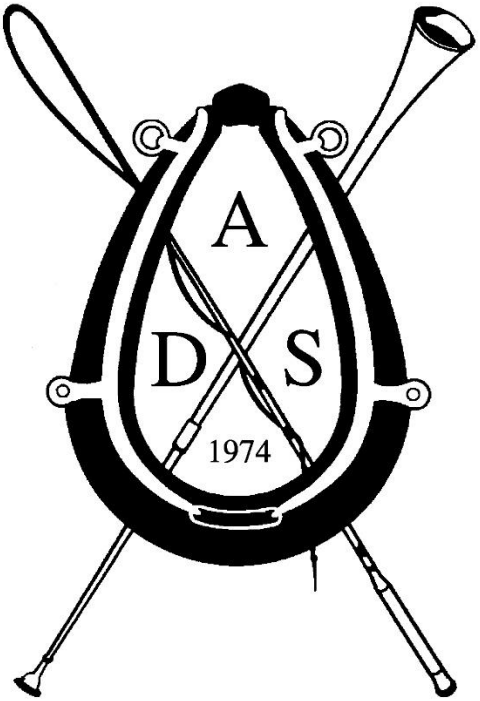


The American Driving Society, Inc.

CDE Course Building Handbook

October 27, 2022

CDE Course Building Handbook

Table of Contents

Chapter 1 – Introduction

This Handbook is to assist volunteers assigned to construct the physical components of an event. The Course Builder is often a volunteer with a number of assistants who have access to the property some time before the event. The Course Builder works under the direction of an experienced Course Designer. A Course Designer is an individual who possesses the knowledge, training and experience fundamental to creating the components of an event which meet local laws and regulations, are safe for athletes and equines, and present a safe and fair competition opportunity for all involved.

When the size or budget for an event does not provide for a Course Designer, then it is best to work with the (TD) to ensure the proposed plan conforms to the Rulebook requirements and will be drivable.

Planning the layout, ideas and discussing any limitations and potential issues with the Course Designer will save time, expense and frustration if changes are required by the TD or POJ.

Basic considerations:

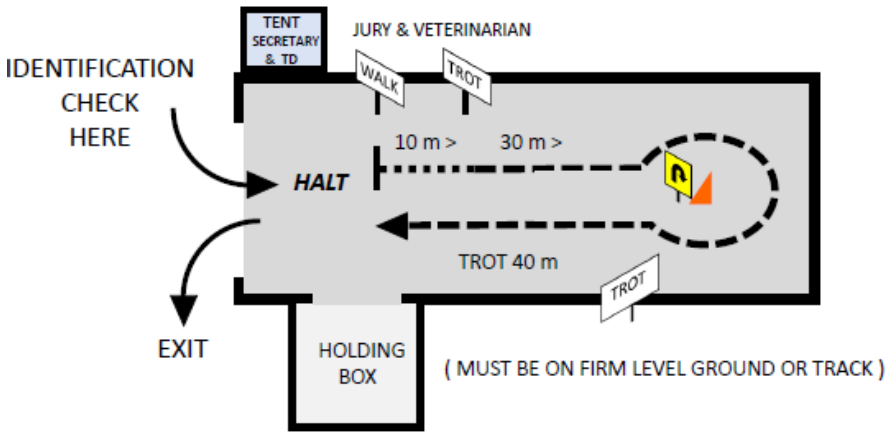
1. Level and firm ground for the Driven Dressage arena.
2. Level and firm ground for the Obstacle Cone Driving arena.
3. Access to start area with enough space before start A for safety check and on-deck area for 3 turnouts.
4. Transfer section with flat terrain, good footing and limited turns and open visibility.
5. 10 min. halt: minimum of 4 turnouts, shade for Competitors, Judges and Vets; water availability.
6. B-section: 1 obstacle per kilometer.
7. 5-7 Marathon obstacles, each asking a different question of the entry.

Chapter 2 – Venue layout

The venue has several physical requirements that must be part of the planning. The TD is responsible for approving the layout, so should be involved in the planning process with the volunteers doing the actual site preparation.

The type and size of an event will determine the requirements of the following considerations:

1. Competitor parking – Allowance for oversized vehicles? Access to competition areas – need to cross marathon tracks or other competition pathways to/from arenas?
2. Spectator parking – Ease of access from highway. Permit required? Free or ticket sales? Marked spots or marshal directed? Estimated number of vehicles. Volunteer requirements and availability?
3. Stabling access and trailer parking – Ease of access from highway. Unloading area near stables for equines on arrival and equipment throughout event. Turnaround for all rig sizes. Departure day interference with marathon route? Proximity to the stable allowing competitors to work out of their trailer?
4. Warm-up areas – Footing identical to competition area is ideal. Shavings or material used for marking "X" available to school equines. Practice cone pairs. Sufficient surrounding space for holding on-deck entries. Portapotties?
5. Safety check/vehicle measurement area – Obvious and convenient spot between stabling and competition arena or marathon start. Close enough to stable if competitor needs to return to stable, but clear of other vehicles.
6. Dressage arena –
   a) Centrally located for ease of communications, competitors and spectators.
   b) Where are tents going to be erected and where will spectators be sitting?
   c) Plan for the practice arena and holding area – practical flow to the Dressage arena from these areas.
   d) Flat as possible naturally.
   e) Enough room for the size arena designated; whether 100m x 40m or 80mx 40m or 60m x 30m, with at the very minimum a 10m perimeter (20m being more desirable). This enables competitors to drive around the outside of the arena without worrying about the proximity of carriages and judges' stands.
   f) The practice arena should be at minimum the same size as the arena to be driven for the test.
7. Marathon tracks – See Chapter 4.3 – Course considerations.
8. Cones arena – See Chapter 5.4 – Planning a course.
9. First Inspection – see diagram.→ (At the option of the Organizer.) When required, it must be stated in the ADS Omnibus. The first inspection is required at ADS Championship events.



Chapter 3 – Dressage Competition

1. Site preparation

   a) A year to six months before your show date: Take a good look at the surface of the selected site; fill holes, add top dressing and reseed if necessary.

   b) Six months before the event: Roll the surface. If it isn't smooth enough, this can be repeated, closer to the competition, as long as the turf is well established. It may take several years of rolling and/or reseeding and mowing to achieve your ideal, but it is well worth the time and effort. Your arena will be without ruts, tufts of grass or sloping ground. You have now set the stage for a topnotch event!

   c) Materials for the arena:
      i) Perimeter material options:
         1) Plastic boards and boxes are considered the safest.
         2) Chain made of plastic material is an option.
            - Should have double-ended connecting links, so you can adjust the length of sections easily.
            - Should have links spaced every so often that will give way under stress.
      ii) Lettering – full set for competition ring and ideally a second set for a warm-up ring. Letters should be clearly visible (2-3 feet high) by the competitor and judge. They can be attractively decorated with flowers. They must be solid so as not to be easily knocked or blown down spaced 0.5m from the edge of the arena.
      iii) Judges stands:
         1) Typically a structure available at the venue but could also be something temporary like a vehicle.
         2) Judges need to be sitting on a raised platform to allow for better viewing of the entire arena.
         3) Set back 5m from the rail and aligning the judge with the centerline or opposite letter.
         4) Tables/writing surface for the judge and scribe.
         5) Seating for both judge and scribe.
         6) Protection from the weather.

2. Arena setup: There are several ways to set up the arena. Whichever method used, do it, at the very least, three days before the competition if the venue and personnel requirements allow. This allows time for any equipment that needs altering or replacing. See Article 518 in the ADS Rulebook.

   One way to set up the arena is to use the Pythagorean Theorem to square the corners. (Remember $A^2 + B^2 = C^2$). Materials needed: a meter tape, a meter wheel, at least 100m length of cord, stakes or pegs or nails with florescent tape. Start in the lower right-hand corner of the arena by placing a peg or nail through a square of fluorescent tape in the corner, 20m away from the pre-designated outer edge of the designated dressage area. Approximate a straight line to the next imagined corner 4m up on the long side and mark this with a peg or tape. Then approximate a straight line 3m toward the corner to the left on the short side and mark it.

   Now, to get a true 90-degree angle, measure the line that runs diagonally to the two marks; it should be 5m. Move one or both pegs in or out to achieve this 5m measurement, carefully keeping the corner parallel to your imagined arena layout. That is the first and most important corner. Next, carefully run a string from the first corner mark past the 4m mark up to the 80m or 100m measurement (be very careful to keep the string in line, parallel over the 4m mark, and mark this spot. Measure down this same line 4m and place a marker. Run your string 3m toward the opposite imagined corner and mark. Alter this mark in or out until the connecting measurement between the two markers is again 5m. Continue this procedure for the next

two corners. Once all four corners are established, measure the diagonal between an upper and lower corner. With a wheel or premeasured string, the diagonal should measure 107.70m for the 100m x 40m large arena and 89.50m for the 80m x 40m small arena. One word of caution: String does tend to stretch over time, so premeasured string will eventually become inaccurate.

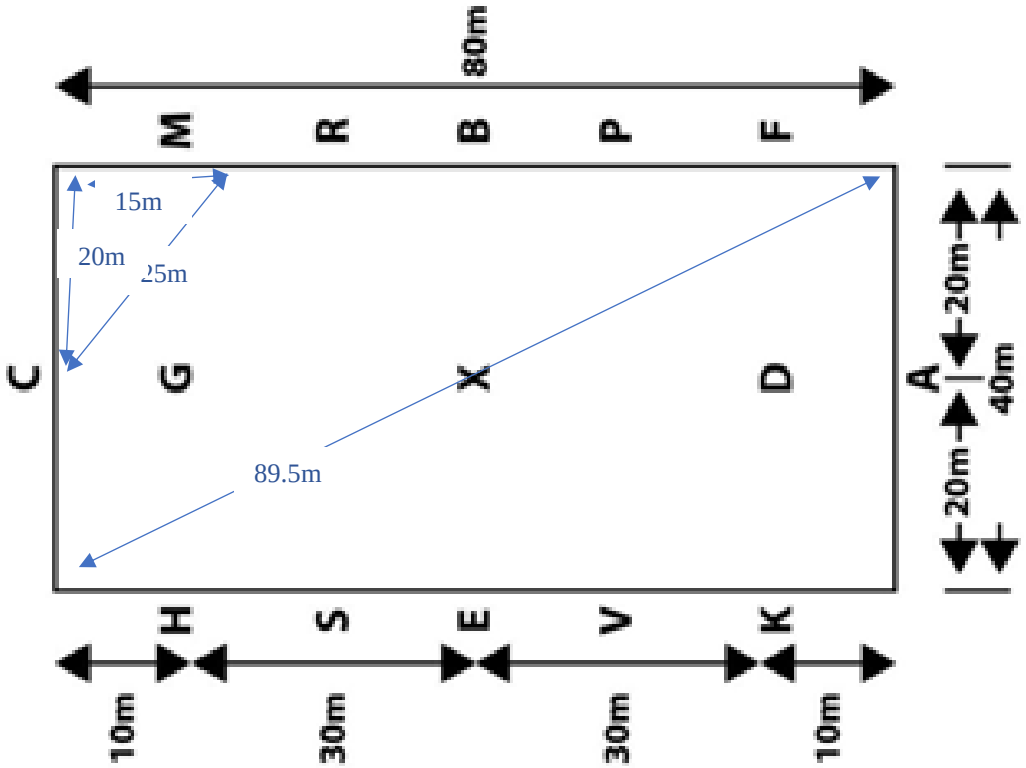
Once the corners are connected with straight lines and the boards are laid down, easily measure the placement of the letters. Refer to the diagrams of the two arena sizes for the correct measurements. The judges' stands should be at C if one judge, as well as at B and/or E if two or three judges,and if five officials, they should be placed as shown in the ADS Rulebook per FEI Annexes DR-A. The judges should be seated 5m from the edge of the arena. If the letter at A is not being moved for each test, it may be stationary 5 m from the arena edge, on the center line.

Mow the center line and horizontally across the center line at D and G. It is also a good idea to mark 20m or, at the very least, 10m away from the arena edge so spectators know where the appropriate viewing distance is.

a) Arena diagrams – See Appendix DR-A in the ADS Rulebook.

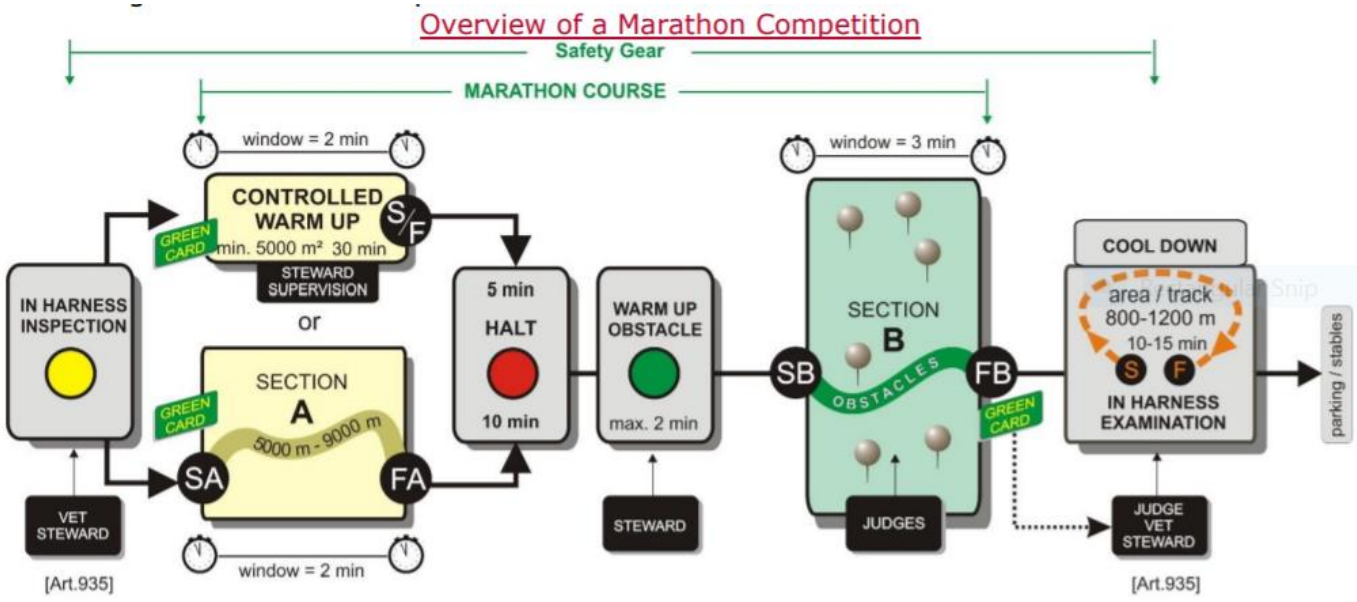
b) Decorations – Adds to the appearance of the arena but must not startle or frighten an equine.

c) Summary
   i) Mark the points X and G on the centre line and also mark those points in the same way at the practice arena.
   ii) The letters must be clearly set 0.5m from boards and must be higher than the boards.
   iii) Angle measuring: 3 – 4 – 5m or 15 – 20 – 25m.
   iv) Long diagonal verification: 80m arena = 89.5m; 100m arena = 107.7m
   v) Practice arena: should have appropriate letters and be at least the size of the test being driven. "X" should be marked with the same material used in the arena to school the horse.



Chapter 4 – Marathon Competition

1. Planning – It takes time to put a Marathon course together. First, an Organizer needs to decide on the Marathon format. If there is sufficient land or trails available, it is possible to have a full CDE with a two- or three-section Marathon. Two-section Marathons can be a Controlled Warm-up or Section A followed by a Section B. Three-section Marathons have a Section A, Transfer Section and Section B. If the area is smaller, a Driving Trial with only a Section B might be a good choice. It is helpful to find an experienced individual to view the available land and find the best way to use it. Since it is advised in the rules that there be a distance of 700m between each obstacle, a venue must have space of between 60 and 100 acres just for the obstacle section, depending on the layout. Depending on the levels the competition will offer, the plan needs to provide for between 5 and 7 obstacles.



NOTE: At ADS competitions, the "In Harness Inspection" is the Safety Check; at "Halt" the 10 minutes after Section A includes a horse inspection; and "Cool Down" is optional.

2. Design – Hiring an experienced Course Designer is the more economical way to establish a quality course. Using the wrong materials and having a bad layout can be costly. The ADS does not require a licensed

Course Designer, but there are individuals who have many years of knowledge and experience available. Course Designers licensed by USEF and FEI are also available. No matter who becomes the Course Designer, that individual must have complete knowledge of the rules and how to apply them to the plan, build a course that is safe and appropriate for the intended levels.

3. Course Considerations –
   a) What level of athletes and equines are expected?
   b) Is the event likely to have VSE, 4-in-hand and/or tandem drivers?
   c) Equine conditioning – how early in the season the event will be held:
      i) Have equines been in work or just coming off winter break?
      ii) Footing conditions depending on typical weather for time of year?
   d) Is the event a championship for any of the levels competing?
   e) What will the overall flow of the course look like?
      i) Will the course loop back to allow for only one vet inspection area?
      ii) Proximity to the stabling to allow entries to cool their equines and to allow for quick changes in the case of sharing.
      iii) If the start and/or end of the marathon is far from the stable, how is that factored into the overall course length consideration?
      iv) Are there additional routes for officials, volunteers, and the score runners to travel?
      v) Could an ambulance access all obstacles and most of the course if needed?
      vi) What areas of the grounds will the radios and/or cellphones not have reception?
   f) Next, think about where the cars, people, horses, facilities, etc. will be. Drive all around the grounds looking for likely roads or pre-made trails. Find out which roads are least traveled, have the best footing, the nicest view. While driving around, look alongside for open fields or carriage wide trails. If additional land space is needed, check the "No Hunting" signs and tax maps for landowners' names so to know whose land might need to be "borrowed".
   g) If it is not a personal facility or a self-contained park such as state horse park, be sure to enlist someone who lives in the area or knows it well to help plan the route. They will probably be able find out who would be more interested in allowing you to cross their land. This "local connection" can also be invaluable in helping point out possible routes to cross you may have missed.
   h) Make note of any water crossings or bridges that may be on course as they need to be mentioned in the omnibus listing.
   i) What makes a course easy or difficult?
      i) Easier:
         - Hard-packed dirt roads or gravel around the edge of smooth fields, or along fire trails.
         - Even and flat.
         - Relatively straight trails and sweeping turns.
      ii) Harder:
         - Rocky trails – try to avoid if possible.
         - Taller grass pulls heavier than short, mowed trails.
         - Track with one side constantly higher than the other.
         - Heavy footing.
         - Constant winding trail and/or sharp turns.
         - Water crossings.
         - A long, low grade can often be harder on an animal than a short, steeper grade.

   Ideal is a good mix of trail and road with short difficult sections of trail (e.g., hills, heavy footing, rocks, etc.) followed by flatter sections with good footing to give the horses a break. All trails should be drivable in a non-four-wheel drive truck. If the track is so wet or rough that four-wheel drive is needed,

the footing may not hold up to bad weather just before or during the event. Avoid trails with washouts or steep slopes to one side – this minimizes the risk of a turnover by a careless driver.

4. Dealing with neighboring landowners – Some marathons require borrowing land from others neighboring the facility. Approach landowners by asking if it would be possible to use a part of their land for the event, explaining exactly what and when would be happening. Points to discuss:
   a) Date and time of the start of the event to end.
   b) Is it acceptable for motorized vehicles to be on their land ahead of the event to mark the course and for competitors to inspect the course?
   c) Insurance and liability concerns – make sure you have added all landowners to the show policy: *Additional Insured Certificate Requests*.
   d) Willingness to mow/maintain/repair the course ahead of the event.
   e) Will they make necessary improvements to areas of the course themselves?
   f) What permissions the event must alter trees/land to the course needs (trim tree branches, dump fill stone in holes, etc.)?
   g) Event will be responsible for repairs to any damage cause by the show- define "damage" to make sure the owner understands the wear and tear that will happen to the course.

   If you have one particularly enthusiastic landowner, you may want to ask them if they would mind being used as a reference for any new landowners with questions about the competition or drive.

   If a landowner expresses a lot of reservations (i.e., "Well I guess it would be OK, as long as it isn't too wet"), it might be best to find another route. Don't press someone into accepting your drive – remember, they are doing the event a favor, not the reverse.

   Finally, let the landowner who welcomes you know how much you appreciate the use of their property. If appropriate, include their name in the program, if any, with a special thank you (unless they would prefer to remain anonymous, which is often the case), send them complimentary tickets to the competition, programs, and invitations to any informal hospitality. Most important of all, don't forget to send out a thank you note after the marathon is over.

5. Controlled Warm-up considerations – If a Controlled Warm-up is being utilized for the event, the space must be 5000 square meters and enclosed in some manner. The area consists of a non-gated obstacle (probably portable) with not too many elements, each at least 3.5m apart. Consider the flow of entries in and out of the space. Competitors arriving prior to their start will need a space to wait that will not interfere with drivers leaving the Controlled Warm-up headed to vet inspection.

   Other considerations:
   a) Ideal terrain is flat, smooth ground suitable for all gaits.
   b) Area shaped to allow entries space to work without interference.
   c) Flat, safe area for a warm-up obstacle to be utilized by one driver at a time away from the other entries in the Controlled Warm-up space.

6. Protecting the land – Competitors typically expect to be able to drive the course by motorized vehicle (golf cart, ATV, etc.) in advance. Be sure the track will hold up fairly well to traffic. If motorized access is restricted to certain days or specific sections, put a reminder of this rule in the competitors' packets and mention it during all briefings. This decision is sometimes made by the ground jury and TD if inclement weather is expected.
   Ways to protect the course:
   a) Use high and dry ground as much as possible.
   b) Look for trails that stay in reasonably good shape no matter what the weather.
   c) Stay away from lawns, ready-to-harvest crop fields or landowners who are extremely reluctant to let you cross their land.
   d) Encourage the course designer to add additional Compulsory Turning Flags (CTFs) and/or arrows in

areas with questionable footing nearby.

7. Marking the Course – The course designer typically will mark and measure your course. The most significant equipment to source is the signage. The course will require a number of yellow arrows, numbered red and white turn flags (for each section), red and white gate letters for the obstacles and kilometer markers for each level. Each section may use as many as 50 arrows, 25 pairs of turning flags and between 5 and 8 Kilometer markers for each level for Section B.
For Section A and Transfer, all levels are marked with one set of kilometer markers. Course signs should be large enough to be seen from a long distance. It is recommended that they be between 9 ½ and 12 inches square. The use of less visible smaller arrows will require using a larger number and the cost of mounting each one on a stake will cost more in the long run. It has become a common practice to mount course signs on 3 foot tall "step-in" electric fence stakes.
The organizer will need to have the following available:

a) Transportation – a non-electric golf cart or ATV/UTV with a flatbed on back is ideal.

b) A metric measuring wheel.

c) Step-in stakes to attach the arrows and compulsory turning flags. You can also use wooden stakes for this, although they are much more labor-intensive than the step-in stakes. If you use wood, remember to make one end pointed so that it can be driven into the ground.

d) Red and white duct tape. This is very useful for putting around posts and trees in the obstacles if the gate can't be seen from every direction. Sometimes referred to as "bands".

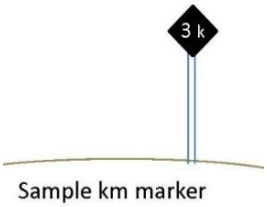
e) Brightly colored rope, surveyor's tape and/or caution tape used to mark off potential safety risks.

f) Orange spray paint that can spray downward – useful for marking rocks, tree roots, etc. that might be a concern on course.

g) Signage:
   i) *Arrows*- Usually black on yellow pointing various directions to mark the direction of the course. Sometimes additional arrows of a different color are needed for untimed sections of the course to direct competitors to start; crew to rest areas; spectators to obstacle viewing, tribunes, facilities.
      (1) Typically, on the right-hand side of the trail; sometimes directly in front of the turnout to indicate a turn.
      (2) When in doubt add an arrow – keep in mind some or most athletes are not familiar with the venue.
      (3) Make visible from a distance.
      (4) Place all arrows 3-5m before the turn to give the driver time to react and prepare.

   ii) *Start and End Section Signs* – Red and white signs labeled "Start A", "End A" or "Start Controlled Warm-up", "End Controlled Warm-up" "Start Transfer", "End Transfer", "Start B", "End B" as applicable for the event. Start/End section signs should be placed a minimum of 3.5 m wide.

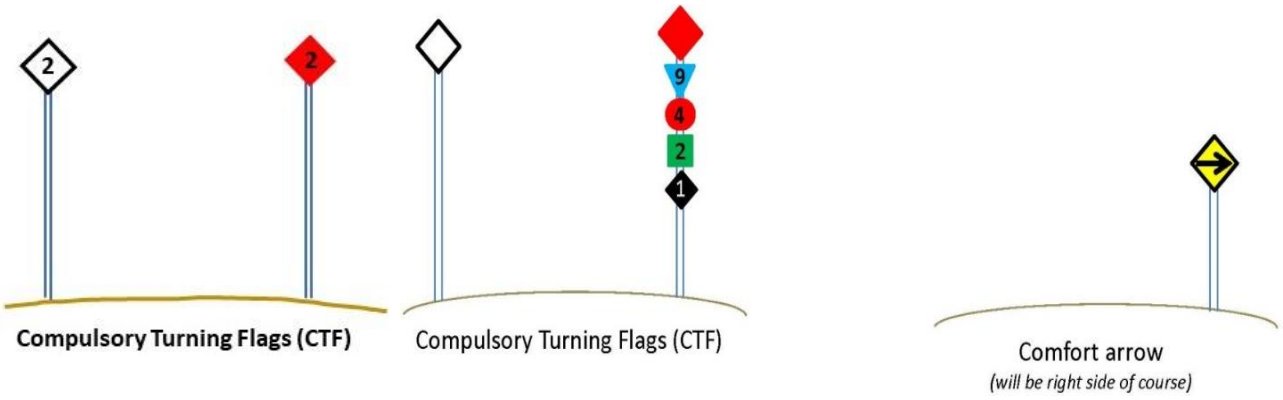
   iii) *Kilometer markers* –
      (1) Placed at the end of each kilometer for each division labeled "1 K", "2 K", etc.
      (2) Section A markers typically are the same for all divisions using the same track.
      (3) Section B markers are color and shape coded by division.
         - Advanced: blue triangle.
         - Intermediate: red circle.
         - Preliminary: green square.
         - Training: black or white diamond.
      (4) If you offer a separate VSE course, use orange or purple octagonal markers inset with the



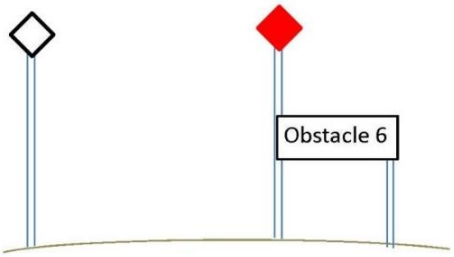
Sample km marker

division markers, as noted above.

iv) *Compulsory Turning Flags (CTF's) –* Red and white signs numbered, starting at 1 for each section. They are used to guide the competitors along the correct track on course. Either an arrow or CTF should be visible from the previous arrow/CTF. There are two numbering schemes:
(1) For courses for a single division or for additional divisions entries all using the same track, the numbers can be placed on the red and white signs.
(2) For courses with multiple divisions having differing route tracks within the section, an applicable numbered color/shape is placed below the red marker as illustrated.
A low-cost option is to use red and white paper/plastic/foam plates rather than a more permanent corplex board.



v) *Obstacle Number Signs* – i.e. Obstacle 1, Obstacle 2, etc. If that the obstacle has a name, e.g., The Duck Pond, it may be put on the same sign. These signs should be placed on the right side of the obstacle entrance.



Sample Obstacle entrance

vi) *Gate Markers* – Red and white markers lettered A, B, C, D, E, and F used in the obstacles. Obstacle gate markers can be made many different ways. Flat sign letters need to be mounted so they may be viewed from different directions. More commonly, 12-inch-tall cylindrical markers are being used that allow for a large forward-facing upper-case letter, with smaller lower-case letters wrapping to the rear. There is no official producer of these markers and many Organizers have produced these in-house to allow identification from 360 degrees.

vii) *Miscellaneous signage* – Additional signage may be requested by the course designer or jury that may be made on a computer printer and laminated or using page protectors.

h) Typical inventory

i)	12 inch yellow arrows	.....	120
ii)	Red and white turning flags – Section A	.....	25
	Transfer	.....	5
	Section B	.....	25
iii)	3 foot (1m) plastic stakes	.....	175

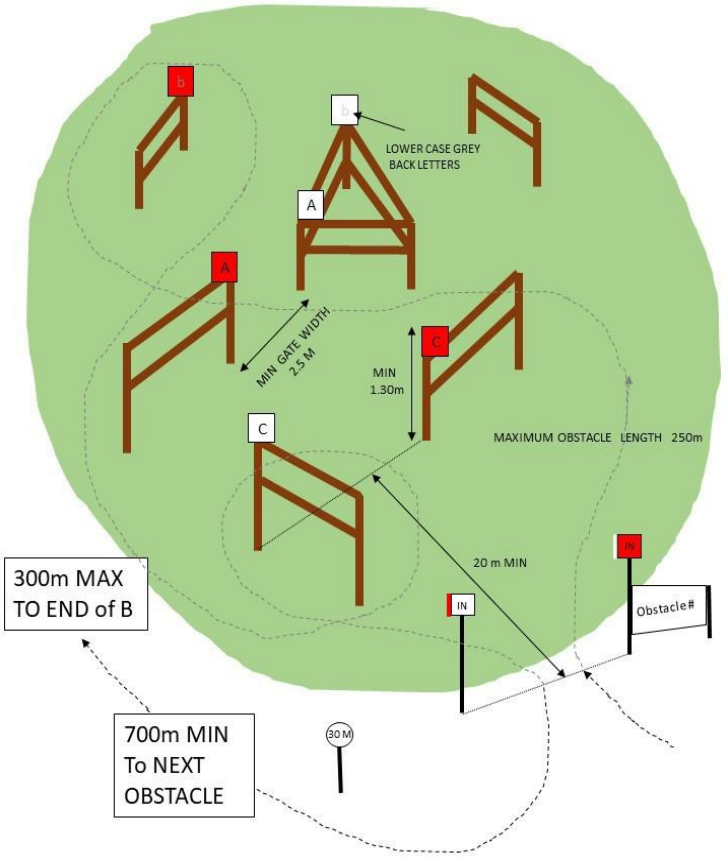
i) Guidelines for marking the course
i) Start/End section signs should be placed a minimum of 3.5m wide.
ii) Either an arrow or CTF should be visible from the previous arrow/CTF.

iii) Course arrows:
- (1) Typically, on the right-hand side of the track; sometimes directly in front of a competitor to indicate a turn.
- (2) When in doubt add an arrow – keep in mind some or most competitors are not familiar with the grounds.
- (3) Make visible from a distance.
- (4) Place all arrows 3-5m before the turn to give the driver time to react and prepare.
- (5) Arrows of a different color are commonly used to mark an untimed section of course i.e., route from the vet box to the start of Section B.

iv) CTFs
- (1) Their purpose is to keep drivers on the intended path.
- (2) Their purpose is NOT to give directions. The arrows are used for that.
- (3) Should be a comfortably wide for all turnouts (approx. 3 – 3.5m).
- (4) Can be used to clarify the path. If two openings are next to each other, do not rely on an arrow alone. Add a CTF.

v) Obstacles
- (1) Start/End gates must be a minimum of 20m from the nearest gated letter inside the obstacle.
- (2) When possible, have the next letter visible from the previous letter.
- (3) Clearly mark with an arrow what direction the course goes when leaving an obstacle.
- (4) Gates and the shortest drivable path must be a minimum of 2.5m wide at all points. 3m is commonly used.

vi) Kilometer Markers/Measuring the Course
- (1) The final course measurement should be done with a metric wheel, on foot or riding slowly on a golf cart or ATV.
- (2) It is suggested to write down the measurements for different segments of the course in case something needs to be changed. i.e., how long each obstacle is for each division, distance between each obstacle for each division, etc.
- (3) K markers are placed on the right side of the course at the appropriate spot for each division.
- (4) If a K mark falls within an obstacle, the K marker for that division is put on the red Out gate post for that obstacle. If the K mark is very early in the obstacle route, try to adjust the course slightly to allow the K to end before the obstacle begins.

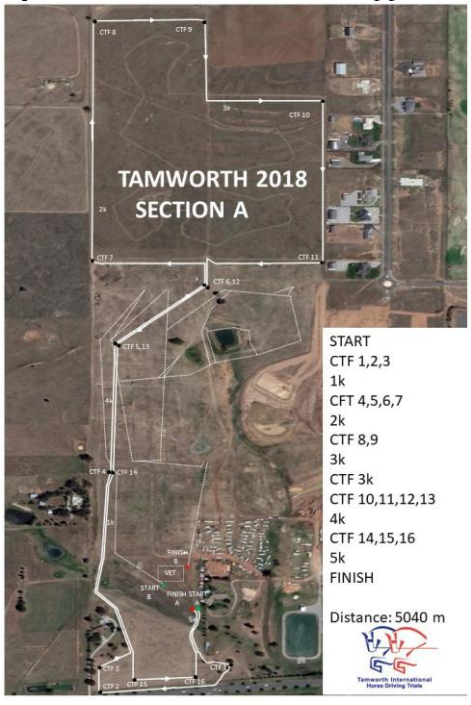


vii) Have someone unfamiliar with the course drive the marked path to look for any areas of confusion and improve with additional signage as needed.

8. Finalizing the course – The final test of any marathon is to actually drive it. If possible, try out the course with a horse and carriage. Note areas that are rougher than expected or unwelcoming to the horse. Another good habit is to take stock of the course after the event.
   a) Listen to what people have to say about the route.
   b) Look over the times to see if people were early or late.
   c) Look for trouble spots on course:
      - Did drivers take a shortcut?
      - Did one area break down more than you expected?
      - Is there an alternate track that might have worked out better?

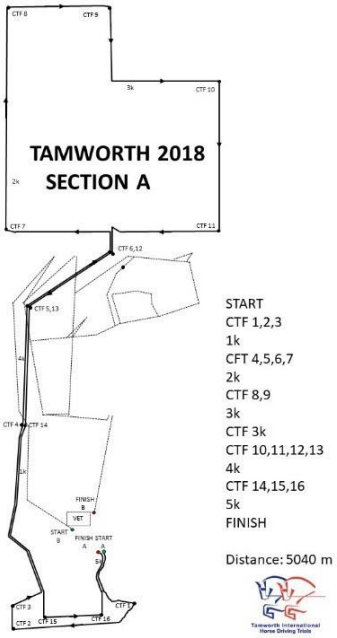
9. Timing equipment – Correct time of day is essential to running a planned marathon. Almost everyone has a cell phone giving the accurate local time for the event to run as scheduled.
   a) Section timers – All "start" and "end" clocks must be synchronized as the elapsed time for each competitor is critical to scoring. Starts are always on a whole minute, while ends are recorded with minutes and seconds as the nose of the lead horse crosses the finish line.
   b) Obstacles – Stopwatches are used for timing the turnout through the in and out gates. One is designated as the "primary" timer, a second is designated as the "backup" and a third is also a backup and used for timing holds. If an electronic timer is used for primary in the obstacles, placing and aligning the electric eyes is critical.
   c) Rest areas – A time of day clock is used for recording turnouts entering the rest area, when rechecks are due, when the veterinarian needs to perform a recheck, can release the turnout, and at the third inspection when a turnout may be released.

10. Course map, obstacle diagrams, turning flag chart – These are typically done by the course designer. It should be discussed ahead of time who is completing which maps.
    a) Maps – Satellite images of the potential course can be useful in identifying property lines, roads, buildings, and areas to avoid. These images are typically used to create the maps given to competitors, so becoming familiar with where the track is in relation to the image will save time later in the process.
    b) Obstacle diagrams – are required for each obstacle showing the IN, OUT and all gates and knockdowns (if any).
    c) CTF (Turning flag) charts – Lastly, the course designer will compile the order of CTFs, K markers and Obstacles for each division in a chart. This is published along with the maps once the TD and Ground Jury have looked for errors and approved the course.



The above maps have been generated using a satellite image. Notice that the Turn Flag Chart is added directly to the Section B map. PowerPoint may be a useful program to generate these maps.

Below are the same maps done as simple line drawings for reproduction in black and white:



11. Track maintenance – Depending on the time of year and how new the paths are that are used, there may be maintenance required. Venues may be willing to do this maintenance themselves. Sometimes it is up to the organizers and their crew.
    a) If a new area of grass track is being used, it most likely will be fairly rough. If possible, mowing the area frequently will help, but even better is bringing in a ground roller when the ground is slightly soft. The smoother the track is, the easier pulling for the horses and less jarring for the humans.
    b) The whole course should be driven within a few weeks of the event to look for any tree branches that might need to be trimmed. Consider the height of the tallest turnout when doing the trimming. (The reach of a tall person trimming branches from the bed of a pick up truck is a good guide.)
    c) If a Controlled Warm-up is being utilized, examine the footing in the area that will be designated for that section. While competitors are able to choose their path more, it is still ideal to have a smooth surface if possible.
    d) Obstacles should be constructed of safe, strong materials. DO NOT USE NAILS! All construction should be done with screws. Not only will screws add strength to an obstacle element; when there is a repair to make, screws are easier to remove from broken material.
    e) Obstacles should be strong enough to withstand impact from most entries. 8-inch diameter round posts or 6 x 6 square posts should be the smallest corner materials used to avoid breakage. Any element that is gated must be a minimum height of 1.3m.
    f) When building portable obstacle elements, smaller and lighter materials can be appropriate, as they will tend to move away from an impact instead of breaking or splintering.
    g) The rules state that there must be a 2.5m minimum drivable route through an obstacle. If a gap is less than 2.5m wide, the course may not be measured through it. The track may also not exceed 250m from start to finish of each obstacle.

h) The flow of an obstacle is critical. Building an obstacle too tight can make it hard on the animals and not very interesting to spectate. Most gaps in a well-built obstacle will be between 3 and 3.5m.

i) Using cross-country jumps is a favorite way to supplement an obstacle. The danger in this is that jumps were meant to be jumped, not driven around. Often available jumps are below the 1.3m requirement for a gate or have a sloping corner or edge that could possibly turn a carriage over on impact. It is possible, in some cases, to raise jumps to the required height.

j) Water obstacles should be shallow. The depth of a constructed water obstacle should be no more than 30 cm. A drainpipe should be installed to keep the water depth at or below the maximum allowed. A natural water obstacle can be up to 50cm deep but will drive very slowly. At ADS competitions, a dry route for Training division must be available unless otherwise specified in the Omnibus.

12. Obstacle maintenance – Even well-established venues and events will require obstacle maintenance prior to the event. Depending on where the event is being held, this may be able to be done a month or two prior, or sometimes only a few weeks or days before competitors arrive.
    a) Most obstacles are built with wooden poles/posts and boards. Each element should be checked for rot or splits that compromise their strength. Once any needed repairs have been completed, budget and personnel allowing, a fresh coat of paint makes for a finished look when the competitors arrive.
    b) For movable elements being used, their structural integrity should also be checked. Will they withstand being hit by an equine or carriage? Is there appropriate equipment available to position the elements? If they are not the most attractive, what can be done to improve their appearance?

13. Summary

Number of obstacles	5-7
Distance between obstacles	1 km desired, 700m min.
Distance between last obstacle and finish	300m
Depth of water obstacles	Max 30cm
Height of gates	Min. 1.3m
Width of gates	Min. 2.5m (3m desirable)
Maximum number of gates	Level dependent
Distance between in/out and lettered gates	20m
Length of an obstacle	Max. 250m

Chapter 5 – Cones Competition

1. General – An arena of 5000 square meters must be provided for a full cones course that may include up to three multiple obstacles and five oxers. Should that size area not be available, the Course Designer must use the number of single and multiple obstacles to ensure there is the correct distance required between each and can be driven by the intended levels of athletes.

   The Course Designer must have the ability to make a clear diagram of the course, including a dotted line indicating the official measured route, available to the competitors at least two hours prior to the first start. It is at that point that the course must be made official at CDEs. Driving Trials require the cones course to be official at least 30 minutes prior to the start.

   The Course Designer will need, not only the cones for the course, but also a number of cones for the warm-up area. Typically, having at least 70 cones available is necessary. A "full" course can use up to 68 cones alone, making use of three zigzags and five oxers. If there is intention to use reduced-width cones, they must be a different color, possibly by using colored sleeves, painting cones, or buying different color cones. The ADS rules do not have the requirement for cones to be a specific weight. However, the dimensions required by ADS rules must be adhered to.

   There are different options for numbered markers. Flat markers that require holders and specialized number blocks are common. Either solution is acceptable, as long as the Athlete can read the next marker from the previous cone. The Course Designer can help create a specific inventory and source the required equipment. Number sleeves are not legal for Driving Trials or CDEs but may be used for Arena Trials and Driving Derbies.

   Bridges may be used for Preliminary and Intermediate. Although an interesting feature, they can be costly and difficult to store if not permanently constructed in the arena. They must be three meters wide and must be declared by the Organizer in the Omnibus. A three-meter-wide water feature may also be used, providing it has sloping sides and has only 20 to 40cm of water depth. These are seen very rarely at ADS competitions.

   Electronic timing is only required for the Intermediate North American Championships. At all other ADS competitions, hand timing with a stopwatch is acceptable.

   Measuring sticks are needed for both measuring carriage widths and setting the cones. These are available through various vendors. It is recommended to have at least five volunteer cone setters, therefore having enough measuring sticks for each is required.

2. Carriage Measurement and settings choices – Carriages must all be measured prior to the Cones competition. This is usually done prior to or directly after Dressage. The measurement as well as the type of vehicle (marathon/presentation) is written on the Wheel Measurement Form.

   Cones settings are calculated using one of two methods.
   a) The *first method is "Minimum Width"*, where the exact width of the carriage is added to the division clearance (see Rulebook Article 973.1.7).

   b) The *second method is "Standardized Width"*, when the cones width comes from the "Standardized Setting" table under Article 972.1.9. This table tells what the settings will be, using a range of carriage measurements.

   Whichever method is being used must be stated in the Omnibus and it may not be changed from what is listed.

3. Warm-up area – This may incorporate an area for a judge and veterinarian to observe each turnout with enough room to execute a figure eight at the trot to determine any lameness. The warm-up area should accommodate at least 3 turnouts, be of similar footing as the cones arena itself and have at least 3 practice cone pairs available.

4. Cones arena location, footing and size – The arena location should consider proximity to the stabling area and warm-up arena. Footing is important not only for the turnout to travel but also for setting the cones. The arena requires an area of 5,000 square meters, with a minimum width not less than 40m. Should this not be possible the number of obstacles must be reduced accordingly.

   The Cones arena should be relatively level and smooth. Bumpy fields and hills can make required speeds difficult and unsafe. Grass should be mown fairly short, not only for the animals but to be sure the cones sit down close to the ground and can be easily marked with paint. Some arenas have arena footing instead of grass and should not be too deep. Many facilities can adjust the depth of their arena footing. A surface that is very hard could cause skidding, a potential hazard.

   It is suggested that a space of 110m by 70m should be used. This is desirable for building a course using the maximum number of cones, with up to three "multiple obstacles."

5. Planning a course – Cones courses have more options than in the past. A relatively flat surface with good footing is required with sufficient room for some multiples.

   The Course Designer may make use of reduced-width cones, oxers and alternate cones. The Course Designer should always consult with the Organizer to know how much equipment is available to ensure enough cones for the course and warm-up, wheel measurement and proper markers for each element on course.

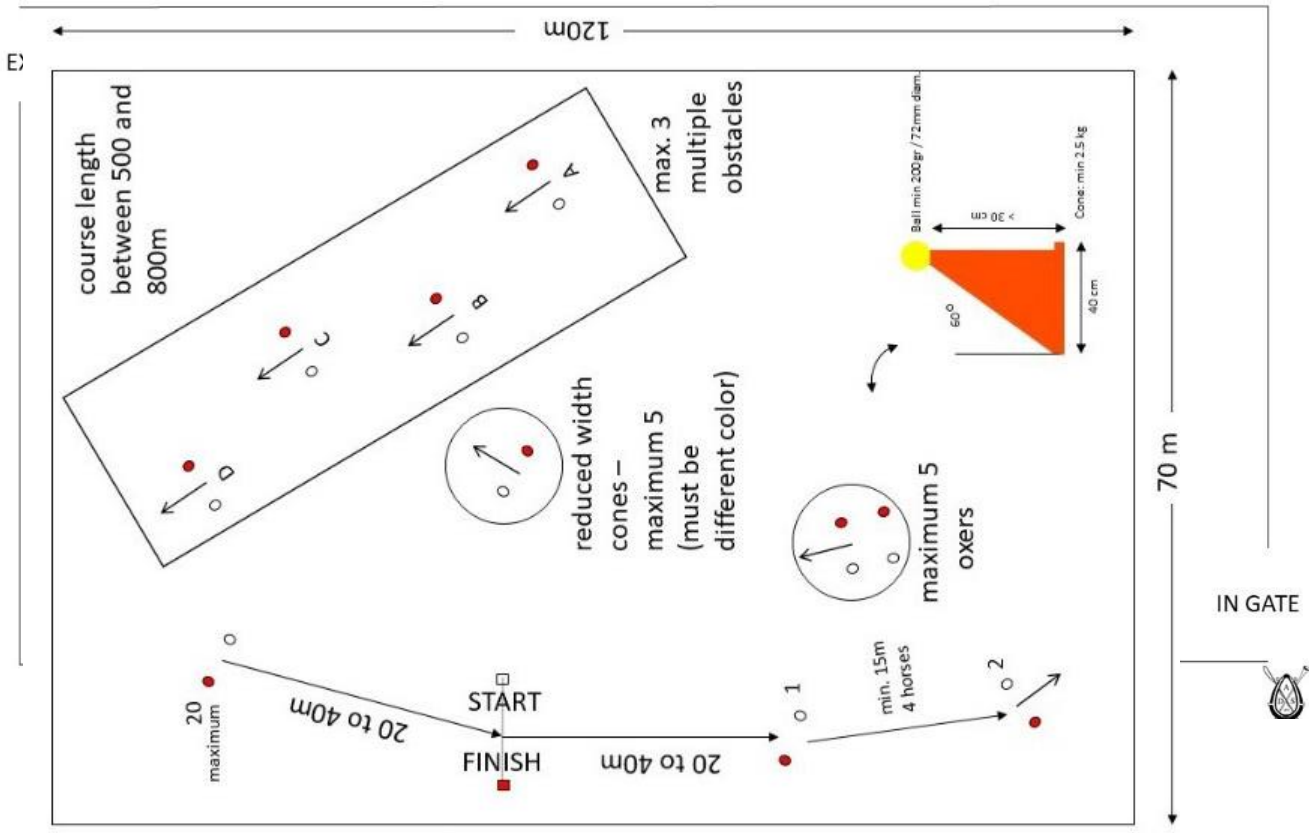
   When planning a Cones course, it works well to think of the course passing through each quarter of the arena at least twice. This will give a reasonable distance and make the course more interesting to watch. Planning the in-gate and exit to allow a competitor to finish and leave the arena at the same time the next competitor enters can also save time, especially when there is no setting change.

   The number of pairs the course includes should have an impact on the length. The legal range of course length is 500m to 800m. The more pairs, the more length should be used to maintain flow.
   a) Possible elements:
      i) Zig-Zags – set, drawing a straight line, using the front, back or the middle of the cones. The distance between the center of each pair is listed in Annex 3.
      ii) The "Wave"- set on a more compacted 45 degree alternating line, shown in Annex 3.
      iii) Bridges-
         - Can be expensive
         - Built correctly, they can add to the flair of an arena
         - Training division may use them if a non-bridge option is offered

iv) Water splashes-
- ONLY Intermediate and Advanced may use them
- Many competitors would rather not get their good equipment wet and dirty

b) Schedule should also be considered when designing a course. For example, the ADS Preliminary speed is 200m per minute. A 600m course would take three minutes to drive, within the time allowed. Add a couple minutes for adjusting cone width and a salute, the average round will take more than five minutes. A longer course will lengthen that time. Keeping the balance between course length and speed, so that the average "trip" time is close to five minutes seems to be ideal.

6. Cones specifications and example map



Example course map with one Zig-Zag, one reduced Oxer and single reduced pair.

7. Timing equipment – Electronic is preferred. Alternately, stopwatches may be used. In either case a backup stopwatch is required in the event of failure of the primary timer.

8. Typical inventory

a)	Cones	80
b)	Red and white markers – numbers 1-20	2-3 sets
c)	Blanks for oxers	5 pair
d)	Colored sleeves for reduced width cones	10
e)	Measuring sticks	7
f)	Metric measuring tape for small vehicles (under stick scale)	2

9. Course map – Needs to show location of judges, start, finish, numbered obstacles and any physical obstructions with a dotted line showing how the course was measured. The course is reviewed and measured by the TD. It is the POJ who determines the final measurement and times allowed.
The course designer will typically create the map. It must be available to the competitors at least two hours prior to the start of the competition and posted in the warm-up area.

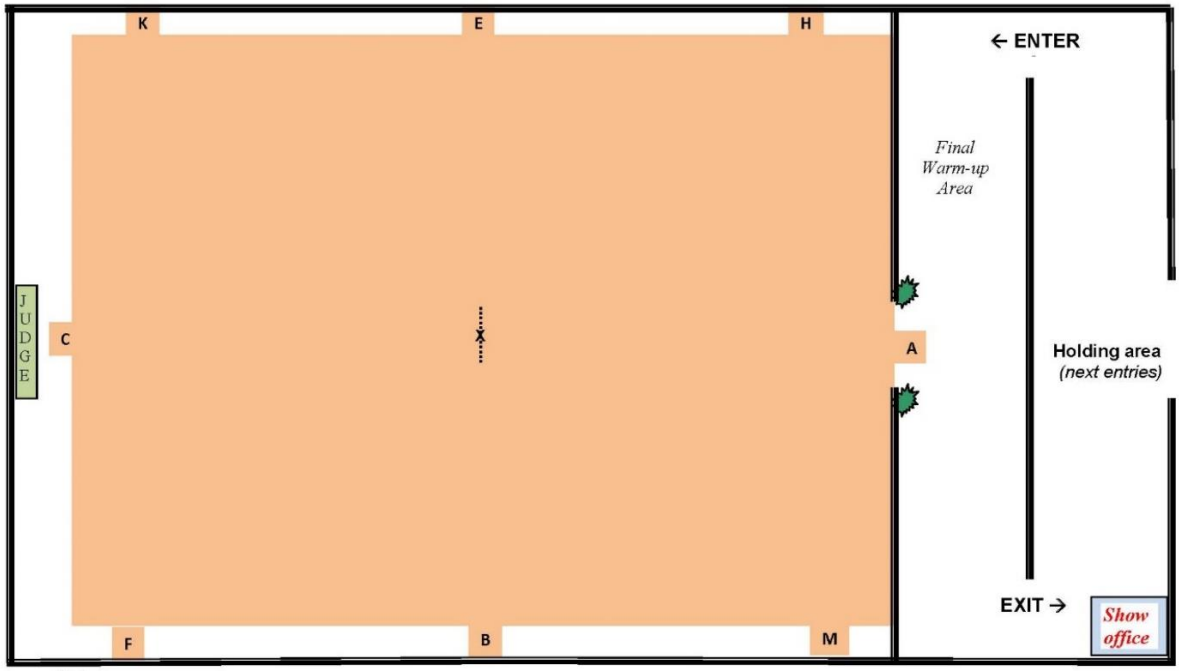
Also on the map, or an additional sheet, should be a chart with the distance, speed and allowed time for each class. Time allowed is calculated using the speeds listed under Article 975.9. See the formulas in Chapter 5.2.

10. Summary

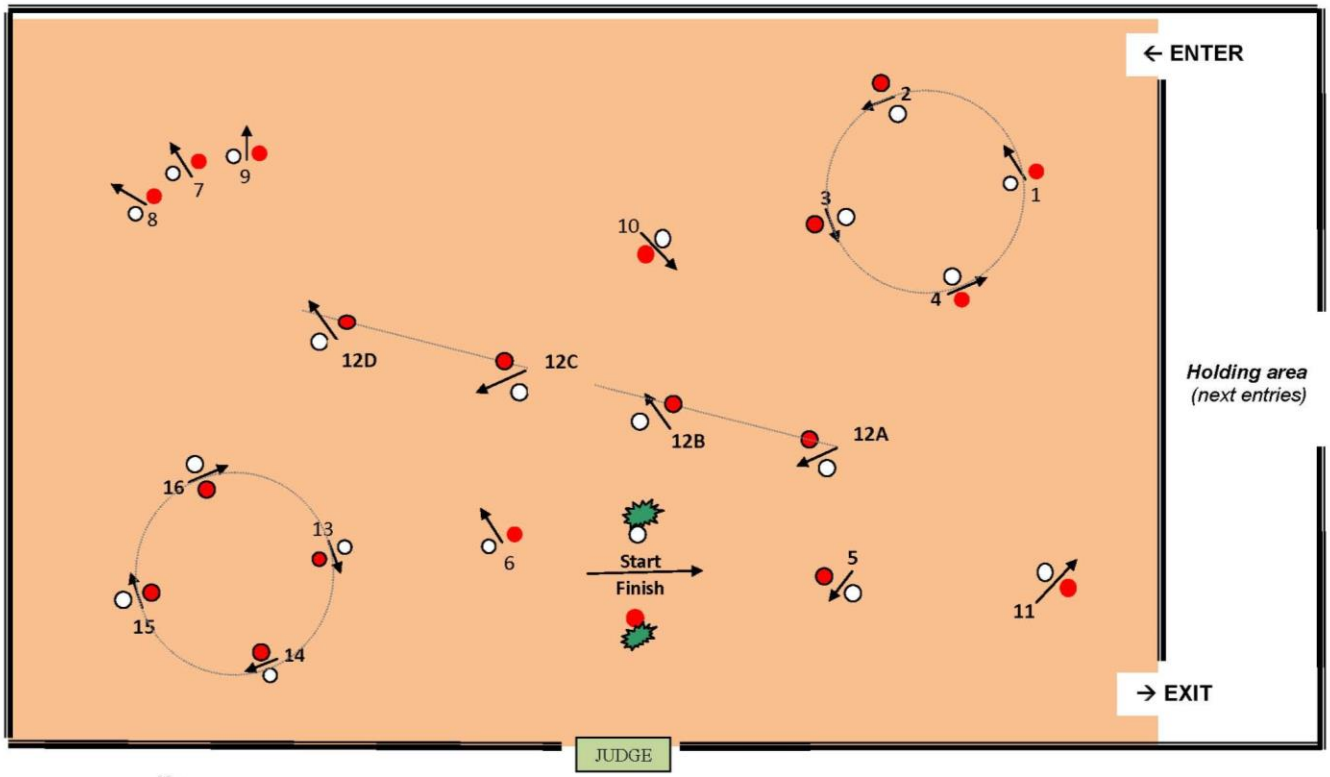
Distance from first and last cone to start/finish (972.1.3)	20m – 40m
Distance from one cone to next (974.1)	12m (multiples 15m)
Distance between elements of zig-zag (FEI Appendix 3)	11m applies to all
Max. distance between cones of an oxer (973.1.6)	3m
Max. number of oxers (973.1.6)	5
Max. number of reduced width pairs (974.1.2)	Singles: 10; pairs/multiples: 5
Max. number of multiple obstacles (zig-zags, serpentine, waves, etc.) (973.2.5)	3
Course length (972.1.5)	500m to 800m

Chapter 6 – Arena Trials

1. Venues – An Arena Trial can be conducted indoors in a single, suitable sized arena or outdoors in one or more arenas. Indoor arenas are ideal for inclement weather and can be set up for all the competitions. The preferred order is dressage, cones, marathon. Scheduling must allow time for clearing the arena, setting the cones course, marathon obstacles and for inspection by the official(s) prior to the competitors' ten-minute course inspection. Easy access for the turnout and a driveable footing are important factors. The plan for warm up and entering the arena must be made clear to all competitors.
2. Dressage competitions – ADS has size-adjusted driven dressage tests suitable for arenas less than the standard 40m x 80m. The standard 80m tests may be adapted as well if the arena size allows sufficient room for the figures. The organizer, with approval of the judge, may choose to allow competitors to warm up in the arena before the class starts, or for approximately one minute after the previous competitor has exited the arena. See *CDE Operating Handbook*, Chapter 3.1 for sample competitor briefings.
3. Sample dressage arena layout – Based on Rulebook, Appendix CD-B – letters A and C shall be placed at the center of the arena width. Letters B and E shall be placed halfway along the length of the useable space while letters M, F, K and H shall be placed 10m from the ends. The example below is for a very large arena with space for a holding and final warm up areas. In arenas where the entire space is required for driving the test with no gate at the letter A, the turnout may enter anywhere and when starting the test will approach letter A on the left rein where judging will begin.



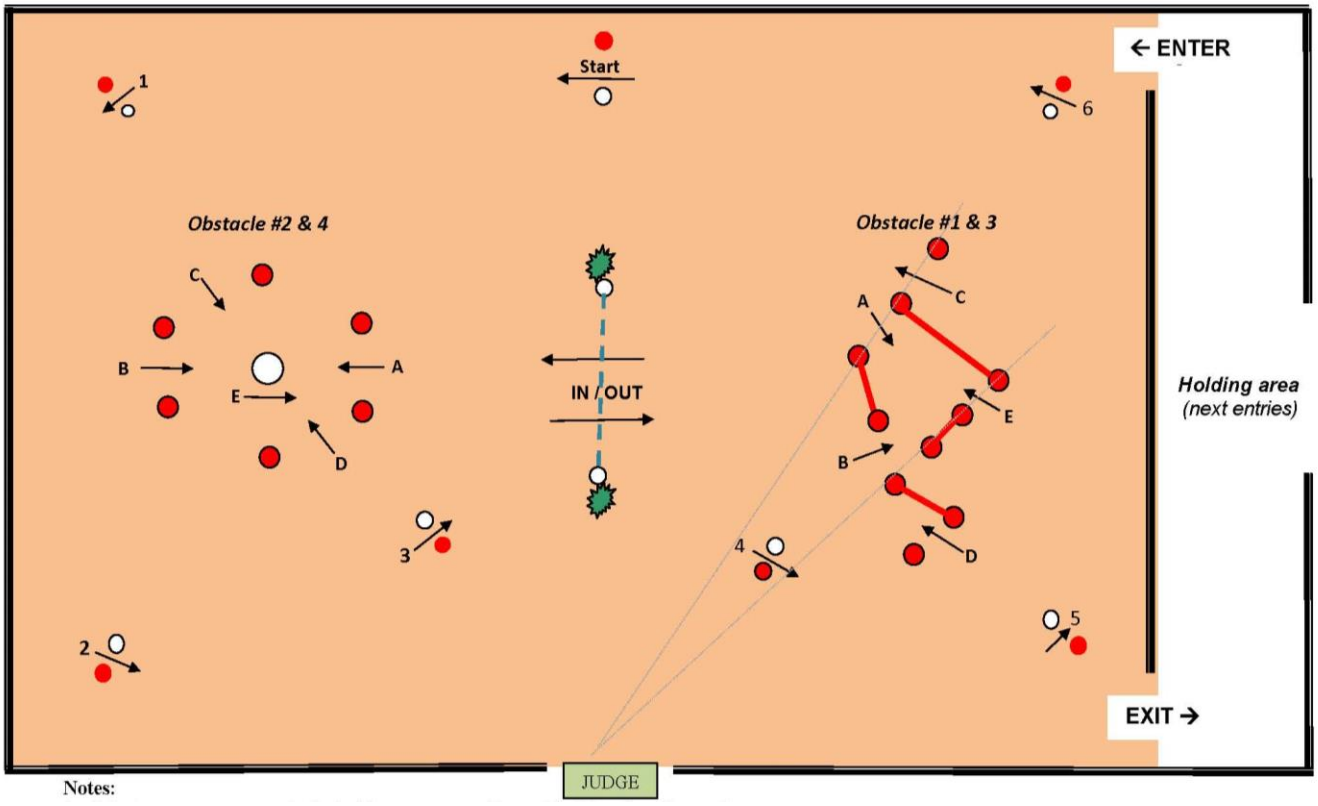
4. Sample cones layout – Based on Rulebook, Appendix CD-B. If the arena is large enough, an optional holding area can be created to organize the competitors to keep the competition flowing and provide shelter from inclement weather.



Course considerations:

a) The number of cones used is at the organizer's discretion, allowing for a suitable course flow in the space available.
b) Maximum of one multiple obstacle may be incorporated.
c) Cones may be numbered with red and white markers placed on the cones themselves in lieu of markers required in Article 973.5. One of the numbers should be rotated so the competitor can see it from the previous obstacle wherever possible.
d) The start and finish lines may not be less than 5m from the first and last cones.
e) There is no minimum distance between cones, but the overall design must enable drivers to maintain an even pace throughout the majority of the course.
f) A course plan is not required, providing a map with speed, distance and allowed time is posted prior to the course inspection.
g) One setting for all competitors may be used at the organizer's discretion based on the largest track width vehicle entered plus 35cm for Training and 30cm for Preliminary classes.
h) See *CDE Operating Handbook*, Chapter 3.7 for sample competitor briefings and Chapter 5.7 for sample score sheet.

5. Sample marathon layout – based on Rulebook, Appendix CD-B. When space permits, the optional holding area is helpful to keep the competition flowing.



Considerations:

a) The competition shall consist of four obstacles, not more than two constructed at one time. The course can be run twice to meet this requirement, or the obstacles re-lettered as #3 and #4 for driving the course a second time. A second drive depends on ability to schedule a second course inspection and the total number of competitors.
b) A common in/out gate, 3m wide shall be placed in the center of the arena.
c) The start line shall also be set at 3m width and visible to the judge/timer in line with the in/out gate.
d) Wherever possible, obstacle alignment shall be in line with the judge's view as illustrated.
e) Any number of dislodgeable elements may be used to support the obstacles.
f) Cones pairs are to direct the flow of the course and may be set at 2m width. See *CDE Operating Handbook*, Chapter 3.2 for sample competitor briefings and Chapter 5.7 for sample score sheet.

Chapter 7 – Driving Derby

1. General – A Driving Derby competition consists of one or more rounds over a course consisting of 8 to 10 pairs of cones and typically two portable marathon-type obstacles in an enclosed space. Size of the arena is at the discretion of the Organizer. See Rulebook, Appendix CB-C for officials, eligibility, turnout requirements, creating the starting order, specifications, rules of competition and penalties. See *CDE Operating Handbook*, Chapter 3.5 for sample competitor briefings and Chapter 5.8 for sample score sheet.
2. Course criteria –
   a) Common start/finish markers.
   b) A minimum of two and a maximum of four marathon-type obstacles with up to five compulsory gates each.
   c) 6 to 16 cones-type compulsory gates.
   d) A minimum of two cones-type compulsory gates between each marathon obstacle and between the start/finish gates and a marathon obstacle.
   e) Each obstacle is numbered numerically, with gates in marathon obstacles noted by alpha letters.
   f) The number of dislodgeable elements on marathon-type obstacles is unlimited and at the discretion of the official.
3. Sample Course layout