



VILLAGE OF KEY BISCAIYNE

Office of the Village Manager

MEMORANDUM

Village Council
Mayra P. Lindsay, *Mayor*
Franklin H. Caplan, *Vice Mayor*
Luis F de la Cruz
Theodore Holloway
Michael E. Kelly
Edward London
James S. Taintor

DATE: August 25, 2015
TO: Honorable Mayor and Council Members
FROM: John C. Gilbert, Village Manager
RE: Fernwood and West Heather Intersection Improvements

Village Manager
John C. Gilbert

RECOMMENDATION

It is recommended that the Village Council select the raised intersection as the crosswalk safety design for the intersection on Fernwood Road at West Heather Drive and authorize the project to go out to bid.

BACKGROUND

On July 7, 2015, Council directed Staff to explore different options in an effort to further improve the intersection on Fernwood Road at West Heather Drive. Stantec drafted three (3) options and submitted the designs to The Corradino Group for their evaluation. The Corradino Group recommended the raised intersection as the preferred option. Their comments and analysis are attached to this memo as Exhibit "A". The following three (3) design options including engineering and lighting costs are (included in Exhibit "A"):

- | | |
|--------------------------------|----------|
| 1. Raised Intersection | \$99,400 |
| 2. Roundabout (Traffic Circle) | \$97,000 |
| 3. Raised Crosswalk | \$51,500 |

Should the Council approve the proposed design, this project will be bid together with the Traffic Calming Project at the Woodcrest Road (700 block), South Mashta and North Mashta Drive. Funding for this project is in the FY2015 Capital Improvements Plan.

ENGINEERS · PLANNERS · PROGRAM MANAGERS · ENVIRONMENTAL SCIENTISTS

From: Joseph M. Corradino, AICP

To: Jud Kurlancheek, AICP

Date: August 11, 2015

Re: Review of Fernwood/W Heather Intersection Proposed Changes

This attempts to more clearly answer the questions asked at the Council Meeting in July.

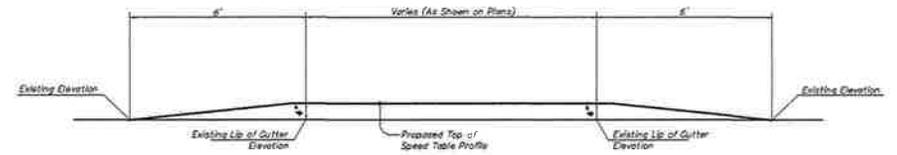
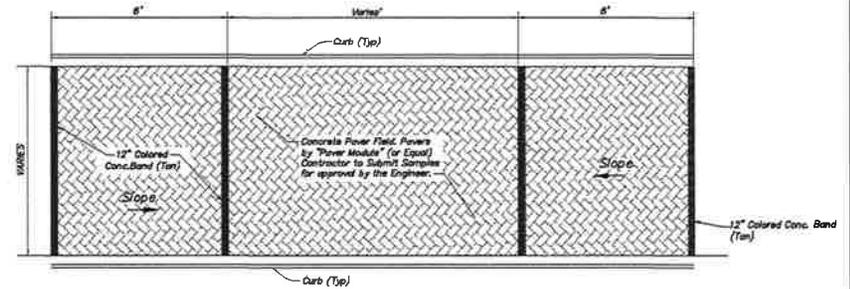
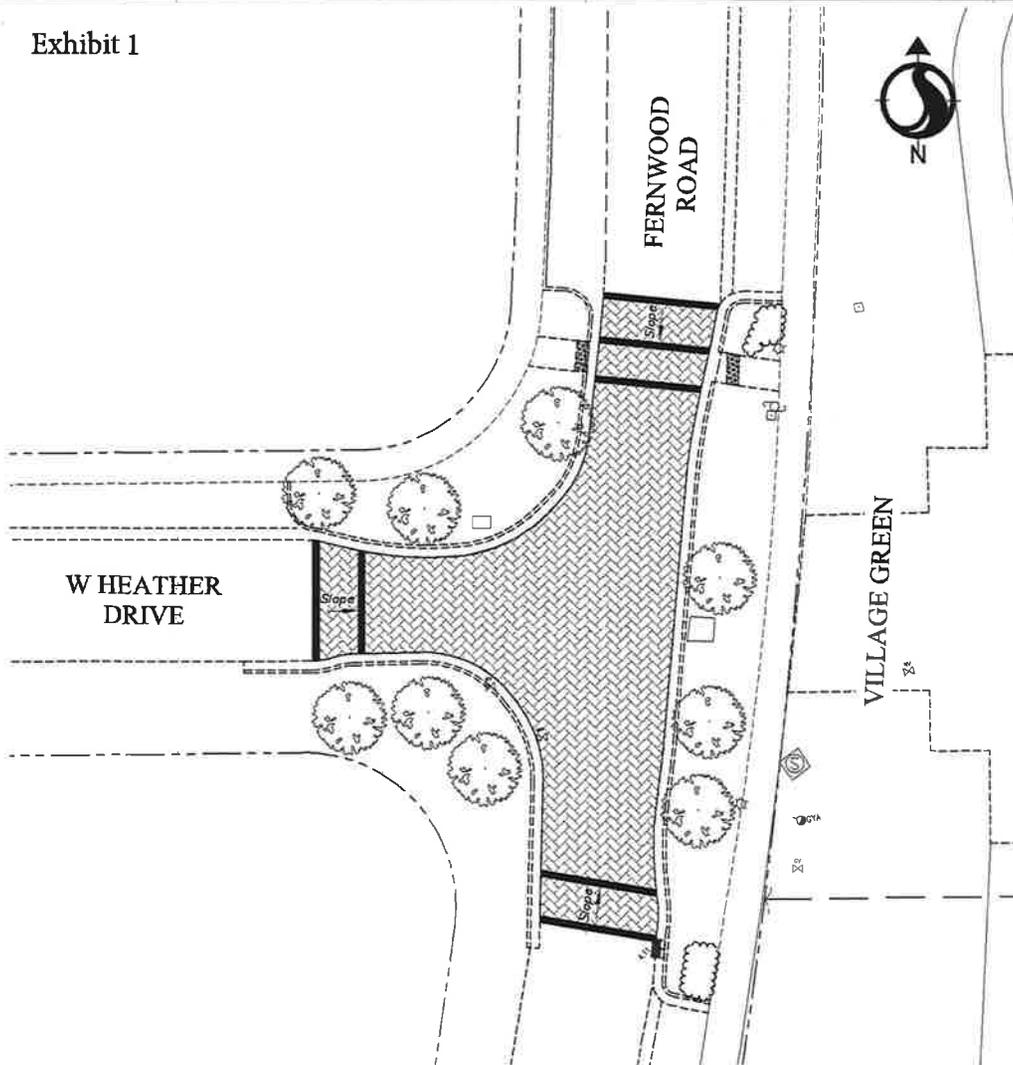
On Fernwood Road and West Heather Drive Intersection Changes:

Corradino was initially asked to provide an opinion, based on presented plans from Stantec, on whether the proposed changes to the intersection of Fernwood Road and West Heather Drive were consistent with adopted changes in the Safe Routes to School Study in January 2015. The plans provided indicated road widening, including changes to the turn radius. In addition, the stop bar will be moved forward, and rumble strips will be added, along with lighting. Currently, the intersection is a controlled intersection with brick pavers and a clearly delineated crosswalk area. Additionally, there is a stop for pedestrian sign. During the Safe Routes to School Study, this intersection was included as part of the Safe Routes to School Route. No recommendations were provided for this intersection given its sufficiency in meeting the requirements of the study in establishing a Safe Route to School. The qualities, such as the crosswalks and signage noted during the study, have been incorporated into the new intersection design. Thus, the initial design as presented by Stantec to Corradino is consistent with the Safe Routes to School Study.

Corradino has subsequently been asked to evaluate alternative methods for the intersection's traffic calming. This separate question will take into account the rumble strips as the current design for the intersection. Alternatively, at this controlled intersection, there have been suggestions of raising the intersection as a speed table, and a best practices review based on provided alternatives was requested. Corradino was provided with three alternative options for evaluation (Exhibit 1). The alternatives presented included a raised intersection, a traffic circle, and a raised crosswalk. Corradino reviewed the three options to determine if there were fatal flaws based on the design as currently presented, and from a best practices approach for the intersection. Specific comments are attached to this memo (Exhibit 2). Based on the findings, which determined that the raised crosswalk and traffic circle options had fatal design flaws based on Miami-Dade County design standards, we note that the sole viable alternative of the three options presented is the raised intersection, and is the preferred alternative from our review. For this option, we additionally suggest reviewing drainage plans before proceeding. Both the Raised Intersection and the Traffic Circle options will likely have impacts to the existing drainage system. This not only increases the cost, but if a significant amount of additional impervious area is being added then a permit from Miami-Dade RER will be required.

RAISED INTERSECTION OPTION (RECOMMENDED)

Exhibit 1



RAISED INTERSECTION DETAIL
N.T.S.

RAISED INTERSECTION OPTION

W HEATHER DR. & FERNWOOD RD. INTERSECTION IMPROVEMENTS

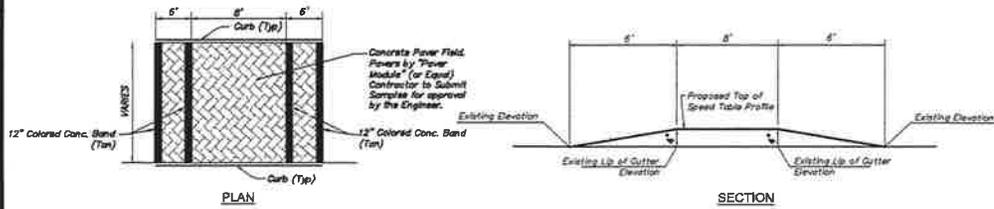
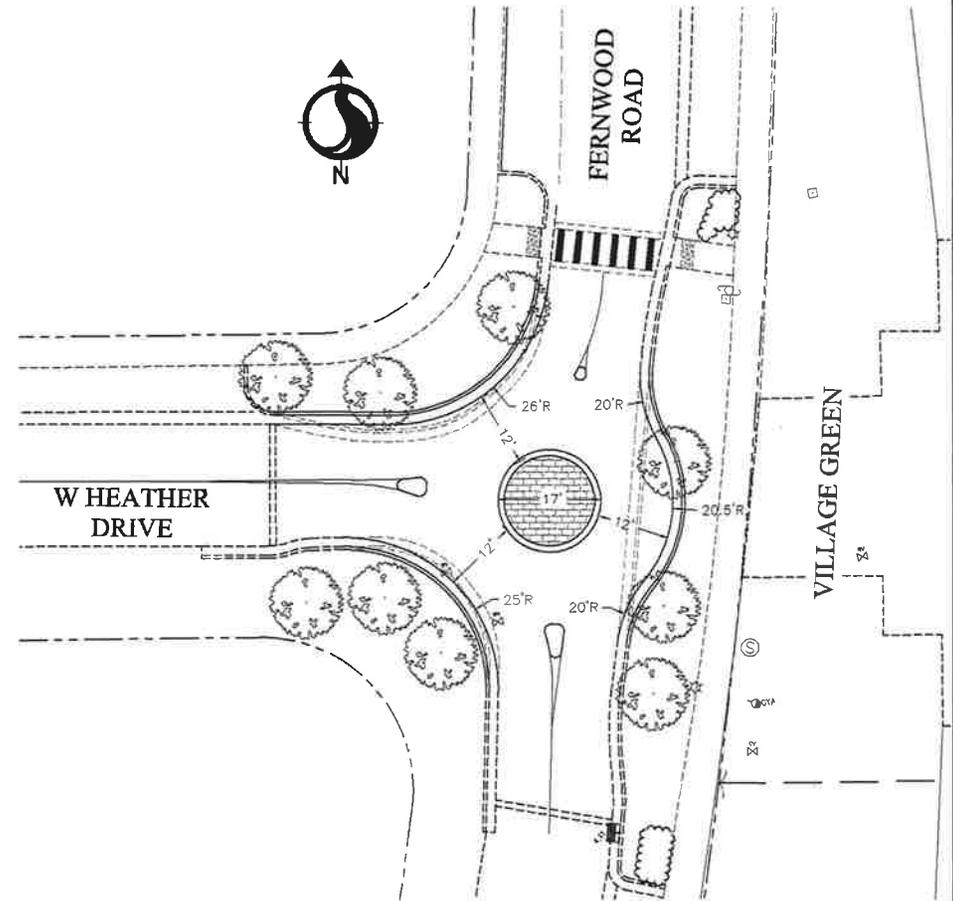
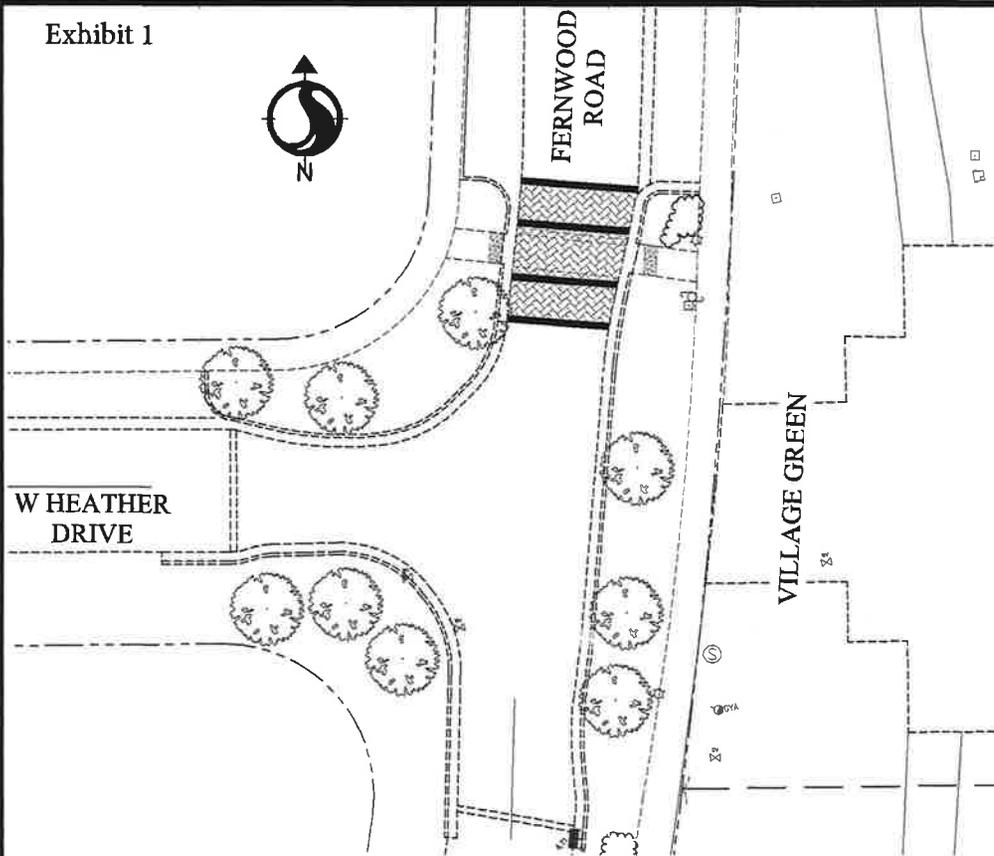


Stantec Coral Gables
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RAISED CROSSWALK OPTION

ROUNDAABOUT OPTION (TRAFFIC CIRCLE)

Exhibit 1



ROUNDAABOUT OPTION

RAISED CROSSWALK OPTION

W HEATHER DR. & FERNWOOD RD. INTERSECTION IMPROVEMENTS



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Fernwood Road and W. Heather Drive Design Alternative Analysis

BENEFITS

Raised Crosswalk	Raised Intersection	Traffic Circle
Raised crosswalks improves accessibility by allowing a pedestrian to cross at nearly a constant grade without the need for a curb ramp and makes the pedestrian more visible to approaching motorists.	Raised intersections reduces through movement speeds at intersection.	Roundabouts are safer than traditional stop sign or signal-controlled intersections.
Raised Crosswalks decreases motor vehicle speeds.	Raised intersections are more pedestrian-friendly.	Roundabouts work great as calming devices slowing traffic speed while improving traffic flow.

CONCERNS

Raised Crosswalk	Raised Intersection	Traffic Circle
Raised crosswalk has to be at least 50' from any intersection. This is a fatal flaw with this design.	Raised intersections increases difficulty making a turn.	According to Miami-Dade County Standards for a 50' R/W road the minimum inside diameter is 35'. This is a fatal flaw with this design.
Raised crosswalk may be a problem for emergency vehicles and trailers.		The minimum traffic circle lane width required by Miami-Dade County is 16', although the county has recently began to allow 15' wide circulatory lanes. This is a fatal flaw with this design.
		Raised splitter Islands must be provided on all approaches.
		It is especially difficult to obtain the required deflection of all through movements at T-intersections. Even if a larger circle is explored we do not believe the appropriate deflection can be achieved.
		If a bigger traffic circle design is explored, please note that at each corner of the intersection a minimum of 2.5 feet of utility strip is not

Exhibit 2

		required between the face of sidewalk and the back of curb.
		A larger traffic circle will impact many of the trees adjacent to the intersection which will require further permitting efforts.

**CONSTRUCTION COSTS
(Order of Magnitude)**

1. Raised Crosswalk (Least expensive)
2. Raised Intersection
3. Roundabout (Most expensive)

RECOMMENDED ALTERNATIVE

- Raised Intersection (See analysis above).