**ONCE MORE, WITH ATTITUDE** If you want to drive Alan Wilson's signature project, Miller Motorsports Park in Tooele, Utah, and you don't want to bring your own ride, you can sign up for the Ford Racing High Performance Driving School. Here we see 'Stangs going through the Attitudes complex, approaching Bad Attitude.


*His name is Alan Wilson, and his creative vision seems to have touched every recent road course development project in America. He started his motorsports career as a racer, but eventually segued to track management, and is now a full-time designer and development consultant, helping existing tracks become better, and new tracks get built.*

*Some of his babies include Miller Motorsports Park, Barber Motorsports Park, Mont Tremblant, Gingerman Raceway, Mid-America Motorplex, Calabogie... Oh, forget it! If we were to list every North American track that Wilson has put his hands on, we'd run out of space. So let's let Wilson speak for himself. The man is fiercely passionate about creating challenging circuits and improving driver safety. On the next eight pages he provides a clinic in track theory and design.*

## THE TRACK DESIGN PROCESS

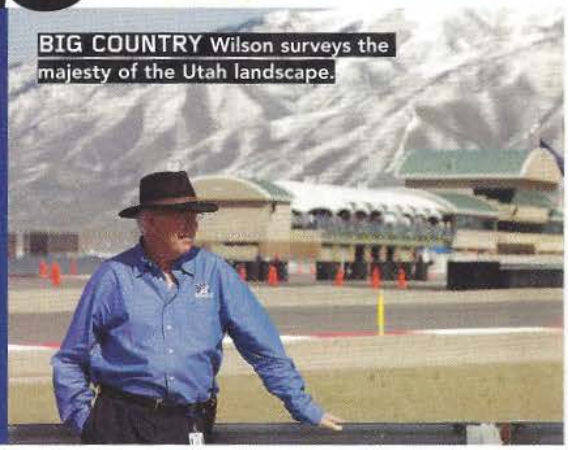
**JP: What's the first thing you create when track design begins in earnest?**

AW: Well, I do a plan, a very detailed design, into which I incorporate all the elements that I want—the exact radiuses, the exact outline of the track, the precise safety systems, the cross grades that I want, the elevations that I want, the longitudinal changes that I want. I also give clients the floor plan, or the footprint of their buildings and the content of what the buildings need to be. And I present this—and this takes several months to do, as I'm going backwards and forwards with the owners and with the engineers and the architects during that period.

Eventually I provide them with an AutoCAD layout that's very, very specific—I mean accurate to the foot. And their engineers then take that, and turn it into construction drawings, grading plans, drainage plans, EPA submissions, etcetera. At that stage, I also provide a manual that's about 400 pages thick. It covers everything from FIA standards, to guidelines on paving, to what barrier systems to use, to how to build tire walls—all the things that an engineer who doesn't know racing will need to make his engineering appropriate to racing.

# WORKING ALL THE ANGLES

**How do you design thrilling, challenging, award-winning road courses? Alan Wilson, America's premier track designer, shares his expert secrets, and reveals the key to creating that elusive—but unmistakable—sense of rhythm and flow.** Q&A BY JON PHILLIPS



**BIG COUNTRY** Wilson surveys the majesty of the Utah landscape.

**JP: When you view the plot of land, how do you decide what goes where? Are there best practices that tell you where elements should go?**

AW: Without being facetious, the last thing I do is do the layouts of the racetrack. I don't want to say layout is least important, because obviously it isn't, but there are many other factors that control what you can do with a racetrack.

For example, the size of the property is crucial. You can't get a quart in a pint pot. I've had people want to put an eight-mile racetrack on a hundred acres. Come on. You've got to look at what the property tells you. For example, you try to put your paddock near the main road. Simple as that, because you don't want a long, winding connecting road that costs almost as much as the track. The paddock's got to be flat, so you're not going to put it on an area that's going to need major drainage or major grading. So you need a minimum of ten acres of relatively flat, two percent grade on your paddock. This defines a piece of land where the paddock is, which then defines where the main straight is, not the other way a round.

**JP: Besides track length and paddock placement, what other elements influence design decisions?**

AW: You've got to look at where water drains. There's a relatively new Federal requirement that states any water that comes onto the property from the sky has to be retained on site. Which means you've got to design a retention pond into the design. Which also means it's got to be at the lowest point on the property, because water doesn't flow uphill. That defines a fair amount of space that you can't use for the racetrack.

So I look at that. I look at rock outcroppings. I look at marsh areas. I look at running water. I look at obvious wasteland areas. I look at steep grades, because the steeper the grade, the more expensive it is to work with. Not just the grading, but the drainage, and the safety area. So that defines what I can do with the property. With a lot of it, I can just look at the property and get a feel for it. But many times I've got to work off aerial photographs and topos. You know, it's like, "There's a beautiful tree." Yeah, I'm going to try and avoid that tree.


**ALAN ON MMP:** "This was essentially the first full concept layout—a packaging plan where I was trying to fit everything we had conceived into a cohesive operational manner. The track was also running clockwise before we switched direction, mainly because I needed the primary spectator side to be on the east. Note that corner shapes were not meant to be finite, and there was no attempt to establish grading needs. The drawing was done in AutoCad Light 2004."

Once I've got all the things that are site-specific control elements, then I fit the track in around those. And I've never yet been able to follow the client's preliminary layout, vision, in any meaningful way.

**JP: OK, but once you do know what you have to work with, how do you actually decide, say, this is how we're going to link corner two to corner three to corner four?**

AW: The first thing I say to them is, "What type of track do you want?" If I was designing a track like Herman Tilke, where Formula One is the be-all and end-all, and everything has to fit into it, my tracks would look very much like Tilke tracks—because Formula One is very much point and squirt. A corner that's slow in any other car is fast for a Formula One car. However, a corner that's fast in a Formula One car is lethal for anybody else.

So I try to identify what type of cars and bikes they want. Remember, I do everything car and bike. It must work for both. So inevitably I say to them, "Look at what your American market is, and who is your customer," and they'll say "CHAMP Car, IRL, ALMS," and I say, "They come three days a year—who is your *real* customer?" And the customer comes down to the sport bike rider, and the Porsche or Corvette owner. These are customers who will bring to you, across the broad span of business, 80 to 90 percent of your cash revenue.

**JP: The track day junkie. The club racer. What are their special requirements?**

AW: Even with them there are control points, because the guy with the Formula Ford, or the Formula Atlantic, or the D Sports Racer—those cars go like hell in a straight line, and they stop on a 10-cent piece. And they go through corners incredibly fast. Just think how quick one of those typical single-seaters is today. Now, if you designed a track purely for them, the guy who arrives in a Cobra, or a big '60s Vette, he's going to hate that track. He's going to run out of brakes, he's going be real slow through the corners. He's never going to get a flow through a corner that's designed for a single-seater.

So I put my single-seaters at the lowest part of my design spectrum—not because I don't like single seaters, but because they're the most likely to be able to cope with conditions that aren't specifically designed for them. That means I try to do tracks that are much more amenable to historic type cars and motorcycles. Tracks with a lot of flow to them. I would love to be able to say that all my tracks flowed beautifully, but there's a downside to a track that's too easy. People come to it once, and they say, "How boring," and they don't come back. Racetracks today have to develop consistent business, so there's got to be a challenge to it. And in today's era you cannot do a challenge that's a danger challenge. You've got to give the *illusion* of danger, but you cannot create a dangerous situation.

**JP: Such as? Describe a dangerous design.**

AW: Every race driver will boast how he loves these terribly difficult, challenging corners with a steep drop off. Yeah, they love to talk about it, but they don't like driving it. They may tell you they do, but they don't want to wreck their car. They don't want to hurt themselves. So you've got to give them a challenge that is no longer a safety challenge. The only way I've found to do that is to make it technical. If anything, I've got a reputation for tracks that are technical and frustrating to learn.

**"Now, I don't get that—you will never get that—on a decreasing radius corner, because, by definition, as you hit the apex you're suddenly working really hard to get out."**

## FLOW VS COMPLEXITY

**JP: How do you define a technical track?**
AW: Multiple radius. Multiple grade changes in the radius. Blind corners. Now, a lot of people don't like blind corners, but they are terribly technical because you better get them right, OK? You better turn them right, or else you're screwed. So the blindness of a corner is part of the technical challenge. I don't like increasing radius corners, but I do them occasionally, and I've got two of them here at Miller. And they're real challenges, because otherwise the track could be too boring.

Now, there are lot of people who, when they drive one of my tracks for the first time, really don't like it. Then they find the key, the flow through it. But I've had a lot of people get really angry with me on day one, because they haven't sussed what the secret of that corner is.

**JP: Because it's simply too technical?**
AW: Because it's too technical. We've got a corner at Miller called the Three Ds—Devil, Demon and Diablo. It's a triple radius, and it's only got two apexes, but you think there are three apexes, but there's not, and it drops away from you on the exit. Now, I've got a tremendous respect for my wife's driving ability. She's driven at every level. After her first 20 minutes, she's got a lap record at this track she's never seen before. But after half an hour, she pulls me aside and literally shouts at me, "You've done it this time!" But then, eventually, she clicked, and then she thought it was wonderful. The corner requires a totally different approach to what you first think. A lot of people now love that corner, but, boy, they give me hell the first time they drive around it.

**JP: How do you define this elusive flow? And how do you create flow?**
AW: This is it: You should go down a straight, and as you approach a corner, there should be a rising level of apprehension. Not fear, but apprehension about getting it right, and having the courage to go into it at the speed you need to go into it. And that apprehension should increase all the way into the braking zone. And you should be holding on to that apprehension, which becomes tension as you go to the apex.

Now, think of the mental thing that goes through your mind. Once you hit the apex, you should scream, "Wow... I've got it!" And coming out the corner, you should have this grin all over your face, with—in the car that I like—slide opposite lock on full power. You should go in with anticipation, get the wow factor as you hit that moment of "I've done it," and then sheer exhilaration coming out. That's the ideal flow. Now, I don't get that—you will never get that—on a decreasing radius corner, because, by definition, as you hit the apex you're suddenly working really hard to get out. So it's more a case of, "Oh shit, oh shit, oh shit, oh... Yeah, I got it." The penalty is really high.

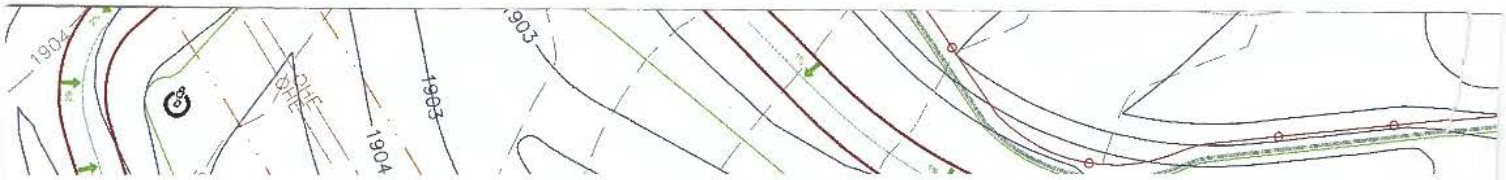
The advantage to this, in a spectator situation, is that when you throw away the entrance to the corner, you always find somebody to overtake. They might understeer off the outside of the corner, and let you overtake and come out ahead. So that's why I put some non-pure-flow corners in, because a pure flowing corner is a terribly difficult corner to overtake in. The corner that encourages overtaking has got drastic speed changes and multiple potential lines. There might still be one *good* line, but also several lines where you can scrabble around, which means that a good driver can get around a lesser driver, even if the lesser driver is on the ideal line.

**PROTOTYPICAL** Miller was host to the Prototype and GT cars of the American LeMans series.

**JP: Nonetheless you still design those vexing, "non-flow" corners. What's the motivation?**
AW: That's sort of the other side of it. In every corner, you should be able to find a flow line. But part of the technical aspect that I've learned—and I like to think I've got it in some corners, and I know I can get it better in future corners—is the throwaway going in. The inexperienced driver is going to charge this corner, and when he gets to the apex and starts coming out, he realizes he's gone in way too fast, and he's screwed the exit. His penalty is understeer, or oversteer, or scrubbing speed at the point when the guy who's done the corner right is on full acceleration.

## ELEVATION & CAMBER

**JP: Let's briefly go back to the track layout and creation. When you're faced with land that has absolutely no elevation—**
AW: OK, Miller was classic. Miller was as flat as a pancake. But we moved a lot of earth and we created the elevation change. The lowest I could go down still had to be higher than the northwest corner to enable water to flow, so I was limited to the amount that I could go down into the ground. So what I did was take the earth that I




## "You've got to design the track so that the guy in the Porsche can spin, and then go back into the pits, change his underwear and carry on..."

removed, and built it up. We ended up with Attitude, which is our version of Laguna's Corkscrew. It's not as steep, but it's a very distinct drop-off. Nonetheless, all the time I'm focusing on where the water's got to go to, so any elevation changes also have to work as surface drainage.

**JP: So how would you rate the elevation that you were able to create?**
AW: Most people who've been here have said it's flat, but it's not. Now, it's certainly not Road America. It's definitely not Barber. The cost of doing that would have been multi, multi, multi millions of dollars. But you *can* make a flat track work. Now you take a track like Mid-America, where the highest grade change is the curvature of the track, which is two inches, OK? I've never dealt on a flatter piece of property. There they didn't have the money to put in artificial elevation. And the water table from the Missouri River, which is about 10 miles away, is five feet under the track. So there's no way we could go down to build. So we ended up with a flat track, and tried to make it as challenging as I could from the layout.

**JP: Will you ever design in negative camber to make a corner more difficult?**
AW: Very seldom do I do negative camber on a corner, and mostly it's to accommodate drainage. There are a couple of times I'll do it to add complexity, but it works against the flow. Yeah, I've got a couple of corners here at Miller that have negative camber, but one of them was specifically because of drainage, and the other because it was appropriate to do it. I like a corner with a lot of cross camber because it helps you get round the corner. It also creates multiple lines. The most I'll ever go [with negative camber] is 2 percent.

**JP: Earlier you alluded to some tracks being simply too easy. Could you name a few and describe why?**
AW: Single radius corners that are separated by straights.

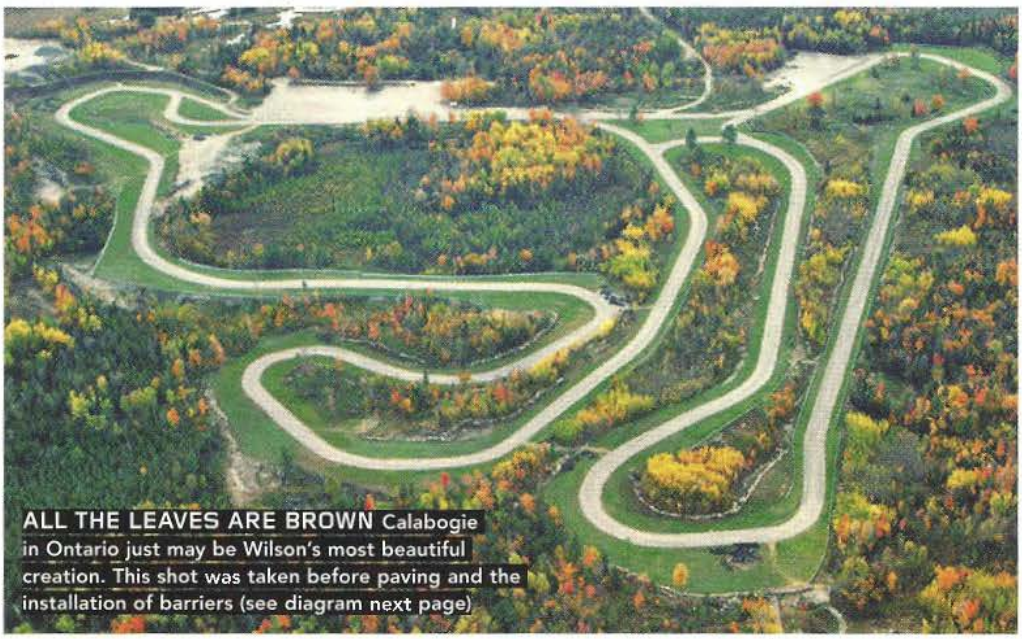
**JP: So like a Laguna Seca, maybe?**
AW: No, Laguna's got the challenge of the Corkscrew. I think the infield of Laguna's pretty easy, but once you get over the top and into the Corkscrew and down to Nine and down to the final corner, I don't think that's easy. You know, this is sort of a sacrilege to say, but Road America is actually one of the easiest tracks. It's got that back straight kink which is scary and fast. So it's not all easy, and it'd be wrong to say it's an easy track. But it's got some corners that are just straightforward—90 degrees, single-flow things. It doesn't make it a less pleasant track. It's just not the most difficult track to learn. I know if that gets printed I'll be pounced on because everyone loves Road America, and so do I. But it's not a difficult track per se.

### YOUR MOST TECHNICAL TRACK?

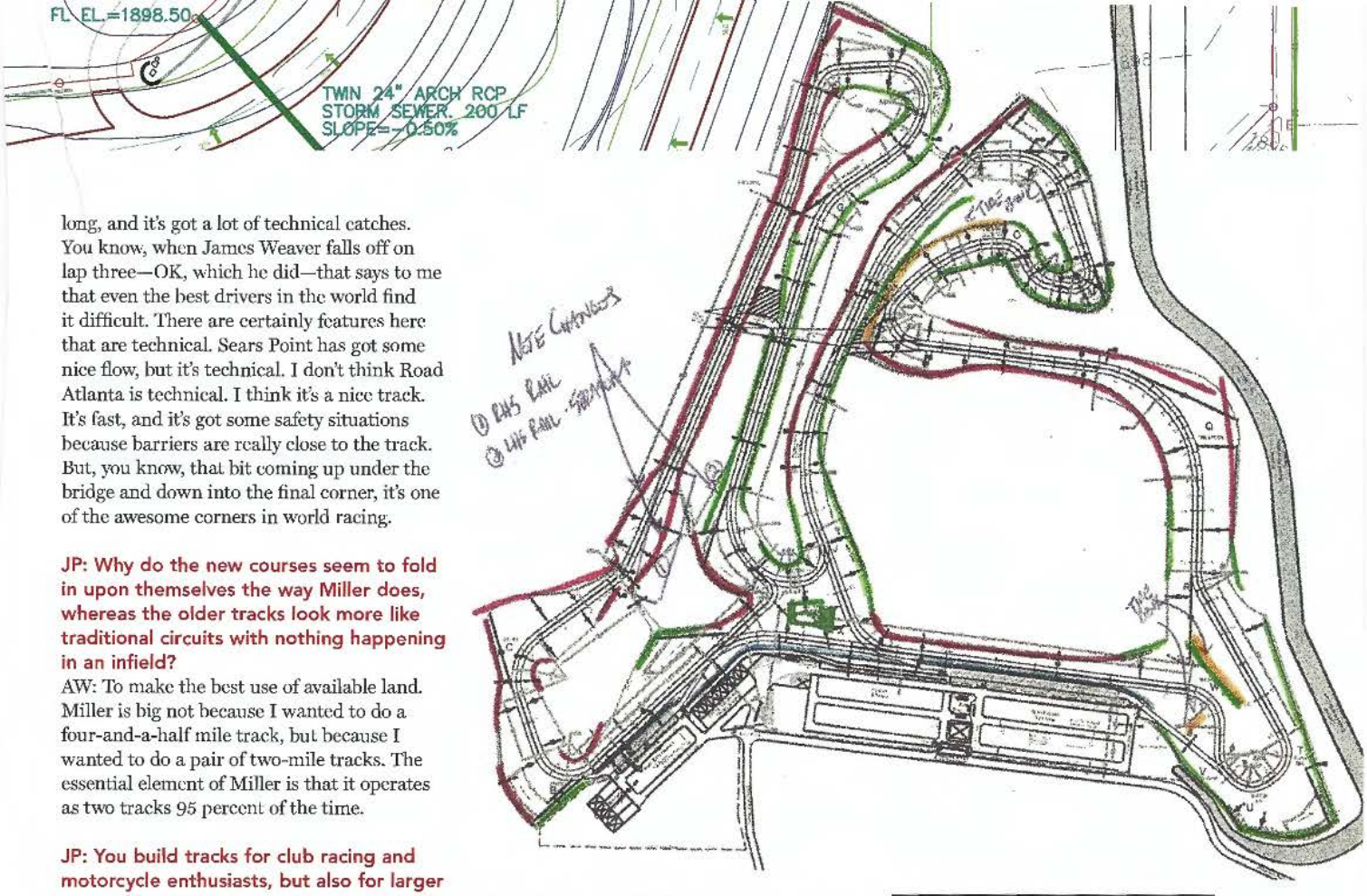
**JP: What do you consider the most technical tracks you've worked on in North America?**
AW: Barber is very technical. When I did Barber we were limited in the size—not by George's money, but by geography. Even at 740 acres we were limited to a very small area that we could use, because of noise and because of drainage issues. So to make a 2.3 mile track work, I tried to make it as technical as I could, and I've had some criticism for it. The big cars don't like it, even though it's 45 feet wide. And the big bikes don't like it because they can't run open.

Now, I don't have the factual evidence to prove it, but I'd be very surprised if this wasn't the case all over. The big Grand Prix-type bikes and modern superbikes are at full throttle a tremendously small proportion of the time that they're on track. Today's highest levels of club cars and bikes will overpower any track in the country. So, to let them run at full power for very long, you'd end up with a track that would be huge in terms of the area it takes up, because of safety zones and things. So my answer to the guys with the superbikes who complain they never get out of fourth gear is that the smaller track is still going to reward the best rider, because now he's got more torque and more power available to him with a smaller space to use it in.

**JP: Besides Barber, name a few more technical courses that you enjoy.**
AW: Miller is very technical. It's



**ALL THE LEAVES ARE BROWN** Calabogie in Ontario just may be Wilson's most beautiful creation. This shot was taken before paving and the installation of barriers (see diagram next page)




long, and it's got a lot of technical catches. You know, when James Weaver falls off on lap three—OK, which he did—that says to me that even the best drivers in the world find it difficult. There are certainly features here that are technical. Sears Point has got some nice flow, but it's technical. I don't think Road Atlanta is technical. I think it's a nice track. It's fast, and it's got some safety situations because barriers are really close to the track. But, you know, that bit coming up under the bridge and down into the final corner, it's one of the awesome corners in world racing.

**JP: Why do the new courses seem to fold in upon themselves the way Miller does, whereas the older tracks look more like traditional circuits with nothing happening in an infield?**

AW: To make the best use of available land. Miller is big not because I wanted to do a four-and-a-half mile track, but because I wanted to do a pair of two-mile tracks. The essential element of Miller is that it operates as two tracks 95 percent of the time.

**JP: You build tracks for club racing and motorcycle enthusiasts, but also for larger events like ALMS. How do you resolve all the requirements a track must fulfill?**

AW: The key difference between a spectator track and a club track is parking. At Miller, I've got over a hundred acres of prepared parking as well as access to another one-fifty, two-hundred acres. You have to have that if you're going to have a successful spectator event. And that is part of the huge cost evaluation. With sanctioned events, you really don't make money on seats, not unless you get up into the thirty-, forty-thousand spectator range. So if you actually look at it, the spectator events are not what drive most tracks in America. It's the regular street cars and the club racers. It's the multiplicity of everyday use that underlines the profitability.

**JP: And do you think track time demand among us regular folk is increasing?**

AW: Yes, absolutely. And I don't see that going away. First, access to performance cars is better than it's ever been. The cost of a Corvette, the cost of a Miata, a Mazda3, a Subaru—they're all fun cars, and you don't have to spend a fortune. You don't have to buy a real race car to have a hell of a lot of fun on a track. Second, more and more people are getting introduced to track use through track days, through clubs, and just the realization that they can buy a car that can stretch their talents. Third, you can't have fun on the road anymore. I've got a Boxster, but I'm selling it, because I can't play with it on the road.

**JP: So how, specifically, does serving the non-racing enthusiast influence track development?**

AW: The track's got to be safe. If somebody's going to bring their Porsche and have a spin—and they will spin, OK?—if they damage their car and write it off, they're not going to come back. So you've got to design the track so that the guy in the Porsche can spin, and then go back into the pits, change his underwear and carry on—and not put it on the trailer and go home, or cancel his trip to Hawaii because he's spent his budget fixing the car. The bottom line is that the non-professional racing element of track activity is on a spurt, and it's not going away any time soon.

**WORK IN PROGRESS** Wilson on Calabogie: "This drawing shows the partial installation of guardrail, which was subject of a lot of discussion and review because of the very difficult and extremely rocky terrain. The hand-drawn lines were sent to me by the track developers showing where they planned to place the rails after meeting with the FIA representative in Canada."

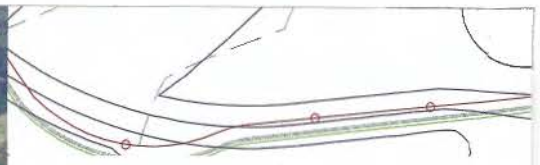
## MITIGATING NOISE & DANGER

**JP: Well, what do we do about the opposing forces of enthusiasts who want more track time, and people who don't want tracks in their backyards?**

AW: Noise is the problem. It's not only the real thing, it's also the perception of noise. Even at Miller we had a certain amount of screaming and bitching before we opened. We still have the occasional comment, but it's gone way down because the perception of what they expected to hear, and the reality of what they actually hear, are two totally different things. Now, all of us, myself included, love the noise of race cars and bikes. If you ask me my favorite noise, it's the six-cylinder Honda ridden by Mike Hailwood at full throttle. There is no noise better than that. It's magnificent. But, boy, is it loud! Now the reality is that as much as you and I car nuts love the noise, cars don't go an awful lot slower if they're quieter. With modern technology they can go just as fast. Noise isn't just about the emotions of the enthusiast either. Noise is an unnecessary part of racing.

**JP: But just how far can noise be mitigated in a competitive race car?**

AW: Think about it. Take any kind of race series in the world, and consider whether it's artificially limited in terms of power or speed. Formula One is artificially limited, OK? So any limitations caused by limiting noise are going to be marginal compared to the air restrictors, smaller capacities, etcetera that are just a standard part of racing. So if we could get competitors to accept that you can race



**WORTH THE LONG DRIVE** Many racers we've interviewed say Canada's Mont Tremblant is "the funnest road course in America." Wilson adds, "Champ Car has been testing at Tremblant, and I was very gratified to hear their comments. My name is not often attached to Mont Tremblant, but I totally redesigned every inch of the track, including corner shapes, cross grades, safety zones, paddock and pits. It was one of the hardest tracks to do because the basic track was so unsafe and in such terrible condition. It would probably have been easier to do a clean sheet design."

very comfortably, very fast, with lower noise levels, after a while we would lose the problem of building race tracks in the community.

**JP: But isn't noise almost too integral a part of the racing experience?**

AW: We have spectators saying they love the sound of cars, and there's no doubt that a noisy car adds to the excitement of the event. However, you'd be surprised by how many people complain that they can't hear the P.A. system over the cars, and that they wish the cars were quieter. Not totally quiet, but quiet enough so that they could hold a reasonable conversation while they watch. The problem is, absolutely, the enthusiast who refuses to acknowledge the issue. If we could get them to run at a quieter level, then the business of racing would just multiply.

**JP: Let's talk about track safety. What do you consider to be minimum safety requirements for a modern road course?**

AW: The basic thing is that pro drivers amount to just one to two percent of a track's business. The rest of the time is used by Joe Enthusiast, who doesn't want to bend his car or fall off a motorcycle and hurt himself by hitting something. Enthusiasts are accepting of spinning and having to change their underwear, but they don't want to hit anything solid. So the first and most important part of development is to design the track with accident tangents, which are a lot easier to calculate with bikes, because cars can often do crazy things. Bikes tend to go off in fairly defined lines, so we give them enough room to recover from the mistake of leaving the track. The downside is that it means that you've got to spread out your racetrack, or you've got to be intricate in how you plan your accident tangents, so they don't intersect with each other.

So not hitting something is the first thing. The second thing is making sure that safety zones are smooth. There are too many times that I've seen a car go off the track, or a bike in particular, in what could otherwise be a harmless situation. But they hit a drainage gully, or they hit a lump of grass, or somebody's left a log lying there, and they suddenly turn an innocuous incident into an accident. That's where track owners need their butts kicked hard.

**JP: What about when an impact is inevitable? What are the latest trends in that area of safety design?**

AW: When you do hit something, you've got to hit as softly as possible. And sometimes barriers are inevitable. There are times when you have to have a guardrail, you have to have a brick wall, because the consequences of not having it are worse than the consequences of having it—like, killing a spectator. Your spectators have got to be protected, come what may. So if somebody gets to a barrier, you try to reduce the speed at which they get to that barrier so that the impact's not so hard. Dead simple logic. The one thing that we know works best are tire walls. They are extremely effective, provided they're built properly. Built badly, they're bloody awful. They can create accidents, turning a simple slam into a rollover. But if you do them properly, they work forever, and they're almost maintenance-free. There are very few tracks in America that have done their tire walls properly.

**JP: What are they doing wrong?**

AW: They don't bolt them. They don't have consistent size tires. They don't have them the right height. They don't have them the right depth. And, ultimately they don't have conveyor belting in front of it. Any tire wall that's strapped is useless. Any tire wall where the tires are loose is dangerous. Strapping has no strength. It doesn't do what a tire wall needs to do. Tire walls work because multiple tires expand, or stretch, together in an impact. It's not the individual tire working on its own, which is what happens when they're strapped. That's why you bolt them. It's a very simple technology.

The FIA has published documents that prove the effectiveness of them, but I still have tracks tell me, "Oh, look how the tire wall burst apart—that's how effective it was." Bullshit. The reality is that a tire wall has got to survive. Any safety system has got to survive a secondary impact. Because what happens if two cars hit the same patch of oil? The first one tears out the tire wall, the second one goes into the barrier.

## WHY U.S. PAVEMENT SUCKS

**JP: What about the surfacing of run-off?**

AW: There's, you know, this question of gravel trap and asphalt. You will see the Formula One tracks are going asphalt, asphalt, asphalt. The complaint that they have is that gravel doesn't work because Formula One cars skip over the top of it. Absolutely, with that kind of suspension, and with the bottoms the way they are, those cars are just going to skim over the top. Gravel tracks don't work for formula cars in any really effective way. But formula cars are a fraction of what we use on our tracks, and it's very hard for me to justify asphalt. Gravel traps are essential for motorcycles. They slow down the bike, and the rider falls into something soft. And with a production car, the exhaust system and the suspension components will drag in, and 99 percent of the time they're going to slow that car down.

So we've got to accommodate the majority use, not the exceptional use of the Indy car, because how many tracks in the country does the Indy car go to? And when did you last hear of brake failure in a Formula One car? Now think about how many times you've been at a track when a Viper or a Mustang lost their brakes. You can hardly go to a club race without some car losing its brakes. So I disagree with the tendency to put asphalt down in most cases.


**JP: How are race tracks surfaced? What is the composition of the pavement?**
AW: The road base—what you call the leveling course, the first layer is of asphalt—is no different to that of a typical rural road. You design them with drainage in mind, you get your compaction rate right, and it's all based on soil conditions, as to how much gravel base you need, and things like that. The leveling course is exactly that—it provides a level base over the gravel that you're going to put your final surface on. There's nothing magic about that other than just maintaining good quality control.

The real difficulty comes in the variety of components. If you follow European racing, you'll never hear of tracks breaking up. You hear of people paving three weeks before the Grand Prix, and the track holds together, OK? In America you hear of tracks breaking up all the time. The core issue comes down to the standards that are applied by the European Union. I hate bureaucracy, but they enforce standards of the quality of the oils that go into the bitumen, the quality of construction, and so on. But there aren't any standards in America. And that's the reason why American public roads are bloody awful and European roads are pretty damn good.

**JP: But that's public roads. What bearing does this have on American race tracks?**
AW: This is the thing. In Europe, whenever they build a road, it's never low-bid. It's a construction/maintenance bid that lasts ten to fifteen years. And if they're responsible for maintaining it for ten to fifteen years, they're going to build it right the first time. In America, every road is built to the lowest bid, and the standards are abysmal. That means, bluntly, that our paving contractors just aren't as skilled as the Europeans. They're used to building crappy roads, so that's the skill level they carry to race tracks.

## THE FUTURE OF TRACK DESIGN

**JP: Last year, Miller was awarded Motorsports Facility of the Year by the Professional Motorsport World Expo. What does that say about the future of overall track design?**
AW: I got a big kick out of it because the people who nominated us for the award are not race fans. They are targeted at the very high, technical side of racing. So I think people recognized Miller as a technical exercise rather than a emotional exercise.

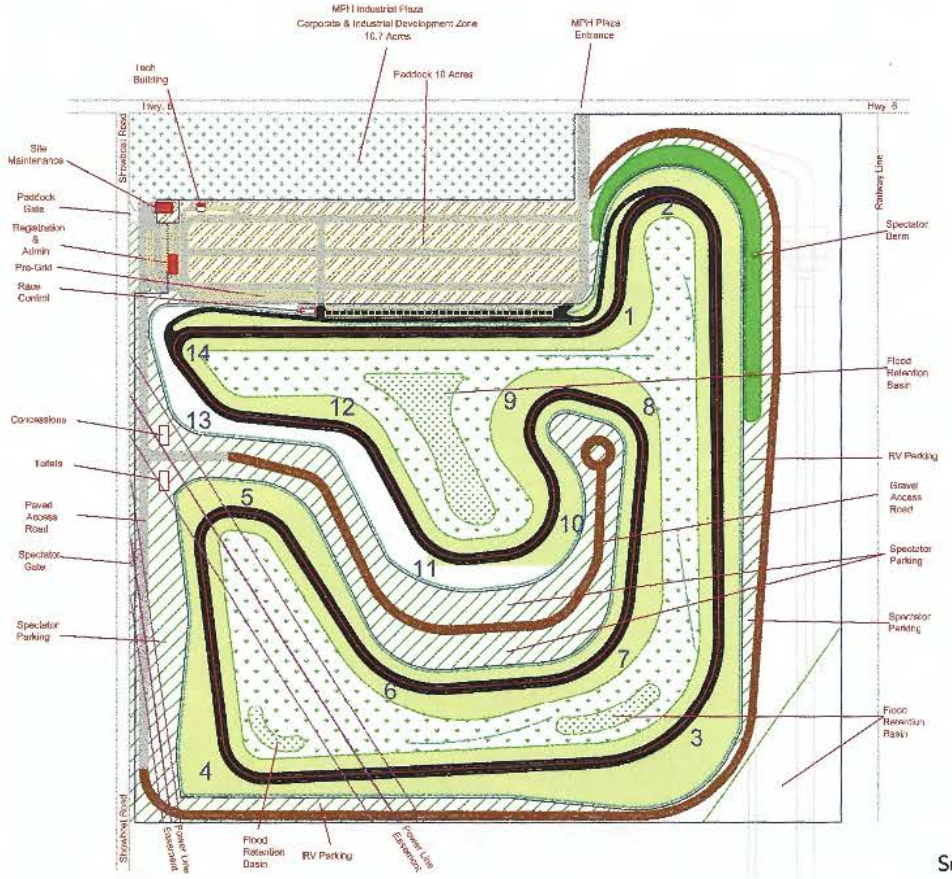
Now, Barber was an emotional one. Tremblant's another emotional one. Tremblant was a huge challenge because the object was to keep the character of the original, but to make it safe, and it was never re-designed to handle CHAMP car. I'm thrilled that they're going there, but they're going to be incredibly limited in their spectator capacity. But to watch a CHAMP car driven fast around that track, and to drive the car, I think the drivers are going to love it. It's the nearest thing in North America to a Monza or a Spa, or that kind of atmosphere.

But Miller, as a technical exercise, is more the future of race tracks in America. Others will follow the pattern of how we've laid this thing out. Not so much the shapes of the corners, but how everything integrates. It's a very, very easy track to operate. We've run four pay events at the same time.

**JP: What do you think is currently the best market for amateur-level enthusiasts? Sometimes I think where I'm located might be best, because I have three nice tracks—Thunderhill, Sears and Laguna—within a two-hour drive.**
A: Obviously, where you are the problem is the cost of getting onto those tracks—because of demand. That market could easily take another track. Having said that, Thunderhill is probably the best-run club track in North America. I tell everybody, "If you want to learn how to run a club track, go up to Thunderhill."

I don't see many other tracks like Miller being built. You have to have a particular type of fan or investor—like Larry Miller, like George Barber—who can afford it, and make the decision, "I'm doing it because I can afford it and not because it's a business." That said, there's plenty of rationale for tracks like Autobahn in Illinois, or like Hastings in Nebraska. Now there's a great example. Hastings is a little market with a very enthusiastic owner-promoter who's got a lot of interested people in town. They have more people for a motorcycle club race than most pro tracks have for a pro AMA event. Hastings is the big deal in a small town. And they treat their customers like gods.

Hastings is a fairly simple, low-cost track that is the absolute model of what can be done in smaller regions all around the country. And that will persevere, and get better and better with age. That is the model. This is the future of track development.

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This is the original concept sketch that Wilson created for Motorsports Park Hastings in Nebraska. Wilson says, "This was followed by various more detailed drawings, including a fencing plan, basic grading plan, and a design plan which was sent to [the developer's] engineers, who then took over the drawings and developed the actual construction documents.