

VI. MINIMIZATION ALTERNATIVES AND MEASURES

Adjustments to the alignment and modification to the design of the Master Plan Alternative have been carefully evaluated to minimize harm to all Section 4(f) resources. In cases where the use of two adjacent Section 4(f) resources is required, all attempts were made to create the least overall impact or least net harm to Section 4(f) resources.

A. Nemours Historic District Minimization Alternative (Blue Ball Barn and Bird-Husbands House) (Figure 18)

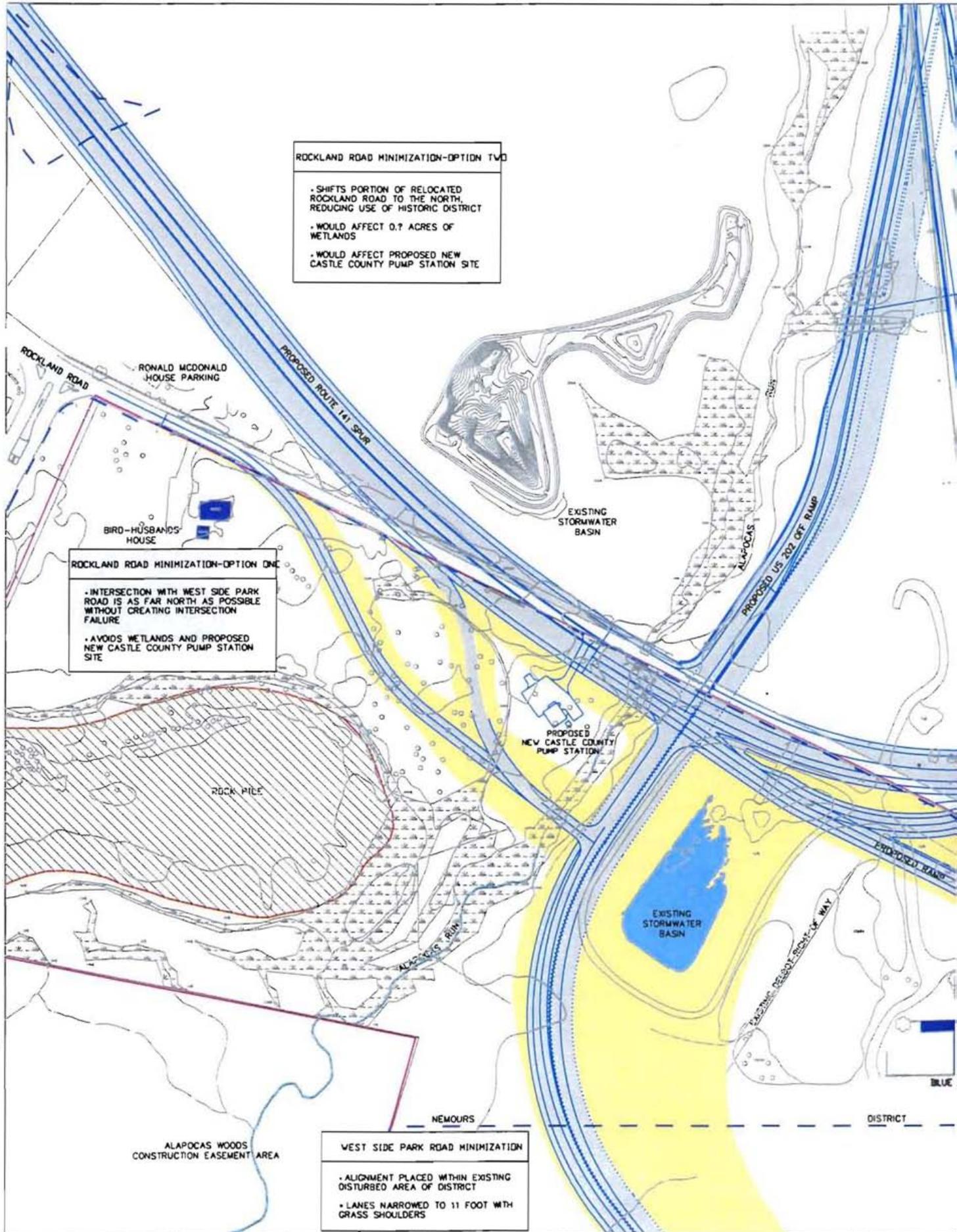
Route 141 Spur – This alternative would minimize impacts to the Nemours Historic District by shifting the Route 141 Spur to the north by approximately 100 feet at the U.S. Route 202 crossing. This alternative results in a slightly reduced impact in the area of the district adjacent to the barn by shifting the U.S. Route 202 ramps to the north by approximately 50 feet. There would also be slightly less fragmentation and land isolation in this area of the Nemours Historic District.

This alternative would require the demolition or relocation of the Weldin-Husbands House, a locally historic resource which is not eligible for the National Register.

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 area currently designated as a DelDOT right-of-way. In addition the roadway lane widths have been minimized to two 11-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. Route 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 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 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 Westpark Drive onto the Route 141 Spur. The traffic equations and values are found in appendix A.



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

ROCKLAND ROAD MINIMIZATION-OPTION ONE

- INTERSECTION WITH WEST SIDE PARK ROAD IS AS FAR NORTH AS POSSIBLE WITHOUT CREATING INTERSECTION FAILURE
- AVOIDS WETLANDS AND PROPOSED NEW CASTLE COUNTY PUMP STATION SITE

WEST SIDE PARK ROAD MINIMIZATION

- ALIGNMENT PLACED WITHIN EXISTING DISTURBED AREA OF DISTRICT
- LANES NARROWED TO 11 FOOT WITH GRASS SHOULDERS

ROCKLAND ROAD

RONALD MCDONALD HOUSE PARKING

PROPOSED ROUTE 141 SPUR

BIRD-HUSBANDS HOUSE

EXISTING STORMWATER BASIN

PROPOSED US 202 OFF RAMP

PROPOSED US 202 OFF RAMP

ROCKLAND ROAD MINIMIZATION-OPTION ONE

ROCK PILE

PROPOSED NEW CASTLE COUNTY PUMP STATION

EXISTING STORMWATER BASIN

ALAPOCAS RUN

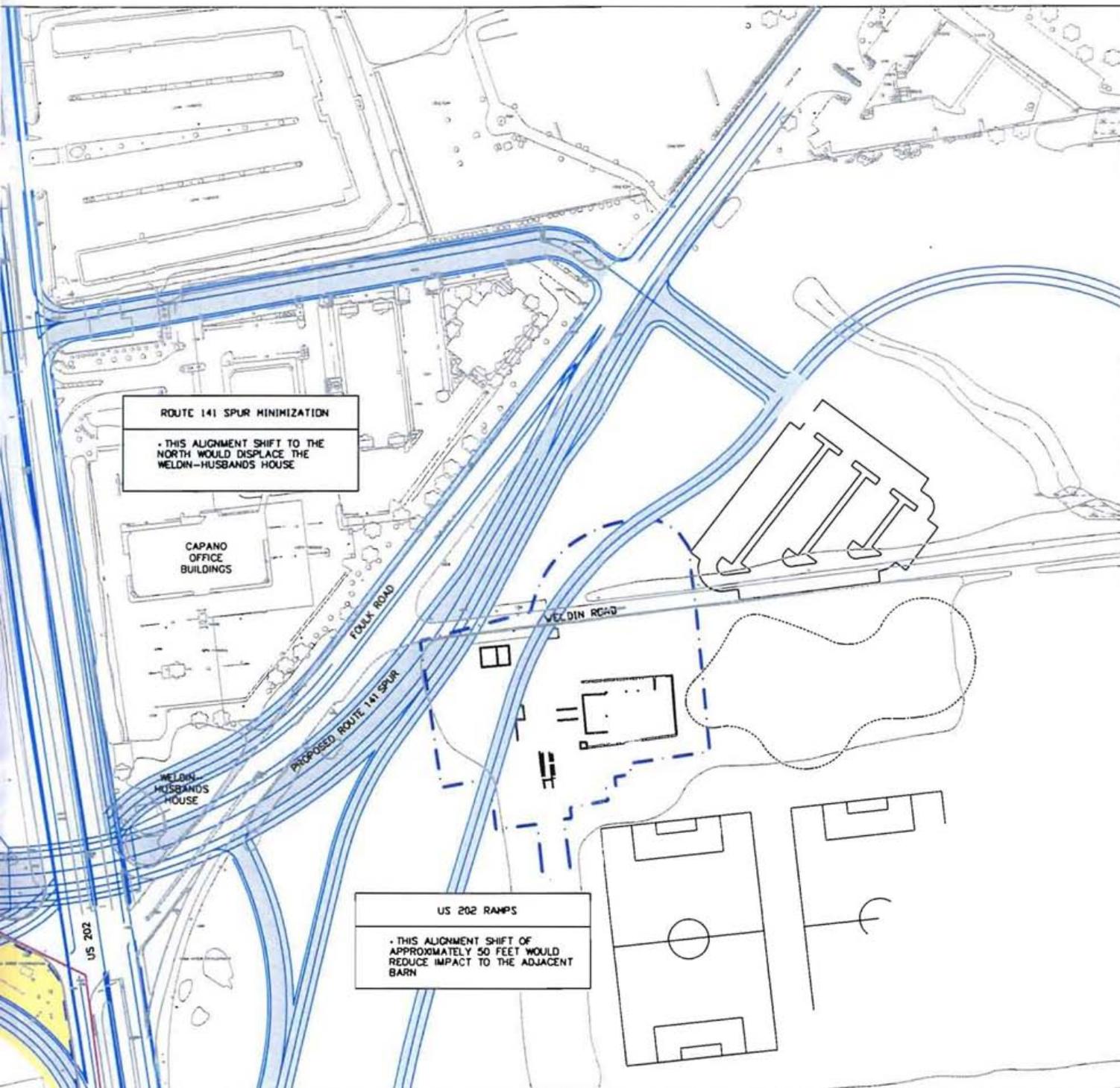
EXISTING DEEDOT RIGHT-OF-WAY

ALAPOCAS WOODS CONSTRUCTION EASEMENT AREA

NEMOURS

DISTRICT

BLUE



ROUTE 141 SPUR MINIMIZATION

• THIS ALIGNMENT SHIFT TO THE NORTH WOULD DISPLACE THE WELDIN-HUSBANDS HOUSE

US 202 RAMP'S

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

SCALE: 1"=50'

MINIMIZATION ALTERNATIVE IN RELATION TO NEMOURS HISTORIC DISTRICT BIRD-HUSBANDS HOUSE (N-494) AND BLUE BALL BARN (N-4048)

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

FIGURE 18

B. Nemours Historic District Minimization Alternative (William Murphy House)
(Figure 19)

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. duPont Institute access drive and gateway. The alignment incorporates impact minimization through the inclusion of low retaining walls and 11-foot lanes adjacent to the Murphy House.

C. Porter Reservoir Minimization Alternative (Figure 20)

The widening of U.S. Route 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. Route 202. 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.

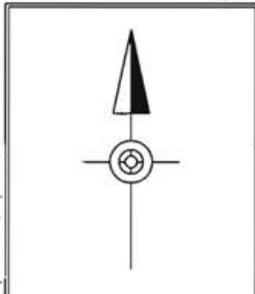
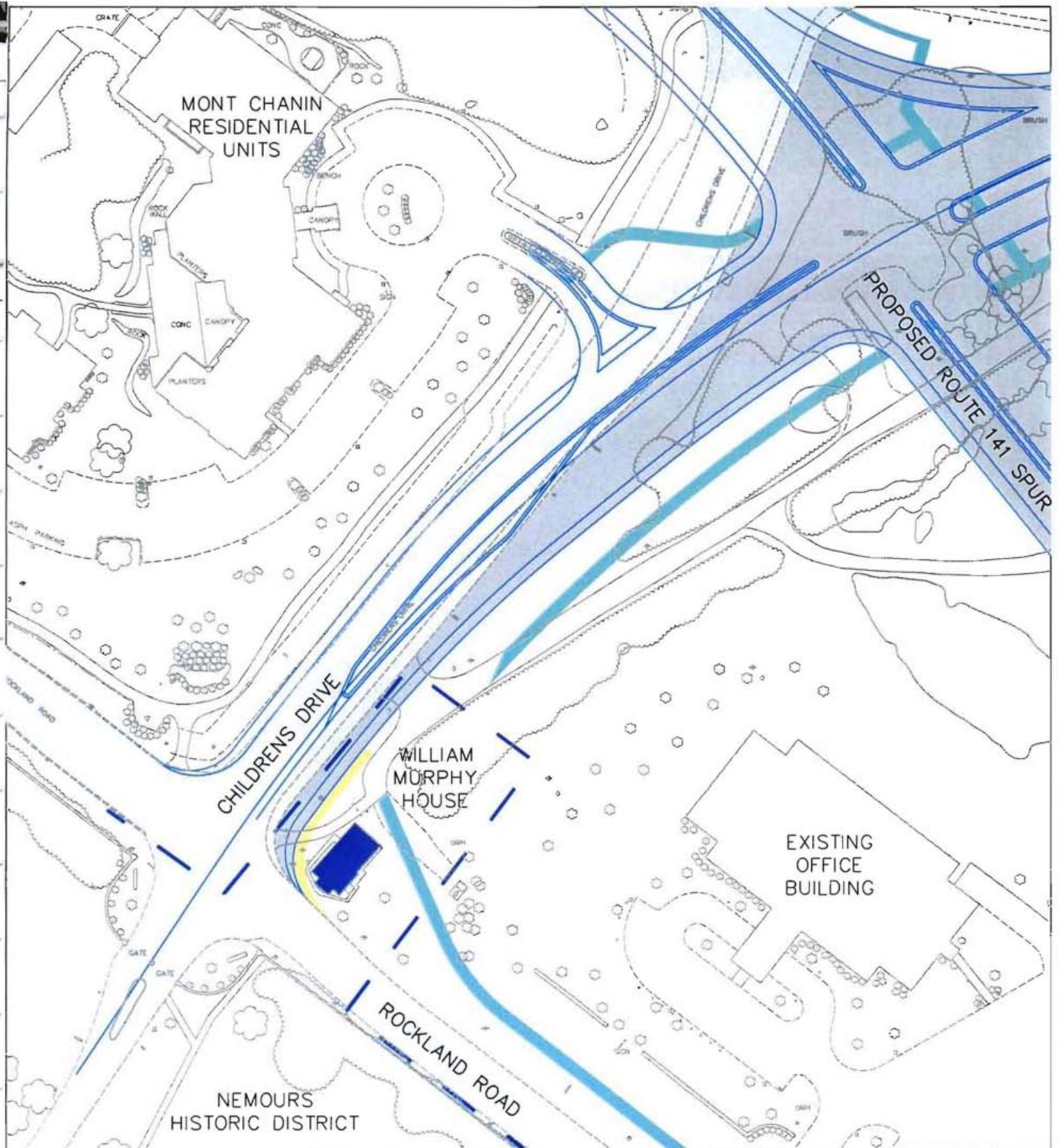
D. One Rock Manor Avenue Minimization Alternative (Figure 21)

The proposed widening of U.S. Route 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 increase impacts to the Porter Reservoir on the opposite side of U.S. Route 202. Balancing the impacts to these two resources would result in the least net harm to the Porter Reservoir on the east and One Rock Manor Avenue on the west. This “least net harm” or “balanced minimization” alignment has been incorporated into the Master Plan “Modified” alternative.

E. J.R. Weldin Archaeological Site Minimization Alternative (Figure 22)

While the Master Plan "Modified" Alternative with Option B would eliminate impacts associated with the proposed Eastpark Drive, the proposed Route 141 spur would remain, creating an impact on the northwest corner of the site thereby displacing the 18th century farmhouse ruins. This minimization alternative would provide a concrete retaining wall between the Route 141 spur and the farmhouse ruins, thereby avoiding all ruins.

The portion of the Route 141 spur which impacts the northwest corner of the site would potentially affect below ground archaeological features. These impacts would be fully mitigated with data recovery.

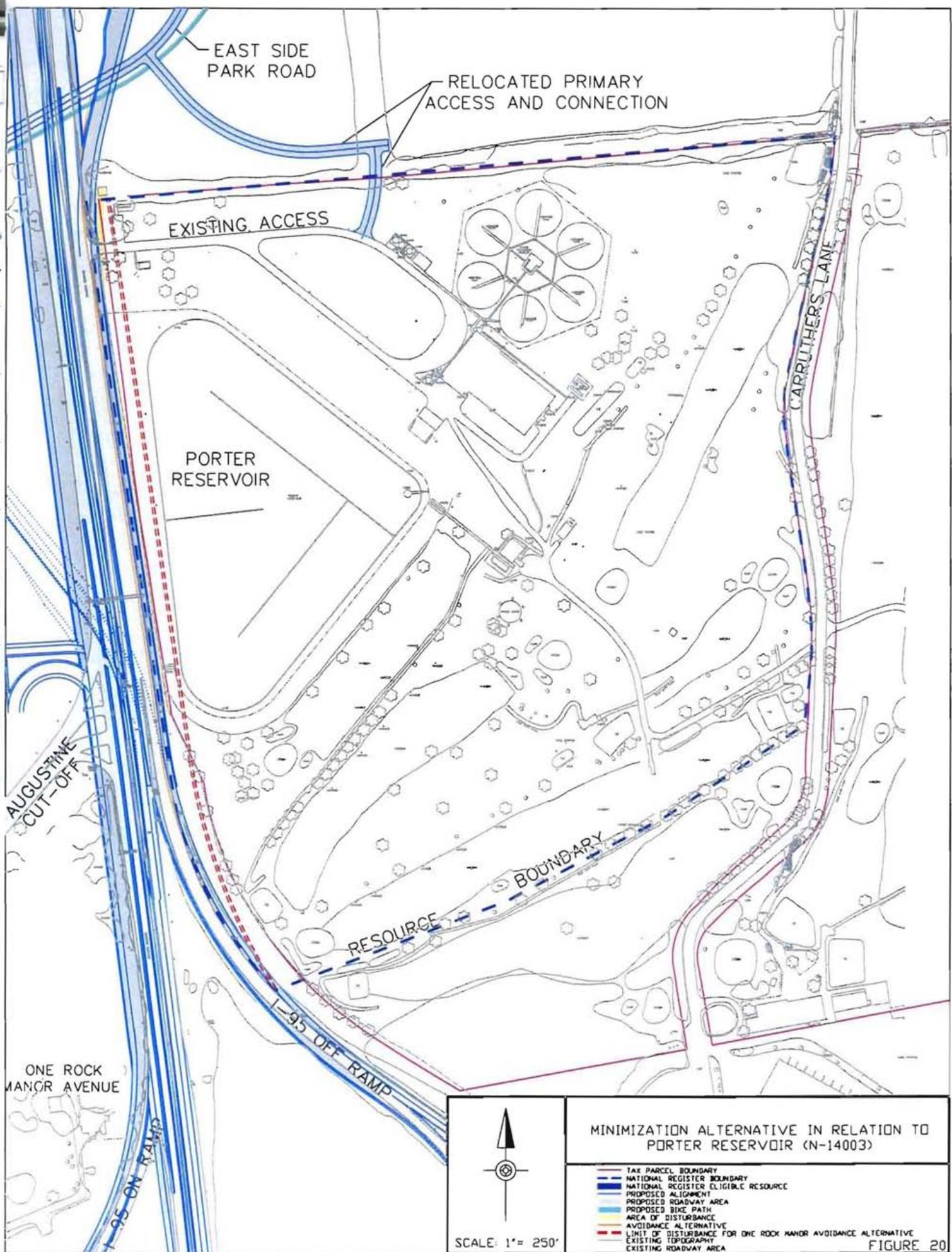


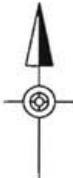
SCALE: 1" = 100'

MINIMIZATION ALTERNATIVE IN RELATION TO NEMOURS HISTORIC DISTRICT (WILLIAM MURPHY HOUSE N-544)

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

FIGURE 19

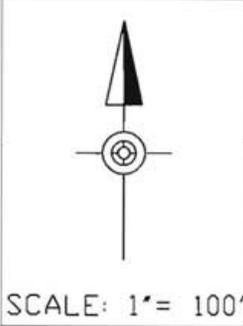
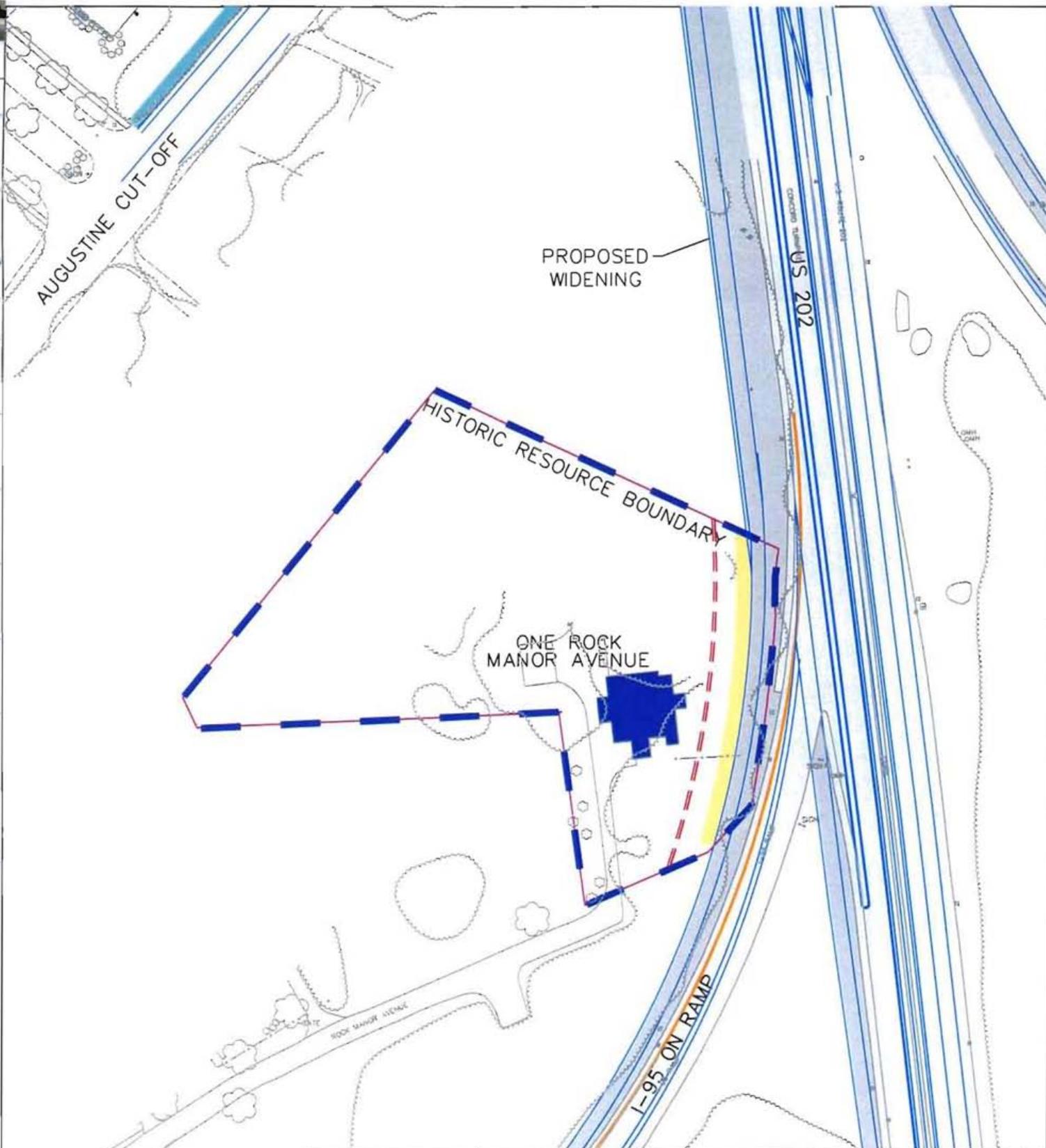



 SCALE: 1" = 250'

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

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

FIGURE 20



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

- 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

FIGURE 21