



Florida Sandhill Crane 2019 Annual Monitoring Report



SJRWMD Permit No. 4-127-0369C-ERP
MLA Project No. 09-00268

Prepared for:
Victoria Park Community Council

VICTORIA PARK MITIGATION AREA
Florida Sandhill Crane Annual Monitoring Report – 2019

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Victoria Park Mitigation Area

Florida Sandhill Crane Annual Monitoring Report – 2019

I. INTRODUCTION

Victoria Park is a 1,859-acre multi-use Development of Regional Impact (DRI #698-06) located in southern Volusia County, Florida. The project includes residential communities, golf courses, commercial tracts and numerous wetland and upland preservation areas. This project includes the preservation of approximately 215 acres of uplands and approximately 161 acres of wetlands, including the enhancement of 22-acres of wetlands and the creation of 6.8-acres of wetlands. The St. John's River Water Management District (SJRWMD) required the preservation and management of seven potential nest sites for the Florida sandhill crane (*Grus canadensis pratensis*), which consists of primary wetland, primary upland, secondary and ancillary foraging areas. The development plan for Victoria Park has been implemented in a phased manner to give the cranes adequate time for adaptation to the preserved versus developed areas and in turn increase-nesting success. This annual report documents the Florida sandhill crane nesting success during the 2019 monitoring season and includes data collection on survivorship, productivity, and habitat use.

II. PROJECT LOCATION

The project is adjacent to County Road 4101 (Martin Luther King, Jr. Beltway (MLK Beltway)), Orange Camp Road, Taylor Road, State Road 472, Blue Lake Road and Interstate 4 within Sections 22-27, 34, 35, and 36; Township 17 South and Range 30 East, near Deland in Volusia County, Florida as depicted on Exhibit I.

III. LICENSE/PERMIT INFORMATION

SJRWMD Permit No. 4-127-0369C-ERP was originally issued to St. Joe Residential Acquisitions, Inc. on October 12, 1999. Data describing the extent of sampling effort, nest occurrence, nest status and other appropriate information must be submitted to the District by the following October for each sample season for the life of this permit. In accordance with the permit, monitoring of cranes and their habitat will be conducted by a qualified biologist during the crane-nesting season. The sandhill crane Site Mitigation and Management Plan (SMMP) is centered on the preservation and management of seven potential nest sites that includes primary wetland, primary upland, secondary and ancillary foraging areas. Victoria Park Community Council umbrella association is the responsible entity for this monitoring, environmental preserve area maintenance, and all the shared amenities and infrastructure within the Victoria Park community.

IV. NEST SITE ANALYSIS

Seven potential nest sites throughout the development are divided into four quadrants. The NW Quadrant is found north of Orange Camp Road, west of Dr. Martin Luther King Jr. Beltway, and east of Blue Lake Avenue and consists of two potential nest sites (Sites A and B). The NE Quadrant is located north of Orange Camp Road, east of Dr. Martin Luther King Jr. Beltway, and west of Interstate 4 and consists of three potential nest sites (Sites C, D, and E). The SW Quadrant is located south of Orange Camp Road and west of Dr. Martin Luther King Jr. Beltway and consists of one potential nest site (Site F). The SE Quadrant is located south of Orange Camp Road and east of Dr. Martin Luther King Jr. Beltway and consists of one potential nest site (Site G). These potential nesting sites and associated wetlands along with secondary habitats are all labeled on the sandhill crane maps enclosed in Exhibit 2.

Each potential nest site includes at least one wetland that is comprised of good nesting and foraging habitat for sandhill cranes. The primary upland habitat for the cranes consists of those upland areas that are comprised of suitable foraging habitat and are contiguous to the primary wetlands. Secondary/ancillary habitats consist of natural wetland and upland areas, golf course, retention pond banks, and parks. The project acreages of areas preserved and constructed for planning purposes established this project consists of approximately 188 acres of primary habitat, 317 acres of secondary habitat, and 110 acres ancillary/tertiary habitat. The total acreage of sandhill crane habitat is approximately 615 acres, which is in excess of the 570 acres required in the SMMP. The excess acreage is primarily based upon the construction of additional storm water treatment areas associated with permitted development activities and the documented use of the shorelines typically associated with those areas. The Sandhill Crane Maps attached as Exhibit 2 have been updated to illustrate the constructed areas with the most recent aerial photography available to provide a clear depiction of development and preservation activities. The aerial photography will be updated when newer data becomes available.

The Florida sandhill cranes were observed nesting in freshwater herbaceous wetlands with nests made of plant material naturally found in the adjacent wetlands such as maidencane (*Panicum hemitomon*), spikerush (*Eleocharis* spp.), smartweed (*Polygonum* sp.), and rushes (*Scirpus* sp.). The male and female work together to build the nest. The nests observed this monitoring period were typically three to four feet in diameter and approximately one to two feet above the water surface and were larger in size to nests observed previously (photographs of typical nests included with Exhibit 3). Based on our observations during the long term monitoring of this project, water levels within the wetlands are the key component for Florida sandhill cranes to nest in a particular wetland and areas within a wetland. The observed water levels at each nest site remained constant from the 2018 monitoring and corresponded to the wetland extents delineated during the original permitting. The wetlands appear to be rebounding well from the drought of 2016-17 and long-term rainfall deficits.

A. Methods

Monitoring included a ground level inspection of potentially suitable nesting habitat on a regular basis during the Florida sandhill crane nesting season (January through June, approximate 26 weeks) totaling 12 visits. The ground level inspection consisted of a visual survey of each freshwater herbaceous wetland in search of nests or nesting behavior by cranes. Water levels and nest locations within the marshes during the nesting season limited access for direct nest observations of most of the nests without disturbing and/or frightening cranes off the nest. During the reviews, the number of eggs in the majority of nests could not be determined. The SMMP requires at least one aerial review of the crane habitat during the nesting season. This was performed via helicopter on April 11, 2019 and photographs taken are enclosed within Exhibit 3. During the aerial review, additional nests were observed that were hidden from view on the ground.

Miller Legg would once more like to take the opportunity to thank the residents and Victoria Park staff that assisted with observations and photographs in between field reviews. Their support has been useful in determining the day-to-day activities of the cranes between visits. The sandhill cranes were observed using a diversity of native habitats during the monitoring period. Shallow marshes were used for nesting, and shorelines of wetland habitats for foraging. In addition the cranes are present in urban areas of Victoria Park including golf courses and suburban subdivisions.

B. Results

This section provides detailed information on the individual nesting sites including a summary discussion of the observations, incidental wildlife observations, and recent maintenance efforts. Photographs documenting the on-site sandhill cranes and their nesting activity can be found in Exhibit 3.

Potential Nest Site A (± 46.4 acres)

Potential nesting site A is comprised of ± 18.6 acres of primary wetland habitat and ± 24.9 acres of primary upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 104, 106, 107, 112, 113, 114, 115, and 116. The secondary habitat for this site is comprised of ± 2.9 acres of secondary wetlands.

Sandhill cranes were observed nesting in Site A during the 2019 monitoring period for the first time in several monitoring periods. Shallow water was observed throughout the primary nesting wetlands within this site for a second year as illustrated in the photographs included within Exhibit 3.

The nesting cranes were observed nesting in Wetland 116 along the edge of the property on February 28th. The nesting pair was not observed in subsequent visits in March and April although the nest was observed during the aerial monitoring. Based on the timing of hatching of other pairs being monitored it is possible the pair successfully fledged colts but this could not be verified.

Additional nesting activity observed adjacent to Site A occurred in a stormwater area just west of the firehouse and existing Victoria Park development. A pair of cranes was observed nesting in April and May. This pair was observed in front of the firehouse with two juveniles during the June 26th visit. This pair is believed to be the same one that abandoned the nest in Wetland 21. In previous monitoring years this pair has had several successful nesting attempts later in the nesting season.

The fence repairs along Dr. Martin Luther King Jr. Beltway are ongoing and continue to limit unauthorized access, but historically a small number of off road vehicles are entering the site from the adjacent property to the north and trespassing on the site. This activity has been further limited by a number of fallen trees offsite blocking the trail on the adjacent property. The Victoria Park Community Council is constantly working on ways to prevent unauthorized off road vehicle access with posted signage, fence installation/repair, and utilizing physical barriers to maintain compliance. This remains a continuous problem as signs are removed and fences are repaired and vandalized in an unending cycle.

Potential Nest Site B (± 30.5 acres)

Potential nesting Site B is comprised of ± 2.4 acres of primary wetland habitat that includes Wetlands 87, 88, and 89. The secondary habitat for this site is comprised of ± 4.9 acres of secondary wetlands and ± 23.2 acres of secondary upland habitat.

As with last year, high water levels during the nesting season limited access for nest observations from the ground this season. Nesting activity was observed on the far side of the wetland during the February 27th visit. Three nests in Wetlands 87 were observed during the aerial review in April. The nests are shown in the photographs included in Exhibit 3. A pair of sandhill cranes with one colt was observed in the front yard of the residence on the west side of Wetland 87 in March.

This season no cranes or nesting activities were observed during monitoring visits to other primary Site B wetlands (88 and 89) or the secondary wetlands as shown on Exhibit 2 Sandhill Crane Maps in February March, and April.

Incidental observations included observations of a non-nesting pair of sandhill cranes foraging adjacent stormwater ponds in site B on several occasions throughout the nesting season/monitoring period.

Potential Nest Site C (± 81.3 acres)

Potential Nest Site C is comprised of 33.6 acres of primary wetland and upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 1, 2, 3, 4, 5, 6, 16, 17, 18, and 20. There are approximately 47.7 acres of secondary and ancillary upland habitat within this potential nest site. This habitat coincides with the Scrub Jay/Gopher Tortoise Preserve.

All wetlands within Site C contained standing water during the 2019 monitoring period. Overall, Site C had two confirmed nesting attempts with two confirmed surviving colts. Five nests were observed in Wetland 17 and one in Wetland 5.

One pair of sandhill cranes was observed nesting in Wetland 17 on multiple occasions during the season. The cranes changed nesting locations as water levels dropped. In addition, they may have built false nests to throw off predators. Water levels during the nesting season limited access for nest observations from the ground this season. Consequently the number of eggs could not be determined. On April 12th through June 26th two adults and two colts were observed near the nest. Both colts were observed as juveniles at the end of this monitoring period and photographs are included in Exhibit 3.

In addition a pair of sandhill cranes was observed nesting in Wetland 5 on multiple occasions during the season. However it appeared the eggs did not hatch and no colts were observed. The reason behind the unsuccessful nesting could not be determined.

Incidental sandhill crane observations were noted along MLK Beltway adjacent to the north preserve and within the neighborhood as well as foraging in the construction areas. Cranes were also observed on several occasions around the perimeter of the stormwater pond directly south of Wetland 17 as shown in the photographs included in Exhibit 3. Multiple aquatic turtles and marsh rabbits were observed on separate visits to this area.

Potential Nest Site D (± 131.2 acres)

Potential Nest Site D is comprised of 13.6 acres of primary wetlands and 20.6 acres of primary upland foraging areas. The primary wetland habitat at this nesting site includes Wetlands 33, 34, 36, 38, 39, 40, 47, 48, and 49. The secondary habitat for this site is comprised of 19.2 acres secondary wetlands and 77.8 secondary/ancillary uplands. The secondary wetland habitat includes Wetlands 21, 23, 24, 26, 27, 30, 31, 32, 35, 43, 44, 45,

46, 51, and 53. The secondary/ancillary upland foraging areas for this nest site consists of approximately 68.7 acres of managed uplands within the Scrub Jay/Gopher Tortoise Preserve and 9.1 acres of park and retention pond banks.

Nesting activity was observed in Wetlands 21, 30, 34, 38, 39, and 40 during the 2019 nesting season. Overall, Site D had eight confirmed nesting attempts, with four hatchlings, and four confirmed surviving juveniles. Based on observations there was a large amount of movement between wetlands to find the ideal nesting location this monitoring season.

An unsuccessful nesting attempt was documented in Wetland 21 during this monitoring period. This pair made a second nesting attempt in an adjacent stormwater area in Site A and two juveniles were observed on the June 26th visit.

A single nesting attempt was observed in Wetland 30 on February 26th. Due to the location in the center of the marsh it could not be determined if there were eggs in the nest.

A single nesting attempt was observed in Wetland 34 in March. The outcome of this attempt is unknown a photograph is included with Exhibit 3.

A single nesting attempt was observed in Wetland 39 on February 26th. A crane was sitting on the nest and it could not be determined if there were eggs. However, four nests in Wetlands 38 and 40 were observed during the aerial review in April. It is likely these were made by the pair typically found in this area. It is believed the pair had a successful nesting attempt in Wetland 40 as the pair was observed in the adjacent neighborhood with two healthy juveniles on June 26th.

Incidental observations of adult sandhill cranes foraging and resting were made within the vicinity of nest site D in and around the contiguous Victoria Park community towards the end of the 2019 nesting season as reported by the residents assisting with the observations.

Potential Nest Site E (\pm 30.1 acres)

Potential nest Site E is comprised of 1.1 acres of primary wetlands and 7.0 acres of primary upland foraging areas. The primary wetland habitat at this nesting site is Wetland 64. The secondary habitat for this site is comprised of 13.8 acres of secondary wetlands and 8.2 acres of secondary uplands, which include retention pond banks and managed upland buffers.

The Wetland 9 is at the northeast portion of Site E in the secondary habitat associated with the FPL Easement. This area was detected as a possible nesting site during the 2018 aerial review. During the 2019 season monitoring nesting activity was first detected in March. The nest was observed during the April aerial review along the west edge of the easement. Two juveniles were observed on May 6th and June 26th within the open water areas within the easement. There were no other nesting cranes observed in Site E although standing water was observed in Wetland 64 for the duration of the nesting season. The aerial flyover confirmed this observation.

Potential Nest Site F (±257 acres)

Potential nest Site F is comprised of 8.0 acres of primary wetland habitat and 42.8 acres of primary upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 82, 83, and 86. The primary upland foraging habitat for this site includes 42.8 acres of managed uplands. Approximately 206.2 acres of this site is secondary upland foraging habitat, which is comprised of 112.1 acres of golf course, 16.3 acres of retention pond banks, and 77.8 acres of managed upland natural areas.

Site F wetlands contained standing water for the duration of the nesting season. A nesting pair was observed in Wetland 86 in February and April. Water levels and location in the marsh limited access for nest observations from the ground. One nest was observed in Wetland 86 during the flyover in April. A pair of cranes with two colts were continuously observed from March 28th through June 26th. Photographs of the colts and juveniles are included with Exhibit 3.

Incidental observations of foraging and resting sandhill cranes were noted on the golf course throughout the 2019 nesting season.

Potential Nest Site G (±39.4 acres)

Potential nest Site G is comprised of 15.8 acres of primary wetland habitat and 4.2 acres of primary upland foraging pastureland habitat. The primary wetland habitat at this nesting site includes Wetlands 73, 74, 75, 76, and a created wetland. Site G includes approximately 19.3 acres of secondary upland foraging habitat distributed throughout this potential nest site.

There was crane nesting activity observed in the middle of the Wetland 74 marsh at Site G. Cranes were observed nesting during February and March site visits this season. The aerial flyover confirmed there were three Florida sandhill crane nests. Water levels were dropping during this period and the nesting attempts were unsuccessful.

Incidental observations of adult sandhill cranes foraging and resting were made within Site G in and around the contiguous Victoria Park community adjacent to this wetland complex throughout the 2019 nesting season.

C. Discussion

This year was the first time in many seasons that there was nesting activity in all sites A through G. The 2019 nesting season had a highest number of nesting pairs and potential nests when compared to the previous monitoring seasons. As with 2018, the higher number of successfully nesting sandhill cranes is credited and/or associated to greatly improved wetland conditions. The potentially viable nests observed throughout Victoria Park in Potential Nest Sites A, B, C, D, E, and F. There were eleven colts observed surviving with ten confirmed juveniles surviving on the June 26th visit.

The number of nests in 2019 was the highest recorded during this monitoring that started in 2003 (Figure 1). The water levels in the project wetlands overall appear normal and increases in the number of nests and success of the nesting efforts appear to correlate to the amount and timing of rainfall within the project area during the nesting season. The number of viable sandhill crane nests typically drops in years that experience drought conditions.

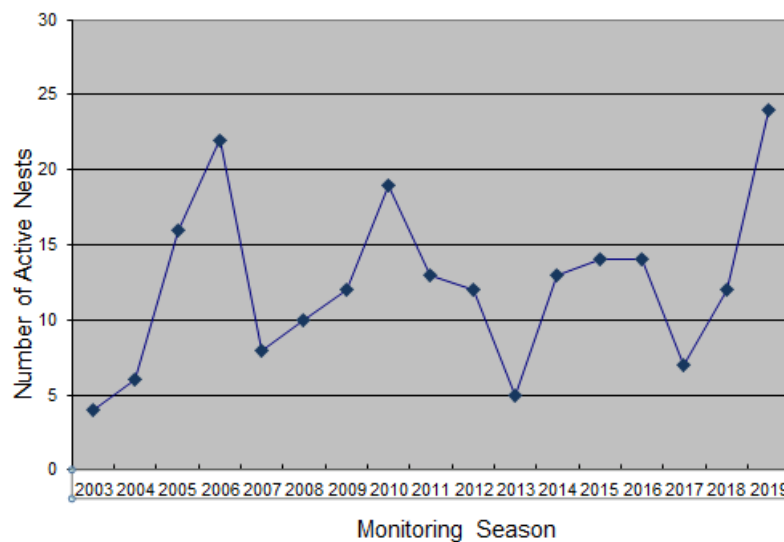


Figure 1. Active sandhill crane nests observed at Victoria Park, Deland, Florida.

Table I- Overall Nest Status

* Based on estimates of surviving juveniles observed at end of monitoring June 26th, 2019.

Nest Location Wetland #	# of Nests	# of Active Nests with Incubating Cranes	Colts Observed	# of Colts Survived	Nesting Pair Numbers
AI12	1	1	-	-	1
Stormwater A	1	1	2	2	1
B87	3	1	1	-	1
C5	1	1	-	-	1
C17	5	1	2	2	1
D21	1	1	-	-	1
D30	1	1	-	-	1
D34	1	1	-	-	1
D38	1	1	-	-	1
D39	1	1	-	-	1
D40	3	1	2	2	1
E9	1	1	2	2	1
F86	1	1	2	2	1
G74	3	1	-	-	1
TOTALS	24	14	11	10	14

During the 2019 Florida sandhill crane nesting season, approximately 24 nests were observed (Table I). Fourteen of these nests were designated as active nests with observations of incubation. Based on observations eleven colts successfully hatched and ten survived through the end of nesting season. The exact number hatchings may have been higher but tall grass and vegetation concealed the assessment of several nests until after the aerial review in April. The number of colts surviving this season was the highest recorded and we hope to continue this positive trend with a continuation of normal water levels in the nesting habitats.

Nest failure, or unsuccessful nests, can result from many factors. Predators such as bobcats, coyotes, raccoons, red-tailed hawks, bald eagles, various owls, and American alligator can eat the eggs or young colts. Relating to the Victoria Park Community sandhill crane habitat, low and changing water levels and raccoon predation appear to have the greatest effect on nesting success. Additional reasons for nest failure include abandonment, egg infertility, and sudden flooding. Based on long term observations and physical location of the nests within the wetlands human disturbance is minimal as it relates to nesting of cranes associated within the project area.

Based on a review of data the National Oceanic and Atmospheric Administration (NOAA), the precipitation levels were slightly below average overall from June 2018 to June 2019 (Figure 2).

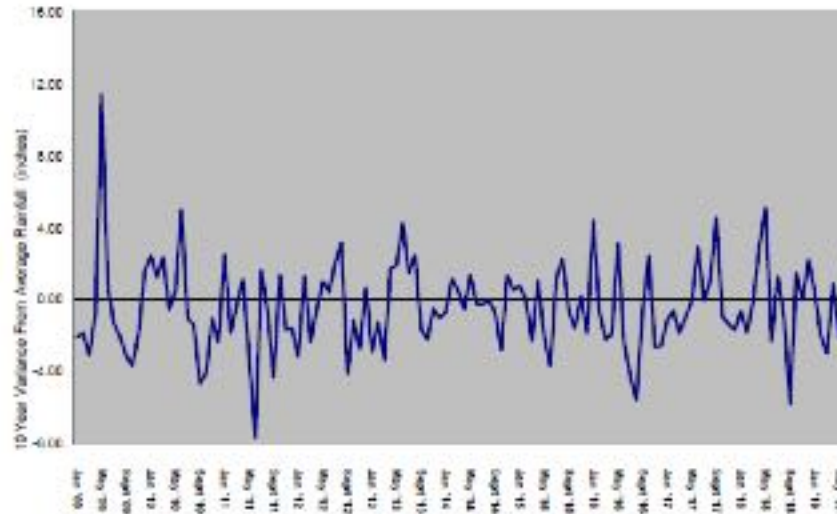


Figure 2. 10 Year difference between actual and average precipitation in Deland, FL (NOAA).

Drought conditions lower the water levels, which reduces success due to increased predator access to nests. In contrast, normal to high rainfall should increase productivity by creating more suitable water depths for nesting and improving feeding conditions. Several sandhill crane pairs in the Victoria Park community nested multiple times this year based on changing water levels based on the evaluation of the photographs taken during the aerial review. Several nests appeared underwater or high and dry with a second or third nest constructed in the same proximity.

V. INCIDENTAL WILDLIFE OBSERVATIONS

The following faunal species were observed directly or indirectly by Miller Legg, within or near the areas monitored since 2010. **Bold = Observed During This Reporting Period**

MAMMALS

Species	Common name
<i>Canis latrans</i>	Coyote
<i>Odocoileus virginianus</i>	White-tailed deer
<i>Lynx rufus</i>	Bobcat
<i>Procyon lotor</i>	Raccoon
<i>Scalopus aquaticus</i>	Eastern mole
<i>Sciurus carolinensis</i>	Grey squirrel
<i>Sciurus niger shermani</i>	Sherman's fox squirrel
<i>Sigmodon hispidus</i>	Cotton rat
<i>Sylvilagus palustris</i>	Marsh rabbit
<i>Ursus major</i>	Black bear*

*only scat observed

AMPHIBIANS & REPTILES

<i>Acris gryllus dorsalis</i>	Florida cricket frog
<i>Alligator mississippiensis</i>	American alligator
<i>Anolis sagrei</i>	Brown anole
<i>Apalone ferox</i>	Florida softshell turtle
<i>Bufo quercicus</i>	Oak toad
<i>Bufo terrestris</i>	Southern toad
<i>Coluber constrictor</i>	Black racer
<i>Crotalus adamanteus</i>	Eastern diamondback rattlesnake
<i>Gopherus polyphemus</i>	Gopher tortoise
<i>Hyla femoralis</i>	Pinewoods treefrog
<i>Lithobates capito</i>	Gopher frog
<i>Micrurus fulvius</i>	Coral snake
<i>Pantherophis guttatus</i>	Corn snake

BIRDS

<i>Accipiter cooperii</i>	Cooper's hawk
<i>Aix sponsa</i>	Wood duck
<i>Anhinga anhinga</i>	Anhinga
<i>Aphelocoma coerulescens</i>	Florida scrub jay
<i>Aramus guarauna</i>	Limpkin
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron
<i>Aythya affinis</i>	Lesser scaup
<i>Aythya collaris</i>	Ring-necked duck
<i>Baeolophus bicolor</i>	Tufted titmouse
<i>Bubulcus ibis</i>	Cattle egret

BIRDS – cont.	
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lineatus</i>	Red-shouldered hawk
<i>Cardinalis cardinalis</i>	Northern cardinal
<i>Cathartes aura</i>	Turkey vulture
<i>Ceryle alcyon</i>	Belted kingfisher
<i>Charadrius vociferus</i>	Killdeer
<i>Chordeiles minor</i>	Common nighthawk
<i>Colinus virginianus</i>	Bobwhite quail
<i>Coragyps atratus</i>	Black vulture
<i>Corvus brachyrhynchos</i>	American crow
<i>Cyanocitta cristata</i>	Blue jay
<i>Dendroica coronata</i>	Yellow-rumped warbler
<i>Dendroica pinus</i>	Pine warbler
<i>Dryocopus pileatus</i>	Pileated woodpecker
<i>Dumetella carolinensis</i>	Grey catbird
<i>Egretta caerulea</i>	Little blue heron
<i>Egretta thula</i>	Snowy egret
<i>Egretta tricolor</i>	Tricolored heron
<i>Eudocimus albus</i>	White ibis
<i>Falco sparverius</i>	American kestrel
<i>Gallinago gallinago</i>	Common snipe
<i>Gallinula chloropus</i>	Common moorhen
<i>Haliaeetus leucocephalus</i>	Bald eagle
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Lophodytes cucullatus</i>	Hooded merganser
<i>Melanerpes carolinus</i>	Red-bellied woodpecker
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker
<i>Meleagris gallopavo</i>	Wild turkey
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Mycteria americana</i>	Wood stork
<i>Myiarchus crinitus</i>	Great-crested flycatcher
<i>Palacrocorax auritus</i>	Double-crested cormorant
<i>Pandion haliaetus</i>	Osprey
<i>Parula americana</i>	Northern parula
<i>Picoides pubescens</i>	Downy woodpecker
<i>Plegadis falcinellus</i>	Glossy ibis
<i>Podilymbus podiceps</i>	Pied-billed grebe
<i>Poecile carolinensis</i>	Carolina chickadee
<i>Quiscalus quiscula</i>	Common grackle
<i>Sialia sialis</i>	Eastern bluebird
<i>Tachycineta bicolor</i>	Tree swallow
<i>Thryothorus ludovicianus</i>	Carolina wren
<i>Toxostoma rufum</i>	Brown thrasher
<i>Tringa flavipes</i>	Lesser yellow-legs
<i>Turdus migratorius</i>	American robin

VI. MAINTENANCE

The habitat for the sandhill cranes is maintained to eliminate the presence of exotic/invasive plant species using the following techniques: mowing, timbering, and mechanical chopping. Potential nest Sites C and D overlap upland habitats with the scrub jay/gopher tortoise preserve, in the NE Quadrant. The preserve is primarily managed for the gopher tortoise and Florida scrub jay, but the management techniques are also beneficial for crane foraging habitat. The upland habitats within the preserve are maintained, according to the SMMP, by using similar techniques. Controlled burns were to be the primary tool utilized for habitat management but has proven difficult. The overall goal is to mechanically reduce the vegetation to heights that can safely lead to potentially utilizing a prescribed burn in the future.

Maintenance for 2019 occurred in North Preserve Management Unit 1, 2, and 3 and South Preserve Management Unit 1 and consisted of mechanically mowing of habitat. These areas coincide with previous observations of sandhill cranes and were managed in a manner that benefits the cranes by reducing vegetation around the wetlands that could conceal predators. This generally follows habitat management guidelines intended to mimic some of the effects of fire. These management treatments were applied in ways that minimize soil disturbance and reduced the possibility of introducing or expanding coverage of invasive or exotic species. The management is potentially setting the stage for potential prescribed fire treatment in the future. Thinning activities along with resumption of normal hydroperiod after the prolonged drought continues to reduce the number of pine seedlings of various species from encroaching in the wetlands.

The Council is committed to ongoing monitoring to determine if these treatments are having the desired effect. Areas are being evaluated and identified in North Preserve Management Unit 4 and South Preserve Management Unit 3 and 4 for maintenance in 2020.

Site A

The SMMP includes clearing within Site A via mechanical chopping, timbering, and herbicide treatments as planned in the scrub jay preserve. The upland areas are periodically mowed and managed with respect to crane habitat needs. During the 2007 monitoring season (March - June), the upland areas were cleared of thick shrubs, opening up the habitat to increase crane utilization. The area was then replanted with native herbaceous vegetation to enhance the area. Wetlands 104 and 107 were mowed at the conclusion of the 2008-nesting season. Maintenance in June 2016 and consisted of thinning the pine saplings encroaching in Wetlands 107, 112, and herbicide spot treatment of exotic species. The resumption of normal hydroperiods after the prolonged drought continues to reduce the number of pine seedlings encroaching in the wetlands. This area is currently being assessed to drop trees in strategic locations to limit off road vehicle access.

Site B

No maintenance is required for this nest site, because the suitable upland forage habitat is south and off-site of the primary wetland.

Site C

The upland habitat occurring in this site is predominantly secondary/ancillary foraging uplands located in the north preserve. Even though the area is already managed primarily for the gopher tortoise and Florida scrub jay, sandhill cranes were observed foraging within this area. Maintenance for exotic/invasive plants in the north and south preserve area occurred in December 2014, August 2016, and consisting of mowing palmettos in the uplands and thinning pine seedlings encroaching in Wetland 16. Pine sapling thinning in Wetlands 2 and 5 occurred in this area in 2018. Maintenance for 2019 occurred in North Preserve Management Unit 1, 2, and 3 around Wetlands 3, 4, 5, 6, 17, and 20.

Site D

The primary foraging upland habitat at this potential nest site consists of pastureland and scrubby uplands. A large portion of Site D in south preserve was mowed in July 2016 and consisted of mowing pines and palmettos encroaching on Wetlands 43, 44, 45, and 46. This mowing also including the adjacent pastureland and palmettos greatly enhancing the foraging value to sandhill cranes. Wetlands 19, 21, 23, 24, 26, 30, 31, 32, 33, 34, 35, 36, 38, 40, 43, 44, 47, 48, 49, and 51 were mowed at the conclusion of the 2008-nesting season. The understory of a portion of the South Preserve (Management Units 1 and 2) was cleared in March through April of 2007. The scrubby upland is comprised of dense vegetation and will be converted into more appropriate foraging habitat via mechanical clearing. The secondary/ancillary foraging uplands of this site are located in the south preserve. This area will primarily be managed for the gopher tortoise and Florida Scrub Jay, identical to the management methods outlined in the Scrub Jay Site Mitigation and Management Plan. Maintenance occurred for 2019 in the South Preserve Management Unit 1 around Wetlands 21, 23, and 24 consisting of vegetation mowing as discussed.

Site E

The uplands for this site primarily consist of pastureland, which provides valuable foraging habitat for flightless cranes. Even though cattle actively forage in the pastureland, periodic mowing is still the only required maintenance technique for this nest site. As with previous years, mowing has not been necessary.

Site F

The upland habitat occurring at Site F is primarily comprised of golf course fairways, a secondary upland foraging habitat. An ecologically sensitive pesticide management plan is in place for the golf course, which is also beneficial for foraging cranes. The primary upland habitat is subject to mowing and removal of undesirable vegetation to ensure ideal ground cover for foraging cranes.

Wetlands 82 and 86 were mowed at the conclusion of the 2008-nesting season. Maintenance of exotic vegetation within Site F is ongoing.

Site G

Maintenance of the upland habitat for this site consists of periodic mowing and controlling undesirable plants to ensure ideal vegetation height for cranes. Wetlands 73 and 74, the Wetland Creation Area and the surrounding pasture areas were mowed at the conclusion of the 2008-nesting season. Maintenance of exotic vegetation within Site G was completed in August 2015 and consisted of treatment of cogon grass and thinning of pine saplings in Wetland 73. This area was treated for cogon grass in 2019 and will be retreated in 2020.

VII. NEXT MONITORING REPORT

The next annual monitoring report will be prepared for review in August 2020.

VIII. SUMMARY

During the 2019 Florida sandhill crane nesting season, approximately 24 nests were observed (Table 1). Fourteen of these nests were designated as active nests with observations of incubation. Based on observations eleven colts successfully hatched and ten survived through the end of nesting season. The exact number hatchings may have been higher but tall grass and vegetation concealed the assessment of several nests until after the aerial review in April. The number of colts surviving this season was the highest recorded and we hope to continue this positive trend with a continuation of normal water levels in the nesting habitats.

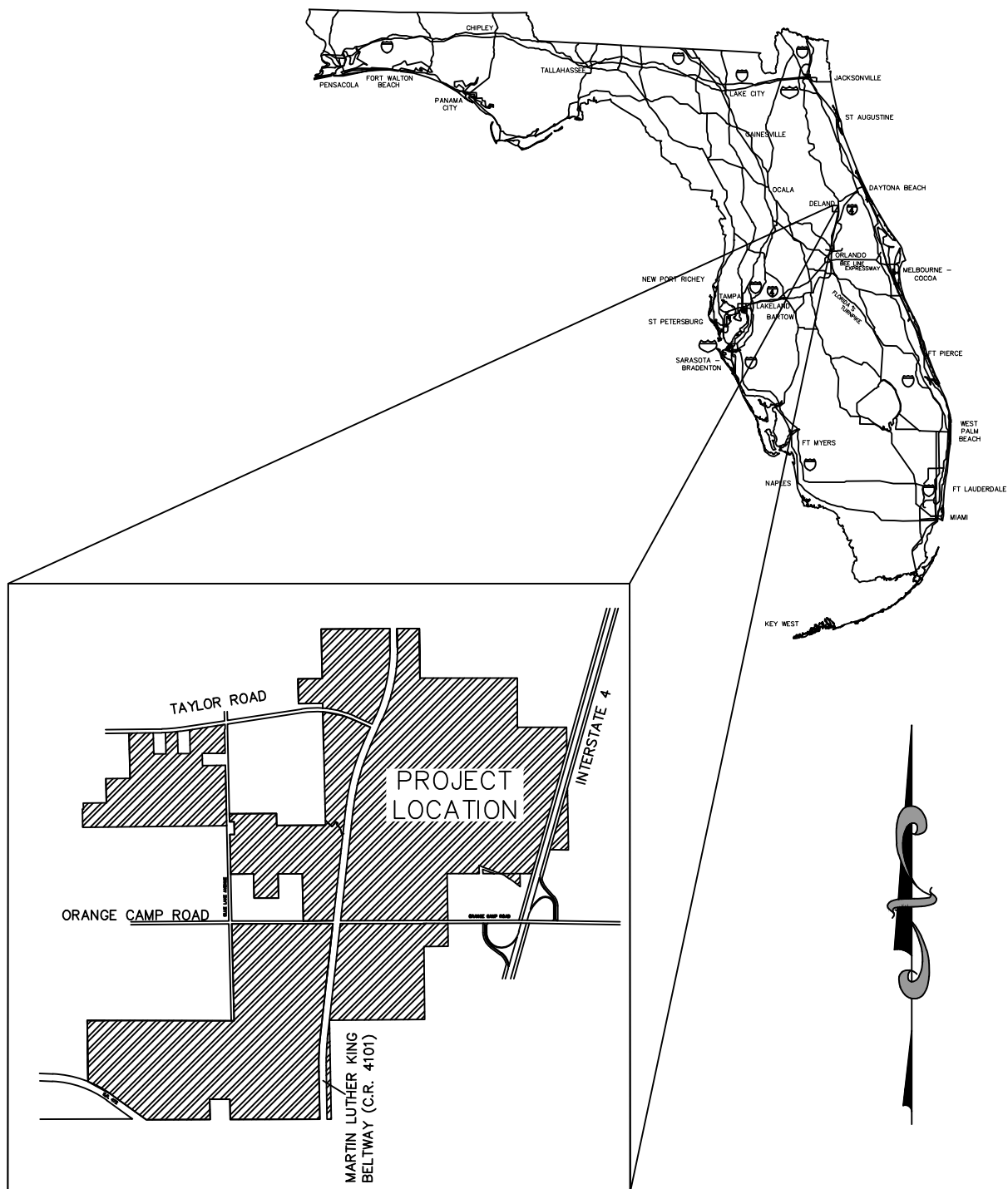
Improved nesting results for next few seasons are expected if the positive rainfall and hydrologic trends continue. Based on observations and physical location of nests within the wetlands human disturbance is minimal to crane nesting connected with this project. Miller Legg will continue its long term monitoring of the Victoria Park Community in relation to rainfall and water levels, and evaluate the maintenance needs based on site conditions.

The wetlands of the Victoria Park Community continue to provide feeding and nesting habitat for Florida sandhill cranes and several additional state and/or federally listed wetland dependent of bird species. We look forward to reporting on the success of the cranes within the Victoria Park Community in the future.

Victoria Park Sandhill Crane Monitoring Report 2019

Exhibit I

Location Map



Project/File No.:
09-00268
Twp/Rng/Sec:
17/30/22-27,34-36
Date Drawn:
10/13/2015

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Central Florida Office: 631 S. Orlando Avenue · Suite 200
Winter Park, Florida · 32789-7122
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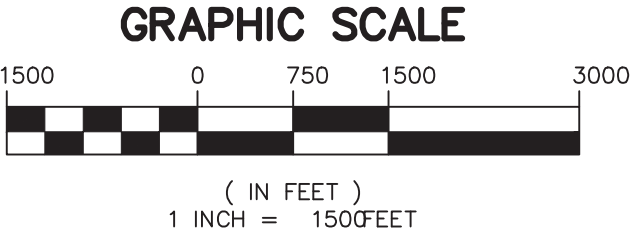
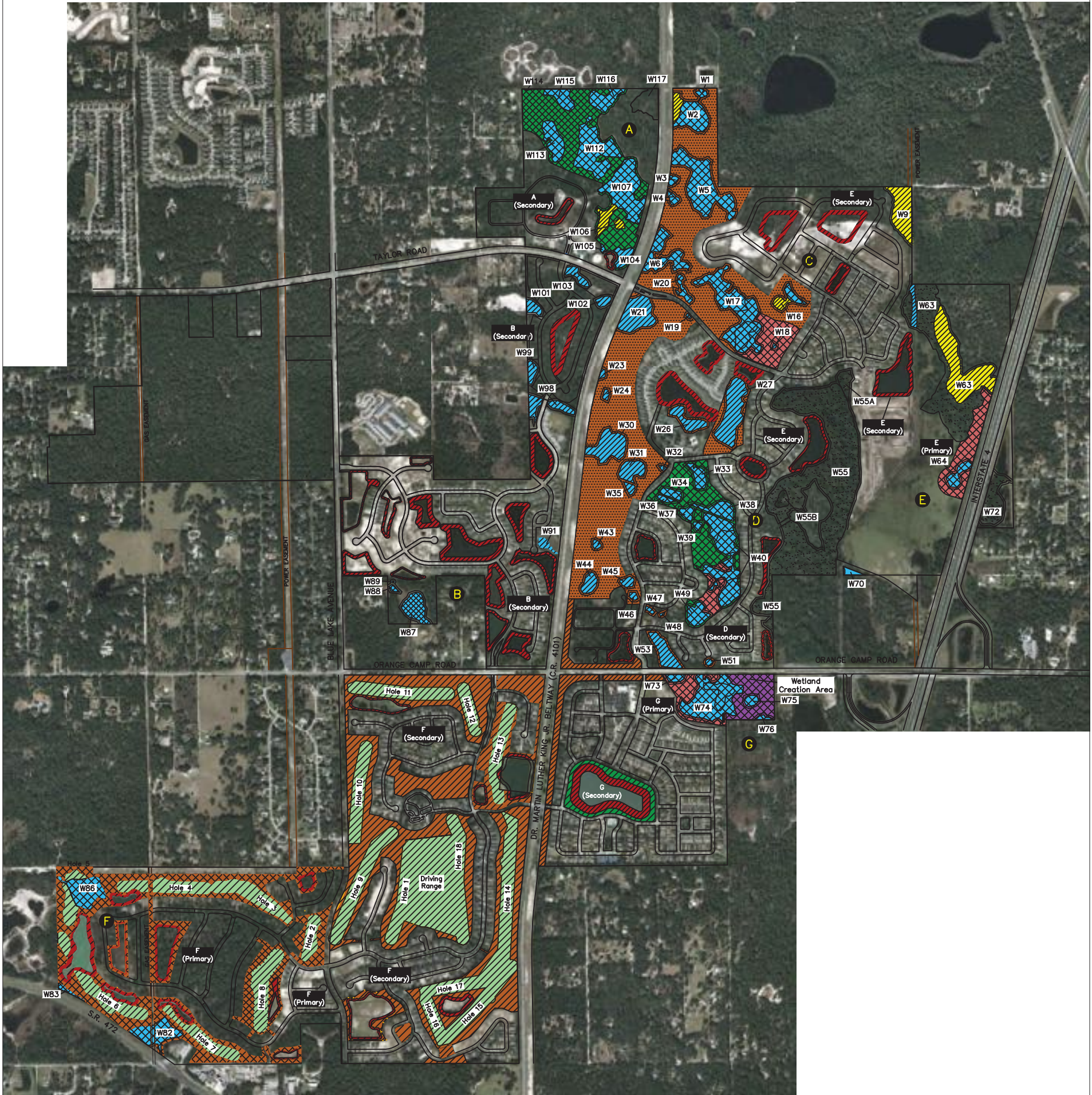
VICTORIA PARK
DELAND, FLORIDA
FOR: Victoria Park Community Council

LOCATION
MAP

Victoria Park Sandhill Crane Monitoring Report 2019

Exhibit 2

Sandhill Crane Maps



NOTE:
MINOR MODIFICATIONS TO
THE SITE PLAN MAY OCCUR
DURING FINAL DESIGN AND
ENGINEERING, HOWEVER,
SANDHILL CRANE PRIMARY
AND SECONDARY ACREAGE
REQUIREMENTS WILL BE
MAINTAINED.

LEGEND	
	Improved Pasture
	Retention Pond (Dry/Wet Bank)
	Managed Upland
	Open Forested Wetland
	Golf Course
	Cleared & Seeded Upland
	Herbaceous Wetland
	Created Herbaceous Wetland
	Park
	Primary Habitat
	Secondary Habitat
	Ancillary (Tertiary) Habitat
	Wetland Number
	Potential Nest Site (A-G)

SANDHILL CRANE HABITAT MAP

DATE DRAWN	2/14/17
DATE	1
OF	1

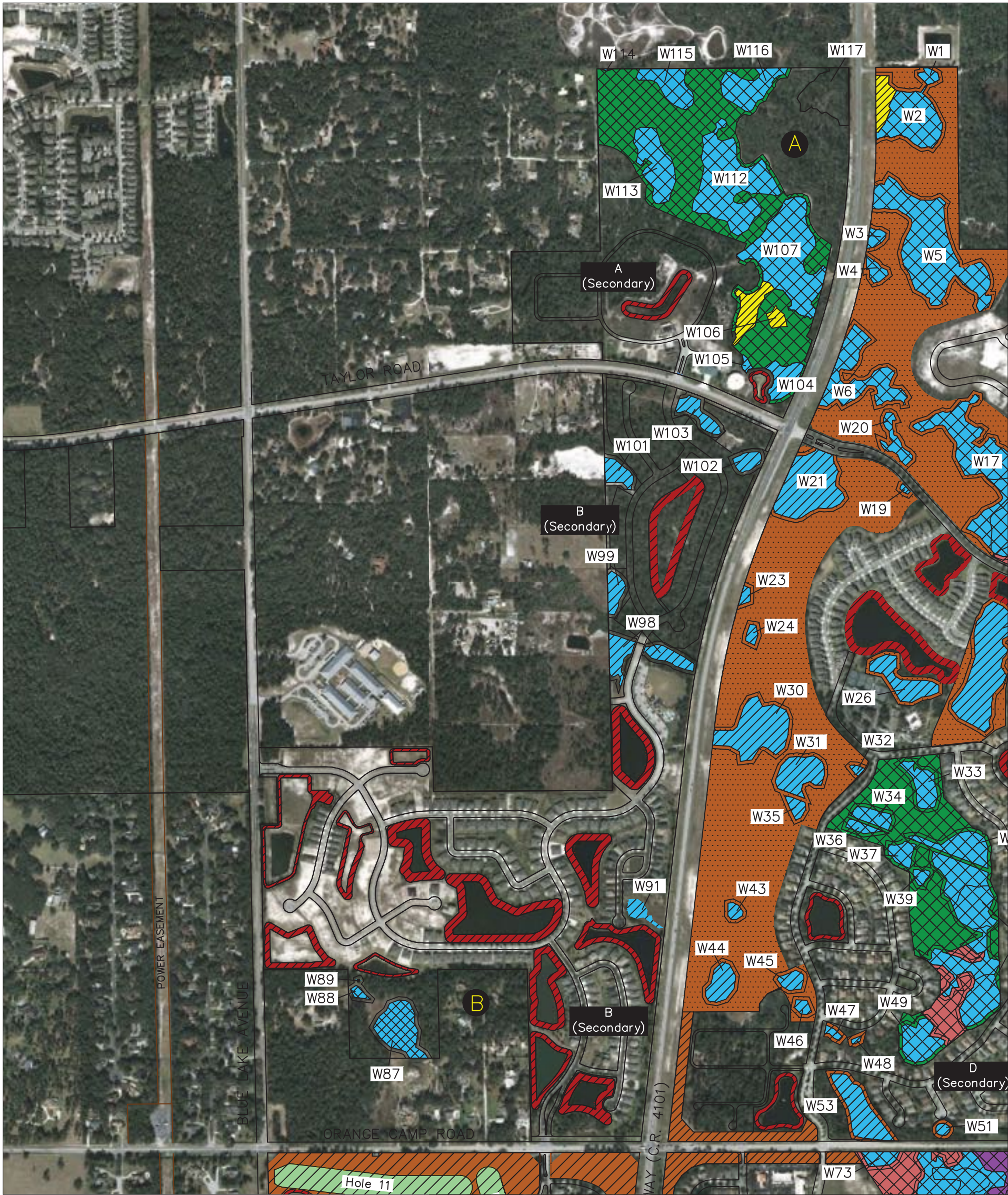
DESIGNER	PM
CHECKER	PM
DATE	DL
PROJECT / FILE NO.	09-00268
DRAWING NO.	SHC-1



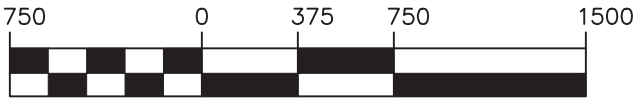
VICTORIA PARK
DELAND, FLORIDA
FOR: KOLTER HOMES LLC

NO.	DATE	REVISIONS	DES.	CHK.

NO.	DATE	REVISIONS	DES.	DWN.



GRAPHIC SCALE



(IN FEET)
1 INCH = 750 FEET

NOTE:
MINOR MODIFICATIONS TO
THE SITE PLAN MAY OCCUR
DURING FINAL DESIGN AND
ENGINEERING. HOWEVER,
SANDHILL CRANE PRIMARY
AND SECONDARY ACREAGE
REQUIREMENTS WILL BE
MAINTAINED.

LEGEND	
	Improved Pasture
	Retention Pond (Dry/Wet Bank)
	Managed Upland
	Open Forested Wetland
	Golf Course
	Cleared & Seeded Upland
	Herbaceous Wetland
	Created Herbaceous Wetland
	Park
	Primary Habitat
	Secondary Habitat
	Ancillary (Tertiary) Habitat
	Wetland Number
	Potential Nest Site (A-G)

SANDHILL CRANE HABITAT MAP - NORTHWEST QUADRANT

South Florida Office: 5747 N. Andrews Way
Ft. Lauderdale, Florida - 33309-2364
954-436-7000 · Fax: 954-436-8664

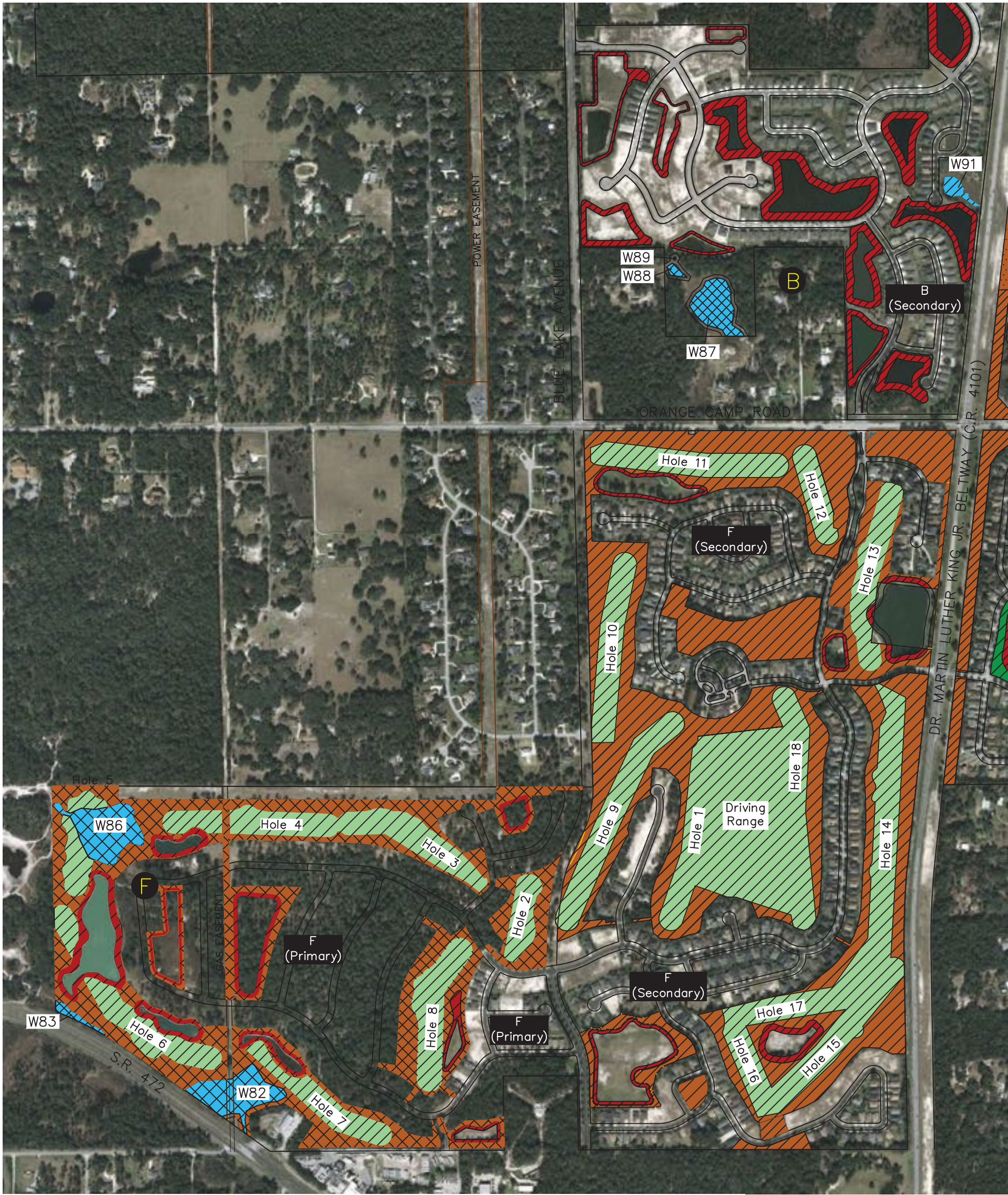
VICTORIA PARK

DELAND, FLORIDA

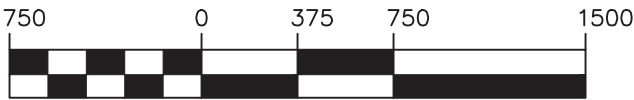
FOR: KOLTER HOMES LLC

NO.	DATE	REVISIONS	DES.	DWN.

DATE EXAMINED	8/10/16
PROJECT / FILE NO.	09-00268
DRAWING NO.	SHC-1
DESIGNED BY	PM
CHECKED BY	PM
IN CHARGE	DL
APPROVED BY	1
DATE	8/10/16



GRAPHIC SCALE



(IN FEET)
1 INCH = 750 FEET

NOTE:
MINOR MODIFICATIONS TO
THE SITE PLAN MAY OCCUR
DURING FINAL DESIGN AND
ENGINEERING, HOWEVER,
SANDHILL CRANE PRIMARY
AND SECONDARY ACREAGE
REQUIREMENTS WILL BE
MAINTAINED.

LEGEND

- Improved Pasture
- Retention Pond (Dry/Wet Bank)
- Managed Upland
- Open Forested Wetland
- Golf Course
- Cleared & Seeded Upland
- Herbaceous Wetland
- Created Herbaceous Wetland
- Park
- Primary Habitat
- Secondary Habitat
- Ancillary (Tertiary) Habitat
- W86 Wetland Number
- (A) Potential Nest Site (A-G)

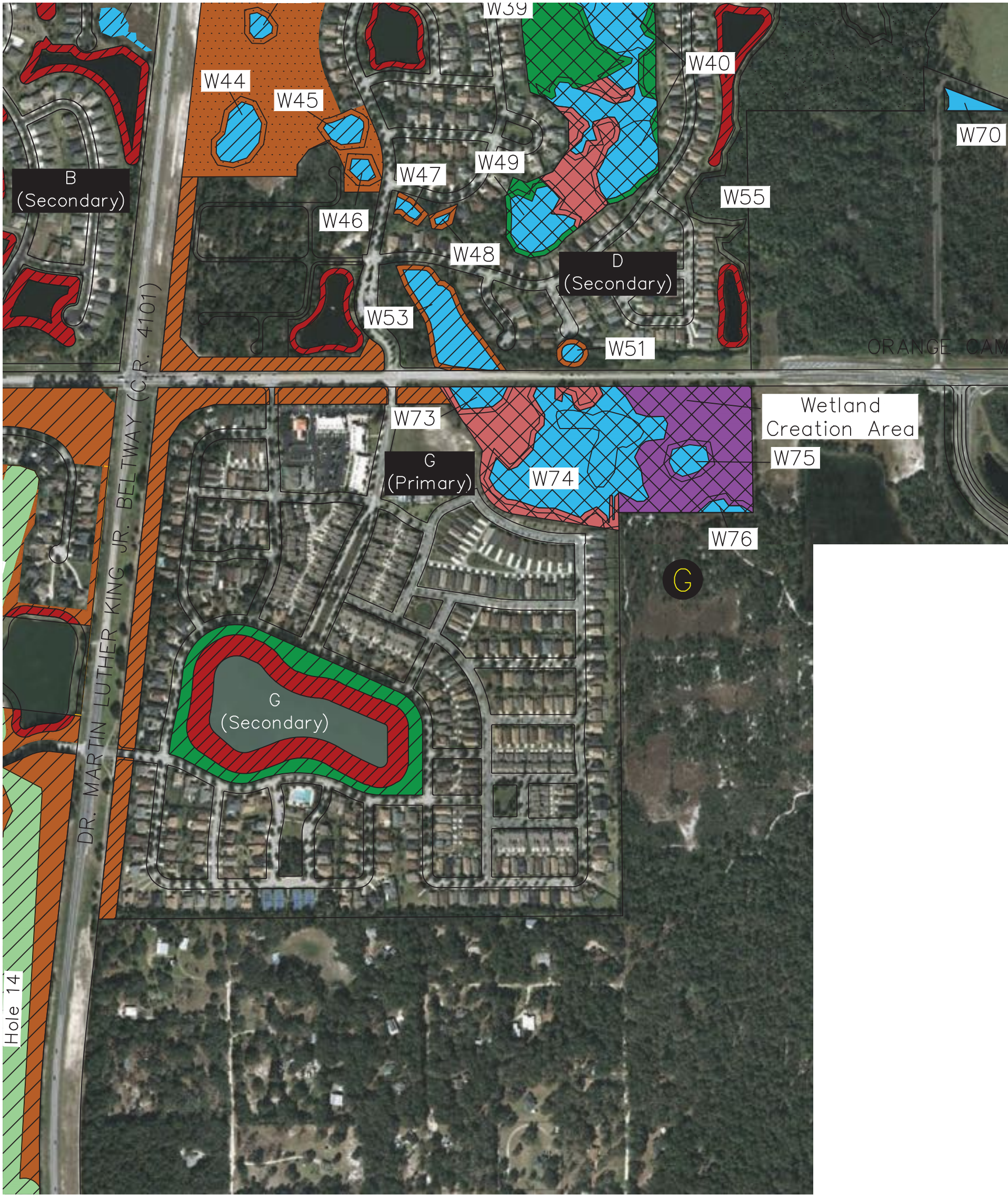
SANDHILL CRANE HABITAT MAP - SOUTHWEST QUADRANT

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Ft. Lauderdale, Florida - 33309-2364
954-436-7000 · Fax: 954-436-8664

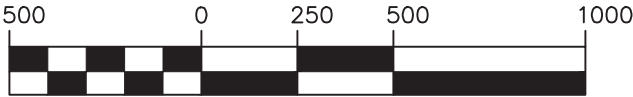
VICTORIA PARK
DELAND, FLORIDA
FOR: KOLTER HOMES LLC

NO.	DATE	REVISIONS	DES.	DWN.

DATE EXAMINE	2/14/17
PROJECT / FILE NO.	09-00268
DRAWING NO.	SHC-1
DESIGNER	PM
CHECKER	PM
INCHES	1" = 750'
SCALE	1" = 750'
PROJECT / FILE NO.	09-00268
DRAWING NO.	SHC-1
DATE EXAMINE	2/14/17



GRAPHIC SCALE



(IN FEET)
1 INCH = 500 FEET

NOTE:
MINOR MODIFICATIONS TO
THE SITE PLAN MAY OCCUR
DURING FINAL DESIGN AND
ENGINEERING, HOWEVER,
SANDHILL CRANE PRIMARY
AND SECONDARY ACREAGE
REQUIREMENTS WILL BE
MAINTAINED.

LEGEND

- Improved Pasture
- Retention Pond (Dry/Wet Bank)
- Managed Upland
- Open Forested Wetland
- Golf Course
- Cleared & Seeded Upland
- Herbaceous Wetland
- Created Herbaceous Wetland
- Park
- Primary Habitat
- Secondary Habitat
- Ancillary (Tertiary) Habitat
- W86 Wetland Number
- Potential Nest Site (A-G)

SANDHILL CRANE HABITAT MAP - SOUTHEAST QUADRANT

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Ft. Lauderdale, Florida - 33309-2364
954-436-7000 · Fax: 954-436-8664

VICTORIA PARK
DELAND, FLORIDA
FOR: KOLTER HOMES LLC

NO.	DATE	REVISIONS	DES.	DWN.

DATE EXAMINE: 8/10/16
PROJECT / FILE NO.: 09-00268
DRAWING NO.: SHC-1
SHEET: 1 OF 1

Victoria Park Sandhill Crane Monitoring Report 2019

Exhibit 3

Photographs

Color Key:

- = Observed active nests**
- = Other viable nests with no
observed SHC utilization**
- = Observed chicks**

Pre-Nesting Activities



Pair of Florida Sandhill Cranes Feeding Victoria Park Site D – 01/25/2019



Site F Golf Course pair of Sandhill Cranes - 01/25/2019

Pre-Nesting Activities



Victoria Park Site B pair of Sandhill Cranes - 2/28/2019



Site C Wetland 9 pair of Sandhill Cranes - 2/28/2019

Active Nesting



Victoria Park Site A Wetland 74 Sandhill Crane Nesting 2/28/2019



Site B Wetland 87 Sandhill Crane Nesting (far side of wetland) - 2/28/2019

Active Nesting



Victoria Park Site C Wetland 5 Sandhill Crane Nesting 2/28/2019



Victoria Park Site D Wetland 21 Sandhill Crane Nesting 2/28/2019

Sandhill Crane Colts



Site F Golf Course Near Wetland 86 Two (2) Adult Sandhill Cranes with Two (2) Colts - 3/28/2019



Victoria Park Site F Near Wetland 86 Two (2) Sandhill Crane Colts - 3/28/2019

Sandhill Crane Colts



Victoria Park Site D Two (2) Adult Sandhill Cranes with Two (2) Colts - 3/28/2019



East of Site B Wetland 87 Two (2) Adult Sandhill Cranes with One (1) Colt - 3/28/2019

Juvenile Florida Sandhill Cranes



Site C Stormwater Pond Two (2) Adult and Two (2) Juvenile Cranes - 4/12/2019



Site F Golf Course Two (2) Adult Sandhill Cranes with Two (2) Juveniles - 5/6/2019

Juvenile Florida Sandhill Cranes



Site D Two (2) Adult Sandhill Cranes with Two (2) Juveniles in Neighborhood- 6/26/2019



Site E (Secondary) Stormwater Pond Two (2) Adult Sandhill Cranes with Two (2) Juveniles - 6/26/2019

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat



Victoria Park Site A Wetland 116 Active Sandhill Crane Nest



Victoria Park Site B Wetland 87 Sandhill Crane Nests

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat



Victoria Park Site C Wetland 5 Sandhill Crane Nest



Victoria Park Site C Wetland 17 Sandhill Crane Nests

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat



Victoria Park Site D Wetland 21 Sandhill Crane Nest



Victoria Park Site D Wetland 40 Sandhill Crane Nests

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat



Victoria Park Site E Wetland 9 Sandhill Crane Nest



Victoria Park Site F Wetland 86 Sandhill Crane Nests

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat



Victoria Park Site G Wetland 74 Sandhill Crane Nests



Victoria Park Site A Wetland 116 No Observed Sandhill Crane Nests

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat



Victoria Park Site C Wetland 2 No Observed Sandhill Crane Nests



Victoria Park Site D Wetland 38 South No Observed Sandhill Crane Nests

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat



Victoria Park Site E Wetland 64 No Observed Sandhill Crane Nests



Victoria Park Site F Wetland 82 No Observed Sandhill Crane Nests

Incidental Observations of Sandhill Cranes



Sandhill Crane Drinking Along Retention Pond Shoreline



Sandhill Cranes Preening Along Retention Pond Shoreline

Incidental Observations of Additional Species



Bobwhite Quail On Golf Course



Barred Owl in Preserve

Incidental Observations of Additional Species



Osceola Turkey Wetland 9 Buffer



Snowy Egret Observed in Wetland 5

Miscellaneous Observations



Abandoned Nest in Wetland 34



Abandoned Nest in Wetland 39