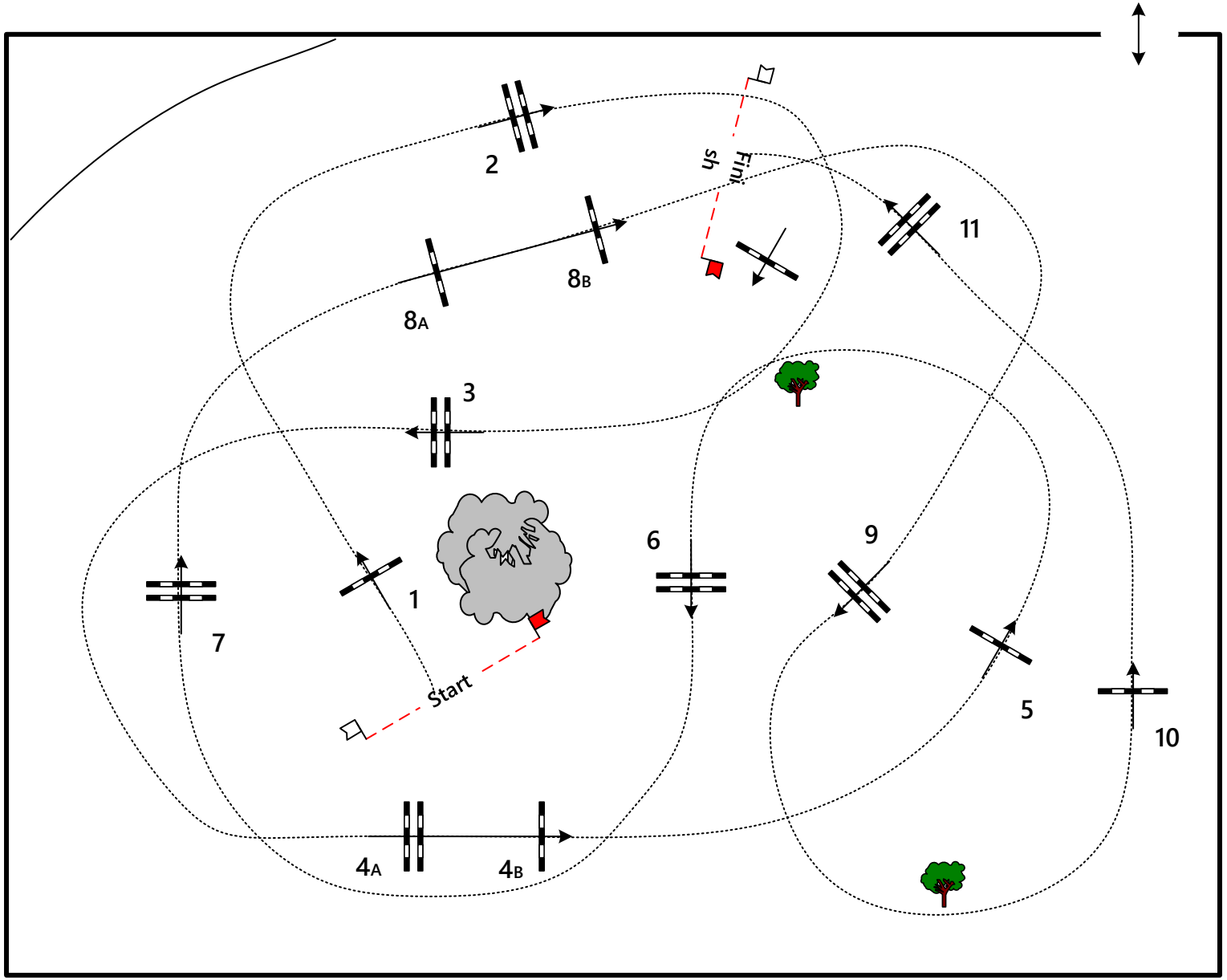
Start at: 9:00AM

Table:	A
National rules:	238.2.2
FEI rules:	238.2.2
Height in m.	1.15
Speed in m/min.:	350
Length in m.:	500
Time allowed in sec.:	86
Time limit in sec.:	172
Obstacles:	11
Efforts:	13

Jump of:
3-4-5a-5b-8-9-13-14

Length in m.:	280
Time allowed in sec.:	48
Time limit in sec.:	96

North Island Jumping Champs



SCALE: 1:400

Class no: 12

26/03/2016

Open Horse

Competition over one round

Start at: 1:00PM

Table:	A
National rules:	239
FEI rules:	239
Height in m.	1.15
Speed in m/min.:	
Length in m.:	
Time allowed in sec.:	
Time limit in sec.:	120
Obstacles:	12
Efforts:	14

Jump of:

Length in m.:
Time allowed in sec.:
Time limit in sec.:

Course Designer:

Taupo Xmas Classic 2016

Class no: 18

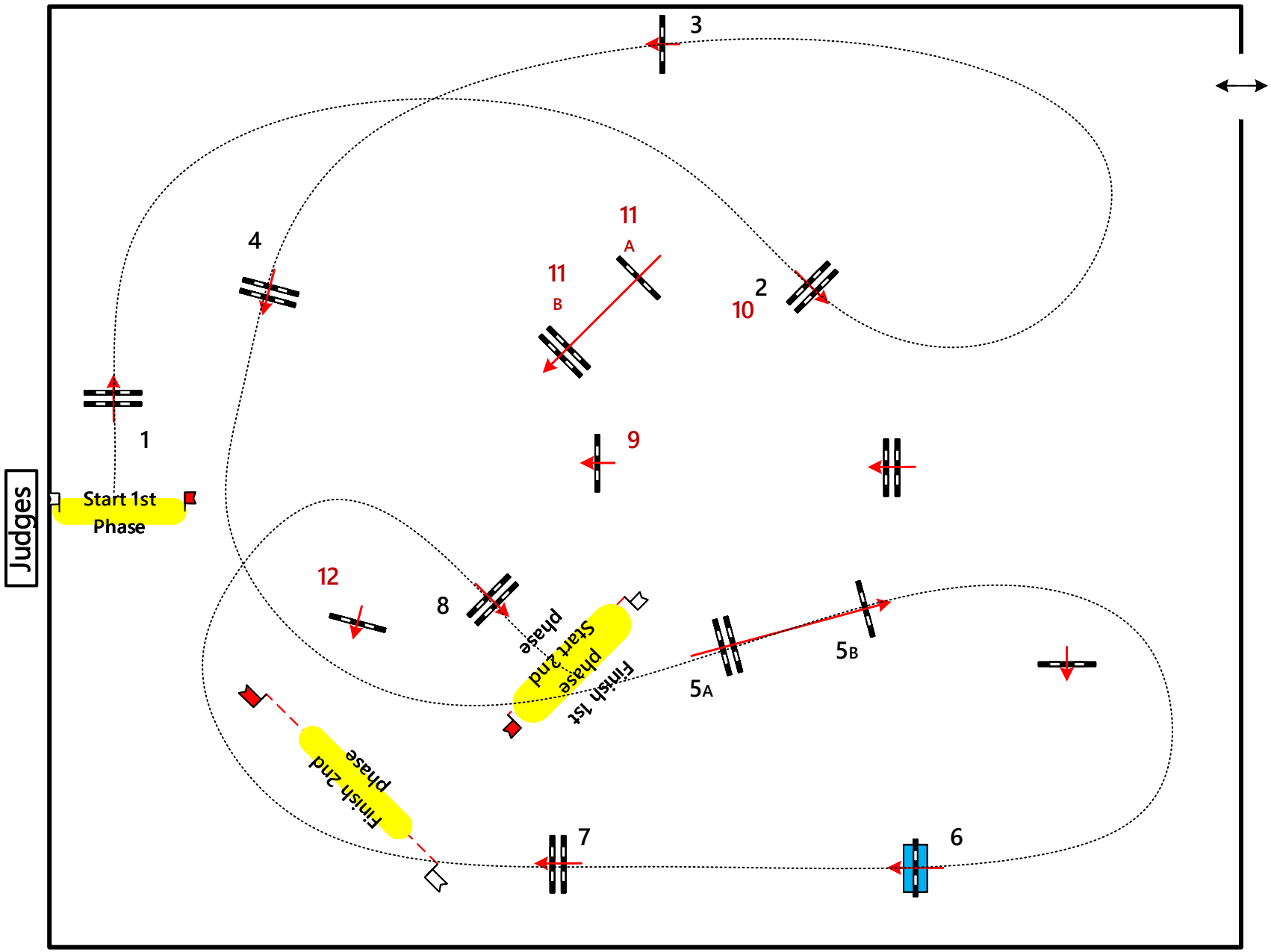
16/12/2016

Open Horse

Competition in two phases

Start at: 8:00am

Table:	A
National rules:	274.5.2
FEI rules:	274.5.2
Height in m.	1.2
Speed in m/min.:	350
Length in m.:	400
Time allowed in sec.:	69
Time limit in sec.:	138
Obstacles:	8
Efforts:	9



2nd Phase

9-10-11a-11b-12

Length in m.:	230
Time allowed in sec.:	40
Time limit in sec.:	80

SCALE: 1:450

Course designer: