



m1 DEPARTMENT OF
TRANSPORTATION

ADA Training Outside In Design

2018

MnDOT



Introduction

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<http://www.dot.state.mn.us/ada/construction.html>



Overview

Overview

- Scoping Review
- Multiple Alignment
- Grade Adjustments
- Minor Adjustments

Definition

What is **NOT** Outside In Design?





Definition

- How do we get from there to here
- What tools are available in the toolbox



Scoping Review

- Know parameters
- Understand ramifications
- Establishing Typical Section



Establish Tie-in

- ROW





Establish Tie-in

- Establish PAR
- 2/3 PAR 1/3 Boulevard



Establish Tie-in

- Doorways
- Steps
- Match steps within 4:



Establish Tie-in

- Don't sacrifice
- Road criteria



Establish Tie-in

- Pedestrian Access



Establish Tie-in

- Exception – Entire Block could be raised



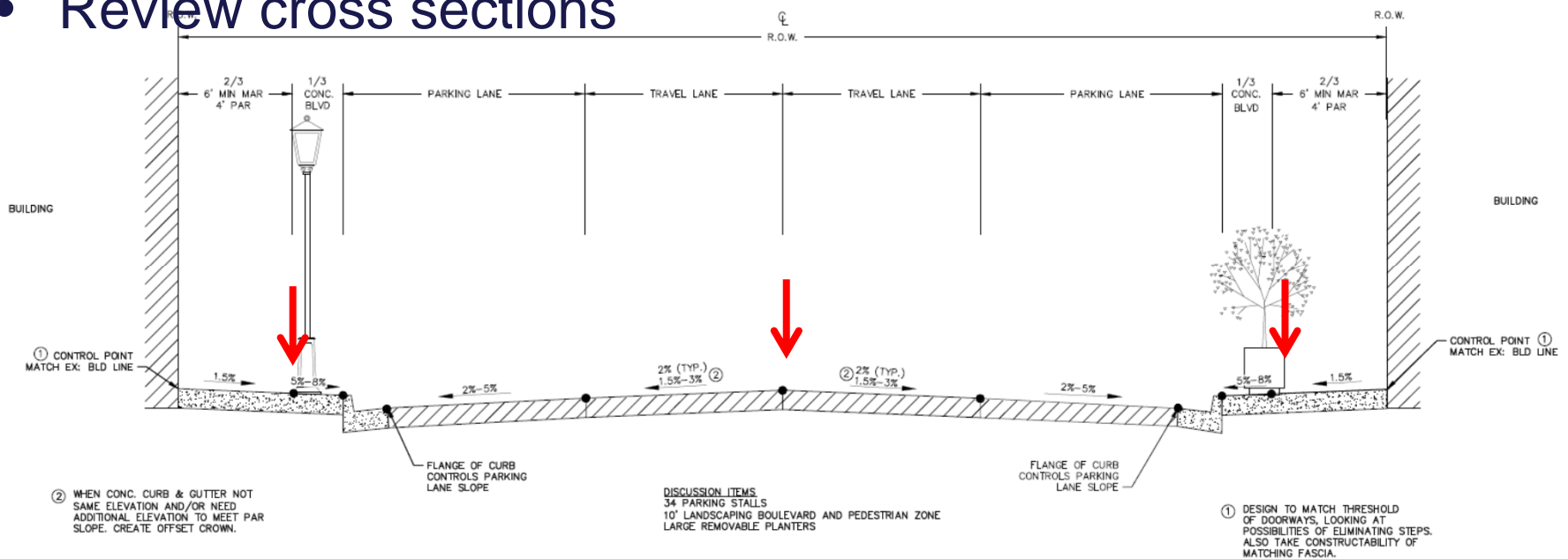
Establish Tie-in

- Establish Sidewalk Profile
- Where it goes does not matter, just establish sidewalk first



Centerline Profile

- Set tie in locations
- Create centerline profile
- Develop corridor model with centerline
- Review cross sections

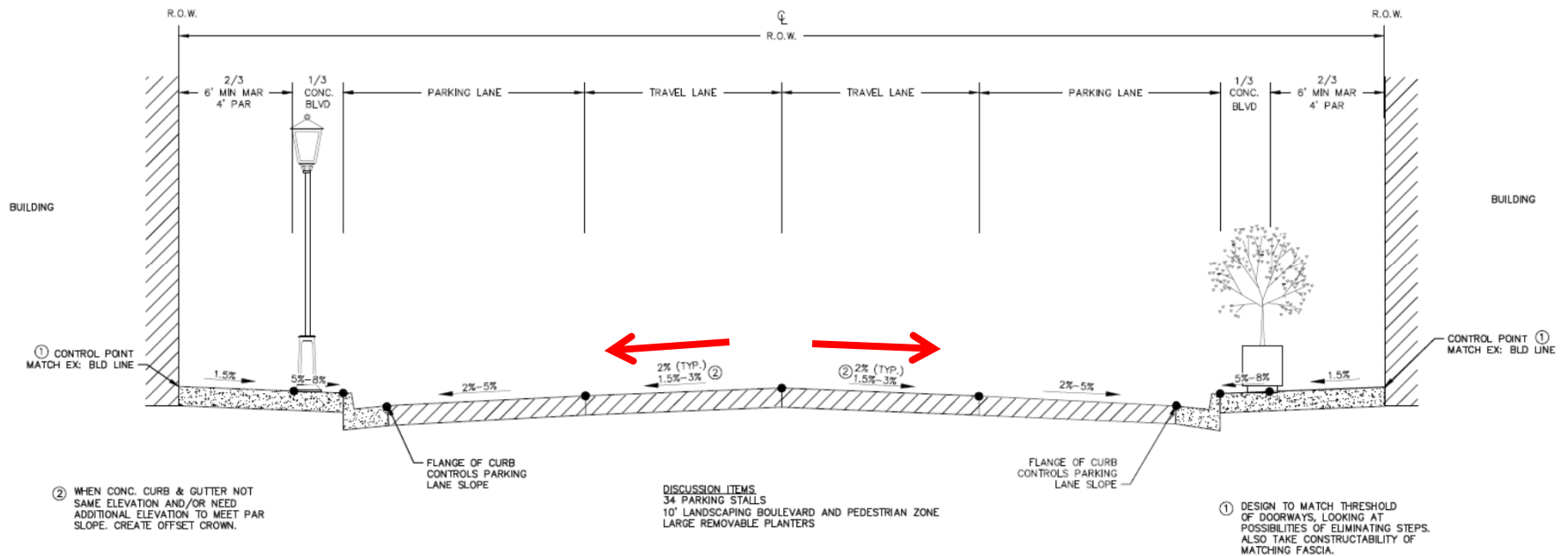


Tool Box



Cross Slope

- Vary Cross Slope
- 1% to 3%
- Consistent Thru Block

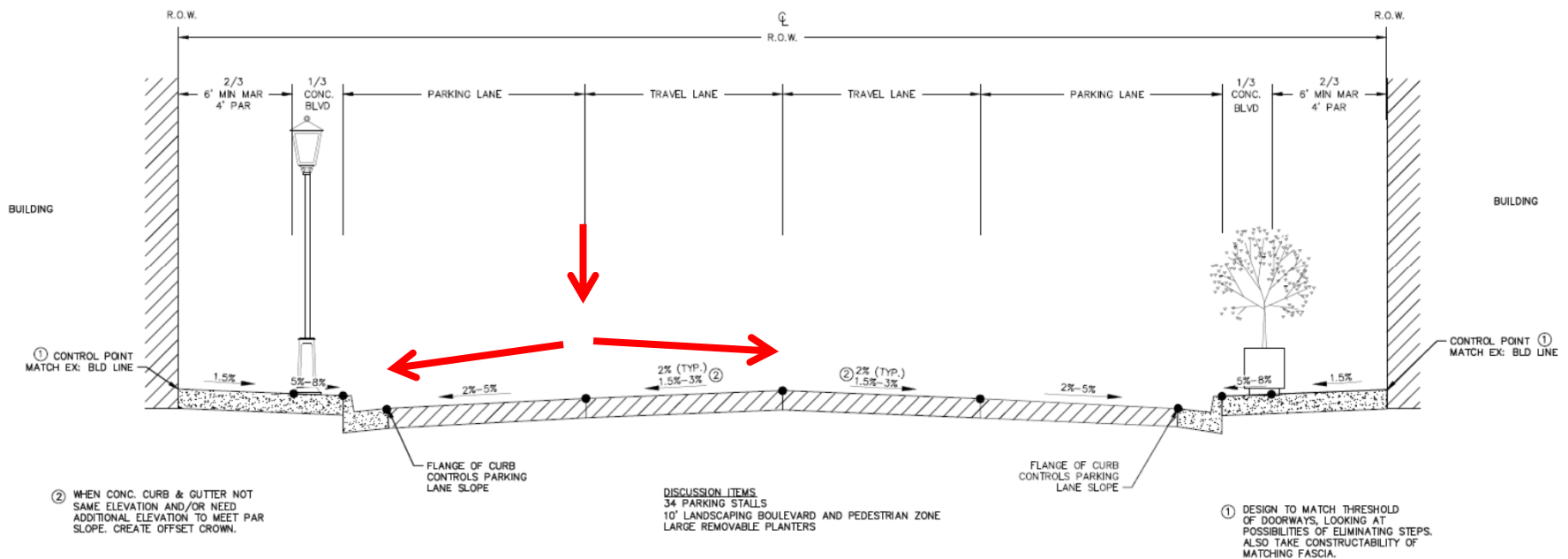


Tool Box



Offset Crown

- At Lane lines
- 12' lane makes 0.5 foot difference
- Can shift further to make more difference



Offset Crown

- Hard Tie in
- 12' lane makes 0.5 foot difference



Offset Crown

- 1% up
- 3% down
- Over 4 - 12' lanes = 0.96 feet



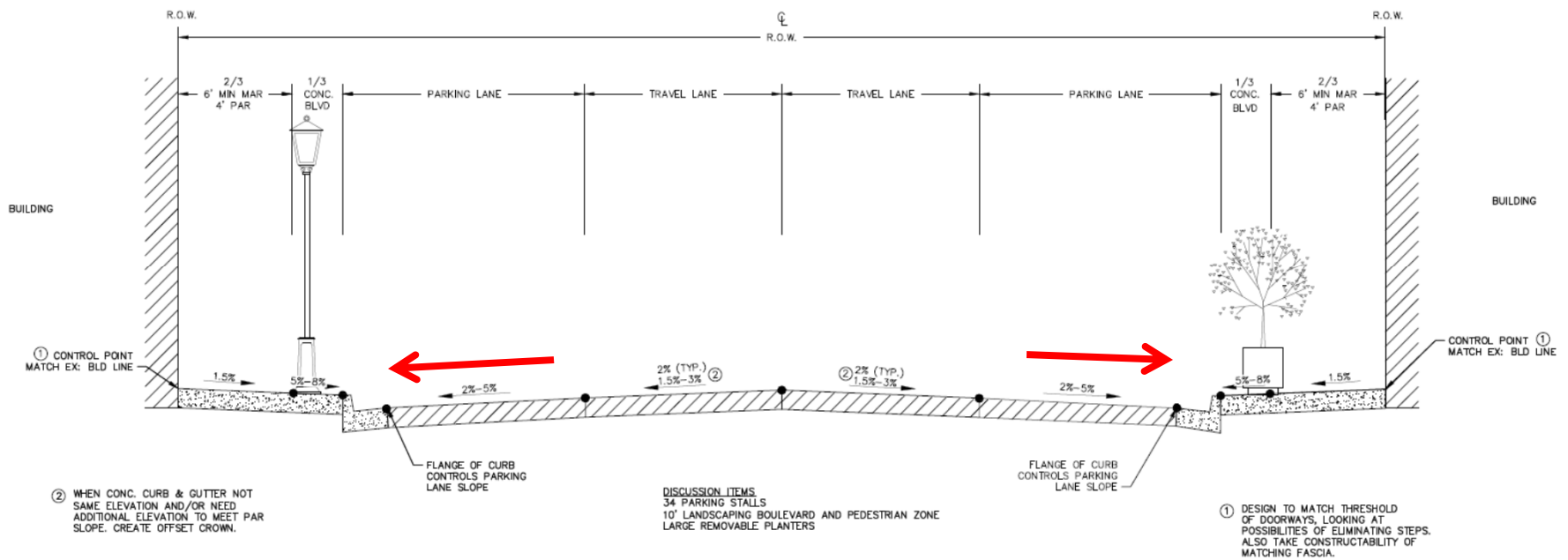


Tool Box



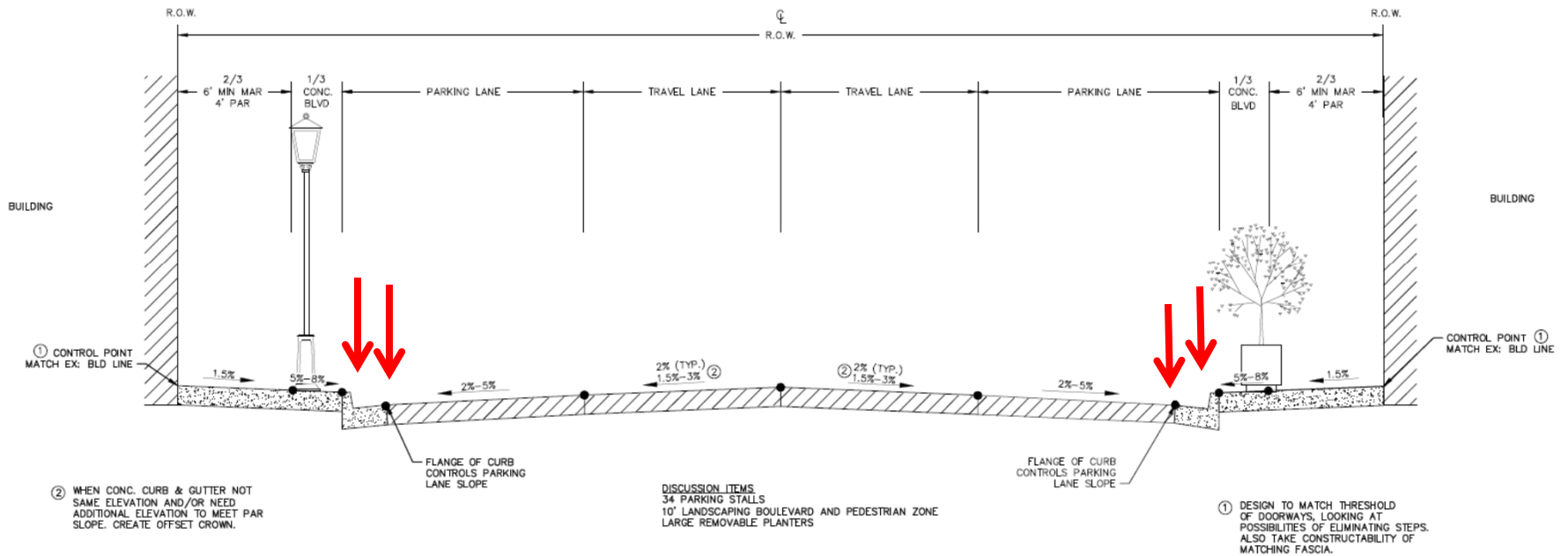
Shoulder Slopes

- 1%-5%
- Change from 2% slope to 5% slope over 10' = 0.3 feet



Shoulder Slopes

- How to create
- Curb profile

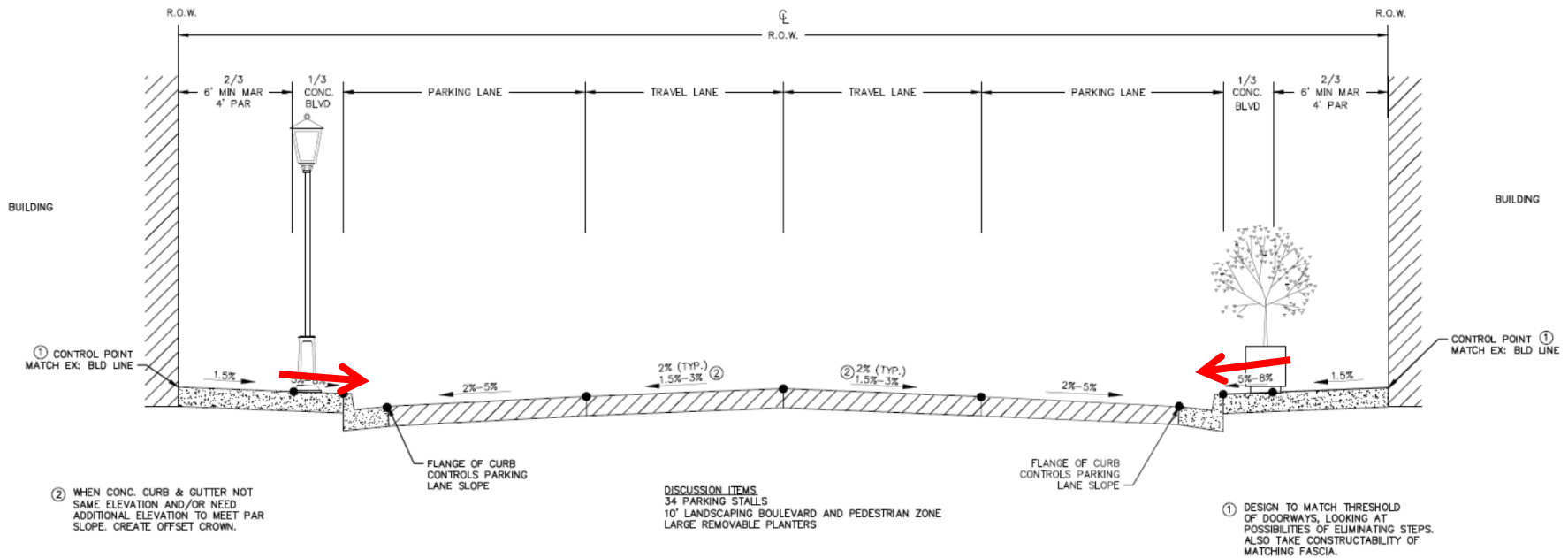


Tool Box



Boulevard Slopes

- 1%-5%
- Up to 8% for short distances





Boulevard Slopes

- Amenity Zone
- Lights
- Stamped concrete
- Car door swings

Tool Box



Curb Heights

- Most 6"
- 8" rarely used, only in no parking
- Use 4" at low point constraints
- Raising curb line 2" can save about 4% in blvd cross slope

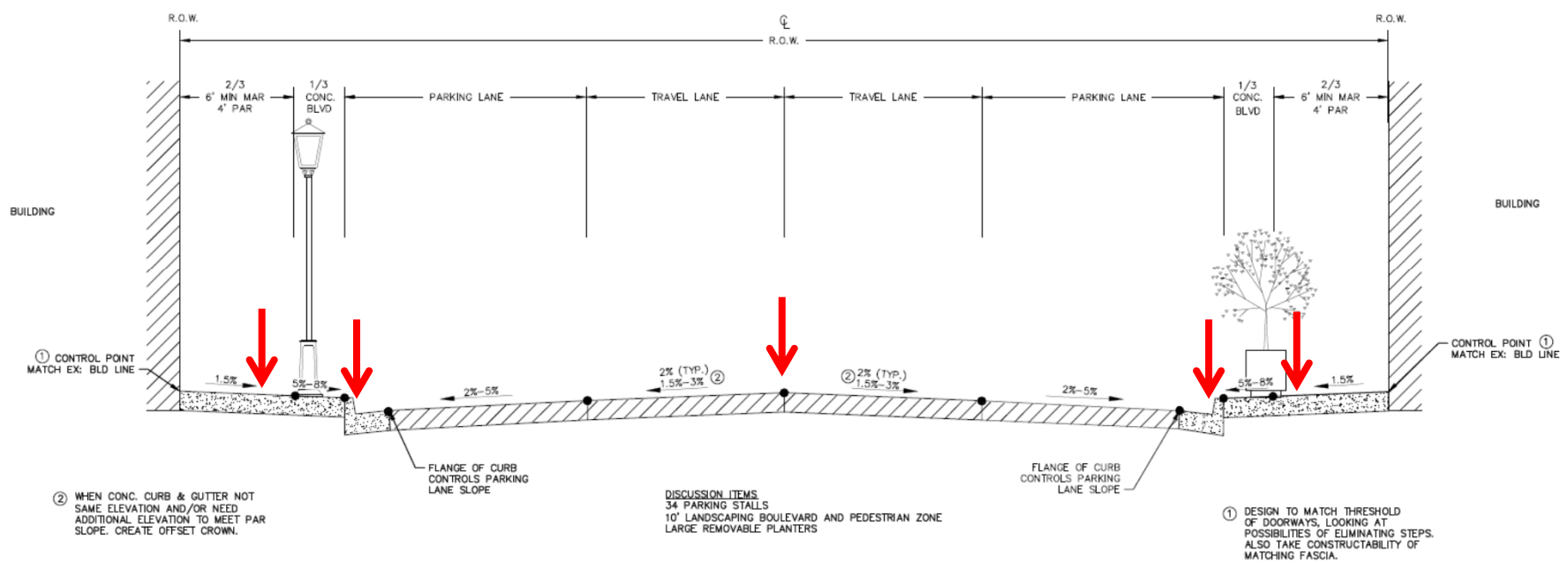




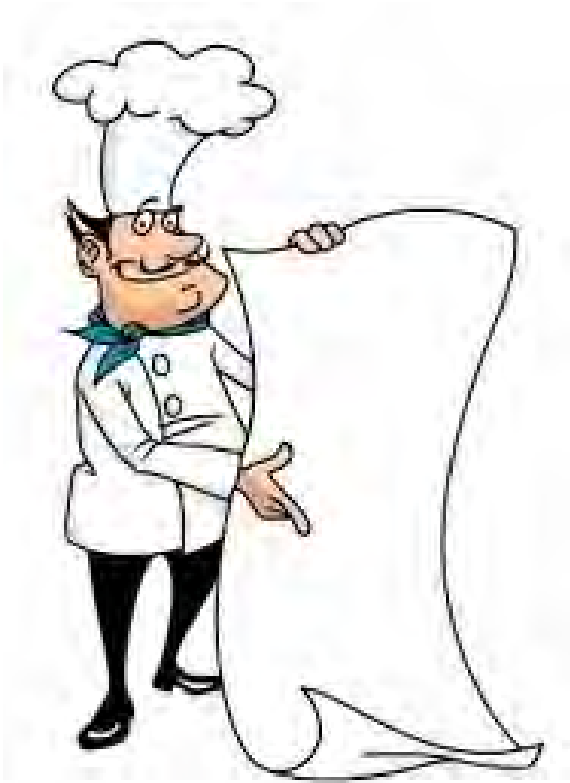
Vertical PI's

- Use in low speed conditions
- MnDOT / State Aid Standards
- Elimination of curves

Profile Overview



Recipe for Success



- Great Scoping
- Establish Typical Section
- Cross Slope
- Offset Crown
- Shoulder Slopes
- Boulevard Slopes
- Curb Heights
- Vertical PI's



Questions



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