



Golf Hammock Owners' Association

Drainage Report

For:

**Lost Ball Drive, Cormorant Point Drive, Dog Leg Drive, Waterwood Drive &
Cormorant Point Drive Intersection Areas**

Prepared for:
Richard Smith, Chairperson
Roads and Drainage Committee
Golf Hammock Owners' Association

Prepared by:



2925 Kenilworth Blvd.
Sebring, FL 33870
(863) 385-5564
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Executive Summary

Richard Smith, Director of the Golf Hammock Owners' Association contacted us to provide an assessment and report on four main areas of drainage concern. These areas include Lost Ball Drive, Cormorant Point Drive, Dog Leg Drive, and the Waterwood Drive & Cormorant Point Drive intersection.

The first area, Lost Ball Drive, is having issues with water standing in the road side ditches. The immediate problem appears to be related to ditch grading and could potentially be caused by overall roadway, ditch, and driveway grading. The original plans called for the water to flow along the road side ditches eventually to the west, but there appears to be some high areas preventing flow. During the site visits, a review of the original plans and comparison to current site conditions was made. It appears the site was not constructed exactly per plan and some conveyance structures were not constructed.

Cormorant Point Drive was also reviewed to determine its cause for water backing up into the road side ditches and driveways. It was quickly apparent, that three areas of road side ditch were filled in at some point. These locations have the fill coming from the front yard and maintain a higher area until it reaches the edge of pavement. These areas need to be re-graded to match the adjacent ditch areas to allow the water to flow again.

The next area of concern was Dog Leg Drive. Similar issues were found in this area, water standing in the ditches and driveways along the road. This roadway only has homes on the southerly side of the road for a major part of the road. The opposite side of the road in this area is mainly wetland. The cause to the issues in this area mostly seem to be related to lack of a road side ditch and a number of driveways having been constructed without a dip or culvert to allow water to pass. There are a few potential solutions to solve the drainage issues for this road. The ditches need to be re-shaped along the majority of the road. The driveways that do not have a dip should be re-constructed to incorporate a dip to allow the water to pass and continue down the road. It is possible to include a sock pipe or some additional inlets and culvert crossings to allow the water to cross the road and allow the ditches to dry out more rapidly.

The last area assessed in this report was the intersection of Waterwood Drive and Cormorant Point Drive. The south easterly side of this intersection had been reported as having water backing up in the ditch. The driveway was pointed out as the likely culprit with the water blockage. After inspection, the driveway clearly was built without any dip or properly sized culvert. A smaller 4 or 6 inch plastic corrugated pipe appears to have been laid just under the pavers in the area of the road side ditch. This is not proper construction methods and has been clogged with grass and sediment. The pavers are also loose over the pipe and the weight of walking can deflect the pavers. This driveway needs to be reconstructed with either a proper dip or culvert to allow water to pass.

Additional details can be found in the report to follow.

Lost Ball Drive

The issues in the area of Lost Ball Drive were reported as water standing in the road side ditches along a number of homes. The areas pointed out were locations that recently had ditch cleaning. The complaints by residents were mainly that the water was not flowing anywhere and would stand for a day to a week before eventually percolating or evaporating.

Some of the causes of the standing water can be associated with irregular grading of the area, rises and dips holding water. The roads and ditches do not have much slope in the areas of the water standing. It does not take much to cause the water to puddle or get blocked. The driveways are also higher than the ditch bottoms in most cases. This will create a driveway dam or ditch block. This should not be considered a bad thing. It will promote water to percolate back into the ground. In some cases, during a wet rain season, the water table can be elevated causing the water to appear to stay for extended periods of time. Lost Ball also has a number of intersections that do not have any culverts crossing under the road. The original plans intended the water to flow around the corners and to the west down Pitching Wedge and Dog Leg. The inspection during the site visit and looking at some older topo, show the ditches and road slope up for a short length before sloping back down to the west. This explains some of the backup of water on the westerly side of Lost Ball Dr.



Image of westerly side of the road near the Dog Leg Drive Intersection
The ditch is very shallow and the running slope is very little.

The easterly side of the road near 9th Tee Ct. currently appears to have the ditch terminate at the pavement edge on 9th Tee. It then flows over the road to an inlet at the end of the cul-de-sac. Upon further investigation, the inlet only has a 4" or 6" out fall pipe. It heads to the east to the golf course and has no apparent outfall. The original drainage plans called for a ditch along the back of all of the homes along Lost Ball and the flow was to head to the south. No apparent ditch was present during the on-site investigation. Going through some older files turned up a possible plastic pipe that runs along this ditch area to the south. It was not possible to verify its location or condition due to the lack of any inlets or clean outs that were visible. The older files pointed to the two inlets that cross the southern most part of Lost Ball Dr. near Hammock Falls. These two inlets confirmed the size and location of the pipe. The older files show that it runs to Hammock Road and runs in the northerly right of way to the easterly side of the main Golf Hammock entrance.



Cul-de-sac Inlet

Outfall Pipe in Inlet



Solutions to the standing water in this area may involve additional ditch cleaning as well as the addition of some culvert crossings near the intersections along Lost Ball. The installation of sock pipe may also help to draw down the water in the ditches. This solution would need a good positive outfall location. In this case, the golf course ditch or pipe, if it exists, may need to be improved or cleaned out. Alternate options may include not doing anything. If the water in the ditch percolates or evaporates in 24 to 48 hours, it is normal behavior for this area of Highlands County. The water table can vary from 6+ feet to the surface within Golf Hammock, depending on the soil type (see soil map in the appendix). If the area is experiencing a very wet rainy season, the water table will likely be closer to the surface, which can cause the water in the ditches to stay longer before it percolates. If it is uncommon for the water to stay past 48 hours, it may be safe to postpone any major drainage improvements in the area. It is our recommendation at this time to observe the conveyance systems that take the water away from Lost Ball. This includes the pipe within the golf course and the pipe crossing Lost Ball to the south. It is also recommended to have the existing pipe located so it may be further inspected for condition and blockages and future maintenance. Flow issues can also be determined once this is done. The downstream system will need to be in good working order before any additional flow is tied into it from the upstream side of the drainage system.



Views facing south in rear of Golf Course Lots

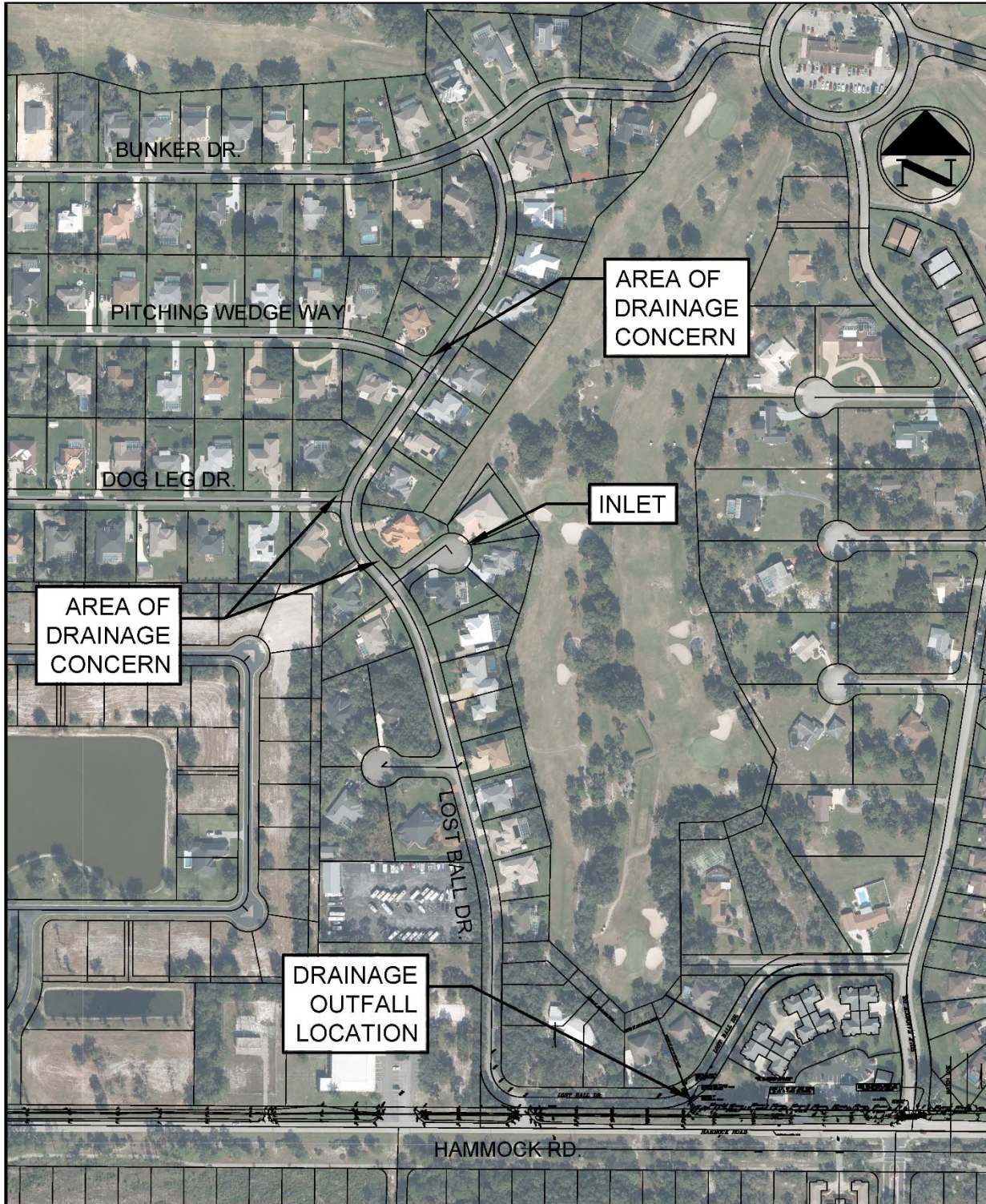
No apparent swales or evidence of drainage pipes were found during the on-site inspection.



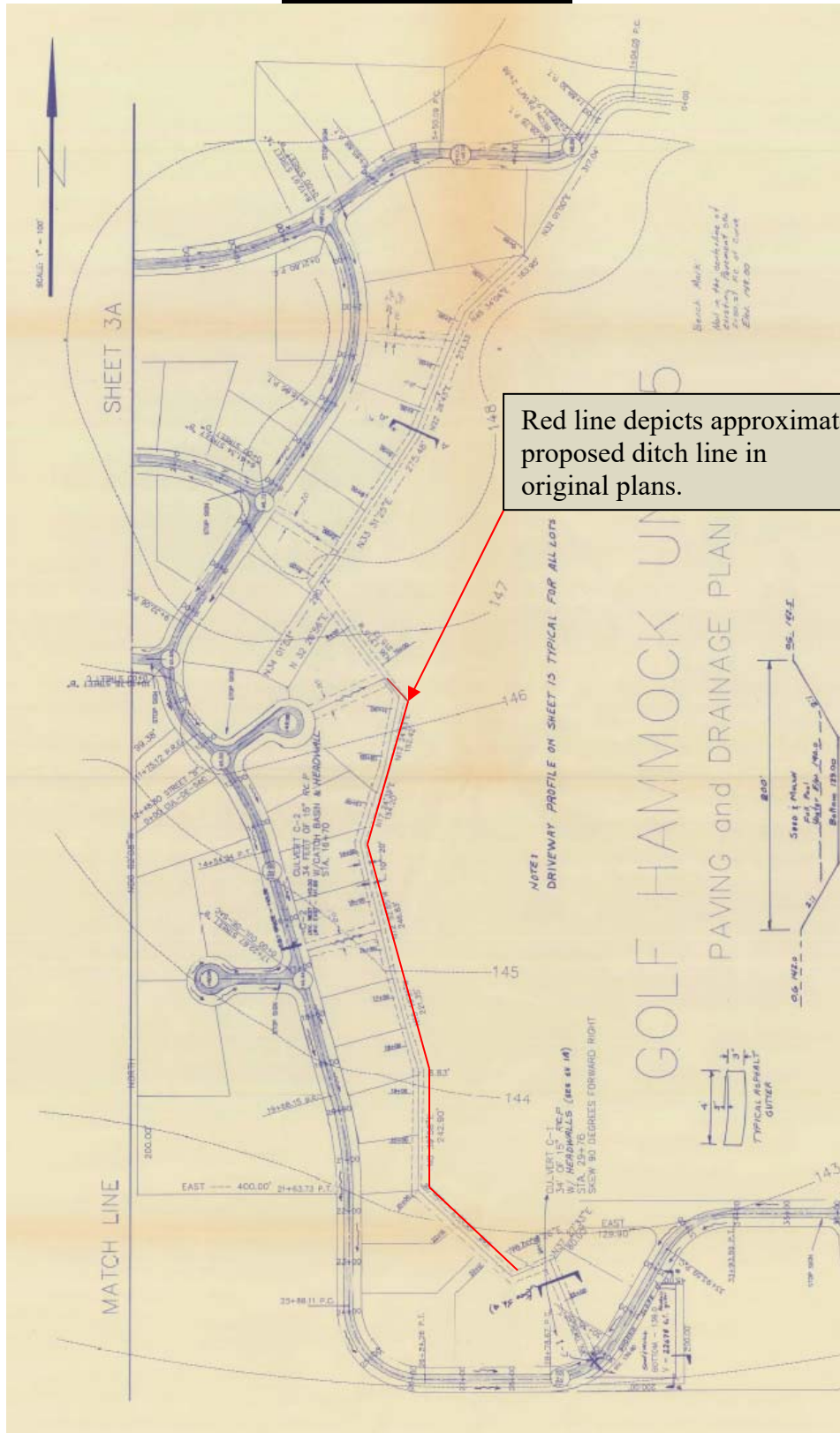
Culvert crossing and side lot ditch taking water towards the Golf Course

No apparent outfall or location for water to flow. Original plans show the flow arrows conveying the water to the east to the Golf Course. The lack of ditch in the golf course and large oak tree appears to be preventing any outfall path.

Lost Ball Drive Map:



Lost Ball Original Plan:



Red line depicts approximate proposed ditch line in original plans.

Cormorant Point Drive

The reported problems along Cormorant Point Drive involved water standing in the driveways and ditches on a number of homes easterly of 3502 Cormorant Point Dr.

The apparent cause of the water backup is what appears to be fill placed within the right of way ditches between 3502 and 3602.

Solutions for this area would require this location and the next three ditches between the next four driveways need to have the ditches reshaped. Once the ditch is reshaped the water should be able to flow west without backing up and going into the road. Alternates may include the installation of a culvert, but this may be cost prohibitive and may not allow for proper cover on the pipe.

Yards Causing the issues:



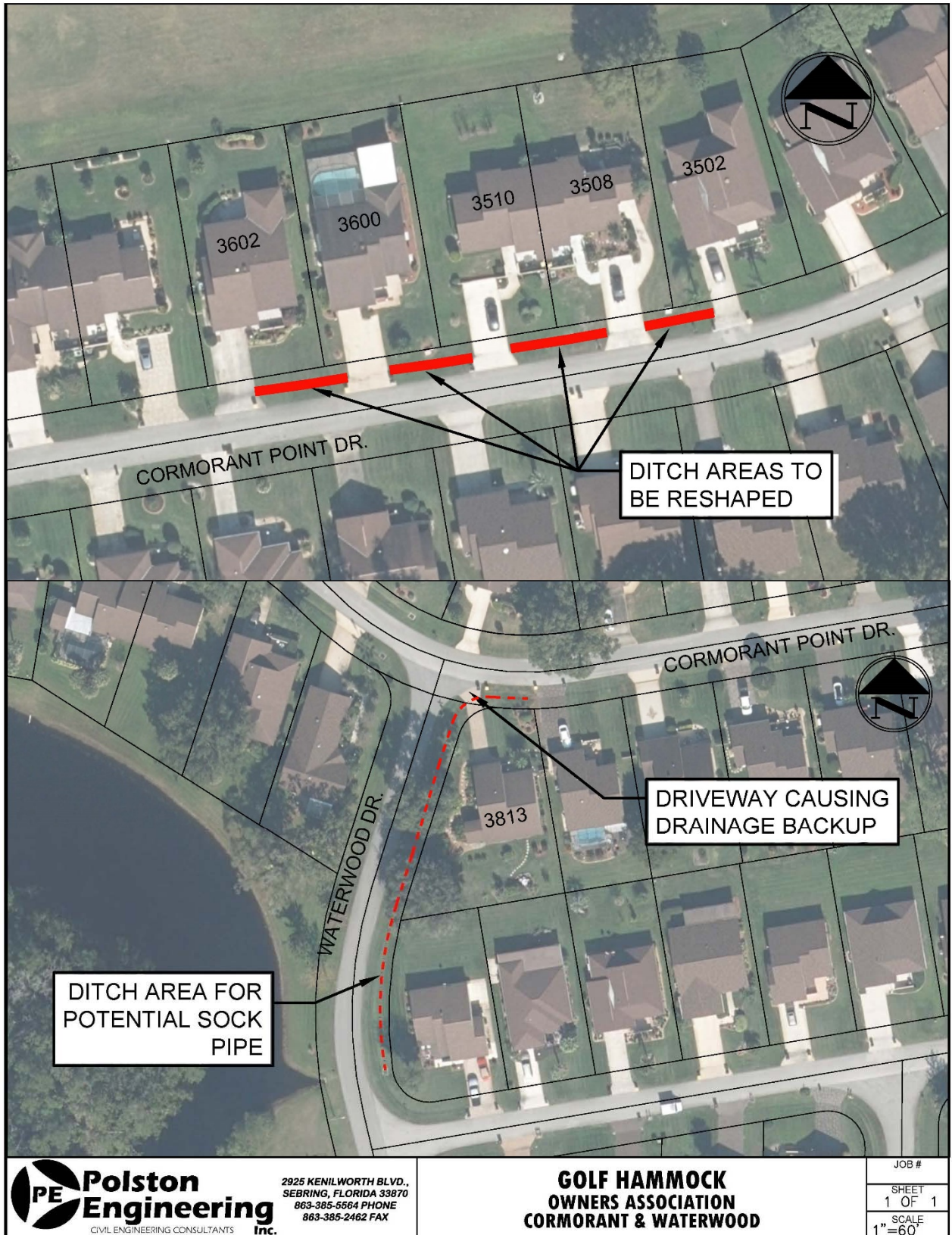
Waterwood Drive & Cormorant Point Drive Intersection

The problem reported for the intersection of Waterwood Dr. and Cormorant Point Dr. was water was standing and getting blocked by the driveway at 3813 Cormorant Point Dr. During the initial inspection, it appeared that the driveway was the culprit in not allowing any flow from the easterly side to cross to the intersection and down Waterwood Dr. After a closer look, it appeared a four-inch pipe was constructed under the paver driveway. This is normally not recommended due to its small size and its ability to be easily blocked. In this case, it was likely blocked and due to the lack of cover, the pipe was being crushed by the vehicle traffic.

The recommended solutions would be to either reconstruct the driveway with a simple driveway dip enough for water to pass or install a proper culvert under the driveway. Both solutions would remove and not use the small pipe. An alternate that was discussed was to install a 4" or 6" sock pipe from the front ditch at 3813 Cormorant Point Dr. all the way to the inlet at the intersection of Waterwood Dr. and Golf Haven Ter. This would only be recommended if there is a water standing problem along the easterly ditch on Waterwood Dr.

Driveway Causing the issues:**View down Waterwood Dr.:**

Cormorant Point Dr. & Waterwood Dr. Drainage Areas:



Dog Leg Drive

The drainage issues along the northerly portion of Dog Leg Drive, approximately between 2010 and 2208, have been reported as standing water along large portions of the road side ditch. This area only has homes on the south easterly side of the road. The westerly and northerly side of the road consists mainly of a wetland.

The causes of the drainage issues appear to be related to the driveway construction and condition of the ditches along this segment of road. A good number of driveways appear to have been constructed with no dip in the ditch area or without any culvert to allow water to pass by. The original plans called for ditches on both sides of the road and for the ditch to convey water to the pond to the south west of the road. The condition of the ditch appears to vary along the roadway. In some areas the ditch appears to be in good working order, and others the ditch is silted in or barely present. In some instances, the ditch has landscape and curbing present. This landscape and curbing restrict the flow of storm water in most cases.

Solutions for this area may include reshaping the ditch along the easterly and southerly side of the road between the driveways. This would provide an actual conveyance path along the side of the road. The driveways that have not been constructed properly would also need to be reconstructed to provide a dip to allow water to pass without it staging into the road or into the lots to allow it to pass. To correct the drainage in this area it also may require some additional inlets and road crossing culverts be installed to allow water to cross the road. A topographical survey would be recommended before any final determination could be made as to what scope of work would be the most cost effective. An alternate to some of the above recommendations would be to install a run or multiple runs of sock pipe. This could potentially be an alternate to reshaping large portions of the existing driveways. A combination of ditch re-construction and sock pipe would allow the ditch to drain the water more efficiently.



Dog Leg Dr. – Very little ditch present on either side of the road.



Dog Leg Dr. No apparent Ditch on either Side of the road.



View South along Dog Leg Dr.



Example of no Ditch or Driveway Dip

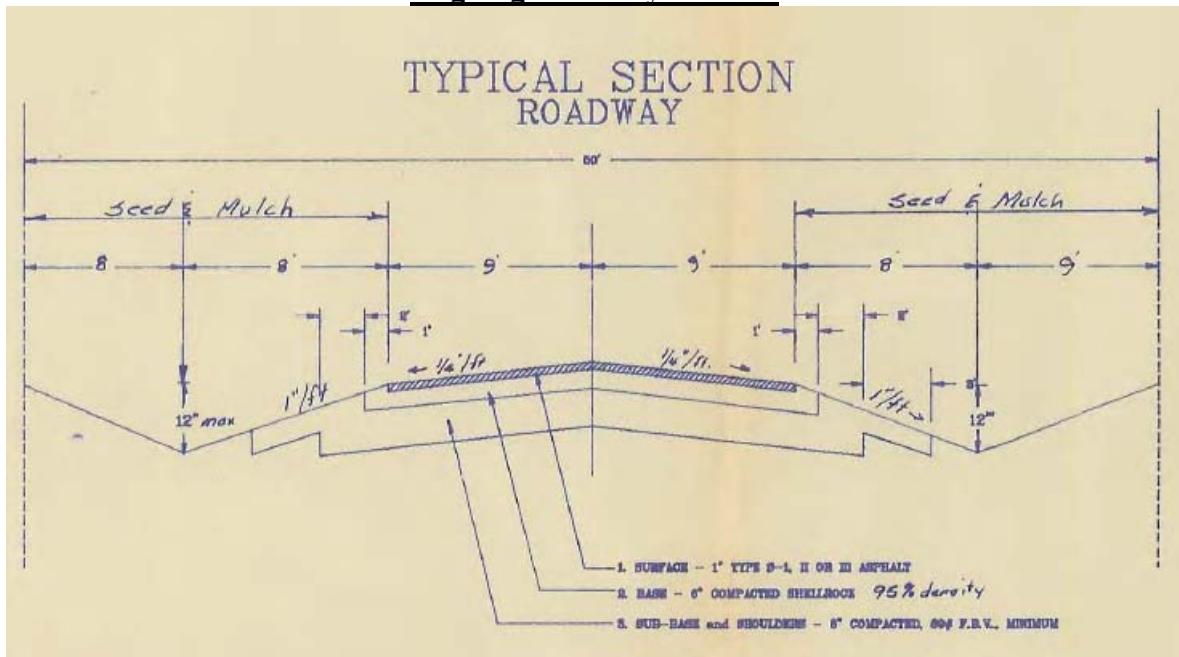
Dog Leg Drive Map:



Dog Leg Original Plan:



Dog Leg Roadway Section:

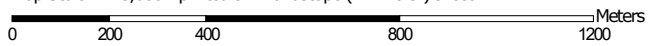


Appendix A

Soil Map—Highlands County, Florida (Golf Hammock)



Map Scale: 1:15,600 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey


11/22/2021
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Appendix A cont.


Soil Map—Highlands County, Florida
(Golf Hammock)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Highlands County, Florida
Survey Area Data: Version 21, Aug 26, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 8, 2010—Feb 11, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	1.9	0.2%
10	Myakka fine sand, 0 to 2 percent slopes	55.5	6.4%
12	Basinger fine sand, 0 to 2 percent slopes	10.9	1.2%
14	Satellite sand, 0 to 2 percent slopes	301.4	34.5%
20	Samsula muck, frequently ponded, 0 to 1 percent slopes	40.9	4.7%
28	Archbold sand, 0 to 5 percent slopes	83.9	9.6%
33	Basinger, St. Johns, and Placid soils	74.7	8.5%
36	Pomello sand, 0 to 5 percent slopes	16.4	1.9%
39	Smyrna sand, 0 to 2 percent slopes	67.3	7.7%
42	Astatula-Urban land complex, 0 to 8 percent slopes	5.1	0.6%
44	Satellite-Basinger-Urban land complex	196.6	22.5%
99	Water	19.1	2.2%
Totals for Area of Interest		873.9	100.0%