



# KOTH PRODUCT

Documenting the work that goes into  
perfecting a staple community map

## The New Path

Viaduct has a very deliberate design. The map's hourglass shape makes it abundantly clear that it wants the player interact with the central objective by funneling them towards it. This is a design that was very effective in teaching the mechanics of KOTH at a time when the game mode was completely new. However, the consensus is that this design is dated and is too restrictive for players. A path was added to alleviate that. The current design is more about keeping the player aware of the objective but also presenting an alternative.

## Ammo/Health Packs

The 2 medium packs have been replaced with small packs as having medium sized packs would have been excessive, especially in the case of engineers. These resources can no longer be taken for granted which makes the middle area more dynamic and strategic. The small health serves to heal chip damage and helps pushing through the chokepoint.



## Crate Stack (middle)

This crate stack was not symmetrical, it did not present any major imbalance but it was something we took the time to improve on regardless. The new design presents an arrangement that better reflect the clip brush that was present initially.

## Crate Stacks (sides)

The crate stacks presented the player with complex geometry that was tricky to navigate. This is something we felt could be improved. Product opted for a cleaner design that would be easier to use during combat scenarios. Its only drawbacks is that the current design expects players to know how to crouch-jump to fully benefit from the crates.





## The Large Cliff Rocks

The cliffs were not symmetrical and didn't provide the same rocket jumping opportunities for each side. We used a mirrored rock model instead. We also made sure to not let sentries be built up there.

## The Small Cliff Rocks

These rocks not being symmetrical was a significant imbalance. They both provided a way for single jump classes to get on the cliff but the jump was far easier to execute on one side of the map than it was on the other side.

## The Cliff Rubbles

The non-solid small rocks at the bottom of the cliff were a popular hidden spot for sticky bomb traps, we removed the rocks completely to avoid traps in a high traffic area that should be reliable for the player.

## The Ammo Pack

This side of the map is lacking in ammo in comparison to the other one. We removed some ammo on the other side and added a medium here.



## The Viaduct

The viaduct has been made slightly higher. The extra room has proven to be beneficial in making the map less sniper dominant. A higher viaduct affords greater mobility for jumping classes and makes snipers a little more vulnerable. The higher mobility also helps making the middle point less of an impenetrable spammy chokepoint. It grants better openings to those who are able to perform the trickier jumps and results in exciting plays.

## Middle Rock

The model here was problematic. First and foremost, the rock was not symmetrical, this was a problem since the lower fence is a popular sniper spot. Having the rock not be symmetrical meant that both sides did not get the same opportunities from standing on the fence. On top of that, the rock's collision model was not up to competitive standards, its collision model has been remade to better reflect the shape of the model.

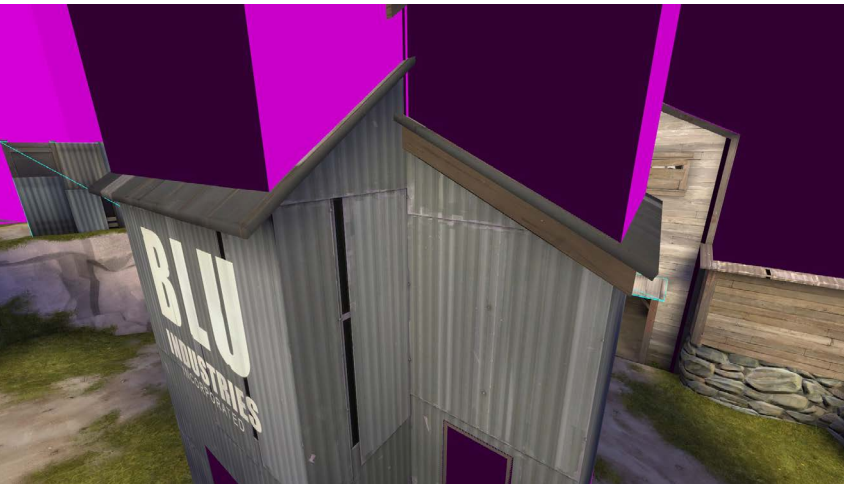
## Dark Wood Panel

This fence has been tweaked for many reasons. The wood panel has been made taller to prevent the heavy being able to stand behind it and shoot through it without exposing himself (the heavy shooting bullets from his eyes meant he could clear the fence). The gap at the bottom was slightly too large as well, the fence failed to provide adequate cover for medics. They'd get sniped through the opening.



## Lite Wood Fence

This fence is an excellent spot to stand on for snipers, they get a lot of cover from the rock and get direct vision to most entry points. The fence and rock have been tweaked numerous times to limit the sniper's vision. The sniper can still cover most entry points but cannot cover them all at once.



## Roof Clipping Overhaul

In the effort of maximizing movement in the map, all roofs have been redone to be as unobstructive as possible. The roof brushes are now non-solid displacements brushes and beams have been turned to func\_illusionary. This allows us to have our clip brushes following along the wall. This way, as far as the players are concerned, it's just on big flat surface, they don't have to worry about getting snagged on the part of the roof that sticks out during jumps and it makes the geometry a lot cleaner overall.



## Windows

To make surfaces as smooth as possible and prevent hiding spots around the map, window models have been made non-solid across the whole map except for those that are regarded as having gameplay value, (in this picture, the window frame at the bottom being solid gives access to the bridge area for non-jump classes). The holes left by the non-solid windows are filled with brushes textured in the invisible material to block both players and projectiles. Again, the wall becomes one large flat surface that the player does not have to worry about.

## Lamp

For a lot of the same reasons, the lamp has been removed, they could have been made non-solid but they were not necessary in Product's lighting setting.

## Handrails

The handrail has been removed as they tend to block projectiles, punishing players for no reason. When handrails are used, the preferred way to make them is to have the model be non-solid and make a clip brush around it for player collision. We simply removed for being unnecessary obstructive in an area where people generally don't fall down.



## Metal Sheets

The metal sheets have moved around for multiple reasons. In short, we wanted to limit sniper options. Having fewer options for snipers makes it safer to approach the middle point since you have less angles to worry, it also makes team communications clearer as there's only a few places the sniper can realistically be at. The panels that had less gameplay value have been removed on the basis of being obstructive for both sniping and jumping. the sniper deck has been shortened as well to limit the number of paths the sniper can cover at once.



## Nitpicks (a few of them)



Here's an other exemple of a series of bad offenders for windows that should be non-solid instead of clipped



The clipping of indoor beams has been to be revised in many areas, this room being the worst offender.



Projectile classes are not pleased with gaps in fences, blockbullet has been used where needed

## Optimization

Something can be said about optimization, Product runs at a noticeably better framerate. The map had taken a performance hit from opening the middle portion on the map but through optimization, framerate is overall better than it used to be on viaduct. Other than removing miscellaneous things and snow, some visibility optimization has been done as well as adjusting fade distances on many models.

Less than scientific benchmarks for reference:

location	fps product	fps viaduct
setpos -1763.482178 -1807.739014 75.823395;setang -5.147987 85.044083 0.000000	250	190
setpos -2771.100586 -826.223022 273.039276;setang 2.772904 7.555834 0.000000	210	175
setpos -745.293091 1075.744751 460.717926;setang 6.332556 -134.347321 0.000000	210	190
setpos -1372.154175 -2925.579834 149.995422;setang -0.403869 90.353203 0.000000	240	200

## Final Word

Product required a lot of work, but it would not have been possible without the community. It makes no doubt to me that the community cares a lot about this map and wants it to be the best it can be. The work that has been done was nothing short of obsessive, every little detail has been reviewed through feedback and testing in a relentless effort the make the map closer to perfection with every update. Unfortunately this document does not cover every tweaks that have been made but I feel like it at least covers the differences that people should be aware of to appreciate the map. This was all you Community, you made this happen. you were very demanding but in the end it paid off. We now have one of the most polished map ever made and what's more, it is a great collaborative effort that is inclusive of everyone involved with TF2; Valve, mappers and players.