

# Lime Rock “Trackside” Classroom

## *Proper Track Braking Technique*

**Mario Andretti:** “Its amazing how many drivers, even at the F1 level, think the brakes are for slowing the car down.”

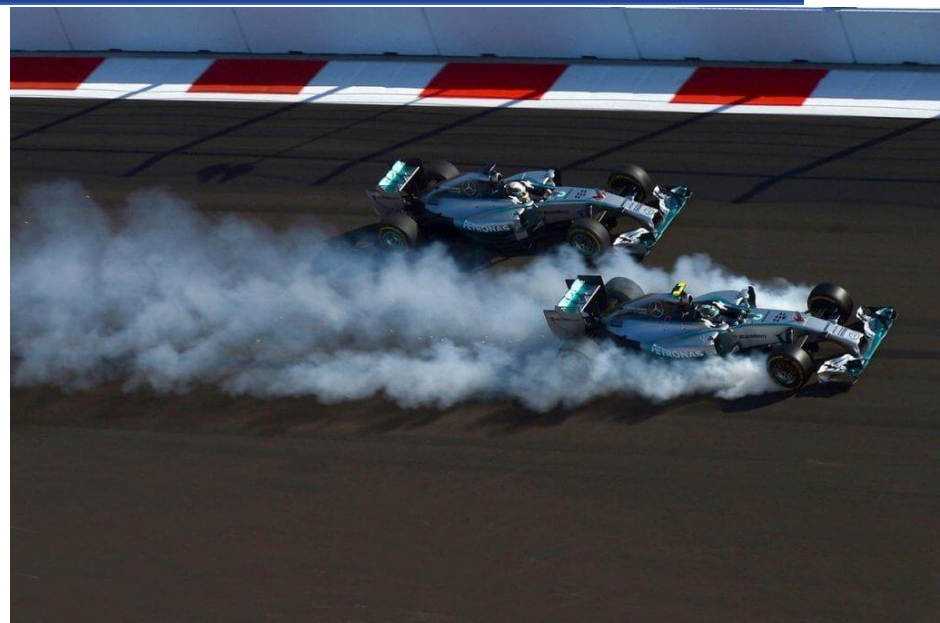


## ***Disclaimer***

*The techniques shown here have been compiled from experienced sources believed to be reliable and to represent the best current opinions on driving on track. But they are advisory only. Driving at speed at Lime Rock, or any other track, requires skill, judgment and experience. These techniques assume the reader has high performance driving knowledge and applies them as applicable to their level of driving experience.*

*High-performance driving can be very dangerous, carries inherent risks and may result in injury or death. NNJR and PCA make no warranty, guarantee or representations as to the absolute correctness or sufficiency of any representation contained herein. Nor can it be assumed that all acceptable safety measures are contained herein or that other or additional measures may not be required under particular or exceptional conditions or circumstances.*

- The Learning Sequence
- Corner Entry Steps
- Braking/Tail Braking
  - Lime Rock examples
- Summary



*“High performance driving is all about the correct timing, application of pressure, and release of the brakes.”*

*-- Ross Bentley*

# NNJR “The Learning Sequence”



1. The line
  - i.e. the right one for you and your car
2. “Corner exit car control”
  - Maximize exit speed—and safety
  - “Throttle Application Point”
3. Braking and entering the turn
  - Smooth transition from straight to throttle application point

Carl Lopez: *Going Faster!*



1. Throttle to Brake transition
2. Straight line deceleration
3. Trail Braking (braking while cornering)
  - Most, but not all corners
4. Brake to Throttle transition

Carl Lopez: *Going Faster!*

*"I spend more time coaching drivers on their brake release than anything else."*

*--Ross Bentley*

- Proper Seating Position
  - Can't be reaching with right foot!
- Right heel stays on floor
- Pick a consistent braking point (beginning of braking)
  - Be aware of varying approach speeds
- Heel and Toe
  - Learn on the street, not the track

# NNJR Common Braking Mistakes



- Green run group
  - Inconsistent braking point, brake pressure
  - “Jump” on and off the brake pedal
  - Too little pressure early, too much late
- Yellow and Blue run groups
  - Too little pressure early, too much late
  - Jump from heavy brake to heavy gas
  - Trying to “brake late”



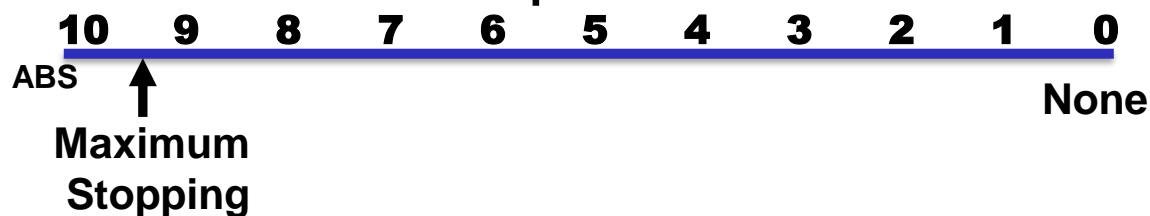
- All corners are fast
- Big Bend
  - Classic trail braking corner
  - Turn 2 slower than Turn 1
- Left Hander
  - Sets up Right Hander, “throwaway”
  - Trail brake helps car turn
- Uphill, West Bend, Downhill
  - Fast Corners
  - Very little trail brake (most braking in straight line)
  - Gentle or “brush” braking



# NNJR How to Improve Braking



- Focus on brake pressure



- Hard braking (Big Bend)



- “Brush” braking (Uphill, West Bend, Downhill)



- Focus on End of Braking (EOB)
  - Much more important than start of braking
    - Always better to brake a few feet earlier and modulate
  - End of Braking is a critical Reference Point
    - Same point, speed (+/- 1-2 mph) each lap
  - First Step: Be aware of brake pressure at Turn In
    - Should be the same each lap

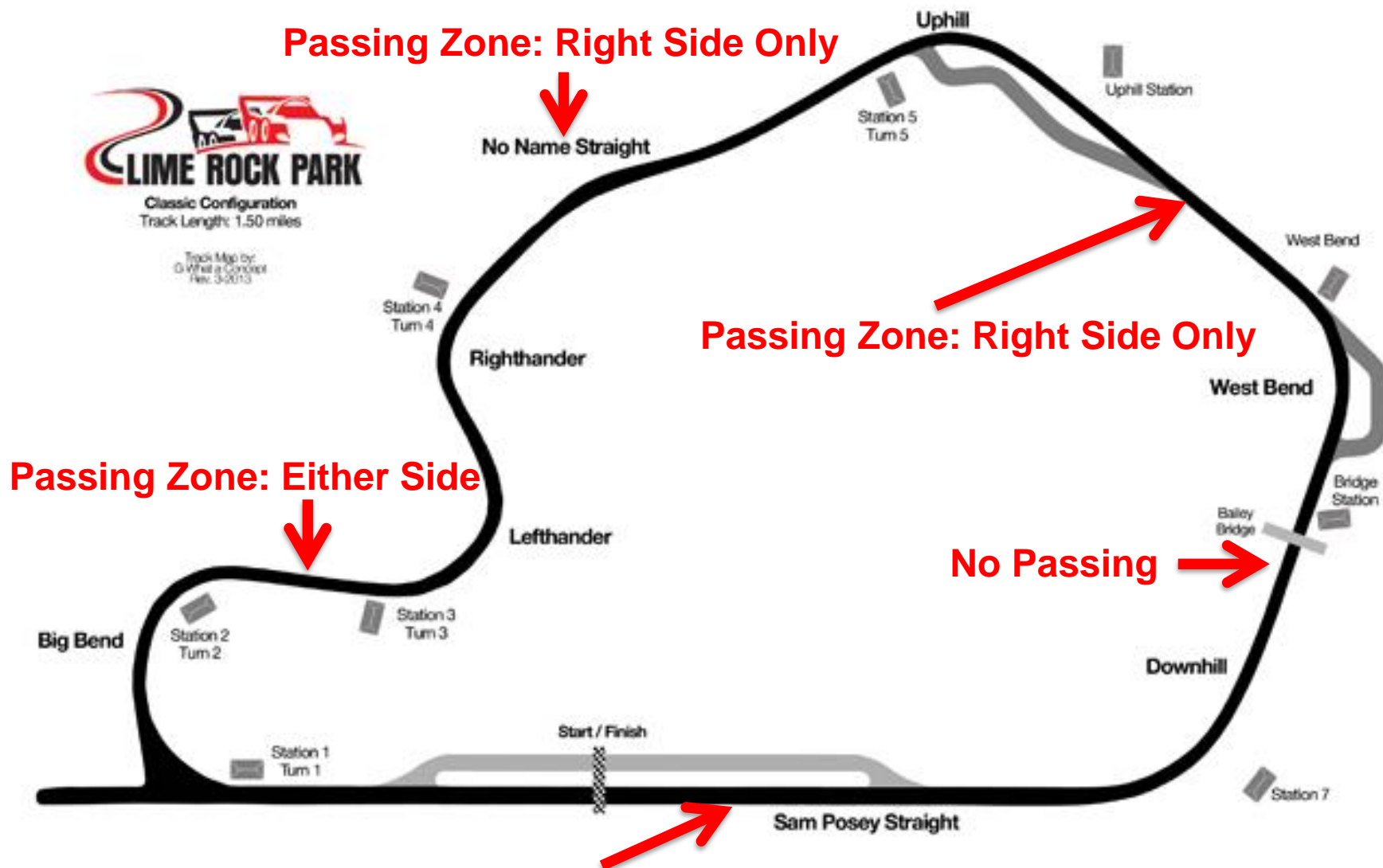


- Learn track braking technique
  - Remember the basics
  - Hard initial brake, gentle release
  - Most braking in first third of brake zone!
- Amount of trail braking
  - Varies by corner (a lot)
  - Varies by car (some)
- Work on smooth transition off brake on to gas
  - Goal: imperceptible



## LIME ROCK TURN BY TURN

# NNJR Lime Rock



**Passing Zone: Right Side Only**

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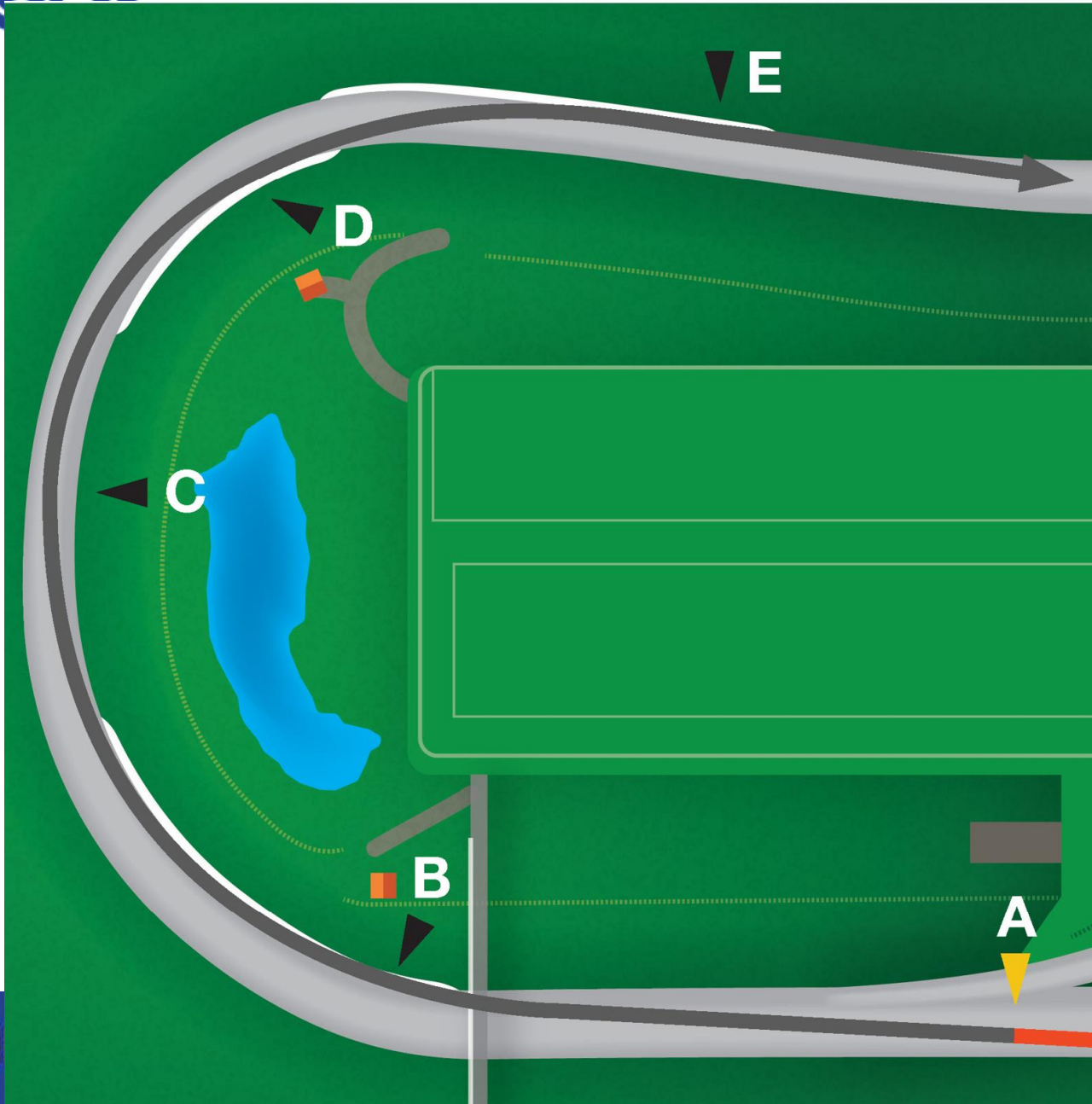


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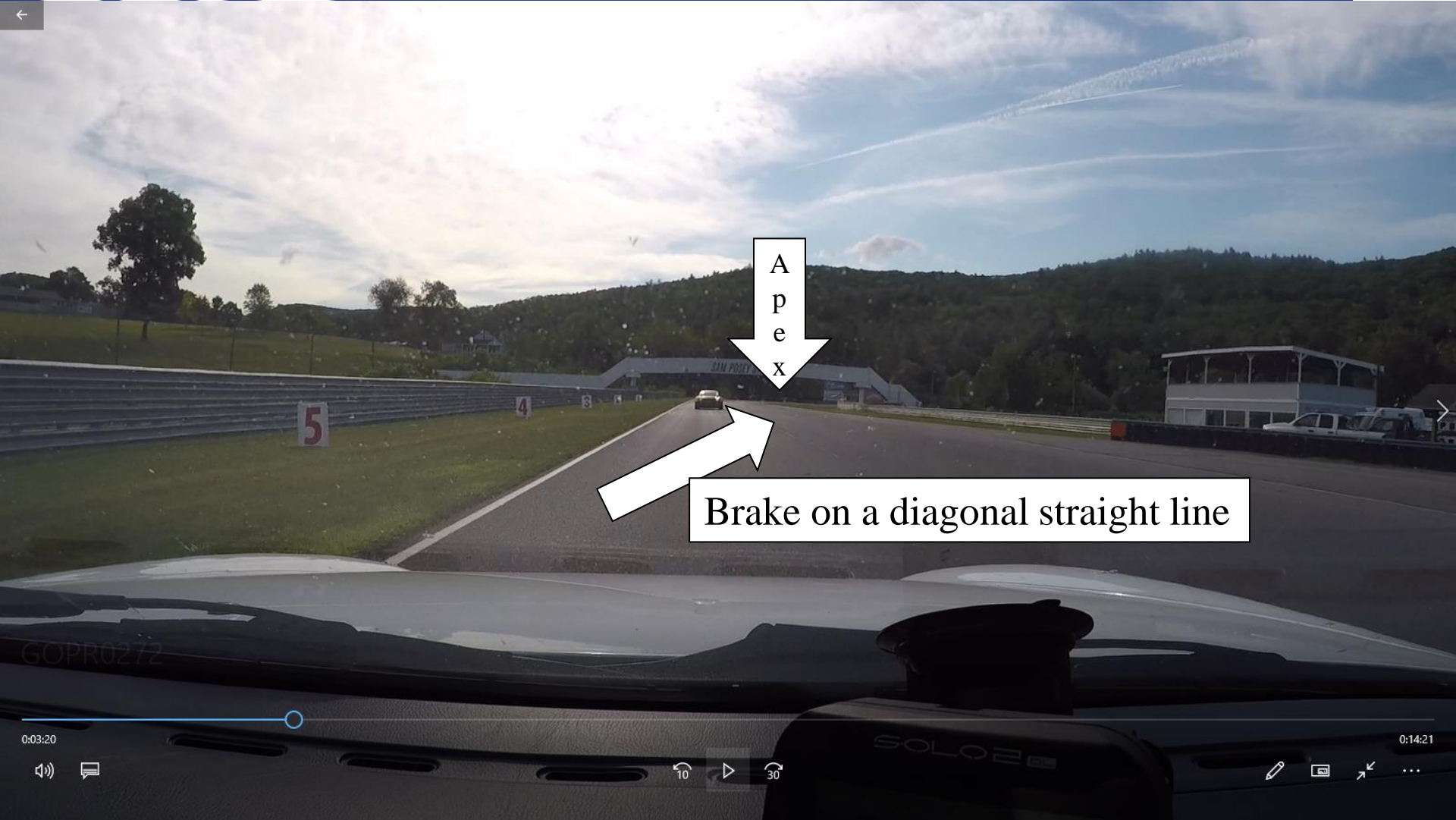
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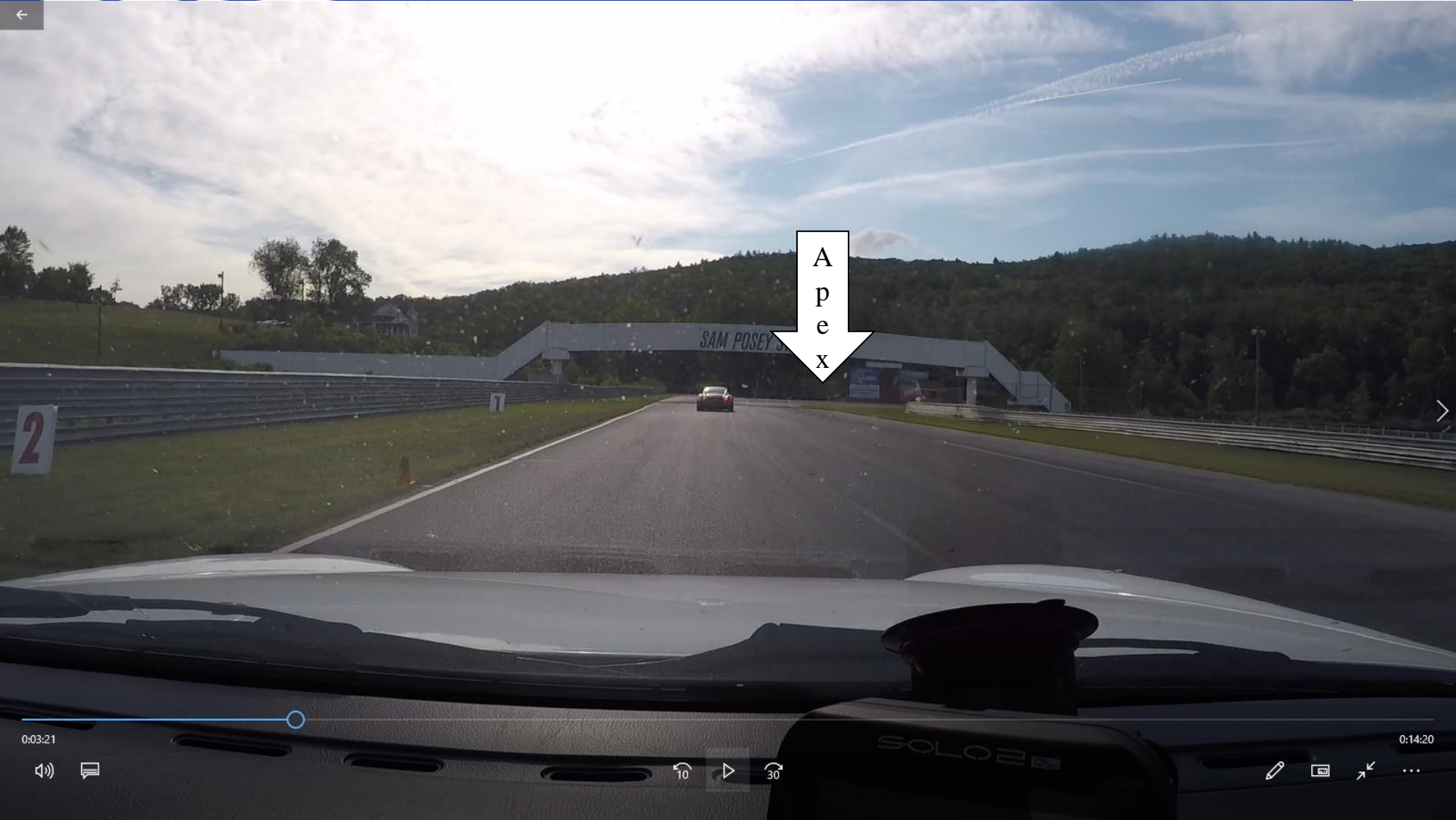


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# NNJR Trail off Brakes at/after Apex



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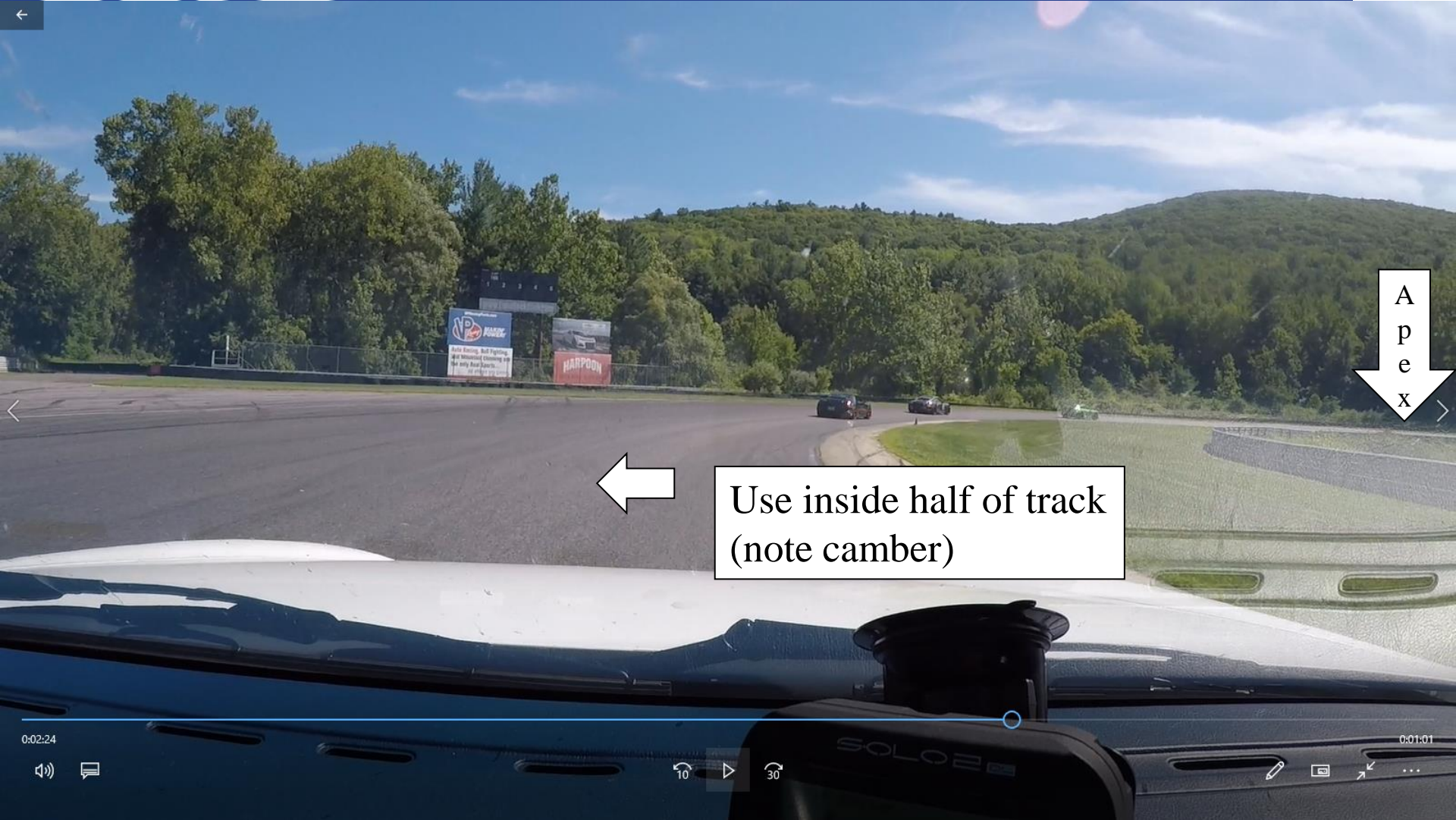
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# NNJR No Place to be Early!



Track  
Out

Apex



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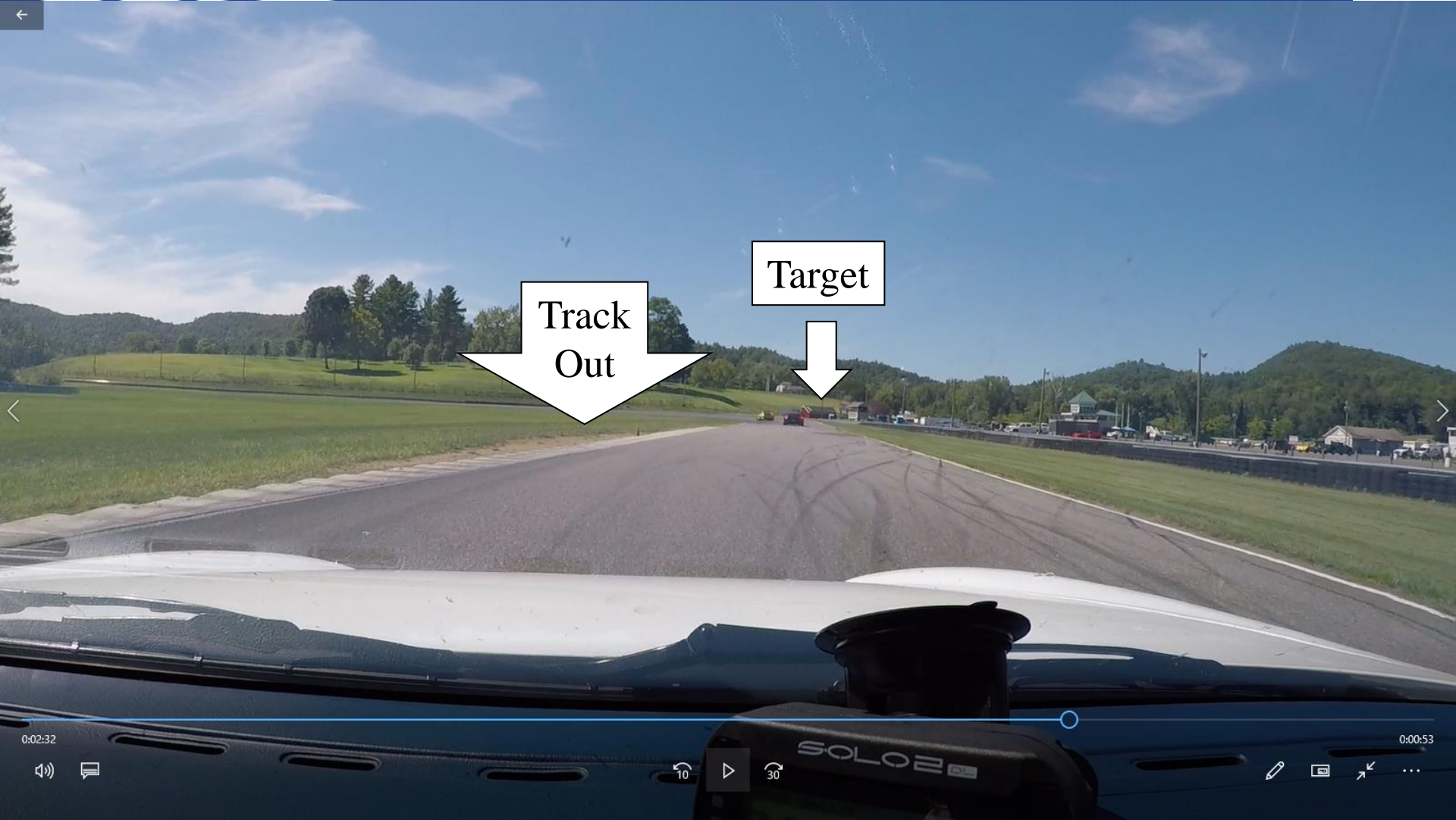
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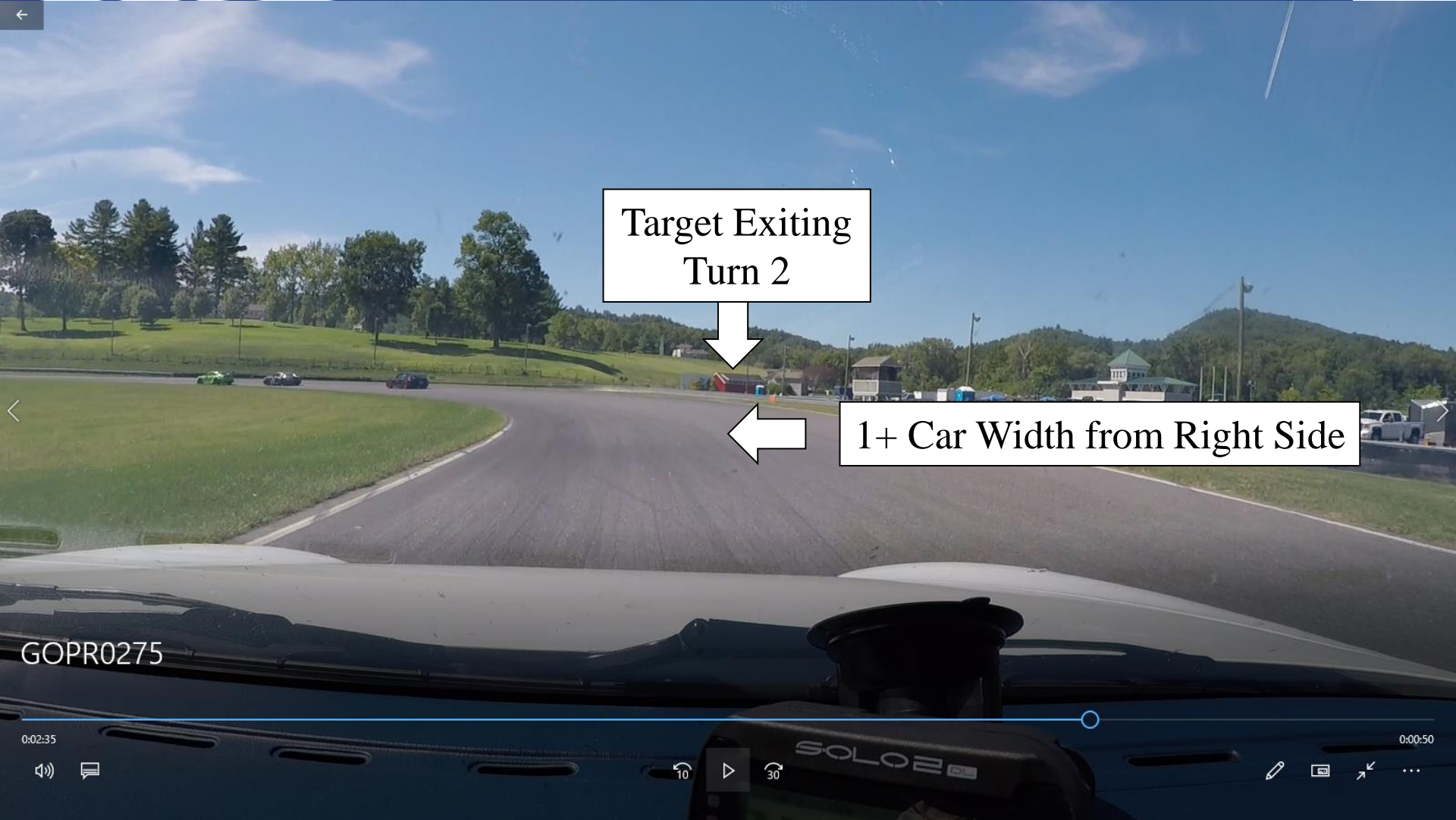
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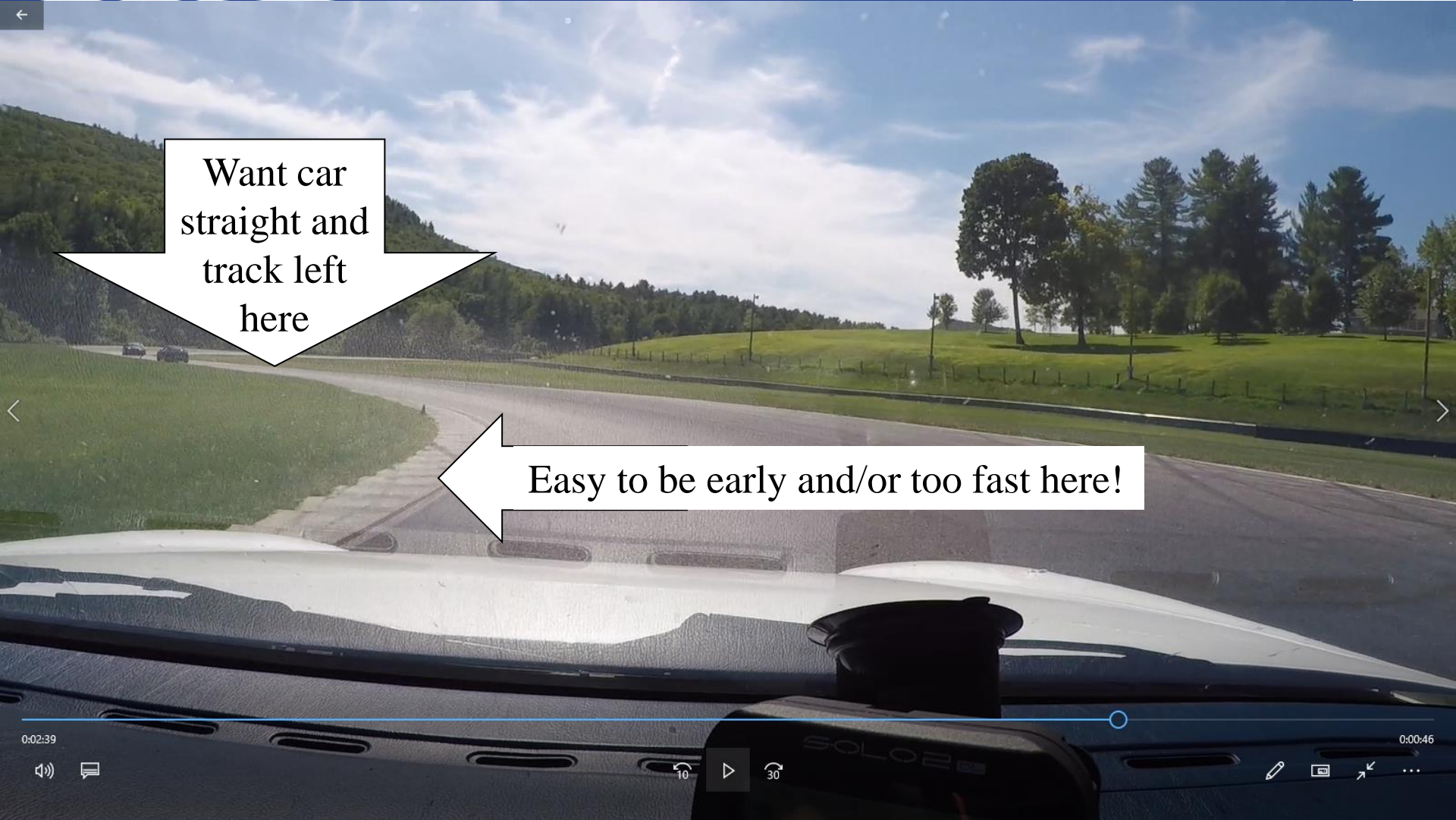
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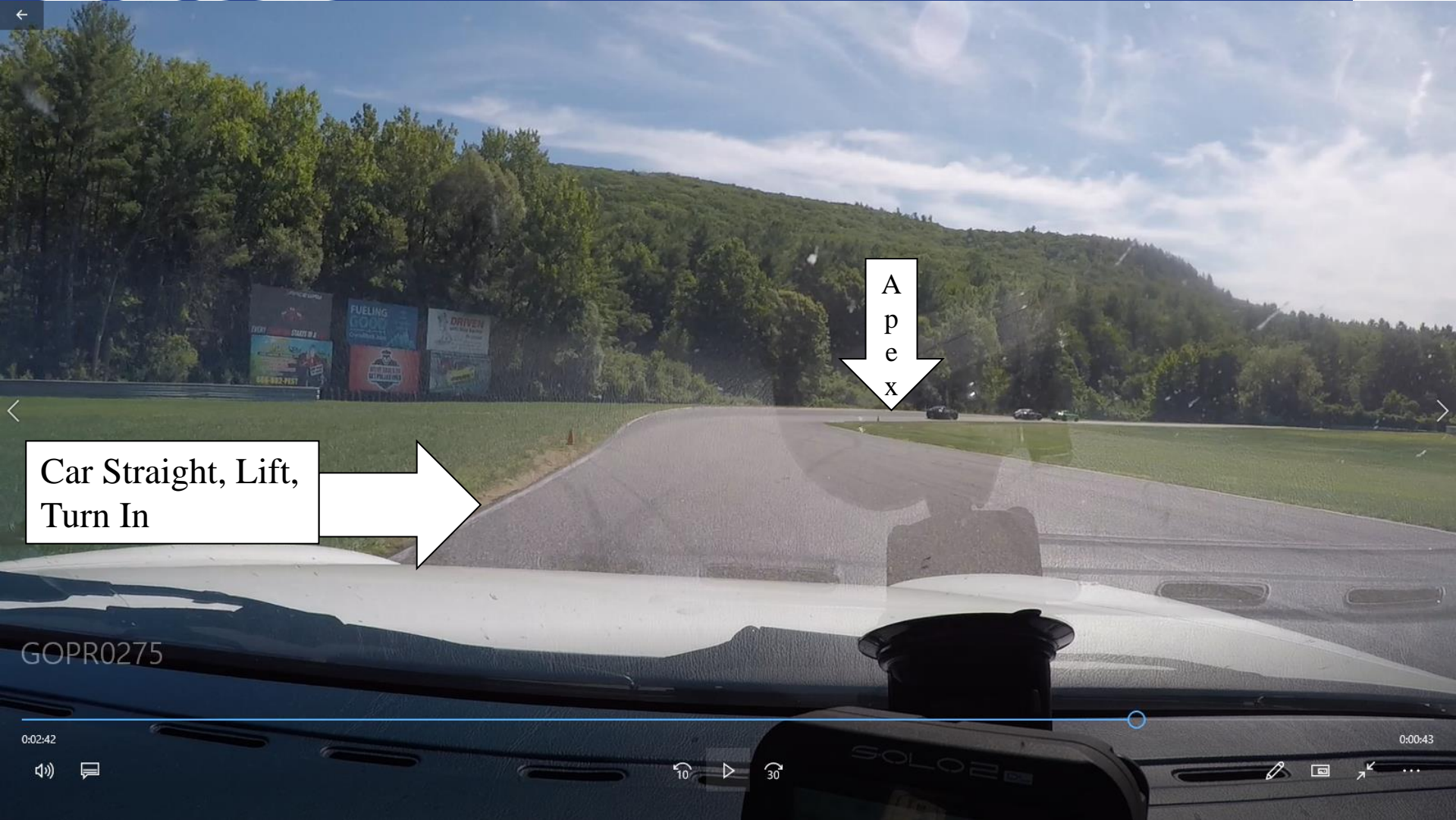


Want car  
straight and  
track left  
here

Easy to be early and/or too fast here!



# NNJR Set Up Right Hander (Turn 4)



Car Straight, Lift,  
Turn In

A  
p  
e  
x



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# NNJR Uphill: Brake Early and Lightly



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# NNJR Off Brakes Right After Turn-In



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# NNJR Uphill: Tight on the Apex Turn In More into Hill



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# NNJR Straight Over the Hill



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# Stay Track Left Until Turn-In



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# NNJR Look thru Apex to Track Out



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# NNJR Apex Zone (at the Road)



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# NNJR Track Left Under Bridge



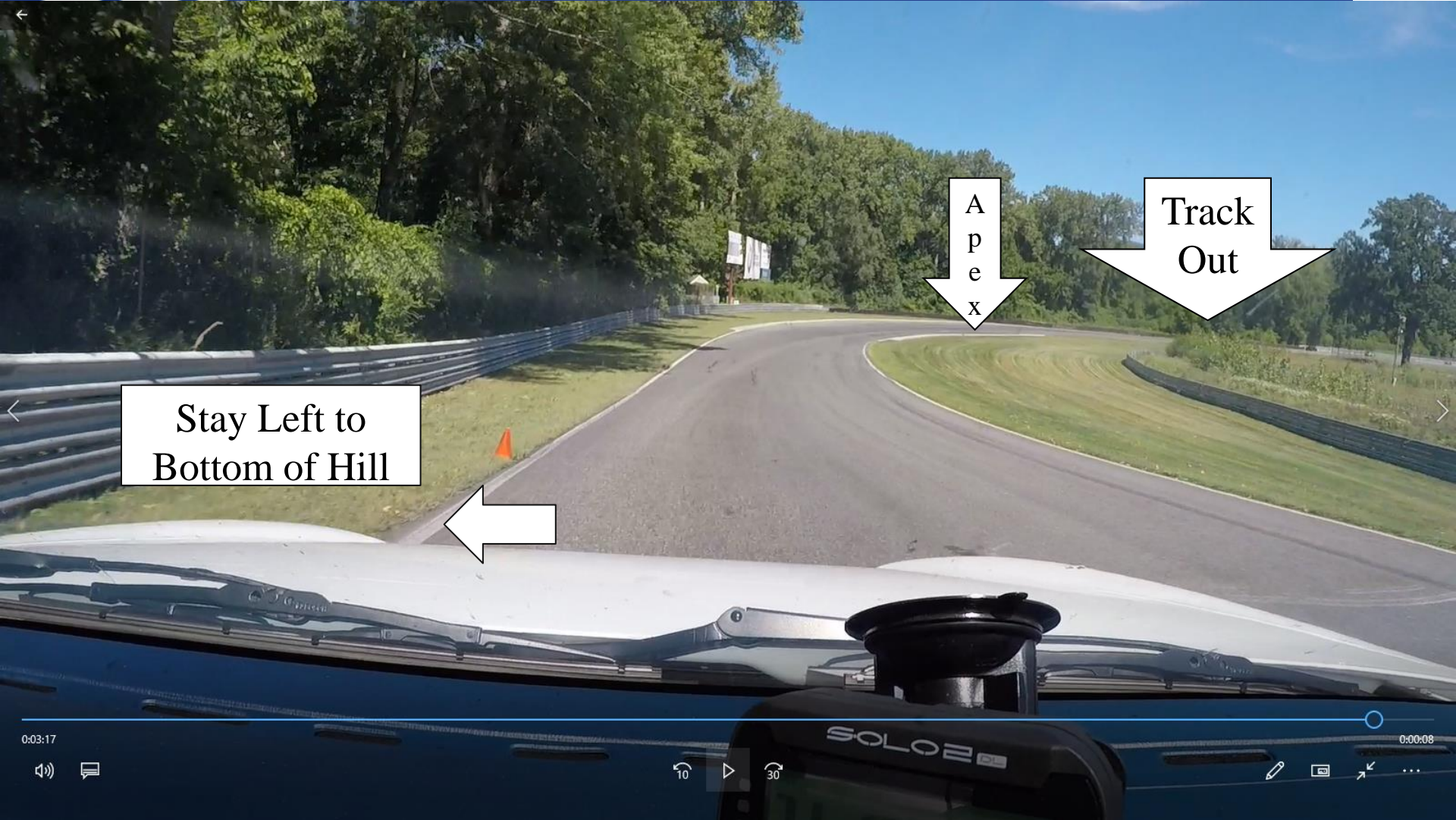
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# NNJR Tight on Apex, Look Ahead



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- Trail Brake into Big Bend and Left Hander
- Minimal trail brake for other corners
  - Brake early and lightly for Uphill, West Bend, Downhill
- Watch the adverse camber!
  - Exiting NoName, exiting Downhill, Turn 2
- Find good Reference Points that don't move!

