

# Memorandum

**To:** Harmony CDD Board of Supervisors  
**From:** Steve Boyd, District Engineer  
**Date:** 12/8/2020  
**Re:** Harmony CDD – Engineers Report for December 2020

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As requested by the Board of Supervisors at during the April 30<sup>th</sup> CDD meeting, I visited

## **I. BILLY’S TRAIL:**

On Friday Nov 27<sup>th</sup> I met with Dan Leet to look at the Section of the Billys Trail. The Section that is currently in bad condition and being driven over is just outside the south / west boundary of the CDD tract. This section needs to be staked to re-establish the correct location of the trail. A proposal from Johnston’s Surveying is included with the Agenda package for this work.

Once this section of the trail is re-staked, clearing and stabilization (if required) can be performed.

I spoke with Richard Jerman and he said the construction on the adjacent neighborhood is starting now. Initial clearing and earthwork should begin in January. He said that if some minor assistance with the Trail is required they are willing to assist.

## **II. GARDEN ROAD:**

Based on follow up conversation with Chairman Kramer and a site visit on Nov 27<sup>th</sup>, I observed the unstabilized sand that was placed on the road. Unstabilized sand is not a suitable driving surface and creates a washboard effect.

The following are my comments from the review of the two previously provided bids for reworking this road:

This work is considered maintenance of the existing unpaved service road. For the reasons we have discussed previously providing a permanent paved or concrete surface will require permits from the County, water management district and review and approval by the FGT.

Roadway compaction specifications are dependent on the specific existing soil conditions and proposed materials to be applied and we depend on a geotechnical engineer to determine the exact specifications for a given site.

However, given the fact that we are limited in the type of improvements that can be done, and that stabilizing the underlying sub-grade is not practical, I am offering my opinion on the two provided proposals as a maintenance application, not a permanent resurfacing.

My recommendation is based on the following exceptions:

1. With sandy soils like those that exist on this site, it is usually necessary to stabilize the underlying sand so that the base material has a firm subgrade that will hold up and not rut or be displaced when the base material is being laid down or compacted.
2. Stabilization is not practical because it requires that clay be mixed into the subgrade to a depth of 8 to 12 inches and the mixed subgrade compacted prior to the base being installed.
3. I cannot say for certain that the underlying surface (after the existing loose sand is removed) is stable enough to not be displaced to some extent when a new crushed concrete base is compacted on top of it.

My input on the two provided bids , that do not include sub-grade stabilization are summarized below:

**Arrow Pavement Services:**

Arrow pavement specifies 222 Cubic Yards of “concrete fines” over a drive area of 1000 ft. long x 12 ft. wide. This translates to 6” of concrete fines being applied over the existing road. They state that they will “demo soft sugar sand areas to proper grade”. I do not know specifically what material is being referenced as concrete fines. I am familiar with crushed concrete, which is similar to limerock base material and is generally accepted as road base material provided that all steel wire and rebar has been removed. 6” of crushed concrete is acceptable. The typical compaction specification for this material and this use is “95% of the maximum density per AASHTO T-180.”

**Straightline Fence:**

Straightline Fence specified the area of 12,000 SF but did not specify the depth for the application of crushed concrete. Based on the price it appears that they intend to install at least 6” of crushed concrete, but they do not state the depth in the bid. The same specification should apply for compaction of the crushed concrete: “95% of the maximum density per AASHTO T-180.”

**Other Option:**

Alternately, the Board may wish to have a Geotechnical Engineer take shallow borings of the roadway and recommend the most suitable repairs and requirements for long term maintenance of this unpaved road.

**III. COMPACTION OF STORM PIPE REPAIR:**

Devo Engineering completed a soil penetration analysis of the backfill placed by Brownies over the repaired storm pipe. This data is included in the Agenda package. I will discuss in more detail during the meeting.

#### **IV: PROPOSED PLAYGROUND ON FIVE OAKS DRIVE**

The field survey required prior to design of the new playground area has been completed. Chairman Kramer asked me to provide a summary of the additional tasks and approximate costs to complete the playground.

Osceola County will require a "Site Development Permit (SDP)" for this construction. The Board may recall that SDP permit was also required for the Butterfly Trail Sidewalk. The SDP will require the following:

1. Site Plan showing limits of all proposed improvements, including sidewalk and playground equipment. A drainage plan will also be required.
2. Landscape plan (which is required for all SDP application), showing minimum tree coverage, with details of any existing trees being removed, and how existing trees being preserved will be counted toward the tree planting requirement. The Landscape Architect will also specify the ground cover play surface material required code.

Small projects are difficult to provide efficient costs due to the fact that as a percentage of the overall effort, the permitting process is a larger percentage of the overall effort.

Fees for design services including Civil Engineering and Landscape Architecture should fall in the following range:

1. Civil Engineering and Landscape Architecture Design and Construction Plans: \$10,000 - \$12,000
2. Osceola County Permitting: \$4,000 - \$6,000
3. Final Permit Certifications: \$2,500 - \$3,000

Actual Construction costs cannot be estimated until a plan has been prepared.

#### **V: STATUS OF RV / BOAT STORAGE AREA**

The PD Amendment for bringing the RV parking area into compliance with the Harmony PD Zoning is proceeding. John Adams, the Land Planner processing the application, has requested that I develop a set of development standard specific to this site. I will be completing these development standards and will provide to Mr. Adams by December 10<sup>th</sup>. Mr. Adams will the complete the process for County approval of the PD Zoning Amendment.

Following approval of the Zoning Amendment, the County has stated that an SDP application must also be filed. The SDP application will include plans and details for construction of the fencing and other improvements required to bring the facility in compliance with the requirements of the PD zoning amendment and other required County Codes. There may be issues that arise during this process related to drainage or other standard code compliance issues. These issues, if any arise, will need to be considered and responded to on a case by case basis.

It is my opinion that if the buffers are properly maintained, and that runoff is not concentrated or creating erosion, that the site as it presently exist does not require a South Florida Water Management (SFWMD) Permit. However, as part of the County SDP process, County staff may bring up additional requirements related to stormwater management with or without the need for a SFWMD permit.