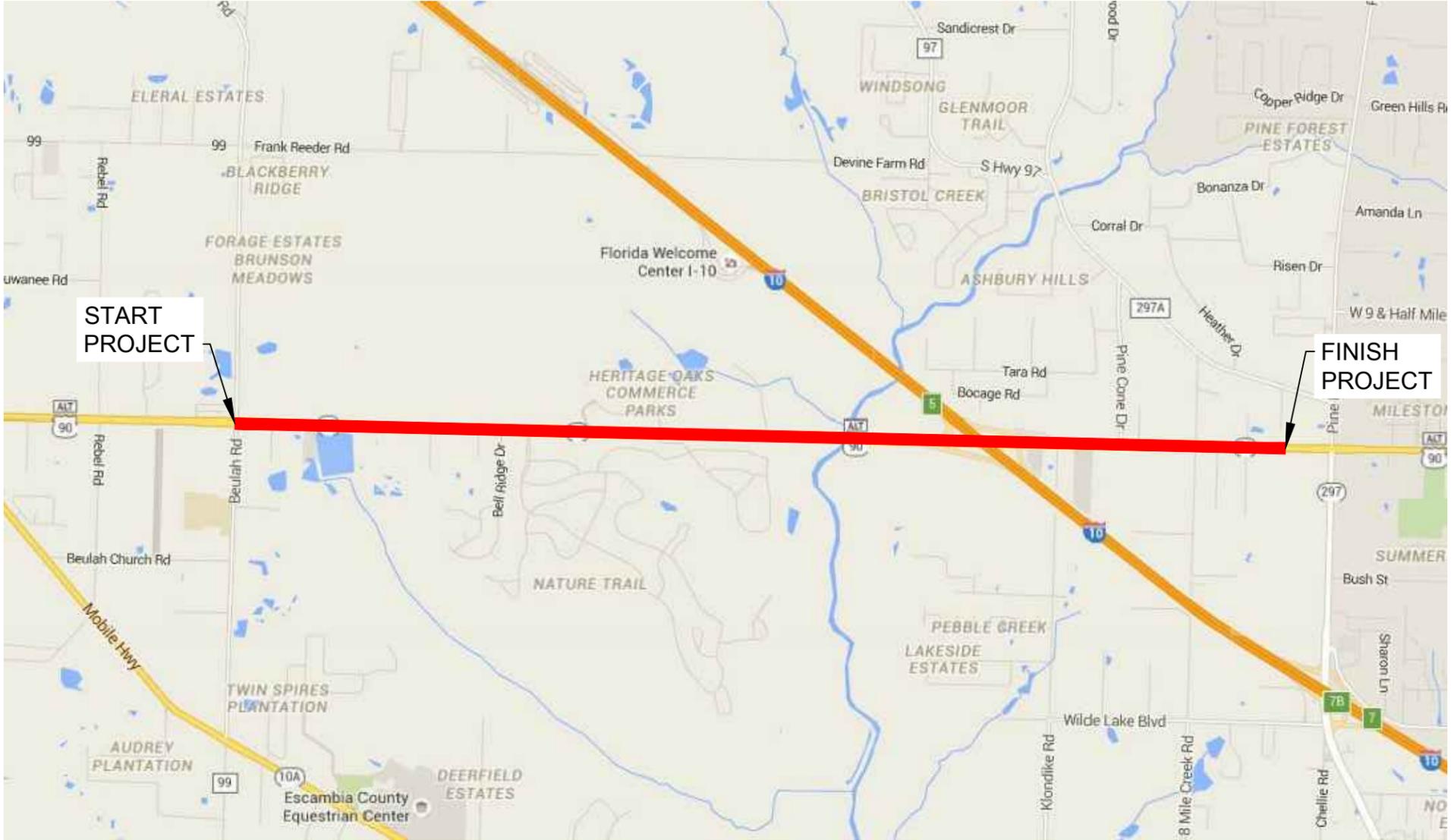


# NINE MILE ROAD ECUA UTILITY RELOCATION CONCEPT PLANS



NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS

SHEET  
NO.

ECUA-1

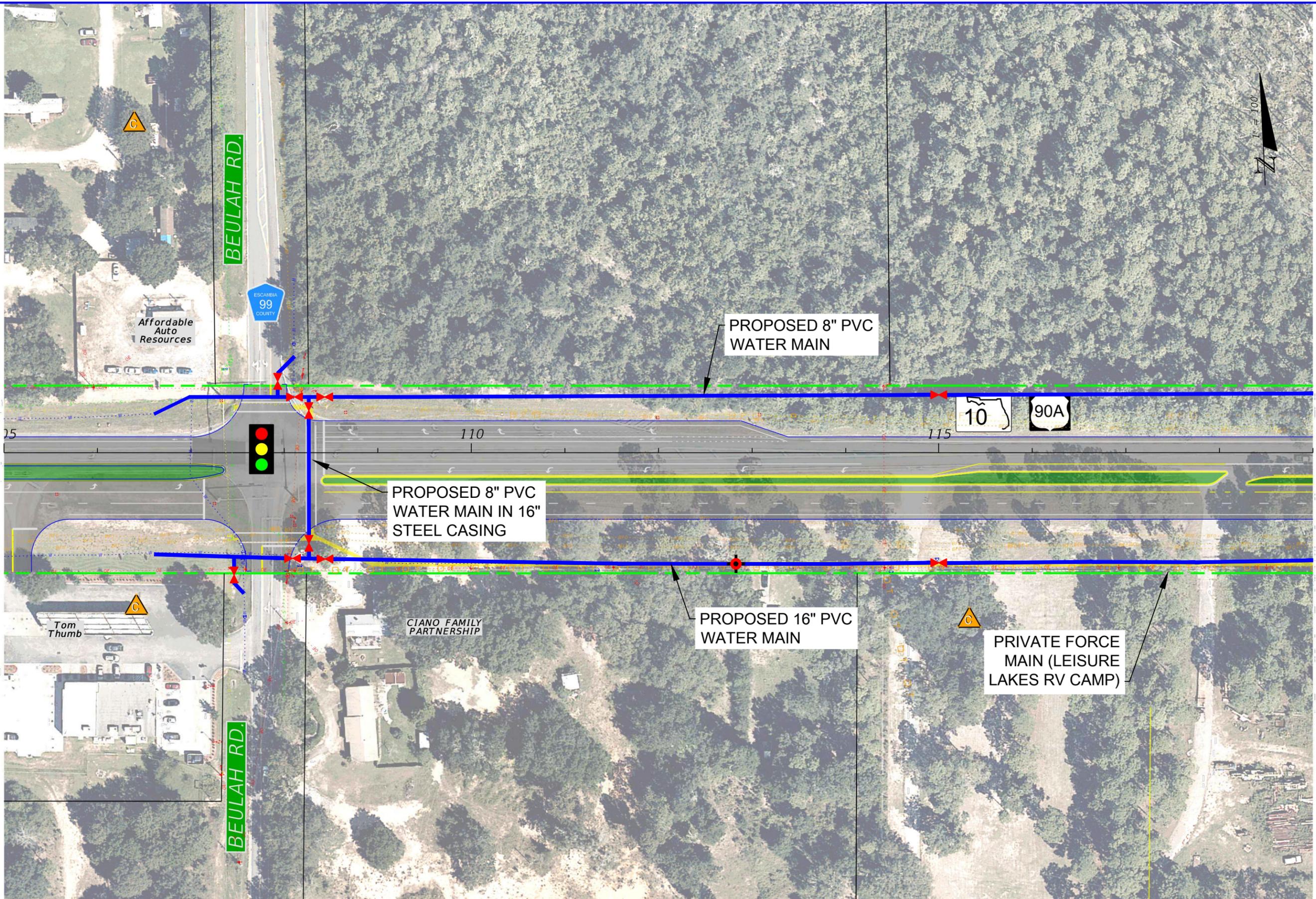
**ECUA General Notes for Concept Plans**

1. **ECUA Engineering Manual Reference:** All work shall be done in accordance with the ECUA Engineering Manual dated December 18, 2014, located at [www.ecua.fl.gov](http://www.ecua.fl.gov).
2. **Placing Mains out of Service (aka abandoning mains):** The majority of ECUA's existing mains and appurtenances will be placed out of service. The Contractor shall remove them if they conflict with new construction, cap them if they are not under roadways, or grout fill them if they are under new or future pavement.
3. **Proposed Water and Sewer Main Locations:** Proposed facilities are shown based on approximate locations. Specific locations shall be determined during design coordination with Contractor and ECUA. ECUA prefers to have mains placed under the backslope of proposed ditches where possible. Placing mains under pavement is not allowable unless authorized by ECUA. ECUA requires a minimum of 5' horizontal separation between its mains and other utilities' pipes/cables/ducts due to future access and repair needs.
4. **Sewer Manhole Joint Seal:** All sewer manholes shall use Wrapid Seal or approved equal on each manhole joint per Detail D-10 of ECUA's Engineering Manual.
5. **Sewer Air Relief Valves (ARVs):** ARVs shall be placed on sewer force mains at each end of a horizontal directional drill. See Detail D-32 of ECUA's Engineering Manual.
6. **Utility Permits:** Contractor shall apply directly to ECUA for water and sewer permits.
7. **Placing Mains in Service, Outages, etc:** Existing mains/services shall remain fully operational until new mains/services are completed, at which time the new services can be transferred to the new mains. Customer outages shall be kept to a minimum. Outages shall be scheduled and shall require ECUA pre-approval. Contractor shall be fully responsible for customer notifications (i.e. outages, boil water notices) via ECUA standard procedures.
8. **Depth of Mains, Valves, etc:** Mains shall be buried at 30" normal to 36" maximum cover measured at finished grade per Sections 556 and 576 of the ECUA Engineering Manual, unless valve heights dictate deeper depths on mains. All valves shall be standard upright configuration, with mains installed at a depth such that the valve nut is 6" or more below finished grade.
9. **Swab (Pig) Pits:** Each swab pit for water mains shall include two valves and one tee to match main size, with tee looking upward with mechanical joint cap, with cap being located inside a jumbo meter box with lid marked "water". Each swab pit for sewer mains shall include three valves, one tee, one 90 degree elbow, all matching main size, with elbow looking upward with mechanical joint cap, with cap being located inside a jumbo meter box with lid marked "sewer".
10. **Customer Connections:** The Concept Plans show some but not all customer connections. Contractor shall be responsible for confirming all connections.
11. **Fittings:** ECUA requires the minimal number of fittings required to accomplish straight runs of mains. ECUA will not allow designs that incorporate multiple fittings just to avoid alignment issues or other conflicts.
12. **Subsurface Utility Engineering (SUE):** Contractor shall provide SUE services as required and based on ECUA guidance to help identify main locations, depths, sizes, material types, etc.
13. **Documents Conflict:** In case of conflict between these Concept Plans and the ECUA Engineering Manual, Contractor shall contact ECUA for resolution.
14. **Appurtenance Locations:** Locations of valves, manholes, fire hydrants, swab pits, etc. are subject to change based on design and/or construction needs.
15. **HDD Piping:** Contractor shall utilize either HDPE or fusible PVC (fPVC) for bores. HDPE pipe shall be SDR 11 for both carrier and casing pipes with green striping for sewer or blue striping for water. fPVC pipe shall be SDR 25 for both carrier and casing pipes with green color for sewer or blue color for water. Heavy gauge tracer wire (green for sewer, blue for water) shall be affixed to bore pipe/casing such that it survives the bore.
16. **Sewer main tie-ins:** ECUA shall provide lift station shutdown coordination for sewer main tie-ins. Contractor shall be responsible for developing plan that is acceptable to ECUA. Contractor shall be responsible for providing vacuum and/or tanker trucks to remove sewer spillage resulting from tie-in operations. Contractor shall also be responsible for applying biocide and all other required cleanup.
17. **Sanitary Sewer Overflow (SSOs) Cleanup and Fines:** In the event that any sanitary sewer overflow (SSOs) occur as a result of Contractor's operations, including but not limited to bypass pumping on flow diversion activities, or any failures therein, Contractor shall be responsible for all cleanup operations required thereby as well as paying all fines and penalties attendant thereto. Any such fines and penalties would likely be in accord with stipulated penalties ECUA has entered into with the Florida Department of Environmental Protection (FDEP) pursuant to Paragraph 17 of the Consent Order regarding OGC File No. 11-0982 – wherein it provides stipulated penalties in the amount of \$500/day per discharge for discharges up to 5,000 gallons; \$1,000/day per discharge for discharges from 5,001 gallons to 10,000 gallons; \$2,500/day per discharge for discharges from 10,001 gallons to 25,000 gallons; \$5,000/day per discharge for discharges from 25,001 gallons to 100,000 gallons; and \$10,000/day per discharge for discharges in excess of 100,000 gallons. At or around the time of any such SSO and before FDEP demands payment, ECUA may require payment from Contractor in these amounts or withhold payment from Contractor in these amounts, at ECUA's option.

18. **Sewer Bypass Pumping/Piping:** On projects requiring temporary sewer bypass pumping/piping, it is the Contractor's responsibility to furnish, install, operate, and remove the appropriate sized materials and equipment and employ the site appropriate means and methods by which to complete this task without causing sewer spills, overflows, sewer backup into customers' homes, or service disruptions to ECUA sewer customers. Regardless of the means and methods chosen by the Contractor, the following conditions shall be met:
  - a. Time is of the essence with whatever flow diversion method chosen and implemented by Contractor.
  - b. It is the Contractor's responsibility to minimize, as much as practical, all impacts (i.e. above ground piping across roads and driveways) to local residents and motorists, and to maintain traffic and driveway access as much as practical. Contractor shall perform lane closures and/or detours on days and at hours as directed and allowed by governing roadway agency.
  - c. Contractor shall be equipped with tools, equipment, manpower, and material necessary to clean overflows resulting from failure of sewer bypass pumping/piping, to include use of environmentally friendly biodegradable disinfectant.
  - d. If available, and should ECUA respond to assist with problems associated with the Contractor's selected bypass pumping/piping system, then Contractor will be charged for ECUA personnel, vehicle, equipment, and material costs.
  - e. When possible, the Contractor shall construct the new infrastructure first (i.e. lift station, force main, gravity sewer, manhole) and place into service while the existing infrastructure remains in operation. When not possible to construct the new infrastructure first, the Contractor shall install its bypass pumping/piping and assure its operation prior to beginning work on the new infrastructure. For existing lift stations that must remain in operation, site must remain accessible at all times to ECUA vehicles (service trucks, tanker trucks, vacuum trucks, etc), Gulf Power service trucks, and bypass pumps and generators.
  - f. Minimum requirements for bypass pumping/piping with gas powered engines/pumps:
    1. Max dBA rating at 7 meters shall not exceed 72 dBA (less than 72 dBA is desirable) and shall be accomplished via the use of specialized residential grade noise attenuators/mufflers and/or baffles.
    2. Primary system shall be backed up with redundant secondary system.
    3. Secondary pump system shall be supplied and equipped with emergency float. An auto-dialer shall be installed to notify the Contractor of emergency conditions. Auto-dialer shall dial the following personnel, in order:
      - a. Contractor representative #1
      - b. Contractor representative #2
      - c. Contractor representative #3
      - d. Bypass pump company representative #1
      - e. Bypass pump company representative #2
      - f. ECUA Project Inspector
      - g. ECUA lift station SCADA (969-2211)
    4. Contractor shall provide name and 2 phone numbers each of at least three Contractor representatives that will be available to respond to emergencies. This info will be supplied to the Engineer, ECUA, and the FDEP.
    5. Contractor shall have crews, equipment, and supplies capable of making needed repairs on site within two hours of initial notification (first contact attempt) of an emergency situation. Contractor shall be fined \$1,000 for each hour it is not on site and fully operational after the initial two hour response window.
    6. Contractor shall provide repairs and have flow diversion back in full operation within 4 hours of initial notification (first contact attempt). Contractor shall be fined \$1,000 for each hour the bypass pumping/piping system is not operational after the initial four hour response window.
    7. Fuel tanks shall meet all regulatory requirements (i.e. double hull, etc.).
    8. All suction and discharge piping shall be welded HDPE and all valves, check valves, and other fittings shall be flanged.
  - g. Minimum requirements for bypass pumping/piping with vacuum trucks, tanker trucks, or frac (storage) tanks:
    1. All material collected by vacuum trucks, tanker trucks, and frac tanks must be taken to ECUA's Central WRF in Cantonment unless otherwise coordinated, allowed, and directed ECUA.
  - h. Minimum requirements for bypass pumping/piping with usage of collection system storage:
    1. Although heavily discouraged, it is understood that very brief moments of collection system storage are needed from time to time in order to incorporate bypass piping/pumping measures. Contractor shall schedule said moments to very low flow periods and for very brief periods. Contractor is responsible for all damages resulting from sewer back-ups onto private properties as a result of its use of collection system storage. Contractor is responsible for cleaning portions of collection system used for storage should deposition as a result of system storage.
  - i. Minimum requirements for bypass pumping/piping with other means and methods not contained in this section:
    1. Other bypass pumping/piping methods system requires ECUA review and approval.

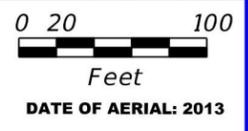
**LEGEND**

-  VALVE
-  FIRE HYDRANT ASSEMBLY
-  EXISTING MANHOLE
-  PROPOSED MANHOLE
-  PROPOSED FORCE MAIN
-  EXISTING FORCE MAIN
-  PROPOSED GRAVITY MAIN
-  EXISTING GRAVITY MAIN
-  PROPOSED WATER MAIN
-  EXISTING WATER MAIN
-  SWAB (PIG) PIT
-  SEWER CHECK VALVE VAULT



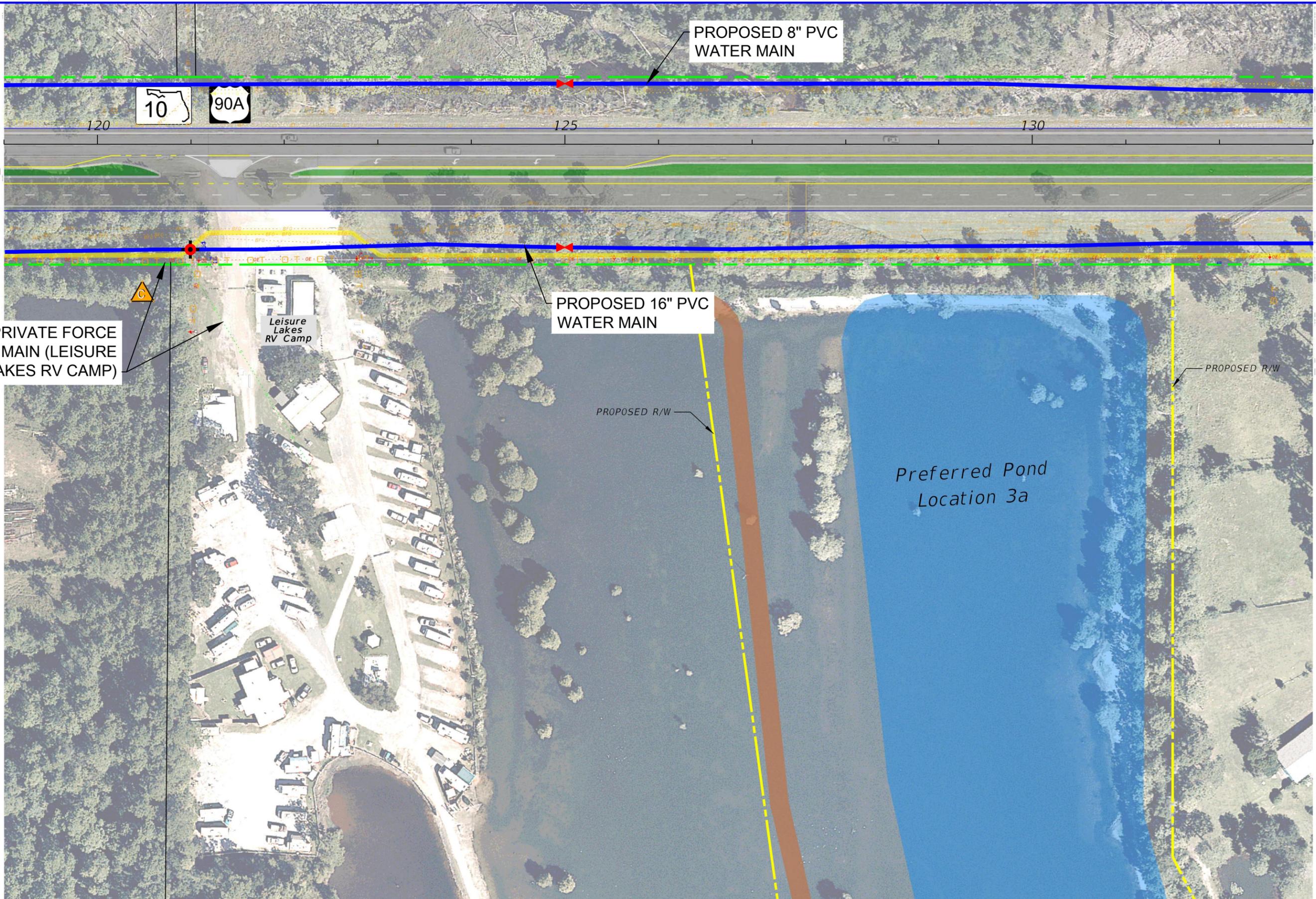
**LEGEND**

- |   |                                      |  |                       |   |                          |
|---|--------------------------------------|--|-----------------------|---|--------------------------|
|  | <b>WETLANDS</b>                      |  | <b>EXISTING ROW</b>   |  | <b>PROPOSED BRIDGE</b>   |
|  | <b>FLOODPLAINS</b>                   |  | <b>PROPERTY LINES</b> |  | <b>PROPOSED ROADWAY</b>  |
|  | <b>POTENTIALLY CONTAMINATED SITE</b> |  | <b>SIDEWALK/TRAIL</b> |  | <b>POND ALTERNATIVES</b> |



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET NO.  
**ECUA-3**



PRIVATE FORCE  
MAIN (LEISURE  
LAKES  
RV CAMP)

Leisure  
Lakes  
RV Camp

PROPOSED 16" PVC  
WATER MAIN

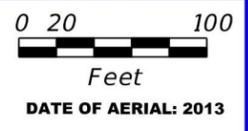
PROPOSED R/W

Preferred Pond  
Location 3a

PROPOSED R/W

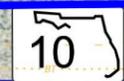
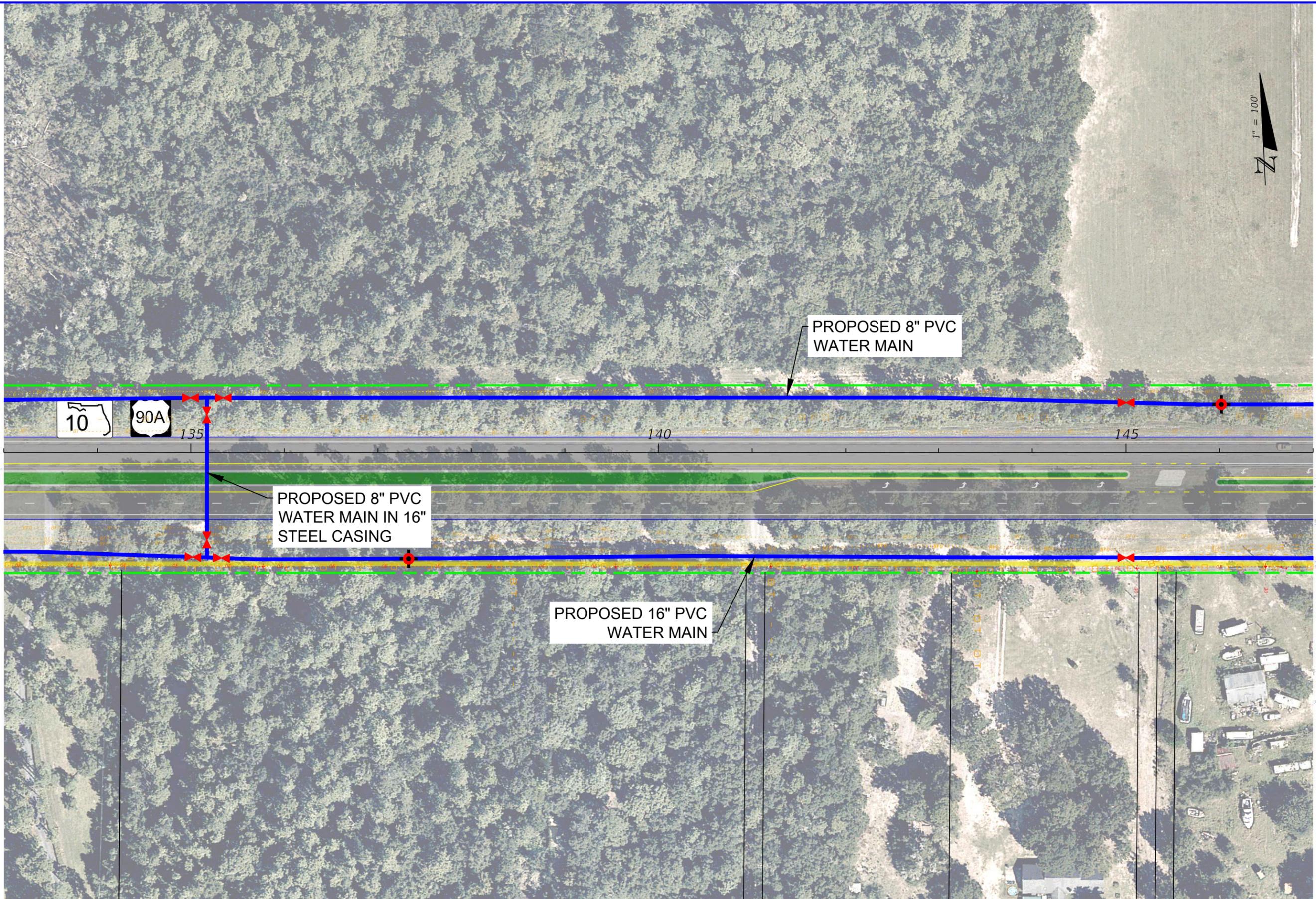
**LEGEND**

	<b>WETLANDS</b>		<b>EXISTING ROW</b>		<b>PROPOSED BRIDGE</b>
	<b>FLOODPLAINS</b>		<b>PROPERTY LINES</b>		<b>PROPOSED ROADWAY</b>
	<b>POTENTIALLY CONTAMINATED SITE</b>		<b>SIDEWALK/TRAIL</b>		<b>POND ALTERNATIVES</b>



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET  
NO.  
**ECUA-4**



90A

135

140

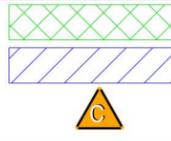
145

PROPOSED 8" PVC  
WATER MAIN IN 16"  
STEEL CASING

PROPOSED 8" PVC  
WATER MAIN

PROPOSED 16" PVC  
WATER MAIN

**LEGEND**



**WETLANDS**  
**FLOODPLAINS**  
**POTENTIALLY  
CONTAMINATED SITE**

**EXISTING ROW**  
**PROPERTY LINES**  
**SIDEWALK/TRAIL**

**PROPOSED BRIDGE**  
**PROPOSED ROADWAY**  
**POND ALTERNATIVES**



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET  
NO.  
**ECUA-5**



Navy Outlying Field #8



150

155

160

PROPOSED 8" PVC WATER MAIN

PROPOSED 12" GRAVITY SEWER MAIN

PROPOSED 8" PVC WATER MAIN IN 16" STEEL CASING

PROPOSED 3" FORCE MAIN IN 6" STEEL CASING

Bell Ridge Forest Neighborhood

METERS FOR CUSTOMERS ON PRIVATE ROAD

METERS FOR CUSTOMERS ON PATRICK LANE

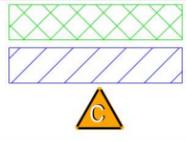
PROPOSED 16" PVC WATER MAIN

BELL RIDGE SUBDIVISION IS NOT SEWERED

PATRICK LN.

BELL RIDGE DR.

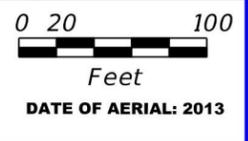
LEGEND



WETLANDS  
FLOODPLAINS  
POTENTIALLY CONTAMINATED SITE

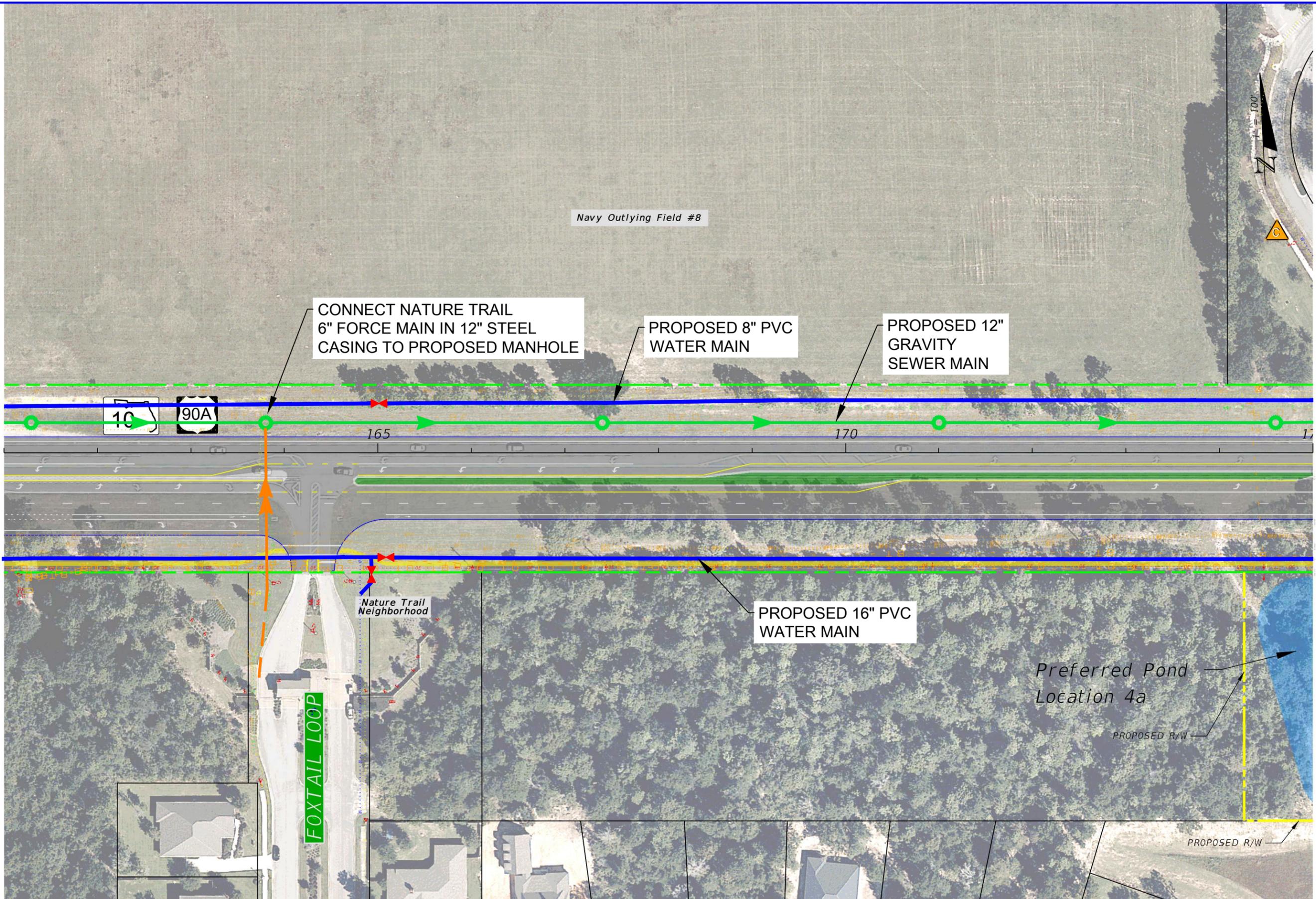
EXISTING ROW  
PROPERTY LINES  
SIDEWALK/TRAIL

PROPOSED BRIDGE  
PROPOSED ROADWAY  
POND ALTERNATIVES



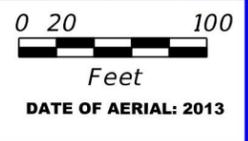
NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS

SHEET NO.  
ECUA-6



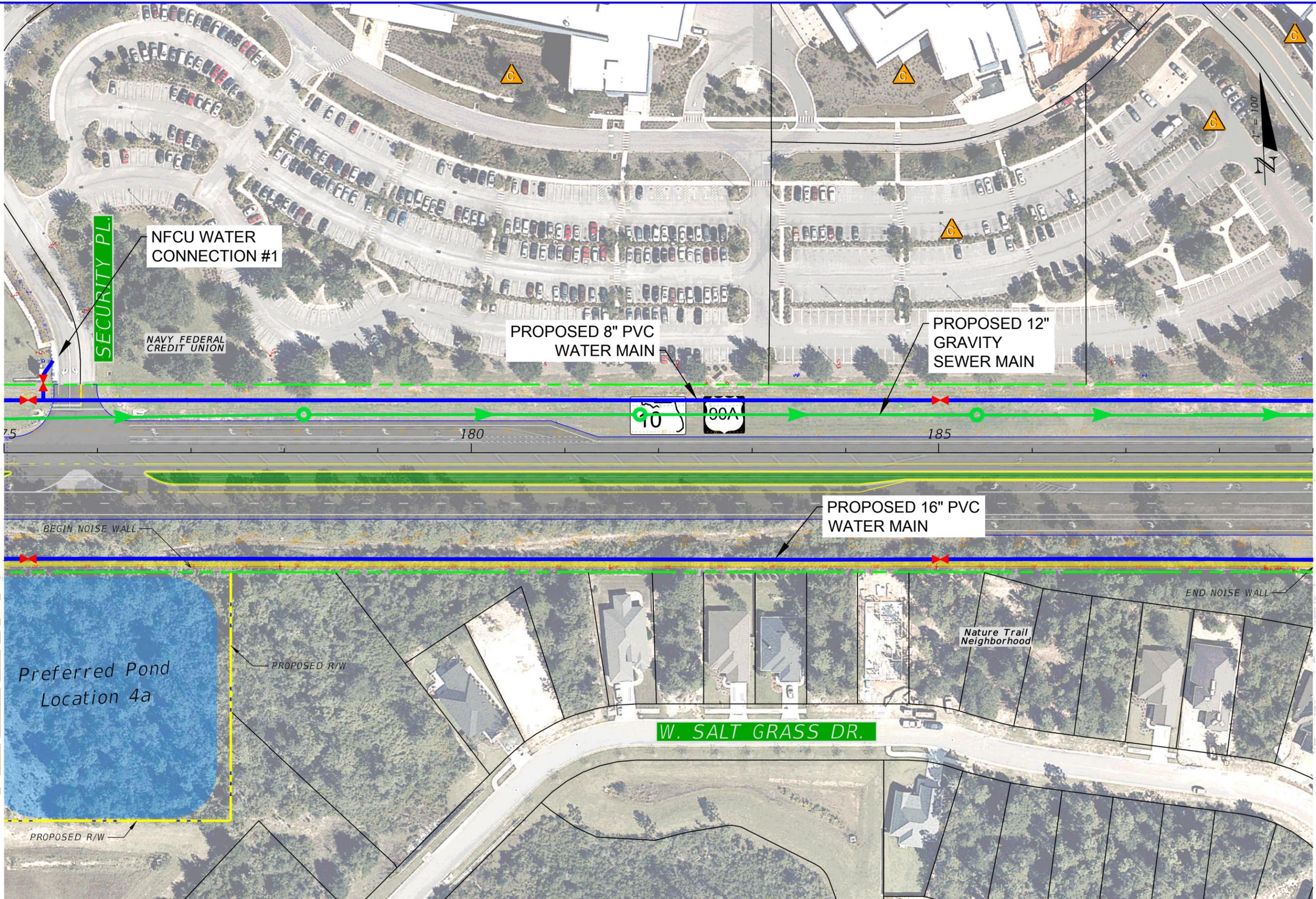
**LEGEND**

	<b>WETLANDS</b>		<b>EXISTING ROW</b>		<b>PROPOSED BRIDGE</b>
	<b>FLOODPLAINS</b>		<b>PROPERTY LINES</b>		<b>PROPOSED ROADWAY</b>
	<b>POTENTIALLY CONTAMINATED SITE</b>		<b>SIDEWALK/TRAIL</b>		<b>POND ALTERNATIVES</b>



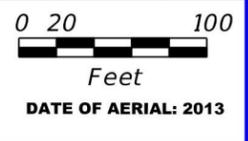
**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET NO.  
**ECUA-7**



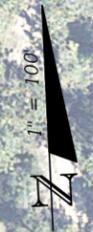
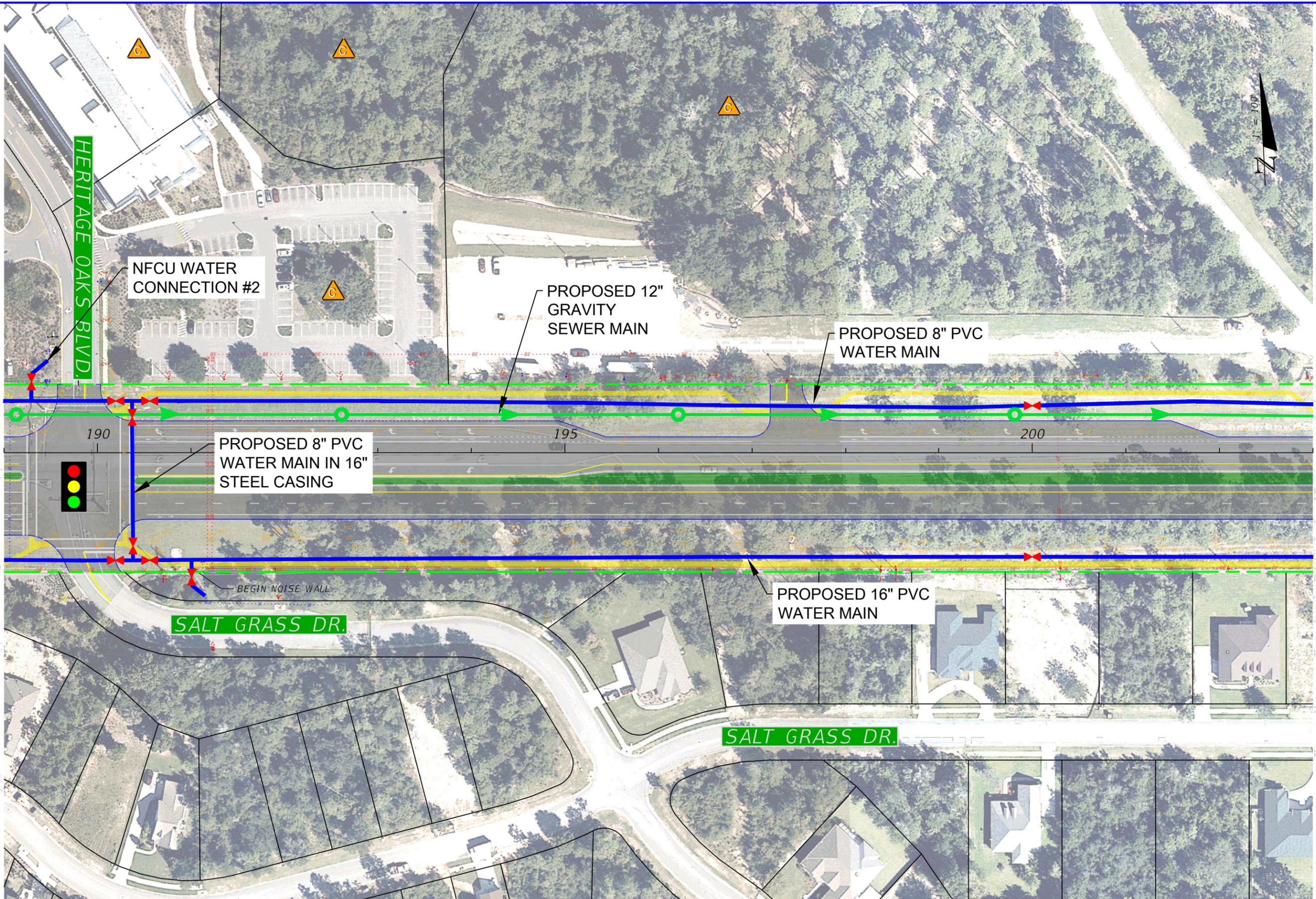
**LEGEND**

	<b>WETLANDS</b>		<b>EXISTING ROW</b>		<b>PROPOSED BRIDGE</b>
	<b>FLOODPLAINS</b>		<b>PROPERTY LINES</b>		<b>PROPOSED ROADWAY</b>
	<b>POTENTIALLY CONTAMINATED SITE</b>		<b>SIDEWALK/TRAIL</b>		<b>POND ALTERNATIVES</b>

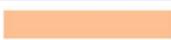


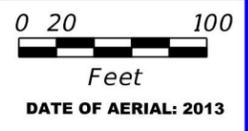
**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET NO.  
**ECUA-8**



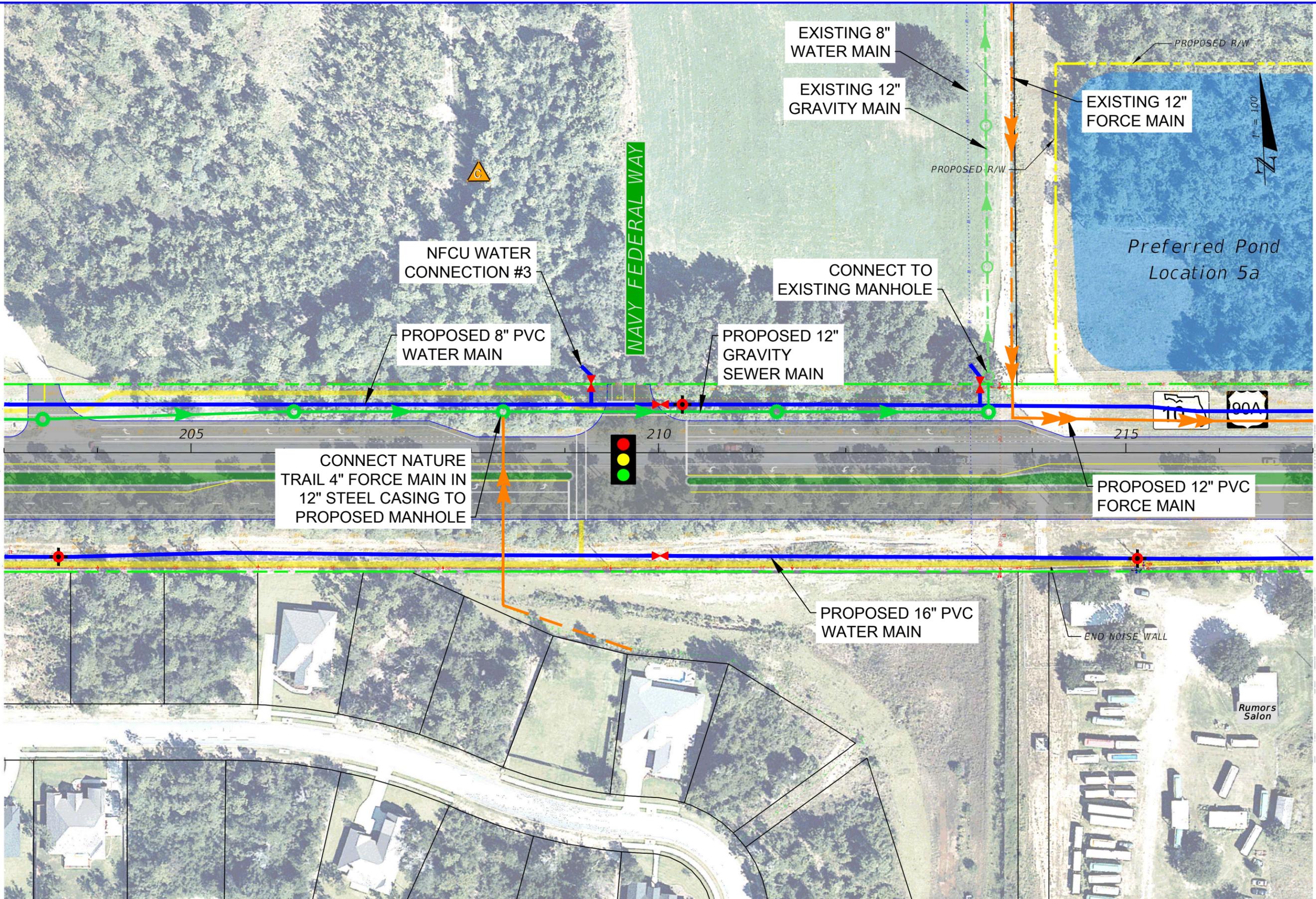
**LEGEND**

- |   |                                      |   |                       |   |                          |
|---|--------------------------------------|---|-----------------------|---|--------------------------|
|  | <b>WETLANDS</b>                      |  | <b>EXISTING ROW</b>   |  | <b>PROPOSED BRIDGE</b>   |
|  | <b>FLOODPLAINS</b>                   |  | <b>PROPERTY LINES</b> |  | <b>PROPOSED ROADWAY</b>  |
|  | <b>POTENTIALLY CONTAMINATED SITE</b> |  | <b>SIDEWALK/TRAIL</b> |  | <b>POND ALTERNATIVES</b> |



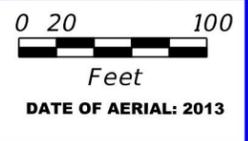
**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET NO.  
**ECUA-9**



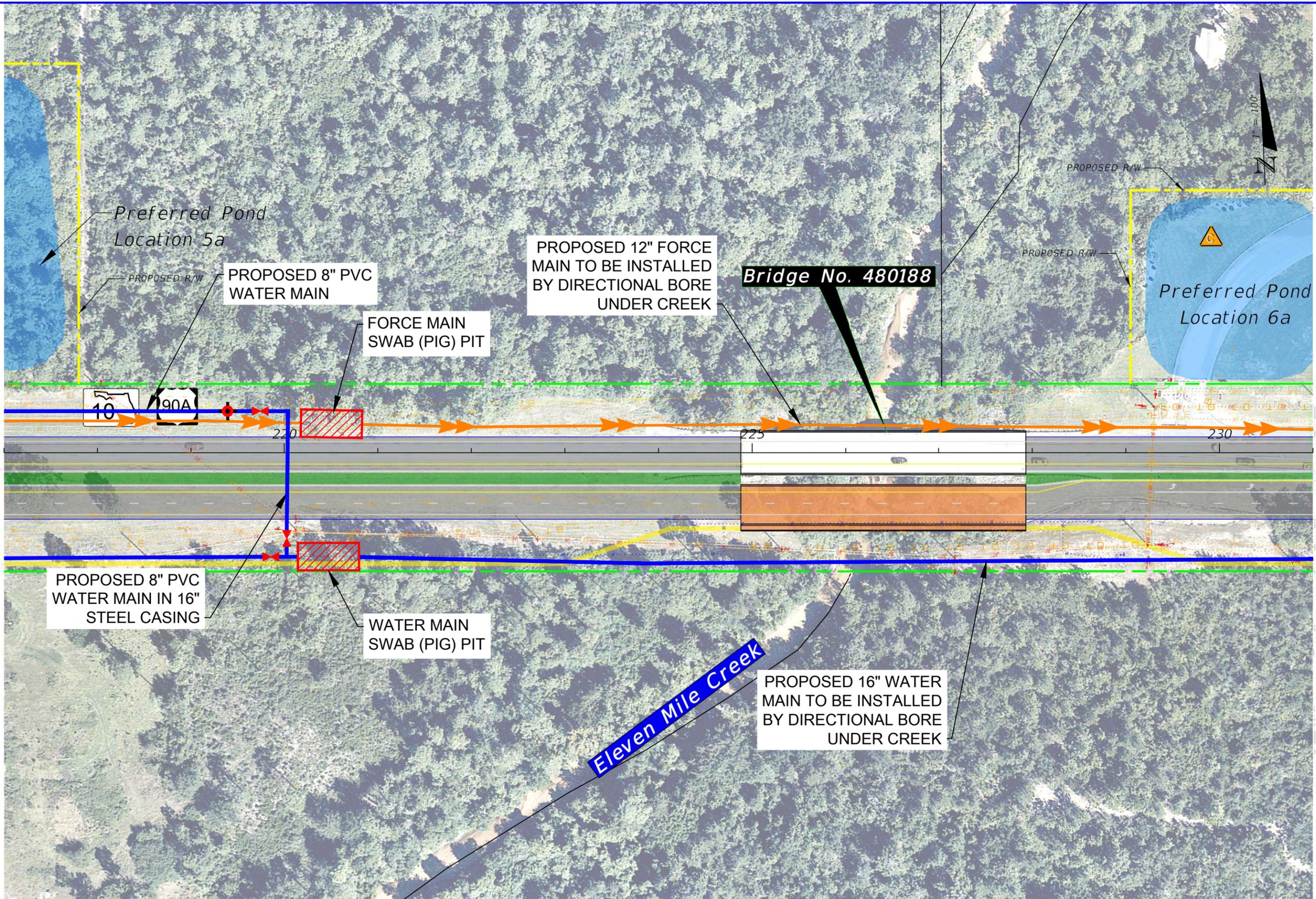
**LEGEND**

- |   |                                      |  |                       |   |                          |
|---|--------------------------------------|--|-----------------------|---|--------------------------|
|  | <b>WETLANDS</b>                      |  | <b>EXISTING ROW</b>   |  | <b>PROPOSED BRIDGE</b>   |
|  | <b>FLOODPLAINS</b>                   |  | <b>PROPERTY LINES</b> |  | <b>PROPOSED ROADWAY</b>  |
|  | <b>POTENTIALLY CONTAMINATED SITE</b> |  | <b>SIDEWALK/TRAIL</b> |  | <b>POND ALTERNATIVES</b> |



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET NO.  
ECUA-10



Preferred Pond Location 5a

PROPOSED R/W

PROPOSED 8" PVC WATER MAIN

FORCE MAIN SWAB (PIG) PIT

PROPOSED 12" FORCE MAIN TO BE INSTALLED BY DIRECTIONAL BORE UNDER CREEK

**Bridge No. 480188**

PROPOSED R/W

PROPOSED R/W

Preferred Pond Location 6a

10 90A

220

225

230

PROPOSED 8" PVC WATER MAIN IN 16" STEEL CASING

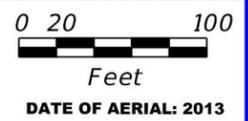
WATER MAIN SWAB (PIG) PIT

**Eleven Mile Creek**

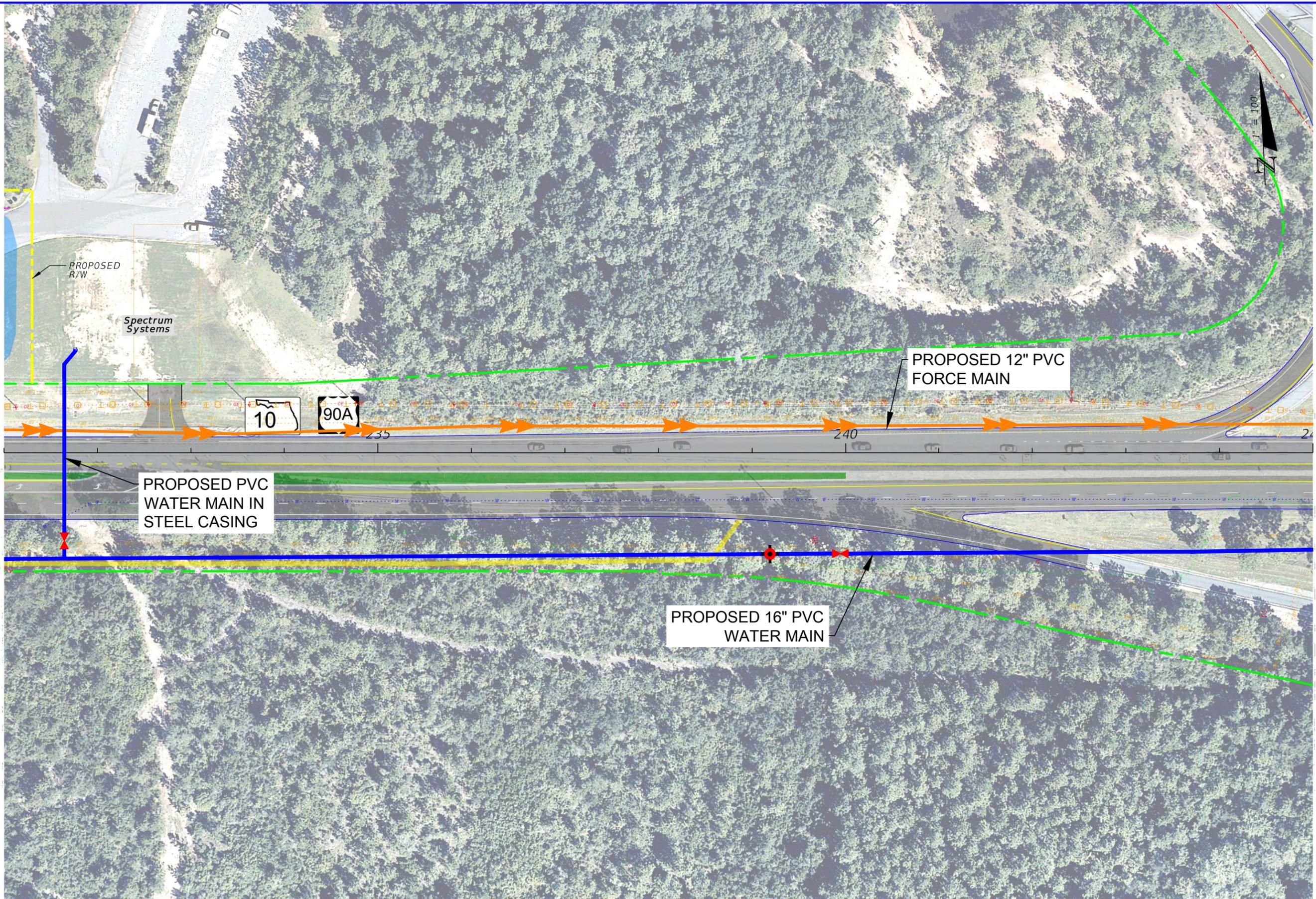
PROPOSED 16" WATER MAIN TO BE INSTALLED BY DIRECTIONAL BORE UNDER CREEK

**LEGEND**

	<b>WETLANDS</b>		<b>EXISTING ROW</b>		<b>PROPOSED BRIDGE</b>
	<b>FLOODPLAINS</b>		<b>PROPERTY LINES</b>		<b>PROPOSED ROADWAY</b>
	<b>POTENTIALLY CONTAMINATED SITE</b>		<b>SIDEWALK/TRAIL</b>		<b>POND ALTERNATIVES</b>



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**



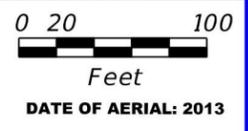
PROPOSED PVC  
WATER MAIN IN  
STEEL CASING

PROPOSED 12" PVC  
FORCE MAIN

PROPOSED 16" PVC  
WATER MAIN

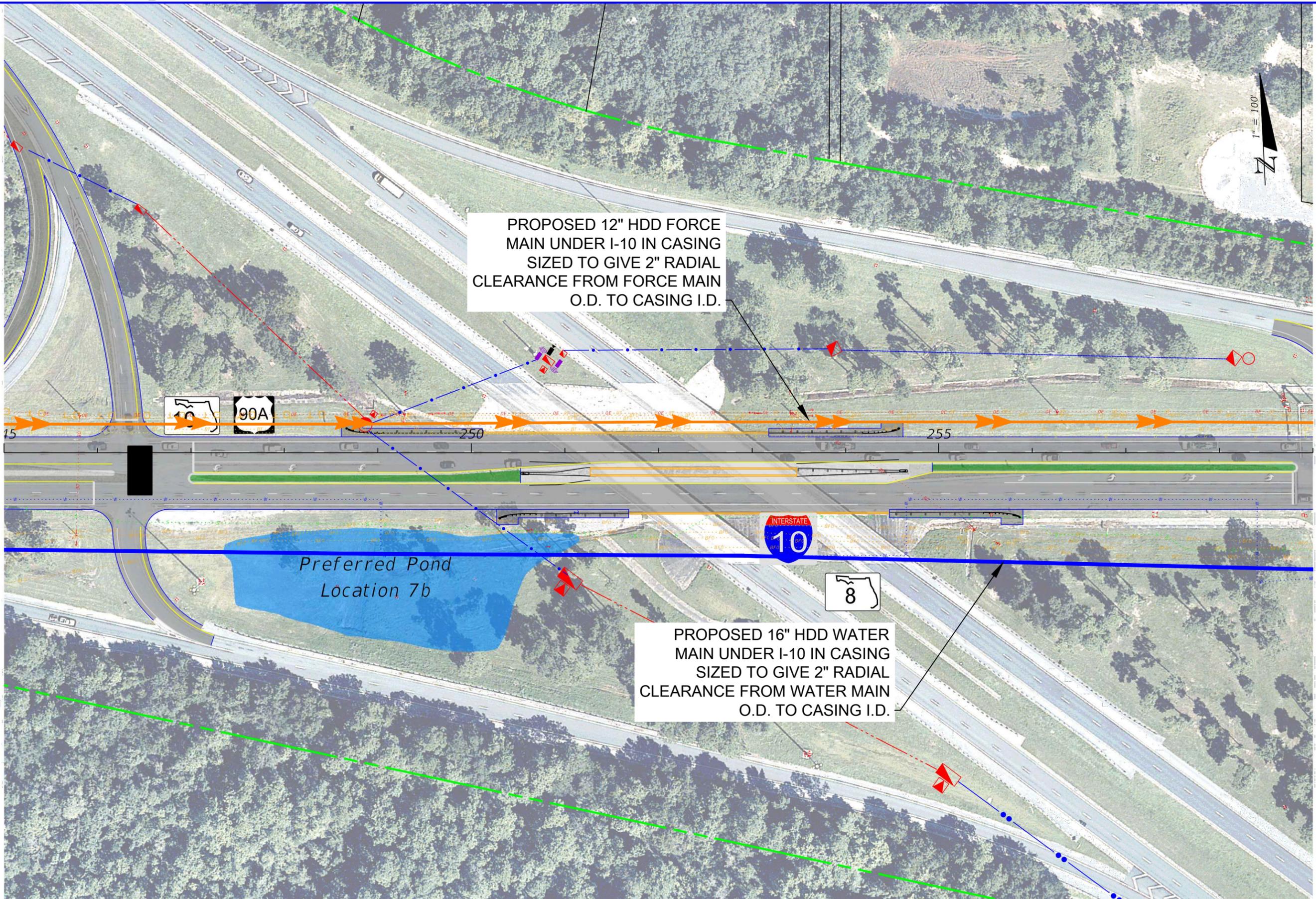
**LEGEND**

	<b>WETLANDS</b>		<b>EXISTING ROW</b>		<b>PROPOSED BRIDGE</b>
	<b>FLOODPLAINS</b>		<b>PROPERTY LINES</b>		<b>PROPOSED ROADWAY</b>
	<b>POTENTIALLY CONTAMINATED SITE</b>		<b>SIDEWALK/TRAIL</b>		<b>POND ALTERNATIVES</b>



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET  
NO.  
ECUA-12



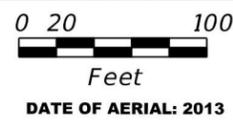
PROPOSED 12" HDD FORCE MAIN UNDER I-10 IN CASING SIZED TO GIVE 2" RADIAL CLEARANCE FROM FORCE MAIN O.D. TO CASING I.D.

PROPOSED 16" HDD WATER MAIN UNDER I-10 IN CASING SIZED TO GIVE 2" RADIAL CLEARANCE FROM WATER MAIN O.D. TO CASING I.D.

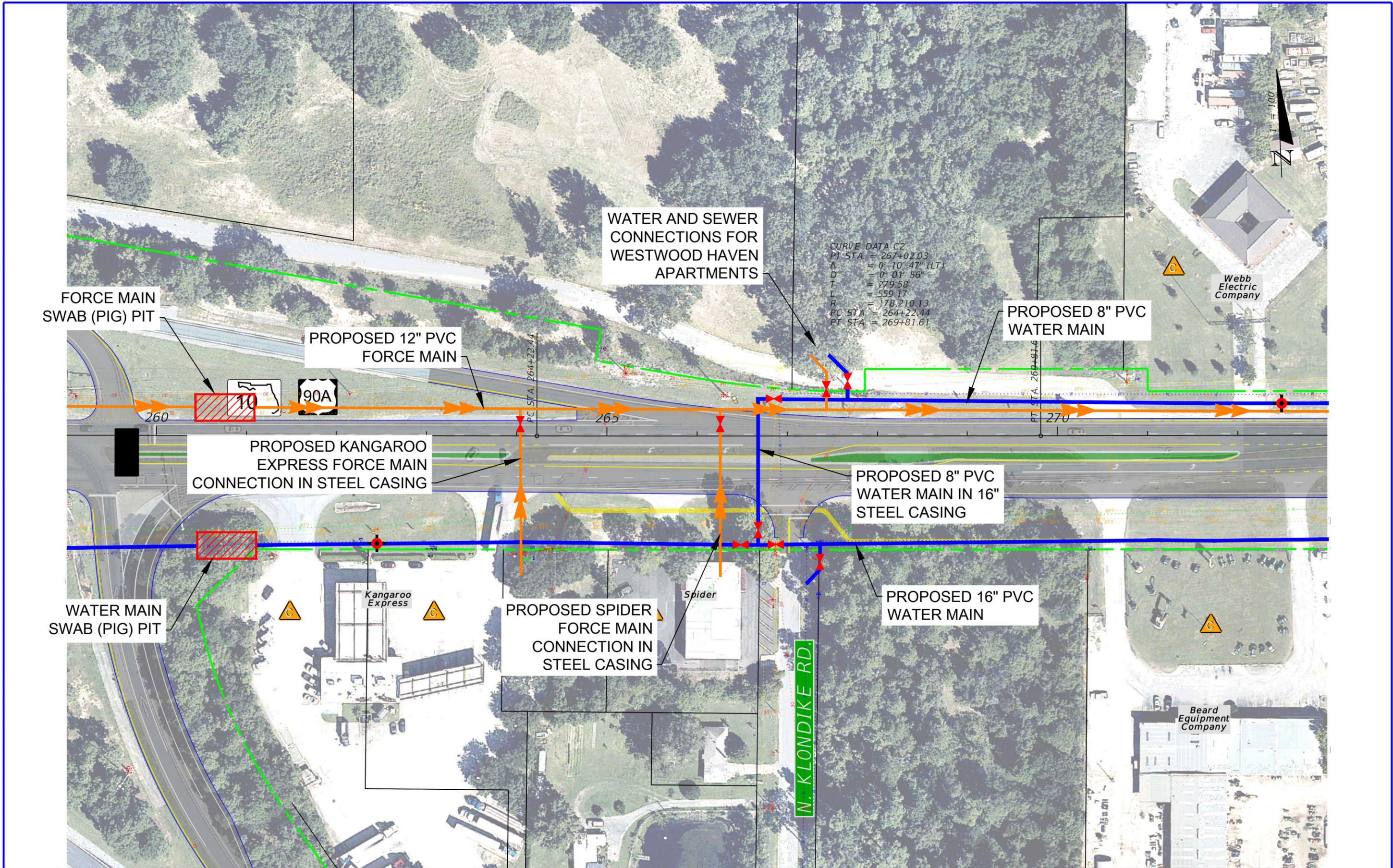
Preferred Pond Location 7b

**LEGEND**

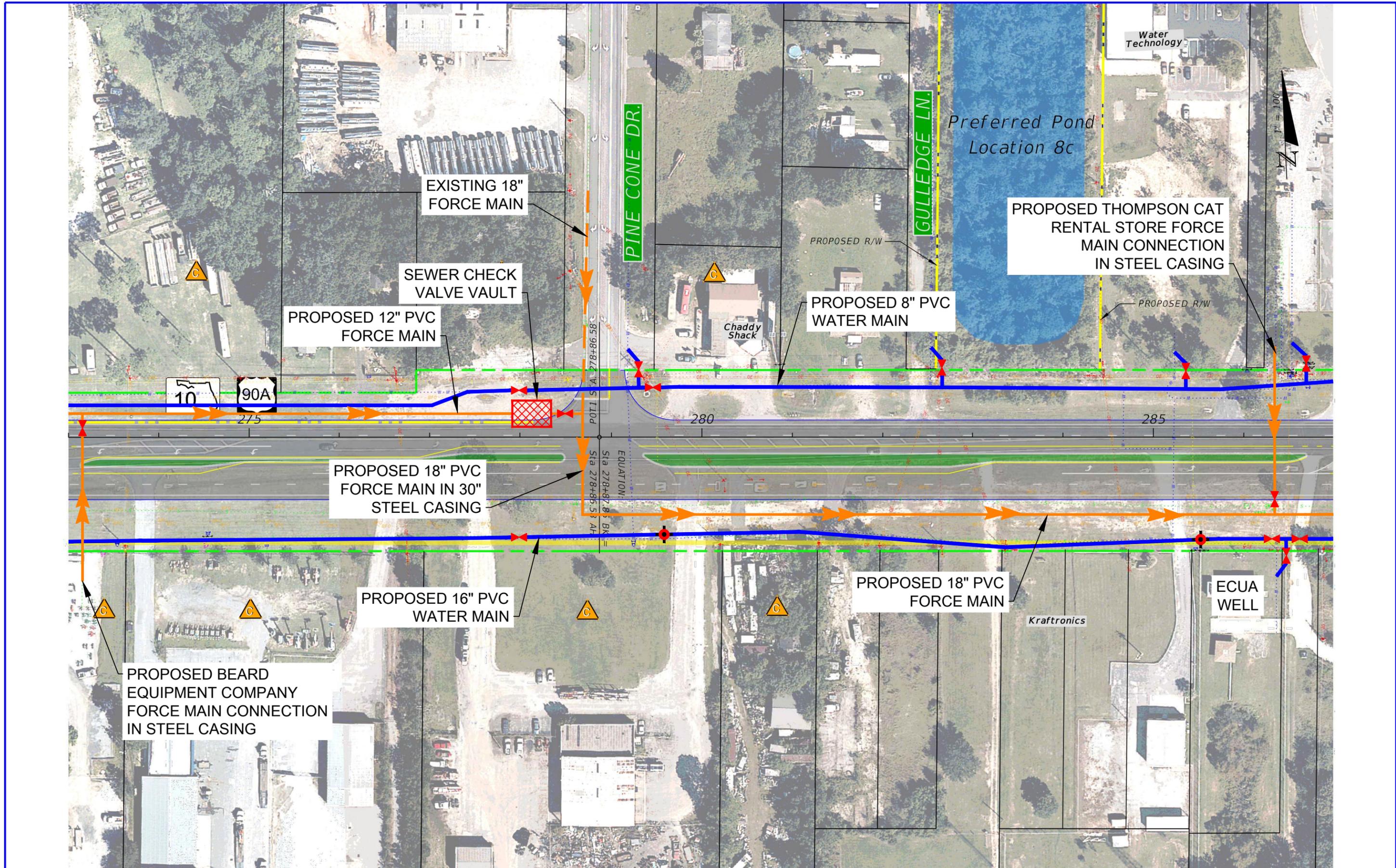
- |   |                                      |  |                       |   |                          |
|---|--------------------------------------|--|-----------------------|---|--------------------------|
|  | <b>WETLANDS</b>                      |  | <b>EXISTING ROW</b>   |  | <b>PROPOSED BRIDGE</b>   |
|  | <b>FLOODPLAINS</b>                   |  | <b>PROPERTY LINES</b> |  | <b>PROPOSED ROADWAY</b>  |
|  | <b>POTENTIALLY CONTAMINATED SITE</b> |  | <b>SIDEWALK/TRAIL</b> |  | <b>POND ALTERNATIVES</b> |



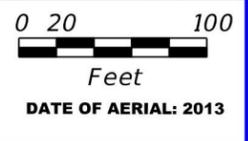
**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**



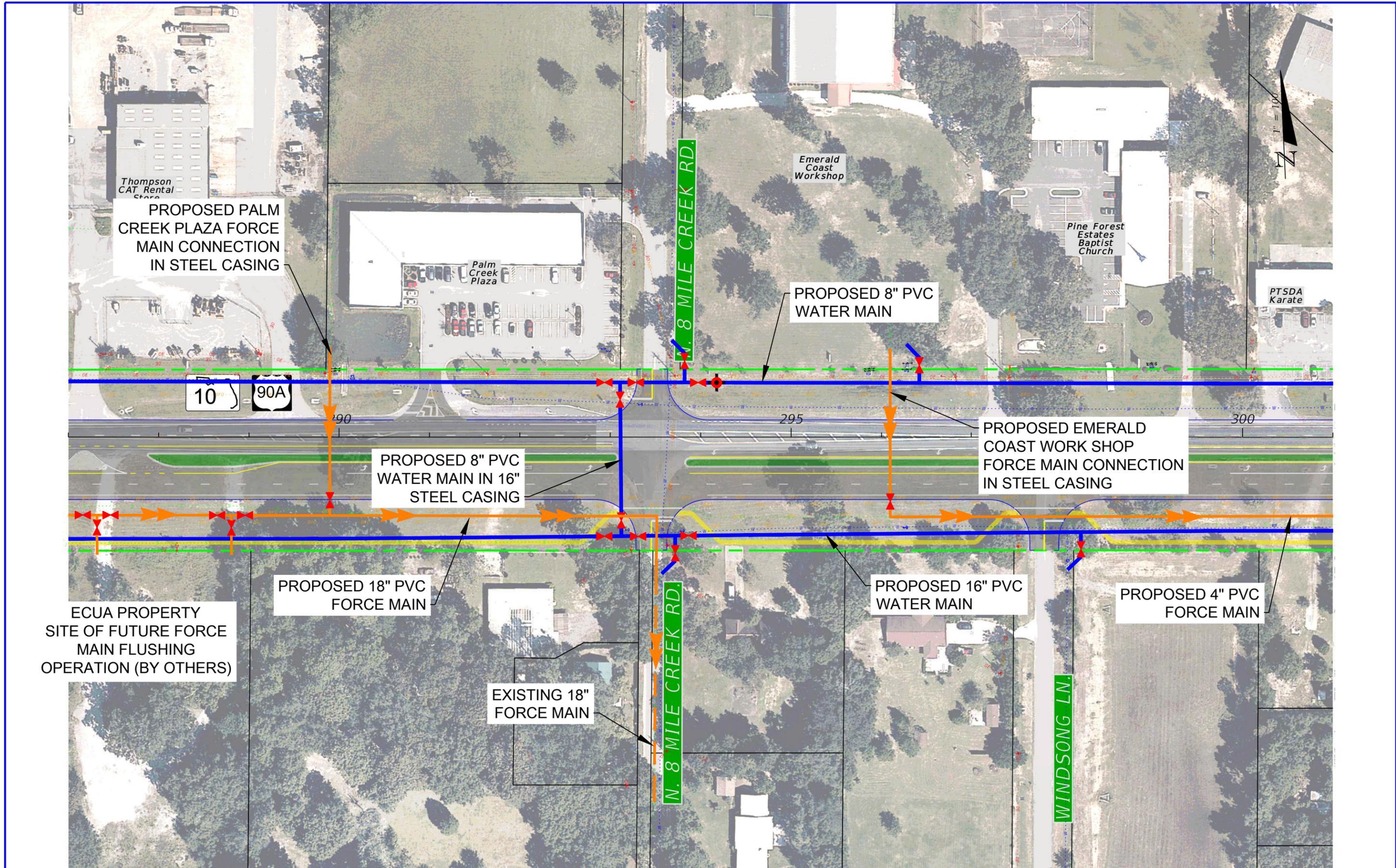
<b>LEGEND</b>	 <b>WETLANDS</b>	 <b>EXISTING ROW</b>	 <b>PROPOSED BRIDGE</b>	0 20 100 Feet DATE OF AERIAL: 2013
	 <b>FLOODPLAINS</b>	 <b>PROPERTY LINES</b>	 <b>PROPOSED ROADWAY</b>	
	 <b>POTENTIALLY CONTAMINATED SITE</b>	 <b>SIDEWALK/TRAIL</b>	 <b>POND ALTERNATIVES</b>	



<b>LEGEND</b>		<b>WETLANDS</b>		<b>EXISTING ROW</b>		<b>PROPOSED BRIDGE</b>
		<b>FLOODPLAINS</b>		<b>PROPERTY LINES</b>		<b>PROPOSED ROADWAY</b>
		<b>POTENTIALLY CONTAMINATED SITE</b>		<b>SIDEWALK/TRAIL</b>		<b>POND ALTERNATIVES</b>



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**



PROPOSED PALM CREEK PLAZA FORCE MAIN CONNECTION IN STEEL CASING

PROPOSED 8" PVC WATER MAIN

PROPOSED EMERALD COAST WORK SHOP FORCE MAIN CONNECTION IN STEEL CASING

PROPOSED 8" PVC WATER MAIN IN 16" STEEL CASING

PROPOSED 18" PVC FORCE MAIN

PROPOSED 16" PVC WATER MAIN

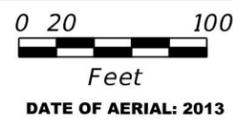
PROPOSED 4" PVC FORCE MAIN

ECUA PROPERTY SITE OF FUTURE FORCE MAIN FLUSHING OPERATION (BY OTHERS)

EXISTING 18" FORCE MAIN

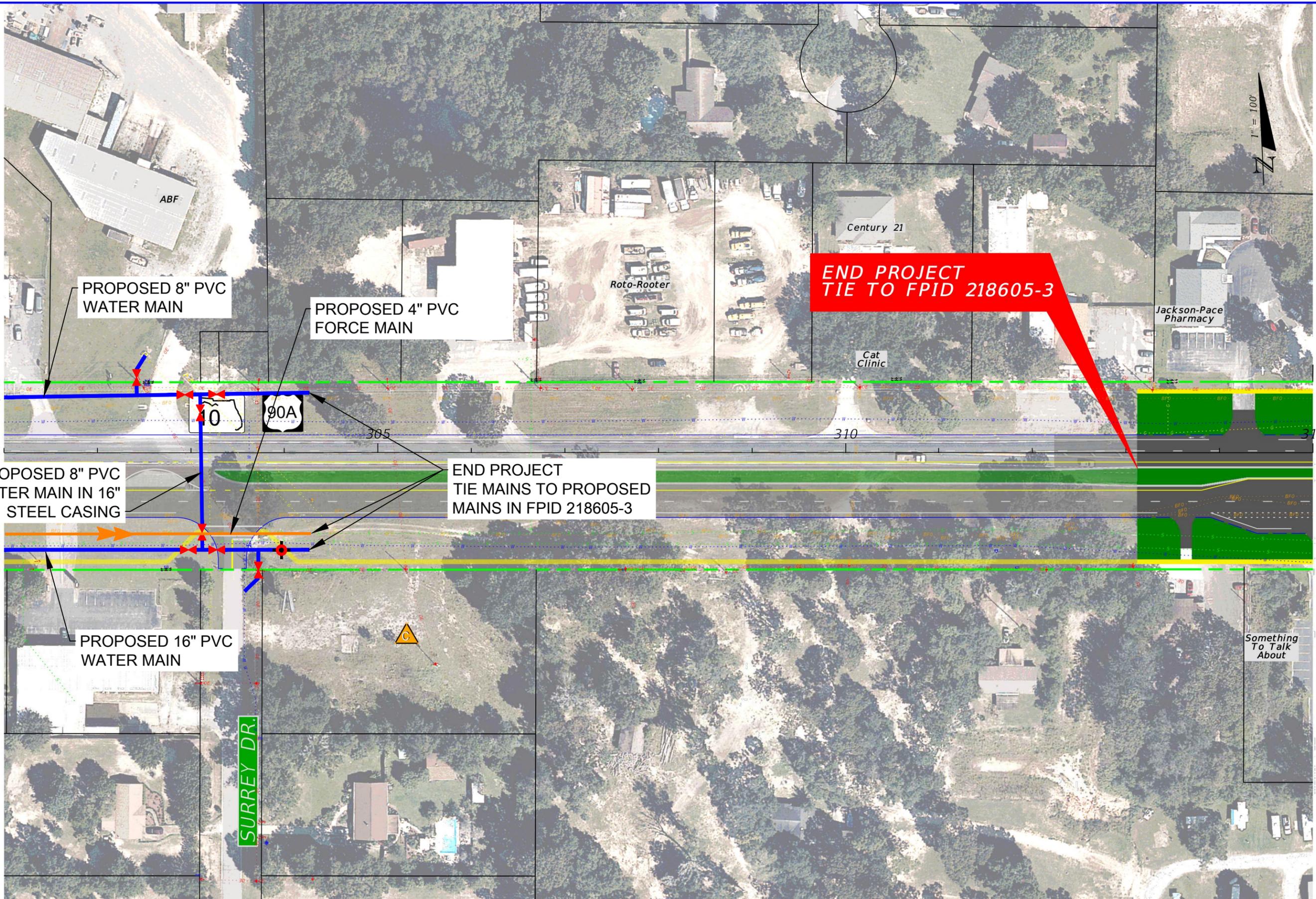
**LEGEND**

- |   |                                      |  |                       |   |                          |
|---|--------------------------------------|--|-----------------------|---|--------------------------|
|  | <b>WETLANDS</b>                      |  | <b>EXISTING ROW</b>   |  | <b>PROPOSED BRIDGE</b>   |
|  | <b>FLOODPLAINS</b>                   |  | <b>PROPERTY LINES</b> |  | <b>PROPOSED ROADWAY</b>  |
|  | <b>POTENTIALLY CONTAMINATED SITE</b> |  | <b>SIDEWALK/TRAIL</b> |  | <b>POND ALTERNATIVES</b> |



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET NO.  
ECUA-16



**END PROJECT  
TIE TO FPID 218605-3**

**END PROJECT  
TIE MAINS TO PROPOSED  
MAINS IN FPID 218605-3**

**PROPOSED 8\"/>**

**PROPOSED 8\"/>**

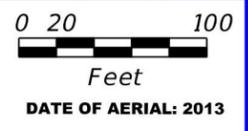
**PROPOSED 4\"/>**

**PROPOSED 16\"/>**

**SURREY DR.**

**LEGEND**

- WETLANDS**
- FLOODPLAINS**
- POTENTIALLY CONTAMINATED SITE**
- EXISTING ROW**
- PROPERTY LINES**
- SIDEWALK/TRAIL**
- PROPOSED BRIDGE**
- PROPOSED ROADWAY**
- POND ALTERNATIVES**



**NINE MILE ROAD  
ECUA UTILITY RELOCATION  
CONCEPT PLANS**

SHEET NO.  
**ECUA-17**