

NR2003 Sandbox Track Editor Basic Information for Beginners

Check out these links:

[Do-it-Yourself FAQ for NR2003](#)
[Track Making Tutorial Thread \(wordy, but good info\)](#)
[The Skinny on "track.ini"](#)
[Track Troubles, Possible fixes](#)
[Minimum Required Track Files](#)
[How to make a Billboard \(short version\)](#)

Great Short Track website:

[United Short-track Alliance \[USA\]](#)
[Best On-line Sandbox Tutorial I have seen!](#)

Q: I have tried to open an existing track with the "sandbox" editor, but I keep getting errors.

A: it's the "trackmat" files that are causing that error. Make sure the files for the F and W sections are in a trackmat folder in the track folder. There is no way to tell what the MIP's are outside sandbox however they should be in the original track .dat file. First you must use winmip2 to unpack the "shared.dat" in your C:\Papyrus\NASCAR Racing 2003 Season\tracks\shared folder. Then unpack the "trackname.dat" file in the track folder you want to edit. Note: Winmip2 will extract the files to an "unpack" folder. Don't forget to move them out of this folder and into the main "shared" or "trackname" folder.

Q: Why won't all my tracks show up?

A: Make sure you have less than 128 tracks, because the **game limits the tracks to 128**. After 128 tracks, the tracks that come later in the alphabet (Talladega, Texas, Watkins Glen...) will be bumped off the list.

I am not the Creator of tutorial that follows; I simply copied and redacted it so it will be saved in written form ... it is the same tutorial that is from the link above.

There may be cases that the track.ini or a dat file is missing ... as I have seen in a few downloaded tracks.

Sandbox Tutorial

This is a tutorial for basic track construction.

PART 1: BASIC CONSTRUCTION.

I'm still in the learning process of building tracks. What I've learned so far in this tutorial. I am going to show you how to build a one mile oval. I'm going to make the straights at 5 degrees banking and the turns at 15 degrees. I am going to go thru the process step by step. This is a long and time consuming process. If you are looking to just throw something together, then this is not for you.

Let's jump right in and get started. Before we do, let's talk about some of the programs we will be using other than Sandbox.

Here are a list of programs and the place to find them. There are three major programs I use to build tracks.

1. Sandbox
2. MIP explorer
3. WinMip 2.

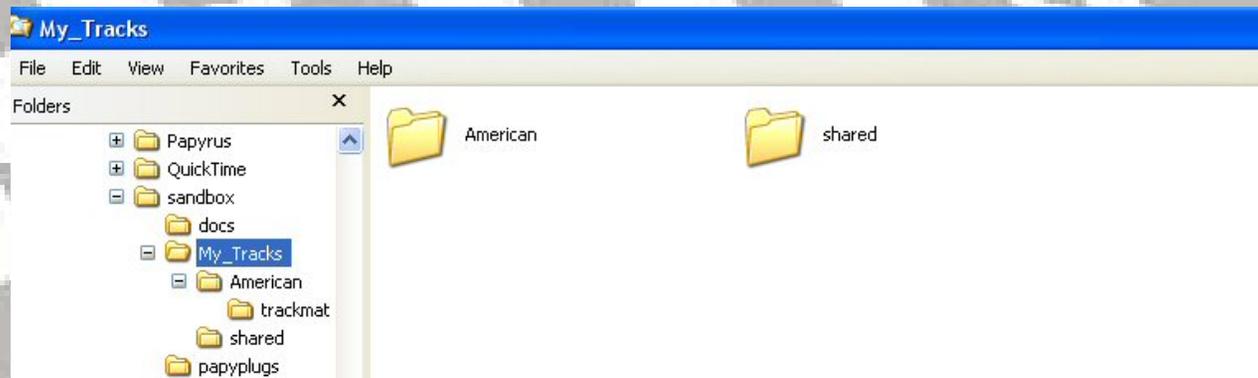
They can all be found at <http://theuspits.com/sims/index.html>. Under NASCAR Racing 4/2002/2003 click on editing and they are all right there. You will also need a paint program. Paint Shop Pro or Photoshop will do your choose.

Also to save you the trouble of looking for files. I've created a zip file of all the files to be used in this tutorial. You don't have to use these files, you could use whatever files you want.

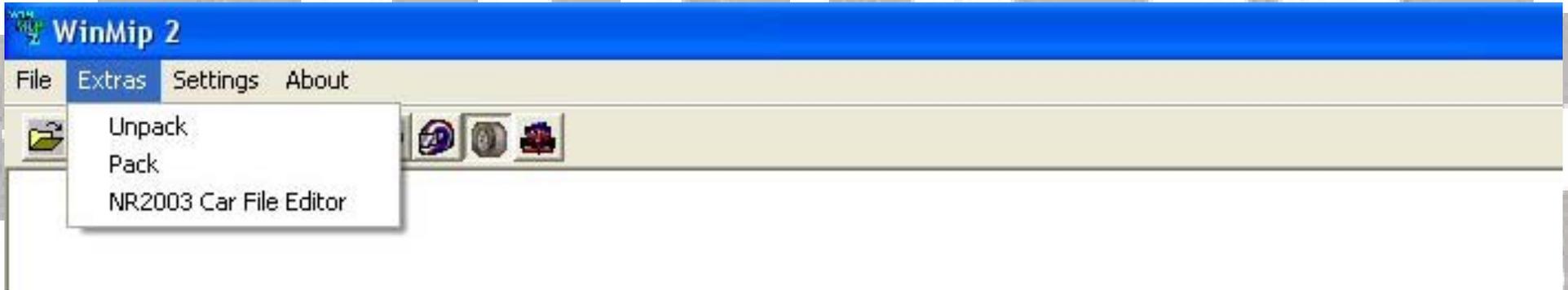
Please Note: For some reason every time I upload the zip file to my web site the host keeps deleting it. So if you want the files send me an e-mail and I'll send them to you. [E-mail](#) It's in ZIP format and is 2.16K in size. I seem to do things a lot different then in other tutorials. You will find yourself saying "why the hell is he doing it this way". In the long run it will be better for you. Let's build.

STAGE 1: WORKSPACE

As I'm sure you know by now, we need our workspace set up. To do this we need to create some folders. In a place that's comfortable for you (I'm going to place my folders in the Sandbox folder). Create a folder called (My_tracks), under that folder create a folder and call it shared. Then one and name it your track name. For lack of a better name I'm going to call my track, American. Inside the American folder create another folder and call it (trackmat). After all that's done you basic tree should look like this.



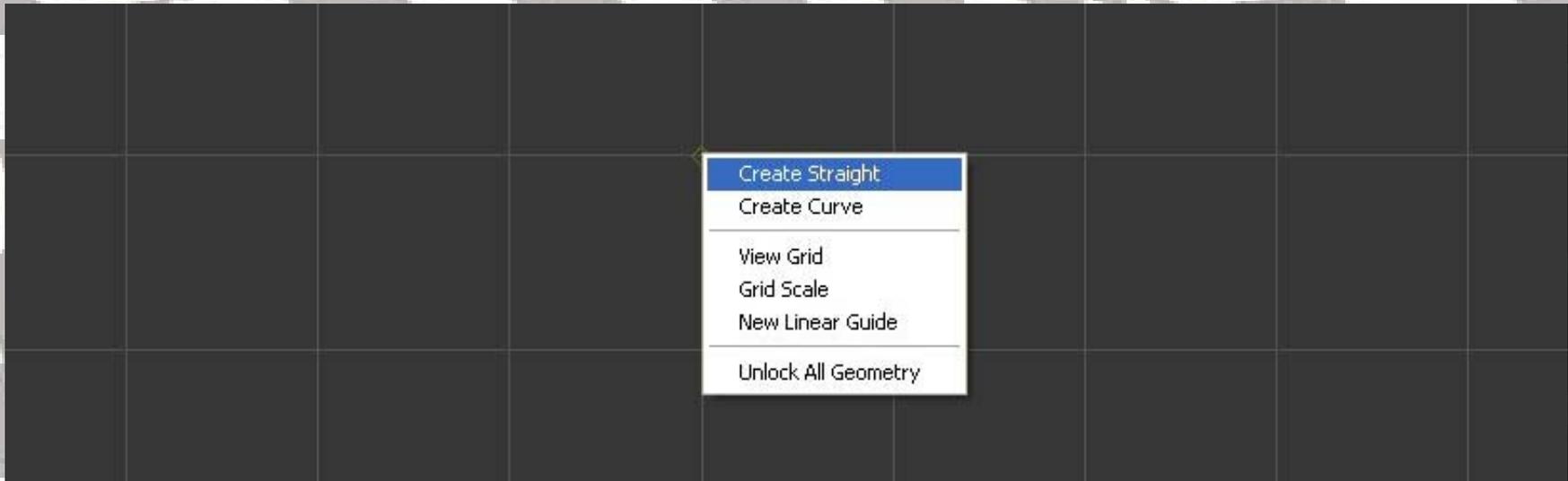
Now copy a copy of your of your shared data file (located in you tracks folder under shared) into your shared folder and then unpack it. I like to use the program WinMip 2. It works really well. Open WinMip 2, and click extra and unpack. Find the shared.dat file and unpack it.



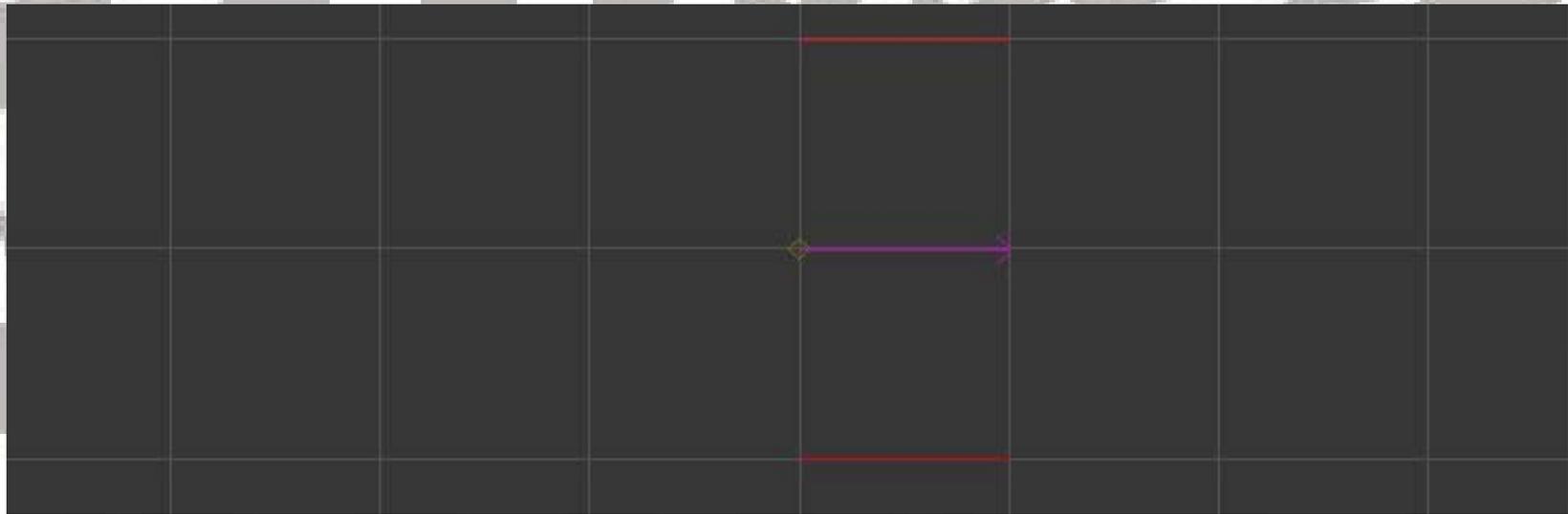
After the unpacking, move all the files for the unpack folder into the shared folder and then delete the folder unpack. If you are using the files that I selected, put them into the trackmat folder you created. Now, let's start building our track.

STAGE 2: BASIC LAYOUT

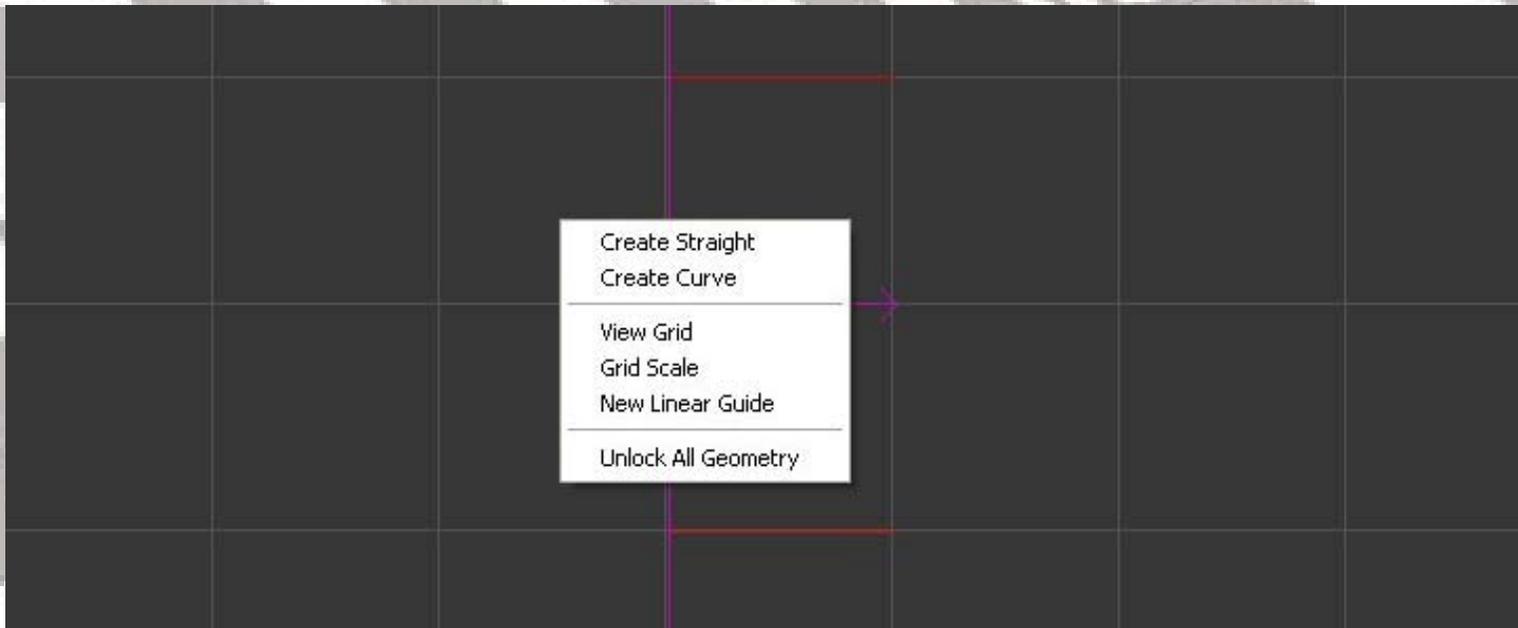
It's now time to get our hands dirty. First open up sandbox. Right click in the center of the screen. It will look like this.



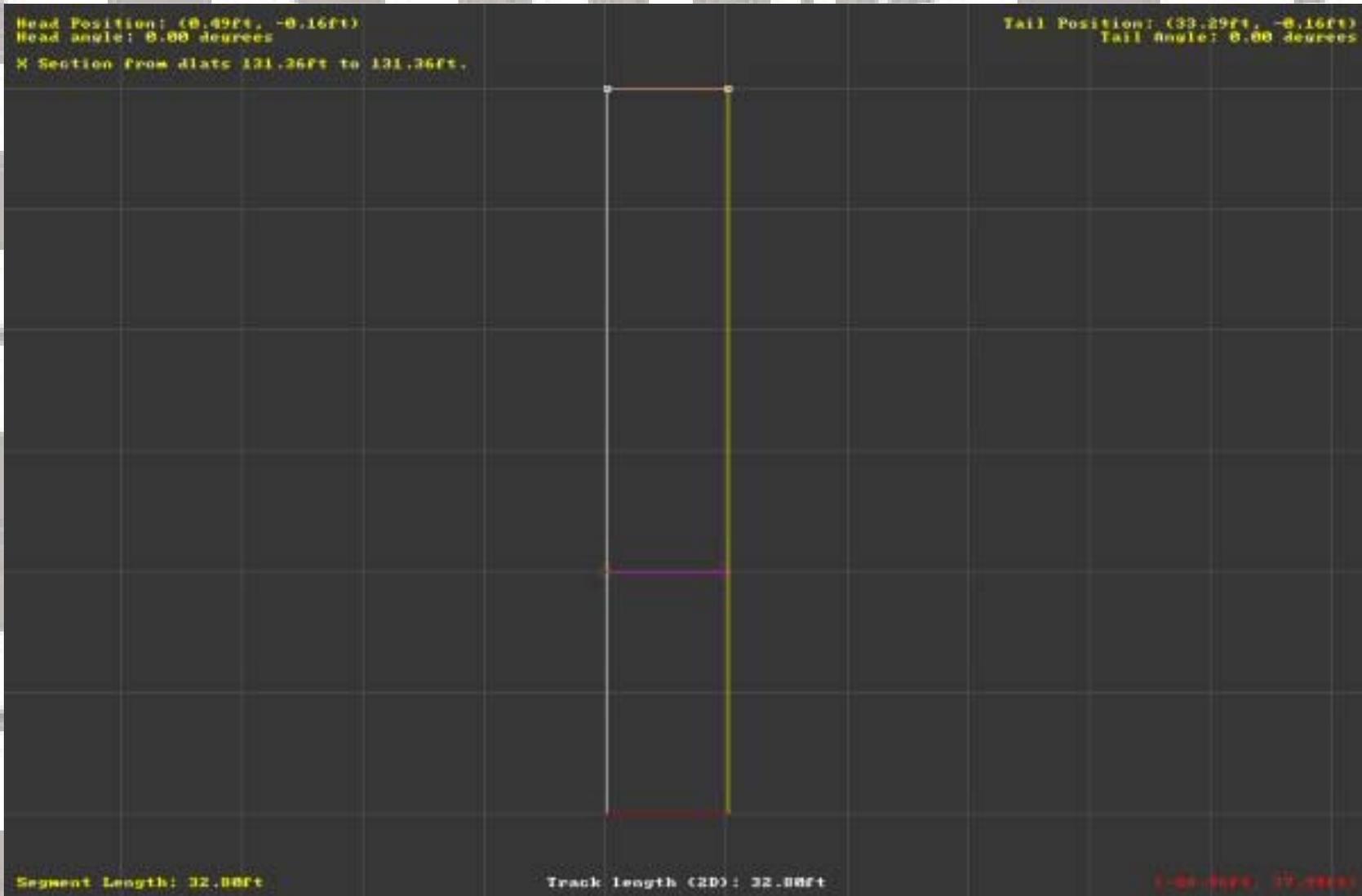
After the right click, click on create a straight.



After you have you straight down we want to save it now. Click file and save as. Name it the name of you track. Make sure you save it to the folder you created earlier. Now reopen it. Click file then new, then click file again and then open. Go to you track folder and select you track. Once the track opens, you should have displayed the little straight you just created. Now outside the track, right click and then select unlock all geometry.



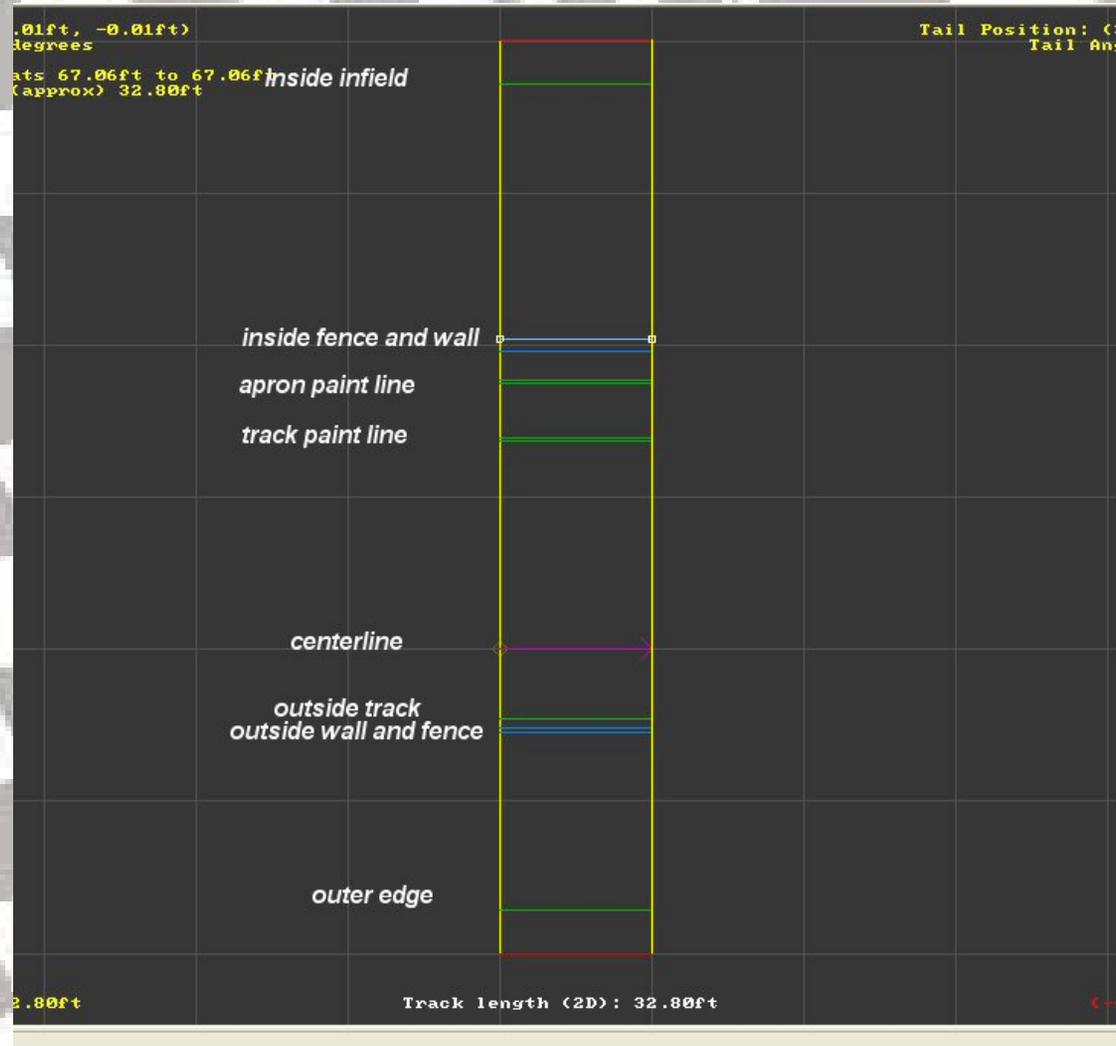
Now, Lets layout the track. You need to get the layout. Some people like to use meters, but I prefer to use feet. I can better judge things that way. To change over to feet from meters, Click at the top on view and displayed units and select feet. For reference the top line is the inside of the track and the bottom is the outside of the track. The purple line is the main part of the track and the red lines are call x-sections. On the bottom red line pull it down one square. At the top line move it up three squares. So it looks like this.



Now we need to lay down all the x, f, w, sections to texture the track. There are going to be a lot of lines. First let's set the line for the outside of the track. Lay down two f-sections, one inside the bottom red line and one inside the top red line, but don't let them touch.

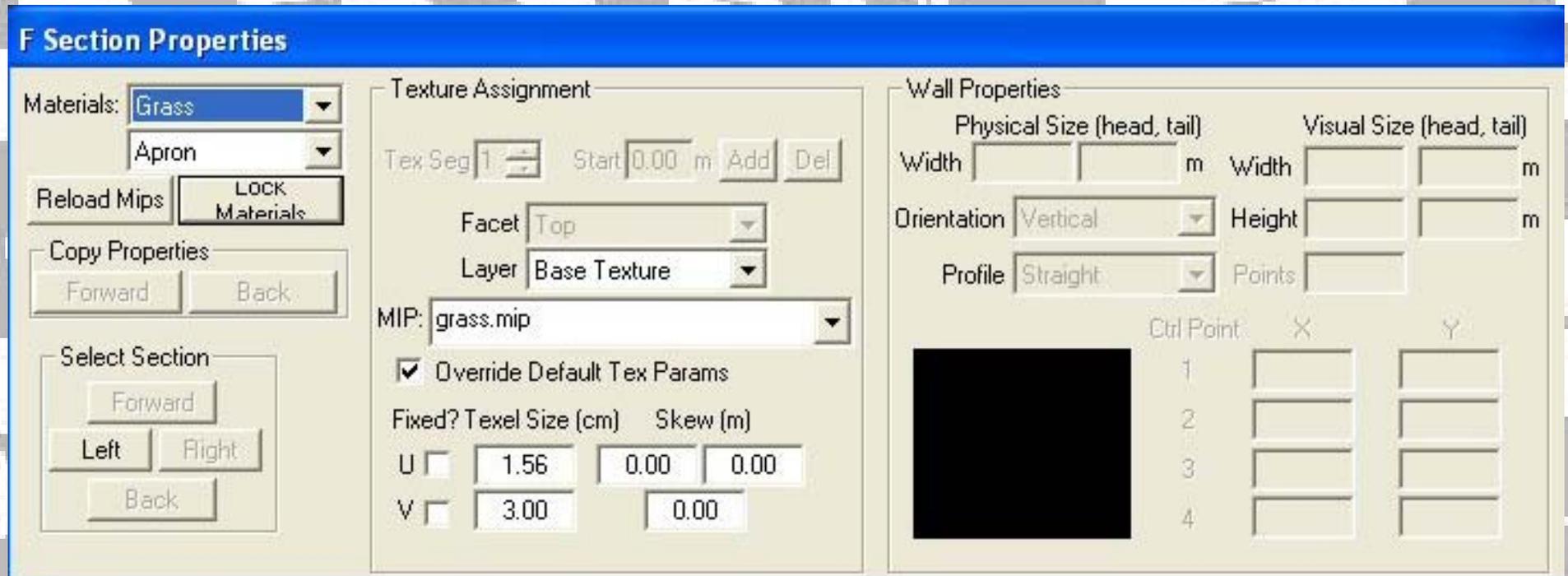
Now by rule, NASCAR measures its tracks for length 15 feet from the outside wall or outer edge of the track. No matter how wide the track is. The purple line in the middle is the measuring line. So right click on the section that we laid out and insert and f-section to the bottom side of the purple line and move 15 feet off. I guess it doesn't need to be perfect, but if you zoom in real close you could get it right.

Below that line we need to put two w-sections. Just place them for right now we'll position them later. Don't touch them with the f-section. We are going to make our track 60 feet wide. So to the top of the purple line place another f-section 45 feet for it. Just to the top of that line put another f-section about .50 feet from it. You may have to zoom in close to get it right. Above your last f-section put another f-section 12 feet away. Then add 0.50 feet more, for another F-section. Above that line put two more w-sections. Again we'll place it in a minute. For now that's all we need to start texturing. Here's a picture to show you what it should look like.



Now we need to texture. But first we need to save it. When you save your work always use "save as" and add or change the ending. I always add a number to the end, (ex. American, American1, American2, American3.) After three I go back to the first one. Sometimes Sandbox will crash in the middle of saving. If you do it this way and save often, you won't lose all your work.

To texture, start at the very bottom and work up. On the bottom f-section, click on it and open the properties window. If you are using my selected files, everything you will need is already there, if not you will need to get some. Instead of telling you everything, I'm going to use pictures for each step and "properties" window. Make sure you pay close attention to each part of the window. If you select view and draw underneath. You can see the textures as you make them. The bottom line is going to be grass. Select it and set the properties to these settings



Now move to the first w-section. This will be our outside fence. You can use these settings. Pay close attention to the wall properties. When texturing fences you really only need to texture the right and lefts (fence.mip). Top, Near and far aren't really issues with fences (note: near relates to the tail, far relates to the head).

W Section Properties

Materials: **Wire Fence (right)** <Undefined>

Reload Mips LOCK Materials

Copy Properties Forward Back

Select Section Forward Left Right Back

Texture Assignment

Tex Seg 1 Start 0.00 m Add Del

Facet Left (walls only)

Layer Base Texture

MIP: fence.mip

Override Default Tex Params

Fixed? Texel Size (cm) Skew (m)

U 1 0.00 0.00

V n/a n/a

Wall Properties

Physical Size (head, tail) Visual Size (head, tail)

Width 0.30 0.30 m Width 0.10 0.10 m

Orientation Perpendicular Height 4.00 4.00 m

Profile Curved Points 4

Ctrl Point	X	Y
1	0.000	0.000
2	-0.200	0.200
3	-0.400	0.500
4	-0.800	0.600



Now go to the next w-section and select it. Use these settings. Use wall_01.mip for the left and right side, near and far, and walltop_01.mip for the top.

W Section Properties

Materials: **Wall** Racing Surface

Reload Mips Lock Materials

Copy Properties Forward Back

Select Section Forward Left Right Back

Texture Assignment

Tex Seg 1 Start 0.00 m Add Del

Facet Top

Layer Base Texture

MIP: walltop_01.mip

Override Default Tex Params

Fixed? Texel Size (cm) Skew (m)

U 1.00 0.00 0.00

V n/a n/a

Wall Properties

Physical Size (head, tail) Visual Size (head, tail)

Width 0.50 0.50 m Width 0.50 0.50 m

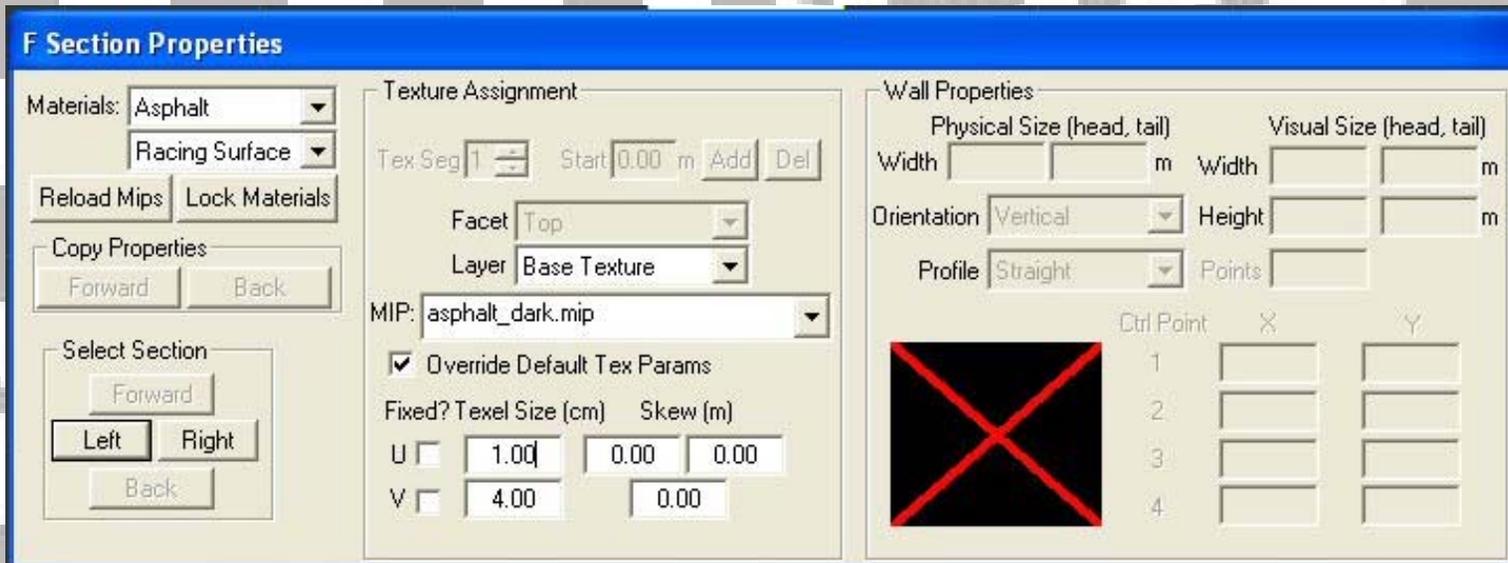
Orientation Perpendicular Height 1.22 1.22 m

Profile Straight Points 1

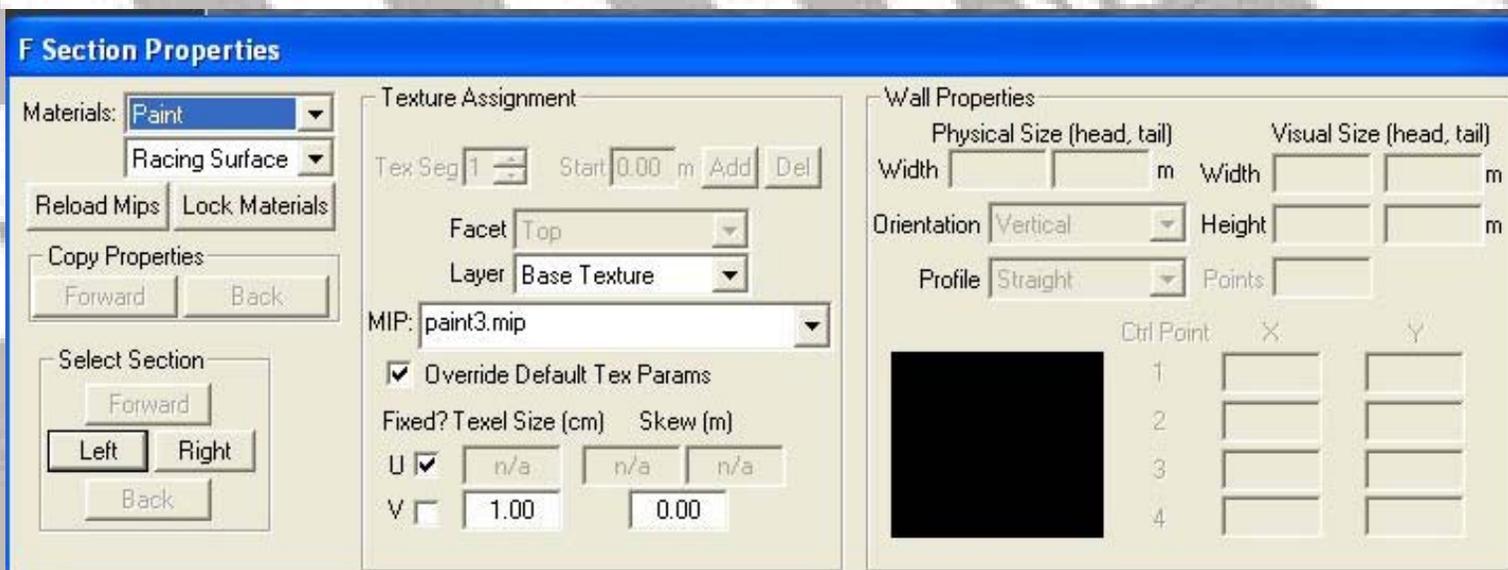
Ctrl Point	X	Y
1	0.000	0.000
2	0.000	0.000
3	0.000	0.000
4	0.000	0.000



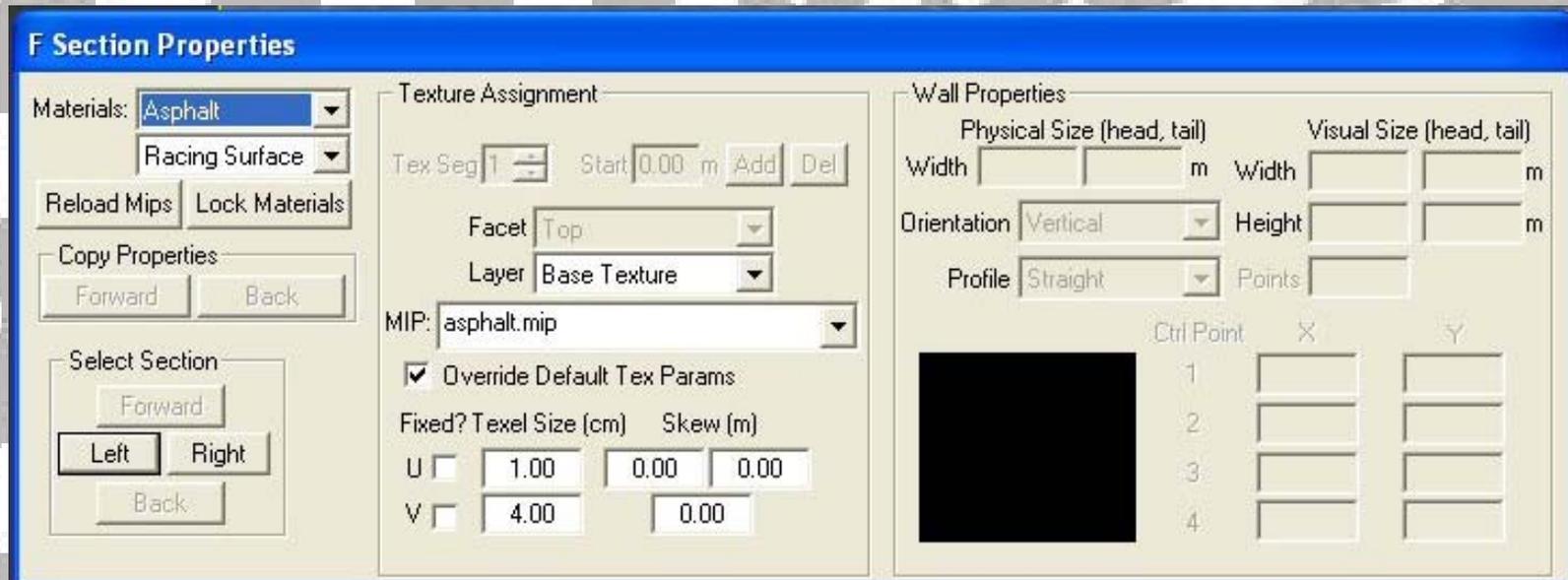
For the next f-section we put down the asphalt. Use these setting and asphalt_dark.mip.



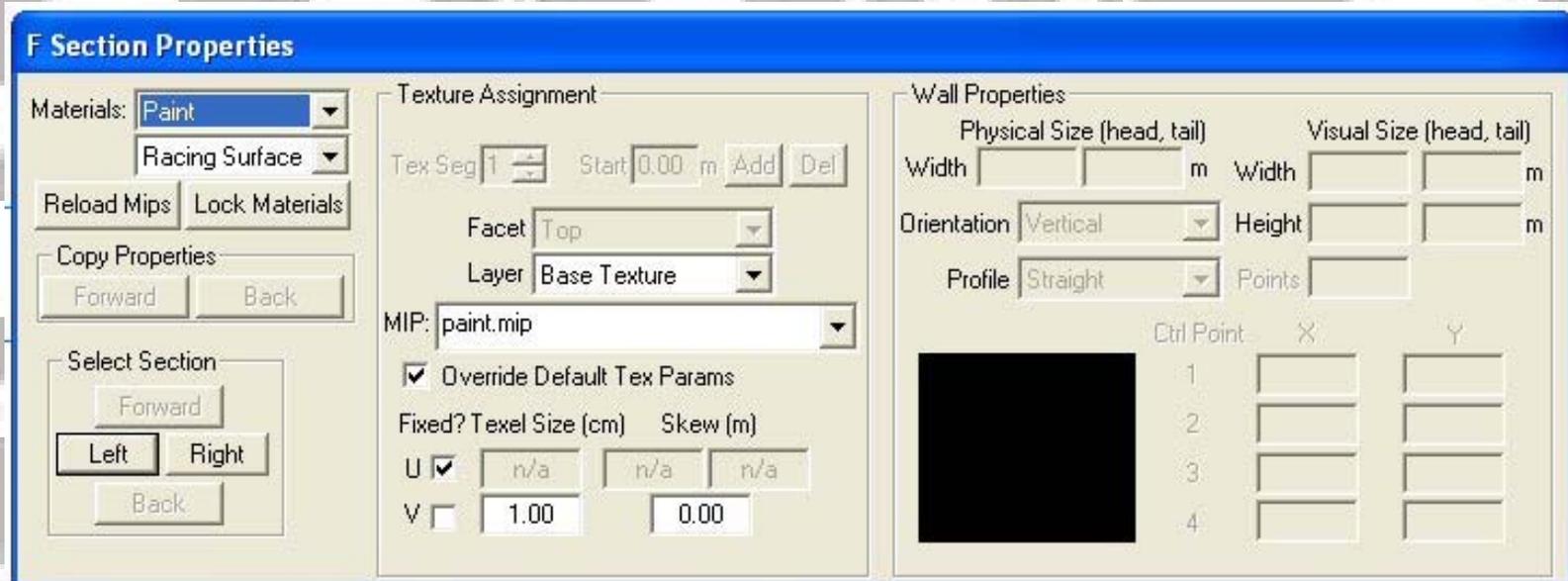
Now to the next line we add our paint line. If you want it to be yellow use paint3.mip or if you want it to be white, use paint.mip. Use these settings.



The next line is for the apron of the track. Use asphalt.mip and these settings.



The next area is for more paint. You could use the same setting as before or you could use the other color. If you used yellow before, use white now or vice versa. Or use the same color both times. It's up to you. I used these settings.



Almost home. The next line is for more grass. You could use the same as before, but I like to keep things different. I used grass2.mip this time. Some settings changed.

F Section Properties

Materials: Grass Apron

Copy Properties

Select Section

Texture Assignment

Tex Seg 1 Start 0.00 m

Facet Top

Layer Base Texture

MIP: grass2.mip

Override Default Tex Params

Fixed? Texel Size (cm) Skew (m)

U 1.56 0.00 0.00

V 1.56 0.00

Wall Properties

Physical Size (head, tail) Visual Size (head, tail)

Width m Width m

Orientation Vertical Height m

Profile Straight Points

Ctrl Point	X	Y
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>



Two more to go. The inside wall is next. Use the same settings as the outside wall except change the visual Size height from 1.22 to 1.00. Like so.

W Section Properties

Materials: Wall <Undefined>

Copy Properties

Select Section

Texture Assignment

Tex Seg 1 Start 0.00 m

Facet Left (walls only)

Layer Base Texture

MIP: wall_01.mip

Override Default Tex Params

Fixed? Texel Size (cm) Skew (m)

U 1 0.00 0.00

V n/a n/a

Wall Properties

Physical Size (head, tail) Visual Size (head, tail)

Width 0.50 0.50 m Width 0.50 0.50 m

Orientation Vertical Height 1.00 1.00 m

Profile Straight Points 1

Ctrl Point	X	Y
1	0.000	0.000
2	0.000	0.000
3	0.000	0.000
4	0.000	0.000



Last but not least, the inside fence. Use these settings, but use fenceinf.mip.

W Section Properties

Materials: Wire Fence (left) ▾
Apron ▾

Reload Mips Lock Materials

Copy Properties
Forward Back

Select Section
Forward
Left Right
Back

Texture Assignment

Tex Seg 1 Start 0.00 m Add Del

Facet Left (walls only) ▾
Layer Base Texture ▾

MIP: fence_inf.mip ▾

Override Default Tex Params

Fixed? Texel Size (cm) Skew (m)

U 1.00 0.00 0.00
V n/a n/a

Wall Properties

Physical Size (head, tail)		Visual Size (head, tail)	
Width	0.30 m	Width	0.10 m
Orientation	Vertical ▾	Height	4.00 m
Profile	Straight ▾	Points	1

Ctrl Point	X	Y
1	0.000	0.000
2	0.000	0.000
3	0.000	0.000
4	0.000	0.000



Now let's get our walls lined up. Move the outside wall in to touch the track. Don't touch blue line to green line just the outer edge of the wall touching the track. Then pull the fence right up next to it. Like so.



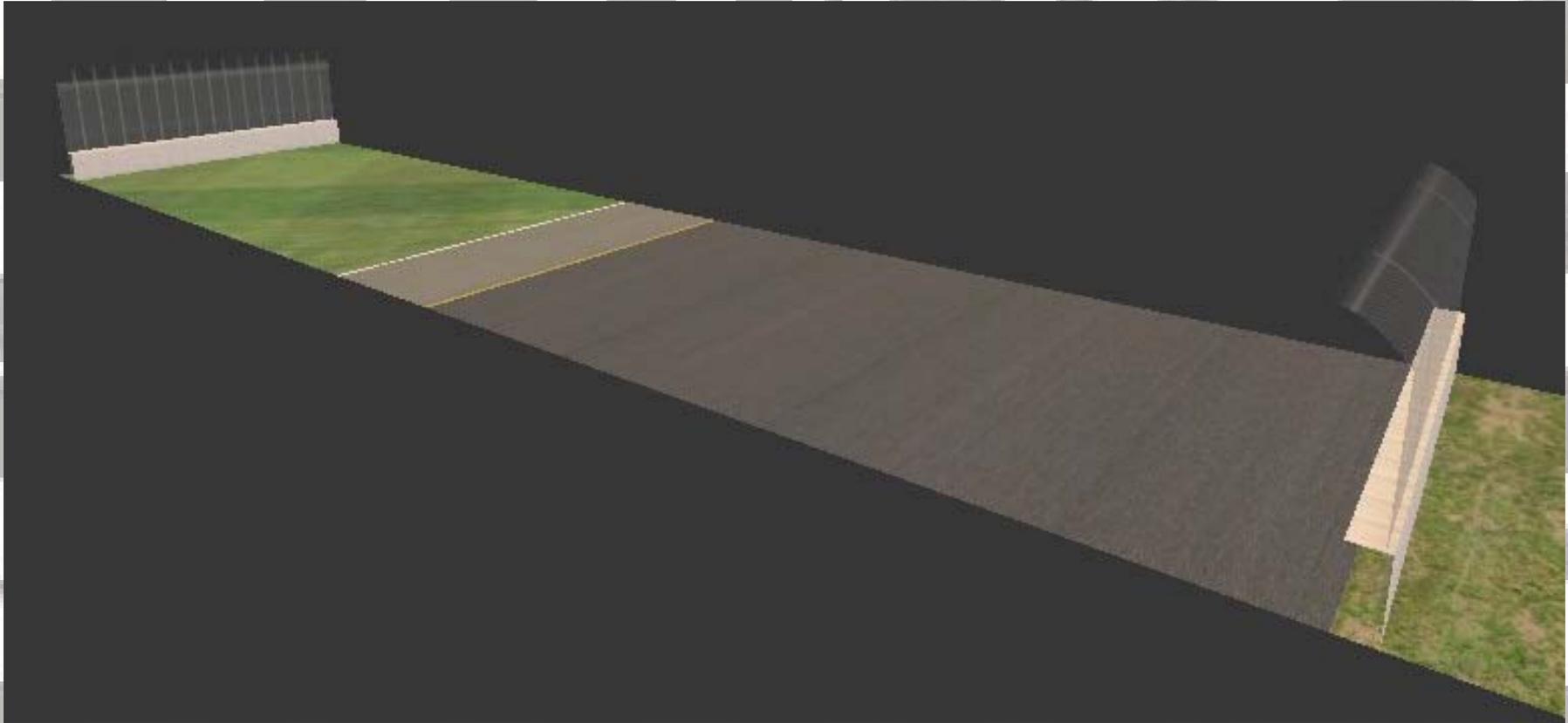
The inside fence and wall you can move out close to the edge of the inside. You don't have to touch these if you don't want to. Now on the outside of the wall pull an x-section right next to it. This will be used for the banking. If it shows that you can't add the x-section, make sure you right click and hit unlock all geometry.



We now need to add two more. One to the top of the inside track and one at the top of the apron. In the picture I show you where to put them but you want to move them in to overlap the green line.



Now click view at the top and click camera view, hit the space key to view you track.



Now save and remember to click save as and add the number. That's it for the basic section. Next we will go through and lay out the whole track.

PART 2: LAYING THE TRACK.

Now that our first section is laid out and textured. We need to lay out the rest of the track. As I said, I am doing a one mile oval. But you could do what ever you want. 1/2 mile, 5/8 1 an 1/2 or 2miles or even 3 miles if you want. Below is a section chart for segment lengths.

length	distance in feet	each segment in feet
1/2 mile	2,640	330
5/8 mile	3,300	412.5
3/4 mile	1,320	165
1 mile	5,280	655
1.25 mile	6,600	825
1.5 mile	7,920	990
2 mile	10,560	1,310
2 1/2 mile	13,200	1,650
3 mile	15,840	1,980

This is a chart for all the basic track sizes. If you want to do a track that is not listed. Here's the formula that I use to gather these numbers.

Whatever size you want, say you wanted to do a 2.25 track.

Take one mile (5,280 feet) divide it by four (one quarter the distance 1,320 feet).

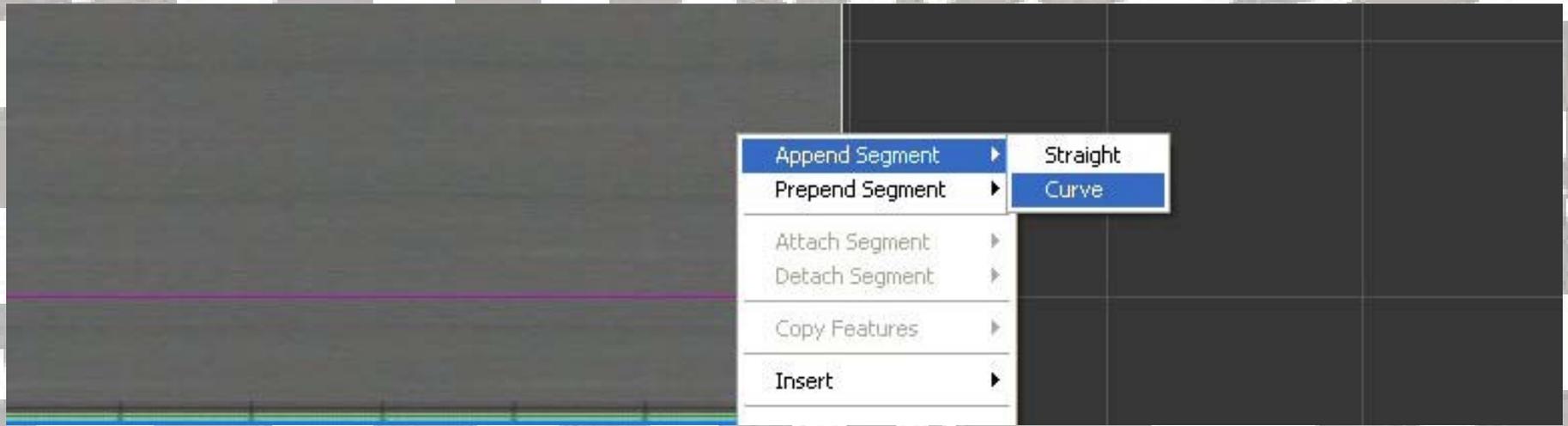
One quarter would go into 2.25 9 times, so times that number by 9 and you get the distance for 2.25 miles (11,880 feet). That is you total distance.

Now divide that number by 8 and that gives you the distance for each section (1,485 feet).

Okay, now that you have settled on you distance.

Let's lay it out.

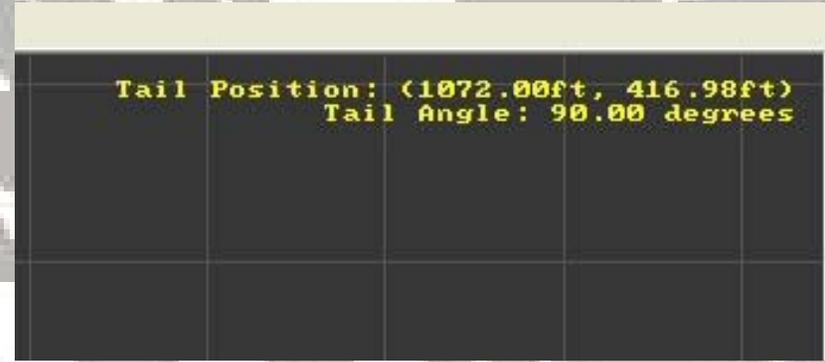
Take the section that you textured and make it the segment length you want. I'm doing a one mile so I make the section 655 feet long. To lay out the next segment, right click with in the first segment and append segment, curve.



You should make the segment the same length as the first. Move the end out until you have the length at 655 feet and 90 degrees. It's going to take a lot of work to get it right. Zoom in as much as you need to get it.



Bottom right



Top left

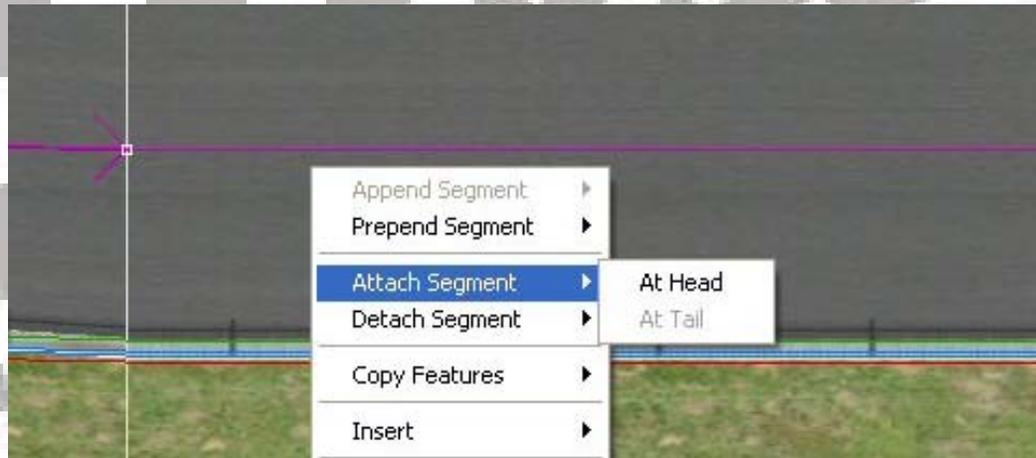
Turn two is easy. Just do the same thing you did for turn one and it will set up right. The top right should now be at 180 degrees and the bottom left should be at 655.00 feet. If not you may need to adjust it.

For the back straight just right click again and it lays it out perfect just like before. The back straight needs to have two segments laid out. So right click again a put another one down.

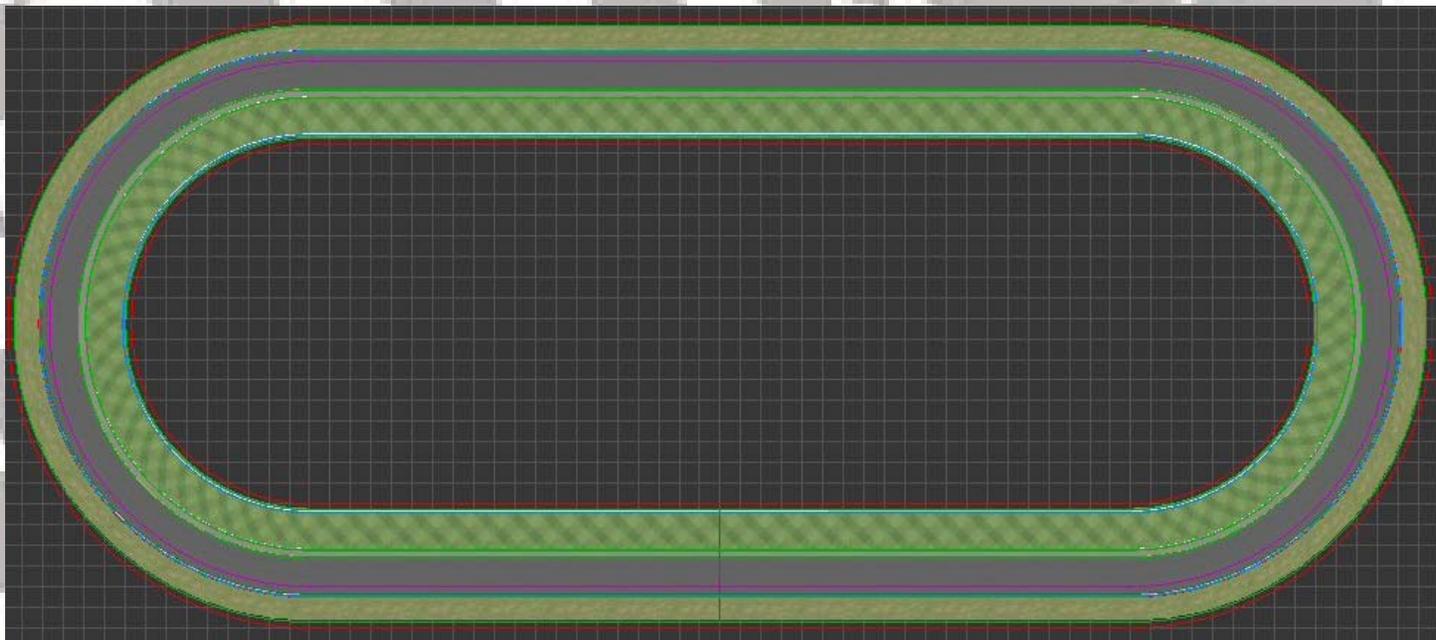
Turn three do the same thing but this time you'll have to go in and adjust it to 655 feet and this time to 270 degrees.

Turn four is done the same as turn two. You shouldn't have to adjust turn four.

Now go back to the first segment you laid out and right click on it and select prepend segment and put a straight behind it. Now just one more thing and we are done. On the segment you just laid, right click and select attach at head.



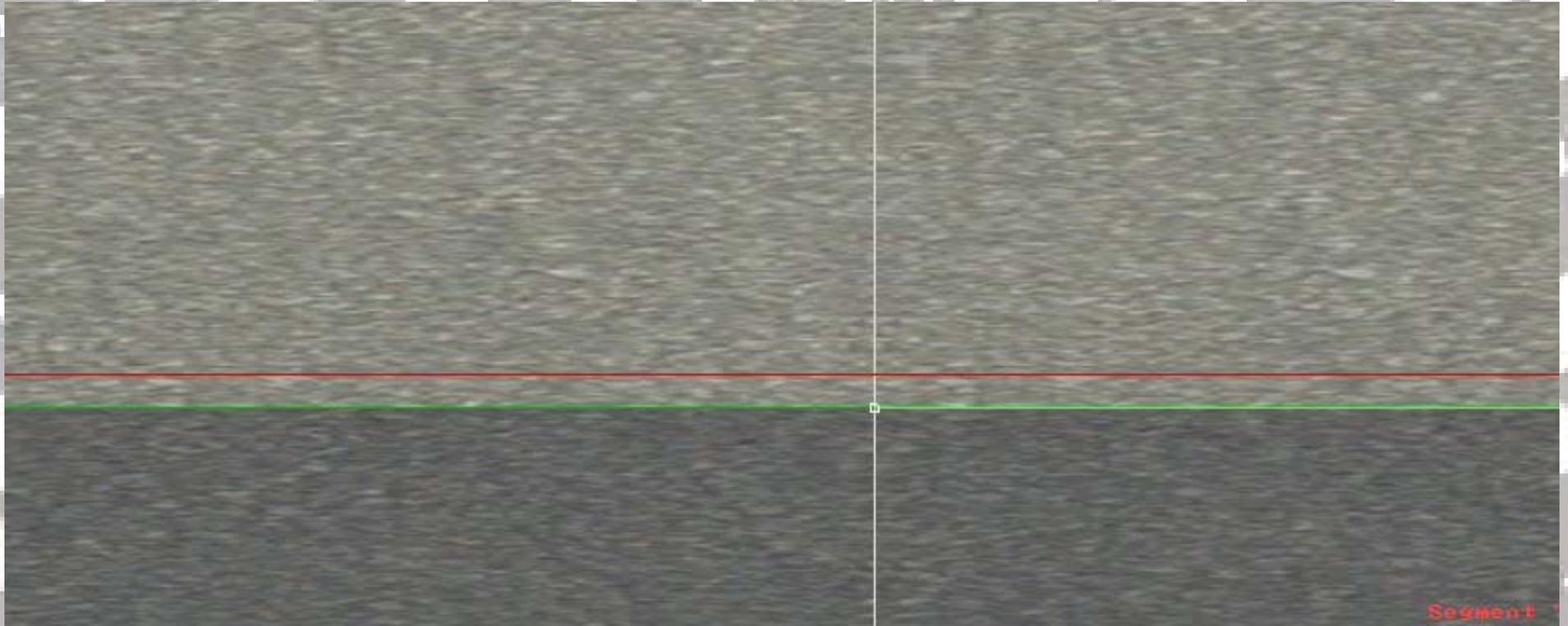
Now the track is complete. I now have a one mile oval that is 5,240.11 feet long. It's close enough to one mile that I can live with it. Here is my finished track.



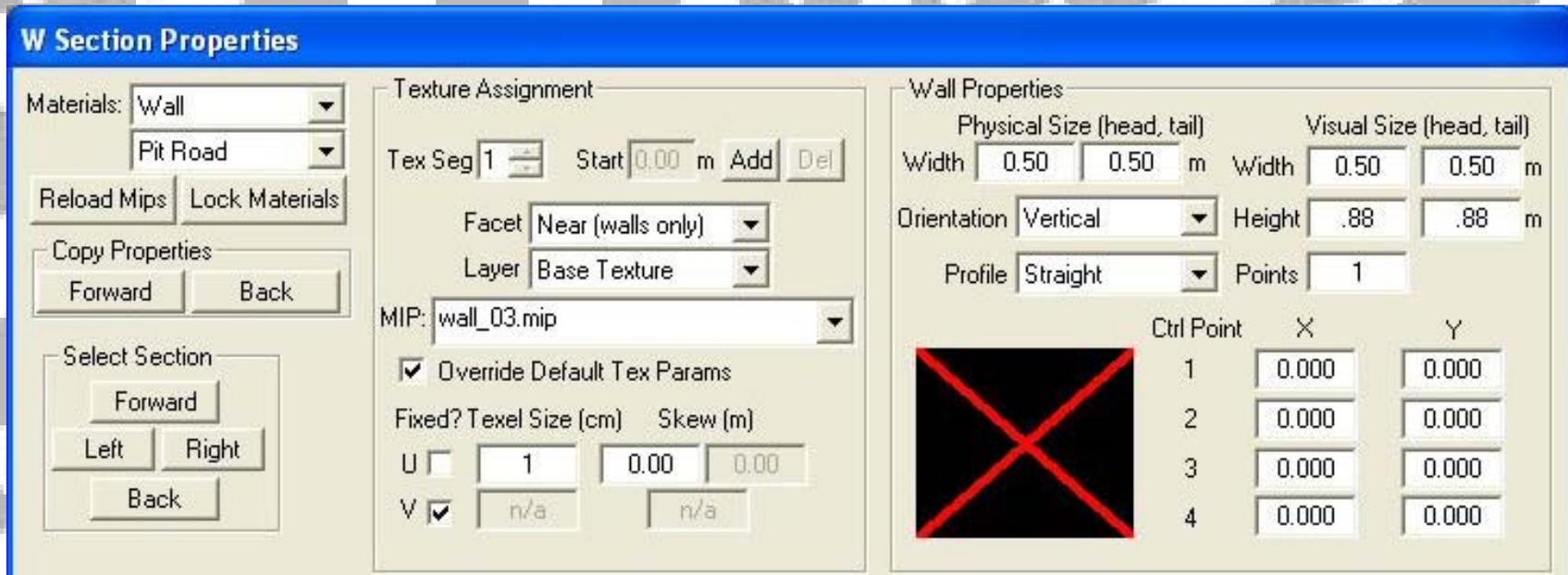
Now I laid my track out in nice even lengths. You could change things to fit you needs. You could make the turns sweep more our make them egg shaped. What ever makes you happy or what ever you want to do. If you have do it already, save now. Next part we are going to put in the pit road. My favorite part of track building.

PART 3: PIT ROAD.

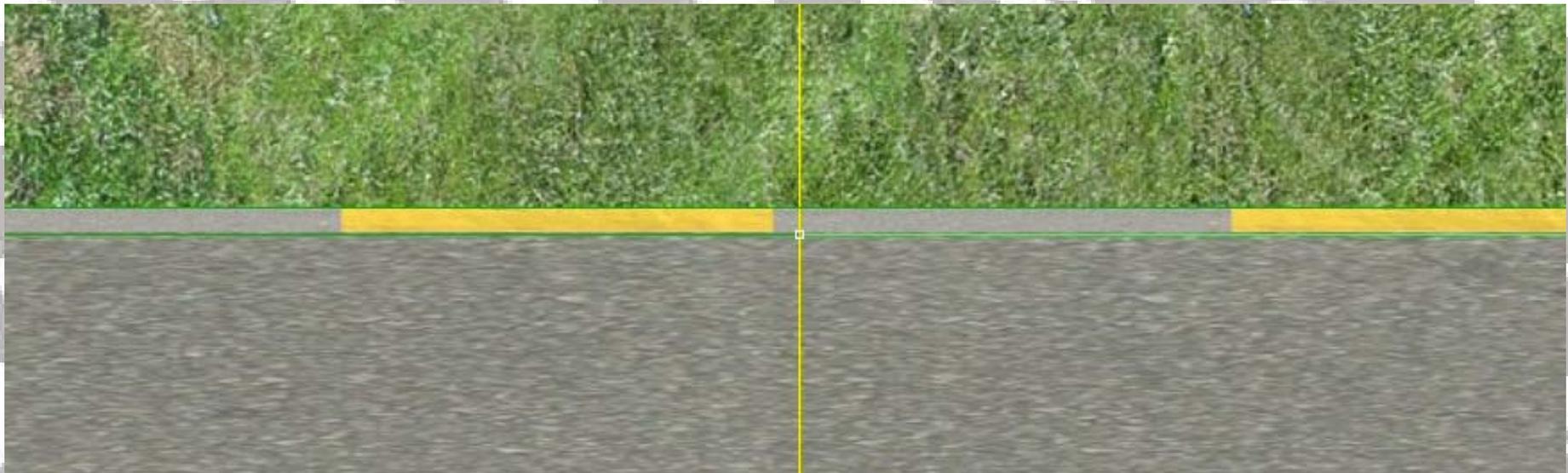
Now we are going to put in our pit road. Pit road is my favorite part to do. At the start finish line, zoom in close to where the race track and the apron meet. On the inside line for the paint (the one on top) right click on it and select delete selection. Go to the one below that and change the texture to the same thing as the apron. This is to remove the painted line. It is no longer need because our inside pit wall will go there. After you do both sections of the front straight. It should look like this now



Insert a w-section right above the red line in both segments for the wall and texture using these settings. Also use wall_03.mip and this time you will need to texture the near texture because the ends are exposed.

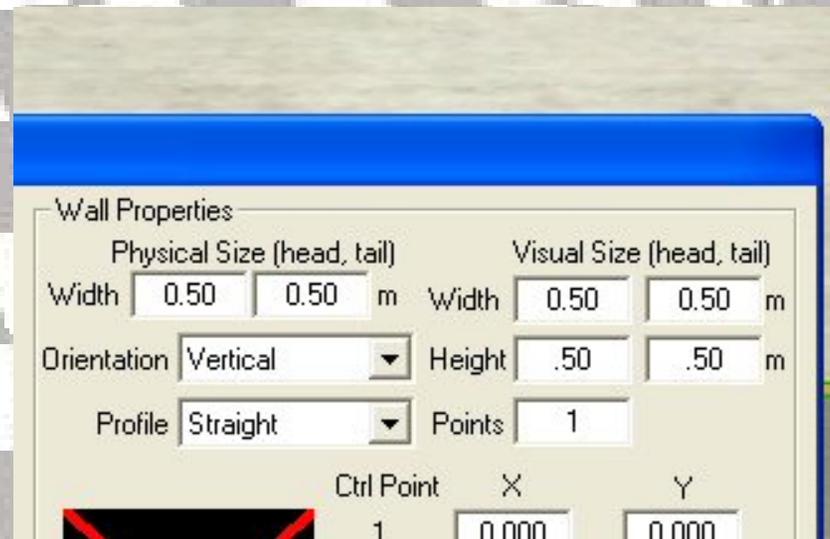
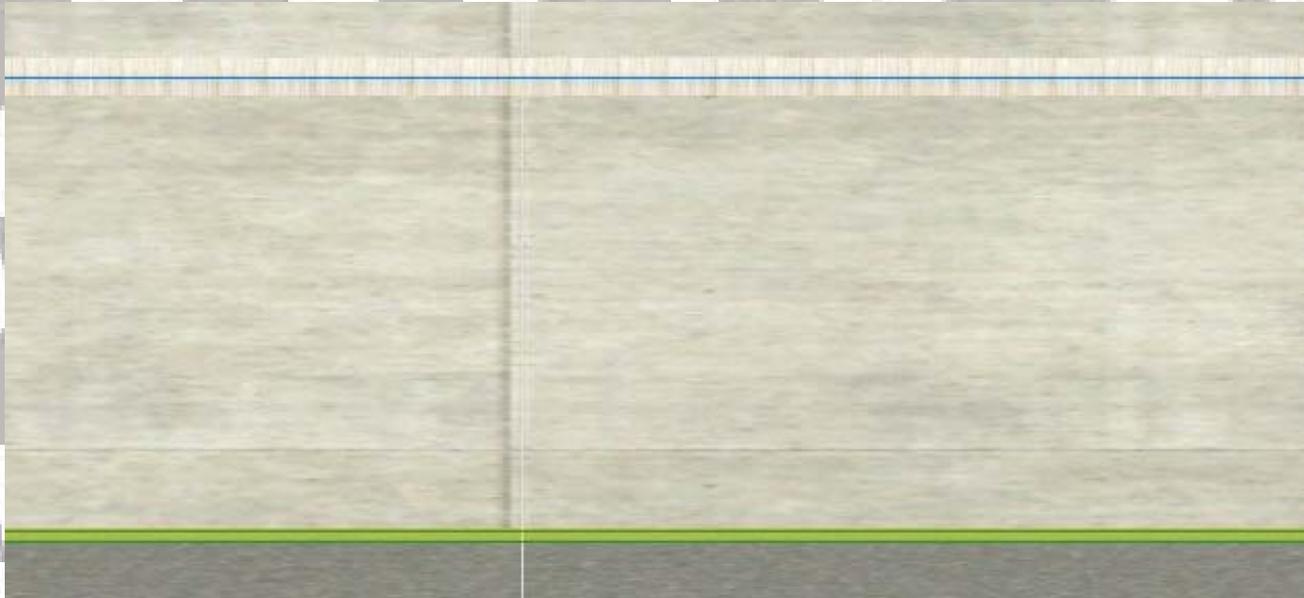


Now for pit road itself. Pit road is going to be 60 feet wide. Enough for two lanes of traffic and the pit stalls. On the painted line we made for the apron, we want to change and move it. The lines need to be moved out to 20 feet. Then we are going to change the paint texture. Change it to paint_01.mip. Leaving the setting as is. Do the same thing to the other side. So it looks like this

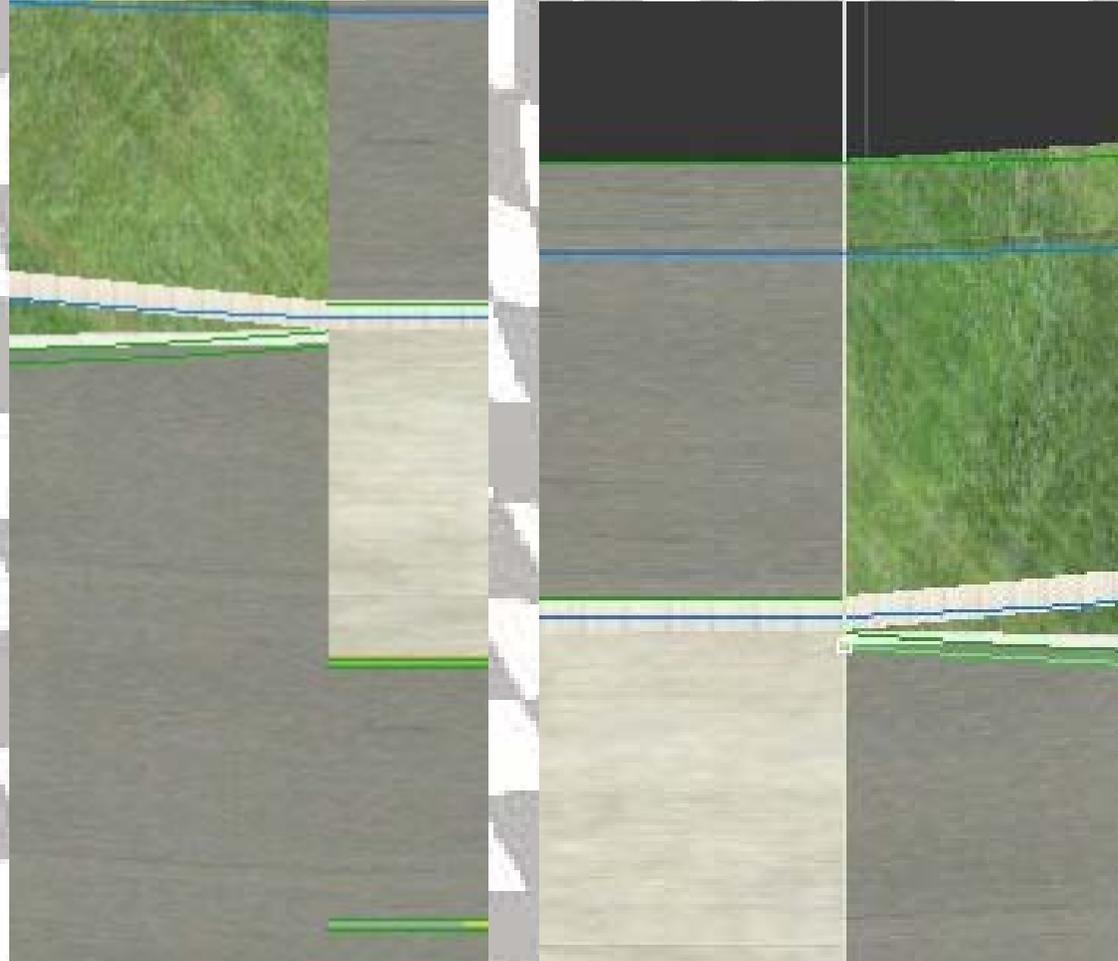


On to lane two. We need to put two more f-sections down for the next lane. The first one at 20 feet and the second one at 20.50 feet. Then texture it using the paint3.mip. You will also have to retexture the grass to asphalt.mip. Don't forget to change the material settings to pit road and racing surface. Above the paint line

you want to texture that section to concrete.mip using the same setting as for the asphalt, but use concrete material. Now pull the inside wall down to 20 feet off the solid line for the pit stalls. Change the wall properties wall height to .50. It would look like this.



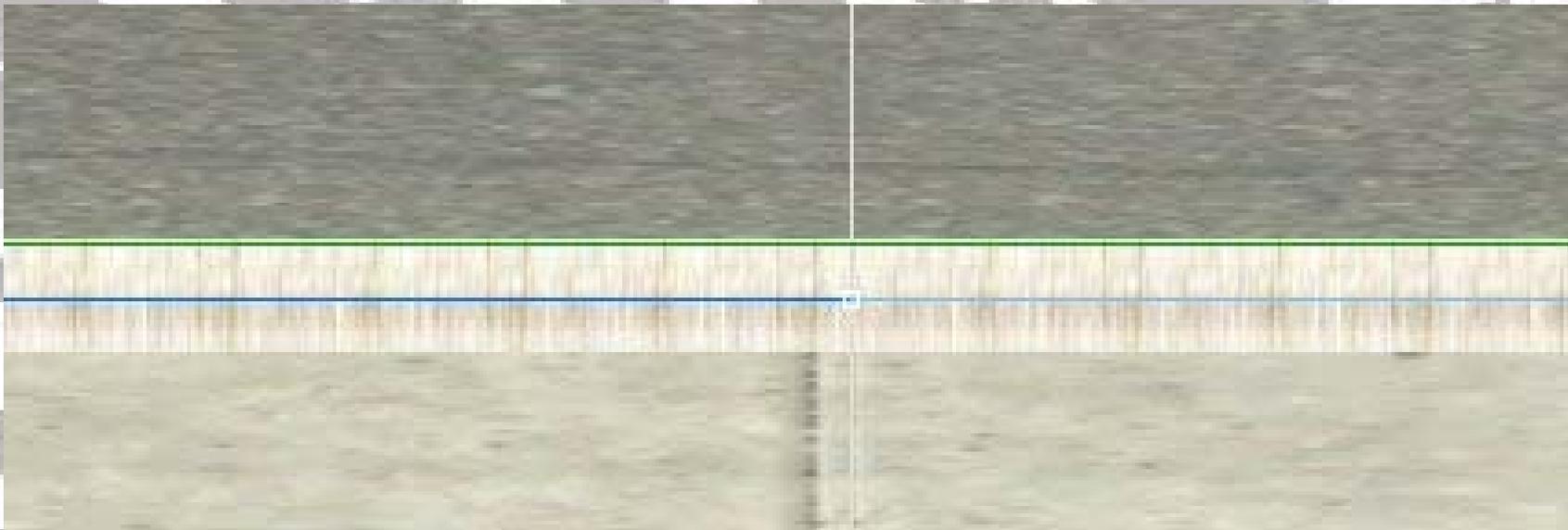
Just outside of the pits at the entrance and exit. Move the white line up to the pit wall. Like so.



Now pit Road is complete. You can save now if you haven't already.



If you don't like the concrete infield, you could add an f-section under the pit stall wall and texture it to asphalt. Like so.



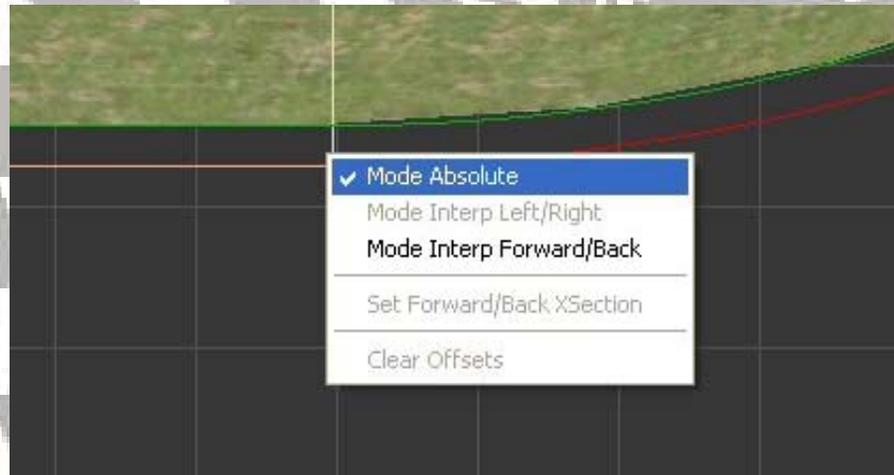
In the next chapter we are going to handle the banking on the track.

PART 4: BANKING.

Now comes the hardest part of track construction. The banking. I always seem to have a lot of trouble with the banking part. So with a little luck, we'll be able to get through it together.

If I understand correctly. When you bank a track, the settings work forward on the segment. Which ever way the track flows at the end of the segment is banking marks. So lets start on the first segment which is going into turn one.

Right click where the first segment and the second segment connect. Make sure mode absolute is checked.



Then open up the height window (View Height view). Select the white square that is on your outside wall. Move the square up till it's at 5 degrees. Then pull the outside one up till its back at zero.



You can also bank the apron here if you want to, but I choose not to. Now move to the line that separates turns one and two. Move the second square up to 15 degrees and the first one back to zero like before. Now move around to the exit of turn two and do the same thing but making the banking at 5 degrees. Stop off in the middle of the back straight and bank it at 5 degrees. Now down to the entrance to turn three and bank it at 5 degrees also. Now to the middle of 3 and 4 and bank to 15 degrees. Continue around to turn 4 and bank at 5 degrees. And finally the start/finish line, do it at 5 degrees also.

Barring any kind of uncontrollable things your banking should be just about right. Check through it though to make sure it right. Sometimes, I bank a track and then go back and it's all screwed up. I wish you lots of luck.

That completes the banking part of this tutorial. Next we will polish of some of the graphics. If you haven't save now.

PART 5: DETAILS.

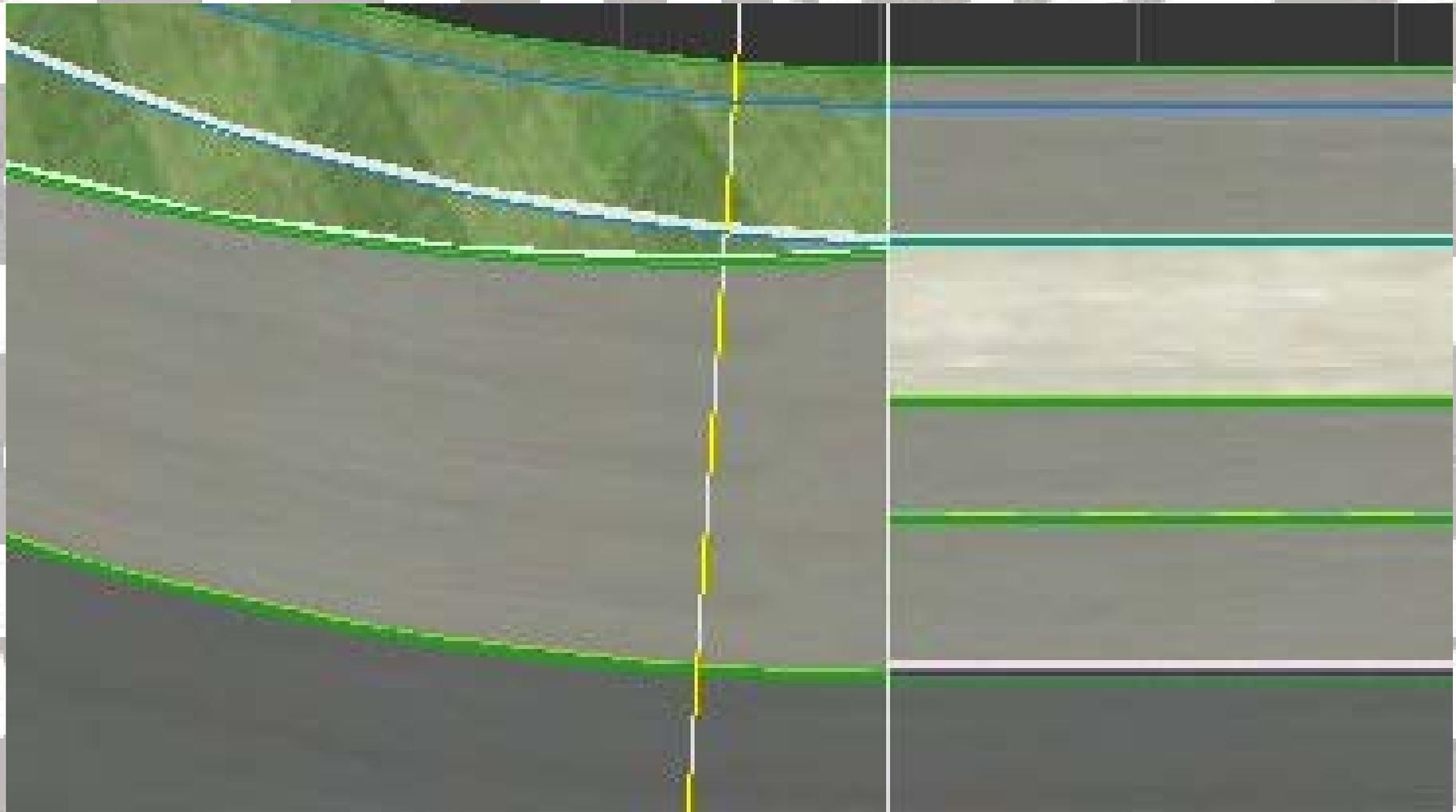
Sometimes I've notice that some of the details laid out when you start change as you lay out the track. So we need to run around the track and check the walls and the fences to make sure the numbers haven't changed.

You can do this in one of two ways. First by looking at the camera view and seeing if the walls and fences look fuzzy. Or you could just click on each and every wall and fence to see if all are as you set them. I like to use the camera view and if you see something wrong then click on it.

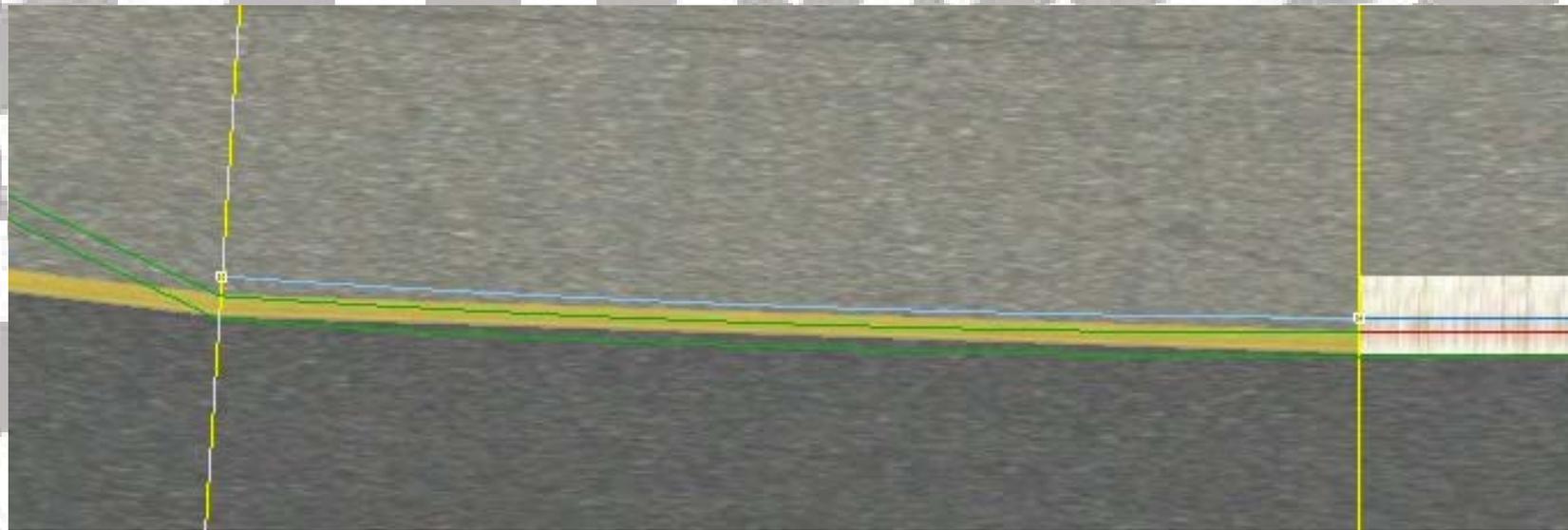
Now that you've been all around the track both inside and outside. Let's move on to more fun things. So save now. Notice at the entrance to pit road how the inside wall is exposed.



We can have that. Someone could get hurt. So we are going to add a tire barrier for safety. To do this we need to first split the segment. Right click on the turn four side just anywhere about 20 to 30 feet. Like this.



It doesn't need to be all that long. And this is going to serve another purpose in a minute. In that little segment, put a w-section in there even with the pit wall.



Now use these setting for the texturing of the tires. Use Tyretp.mip for the top and tyrewall.mip for all the sides.

W Section Properties

Materials: **Tires** ▼

Pit Road ▼

Reload Mips Lock Materials

Copy Properties

Forward Back

Select Section

Forward

Left Right

Back

Texture Assignment

Tex Seg 1 Start 0.00 m Add Del

Facet Top ▼

Layer Base Texture ▼

MIP: Tyretp.mip ▼

Override Default Tex Params

Fixed? Texel Size (cm) Skew (m)

U 4 0.00 0.00

V n/a n/a

Wall Properties

Physical Size (head, tail)		Visual Size (head, tail)	
Width	0.20 0.50 m	Width	0.80 1.00 m
Orientation	Vertical ▼	Height	1.00 1.00 m
Profile	Straight ▼	Points	1

Ctrl Point	X	Y
1	0.000	0.000
2	0.000	0.000
3	0.000	0.000
4	0.000	0.000

If you didn't use the files that I uses you will not find the wall textures like I have. I made them myself.

Now see how good this looks.



Okay, now on to something else. Let's do some lines. Click at the top on view and "track surface decal properties". First let's do the line heading into the pits.

Right click and select add track surface decal. When the window pops up scroll all the way to the bottom and select paint.mip. A little white line shows up. We need to move this line into place and resize it. Open the properties window and change the length to 16.5 meters and set width to .229 meters and move it into place at the end of pit road, like so



This line runs from the pit wall to the pit stalls. Now do the same thing at the other end of pit road. That puts lines at each end of pit road. Now we want to do the start finish line. Switch back over to the geometry editing view. Laying down the lines it's hard to see where the two segments meet. So we need to make a visual line to see. Take the track surface a change it to where it's fuzzy. So we can see the line. Do the same thing in the pits. We'll change them back in a minute.



Switch back to the track decal surface. Right click and add. This time we want `tsd_startfinish.mip` for the start/finish line. We need to set the properties to this. Make note that you will have to rotate it 90 degrees.

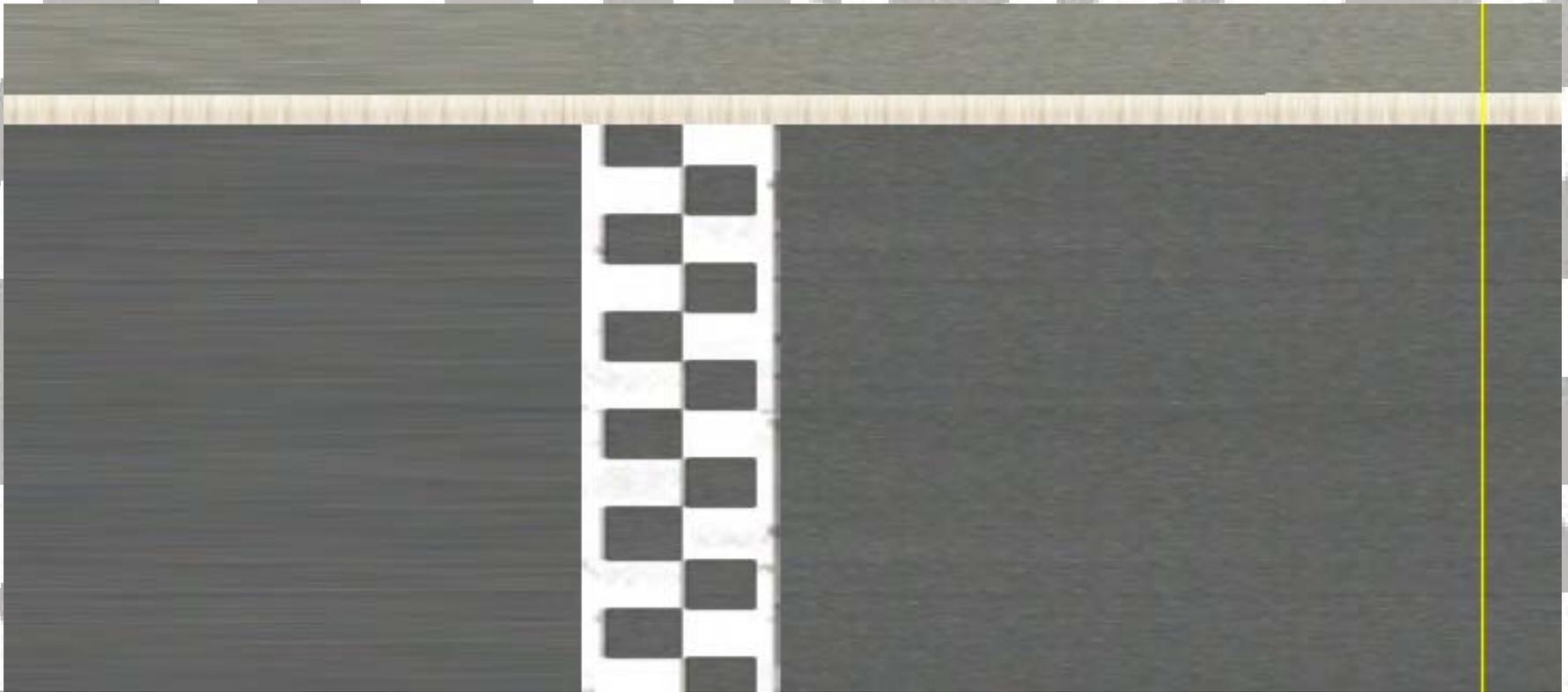
Track Surface Decal Properties

Mip: `tsd_startfinish.mip`

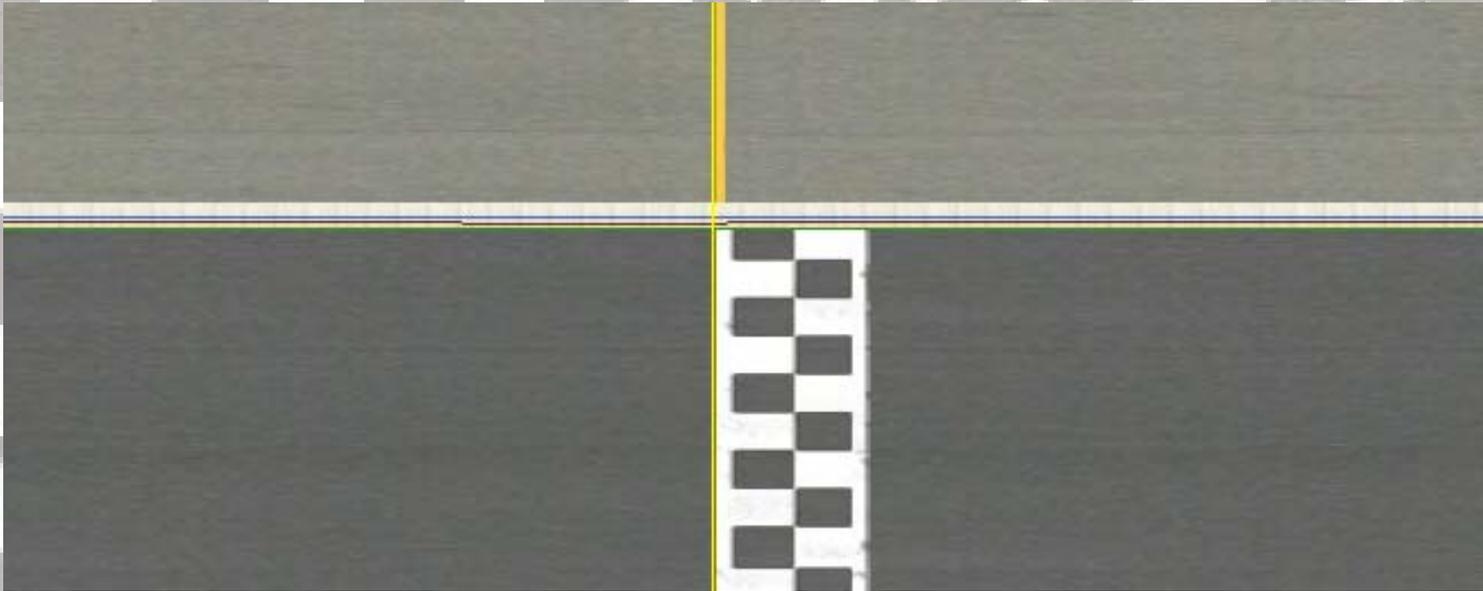
dlong m length m Yaw deg

dlat m width m

It should look like this when finished. Make sure you set the far left side of the line where the start finish line goes.



Now for the pits start finish line. Right-click again and add `tsd_yellow.mip` for the line in the pits. Use the settings 16.5 meters long and .229 meters wide. Line up the left side to the start finish line and you're done. Just don't forget to change the tracks back out of fuzzy. And there are your start/finish lines.



It's time for another save.

Now I think that it's time for a trail run. Let's prepare it for its first laps. We need to copy not move our track folder over to our NASCAR tracks directory.

Do that now. We also need a few files. We need a tracks.ini file. So select one from a track similar to the one you made. If you followed my files use New Hampshire.

Also you are going to need a arcade.cup.acd file from the same directory and one set up. That is really all you need. Go in and change the tracks.ini file to match the track you created.

Give it a city and state. Change the length and the banking.

Also change the location of your car.

Change it to this:

```
;special stalls  
stall_qual_exit = 0 0 0  
;regular stalls  
stall_0 = 0 0 0
```

You're all set. Go try it out and I'll see you back here for some more work.