

III. PROJECT ALTERNATIVES

Throughout the development of the transportation component of the Blue Ball Properties Master Plan, a wide range of transportation options were developed, evaluated and reviewed in terms of meeting project need and minimizing impacts to the project area resources. Extensive public involvement efforts were also conducted during this process, as well as numerous committee meetings focusing on different aspects of the project. The process resulted in either the dismissal or refinement of individual transportation improvement options as discussed in the previous section, in addition to other project initiatives. This process is described in detail in *Section II, Blue Ball Properties Master Planning*.

As a result of the preliminary Master Planning Process followed for the project, a preferred transportation concept emerged, the Master Plan Alternative.

The Master Plan Alternative was evaluated in detail and was subjected to a comprehensive impact analysis and resource avoidance and minimization effort. The goal of the resource avoidance and minimization effort was to further sensitize and therefore improve the Master Plan Alternative. This process resulted on the preferred alternative, the Master Plan Modified Alternative. This resource avoidance and minimization effort was also completed to satisfy the requirements of the National Environmental Protection Act (NEPA), Section 106 of the National Historic Preservation Act, Section 4(f) of the US Department of Transportation. A general discussion of the avoidance and minimization analysis is provided in the following or can be seen in the supplemental documents that detail their respective compliance standards. In addition, details of the Wetland Avoidance and Minimization effort to satisfy Section 404 of the Clean Water Act can be found in *Appendix B*.

The evaluated impacts or consequences of the proposed action (Master Plan Modified Alternative) are generally discussed in comparison to the “No-Build” or “no action” alternative. A description of these alternatives is presented below.

A. No-Build Alternative

The No-Build Alternative is based on a no-construction scenario where no roadway improvements would take place (*Figure 9*). It would only entail routine maintenance of existing roadway surfaces, road painting, road signs, traffic signals and traffic signal timing. However, this alternative would include the implementation of feasible ITMS strategies similar to those proposed for the Master Plan Alternative. These ITMS strategies would include:

- Coordinated traffic signals, integrated and regional signal system and DelDOT transportation management center (TMC).
- Surveillance cameras linked to TMC and the DelDOT web page.
- Dynamic message signs.

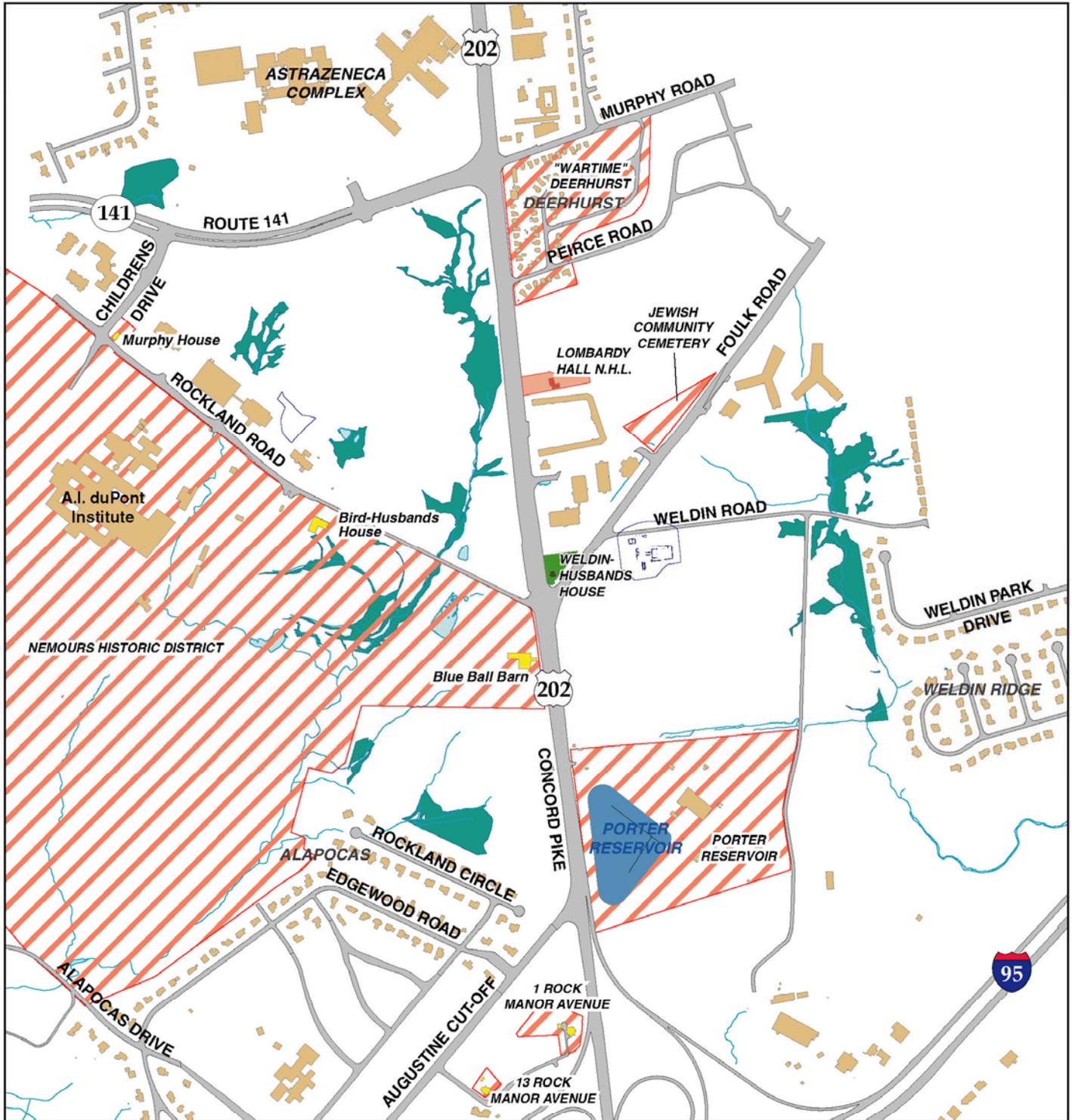
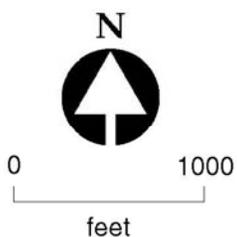


FIGURE 9: "NO BUILD" ALTERNATIVE IN RELATION TO SECTION 4(f) RESOURCES



- Wetland
- National Historic Landmark (N.H.L.)
- National Register Eligible Property
- Locally Significant Historic House

- Traffic/transit information kiosks.
- Vehicle detection systems used to optimize traffic signals and detect incidents.

Although limited pedestrian/bicycle facilities could be constructed with the proposed recreational features on the Weldin and Alapocas Tracts, the U.S. 202, grade-separated connection of the Brandywine Greenway would not be possible in this project. This would not be consistent with the State's Greenways plan for the area, since it would represent an incomplete inter-modal transportation facility.

Therefore, this alternative would not meet project needs and objectives, as it would not address existing or future traffic congestion, high accident locations, or the access needs of the economic development planned for the area.

B. Master Plan Alternative

The Master Plan Alternative (*Figure 10*), would include the construction of the following roadway improvements in the Blue Ball area:

1. Regional Roadway Improvements:

- The Delaware Route 141 Spur would be built on a new four-lane boulevard from the Childrens Drive/Delaware Route 141 intersection south to a new intersection with U.S. 202 and Foulk Road.
- U.S. 202 would be widened and improved from I-95 north to the existing Murphy Road intersection. Travel lanes will be added through most of this section for bus use only.

2. Local Roadway Improvements:

- A local roadway network will be constructed on the west side of U.S. 202 (Westpark Drive), which will connect the Augustine Cut-Off to the proposed Route.141 Spur. A local roadway connection will be constructed to link the west side road under U.S. 202 to Weldin Road on the east side of U.S. 202.
- Weldin Road would be relocated to allow an improved intersection with Foulk Road. A small connector roadway would be constructed from this intersection west to U.S. 202.
- This proposed network of local roads connected under U.S. 202 would allow for the desired separation of local and regional traffic.

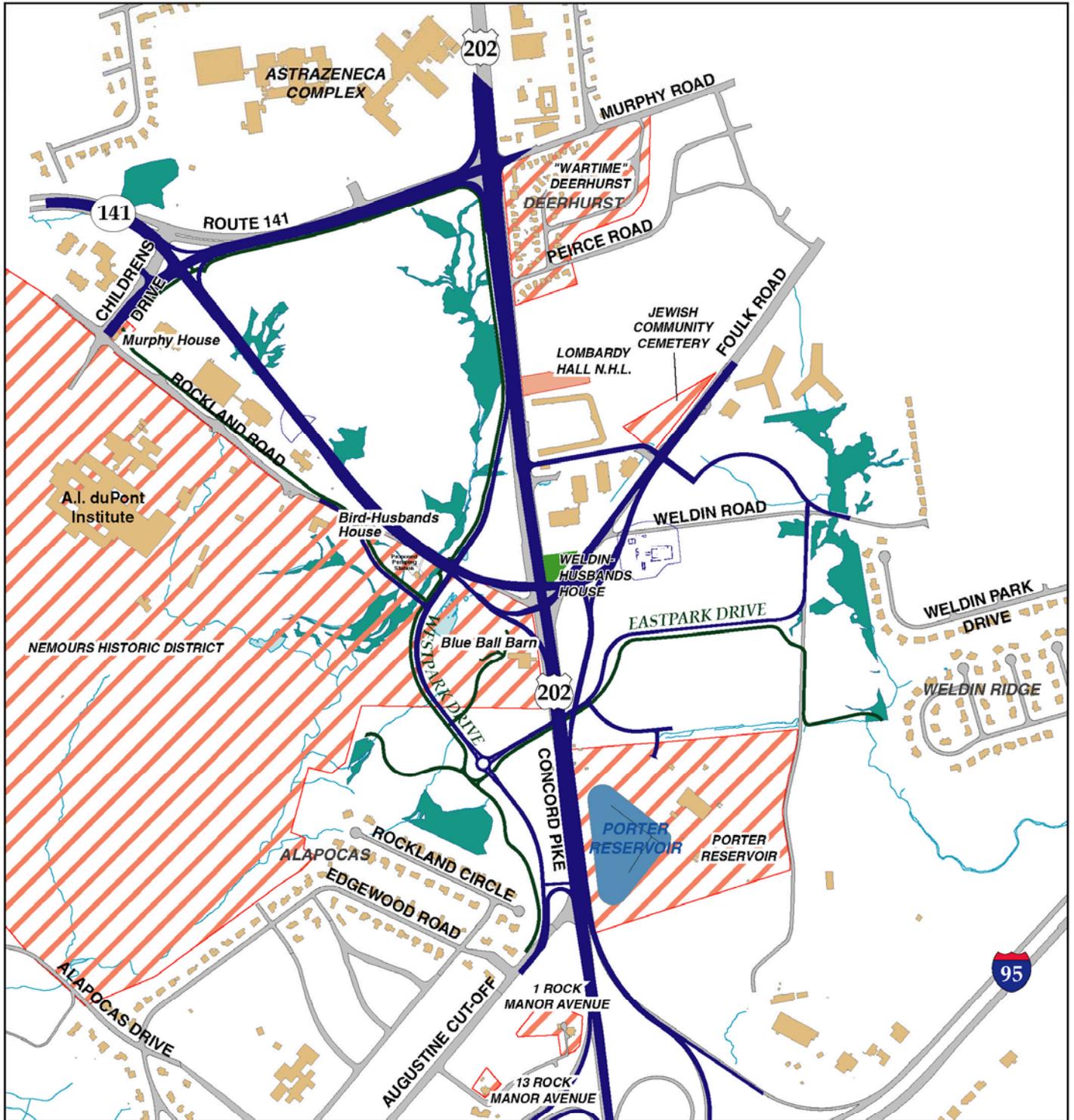
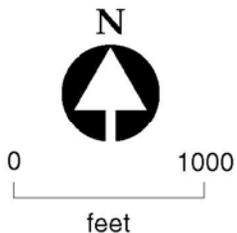


FIGURE 10: "MASTER PLAN ALTERNATIVE"



Logos for MTA McCormick, Taylor & Associates, Inc. and Blue Ball Properties.

Several key intersections and roadway links are shown in more detail in *Appendix C*.

3. *Intersection Improvements:*

- U.S. Route 202/Powder Mill Road/Murphy Road – An additional through lane in each direction on U.S. Route 202 will be provided, as well as an additional turn lane on Murphy Road
- U.S. Route 202/Foulk Road/Route 141 Spur – This signalized intersection will be located on top of the structure carrying the Route 141 Spur under U.S. Route 202 to Foulk Road. The intersection will include an efficient two-phase traffic signal, serving three lanes in each direction on U.S. Route 202 in one phase, followed by the dual left-turn lanes on Foulk Road and the Route 141 Spur in the second phase.
- U.S. Route 202/Augustine Cut-Off – The “Partial Signal” option allows right-turns from Augustine Cut-Off and northbound left-turns on U.S. Route 202. The eastbound left-turns and southbound right-turns will not be allowed, and these movements will be diverted to other intersections. The intersection of the West Side Park Road and Augustine Cut-Off will also be signalized and will work together with the signal on U.S. Route 202 to ensure vehicles do not stack out onto the U.S. Route 202 mainline.
- U.S. Route 202/I-95 Ramps – Signalization of one or more of the ramp accesses to I-95 on U.S. Route 202 is being considered for capacity and traffic calming reasons.
- Route 141 Spur/Powder Mill Road/Childrens Drive – The existing three-leg intersection will be reconfigured into a four-leg intersection to efficiently connect the Route 141 Spur into existing Route 141 (Powder Mill Road). Two through lanes and dual left-turn lanes will be provided on each approach.
- Route 141 Spur/Westpark Drive – This proposed intersection will serve Route 141 Spur traffic, relocated Augustine Cut-Off traffic, and park traffic. Two through lanes are provided in each direction on the Route 141 Spur. Northbound traffic on the Westpark Drive will have separate right and left turn lanes, while southbound traffic on Ramp C will have separate left, through, and right-turn lanes.
- Route 141 Spur/Ramp F – This intersection will serve the heavy traffic movement from I-95 to the Route 141 Spur. Ramp F will include dual left-turn lanes and a separate right-turn lane.
- Foulk Road/Connector Road to Relocated Weldin Road – This intersection will replace the existing intersection of Foulk Road and Weldin Road. Additionally, a fourth leg to the intersection will be added, connecting to the U.S. Route 202 Connector Road.

4. *Pedestrian/Bicycle Greenway*

- A greenway trail network would be constructed from the Alapocas trail head on the west, under U.S. 202, to the existing trail terminus on the east. This greenway connector will provide the missing link in a greenway trail intended to connect the Delaware and Brandywine River Corridors. This greenway trail will also facilitate pedestrian/bicycle access to the recreational facilities proposed for the area.
- Combined bicycle/pedestrian paths are also proposed along Rockland Road, the U.S. 202 ramp to the Route 141 Spur, U.S. 202 and Westpark Drive.

5. *Stormwater Management Facilities*

- The proposed action would include the construction of several stormwater management facilities to prevent flooding and protect water quality and aquatic life in the watershed. These facilities include:
 - A large basin off Rockland Road to handle drainage for the AstraZeneca Triangle parcel and proposed roadway improvements
 - Bioswales south of Rockland Road to increase filtration, sediment trapping and water quality in the area.

The exact design and placement of the stormwater management facilities is still under consideration, and this section will be updated, as the information becomes available for final Environmental Assessment review.

6. *Intelligent Transportation Management Systems Strategies*

- ITMS Strategies for the Master Plan Alternative are similar to those proposed for the No-Build Alternative. These ITMS strategies would include:
 - Coordinated traffic signals, integrated and regional signal system and DelDOT transportation management center (TMC).
 - Surveillance cameras linked to TMC and the DelDOT web page.
 - Dynamic message signs.
 - Traffic/transit information kiosks.
 - Vehicle detection systems used to optimize traffic signals and detect incidents.

C. Wetland Resource Avoidance and Minimization Alternatives Analysis (Refer to Appendix B)

Total avoidance of wetlands in the project area is not practical because it would not meet the project needs and would result in extensive impacts to the other resources. Total avoidance would require widening U.S. 202 to the east, thus impacting the Deerhurst residential community, Lombardy Cemetery and Lombardy Hall, all of which are resources protected by Section 106 of the National Historic Preservation Act of 1966 and Section 4(f) of the US

Department of Transportation Act of 1966. Additionally, it would be necessary to eliminate the Route 141 Spur, the Rockland Road connection and Westpark Drive. By doing so, the Total Avoidance Alternative impact upon wetlands would not meet the project or other compliance needs.

Wetland minimization design and options were, however evaluated for every wetland impact associated with the Master Plan Alternative improvements. This effort was conducted in coordination with resource agency representatives from USACOE, USEPA and DNREC. Field view and design discussions helped prioritize the wetlands for avoidance and minimization. This effort also set the standards and approach for stream restoration, stormwater management and water quality enhancement and wetland mitigation design. Ultimately, the best of these minimization and enhancement measures were incorporated into the preferred alternative.

Table 1 in Appendix B summarizes the avoidance and minimization measures evaluated for each identified wetland area of the project.

D. Cultural Resource Avoidance Alternatives (Figures 11 through 26 are located at the end of this chapter, Section III: Project Alternatives)

1. Nemours Historic District Avoidance Alternative (Blue Ball Barn and Bird-Husbands House)

This alternative (**Figure 11**) would avoid the Nemours Historic District by shifting the Route 141 Spur to the north and into the AstraZeneca triangle parcel which is approved for development and expansion of the AstraZeneca Corporate Headquarters. This alternative would also eliminate the Westpark Drive (local connector) by adding capacity to the Eastpark Drive system. This alternative would leave Rockland Road in its current alignment with a cul-de-sac termination.

In addition, this alternative would result in the following impacts;

- Loss of the proposed western Greenway Connection through the Alapocas parcel as outlined in the Master Plan.
- Additional wetlands loss on the AstraZeneca triangle property
- Reduction of the AstraZeneca triangle property size below that approved by New Castle County. There would also be a reduction of the required storm water management facilities.
- Significant displacement of the Capano property, a nine (9) acre commercial property consisting of four (4) office buildings and associated parking of 538 spaces. The businesses which currently occupy the buildings employ several hundred professional employees.
- Elimination of the proposed recreational features on the Weldin Tract including two multi-purpose fields, a picnic area, associated parking area, and existing vegetative buffers (assuming the Master Plan for the parks layout cannot be reconfigured or portions of the plans facilities eliminated).

2. *Nemours Historic District Avoidance Alternative (Murphy House)*

This alternative (**Figure 12**) would avoid the isolated portion of the Nemours Historic District surrounding the William Murphy House by shifting the widening of Childrens Drive to the west. This would maintain the existing edge of roadway and drainage swale on the western property boundary.

This alternative would result in the following impacts;

- Displacement of and adverse impacts to the Nemours Historic District features associated with the A.I. du Pont Institute on the south side of Rockland Road. This includes portions of the original stone wall and entrance gateway that are contributing features of the Nemours Historic District.
- Loss of landscaping and access roadway features associated with the Montchanin Residential Complex (senior citizen accommodations).

3. *Porter Reservoir Avoidance Alternative*

This alternative (**Figure 13, 13A, 13B**) would shorten the proposed U.S. 202 northbound to Route 141 off-ramp. It would also result in a shift in the alignment of U.S. 202 to the west encroaching on One Rock Manor Avenue (another historic property identified) as well as the Nemours Historic District. This would result in the displacement of the milk house associated with the Blue Ball Barn (50 feet). The reservoir access drive (at its current location off U.S. 202 in the traffic weave area between the I-95 off-ramp and the U.S. 202 off ramp) would be discontinued. A secondary access via Carruthers Lane would be used.

This alternative would not meet the following project needs:

- Safety objectives of access management on U.S. 202.
- Ramp design geometry at U.S. 202 to Route 141 off-ramp
- Imbalance of identified historic resource impacts.

4. *One Rock Manor Avenue Avoidance Alternative*

As the only historic and private occupied residence of the project area that is directly impacted, this alternative (**Figure 14, 14A**) would shift the proposed U.S. 202 widening approximately 50 feet to the east allowing the U.S. 202 to I-95 on ramp to avoid encroachment onto One Rock Manor Avenue. The resulting alignment would force U.S. 202 into the Porter Reservoir historic resource boundary and actually displace a portion of the reservoir embankment requiring its reconfiguration or permanent loss. This would adversely affect the Wilmington water supply.

This alternative would meet most project needs; however it would result in greater harm to the Porter Reservoir property and require alteration of the reservoir structure itself. This would have an adverse impact on the reservoir and on the City of Wilmington's water supply. It would also create an unbalanced impact on identified historic resources.

5. *J.R. Weldin Archaeological Site Avoidance Alternatives*

A series of alternatives were developed for the alignment of Eastpark Drive to avoid impacts to the J.R. Weldin archaeological site.

Avoidance Alternative A (Avoids ruin features): (Figure 15)

Although a portion of this site would be impacted, this avoidance alternative minimize impacts to the site through a combination of retaining wall and roadway alignment shifts. To avoid impacts at the northwestern edge of the site where the original farmhouse ruins are located, a retaining wall or slope/wall combination will be constructed along the eastern edge of the Route 141 Spur. This structure would be approximately 17 feet below existing grade at the site. To avoid further impacts to the adjacent portion of the archaeological site, the proposed Eastpark Road would be relocated to the southeast along the edge of the site boundary.

While this avoidance alternative would leave a large portion of the site features and building ruins intact, it would adversely affect the proposed recreational park development planned for the area. Specifically the relocation of the Eastpark Drive would create the following adverse impacts to the proposed recreational park:

- Loss of one multi-use recreation field (soccer, lacrosse, etc.);
- Isolation of the planned viewing/picnic area from the proposed Weldin ruins interpretive site;
- Loss of existing mature vegetation and hedgerow buffer area;
- Loss of needed parking.

Avoidance Alternative B and B1 (Greenway Alignments): (Figure 16 and 17)

Although a small portion of the site would still be impacted, these alternatives would be minimized through a combination of the Route 141 retaining wall or slope/wall combination and Eastpark Drive alignment shifts. Both variations would place the Eastpark Drive between the golf driving range and the multi-use recreational fields of the park adjacent to the greenway. Avoidance Alternative B would travel along the north side of a buffer hedgerow located between the recreational fields and the driving range, Avoidance Alternative B1 would travel along the south side of the hedgerow.

These alternatives appear to be consistent with the Master Plan for providing area parks and recreational facilities. However, Avoidance Alternatives B and B1 would place the roadway immediately adjacent to three (3) multi-purpose sports fields resulting in the redesign of the park facilities. Additionally, Avoidance Alternative B1 would directly impact the proposed golf driving range, therefore, until an alternative site plan of the State Parks Master Plan can provide a functional arrangement of the fields and supporting amenities.

Avoidance Alternative C (Southern alignment): (Figure 18)

This avoidance alternative would avoid the features of the ruins through a combination of the retaining wall and Eastpark Drive roadway alignment shifts. This avoidance alternative would place the Eastpark Drive between the proposed driving range and Porter Reservoir. The alignment requires the use of Carruthers Lane, and is inconsistent with the Master Plan since park facilities and the golf course expansion needs would be impacted.

6. *Ronald McDonald House Archaeological Site Avoidance (Figure 19)*

This alternative would shift the propose Route 141 Spur to the north into the AstraZeneca South Campus Triangle property. This avoidance alternative would meet the transportation purpose and needs. However, it would require right-of-way from the AstraZeneca property, displace facilities for the South Campus Triangle and result in greater wetland impacts. Similarly, a shift to the south and into the Ronald McDonald House and other commercial establishments would displace these features and result in adverse social and economic impacts.

E. *Cultural Resource Minimization Alternatives*

1. *Nemours Historic District Minimization Alternative (Blue Ball Barn and Bird-Husbands House) (Figure 20)*

Route 141 Spur – This alternative would minimize impacts to the Nemours Historic District by shifting the Route 141 Spur to the north by approximately 100 feet at the U.S. 202 crossing. This alternative results in a slightly reduced impact in the area of the district adjacent to the Blue Ball Barn (contributing resource to the District) by shifting the U.S. 202 ramps to the north by approximately 50 feet. There would also be less fragmentation and land isolation in this area of the Nemours Historic District. This alternative would however, require the demolition or relocation of the Weldin-Husbands House, a locally historic resource which is not eligible for the National Register. The SHPO and the Keeper of the National Register of Historic Places (NRHP) has confirmed this determination.

Westpark Drive – The Westpark Drive travels north-south through the eastern portion of the Nemours Historic District. This local roadway has been aligned to avoid the Blue Ball Barn and the Bird-Husbands House. This alignment would place the proposed local roadway in a disturbed area adjacent to a stormwater basin currently designated as a DeIDOT right-of-way. In addition, the roadway lane widths have been minimized to two (2) eleven foot lanes and grass shoulders. Design speed has been minimally selected.

Relocated Rockland Road – The relocation of Rockland Road is required to connect the local roadway network on the west side of U.S. 202. This option shifts a portion of the relocated road to the north, thus isolating less acreage from the district. However, this alignment would impact an additional 0.7 acres of wetlands and impact the New Castle County Pump Station Site. Design speed and shoulders has been minimally selected.

The Rockland Road Extension was designed to intersect the Westpark Drive at the minimum possible distance from the Route 141 Spur that would still provide for a sufficient vehicular stacking distance for the northbound left-turn movement from the Westpark Drive onto the Route 141 Spur. In other words, northbound Westpark Drive traffic should not be blocked from turning left onto the Rockland Road Extension by traffic waiting to turn left from the West Side Park Road onto the Route 141 Spur.

2. *Nemours Historic District Minimization Alternative (Murphy House) (Figure 21)*

Widening of Childrens Drive – The widening of Childrens Drive adjacent to the Murphy House is required to provide turning lanes and align through-lanes with the A.I. du Pont Institute main access drive and gateway. The alignment incorporates impact minimization through the inclusion of low retaining walls and eleven-foot lanes adjacent to the Murphy House.

3. *Porter Reservoir Minimization Alternative (Figure 22)*

The widening of US-202 adjacent to the Porter Reservoir would require a narrow strip of frontage from the western property boundary. Minimization would shift the widening improvement to the west. However, the alignment shift to the west would increase impacts to One Rock Manor Avenue on the opposite side of U.S. 202 (*see Figure 22; labeled in dashed red*). Balancing the impacts to these two resources would result in least net harm to the Porter Reservoir and One Rock Manor Avenue. This “least net harm” or “Balanced Minimization” alignment has been incorporated into the Master Plan Modified Alternative. A shift to the west would also require acquisition within the Nemours Historic District.

4. *One Rock Manor Avenue Minimization Alternative (Figure 23)*

The proposed widening of US-202 and the resulting I-95 ramp realignment adjacent to One Rock Manor Avenue would require a strip of land from the eastern property boundary. Minimization would shift the widening improvements to the east. However, this alignment shift would result in severe impacts to the Porter Reservoir on the opposite side of U.S. 202 (*See Figure 23; labeled in dashed red*). Balancing the impacts to these two resources would result in least net harm to the Porter Reservoir and One Rock Manor Avenue. This “least net harm” or “Balanced Minimization” alignment has been incorporated into the Master Plan Modified Alternative.

5. *J.R. Weldin Archaeological Site Minimization Alternative (Figure 24)*

The proposed construction of the Route 141 Spur and the Eastpark Drive would displace some features of the J.R. Weldin archaeological site. A minimization strategy would enable preservation of the major features of the Weldin ruins by shifting the alignment of the Eastpark Drive. In addition, the limit of impact associated with the Route 141 Spur would shift slightly away from the farmhouse ruins. This is accomplished through minor median and shoulder reductions.

This minimization shift would place the Eastpark Drive between the major ruins of the farmhouse and the barn. Some features (walls, etc.) of the site may be affected by this alignment depending on its actual placement. All attempts would be made to minimize impacts at the site. This minimization option would also include the construction of a retaining wall or wall/slope combination between the Route 141 Spur and the Weldin farmhouse features.

While this minimization alternative would retain the farmhouse ruins and the barn ruins on the site, it would result in isolation of the farmhouse between two (2) roadway features. This isolation could result in neglect or vandalism and thereby constitute greater harm as compared to displacement and archaeological data recovery.

This minimization alternative would result in little or no impact on the following proposed recreational features of the parks Master Plan:

- The proposed picnic/interpretive area for the J.R. Weldin Archaeological Site;
- The proposed multi-use fields;
- The existing vegetative hedgerow buffer; and
- The proposed facility parking area.

F. Master Plan Modified Alternative with Eastpark Drive Option A (*Figures 25, 25A*)

Culminating from the above avoidance/minimization analysis, the Master Plan Alternative has been reconfigured into a Master Plan Modified Alternative. The Master Plan Modified Alternative has two (2) options for the alignment of Eastpark Drive. Option A is described below.

This alternative is consistent with the general location and operation of the Master Plan Alternative, however it has been revised to incorporate minimization concepts and features.

These minimization features include;

- Realignment and shift of the 141 Spur 100 feet to the north at its U.S. 202 crossing. This minimization reduces the land area required from the Nemours Historic District by approximately one (1) acre. This shift also allows the 141 to U.S. 202 off ramps to be realigned at a location further from the Blue Ball Barn. A resulting impact of this shift is the loss of the Weldin-Husbands House, a locally historic structure at the corner of Foulk Road and U.S. 202 that is not eligible for the National Register.

Other minimization strategies incorporated into this alternative include;

- Grass shoulder and 11-foot travel lanes for the Westpark Drive through the Nemours Historic District.
- Reduced lane and shoulder widths for the widened portion of Childrens Drive adjacent to the William Murphy House.

- Placement of a retaining wall and fence between the One Rock Manor property and the U.S. 202 to I-95 on-ramps.
- Placement of a retaining wall or wall/slope combination along the eastern edge of the Route 141 Spur adjacent to the J.R. Weldin Archaeological Site.

Eastpark Drive Option A – This option places the Eastpark Drive in an alignment parallel with the U.S. 202 off ramp. It passes through a portion of the J.R. Weldin Archaeological Site, displacing a portion of the ruins. The Eastpark Drive then connects to relocated Weldin Road with an intersection east of Foulk Road. This option is consistent with the J.R. Weldin Archaeological Site Minimization Alternative (***Page 71, Figure 24***).

While Option A is currently consistent with the Blue Ball Properties Master Plan, this option would result in the following impacts;

- Displacement of a portion of the ruins at the J.R. Weldin Archaeological Site. Specifically, the Eastpark Drive would destroy 18th century farmhouse ruins which occupies the western portion of the site. Some associated rock walls and features such as the equipment shed would also be destroyed. Other features of the site would remain, including the barn ruins and a perimeter rock wall (Phase III archaeological data recovery would mitigate portions of the site to be destroyed).

G. Master Plan Modified Alternative with Eastpark Drive Option B (*Figures 26, 26A*)

Culminating from the above avoidance/minimization analysis, the Master Plan Alternative has been reconfigured into a Master Plan Modified Alternative. The Master Plan Modified Alternative has two (2) options for the alignment of Eastpark Drive. Option B is described below.

This alternative is consistent with the general location and operation of the Master Plan Alternative, however it has been revised to incorporate minimization concepts and features.

These minimization features include;

- Realignment and shift of the 141 Spur 100 feet to the north at its U.S. 202 crossing. This minimization reduces the land area required from the Nemours Historic District by approximately one (1) acre. This shift also allows the 141 to U.S. 202 off ramps to be realigned at a location further from the Blue Ball Barn. A resulting impact of this shift is the loss of the Weldin-Husbands House, a locally historic structure at the corner of Foulk Road and U.S. 202 that is not eligible for the National Register.

Other minimization strategies incorporated into this alternative include;

- Grass shoulder and 11-foot travel lanes for the Westpark Drive through the Nemours Historic District.
- Reduced lane and shoulder widths for the widened portion of Childrens Drive adjacent to the William Murphy House.

- Placement of a retaining wall and fence between the One Rock Manor property and the U.S. 202 to I-95 on-ramps.
- Placement of a retaining wall or wall/slope combination along the eastern edge of the Route 141 Spur adjacent to the J.R. Weldin Archaeological Site.

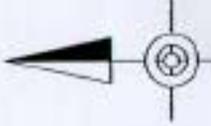
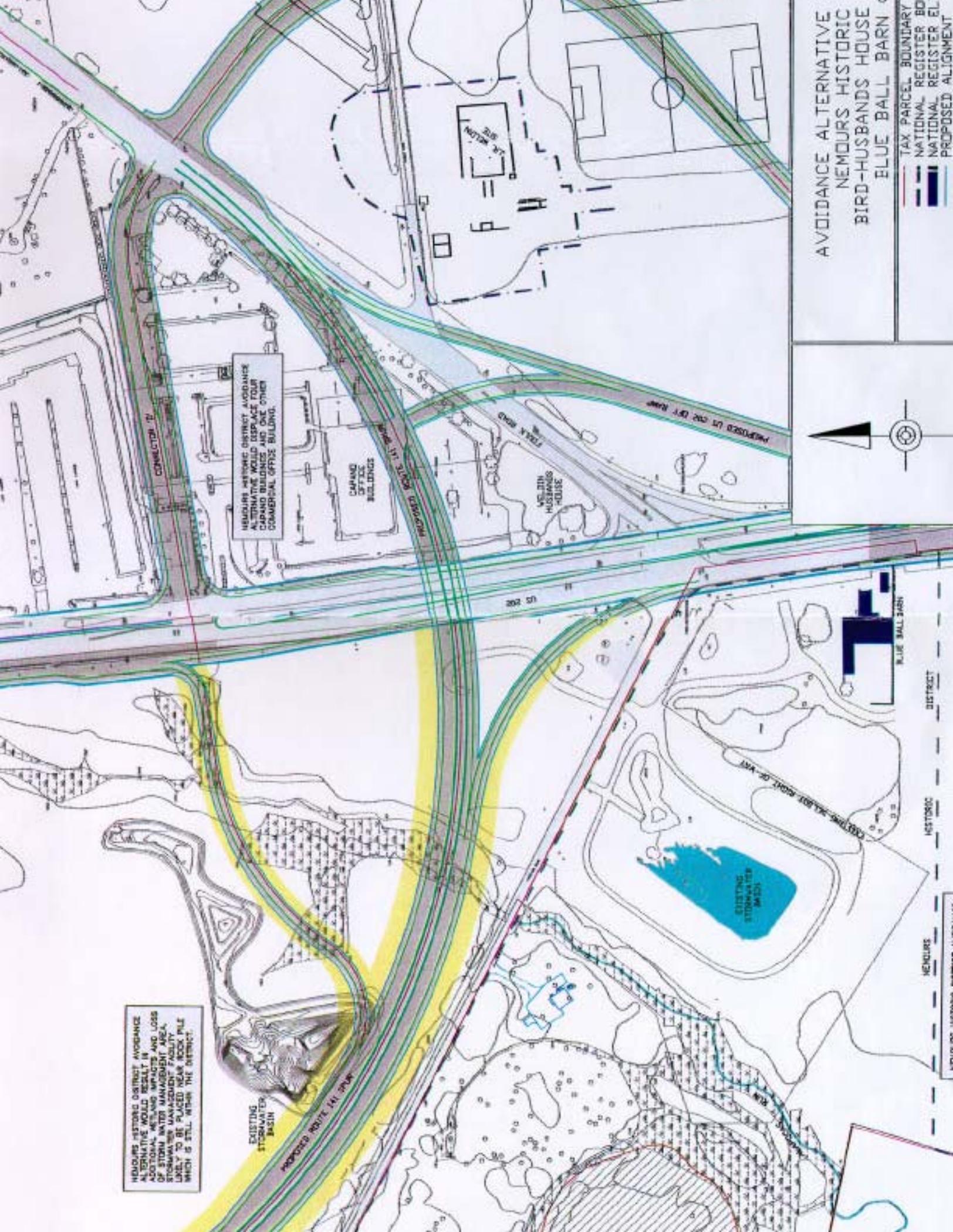
Eastpark Drive Option B – This option places the Eastpark Drive in an east-west alignment between the proposed golf practice area and the proposed multi-purpose soccer fields, north of the hedgerow. It then connects to Carruthers Lane and travels north to a relocated segment of Weldin Road. This portion of Weldin Road connects to Foulk Road at an intersection north of the existing Foulk Road/Weldin Road intersection. This option is consistent with the J.R. Weldin Archaeological Site Avoidance Alternative B described on page 62 (***Figure 16***).

Option B avoids the impacts of Option A to the J.R. Weldin Archaeological Site. The Alignment of Option B would place the roadway south and immediately adjacent to three (3) multi-purpose sports fields that are north of the existing hedgerow, separating the facilities. The park plan has been reconfigured to minimize impacts that this would have on the proposed park facilities.

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NEMOURS HISTORIC DISTRICT AVOIDANCE ALTERNATIVE WOULD RESULT IN ADDITIONAL WETLAND IMPACTS AND LOSS OF STORM WATER MANAGEMENT AREA. STORMWATER MANAGEMENT FACILITY WOULD BE PLACED NEAR ROCK PILE WHICH IS STILL WITHIN THE DISTRICT.

NEMOURS HISTORIC DISTRICT AVOIDANCE ALTERNATIVE WOULD REPLACE FOUR CAPANO BUILDINGS AND ONE OTHER COMMERCIAL OFFICE BUILDING.

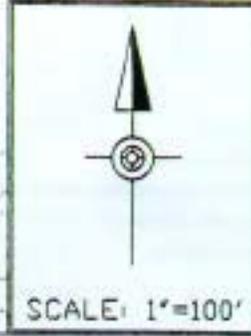
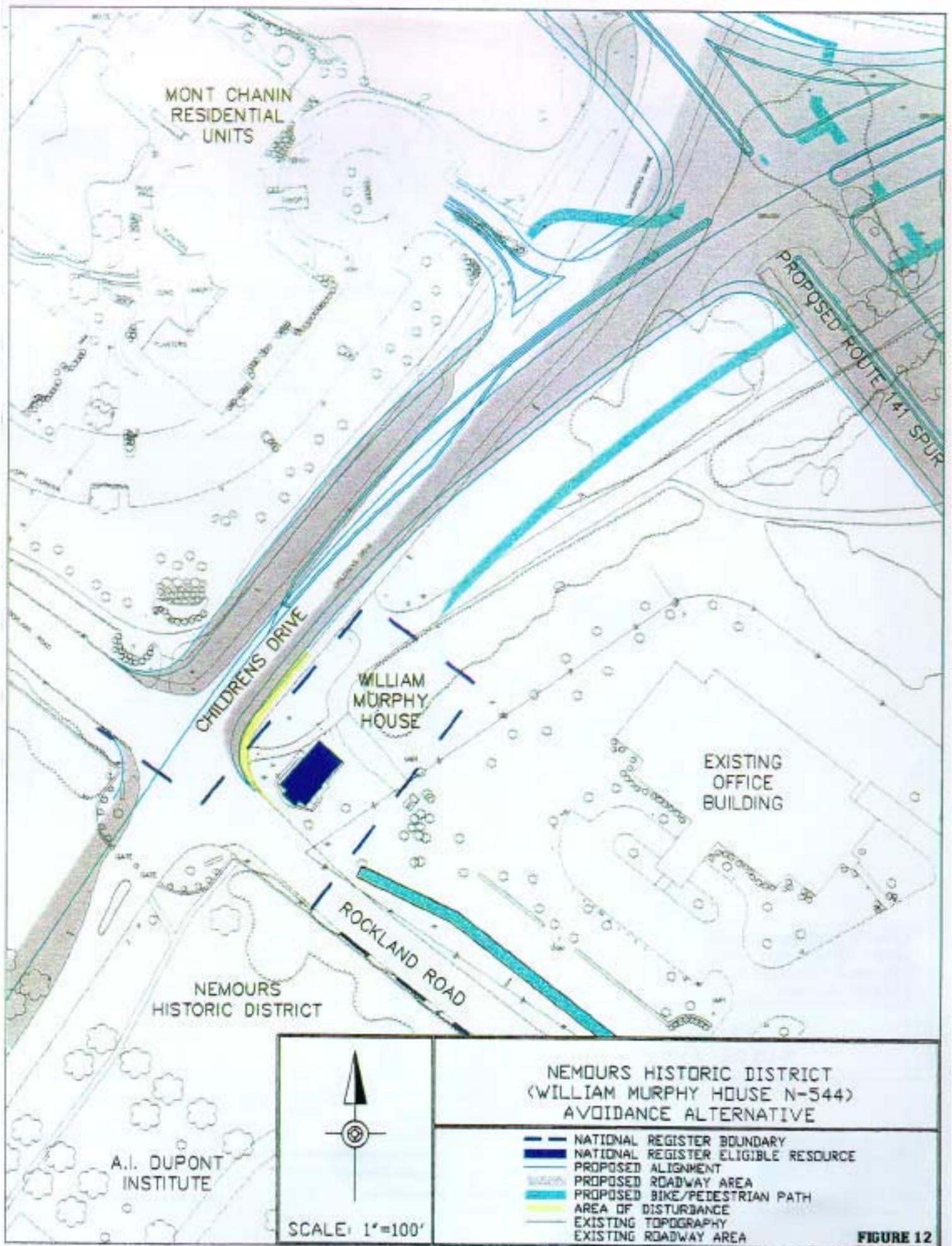


AVOIDANCE ALTERNATIVE
 NEMOURS HISTORIC
 BIRD-HUSBANDS HOUSE
 BLUE BALL BARN

- TAX PARCEL BOUNDARY
- NATIONAL REGISTER BOUNDARY
- NATIONAL REGISTER ELIMINATION
- PROPOSED ALIGNMENT

NEMOURS HISTORIC DISTRICT
 BLUE BALL BARN

FIGURE 11: NEMOURS AVOID (BBARN ETC)



**NEMOURS HISTORIC DISTRICT
(WILLIAM MURPHY HOUSE N-544)
AVOIDANCE ALTERNATIVE**

- NATIONAL REGISTER BOUNDARY
- NATIONAL REGISTER ELIGIBLE RESOURCE
- PROPOSED ALIGNMENT
- PROPOSED ROADWAY AREA
- PROPOSED BIKE/PEDESTRIAN PATH
- AREA OF DISTURBANCE
- EXISTING TOPOGRAPHY
- EXISTING ROADWAY AREA

FIGURE 12

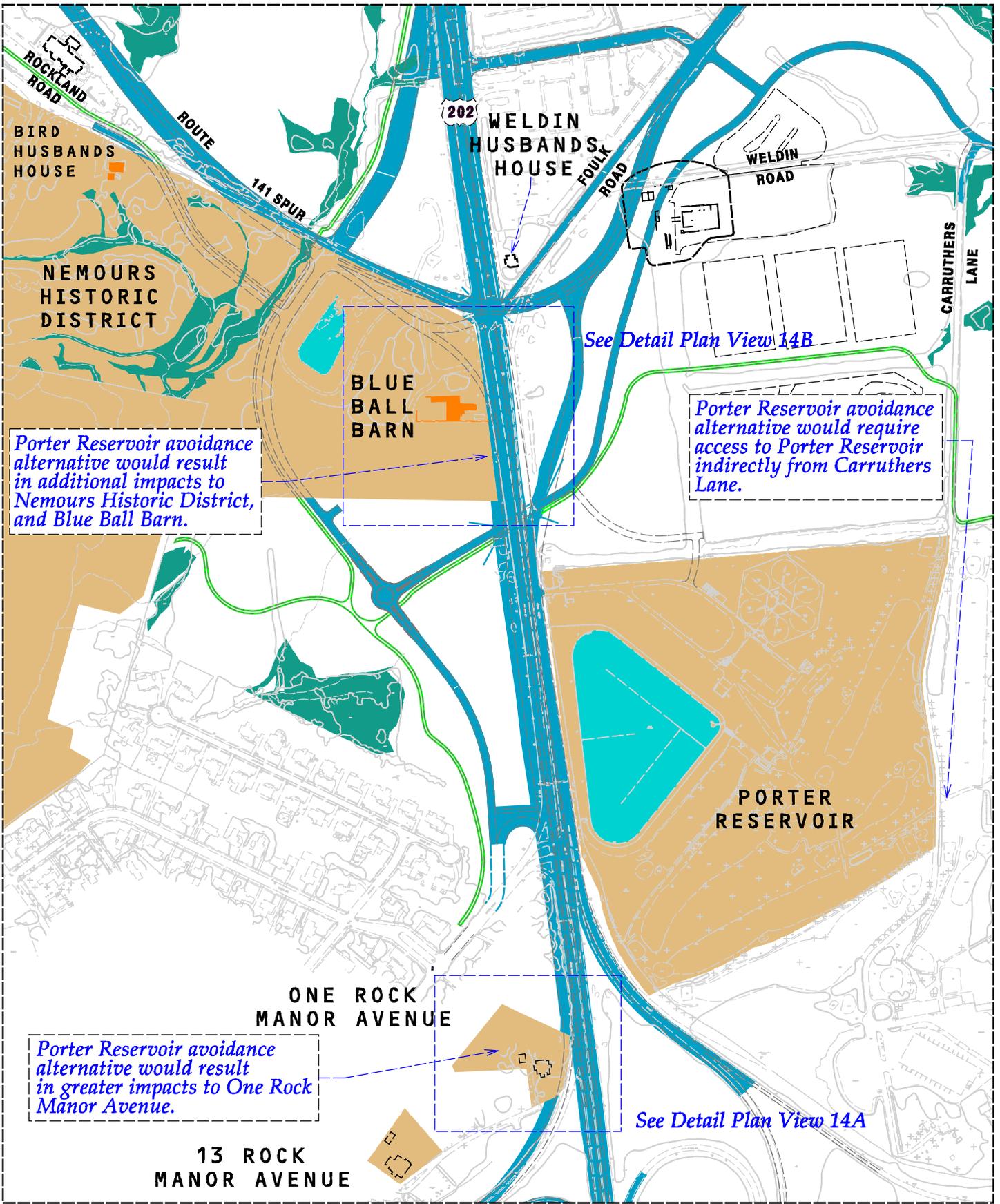
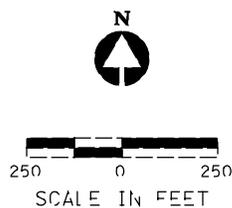
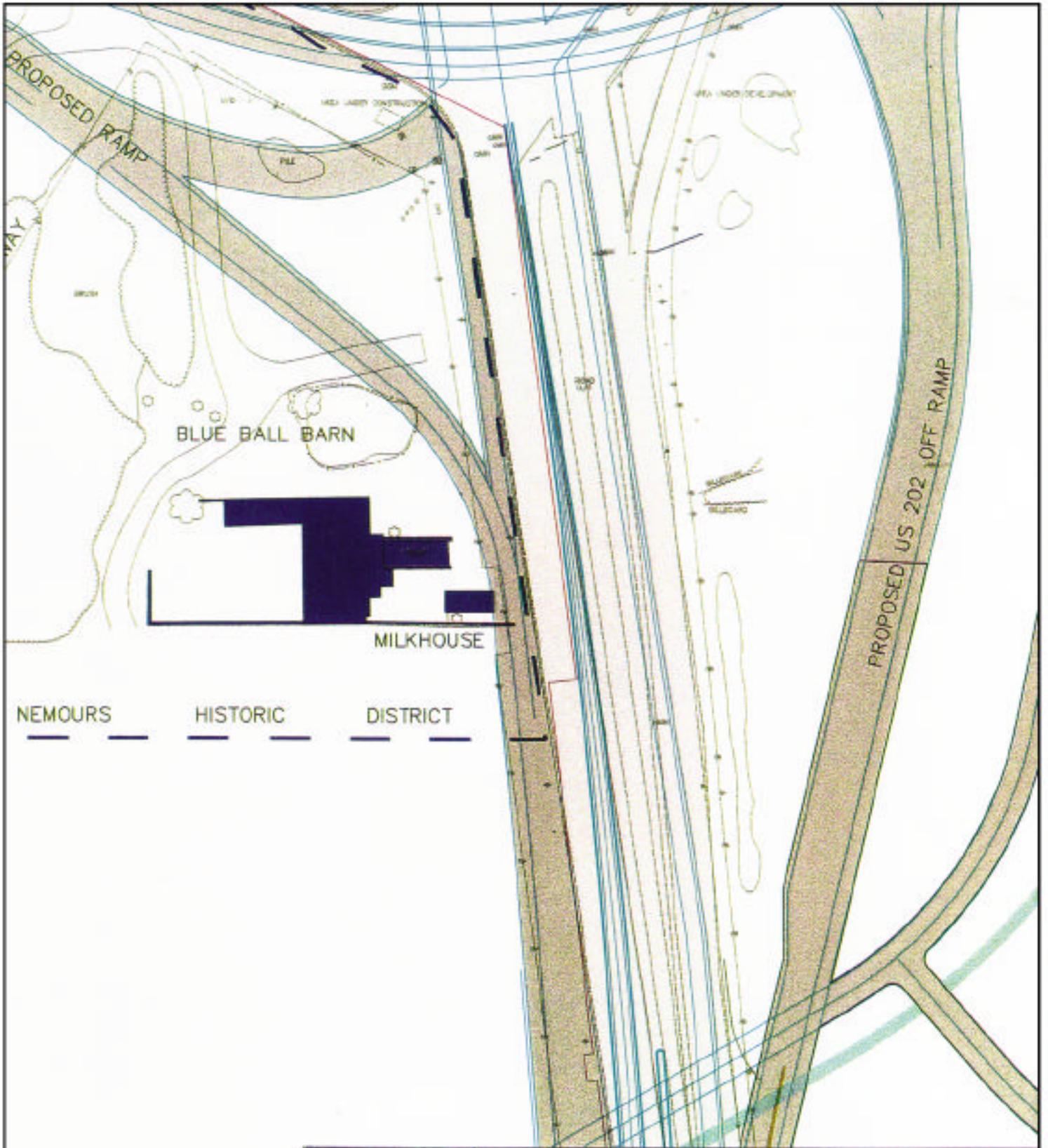


Fig. 13, Avoidance Alternative - Porter Reservoir

- LEGEND**
-  WETLANDS
 -  SECTION 4(F) RESOURCE
 -  HISTORIC DISTRICT CONTRIBUTING ELEMENT
 -  AVOIDANCE ALIGNMENT
 -  MASTER PLAN MODIFIED (OPTION A)
 -  GREENWAY TRAIL





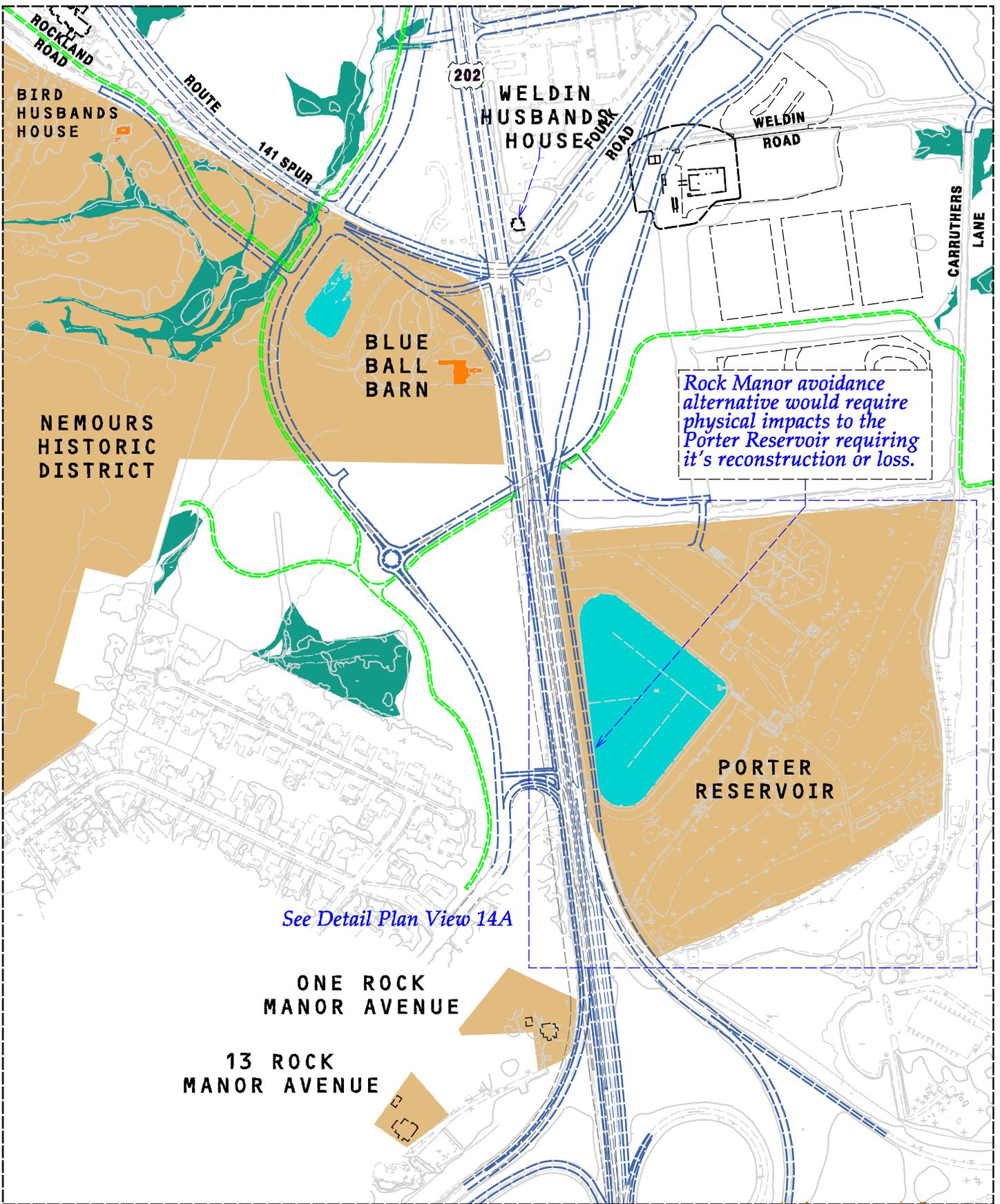
NEMOURS HISTORIC DISTRICT



PORTER RESERVOIR AVOIDANCE ALTERNATIVE

- TAX PARCEL BOUNDARY
- - - NATIONAL REGISTER BOUNDARY
- NATIONAL REGISTER ELIGIBLE RESOURCE
- PROPOSED ALIGNMENT
- PROPOSED ROADWAY AREA
- PROPOSED BIKE PATH
- AREA OF DISTURBANCE
- AVOIDANCE ALTERNATIVE
- EXISTING TOPOGRAPHY
- EXISTING ROADWAY AREA

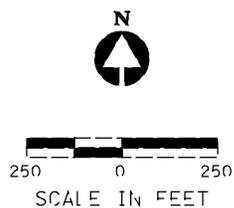
FIGURE 13B

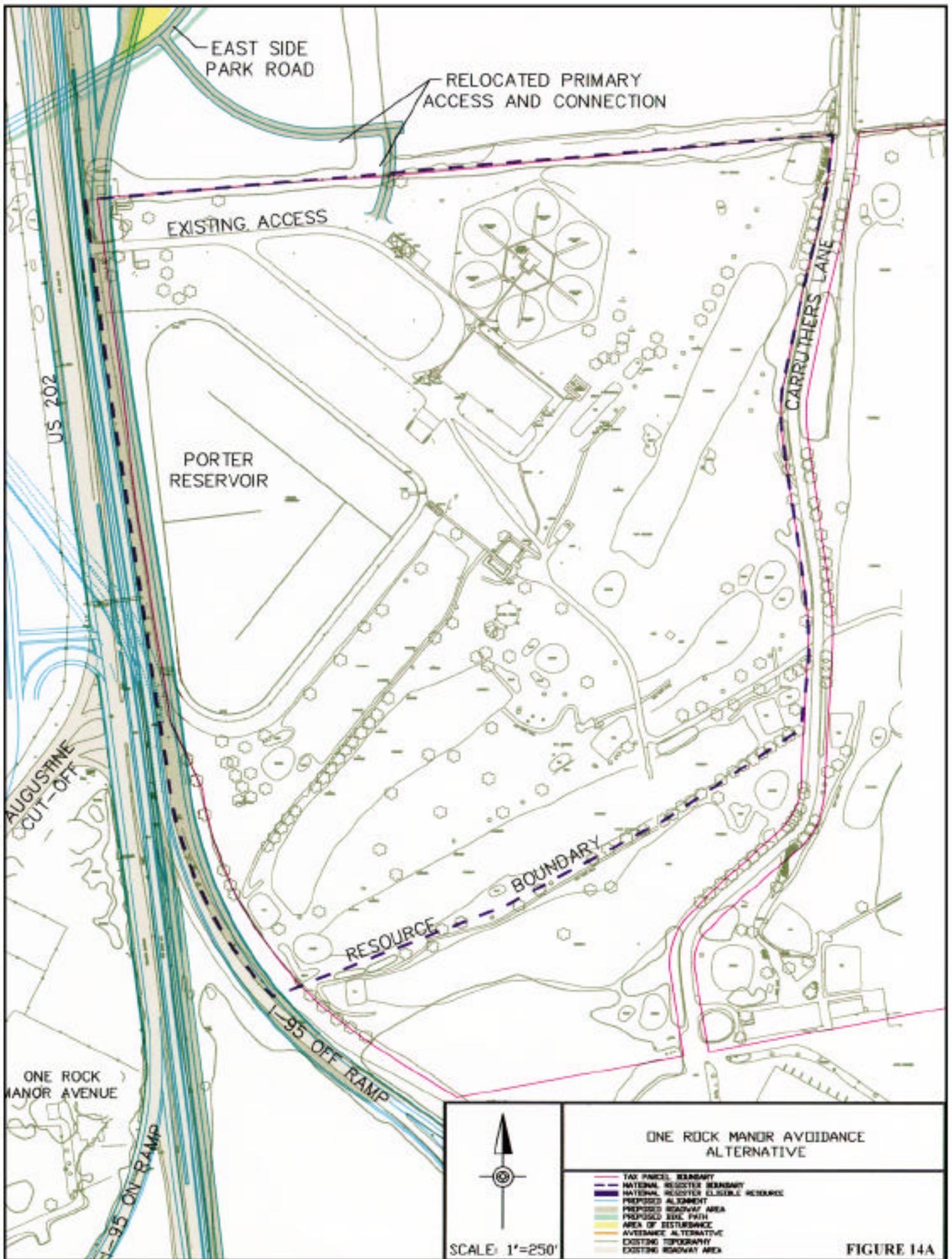


LEGEND

-  WETLANDS
-  SECTION 4(F) RESOURCE
-  HISTORIC DISTRICT CONTRIBUTING ELEMENT
-  AVOIDANCE ALIGNMENT
-  MASTER PLAN MODIFIED (OPTION A)
-  GREENWAY TRAIL

Fig.14, Avoidance Alternative - One Rock Manor Avenue



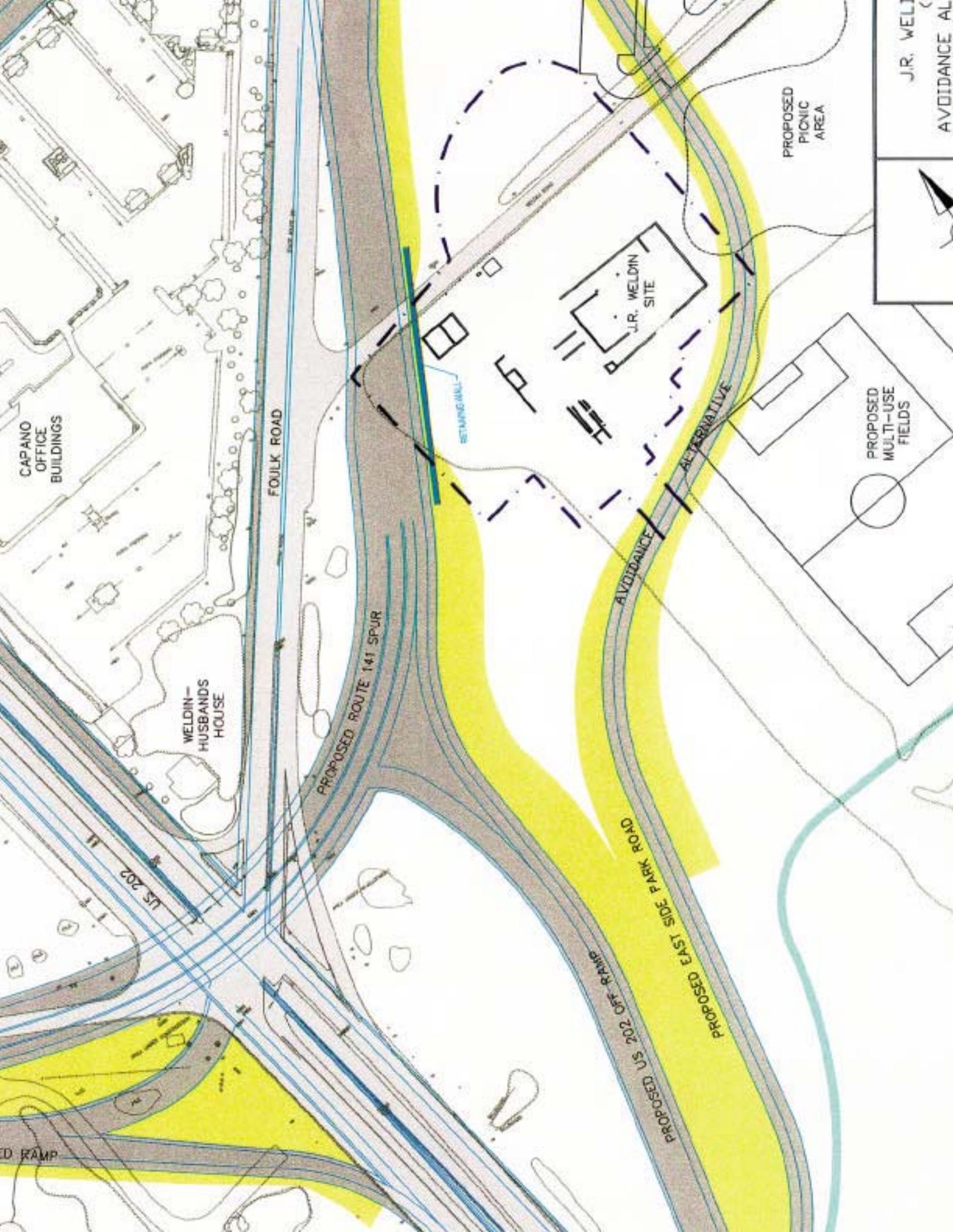


ONE ROCK MANOR AVOIDANCE ALTERNATIVE

- TAX PARCEL BOUNDARY
- NATIONAL REGISTER BOUNDARY
- NATIONAL REGISTER ELIGIBLE RESOURCE
- PROPOSED ALIGNMENT
- PROPOSED ROADWAY AREA
- PROPOSED SIDE PATH
- AREA OF DISTURBANCE
- AVOIDANCE ALTERNATIVE
- EXISTING TOPOGRAPHY
- EXISTING ROADWAY AREA

SCALE: 1"=250'

FIGURE 14A



CAPANO OFFICE BUILDINGS

WELDIN-HUSBANDS HOUSE

FOULK ROAD

PROPOSED ROUTE 141 SPUR

RETRAINING HALL

PROPOSED EAST SIDE PARK ROAD

PROPOSED US 202 OFF RAMP

AVOIDANCE

ALTERNATIVE

J.R. WELDIN SITE

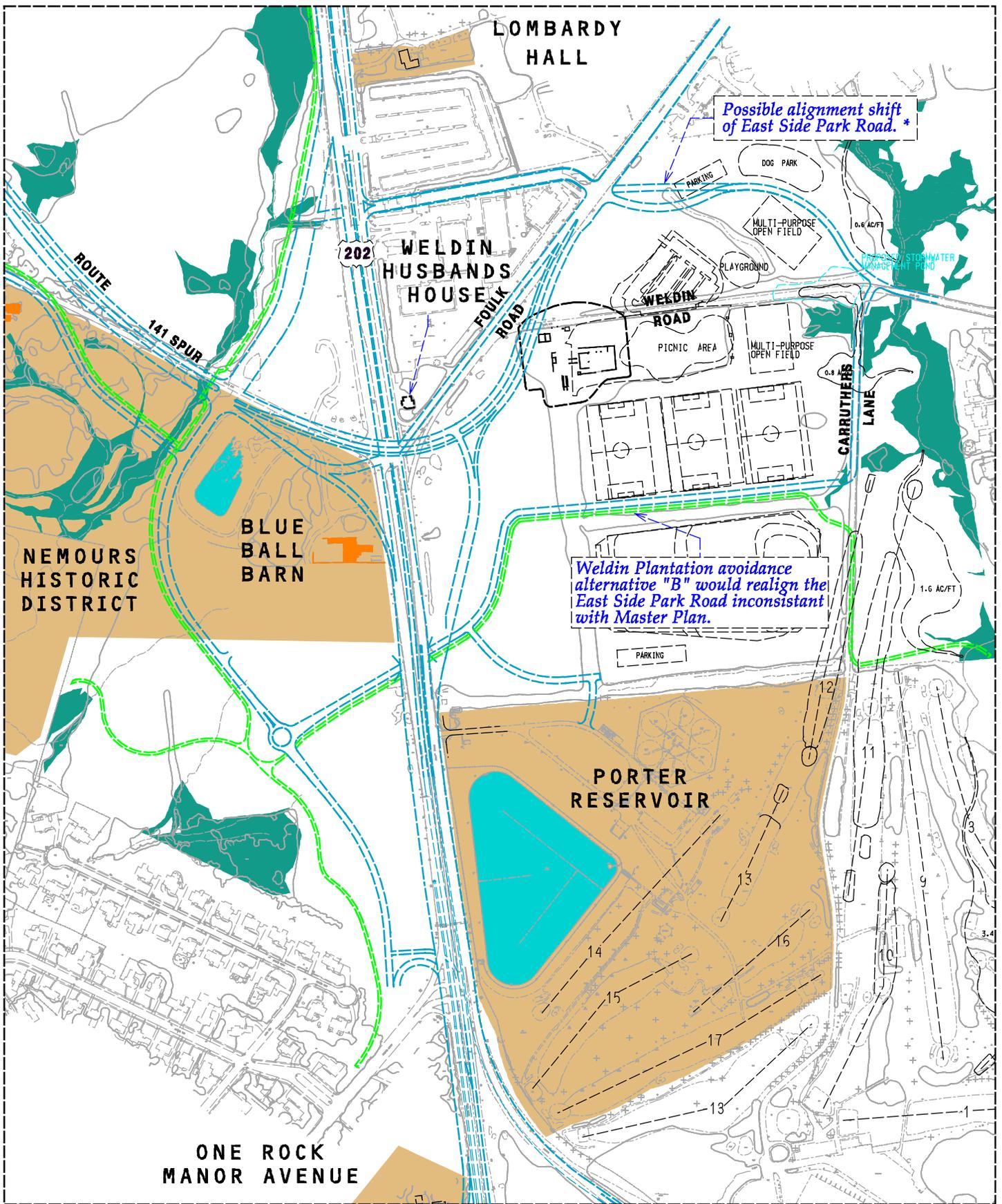
PROPOSED PICNIC AREA

PROPOSED MULTI-USE FIELDS

J.R. WELDIN
AVOIDANCE AREA



FIGURE 15: WELDING AVOIDANCE

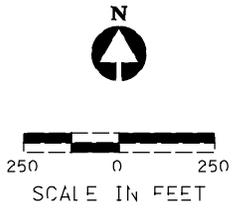


Possible alignment shift of East Side Park Road. *

Weldin Plantation avoidance alternative "B" would realign the East Side Park Road inconsistent with Master Plan.

LEGEND	
	WETLANDS
	SECTION 4(F) RESOURCE
	HISTORIC DISTRICT CONTRIBUTING ELEMENT
	AVOIDANCE ALIGNMENT
	MASTER PLAN MODIFIED (OPTION A)
	GREENWAY FROM DELAWARE GREENWAYS

Fig. 16 , Avoidance Alternative B - J.R. Weldin Archaeological Site



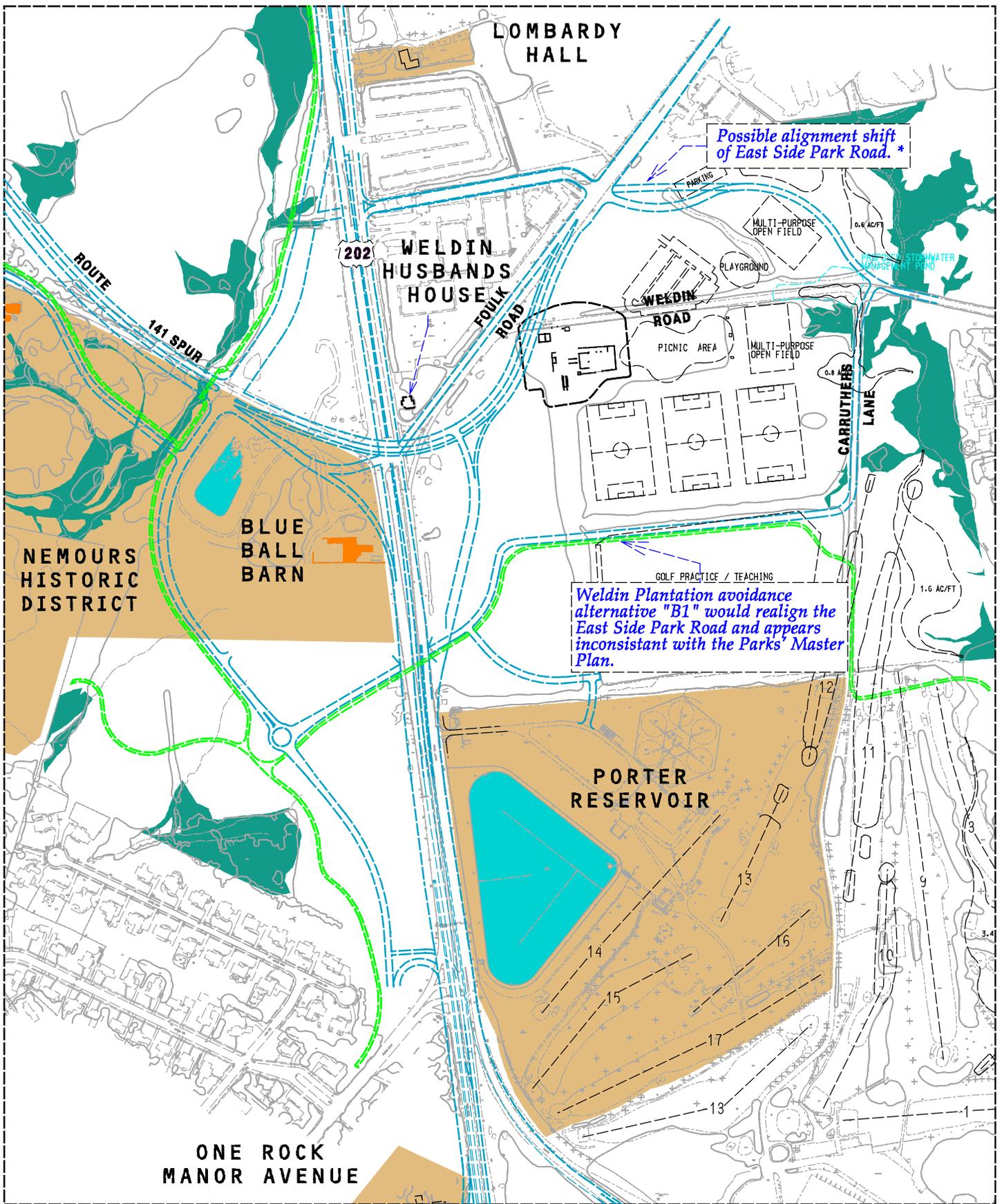
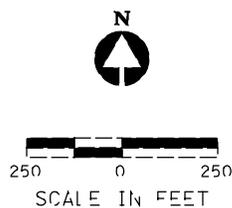
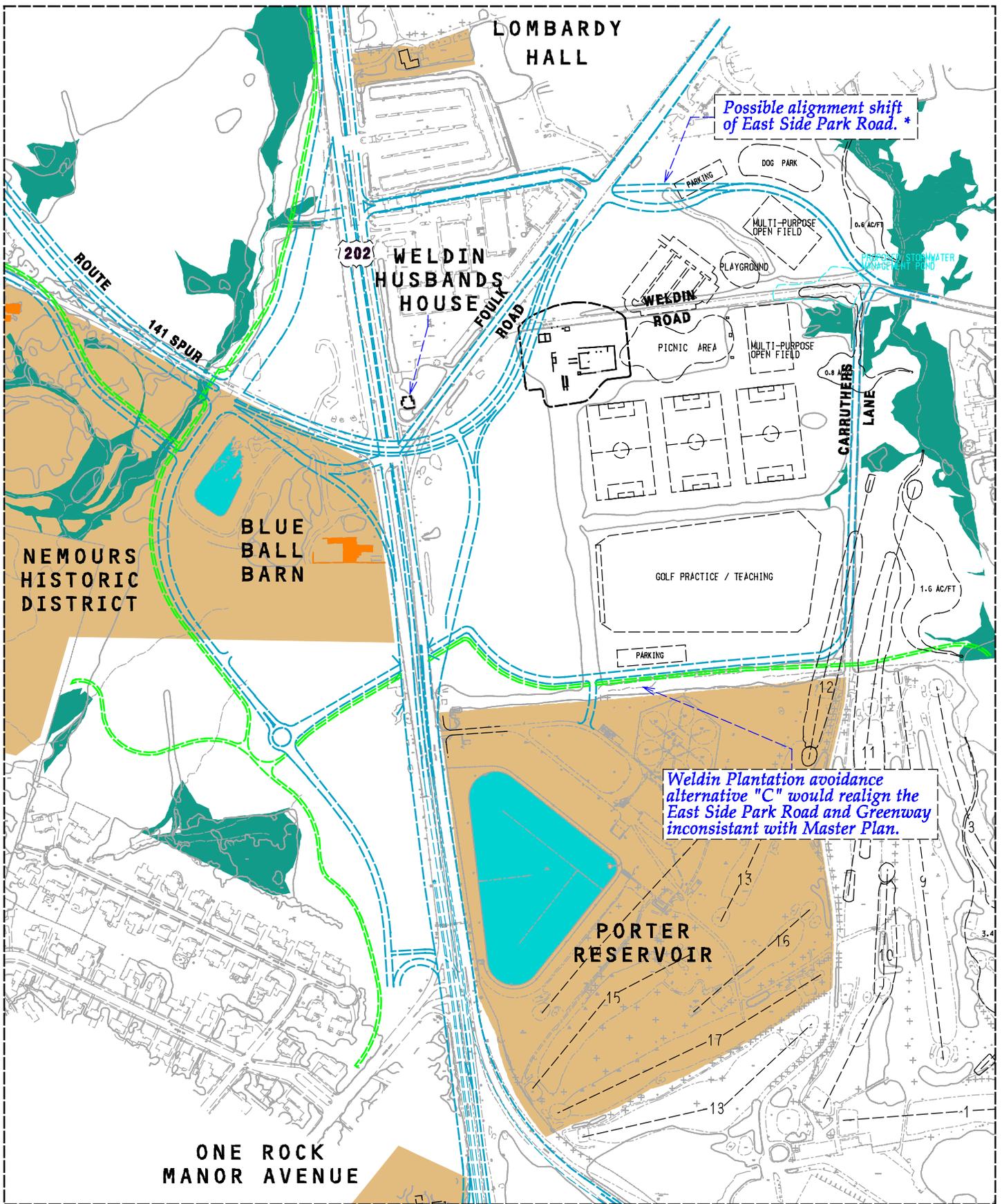


Fig. 17 , Avoidance Alternative B1 - J.R. Weldin Archaeological Site
(Alternative B1 proposed by Preservation Delaware, Inc.)

- LEGEND**
- WETLANDS
 - SECTION 4(F) RESOURCE
 - HISTORIC DISTRICT CONTRIBUTING ELEMENT
 - AVOIDANCE ALIGNMENT
 - MASTER PLAN MODIFIED (OPTION A)
 - GREENWAY FROM DELAWARE GREENWAYS



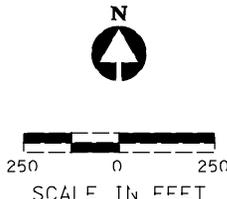


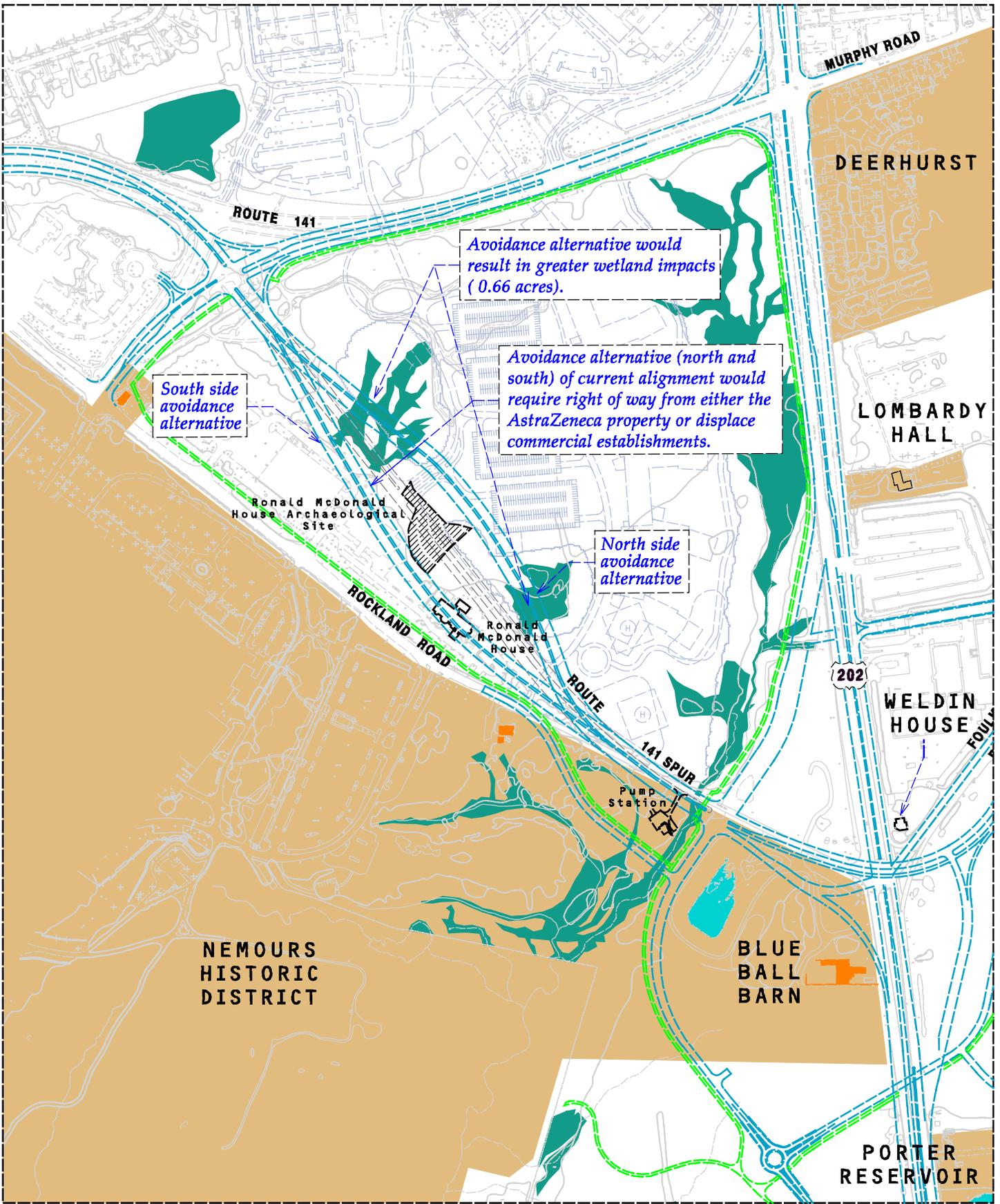
Possible alignment shift of East Side Park Road. *

Weldin Plantation avoidance alternative "C" would realign the East Side Park Road and Greenway inconsistent with Master Plan.

LEGEND	
	WETLANDS
	SECTION 4(F) RESOURCE
	HISTORIC DISTRICT CONTRIBUTING ELEMENT
	AVOIDANCE ALIGNMENT
	MASTER PLAN MODIFIED (OPTION A)
	GREENWAY FROM DELAWARE GREENWAYS

Fig. 18 , Avoidance Alternative C - J.R. Weldin Archaeological Site

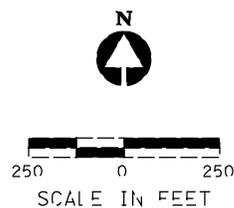




LEGEND

	WETLANDS
	SECTION 4(F) RESOURCE
	HISTORIC DISTRICT CONTRIBUTING ELEMENT
	AVOIDANCE ALIGNMENT
	MASTER PLAN MODIFIED (OPTION A)
	GREENWAY TRAIL
	PROPOSED ASTRAZENECA BUILDINGS

Fig. 19, Avoidance Alternative - Ronald McDonald House Archaeological Site



**ROCKLAND ROAD MINIMIZATION-
OPTION TWO**

- SHIFTS PORTION OF RELOCATED ROCKLAND ROAD TO THE NORTH, REDUCING USE OF HISTORIC DISTRICT
- WOULD AFFECT 0.7 ACRES OF WETLANDS
- WOULD AFFECT PROPOSED NEW CASTLE COUNTY PUMP STATION SITE

ROUTE 141 SPUR MINIMIZATION

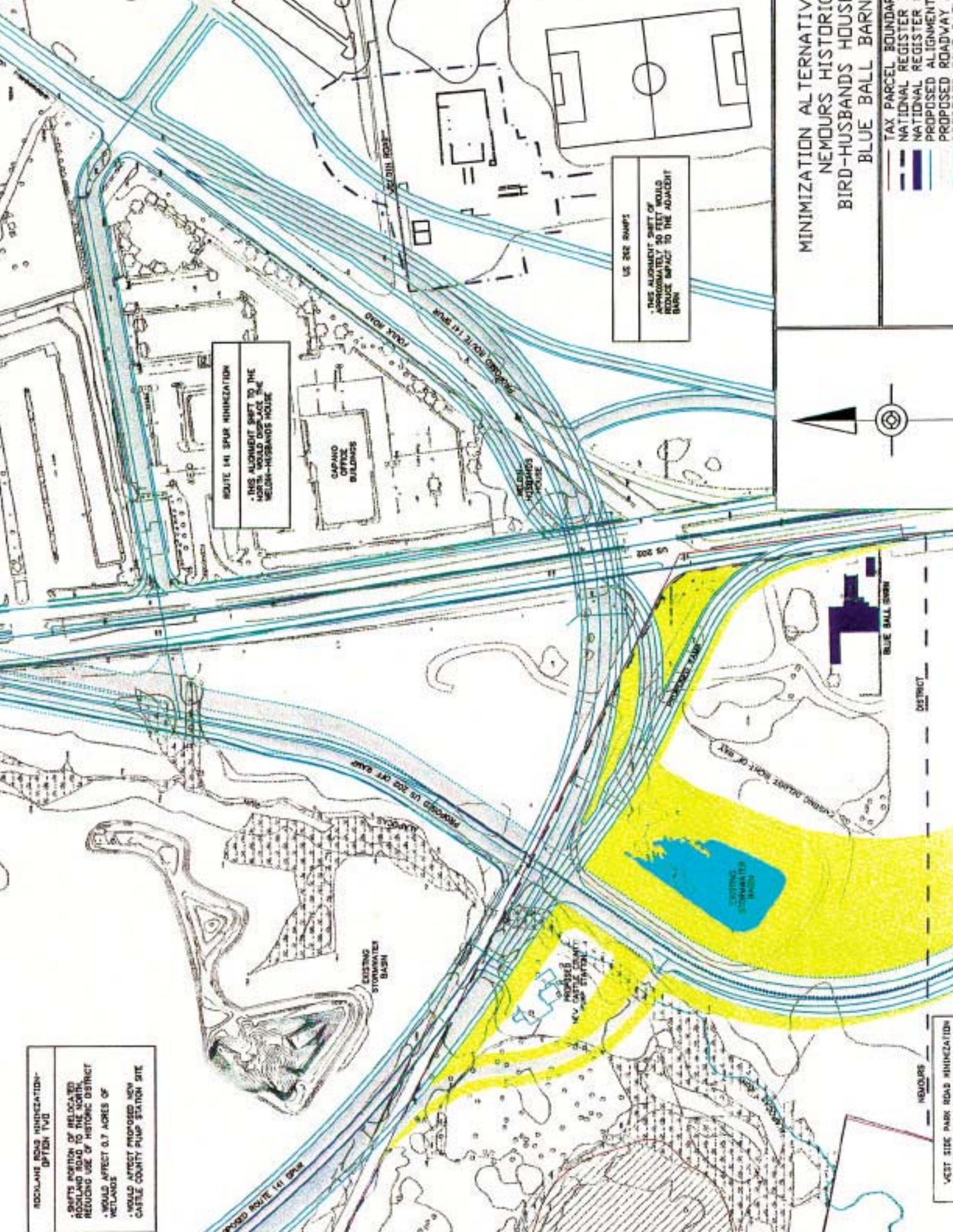
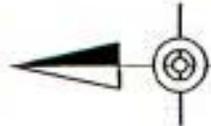
- THIS ALIGNMENT SHIFT TO THE NORTH, WOULD DISPLACE THE MELUM-HUSBANDS HOUSE

US 202 RAMP

- THIS ALIGNMENT SHIFT OF APPROXIMATELY 50 FEET WOULD REDUCE IMPACT TO THE ADJACENT BARN

**MINIMIZATION ALTERNATIVE
NEMOURS HISTORIC
BIRD-HUSBANDS HOUSE
BLUE BALL BARN**

- TAX PARCEL BOUNDARY
- NATIONAL REGISTER
- NATIONAL REGISTER
- PROPOSED ALIGNMENT
- PROPOSED ROADWAY



WEST SIDE PARK ROAD MINIMIZATION

NEMOURS

DISTRICT

BLUE BALL BARN

EXISTING STORMWATER BASIN

PROPOSED CASTLE COUNTY PUMP STATION

EXISTING STORMWATER BASIN

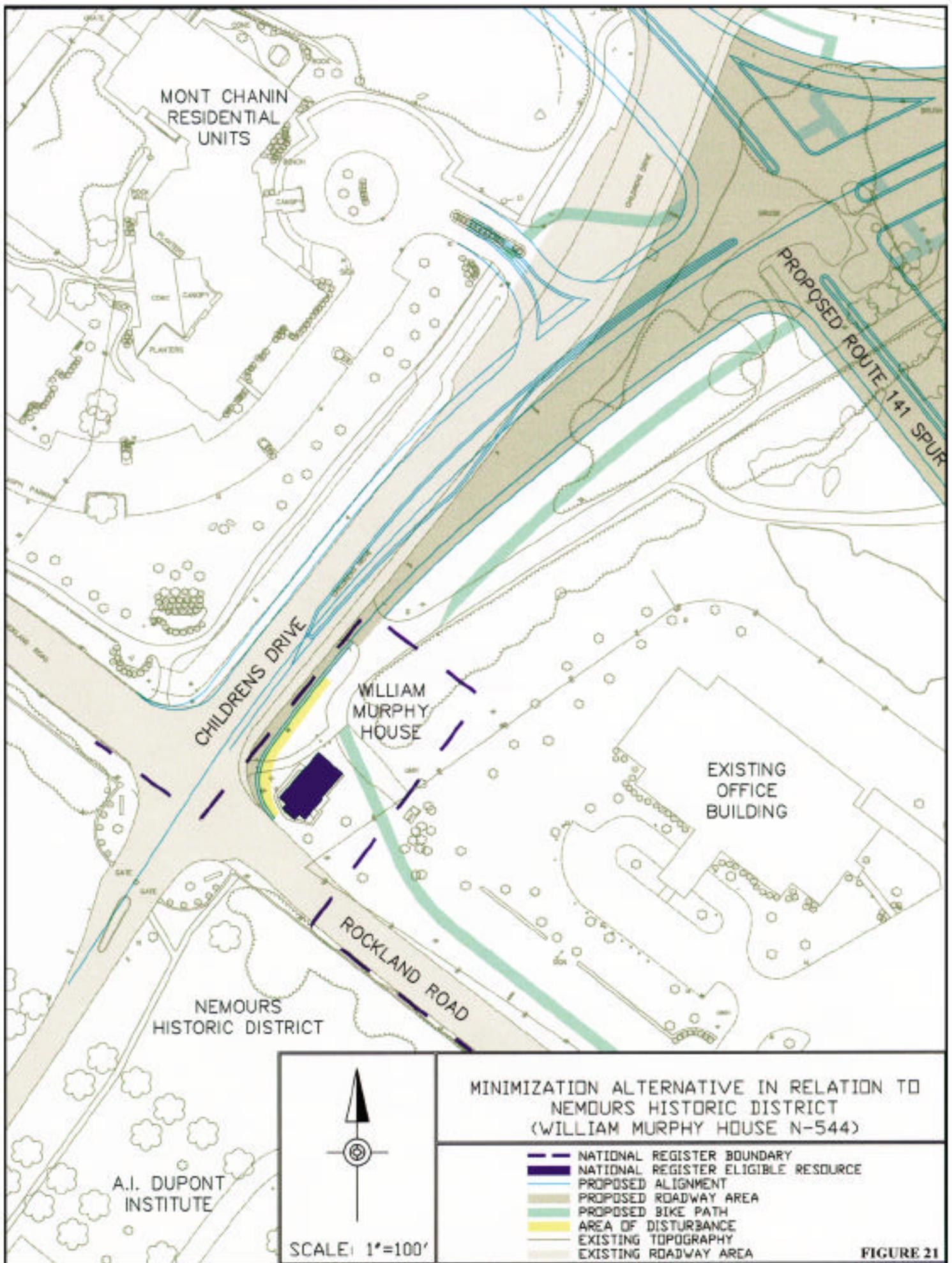
PROPOSED US 202 CR RAMP

CARPANO OFFICE BUILDINGS

MELUM-HUSBANDS HOUSE

US 202 RAMP

FIGURE 20: NEMOURS MIN (BBB & WELD HUSB)



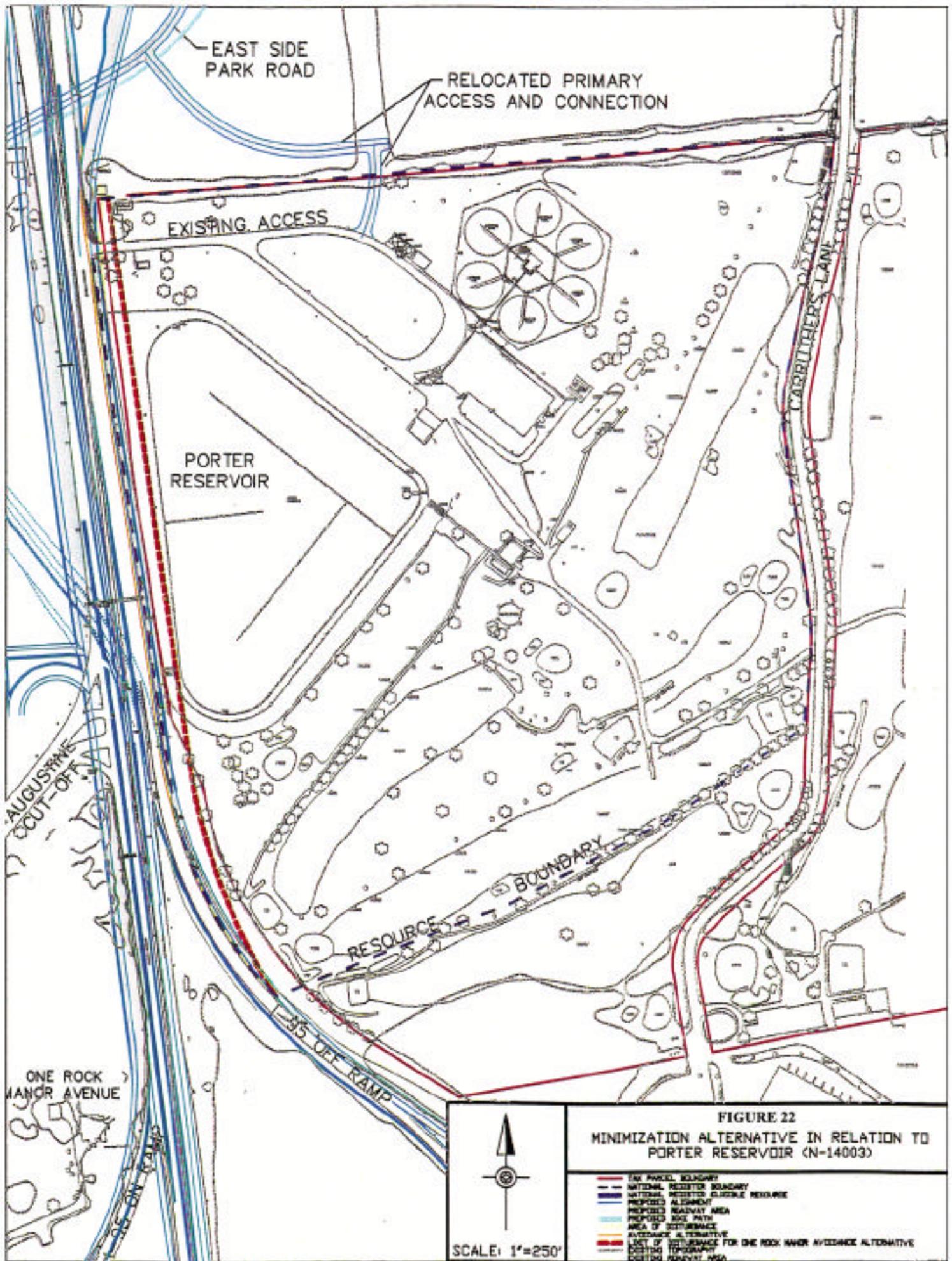


FIGURE 22
MINIMIZATION ALTERNATIVE IN RELATION TO PORTER RESERVOIR (N-14003)

- THE PARCEL BOUNDARY
- NATIONAL RESERVOIR BOUNDARY
- NATIONAL RESERVE CLASSIFIED RESOURCE
- PROPOSED ALIGNMENT
- PROPOSED ROADWAY AREA
- PROPOSED SIDE PATH
- AREA OF INTERFERENCE
- AVOIDANCE ALTERNATIVE
- SET OF 50' BUFFERAGE FOR ONE ROCK MANOR AVOIDANCE ALTERNATIVE
- EXISTING TOPOGRAPHY
- EXISTING ROADWAY AREA

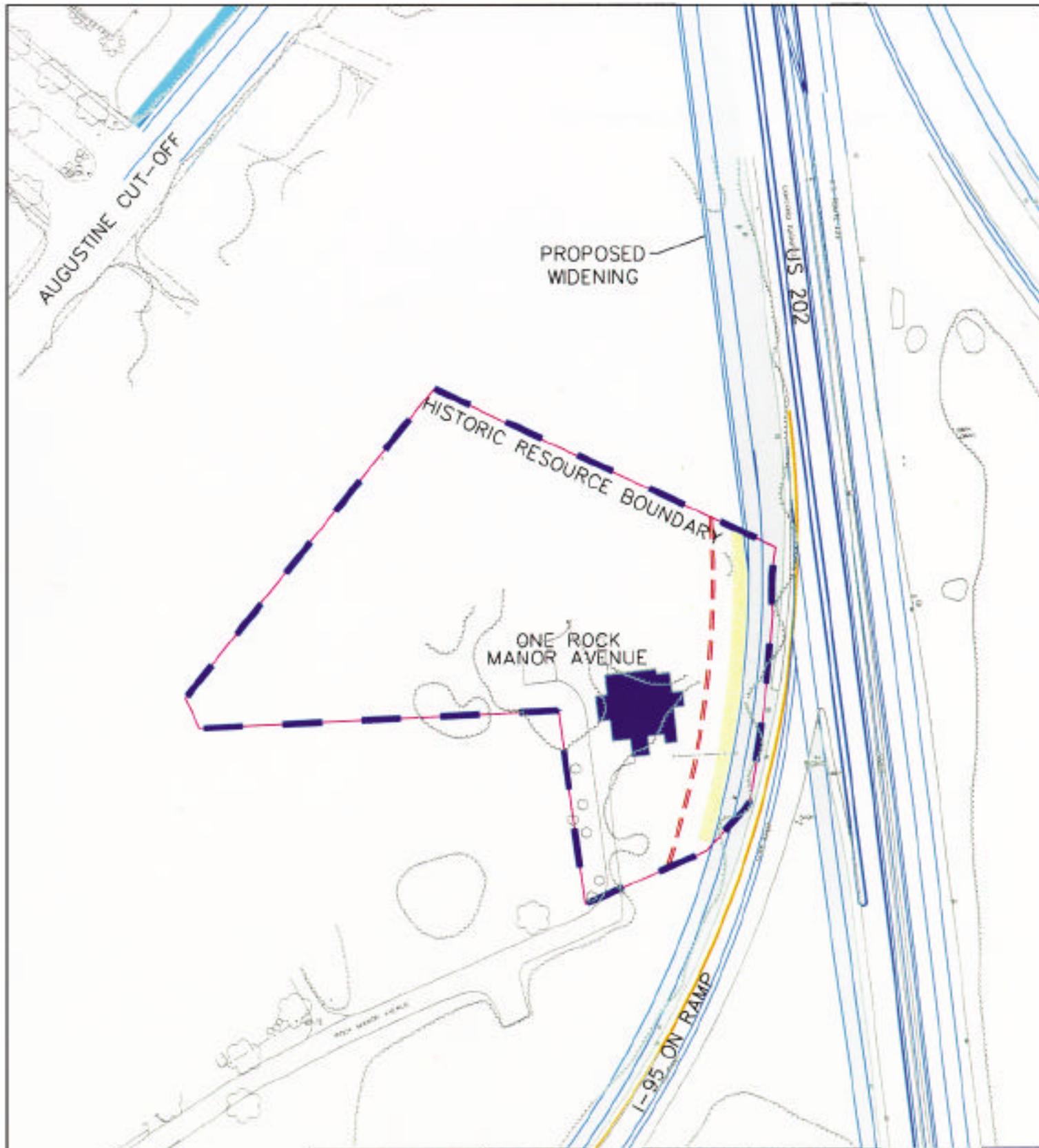
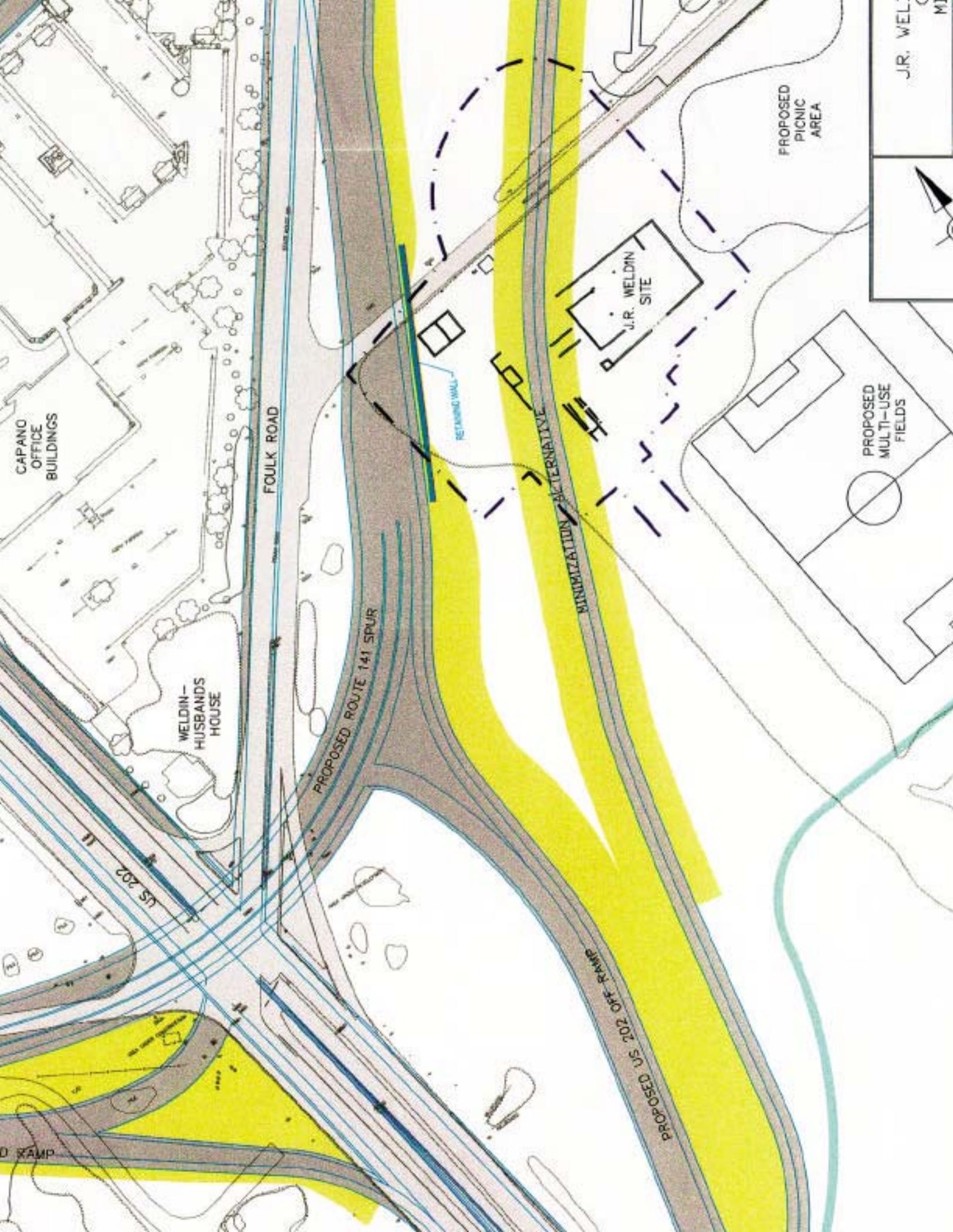


FIGURE 23
 MINIMIZATION ALTERNATIVE IN RELATION TO
 ONE ROCK MANOR AVENUE (N-12673)

SCALE: 1"=33.3'

- TAX PARCEL BOUNDARY
- NATIONAL REGISTER BOUNDARY
- NATIONAL REGISTER ELIGIBLE RESOURCE
- PROPOSED ALIGNMENT
- PROPOSED ROADWAY AREA
- PROPOSED BIKE PATH
- AREA OF DISTURBANCE
- AVOIDANCE ALTERNATIVE
- LIMIT OF DISTURBANCE FOR PORTER RESERVOIR AVOIDANCE ALTERNATIVE
- EXISTING TOPOGRAPHY
- EXISTING ROADWAY AREA

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CAPANO OFFICE BUILDINGS

WELDIN-HUSBANDS HOUSE

FOULK ROAD

PROPOSED ROUTE 141 SPUR

RETAINING WALL

MINIMIZATION ALTERNATIVE

J.R. WELDIN SITE

PROPOSED PICNIC AREA

PROPOSED MULTI-USE FIELDS

PROPOSED US 202 OFF RAMP

J.R. WELDIN



FIGURE 24: WELDIN MIN

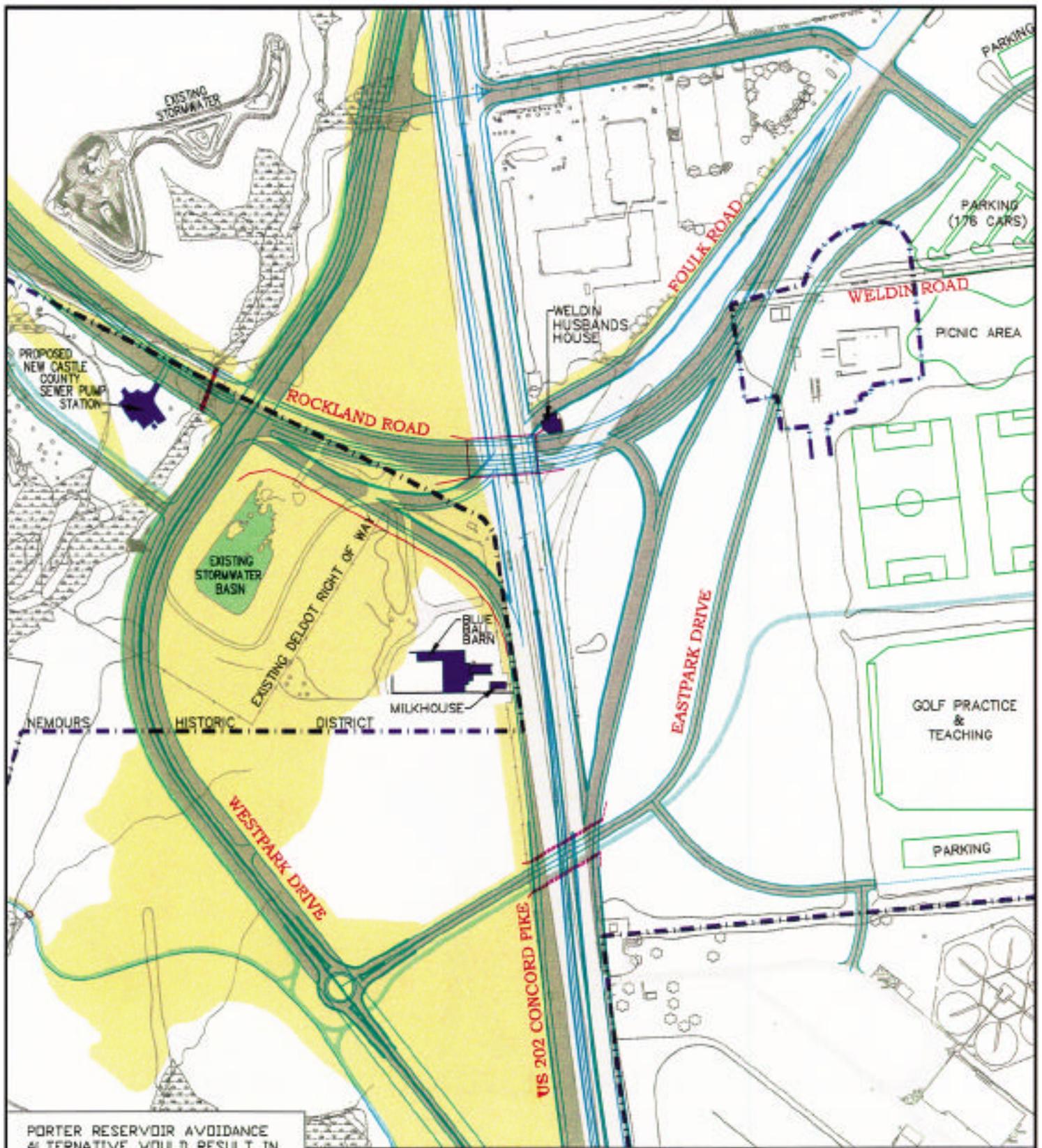
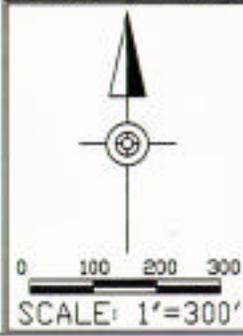


FIGURE 25A
 MASTER PLAN ALTERNATIVE -MODIFIED
 (WITH WELDIN OPTION A)

PORTER RESERVOIR AVOIDANCE ALTERNATIVE WOULD RESULT IN ADDITIONAL IMPACTS TO NEMOURS HISTORIC DISTRICT, AND BLUE BARN.

PORTER RESERVOIR AVOIDANCE ALTERNATIVE WOULD REQUIRE ACCESS TO PORTER RESERVOIR INDIRECTLY FROM CARRUTHERS LANE.

PORTER RESERVOIR AVOIDANCE ALTERNATIVE WOULD RESULT IN GREATER IMPACTS TO ONE ROCK MANOR AVENUE.



- NATIONAL REGISTER BOUNDARY
- NATIONAL REGISTER ELIGIBLE RESOURCE
- PROPOSED ALIGNMENT
- PROPOSED ROADWAY AREA
- PROPOSED BIKE/PEDESTRIAN PATH
- AREA OF DISTURBANCE
- EXISTING TOPOGRAPHY
- EXISTING ROADWAY AREA

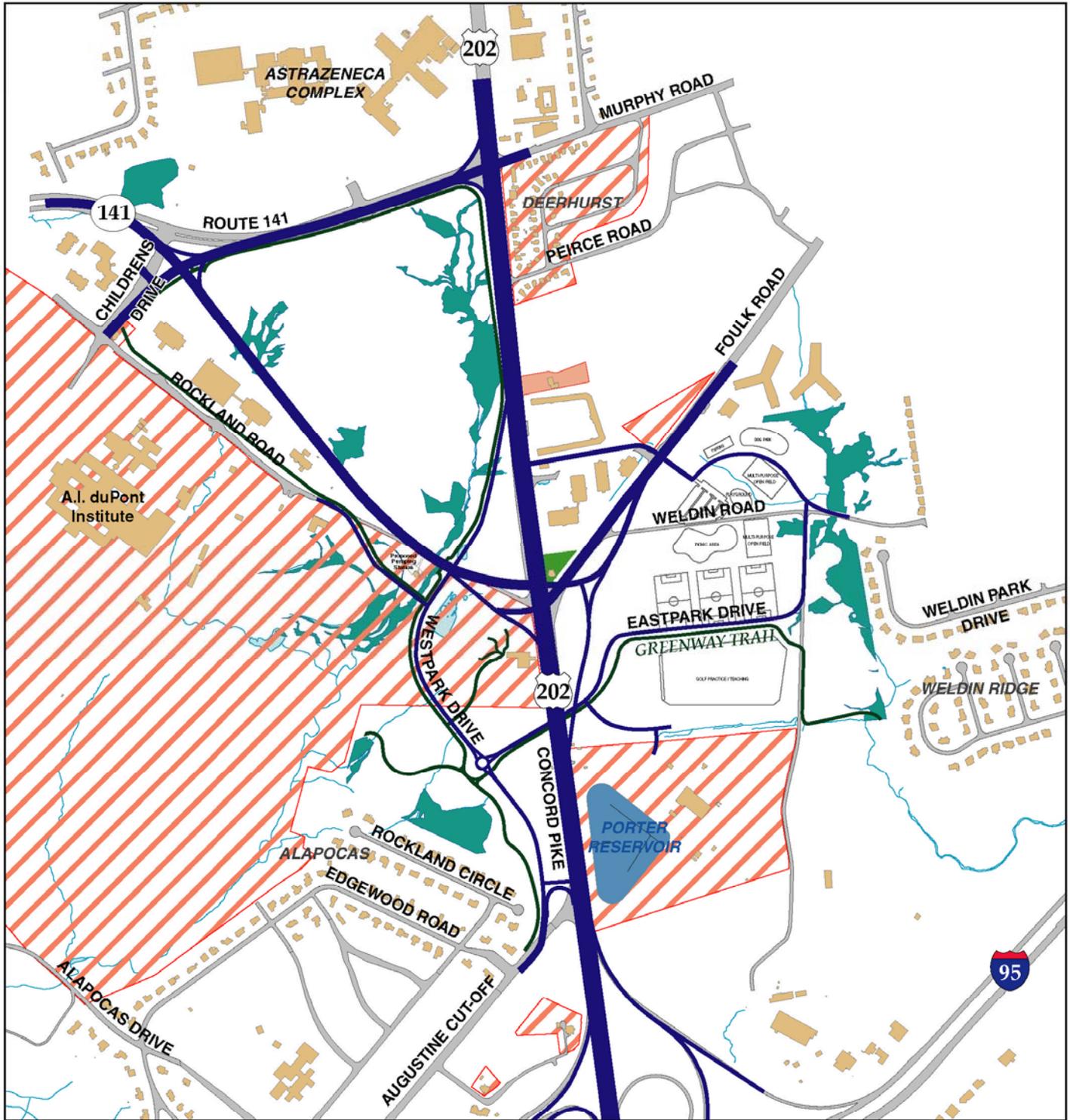


FIGURE 26: MASTER PLAN ALTERNATIVE - MODIFIED (WITH WELDIN OPTION B)

 N	<ul style="list-style-type: none">  Wetland  National Historic Landmark (N.H.L.)  National Register Eligible Property  Locally Significant Historic House  Greenway Trail 	 MTA McCormick, Taylor & Associates, Inc.	 Blue Ball Properties
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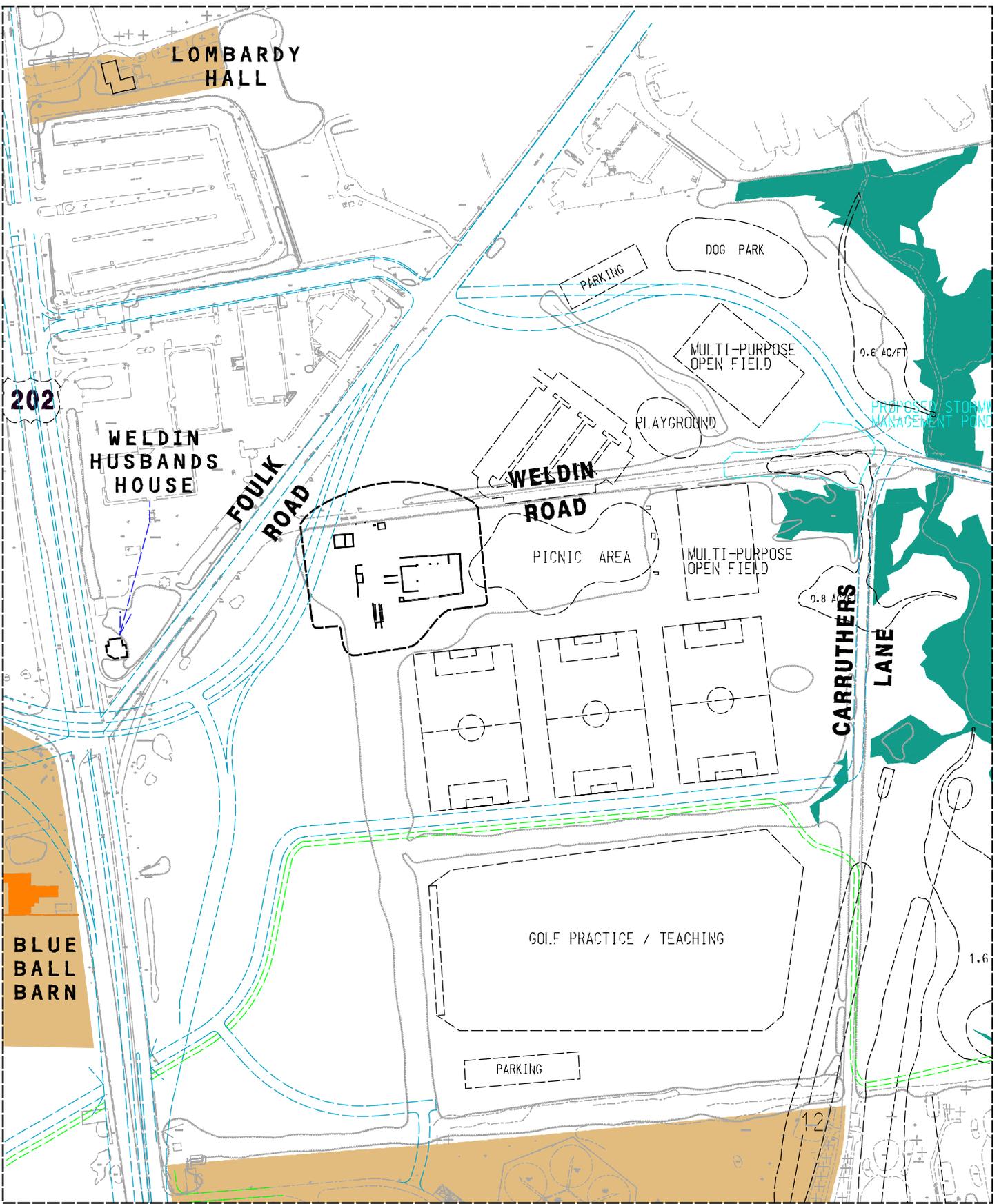


Fig. 26A MASTER PLAN ALTERNATIVE - MODIFIED (WITH WELDIN OPTION B)

- LEGEND**
- WETLANDS
 - SECTION 4(F) RESOURCE
 - HISTORIC DISTRICT CONTRIBUTING ELEMENT
 - AVOIDANCE ALIGNMENT
 - MASTER PLAN MODIFIED (OPTION A)
 - GREENWAY TRAIL

