

**FINAL  
WETLAND EVALUATION  
TECHNICAL MEMORANDUM**

**STATE ROAD 52 PD&E STUDY  
FROM I-75 (SR 93) to E. of EMMAUS CEMETERY ROAD**

Pasco Work Order Number: C-3623.00  
WPI Segment Number: 408827 1

Prepared for:



**Pasco County Engineering Services Department**

**May 2005**

**In cooperation with the Florida Department of Transportation**

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Prepared for:

**Pasco County Engineering Services Department**

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## **1.0 INTRODUCTION**

This technical memorandum serves as documentation of the wetland related considerations for the referenced project using criteria contained in Part 2, Chapter 18 of the Florida Department of Transportation's Project Development & Environment (PD&E) Manual. This analysis of wetlands occurrence, quality, impacts and mitigation is provided following database research, field evaluations and agency coordination.

The proposed project includes improvements to State Road 52 (SR 52) from east of the Interstate-75 ramps to east of Emmaus Cemetery Road, a distance of approximately 1.91 miles, see Figure 1. The project will result in the widening of this segment of SR 52 from a 2-lane roadway to a 6-lane roadway.

Much of the adjacent property within the project corridor is undeveloped land with some pasture and silviculture activities. Five parcels front the south side of SR 52. From west to east along the corridor, the land uses for these parcels include vacant-unimproved pastureland, a welding business, and timber production. There are 19 parcels fronting the north side of SR 52. From west to east, land uses include a retail truck stop, vacant-unimproved industrially zoned property, a light manufacturing business, mobile homes, a mobile home park and two churches. There are no publicly owned lands, as defined in Chapter 7, Section 10 of the Right-of-Way Manual. As addressed herein, isolated and contiguous wetlands occur within and adjacent to the right-of-way, including a riparian system crossed known as Bayou Branch.

## **2.0 EXISTING CONDITIONS**

Companion documents for the SR 52 Widening SEIR contain additional information on existing project area conditions and the nature and design of the project. Reviewers of this wetlands technical memorandum are referred to the Preliminary Engineering Report (PER) and related documents for such information.

The existing land cover and uses along this segment of SR 52 are predominantly rural in nature and include improved pastureland [Florida Land Use Cover and Forms Classification System (FLUCFCS) code 211], planted pines (441), shrub and brushland (320), and freshwater marshes (641). In the western portion of the project, on the north side of the roadway, there is also a commercial truck stop with retail services and a recreational vehicle commercial facility (141), along with some open land (190). Near the project's eastern terminus on the north, there is some low density residential (110) and a small church (172). At a bend in the road near the eastern terminus, a channelized watercourse known as Bayou Branch is crossed, and this cover type is classified as a stream forest bottomland (615). Except for the narrow floodplain associated with this feature, and other wetlands, there are essentially no natural system habitats within or immediately adjacent to the existing or proposed SR 52 right-of-way (R/W).

### **3.0 NATURAL FEATURES**

Because the majority of the proposed project will occur within the cleared and maintained R/W, the natural system impacts will be relatively minor. The only natural habitat temporarily or permanently affected will be almost exclusively non-forested wetlands within or adjacent to the existing R/W, and overall there will be no significant impact, as detailed in the pertinent section below.

Wildlife, habitat and listed species effects also will be minimal. Relative to the existing two-lane state highway condition, the addition of lanes will only incrementally increase direct impacts. The typical effects of a roadway's barrier to wildlife movement already exist, but the incidence of road kill likely will be increased by the greater width of pavement to cross. This will be somewhat mitigated by the fact that the entire project area is on the verge of experiencing a rapid transition from rural to sub-urban, similar to what is occurring on SR 54 and SR 56 immediately to the south. Most of the project also is within a mile or so of an Interstate-75 interchange that will also experience increased development. Most road kill occurrences today involve small mammals and reptiles, and that pattern likely will continue.

There is no critical habitat for threatened or endangered species occurring within or very near to the project limits. As noted above, virtually all native, natural habitat already has been culturally modified and fragmented. The only state or federal listed faunal species observed or expected adjacent to the project are Species of Special Concern (SSC) wading birds, such as the White Ibis, Little Blue Heron and Tricolored Heron, and foraging Florida Sandhill Cranes, classified as threatened by the State. No gopher tortoises (SSC) have been observed in proximity to the R/W. None of the proposed stormwater management pond sites will have any known involvement with listed species, nor will their location have an adverse impact on any significant natural habitat. The potential need for design of a specific wildlife underpass in association with the Bayou Branch crossing was discussed with appropriate representatives of both Pasco County and the Southwest Florida Water Management District (SWFWMD) and a crossing may be included in the final design. For more on these and related issues, see the Wildlife, Habitat and Listed Species Technical Memorandum for this project.

The soils for the project area are typical for the region and are predominantly upland (non-hydric) in association with the existing and proposed R/W. There are no prime agricultural soils mapped for the areas by the Natural Resources Conservation Service (NRCS; fka SCS). Hydric soils generally associated with marsh wetlands are Sellers mucky loamy fine sand and Zephyr muck. The upland soils include Pomona fine sand, Sparr fine sand, Narcoossee fine sand, Kendrick fine sand, Lochlossa fine sand and Millhopper fine sand. A soils map is presented in the project's PER.

### **4.0 PROPOSED ALTERNATIVES**

The need for widening this segment of SR 52 to enhance capacity and safety is recognized and supported by Pasco County and District Seven of the Florida Department of Transportation. There is an existing alignment for the present two-lane facility that has been cleared and is maintained. Near the eastern terminus is an existing culverted crossing of Bayou Branch and its floodplain, and near the western terminus there is an existing Interstate-75 interchange. The project segment in between is nearly straight and the only logical corridor for the roadway. To conform to design and safety standards, and to minimize wetland involvement, the widening calls for additional R/W acquisition only on the south. Given these circumstances, the project design employs wetland avoidance and minimization to the extent practicable and there are no viable alternatives.

## 5.0 WETLANDS

The wetland resources within the project study area initially were identified by review of the existing SWFWMD cover mapping database and the Pasco County Soil Survey, as well as aerial photointerpretation of recent aerial photography. Subsequent field studies were conducted by certified Professional Wetland Scientists with Biological Research Associates between August 2003 and December 2004. Field activities included wetland jurisdictional delineation (JD) flagging and verification with a SWFWMD Environmental Scientist in September 2003, and a similar JD verification associated with proposed stormwater management pond sites in October 2004. Seasonal high water (SHW) elevations were also verified at those times. The wetland JD points and SHW levels were subsequently surveyed, mapped and sent to SWFWMD for certification.

Other field tasks included qualitative wetland assessments and general wildlife and habitat reconnaissance. In the study area, within and adjacent to the existing SR 52 R/W, there are eight (8) wetlands with potential project involvement. As a result of the currently proposed project design, and additional R/W acquisition to the south, only six (6) wetlands are likely to be wholly or partially impacted. The eight total wetlands have eleven potential points of impact, and of these, two will be avoided, and a third may be able to be avoided in final design. Most of these wetlands historically were small, isolated marshes. Some have ditches or other man-made connections to other systems. Only the Bayou Branch crossing involves a natural floodplain connected to regional wetlands, but it also has been modified by ditching, channelization and the existing bridge crossing.

The impacted wetlands are graphically located on Figure 2, Wetland & Pond Location Map. They have been identified by alpha-numeric designations on the south side of the R/W from west to east (W-1S through W-5S) and similarly on the north side (W-1N through W-3N). Wetlands W-3N and W-5S are the north and south locations, respectively, of the Bayou Branch crossing. Wetlands W-1N and W-2N are outside of the north R/W line and have been delineated and surveyed, but are not specifically identified on the attached location graphic because they will not be affected by the project. Other than Bayou Branch, the only flow-way crossing in the project R/W is a culvert and ditch connection of W-1S with W-1N, and there may not have been an historical connection between these systems.



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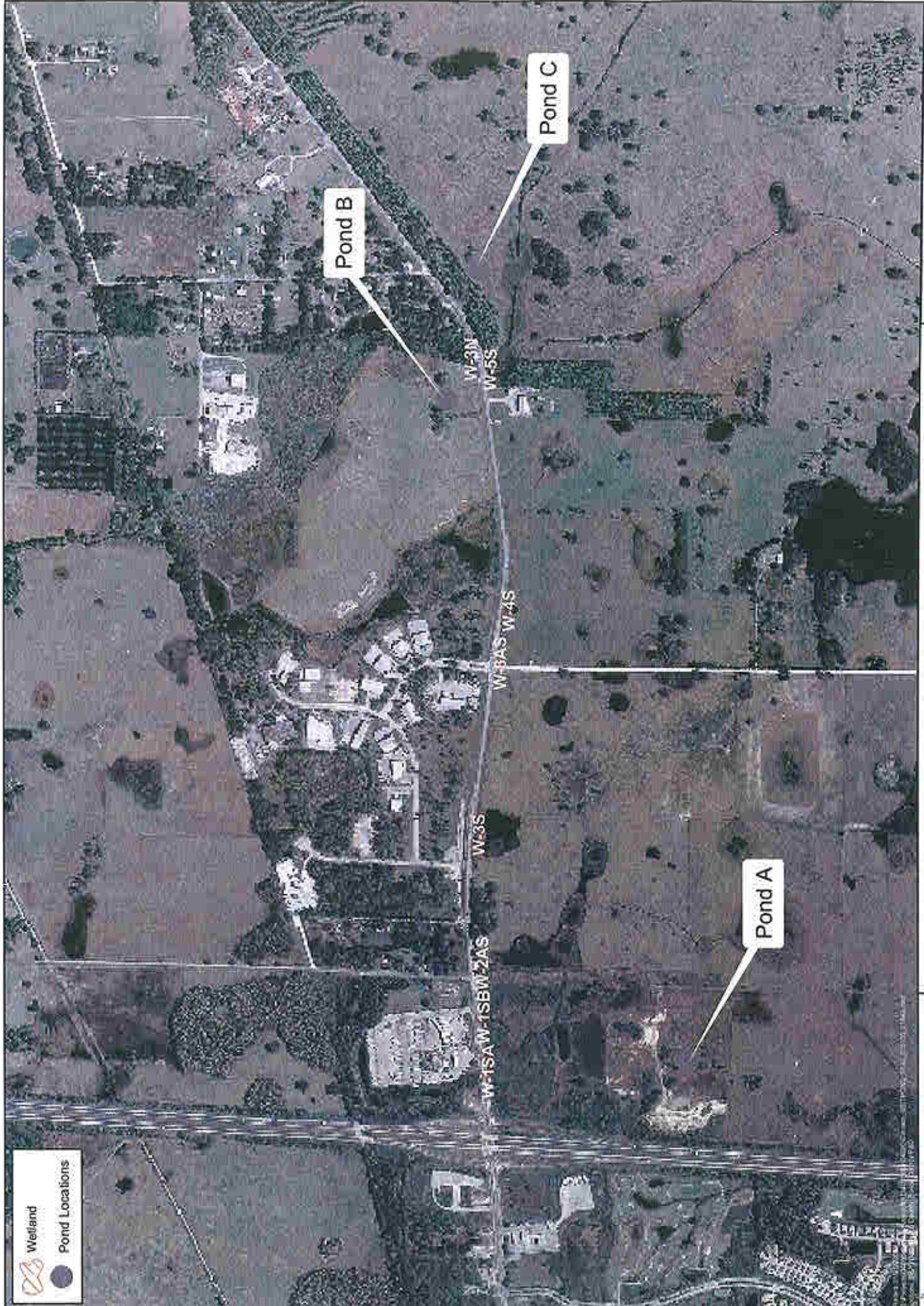


NOT TO SCALE



FIGURE 1  
 PROJECT LOCATION MAP





Wetland  
Pond Locations

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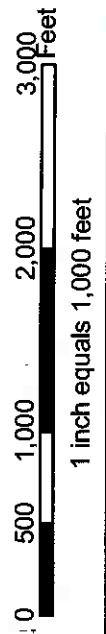


FIGURE 2  
WETLAND & POND LOCATION MAP



The following table provides an inventory of the vegetation collectively found to be associated with these wetlands (Representative Wetland Plant Species List). The table provides the scientific binomials for the common plant names used in the following system descriptions.

COMMON NAME	SCIENTIFIC NAME
Alligator-weed	<i>Alternanthera philoxeroides</i>
American cupscale grass	<i>Sacciolepis striata</i>
Baby tears	<i>Micranthemum umbrosum</i>
Bahia grass	<i>Paspalum notatum</i>
Big carpetgrass	<i>Axonopus furcatus</i>
Blackgum	<i>Nyssa sylvatica</i> var. <i>biflora</i>
Blue maidencane	<i>Amphicarpum muhlenbergianum</i>
Broomsedge	<i>Andropogon virginicus</i>
Buttonbush	<i>Cephalanthus occidentalis</i>
Buttonweed	<i>Diodia virginiana</i>
Cabbage palm	<i>Sabal palmetto</i>
Caesarweed	<i>Urena lobata</i>
Caric sedge	<i>Carex albolutescens</i>
Carolina willow	<i>Salix carolinana</i>
Chinese tallow tree	<i>Sapium sebiferum</i>
Climbing hempvine	<i>Mikania scandens</i>
Cogon grass	<i>Imperata cylindrica</i>
Coinwort	<i>Centella asiatica</i>
Colic-root	<i>Aletris lutea</i>
Common cattail	<i>Typha domingensis</i>
Dayflower	<i>Commelina diffusa</i>
Dog fennel	<i>Eupatorium capillifolium</i>
Duckweed	<i>Lemna</i> sp.
Elderberry	<i>Sambuccus canadensis</i>
Elm	<i>Ulmus americana</i>
Erect-leaf witchgrass	<i>Panicum erectifolium</i>
Fireweed	<i>Erechtites hieracifolia</i>
Flat sedge	<i>Cyperus odoratus</i>
Flat-topped goldenrod	<i>Euthamia minor</i>
Frog-fruit	<i>Phyla nodiflora</i>
Goldenrods	<i>Solidago</i> spp.
Grassy arrowhead	<i>Sagittaria graminea</i>
Greenbrier	<i>Smilax</i> spp.
Guineagrass	<i>Panicum maximum</i>
Horned beakrush	<i>Rhynchospora inundata</i>
Jointed flat sedge	<i>Cyperus haspan</i>
Knotroot bristlegrass	<i>Setaria geniculata</i>
Lance-leaved arrowhead	<i>Sagittaria lancifolia</i>
Laurel oak	<i>Quercus laurifolia</i>
Leaf-flower	<i>Phyllanthus urinaria</i>
Live oak	<i>Quercus virginiana</i>
Longleaf pine	<i>Pinus palustris</i>
Maidencane	<i>Panicum hemitomom</i>
Marsh fleabane	<i>Pluchea rosea</i>

COMMON NAME	SCIENTIFIC NAME
Meadow beauty	<i>Rhexia cubensis</i>
Mermaid-weed	<i>Proserpinaca palustris</i>
Muscadine grapevine	<i>Vitis rotundifolia</i>
Musky mint	<i>Hyptis alata</i>
Pennywort	<i>Hydrocotyle umbellata</i>
Peppervine	<i>Ampelopsis arborea</i>
Persimmon	<i>Diospyros virginiana</i>
Pickerelweed	<i>Pontederia cordata</i>
Primrose willow	<i>Ludwigia peruviana</i>
Rattan vine	<i>Berchemia scandens</i>
Red bay	<i>Persea borbonia</i>
Red ludwigia	<i>Ludwigia repens</i>
Red maple	<i>Acer rubrum</i>
Redroot	<i>Lachnanthes caroliniana</i>
Red-top panicum	<i>Panicum rigidulum</i>
Royal fern	<i>Osmunda regalis</i>
Rush-fuirena	<i>Fuirena scirpoidea</i>
Saltbush	<i>Baccharis halimifolia</i>
Sand cordgrass	<i>Spartina bakeri</i>
Skunk-vine	<i>Paederia foetida</i>
Slash pine	<i>Pinus elliottii</i>
Smartweed	<i>Polygonum hydropiperoides</i>
Smooth water hyssop	<i>Bacopa monnieri</i>
Soft rush	<i>Juncus effusus</i>
Sour paspalum	<i>Paspalum conjugatum</i>
Southern beakrush	<i>Rhynchospora microcarpa</i>
Southern cut grass	<i>Leersia hexandra</i>
Surinam sedge	<i>Cyperus surinamensis</i>
Swamp fern	<i>Blechnum serrulatum</i>
Swithgrass	<i>Panicum virgatum</i>
Tickseed	<i>Coreopsis leavenworthii</i>
Velvet Panicum	<i>Panicum scoparium</i>
Warty Panicum	<i>Panicum verrucosum</i>
Water hyacinth	<i>Eichhornia crassipes</i>
Water oak	<i>Quercus nigra</i>
Water-primrose	<i>Ludwigia octovalvis</i>
Water-spider orchid	<i>Habenaria repens</i>
Wax myrtle	<i>Myrica cerifera</i>
Waxweed	<i>Cuphea carthagenesis</i>
White beggar-ticks	<i>Bidens pilosa</i>
White-top sedge	<i>Dichromena colorata</i>
Yellow-eyed grass	<i>Xyris</i> sp.
Yellow jessamine vine	<i>Gelsemium sempervirens</i>

The following section provides a qualitative description of each of the wetland areas anticipated to be impacted by the proposed roadway widening project.

#### Wetland 1 South (W-1S)



This is an emergent marsh wetland system that is primarily grasses and sedges in the proposed right-of-way expansion area with some broad-leaf species just south of the right-of-way. The site presently has an average of 8 to 10 inches of standing water at seasonal high water. It is a lobe of a larger wetland system that has upland fingers of saw palmetto interspersed. There are virtually no woody species within the wetlands, although occasionally at the edge there are wax myrtle, red maple, and laurel or live oak trees. Representative plants include southern cut grass, blue maidencane, water primrose, yellow-eyed grass, pennywort, various beak rushes, various flat sedges, knotroot bristlegrass, red ludwigia, some primrose willow, rush-fuirena, climbing hempvine, flat-top goldenrod, meadowbeauty, peppervine, St. John's wort, and some broomsedge. The emergent cover is approximately 80 percent or higher. There are a number of small mammal trails through the system, there are a number of species of frogs and evidence of crayfish.

#### Wetland 2 South (W-2S)



This small area is another lobe of the same large wetland that comprises Wetland 1 South. This is a relatively woody area with fairly large wax myrtles, some small Carolina willow, red maple up to a foot in diameter, laurel and water oak, and at least one black gum tree. The groundcover is fairly sparse due to the shade, and it is clearly only seasonally wet, maybe even



ephemerally wet. The groundcover is comprised of flat sedges, St. John's wort, water primrose, knotroot bristlegrass, broomsedge, water-spider orchid, dayflower, redroot, peppervine, smartweed, poison ivy, musky mint and pennywort. There are saw palmettos at the edge of this system and it comes up to the road right-of-way, as does Wetland 1 South. It has been the same seasonal high water elevation also, which has been determined to be 91.5 feet NGVD. The northern tip of this lobe will be clipped by the proposed project.

#### Wetland 2A South (W-2AS)

This is a seasonally wet emergent marsh depression that is 80 percent contained within an improved pasture, with the western 20 percent across a north-south fence line in a shrub-brushland association. The overall system is over two acres in size and it lies south of State Road 52, within the northern tip just inside the proposed right-of-way acquisition zone. There may be a very small direct construction impact from the road widening. The pastureland portion of this system is comprised of open water with mixed broad-leaved and graminoid emergents dominated by maidencane and pickerelweed. The surrounding land at the jurisdictional line upland edge is almost entirely bahia grass. Other vegetation includes some short-bristle beakrush, watergrass, other beakrushes, pennywort, water hyssop, smartweed, red-topped panicum and flat sedges. On the portion of this system west of the fence line in the shrubby area, woody plants include a few young blackgums along with wax myrtles, persimmon, saltbush and primrose willow. There is some maidencane, climbing hemp vine, pennywort and tickseed, along with an abundance of blackberry and caesarweed at the upland edge. The land surface is disturbed on the west by prior activity, producing a shrubby weediness, and cattle grazing, trampling and nutrient effects occur on the pasture side. This system can be considered to have low to moderate wetland quality. The SHW elevation has been determined to be 91.7 feet NGVD.

#### Wetland 3 South (W-3S)



This is seasonally wet emergent marsh system with a central core of maidencane and lance-leaf arrowhead, surrounded by a variety of rushes, sedges and grasses that vary from obligate to facultative hydrophytes. These include vasey grass, blue maidencane, yellow-eyed grass, pennywort, big carpetgrass, beak rushes, broomsedge, baby-tears, and knotroot bristlegrass. There are no woody species except for one black gum tree. It is an isolated system that comes to the edge of the right-of-way. Both Florida Sandhill Cranes and Wood Storks occasionally forage in this system as they do in similar systems locally and throughout the entire region. Other wading birds also can be expected. The surrounding vegetation is all bahia grass



pasture, interspersed with dog fennel. About one-half acre of this approximately two-acre system will be included in new R/W acquisition. The SHW elevation has been determined to be 97.4 feet NGVD.

#### Wetland 3A South (W-3AS)

This very small and ephemeral emergent wetland is probably only about one-tenth of an acre in size. It occurs in the southeast quadrant of the intersection of SR 52 with McKendree Road. It is bordered on the north and west by those roads and the fence line at the rights-of-way, and on the south and east by improved pasture dominated by bahia grass. This is a very marginal wetland that was required to be flagged by the SWFWMD because it falls entirely within the proposed new R/W acquisition. It appears merely to be a low spot in the corner of the pasture and has few obligate hydrophytes. The low diversity of emergent plants is dominated by grasses, especially smutgrass, knotroot bristle grass, and some vasey grass. There is also some pennywort, frog's fruit, leaf flower, carpetgrass, pony's foot and some flat-topped sedges. It is projected that this small system has standing water only during portions of the wet season or very wet periods, and for most of a normal year would only be saturated to moist, or completely dry. It has minimal wetland functions and values in terms of the overall quality, size, and wildlife support. The Water Management District has indicated that they probably will not require mitigation for any direct or secondary impacts. The SHW elevation has been determined to be 98.0 feet NGVD.

#### Wetland 4 South (W-4S)



This is a small wetland depression with a central core of dense soft rush, surrounded by primarily open water during wet periods. It is a seasonally wet system that comes up to the right-of-way, but is less than half an acre in area. It will be claimed as jurisdictional, but probably will not require mitigation for impacts. The plant species diversity is low, and during dry periods it probably is encroached upon by the surrounding bahia grass pasture. At this time there is some water ludwigia, beak rushes, pennywort and flat sedges. Approximately the northern two-thirds of this system will be affected by new R/W acquisition. The SHW elevation has been determined to be 95.3 feet NGVD.

### Wetlands 5 South and 3 North (W-5S and W-3N)



This wetland system is associated with Bayou Branch where it underpasses SR 52 flowing to the north. The wetland to the south of the bridge has been designated W-5S and to the north as W-3N. The flow-way is fed by two ditch conveyances coming from the east and south, and the wetland basin broadens out just south of the right-of-way to include a semi-permanent pool, approximately one acre in size. On the south's west side, there are some planted slash pines that are up to 10 to 12 inches in diameter at the wetland edge, along with some laurel and water oaks. There are a variety of facultative and facultative-wet grasses and rushes at the edge, and the open water pool is dominated by robust growth of water hyacinth and some lance leaf arrowhead. Emergent growth includes flat sedges, maidencane, knotroot, bristlegrass, pennywort, leaf-flower, flat-top goldenrod, smartweed, and pepper vine. The top left photo was taken at the western edge of this wetland on the south side of SR 52. The top right photo is at the Bayou Branch crossing looking south. The fill slope of the right-of-way has bahia grass, and there is a dead-end canal that runs westward, parallel to the road, for a distance of approximately 125 feet. There is a berm on the other side of that with pines and oaks and then the wetland pool described earlier. Wetland plants include water hyacinth, alligator-weed, Carolina willow, smartweed, primrose willow, and some wax myrtle at the edges. The bottom left photo is taken at the east side of the pool showing the abundance of the smart weed and water hyacinth, and the two channelized conveyances that provide water to the three 10' x 10' box culverts under SR 52, ultimately contributing to the headwaters of Cypress Creek several miles to the northwest. The bottom right photo is looking downstream to the north at the narrow floodplain forest with laurel and live oaks, buttonbush, Carolina willow, and water hyacinth at the water's edge. The SHW elevation on the south side of the bridge is determined to be 91.7 feet NGVD.

## Proposed Wetland Impacts

The wetland impacts that would accrue from the proposed SR 52 widening project are summarized in the table below. Plan view exhibits of the proposed impact areas for each wetland are attached, see Figures 3 - 10. The total wetland involvement as a result of the project is projected to be 1.53 acres, pending final design. Some slight reduction is possible by the time of permitting, but an overall impact of about 1.5 acres for this 1.9-mile highway widening and R/W acquisition project is anticipated.

Wetland Number	FLUCFCS Code	USFWS Classification	Size (acres)	Impact (acres)	Wetland Type
W-1S	641	PEM1F	≈3.0	0.21	Freshwater emergent marsh
W-2S	641/617	PEM1C/PFO1C	≈3.0	0.09	Marsh/mixed hardwoods
W-2AS	641	PEM1F	≈3.0	0.03	Freshwater marsh
W-3S	641	PEM1F	≈2.0	0.52	Freshwater marsh
W-3AS	643	PEM1A	0.11	0.11	Seasonally wet prairie
W-4S	641	PEM1F	0.18	0.14	Freshwater marsh
W-5S	641/510	PEM1F	N/A	0.34	Marsh/open water
W-3N	615	PFO1F	N/A	0.09	Stream bottomland

Virtually all wetland impacts will be to non-forested, seasonally wet freshwater marshes. Most of the systems have been previously impacted or degraded to some extent, such as by ditching, cattle grazing, and by prior fragmentation by the existing SR 52 R/W. The projected impacts are unavoidable given the requirements of this public interest project.

Impacts to wetlands W-1S, W-2S, W-2AS and W-3S will be from clipping the northern portion of these systems on the south side of the existing R/W. Wetland W-3AS will be entirely taken by R/W acquisition, but is a very small (0.11 acre), ephemeral, grassy pocket in the corner of an active pasture with existing roads on two sides and minimal habitat functions or values. Nearby wetland W-4S is less than two-tenths of an acre and will experience a 0.14-acre impact, effectively eliminating this isolated, seasonally wet system within pastureland. The wetland impacts at the Bayou Branch bridge crossing will result from necessary design and safety improvements, and will be primarily limited to previously channelized, open water areas. The total involvement for the south side (W-5S) and the north side (W-3N; potentially avoidable in final design) of this waterway crossing improvement will only be about one-third of an acre. There should be no other wetland impacts on the north side of the existing R/W.

This project is anticipated to go to permitting in the spring of 2005, and as noted above, there may be some minor design and impact adjustments. It is unlikely that impacts will increase, but there could be a downward adjustment of one or two tenths of an acre. With respect to mitigation for impacts, wetlands W-3AS and W-4S are both isolated and less than one-half an acre, without critical listed species value, so they will not require compensation by the state, and they also are not considered jurisdictional under federal regulations. Therefore, of the anticipated total wetland impact acreage of 1.53 acres, only about 1.28 acres will require mitigation. Those wetlands that will have a small portion removed by the project will have appropriately placed and secured turbidity/sedimentation barriers to avoid secondary impacts to the remainder of those systems. None of the involved wetlands are known to have any unique

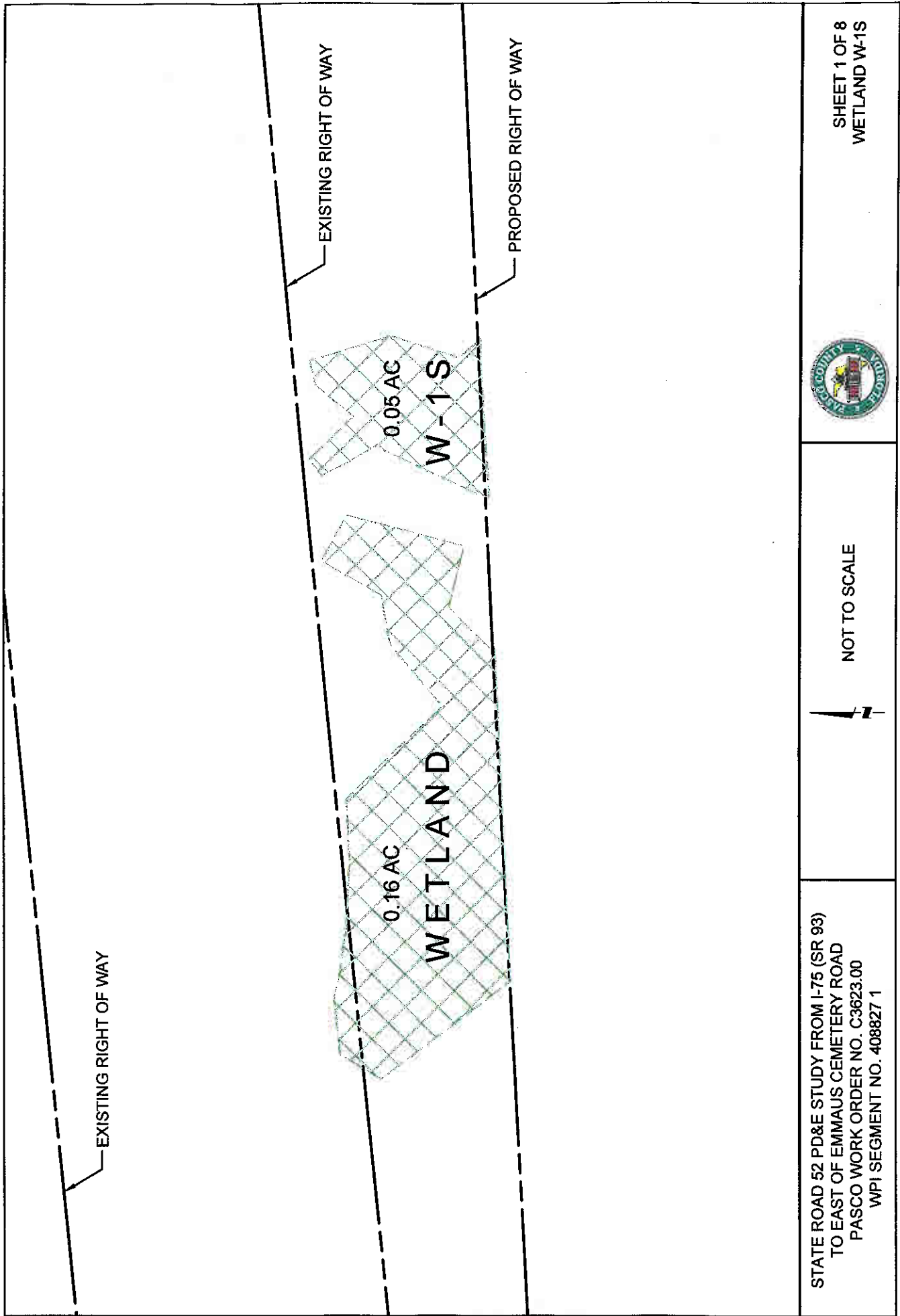


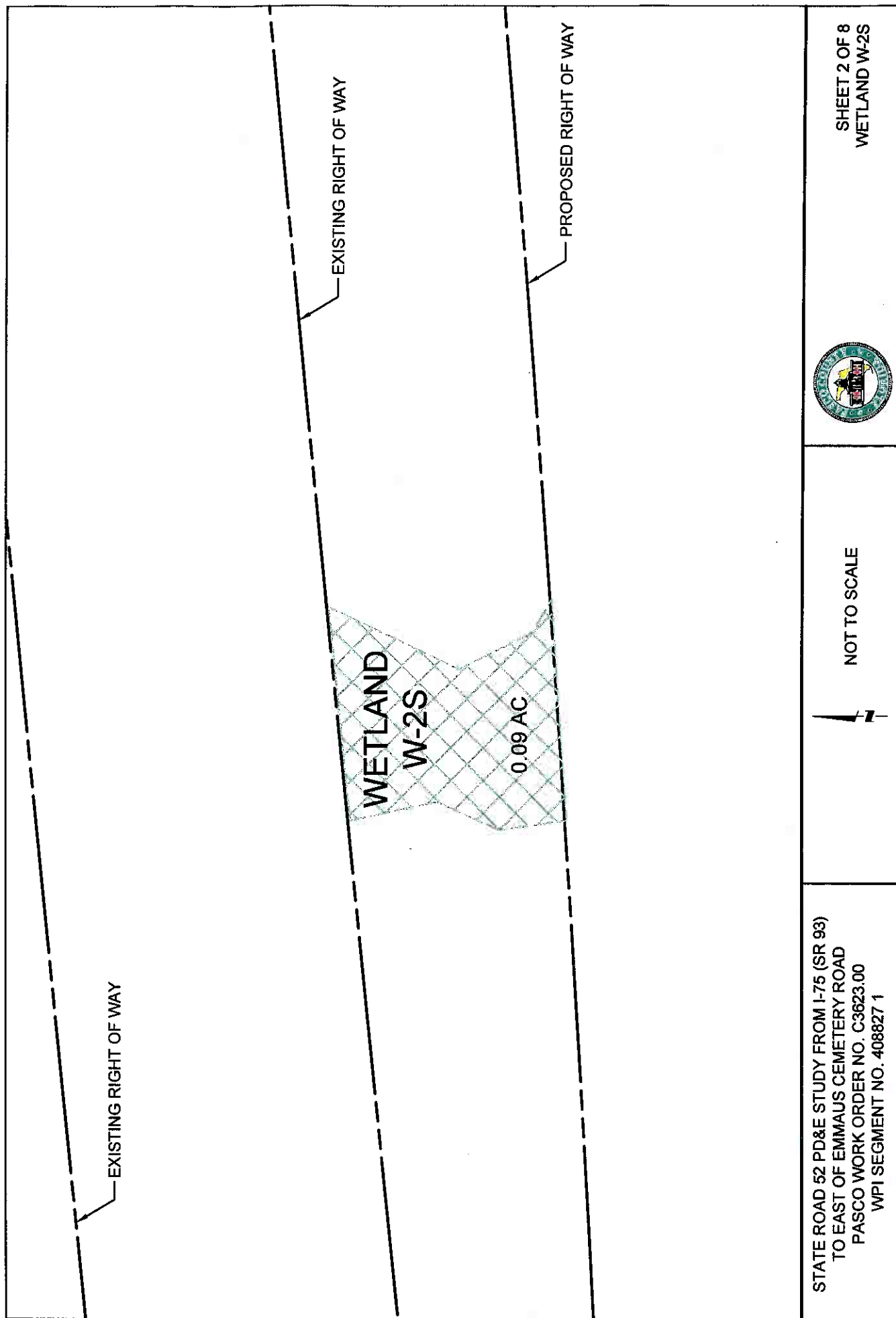
or critical foraging or breeding value to state or federal listed wildlife species. There also are no threatened or endangered plant species known to occur within the project area.

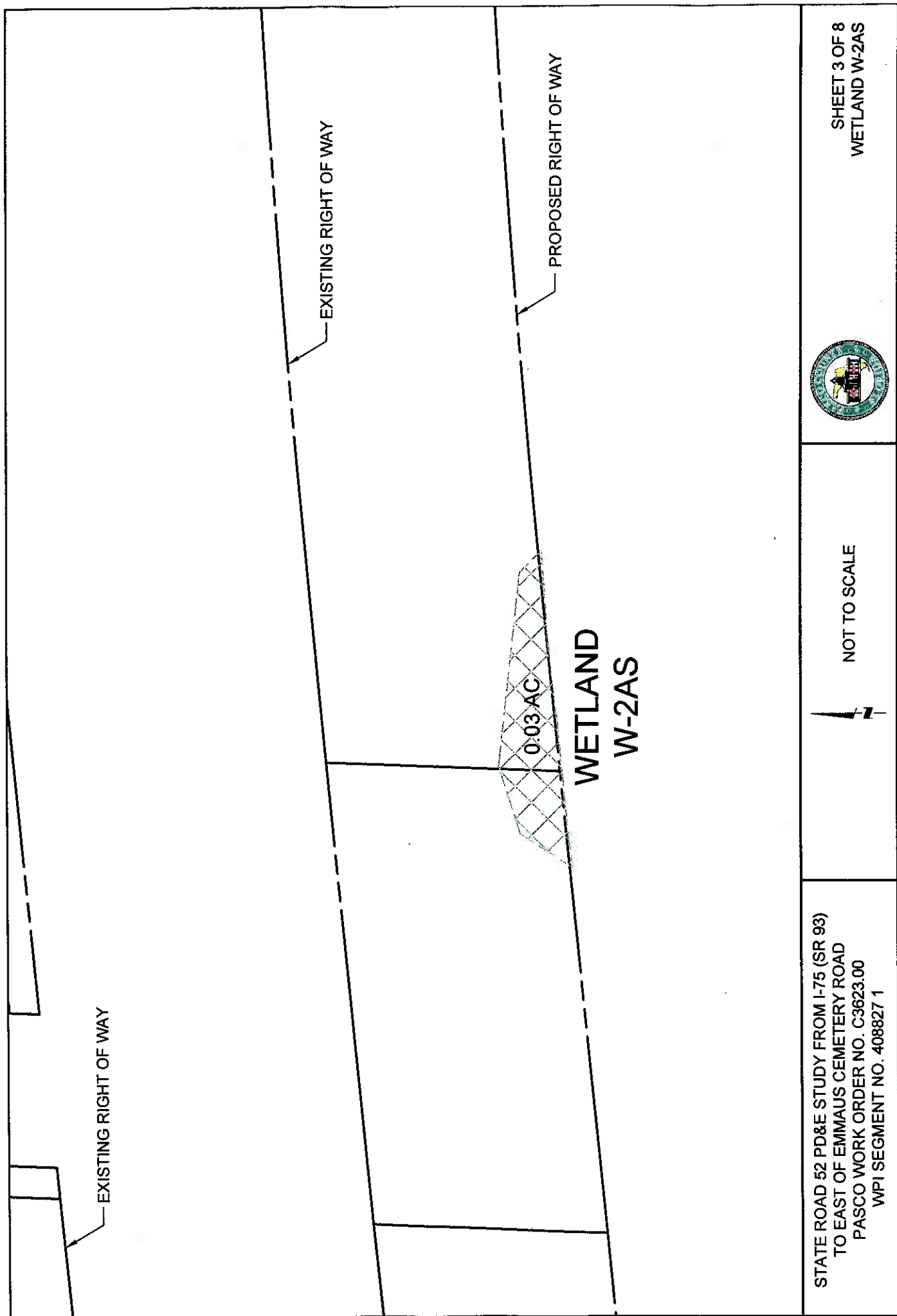
Mitigation for project impacts will be accommodated within the Cannon Ranch DRI project, which lies adjacent to SR 52 on the south, east of Bayou Branch. Prior to submitting the Environmental Resource Permit (ERP) application to the SWFWMD and the US Army Corps of Engineers (USACE), and agency pre-application discussions, mitigation requirements will be determined through evaluation by the Unified Mitigation Assessment Method (UMAM) process, and the federal Wetland Rapid Assessment Procedure (WRAP), if required. This functional assessment of wetland habitat values lost will identify the mitigation "lift" that must be achieved by wetland restoration and/or creation on the Cannon Ranch site. This procedure will be thoroughly documented during the upcoming permitting process, and appropriate mitigation design plans and details will be produced.

The project also will require the creation of three stormwater treatment/management ponds to accommodate regulatory criteria for project runoff. Each of the proposed pond sites (identified on the Wetland & Pond Location Map) has been visited in the field. None of these sites was found to involve adverse effects to wetlands or listed species. The three ponds are all located in uplands. Pond B is adjacent on the west to Bayou Branch bottomland flow-way, but a District-verified wetland JD has been established, surveyed and mapped in order to design this feature without adverse impacts. Reviewers seeking further pond and drainage details are referred to the PER.









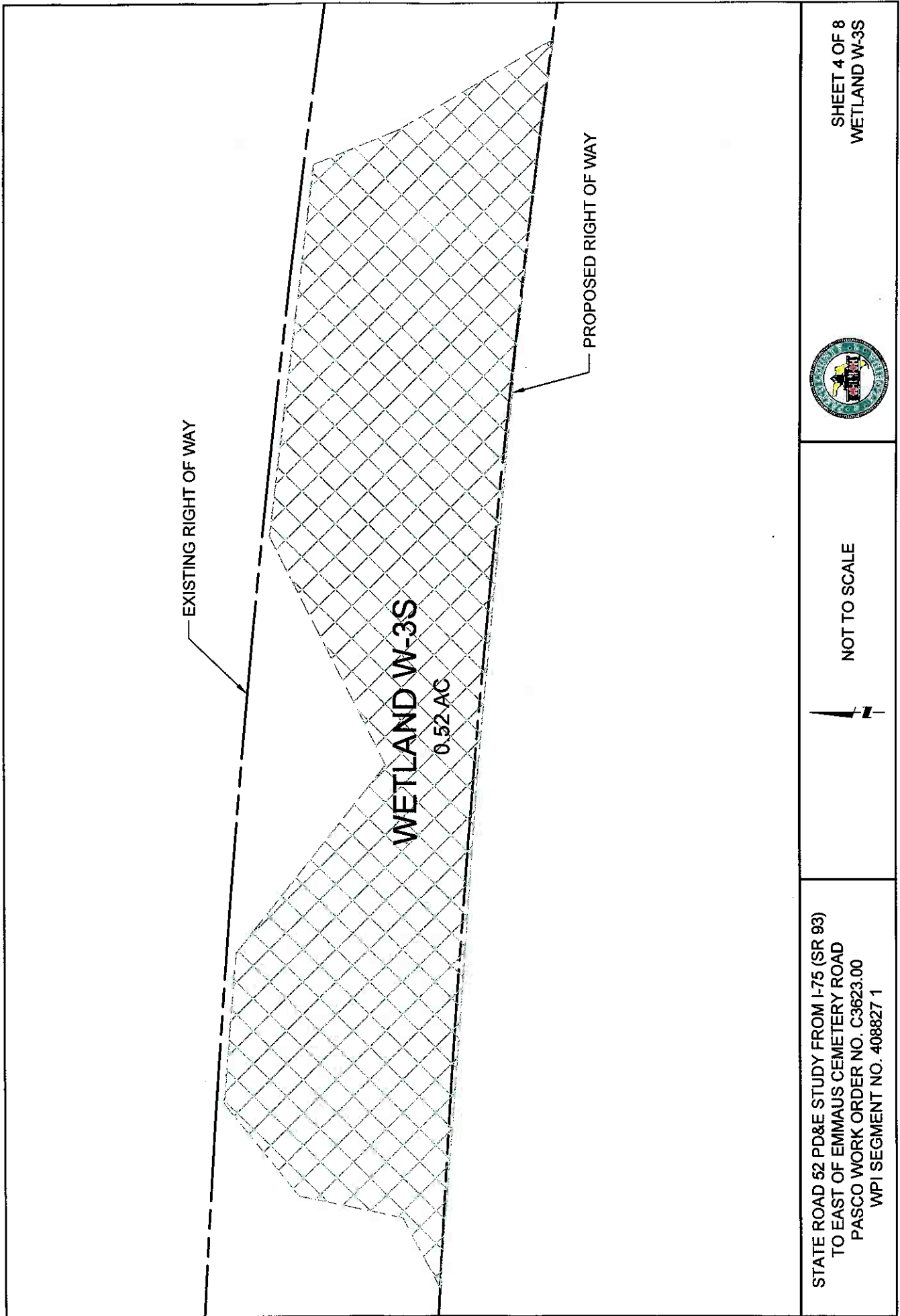
STATE ROAD 52 PD&E STUDY FROM I-75 (SR 93)  
TO EAST OF EMMAUS CEMETERY ROAD  
PASCO WORK ORDER NO. C3623.00  
WPI SEGMENT NO. 408827 1



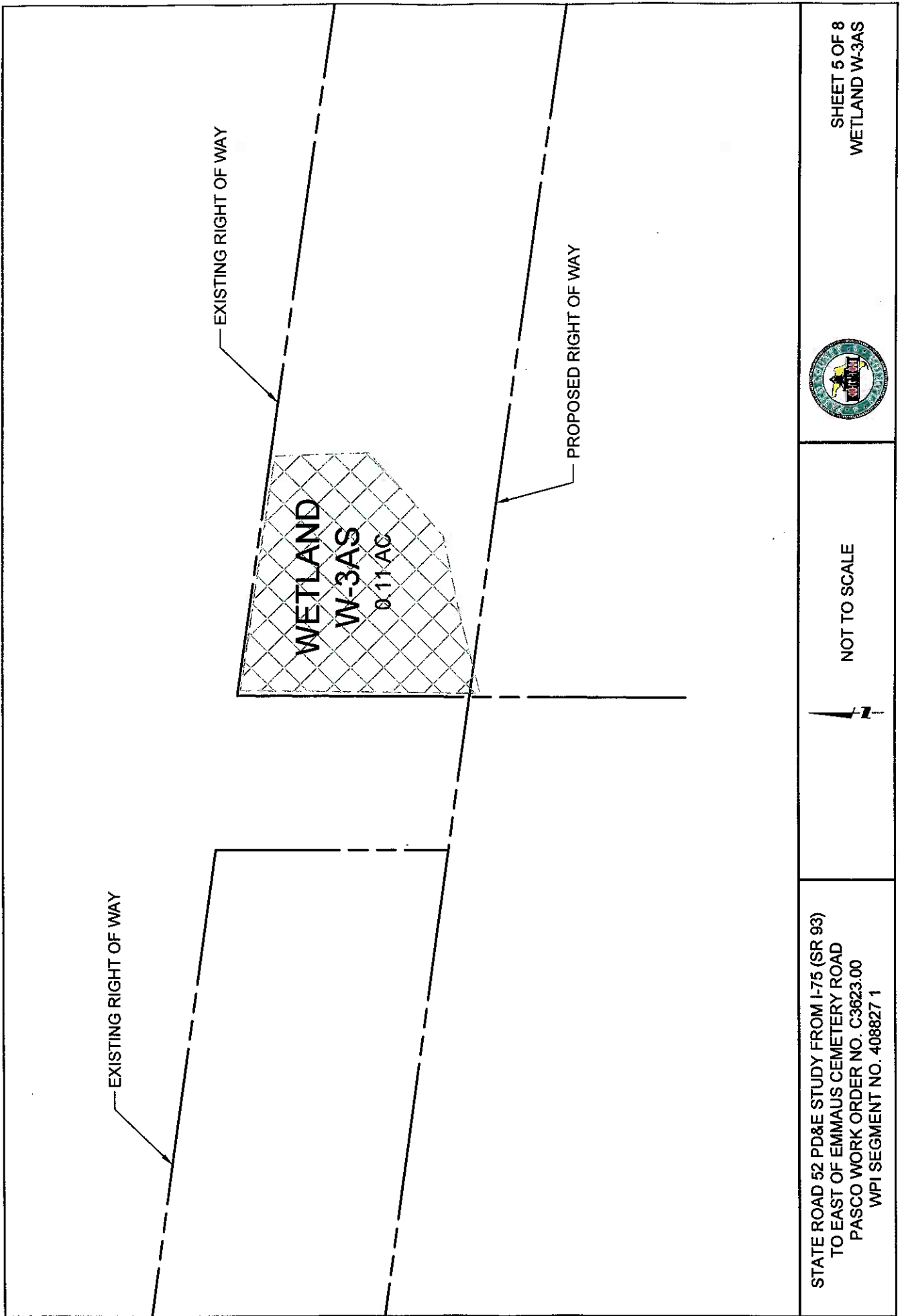
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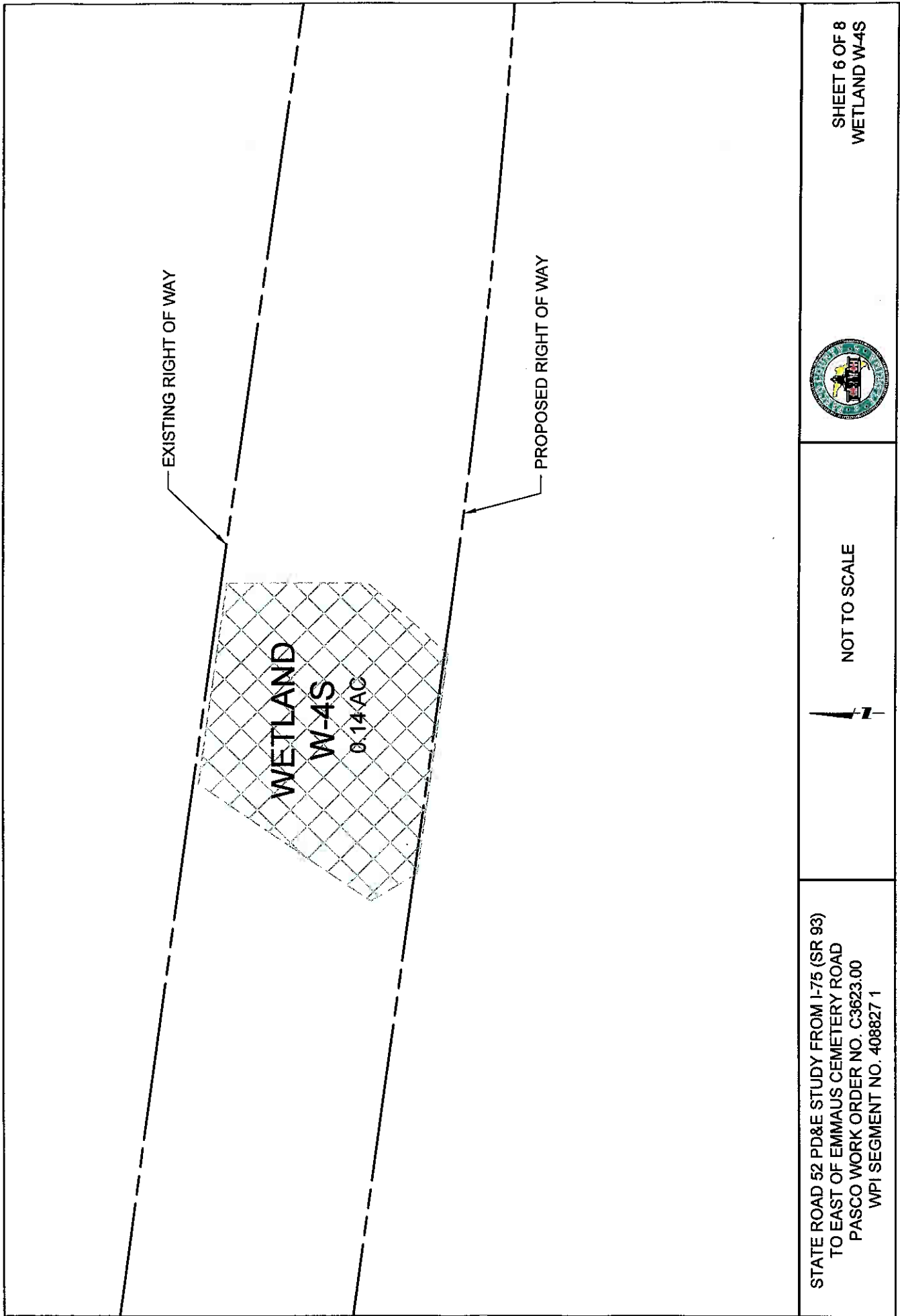


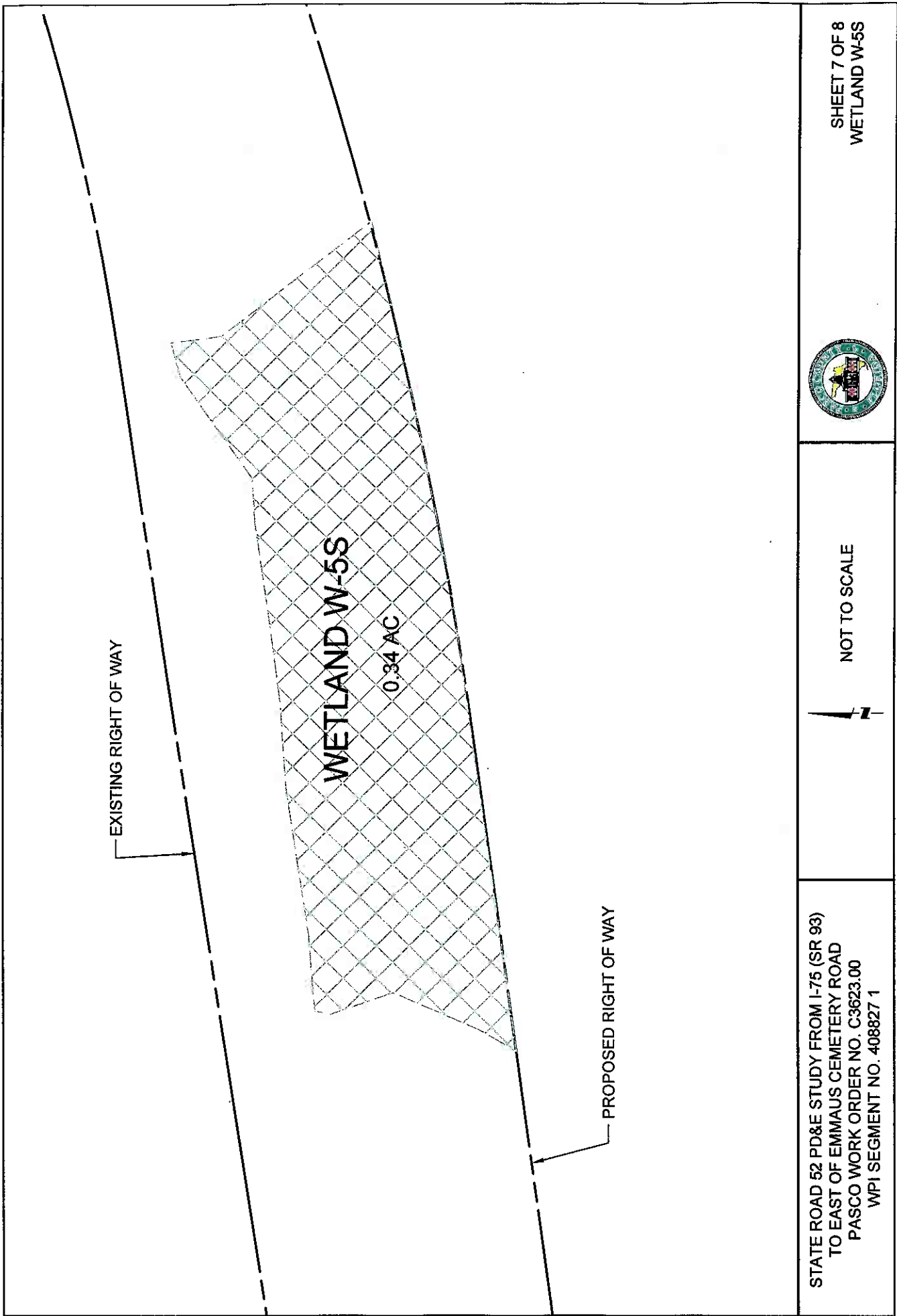
SHEET 3 OF 8  
WETLAND W-2AS

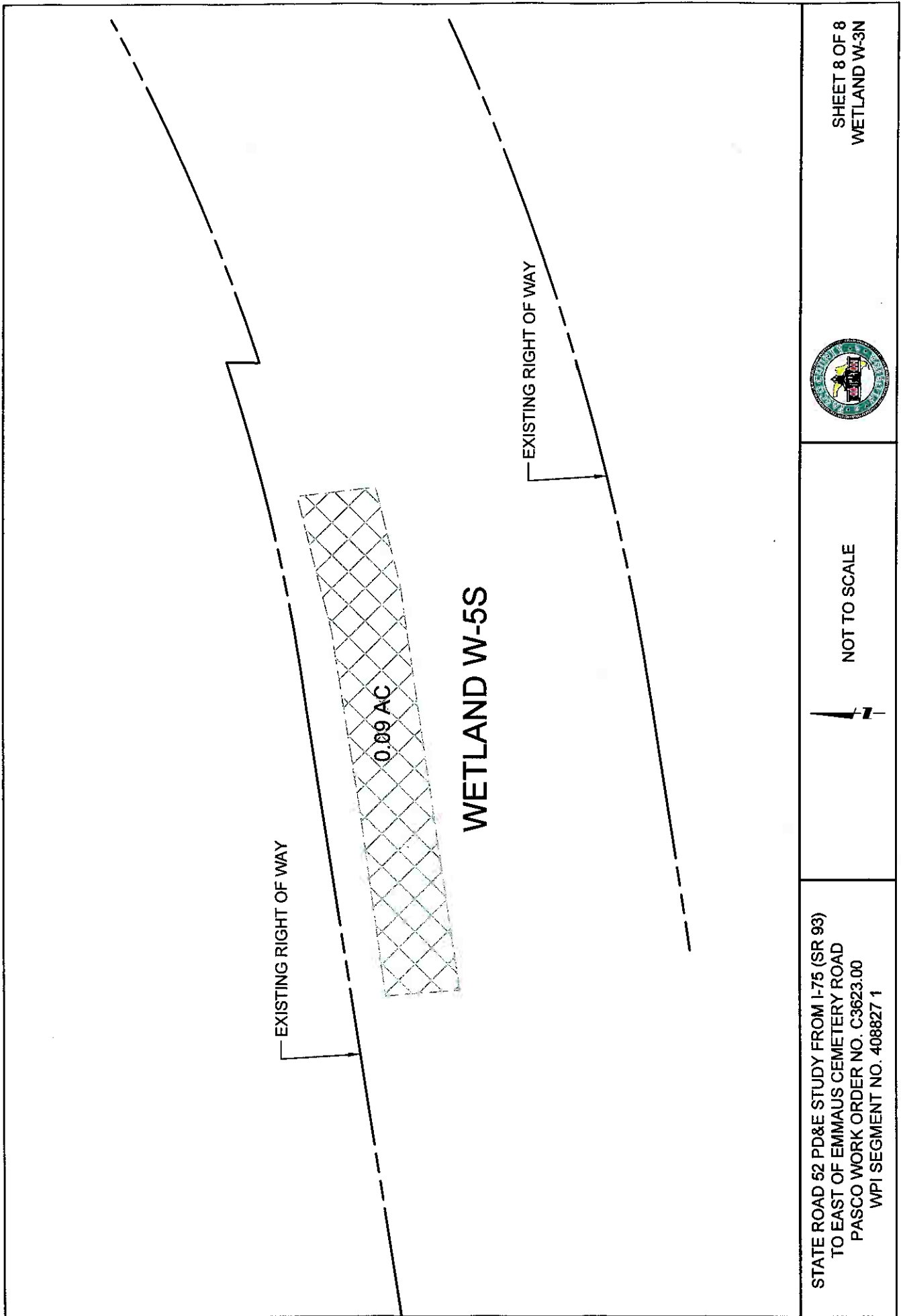














## **6.0 CONCLUSION**

The potential wetland impacts due to the widening of SR 52 from I-75 east to Emmaus Cemetery Road (about 1.9 miles) will be approximately 1.53 acres. The proposed alignment and required additional R/W acquisition have taken into account the location and relative quality of project area wetland resources, and employed impact avoidance and minimization procedures to the extent practicable during preliminary engineering design. Final design may allow for some additional, but very limited impact reduction. Prior to pending state and federal permitting, wetland functional assessment evaluations will be conducted to determine specific mitigation requirements. It is anticipated that mitigation will only be necessary for about 1.28 acres of direct and permanent impacts, and appropriate compensation, as approved through SWFWMD and USACE permitting, will be provided via wetland restoration and/or creation on the adjacent Cannon Ranch DRI property.