

4.2.2 Long Term Capacity Improvement Concepts

As presented in Section 3, the 2030 traffic forecasts and analysis demonstrate a need to provide additional traffic capacity along Route 305 in Windsor in order to maintain acceptable operations and vehicular mobility through the corridor. The future forecasts indicate that the peak hour directional traffic volumes between Interchange 37 and Marshall Phelps Road will exceed the capacity of a single travel lane under the 2030 Baseline and 2030 Baseline with Development conditions. Two westbound travel lanes will be required to accommodate morning peak traffic, and two eastbound travel lanes will be required to accommodate afternoon peak traffic. Without capacity improvements, traffic delays and congestion will occur throughout the corridor, with the most significant delays on Route 305 being experienced at the Addison Road and Marshall Phelps Road intersections.

The study team investigated four alternative concepts that would provide two travel lanes in each direction along Route 305 between Marshall Phelps Road and the existing four-lane section near Mountain Road. These concepts include:

- **Concept A:** Basic Four Lane Roadway
- **Concept B:** Four Lane Roadway with Narrow Median
- **Concept C:** Asymmetric Four Lane Roadway with Wide Median
- **Concept D:** Basic Four Lane Roadway with U-turns

A basic four lane roadway is recommended between Marshall Phelps Road and Addison Road for all four alternative concepts. For Concept A, the basic four lane roadway section is also applied between Addison Road and Mountain Road. For Concept B and Concept C, the study team explored two different raised median applications between Addison Road and Mountain Road that aim to address the goal of preserving the residential character of the corridor while providing additional safety measures. For Concept D, the study team incorporated provisions for u-turns into the basic four lane roadway section.

While each of the concepts is discussed in detail in this section relative to their unique features, overall feasibility, costs, and impacts, several features are common to all four concepts including:

- **11 ft travel lanes.** Provide narrower travel lanes (11 ft instead of 12 ft) to encourage slower traffic speeds.
- **5 ft shoulders.** Provide wider shoulders (5 ft preferred, 4 ft minimum) to more safely accommodate bicyclists and pedestrians (in absence of sidewalk).
- **5 ft sidewalks.** Provide sidewalks that meet current *American with Disabilities Act Accessibility Guidelines* (ADAAG) along both sides of Route 305 between Mountain Road and Addison Road. Provide sidewalk along the north side of Route 305 between Addison Road and Marshall Phelps Road. All sidewalks separated from roadway by a 4 ft green/utility strip that helps buffer pedestrians from traffic.

- **Street trees.** Provide new trees along the improved roadway to mitigate impacts to existing landscaping and to visually enclose the roadway to encourage slower traffic speeds.
- **Access Management.** As appropriate, incorporate access management measures and strategies into the improvement concepts as the concepts are advanced to subsequent stages of planning and design.
- **Wildlife Passage.** Consider provisions for accommodating wildlife passage at the Mill Brook crossing located just east of Addison Road. Provisions could be incorporated into the future replacement of the existing culvert at this crossing in conjunction with (or independently of) capacity improvements along Route 305. Additional study will be necessary to determine the openness requirements of the culvert or bridge based on what species of wildlife will be accommodated by the crossing. The study team completed a cursory investigation of the potential impacts associated with raising the profile of Route 305 to accommodate the passage of large mammals (such as white tailed deer) and determined that the roadway would need to be raised approximately 4 ft or more at the brook. Raising the roadway by 4 ft at the brook would require raising the driveways that are located closest to the brook by as much a 2 ft, though it appears the resulting driveway grades would be acceptable. Additionally, the resulting profile of Route 305 would not meet headlight sight distance requirements in the vicinity of the brook, so adequate street lighting would have to be maintained in this area.

See **Appendix 4** for a detailed summary of site-specific and general access management recommendations.

The study team notes that the four concepts for a four-lane roadway that are presented in this section are intended to illustrate the potential advantages, disadvantages, costs, and impacts associated with various types of four-lane roadways in the Route 305 corridor. These four concepts are not intended to represent an exhaustive list of the capacity improvement opportunities in the corridor. Rather, these concepts should serve as a starting point for dialogue among residents, commuters, the Capitol Region Council of Governments, ConnDOT, and other stakeholders regarding what form a potential four-lane Route 305 should take in the future and to what extent it could and should be integrated into the character of the existing corridor. This study has provided an opportunity for corridor stakeholders to express their insights and concerns relative to these concepts and to have them documented as part of this initial study phase. The study team notes that all of the improvement concepts and recommendations presented in this study will be open to additional public input and comment as they are advanced to subsequent stages of planning and design.



Artist rendering of a potential four lane roadway with narrow landscaped median.

4.2.2.a Concept A: Basic Four Lane Roadway

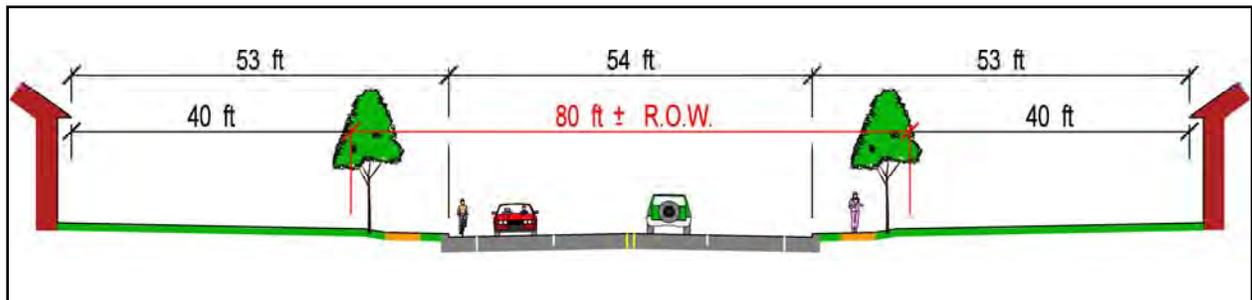


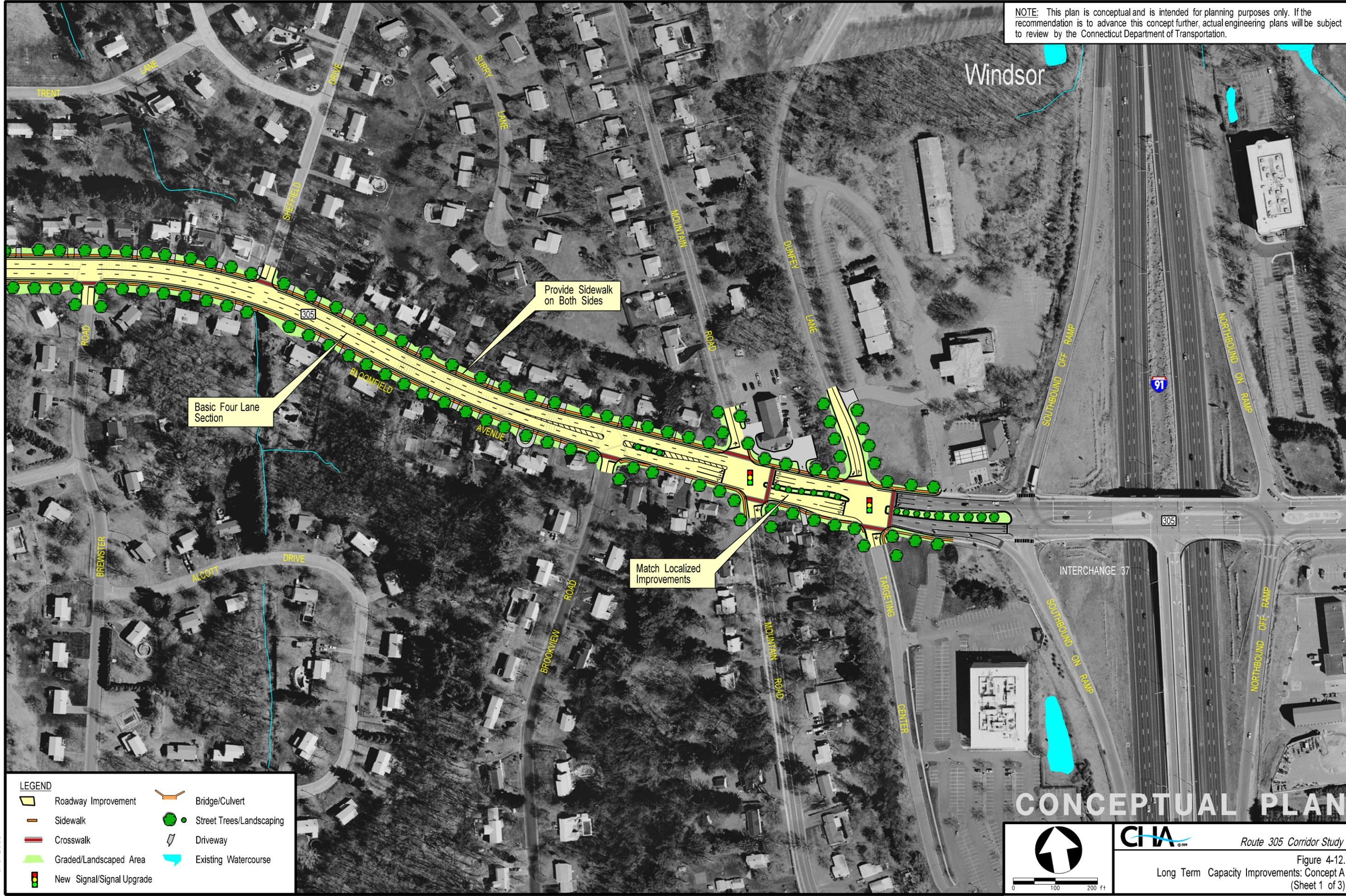
Figure 4-11. Basic Four Lane Typical Section

As shown in Figure 4-11, the basic four-lane section would provide an overall roadway width of 54 ft. This is the minimum width required to accommodate an additional travel lane in the eastbound and westbound directions. The key design features associated with Concept A are described in detail below. The advantages, disadvantages, costs, and impacts are summarized in Table 4-2 in Section 4.2.2.d. Pedestrian and bicycle considerations are discussed in Section 4.2.4. The conceptual layout is shown in Figure 4-12.

Key Design Features

- Match the existing four lane section near Brookview Road and extend to Marshall Phelps Road.
- Provide additional turn lanes at Addison Road and Marshall Phelps Road as required to maintain acceptable intersection operations.
- Accommodate widening equally on both sides of Route 305 in order to balance potential impacts to existing residential properties. In general, this widening could be accommodated within the existing 80 ft wide right-of-way.

NOTE: This plan is conceptual and is intended for planning purposes only. If the recommendation is to advance this concept further, actual engineering plans will be subject to review by the Connecticut Department of Transportation.



Windsor

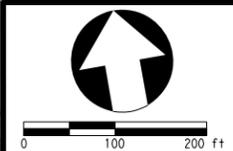
Basic Four Lane Section

Provide Sidewalk on Both Sides

Match Localized Improvements

LEGEND	
	Roadway Improvement
	Sidewalk
	Crosswalk
	Graded/Landscaped Area
	New Signal/Signal Upgrade
	Bridge/Culvert
	Street Trees/Landscaping
	Driveway
	Existing Watercourse

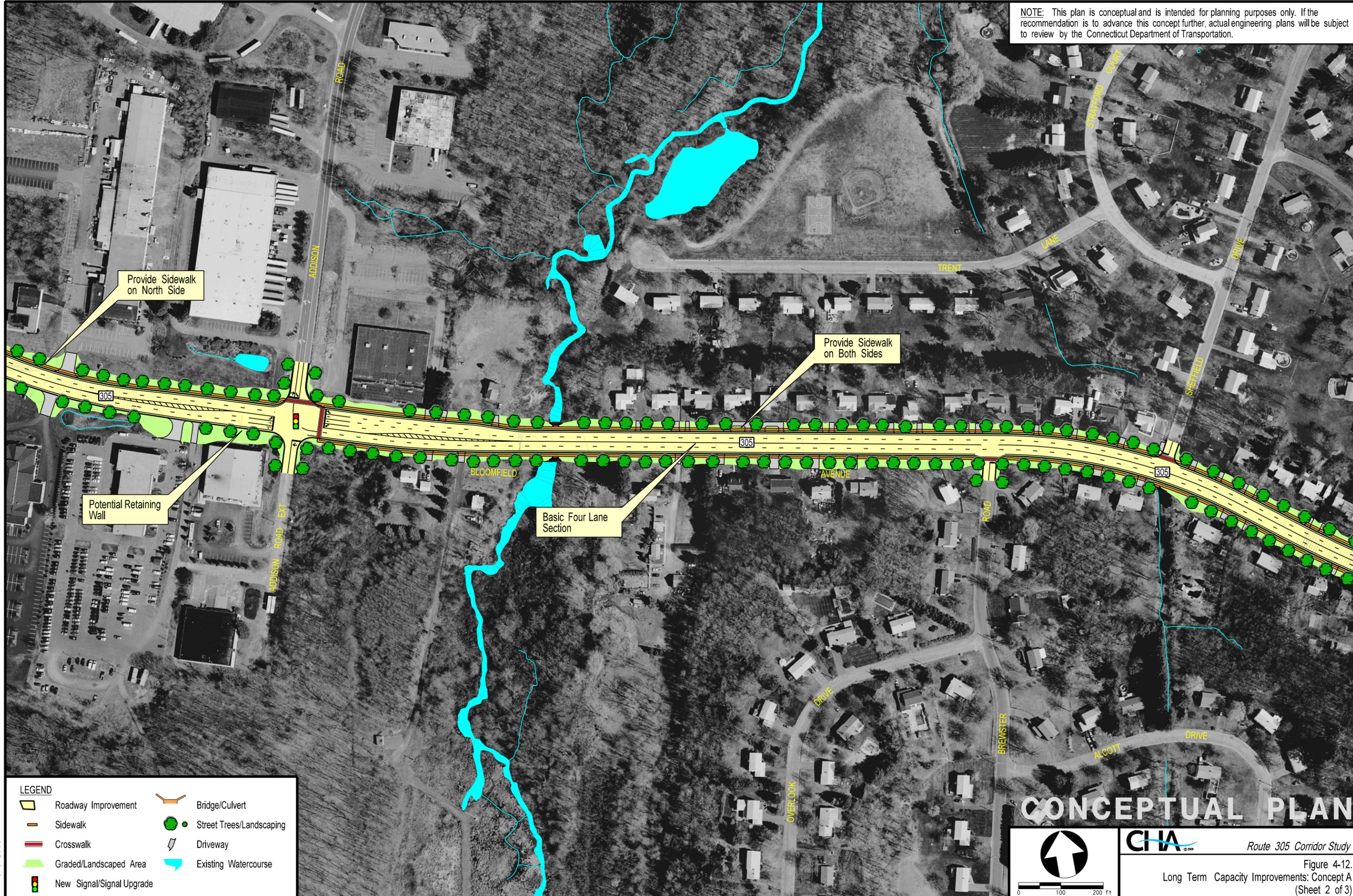
CONCEPTUAL PLAN



CIA Route 305 Corridor Study
 Figure 4-12.
 Long Term Capacity Improvements: Concept A
 (Sheet 1 of 3)

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LEGEND	
	Roadway Improvement
	Street Trees/Landscaping
	Sidewalk
	Crosswalk
	Graded/Landscaped Area
	New Signal/Signal Upgrade
	Bridge/Culvert
	Existing Watercourse
	Driveway

CONCEPTUAL PLAN



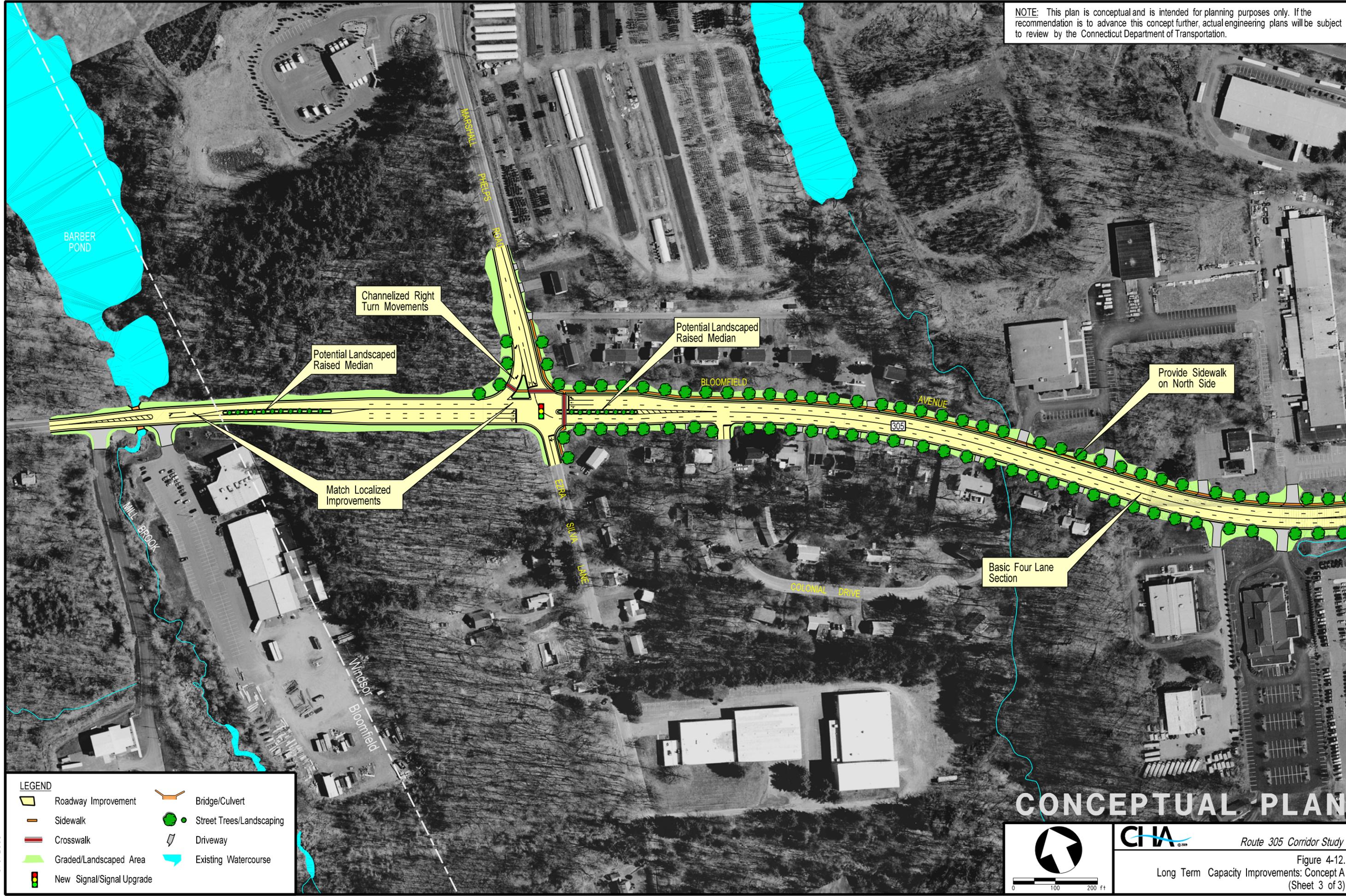



Route 305 Corridor Study

Figure 4-12.
Long Term Capacity Improvements: Concept A
(Sheet 2 of 3)

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LEGEND

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

CONCEPTUAL PLAN

Route 305 Corridor Study

Figure 4-12.
Long Term Capacity Improvements: Concept A
(Sheet 3 of 3)

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4.2.2.b Concept B: Four Lane Roadway with Narrow Median

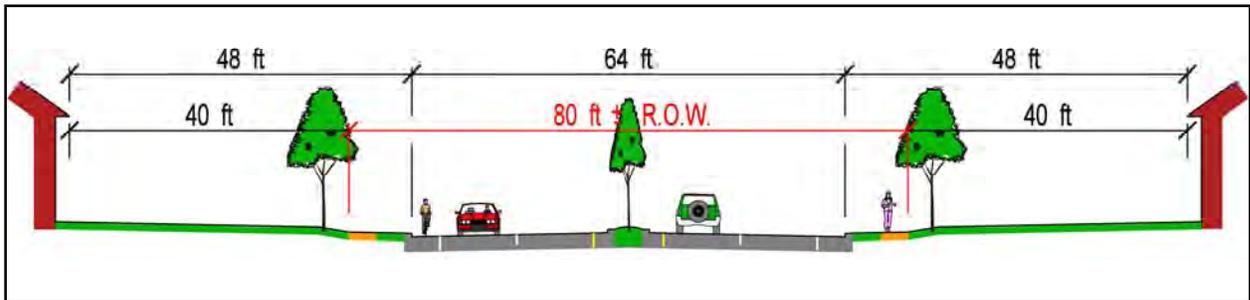


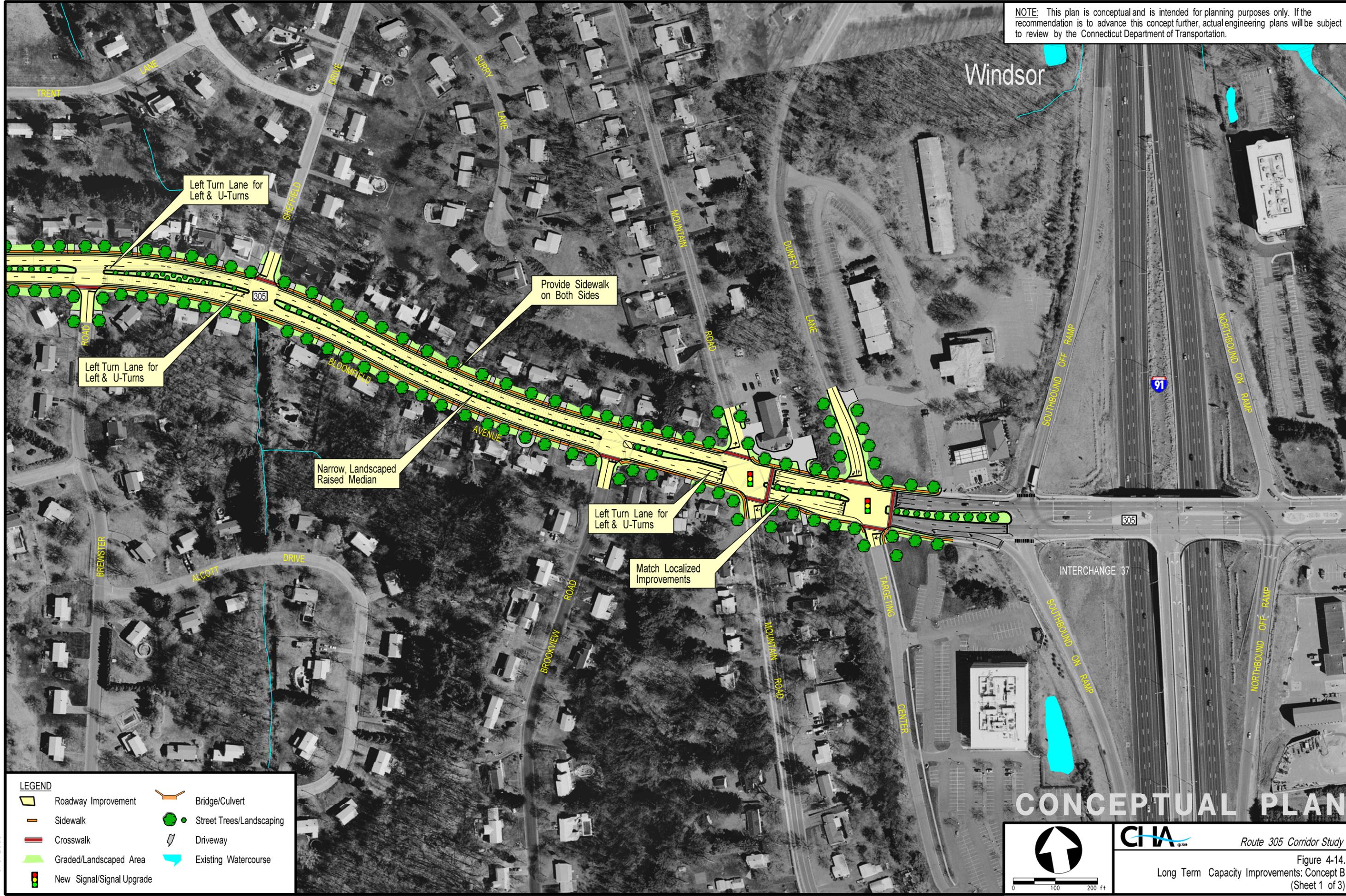
Figure 4-13. Four Lane Typical Section with Narrow Median

As shown in Figure 4-13, the four lane roadway with narrow median incorporates a landscaped median into the basic four lane section and provides an overall roadway width of 64 ft in most areas. The key design features associated with Concept B are described in detail below. The advantages, disadvantages, costs, and impacts are summarized in Table 4-2 in Section 4.2.2.d. Pedestrian and bicycle considerations are discussed in Section 4.2.4. The conceptual layout is shown in Figure 4-14.

Key Design Features

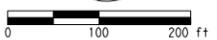
- Provide a 10 ft wide landscaped median (6 ft raised median with 2 ft shoulders on either side) in conjunction with two travel lanes in both the eastbound and westbound directions between Addison Road and Brookview Road. The median would be an aesthetic and functional feature best suited for this primarily residential segment of Route 305. The median would provide landscaping opportunities, provide traffic calming, and help manage residential driveway access by prohibiting left turns onto Route 305. Abutters would be required to turn right onto Route 305 and proceed to the next U-turn opportunity in order to change directions.
- Provide U-turn opportunities at Addison Road, Brewster Road, Sheffield Drive, and Mountain Road. Additional median width would be required in the vicinity of intersections where U-turn opportunities are provided in order to physically accommodate turning maneuvers.
- Provide additional turn lanes at Addison Road and Marshall Phelps Road as required to maintain acceptable intersection operations.
- Accommodate widening equally on both sides of Route 305 in order to balance potential impacts to existing residential properties.
- Transition to the basic four lane roadway west of Addison Road.

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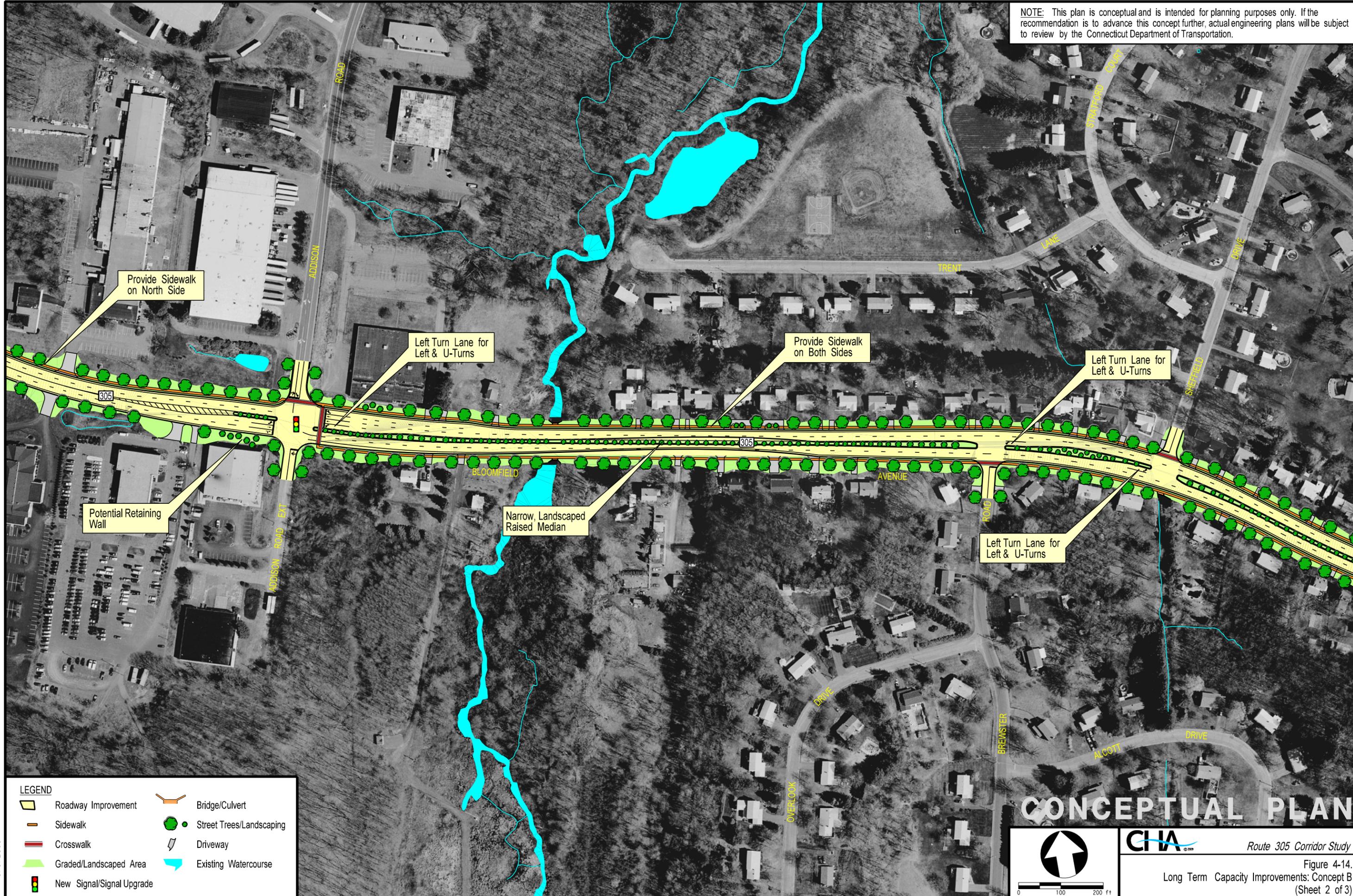
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CONCEPTUAL PLAN


 Route 305 Corridor Study
 Figure 4-14.
 Long Term Capacity Improvements: Concept B
 (Sheet 1 of 3)

NOTE: This plan is conceptual and is intended for planning purposes only. If the recommendation is to advance this concept further, actual engineering plans will be subject to review by the Connecticut Department of Transportation.



LEGEND

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

CONCEPTUAL PLAN



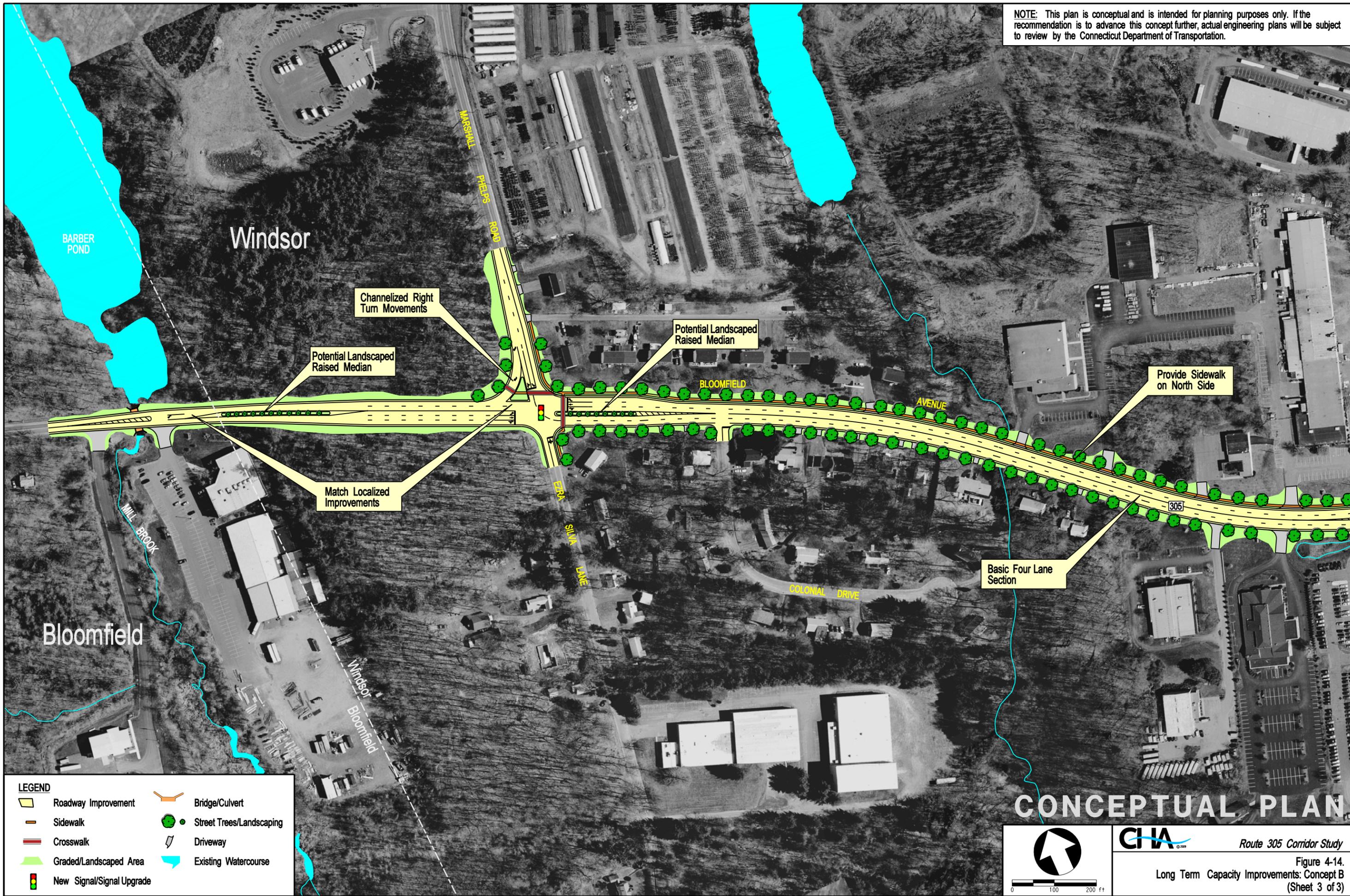



Route 305 Corridor Study

Figure 4-14.
Long Term Capacity Improvements: Concept B
(Sheet 2 of 3)

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LEGEND

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

CONCEPTUAL PLAN

Route 305 Corridor Study

Figure 4-14.
Long Term Capacity Improvements: Concept B
(Sheet 3 of 3)

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4.2.2.c Concept C: Asymmetric Four Lane Roadway with Wide Median

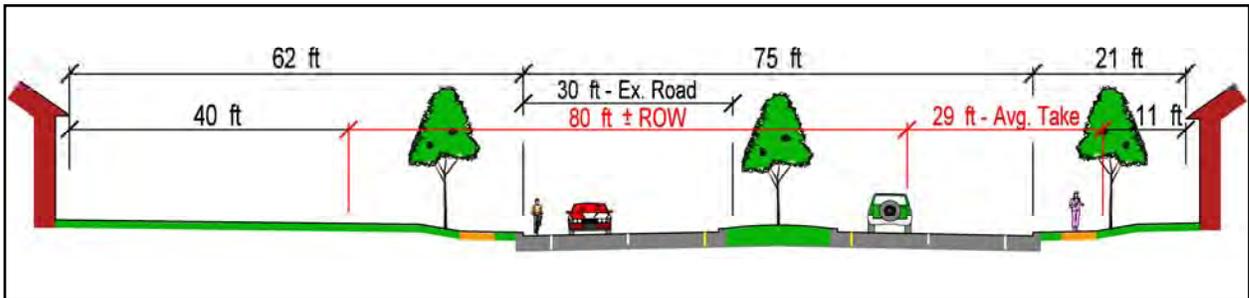


Figure 4-15. Asymmetric Four Lane Typical Section with Wide Median

As shown in Figure 4-15, the asymmetric four lane roadway with wide median incorporates a wider landscaped median into the basic four lane section and provides an overall roadway width of 75 ft. The section is described as asymmetric because it is assumed that widening would be predominantly accommodated on one side of the existing roadway rather than equally on both sides of the roadway in order to minimize overall property impacts.

The asymmetric section evaluated by the study team assumed that widening would be accommodated predominantly on the south side of Route 305 in order to concentrate potential impacts to existing residential properties on the south side and to minimize impacts to residential properties on the north side. As shown in Table 4-2 in Section 4.2.2.d, asymmetric widening to the south could require the potential full acquisition of 19 properties. By comparison, asymmetric widening to the north could require the potential full acquisition of 28 properties; widening equally on both sides of the roadway could require the potential full acquisition of 26 properties. The key design features associated with Concept C are described in detail below. The advantages, disadvantages, costs, and impacts are summarized in Table 4-2 in Section 4.2.2.d. Pedestrian and bicycle considerations are discussed in Section 4.2.4. The conceptual layout is shown in Figure 4-16.

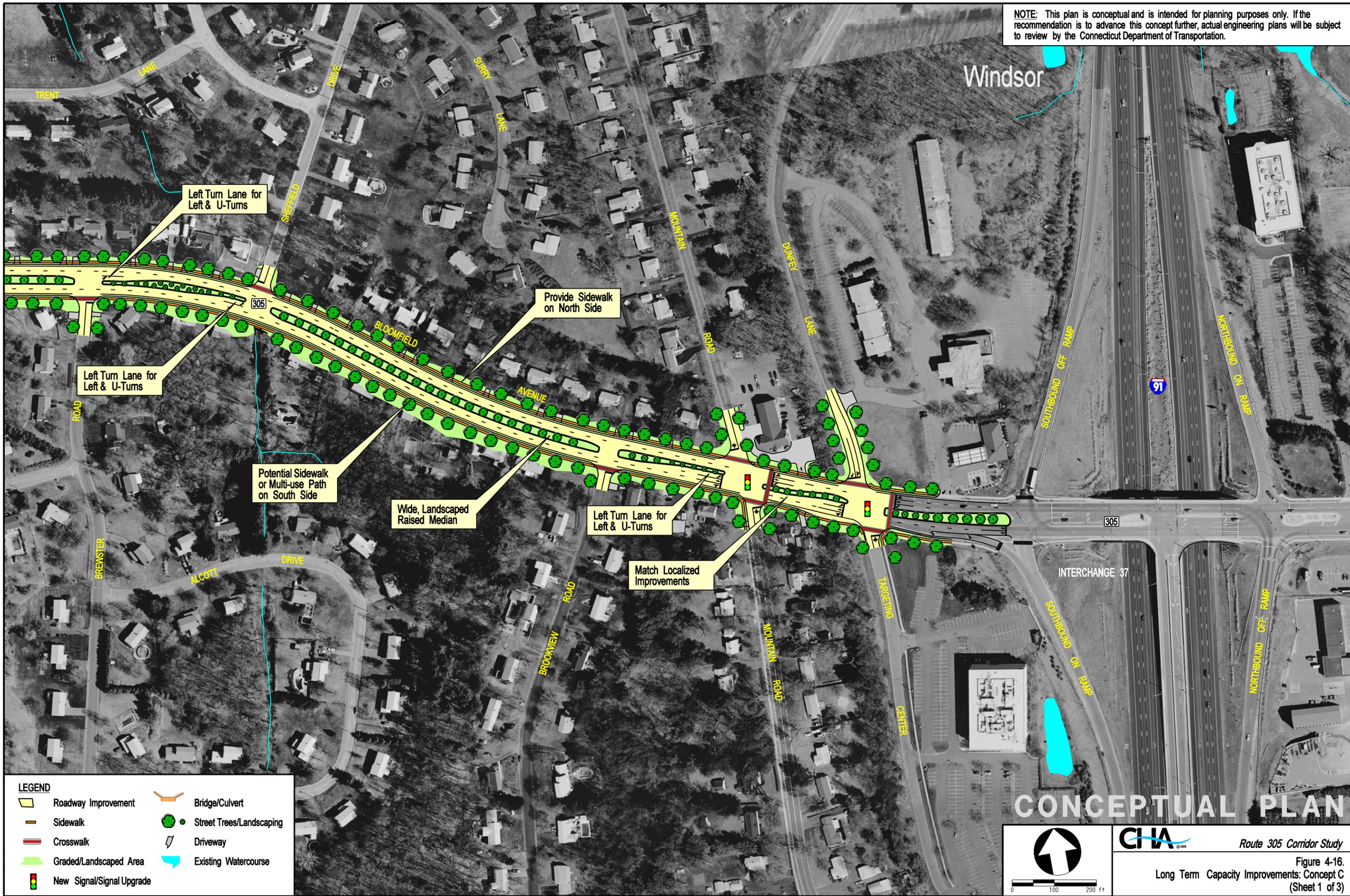
Key Design Features

- Provide a 21 ft wide landscaped median (17 ft raised median with 2 ft shoulders on either side) in conjunction with two travel lanes in both the eastbound and westbound directions between Addison Road and Mountain Road. Similar to the narrow median concept, the wide median would be an aesthetic and functional feature best suited for this primarily residential segment of Route 305. The wide median would provide more substantial landscaping opportunities, provide traffic calming, and help manage residential driveway access by prohibiting left turns onto Route 305. Abutters would be required to turn right onto Route 305 and proceed to the next U-turn opportunity in order to change directions.
- Provide U-turn opportunities at Addison Road, Brewster Road, Sheffield Drive, and Mountain Road.
- Provide additional turn lanes at Addison Road and Marshall Phelps Road as required to maintain acceptable intersection operations.

- Consider reusing land that would be acquired south of Route 305 for alternative purposes such as providing a shared-use path or recreational trail or shifting the roadway further to the south. Shifting the roadway further to the south could provide larger setbacks for properties on the north and potentially accommodate a shared access road to consolidate driveway access to a few locations. All of these options can be explored further as part of subsequent studies.
- Transition to the basic four lane roadway west of Addison Road.

See **Appendix 4** for a conceptual sketch illustrating the potential reuse of land on the south side of Route 305 for a shared-use path.

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Left Turn Lane for Left & U-Turns

Provide Sidewalk on North Side

Left Turn Lane for Left & U-Turns

Potential Sidewalk or Multi-use Path on South Side

Wide, Landscaped Raised Median

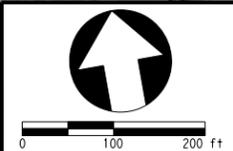
Left Turn Lane for Left & U-Turns

Match Localized Improvements

LEGEND

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

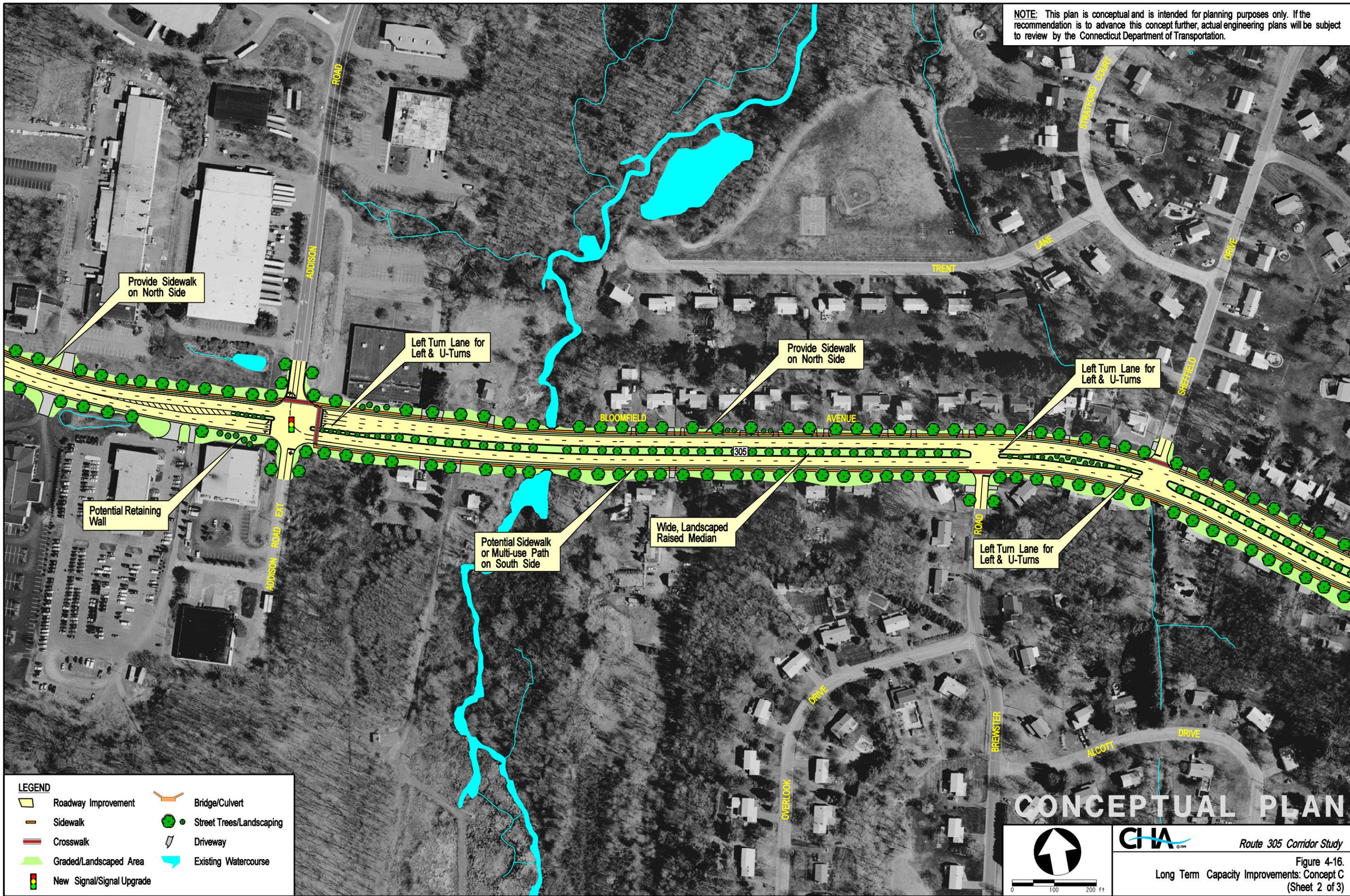
CONCEPTUAL PLAN



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 Route 305 Corridor Study
 Figure 4-16.
 Long Term Capacity Improvements: Concept C
 (Sheet 1 of 3)

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LEGEND	
	Roadway Improvement
	Sidewalk
	Crosswalk
	Graded/Landscaped Area
	New Signal/Signal Upgrade
	Bridge/Culvert
	Street Trees/Landscaping
	Driveway
	Existing Watercourse

CONCEPTUAL PLAN



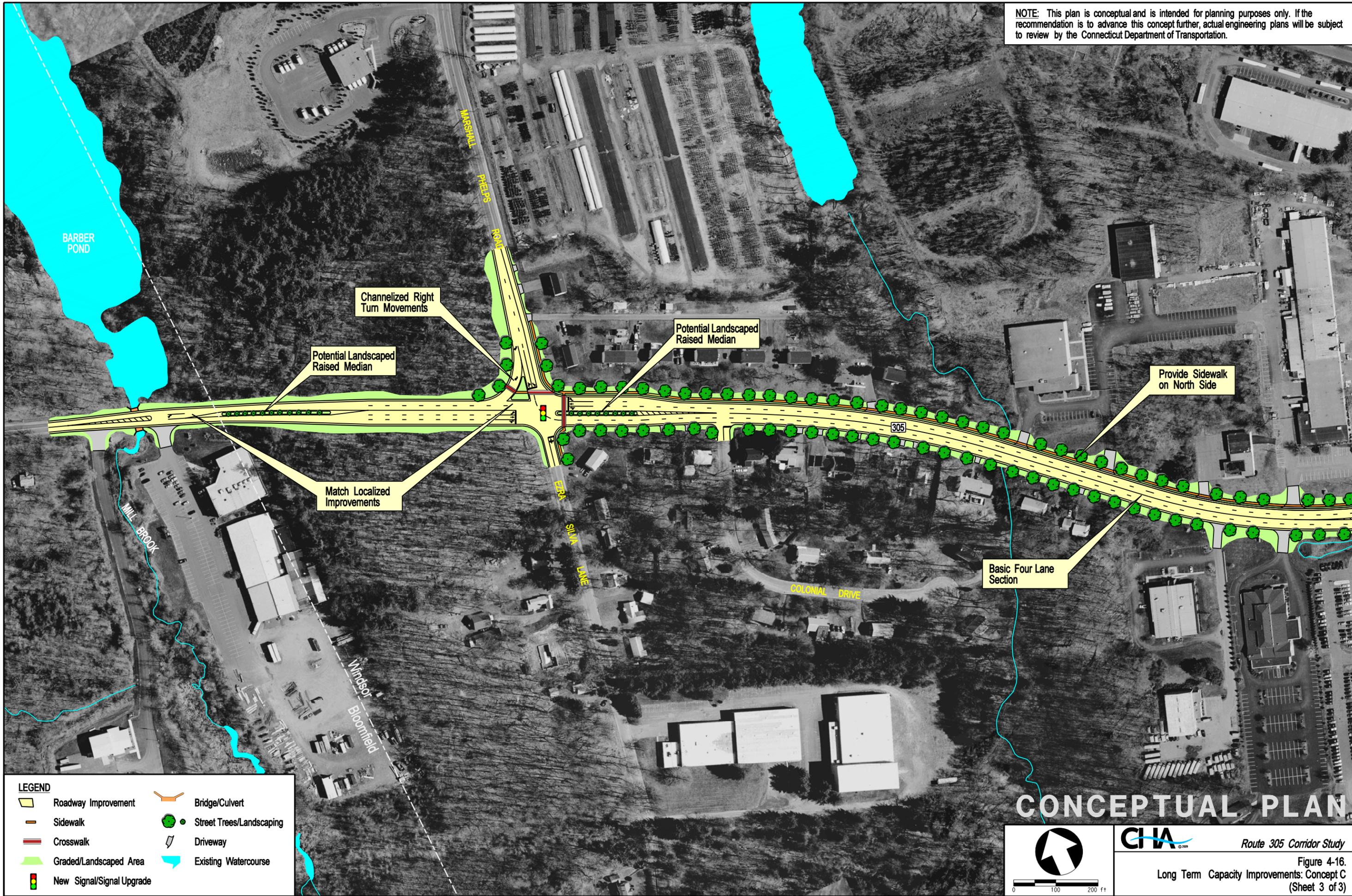



Route 305 Corridor Study

Figure 4-16.
Long Term Capacity Improvements: Concept C
(Sheet 2 of 3)

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LEGEND

Roadway Improvement	Bridge/Culvert
Sidewalk	Street Trees/Landscaping
Crosswalk	Driveway
Graded/Landscaped Area	Existing Watercourse
New Signal/Signal Upgrade	

CONCEPTUAL PLAN

Route 305 Corridor Study

Figure 4-16.
Long Term Capacity Improvements: Concept C
(Sheet 3 of 3)

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