Density Update
Request: Add Additional Residential Density

OLD PROPOSAL

APRIL 19th	April 19th
Rental (Apartment)	60
Condos	526
Townhomes	102
Total	**688**
Affordable homes included in the above number:	88

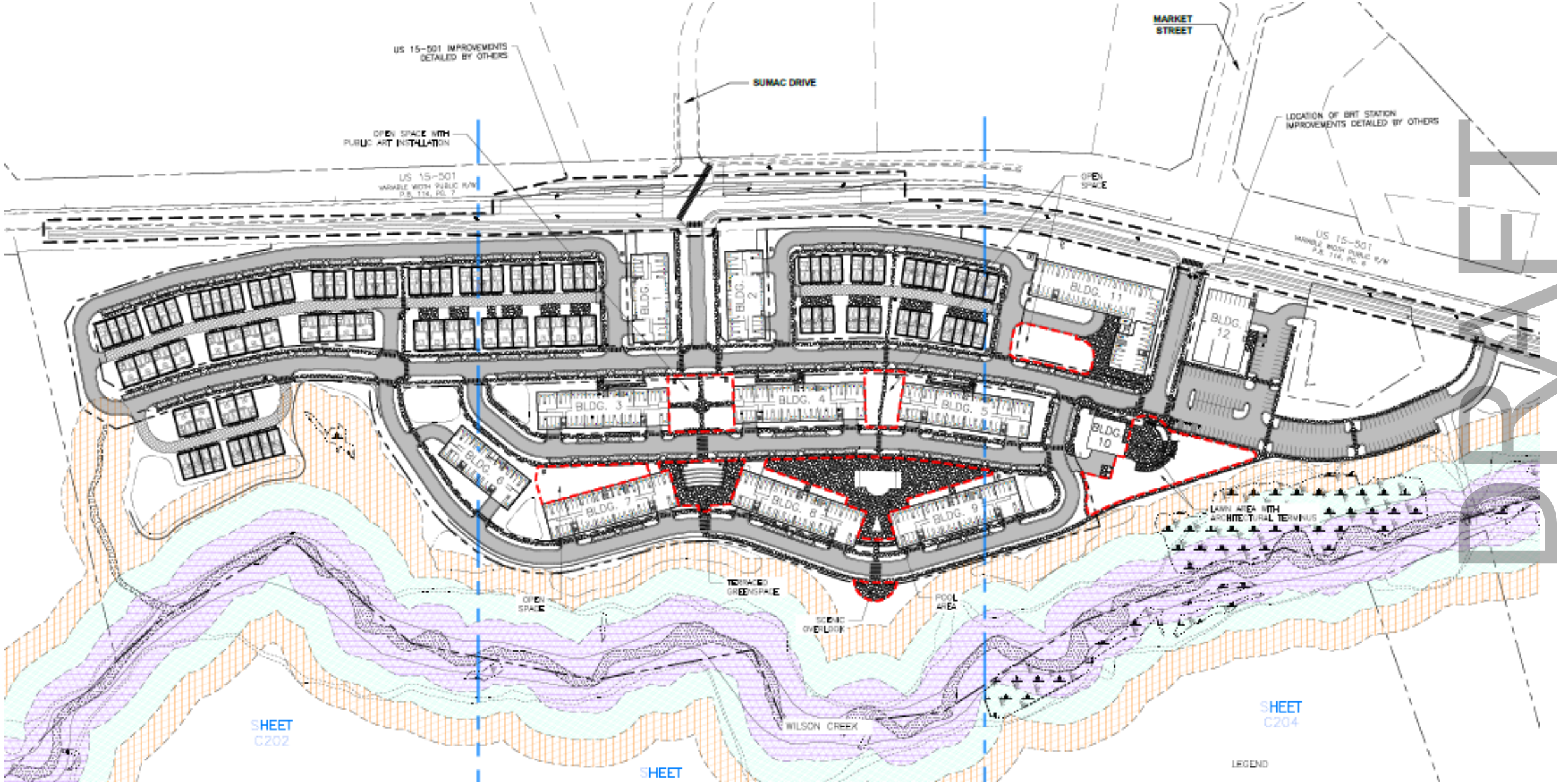
NEW PROPOSAL

LOWER RANGE	June 7th
Rental (Apartment)	60
Condos	526
Townhomes	102
Total	**688**
Affordable homes included in the above number:	88

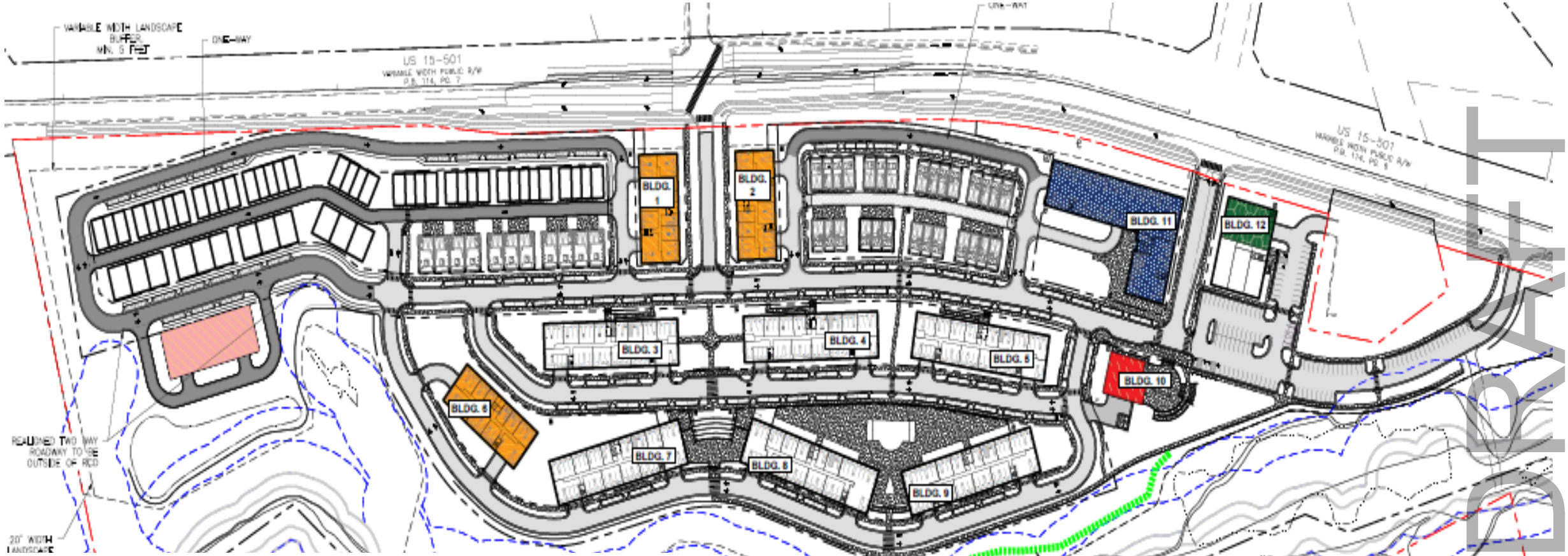
UPPER RANGE	June 7th	Change
Rental (Apartment)	120	*+60*
Condos	606	*+80*
Townhomes	89	*-13*
Total	**815**	***+127***
Affordable homes included in the above number:	105	*+13*

DRAFT

Previous (April 19th) Site Plan (for reference)



Density Update
Request: Add Additional Residential Density



ADDITIONAL DENSITY TABLE

	BUILDINGS 1, 2, & 6	10 CONDO UNITS PER BUILDING
	ADDITIONAL CONDO BUILDING	49 CONDO UNITS
	BUILDING 10	20 APARTMENT UNITS
	MIXED USE BUILDING	20 APARTMENT UNITS
	OFFICE BUILDING	20 APARTMENT UNITS
	TOTAL ADDITIONAL UNITS	139 UNITS

LEGEND

	REVISED PAVED AREA
	ORIGINAL PAVED AREA
	REVISED RESIDENTIAL BUILDING
	ORIGINAL RESIDENTIAL BULIDING

Density Update
Request: Add Additional Retail Space

OLD PROPOSAL

2-5% of Floor Area (952, 866 sf)

Potential for 19K to 47.6K SF of Comm/Retail

NEW PROPOSAL

NEW LOWER RANGE

2-5% of Floor Area (952, 866 sf)

Potential for 19K to 47.6K SF of Comm/Retail

NEW UPPER RANGE

2-5% of Floor Area (1,034,117 sf)

Potential for 20.6K to 51.7K SF of Comm/Retail

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*This represents an increase of up to **+/-4K SF** of more commercial/retail space compared with our last meeting. Additionally, we envision doing several things to help activate the Sumac St and Market St entrance areas as mixed-use nodes with community-amenity retail shops, housing above, communal meeting spaces, trail heads and green spaces.*

Density Update
Request: Add Additional Retail Space

HOW WE PLAN TO DO THAT

By Creating a Market Street Node / Plaza

- **Densified with more housing and retail opportunities**
- **Ground floor commercial opportunities accent the residential elements creating a true live, work, play environment**
  - **Restaurants, offices (medical), services, fitness**
- **Vibrant entrance corridor with streetscape that frames an intimate atmosphere**
  - **Public art and signage create focal points and interest throughout the fabric of the community**

Density Update
Request: Add Additional Retail Space

HOW WE PLAN TO DO THAT

By Creating a Market Street Node / Plaza

- **Outdoor dining, causal strolling, sidewalk connectivity to all aspects of the community**
- **Plaza with open lawn gathering space for community use, group events and daily personal social activities**
  - **Greenway connection with parking (car & bike) to nature preserve, passive dog park**
  - **Spaces to be activated for farmers markets, sidewalk sales, holiday celebrations and special events**

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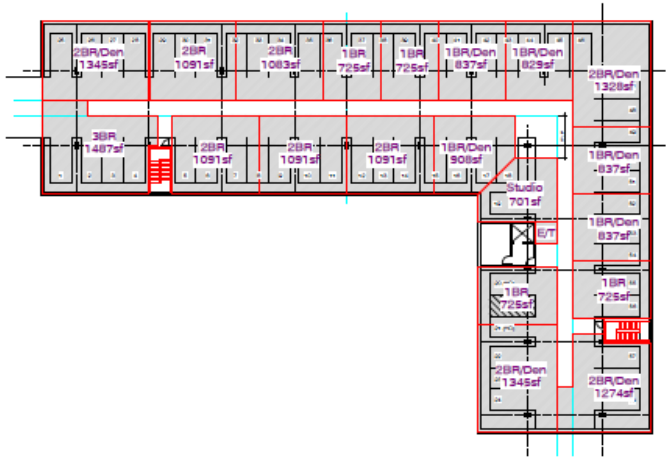
Density Update
Request: Add Additional Retail Space



Our Green Space

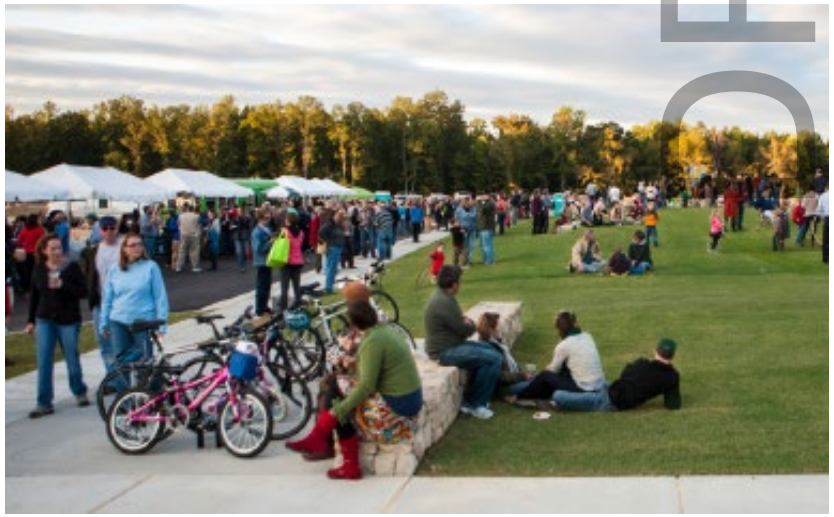
Adjacent to Plaza but larger open space

- Permeable pavers and lawn with underground stormwater detention
- Potential for food truck rodeos, farmers markets, community festivals, and events.

Mixed Use Building (#11)

+/- 80 apartments (rental)

+/- 5500 SF ground floor commercial space for (outdoor) dining, office, and retail



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Density Update
Request: Add Additional Retail Space

HOW WE PLAN TO DO THAT

Flexibility for a Sumac Road Node @ Terraced Green

- Additional ground floor retail & office opportunities
- Terraced hillside seating and shelter anchor the space for daily social activities and community events
- Central location makes it walkable for all
- Terraced greens are flanked by shade trees with public art

Density Update
Request: Add Additional Retail Space

HOW WE PLAN TO DO THAT

<u>Flexiblty for a Sumac Road Node @ Terraced Green</u>

- Ground floors can also be used for resident amenity facilities
- Club space for fitness, greenscreen/podcasting studios, test kitchens, etc
- Active recreation space for play areas

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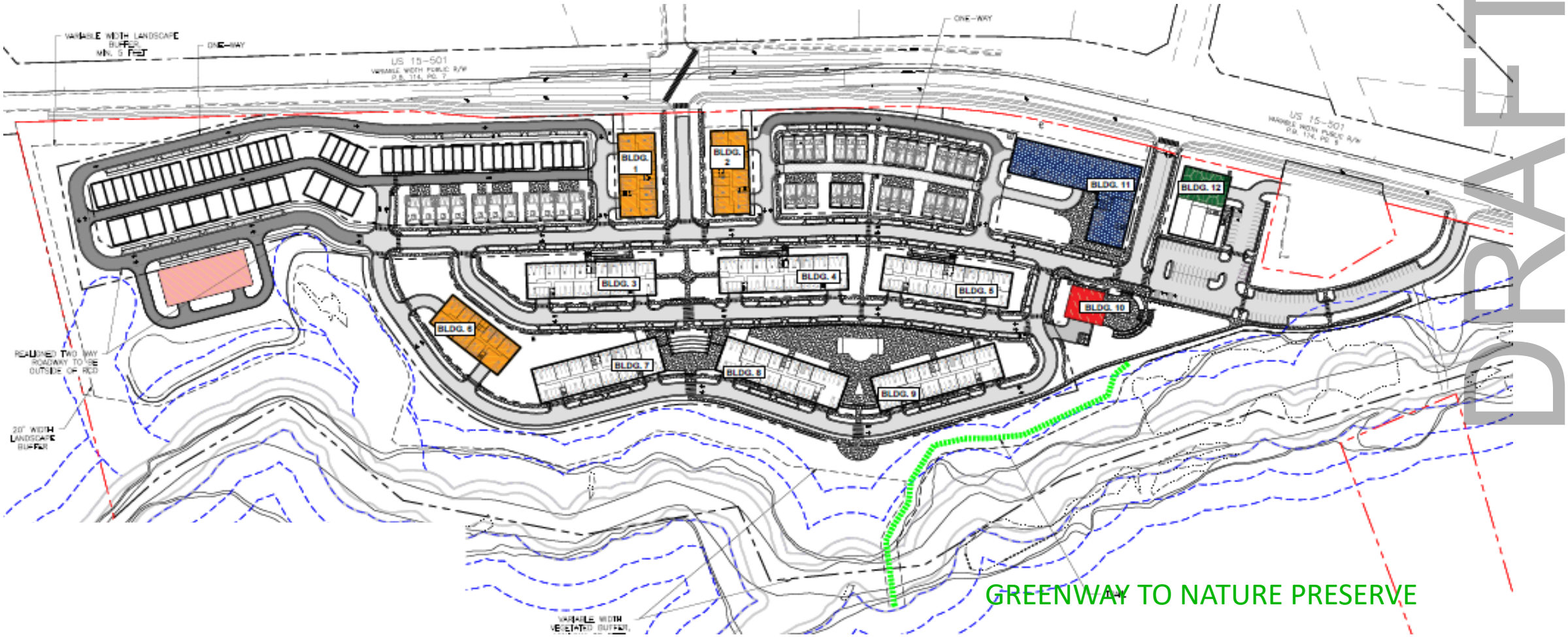
Trails / Natural Preserve

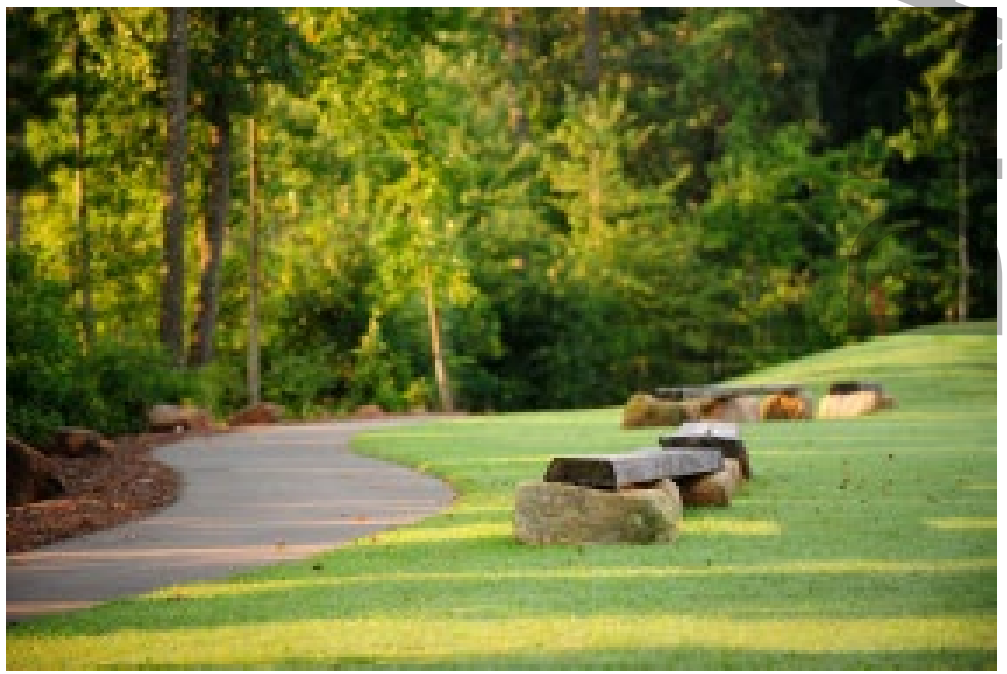
Conservation Easement

- Trails and public access
- Annual monitoring to ensure
- compliance with the easement
- Stewardship by owners for maintenance
- Potential for guided hikes/educational programming



Trails / Natural Preserve

- Passive paved trail connection from Plaza through wooded terrain with bridge crossing over Wilson Creek
- Connecting to future trails in nature preserve
- RCD/Steep Slopes impacts – quantified separate from overall project impacts
- Trail includes vehicular access for maintenance purposes with removable bollards
- Wayfinding and environmental education signage

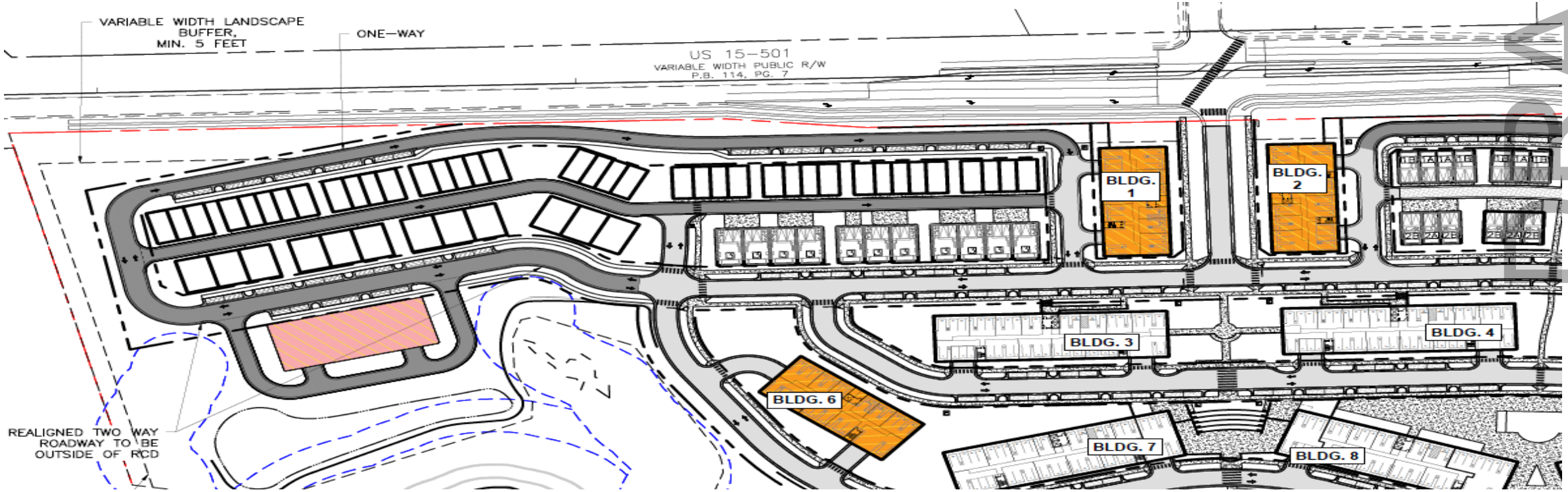


Removing Roads

Request: Evaluate Road Layout for Townhomes and Western Buffer Impact

Recommendation: Maintain similar layout to original plan but work with Staff during construction drawings to narrow road for one way access

- Added buffer area for additional landscaping
- Unit count remains like original submittal
- Clear sense of front and back with fronts facing public streets and backs abutting interior alleys



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Removing Roads

Request: Evaluate Road Layout for Townhomes and Western Buffer Impact

Review of Alternative #1: Creating a Mews Court

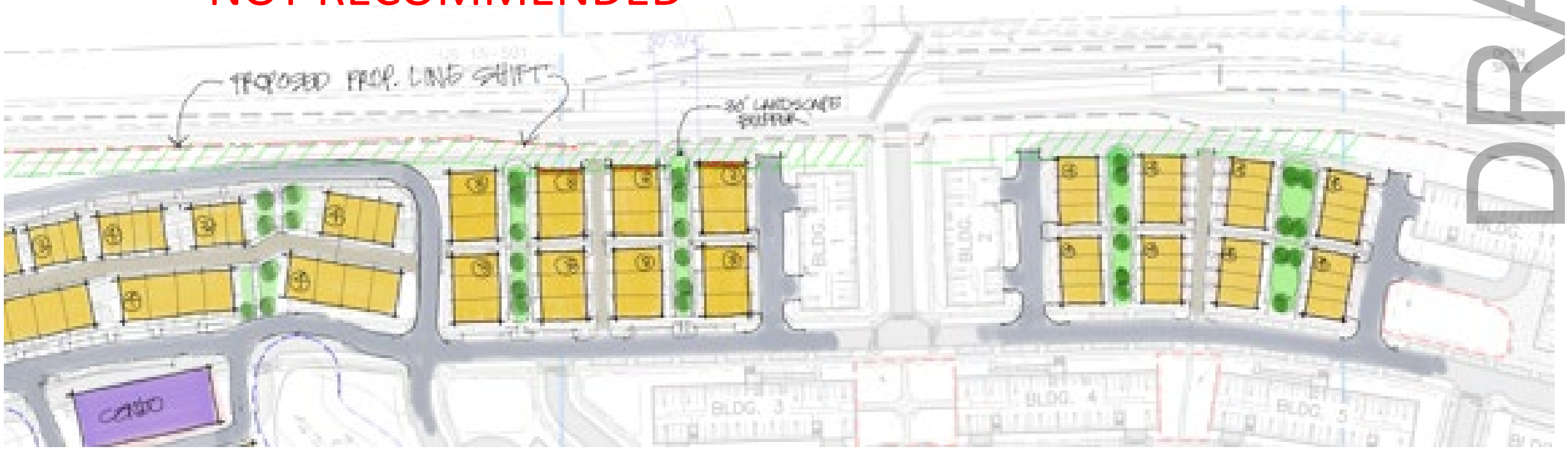
Pro's

- Most # of units (97 or 89 to further increase buffer)
- Variable buffer area increases (20' max)

Con's

- Side yard orientation – dramatic drops across each front door/garage
- Streetscape aesthetic is compromised
- Limited guest parking
- Accessibility/Connectivity challenges

NOT RECOMMENDED



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Removing Roads

Request: Evaluate Road Layout for Townhomes and Western Buffer Impact

Review of Alternative # 2: Convert Alley to Public Rd

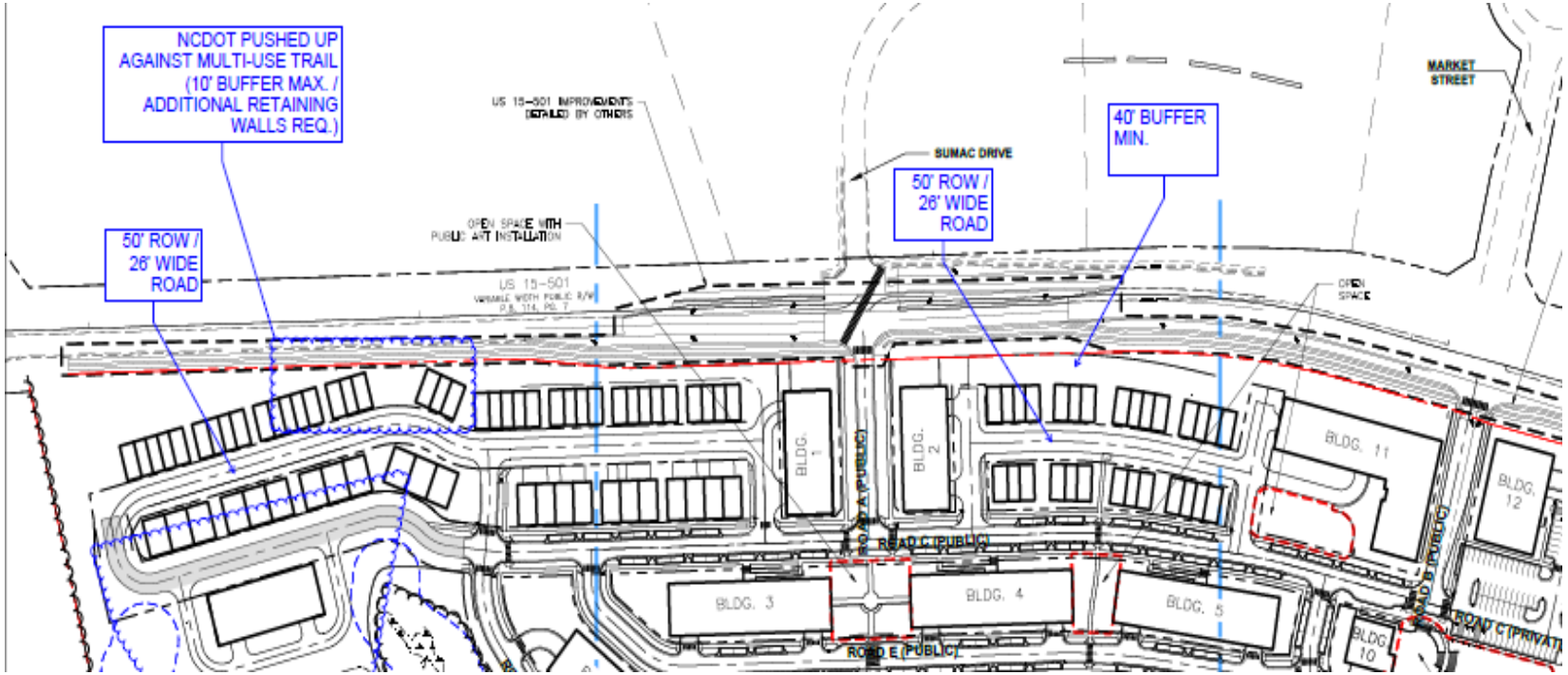
Pros

- Eliminates most roadway
- Larger buffer area, but still varies from 5' to 40'

Cons

- Least # of units (84 or 78 to increase buffer)
- Front doors likely to be slightly below grade
- Garage front homes
- Crowded streetscape – vehicles, utility pedestals, etc.

NOT RECOMMENDED



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Affordable Housing Update

Request: Evenly distribute affordable housing across all housing types

OLD PROPOSAL

	Apartment (Rental)	Condos	Townhomes
65% AMI or less	15	30	
80% AMI or less		30	13
Totals	**15**	**60**	**13**

This represented 88 Total Units

Plus 1000 SF of Office Space Deeded to Affordable Housing Management Organization

NEW PROPOSAL

Lower Density Range

	Apartment (Rental)	Condos	Townhomes
688 Total	60	526	102
Total Market	53	458	89
Affordable Calc		458 * 15% =68.7	89 * 15% =13.35
Total Affordable	7	68	13
		plus .7 $ in lieu	plus .35 $ in lieu

	Apartment (Rental)	Condos	Townhomes
65% AMI or less	7	34	
80% AMI or less		34	13
Totals	**7**	**68**	**13**

Higher Density Range

	Apartment (Rental)	Condos	Townhomes
815 Total	120	606	89
Total Market	105	527	78
Affordable Calc	109 * 15% =15.75	527 * 15% =79.05	78 * 15% =11.7
Total Affordable	15	79	11
	plus .75 $ in lieu	plus .05 $ in lieu	plus .7 $ in lieu

	Apartment (Rental)	Condos	Townhomes
65% AMI or less	8	40	5
80% AMI or less	7	39	6
Totals	**15**	**79**	**11**

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S Columbia Street Crossing
Three options:

We have extensively studied three options for crossing 15-501:

1. A pedestrian/bicycle bridge - REVIEWED
2. A pedestrian/bicycle tunnel - REVIEWED
3. An At-Grade Crossing - RECOMMENDED ✓

Each option has Pros and Cons.

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S Columbia Street Crossing
A Pedestrian Bridge

DRAFT

S Columbia Street Crossing
Pedestrian Bridge Option

DRAFT

CHALLENGES WITH A PEDESTRIAN BRIDGE:

1. TOPOGRAPHY:

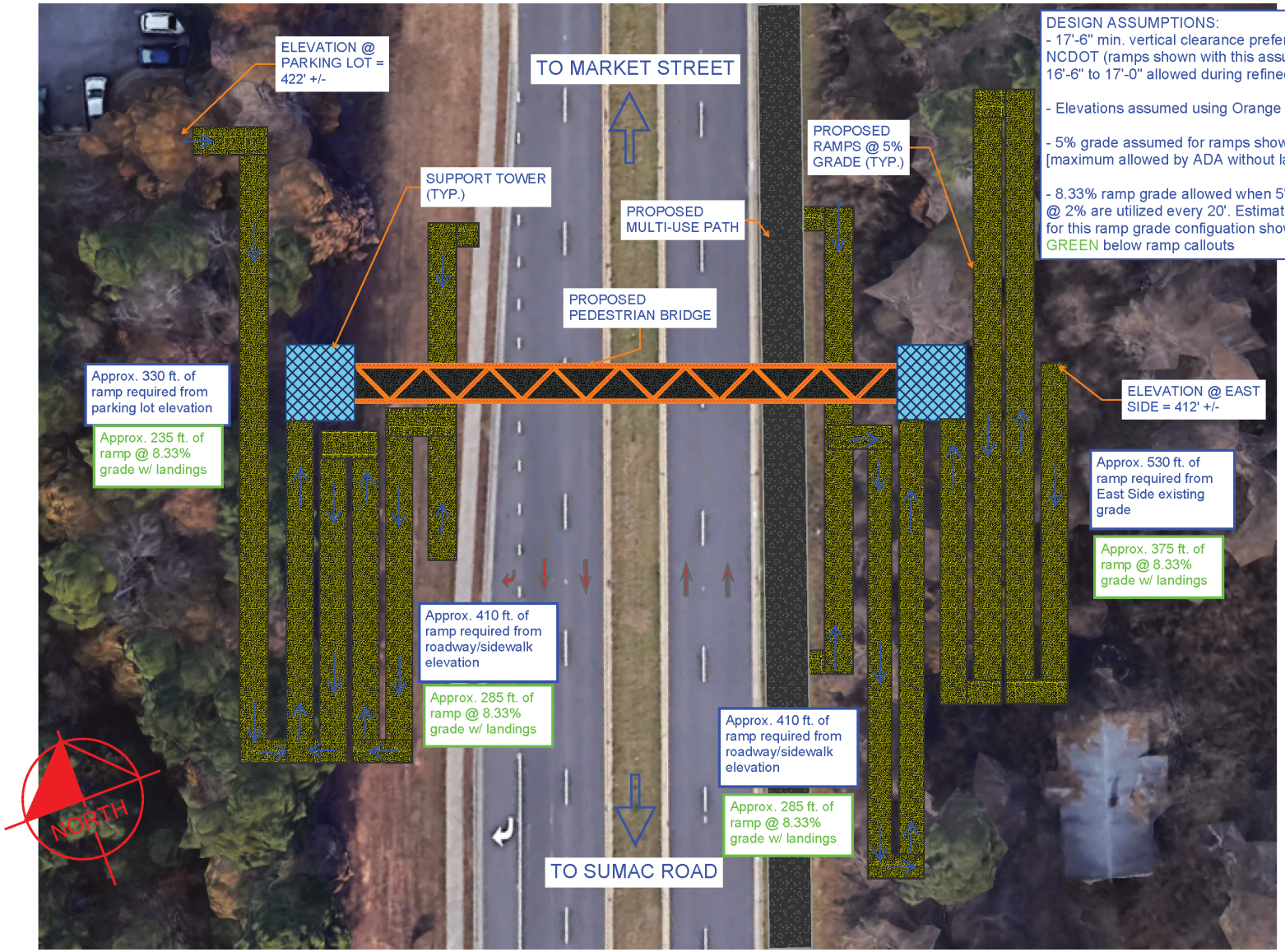
The topography drops significantly as you move from west to east across 15-501, by as much as **20 feet** from one side to the other. To maintain truck height clearances over the road, the bridge would be very high on the South Creek side.

- This means that stairs up to the bridge would require pedestrians to climbs as much as **20 feet** of stairs.
- Ramps would also be required for ADA and bicyclists. Climbing the height needed would require thousands of feet of ramp. On the South Creek side alone we estimate that it would be up to 1,125 feet of ramp.
- Elevators could be built, but this would further increase the already high cost.
- The land needed for additional ramping may eat into developable land and reduce South Creek density
- This is not an optimal solution for children nor does it encourage true connectivity

2. TRAVEL TIME & SAFETY: The stairs and ramping result in a travel time across the bridge of an additional 30% longer than crossing at grade. We believe this may discourage use of the bridge and many people may try crossing at grade instead.

3. COST: The renderings of the bridge is from a similar bridge being built in Elizabeth City, NC. Cost estimates for that bridge are $11-$14MM, and we believe a bridge here would be equally if not more expensive due to temporary relocation of 15-501.

S Columbia Street Crossing
Pedestrian Bridge Option



DESIGN ASSUMPTIONS:
- 17'-6" min. vertical clearance preferred by NCDOT (ramps shown with this assumption). 16'-6" to 17'-0" allowed during refined design

- Elevations assumed using Orange County GIS

- 5% grade assumed for ramps shown in view [maximum allowed by ADA without landings]

- 8.33% ramp grade allowed when 5' landings @ 2% are utilized every 20'. Estimated lengths for this ramp grade configuation shown in GREEN below ramp callouts

RAMPS TO DEVELOPMENT & ROADWAY

SOUTH CREEK PEDESTRIAN BRIDGE TOWER AND RAMP SCHEMATIC

CHAPEL HILL, NC

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S Columbia Street Crossing
Pedestrian Bridge Option

	PROPOSED DENSITY	ADDED COST FOR EACH UNIT	ADDED COST FOR EACH UNIT
	Cost/ Unit	**$11MM Bridge**	**$14MM Bridge**
LOWER RANGE	688 Units	$15,988	$20,348
UPPER RANGE	815 Units	$13,496	$17,177

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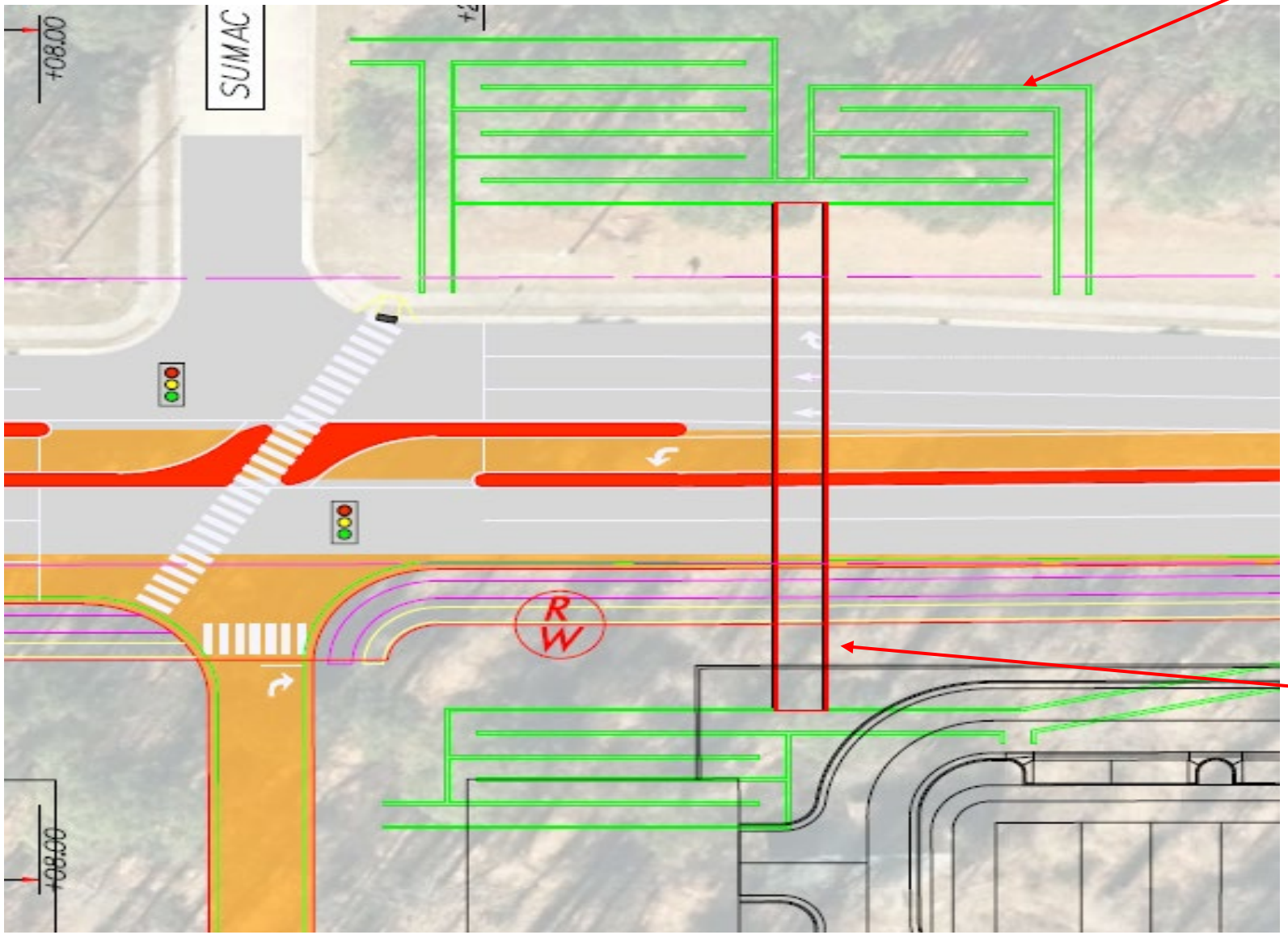
S Columbia Street Crossing
Tunnel Option



Significant Ramping

Increased Travel Times

Underground

Limited Visibility for Children

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S Columbia Street Crossing
Tunnel Option

CHALLENGES WITH A PEDESTRIAN TUNNEL:

1. TOPOGRAPHY and UNDERGROUND UTILITIES:
   The topography drops significantly as you move from west to east across 15-501. To build a tunnel, drops of as much as **22 feet** from S Columbia must be dealt with.

   There is also a 12" diameter water line under 15-501, and any tunnel would need to dip down deep enough to clear it.

   - Climbing the height needed would require thousands of feet of ramp. On the South Creek side alone we estimate that it would be up to 645 feet of ramp on the West side and 620 feet on the East side.
   - Elevators could be built, but this would further increase the already high cost.
   - The land needed for additional ramping may eat into developable land and reduce South Creek Density
   - This is not an optimal solution for children to travel underground unescorted nor does it encourage true connectivity

2. TRAVEL TIME & SAFETY: The stairs and ramping result in a travel time across the bridge of an additional 30% longer than crossing at grade. We believe this may discourage use of the bridge and many people may try crossing at grade instead.

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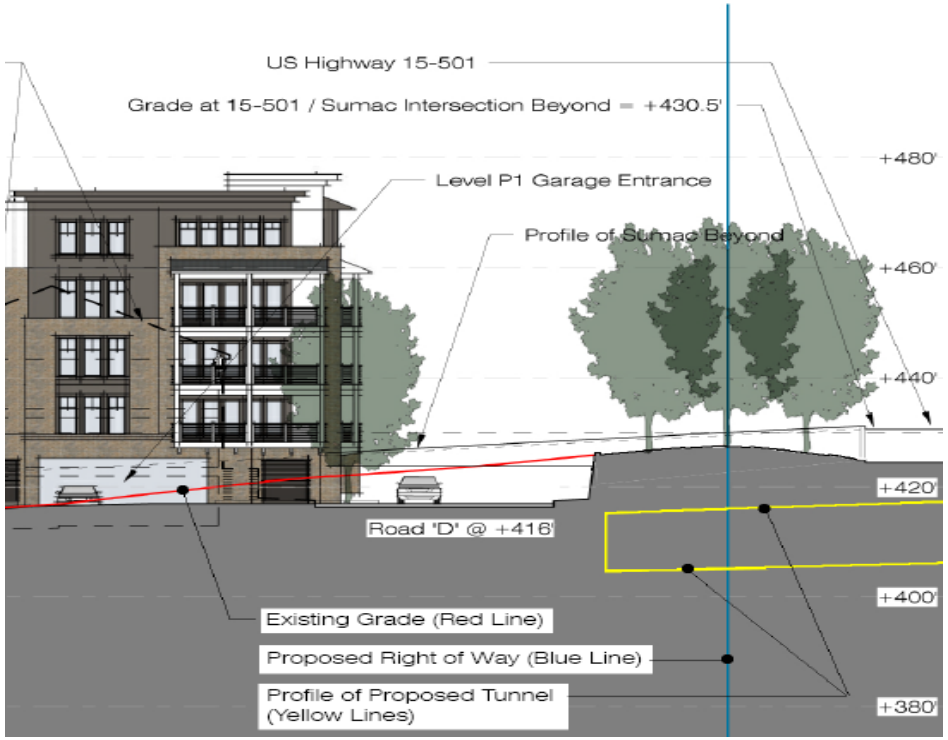
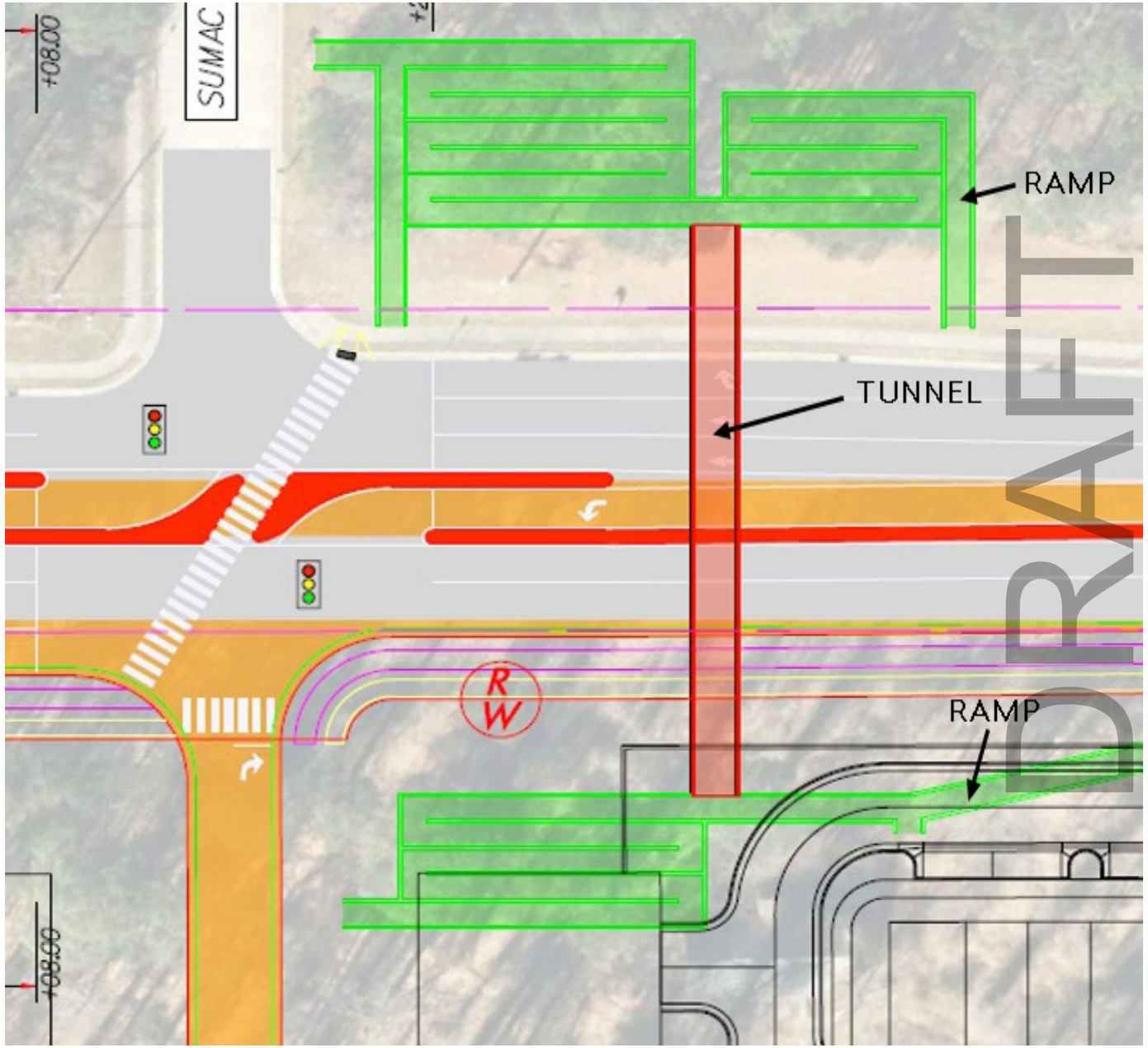
S Columbia Street Crossing
Tunnel Option

CHALLENGES WITH A PEDESTRIAN TUNNEL (Continued):

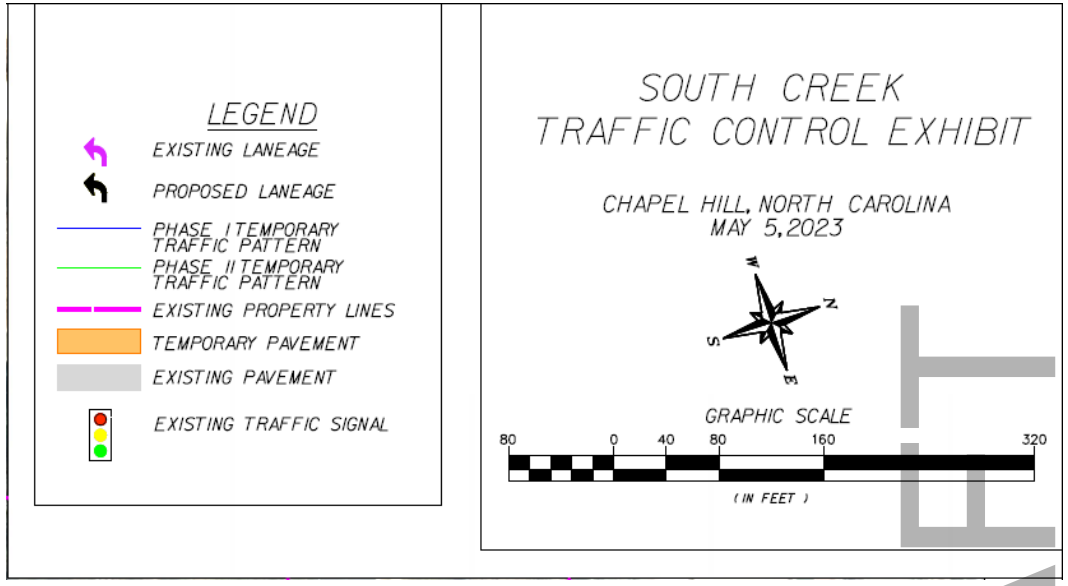
This sketch illustrates (in green) the ramping required on both sides of the pedestrian tunnel. The tunnel itself is shown in red.

The image below is a cross-section of the pedestrian tunnel highlighting the differences in grade:



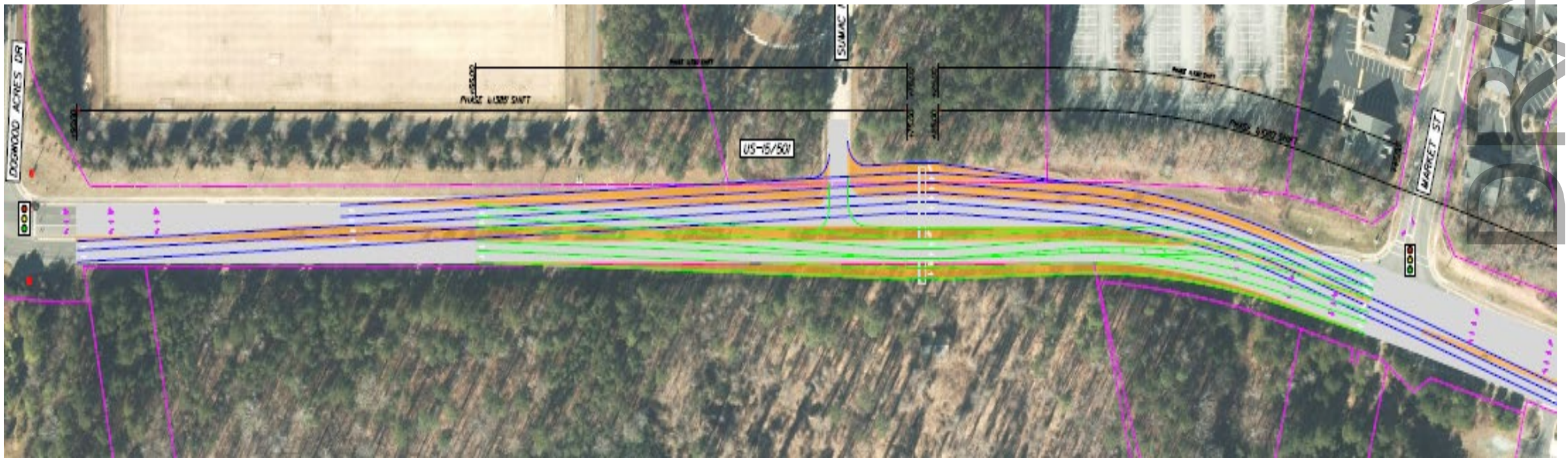


S Columbia Street Crossing
Tunnel Option



CHALLENGES WITH A PEDESTRIAN TUNNEL (Continued):

TUNNEL WOULD REQUIRE EXTENSIVE WORK TO 15-501: Construction of a tunnel would require extensive re-routing of 15-501 to create temporary lanes during construction (estimated +2,000 feet). Additionally, the OWASA water line and other utilities would need to be relocated. The dislocation and restoration of 15-501 would take several months.



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S Columbia Street Crossing
Tunnel Option

CHALLENGES WITH A PEDESTRIAN TUNNEL (Continued):

COST: Cost estimates we received from a tunnel construction company are between $9-$15MM, but did not take into account work that may be required to relocate the OWASA water line and other costs associated with re-routing and restoring 15-501. Additional easements may also be required for land on either side of 15-501.

	PROPOSED DENSITY	ADDED COST FOR EACH UNIT	ADDED COST FOR EACH UNIT
	Cost/ Unit	$9MM Tunnel	$15MM Tunnel
LOWER RANGE	688 Units	$13,081	$21,802
UPPER RANGE	815 Units	$11,042	$18,404

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S Columbia Street Crossing
Bridge and Tunnel Options

ADDITIONAL CHALLENGES WITH A BRIDGE AND TUNNEL:

1. **DOT Approva**l Required but not guaranteed. DOT may not allow for the proposed leftover movement should a bridge/tunnel be pursued.
2. **Timeframe:** Construction of either a bridge or a tunnel would take considerable time and likely disrupt local businesses and traffic on 15-501, a major artery. This could delay the completion of the new housing units or potentially drive away potential home buyers.
3. **Maintenance and Upkeep:** The initial cost is only part of the cost. Ongoing maintenance costs will be substantial over the long term, and if that cost is borne by residents, could lead to higher than expected HOA dues.
4. **Lower Affordability:** The costs of a bridge or tunnel will ultimately be passed onto residents of South Creek in some form, either higher purchase prices or higher rents, and impact the affordability of the units. This works against our goal of building affordable housing.
5. **Safety & Connectivity**: To truly encourage safe connectivity for school children, bicyclists and residents, crossings should minimize travel time, be accessible and visually appealing. The significant ramping, bridge height and dark tunnel discourage true connectivity and do not present the best safety features offered by a short signalized at-grade crossing.

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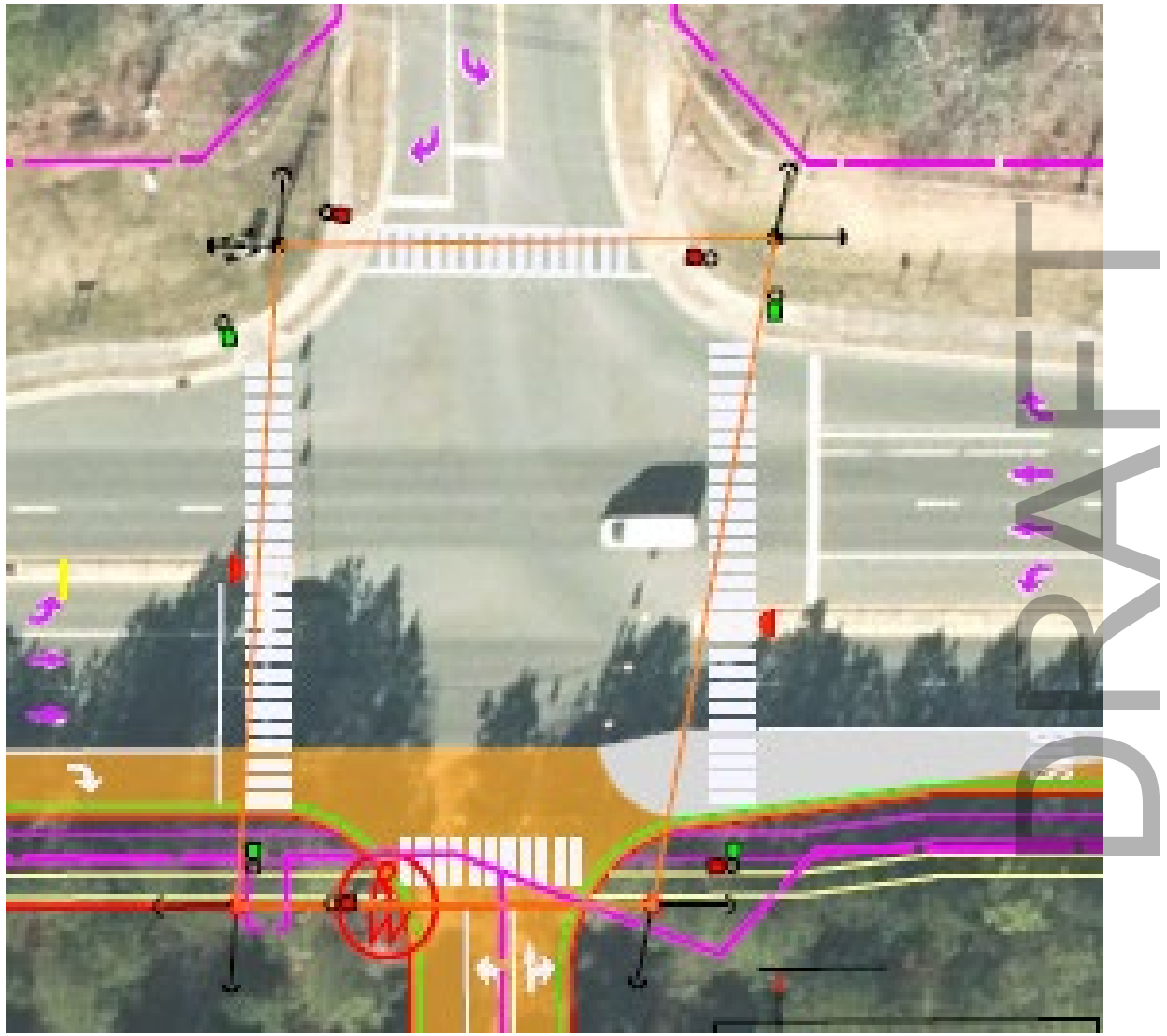
S Columbia Street Crossing
Updates to At Grade Crossings

RECOMMENDED CROSSINGS

- Fully Signalized Intersections @ Sumac Rd and Market St
- Sumac functions as primary pedestrian crossing location
  - Increased Pedestrian Signage
  - Staggered Refuge Area, colored brick/paving
  - Pedestrian Signal Heads
  - Traffic Stop Buffer
- Market crossing remains as proposed



Market Street

S Columbia Street Crossing
Updates to At Grade Crossings

RECOMMENDED

Aerial Rendering of Market crossing

DRAFT

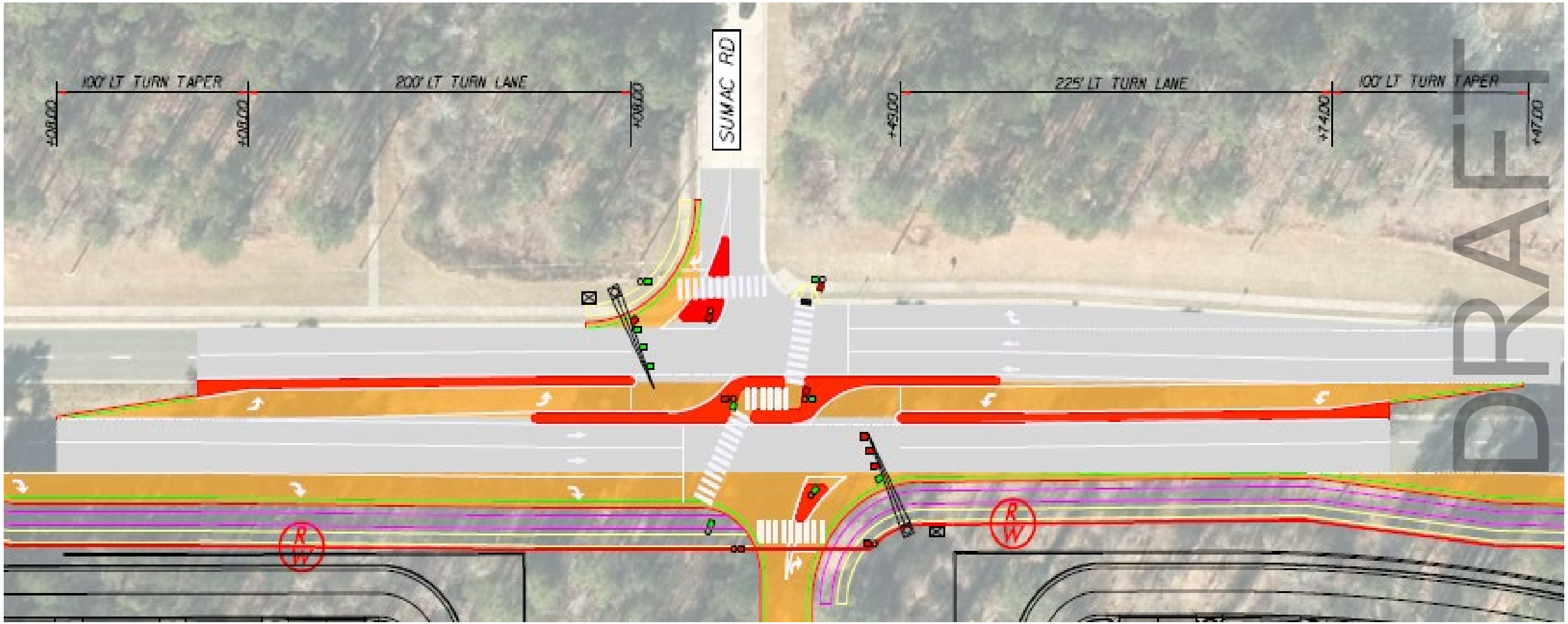
S Columbia Street Crossing
Updates to At Grade Crossings

RECOMMENDED

Aerial Rendering of Market crossing

DRAFT

S Columbia Street Crossing
Updates to At Grade Crossings



S Columbia Street Crossing
Updates to At Grade Crossings

RECOMMENDED

Aerial Rendering of Sumac crossing

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S Columbia Street Crossing
Updates to At Grade Crossings

RECOMMENDED

At Grade View of Sumac Crossing

Features

- Pedestrian Refuge
- Fully-Signalized
- Ample Signage
- Generous Traffic Buffers
- Efficient Travel Time
- High –Res Visibility for All
- Bicycle Accessible
- Less Disturbance

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