

ATTACHMENT 4

VILLAGE PLAZA THEATERS TRAFFIC IMPACT STUDY AMENDMENT

THE TOWN OF CHAPEL HILL, NORTH CAROLINA



Prepared for:

The Town of Chapel Hill

Prepared by:

HNTB North Carolina, PC

343 East Six Forks Road Suite 200 Raleigh, NC 27609

May, 2004



(34)

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Village Plaza Theaters - Proposed Movie Cinemas



I. EXISTING CONDITIONS

A. Project Overview

In February 2002, a traffic impact analysis (TIA) was conducted by RS&H Architects-Engineers-Planners Inc. for the redevelopment of the Village Plaza Theaters in the Village Plaza Shopping Center. The proposed cinema was to be expanded from 5 to 10 screens on the original theater location along S. Elliott Road between Franklin Street and US 15-501 in Chapel Hill, NC. **Figure 1** shows the general site location of the theater development, which was demolished. The study conducted by RS&H analyzed the theater's effects on traffic at the intersections of Franklin Street & Elliott Road, US 15-501 Bypass & Elliott Road, and Elliott Road & two shopping center driveways (adjacent to the development).

The 2002 study recommended that one of the site access driveways be widened for two exiting turning lanes. However, this driveway, known as Driveway "D", is not entirely located on the Applicant's property. Pursuant to the inability in reaching an agreement with the adjacent property owner to make off-site improvements at Driveway "D", the project has not been completed. Subsequent to this inability to achieve agreement, Eastern Federal Corporation (owner of the cinema site) sought to amend the site's Special Use Permit to have this driveway widening removed as a requirement of the Permit. Part of the application to amend the permit is this traffic study by HNTB, which reanalyzes the proposed development and broadens the scope to include six access driveways along Elliott Road. This report will analyze the proposed theater's affects on all six existing driveways for the full build-out scenario in 2007, the no-build scenario for 2007, as well as 2004 existing year traffic conditions.

The existing Village Plaza shopping center has direct access to Elliott Road via three driveways along its east/north frontage. There are three additional driveways studied that provide internal connections to the cinemas and shopping center. Elliott Road connects to both Franklin Street and US 15-501, both serving as major access points to the Town of Chapel Hill and Triangle Region. **Figure 2** displays the preliminary site plan of the proposed Village Plaza Theater site and nearby roadways.

B. Site Location and Study Area

As previously mentioned, this report analyzes and presents the transportation impacts that the Village Plaza Theater site will have on the following intersections in the project study area (from southeast to northwest):

- Elliott Road and Driveway "A" Across from Burger King
- Elliott Road and Driveway "B"
- Elliott Road and Driveway "C"
- Elliott Road and Driveway "D" Red, Hot & Blue Restaurant frontage
- Elliott Road and Driveway "E" Red, Hot & Blue Restaurant frontage
- Elliott Road and Driveway "F" Whole Foods Supermarket frontage





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It was determined in conversations with Town staff that no changes to the RS&H evaluation of the intersections of Franklin Street / Elliott Road and US 15-501 Bypass / Elliott Road are necessary for this analysis. Due to this fact, these intersections were not studied in this amendment. For the aforementioned analyses, please refer to the February 2002 document completed by RS&H.

The impacts of the proposed site at the six driveways will be evaluated during the peak hour of the 6:00 p.m. - 10:00 p.m. period on Friday and Saturday. Standard AM, noon, and PM peak hours were not used for this analysis, due to the unique peaking characteristics of theater-related traffic. Though the theater will be in operation during the standard peak hours, the site traffic produced will not be as significant as it would be during the peak showing times between 6:00 p.m. and 10:00 p.m. on weekends. Friday and Saturday evening theater-related activity was projected to be significant, and thus was included for analysis. The following study is based on background traffic for the existing year, 2004 and the estimated design year of 2007, and the estimated sitegenerated traffic produced by the theater. There are no approved future developments in the study area that will generate any additional background traffic. The original RS&H study included three area developments as background traffic, however, it is assumed that these developments have been completed and that traffic from these developments is inclusive to the existing counts. An (updated) area-wide future traffic growth percentage of two percent was applied to the existing volumes, based on information provided by the NCDOT Traffic Survey Unit.

C. Site Description

The Village Plaza Theaters site is currently vacant. The Village Plaza Shopping Center is occupied by various commercial businesses and stands adjacent to proposed site. The previous cinema was demolished in 2002. That development consisted of five movie screens with 1,332 total seats and 24,780 square feet of space. Parking for the old theater development still remains essentially intact and driveway connections with Elliott Road and an internal connection to commercial property to the north are still in use.

The original Special Use Permit for the Village Plaza Theaters redevelopment includes stipulations that there be a maximum of 10 movie theater screens and 1,600 seats. 490 total parking spaces must also be provided for the proposed 35,460 square foot theater. A detailed site description for the Village Plaza Shopping Center and other changes related to this redevelopment proposal was provided on page 4 of the February 2002 TIA conducted by RS&H.

D. Existing and Proposed Uses in Vicinity of Site

The land uses and development in the study area is virtually unchanged since the 2002 analysis. The original TIA document has a detailed description of specific land use types and sizes along Elliott Road. In general, the proposed site is part of the larger Village Plaza Shopping Center that contains smaller commercial parcels including an





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ABC store, video store, restaurants and a health club. Office buildings, restaurants, larger retail parcels and banking facilities line Elliott Road. Driveway access to these facilities is provided on both sides of the road.

E. Existing and Committed Surface Transportation Network

Roadways

Elliott Road is the only public maintained surface street included in the study area for this analysis. Elliott Road serves as a collector street for traffic accessing commercial developments along its length between Franklin Street and US 15-501. These two facilities provide primary access for external trips into and out of the study area and function as major multi-lane arterial streets. Elliott Road contains 12 foot wide travel lanes and a continuous central left-turn lane that is striped into individual left-turn bays for the access driveways. On-street parking is not permitted, but several bus stops are located along the facility between Franklin Street and US 15-501. Figure 3 shows the existing lane configuration, traffic control, and speed limits for Elliott Road and its connection to the six existing study area driveway intersections.

Driveway Intersections

The six driveway intersections with Elliott Road are currently unsignalized with each experiencing the stop-controlled condition. The RS&H study only examined the effects of the site generated traffic on Driveway "C" and Driveway "D", assuming that all site-related traffic would use these driveways. This amendment will focus on the potential effects on driveways "A" through "F".

The intersection of Elliott Road and Driveway "A" is a four-legged, stop controlled intersection. The eastbound and westbound Elliott Road approaches each contain an exclusive left-turn lane and a shared through/right-turning lane. The northbound and southbound stop controlled driveways each contain a shared left/through/right lane. The northbound approach to this intersection is the driveway from an existing Burger King parking lot.

The intersections of Elliott Road with Driveways "B", "C", "D", and "E" are all unsignalized "T" intersections. Each includes a shared through/right-turn lane for north and westbound Elliott Road and exclusive through and left-turning lanes for south and eastbound Elliott Road. Driveways "C", "D" and "E" contain shared left/right-turn lanes where Driveway "B" contains exclusive southbound left and right-turning lanes.

The intersection of Elliott Road and Driveway "F" is a four-legged, stop controlled intersection. The northbound and southbound Elliott Road approaches each contain an exclusive left-turn lane and a shared through/right-turning lane. The eastbound stop controlled driveway contains a shared left/through/right lane where the westbound stop controlled approach contains a shared through/left-turn lane and an exclusive right-turn lane. The eastbound approach to this intersection is the driveway from an existing First Citizens Bank parking lot.





Bicycle Routes and Sidewalks

The RS&H study documents one planned bicycle path along Booker Creek to be located behind the proposed theater. A description of this bike path is found on page 32 of their February 2002 TIA. Area sidewalks are described in detail in the RS&H report on pages 31-32. No additional sidewalks are shown in the site plan for this project.

Transit Routes

Current Chapel Hill Transit Routes D and F serve the project study area along Elliott Road with weekday bus service. Route D service runs on 20 minute headways and Route F headways vary between 20-35 minutes, depending on time of day. D Route service extends to approximately 10:00 p.m. on weeknights. Weekend service is provided by the DM and FG Routes. Buses on these routes run from approximately 8:00 a.m. to 6:00 p.m. on Saturdays. Both have one hour headways.

The Triangle Transit Authority also provides bus service to the study area. TTA buses serve regional trips between Chapel Hill, Durham and RTP and run along Franklin Street, just to the north of the study area.

As in the original study, this analysis does not account for a transit trip reduction factor. The proximity and frequency of transit service would likely account for a portion of site trips, although bus service is more infrequent during the peak weekend evening periods.

F. Existing Traffic Conditions

Figure 4 shows the existing Friday and Saturday evening (6:00 p.m. to 10:00 p.m.) peak hour traffic volumes for the study area intersections. The counts used to determine these volumes were conducted by Pontius-Montesi Traffic Services for the following intersections during the respective times:

Table 1 - Traffic Count Information

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Elliott Road and Driveway "A" – Burger King	Friday Peak	6:00 - 10:00 PM	3/5/04
	Saturday Peak	6:00 - 10:00 PM	2/28/04
Elliott Road and Driveway "B"	Friday Peak	6:00 - 10:00 PM	3/5/04
	Saturday Peak	6:00 - 10:00 PM	2/28/04
Elliott Road and Driveway "E" – Red, Hot & Blue	Friday Peak	6:00 – 10:00 PM	3/5/04
	Saturday Peak	6:00 – 10:00 PM	2/28/04
Elliott Road and Driveway "F" – First	Friday Peak	6:00 – 10:00 PM	3/5/04
Citizens	Saturday Peak	6:00 – 10:00 PM	2/28/04



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Traffic volumes for the intersections of Elliott Road / Driveway "C" and Driveway "D" were conducted February 13th and 14th, 2004 by Post, Buckley, Schuh & Jernigan (PBS&J) for Friday peak hour traffic on Elliot Drive (4:45 to 5:45 p.m.), Saturday midday peak on Elliott Road (12:45 to 1:45 p.m.) and the Saturday theater-related peak (6:00-7:00 p.m.). The Saturday theater-related peak values were used in this analysis. A check of PBS&J traffic count volumes upstream and downstream of driveways "C" and "D" indicated good correlation between the counts, which were conducted on different days. It was originally intended to update counts taken from the 2002 RS&H study, but later determined that no actual driveway counts existed at these locations.

Friday theater-peak period traffic was estimated by producing a ratio of upstream and downstream traffic flows from HNTB Friday and Saturday evening counts and applying that factor to the actual PBS&J Saturday count volumes. Again, a check of upstream and downstream flows indicated an acceptable balance between actual field-collected data and these synthetic volumes.

Traffic flow on Elliott Road was noted to be light during the Friday and Saturday evening peak hours with the heaviest traffic flows found closer to the US 15-501 end of Elliott Road and during the early part of the counting period 6:00-7:00 pm. Traffic flows to and from the shopping driveways were found to be light with no field observed queuing problems. It was also noted that less than 25 trucks/heavy vehicles were counted for the entire eight hour count period.

II. 2007 BUILD-OUT YEAR CONDITIONS

A.) Future Traffic Without Proposed Development

Based on information on average daily traffic collected by the NCDOT Traffic Survey Unit a yearly ambient traffic growth rate of two percent per year was used for the short-term 2007 design year capacity analyses. This rate is based on previous and anticipated growth trends for this area in Chapel Hill and incorporates ADT traffic growth on US 15-501, Franklin Street, and Elliott Road. These roads each had small (or even slightly negative) growth rates and were synthesized into the two percent overall study area average rate.

B.) Background Traffic

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Background traffic methodologies and trip generation/distribution/assignment were taken directly from the original Village Plaza Theaters TIA. Town staff advised that any sites included as background development traffic in 2002 also be included in this study, alluding to the fact that these projects were not complete in 2002 and are still not complete and fully operational as of March, 2004. The three background traffic generators in the 2002 study are listed below:





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- Franklin Grove Townhomes
- Chapel Hill Centre II
- **University Mall Expansion**

Traffic volume data from the 2002 study was analyzed to identify study area intersections containing background traffic. In general, few background trips are made on Elliott Road and none will impact the six site driveway entrances. Background traffic and ambient traffic growth are combined to formulate the design year 2007 No-Build traffic volume estimates in Figure 7.

C.) Proposed Project Traffic

i. Trip Generation

The projected trips generated by the proposed theater were based on the ITE Trip Generation Manual (Institute of Transportation Engineers, 7th Edition, 2003). separate trip generating Land Use Codes from the ITE Trip Generation Manual were accounted for in this analysis - Movie Theater with Matinee (L.U. Code 444) and Multi-Plex Cinema (L.U. Code 445). For the purposes of this study, it was assumed that the original theater operations more closely corresponded to ITE's description of a Movie Theater with Matinee. This land use type was common for older theater complexes with less than ten screens and featuring more seats per screen than modern multiplexes. In contrast, the proposed redevelopment of Village Theaters will feature some attributes that more closely correspond to the Multi-plex land use type. According to the ITE Manual's definition, Multi-plexes typically feature over 10 screens and a smaller of seats per screen and are of more recent vintage. The data available for the Village Plaza redevelopment indicates that it would be a mix of both theater types and, as such, used an average of both generation rates for three independent variables to determine site generated vehicle trips.

Three independent variables for generating trips – number of seats, number of screens, and gross square footage were used to provide a conservative, accurate estimate of generated trip potential. Limited data for Land Use Codes 444 and 445 necessitated the use of three factors to allow more data to be incorporated in the overall estimates. Trip generation results also use the average rate methodology found in the ITE Manual for each variable to calculate the number of trips.

According to the Special Use Permit of January 27, 2003, the development is limited to 1,600 seats for 10 screens with approximately 35,000 square feet of space. These numbers were used to develop trip estimates for both ITE Land Use Code 444 (Movie Theater with Matinee) and 445 (Multi-Plex). These estimates were then averaged together to arrive at a final trip estimate. After analyzing the numbers of trips produced, it was noted that this average produced a reasonable range of generated trips for each peak period.







Table 2 shows the estimated number of trips generated by the Village Plaza Theater during the Friday and Saturday evening peak hours of the adjacent streets. Detailed breakdowns of trip generation estimates for each of the three independent variables are found in *Appendix B*. A truck percentage of two percent was estimated for all sitegenerated traffic.

Table 2 shows that the Village Plaza Theater, when fully developed, will generate approximately 715 new vehicular site trips Friday Evening Peak, 780 in the Saturday Evening Peak. These trip estimates do not account for a trip reduction due to transit, pedestrians or bicycles, in concurrence with the original traffic study.

ii.) Adjustments to Trip Generation Rates

a.) Pass-by Trips

Pass-by trips were not accounted for in this study because no documentation exists in the ITE Trip Generation Manual or ITE Trip Generation Handbook for these land use types. Due to the nature of and location of the proposed facility, most site-related trips will be made solely for the purpose of travel to and from the theater. Few trips to and from the Village Plaza Theater are anticipated to be made in a pass-by manner.

b.) Internal Capture

In order to produce a conservative estimate on the number of trips and to remain consistent with the RS&H study, it was assumed that all trips to and from the theater would be from external sites. The amount of trips estimated was not adjusted by internal capture.

c.) Modal Split

In order to produce a conservative estimate on the number of trips and to remain consistent with the RS&H study, it was assumed that all trips to and from the theater would be from personal, and not public, vehicles. The amount of trips estimated was not adjusted due to area-wide transit.

d.) Trip Generation Budget

Because the site will be built in a single phase, no trip generation budgeting for future expansion was considered in this study.



Table 2 Weekend Vehicle Trip Generation Summary Proposed Village Plaza Theater

ITE Land Use Codes 444 (Movie Theater with Matinee) & 445 (Multi-Plex)

Friday Evening Peak Trip Summary

		LET TO THE STATE OF			VeU.		
0007	445	Multi-Plex	576	56	44	323	253
2007 Build out	444	Movie Theater w/ Matinee	851	56	44	477	374
	Average	New Village Theaters	714	56	44	400	314

Saturday Evening Peak Trip Summary

Selector	等。 企文包含	English Managara	FARTE S	ZAIN.	ioversity haveollys		G.5.7
	445	Multi-Plex	588	52	48	306	282
2007 Build out	444	Movie Theater w/ Matinee	971	56	44	544	427
	Average	New Village Theaters	780	56	44	437	343



iii.) Trip Distribution

Trip distribution for site-related traffic was based on two factors. First, peak hour traffic patterns were noted to determine the directional traffic characteristics of traffic to and from Franklin Street and US 15-501. Turning movement Saturday peak hour traffic count data from the 2002 study provided the basis for routing external trips to and from Elliott Road.

Driveway locations and proximity to available parking determined the route of trips to and from the Village Plaza Theater site. Driveways "B" and "C", closer to the main cinema entrance located in the southwest corner of the redevelopment, received a heavier percentage of site-related traffic. Driveways further away received increasingly smaller percentages. In addition, it was assumed that all traffic from Franklin Street would use Driveways "C", "D", and "E" and all traffic from US 15-501 would use Driveways "A", "B", and "C". No traffic is predicted to go past proximate driveway entrances, though this possibility does exist. In addition, no theater traffic is expected to use Driveway "F", simply due to its distance from the theatre entrance and the difficulty in vehicular movement (multiple speed humps, narrow parking lanes, overall poor circulation) in the vicinity of Whole Foods.

HNTB calculated a directional split of approximately 50% of site traffic accessing the theater from the north from Franklin Street and approximately 50% of the site traffic accessing the theater from the south from US 15-501, based on 2002 traffic count data collected for the RS&H study. It was assumed that 70% of the total site trips would use Driveway "C" (most proximal to adjacent site parking and front theater entrance) and 20% of the total site trips would use Driveway "B". The remaining 10% would be distributed among Driveways "A", "D", and "E".

Figure 5 presents the projected trip distribution traffic percentages for the proposed site in 2007.

iv.) Trip Assignment

4 1

Figure 6 shows the corresponding site traffic volumes distributed on the study area network. Total volumes into and out of the site correspond to total external vehicular trips generated based on the trip generation methodology developed previously. Trip assignment internal to the site – within its parking lot and between adjacent parking lots was not specifically studied due to the uncertainties involved in predicting the likelihood of trips being made that use a different parking lot than the one immediately connected to their external access driveway. However, a qualitative and quantitative estimate of parking supply and how it relates to traffic assignment at the site driveways is presented later in this report.





D.) Future Traffic Forecasts with the Proposed Development

Figure 7 shows the traffic volumes for Condition 2 (without site), and **Figure 8** displays the Condition 3 projected study area traffic volumes with site traffic added. Site traffic only includes the *additional* traffic volumes in renovating the five screen theater to ten screens. Condition 1 (existing traffic) was previously shown by **Figure 4**.

III. IMPACT ANALYSES

A.) Peak Hour Intersection Level of Service Analysis

i.) Methodology

Evaluation of traffic operations on suburban arterials is most effective through the determination of level of service (LOS) criteria. The concept of level of service correlates qualitative aspects of traffic flow to quantitative terms. This enables transportation professionals to take the qualitative issues, such as congestion and substandard geometrics, and translate them into measurable quantities, such as operating speeds and vehicular delays. The 2000 Highway Capacity Manual (HCM 2000) characterizes level of service by letter designations A through F. Level of service A represents ideal low-volume traffic operations, and level of service F represents oversaturated high-volume traffic operations. Level of service is measured differently for various highway facilities, but in general, level of service letter designations are described by the following in **Table 3**.

The *Highway Capacity Software (HCS 2000)* was used to analyze peak hour conditions at unsignalized intersections and was supplemented with the traffic operations optimization and evaluation software *Synchro Professional Version 5.0* to evaluate future signal operations at signalized intersections (if applicable).

The minimum acceptable peak hour intersection level of service established for this project is LOS D for signalized intersections or LOS E for critical movements at unsignalized intersections, or no increase in delay for intersections operating below LOS D (if signalized) or LOS E (critical movements at unsignalized intersections) without the inclusion of site traffic. The following four conditions were evaluated:

Condition 1 - Existing Traffic

Condition 2 - 2007 Traffic without Site Traffic

Condition 3 - 2007 Traffic with Site Traffic Volumes Added

Condition 4 - 2007 Traffic with Site Traffic and Improvements
(for all intersections operating below LOS D (signalized) or LOS E
(unsignalized), where applicable)



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If applicable, information related to signal timing minimums, cycle lengths, splits, offsets, and phasing sequences will be assumed based upon the typical standards and practices of the Town of Chapel Hill Engineering staff and the NCDOT Signals and Geometrics Section.

Table 3
Level of Service (LOS) Characteristics

1	evel of Service Description	Per Vehicle Delay	Per Vehicle Delay
		at Signal	at Stop Sign
, -	OS A		
1	Free flow	< 15.0 sec	4400
>	Freedom to select desired speed and to	< 15.0 Sec	< 10.0 sec
	maneuver is extremely high		
>	General level of comfort and convenience for		
	motorists is excellent		
	OS B		
	Stable flow	10.0 - 20.0 sec	10.0 – 15.0 sec
>	Other vehicles in the traffic stream become	10.0 - 20.0 500	10.0 – 15.0 Sec
1.	noticeable		
	Reduction in freedom to maneuver from LOS A		
. –	OS C		
1	Stable flow	20.0 – 35.0 sec	15.0 – 25.0 sec
>	Maneuverability and operating speed are	20.0 - 00.0 860	13.0 - 23.0 880
1.	significantly affected by other vehicles		
>	General level of comfort and convenience		
<u> </u>	declines noticeably		
1 -	OS D		
	High density but stable flow	35.0 – 55.0 sec	25.0 - 35.0 sec
>	operation in contain to maneuver are severely	33.0 - 33.0 Sec	23.0 - 33.0 Sec
1.	restricted		
	General level of comfort / convenience is poor		
>	Small increases in traffic will generally cause		
	operational problems		
	Unstable flow	55.0 – 80.0 sec	35.0 – 50.0 sec
>	Speed reduced to lower but relatively uniform	00.0 - 00.0 360	33.0 - 30.0 Sec
	value		
8	Volumes at or near capacity level		
	Comfort and convenience are extremely poor		
>	Small flow increases or minor traffic stream		
	disturbances will cause breakdowns		
	S F		
	Forced or breakdown flow	> 80.0 sec	> 50.0 sec
<i>></i>	Volumes exceed roadway capacity		- 0010 000
_	Formation of unstable queues		
	Stoppages for long periods of time because of		
	traffic congestion		



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The results of this analysis are based on the procedures presented in the HCM 2000 and performed with the corresponding HCS 2000. If applicable, the timing optimization software Synchro Version 5.0 will be used for obtainment of optimized signal timings for actuated signals given existing volumes. The methodology of evaluating each condition is presented below:

- **Condition 1** No currently signalized intersections.
- Conditions 2 and 3 If applicable, obtain optimal cycle length and splits of each individual signalized intersection and report LOS and delay values from Synchro Version 5.0. Determine split timings that allow the overall intersection to operate at LOS D, or better, if possible.
- Condition 4 Reoptimize the cycle lengths and splits of individual intersections in Synchro. Adjust split timings to allow the overall intersection to operate at LOS D, or better, if possible. Adjust cycle lengths, splits, and offsets, if necessary, if the signal is currently operating in a coordinated system. Recommendations, if warranted, will be made to obtain at least LOS D for the intersection as a whole.

The net effect of this process is that direct comparisons, by movement, of delay and LOS between each of the conditions are impossible because splits and cycle lengths can and do change between conditions. The pertinent statistic of this analysis is the overall intersection level of service and delay. Improvements to deficient intersections in Condition 3 were made by first attempting to create an optimally progressed signal system (if applicable) with acceptable adjustments to signal phasing. If that did not produce satisfactory results for all intersections, geometric improvements to improve intersection capacity were considered for the deficient intersections.

The six unsignalized intersections were analyzed directly in HCS. Their results were evaluated on a per-movement basis, since HCS does not produce an overall intersection level of service for unsignalized intersections. Thus, intersections with deficient movements in Condition 2 would need to be evaluated for improvements in Condition 3. This methodology differs from signalized intersections, where one or more movements at an intersection may be deficient in Condition 2, but as long as the overall intersection level of service does not fall below LOS D, no intersection improvements are deemed necessary. Appendix C contains the HCS output for all unsignalized intersections under study.

ii.) Existing Conditions

Table 4 presents the results for the existing year traffic conditions as compiled from field data. A summary of operations for each intersection is given on the following page. The table lists LOS and delay values for those movements that are in existence at this time. It also only lists data for individual movements encountering delay at the stop-controlled intersections (which also do not have an overall intersection delay value produced by HCS). A qualitative description and analysis of the results is contained below in Table 4.



Table 4 - Capacity Analysis Results for Study Area Intersections Condition 1 – 2004 Existing Traffic

		0)		aneitroday.
		377		EVID S
Elliott Road and Driveway "A"	N/A	N/A	N/A	N/A
NB LTR	В	В	11.8	11.6
SBLTR	B C A	C	17.3	15.3
EBLT	Α	A	8.1	8.0
WBLT	A	Α	8.1	8.1
Elliott Road and Driveway "B"	N/A	N/A	N/A	N/A
SB LT	В	В	13.2	12.6
SBRT	B B	B	10.1	10.1
EBLT	Α	Ā	7.9	8.0
Elliott Road and Driveway "C"	N/A	N/A	N/A	N/A
SBLT	A	Α	8.2	8.0
WBLTRT	В	В	11.3	10.7
Elliott Road and Driveway "D"	N/A	N/A	N/A	N/A
SBLT	A	A	8.1	8.0
WB LTRT	В	В	12.9	12.1
Elliott Road and Driveway "E"	N/A	N/A	N/A	N/A
SBLT	Α	Α	8.1	7.9
WB LTRT	В	В	12.9	12.4
Elliott Road and Driveway "F"	N/A	N/A	N/A	N/A
NB LT	A	A	7.8	7.7
SBLT	Ä		8.2	8.0
EBLTR	Ċ	Ċ	15.7	15.7
WBLTTH	C	A C C	16.8	16.3
WB RT N/A => Not Applicable, i.e. moveme	B	в (11.0	10.2

N/A => Not Applicable, i.e. movement is non-existent or no improvements made

During existing conditions, all six intersections operate at acceptable levels of service for the Friday and Saturday evening peak hour. As shown in Table 4, each intersection is under capacity for both periods, with the worst conditions occurring for the southbound shared left/through/right-turning movement at Driveway "A." Current volumes on all facilities are light to moderate and turning traffic is not significantly delayed in this Condition.

iii.) 2007 No-Build Scenario (Condition 2)

Table 5 presents the results for the design year estimated traffic conditions without the impacts of site-related traffic. This analysis includes ambient growth, but no data for any future background site developments. A summary of operations for each intersection is given below.

Table 5 - Capacity Analysis Results for Study Area Intersections Condition 2 - 2007 Without Site Traffic

			I. ZVITILY	
			and the second s	
Elliott Road and Driveway "A"	NA	N/A	N/A	N/A
NB LTR	В	R	12.0	11.4
SB LTR	Č	B C A	18.0	15.1
EBLT	Ä	Ă	8.2	8.1
WBLT	A	A	8.2	8.1
Elliott Road and Driveway "B"	N/A	N/A	N/A	N/A
SBLT	В	В	13.6	40.4
SB RT	В	В	10.4	13.1 10.2
EBLT	Ă	Ä	8.1	8.0
Elliott Road and Driveway "C"	N/A	N/A	N/A	N/A
SBLT	Α	Α	8.3	
WBLTRT	B	A B	11.6	8.1 10.9
Elliott Road and Driveway "D"	N/A	N/A	N/A	N/A
SBLT		_		1
WBLTRT	A B	A	8.2	8.0
Elliott Road and Driveway "E"	N/A	N/A	13.3 N/A	12.4 N/A
·				1 1
SBLT	Α	A	7.9	8.2
WB LTRT	В	В	12.5	13.4
Elliott Road and Driveway "F"	N/A	N/A	N/A	N/A
NB LT	A	A	7.8	7.7
SB LT		A	8.3	8.1
EBLTR	C C	С	16.0	16.1
WBLTTH	C	С	17.0	16.7
WB RT	В	В	11.3	10.3

N/A => Not Applicable, i.e. movement is non-existent or no improvements made

During Condition 2, 2007 Without Site Conditions, all six intersections will continue to operate at acceptable levels of service for the Friday and Saturday evening peak hour. As shown in Table 5, each intersection is under capacity for both periods, with the worst conditions again occurring for the southbound shared left/through/right-turning movement at Driveway "A." Predicted 2007 volumes on all facilities are light to moderate and turning traffic is not significantly delayed in this Condition.

iv.) 2007 Build Scenario (Condition 3)

Table 6 presents the results for the design year estimated traffic conditions including the impacts of site-related traffic. This assumes all site traffic will use existing driveways and that no changes will be made to any of the existing driveways. $\bar{\mathsf{A}}$ summary of operations for each intersection is given below.

Table 6 – Capacity Analysis Results for Study Area Intersections Condition 3 – 2007 With Village Plaza Theater Site Traffic

ale te colore de la company		05-13-16	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
				HE SAME
Elliott Road and Driveway "A"	N/A	N/A	N/A	N/A
NB LTR	В	В	14.4	13.7
SB LTR	D	C	28.7	22.5
EB LT	A	A	8.9	8.9
WBLT	A	Α	8.7	8.6
Elliott Road and Driveway "B"	N/A	N/A	N/A	N/A
SBLT	С	C	19.2	19.2
SB RT	C B	В	11.9	11.8
EBLT	Α .	A	8.8	8.7
Elliott Road and Driveway "C"	N/A	N/A	N/A	N/A
SBLT	A	A	9.6	9.4
WBLT	Ε	D	36.1	33.9
WB RT	B	В	13.3	12.8
Elliott Road and Driveway "D"	N/A	N/A	N/A	N/A
SBLT	Α	Α	8.7	8.5
WB LTRT	С	В	16.1	15.0
Elliott Road and Driveway "E"	N/A	N/A	N/A	N/A
SBLT	A	A	8.7	8.5
WB LTRT	C	С	16.5	16.8
Elliott Road and Driveway "F"	N/A	N/A	N/A	N/A
NB LT	A	A	8.4	8.3
SBLT	Α	A	8.9	8.7
EBLTR	C	C	23.0	23.3
WB LTTH	C	C	23.6	25.0
WB RT N/A => Not Applicable, i.e. movemen	В	В	13.4	12.2

N/A => Not Applicable, i.e. movement is non-existent or no improvements made

During Condition 3, 2007 With Site Conditions, all six intersections will continue to operate at acceptable levels of service for the Friday and Saturday evening peak hour. As shown in **Table 6**, each intersection is under capacity for both periods, with the worst conditions again occurring for the southbound shared left/through/right-turning movement at Driveway "A." Predicted 2007 volumes, including the addition of site traffic, on all facilities are moderate and turning traffic is not significantly delayed in this Condition.

B.) Access Analysis

Vehicular site access is to be accommodated via the six potential site driveways connecting to Elliott Road. The three on-site driveways ("A", "B", and "C") should ideally handle all of the site-related traffic, but with the availability and connectivity of internal roadways from "D", "E", and "F", there is a strong possibility that some theater-related traffic will use those driveways for access to parking.



Driveway throat lengths as shown on the proposed site redevelopment plans are adequate for projected 2007 with site traffic conditions. Estimated queues should rarely exceed the 50 foot throat length for Driveways "A" and "B". Driveway "C" has an approximate 25 foot driveway throat length, with separate left and right-turning vehicle lanes. This throat length is too short for adequate and safe operations, even with estimated queue lengths of approximately 2 vehicles for exiting left-turns. During peak turnover periods within the peak hour itself, traffic may back up beyond predicted hourly queue length maximums. A 50 foot minimum driveway throat length would greatly add to safe vehicular circulation to and from Elliott Road. This additional requirement would force a redesign of circulation lanes within the parking lot, due to the fact that the current site plans show travel lanes meeting at the end of the 25 foot throat. The 2003 NCDOT Policy on Street and Driveway Access to North Carolina Highways recommends a 100 foot minimum throat length (similar to Driveway "F") for driveways accessing arterial roadways.

Internal circulation and access to other commercial development within the Village Plaza Shopping Center is well designed on the site plan. Traffic can use internal driveway connections to access all other parcels from the front of the theater and from the back of the theatre. Also, cross access is maintained with the Red, Hot and Blue, and Whole Foods parking lots. As a stipulation in the original 2003 Special Use Permit for the Village Plaza Theaters, the developer is to provide sentinel personnel to ensure that cross parking is not occurring by theater patrons in the Red, Hot and Blue and Whole Foods parking areas. More information about the correlation between site trip generation, driveway assignment and parking supply is found in **Section III. F) Special Analyses**.

Access for pedestrians is currently acceptable. As previously discussed, there are ample area sidewalks and good sidewalk connectivity, at least in the local study area. Bicycle access is also adequate to and from the site, although no specific bicycle amenities are provided on Elliott Road. The Lower Booker Creek Greenway provides some additional external connectivity for non-motorized transportation.

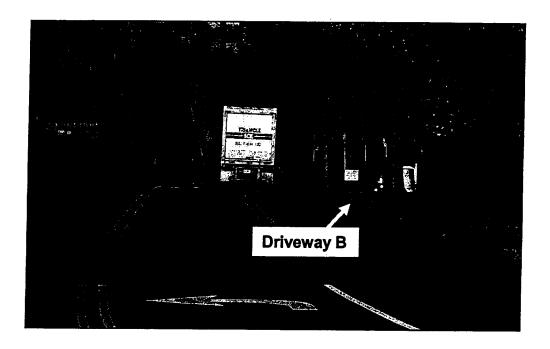
C.) Signal Warrant Analysis

Based on projected traffic volumes, none of the unsignalized intersections in the project study area would warrant the installation of a traffic signal based on the methodology found in the 2000 Manual on Uniform Traffic Control Devices (MUTCD). A warrant often satisfied from the MUTCD methodology is the Peak Hour Warrant, which would have comparable data collected from this study. Based on Figure 4C-4 from the MUTCD 2000, no study area intersection with the additional Village Park Theater site trips added would warrant the installation of a signal based on the Peak Hour thresholds.



D.) Sight Distance Analysis

In general sight distance issues entering and exiting the driveways are minimal, except for Driveway "B". Driveway "B" is located on a section of horizontal curvature along Elliott Road that, when coupled with tree trunks and shrubbery along the eastern edge of the roadway, makes it difficult for vehicles exiting this driveway to see oncoming eastbound Elliott Road traffic. The picture below identifies this problem (and shows a speed limit sign obscured by foliage, as well). Every effort should be made to clear shrubbery and overhanging branches from the many site-related driveways to ensure safe turning movements onto and off of Elliott Road.



E.) Other Transportation-Related Analyses

Other transportation-related analyses normally required by the 2001 Town of Chapel Hill Guidelines for the preparation of Traffic Impact Studies were completed as part of the original 2002 Village Plaza Theaters TIA by RS&H. The following studies listed in **Table 7** were completed at that time and were not reanalyzed in this report because no appreciable changes have occurred to the study area or development plans in the last two years that would affect a particular analysis.



Table 7. Status of Other Transportation-Related Analyses

ATENSION	Commence as
Generalized Peak Hour	No relevant changes from the 2002 Original Study. A
and/or Daily LOS Analysis	description is found on page 25 of that study.
Signal Phasing Analysis	No signals at current study area intersections nor are any proposed in future design year
Intersection Accident	An "Intersection Accident Analysis" is provided on page 25 of
Analysis	the February 2002 RS&H TIA. No intersection improvements were recommended to improve area safety.
Progression Analysis	No signalized intersections were studied for this amendment.
Turn Lane Storage	All storage lanes adequately meet the traffic demands for
Requirements	existing and future traffic.
Appropriateness of	Given the proposed configuration of site driveways, the lane
Acceleration/Deceleration	geometrics and traffic patterns on Elliott Road, and a low 25
Lanes	mph speed limit, no special acceleration or deceleration lanes
	are required due to the proposed Village Plaza Theater development.
Pedestrian and Bicycle	A discussion of the "Pedestrian and Bicycle Analysis" is
Analysis	provided on pages 31-32 of the February 2002 RS&H TIA.
Public Transportation	A discussion of the "Public Transportation Analysis" is
Analysis	provided on page 32 of the February 2002 RS&H TIA.

F.) Special Analysis/Issues Related to Project

The original TIA document alluded to the special issue of providing a direct access point from the Lower Booker Creek Greenway to the site, thus encouraging and enhancing pedestrian and bicycle access to the Village Plaza Theaters and Shopping Center. Though the effects of this improvement were not directly studied in this analysis, any improvement to better serve non-motorized trips to the theater should be implemented. The added benefit in this case would be a reduction in vehicular trips to a site with overall limited proximal parking.

The key issue in the need for a reinvestigation of traffic impacts from this site is the more thorough analysis of driveway access and improvements to on-site parking. The original Village Plaza Theaters study conducted by RS&H Engineers made a recommendation of improving both driveways in that study ("C" and "D") to have separated left and right turning lanes exiting the site. This recommendation was not directly due to congested or failing traffic conditions at these site driveways with the addition of theater traffic. The current site plans show Driveway "C", the on-site driveway, being improved for separate exit turning lanes and a single entrance lane. Driveway "D", an off-site driveway, shows no design improvements over existing conditions. The previous trip distribution estimates and corresponding capacity analysis showed that Driveway "D" would not need separate left and right-turn exit lanes during the peak hours under study, but that the need for separate exit turning lanes from Driveway "D" was a general recommendation to improve conditions at this driveway,



Village Plaza Theaters - Proposed Movie Cinemas

though those conditions were not considered to require mitigation by Town of Chapel Hill standards.

Improvements to on-site parking will likely play a significant role into where movie theater-related traffic chooses to access the proposed site. A quantitative investigation into proposed parking shows that there will be approximately 240 parking spaces proximally located adjacent to the theater. Approximately 52 spaces will be created on the north side of the theater, 67 spaces between driveways "D" and "C", and 120 spaces located between driveways "C" and "B". Some non-theater related parking currently uses some spaces in the area between entrances "C" and "B", and will continue to do so in the future.

Beyond the proximal parking areas, there is secondary parking capacity available between driveways "A" and "B" - approximately 150 spaces and off site in the Red. Hot and Blue lot - 25 spaces and behind stores in the adjacent shopping center - 30+ spaces. Secondary parking capacity indicates that these stalls would likely not be considered optimal theater parking, but would be desirable parking spaces if optimal spaces were taken. Again, there is some existing parking demand during the peak hours under study at these locations. Proximity to the proposed theater entrance was considered the main criteria for parking space importance.

Additional parking space opportunities are located farther to the north in the Whole Foods lot and farther east of driveway "A" in the Village Plaza complex, but with the primary and secondary parking supply available, it is highly unlikely that these spots would be needed. Signage outside the Whole Foods lot indicates that this lot is exclusively for shoppers at the market and adjacent stores, and not for general area parking.

With this distribution of parking capacity, it is reasonable that most access will occur at Driveways "C" and "B". To a lesser extent, some vehicles may attempt to access at Driveways "D" and "E", but little immediate parking would be available in Red. Hot & Blue and traffic would have to negotiate through significant speed bumps on internal circulation roads in that area.

It is important to note that the focus of traffic impact studies under the Guidelines for Preparation of a Traffic Impact Study provided by the Town of Chapel Hill is on the analysis of transportation impacts on the adjacent and external transportation network surrounding a proposed development. While some account needs to be made for a development's parking access and circulation, the scope of this Village Plaza Theater traffic impact study does not attempt a further, quantitative analysis of parking issues for the Village Plaza Theaters and its study area environs.



Village Plaza Theaters – Proposed Movie Cinemas

IV. MITIGATION MEASURES/RECOMMENDATIONS

A.) Planned Improvements

Neither the Town of Chapel Hill nor the North Carolina Department of Transportation are expected to make any significant planned improvement projects for study area facilities studied during this amendment. Page 32 of the February 2002 RS&H TIA mentions several planned improvements by the Town beyond the boundaries of this study area, but they are not expected to affect this study.

B.) Background Committed Improvements

No background improvements are committed by other area project developments.

C.) Applicant Committed Improvements

The only stipulation made in the original operations analysis as an "Applicant Committed Improvements" is the widening of Driveways "C" and "D". Based on a reanalysis of the site generated trips in the appropriate peak periods and a more accurate redistribution of site traffic among the six possible site driveways, there are no necessary improvements to be made beyond what are indicated on the site plan for driveway throat lengths and lane designation/striping.

D.) Necessary Improvements

No additional external roadway improvements are necessary to due to the addition of ambient growth and/or site traffic. However, as described in the Access Analysis section, the throat length for Driveway "C" should be extended to at least 50 feet. This would impact the circulation plan for the parking lot on current plans. Care needs to be taken with streetscape improvements along Elliott Road to allow adequate sight distance from Driveways "B" and "C", as they both are located near a horizontal curve. Driveways "B" and "C" should also feature conspicuous signage indicating that they are the main entry points for the proposed Village Plaza Theaters.

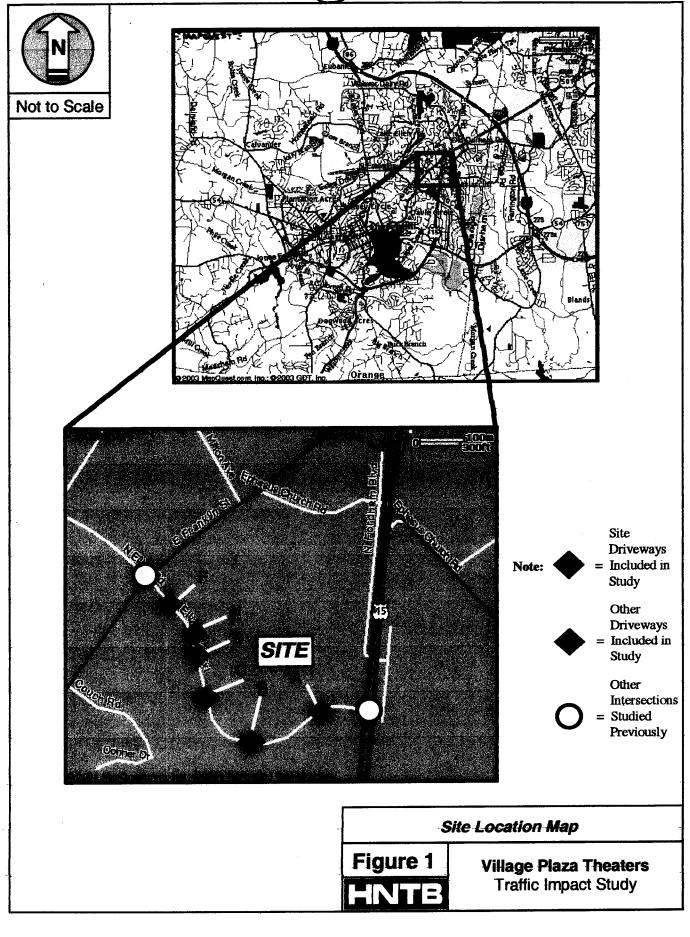
As part of the original Special Use Permit for this site, the developer agreed to provide personnel to monitor parking operations and ensure, to the greatest extent possible, that theater-goers were parking in lots on the Village Plaza site. This policy needs to be adhered to since the Red, Hot and Blue lot has a limited amount of parking capacity and the neighboring lot at Whole Foods is designated only for patrons of that shopping center.

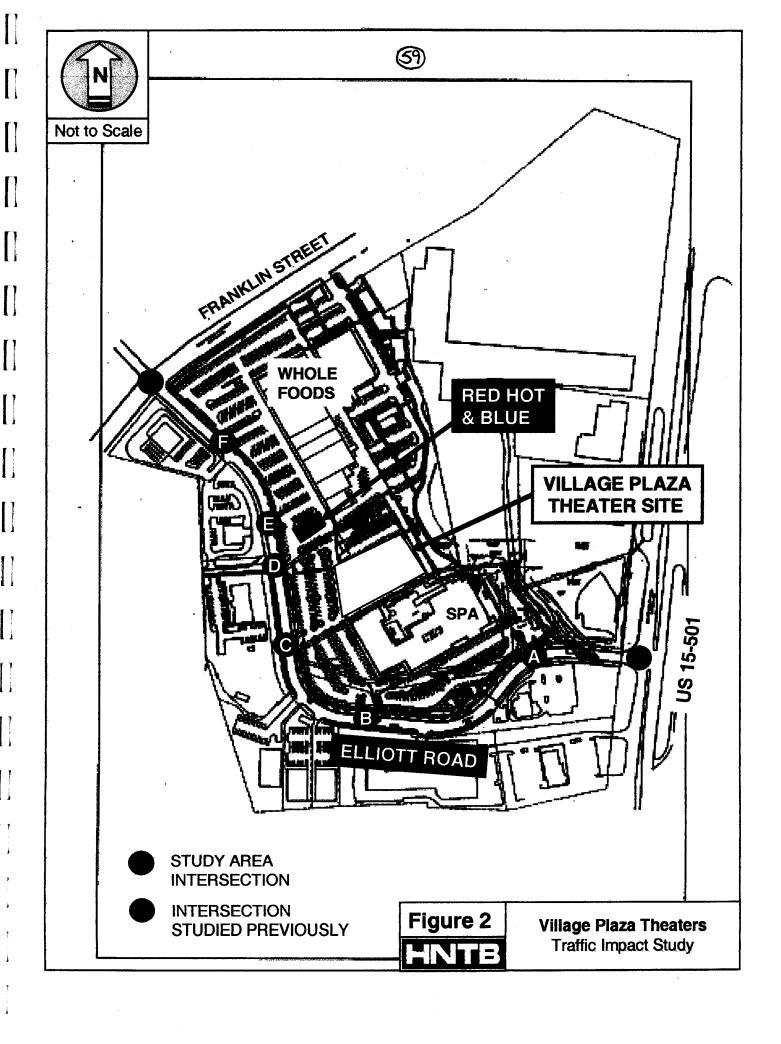


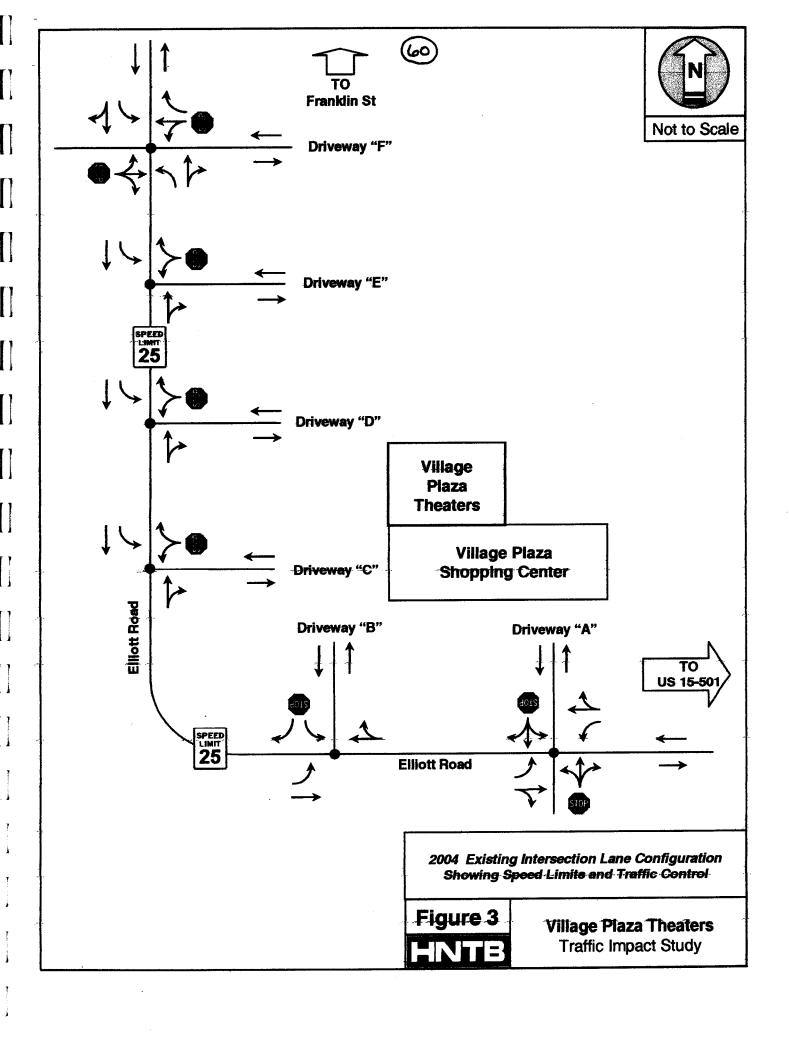
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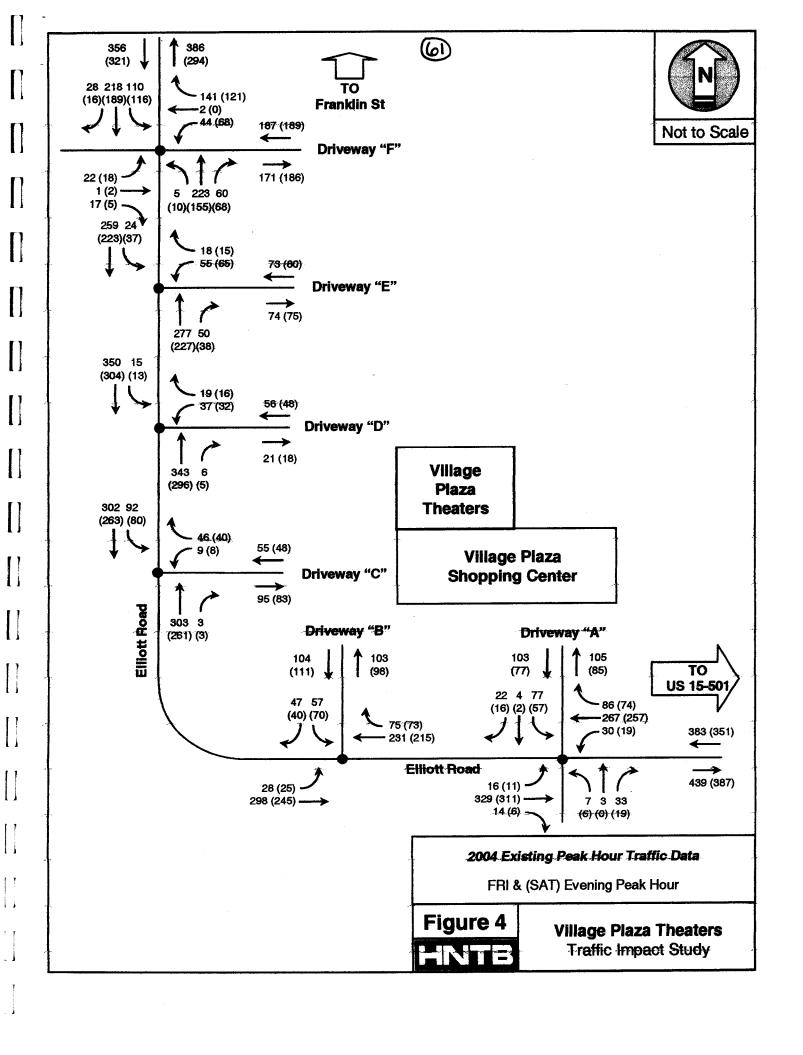


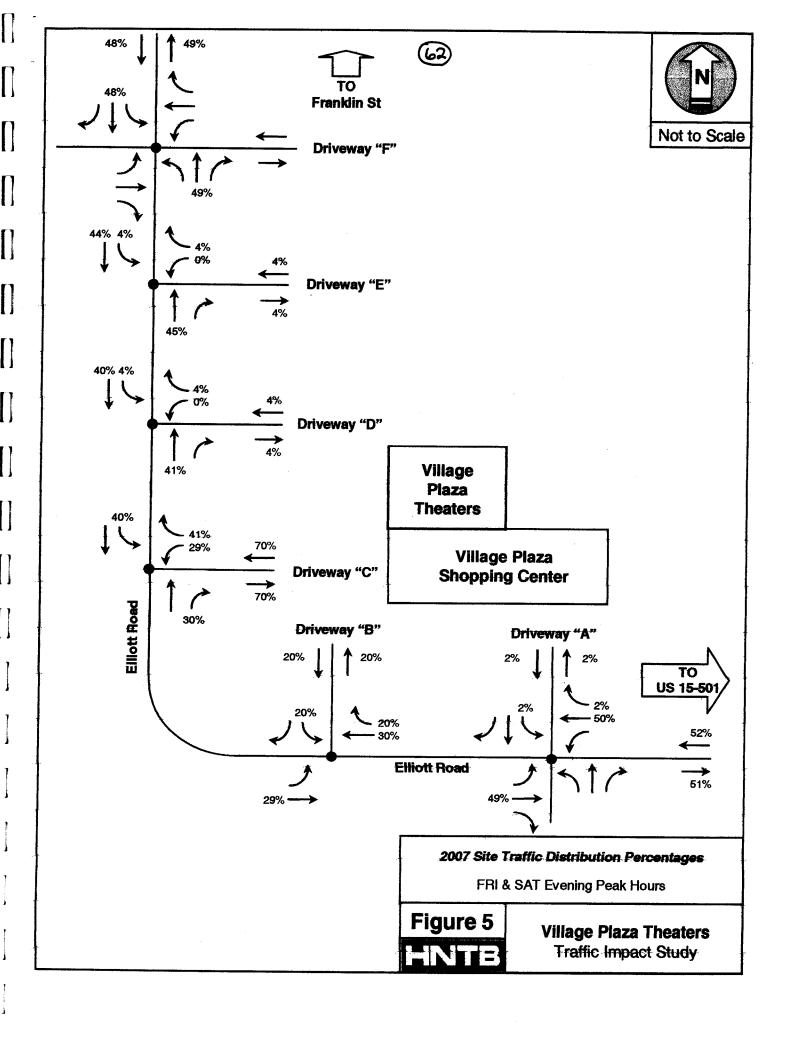
Appendix A - Figures

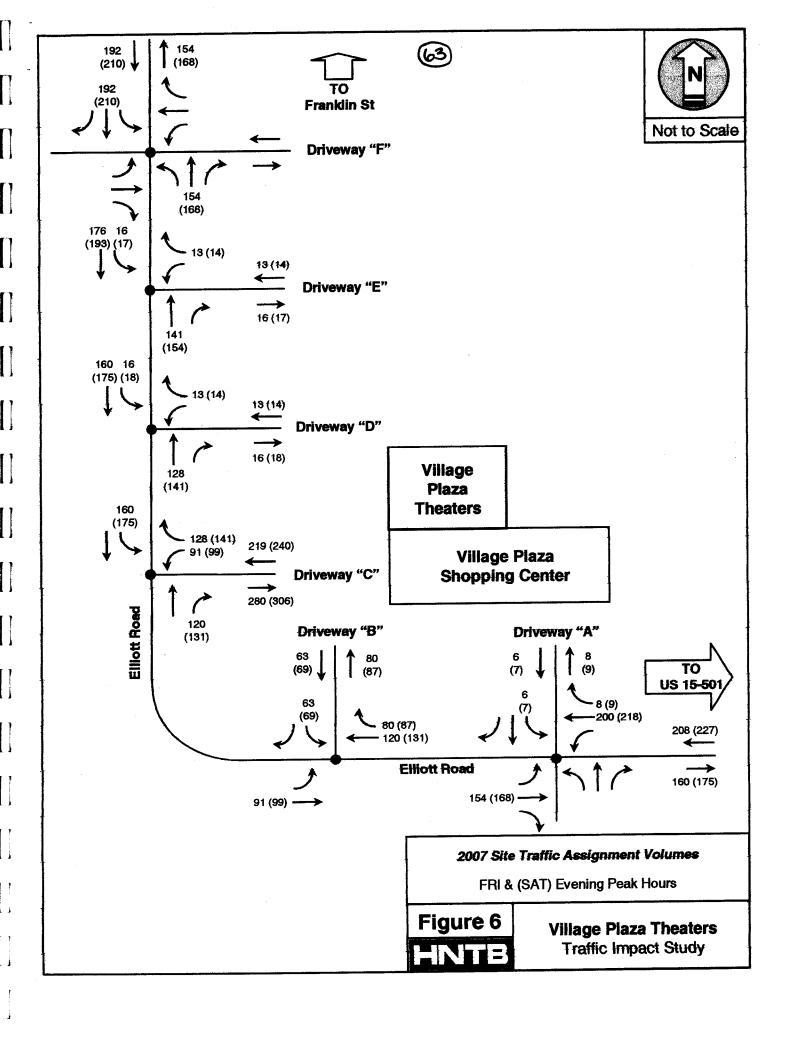


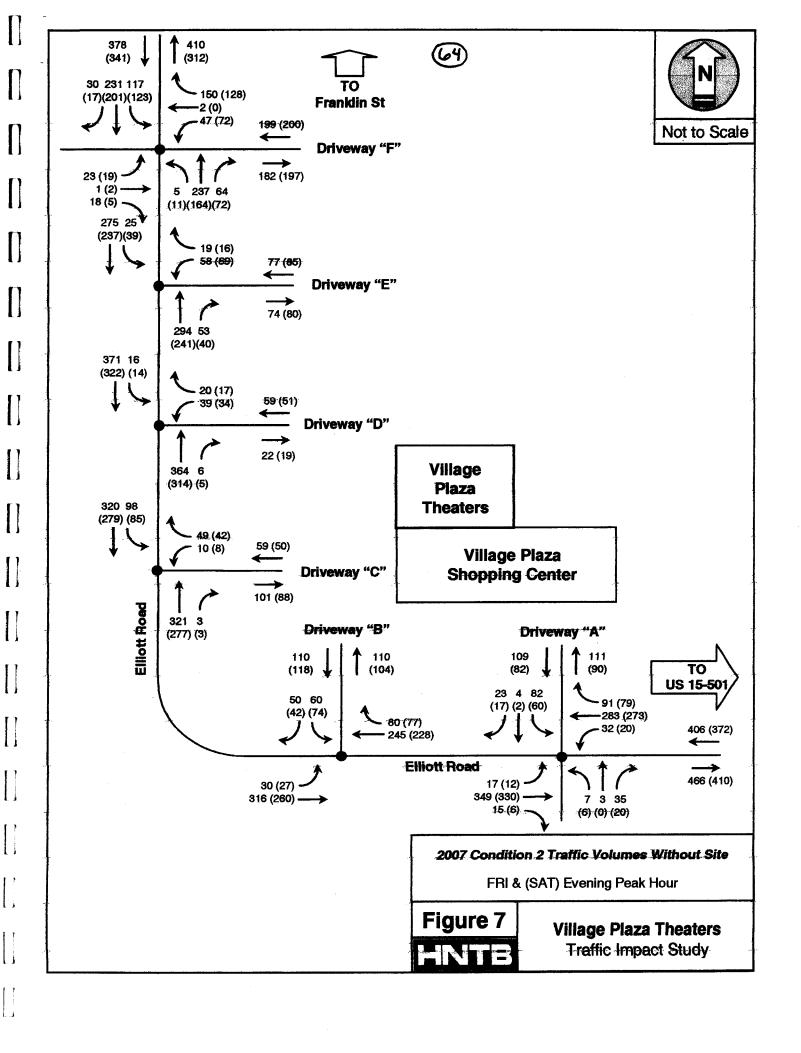


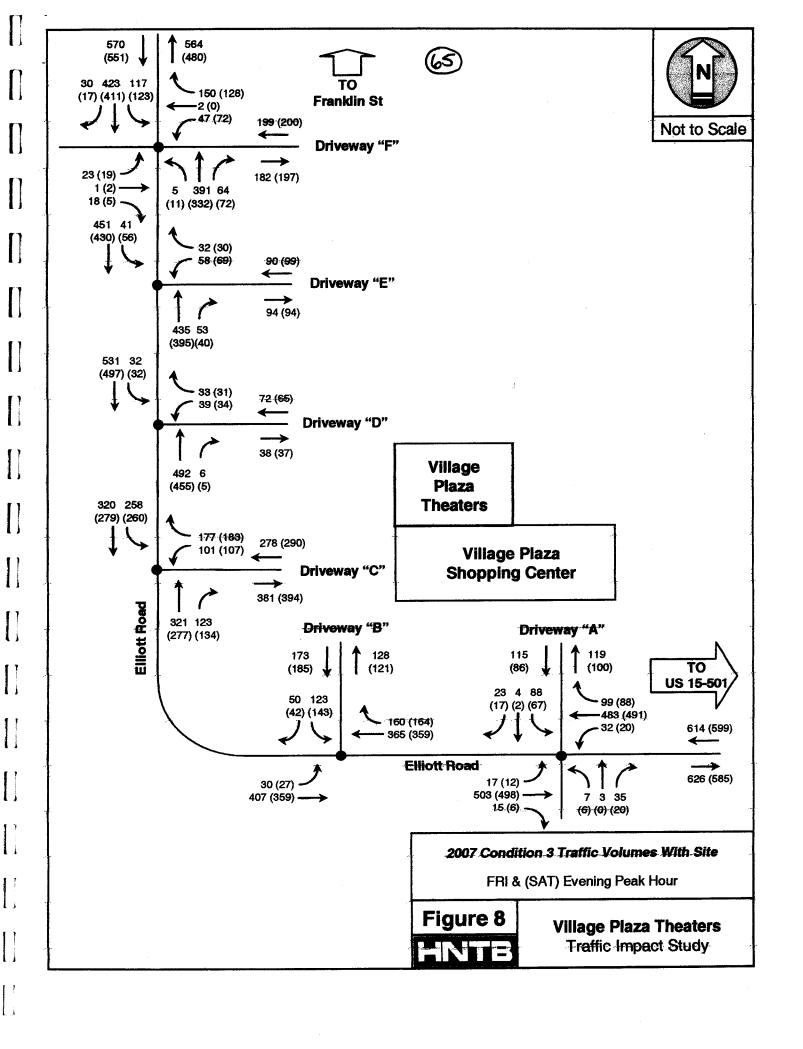














Appendix B - Trip Generation Estimate Details



Village Plaza Theatres Amendment TIS - Trip Generation

Trip Generation Changes Between Buildout and Existing

Day	T	OTAL TRIP	S		TRIPS IN			TRIPS OUT	
	Buildout	Existing	Growth	Buildout	Existing	Growth	Buildout	Existing	Growth
Friday ·	714	552	162	400	309	91	314	247	67
Saturday	780	631	149	437	353	84	343	278	65

Village Plaza Theatres Amendment TIS - Trip Generation

Day ERIDAN SERVICE Scenario Build Ories See

	Trips OUT	18	2 6	2/0	304		253	252	3	432	417	/11/
	Trips IN	274	- 0			1						•
	% OOT	41	: ;	3	48		‡	44	: \$	74	4	
	N. S.	29	7,	5	25	EE	3	26	2	S	26	
	٠,		629			1			•			
Sito Data	Oile Dala	1600	10	07 46	33.40	average	200,	000	10		35.46	0,00000
			62.89				1	0.50			- 1	
Variable		Seats	Screens	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	5		1		Screens		KLD.	
Name	Multi Dlov	YOL LENGTH	Multi-Plex	Multi-Plex			Movie Theatre w/ Matinee		Movie Theatre W/ Matinee	Movie Theatre w/ Matineo	ייים ייים ייים ייים ייים ייים ייים ייי	
ITE LU Code	445	746	C + -	445			444	777		444		

Day SATIURDAY Scenario Buildtont

314

56

714

avg. 444&445

	Lnos	230	252	202 202	3	282	324		9	127	15	174
		H			1						-	
	Irips	25(36.	300		ັ ຈ	41;	. 0	ñ	75	EA	5
	100 %	48	48	48		40	44	42	7.	44	44	F
	NI Ø/	25	25	52	53	26	26	2,5	3 8	96	56	
TOMETER	Colon III	480	691	594	588	3	736	1205	7.0	178	971	
Site Data		0091	9	35.46	average		1600	9	25.46	33.40	average	
Rafe	60	 	69.14	16.76		9,0	0.40	120.48	27 30	51.73		
Variable	Contract	Calls	Screens	GFA		0,000	Seals	Screens	GFA			
Name	Mulfi-Plex	Marifi Diam	Multi-Plex	Multi-Piex		Movie Theatre w/ Matingo	Movie Thanks W Maurice	Movie Theatre W/ Matinee	Movie Theatre w/ Matinee			
ITE LU Code	445	445	778	2		444	777	;	444			

343

437

44

56

780

avg. 444&445

Village Plaza Trip Gen

Village Plaza Theatres Amendment TIS - Trip Generation

Existing

Day FRIDAY FOR Scenario Existing FRIDAY

II E LU Code	Name	Variable	Rate	Site Data	Total Trins	NI %	TIIO %	Trine IN	Tribe OIL
AAG			1		2	The state of the s	1000		
440	Multi-Plex	Seats		1332	386	S S	14		21,
L' '				100.	3	3	-	077	200
445	Milli-Plex	Sorgano	62 80	Ц	770	1	•	<u> </u>	
!		2	06.03	<u> </u>	410	200	43	1/9	135
445	Multi-Plex	AHA AHA	17 87	27 70	443	ç	•		
			5	27.10	440	70	40	230	213
				average	381	95	44	213	169
777	Mario Thanks A Maris					ŝ		210	100
†	I MOVIE THEATTE W/ MATINEE	Seats	0.36	1332	480	S.	77	260	24.4
777	A 1	(-	2	3	F	203	-17
444	Movie Theatre W/ Matinee	Screens	102.87	ıc.	514	ď	45	900	250
777	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1)	-	3	74	230	017
444	Movie neatre w/ Matinee	GFA	26.7	24 78	662	20	**	27.4	700
				2	200	3	‡	ر د	283
:				average	たたり	28	77	200	17,0
						2	1		/8/

Day SATURDAY SENSING

П			_			т-	_					Т	_
Tribe OID	00 80111	104	140	5 5	200	170	02.0	2/2	253	3	299	970	0/7
Trine IN	2000	730	197	270	210	217	242	540	349	?	380	25.2	3
LIO %)	-	43	. ę	40	44	1	ţ	42	! :	4	77	•
NI %	50	S	27	23	76	56	56	3	28		96	95)
Total Tribs	400			415	ı			2	602	1	6/9	631	
Site Data	1332	7	ည	24.78		average	1332	1	Ŋ	7,70	24.78	average	
Rate	03	·	69.14	16.76			0.46		120.48	07.00	66.12		
Variable	Seats		Screens	GFA			Seats	:	Screens	S L	KLD		
Name	Multi-Plex		Multi-Piex	Multi-Plex			Movie Theatre w/ Matinee		Movie heatre w/ Matinee	Movie Theatre w/ Matinge	יייסיוכ ויוכמים אי ואמנווופם		
ITE LU Code	445	770	6440	445			444	7 7	444	444			

The 444 Land Use Type more closely corresponds with the original Village Plaza Theaters, so these numbers were used directly.



•



	TV	O-WAY STOP CONTROL SUMMARY Site Information								
General Informa	tion			Site	Infor	ma	tion			
Analyst	KJF			Inter	section			Elliott I	Road and	Driveway
Agency/Co.		North Carolina,	PC	Juris	diction			Town	of Chapel	Hill
Date Performed	3/2/04			1	ysis Ye	ar			xisting	
Analysis Time Period	2004	Friday PM Peak			.				<i>y</i>	
Project Description	38435 - Tou	n of Chapel Hill								
East/West Street: E							eet: <i>Driv</i>			
Intersection Orientation	on: <i>East-W</i>	est		Study	/ Perioc	<u>l (h</u>	rs): <i>0.25</i>			
Vehicle Volumes	and Adju									
Major Street		Eastboun	d					Westb	ound	
Movement	1	2		3			4	5		6
	L	T		F			_ <u>L</u>	T		R
Volume (veh/h)	16	329	\bot	14			30	267		86
Peak-hour factor, PH	F 0.93	0.93		0.9	3		0.95	0.95	5	0.95
Hourly Flow Rate (veh/h)	17	353		15			31	281		90
Proportion of heavy vehicles, P _{HV}	2						2	_		
Median type				Two	Nav Lei	ft T	um Lane			
RT Channelized?			T	0	1			7	I	0
Lanes	1	1		0			1	1		0
Configuration	- 		十	TR			- i	1		TR
Upstream Signal		0	\dashv					0		
Minor Street		Northboun	d					Southbo	ound	
Movement	7	8		9			10	11		12
	L	Т		R			L	Т		R
Volume (veh/h)	7	3		33			77	4		22
Peak-hour factor, PHF	0.67	0.67		0.6	7		0.79	0.79		0.79
Hourly Flow Rate (veh/h)	10	4		49			97	5		27
Proportion of heavy			\top	_						
vehicles, P _{HV}	2	2		2			2	2		2
Percent grade (%)		0						0		
Flared approach		N						N		
Storage		0						0		
RT Channelized?				0						0
anes	0	1		0			0	1		0
Configuration		LTR						LTR		
Control Delay, Queue	Length, Le	vel of Service								
Approach	EB	WB		- 1	Vorthbo	un	d	5	Southboun	d
Novement	1	4		7	8		9	10	11	12
ane Configuration	L	L	1		LTR				LTR	
/olume, v (vph)	17	31	T		63				129	
Capacity, c _m (vph)	1188	1191	+	-	589	\dashv			421	
/c ratio	0.01	0.03	 		0.11	\dashv	_		0.31	
	0.01	0.03	+		0.11					
Queue length (95%)	0.04	0.08	 		0.30	\dashv			1.28	

_		_
•	1	7
ı	ı	1

Control Delay (s/veh)	8.1	8.1	11.8	17.3
LOS	Α	Α	В	С
Approach delay (s/veh)			11.8	17.3
Approach LOS	••		. В	С

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<u> </u>	Part 2 4 4	NAV OTO	CONT	יים פוי	AANA A DV			
		O-WAY STOP						
General Informati	on		Site	Informa	ition	Tew		
Analyst	KJF		Inters	ection		Elliott Ho	oad and L	Driveway
Agency/Co.		lorth Carolina, P	Uris	diction			Chapel F	iill
Date Performed	3/2/04		111	sis Year	 	2004 Ex		
Analysis Time Period	2004 Sa	iturday PM Peal	7/1an	313 1001		2004 EX	oung	
Desirat Description	2012E TOWN	of Chapel Hill T	IS - Village	Plaza Ti	heatres			
Project Description East/West Street: Ell.		or oriaper riii ri	North	South St	reet: Driv	ewav "A"		
Intersection Orientatio	n: Fast-Wes	†			rs): 0.25			
Vehicle Volumes	and Adjust	Eastbound				Westbou	ınd	
Major Street Movement	1	2	T 3		4	5	110	6
Movement		- - - - - - - - - - 	Ř		Ĺ	Ť		R
Volume (veh/h)	11	311	6		19	257		74
Peak-hour factor, PHF		0.80	0.80)	0.91	0.91		0.91
Hourly Flow Rate (veh/h)	13	388	7		20	282		81
Proportion of heavy	2				2			
vehicles, P _{HV}	2							
Median type			Two V	Vay Left 1	Tum Lane			
RT Channelized?			0					0
Lanes	1	1	0		1	1		0
Configuration	L		TR		L			TR
Upstream Signal		0				0		
Minor Street		Northbound				Southbou	und	
Movement	7	8	9		10	11		12
	L	T	R		L	T		R
Volume (veh/h)	6	0	19		57	2		16
Peak-hour factor, PHF	0.84	0.84	0.84	7	0.77	0.77		0.77
Hourly Flow Rate (veh/h)	7	0	22		74	2		20
Proportion of heavy vehicles, P _{HV}	2	2	2	ĺ	2	2		2
Percent grade (%)		0				0		
Flared approach		N				N		
Storage		0				0		
RT Channelized?			0			1		0
Lanes	0	1	0		0	1	<u> </u>	0
Configuration		LTR				LTR		
Control Delay, Queue	Lenath, Leve	el of Service						
Approach	EB	WB		Northbour	nd	S	outhboun	d
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
Volume, v (vph)	13	20		29			96	
	1196	1164	-	573	1		446	
Capacity, c _m (vph)				0.05	1	 	0.22	
v/c ratio	0.01	0.02	ļ		1	 	0.22	-
Queue length (95%)	0.03	0.05		0.16	-	-	0.01	

(7	۹)
V	2

Control Delay (s/veh)	8.0	8.1	11.6	15.3
LOS	Α	Α	В	С
Approach delay (s/veh)			11.6	15.3
Approach LOS			В	С

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1.3



	TW	O-WAY STOP	CONT	ROL SU	MMARY						
General Informat	ion		Site	Site Information							
Analyst	KJF		Intor	section			Road and	Driveway			
Agency/Co.	HNTB N	Vorth Carolina, P	C L			"B"					
Date Performed	3/2/04		Juris	diction		Town of Chapel Hill					
	2004 E	kisting Friday PM	Analy	sis Year		2004 E.	xisting				
Analysis Time Period	p ban][1					
Project Description	38435 - Town	of Chapel Hill TI	S - Village	Plaza Ti	neatres						
East/West Street: Ell					eet: Drive	eway "B"					
Intersection Orientatio	n: <i>East-Wes</i>	<u>t</u>	Study	Period (h	rs): <i>0.25</i>						
Vehicle Volumes	and Adjust	ments									
Major Street		Eastbound				Westbo	und				
Movement	1	. 2	3		4	5		6			
	L	T	R		<u> L </u>	T		R			
Volume (veh/h)	28	298	0		0	231		<i>75</i>			
Peak-hour factor, PHF	0.92	0.92	1.00	7	1.00	0.99		0.99			
Hourly Flow Rate (veh/h)	30	323	0		0	233		<i>75</i>			
Proportion of heavy	2				0						
vehicles, P _{HV}				l_			<u> </u>				
Median type				Vay Left T	um Lane	· · · · · · · · · · · · · · · · · · ·					
RT Channelized?			0					0			
Lanes	1	1	0		0	1		0			
Configuration	L	T						TR			
Upstream Signal		0	<u> </u>			0					
Minor Street		Northbound				Southbo	und				
Movement	7	8	9		10	11		12			
	L	Т	R		L	T		R			
Volume (veh/h)	0	0	0		<i>57</i>	0		47			
Peak-hour factor, PHF	1.00	1.00	1.00)	0.70	1.00		0.70			
Hourly Flow Rate (veh/h)	0	0	0		81	0		67			
Proportion of heavy	0	О	0		2	0		2			
vehicles, P _{HV}		,	L ,		۷.			2			
Percent grade (%)		0				3					
Flared approach		N				N					
Storage		0				0					
RT Channelized?			0					0			
Lanes	0	0	0		1	0		1			
Configuration					L			R			
Control Delay, Queue	Length. Leve	el of Service									
Approach	EB	WB	1	Northboun	d	S	outhbour	ıd			
Movement	1	4	7	8	9	10	11	12			
Lane Configuration	L.				1	L		R			
Volume, v (vph)	30					81		67			
	1253			-		519	 	769			
Capacity, c _m (vph)							 	4			
//c ratio	0.02	ļļ				0.16		0.09			
Queue length (95%)	0.07				ļ	0.55		0.29			

/- A	
12 N	
LAN	
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Control Delay (s/veh)	7.9	1	1		13.2		10.1
LOS	Α				В		В
Approach delay (s/veh)						11.8	
Approach LOS	•••					В	

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5.4



General Information	\n		C +-	Info	mation		****				
				INIOF	mation						
Analyst Agency/Co.	KJF	orth Carolina, PC	Inte	rsection		Elliott "B"	Road an	d Driveu			
Date Performed	3/2/04	rin Carolina, PC		sdiction			Town of Chapel Hill				
		ting Saturday P			ar		Existing	7 1 1111			
Analysis Time Period	Peak	ung Calaraay r	"	., 0.0		2004.	_xiourig				
Project Description 3	8435 - Town o	f Chapel Hill TIS	6 - Village Plaza Theatres								
East/West Street: Ellio	tt Road			North/South Street: Driveway "B"							
Intersection Orientation:	East-West		Stud	Study Period (hrs): 0.25							
Vehicle Volumes a	nd Adjustm	ents									
Major Street		Eastbound				Westb	ound				
Movement	1	2	3		4	5		6			
	L	T	F		L	T		R			
Volume (veh/h)	25	245	0		0	215		73			
Peak-hour factor, PHF Hourly Flow Rate	0.95	0.95	1.0		1.00	0.8	R	0.88			
veh/h)	26	26 257		1	0	244	4	<i>82</i>			
Proportion of heavy	2										
vehicles, P _{HV}				1	0		ı				
Median type			Two	Two Way Left Turn Lane							
RT Channelized?			0					0			
anes	1	1	0	0 0		1		0			
Configuration	L	T						TR			
Jpstream Signal	<u> </u>	0				0					
linor Street		Northbound			· · · · · · · · · · · · · · · · · · ·	Southb					
Novement	7	8	9		10	11		12			
(alauma (asala/la)	L	T	R		L	Т		R			
olume (veh/h) eak-hour factor, PHF	0 1.00	0 1.00	1.00	- 	70	0		40			
lourly Flow Rate				'	0.93	1.00	'	0.93			
/eh/h)	0	0	0	- 1	<i>75</i>	0		43			
roportion of heavy											
ehicles, P _{HV}	0	0	. 0	0 2		0		2			
ercent grade (%)		0				3					
ared approach		N	·			N					
Storage		0				0					
T Channelized?			0					0			
anes	0	0	0		1	0		1			
onfiguration					L			R			
ontrol Delay, Queue Lo	ength, Level o	f Service									
oproach	EB	WB	1	Vorthbou	und	5	Southbou	nd			
ovement	1	4	7	8	9	10	11	12			
ne Configuration	L					L		R			
olume, v (vph)	26				1	75		43			
	1234					548		754			
apacity, c _m (vph)	1204				1						
apacity, c _m (vph)	0.02		···			0.14		0.06			

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/	~ /
(1	J)
V.	IJ

Control Delay (s/veh)	8.0		 12.6	10.1
LOS	Α		В	В
Approach delay (s/veh)	••		1	11.7
Approach LOS				В

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	TW	D-WAY STOP	CONT	ROL	SUI	MMARY	•			
General Informa			Site	Info	rma	tion				
Analyst	CRS		Inter	section	 }		Elliott I	Road a	nd D	Privewa
Agency/Co. Date Performed	HNTB N 5/22/04	lorth Carolina, P		diction			"C"	.s n L = 1		1:11
	2004 Ev	risting Friday PM		aiction ysis Ye			Town of Chapel Hill 2004 Existing			1111
Analysis Time Period	Peak	isung rinday riv	Pila	ysis i c	, Cai		2004 Existing			
		of Chapel Hill -	- Village Plaza Theatres							
East/West Street: Di			North/South Street: Elliott Road							
Intersection Orientation			Stud	y Perio	d (hr	s): 0.25				
Vehicle Volumes	and Adjust				,					
Major Street		Northbound			<u> </u>		Southb	ound		
Movement	1	2 T	F		 	4	5 T		6	
Volume	0	303	3		╁	92	302	,		R 0
Peak-Hour Factor, PH		0.90	0.9		\vdash	0.90	0.90			1.00
lourly Flow Rate, HF		336	3		†	102	335			0
Percent Heavy Vehicle			<u> </u>			2	 		•	
Median Type			Two	Way Le	eft Tu	ım Lane		A		
RT Channelized			0							0
anes	0	1	0			1	1			0
Configuration			TF	?		L	T			
Jpstream Signal		0					0	0		
Minor Street		Westbound					Eastbound			
Movement	7	8	9			10	11			12
	L	Т	R			<u>L</u>	T			R
/olume	9	0	46			0		0		0
Peak-Hour Factor, PH		1.00	0.9	0		1.00	1.00			1.00
fourly Flow Rate, HFF Percent Heavy Vehicle		0 0	51 2			0	0			0
Percent Grade (%)	** 2					U		· ·		0
		0	i i				0	т.		
lared Approach		N	 				N			
Storage		0					0			
RT Channelized			0				<u> </u>			0
anes configuration	0	LR	0			0	0			0
			L	<u> </u>			<u> </u>			
elay, Queue Length pproach	NB	Service SB		Westbo	ound		T	Eastbo	und	
lovement	1	4	7		Julia		 			40
ane Configuration	<u> </u>			8		9	10	11		12
······································		L 102		LR C4	\dashv			<u> </u>		
(vph)		102		61	_			 	[·
(m) (vph)		1220		630	_					
C		0.08	 	0.10			ļ	<u> </u>		
5% queue length		0.27		0.32						
ontrol Delay		8.2		11.3						
os j		Α		В	\Box					
proach Delay		-		11.3						
proach LOS				В						



	TW	O-WAY STO	P C	ONT	ROL	SU	MMARY	,				
General Informa				Site	Infor	ma	tion					
Analyst Agency/Co. Date Performed Analysis Time Perioc	5/22/04 2004 E	North Carolina, l xisting Saturda		Juris	section diction ysis Ye			"C"	of	Chape		rivewa ill
	Peak						<u> </u>					
Project Description	38435 - Towi	of Chapel Hill										
East/West Street: D							eet: Ellic					
Intersection Orientati				Study	/ Perio	d (n	rs): 0.25) 				
Vehicle Volumes	and Adjus							W				
Major Street		Northbour	nd					South		und		
Movement		2 T	_	3 F		ļ	4 L		5 T			6
Volume	1 0	261	$-\vdash$	3		-	80		<u>!</u> 33			R 0
Peak-Hour Factor, Ph		0.90		0.9		-	0.90	0.		-+		1.00
lourly Flow Rate, HF		290	\dashv	3		\vdash	88	29		- 		0
Percent Heavy Vehicl		-	_				2	 				
Median Type		· · · · · · · · · · · · · · · · · · ·		Two I	Nay Le	ft T	um Lane)				
RT Channelized				0								0
anes	0	1		0			1	1				0
Configuration				TR			L	7	T			
Jpstream Signal		0						(0			
Minor Street		Westboun	d					Eastbound				
Movement	7	8		9			10	1	11		12	
,	L	Т		R			L	1	Т			R
/olume	8	0		40			0	0				0
Peak-Hour Factor, Ph		1.00		0.90			1.00	1.0	1.00			.00
lourly Flow Rate, HF		0		44			0	0		.59 0		
Percent Heavy Vehicle	es 2	0		2			0	0				0
Percent Grade (%)		0						0				
lared Approach		N N						N				
Storage		0	\bot					0				
RT Channelized				0								0
anes	0	0		0			0	0				0
onfiguration		LR										
elay, Queue Length	, and Level of	Service										
pproach	NB	SB		1	Westbo	ounc	i		Ea	astbou	ınd	
lovement	1	4		7	8		9	10	T	11	T	12
ane Configuration		L			LR				T		寸	
(vph)		88			52			1	+			
(m) (vph)		1269	1		680	\neg			十		十	
c		0.07	T		0.08			 	\dagger		十	
5% queue length		0.22	1		0.25	_			+		\dashv	
ontrol Delay		8.0	1		10.7			 	+		\dashv	
OS		A	 		B	\dashv			+		+	
oproach Delay			+-		10.7			 	<u> </u>			•
			 					<u> </u>				
oproach LOS			<u> </u>		В			<u></u>				



	TW	O-WAY STO	P CONT	ROL S	SUMMARY	(
General Informa	tion		Site	e Infor	mation					
Analyst	CRS		Inter	rsection			Road and	d Drivewa		
Agency/Co. Date Performed	HNTB 1 5/22/04	North Carolina, I	PC	Jurisdiction			"D" Town of Chapel Hill			
	2004 =	xisting Friday Pl		saiction lysis Ye	ar			i Hili		
Analysis Time Period	Peak	Noung i naay i i		iyələ i C	ar	2004 Existing				
		of Chapel Hill	TIS - Village Plaza Theatres							
East/West Street: D					Street: Ellic					
Intersection Orientation	on: <i>North-So</i>	uth	Stud	y Period	d (hrs): 0.25	5				
<u>Vehicle Volumes</u>	and Adjust									
Major Street		Northboun				Southb	ound			
Movement	1 1	2 T		3	4	5		6		
Volume	0	343	1 6	χ ,	L	T		R		
volume Peak-Hour Factor, Ph		0.90	0.9		15 0.90	350 0.90		0 1.00		
Hourly Flow Rate, HF		381	1 6		16	388		0		
Percent Heavy Vehicle					2		300			
Median Type			Two	Wav Le	ft Turn Lane		L			
RT Channelized		T	1 0	7			T	0		
anes	0	1	0		1	1		0		
Configuration			TI	₹	L	T				
Jpstream Signal		0				0	0			
Minor Street		Westbound	t			Eastbound				
Movement	7	8	6)	10	11		12		
	L	Т	F	₹	L	Т		R		
/olume	37	0	19		0	0		0		
Peak-Hour Factor, PH		1.00	0.9		1.00	1.00		1.00		
lourly Flow Rate, HFI		0	21		0	0		0		
Percent Heavy Vehicle	es 2	0	2		0	0		0		
Percent Grade (%)		-2				0				
lared Approach		N				N				
Storage		0				0				
RT Channelized			0					0		
anes	0	0	0		0	0		0		
configuration		LR		L		<u> </u>				
elay, Queue Length						,				
pproach	NB	SB		Westbo			Eastbou			
lovement	1	4	7	8	9	10	11	12		
ane Configuration		L.		LR						
(vph)		16		62						
(m) (vph)		1171		518						
С		0.01		0.12						
5% queue length		0.04		0.41						
ontrol Delay		8.1		12.9						
os		Α		В						
proach Delay				12.9	<u> </u>	1	-			
			72.9 B							



	TWO	-WAY STOP	CONTI	ROL S	SUI	MMARY				,,
General Informat	on		Site	Infor	ma	tion				
Analyst Agency/Co. Date Performed	CRS	rth Carolina, PC	i	ection			Elliott F "D" Town o			riveway ill
Analysis Time Period	Peak	ting Saturday Pl					2004 Existing			
Project Description	<u> 38435 - Town o</u>	f Chapel Hill TIS	- Village	e Plaza	Th	eatres				
East/West Street: Dri		<u> </u>				eet: Elliot	t Road			
Intersection Orientatio			Study	Period	a (ni	rs): 0.25				
Vehicle Volumes	and Adjustm								-	
Major Street		Northbound			_		Southb	ound	Г	
Movement	1 1	2 T	3 R		-	<u>4</u> L	5 T			6 R
Volume	L	296	5			13	304			0
Peak-Hour Factor, PH		0.90	0.9	0		0.90	0.90		-	1.00
Hourly Flow Rate, HFF		328	5			14	337			0
Percent Heavy Vehicle						2	-			
Median Type			Two V	Vay Le	ft T	um Lane				
RT Channelized			0				Ī			0
Lanes	0	1	0			1	1			0
Configuration			TR			L	T			
Upstream Signal		0					0			
Minor Street		Westbound					Eastbo	und		,
Movement	7	8	9			10	11			12
	L	Т	R			L	Т			R
Volume	32	0	16			0	0			0
Peak-Hour Factor, PHI		1.00	0.90			1.00	1.00		1.00	
Hourly Flow Rate, HFF		0	17			0	0	-		0
Percent Heavy Vehicle	s 2	0	2			0	0			0
Percent Grade (%)		-2					0_			
Flared Approach		N					N			·
Storage		0					0			
RT Channelized			0							0
Lanes	0	0	0			0	0			0
Configuration		<u>LR</u>					<u> </u>			
Delay, Queue Length,	and Level of S	ervice								
Approach	NB	SB		Westbo	ound	t		Eastb	ound	
Movement	. 1	4	7	8		9	10	1	1	12
Lane Configuration		L		LR				T		
v (vph)		14		52				1		
C (m) (vph)		1226		561						
v/c		0.01		0.09						
95% queue length	<u> </u>	0.03		0.31						
Control Delay		8.0		12.1						
LOS		A A		12.1 B				 		
		7		12.1				<u> </u>		<u> </u>
Approach Delay									-	
Approach LOS	L			В						



	TWC	D-WAY STO	P CONT	ROL S	SUMMAR	1				
General Informati			Site	Infor	mation					
Analyst Agency/Co. Date Performed	KJF HNTB N 3/2/04	orth Carolina, I	² C	section diction		"E"	Elliott Road and D "E" Town of Chapel Hi			
Analysis Time Period	Peak	isting Friday Pl		ysis Yea			2004 Existing			
Project Description	38435 - Town	of Chapel Hill T	TIS - Village Plaza Theatres North/South Street: Elliott Road							
East/West Street: Dri		th			Street: <i>Elli</i> I (hrs): <i>0.2</i> 8					
			Joluu	y Felloc	(1118). 0.23)				
Vehicle Volumes a Major Street	ana Aajusti T	Northbound	4			Southb	ound			
Movement	1 1	2		3	4	5000110		6		
	Ĺ	- -	F		<u> </u>	Ť		R		
/olume	0	277	50		24	259		0		
Peak-Hour Factor, PHF	1.00	0.89	0.8	9	0.89	0.89	9	1.00		
lourly Flow Rate, HFR	0	311	56	3	26	291		0		
Percent Heavy Vehicles	S 0				2					
/ledian Type					ft Turn Lane					
RT Channelized			0					0		
anes	0	1	0		1	1		0		
Configuration			TF	?	L	T				
Ipstream Signal		0				0	0			
linor Street		Westbound					Eastbound			
Novement	7	8	9		10	11		12		
	L L	T	P		L	Т		R.		
olume	55	0	18		0	0		0		
eak-Hour Factor, PHF lourly Flow Rate, HFR	0.78 70	1.00	0.7		1.00	1.00		1.00		
ercent Heavy Vehicles		0	23		0	0		0		
ercent Grade (%)	2	-1			U	0		0		
lared Approach		-/ N	7			0				
			-			N				
torage	<u> </u>	0				0				
T Channelized	 	 	0			1		0		
anes onfiguration	0	0	0		0	0		0		
		LR	<u> </u>					140		
elay, Queue Length,	NB NB	Service SB	<u> </u>	Masth	un d		T41-			
	}			Westbo			Eastbour			
ovement	1	4	7	8	9	10	11	12		
ane Configuration		L		LR		<u> </u>				
(vph)		26		93						
(m) (vph)		1192		548						
C		0.02		0.17						
5% queue length		0.07		0.61						
ontrol Delay		8.1		12.9						
OS		Α	·	В				1		
proced Dolov	<u>.</u> .			12.9		1				
proach Delay				12.3		l .				



	TWO	-WAY STOP	CONT	ROL	SUI	MMARY	•		_			
General Informati	on		Site	Info	ma	tion						
Analyst Agency/Co. Date Performed Analysis Time Period	3/2/04 2004 Ex Peak	orth Carolina, P	Juris PM Anal		ar		Elliott F "E" Town c 2004 E	of Cha _l	pel F	Driveway Iill		
Project Description	38435 - Town	of Chapel Hill Ti	IS - Villag	e Plaz	a Th	eatres						
East/West Street: Dri	veway "E"					eet: <i>Ellic</i>	tt Road					
Intersection Orientation	n: North-Sou	th	Stud	y Perio	d (h	rs): <i>0.25</i>						
Vehicle Volumes	and Adjusti	nents										
Major Street		Northbound					Southb	ound				
Movement	1	2	3			4	5		<u> </u>	6		
	L L	T	F		ļ	<u>L</u>	T		<u> </u>	R		
Volume	1.00	227 0.91	38 0.9		-	<i>37</i> <i>0.93</i>	223 0.93		ļ	0 1.00		
Peak-Hour Factor, PHF Hourly Flow Rate, HFF		249	47		-	39	239			0		
Percent Heavy Vehicle				· · · · · · · · · · · · · · · · · · ·	_	2	200					
Median Type			Two	Way I	əft Ti	um Lane						
RT Channelized			1 0		<u> </u>	un Lano	T			0		
Lanes	0	1	0			1	1			0		
Configuration			TF			L	T					
Upstream Signal		0		<u> </u>			0					
Minor Street		Westbound					Eastbo	und				
Movement	7	8	9		<u> </u>	10	11			12		
	L	Т	R			L	Т			R		
Volume	65	0	15			0	0		0			
Peak-Hour Factor, PHF	0.89	1.00	0.8	9		1.00	1.00			1.00		
Hourly Flow Rate, HFR	73	0	16			0	0			0		
Percent Heavy Vehicles	3 2	0	2			0	0			0		
Percent Grade (%)		-1					0					
Flared Approach		N					N					
Storage		0					0					
RT Channelized			0							0		
anes	0	0	0		-	0	0			0		
Configuration		LR								·		
Delay, Queue Length,	and Level of	Service										
Approach	NB	SB		Westb	ounc)		Eastbo	ound			
Movement	1	4	7	8		9	10	1.		12		
ane Configuration		L	··········	LR				t				
(vph)		39		89				 				
C (m) (vph)		1272		578			<u> </u>	 				
/c		0.03		0.15								
5% queue length		0.09		0.54			 					
Control Delay		7.9		12.4				 				
.OS		7.3 A		12 B			<u> </u>					
· · · · · · · · · · · · · · · · · · ·						·	 	<u> </u>		·		
pproach Delay				12.4			ļ					
approach LOS				В								

1.3

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	TW	O-WAY STO	P CONT	ROL	SUI	MMARY			
General Informa	tion		Site	Info	rma	tion			·········
Analyst Agency/Co. Date Performed Analysis Time Period	3/2/04 2004 F	North Carolina, I	Juris	Intersection Jurisdiction Analysis Year			Elliott Road and Drivewa "F" Town of Chapel Hill 2004 Existing		
Project Description		of Chapel Hill	TIS - Villag	e Plaz	a Th	eatres			
East/West Street: D	riveway "F"					eet: Ellio	tt Road		
Intersection Orientation	on: <i>North-So</i>	uth	Stud	y Perio	d (hr	rs): <i>0.25</i>			
Vehicle Volumes	and Adjust	ments							
Major Street		Northboun					Southb	ound	
Movement	1	2		3		4	5		6
 		T	F		ļ		Т		R
Volume	5	223	60		<u> </u>	110	218		28
Peak-Hour Factor, Ph Hourly Flow Rate, HF		0.90 247	0.9		\vdash	0.83 132	0.83 262		0.83 33
Percent Heavy Vehicle					\vdash	2	202		
Median Type			Two	Way L	eft Ti	um Lane	1	L	
RT Channelized			1 0			ann Lane			0
Lanes	1	1	0			1	1		0
Configuration	L		TF	?		L			TR
Upstream Signal		0					0		
Minor Street		Westbound	i				Eastbo	und	-
Movement	7	8	9			10	11		12
	L	Т	F			L	T		R
Volume	44	2	14			22	1		17
Peak-Hour Factor, PH		0.90	0.9			0.83	0.83		0.83
Hourly Flow Rate, HFI		2	150	3		26	1		20
Percent Heavy Vehicle	es <i>2</i>	0	2			0	0		0
Percent Grade (%)		1					0		
Flared Approach		N	_				N		
Storage		0					0		·
RT Channelized			0						0
_anes	0		1			0	1		0
Configuration	LT		R				LTR		
Delay, Queue Length			T	144 11			<u> </u>		
Approach	NB	SB	 	Westb	ound			Eastbound	
Movement	1	4	7	8		9	10	11	12
ane Configuration	L	L	LT	<u> </u>		R	<u> </u>	LTR	
/ (vph)	5	132	50		\Box	156		47	
C (m) (vph)	1278	1247	354			759		382	<u> </u>
r/c	0.00	0.11	0.14			0.21		0.12	
5% queue length	0.01	0.35	0.49			0.77		0.42	
Control Delay	7.8	8.2	16.8			11.0		15.7	
os	Α	Α	С			В		С	
pproach Delay				12.4	!			15.7	
pproach LOS				В				С	
ights Reserved									



	TW	O-WAY STO	P CONT	ROL S	SUMMARY	7		•
General Informa			Site	e infor	mation			
Analyst Agency/Co. Date Performed Analysis Time Period	3/2/04 2004 F	North Carolina, F	Juris	section diction lysis Yea	ar	"F"	of Chapel	Driveway Hill
Project Description		of Chapel Hill T	TS - Villag	ge Plaza	Theatres			
East/West Street: D					Street: Ellic	ott Road		
Intersection Orientation	on: <i>North-So</i>	uth	Stud	y Period	d (hrs): 0.25			
Vehicle Volumes	and Adjust	ments						
Major Street		Northbound	j			Southb	ound	
Movement	1	2		3	4	5		6
	L	Т		3	L	Т		R
Volume	10	155	66		116	189		16
Peak-Hour Factor, Ph		0.99	0.9		0.90	0.90		0.90
Hourly Flow Rate, HF		156	6		128	210	<u>' </u>	17
Percent Heavy Vehicle	es <i>2</i>				2			
Median Type RT Channelized					ft Turn Lane	<u> </u>	- F	•
Lanes		1 1	0			+		0
Configuration	1 L		TI		1	1		0 TR
Upstream Signal		0	- ''		L	0		IH
Minor Street		Westbound	1					
Movement	7	vvesibound 8	9		10	Eastbo	una	12
Movement	 	Ť	F		L	T		R
Volume	68	0	12		18	2		5
Peak-Hour Factor, PH		0.73	0.7		0.61	0.61		0.61
Hourly Flow Rate, HFI		0	16:		29	3		8
Percent Heavy Vehicle		2	2		2	2		2
Percent Grade (%)		1	<u> </u>		-	-3		
Flared Approach		l N	I			l N		
Storage		0				0		
RT Channelized			1 0	,		-		0
Lanes	0	1 , 1	1		0	1		0
Configuration	LT		R			LTR		
Delay, Queue Length		Sarvica	<u> </u>					
Approach	NB	SB		Westbo	und	1	Eastbound	
Movement	1	4	7	8	9	10	11	12
ane Configuration	L		LT	 °	R	10	 	12
				 		ļ	LTR	-
/ (vph)	10	128	93	<u> </u>	165		40	
C (m) (vph) v/c	1341	1345	410	<u> </u>	852		376	
	0.01	0.10	0.23		0.19		0.11	
95% queue length	0.02	0.31	0.86	ļ	0.71		0.35	
Control Delay	7.7	8.0	16.3		10.2		15.7	
.OS	Α	Α	С		В		С	
pproach Delay				12.4			15.7	
pproach LOS								

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		TW	O-WAY STO	P C	ONT	ROL S	SU	MMARY				
General Informa	ion				Site	Infor	ma	ition				
Analyst		KJF			inter	section			Elliott	Road ar	d Drive	way
Agency/Co.		HNTB I	Vorth Carolina, I	PC					A			
Date Performed		3/2/04				diction			Town of Chapel			
Analysis Time Period		2007 W Peak	//O Site Friday P	PM	Anai	ysis Ye	ar		2007 Without Site			
Project Description	3843	5 - Town	of Chapel Hill T	TIS -	Village	e Plaza	Th	neatres				
East/West Street: E	liott R	oad			North	/South	Str	eet: <i>Drive</i>	eway "A"			
Intersection Orientation	on: E	ast-Wes	st		Study	Period	<u>d (h</u>	rs): <i>0.25</i>				
Vehicle Volumes	and	Adjust	ments									
Major Street			Eastbound	j					Westb	ound		
Movement		1	2		3			4	5		6	
		L	T		R			L	T		R	
Volume (veh/h)		17	349		15			32	283		91	
Peak-hour factor, PHI		0.90	0.90		0.9	0		0.90	0.9	0	0.90	<u>'</u>
Hourly Flow Rate (veh/h)		18	387		16			35	314	1	101	
Proportion of heavy vehicles, P _{HV}		2		İ				2			**	
Median type					Two V	Vay Let	ft T	um Lane	1			
RT Channelized?					0	T				T	0	
Lanes		1	1	╅	0			1	1		0	
Configuration	\top	L			TR			L			TR	
Upstream Signal			0						0			
Minor Street			Northbound	Ľ					Southb	ound		
Movement		7	8	T	9			10	11		12	
		Ł	Т		R			Ļ	Т		R	
Volume (veh/h)		7	3		35			82	4		23	
Peak-hour factor, PHF		0.90	0.90		0.90)		0.90	0.90)	0.90	
Hourly Flow Rate (veh/h)		7	3		38			91	4		25	
Proportion of heavy vehicles, P _{HV}		2	2		2			2	2		2	
Percent grade (%)			0						0			
Flared approach	\dashv	·	T N	T	 				N			·············
Storage	+		0	+					0			
RT Channelized?	+-	····	- 	+	0			·	<u>~</u>		0	
	-	0	1	+	0			0	1		0	
_anes Configuration	+	U	LTR	+	U			U	LTF	?		
Control Delay, Queue	Lenc	th. Leve	el of Service									
Approach		EB	WB		1	Vorthbo	un	d	· · · · · · · · · · · · · · · · · · ·	Southbo	und	
Movement		1	4		7	8		9	10	11		12
ane Configuration		Ĺ	L	 	•	LTR		 		LTR		
		18	35	\vdash		48		-		120		
/olume, v (vph)				-				 				
Capacity, c _m (vph)		144	1156	<u> </u>		562				395		
/c ratio	0.	02	0.03	L		0.09				0.30		
Queue length (95%)	0.	05	0.09	_		0.28				1.26		·
						,			1			



Control Delay (s/veh)	8.2	8.2	12.0	18.0
LOS	A	Α	В	С
Approach delay (s/veh)			12.0	18.0
Approach LOS			В	С

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	TW	O-WAY STOR	CONT	ROL SU	IMMARY				
General Informat	ion		Site	Inform	ation				
Analyst	KJF		Intere	section	Elliott Road and Driveway				
Agency/Co.	HNTB	North Carolina, P	?C L			"A"			
Date Performed	3/2/04			diction		Town of Chapel H			
Analysis Time Period		V/O Site Saturday	Analy	/sis Year		2007 Without Site)	
	FIVITE								
Project Description	38435 - Town	n of Chapel Hill T	IS - Village	Plaza T	heatres		.		
East/West Street: Ell					reet: Driv				
Intersection Orientatio	n: <i>East-We</i>	st	Study	Period (I	hrs): <i>0.25</i>				
Vehicle Volumes	and Adjus	tments							
Major Street		Eastbound				Westbou	nd		
Movement	1	2	3		4	5		6	
	L	Т	R		<u>L</u>	T		R	
Volume (veh/h)	12	330	6		20	273		79	
Peak-hour factor, PHF	0.90	0.90	0.9		0.90	0.90		0.90	
Hourly Flow Rate (veh/h)	13	366	6		22	303		87	
Proportion of heavy vehicles, P _{HV}	2		-		2	-		••	
Median type			Two V	Vay Left	Tum Lane			-	
RT Channelized?			0			T		0	
Lanes	7	1	0		1	1		0	
Configuration	L		TR		L			TR	
Upstream Signal		0				0			
Minor Street		Northbound				Southbou	ınd		
Movement	7	8	9		10	11		12	
	L	T	R		L	T		R	
Volume (veh/h)	6	0	20		60	2		17	
Peak-hour factor, PHF		0.90	0.90)	0.90	0.90		0.90	
Hourly Flow Rate (veh/h)	6	0	22		66	2		18	
Proportion of heavy									
vehicles, P _{HV}	2	2	2	-	2	2		2	
Percent grade (%)	 	0	1		. 7.	0			
Flared approach	+	T N	1			T N			
Storage		0	1			0	\dashv		
RT Channelized?	_	- 	0			+		0	
	0	1	0	 	0	+ 1		0	
Lanes Configuration	0	LTR	1 -	 		LTR			
	Longth Lou								
Control Delay, Queue	EB	WB	 	Northbou	nd	Sc	outhboun	d	
Approach			7	8	9	10	11	12	
Movement	1,	4	 ' 		 	 '' 	LTR	'-	
ane Configuration	L	L	ļ ———	LTR		 		 	
/olume, v (vph)	13	22		28	 	 	86	 	
Capacity, c _m (vph)	1169	1186		593			442		
/c ratio	0.01	0.02		0.05			0.19		
Queue length (95%)	0.03	0.06		0.15	1		0.71		
					1				



Control Delay (s/veh)	8.1	8.1	11.4	15.1
LOS	Α	Α	В	С
Approach delay (s/veh)	-		11.4	15.1
Approach LOS	••		В	С

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Movement L L F Lane Configuration L L F Volume, v (vph) 33 66 55 Capacity, c _m (vph) 1199 485 72 v/c ratio 0.03 0.14 0.0		TWO	-WAY STOP C						
Analyst Apency/Co. HNTB North Carolina, PC Date Performed 3/2/04 Analysis Time Period 2007 W/O Site Friday PM Pagk 2007 W/O Site Friday PM Pagk	General Information	on		Site In	<u>format</u>	ion			
Agency/Co. HNTB North Carolina, PC Date Performed 32/204 Jurisdiction Town of Chapel Hill Analysis Time Period 2007 W/O Site Friday PM Peak				Intersec	tion			ad and D	riveway
Date Performed 3/20/4		HNTB No	orth Carolina, PC					OF ====111	211
Analysis Time Period Peak Peak Peak Project Description 38435 - Town of Chapel Hill TIS - Village Plaza Theatres Project Description 38435 - Town of Chapel Hill TIS - Village Plaza Theatres Priveway "B" Intersection Orientation: East-West Eastbound Study Period (hrs): 0.25	Date Performed								
Project Description 38435 Town of Chapel Hill TIS - Village Plaza Theatres	Analysis Time Period		Site Friday PM	Analysis	Year	*****	2007 WIL	nout Site	
EastWest Street: Elliott Road North/South Street: Driveway "B"			f Chanal Hill TIC	- Villago F	laza The	eatres			
			т Спарет Піт ТіЗ	North/So	outh Stre	et: <i>Driv</i>	ewav "B"		
Vehicle Volumes and Adjustments Eastbound Mestbound	eteroetion Orientation	· Fast-West							
Major Street				1/					
Major Street		ana Aajustn	Footbound				Westhou	nd	
Volume (veh/h) 30 316 0 0 245 80				3		4			6
Volume (veh/h) 30 316 0 0 245 80 Peak-hour factor, PHF 0.90 0.90 1.00 1.00 0.90 0.90 Hourly Flow Rate (veh/h) 33 351 0 0 272 88 Veh/or (veh/h) 2 0 Weldian type Two Way Left Tum Lane RT Channelized? 0 0 1 0 Configuration L T TR	Movement	 					T		
Peak-hour factor, PHF	Volume (veh/h)	30					245		
Hourly Flow Rate (yeh/h)				1.00		1.00	0.90		0.90
Proportion of heavy vehicles, P _{HV} Median type Two Way Left Tum Lane RT Channelized? I 1 0 0 1 0 0 Lanes 1 1 1 0 0 0 1 0 Configuration L T	Hourly Flow Rate		351	0		0	272		88
Median type	Proportion of heavy	2				0			
Cannelized?				Two Ma	V Left Tu	ım I ane			
Continue		T		y Len Te	an Lane			0	
Configuration						0	1 1		
Description				<u> </u>					TR
Northbound Nor							0		
Movement 7 8 9 10 11 12 12							Southbou	ınd	
L		7		9	_	10			12
Volume (veh/h) 0 0 0 60 0 50 Peak-hour factor, PHF 1.00 1.00 1.00 0.90 1.00 0.90 Hourly Flow Rate (veh/h) 0 0 0 66 0 55 Proportion of heavy vehicles, P _{HV} 0 0 0 2 0 2 Percent grade (%) 0 0 3 3 3 3 Flared approach N N N N N N N Storage 0 0 0 0 0 1 0 0 0 0	viovement						T		R
Peak-hour factor, PHF	Volume (veh/h)			0		60	0		50
Hourly Flow Rate (veh/h)						0.90	1.00		0.90
Proportion of heavy vehicles, PHV 0 0 2 0 2 Percent grade (%) 0 3 Flared approach N N N Storage 0 0 0 RT Channelized? 0 0 1 0 1 Lanes 0 0 0 1 0 1 R Configuration L R Northbound Southbound Southbound Movement 1 4 7 8 9 10 11 1	Hourly Flow Rate	0	0	0		66	0		5 5
Vehicles, Phy			0	0		2			2
Flared approach	vehicles, P _{HV}	0							
Storage O	Percent grade (%)		0					 	
RT Channelized? 0 0 1 0 1	Flared approach		N						
RT Channelized?			0				0		
Lanes 0 0 0 1 0 1 Configuration L R Control Delay, Queue Length, Level of Service Approach EB WB Northbound Southbound Movement 1 4 7 8 9 10 11 1 Lane Configuration L L F				0					
Configuration L R Control Delay, Queue Length, Level of Service Approach EB WB Northbound Southbound Movement 1 4 7 8 9 10 11 1 Lane Configuration L L F		0	0	0		1	0.		
Approach EB WB Northbound Southbound Movement 1 4 7 8 9 10 11 1 Lane Configuration L L F L F Volume, v (vph) 33 66 53 Capacity, c _m (vph) 1199 485 72 V/c ratio 0.03 0.14 0.00						L			R
Approach EB WB Northbound Southbound Movement 1 4 7 8 9 10 11 1 Lane Configuration L L F L F Volume, v (vph) 33 66 53 Capacity, c _m (vph) 1199 485 72 V/c ratio 0.03 0.14 0.00	Control Delay, Queue	Length, Leve	l of Service						
Movement 1 4 7 8 9 10 11 1 Lane Configuration L L F L F /olume, v (vph) 33 66 53 Capacity, c _m (vph) 1199 485 72 //c ratio 0.03 0.14 0.0			WB	No	rthboun	d	S		
Lane Configuration L L F Volume, v (vph) 33 66 58 Capacity, c _m (vph) 1199 485 72 v/c ratio 0.03 0.14 0.0		1	4	7	8	9	10	11	12
Volume, v (vph) 33 66 55 Capacity, c _m (vph) 1199 485 72 v/c ratio 0.03 0.14 0.0		L					L		R
Capacity, c _m (vph) 1199 485 72 //c ratio 0.03 0.14 0.00		33					66		55
v/c ratio 0.03 0.14 0.0							485		724
							0.14		0.08
							0.47		0.25
	acces (5.1.3.1 (5.5.7.1)								

_	-	
		•
u	ı	-)
Π.	1	,

Control Delay (s/veh)	8.1			1		13.6		10.4
LOS	Α					В		В
Approach delay (s/veh)					-		12.1	
Approach LOS							В	

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	Т	WO-V	WAY STOP	CONTR	OL S	UMMARY				
General Informat	ion			Site	nforr	nation				
Analyst	KJF			Intersection				Elliott Road and Driveway		
Agency/Co.		B Nort	h Carolina, PC					"B"		
Date Performed	3/2/0)4		Jurisc				Chapel H	ill	
			Site Saturday	Analy	sis Ye	ar	2007 W	thout Site		
Analysis Time Period	I IVI I	Peak					<u> </u>			
Project Description	38435 - To	wn of (Chapel Hill TIS	- Village	Plaza	Theatres				
East/West Street: Ell				North/	South	Street: Drive	eway "B"			
Intersection Orientatio	n: <i>East-V</i>	Vest		Study	Period	(hrs): 0.25				
Vehicle Volumes	and Adju	ıstme	ents							
Major Street			Eastbound				Westbo	und		
Movement	1		2	3		4	5		6	
	L		Т	R		L	T		R	
Volume (veh/h)	27		260	0		0	228		77	
Peak-hour factor, PHF	0.90)	0.90	1.00		1.00	0.90		0.90	
Hourly Flow Rate (veh/h)	30		288	0		0	253		8 5	
Proportion of heavy	2				1	0				
vehicles, P _{HV}	-									
Median type				Two V	/ay Lei	ft Tum Lane				
RT Channelized?				0					0	
Lanes	1		1	0		0	1		0	
Configuration	L		T						TR	
Upstream Signal			0		Ī		0			
Minor Street			Northbound				Southbo	und		
Movement	7	- · · · · ·	8	9		10	11		12	
	L		Т	R		Ĺ	Т		R	
Volume (veh/h)	0		0	0		74	Q		42	
Peak-hour factor, PHF		,	1.00	1.00		0.90	1.00		0.90	
Hourly Flow Rate		$\neg \uparrow$	0	0		82	0		46	
(veh/h)	0		U	U		02			70 .	
Proportion of heavy	О		О	0	- 1	2	0		2	
vehicles, P _{HV}			0	U		<u> </u>				
Percent grade (%)			0				3			
Flared approach			N				N			
Storage	1		0				0			
RT Channelized?			-	0			1	- I	0	
Lanes	1 0		0	0		1	0	- 	1	
Configuration	 	-			-+	Ĺ	† 		R	
	. 1		4 Complete				<u> </u>			
Control Delay, Queue	EB	evel o	WB WB		lorthbo	und	١ ٥	outhbound	1	
Approach							10	11	12	
Movement	1	_	4	7	8	9		11		
Lane Configuration	L						L		R	
Volume, v (vph)	30						82		46	
Capacity, c _m (vph)	1221						524		743	
v/c ratio	0.02						0.16		0.06	
Queue length (95%)	0.08						0.55		0.20	
<u> </u>										

93)	

Control Delay (s/veh)	8.0	1	1 .	13.1	10.	.2
LOS	Α			В	В	3
Approach delay (s/veh)					12.1	
Approach LOS					В	

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	TWO-	WAY STOP	CONT	ROL S	UN	MARY					
General Information	on		Site	Inforr	nat	ion					
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB Nor 5/22/04 2007 W/O Peak	Juriso Analy	Intersection Jurisdiction Analysis Year				Elliott Road and Driveway "C" Town of Chapel Hill 2007 Without Site				
Project Description 3	8435 - Town of	Chapel Hill - Vi	llage Pla	za The	atre	s					
East/West Street: Driv	eway "C"		North/South Street: Elliott Road								
Intersection Orientation	: North-South		Study	Period	(hr	s): 0.25					
Vehicle Volumes a	nd Adjustm	ents									
Major Street		Northbound					Southbound				
Movement	1	2	3		4		5			6	
	L	Т	R			<u> </u>	T			R	
Volume	0	321	3			98	320		0		
Peak-Hour Factor, PHF		0.90	0.90		0.90		0.90		-	1.00 0	
Hourly Flow Rate, HFR	0	356	3			108 2	355		-		
Percent Heavy Vehicles			Two l	Vay Let	# T,	ım Lane	<u> </u>		L		
Median Type RT Channelized		1	0	vay Lo	110	irri Lanc	T			0	
	0	1	0			1	1			0	
Lanes Configuration		, , , , , , , , , , , , , , , , , , ,	TR		-		 				
Upstream Signal		0	//\				0				
Minor Street	+	Westbound		-			Eastbo	und			
Movement	7	8	9		10		11			12	
MOVOMEN	Ĺ	T	R			L	Т		R		
Volume	10	0	49			0			0		
Peak-Hour Factor, PHF		1.00		0.90 1.		1.00	1.00		1.00		
Hourly Flow Rate, HFR	11	0	54			0	0		0		
Percent Heavy Vehicles	2	0	2			0	0			0	
Percent Grade (%)		0				0					
Flared Approach		N					N				
Storage	1	0					0				
RT Channelized			0							0	
Lanes	0	0	0		0		0		0		
Configuration		LR									
Delay, Queue Length,	and Level of S	ervice									
Approach	NB I	SB	1	Vestbo	und			Eastbo	ound		
Movement	1	4	7			9	10	1	1	12	
Lane Configuration	'	L	*	LR		•		l i			
		108		65	\dashv			 			
v (vph)	<u> </u> _	1200		608				-			
C (m) (vph)					-+		<u>-</u>	 			
v/c		0.09		0.11	}						
95% queue length		0.30		0.36	-			-			
Control Delay		8.3		11.6				<u> </u>			
LOS		Α		В	1			<u> </u>		L	
Approach Delay				11.6							
Approach LOS				В							



	TWO	-WAY STOP	CONTI	ROL S	UN	MARY				
General Informat	ion		Site	Inform	nat	ion				
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB No 5/22/04	orth Carolina, PC O Site Saturday	Inters Juriso	ection diction sis Yea		Elliott Road and Driv "C" Town of Chapel Hill 2007 Without Site				iii
Project Description		of Chapel Hill - Vi	llage Pla	aza The	atre	s				
East/West Street: Dri		North/South Street: Elliott Road								
Intersection Orientatio	Study Period (hrs): 0.25									
Vehicle Volumes	and Adjustn	nents								
Major Street		Northbound					Southbo	Southbound		
Movement	1	2	3		4		5		6	
	L	Т	R		L		Т		R	
Volume	0	277	3			85	279			0
Peak-Hour Factor, PH	·	0.90	0.9)		0.90	0.90		 	1.00
Hourly Flow Rate, HFF		307	3			94	310		ļ	0
Percent Heavy Vehicle	s 0				~ -	2			<u> </u>	
Median Type				Vay Lei	ft Tu	m Lane				
RT Channelized			0						0	
Lanes	0	1	0		1		1		ļ	0
Configuration		 	TR		L		7			
Upstream Signal		0					0			
Minor Street		Westbound				Eastbound		und	12	
Movement	7	8	9			10	17 T			
	L	Т	R L		0		R			
Volume	8	0		42 0			1.00		1.00	
Peak-Hour Factor, PHI		1.00	0.90	46		1.00 0	0			0
Hourly Flow Rate, HFR		0 0	2			0	0			0
Percent Heavy Vehicle	S 2					U	0			U
Percent Grade (%)		0								
Flared Approach		N			····-		N			
Storage		0		ļ			0			
RT Channelized			0						0	
Lanes	0	0	0	\longrightarrow	0		0		0	
Configuration		LR					<u> </u>			
Delay, Queue Length,	Y									
Approach	NB	SB		Westbound			East			
Movement	1	4	7	8		9	10	1	1	12
ane Configuration		L		LR						
/ (vph)		94		54						
C (m) (vph)		1250		665						
//c		0.08		0.08						
95% queue length		0.24		0.26						
Control Delay		8.1		10.9						
OS		A A		10.5 B	\dashv			 		,
				10.9				I		
Approach Delay										
Approach LOS	L			В			<u> </u>			



	TWO	-WAY STOP	CONTR	ROL S	UM	MARY						
General Information				Site Information								
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB No 5/22/04	orth Carolina, PC O Site Friday PM	Inters Jurisd	Intersection Jurisdiction Analysis Year				Elliott Road and Drivewa "D" Town of Chapel Hill 2007 Without Site				
Project Description 38435 - Town of Chapel Hill TIS				- Village Plaza Theatres								
East/West Street: Driveway "D"			North/	North/South Street: Elliott Road								
Intersection Orientation	Study Period (hrs): 0.25											
Vehicle Volumes	and Adiustn	nents										
Major Street	1	Northbound			Southbound							
Movement	1	2	3		4		5			6		
	L	Т	R			L	Т		R			
Volume	0	364	6			16	371			0		
Peak-Hour Factor, PHI		0.90	0.90)	(0.90	0.90			1.00		
Hourly Flow Rate, HFR		404	6			17	412			0		
Percent Heavy Vehicle	s 0					2	-					
Median Type				Vay Lei	t Iu	m Lane	1					
RT Channelized			0						0			
Lanes	0	1	0			1	1			0		
Configuration			TR			L	T					
Upstream Signal		0					0					
Minor Street		Westbound					Eastbound					
Movement	7	8	9			10	11		12			
·	L	Т	R			L	T		R			
Volume	39	0	20			0	0		0			
Peak-Hour Factor, PHF		1.00	0.90 1.00			1.00		1.00				
Hourly Flow Rate, HFR		0	22			0	0			0		
Percent Heavy Vehicle	s 2	0	2			0	0		-	0		
Percent Grade (%)		-2					0					
Flared Approach		N					N					
Storage		0					0					
RT Channelized			0						0			
Lanes	0	0	0			0	0		0			
Configuration		LR										
Delay, Queue Length,	and Level of	Service										
Approach	NB	SB	1	Vestbo	ound		Eastb		oound			
Movement	1	4	7	8		9	10	1	1	12		
Lane Configuration		L		LR	一							
v (vph)		17		65	十							
C (m) (vph)		1149		498	\dashv							
v/c		0.01		0.13					-			
95% queue length		0.05		0.45	_							
Control Delay		8.2		13.3								
LOS		A		В	+							
			···	13.3				<u> </u>				
Approach Delay												
Approach LOS				В								



	71	NO-1	WAY STOP	CONTR	ROL S	AU8	MARY							
General Informat		-	WAI OIOI											
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTE 5/22/ 2007				Site Information Intersection Jurisdiction Analysis Year				Elliott Road and Drivewa "D" Town of Chapel Hill 2007 Without Site					
Project Description 38435 - Town of Chapel Hill TIS -					- Village Plaza Theatres									
East/West Street: Driveway "D"					North/South Street: Elliott Road									
Intersection Orientation: North-South					Study Period (hrs): 0.25									
Vehicle Volumes	and Adiu	stm	ents											
Major Street			Northbound					Southbound						
Movement	1		2	3			4	5			6			
	L		T	R			L		T		R			
Volume	0		314	5			14	322			0			
Peak-Hour Factor, PH			0.90	0.90)	<u> </u>	0.90	0.90		1.00				
Hourly Flow Rate, HFI			348	5		15		357			0			
Percent Heavy Vehicle	es 0		<u> </u>				2							
Median Type					Vay Le	ft To	um Lane	1						
RT Channelized					0						0			
Lanes	0		1	0		1		1			0			
Configuration				TR		L		T						
Upstream Signal			0					0						
Minor Street			Westbound					Eastbound		- 40				
Movement	7		8		9		10	11			12			
	L		Т	R			<u> </u>	T		R				
Volume	34		0	17			0	0		0				
Peak-Hour Factor, PH			1.00	0.90		1.00		1.00		1.00				
Hourly Flow Rate, HF			0	18		0		0		0				
Percent Heavy Vehicle	es 2		0	2	2		0	0			0			
Percent Grade (%)			-2					0						
Flared Approach			N					N						
Storage			0					0						
RT Channelized				0						0				
Lanes	0		0	0			0	0		0				
Configuration			LR					<u></u>						
Delay, Queue Length	, and Level	of S	ervice											
Approach	NB		SB	1	Westbound		Eastb		oound					
Movement	1		4	7	8		9	10	1	1	12			
Lane Configuration		\top	L		LR									
v (vph)		1	15		55									
C (m) (vph)			1206		543									
v/c	·		0.01		0.10	0.10								
95% queue length		\neg	0.04		0.34									
Control Delay		1	8.0		12.4	1								
LOS		\dashv	A		12.4 B				1					
Approach Delay		\dashv			12.4	<u></u>	L							
		\dashv			В									
Approach LOS		L_		D				1						



	TWO	WAY STOP (CONTI	ROL S	UN	MARY				
General informati	on		Site	Inforr	nat	ion				
Analyst Agency/Co. Date Performed Analysis Time Period	KJF HNTB No 3/2/04	rth Carolina, PC Site Friday PM	Juriso	ection liction sis Yea	ır		Elliott F "E" Town o 2007 W	f Cha	pel H	
Project Description 3	38435 - Town o	f Chapel Hill TIS	- Village	e Plaza	The	eatres				
East/West Street: Dri	veway "E"		North	/South	Stre	et: Ellio	tt Road			
Intersection Orientation	n: North-Soutl	7	Study	Period	hr:	s): <i>0.25</i>				
Vehicle Volumes a	and Adjustm	ents								
Major Street		Northbound					Southb	ound		
Movement	1	2	3			4	5		<u> </u>	6
	L	T	R			<u>L</u>	T		╀	R
Volume	0	241 0.90	40 0.9			25 0.90	275 0.90		 	0 1.00
Peak-Hour Factor, PHF		267	44			<u>0.90</u> 27	305		-	0
Hourly Flow Rate, HFR Percent Heavy Vehicles		207				2	303		+	
Median Type	-			Vay I e	ft Ti	ırn Lane	<u> </u>			
RT Channelized		Т Т	0	Vay Lo	7 4	III Lanc	T		1	0
Lanes	0	1	0		***	1	1		1	0
Configuration	 	 	TR			Ĺ	7		 	
Upstream Signal		0	• • • • • • • • • • • • • • • • • • • •				0		 	~
Minor Street		Westbound					Eastbo	und	•	
Movement	7	8	9			10	11		Г	12
	L	T	R			L	Т			R
Volume	58	0	19			0	0		<u> </u>	0
Peak-Hour Factor, PHF	0.90	1.00	0.90)		1.00	1.00			1.00
Hourly Flow Rate, HFR	64	0	21			0	0			0
Percent Heavy Vehicles	5 2	0	2			0	0		<u> </u>	0
Percent Grade (%)		-1					0			
Flared Approach		N					N			
Storage		0					0			
RT Channelized			0							0
Lanes	0	0	. 0			0	0			0
Configuration		LR								
Delay, Queue Length,	and Level of S	ervice							•	
Approach	NB	SB	1	Westbo	und	T		Eastb	ound	
Movement	1	4	7	8	П	9	10	1	11	12
Lane Configuration		L		LR	+			1		
v (vph)		27		85	\dashv			 		
C (m) (vph)		1249		566	\dashv		 	+		
		0.02		0.15				+		
V/C		0.02		0.13				1		
95% queue length	<u> </u>							 		
Control Delay		7.9		12.5				 		· · · · · · · · · · · · · · · · · · ·
LOS		Α		B				<u> </u>		<u></u>
Approach Delay				12.5						
Approach LOS	1			В			<u> </u>			

ii



Seary Co. HNTB North Carolina, P.C. 37/204 2007 W/rO Site Saturday Port 2007 W/ro Site Saturday 2007 W/ro Site Saturday		TWC	LWAY STOP	CONTE	OL S	UMMA	ARY				
Intersection	Canaval Informati		7-WA1 0101								· · · · · · · · · · · · · · · · · · ·
PAM Peak Project Description 3443	Analyst Agency/Co. Date Performed	KJF HNTB N 3/2/04		Interse Jurisd	ection iction			"E" Town of	Chap	oel Hi	-
North/South Street Elliot Road	•	PM Peal	k								
Study Period (hrs): 0.25			of Chapel Hill TIS	S - Village	Plaza	Theatre	9 <i>s</i>				
Fehicle Volumes and Adjustments								т ноаа			
Inject Northbound Northbo				Study	Period	(nrs):	0.25			-	
Note		<u>and Adjusti</u>						Caudhha	und		
Definition Column Column	Major Street						· · · · · · · · · · · · · · · · · · ·		una		6
Olume	Movement										
eak-Hour Factor, PHF)				
Sak-Hour Rate, HFR 0 326 58 43 263 0				1	, +						
Company First First First Company First					' 					\vdash	
Teledian Type				}							
CT Channelized					Vav I et		ane	.l			
A					Vay Let			1			0
TR		 	1			1		1 1		-	
											
Ilinor Street								1			
Movement 7									ınd		
L T R L T R L T R R R R R R R R R R		7		٩		10					12
Colume	Movement										
Outline	V. I										
Section Sect	The second secon				, +		2			-	
Series Flow Hate, Flim Flow F							<u> </u>				
Percent Grade (%) Iared Approach											
Alared Approach		5 2						<u> </u>			
Transpect				<u> </u>	-+		J				
T Channelized 0	Ot										
Configuration Configuratio				0					f		0
Configuration LR		0	0			0		0			0
Relay, Queue Length, and Level of Service opproach NB SB Westbound Eastbound dovement 1 4 7 8 9 10 11 12 ane Configuration L LR Image: L			LR								
NB		and Level of	Service								
Independent 1 4 7 8 9 10 11 12 Independent and configuration (vph) L L LR Independent and configuration and configuration are configuration. Independent and configuration.				1	Vestbo	und			Eastb	ound	
ane Configuration L LR (vph) 43 93 (m) (vph) 1174 523 (c 0.04 0.18 5% queue length 0.11 0.64 control Delay 8.2 13.4 OS A B pproach Delay	Movement	1	4	7	8		9	10	1	1	12
(vph) 43 93 (m) (vph) 1174 523 /c 0.04 0.18 5% queue length 0.11 0.64 control Delay 8.2 13.4 OS A B pproach Delay 13.4	Lane Configuration		L		LR						
(m) (vph) 1174 523 /c 0.04 0.18 5% queue length 0.11 0.64 control Delay 8.2 13.4 OS A B pproach Delay 13.4	v (vph)		43		93						
Ic 0.04 0.18 5% queue length 0.11 0.64 control Delay 8.2 13.4 OS A B pproach Delay 13.4			1174		523						
5% queue length 0.11 0.64	v/c		0.04		0.18						
Control Delay 8.2 13.4	95% queue length		0.11		0.64						
OS	Control Delay		8.2		13.4						
pproach Delay 13.4	LOS		A		В						
	Approach Delay				13.4						
	Approach LOS				В						



	TWC	-WAY STOP	CONT	ROL S	SUN	/MARY			
General Informat	ion		Site	Infor	ma	tion			
Analyst Agency/Co. Date Performed Analysis Time Period	KJF HNTB N 3/2/04	orth Carolina, PC O Site Friday PM	Jurisc	ection liction sis Ye	ar		"F" Town o	oad and l f Chapel H ithout Site	- Hill
Project Description		of Chapel Hill TIS	S - Village	- Village Plaza Theatres					
East/West Street: Dr						et: Elliot	t Road		
Intersection Orientatio		th	Study	Perio	d (hr	s): 0.25			
Vehicle Volumes	and Adiusti	nents							
Major Street	T	Northbound					Southbo	ound	
Movement	1	2	3			4	5		6
	L	Т	R			L.	T		R
Volume	5	237	64			117	231		30
Peak-Hour Factor, PH		0.90	0.90)		0.90	0.90		0.90
Hourly Flow Rate, HFF		263	71			130	256		33
Percent Heavy Vehicle	es 2		<u></u>		<u>, </u>	2			
Median Type				vay Le	πι	urn Lane	1		
RT Channelized			0				1		0
Lanes	1	1	0			1			TR
Configuration	L		TR			L	0		I ft
Upstream Signal		0					<u> </u>		
Minor Street	 	Westbound	9			10	Eastbox	una	12
Movement	7	8 T	R			 	T		R
\	L 47	2	150			23	1		18
Volume Peak-Hour Factor, PH	47 F 0.90	0.90	0.90			0.90	0.90		0.90
Hourly Flow Rate, HFF		2	166			25	1		20
Percent Heavy Vehicle		2	2			2	2		2
Percent Grade (%)	-	1	<u> </u>				0		
Flared Approach		1 N 1					N		
		0					0		
Storage							-		0
RT Channelized		1	0			0	1		0
Lanes	O LT		n R			U	LTR		U
Configuration				1			LIN		
Delay, Queue Length				Manth		1		Eastbound	4
Approach	NB	SB		Westb		,			
Movement	1	4	7	8		9	10	11	12
Lane Configuration	L	L	LT			R		LTR	
v (vph)	5	130	54			166		46	↓
C (m) (vph)	1273	1225	354			741		372	<u> </u>
v/c	0.00	0.11	0.15			0.22		0.12	
95% queue length	0.01	0.36	0.53			0.86		0.42	
Control Delay	7.8	8.3	17.0			11.3		16.0	
LOS	Α	А	С			В		С	
Approach Delay				12.7	7			16.0	
Approach LOS				В				С	
Pighta Pagaryad						i	· · · · · · · · · · · · · · · · · · ·		



	TWO	-WAY STOP	CONT	ROL	SU	MMARY			
General Informat	ion		Site	Info	ma	tion			
Analyst Agency/Co. Date Performed Analysis Time Period	3/2/04	orth Carolina, Po O Site Saturday	Juris	section diction /sis Ye			"F" Town o	Road and f Chapel I lithout Sit	
Project Description	38435 - Town	of Chapel Hill TI	S - Villag	e Plaz	a Tr	eatres			
East/West Street: Di	iveway "F"		North	/South	Str	eet: <i>Ellio</i> i	tt Road		
Intersection Orientation	n: <i>North-Sou</i>	th	Study	/ Perio	d (h	rs): <i>0.25</i>			
Vehicle Volumes	and Adjusti	nents							
Major Street		Northbound					Southbo	ound	
Movement	1	2	3			4	5		6
	L	T	F		<u> </u>	<u> </u>	T		R
Volume	11	164	72		<u> </u>	123	201		17
Peak-Hour Factor, PH		0.90	0.9		⊢	0.90 136	0.90		0.90
Hourly Flow Rate, HFI		182	80		┼	2	223		18
Percent Heavy Vehicle Median Type	2 2)# T	urn Lane			
RT Channelized		<u> </u>	1 0	rvay L	<i>3/1</i> /	uiii Laile	1		0
Lanes	1 1	1	0		\vdash	1	1		0
Configuration	1 1	- ' 	TF	?	\vdash	i	 		TR
Upstream Signal	- -	0			<u> </u>		0		
Minor Street		Westbound	1				Eastbo	und	
Movement	7	8	9	-	\vdash	10	11	I	12
	L	T	R			L	T		R
Volume	72	0	128		-	19	2		5
Peak-Hour Factor, PH		0.90	0.9			0.90	0.90		0.90
Hourly Flow Rate, HFF		0	142	?		21	2		5
Percent Heavy Vehicle	s 2	2	2			2	2		2
Percent Grade (%)		1					-3		
Flared Approach		N					N		
Storage		0					0		
RT Channelized			0						0
Lanes	0	1	1			0	1	i	0
Configuration	LT		R				LTR		
Delay, Queue Length	, and Level of	Service							
Approach	NB	SB		Westb	oun	d	i	Eastboun	d
Movement	1	4	7	8		9	10	11	12
Lane Configuration	L	L	LT			R		LTR	
v (vph)	12	136	80			142		28	
C (m) (vph)	1326	1302	386			818	<u> </u>	353	1
v/c	0.01	0.10	0.21	 		0.17		0.08	
95% queue length	0.03	0.35	0.77	 		0.63		0.26	
Control Delay	7.7	8.1	16.7	 		10.3		16.1	
LOS	A .	A A	C	 		10.3 B		C C	
				12.6		<i>D</i>		16.1	<u> </u>
Approach LOS				12.0 B	<u>, </u>			C C	
Approach LOS ICS2000 TM	 Con	yright © 2003 Universi	ty of Florida		ic Rec	erved			Version 4.1d

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	TW	D-WAY STO	P CONTI	ROL SU	MMARY			
General Informat	ion		Site	Informa	ation			
Analyst	CRS		Inter	section	· · · · · · · · · · · · · · · · · · ·		oad and l	Drivewa
Agency/Co.	HNTB I	North Carolina, I	PC		·	Α		
Date Performed	5/18/04		111	diction			Chapel I	-lill
Analysis Time Period	8	ite REV Friday F	Anai Anai	sis Year		2007 Sit	te	
	Гвак						 	
Project Description		of Chapel Hill 7	TS - Village	Plaza T	heatres			
East/West Street: Ell					treet: Driv			
Intersection Orientation	n: East-Wes	st	Study	Period (i	hrs): <i>0.25</i>			-
Vehicle Volumes	and Adjust	ments				***		
Major Street		Eastbound				Westbo	und	
Movement	1	2	3		4	5_		6
	L	T	R		<u>L</u>	T 100		R
Volume (veh/h)	17	503	15		32	483		99
Peak-hour factor, PHF	0.90	0.90	0.9		0.90	0.90		0.90
Hourly Flow Rate (veh/h)	18	558	16		35	536		110
Proportion of heavy	2	_	_	- 1	2	_		
vehicles, P _{HV}								
Median type				Vay Left	Turn Lane			
RT Channelized?			0					0
anes	1	1	0		1	1		0
Configuration	L		TR		<u> </u>			TR
Jpstream Signal		0	,			0		
Minor Street		Northbound				Southbo	und	
Movement	7	8	9		10	11_		12
	L	Т	R		<u> </u>	T		R
/olume (veh/h)	7	3	35		88	4		23
Peak-hour factor, PHF	0.90	0.90	0.90	'	0.90	0.90		0.90
lourly Flow Rate veh/h)	7	3	38		97	4		25
Proportion of heavy rehicles, P _{HV}	2	2	2		2	2		2
Percent grade (%)		0				0	<u> </u>	
lared approach		T N				l N	F	
		1 0				0		
Storage RT Channelized?			0			 		0
	0	1	0		0	1		0
anes Configuration	+ -	LTR	+ -			LTR		
								
Control Delay, Queue			1	المسلام المساد		1 -	outhbarr-	d
pproach	EB	WB		Northbou			outhbour	
fovement	1	4	7	8	9	10	11	12
ane Configuration	L	L		LTR			LTR	
olume, v (vph)	18	35		48			126	<u> </u>
Capacity, c _m (vph)	939	999		430			275	
/c ratio	0.02	0.04		0.11			0.46	
Queue length (95%)	0.06	0.11		0.37			2.26	1
					†			1

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Control Delay (s/veh)	8.9	8.7	14.4	28.7
LOS	A	Α	В	D
Approach delay (s/veh)	-	-	14.4	28.7
Approach LOS			В	D

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		-WAY STOP						
General Information	on		Site	Inform	nation			
Analyst	CRS		Inter	section			oad and l	Drivewa
Agency/Co.		orth Carolina, PC				"A"	Chanall	J:II
Date Performed	5/18/04		11	diction		2007 Sit	Chapel I	1111
Analysis Time Period		e REV Saturday	Anal	/sis Yea	<u> </u>	2007 31	.8	
ļ	PM Peal							
Project Description 3	18435 - Town	of Chapel Hill TIS	- Village	Plaza	Theatres			
East/West Street: Ellic					Street: Drive (hrs): 0.25	eway A	-	
Intersection Orientation			Study	Period	(nis). 0.20			
Vehicle Volumes a	and Adjusti							
Major Street		Eastbound				Westbo	und	
Movement	11	2	3		4	5 T		6 R
	 	T 400	R		L 20	491		88
Volume (veh/h)	12	498 0.90	6 0.9	. 	0.90	0.90		0.90
Peak-hour factor, PHF	0.90			-				
Hourly Flow Rate (veh/h)	13	553	6		22	545		97
Proportion of heavy	_				2			_
vehicles, P _{HV}	2					<u></u> _		
Median type			Two	Vay Left	Tum Lane			
RT Channelized?			0				_	0
anes	1	1	0		1	1		0
Configuration	L		TR		L			TR
Upstream Signal		0				0		
Minor Street		Northbound				Southbo	und	
Movement	7	8	9		10	11		12
	L	T	R		L	Т		R
/olume (veh/h)	6	0	20		67	2		17
Peak-hour factor, PHF	0.90	0.90	0.9	9	0.90	0.90		0.90
Hourly Flow Rate	6	0	22		74	2		18
(veh/h)	-							
Proportion of heavy vehicles, P _{HV}	2	2	2		2	2	1	2
		0				0	L	
Percent grade (%)		N V				T N		
Flared approach						0		
Storage		0		- +		1 -		0
RT Channelized?			0			1		0
Lanes	0	1 1 70	0		0	LTR		
Configuration		LTR				I LIK		
Control Delay, Queue				.		T)	
Approach	EB	WB		Northbo			outhbour	
Movement	1	4	7	8	9	10	11	12
ane Configuration	L	L		LTR		<u> </u>	LTR	
/olume, v (vph)	13	22		28			94	
Capacity, c _m (vph)	943	1012		440			298	
//c ratio	0.01	0.02	-	0.06			0.32	
	0.04	0.07		0.20		 	1.31	†
Queue length (95%)	U.U4	U.U/		1 0.20	I	I	_ ····	

1		_
7	•	-61
	ı	\mathbf{o}
	•	

Control Delay (s/veh)	8.9	8.6	13.7	22.5
LOS	Α	Α	В	С
Approach delay (s/veh)	-	-	13.7	22.5
Approach LOS	_	-	В	С

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	1 7 7 7	D-WAY STOP						
General Informati	on		Site I	nforma	tion			
Analyst	CRS		Interse	ection		Elliott F	Road and	Drivewa
Agency/Co.		lorth Carolina, PC				"B"		***
Date Performed	5/18/04		Jurisdi				f Chapel I	lill
Analysis Time Period	2007 Si Peak	te REV Friday PM	Analys	sis Year		2007 S	te	
Project Description	38435 - Town	of Chapel Hill TIS	- Village	Plaza Th	eatres			
East/West Street: Elli			North/S	South Str	eet: <i>Driv</i>	eway "B"		
Intersection Orientatio	n: <i>East-Wes</i>	t	Study I	Period (h	rs): 0.25			
Vehicle Volumes	and Adiust	ments						
Major Street		Eastbound				Westbo	und	
Movement	1	2	3		4	5		6
	L	T	R		L	T		R
Volume (veh/h)	30	407	0		0	365		160
Peak-hour factor, PHF	0.90	0.90	1.00		1.00	0.90		0.90
Hourly Flow Rate (veh/h)	33	452	0		0	405		177
Proportion of heavy vehicles, P _{HV}	2				0	-		
Median type			Two W	av Left T	um Lane	!		
RT Channelized?		1	0	<u> </u>		1		0
anes	1	1	0		0	1		0
Configuration	+i	 	· ·		 	 		TR
Jpstream Signal		0			<u> </u>	0		
Minor Street		Northbound			· · · · · · · · · · · · · · · · · · ·	Southbo	und	
Movement	7	8	9		10	11		12
NOVOMORE	 	T	R	***	L	T		R
/olume (veh/h)	0	0	0		123	Ö		50
Peak-hour factor, PHF	1.00	1.00	1.00		0.90	1.00		0.90
Hourly Flow Rate veh/h)	0	0	0		136	0		55
Proportion of heavy								_
ehicles, P _{HV}	0	0	0	l	2	0		2
Percent grade (%)		0				3		
Flared approach		T N T			_ : * * **	N		
		0				0		
Storage	<u></u>		0			+	_	0
RT Channelized?	 	0	0	_	1	0		1
anes	0		U		1 L	+ -		R
Configuration	<u>.l</u>			1	<u> </u>	<u></u>		^
Control Delay, Queue				41-1		1 -)	
pproach	EB	WB		orthboun			outhboun	
lovement	1	4	7	8	9	10	11	12
ane Configuration	L					L		R
olume, v (vph)	33					136		55
capacity, c _m (vph)	992					388		575
/c ratio	0.03				 	0.35	1	0.10
Queue length (95%)	0.10		-			1.54		0.32
zueue ieriyili (80%) [0.10				I	1.04	<u> </u>	0.02

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Control Delay (s/veh)	8.8	<u> </u>		 19.2		11.9
LOS	Α			С		В
Approach delay (s/veh)		_			17.1	
Approach LOS		-			С	

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		TW	O-WAY STOP	CONT	ROL S	UM	MARY								
General Informa	tion			Site	Infor	nati	on								
Analyst		CRS		Inte	rsection				Road and I	Driveway					
Agency/Co.		HNTB I	North Carolina, P	C				"B"							
Date Performed		5/18/04			sdiction			Town of Chapel Hill							
Analysis Time Perio	d	2007 S PM Pea	ite REV Saturday ak	Ana	lysis Yea	ar		2007 S	ite						
Project Description	3843			S - Villac	e Plaza	The	atres								
East/West Street: E			or Chaperrin Ti					eway "B"							
Intersection Orientati			st		Study Period (hrs): 0.25										
Vehicle Volumes	and	Adjust	tments												
Major Street			Eastbound					Westbo	ound						
Movement		1	2] ;	3		4	5		6					
		L	T	F	₹		L	T		R					
Volume (veh/h)		27	359	0			0	359		164					
Peak-hour factor, PH	F	0.90	0.90	1.0	00	1	.00	0.90		0.90					
Hourly Flow Rate (veh/h)		30	398	0			0	398		182					
Proportion of heavy		2	_				0								
vehicles, P _{HV}				<u> </u>		•				_					
Median type				Two	Way Lef	t Tur	n Lane								
RT Channelized?				0						0					
Lanes		1	1	0			0	1		0					
Configuration		L	T							TR					
Upstream Signal			0					0							
Minor Street			Northbound					Southbo	ound						
Movement		7	8	9		10		11		12					
,	1	L	T	F	2		L	T		R					
Volume (veh/h)		0	0	0		1	43	0		42					
Peak-hour factor, PHI	= -	1.00	1.00	1.0	0	0	.90	1.00		0.90					
Hourly Flow Rate (veh/h)		0	0	0		1	58	0		46					
Proportion of heavy							_								
vehicles, P _{HV}		0	0	0	1		2	0		2					
Percent grade (%)			0					3							
Flared approach			N					N							
Storage			0					0							
RT Channelized?				0						0					
anes	7	0	0	0		-	1	0		1					
Configuration	1						L			R					
Control Delay, Queu	e Lena	th, Leve	el of Service												
Approach	7	EB	WB		Northbo	und		S	outhboun	d					
Movement		1	4	7	8		9	10	11	12					
ane Configuration		L				十		L]	R					
/olume, v (vph)		80			<u> </u>	+		158		46					
Capacity, c _m (vph)		94			1	\top		409		579					
/c ratio		03				十		0.39		0.08					
Queue length (95%)		09			 	+		1.79	 	0.26					
(2000 longin (0078)	- 0.		 		 	+		1.75		0.20					

	~	
4	√9)	
ŀ	O y	

Control Delay (s/veh)	8.7			19.2	11.8
LOS	Α			С	В
Approach delay (s/veh)	_	_	·	1	7.5
Approach LOS		-			С

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	TW	O-WAY STO				<u> </u>				
General Informat	tion		Site	Infor	mation					
Analyst Agency/Co. Date Performed Analysis Time Period	5/22/04 2007 S	North Carolina, I I ite REV Friday F	Juris	section diction ysis Yea	ar	"C" Town o	Elliott Road and Driveway "C" Town of Chapel Hill 2007 Site			
Project Description	reak	of Chanel Hill -	Village Pl	laza Thi	eatres		 			
East/West Street: Di		roi Chaperriii -			Street: Elli	ott Road				
Intersection Orientation		outh			i (hrs): 0.2					
Vehicle Volumes			1		<u> </u>					
Major Street	and Aujus	Northboun	d			Southbo	ound			
Movement	1	2	1 3	3	4	5		6		
	L	T	F		L.	Т		R		
Volume	0	321	123		258	320		0		
Peak-Hour Factor, Ph	IF 1.00	0.90	0.9	00	0.90	0.90		1.00		
Hourly Flow Rate, HF	R 0	356	13	6	286	355		0		
Percent Heavy Vehicle		-			2					
Median Type			Two	Way Le	ft Turn Lane					
RT Channelized			0					0		
Lanes	0	1	0		1	1		0		
Configuration			TF	?	L	T				
Upstream Signal		0				0				
Minor Street		Westbound	1			Eastbo	und			
Movement	7	8	9)	10	11		12		
	L	Т	R	2	L	T		R		
Volume	101	0	17	7	0	0		0		
Peak-Hour Factor, PH		1.00	0.9		1.00	1.00		1.00		
Hourly Flow Rate, HFI		0	190	5	0	0		0		
Percent Heavy Vehicle		0	2		0	0		0		
Percent Grade (%)		0			***************************************	0				
Flared Approach		N				I N				
Storage		0			: • • • • • • • • • • • • • • • • • •	0				
RT Channelized	 	- 	0			 		0		
anes	1	0	1 1		0	0		0		
Configuration			R			 				
Delay, Queue Length	and I aval a	f Service								
Approach	NB	SB	1	Westbo	und	7	Eastbour	nd		
Movement	1	4	7	8	9	10	11	12		
ane Configuration		<u> </u>	L	+ - "	R	10		12		
(vph)		286	112	 	196					
			}	 		+	L	_		
C (m) (vph)		1071	224	 	630					
//c		0.27	0.50	-	0.31					
95% queue length		1.08	2.54		1.32					
Control Delay		9.6	36.1		13.3					
.OS		Α	E		В					
Approach Delay				21.6						
pproach LOS	**			С						
·		<u> </u>								

·	TWO	O-WAY STOP	CONT	ROL S	SUI	MARY					
General Informat				Infor			Elliott Road and Driveway				
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB N 5/22/04	lorth Carolina, PC te REV Saturday) Inters	ection diction sis Ye	i		Elliott R "C" Town of 2007 Si	Cha		•	
Project Description		of Chapel Hill - V	illage Pla	aza Th	eatr	es					
East/West Street: Dr		<u> </u>				eet: <i>Elliot</i>	t Road				
Intersection Orientation		ıth				s): 0.25					
Vehicle Volumes	and Adjust	ments									
Major Street		Northbound					Southbo	ound			
Movement	1	2	3			4	5			6	
	L	T	R			L	Т			R	
Volume	0	277	134			260	279		<u> </u>	0	
Peak-Hour Factor, PH		0.90	0.9			0.90	0.90			1.00	
Hourly Flow Rate, HFI		307	148	3	<u> </u>	288	310			0	
Percent Heavy Vehicle	es 0				<u> </u>	2			<u> </u>		
Median Type				Vay Le	eft T	um Lane			T		
RT Channelized			0						-	0	
Lanes	0	1	0		_	1	1			0	
Configuration			TR			L	T		<u> </u>		
Upstream Signal		0					0		<u> L</u>		
Minor Street		Westbound					Eastbou	und			
Movement	7	8	9			10	11			12	
	L _	Т	R	R		L	T			R	
Volume	107	0	183			0	0			0	
Peak-Hour Factor, PH		1.00	0.90		1.00		1.00			1.00	
Hourly Flow Rate, HFI		0	203		0		0			0	
Percent Heavy Vehicle	es 2	0	2		0		0			0	
Percent Grade (%)		0					0				
Flared Approach		N					N				
Storage		0					0				
RT Channelized			0							0	
Lanes	1	0	1			0	0			0	
Configuration	L		R]							
Delay, Queue Length	, and Level of	Service									
Approach	NB	SB	1	Westb	ound	t	E	Eastb	ound		
Movement	1	4	7	8		9	10	7	11	12	
Lane Configuration		L	L			R		Г			
v (vph)		288	118			203					
C (m) (vph)		1106	239			666					
v/c		0.26	0.49			0.30					
	5% queue length			2.51		1.29		 			
Control Delay			33.9			12.8		\vdash			
LOS	9.4 A			D B				 			
		-	U	00.7		D	<u></u>				
Approach Delay				20.5)						
Approach LOS				С							

	TWO	-WAY STOP	CONTI	ROL S	SUI	MMARY				
General Information	n		Site	Site Information						
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB No 5/22/04	orth Carolina, PC REV Friday PM) Inters	ection diction sis Yea			Elliott R "D" Town of 2007 Sit	Cha _l		ill
Project Description 38		of Chapel Hill TIS	S - Village	e Plaza	Th	eatres				
East/West Street: Drive						eet: <i>Elliot</i>	t Road			
Intersection Orientation:		h	Study	Period	d (hi	rs): 0.25				
Vehicle Volumes a	nd Adiustn	nents		The state of the s						
Major Street		Northbound					Southbo	ound		
Movement	1	2	3	3		4	5			6
	L	Т	R			L	Т			R
Volume	0	492	6			32	531			0
Peak-Hour Factor, PHF	1.00	0.90	0.9				0.90			1.00
Hourly Flow Rate, HFR	0	546	6	35			590			0
Percent Heavy Vehicles	0					2			<u> </u>	
Median Type				Vay Le	ft T	um Lane			·	
RT Channelized			0						<u> </u>	0
Lanes	0	1	0			1	1			0
Configuration			TR			L	T			
Upstream Signal		0	<u> </u>	ļ			0			
Minor Street		Westbound					Eastbou	und		
Movement	7	8	9		10		11			12
	L	Т	R			L	Т			R
Volume	39	0	33		0		0			0
Peak-Hour Factor, PHF	0.90	1.00	0.90		1.00		1.00		•	1.00
Hourly Flow Rate, HFR	43	0	36		0		0_			0
Percent Heavy Vehicles	2	0	2			0	0			0
Percent Grade (%)		-2					0			
Flared Approach		N					N			
Storage		0					0			
RT Channelized			0							0
Lanes	0	0	0			0	0			0
Configuration		LR								
Delay, Queue Length, a	nd Level of	Service								
Approach	NB	SB	1	Westbo	ounc	d	E	Eastb	ound	
Movement	1	4	7	8		9	10	1	1	12
Lane Configuration		L		LR					`	
v (vph)		35		79						
C (m) (vph)		1018		402						
v/c				0.20	•					
95% queue length	0.11		0.72							
Control Delay	trol Delay 8.7			16.1						
LOS A			С							
Approach Delay				16.1						
Approach LOS				С						

	TWO-	WAY STOP	CONT	ROL S	SUI	MMARY					
General Information	n		Site	Infor	ma	tion					
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB Noi 5/22/04	th Carolina, PC REV Saturday	Inters Juriso	ection diction sis Ye			Elliott R "D" Town or 2007 Si	f Cha _l)riveway Iill	
Project Description 3		Chapel Hill TIS	- Village	e Plaza	Th	eatres					
East/West Street: Drive				North/South Street: Elliott Road							
Intersection Orientation:	North-South		Study	Study Period (hrs): 0.25							
Vehicle Volumes a	nd Adjustm	ents		i							
Major Street	1	Northbound					Southbo	ound			
Movement	1	2	3			4	5			6	
	L	Т	R			L	T			R	
Volume	0	455	5			32	497			0	
Peak-Hour Factor, PHF	1.00	0.90	0.9	0		0.90	0.90			1.00	
Hourly Flow Rate, HFR	0	505	5		ļ	35	552			0	
Percent Heavy Vehicles	0	-				2	<u> </u>		<u> </u>		
Median Type				Vay Le	ft T	urn Lane	1				
RT Channelized			0							0	
Lanes	0	1	0			1	1			0	
Configuration			TR			L	T				
Upstream Signal		0					0				
Minor Street		Westbound					Eastbound				
Movement	7	8	9		10		11			12	
	L	Т	R	R		L	Т			R	
Volume	34	0	31	1		0	0			0	
Peak-Hour Factor, PHF	0.90	1.00	0.90)		1.00	1.00			1.00	
Hourly Flow Rate, HFR	37	0	34		0		0			0	
Percent Heavy Vehicles	2	0	2			0	0			0	
Percent Grade (%)		-2					0				
Flared Approach		N					N				
Storage		0					0				
RT Channelized			0							0	
Lanes	0	0	0			0	0			0	
Configuration		LR						1			
Delay, Queue Length, a	nd Level of S	ervice									
Approach	NB	SB	,	Westbo	ound	d	1	Eastb	ound		
Movement	1	4	7	8		9	10	1	1	12	
ane Configuration		L		LR							
/ (vph)		35		71							
C (m) (vph)		1055		431							
//c		0.03		0.16	}						
95% queue length		0.10		0.58							
ontrol Delay		8.5		15.0							
.os		Α	E								
Approach Delay				15.0)						
Approach LOS				В							

	TWO-WAY STOP CONTROL SUMMARY												
General Informat	ion		Site	Infor	ma	tion							
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB No 5/18/04	orth Carolina, PC	Jurisc	ection liction sis Ye			Elliott R "E" Town of 2007 Si	^r Chape	d Driveway I Hill				
i '	Peak												
Project Description		of Chapel Hill TIS	- Village	Plaza	a In	eatres	4 Dood						
East/West Street: Dr.				North/South Street: Elliott Road									
Intersection Orientatio			Study	Study Period (hrs): 0.25									
Vehicle Volumes	<u>and Adjustn</u>						<u> </u>						
Major Street		Northbound			ļ		Southbo	ouna T	-				
Movement	1 1	2 T	3		├	<u>4</u>	5 T		6 R				
Valuma	0	435	53	R 52		41	451		0				
Volume Peak-Hour Factor, PH		0.90	0.90		┪	0.90	0.90		1.00				
Hourly Flow Rate, HFF		483	58		Т	45	501		0				
Percent Heavy Vehicle						2							
Median Type			Two V	Vay Le	eft T	um Lane							
RT Channelized		1	0						0				
Lanes	0	1	0			1	1		0				
Configuration			TR			L	Т						
Upstream Signal		0					0						
Minor Street		Westbound					Eastbou	und					
Movement	7	8	9		10		11		12				
	L	Т	Ŕ	L		L	T		R				
Volume	58	0	32		0		0		0				
Peak-Hour Factor, PH		1.00		0.90		1.00	1.00		1.00				
Hourly Flow Rate, HFF		0	35		0		0		0				
Percent Heavy Vehicle	es 2	0	2			0	0		0				
Percent Grade (%)		-1					0						
Flared Approach		N					N						
Storage		0					0						
RT Channelized			0						0				
Lanes	0	0	0			0	0		0				
Configuration		LR											
Delay, Queue Length	and Level of	Service											
Approach	NB	SB	1	Westb	ound	d	E	Eastbou	ınd				
Movement	1	4	7	8		9	10	11	12				
Lane Configuration		L		LR)								
v (vph)		45		99									
C (m) (vph)		1028	·····	412				 					
v/c		0.04		0.24									
95% queue length		0.14		0.93									
Control Delay		8.7		16.8									
LOS													
	A			C									
Approach Delay					16.5								
Approach LOS		С											

	TWO-	WAY STOP (CONTR	OL S	UN	MARY				
General Informatio	n		Site	nforn	nat	ion				
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB Nor 5/18/04 2007 Site I	th Carolina, PC REV Saturday	Interse Jurisd Analys		r		Elliott Ro "E" Town of 2007 Site	Chap		•
	PM Peak	Chapel Hill TIS	Village	Plaza	The	atros				
		Спарет пін тто	- Village	South S	Stre	et: <i>Elliott</i>	Road			
East/West Street: Drive				Study Period (hrs): 0.25						
Intersection Orientation:			Otady	Toriou	7	<i>.</i> 0.20				
Vehicle Volumes a	na Aajustm	ents Northbound		— т			Southbo	und		
Major Street		Northbourid 2	3			4	5	T T		6
Movement	L	T	R			1	T			Ř
Volume	0	395	40			56	430			0
Peak-Hour Factor, PHF	1.00	0.90	0.90	, 		0.90	0.90			1.00
Hourly Flow Rate, HFR	0	438	44			62	477			0
Percent Heavy Vehicles	0			- 2						
Median Type	j	1	Two V	Vay Lef	tΤυ	ırn Lane				
RT Channelized			0	T						0
Lanes	0	1	0			1	1			0
Configuration			TR			L	T			
Upstream Signal		0					0			
Minor Street	Westbound						Eastbou	ınd		
Movement	7	8	9			10	11			12
MOVOMONA	L	Т	R			L	Т			R
Volume	69	0	30		0		0			0
Peak-Hour Factor, PHF	0.90	1.00	0.90	,	1.00		1.00		1	.00
Hourly Flow Rate, HFR	76	0	33			0	0			0
Percent Heavy Vehicles	2	0	2		0		0			0
Percent Grade (%)		-1					0			
Flared Approach		N					N			
Storage		0					0			
RT Channelized			0							0
Lanes	0	0	0			0	0			0
Configuration		LR								
Delay, Queue Length, a	ind Level of S	ervice								
Approach	NB	SB	1	Westbo	unc	1	E	Eastbo	ound	
Movement	1	4	7	8		9	10	1	1	12
Lane Configuration		L		LR						
v (vph)		62		109						
C (m) (vph)		1081		414						
v/c		0.06		0.26						
95% queue length		0.18		1.04						
Control Delay		8.5		16.8						
LOS		Α		С						
Approach Delay				16.8						
Approach LOS		С								

	TWC	-WAY STOP	CONT	ROL S	SUM	MARY						
General Informat	ion		Site	Inforr	mat	ion						
Analyst Agency/Co. Date Performed Analysis Time Period	CRS HNTB No 5/18/04 2007 Site Peak	orth Carolina, PC e REV Friday PM	Juriso Analy	sis Yea			"F"	oad and L Chapel H le	-			
Project Description	38435 - Town	of Chapel Hill TIS	S - Village	Plaza	The	atres						
East/West Street: Dr						et: <i>Elliot</i>	t Road					
Intersection Orientatio			Study	Study Period (hrs): 0.25								
Vehicle Volumes	and Adjustr											
Major Street		Northbound					Southbo	ound	6			
Movement	1 1	2 T	3			4	5 T		R			
Volumo	5	391	R 64			117	423		30			
Volume Peak-Hour Factor, PH		0.90	0.90			0.90	0.90		0.90			
Hourly Flow Rate, HFF		434	71			130	470		33			
Percent Heavy Vehicle		-				2	_					
Median Type			Two V	Vay Le	ft Tu	m Lane						
RT Channelized			0		-				. 0			
Lanes	1	1	0			1	1		0			
Configuration	L		TR			L			TR			
Upstream Signal		0					0					
Minor Street		Westbound					Eastbou	und				
Movement	7	8	9	9		10	11		12			
	L	Τ	R			L	Т		R			
Volume	47	2	150		23		1		18			
Peak-Hour Factor, PH	F 0.90	0.90	0.90		0.90		0.90		0.90			
Hourly Flow Rate, HFF		2	166		25		1		20			
Percent Heavy Vehicle	es 2	0	2		0		0		0			
Percent Grade (%)		1					0					
Flared Approach		N					N					
Storage		0					0					
RT Channelized			0						0			
Lanes	0	1	1			0	1		0			
Configuration	LT		R				LTR					
Delay, Queue Length	, and Level of	Service										
Approach	NB	SB	١	Westbo	ound			Eastbound	d			
Movement	1	4	7	8		9	10	11	12			
Lane Configuration	L	L	LT		一十	R		LTR				
v (vph)	5	130	54		\neg	166		46				
C (m) (vph)	1072	1060	247		一	593	<u> </u>	246				
v/c	0.00	0.12	0.22			0.28	<u> </u>	0.19	 			
95% queue length	0.01	0.42	0.81			1.14		0.67				
Control Delay	8.9	23.6			13.4	<u> </u>	23.0	 				
	8.4	A A						C C	 			
LOS	A	A	C B				23.0					
Approach Delay		-		15.9								
Approach LOS			C C									

	TWO	-WAY STOP										
General Informati			Site	Inforn	nat	ion	FW 45		5 • • • • • • • • • • • • • • • • • • •			
Analyst Agency/Co. Date Performed Analysis Time Period	5/18/04	orth Carolina, P e REV Saturday	Jurisd		r		"F"	Chapel I	Oriveway Hill			
Project Description			S - Village	Plaza	The	eatres						
East/West Street: Driv			North	North/South Street: Elliott Road								
Intersection Orientation		th	Study	Study Period (hrs): 0.25								
Vehicle Volumes a				learly, over finely, ever								
Major Street	The Augusti	Northbound					Southbo	und				
Movement	1	2	3			4	5		6			
	L	Т	R			L	T		R			
Volume	11	332	72		123		411		17			
Peak-Hour Factor, PHF	0.90	0.90	0.90)		0.90	0.90	_	0.90			
Hourly Flow Rate, HFR		368	80			136	456		18			
Percent Heavy Vehicle	s 2	-				2						
Median Type				Vay Lef	t Tu	ım Lane						
RT Channelized			0						0			
Lanes	1	1	0			1	1		0			
Configuration	L		TR			L			TR			
Upstream Signal		0					0_					
Minor Street		Westbound		- 10			Eastbou	ınd				
Movement	7	8	9			10	11		12			
	L	Т	R			L	Т		R			
Volume	72	0	128		19		2		5			
Peak-Hour Factor, PHF	0.90	0.90	0.90)		0.90			0.90			
Hourly Flow Rate, HFR	80	0	142			21	2		5			
Percent Heavy Vehicle	s 2	2	2			2	2		2			
Percent Grade (%)		1					-3					
Flared Approach		N					N					
Storage		0					0					
RT Channelized			0						0			
Lanes	0	1	1			0	1		0			
Configuration	LT		R				LTR					
Delay, Queue Length,	and Level of	Service										
Approach	NB	SB	,	Westbo	unc	i		Eastboun	d			
Movement	1	4	7	8		9	10	11	12			
Lane Configuration	Ĺ	L	LT	<u> </u>		R		LTR				
v (vph)	12	136	80			142		28				
C (m) (vph)	1088	1112	259			643		225				
v/c	0.01	0.12	0.31			0.22		0.12				
95% queue length	0.03	0.42	1.27			0.84		0.42	1			
Control Delay	8.3	8.7	25.0			12.2	***	23.3	1			
LOS	A	A	С			В		С				
Approach Delay				16.8				23.3				
Approach LOS			C				C C					
approach 200			<u> </u>									

Appendix D - Traffic Count Data

343 East Six Forks Road Ste. 200

Raleigh, NC 27609

Groups Printed- Unshifted

Architects, Engineers, Planners

File Name : eldrafri Site Code : 00000004 Start Date: 3/5/04

Page No : 1

١		Driveway A							lliot R			Burger King Northbound					Elliot Road Eastbound					ı
- 1		}	S	outhbo	und			W	estbo	und			NO.	orthbo	und				<u>astbol</u>	ına		
-	Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	7	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	int. Total
ŀ	Factor	1.0	1.0	1.0	1.0	1,5,50	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
ŧ	06:00 PM	21	1.0	3	0	25	12	68	21	0	101	1	2	8	0	11	2	79	3	0	84	221
	06:15 PM	21	i	7	1	30	4	65	23	0	92	5	1	10	0	16	4	84	4	0	92	230 229
	06:30 PM	25	1	7	Ó	33	6	71	16	0	93	1	0	5	0	6	5	89	3	0	97	
	06:45 PM	10	1	5	Ö	16	8	63	26_	0	97	0	0	10	0	10	5	77	4	0	86	209
•	Total	77	4	22		104	30	267	86	0	383	7	3	33	0	43	16	329	14	0	359	889
	, , , , ,	• •				•								_			_		_	_	1	
	07:00 PM	25	0	. 3	0	28	6	64	22	0	92	3	1	7	0	11	5	62	6	0	73	204
	07:15 PM	19	ō	9	0	28	4	50	17	0	71	3	1	7	0	11	7	55	3	2	67	177
	07:30 PM	30	Ó	5	0	35	2	56	14	0	72	2	0	3	0	5	4	52	0	0	56	168
	07:45 PM	33	2	7	0	42	3	32	12_	2	49	0	0	6_	2	8	3	42	3	0_	48	147
•	Total	107	2	24	0	133	15	202	65	2	284	8	2	23	2	35	19	211	12	2	244	696
	• • • • •											_	_		_	- 1	_				ا مه	484
	08:00 PM	16	1	4	0	21	4	48	8	0	60	3	0	4	0	7 1	2	40	1	0	43	131
	08:15 PM	14	0	6	0	20	2	52	10	0	64	4	1	2	0	(1	- 1	38	2		44	135
	08:30 PM	15	0	2	0	17	4	35	6	0	45	2	0	4	0	6	1	45	3	Ų	49	117
	08:45 PM	10	0_	2	0	12	2_	28	9_	0	39	1	<u> </u>	3_	- 0	4	2	43	2	- 0	47	102 485
-	Total	55	1	14	0	70	12	163	33	0	208	10	1	13	0	24	9	166	8	0	183	450
							_		_		-a 1	٥			0	4.1	4	29	٥		30	78
	09:00 PM	13	0	1	0	14	3	20	(Ü	30	9	٧	3	ž	- 2	- ;	29	3	ŏ	33	60
	09:15 PM	5	0	2	0		3	10	2	V	15 30	- 1	,	3	Ň	اء	, i	32	2	ŏ	37	86
	09:30 PM	11	0	3	. 0	14	2	19	9	ŭ	19	2	9	7	Ň	7	ñ	- 26	5	ň	28	60
_	09:45 PM	5_	2_	2	0	9	<u> </u>	15 64	22	- 6	94	- 4		11	-ŏ	18	 _	116		- 0	128	284
	Total	34	2	. 8	0	44	8	64	22	U	374	•	3		·	.0	J	110	•	•	120 ;	_
	Grand Total	273	9	68	1	351	65	696	206	2	969	29	9	80	2	120	49	822	41	2	914	2354
	Approh %	77.8	2.6	19.4	0.3		6.7	71.8	21.3	0.2		24.2	7.5	66.7	1.7		5.4	89.9	4.5	0.2		
	Total %	11.6	0.4	2.9	0.0	14.9	2.8	29.6	8.8	0.1	41.2	1.2	0.4	3.4	0.1	5.1	2.1	34.9	1.7	0.1	38.8	
	. 3461 70			4.0							•											

Intersection: Elliott Rd & Driveway A

HNTB Project #: 38435-PL-004

Counted By: PMTS Weather: Cool

343 East Six Forks Road Ste. 200 Raleigh, NC 27609

Raleigh, NC 27609 Architects, Engineers, Planners



File Name: eldrafri Site Code: 00000004 Start Date: 3/5/04

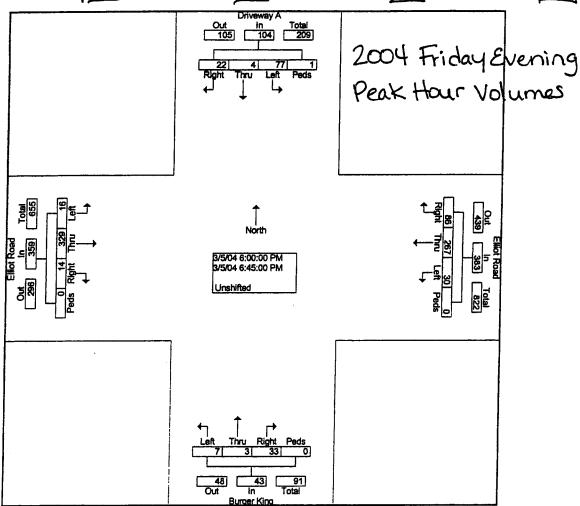
Page No : 2

Intersection: Elliott Rd & Driveway A

Counted By: PMTS

Weather: Cool HNTB Project #: 38435-PL-004

Burger King Elliot Road Driveway A Elliot Road Westbound Northbound Eastbound Southbound App. int. Total App. Total Thru Right Peds Thru Right Peds Thru Right Right Left Start Time 06:00 PM to 09:45 PM - Peak 1 of 1 k Hour From Intersection 06:00 PM 3 7.0 14 3.9 104 267 383 43 16 329 359 889 Volume 0.0 76.7 0.0 0.0 69.7 22.5 18.3 4.5 91.6 Percent 74.0 21.2 1.0 7.8 06:15 23 0 92 5 10 0 16 0 230 65 92 21 30 Volume Peak Factor 0.966 06:00 PM 06:15 PM High Int. Volume 06:30 PM 101 0.948 12 21 10 0 0 25 0.672 0.925 0.788 Peak Factor



343 East Six Forks Road Ste. 200 Raleigh, NC 27609

Architects, Engineers, Planners

(121)

File Name : eldrbfri Site Code : 00000003 Start Date : 3/5/04

Page No :1

Intersection: Elliott Rd & Driveway B Counted By: PMTS

Weather: Cool HNTB Project #: 38435-PL-004

Groups Printed- Unshifted

Driveway B Elliot Road Elliot Road																					
	1	D	rivewa	av B			Е	lliot R	oad		ŀ					l	E	lliot R	oad		
	1		outhbo				W	estbo	und	i	ł	N	orthbo	und			E	astbo	und	1	
		, 3			Ann					App.					App.		1	T		App.	Int.
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	Total	Total
Facto	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:00 PN		0	11	0	22	0	61	16	0	77	0	0	0	0	0	- 6	71	0	0	77	176
06:15 PM		0	9	0	19	0	60	17	0	77	0	0	0	0	0	10	79	U	Ü	89	185 195
06:30 PM		0	17	0	37	0	54	22	. 0	76	0	0	0	0	0	4	78	U	ŭ	82	
06:45 PM	1 16	. 0	10	0	26	0	56	20	0	76			0	0			70	- 0	0	78	180 736
Tota		0	47	0	104	0	231	75	0	306	0	0	0	0	0	28	298	0	U	326	/30
										1	_	_	_	_	- 1					ee i	163
07:00 PM	1 20	0	13	0	33	0	63	11	0	74	0	0	0	0	0	•	52 58	ů		56 64	158
07:15 PM	1 13	0	10	0	23	0	54	17	0	71	0	. 0	0	. 0	21			ŭ	Ü	42	136
07:30 PM	20	0	10	0	30	0	42	22	0	64	0	0	0	0	0	6	36	ŭ	u	41	107
07:45 PM	15	0	9	0_	24	0	29	13	0	42	0	0	0	<u> 0</u>	0		37	- 6			564
Tota		0	42	0	110	0	188	63	0	251	0	0	0	0	0	20	183	U	0	203	304
				_	1	_				en 1	•			•	- 1		26	٥	0	32	115
08:00 PM		0	15	0	30	Ü	37	16	ů	53 66	0	0	0	0	0	9	37	ŏ	ñ	40	134
08:15 PM		0	15	0	28	Ū	42	24 9	Ö	40	ŭ	ŏ	٥	Č		3	31	ŏ	ŏ	34	106
08:30 PM		0	16	0	32	ŭ	31		0	30	0	Č	V	ŭ	ŏ	3	26	ŏ	ň	28	68
08:45 PM		0_	9	<u> </u>	30	- 0	18 128	12 61	- 6	189	- 7	- 6	- 0	- 6	- 61	14	120	- 6	- ö -	134	443
Total	65	0	55	0	120	U	126	01	U	108	U	U	U	U	٠,	14	120	·	·	10-7 ;	770
09:00 PM	5	٥	4	0	9 1	0	23	4	0	27	0	0	0	0	0	2	23	0	0	25	61
09:15 PM		ŏ	10	ŏ	19	ō	12	3	Ō	15	0	0	0	0	0	4	25	0	0	29	63
09:30 PM	5	ŏ	3	ŏ	8	ŏ	24	5	č	29	ō	Ō	Ö	Ó	0	2	23	0	0	25	62
09:45 PM	Ă	ō	5	ā	9	ō	19	3	0	22	0	C	0	0	0	2	24	0	0	26	57
Total	23	0	22	Ŏ	45	0	78	15	0	93	0	0	0	0	0	10	95	0	0	105	243
100		•								•											
Grand Total	213	0	166	0	379	0	625	214	0	839	0	0	0	0	0	72	696	0	0	768	1986
Apprch %		0.0	43.8	0.0	i	0.0	74.5	25.5	0.0	i	0.0	0.0	0.0	0.0		9.4	90.6	0.0	0.0		
Total %	10.7	0.0	8.4	0.0	19.1	0.0	31.5	10.8	0.0	42.2	0.0	0.0	0.0	0.0	0.0	3.6	35.0	0.0	0.0	38.7	
,	. •••				•																

343 East Six Forks Road Ste. 200 Raleigh, NC 27609

Raleigh, NC 27609
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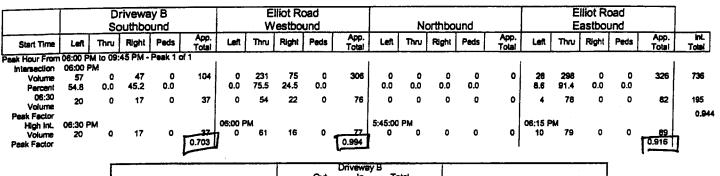
122

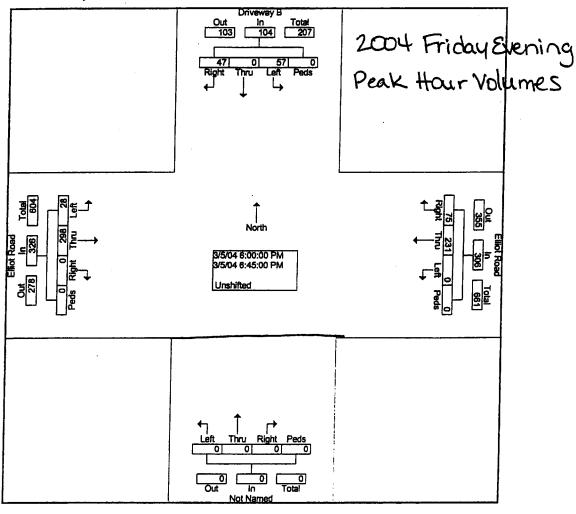
File Name: eldrbfri Site Code: 00000003 Start Date: 3/5/04

Page No : 2

Intersection: Elliott Rd & Driveway B Counted By: PMTS Weather: Cool

HNTB Project #: 38435-PL-004





343 East Six Forks Road Ste. 200

Raleigh, NC 27609 Architects, Engineers, Planners

File Name : eldrefri Site Code : 00000001

Start Date : 3/5/04 Page No : 1

Intersection: Elliott Rd & Driveway E Counted By: PMTS Weather: Cool

HNTB Project #: 38435-PL-004

Groups Printed-Unshifted

		E	lliot R	oad				rivewa	у Е				lliot R								
		S	outhbo	und		i	N	estbo	und			No.	orthbo	und				astbo	na		
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:00 PM	6	62	0	0	68	10	0	3	0	13	0	73	8	0	81	0	0	0	0	0	162
06:15 PM	ě.	71	1	2	80	13	0	4	0	17	0	74	16	3	93	0	0	0	0	0	190
06:30 PM	8	73	0	0	81	12	0	7	2	21	1	57	13	0	71	0	0	2	2	4	177
06:45 PM	4	53	0	2	59	20	0	4_	0	24	0	73	13	0	86	0_	0	. 0	0	0	169
Total	24	259	1	4	288	5 5	0	18	2	75	1	277	50	3	331	0	0	2	2	4	698
07:00 PM	7	48	0	2	57	12	0	4	1	17	2	63	8	0	73	0	0	0	0	0]	147
07:15 PM	7	53	1	ō	81	15	0	.1	0	16	5	61	9	1	76	0	0	0	0	0	153
07:30 PM	À	41	ò	ō	45	5	0	5	0	10	1	47	2	0	50	0	٥	0	0	0	105
07:45 PM	ñ	39	ō	ō	39	6	0	2	0	8	2	47	5_	3	57	0	0	0	1	1	105_
Total	18	181	1	2	202	38	0	12	1	51	10	218	24	4	256	0	0	0	1	1	510
00.00 DM	3	46	•	0	49 (7	0	4	0	11	2	58	2	0	62	0	0	٥	0	0 1	122
08:00 PM	3	48	ŭ	ŏ	50	Á	ŏ	4	ō	8	- 7	52	3	ō	56	Õ	õ	ō	ō	o l	114
08:15 PM	1	19	- 1	ŏ	25	7	ň	ñ	ň	71	i i	60	3	ŏ	64	ŏ	ō	ō	ō	اه	93
08:30 PM		21	- ;	ň	22	,	ŏ	ž	ŏ	<u>آ</u> آ	ò	33	5	ō	38	ŏ	ŏ	ŏ	ō	ō	64
08:45 PM Total	9	134	- 3	Ö	146	17	Ö	10	ŏ	27	4	203	13	ö	220	Ö	Ö	ō	0	ō	393
			_		00.1		^	•	0	8	٥	28	•	•	29	•	0	o	0	o I	61
09:00 PM	2	24	0	0	26 19	3	ŏ	3	ŏ	2	0	26		ň	27	ň	ň	ŏ	ŏ	ň	51
09:15 PM	1	18	0	0		*	ŏ	,	Ď	3	ŏ	35	,	ň	37	ň	ŏ	ň	ŏ	اه	71
09:30 PM	2	29	ŏ	ö	31 28	3	ň	ž	ŏ	5	ő	20	. õ	ŏ	20	ň	ŏ	ŏ	ŏ	اة	53
09:45 PM		27 98	- 0	0	104	12	- 0		- 6	19	- ö-	109	- - 4	-	113	0	0	ō	0	ă	236
Total	6	80	U	U	104	12		•	•		_		7	•		•	•	_	-	- 1	
Grand Total	57	672	5	6	740	122	0	47	3	172	15	807	91	7	920	0	0	2 40.0	3 60.0	5	1837
Apprch %	7.7	90.8	0.7	0.8		70.9	0.0	27.3	1.7		1.6	87.7	9.9	8.0	50.4	0.0	0.0	40.0 0.1	0.2	0.3	
Total %	3.1	36.6	0.3	0.3	40.3	6.6	0.0	2.6	0.2	9.4	8.0	43.9	5.0	0.4	50.1	0.0	0.0	U. I	V.4	U.3	

343 East Six Forks Road Ste. 200

Raleigh, NC 27609 Architects, Engineers, Planners



File Name : eldrefri Site Code : 00000001 Start Date : 3/5/04

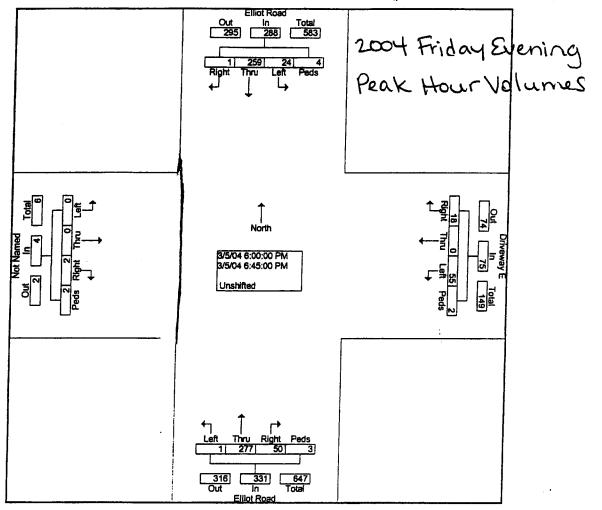
Page No : 2

Intersection: Elliott Rd & Driveway E

Counted By: PMTS Weather: Cool

HNTB Project #: 38435-PL-004

Driveway E Elliot Road Elliot Road Westbound Northbound Southbound Eastbound App. Total int. Total Thru Right Peds Thru Right Peds Left Thru Right Peds Left Thru Right Peds Start Time Left ak Hour From 06:00 PM to 09:45 PM - Peak 1 of 06:00 PM Intersection 2 2.7 0.0 Volume 288 55 0 75 331 2 50.0 50.0 698 0.0 24.0 0.9 1.4 73.3 0.3 Percent 06:15 0.3 83.7 15.1 0.0 8.3 89.9 2 80 13 0 0 17 0 74 3 93 0 16 n ٥ 190 0 Volume Peak Factor High Int. Volume 0.918 06:45 PM 06:30 PM 06:15 PM 06:30 PM 93 0.890 0 20 0.781 16 0.889 Peak Factor 0.250



343 East Six Forks Road Ste. 200 Raleigh, NC 27609

Architects, Engineers, Planners

File Name : eldrffri Site Code : 00000001 Start Date : 3/5/04

Page No : 1

Intersection: Elliott Rd & Driveway F

Counted By: PMTS
Weather: Cool
HNTB Project #: 38435-PL-004

ł	INTB Proje	:CL#: 3)04JJ	-F-L-00	~				(Groups	Printe	d- Uns	hifted							rage		
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-			T	outhbo	T	App.	Left	Thru	Right	1	Арр.	Left	Thru	Right	Peds	Арр.	Left	Thru	Right		App.	int.
	Start Time	Left	Thru	Right	Peds	App. Total				1.0	Total	1.0	1.0	1.0	1.0	Total	1.0	1.0	1.0	1.0	Total	Total
Е	Factor	1.0	1.0	1.0	1.0	82	1.0	1.0	35	1.01	49	1.0	57	18	1.0	78	,,,,	0	1.0	1.0	11	220
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	07:15 PM	28	44	5	ō	77	11	1	21	0	33	1	50	14	1	66	- 5	0	3	0	8	184
	07:30 PM	14	35	3	ō	52	11	1	28	0	40	2	32	11	0	45	6	1	4	0	11	148
	07:45 PM	19	26	2	ō	47	6	Ó	26	1	33	. 0	39	8	0	47	2	0	3	0	5	132
_	Total	75	145	15	2	237	34	2	103	2	141	4	174	49	1	228	19	2	15	0	36	642
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	08:00 PM	12	41	7	0	60	8	1	17	0	26	1	49	8	2 ·	60	7	1	3	0	11	157
	08:15 PM	15	36	5	0	56	10	0	17	٥	27	3	43	10	0	56	7	0	4	0	. 11	150
	08:30 PM	17	19	4	0	40	2	0	12	0	14	0	44	7	0	51	1	0	0	0	1	106
	08:45 PM	8	23	2	0	33	5_	0	14	. 0	19	0	31	3	0	34	1	0	1_	0	2	88
-	Total	52	119	18	0	189	25	1	60	0	86	4	167	28	2	201	16	1	8	0	25	501
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	09:30 PM	5	25	1	0	31	7	0	5	ŭ	11	1	25 25	2	ň	28	1	ñ	ŏ	ŏ	11	67
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	Total	13	80	5	U	108	10	U	33	J	91	٠.	100	3	•	120	-	•	•	•	- 1	
	Grand Total	250	572	66	4	892	119	5	339	. 2	465	14	672	146	6	838	62	5	40	0	107	2302
					0.4		25.6	1.1	72.9	0.4	l	1.7	80.2	17.4	0.7	i						
	Total %			2.9	0.2	38.7	5.2	0.2	14.7	0.1	20.2	0.6	29.2	6.3	0.3	36.4	2.7	0.2	1.7	0.0	4.6	
	Grand Total Approh % Total %	250 28.0 10.9	572 64.1 24.8	66 7.4 2.9	0.4		25.6	1.1	72.9	0.4	İ	1.7	80.2	17.4			0.7	0.7 57.9	0.7 57.9 4.7	0.7 57.9 4.7 37.4	0.7 57.9 4.7 37.4 0.0	0.7 57.9 4.7 37.4 0.0

343 East Six Forks Road Ste. 200 Raleigh, NC 27609 Architects, Engineers, Planners

(126)

File Name : eldrffri Site Code : 00000001 Start Date : 3/5/04

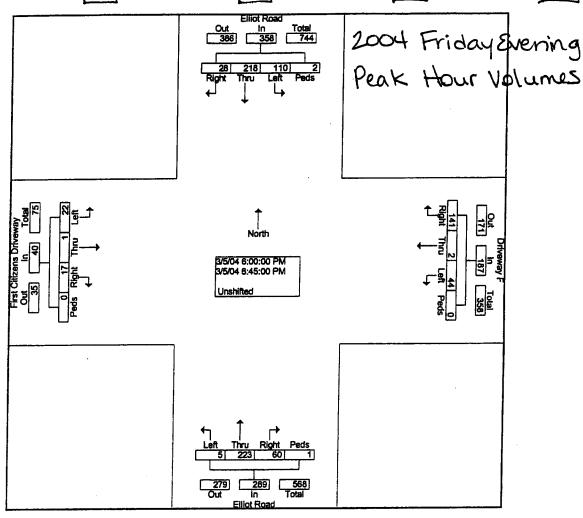
Page No : 2

Intersection: Elliott Rd & Driveway F

Counted By: PMTS

Weather: Cool HNTB Project #: 38435-PL-004

Elliot Road First Citizens Driveway Driveway F Elliot Road Eastbound Southbound Westbound Northbound int. Total App. App. Total App. Total Thru Right Peds Left Thru Right Right Peds Thru Right Peds Left Thru Start Time Left ak Hour From 06:00 PM to 09: 45 PM - Peak 1 of 06:00 PM Intersection 22 55.0 874 358 2 1.1 187 289 40 Volume 110 42.5 2.5 0.0 7.8 0.6 23.5 75.4 0.0 1.7 77.2 20.8 0.3 Percent 06:15 30.7 60.9 0 12 236 7 15 0 80 23 57 12 2 94 11 0 39 0 50 1 Volume 0.926 esk Factor High Int. 06:15 PM 06:30 PM 06:15 PM 06:30 PM 108 6 13 35 67 0.833 0.903 0.829 0.899 Peak Factor



HNTB North Carolina, PC 343 East Six Forks Road, Suite 200 Raleigh, NC 27609

Architects, Engineers, Planners

(127)

File Name: eldrasat Site Code : 00000000

Start Date : 2/28/04

Page No : 1

Intersection: Elliott Rd & Driveway A

Counted By: PMTS

Weather: Cool

HNTB Project #: 38435-PL-004

		Drive	way A			Elliott	Road		- Unshif	Burge				Elliott Eastb			
		South	bound			Westb	ound			North	oouna			Casio			1
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	To
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:00 PM	4	0	21	0	24	60	3	0	4	0	1	2	2	98	3	0	2
06:00 PM	8	1	13	1	20	65	1	0	2	0	4	0	3	75	1	0	1
06:30 PM	1	ò	11	0	12	60	8	1	6	0	0	0	1	70	4	0	1
08:45 PM	3	1	12	11	18	72	7	0	7	. 0	1	0	0	68	3		
Total	16	<u>;</u>	57	2	74	257	19	1	19	0	6	2	6	311	11	0	7
		4	17	0 !	14	48	3	0	2	0	5	0	5	53	3	0	1
07:00 PM	6 8	1	15	ŏl	13	41	1	Ö	4	Ō	2	1	3	51	3	. 0	•
07:15 PM		Ö	12	ŏ	13	48	ż	ŏ	8	Ō	0	0	2	53	3	0	•
07:30 PM	4	0	12	ő	4	41	3	ŏ	2	Ŏ	3	1	1	54	2	0	•
07:45 PM Total	1 19	1	56	ŏ	44	178	9	Ö	16	0	10	2	11	211	11	0	
	_	_		4.1	7	34	2	0	4	0	4	01	3	47	1	0	1
08:00 PM	2	0	8	1	7	25	3	1	5	ŏ	i	Ö	1	39	3	0	1
08:15 PM	3	0	12 6	ö	, A	33	2	òl	1	ŏ	3	اه	4	48	3	0	•
08:30 PM	2	0		Ö	5	21	2	ŏ	À	ŏ	2	ŏ	1	27	2	0	
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09:00 PM	0	0	7	0	2	20	1	0	3	Ö	2	6	1	26	3	ō	
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09:45 PM	4	0	5	0	3	10	2	0	11	0	5	- 6	5	103	6	Ö	2
Total	8	0	28	0	14	61	13	0	11	U	J	0	J		_		
Grand Total	53	3	178	3	155	609	50	2	57	0	31	4	31	786	37	0	19
Apprch %	22.4	1.3	75.1	1.3	19.0	74.6	6.1	0.2	62.0	0.0	33.7	4.3	3.6	92.0	4.3	0.0	
Total %	2.7	0.2	8.9	0.2	7.8	30.5	2.5	0.1	2.9	0.0	1.6	0.2	1.6	39.3	1.9	0.0	
•																	

343 East Six Forks Road, Suite 200 Raleigh, NC 27609

Architects, Engineers, Planners

File Name: eldrasat Site Code : 00000000 Start Date : 2/28/04

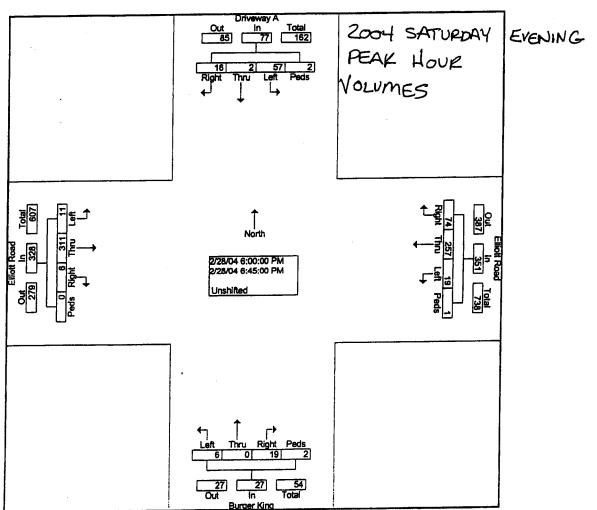
Page No : 3

Intersection: Elliott Rd & Driveway A

Counted By: PMTS

Weather: Cool HNTB Project #: 38435-PL-004

Burger King Elliott Road Elliott Road Driveway A Eastbound Northbound Westbound Southbound Left Ped Rig App. Int. Rig Ped App. App. Ped App. Rig Left Start Left Total Left Total ht Total Total ht ht Total Time ht Peak Hour From 06:00 PM to 09:45 PM - Peak 1 of 1 Intersecti 06:00 PM on 328 783 2 27 6 11 0 351 19 257 19 1 77 74 16 2 57 2 Volume 73. 70. 21. 0.0 20. 0.3 0.0 7.4 1.8 3.4 2.6 2.6 5.4 Percent 4 2 8 1 222 103 06:00 0 0 87 2 7 3 60 3 21 0 25 24 0 Volume 0.882 Peak Factor 06:00 PM 06:45 PM 06:45 PM 06:00 PM High Int. 103 1 2 3 0 25 0.77 97 0 7 0 7 0 21 0 18 72 0 Volume 0.79 0.84 0.90 Peak 6 Factor



343 East Six Forks Road, Suite 200

Raleigh, NC 27609 Architects, Engineers, Planners

Groups Printed- Unshifted

Intersection: Elliott Rd & Driveway B Counted By: PMTS Weather: Cool

26

23

09:45 PM

Total

HNTB Project #: 38435-PL-004

0

File Name: eldrbsat Site Code : 00000003 Start Date : 2/28/04

224

1803

Page No : 1

• • • • •	•							Groups	Printed	- Unshi	tea							
			Drivey				Elliott				North	oound			Elliott Eastb			
Start	Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	int. Total
i			40	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
F	actor	1.0	1.0		0	22	59	0	1	0	0	0	0	0	66	5	1	181
06:00	0 PM	4	0	23	0		52	0	ò	٥	ň	ñ	Ō	0	62	5	0	169
06:1	5 PM	8	0	19	1	22		0	Ö	0	ň	ñ	n	n	57	7	2	154
06:30	O PM	13	0	13	0	11	51	0	0	ő	ő	õ	ň	Ô	60	8	οl	170
06:4	5 PM	15	0	15_	0	18	53	0	<u></u> _		- 6	0	- 0	0	245	25	3	674
	Total	40	0	70	1	73	215	0	2	0	U	U	U		240		• 1	• • •
07:00	D PM	12	0	11	0	18	44	0	٥	0	0	0	0	0	37	10	0	132
07.00	5 PM	22	Õ	12	0	15	44	0	0	0	0	0	0	0	54	9	1	157
07.10	PM	17	ñ	20	Ō	17	32	0	0	0	0	0	0	0	38	5	0	129
	5 PM	12	ñ	15	ŏ	18	28	0	0	0	0	0	0	0	40	<u> </u>	0	120
	Total	63	- ö	58	ō	68	148	0	Ö	0	0	0	0	0	169	31	1	538
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08:30		11	0	14	0	11	27	0	0	0	0	0	0	0	20	1	ŏ	59
08:45		6	0	11	0	3	18	0	0	0	· 0	0	0	0	134	15	1	367
	Total	43	0	50	1	34	89	0	0	0	0	0	0	U	134	13	. 1	30,
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09:00		14	0	5	ă	4	15	ŏ	ŏl	0	0	0	0	0	19	3	0	60
09:15	D FIM	14	0	7	1	7	13	ō	ŏ	0	0	0	0	0	20	2	0	58
09:30		0	0	, E	ó	'	17	ŏ	ō	Ŏ	ō	0	0	0	15	1	0	43
09.45	o PM	7	U	Q	9 1										=-			004

626 80 5 0 0 0 0 0 0 2 198 516 3 172 0 201 **Grand Total** 0.7 88.0 11.3 0.0 0.0 0.0 0.0 0.8 27.7 0.2 11.0 0.3 0.0 53.5 72.1 0.0 0.0 45.7 Apprch % 4.4 0.3 0.0 0.0 34.7 0.0 0.0 0.1 0.0 0.0 28.6 Total % 9.5 0.0 11.1

0

0

64

343 East Six Forks Road, Suite 200 Raleigh, NC 27609 Architects, Engineers, Planners

(30)

File Name: eldrbsat Site Code: 00000003

Start Date : 2/28/04 Page No : 3

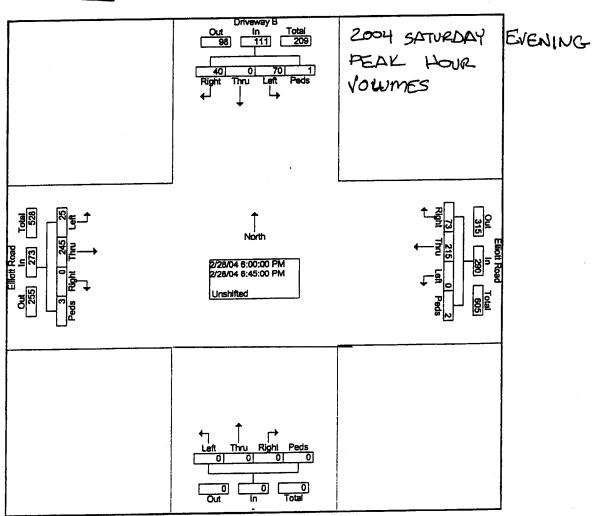
Intersection: Elliott Rd & Driveway B

Counted By: PMTS

Weather: Cool

HNTB Project #: 38435-PL-004

Elliott Road Elliott Road Driveway B Eastbound Northbound Westbound Southbound Int Ped App. Left Ped Left Ped Ped App. Rig Thr Thr Rig Left App. App. Rig Start Rig Thr Left Total Total Total ht Total Total ht ht Time Peak Hour From 06:00 PM to 09:45 PM - Peak 1 of 1 Intersecti 06:00 PM on 273 674 25 3 0 245 0 0 0 0 0 2 290 215 0 70 1 111 73 0 40 Volume 89. 74. 25. 9.2 63. 0.0 0.0 0.0 1.1 36. 0.0 0.0 0.0 0.7 0.9 Percent 0.0 2 1 1 0 72 181 0 66 5 1 06:00 0 0 0 82 0 27 22 59 0 1 23 0 0 Volume 0.931 Peak Factor 06:00 PM 5:45:00 PM 06:00 PM 06:45 PM High Int. 72 0 0 66 5 0 0 82 0 1 0 0 30 59 15 0 15 0 22 0.94 Volume 0.88 0.92 Peak 5 Factor



343 East Six Forks Road, Suite 200

Raleigh, NC 27609 Architects, Engineers, Planners (13)

ō

File Name: eldresat Site Code : 00000002

Start Date : 2/28/04 Page No : 1

Intersection: Elliott Rd & Driveway E

Counted By: PMTS Weather: Cool

09:45 PM

Total

HNTB Project #: 38435-PL-004

Groups Printed- Unshifted Elliott Road Driveway E Elliott Road Eastbound Northbound Southbound Westbound Int. Left Peds Left Peds Right Thru Thru Peds Thru Left Peds Right Right Start Time Right Thru Left Total 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 Factor 1.0 ō 06:00 PM 06:15 PM 06:30 PM O 06:45 PM Total 07:00 PM 07:15 PM Ω 07:30 PM Ö 07:45 PM ō ō Total 08:00 PM 08:15 PM 08:30 PM 08:45 PM Total 09:00 PM 09:15 PM 09:30 PM

Grand Total 0.0 0.0 0.0 100.0 0.0 10.3 89.7 0.0 0.0 71.0 3.3 Apprch % 0.0 89.9 10.1 0.0 25.7 0.0 0.0 0.0 0.1 0.0 0.0 4.8 41.7 0.0 2.9 0.0 8.0 0.4 37.9 4.2 0.0 Total %

343 East Six Forks Road, Suite 200 Raleigh, NC 27609 Architects, Engineers, Planners

(132)

File Name: eldresat Site Code: 00000002 Start Date: 2/28/04

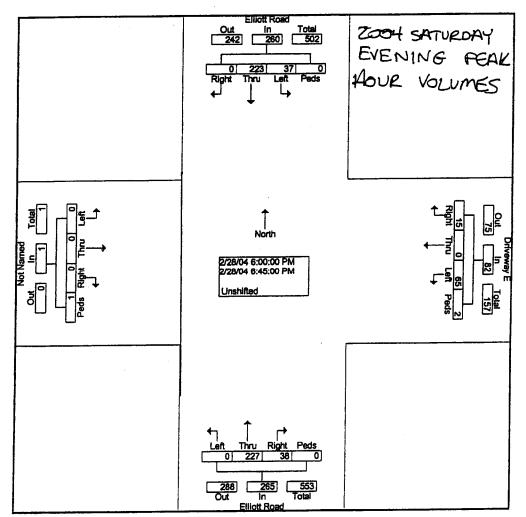
Page No : 3

Intersection: Elliott Rd & Driveway E

Counted By: PMTS Weather: Cool

HNTB Project #: 38435-PL-004

			liott R					rivewa estbo	•	·········			liott Re				E	astbou	ınd		
Start Time	Rig ht	Thr	Left	Ped	App. Total	Rig ht	Thr	Left	Ped s	App. Total	Rig ht	Thr	Left	Ped s	App. Total	Rig ht	Thr U	Left	Ped s	App. Total	int. Total
Peak Hour f	Peak Hour From 06:00 PM to 09:45 PM -						f 1				·										
Intersecti on	06:00	PM																		ļ	
Volume	0	223	37	0	260	15	0	65 70	2	82	38 14.	227 85.	0	0	265	0	0	0	1 100	1	608
Percent	0.0	85. 8	14. 2	0.0		18. 3	0.0	79. 3	2.4		3	7	0.0	0.0		0.0	0.0	0.0	.0	ł	
06:15	0	54	11	0	65	6	0	15	2	23	13	60	0	0	73	0	0	0	0	0	161
Volume Peak																				ŀ	0.944
Factor High Int.	06:45	DM.				06:00	PM				06:15	РМ				06:45	PM			}	
Volume	00.40	59	11	0	70	4	0	19	ο,	23	13	60	0	0	73	۰ ا	0	0	1	0.25	
Peak Factor				(0.92	}				0.89				į	0.90 8	1				0.25	



HNTB North Carolina, PC 343 East Six Forks Road, Suite 200 (133)

Raleigh, NC 27609 Architects, Engineers, Planners

File Name : eldrfsat Site Code : 00000001 Start Date : 2/28/04

Page No : 1

Counted By: PMTS
Weather: Cool
HNTB Project #: 38435-PL-004

Intersection: Elliott Rd & Driveway F

Groups Printed- Unshifted

	,						1	Groups	Printed	- Unsnii								
			Elliott	Road			Drive	way F			Elliott	Road		Firs	t Citizen		way	
			South				West				North	ound _			Eastb	ound		
			30001						5 4	D:-b4	Thru	Left	Peds	Right	Thru	Left	Peds	int.
•	Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right								Total
ì	Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	407
	06:00 PM	5	52	32	0	22	0	16	2	17	40	2	0	1	1	<u>′</u>	0	197
	06:15 PM	6	40	25	0	44	0	22	0	16	38	3	0	2	0	(2	205
	06:30 PM	Õ	51	34	0	26	0	10	1	20	35	3	0	1	1	2	0	184
	06:45 PM	5	46	25	0	29	0	20	0	15_	42	2	0	1	0		0	187
	Total	16	189	116	0	121	0	68	3	68	155	10	0	5	2	18	2	773
	, 0					'								_	_	_		405
•	07:00 PM	6	45	17	0	32	0	10	1	14	47	1	0	6	0	6	0	185
	07:15 PM	4	44	28	0	30	0	9	0	7	41	1	0	4	0	3	1	172 137
•	07:30 PM	3	31	16	0	23	0	6	2	10	40	2	0	2	0	2	. 0	
	07:45 PM	2	33	10	0	21	0	10	0_	9	38	0	0	3_	0	3_	0	129 623
)	Total	15	153	71	0	106	0	35	3	40	166	4	0	15	0	14	1	623
													- 1		•	2	21	126
•	08:00 PM	2	29	11	0	19	0	9	0	8	42	1	0	1	0	2 2	2	126
	08:15 PM	1	36	12	0	27	0	11	0	3	34	0	0	Ü	0	4	6	105
!	08:30 PM	2	34	10	0	13	0	8	0	6	31	0	0	0	-	1	6	80
	08:45 PM	1	15	9	0	17	0	6	0	1_	28	0	0	2	0	- 6	2	437
	Total	6	114	42	0	76	0	34	0	18	135	1	0	3	U	0	2	431
									- 1			_	0.1	2	0	2	0	67
	09:00 PM	0	16	6	0	11	0	4	0	4	20	2	0	0	Ö	4	0	71
	09:15 PM	1	18	9	0	6	0	4	1	0	30	1	0	0	Ö	5	ö	71
	09:30 PM	7	15	1	0	4	0	7	0	4	28	0	. 0	0	0	2	ő	47
	09:45 PM	2	15	2	0	3_	<u> </u>	2	0	55_	16	<u>0</u> 3	0	2	0	10	öl	256
•	Total	10	64	18	0	24	0	17	1	13	94	3	١٥	2	U	10	O I	250
							_		- i	400	EE0	18	0	25	2	48	5	2089
	Grand Total	47	520	247	0	327	0	154	7	139	550		0.0	31.3	2.5	60.0	6.3	2000
	Apprch %	5.8	63.9	30.3	0.0	67.0	0.0	31.6	1.4	19.7	77.8	2.5		1.2	0.1	2.3	0.2	
	Total %	2.2	24.9	11.8	0.0	15.7	0.0	7.4	0.3	6.7	26.3	0.9	0.0	1.2	U. 1	د.ي	0.2	

343 East Six Forks Road, Suite 200 Raleigh, NC 27609

Raieigh, NC 27609 Architects, Engineers, Planners 134)

File Name : eldrfsat Site Code : 00000001 Start Date : 2/28/04

Page No : 3

Intersection: Elliott Rd & Driveway F

Counted By: PMTS

Weather: Cool

HNTB Project #: 38435-PL-004

