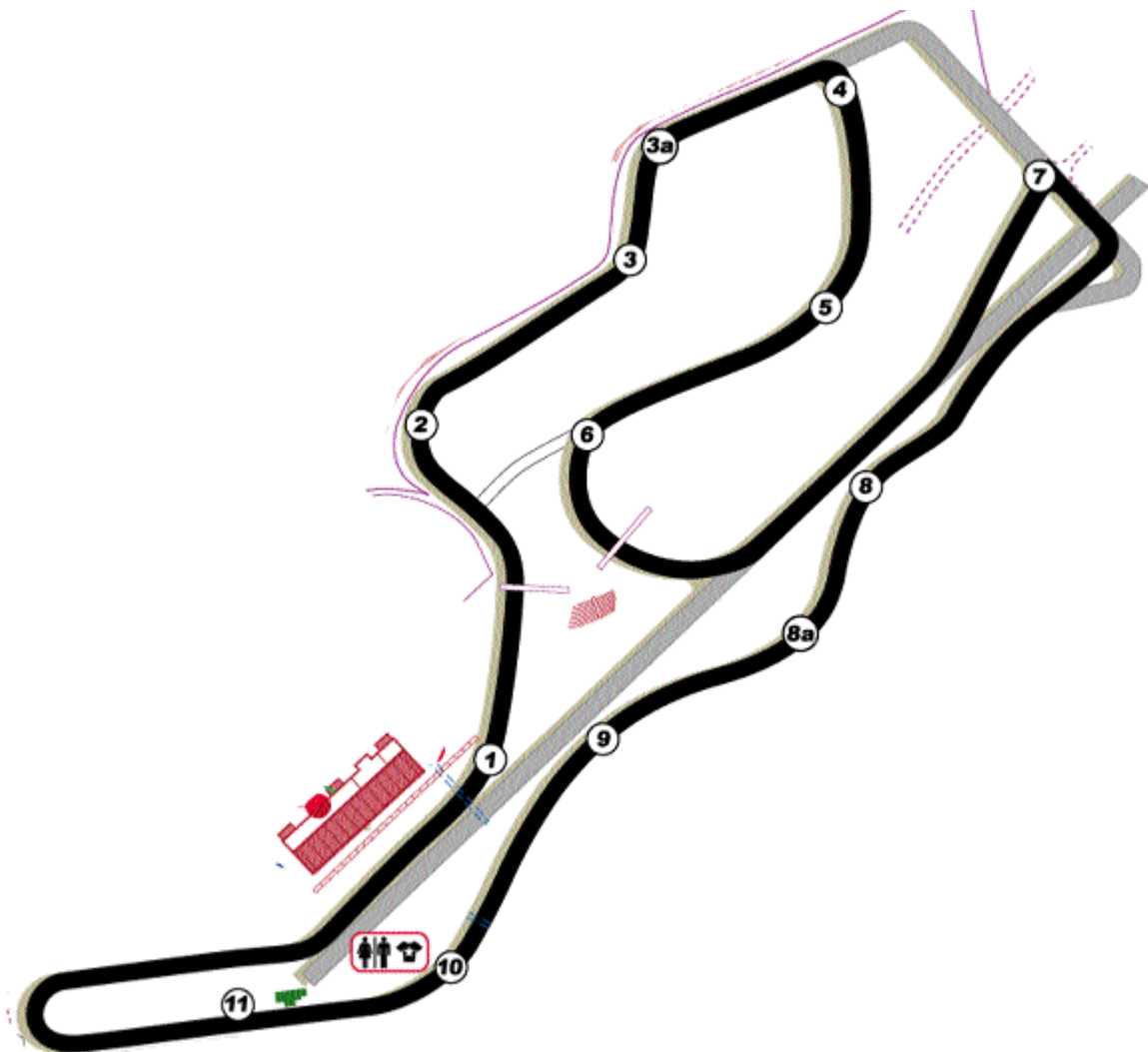


# Infineon Raceway

*DISCLAIMER: The following information is provided by the Golden Gate Region of the Porsche Club of America as an orientation to this track. It is intended to be used only as a guideline and intended only for use by drivers at GGR events. All drivers are responsible for determining the safest and best approach for themselves and their cars. Under no circumstances will the region, its officers, event organizers, instructors or other members be responsible for any consequences to any driver as a result of completely or partially following the recommendations herein. This exclusion applies to events conducted by GGR as well as other events where drivers may choose to use these guidelines to assist in learning to drive this track.*

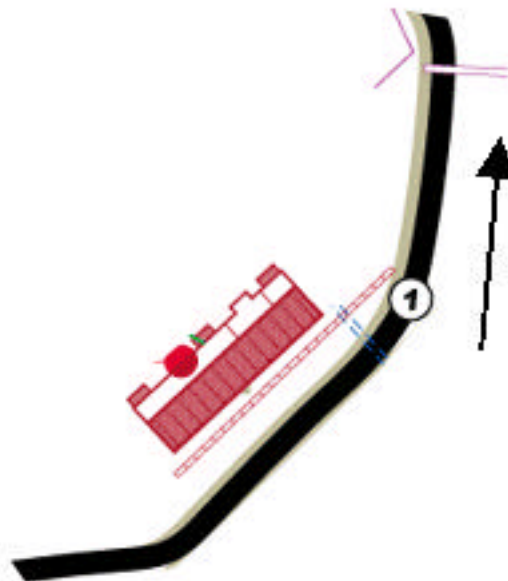
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Since 1997 Sears Point/Infineon Raceway has been undergoing rather constant revision, and the process is expected to continue for a while. The notes here were correct as of Dec 2003.

Infineon Raceway is a dangerous track. There is very little runoff room around much of the track. Due to mountains, bridge supports and close walls, there are several areas where a substantial misjudgment will end up with the car striking hard vertical obstacles at high speeds (the exits of 2, 3A, 4, 8A and 10 all fall into this category, let alone the exit of 11 which is, itself, a hard wall with no tire stack.)

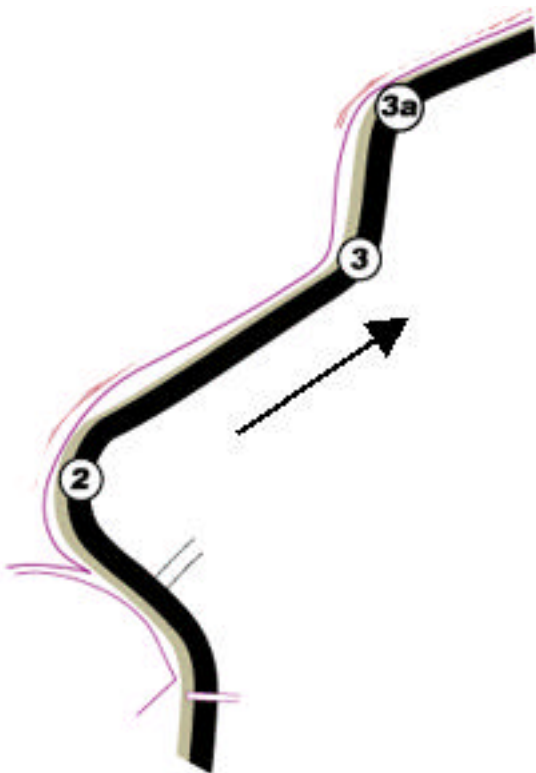
Since repaving in 2003 the surface no longer exhibits the substantial unpredictability of traction in the wet that was typical before that. However, driving Infineon under wet conditions continues to be an exercise that needs extreme caution.



### **Turn 1, just at the end of the short start/finish straight**

Veer left to come within a foot or so of the apex at the end of the hot-pit wall: The important aspect of turn 1 is setting up for the curve up the hill into turn 2. Depending on what passing was going on since turn 11, you may hit a precise apex at turn 1 or may be a few feet to the right of this. Arrange your path so that you are, as much as possible, traveling straight and lined up on the right side of the roadway as you come under where the bridge used to be. For most cars there will be a slight speed adjustment at this point. This should be gentle braking; a firm tap will likely lose too much speed. Much less braking is needed than most people will realize, as the process of getting up the hill will slow the car more than expected. Turn up the hill just as you clear underneath the bridge.

The proper path up the hill is a gentle, smooth arc that will lead to the left edge of the pavement no earlier than the end of the entry berm to turn 2. Pulling in to the left too soon as you head up the hill and you will be forced onto a line that will compromise turn 2. If you stay too far out to the right coming up the hill you will not have the advantage of the banking, likely be in some marbles and find it difficult to end up on the left side of the track.



### Turn 2, off-camber right at the hillcrest

Having come up the hill to the entry to turn 2, the turn-in point is about a car's length past the end of the entry berm. The apex of 2 is on a crest or nearly a point that slopes down in all directions. So, approaching the apex, you are headed uphill with the car tilted off-camber to the left. Be sure and get the right front tire fully into the paint. The apex is at about the middle of the apex berm. If done properly, the sensation will be that there is noticeable slip angle at the rear of the car and the car will feel like it's just sliding leftward off the mountain. However, road camber improves as you near the edge, and, if your car control is adequate, the sliding will taper off and be complete before you reach the exit. The exit will be nearly at the end of the exit berm. At the exit of 2 do not immediately begin moving to the right. Rather, wait about 30-40 yards. Doing this will provide a better entry to turn 3. In a cooperative environment it should be possible to let a car pass on the right between turns 2 and 3.

### Turn 3, uphill left

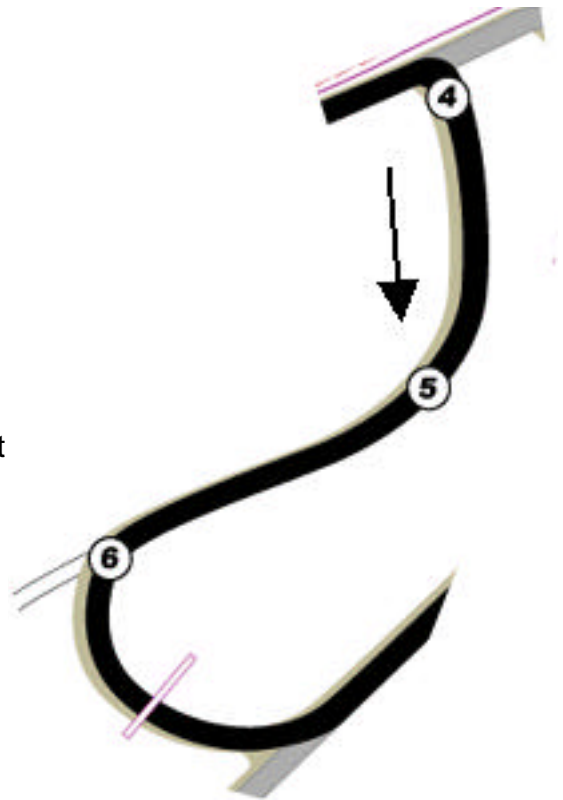
If the driver was patient, staying a long the left side of the track for a while at the exit of 2, the car can now be pointed into the entry of turn 3. The roadway veers slightly right at the entry. This section cannot be effectively used if the driver is on the right side of the track too early. Follow the path of the car across the track to the right, ending up in this slot with your eyes on your desired turn 3 apex. The turn in is just as you enter this slot. There is good banking here and the car will reward a smooth, aggressive entry to the turn. The apex point is at the end of the apex berm. This will transition almost immediately into the entry to turn 3A, so this end-of-3-apex-berm point is both the apex and exit of turn 3.

### Turn 3A, gentle right at the crest

From the apex/exit of turn 3, proceed no more than one additional car-length before turning in for turn 3A. This is a blind turn over a crest. A late apex is important here, as an early apex will put the car on a path to leave the roadway at the left, and the car will be light enough over the top of the crest that it will be very difficult to change directions. The wall to the left of the exit point is close. At the very least an early apex here will require you to stay off the throttle until you have settled on the far side of the crest. The actual desired apex point is about 60% along the apex berm and is not quite visible at the time of turn-in, but a few laps experience will teach you where to point the car. It is much better to take too much of the apex berm than too little. Missing this apex risks an exit at track-left. Nibbling hard on this apex will bounce the right side of the car a bit into the air, but it will settle without further ado. This isn't much different than nibbling just a little bit, as the car is light and unmanueverable at the crest in any case. The exit is at track left, about 70% along the exit berm. You will have enough traction to point the car down into turn 4. Done properly, turn 3A can be negotiated with the power fully on from a point before the apex.

## Turn 4, downhill right

Entering turn 4 you should see cones blocking the path straight ahead to “The Chute.” Turn 4 is a visual problem. It’s bigger than it looks, accepts a bigger arc of a path than is visually apparent and, therefore, requires a slightly earlier turn-in than seems appropriate. The turn-in point is about 1.5 car lengths past the end of the turn 3A exit berm. Turn 4 will require trail braking from almost every car driving the track, including tail-happy 911s. This is also a good place to learn trail-braking techniques. Substantial braking will be required. Begin this as the car is traveling down the left side of the track. At the turn-in point, the actual apex needed will not quite be visible, but try to be looking at the spot where you expect it to appear. Reduce the braking to a light effort (perhaps 25% of the maximum braking available) as you begin to rotate the car toward the apex. The apex is about at the middle of the apex berm and will become adequately visible not long after the car has been pointed at the apex. Be sure to get the car completely in to the apex. Failure to do this risks running off-track in an area where there is very little runoff. The exit occurs normally at the end of the exit berm on the left.

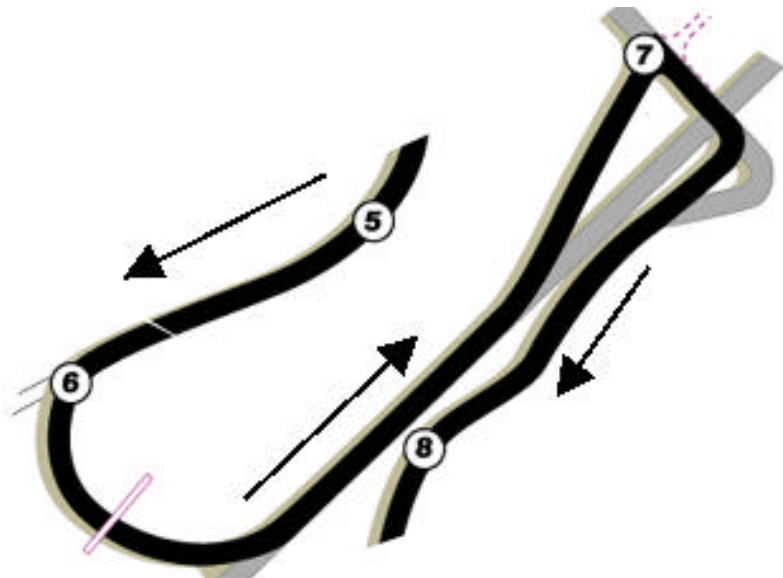


## Turn 5, sweeper towards the Carousel

While turn 5 is numbered, it requires no braking and may, depending upon the rules in place, be a reasonable location for cooperative passing. Without passing, the reasonable approach is a late apex, perhaps 75% of the way through the turn. Begin moving the car to the right side of the track as the roadway at the exit of turn 4 begins to veer rightward. The apex should be a real apex, bringing the car fully to the right side of the track. The car will then drift out not quite to mid-track.

## Turn 6, the Carousel

This is the most famous of the turns at Infineon. There are many approaches to driving it, and reasonable people may choose among these. The GGR student line enters the Carousel from just to the right of track center. A little braking will be needed just before the crest. The brakes must be relaxed while going over the crest or the lightness of the car will help the brakes lock up, leading to a lack of steering control. As the car settles on the other side the brakes are reapplied. All of this should be possible in a straight line, while maintaining a car-width's distance from the right side of the track. The right side of the track is rarely used and will have marbles, providing very little traction. Once braking is complete, the left turn is initiated, squeezing the car ever more inward, applying throttle as much as possible without forcing the car wide from the apex. The appropriate apex is near the end of the apex berm. This will lead to a safe exit. Once it is clear that the apex will be achieved, most cars can apply full throttle. Continue the activity of turning and gradually letting the car out to the right to the exit.



The alternate approach to turn 6 is tricky only in the setup of the turn, and is actually easier to drive once you are in the turn. It involves using a later apex for turn 5 so that the car can be brought back almost entirely to the right side of the track before the crest leading to the Carousel. Then, just when the standard line (above) would have the driver begin the pre-crest braking, the car is, instead, turned to the left for an extremely early apex. Throttle is maintained over the crest of the hill. Given the path the car is now on, there is plenty of time for braking once the car settles on the far side of the hill, since there will be lots of track, the fat part of turn 6, in front of the car. As the car settles, apply the brakes to adjust the speed and begin the turn to the left. At this point you join up with the same line being used by the standard method and the rest of the turn is the same. This is very similar to the double-apex line used by some for turn 2 at Laguna Seca.

### **Straight towards turn 7**

After the exit of turn 6, and depending upon the passing rules in effect, pass cars or let them by as needed. Passing may be done safely from either side. By the mid-point of the wall that forms the left side of the track move the car fully left.

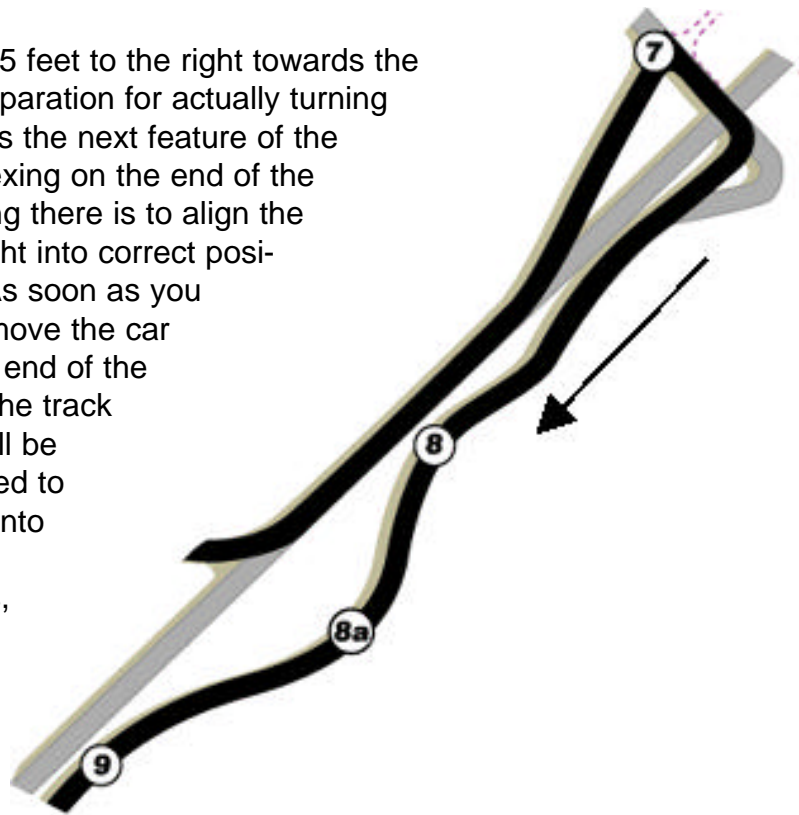
### **Turn 7, hairpin right**

Turn 7 is a wide and very open right hairpin turn. Since much speed can be brought through turn 6 and added to up the straight, serious braking will be required for turn 7. In most cases, the turn-in will be towards a neutral apex at the berm on the inside as turn 7 is initiated. It is not critical to hit this apex precisely. Rather, we are just getting the car set to float out into the middle of the turn and prepare for an aggressive move towards the second apex. Let the car move out to the left as it is rotated to prepare for the turn 7 exit. Use a slight throttle-lift as needed to help the car rotate and move the car toward a slightly late apex in the second part of the turn. Aggressive throttle can be used on the correct line.

### **Preparing for Turn 8**

The exit of turn 7 begins a series of moves that will continue, without much pause or relaxation until the completion of turn 10. The first step is, as soon as the car is settled from com

pleting turn 7, move the car 3 to 5 feet to the right towards the middle of the track. This is in preparation for actually turning on the slight kink to the left that is the next feature of the track. Make this gentle turn, apexing on the end of the apex berm. The reason for turning there is to align the car so that it can easily be brought into correct position for the beginning of turn 8. As soon as you have apexed on the left, gently move the car back to the right, apexing on the end of the berm that is on the right side of the track before turn 8. For most cars it will be advantageous, as the car is turned to the left at the kink, to short-shift into a higher gear (typically 4th) to avoid having to shift in the esses, which may unsettle a car at a most inopportune time. Just past the right-side apex berm the car is ready for turn 8.



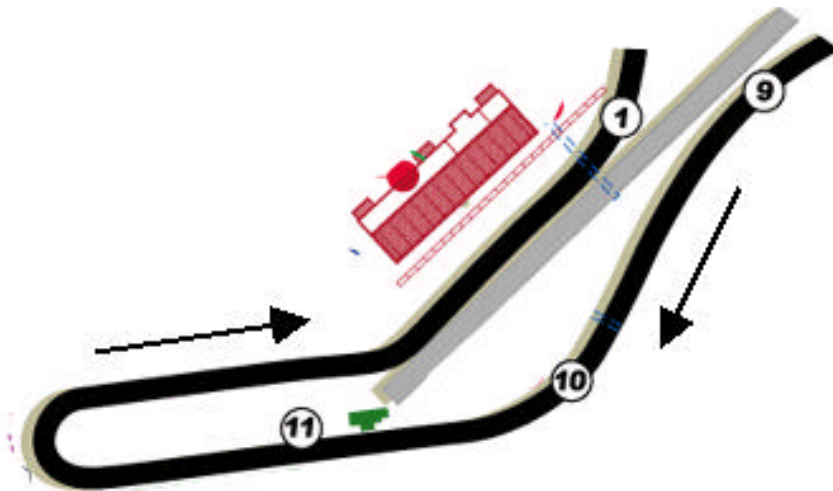
### Turn 8, gentle left, first of the esses

The entry position is described above. Turn in and proceed to an apex near the very end of the apex berm. This effectively forms the entry to turn 8A.

### Turn 8A, gentle right, second part of the esses

While completing the apex of turn 8, bring the wheel to dead-center for a very brief time, perhaps .5 to .7 seconds depending on the stiffness of the suspension (softer cars need less time with the wheel centered, but a more gentle action in moving from turning left to being in the center to beginning to turn right. This centering allows the car's suspension to settle. Failure to take this approach will result in overshooting the suspension as the car is moved directly from turning left to turning right. After the brief pause of the steering wheel, move the car into a right turn, pointing towards an apex near the end of the apex berm. At this point (already when turning in, not just when the apex has been reached) a quick evaluation is needed. If you have executed everything properly, you should be in a position to hit that apex. If that is not true, reduce your turning effort, back out of the throttle, get the car slowed down and then get back into your activity of practicing.

Assuming that you have a clear and likely path to the appropriate turn 8A apex, you should be able to apply full throttle before or at the apex. The apex is near the end of the raised section of the apex berm, about 70% along the length of the apex berm. Continue making the car turn, but relax the turning effort somewhat as the car gets light when the roadway drops away at the exit of 8A. The proper exit point is near the edge of the roadway on the left, after the hill flattens out into the entry to turn 9, near the end of the exit berm.



### Turn 9, left sweeper around the mountain

The exit of 8A forms the entry for turn 9. Since there is neither need nor time to move the car to the right, the entry happens at the left, on the inside. As the road begins to turn to the left, turn the car to the left. There will be a steady steering input (find a position of the steering wheel and hold it there) that will allow the track to fall away to the left (the car moves towards but not all the way to the center of the track) and then the car will move back to the left of the track (or, rather, the track will come back to the car), all this in one arc without moving the steering wheel. From this description it seems that turn 9 doesn't have an apex, but that isn't quite true. It's one of those turns (or part of a sequence of turns) where the apex and the exit are the same point. Be wary of letting the car too far to the right while in the middle of turn 9. Speeds are very high through this section and the right side of the track area will likely have reduced traction due to marbles. An inability to get the car back to the left will mean that you enter turn 10 from an inside approach and early apex; this would be highly inadvisable.

### Turn 10, right dogleg onto the back straight

Having completed turn 9 at the left side of the track you will have a very short section during which to brake for turn 10. Turn 10 is a fast turn, but the closeness of the walls on both sides makes it dangerous. The appropriate approach is to gently use the brakes to adjust the speed downward somewhat, turning in at the end of the entry rumble strip and early enough to be very sure of achieving an apex, about 70% of the way around the apex berm and at the end of the raised part of the berm. The throttle (except for extremely powerful cars) should be completely down well before the apex point. If a proper apex is achieved, the car will continue to the left side of the roadway with adequate room from the edge of the pavement.

### Back straight

The straight between turn 10 and turn 11 is usually a good spot for cooperative passing. Several cars can be let by at this point without difficulty.

### Turn 11, hairpin right

Substantial braking is required for turn 11. You will want to drive the car deeper than you might, at first, believe. The objective is to position the car for a properly late apex, since this turn precedes one of the longest straights on the track. The two notions to keep clearly in

mind during turn 11 are a conservation of momentum (do not slow the car more than needed) and a sense of getting it pointed where you want to go before applying power. Many people, especially including good 911 drivers, want to apply power as soon as the turn is initiated. Since you are not pointed in the direction you want to go, this is counter-productive. Rather, once you have completed braking and initiated the turn (and those may overlap as some cars will do turn 11 better with some trail-braking), use the steering wheel at the limit of traction to complete the turning as quickly as possible. If the car is plowing (and trail-braking has been completed), back off on the steering wheel. If it is turning very easily, add more steering input. Once the car swings around through about 120 degrees of the 180 degrees that have to be turned, begin adding throttle. If you are looking toward the exit point (at the wall and down the track beyond it) you will have a sense of how much throttle you can add and maintain the proper path. The exit will be near the wall, leaving whatever room is required for your comfort. The apex is typically on the next-to-last pile of tires. You may drive in the paint, but be aware that it offers less traction than the unpainted surface, especially in the wet.

### Front straight, first part

The front straight is a key traditional open-passing area. If you need to pass cars or let them by, do so. However, within this activity, try to stay as much as possible on a proper line for turn 12.

### Turn 12, end of the first part of the pit wall

As soon as the exit of turn 11 is complete at the wall, move the car to the right, away from the wall. Before the end of the wall is reached, turn the car to the left, apexing on the wall corner. You should be able to achieve this apex within a couple of feet. This will put you on a line that requires very little turning in the short start/finish straight, letting you arc out to the right, hold straight for a little bit, then prepare for turn 1.

