

**ATTACHMENT 1****Family House at UNC Hospitals: Additional Information for Key Issues 1 & 2**

Justification for Granting Traffic Impact Analysis Exemption and  
 Recommendation to Omit Stipulation Requiring Left-Turn Lane  
 October 27, 2005

Key Issue 1 - Traffic Impact Analysis Exemption: In 2001, the Town Council approved guidelines for preparing Traffic Impact Analyses (TIA) for developments in Chapel Hill. The guidelines allow exemption from preparing a TIA if the proposed development meets the following criteria:

“Submittal of an application for a major subdivision, special use permit, or site plan review. Typically, a full traffic impact analysis as detailed herein is required for all these development requests. The requirement to prepare a full traffic impact analysis may be waived by the Town Manager only if all of the following conditions are met:

- Daily trip generation is less than 500 (or, for a change to an existing property that does not requiring rezoning, difference in daily trip generation is less than 500); and
- No more than 250 vehicles per day (or, for a change to an existing property that does not requiring rezoning, no more than 250 vehicles per day in difference) access an existing collector or local road; and
- The total traffic, including background traffic and additional traffic from proposed new site or redeveloped property does not exceed an average of 150 vehicles per day on any unpaved road; and
- The applicant submits a written request for a Traffic Impact Analysis waiver with appropriate supporting documentation including pedestrian/bicycle analysis, if applicable; and
- The Town Manager concurs with the request.”

The estimated number of trips generated by the proposed Family House is provided in the following table:

<b>Day</b> <b>24-hour Two-way Volume</b>		<b>AM Peak Hour</b>		<b>PM Peak Hour</b>	
		<b>Enter</b>	<b>Exit</b>	<b>Enter</b>	<b>Exit</b>
Average Weekday	240	3	15	14	7
Saturday	232			10	9
Sunday	198			9	9

1. Trip Generation for 41 rooms calculated using ITE Trip Generation Manual (7<sup>th</sup> Edition)

We note that the applicant’s request for exemption included a 10% reduction in the number of trips to account for transit use, walking, biking, and shared-ride/shuttle service. A 10% reduction in the number of trips is generally accepted practice in Chapel Hill.

Please refer to the Traffic Impact Analysis exemption (part of Attachment 3) and the applicant's letter with analysis, dated October 17, on the following page.

Key Issue 2 – Recommended Omission of Left-Turn Lane Stipulation: The Town reviewed the applicant's request for a TIA exemption and we granted exemption with the following condition:

*“As part of the SUP Modification, subject to the Town Council approval, the Town Manager may recommend several roadway improvements, such as sidewalks, bike lanes, payment-in-lieu for signal timing improvements, and turning lanes.”*

During the staff review process of the Family House SUP application, we initially recommended the following items for improving traffic circulation in the area:

- Payment-in-lieu for reviewing/revising signal timing on Fordham Boulevard at its intersections with Old Mason Farm Road and Manning Drive.
- A left-turn lane on Old Mason Farm Road onto the Family House driveway.

The applicant agreed to provide the payment-in-lieu for the signal timing changes, and provided supplemental, detailed analysis and justification that a left-turn lane on Old Mason Farm Road would not be necessary. A copy of the applicant's letter with analysis, dated October 17, on the following page.

We reviewed the information submitted by the Applicant and we believe that the data and analysis show that a left-turn lane on Old Mason Farm Road is not necessary for the following reasons:

The maximum number of peak hour trips entering into the site is 14 during the PM peak. The analysis shows that no more than 2 vehicles would need to wait briefly on Old Mason farm Road to make a left-turn into the site.

The proposed main entrance into the Family House is located approximately 600 feet from Fordham Boulevard and is located approximately 200 feet from the new location of Highland Woods Road. We do not believe that 2 vehicles would constitute queue that would significantly congest traffic or block intersections on Old Mason Farm Road.

Capacity analysis of the intersection of Old Mason Farm Road with the proposed main entrance of the Family House indicates level of service B or better.

Old Mason Farm Road is maintained by the State. State staff has reviewed the data and analysis, and agree that a left-turn lane on Old Mason Farm Road into the main entrance to the proposed Family House is unnecessary. Resolution A, the Manager's Revised Recommendation, does not include a stipulation requiring a left-turn lane.



30.1

# CORLEY REDFOOT ZACK<sup>INC.</sup>

ARCHITECTS • ENGINEERS • PLANNERS

October 17, 2005

Mr. Kumar Neppalli  
Engineering Department  
Town of Chapel Hill  
405 Martin Luther King, Jr. Blvd.  
Chapel Hill, NC 27514

GLENN D. CORLEY, AIA  
*President, CEO*

KENNETH E. REDFOOT, AIA  
*Vice President*

MARK ZACK, AIA  
*Vice President*

MICHAEL L. HAMMERSLEY, PE  
*Principal*

LAURENCE W. BUNCH, AIA  
*Associate*

ANDREW R. CRUICKSHANK, AIA  
*Associate*

CHARLENE E. HANLEY, AIA  
*Associate*

DAVID M. TAYLOR, AIA  
*Associate*

HARRY M. JENSEN  
*Associate*

KENNETH E. SMITH  
*Associate*

RE: Family House at UNC Hospitals  
Old Mason Farm Road  
Chapel Hill, NC  
CRZ #0206

Dear Kumar:

I am writing in response to a request from the Engineering Department in a recent DHR review of the above-referenced project. The request was for a left-turn lane from the westbound lane of Old Mason Farm Road onto the site. We do not feel that this is a reasonable request for the following reasons:

1. Traffic volumes along Old Mason Farm Road were studied to see the impacts the project may have on the background traffic. The new turn movements into this site are generally limited to those by the facility's staff members. A review of the AM and PM peaks along this roadway revealed that approximately three new turning movements into the site will be required during these peak times. This number constitutes only 1.7% of the current traffic flow on Mason Farm Road. A shuttle bus service to and from the Hospital will be used by the facility's residents throughout the day. This busing will further limit trips into the site.

The proposed driveway into the project is approximately 600' from the intersection with Fordham Boulevard, which makes it difficult to install any turn-lanes. The closest intersection to this site is Fordham Blvd. and Old Mason Farm Road. The current problem with backup traffic at this intersection occurs on the north side of the intersection, not the south side; therefore, further conflicts with left turns into the site are not anticipated at this time.

The location of the project along Old Mason Farm Road allows an alternate traffic movement off Raleigh Road to access the site; therefore, staff and residents can use the eastbound lane coming from Raleigh Road to make a right turn into the site.

2. In order to provide the storage and transition lanes and widenings for a left-turn lane required by NCDOT standards, the lane improvements would extend into the existing 15-501 bypass intersection. Attached is the backup for the calculated length of 780'. These design requirements were discussed briefly with Chuck Edwards of NCDOT.

PO Box 2368  
Chapel Hill, NC 27515-2368

222 Cloister Court  
Chapel Hill, NC 27514-2212



(919) 401-8586 Telephone  
(919) 493-7306 Fax  
[www.corleyredfootzack.com](http://www.corleyredfootzack.com)

Mr. Kumar Neppalli  
RE: Family House

October 17, 2005  
page 2

- 3. Another reason to defer the left-turn lane at this time is due to existing issues along Old Mason Farm Road. New work is planned for a revised intersection of Highland Hills and Old Mason Farm Road, as well as for the driveways into the UNC Botanical Gardens. This new geometry for Old Mason Farm Road will be revised in the next two to five years. The revisions to two other intersections would make the alignment of a turn-lane and its widening very difficult to anticipate.

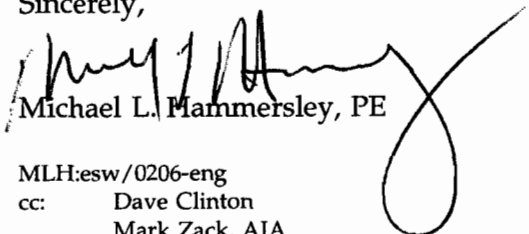
Other work on Old Mason Farm Road to be done in the next few years includes two projects: 1) a ductbank installation by UNC Electrical Distribution, and 2) an OWASA reuse water line, both of which will be done along both sides of the roadway. These projects will be within the existing right-of-way and will require excavation. It does not seem like a good idea to install new improvements only to see them cut and patched in these infrastructure projects in the near future.

- 4. A final consideration is that this project is a non-profit residence for families while they are involved in treatment at UNC Hospitals. The project costs would be substantially impacted by the approximately \$250,000 it would require to build the turn-lane and associated improvements for Old Mason Farm Road. These costs are based upon similar projects which have been done in the last few years.

We would appreciate your review of this requirement and possibly granting relief from building this left turn-lane.

If you have any additional questions, please let me know.

Sincerely,



Michael L. Mammersley, PE

MLH:esw/0206-eng  
cc: Dave Clinton  
Mark Zack, AIA



07/26/05

(32)

Family House - Mason Farm Road

calculate left turn lane into site

assum = 100' left turn

Approach Taper =  $L = WS$

$L = (11') (45') = \underline{\underline{495'}}$

Bay Taper =  $L = \frac{WS}{3} = 165'$  100'  
store

330' + 100'

430' =  $\frac{2}{3}A$

This 250' = D

680'

+ 100'  
780'

Total Length = 760'

780' ← total

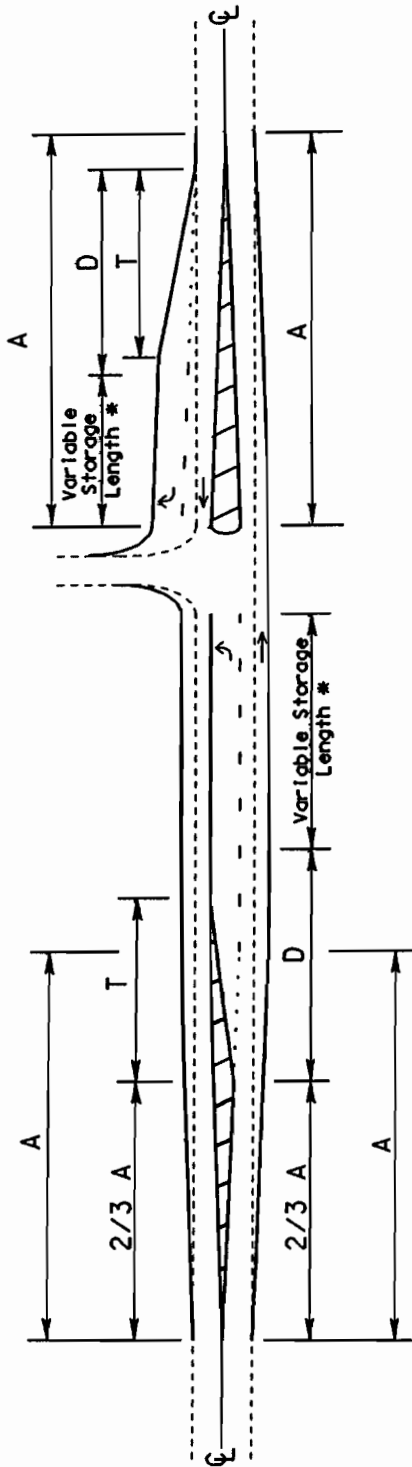
The required length of 780' exceeds length to

the bypass & its intersections |||

& the new intersection for Highland Hills

# Recommended Treatment for Turn Lanes

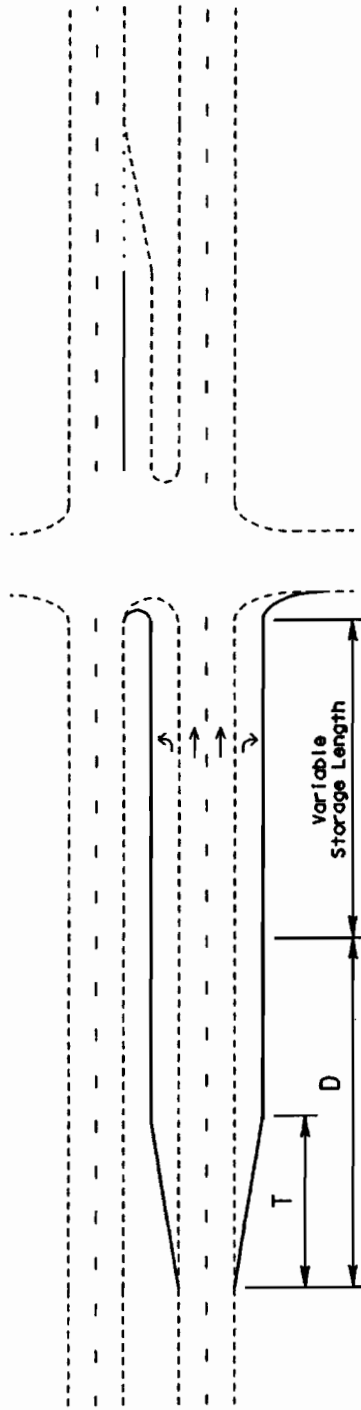
## Symmetrical Widening



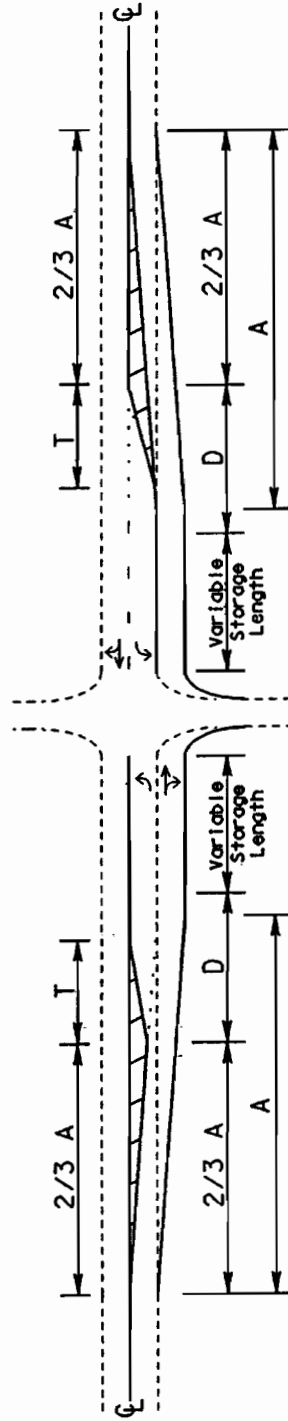
Design Speed (mph)	Posted Speed (mph)	Minimum Deceleration Length (D)	Desirable Deceleration Length (D)	Bay Taper Length (T)	Approach / Departure Taper (A)
30	≤ 25	100'	150'	75'	A = $WS^2/60$ (IF S ≤ 40 MPH)
35	30	100'	150'	75'	A = WS (IF S > 40 MPH)
40	35	150'	200'	100'	S = Design Speed
45	40	150'	250'	100'	W = Width of Lateral Shift
50	45	150'	300'	100'	* Storage length for waiting vehicles should be calculated based on the latest version of the Highway Capacity Manual or Policy on Street and Driveway Access to North Carolina Highways.
55	50	200'	500'	150'	
60	55	250'	575'	200'	

Recommended Treatment for Turn Lanes

Pocket Lanes



Near Side Widening



All values to be determined using the table on the previous page.

10/10/05 (35)

UNC Hospitals - Family House 1

Traffic Counts for Family House  
Old Mann Farm Road

A.M. Peak

Eastbound Old Mann Farm Road

142 vehicles

west bound Old Mann Farm Road

185 vehicles

left turns onto site

staff = 6 employees

3.18 am peak

$$\frac{3.18 \text{ am}}{185} = 1.7\% \text{ of traffic}$$

not enough to justify a dedicated left turn lane

P.M. peak

similar background traffic of  
3.06 pm trip

$$\frac{3.06}{181} > 1.7\% \text{ of moments}$$