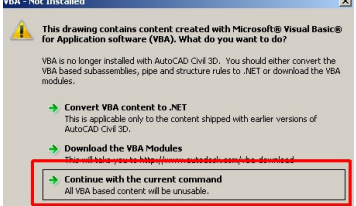
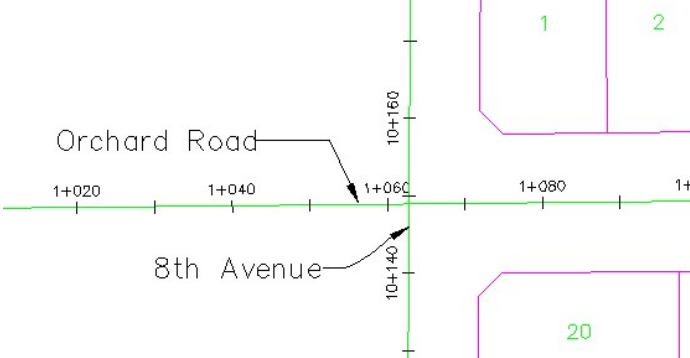
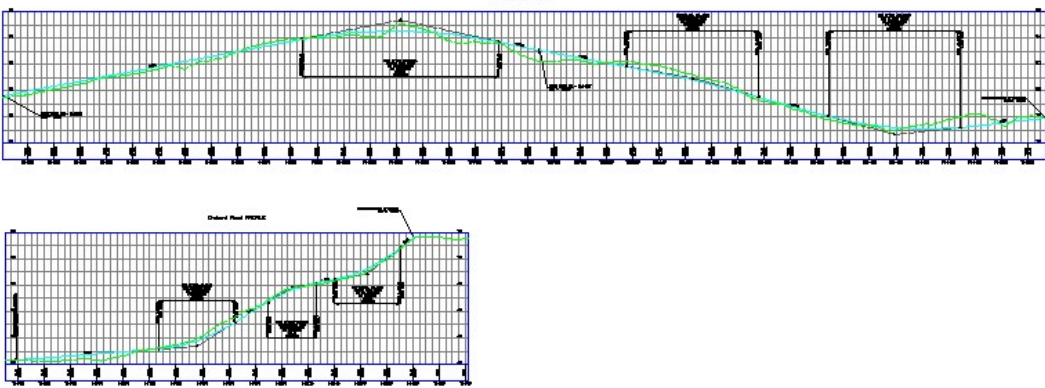


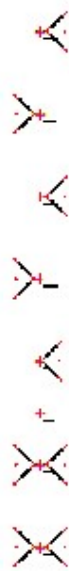
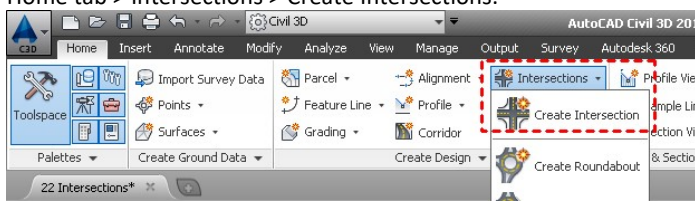
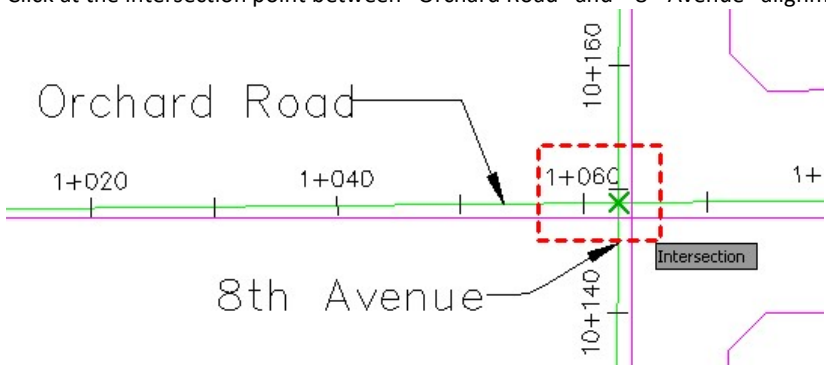
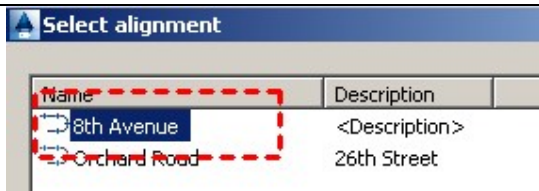
CHAPTER 16 : MODELING AN INTERSECTION

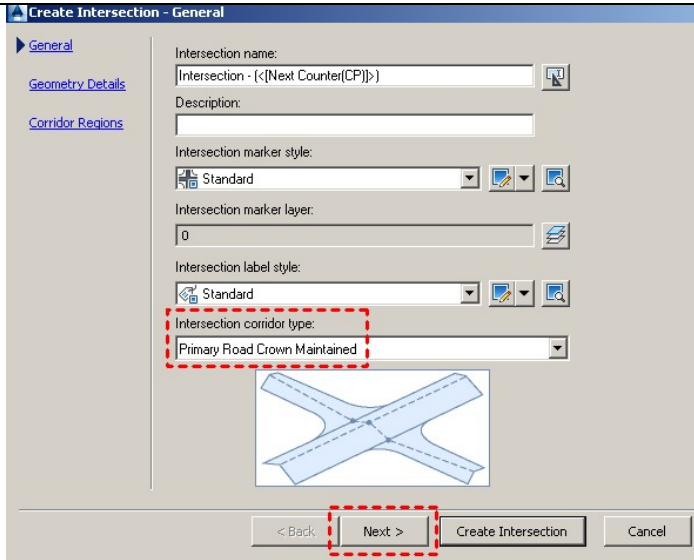
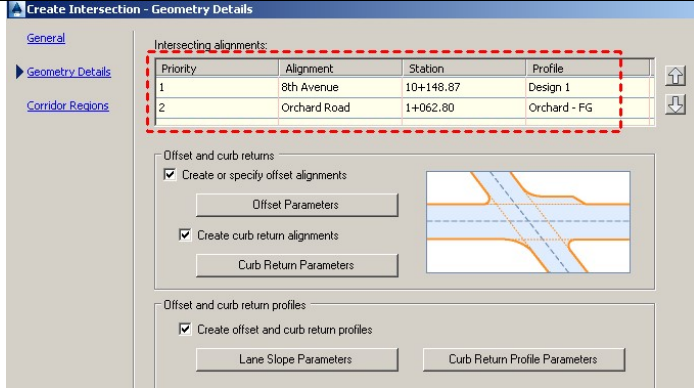
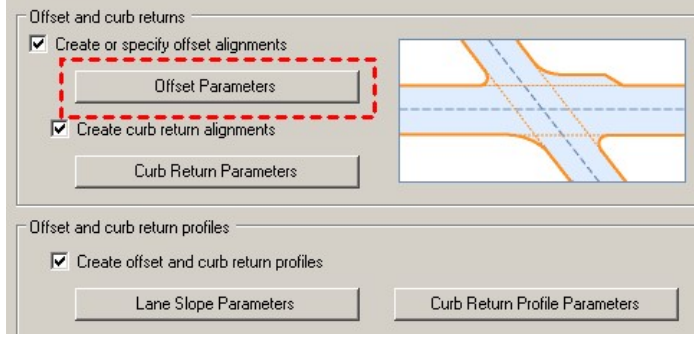
This chapter will demonstrate step-by-step approach to :

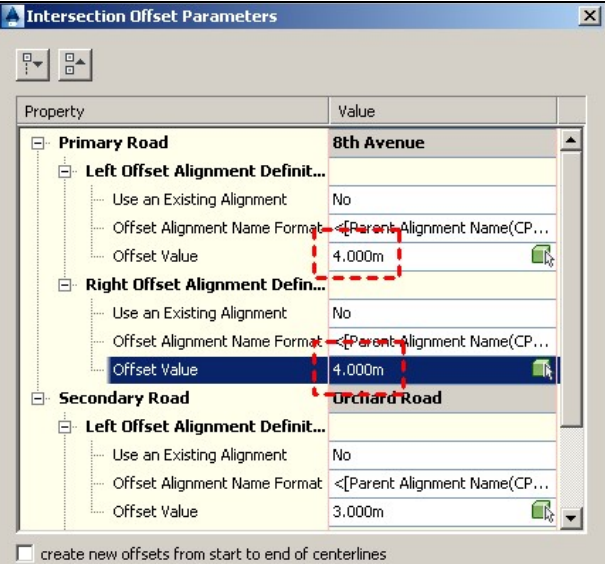
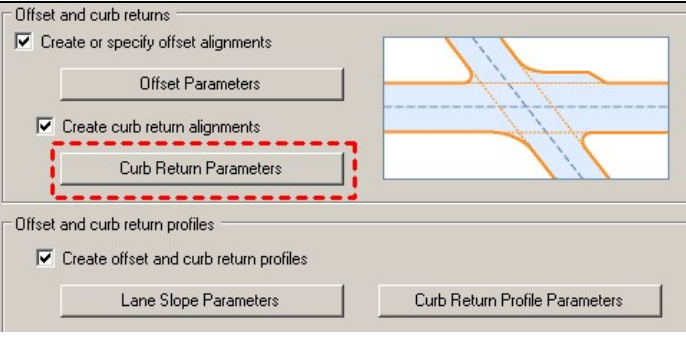
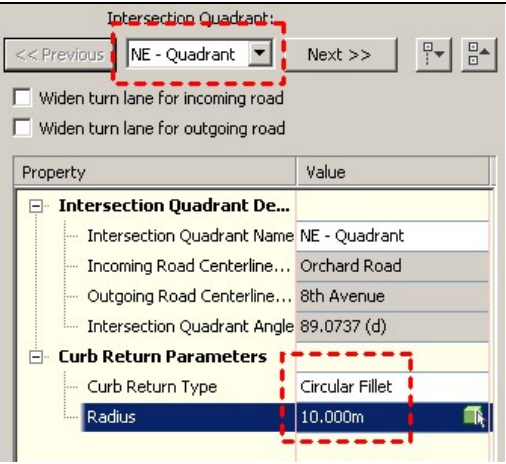
- Model the intersection corridor.

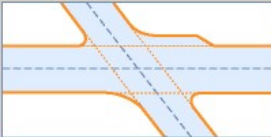
16.1 Intersection

No.	Descriptions	Commands/Remarks
1.	Open the drawing.	 Browse to filename "22 Intersection.dwg"
2.	Ignore "VBA – Not Installed" message. Select "Continue with the current command".	
3.	The author has prepared two alignments for the intersection, i.e. Orchard Road and 8 th Avenue alignments.	
4.	The author has prepared designed profiles (cyan colour) for each alignments:	

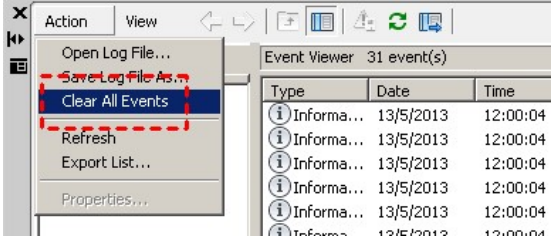
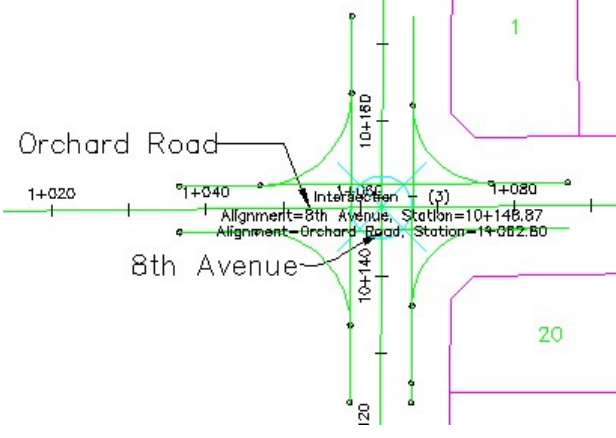
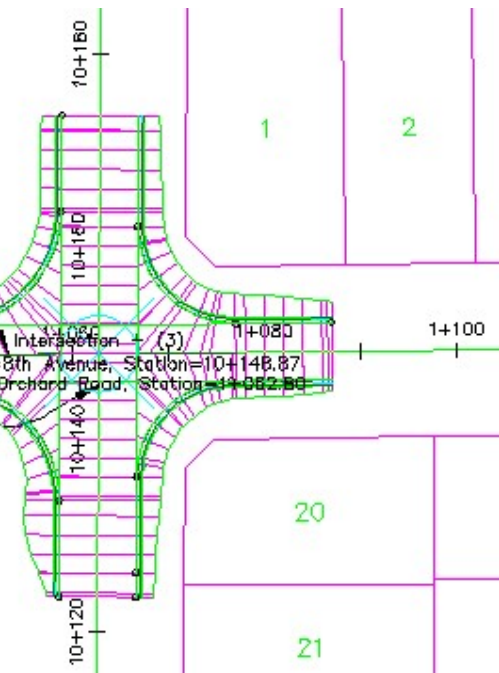
5.	The model also contains many types of assemblies for the intersection modelling.	
6.	Home tab > Intersections > Create Intersections.	
7.	Click at the intersection point between "Orchard Road" and "8 th Avenue" alignment.	
8.	Command line prompt "Select Main Road Alignment". Hit "ENTER" keyboard.	
9.	Select "8 th Avenue" > "OK". The Intersection wizard begins.	

10.	User to verify which “Intersection corridor type” to be used. Hit “Next”.													
11.	User to verify the values for “Intersecting alignments” especially the “Profile” column.	 <table><thead><tr><th>Priority</th><th>Alignment</th><th>Station</th><th>Profile</th></tr></thead><tbody><tr><td>1</td><td>8th Avenue</td><td>10+148.87</td><td>Design 1</td></tr><tr><td>2</td><td>Orchard Road</td><td>1+062.80</td><td>Orchard - FG</td></tr></tbody></table>	Priority	Alignment	Station	Profile	1	8th Avenue	10+148.87	Design 1	2	Orchard Road	1+062.80	Orchard - FG
Priority	Alignment	Station	Profile											
1	8th Avenue	10+148.87	Design 1											
2	Orchard Road	1+062.80	Orchard - FG											
12.	Click “Offset Parameters”.													

13.	User to update necessary values. In this example, for Primary Road 8th Avenue, we will update the Offset Values as shown. Click "OK".	
14.	Click "Curb Return Parameters".	
15.	For "NE – Quadrant", the Circular Fillet is set to 10m. Click "Next>>" for other quadrants. Other quadrants are as follows: - SE = 10m - SW = 12m - NW = 12m Click "OK".	

16.	Click "Lane Slope Parameters".	Offset and curb returns ☒ Create or specify offset alignments Offset Parameters ☒ Create curb return alignments Curb Return Parameters Offset and curb return profiles ☒ Create offset and curb return profiles Lane Slope Parameters Curb Return Profile Parameters 																														
17.	User to update the values accordingly. In this example, we shall use the default values. Hit "OK".	<table><thead><tr><th>Property</th><th>Value</th></tr></thead><tbody><tr><td>Primary Road</td><td>8th Avenue</td></tr><tr><td>Left Edge Profile Definition</td><td></td></tr><tr><td>Use an Existing Profile</td><td>No</td></tr><tr><td>Offset Profile Name Format</td><td><[Parent Alignment Name(CP...</td></tr><tr><td>Cross Fall from Centerline</td><td>-2.00%</td></tr><tr><td>Right Edge Profile Definition</td><td></td></tr><tr><td>Use an Existing Profile</td><td>No</td></tr><tr><td>Offset Profile Name Format</td><td><[Parent Alignment Name(CP...</td></tr><tr><td>Cross Fall from Centerline</td><td>-2.00%</td></tr><tr><td>Secondary Road</td><td>Orchard Road</td></tr><tr><td>Left Edge Profile Definition</td><td></td></tr><tr><td>Use an Existing Profile</td><td>No</td></tr><tr><td>Offset Profile Name Format</td><td><[Parent Alignment Name(CP...</td></tr><tr><td>Cross Fall from Centerline</td><td>-2.00%</td></tr></tbody></table>	Property	Value	Primary Road	8th Avenue	Left Edge Profile Definition		Use an Existing Profile	No	Offset Profile Name Format	<[Parent Alignment Name(CP...	Cross Fall from Centerline	-2.00%	Right Edge Profile Definition		Use an Existing Profile	No	Offset Profile Name Format	<[Parent Alignment Name(CP...	Cross Fall from Centerline	-2.00%	Secondary Road	Orchard Road	Left Edge Profile Definition		Use an Existing Profile	No	Offset Profile Name Format	<[Parent Alignment Name(CP...	Cross Fall from Centerline	-2.00%
Property	Value																															
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Left Edge Profile Definition																																
Use an Existing Profile	No																															
Offset Profile Name Format	<[Parent Alignment Name(CP...																															
Cross Fall from Centerline	-2.00%																															
18.	Click "Curb Return Profile Parameters".	Offset and curb returns ☒ Create or specify offset alignments Offset Parameters ☒ Create curb return alignments Curb Return Parameters Offset and curb return profiles ☒ Create offset and curb return profiles Lane Slope Parameters Curb Return Profile Parameters 																														

19. User to update the values accordingly.
- In this example, we shall use the default values.
- Hit "OK".
-
20. Click "Next>" button.
-
21. Click "Create Intersection" button.
- Note: User may need to click "Browse" button in order to assign the assembly set to "Drive LEFT side of road".
-

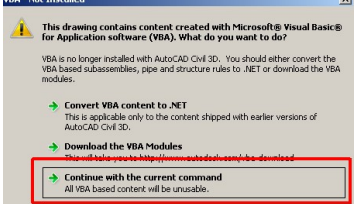
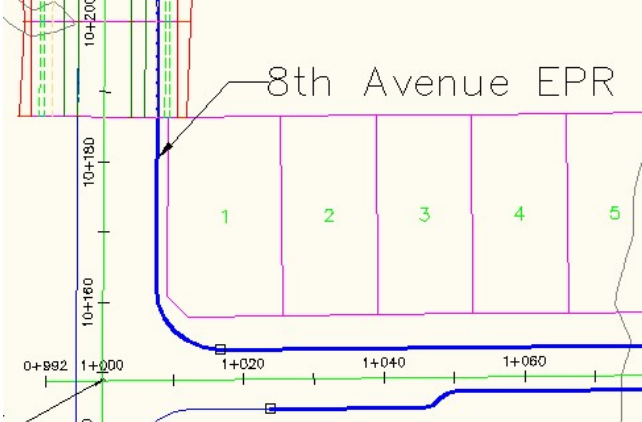
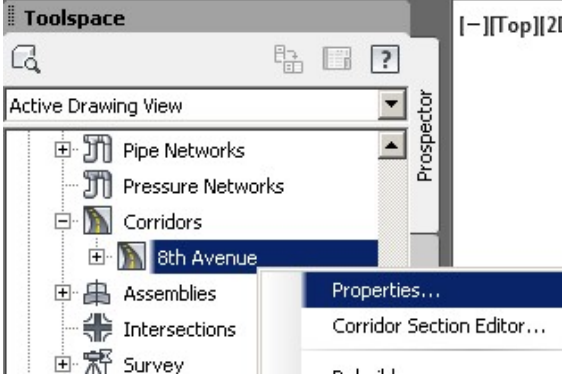
22.	Clear and close the report.	
23.	The intersection is almost complete. Run "REA" command.	
24.	The intersection is now complete.	

CHAPTER 17 : MODELING A ROAD WIDENING

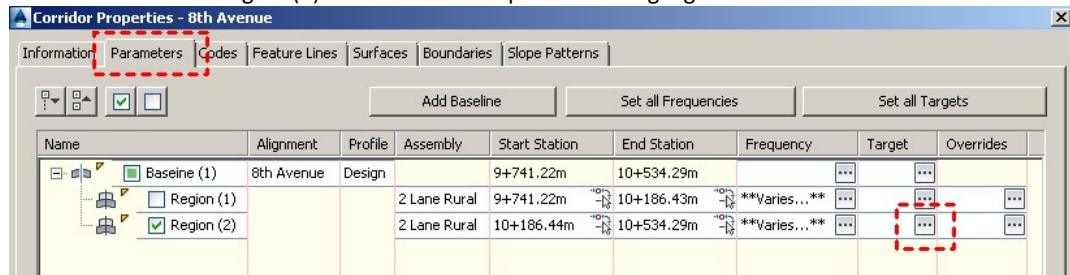
This chapter will demonstrate step-by-step approach to :

- Model the road widening for Edge of Pavement.

17.1 Map Corridor Targets

No.	Descriptions	Commands/Remarks
1.	Open the drawing.	 Browse to filename "23 Target Mapping.dwg"
2.	Ignore "VBA – Not Installed" message. Select "Continue with the current command".	
3.	In this drawing, the model has been prepared with a thick blue colour alignment named "8 th Avenue EPR".	
4.	Goto Prospector > Corridor > RC "8 th Avenue" > Properties...	

5. Parameters tab > at Region (2) row > click the ellipsis icon as highlighted.



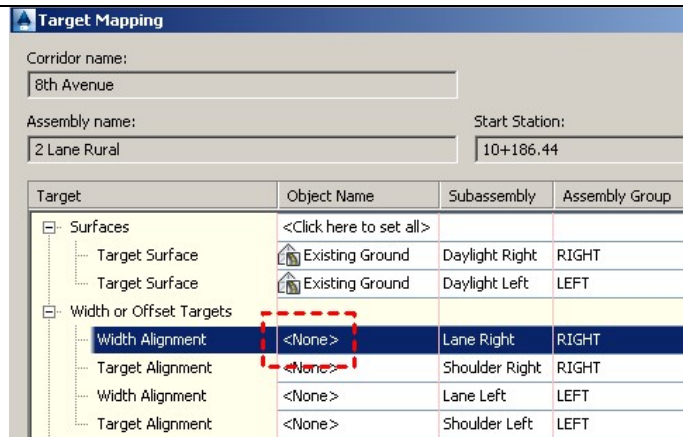
Note:

The reason we choose "Region (2)" is because the widening section is happening along this region only. If you have multiple sections of road widening, repeat the command for each regions.

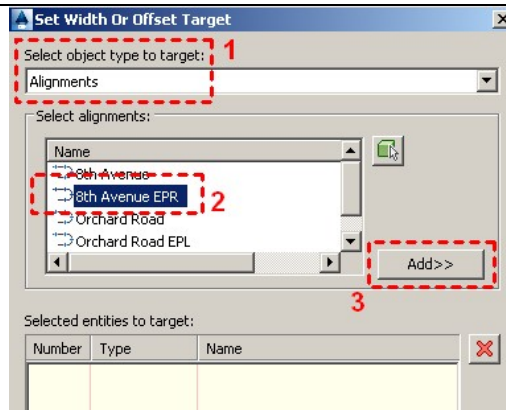
6. Click the "<None>" cell as highlighted.

Note:

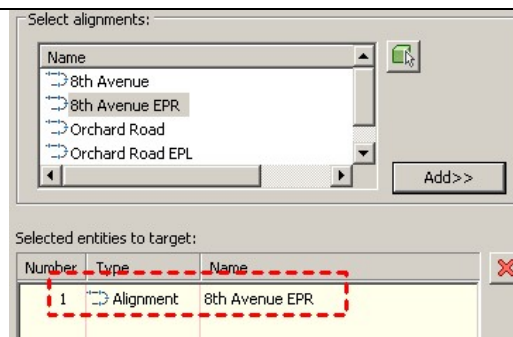
The reason we choose "Width Alignment" and "Lane Right" subassembly is because the road widening is happening at the right-lane along the corridor.



7. • Type to target = Alignments
• Alignments = 8th Avenue EPR
• Click the "Add>>" button.



8. Once the entities to target has been assigned as shown, click "OK".



9.

- Once the Width Alignment is assigned to "8th Avenue EPR" as shown, click "OK".
- Click "OK" again to close the corridor properties window.

Target	Object Name	Subassembly	Assembly Group
Surfaces	<Click here to set all>		
Target Surface	Existing Ground	Daylight Right	RIGHT
Target Surface	Existing Ground	Daylight Left	LEFT
Width or Offset Targets			
Width Alignment	8th Avenue EPR	Lane Right	RIGHT
Target Alignment	<None>	Shoulder Right	RIGHT
Width Alignment	<None>	Lane Left	LEFT

10. Click "Rebuild the corridor" option.

Corridor Properties - Rebuild

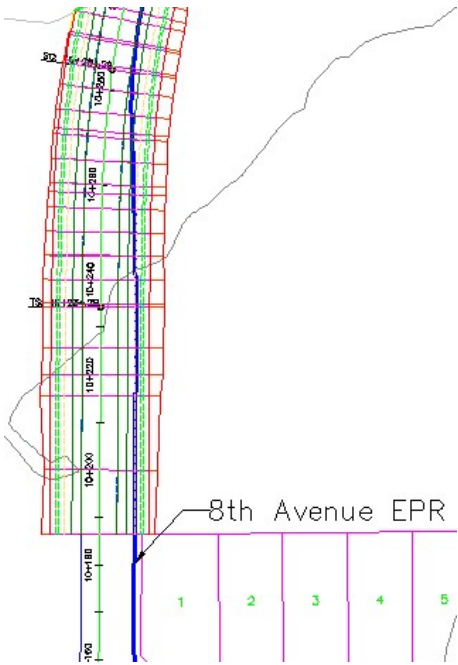
 The corridor definition has been modified and needs to be rebuilt. What do you want to do?

→ **Rebuild the corridor**
The corridor will be rebuilt to apply the modifications.

→ **Mark the corridor as out-of-date**
The modifications will be saved, but the corridor will not reflect them until a rebuild is done at a later time.

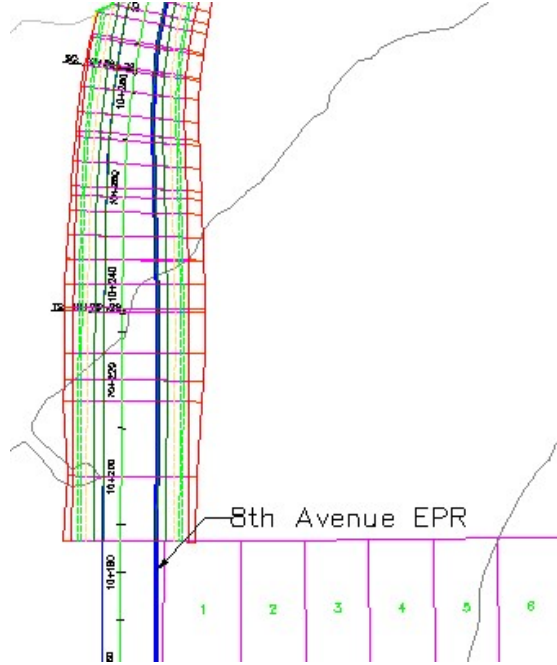
If any, clear and close the report status.

11. The corridor model rebuilds. It now displays the parallel lane and taper.



8th Avenue EPR

BEFORE



8th Avenue EPR

AFTER