



**Borough of
Tinton Falls
New Jersey**

Comprehensive Traffic Study and
Concept Plans for Intersection
Improvements at County Route
13A (Sycamore Avenue) and
County Route 51 (Hance
Avenue), and County Route 13A
(Sycamore Avenue) and Hope
Road in the Borough of Tinton Falls





Agenda

1. Existing Conditions
2. Future Conditions
3. Infeasible Concepts
4. Feasible Concepts

Existing Conditions

Tinton Falls



Middletown



Red Bank



Shrewsbury

Hance Ave



Sycamore Ave

Hope Rd

Tinton Falls



Study Area



Data Collection

- Turning Movement Counts
 - Hance/Hope & Sycamore
 - Tuesday and Thursday in October 2017
- Road Tubes
 - Between Intersections
 - October 2017 – One Full Week
- Origin-Destination Counts
 - Vehicles Diverting Away from Hance
 - Over 100 Vehicles During Peak Hours
- Peak Hours
 - 7:30 AM to 8:30 AM
 - 5:00 PM to 6:00 PM



Traffic Volumes – Existing Conditions

CR 51 (Hance Avenue)



406 177
222 100



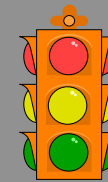
CR 13A (Sycamore Avenue)

408 235
343 545

154 417
380 409



418 429
139 81



424 615
267 468

Hope Road

327 471
165 358

AM Peak Volumes

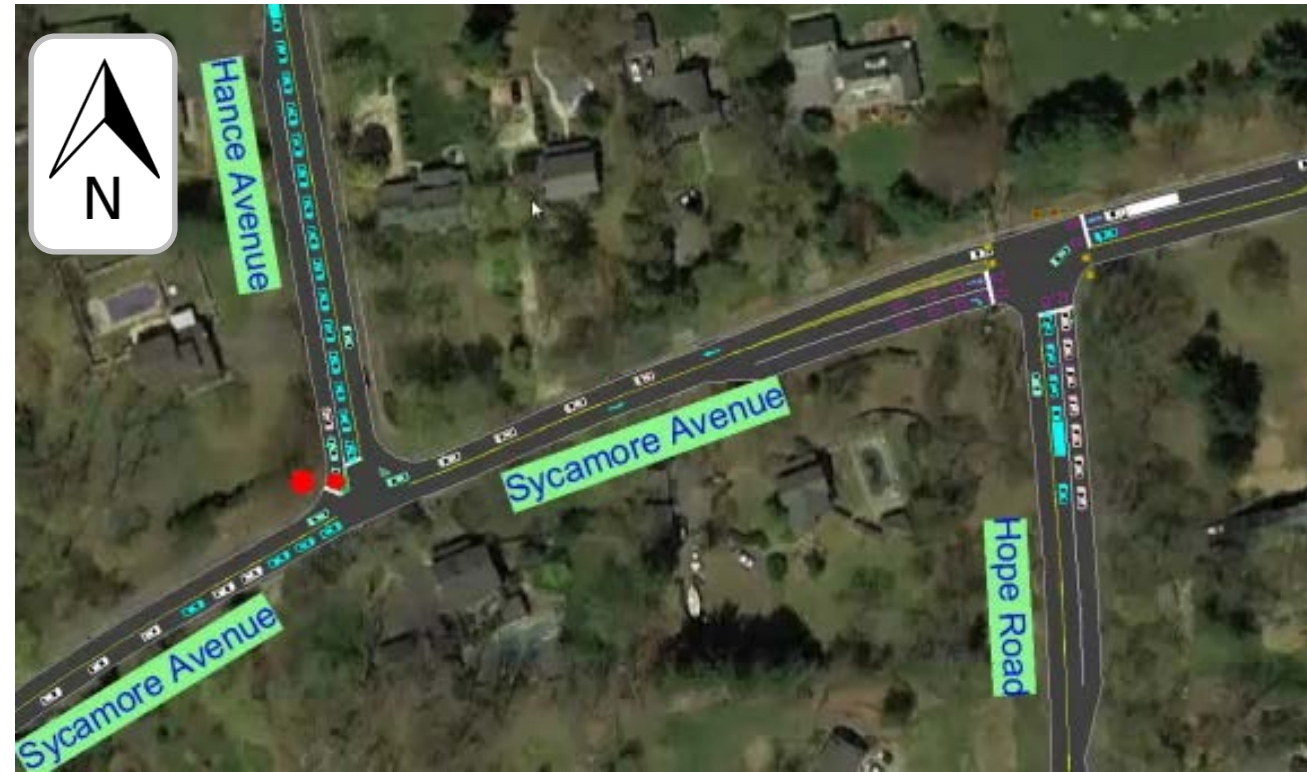
PM Peak Volumes

Existing Congestion – AM Peak Hour

Video Recording
Hance Avenue Facing
South, Towards Sycamore



SimTraffic Model
Hance Avenue at
Sycamore Avenue



Existing Conditions AM - Video of Close Call #1



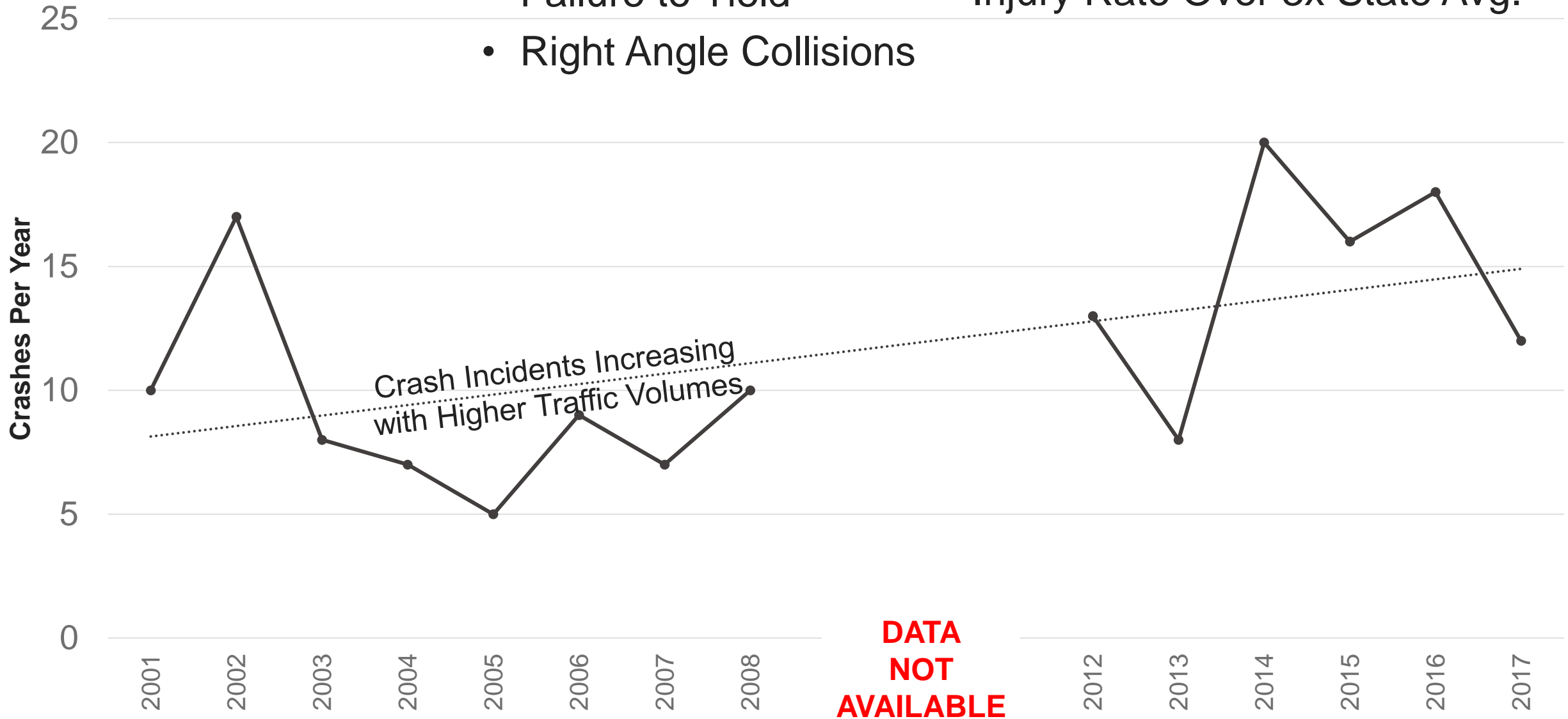
Existing Conditions AM - Video of Close Call #2



Sycamore & Hance 4-Year Crash History

Crash History

- More Than 20 Injuries
- Failure to Yield
- Right Angle Collisions
- Crash Rate Over Twice State Avg.
- Injury Rate Over 3x State Avg.



Future Conditions

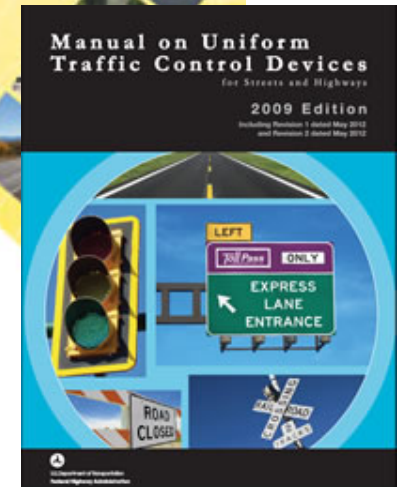
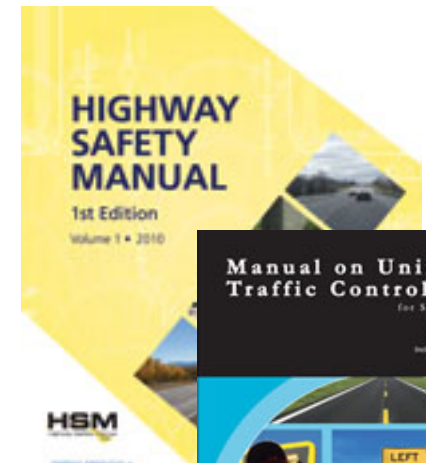
Future Conditions – 2037

- Forecasting Data for Population/Emp.
- 0.6% Per Year; 20 Years
- Fort Monmouth Redevelopment
- Apple Street Traffic Back to Hance
- More Than 15% Growth



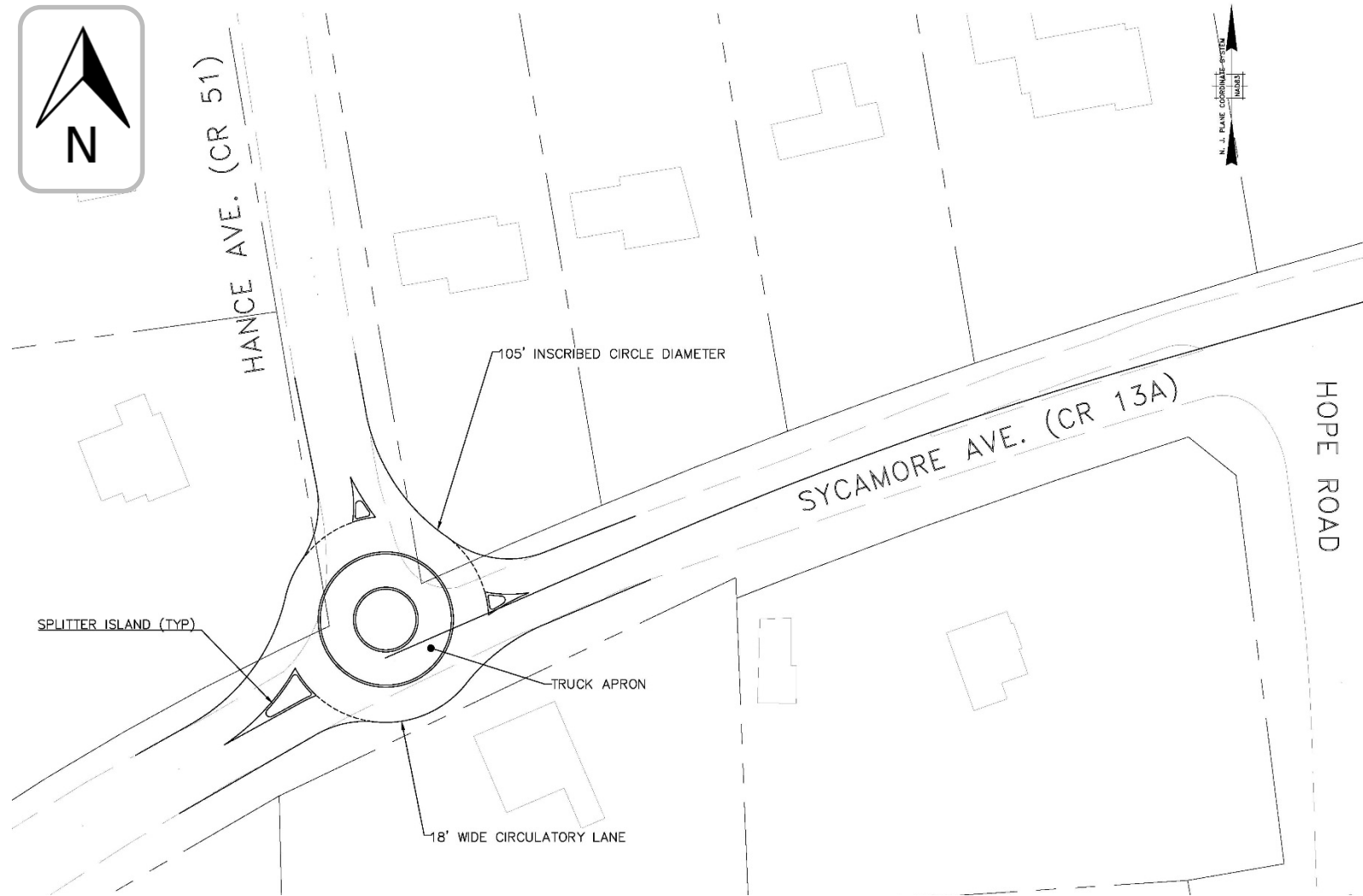
Need for Improvement

- Cost of Crashes to Society Over 20 Years - \$12 Million
 - \$600,000 Per Year → \$100,000 Per Injury Crash & \$10,000 Per PDO
 - Calculated According to Highway Safety Manual
- MUTCD Warrants Signalization
 - Four-Hour Volume
 - Eight-Hour Volume
 - Exceeds Five Correctable Crashes Per Year Threshold
- 2037 Intersection Delay to Increase 25% at Hance



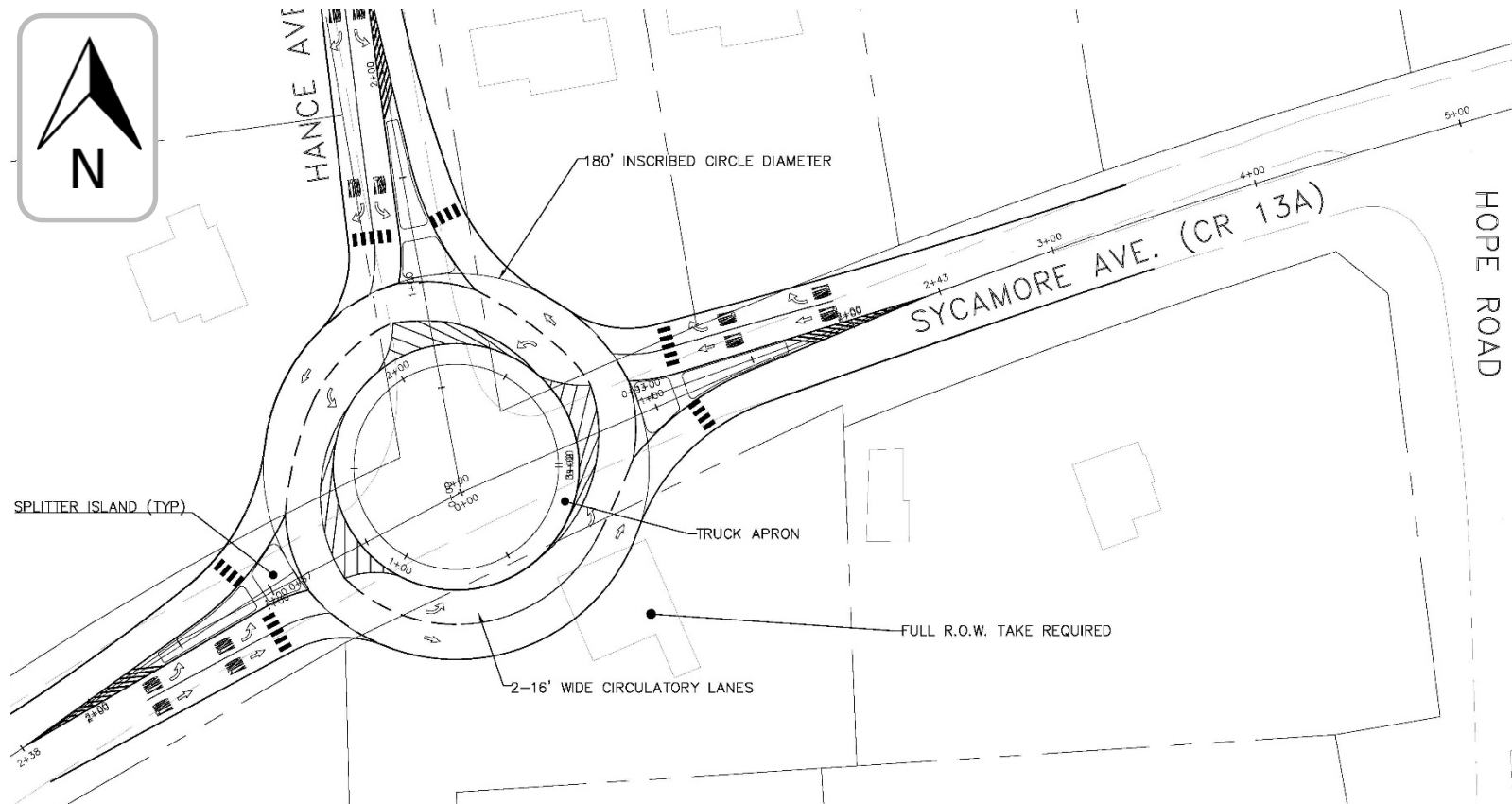
Infeasible Concepts

Concept 3 – Single-Lane Roundabout



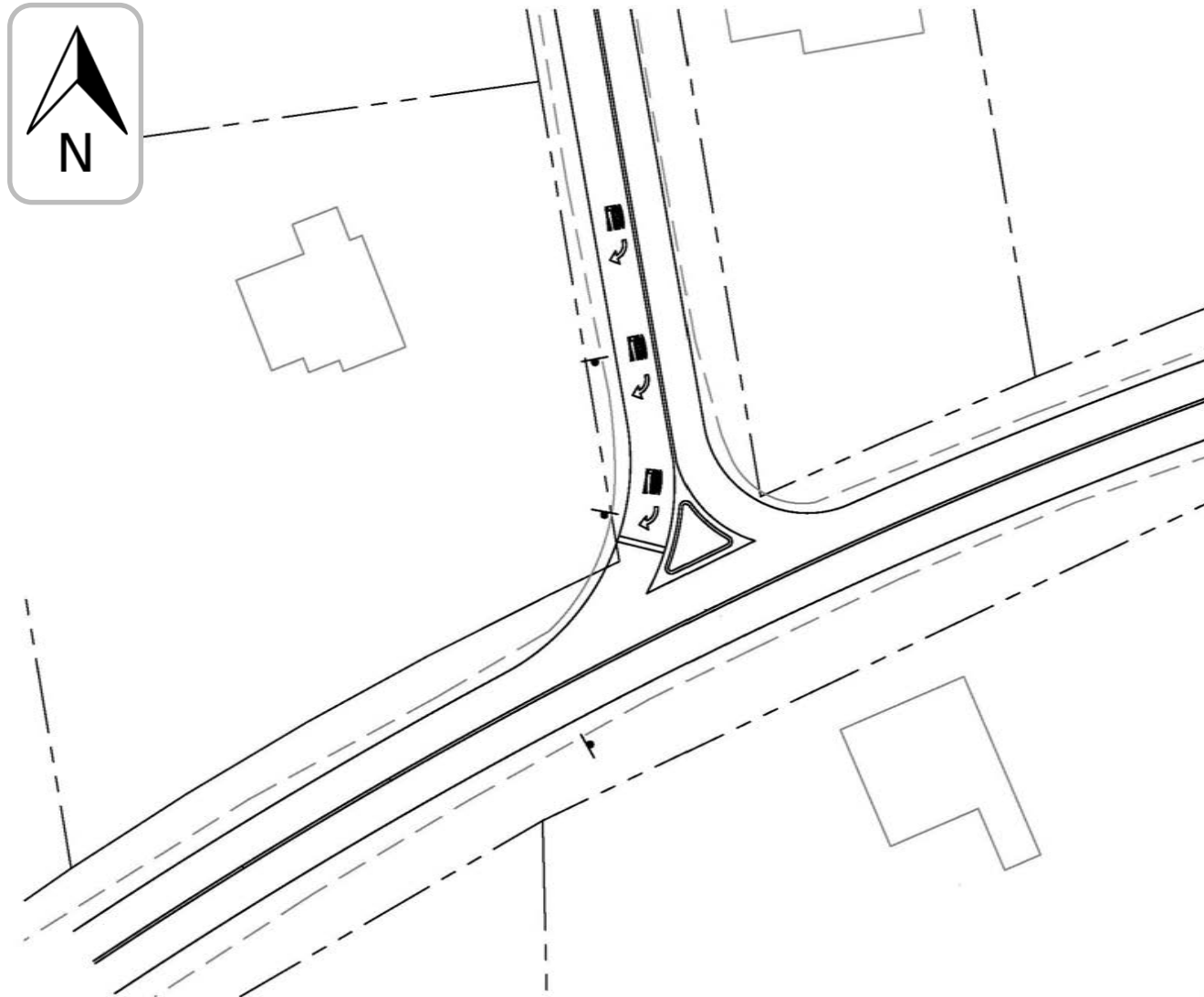
- Failing Operations
- 1000' Queuing
- Backup Extends Off Page

Concept 4 – Multi-Lane Roundabout



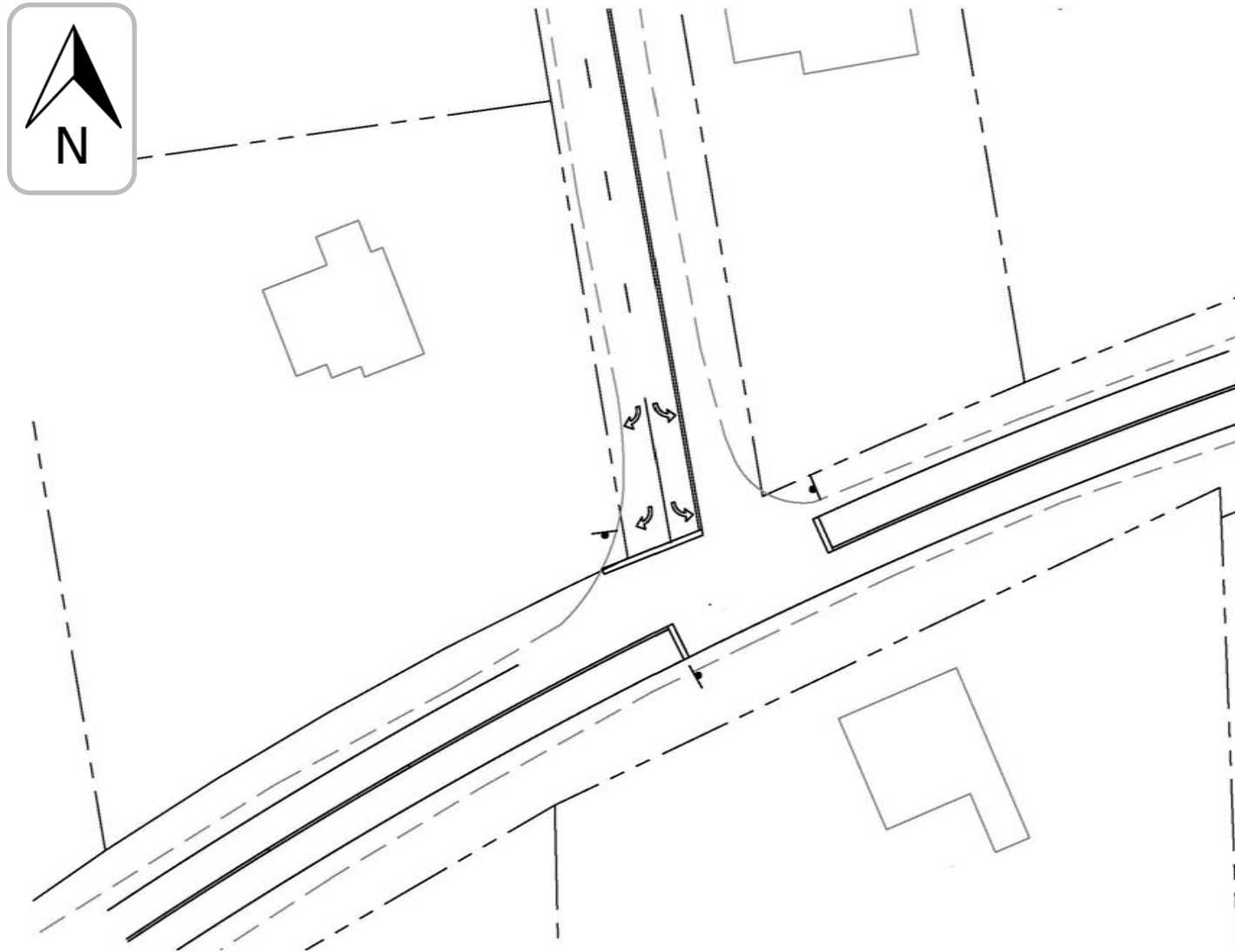
- Huge Property Impacts
- Driver Confusion
- Sideswipe Collisions

Concept 5 – Right-In/Right-Out



- Enforcement Needed
- Safety Issue
- Traffic Diversions
 - Riverdale Avenue
 - Knollwood Drive
 - Apple Street
 - Linda Lane
 - Shrewsbury Avenue

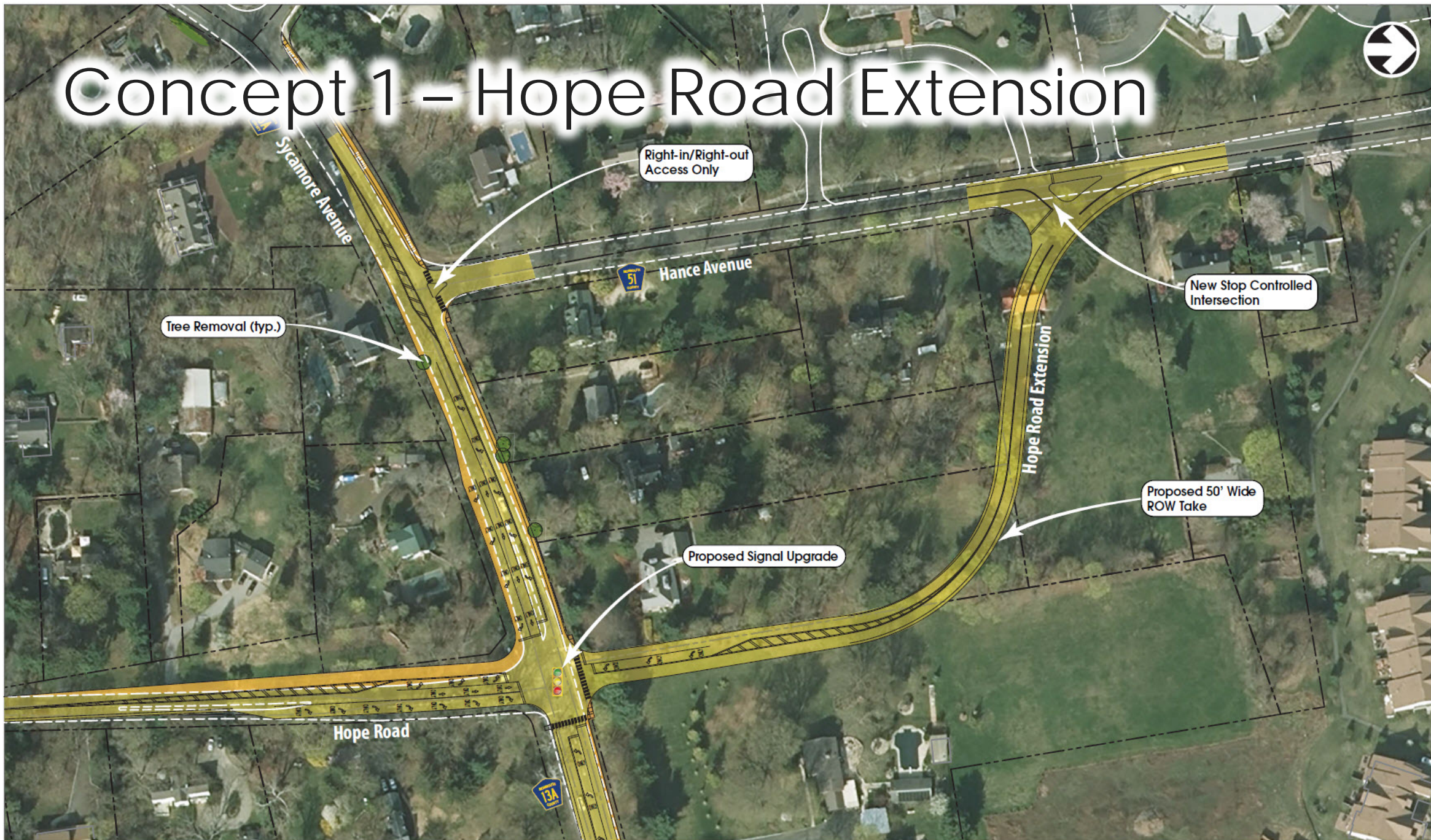
Concept 6 – All-Way Stop Control



- Failing Operations
- Over ½ Mile Queuing
- Queuing Off Page
- For Low Volume Roads

Feasible Concepts

Concept 1 – Hope Road Extension



Right-in/Right-out
Access Only

Tree Removal (typ.)

Proposed Signal Upgrade

Proposed 50' Wide
ROW Take

New Stop Controlled
Intersection

Sycamore Avenue

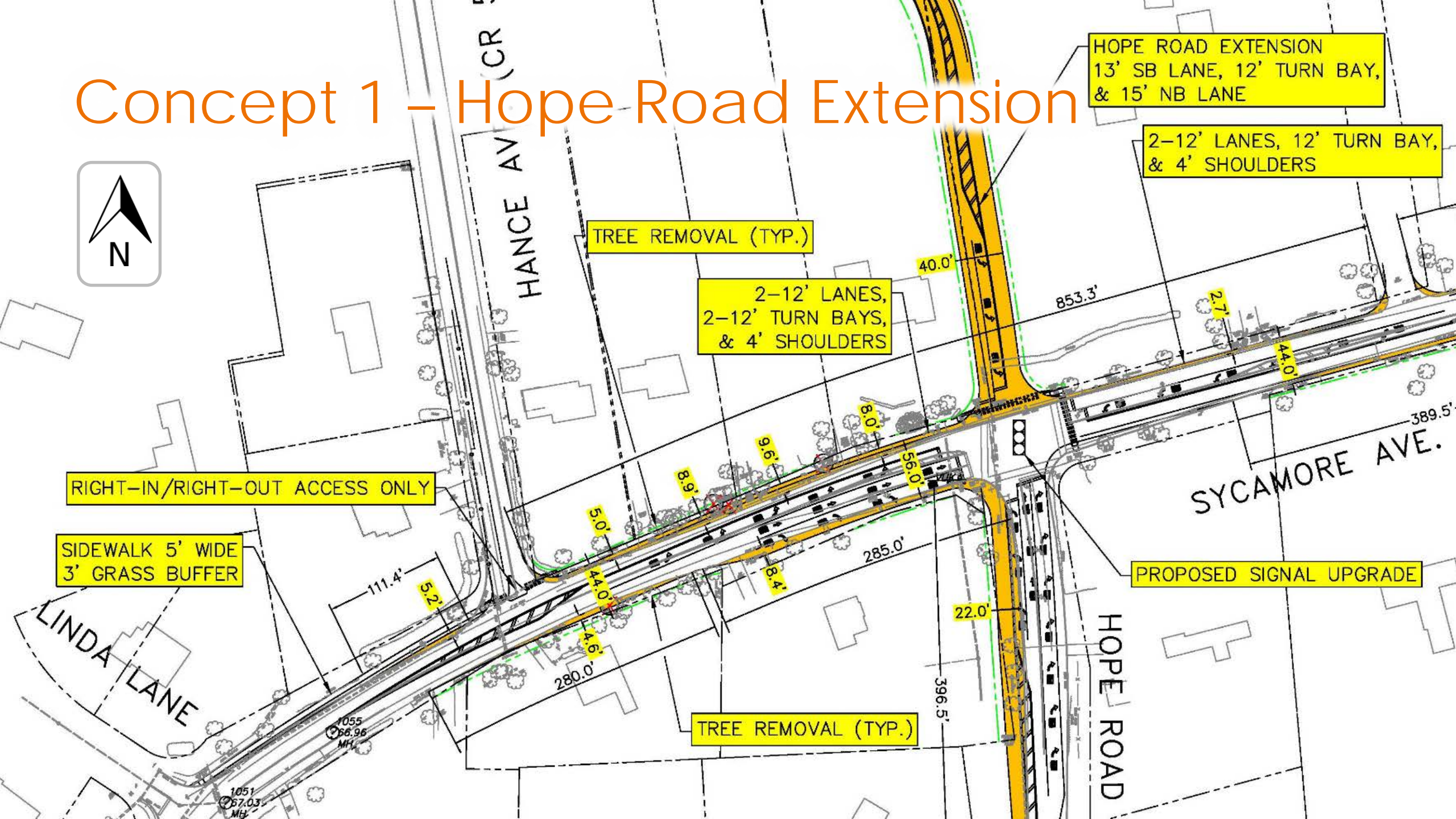
Hance Avenue

Hope Road Extension

Hope Road



Concept 1 – Hope Road Extension



HOPE ROAD EXTENSION
13' SB LANE, 12' TURN BAY,
& 15' NB LANE

2-12' LANES, 12' TURN BAY,
& 4' SHOULDERS

TREE REMOVAL (TYP.)

2-12' LANES,
2-12' TURN BAYS,
& 4' SHOULDERS

RIGHT-IN/RIGHT-OUT ACCESS ONLY

SIDEWALK 5' WIDE
3' GRASS BUFFER

PROPOSED SIGNAL UPGRADE

TREE REMOVAL (TYP.)

HANCE AV

SYCAMORE AVE.

LINDA LANE

HOPE ROAD

1055
66.96
MH

1051
67.03
MH

40.0'

853.3'

2.7'

4.40'

389.5'

285.0'

22.0'

396.5'

111.4'

5.2'

280.0'

5.0'

4.40'

4.6'

8.9'

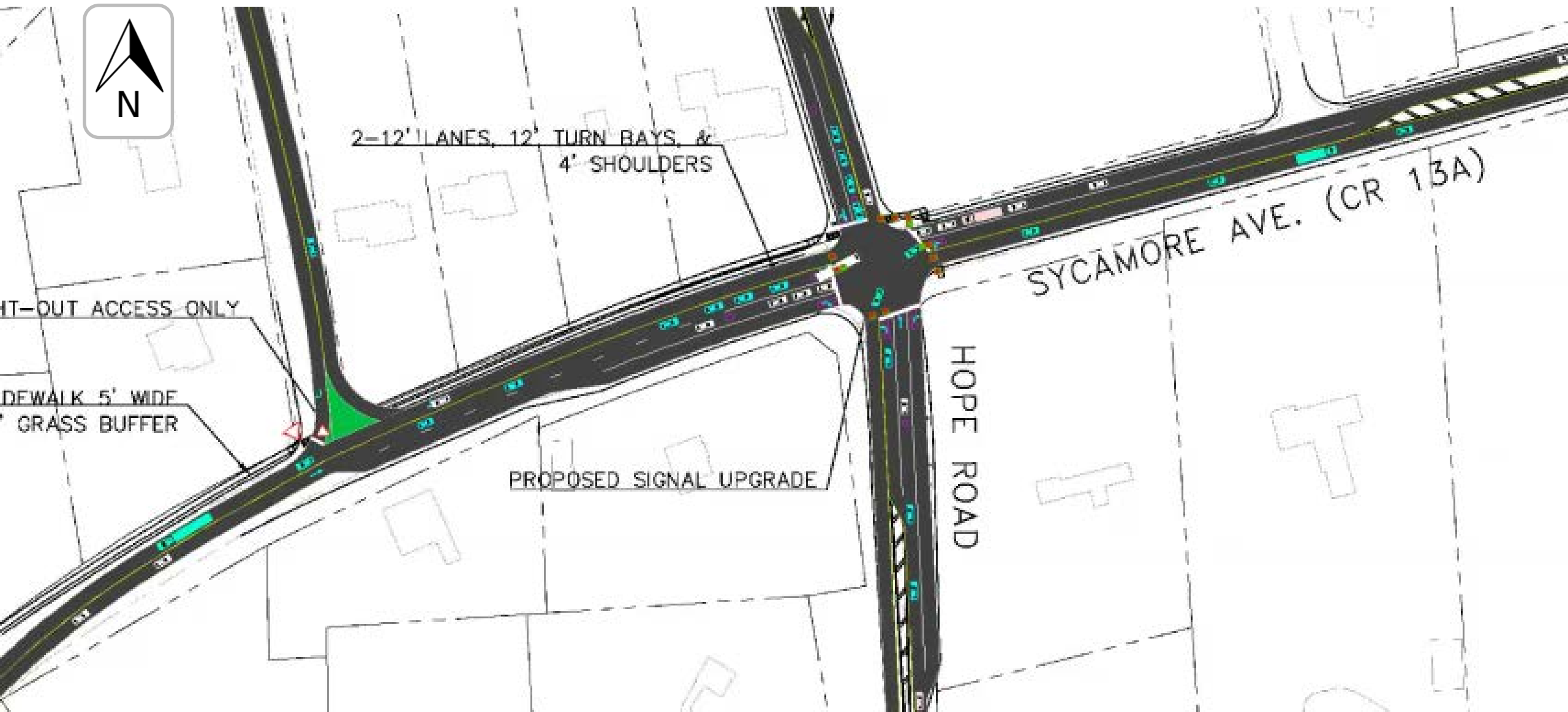
9.6'

8.0'

8.4'

56.0'

Concept 1 – Video of 2037 Conditions



Concept 2 – Signal at Hance



51
Hance Avenue

Proposed Traffic Signal

Tree Removal (typ.)

13A
Sycamore Avenue

Linda Lane

13A
Sycamore Avenue

Proposed Utility Pole Relocation

Hope Road

Tree and Shrub Removal for Improved Sight Lines

Concept 2 – Signal at Hance

2-12' LANES, 12' TURNING BAYS, & 4' SHOULDERS



HANCE AVE

SYCAMORE

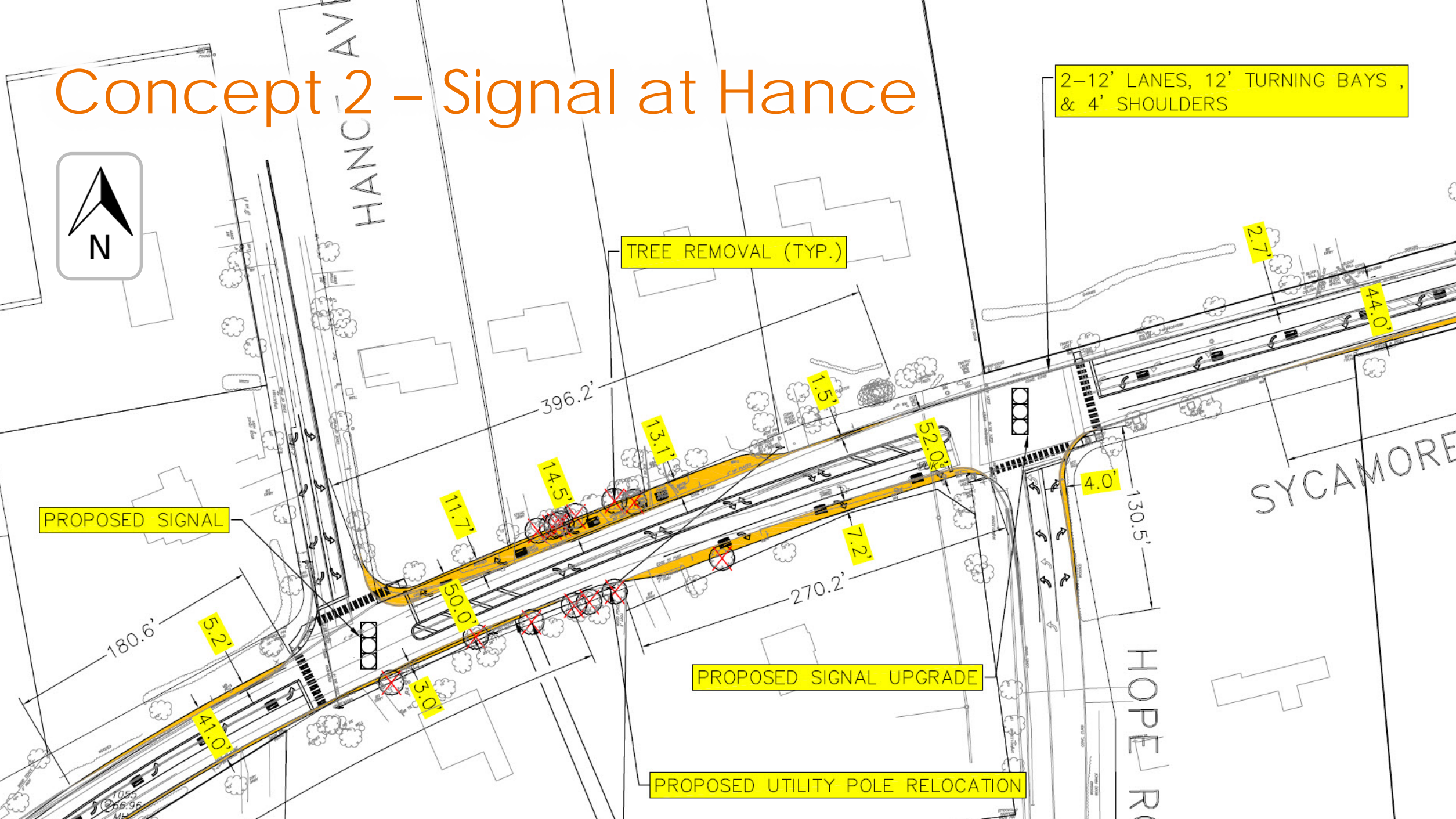
HOPE R

TREE REMOVAL (TYP.)

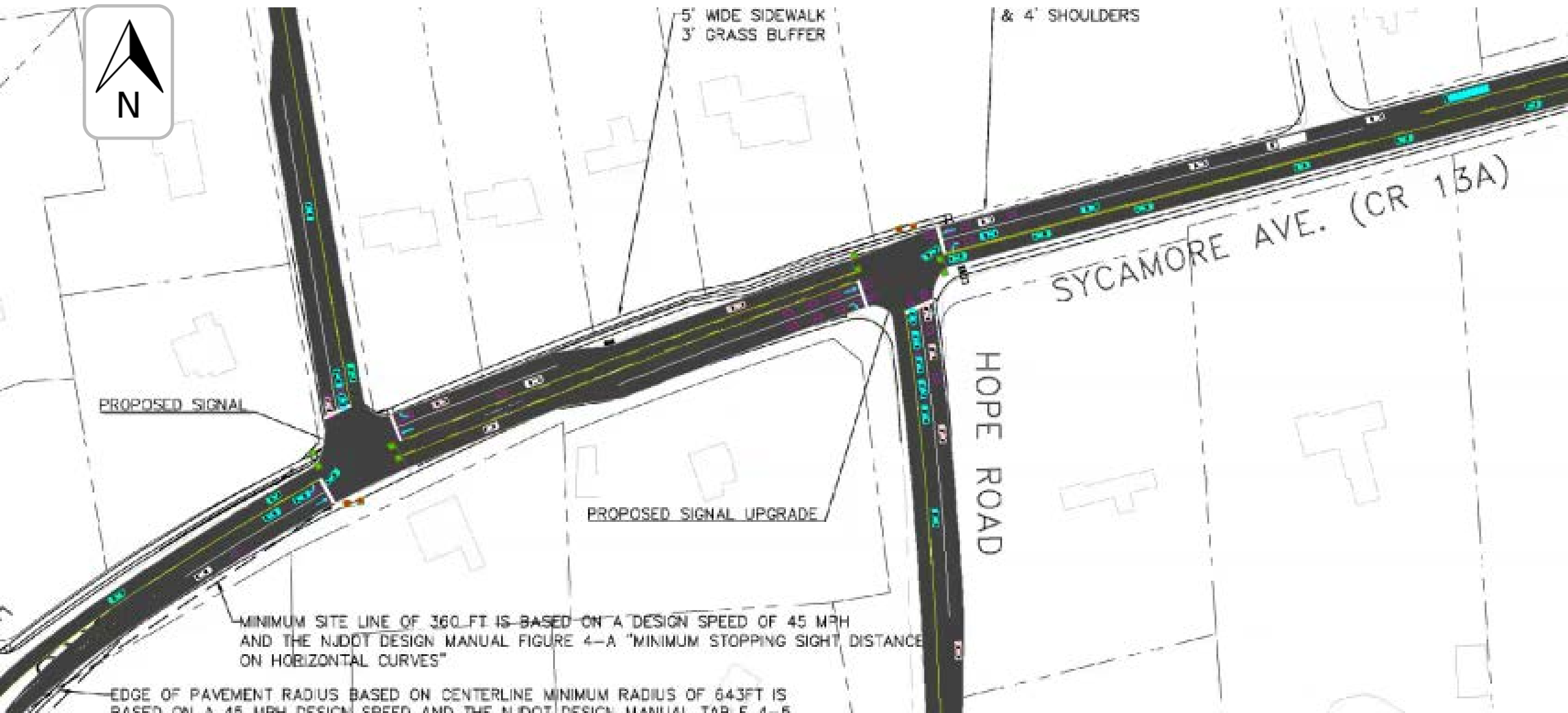
PROPOSED SIGNAL

PROPOSED SIGNAL UPGRADE

PROPOSED UTILITY POLE RELOCATION



Concept 2 – Video of 2037 Conditions



Matrix of Feasible Concepts

Feasible Concept	Traffic Operations	Maximum Distance of Widening Along Sycamore	Right-of-Way to be Acquired	Mature Landscaping Impact Along <u>Sycamore</u>
Concept 1 Hope Road Extension	LOS D or Better Queues Under 400'	Roughly 10'	3.1 Acres	Maple, Oak, Evergreen 4 Trees
Concept 2 Signal at Hance	LOS D or Better Queues Under 500' (Traffic May Wait at Two Signals)	Roughly 15'	0.1 Acres	Maple, Oak, Evergreen 15 Trees

Matrix of Feasible Concepts (continued)

Feasible Concept	Cost by Conceptual Alternative	Pros	Cons
Concept 1 Hope Road Extension	Construction – \$1.5 MM ROW – \$0.7 MM Total – \$2.2 MM	Consolidates Traffic Operations, Addresses Safety Need	Property Takings Required, Property Access Issues
Concept 2 Signal at Hance	Construction – \$1.5 MM ROW – \$0.1 MM Total – \$1.6 MM	Minimizes Property Impacts, Addresses Safety Need	O&M of Two Signals
