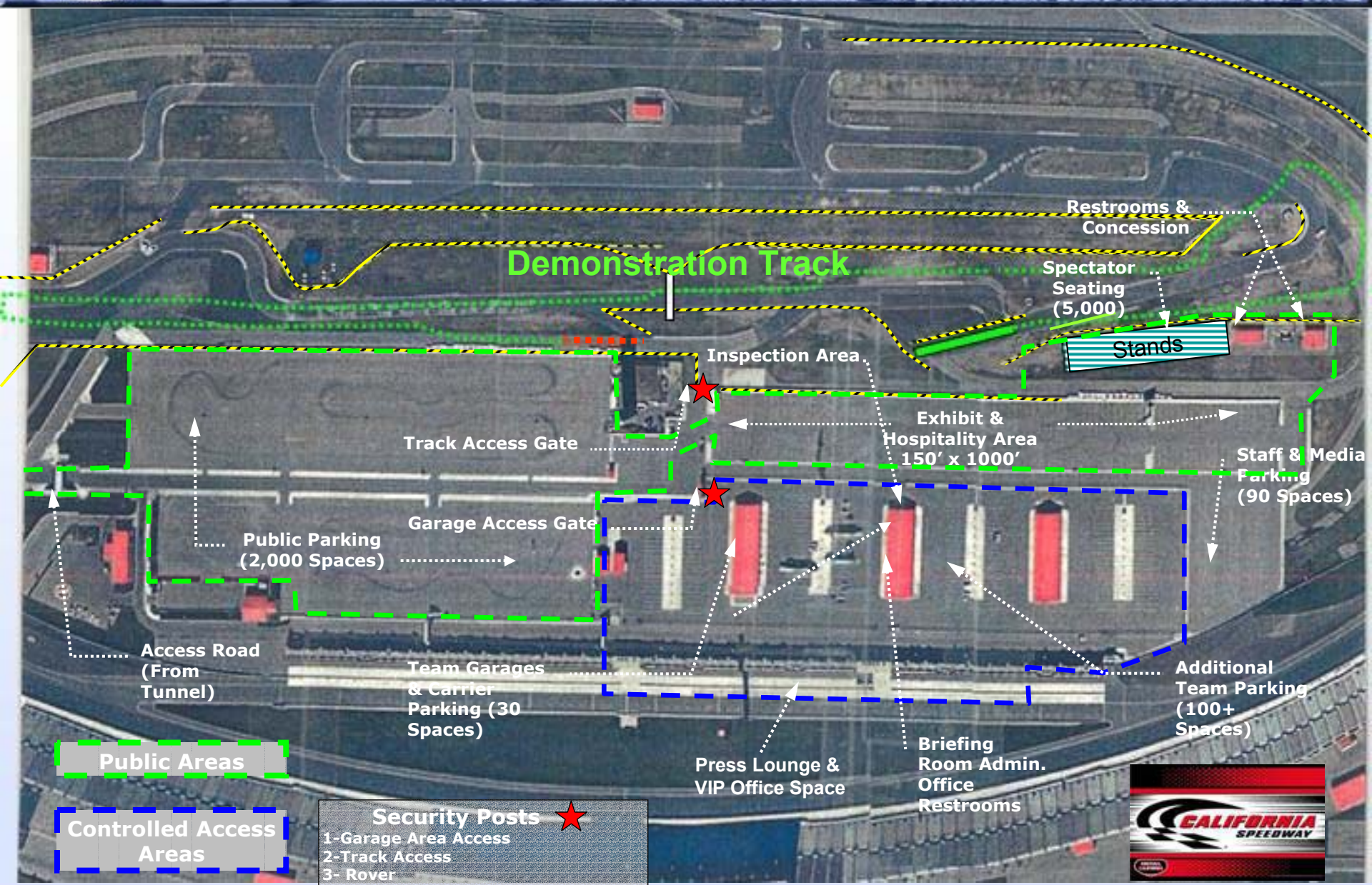
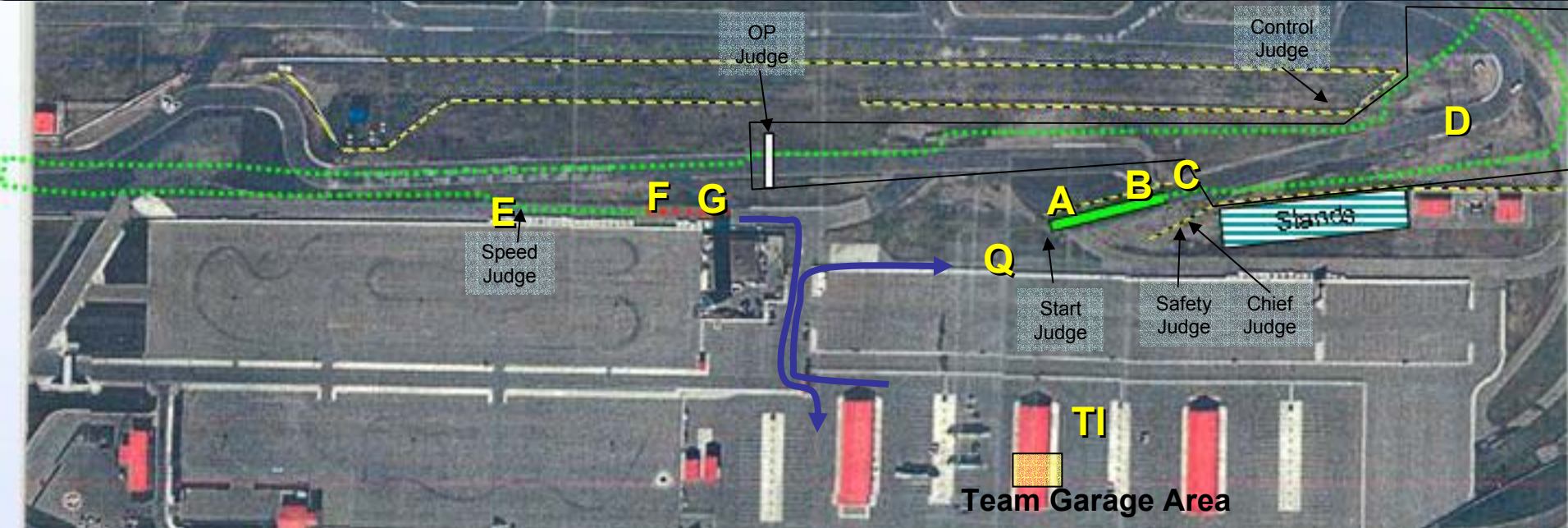


QID Site Layout

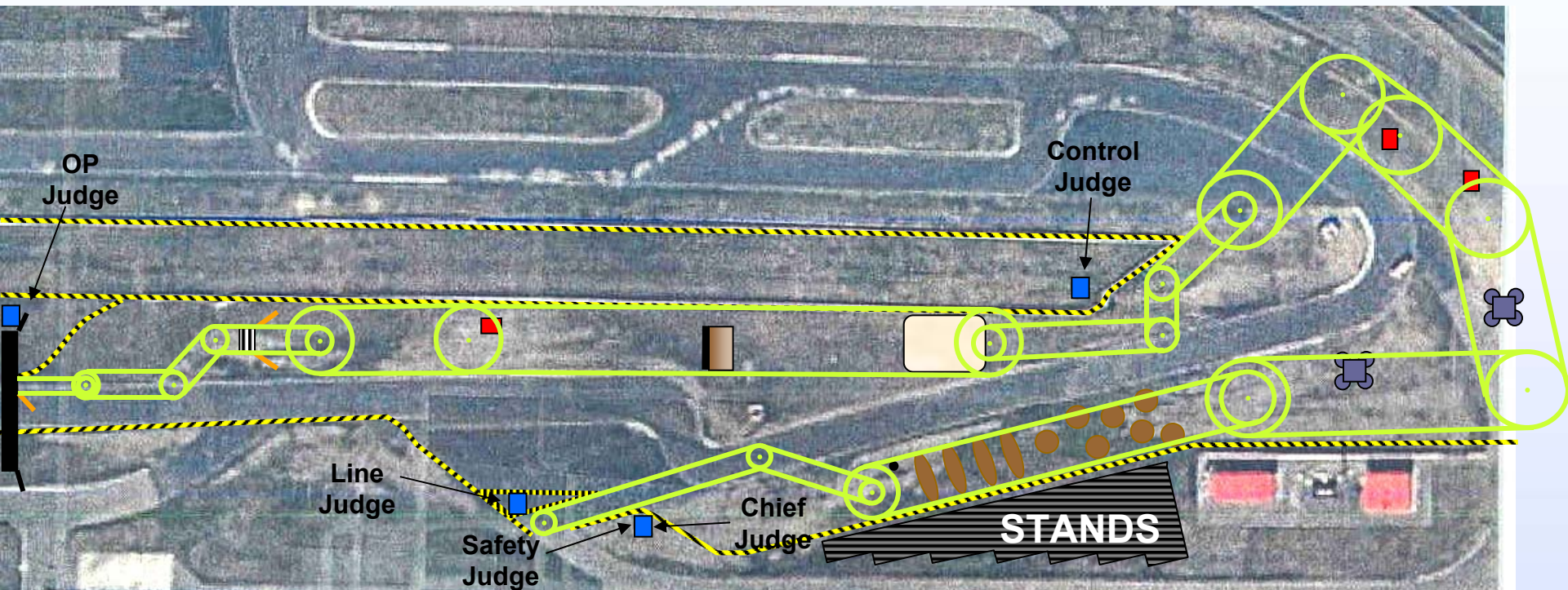
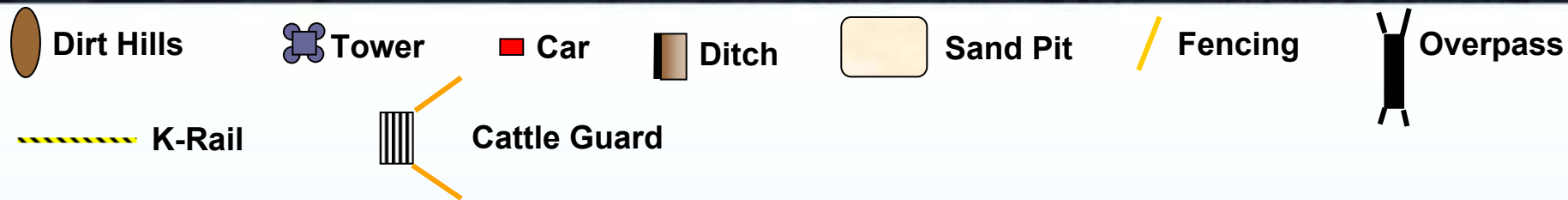


QID Process



- TI** – Static Technical Inspection of Bot for safe operation and compliance with paper
- Q** – Que for Bots waiting to enter the track
- A** – Stationary Test of E-Stop Operation, Tracking System and Bot warning devices
- B** – Dynamic Test of E-Stop Operation and Tracking System on moving Bot
- C** – Start Track Timer
- D** – Test Bot navigation, compliance with RDDF and sensing through obstacle field
- E** – Measure Bot transit time from point C, through obstacles, to point E
- F** – Assess Robot's reaction to a moving obstacle
- G** – Operate E-Stop (*pause and disable*), retrieve data, remove vehicle from track

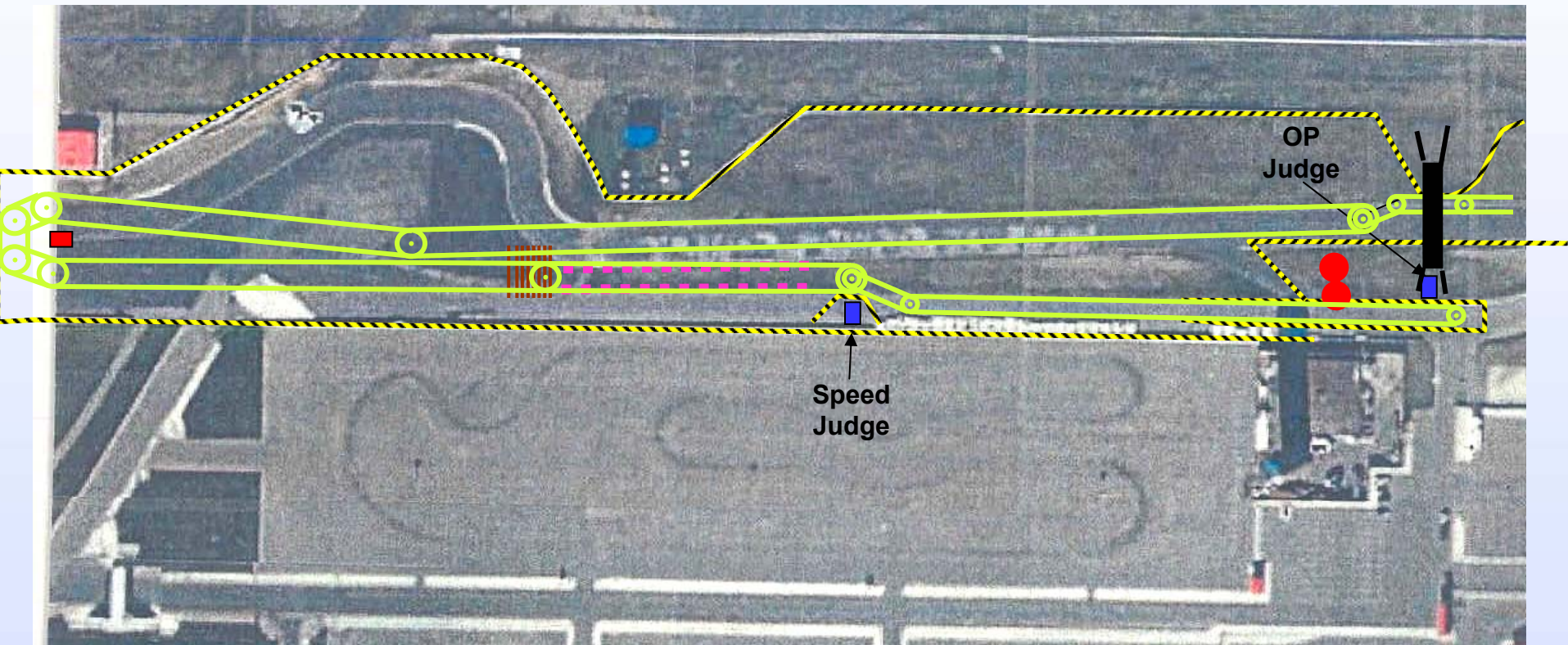
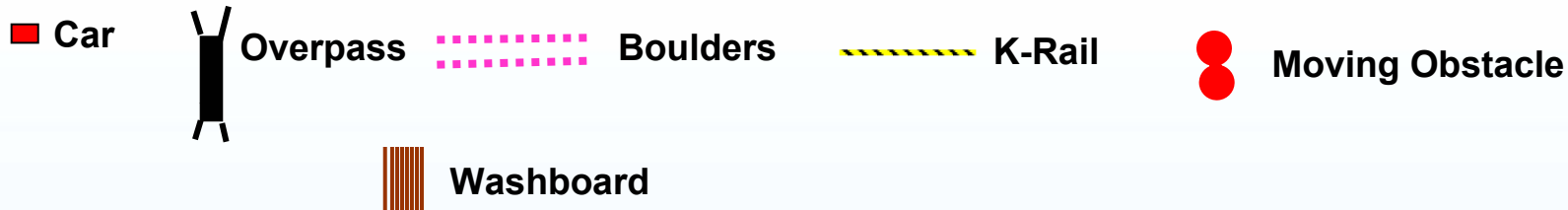
QID Obstacles - East



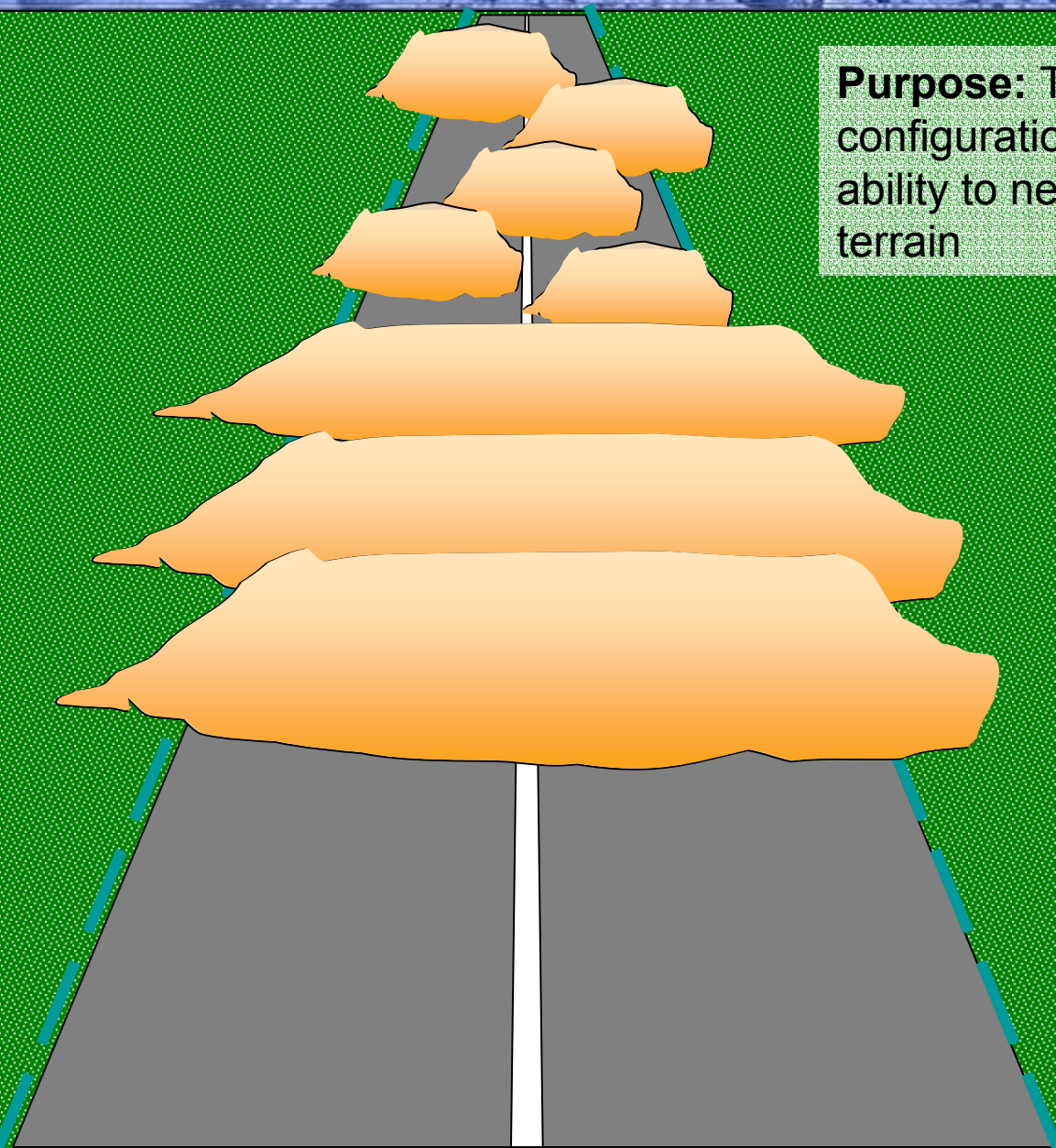
DGC Rule 1.4 - Route Description:

The Route will include surfaced and un-surfaced roads, trails, and off-road areas. Man-made and natural obstacles are to be encountered—both above and below the surface of the average terrain. Examples of obstacles include shallow and deep washboards, ditches, open water, rocks/boulders, underpasses, construction, and other vehicles. All obstructions on the route can be either accommodated or avoided by a commercial 4X4 pick-up truck...

QID Obstacles - West



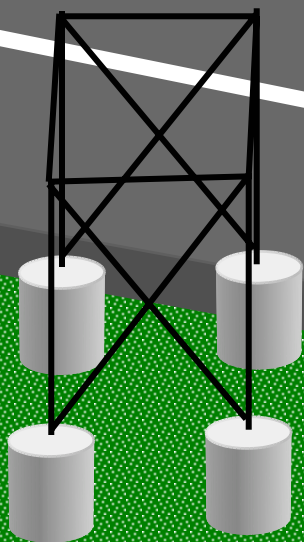
Dirt Hills



Purpose: This obstacle configuration tests the Bots ability to negotiate rough terrain

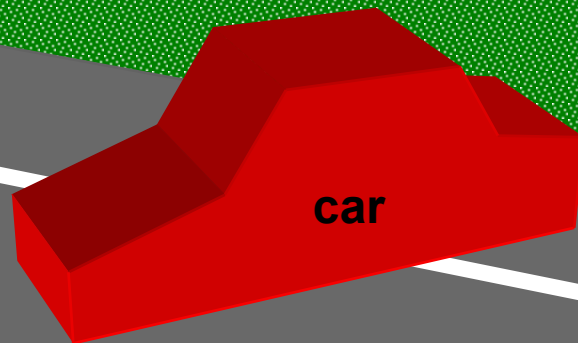
Tower Obstacle

Purpose: This obstacle configuration tests the Bots ability to detect, avoid and bypass an obstacle



Car Obstacle

Purpose: This obstacle configuration tests the Bots ability to detect, avoid and bypass other static vehicles on the road



Steep Hill

Purpose: This obstacle configuration tests the Bots ability to negotiate a steep hill, as will be encountered on the Course. Vehicle will negotiate hill perpendicular.



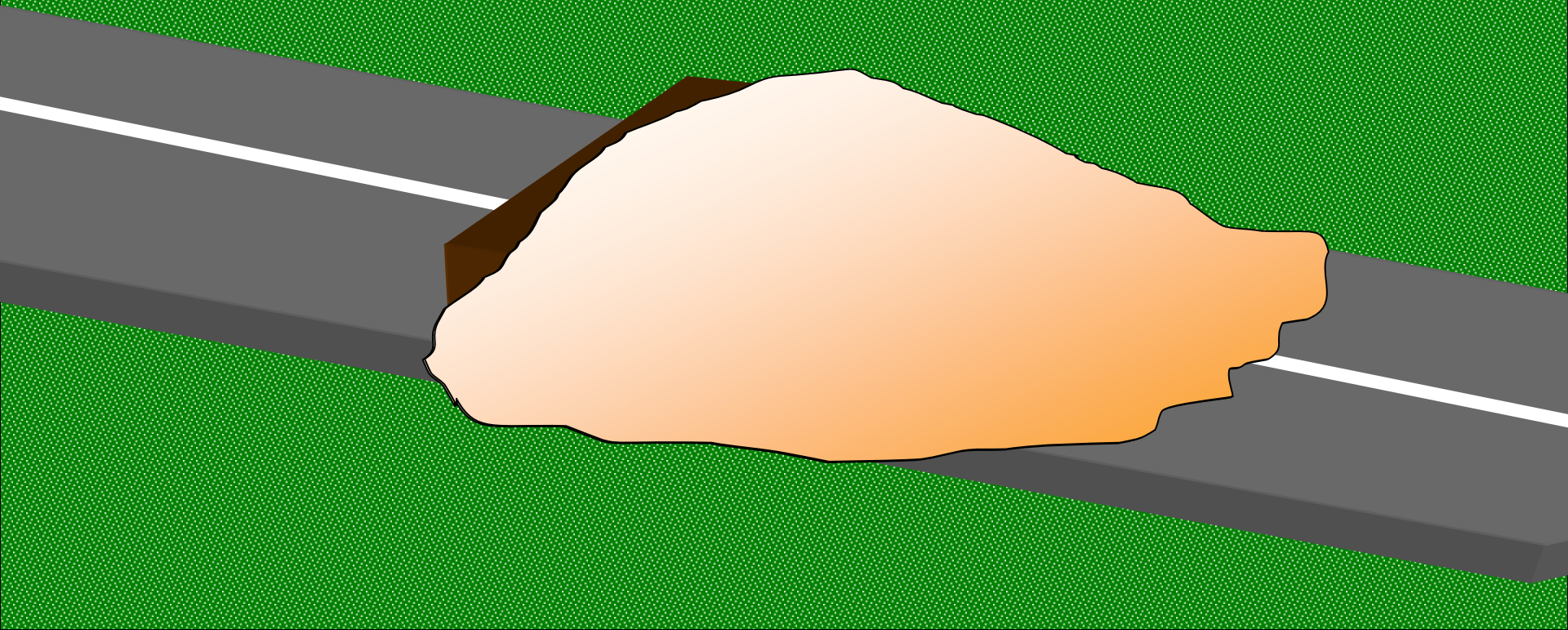
Sand Trap



Purpose: This obstacle configuration tests the Bots ability to maintain traction while negotiating through the Course

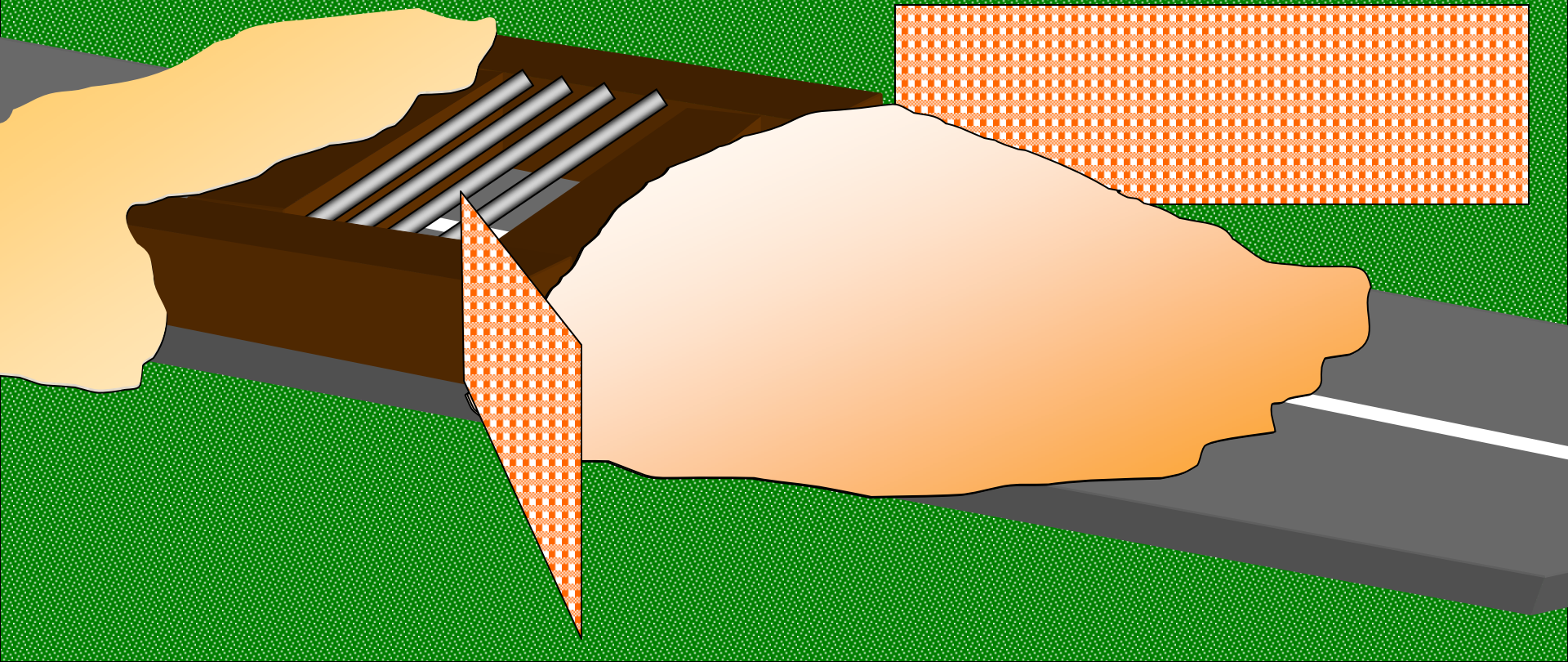
Ditch

Purpose: This obstacle configuration tests the Bots ability to negotiate or avoid a Ditch, as will be encountered on the Course



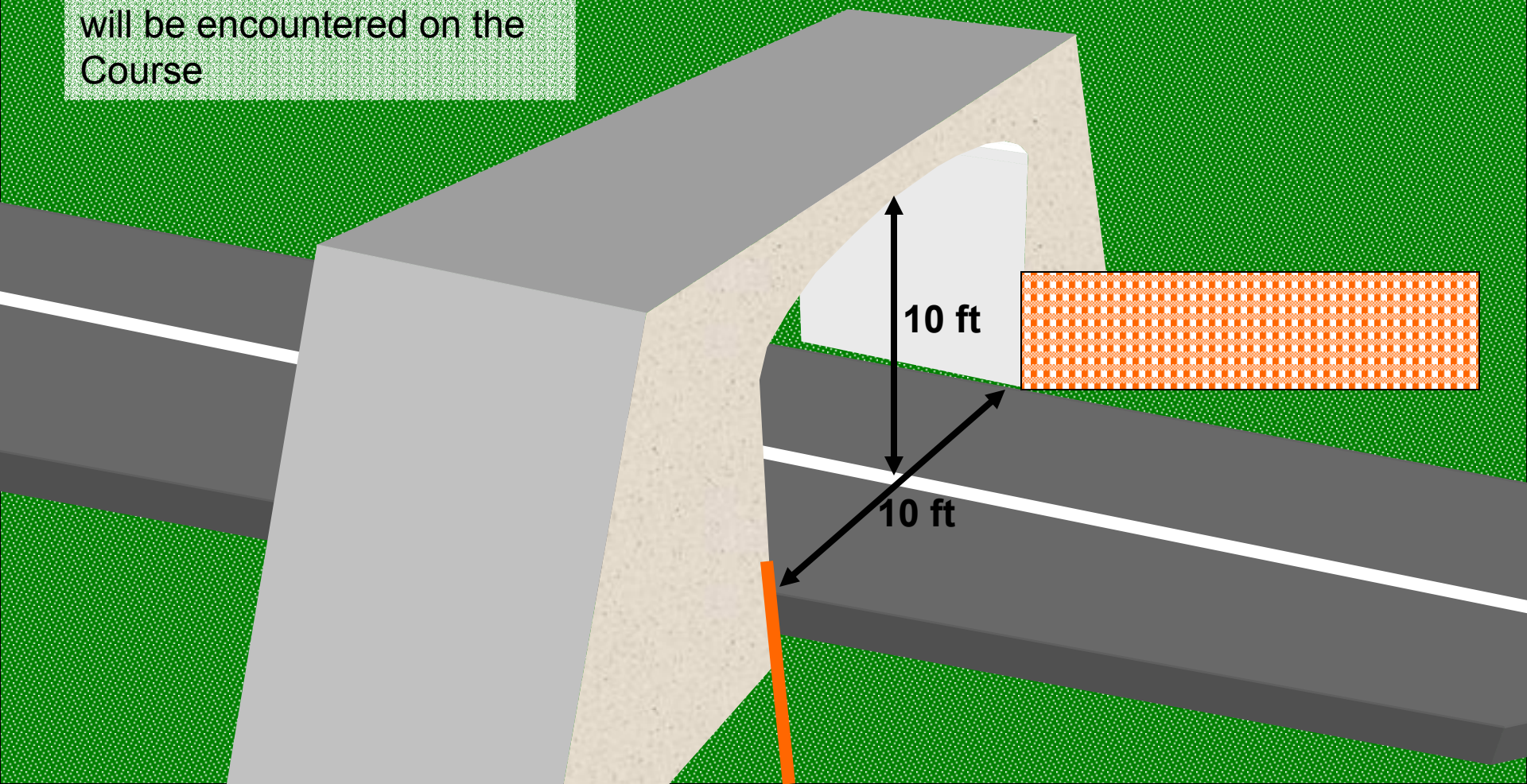
Cattle Guard

Purpose: This obstacle configuration tests the Bots ability to negotiate a cattle guard, as will be encountered on the Course



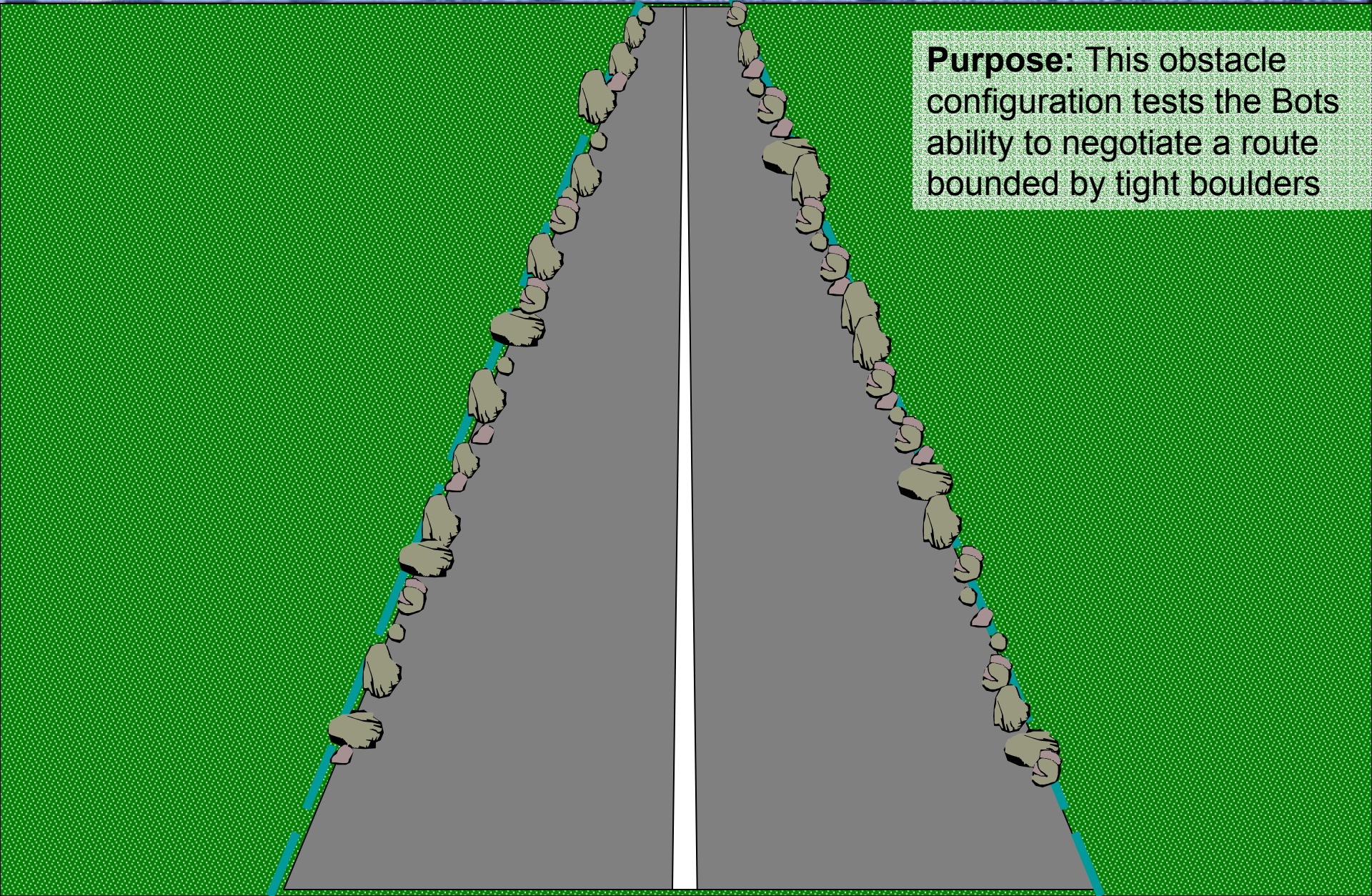
Overpass

Purpose: This obstacle configuration tests the Bots ability to negotiate through a narrow, short overpass as will be encountered on the Course



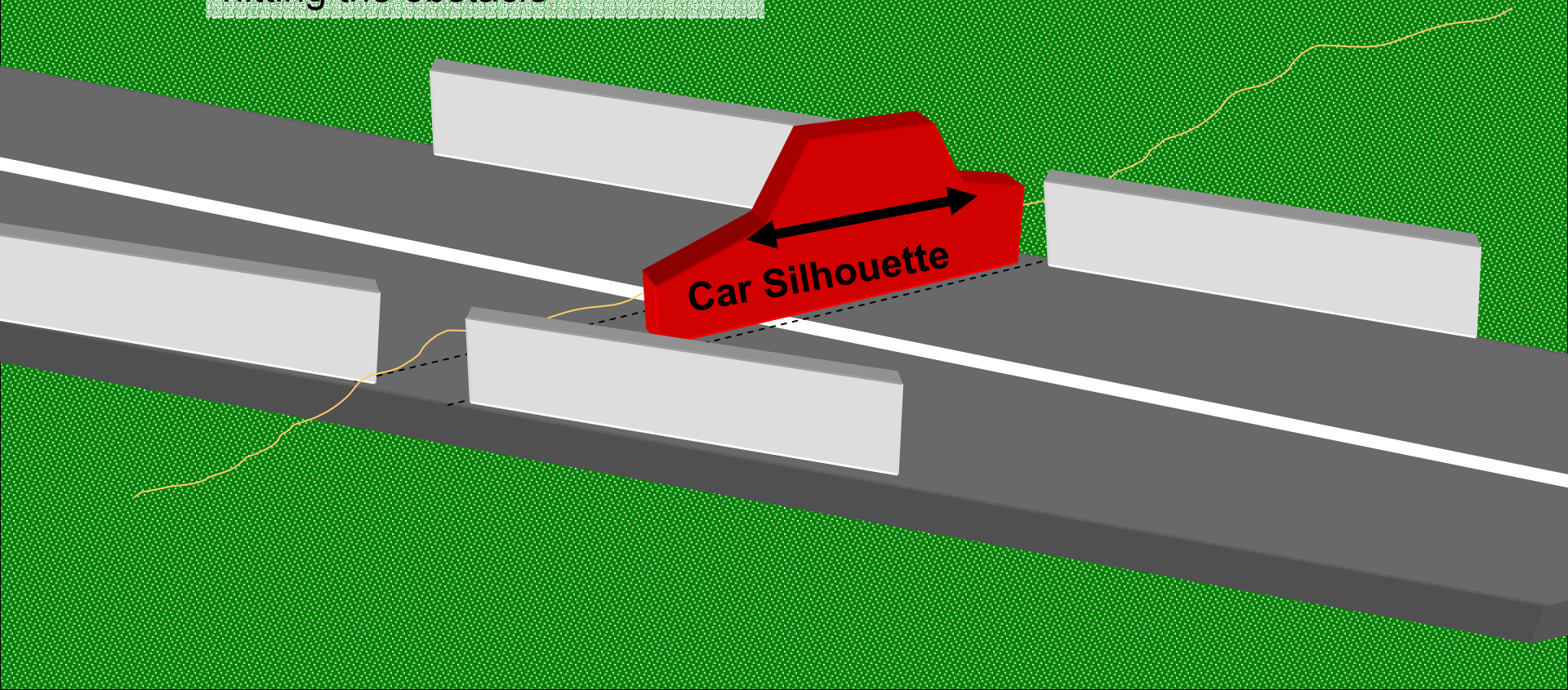
Boulders

Purpose: This obstacle configuration tests the Bots ability to negotiate a route bounded by tight boulders

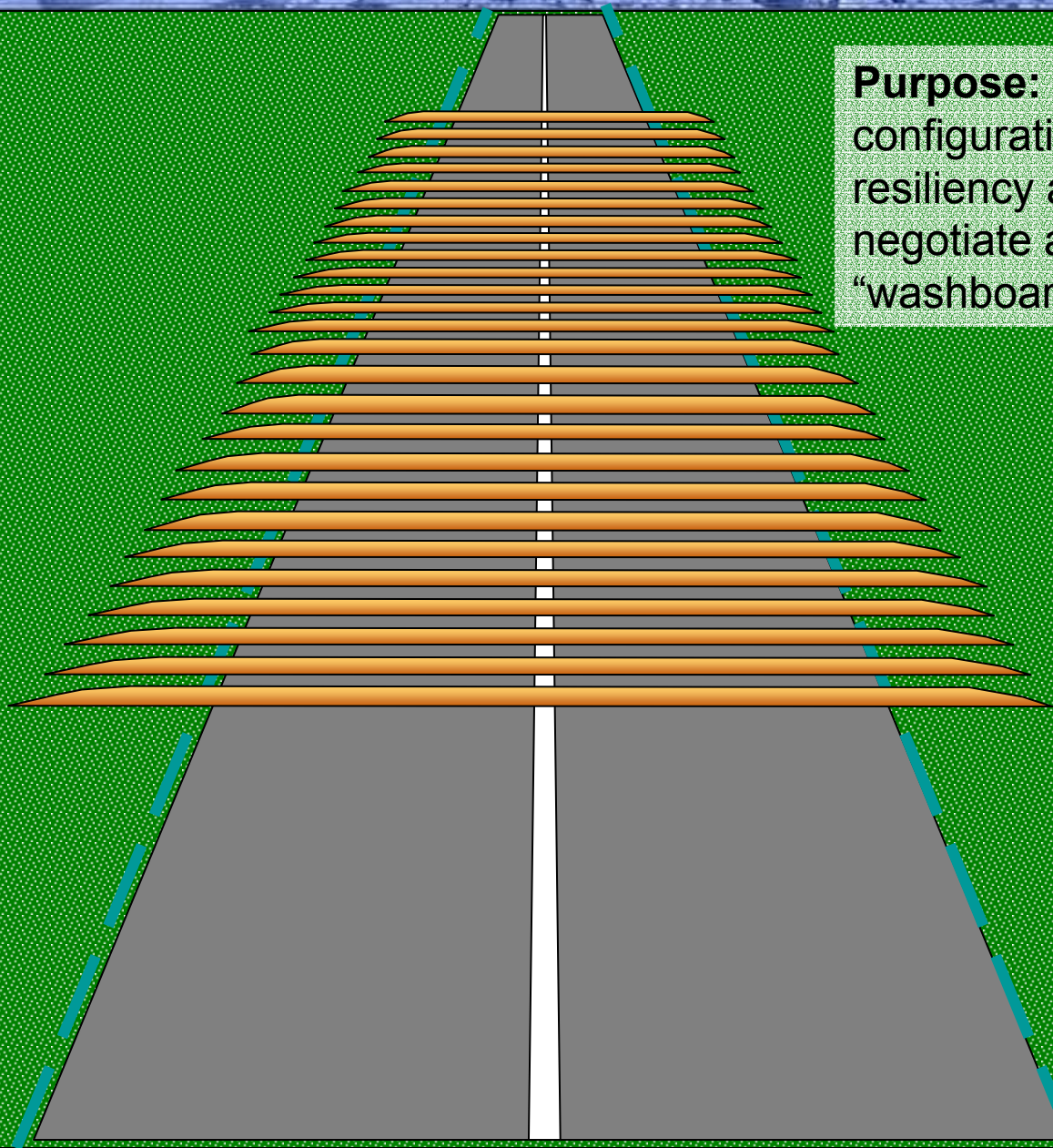


Moving Car Obstacle

Purpose: This obstacle configuration tests the Bots ability to detect the sudden presence of a vehicle to the front and stop to prevent hitting the obstacle



Washboard



Purpose: This obstacle configuration tests the Bots resiliency and ability to negotiate an off-road “washboard surface”