DOLAN&DEAN
CONSULTING ENGINEERS, LLC

181 WEST HIGH STREET
SOMERVILLE, NJ 08876

908 927 0100 p
908 927 0181 f

TRAFFIC AND PARKING STUDY

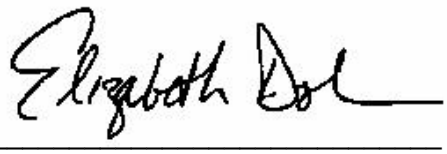
FOR

COURTHOUSE SQUARE

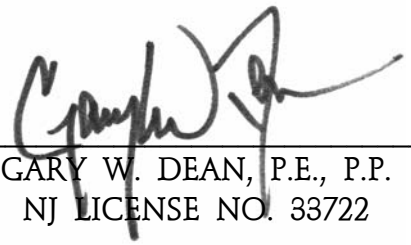
FLEMINGTON CENTER URBAN RENEWAL, LLC

BLOCK 22, LOTS 4 – 7, 12 – 14
BLOCK 24, LOTS 1-3, 5 & 24
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

AUGUST 9, 2018



ELIZABETH DOLAN, P.E.
NJ LICENSE NO. 37071



GARY W. DEAN, P.E., P.P.
NJ LICENSE NO. 33722

EC/GWD/lrc
Hunterdon\Flemington\SpartanCourthouseSquare\Documents\2017-07-25 TIA.doc

INTRODUCTION

A redevelopment site plan application is being presented to Flemington Borough for rehabilitation of the Union Hotel as part of a mixed-used development, located at Block 22, Lots 4 – 7, 12 – 14 and Block 24, Lots 1 - 3, 5, 24 on Main Street, Bloomfield Avenue, Spring Street and Chorister Place. The parcels are an assemblage of properties currently developed with multiple uses including Flemington Furs, the Borough Police lot and the closed Union Hotel, among other commercial, retail and office uses.

This summary of findings has been prepared to assess the traffic and parking impacts associated with the redevelopment. Dolan & Dean Consulting Engineers, LLC (D&D) has been retained by the applicant to conduct this study to evaluate the adequacy of the roadway system to accommodate the new site traffic and the sufficiency of the proposed parking.

The development proposal includes a center courtyard/retail plaza that will connect Spring Street with Main Street and provide access to the numerous site components that include:

- A rehabilitation of portions of the Union Hotel that would provide 100 lodging rooms along with lobby and meeting space.
- Retail and service components.
- Upper-floor, residential dwelling units.
- Medical Office Space
- Educational Classrooms
- A multi-level parking facility.

Across from the primary redevelopment on a separate parcel located on the south side of Spring Street, the application includes the development of a 3-story commercial structure, intended to be used for ground floor, medical office with the upper stories proposed for secondary education for either college curriculum or supplemental vocational training. The proposed uses are designed to surround the multi-level parking facility that would provide 760 on-site parking spaces. Consistent with the "downtown" design element, on-street

parking will also be provided along Bloomfield Avenue, Spring Street, Chorister Place and the existing parking along Main Street will be retained.

While this traffic study evaluates the new traffic associated with the proposed redevelopment, this analysis can be considered extremely conservative in that no traffic credits will be taken for any existing traffic that is currently generated by site uses that will be absorbed into or eliminated with the redevelopment proposal. Retailers such as Flemington Furs as well as the other Main Street shops and restaurants that are displaced through the redevelopment proposal will have space within the new redevelopment, thus resulting a "net neutral" traffic impact to a certain degree.

Based on the most recent architectural building plans by Minno & Wasko, this traffic impact study includes an analysis of the following components and sizes.

- 222 residential dwelling units – allocated among 111 (50%) 1-bedroom/studio units, 108 (49%) 2-bedroom/duplex units and 3 (1%)-3-bedroom units.
- 100-room Union Hotel.
- 29,170 square feet of retail/restaurant/commercial space.
- 15,000 square feet of medical office space.
- 30,000 square feet of education space that could accommodate an enrollment of up to 300 students.

The mixed-use nature of the project will allow for shared parking, which will be described in further detail within this report. Through a combination of the on-site spaces within the garage combined with available off-site, off-street spaces in neighboring existing parking lots, sufficient parking can be provided for the Courthouse Square project. The project will not rely on on-street parking to accommodate the expected demands, although it is recognized that the availability of such parking will further enhance the accessibility of the new project.

EXISTING CONDITIONS

The redevelopment site currently contains the Union Hotel, which is a four-story building. The first floor had been used as a restaurant with the upper floors previously used as lodging rooms. An antique store is located next to the Union Hotel. Further west is the T.C.M. building at 80-82 Main Street and further west is a three-story building that among others contains the Flemington Police Department.

The main site has frontage along Main Street, and is served via two alleys, one on either side of the Union Hotel building. The alleys provide access to a parking area to the rear of the building as does Chorister Place.

EXISTING ROADWAY CONDITIONS

The Courthouse Square redevelopment site is situated in the block formed by Main Street to the west, Spring Street to the east, Bloomfield Avenue to the north, and Chorister Place to the south. The site location is shown on appended Figure 1. This figure also shows the various parking lots, and on-street parking, proximate to the subject property. Throughout the area, two-hour parking is permitted, from 9:00 a.m. to 6:00 p.m., except Sundays and holidays.

Main Street has a general north-south orientation. Along the site frontage, Main Street provides one lane for each direction of travel. Main Street also allows on-street parking in the site vicinity.

Spring Street has a north-south orientation, accommodating two-way traffic flow. Parallel parking is provided on both sides of the street.

Bloomfield Avenue has an east-west orientation, provided one-way traffic in the eastbound direction. Parking is permitted on the southerly side of the roadway only.

Chorister Place provides two-way traffic flow, up to the mid-point of the block when it is restricted to any eastbound direction. Parking is permitted on the north side of the roadway only.

EXISTING TRAFFIC VOLUMES

To provide a comprehensive impact analysis of the projected increases associated with the redevelopment, peak hour traffic volume counts were conducted on the roadways surrounding the redevelopment site. This traffic data serves as a basis of evaluating "existing" conditions and is used to first quantify the nearby traffic activity. This data is then used to assess whether there are any existing capacity constraints or deficient operating conditions near the site.

Based on observations made during the peak hour traffic counts, no traffic operational constraints were identified and traffic flows freely in the immediately site vicinity, particularly given the one-way direction of Bloomfield Avenue and the limited use of Chorister Place. The surrounding streets operate free from congestion during existing conditions, with no major constraints or deficient operating levels of service identified.

Appended Figures 2 and 3 show the existing peak hour traffic conditions in the immediate site vicinity. The date and duration of the traffic counts is summarized below:

- Main Street and Chorister Place

  Tuesday, June 13, 2017 from 7:00 - 9:00 a.m. and from 4:00 - 6:30 p.m.

- Chorister Place and Spring Street

  Thursday, June 8, 2017 from 7:00 – 9:00 a.m. and from 4:00 - 6:30 p.m.

- Bloomfield Avenue and Main Street

  Thursday, June 8, 2017 from 7:00 – 9:00 a.m. and from 4:00 - 6:30 p.m.

- Bloomfield Avenue and Spring Street

  Wednesday, June 7, 2017 from 4:00 - 6:30 p.m.
  Thursday, June 8, 2017 from 7:00 – 9:00 a.m.

As noted from the figures, traffic along Main Street is approximately 700 vehicles in both directions during the morning peak hours with slightly higher traffic of approximately 950 observed in the evening peak hours.

By contrast, traffic along Bloomfield Avenue and Spring Street was significantly lower with only fewer than 50 vehicles traveling on Spring Street and 75 vehicles along Bloomfield Avenue. Other than Main Street, traffic on the surrounding roads can be considered minimal from a traffic engineering perspective.

ANALYSIS OF EXISTING TRAFFIC OPERATIONS

A volume/capacity level of service analysis was completed in accordance with the practices recommended by the Transportation Research Board in the Highway Capacity Manual. For peak hour conditions, these analyses are performed to evaluate the typical delays at intersections by motorists waiting to turn from or onto intersecting streets. Levels of service are based on the average peak hour delay and are rated on a scale from Level of Service "A" (which is indicative of short delays of 5 seconds or less), to Level of Service "F" conditions, which are delays exceeding 50 seconds. These analyses are most often conducted for peak traffic conditions when the roadway system usually experiences its maximum demand. If problematic conditions are found under existing conditions – prior to development - the analyses are further used to identify specific operational constraints, that can assist in developing improvement options.

Because of the unique roadway patterns surrounding the redevelopment site, there are no direct turns from the street surrounding the site onto Main Street. Essentially Spring Street acts as a parallel frontage street to Main Street with movements accommodated travelling from Main Street onto the intersecting side streets.

Appended Figure 4 shows the existing levels of service during the peak a.m. and p.m. hours. As confirmed through the observations, all movements operate very efficiently at Levels of Service "B" or better to or from Main Street as well as the intersecting side streets. There were no delays of long duration and traffic flows freely during both the morning and afternoon hours.

TRAFFIC CHARACTERISTICS OF THE PROPOSED REDEVELOPMENT

TRIP GENERATION

To identify the projected traffic activity arising from the redevelopment, a detailed trip generation calculation was performed using industry standard data compiled by the Institute of Transportation Engineers (ITE) in the 9th Edition of Trip Generation, 2012. Table I summarizes the individual component trip generation for each of the proposed uses based on ITE data.

TABLE I
PROJECTED TRAFFIC GENERATION

Land Use	Morning Peak Hour		Evening Peak Hour	
	Enter	Exit	Enter	Exit
222 Residential Units	24	54	56	40
300 Student College/Educational	94	26	69	147
15,000 SF Medical Office	28	8	15	39
100 Room Hotel	31	22	31	30
29,170 SF Retail/Commercial Use	19	12	135	146

For a mixed-use site, it is expected that there will internal synergy among the components with some of the traffic remaining on-site, or at least linked between uses. For example, at the end of a business day, some office employees or students may remain on-site and visit a restaurant or the other retail uses before leaving after the peak hour. Inbound site residents may stop at the commercial uses as they arrive home. Each of these "internal" trips must be considered to evaluate the actual, net traffic impacts on the roads surrounding the site.

Therefore, once the gross trip generation associated with each site component is calculated, internal, "linked" volumes that would travel among the uses and remain on-site were then determined using the ITE methodology for a multi-use development for the morning and evening peak hour. The calculations resulted in a 14% internal credit for the morning peak hour, and a 29% internal credit for the evening peak hour.

The resultant external trips that would be used for analysis purposes at each site access are summarized below.

TABLE II
EXTERNAL TRIPS
PROPOSED REDEVELOPMENT

Land Use	Morning Peak Hour		Evening Peak Hour	
	Enter	Exit	Enter	Exit
222 Residential Units	25	54	32	27
300 Student College	78	20	56	121
15,000 SF Medical Office	34	8	23	52
100 Room Hotel	31	17	25	24
29,170 SF Retail/Commercial Use	9	4	107	112
TOTAL	177	103	243	336

In addition to the internal trips that are inherent within a mixed-use site, certain other site visits will be made as a matter of convenience by ambient traffic that will find the site to be a convenient stop en route to another, primary-purpose trip (e.g., a commuting or other errand-type trip). This type of traffic movement would simply be diverted from (primarily) Main Street and would exist irrespective of the site redevelopment.

Pass-by trips were calculated by applying 34% to only the external retail volumes, during the evening peak hours. Table III shows the new and pass-by trips, associated with the combined redevelopment components.

TABLE III
PASS-BY TRIPS
PROPOSED REDEVELOPMENT

	Evening Peak Hour		
	Enter	Exit	Total
Pass-by	37	37	74
New	201	295	496
TOTAL	238	332	570

Site generated traffic was then distributed according to an estimate following the projected market area for retail trips and a review of the existing traffic patterns. Again, all future site traffic projections are assumed to be "new" and do not take into consideration any existing site traffic that will be either eliminated or included in the new plan.

FUTURE TRAFFIC CONDITIONS

FUTURE TRAFFIC VOLUMES

It is recognized that traffic routinely fluctuates along various state and county roadways, as well as local streets, and varies not only day-to-day, but also on a monthly and yearly basis. Because of both normal "background" traffic increases, (attributed to continued regional growth and changes in driver demographics), as well as new traffic generated by specific projects, traffic demands on the roadways in the vicinity of the site may increase over current demands (at least to some degree), even if no changes were to occur on the subject property, irrespective of the uses permitted.

For this scenario, a five-year development build-out horizon has been assumed, allowing for agency approvals and permitting, construction, occupancy and absorption. As such, existing traffic counts were expanded by the NJDOT estimated 2.0% annual background traffic growth rate for a five-year period to create a 2022 "no-build" traffic condition.

There are no other approved or pending major developments that would affect the AM or PM conditions in the immediate site vicinity. Any minor traffic increases arising from smaller development/redevelopment projects on is included in the background traffic growth rate. No deductions were taken for "existing" site traffic that will be eliminated as part of the redeployment effort. "No-build" traffic volumes were developed and are illustrated on Figures 7 and 8.

Site generated traffic was then added to these volumes to establish the 2022 "build" volumes, which are shown on Figures 9 and 10.

FUTURE "BUILD" TRAFFIC ANALYSIS

A volume/capacity Level of Service analysis was conducted for the future site driveways and adjacent intersections to evaluate whether safe and efficient access can be provided. It is

important to note that all site driveway movements will operate at Level of Service "C" or better during both peak hours analyzed, illustrating that sufficient capacity will be provided at these locations. Under the driveway design proposed, safe and efficient ingress and egress to the site can be provided.

As illustrated on Figure 12, very favorable Levels of Service will continue to be provided on the roads and intersections surrounding the Courthouse Square site.

It is therefore concluded that the proposed site redevelopment for residential apartments and other mixed, retail, service, commercial and education uses will not have a measurable or significant impact on adjacent street traffic along Main Street, Bloomfield Avenue or Spring Street. Site traffic will be able to safely and efficiently enter and the exit with minimal delays and impact on the surrounding area.

PARKING ANALYSIS

As part of this study, the parking demands for the Courthouse Square redevelopment proposal were analyzed based on the most recent (August 10, 2018) Architectural Drawings prepared by Minno & Wasko. The purpose of this analysis is to calculate the maximum parking demand that considers the nature of the individual uses and differing times of day for peak parking demand.

This analysis has been prepared to evaluate the sufficiency of the proposed structured parking garage that will provide 770 spaces. As previously noted, the redevelopment area also includes availability of a 60-space parking lot that while off-site, is located less than one block from the subject property and would be available for site visitors.

Appended to this report are two shared parking calculations that consider both the weekday "noon" peak hour as well as a later, evening peak when more residents have arrived home and the hotel would experience higher parking demands. The parking summaries first calculate the individual parking demands for each site component, which if considered separately would yield a "requirement" of 919 spaces.

However, in designing the parking supply for mixed-use centers, it is a well-established practice to consider time-of-day demand fluctuations for each component to develop a "shared" parking design. Shared parking demand recognizes that vacancies are created throughout the weekday (e.g., by residents who are away at work or departed hotel guests) that allow other uses (such as medical office staff or college students) to use the vacated spaces. In the evening, as retail, restaurant and residential demands increase, the parking spaces vacated by office staff or college students would be available.

When considering the time-of-day considerations, the maximum shared parking demand for the Courthouse Square project would be 683 spaces, which would occur during weekday noon hours. This parking demand would include peak demand by the hotel conference

facilities, the medical office use and the school – all assumed to operate at 100% parking demand. While there would be far fewer residents on site at the time, the redevelopment plan allocates one reserved parking space for each apartment resident at all times, thus that demand has been considered, specifically, which yields a 70% "occupancy." Realistically, this "demand" (allocation) would be significantly lower if parking spaces were not assigned to each tenant and readily available to other uses.

The overall shared parking demand of 683 spaces is less than the proposed parking supply of 770 spaces, which will yield a surplus parking "buffer" of 87 or more spaces at all times. With an additional 60 off-site spaces available, the project would operate with a 147-space (or more) parking surplus, which would allow for minor fluctuations in demand. Any possible use of on-street spaces would further reduce the on-site parking demand.

Based on these findings, the proposed parking is adequate for the proposed redevelopment based on the land use components envisioned at this time.

TECHNICAL APPENDIX

WEEKDAY NOONTIME
PARKING SUMMARY

Use	Size	Parking Ratio	Unadjusted Parking Requirements	Shared Parking Adjustment Requirement (Weekday Noon Peak)	
222 Apartments	111 - 2 bedroom	1.3/unit+	144		
	108 – 2 bedroom	1.5/unit+	162		
	3 – 3 bedroom	1.8/unit+	5		
Total Residential	222		311	71%	222 (reserved)
Residential Guest/Visitor		0.5/unit	111	20%	22+
Hotel/Conf	100 keys	1.25	125	100%	125
Retail/Service/ Commercial	29,170 SF	4/1,000 SF	117	50%*	59
Medical Office	15,000 SF	5/1,000 SF	75	100%	75
Subtotal Without College/School			739		503
College/School	300 Enrolled Students	1/2 students + faculty/staff	150 + 30 = 180	100%	180
				Shared Parking Total Demand	683
				Available Site Parking	770
				Surplus	+87
				Matt's/56 Main/Furs	+60
				Surplus	+147

*The remaining 50% "demand" would be walk-in from other components or surrounding business/court uses.

+Visitor/Guest Parking of 0.5 spaces/unit used during off-peak periods and excluded from this shared parking calculation. Limited weekday noon guest/visitors could be accommodated in reserved allocation.

This analysis does not rely on on-street parking to meet the projected demands. However, on-street parking exists and is readily available for public use and presumably will be used by guests/customers/visitors.

- At the redeveloper's request, 1 space per residential unit will be reserved for residential use. At this time, it is not expected that numbered or individual spaces will be used, but rather residents will have a guaranteed allocation either within separate floors of the parking structure or designated sections, specifically for residential use. This practice will ensure that any residents who are not part of typical commuting workforce or operate on modified work schedules, will have guaranteed access to an appropriately allocated reserve of parking. Weekday visitors and guests during midday hours, could have access to this reserved area.

- While typically hotel lodging guests have little if any parking demand during midday hours, a parking supply of 1.25 spaces per room will be available for midday conference/meeting room use.

- During peak weekday noontime parking demands, it is expected that for the retail/service/commercial component, 50% of the demands will be accommodated via walk-in traffic from the surrounding neighborhood, businesses, and county-related administrative and court buildings. Conservatively, it is expected that 50% of the parking demand during these periods will be "destination" specific that would include restaurant or retail shopping or other personal service appointment uses during the lunchtime period.

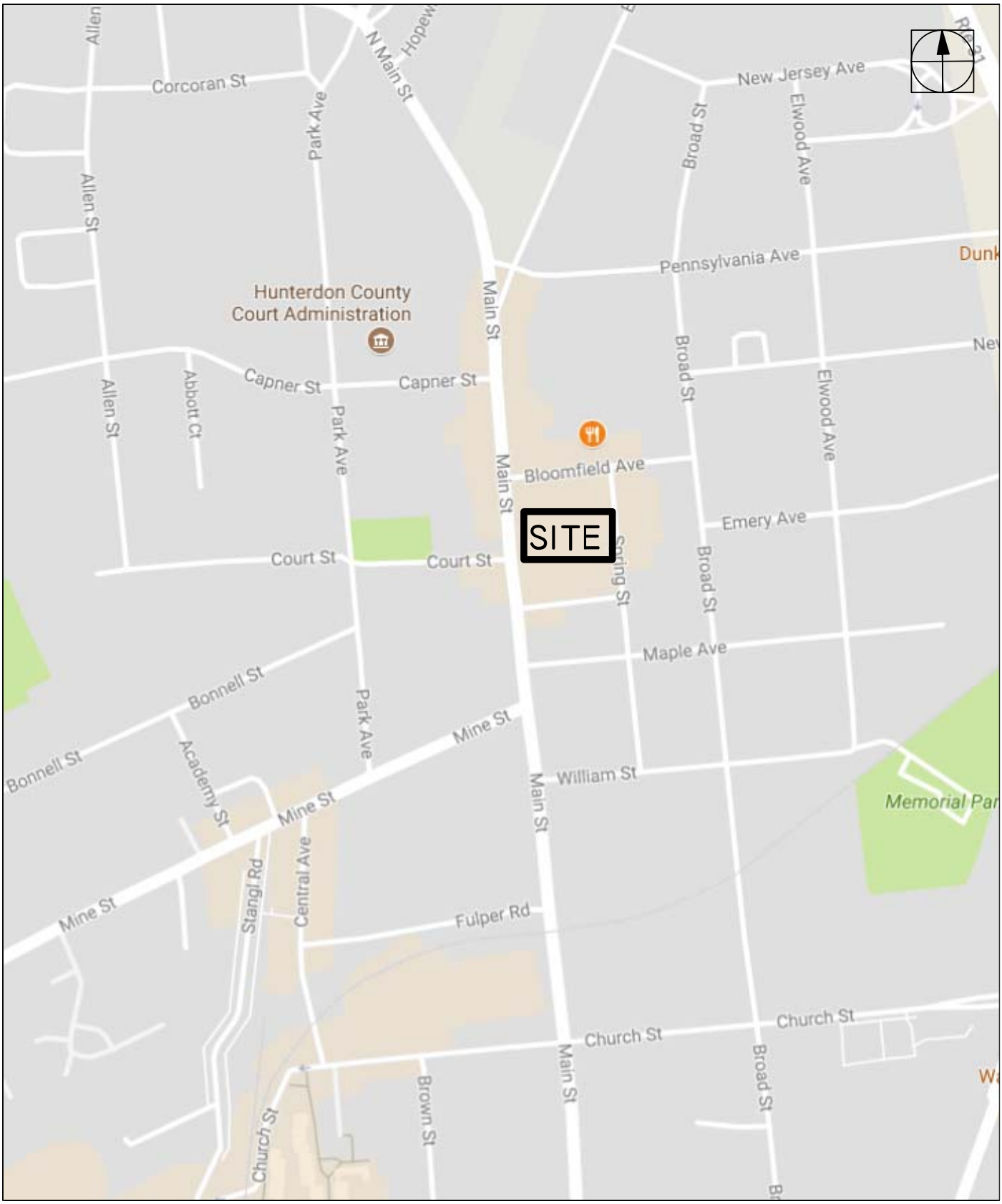
WEEKDAY P.M. PEAK (6:00 TO 7:00 P.M.)
PARKING SUMMARY

Use	Size	Parking Ratio	Unadjusted Parking Requirements	Shared Parking Adjustment Requirement (Weekday Noon Peak)	
222 Apartments	111 - 1 bedroom	1.3/unit+	144		
	108 – 2 bedroom	1.5/unit+	162		
	3 – 3 bedroom	1.8/unit+	5		
Total Residential	222		311	71%	222 (reserved)
Residential Guest/Visitor		0.5/unit	111	60%	67
Hotel/Conf	100 keys	1.25	125	75%	94
Retail/Service/ Commercial	29,170 SF	4/1,000 SF	117	100%	117
Medical Office	15,000 SF	5/1,000 SF	75	63%	47
Subtotal Without College/School			739		547
College/School	300 Enrolled Students	1/2 students + faculty/staff	150 + 30 = 180	70%	126
				Shared Parking Total Demand	673
				Available Site Parking	770
				Surplus	+97
				Matt's/56 Main/Furs	+40 (est)
				Surplus	+137

This analysis does not rely on on-street parking to meet the projected demands. However, on-street parking exists and is readily available for public use and presumably will be used by guests/customers/visitors.

- Peak parking demands follow hourly demand trends as summarized by the Institute of Transportation Engineers (ITE) in Parking Generation, 4th Edition.

- Residential visitors can be accommodated in the non-residential allocated portion of the parking structure.

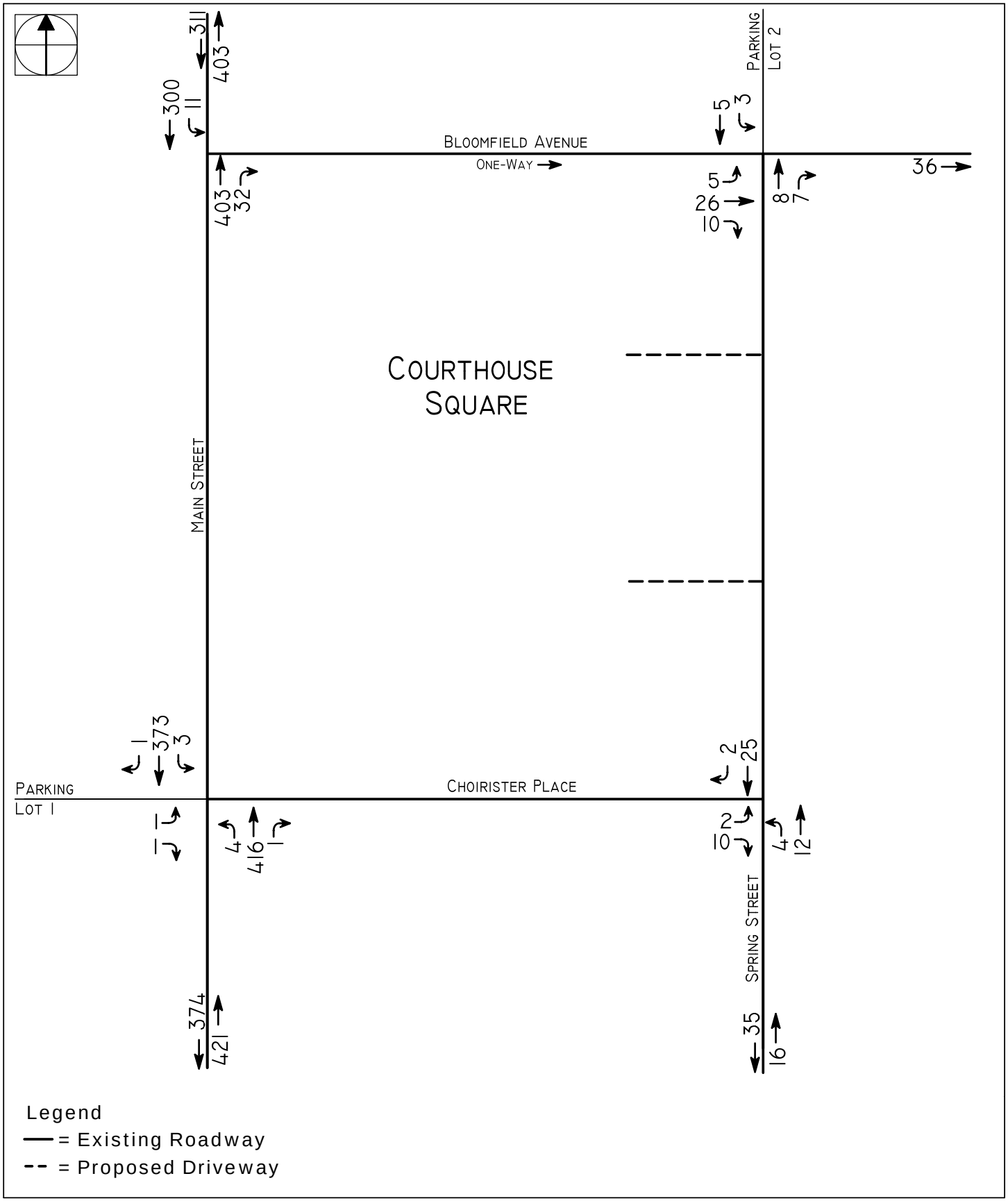


PROPOSED COURTHOUSE SQUARE
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

FIGURE 1

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

SITE LOCATION MAP

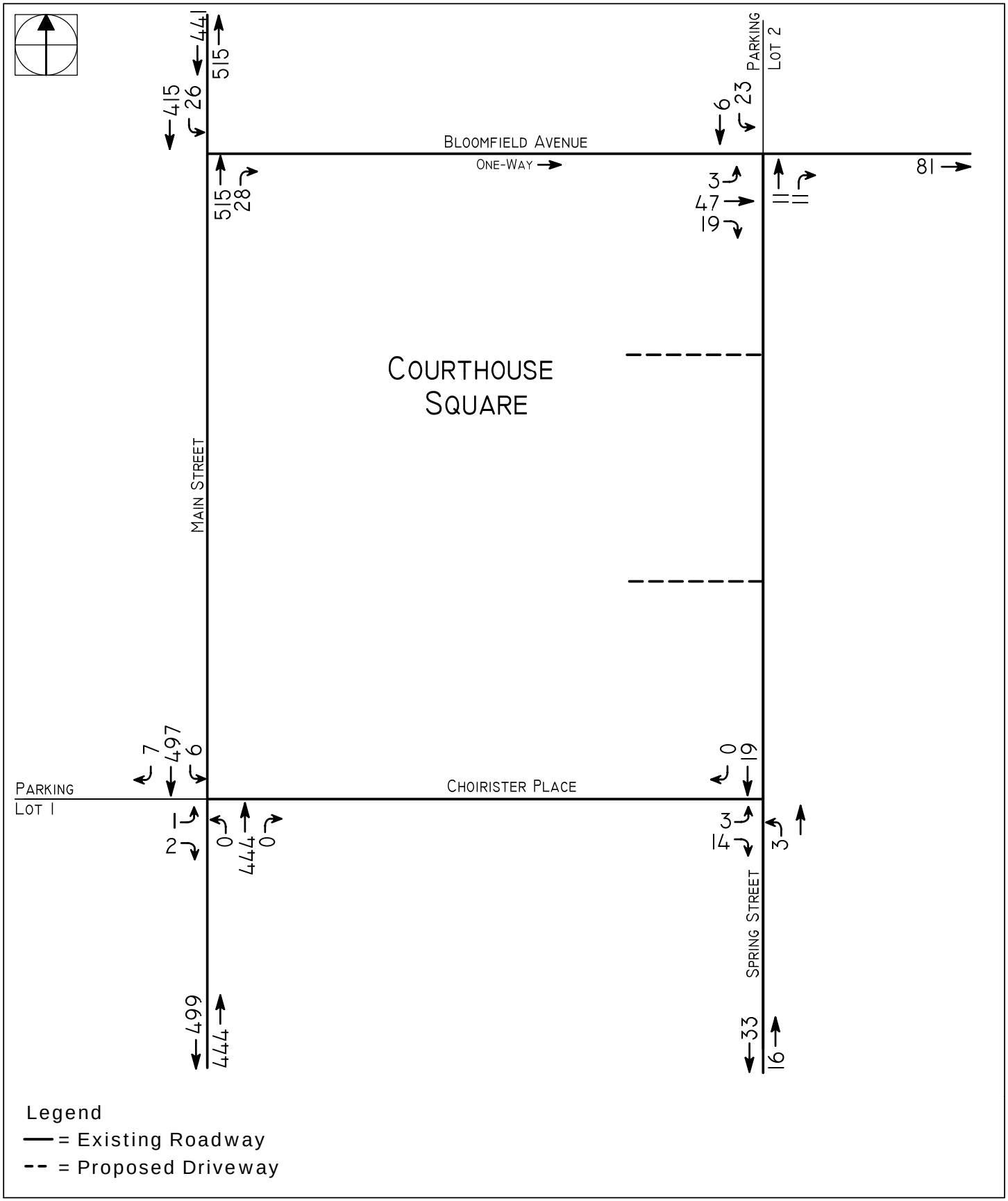


PROPOSED COURTHOUSE SQUARE
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

FIGURE 2

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

EXISTING TRAFFIC VOLUMES
MORNING PEAK HOUR

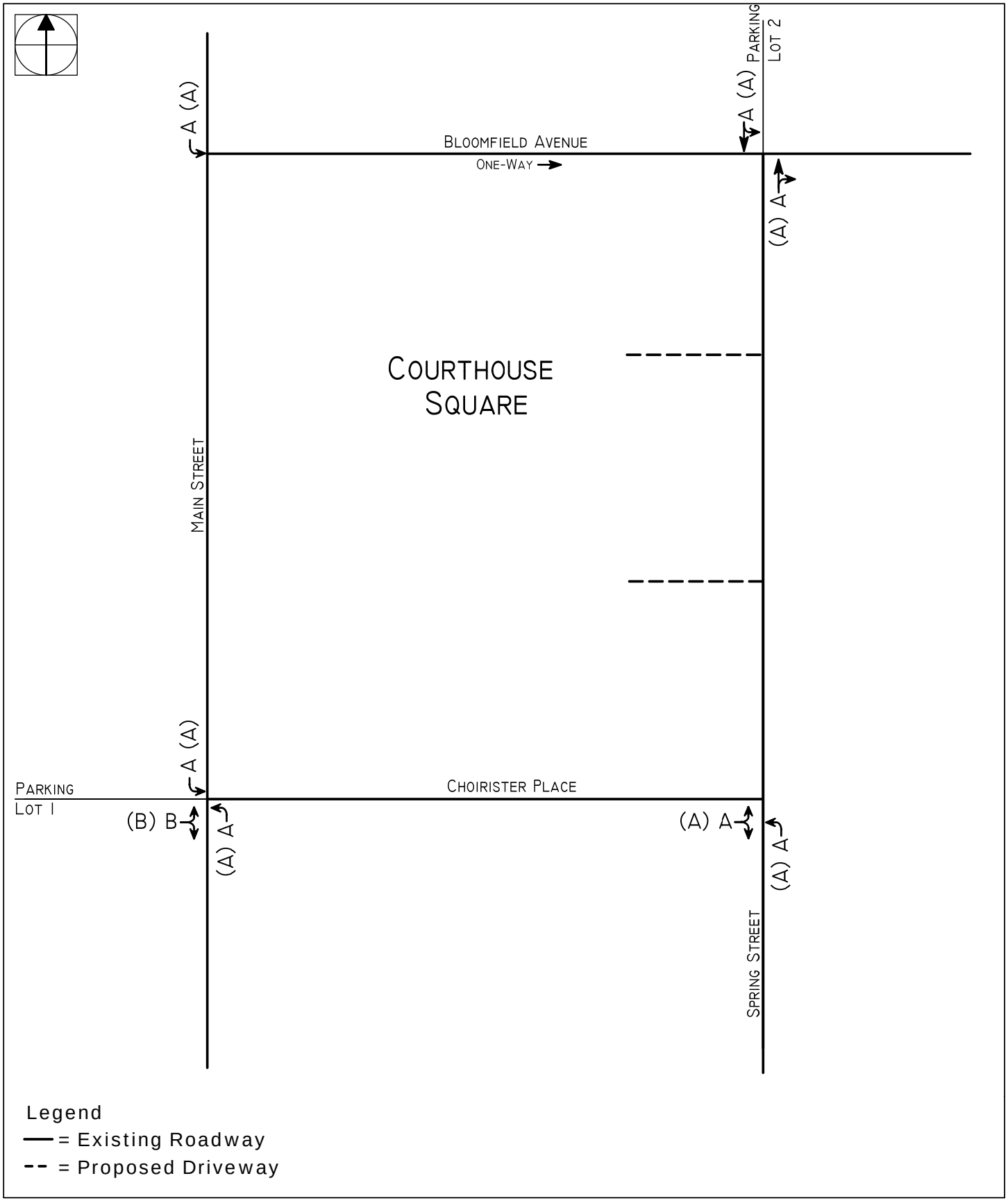


Proposed Courthouse Square
Borough of Flemington
Hunterdon County, New Jersey

Figure 3

Dolan & Dean
Consulting Engineers, LLC

Existing Traffic Volumes
Evening Peak Hour

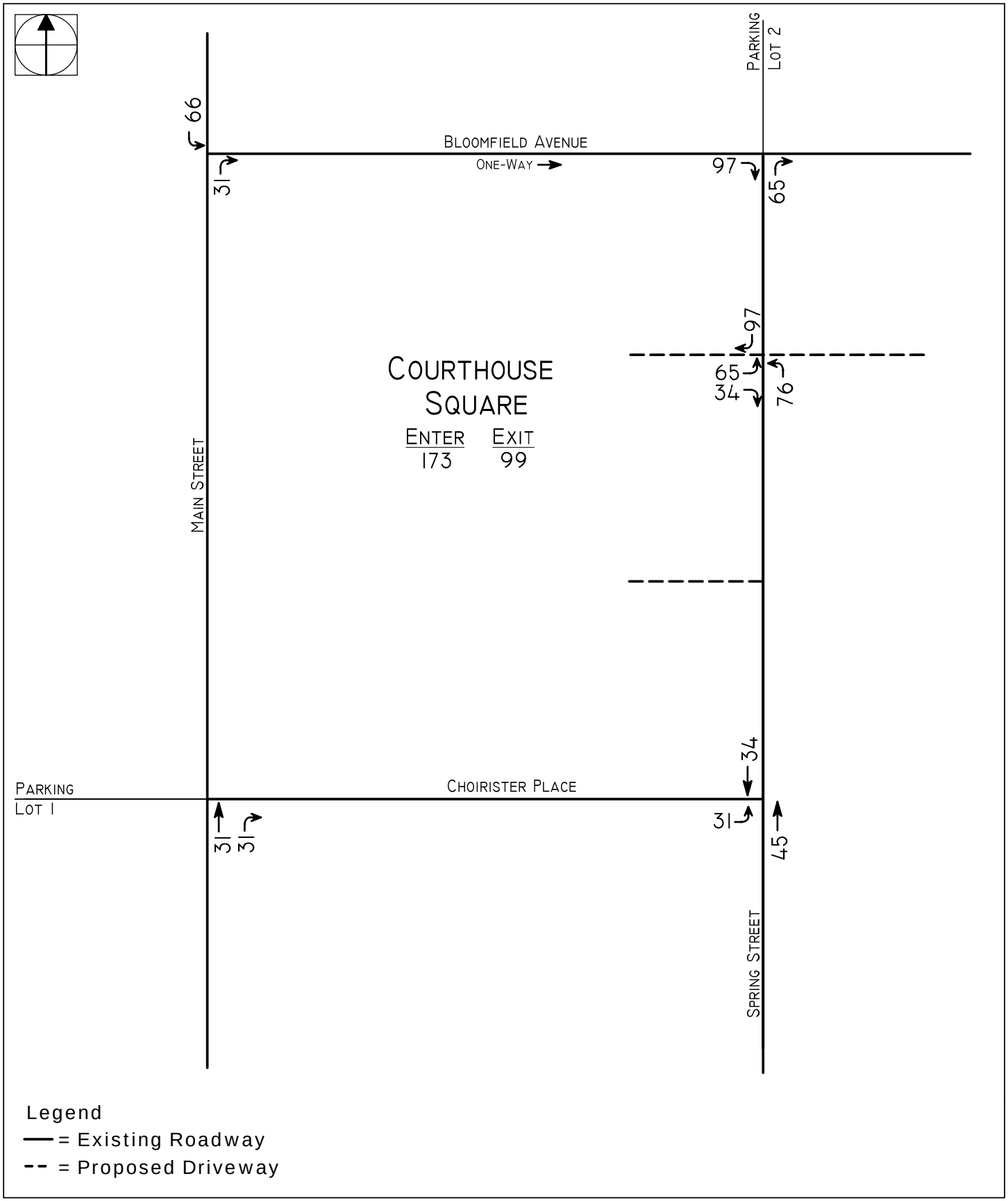


Proposed Courthouse Square
Borough of Flemington
Hunterdon County, New Jersey

Figure 4

Dolan & Dean
Consulting Engineers, LLC

Existing Levels of Service
Evening Peak Hour

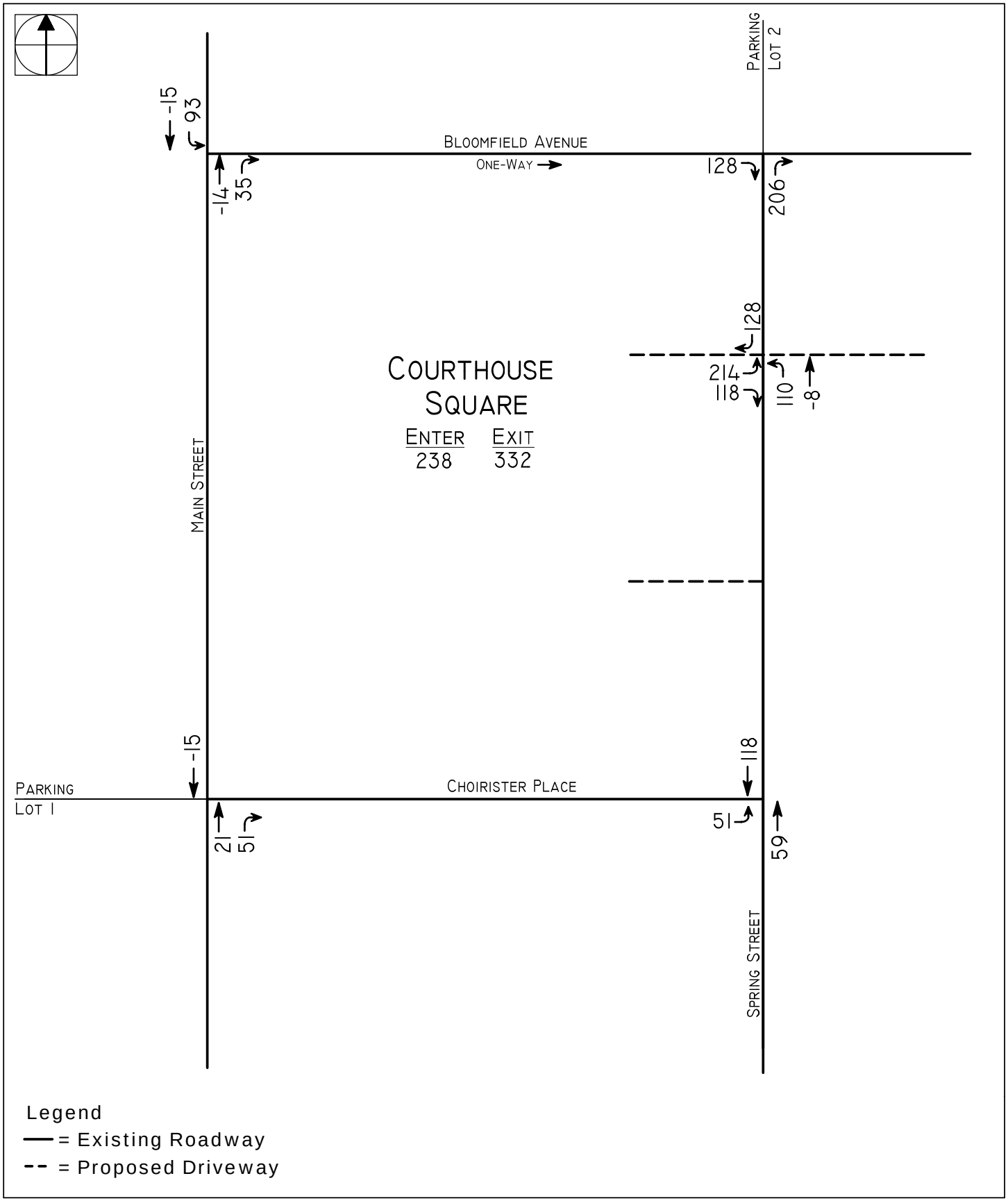


PROPOSED COURTHOUSE SQUARE
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

FIGURE 5

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

SITE GENERATED TRAFFIC VOLUMES
MORNING PEAK HOUR

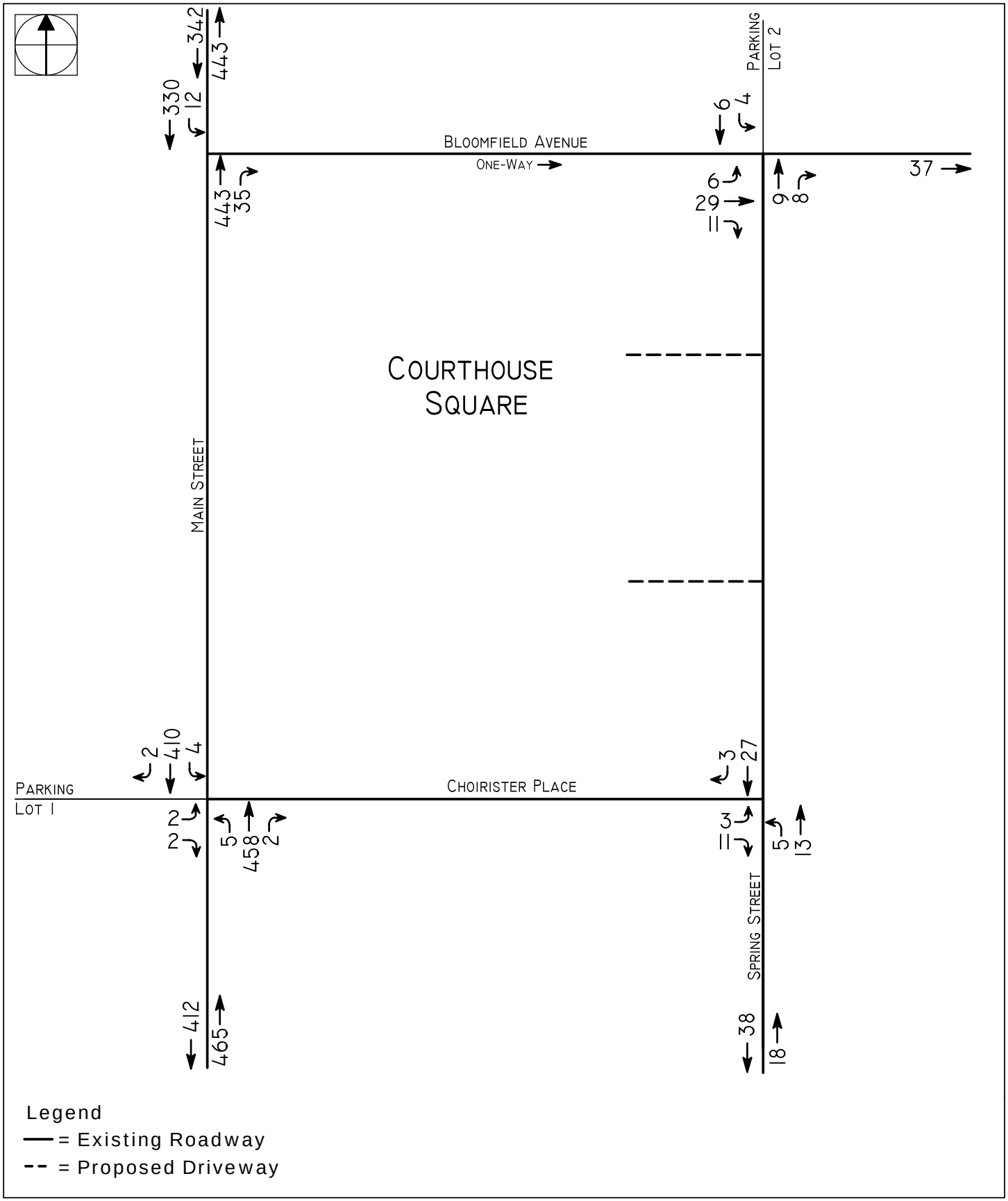


PROPOSED COURTHOUSE SQUARE
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

FIGURE 6

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

SITE GENERATED TRAFFIC VOLUMES
EVENING PEAK HOUR

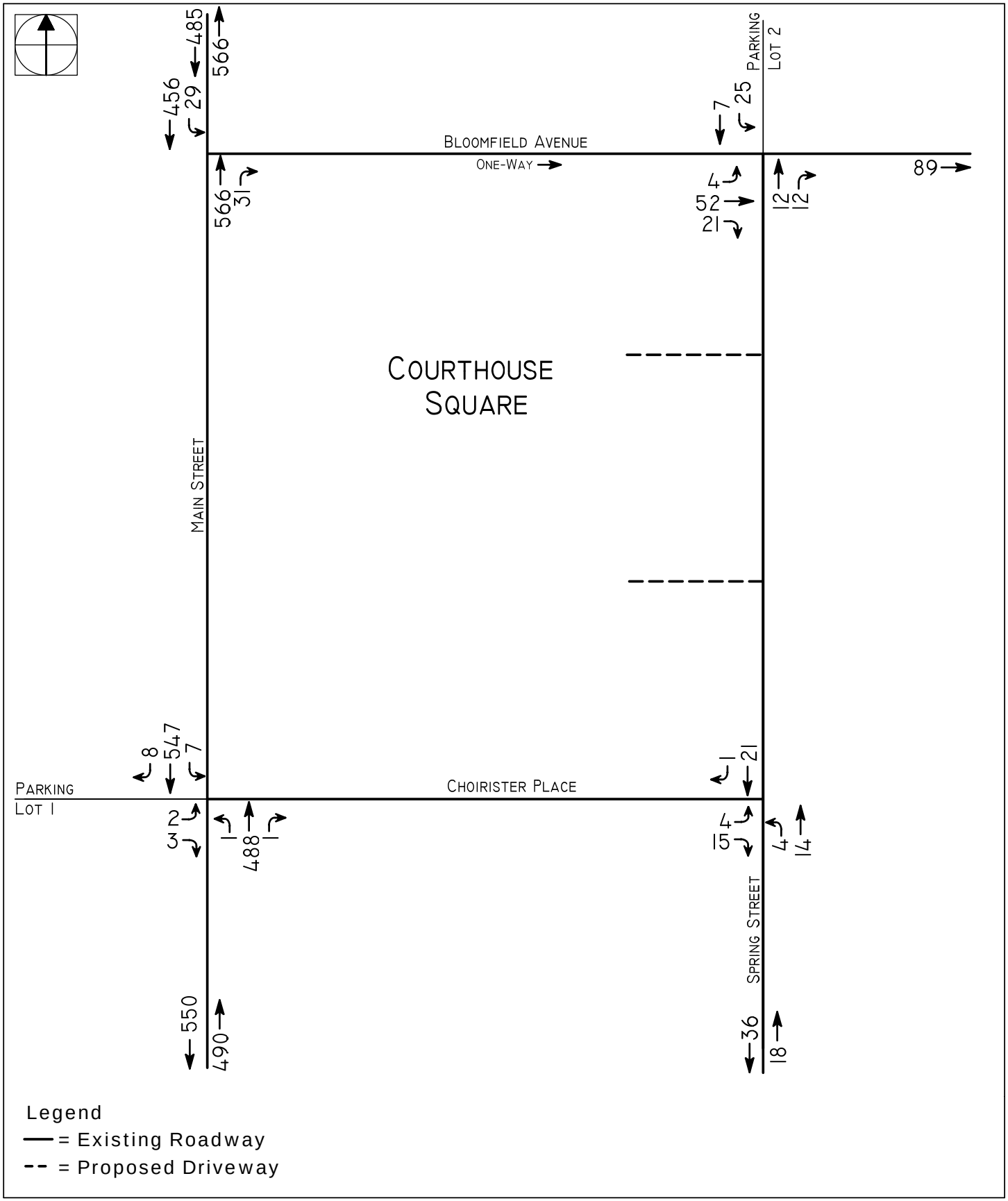


Proposed Courthouse Square
Borough of Flemington
Hunterdon County, New Jersey

Figure 7

Dolan & Dean
Consulting Engineers, LLC

No-Build Traffic Volumes
Morning Peak Hour

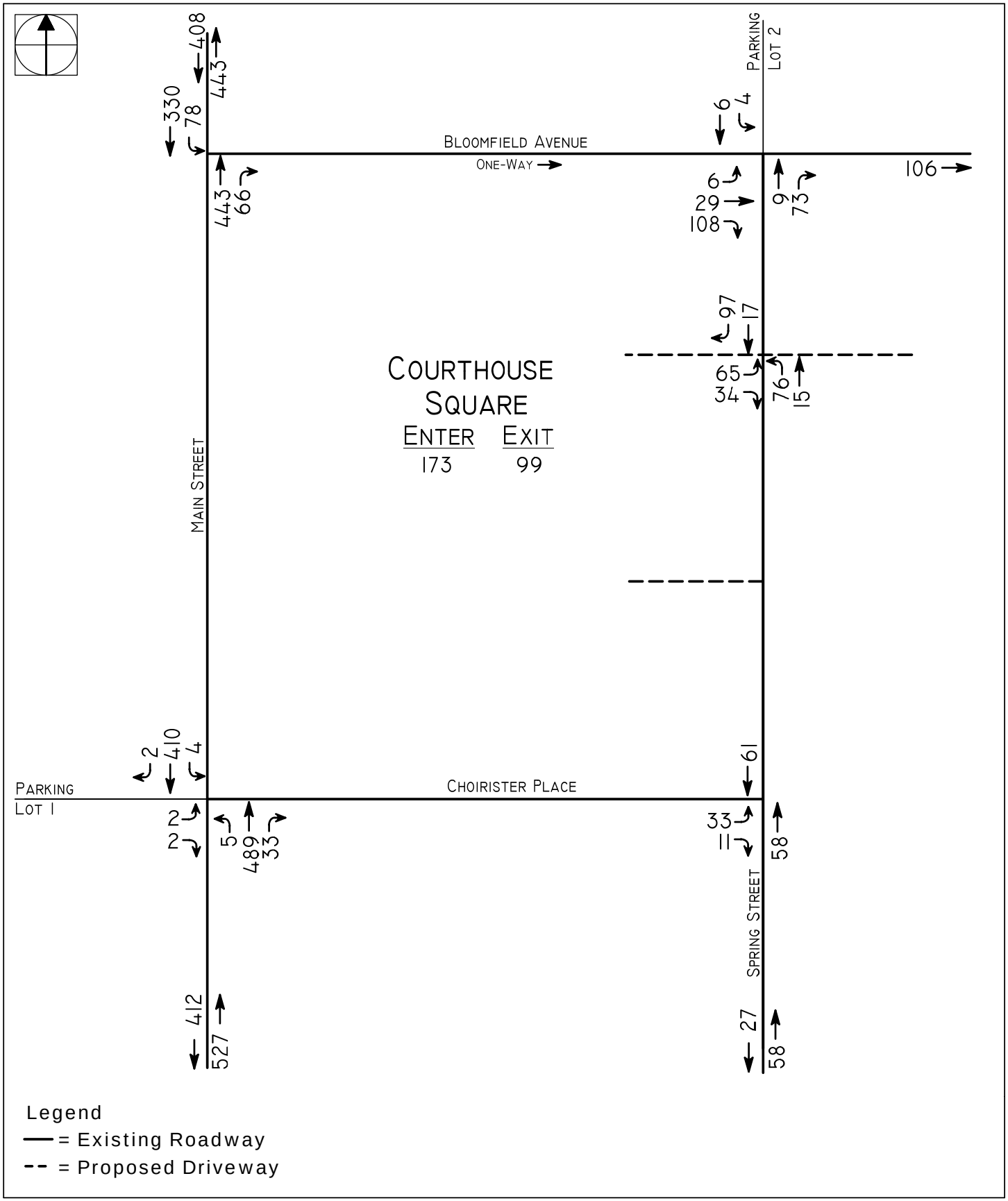


PROPOSED COURTHOUSE SQUARE
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

FIGURE 8

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

NO-BUILD TRAFFIC VOLUMES
EVENING PEAK HOUR

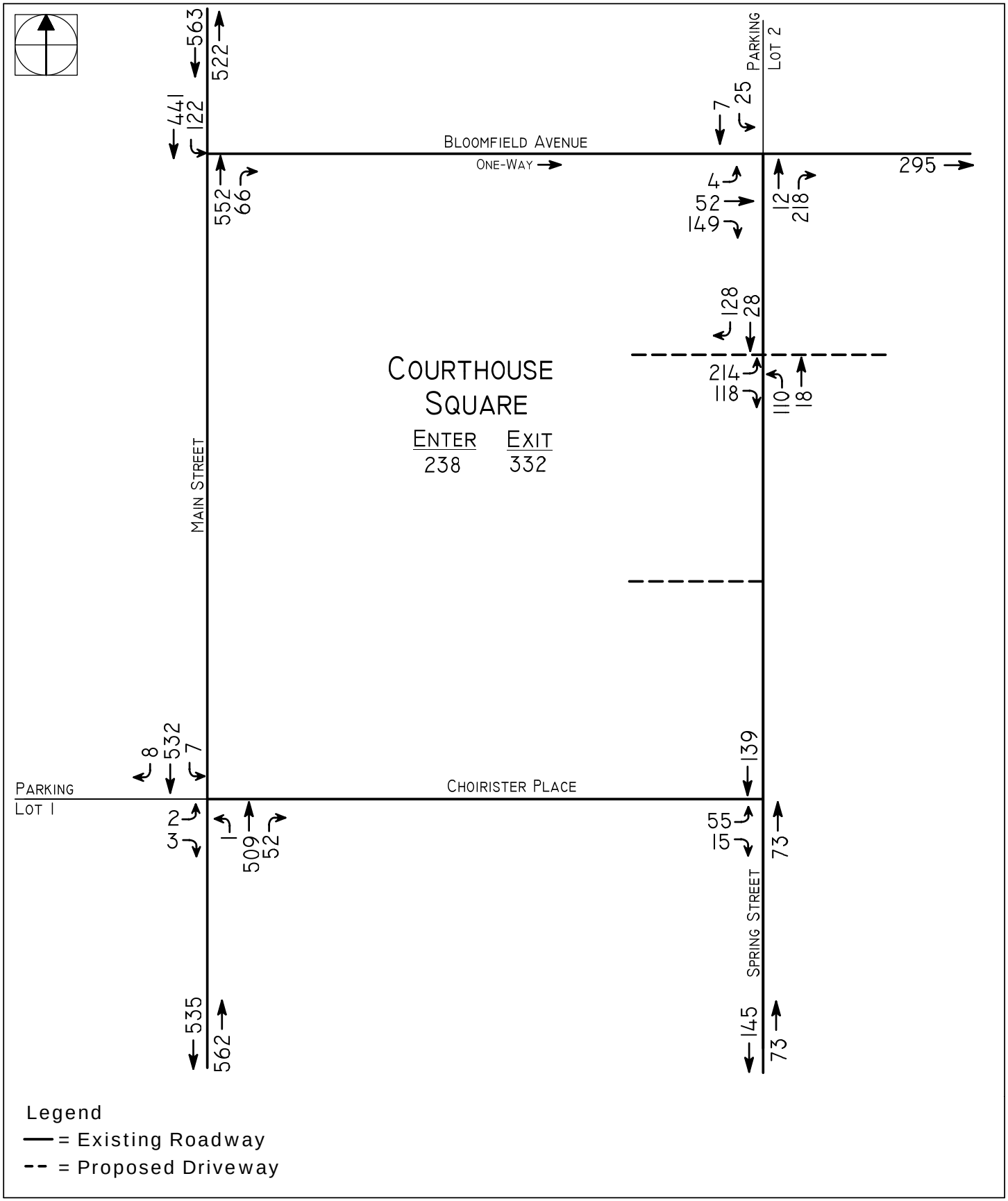


PROPOSED COURTHOUSE SQUARE
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

FIGURE 9

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BUILD TRAFFIC VOLUMES
MORNING PEAK HOUR

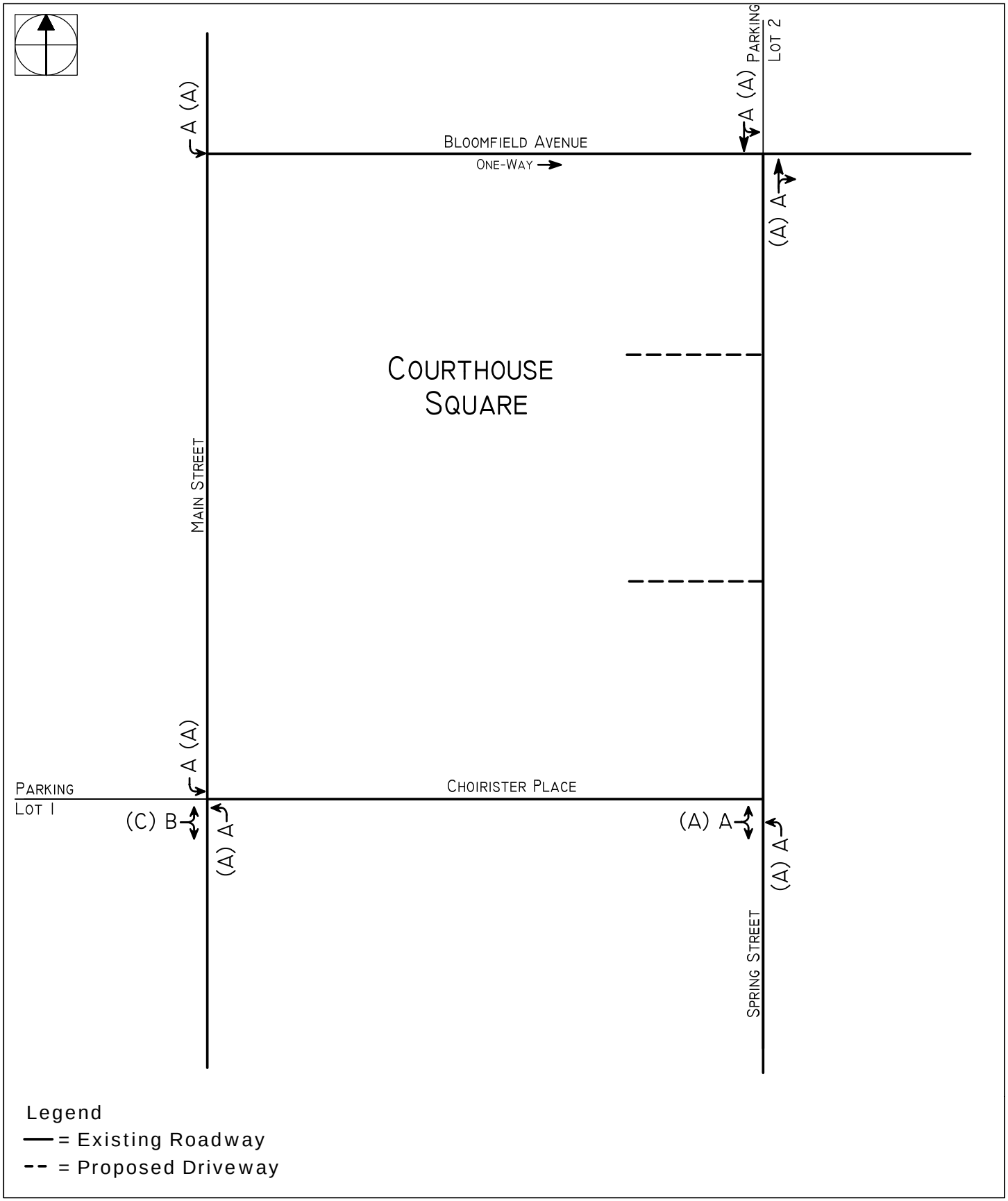


PROPOSED COURTHOUSE SQUARE
BOROUGH OF FLEMINGTON
HUNTERDON COUNTY, NEW JERSEY

FIGURE 10

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BUILD TRAFFIC VOLUMES
EVENING PEAK HOUR

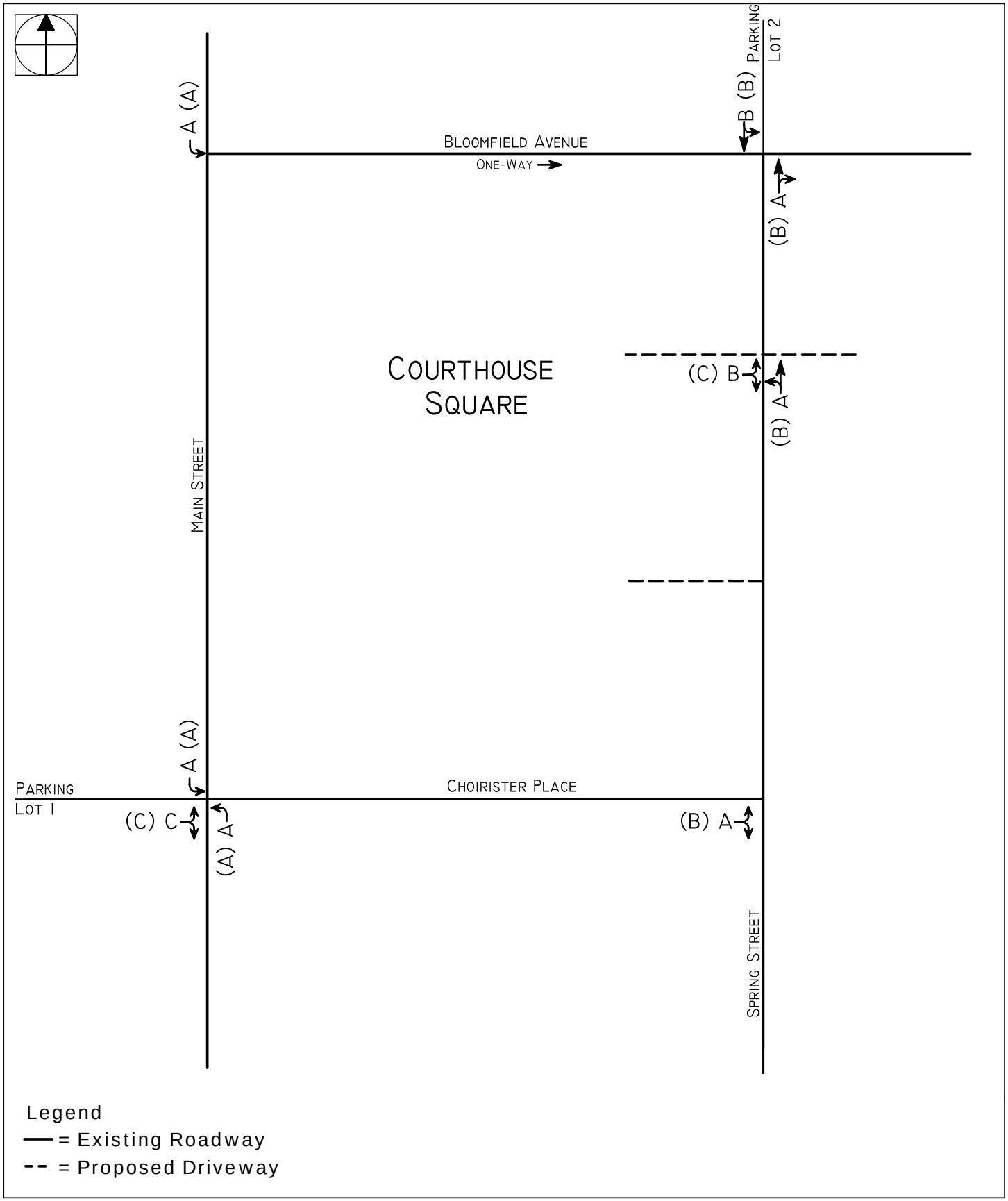


Proposed Courthouse Square
Borough of Flemington
Hunterdon County, New Jersey

Figure 11

Dolan & Dean Consulting Engineers, LLC

No-Build Levels of Service
Morning (Evening) Peak Hour



Proposed Courthouse Square
Borough of Flemington
Hunterdon County, New Jersey

Figure 12

Dolan & Dean Consulting Engineers, LLC

Build Levels of Service
Morning (Evening) Peak Hour

(5)

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

PROJECT #: _____ CLIENT: SPARTAN

INTERSECTION: BLOOMFIELD AVE & MAIN ST

MUNICIPALITY: FLEMINGTON

COUNT BY: K. DONATELLI DATE: 6/8/17

TIME from 7:00a to 9:00a & S M T W (T) F S (CIRCLE DAY)
4:00p – 6:30p

SKETCH SURVEY AREA (INCLUDE LANDMARKS)

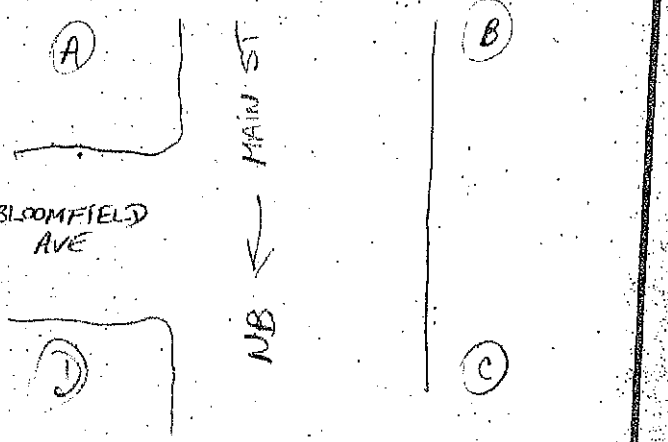
START TIME	CARS MOVEMENT NUMBER				TRUCKS				TOTAL
	1	2	3	4	1	2	3	4	
7:00	108	7	2	68	7	—	—	4	
7:15	131	9	2	68	3	—	—	2	
7:30	59	8	3	83	—	—	—	3	
7:45	90	6	4	69	5	2	—	3	
8:00	79	6	2	66	3	2	—	4	
8:15	77	7	8	82	2	—	—	—	
8:30	85	5	2	65	4	—	—	3	
8:45	98	9	2	60	4	—	—	2	
4:00	138	11	3	86	4	—	—	2	
4:15	102	7	4	89	4	—	—	1	
4:30	113	9	13	96	4	—	—	2	
4:45	127	4	3	98	—	—	—	3	
5:00	140	8	4	113	3	—	—	—	
5:15	128	7	6	102	—	—	—	1	
5:30	124	7	3	91	1	—	—	3	
5:45	140	8	5	79	—	—	—	—	
6:00	128	3	2	86	3	1	1	—	
6:15	134	8	5	85	3	—	—	1	

PEAK HOUR

(6) TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS
792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax



SKETCH SURVEY AREA (INCLUDE LANDMARKS)

PROJECT #: CLIENT: SPARTAN

INTERSECTION: BLOOMFIELD AVE & MAIN ST

MUNICIPALITY: FLEMINGTON

COUNT BY: K. DONATELLI DATE: 6/8/17

TIME from 7:00 a to 9:00 a & 4:00 p – 6:30 p

S M T W (T) F S (CIRCLE DAY)

PEDESTRIANS — MOVEMENT NUMBER

START TIME	A→B	B→A	B→C	C→B	C→D	D→C	D→A	A→D	TOTAL
7:00	3	3	—	—	3	—	3	6	
7:15	2	2	1	1	—	1	2	2	
7:30	2	—	2	—	—	—	—	—	
7:45	—	—	—	3	—	2	7	1	
8:00	1	1	2	—	1	—	1	4	
8:15	—	—	—	1	1	1	8	3	
8:30	—	—	1	—	—	5	4	4	
8:45	—	1	1	2	1	2	4	4	
4:00	—	—	4	3	5	4	4	5	
4:15	2	2	1	2	4	7	—	4	
4:30	—	—	—	1	6	5	4	8	
4:45	—	1	2	3	4	6	8	6	
5:00	—	—	3	2	2	3	2	2	
5:15	1	1	2	2	1	2	5	4	
5:30	—	2	2	6	4	5	3	—	
5:45	1	—	1	1	3	4	10	—	
6:00	—	—	3	1	8	1	6	5	
6:15	—	—	2	—	1	6	7	5	

PEAK HOUR

(7)

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

PROJECT #: CLIENT: SPARTAN

INTERSECTION: MAIN ST & CHORISTER PL

MUNICIPALITY: FLEMINGTON

COUNT BY: K. DONATELLI DATE: 6/13/17

TIME from 7^00 a to 9^00 a & 4^00 p - 6^30 p

S M (T) W T F S (CIRCLE DAY)

SKETCH SURVEY AREA (INCLUDE LANDMARKS)

START TIME	CARS 1	2	3	4	5	6	7	8	TRUCKS 1	2	3	4	5	6	7	8	TOTAL
7^00	108	1	1	61	1	—	—	1	4	—	—	2	—	—	—	—	
7^15	128	1	—	88	—	—	—	—	5	—	—	2	—	—	—	—	
7^30	85	—	1	92	2	1	—	1	6	—	—	1	—	—	—	—	
7^45	90	—	—	89	—	—	1	—	4	—	—	3	—	—	—	—	
8^00	96	—	2	94	2	—	—	—	2	—	—	4	—	—	—	—	
8^15	82	1	1	101	1	1	1	—	3	—	—	2	—	—	—	—	
8^30	94	—	3	81	—	3	1	—	2	—	—	3	—	—	—	—	
8^45	97	1	2	74	4	2	—	—	—	—	—	3	—	—	—	—	
4^00	114	3	2	127	—	—	—	2	3	—	—	3	—	—	—	—	
4^15	114	1	1	121	—	—	—	—	5	—	—	2	—	—	—	—	
4^30	88	1	2	135	—	—	1	—	1	—	—	5	—	—	—	—	
4^45	116	2	1	101	—	—	—	—	3	—	—	3	—	—	—	—	
5^00	107	1	4	100	—	—	—	1	2	—	—	1	—	—	—	—	
5^15	124	3	—	108	—	1	—	3	2	—	—	1	—	—	—	—	
5^30	128	1	1	101	—	1	1	1	—	—	—	1	—	—	—	—	
5^45	130	—	—	108	—	—	—	—	2	—	—	1	—	—	—	—	
6^00	127	—	1	97	1	—	1	2	4	—	—	2	—	—	—	—	
6^15	118	—	—	74	—	—	—	1	—	—	—	1	—	—	—	—	

PEAK HOUR

(8) TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS
792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

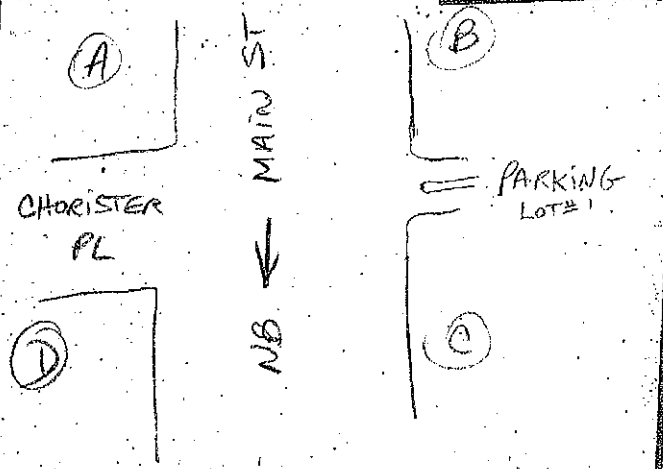
PROJECT #: CLIENT: SPARTAN

INTERSECTION: MAIN ST & CHORISTER PL

MUNICIPALITY: FLEMINGTON

COUNT BY: K. DONATELLI DATE: 6/13/17

TIME from 7:00a to 9:00a & 4:00p - 6:30p ; S M (T) W T F S (CIRCLE DAY)



SKETCH SURVEY AREA (INCLUDE LANDMARKS)

PEDESTRIANS — MOVEMENT NUMBER

START TIME	A→B	B→A	B→C	C→B	C→D	D→C	D→A	A→D	TOTAL
7:00	—	—	2	—	—	—	3	2	
7:15	—	—	—	—	—	—	—	—	
7:30	—	—	1	2	1	—	—	1	
7:45	—	1	2	3	—	—	1	5	
8:00	—	1	—	1	—	1	—	3	
8:15	—	—	2	—	—	—	4	2	
8:30	—	—	—	2	—	—	4	1	
8:45	—	3	3	—	—	—	2	—	
4:00	2	—	—	—	—	—	2	4	
4:15	1	1	1	5	—	1	—	3	
4:30	—	—	—	2	—	—	8	3	
4:45	—	1	3	2	—	—	1	4	
5:00	1	—	—	4	—	—	2	3	
5:15	—	—	2	1	1	1	2	5	
5:30	—	—	—	2	—	—	—	1	
5:45	—	—	—	—	—	—	—	4	
6:00	—	—	—	4	—	—	3	6	
6:15	—	—	—	2	—	—	—	5	

PEAK HOUR

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BY KEN DONATELLI PROJECT NO.
CLIENT/PROJECT SPARTAN
SUBJECT FLEMINGTON DATE 6/13/17

SIGN LEGEND

(1) PEDESTRIAN CROSSING

(2) NO STOPPING OR STANDING

(3) 2 HR PARKING
9AM – 6PM
EXCEPT SUN & HOLIDAYS

(4) NO PARKING
1:00 AM – 6:00 AM

(5) ONE WAY

(6) NO PARKING HERE TO CORNER

(7) SPEED LIMIT 25

(8) COUNTY EMPLOYEES PARKING
PUBLIC PARKING WEEKENDS ONLY

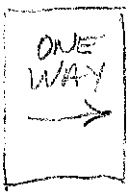
(9) DO NOT ENTER

(10) NO PARKING ANY TIME

(11) STOP

(12) RESERVED PARKING (H/C)

(13)



(14) 15 MIN. PARKING
9AM – 6PM

(15) NO PARKING LOADING ZONE

(16) 15 MIN. PARKING

(17) LOADING ZONE

(18) HYDRANT

(10)

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BY KEN DONATELLI PROJECT NO.

CLIENT/PROJECT SPARTAN

SUBJECT FLEMINGTON DATE 6/13/17

PARKING COUNT

		MAIN ST			SPRING ST		PUBLIC LOT	
		WEST SIDE	EAST SIDE	BLOOMFIELD	W. SIDE	E. SIDE	4-HR.	2HR
AVAIL. SPACES:		16	18	16	11	14	76	43
6/8/17	12⁰⁰ P	13	8	9	5	5	15	30
	12¹⁵	13	9	11	6	4	14	26
	12³⁰	12	11	8	5	3	15	25
	12⁴⁵	10	10	9	5	4	17	25
	1⁰⁰	13	8	10	6	4	19	28
6/13/17	12³⁰ P	10	8	8	6	7	21	31
	12⁴⁵	13	5	9	6	7	16	34
	1⁰⁰	8	6	7	7	6	16	32
	1¹⁵	8	5	8	6	6	17	35
	1³⁰	12	7	10	5	6	16	30

NOTES

- PARKING COUNTS ARE FILLED SPACES
- MAIN ST PARKING FROM BLOOMFIELD AVE TO MINE ST
- BLOOMFIELD AVE PARKING FROM MAIN ST TO BROAD ST
- SPRING ST PARKING FROM BLOOMFIELD AVE TO MAPLE AVE
- PUBLIC LOT PARKING: 4 HR OR PERMIT PARKING, 2HR PARKING 6am - 6pm
- BUSES INCLUDED IN TRUCK COUNT

6/8 SCHOOL BUS STOP MAIN ST NB, S SIDE

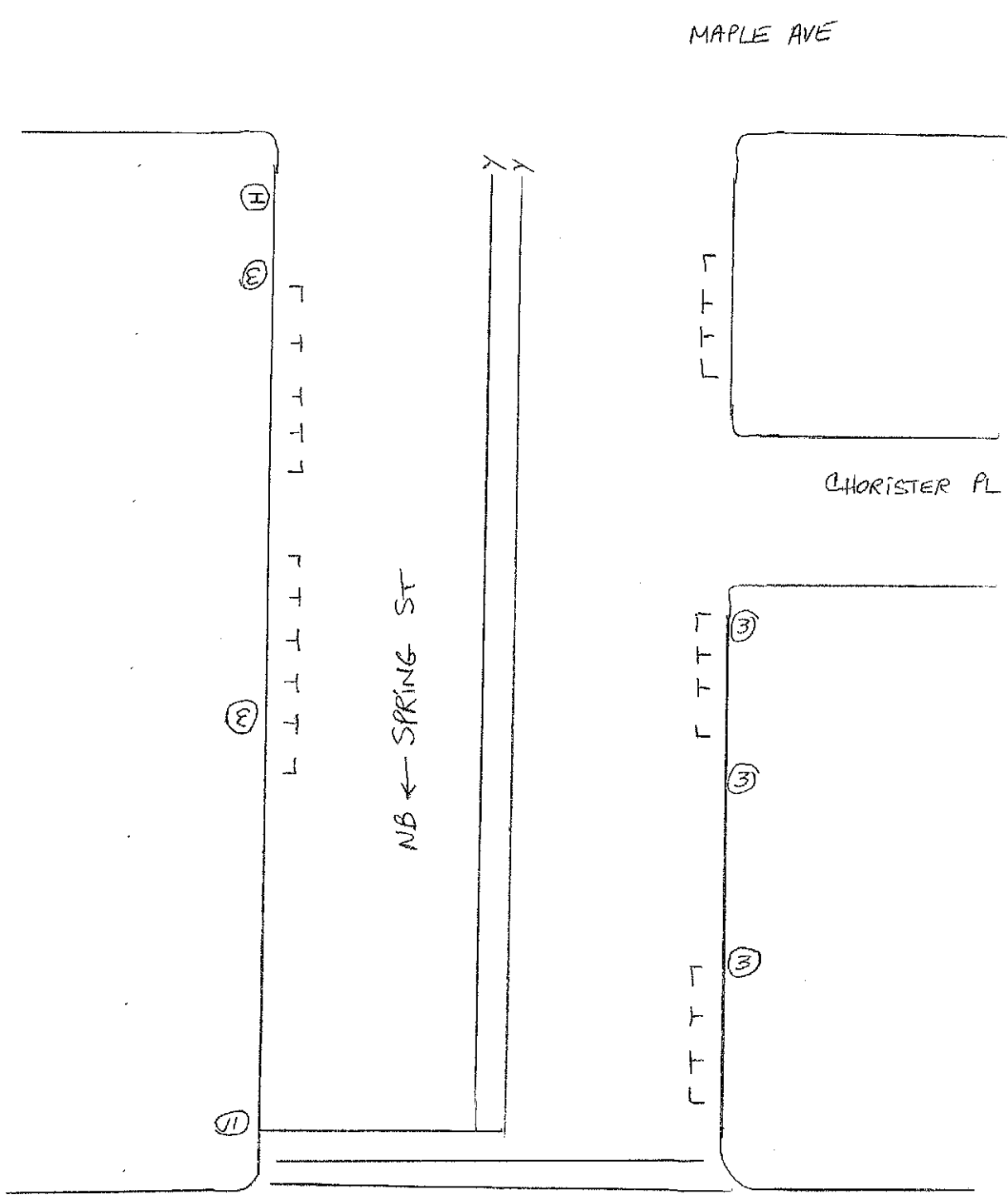
(4)

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BY KEN DONATELLI PROJECT NO.

CLIENT/PROJECT SPARTAN

SUBJECT FLEMINGTON DATE 6/13/17



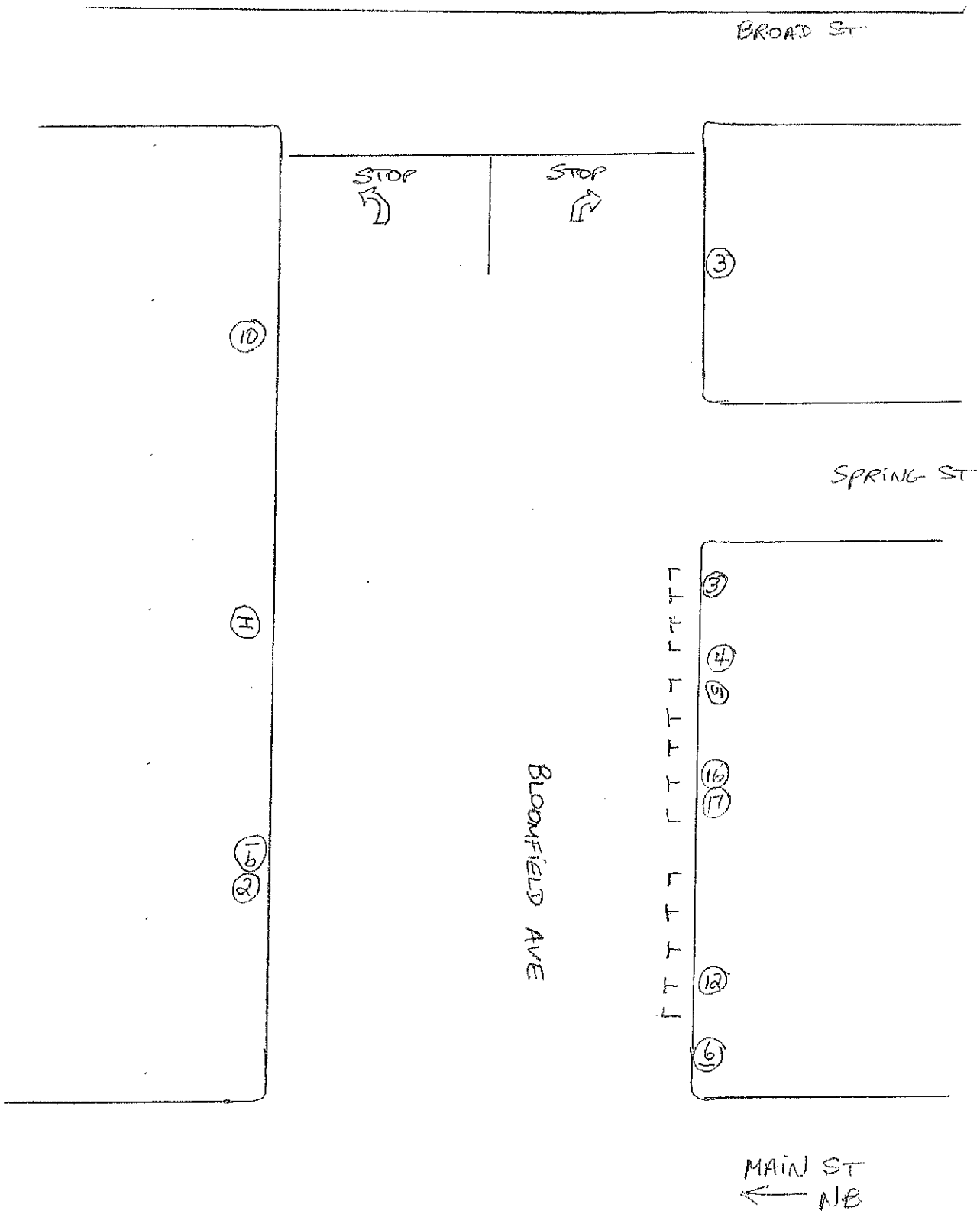
(3)

DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BY KEN DONATELLI PROJECT NO.

CLIENT/PROJECT SPARTAN

SUBJECT FLEMINGTON DATE 6/13/17

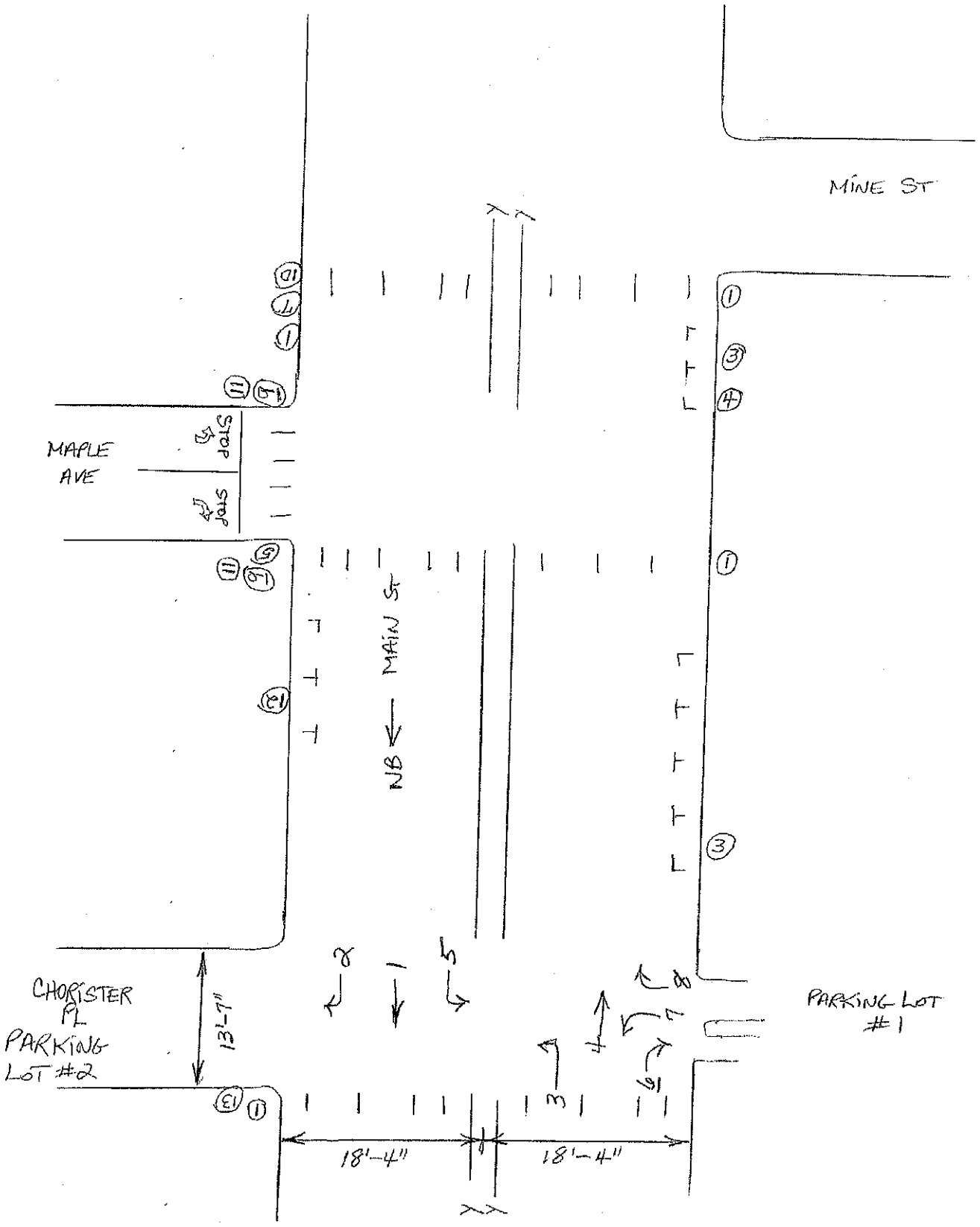


DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BY KEN DONATELLI PROJECT NO.

CLIENT/PROJECT SPARTAN

SUBJECT FLEMINGTON DATE 6/13/17

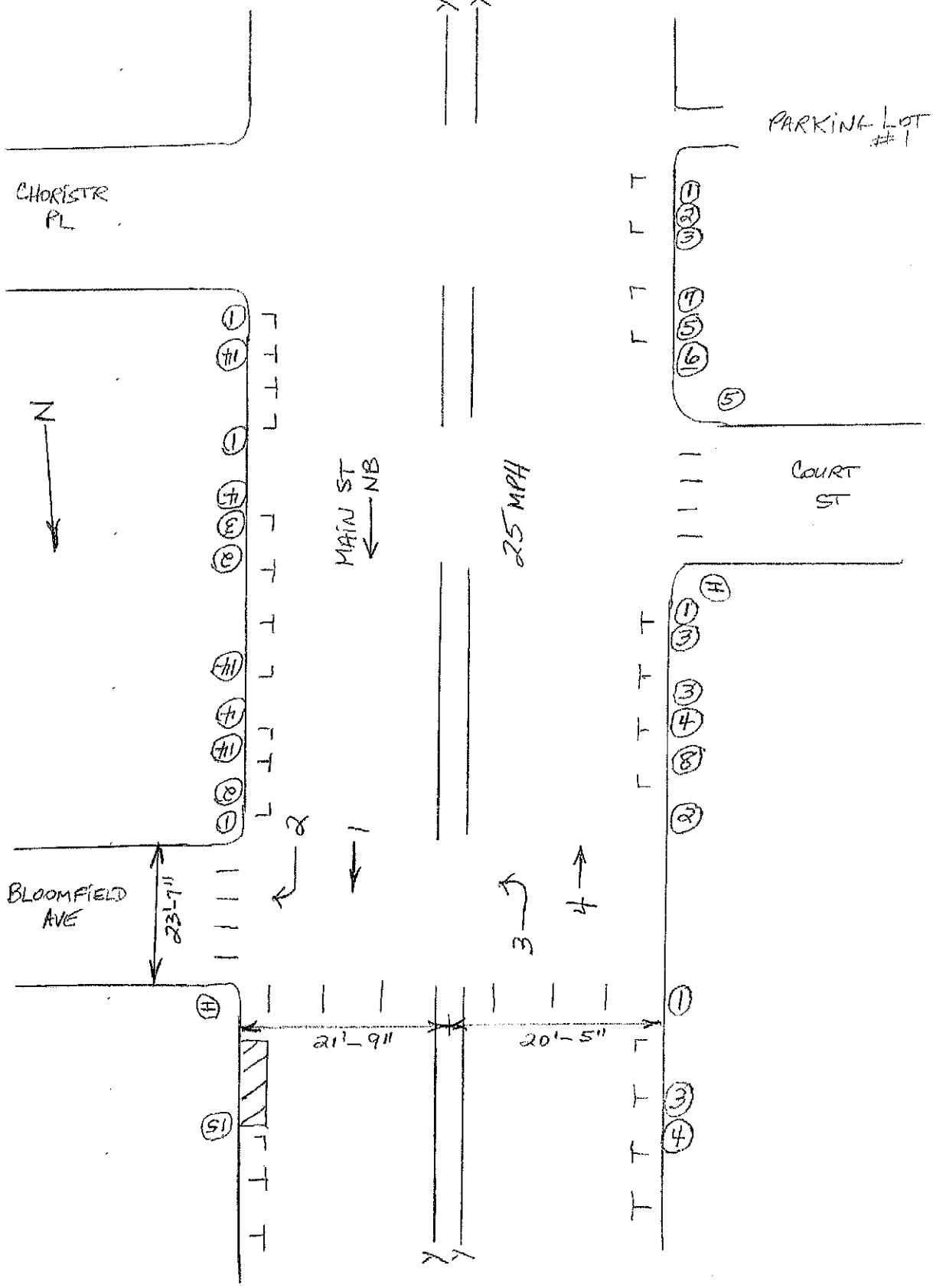


DOLAN & DEAN
CONSULTING ENGINEERS, LLC

BY KEN DONATELLI PROJECT NO.

CLIENT/PROJECT SPARTAN

SUBJECT FLEMINGTON DATE 6/13/17



TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

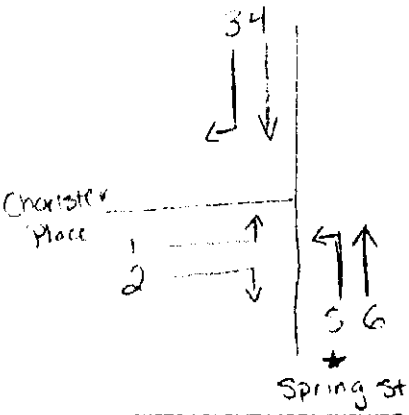
PROJECT #: CLIENT: Spornan

INTERSECTION: Spring St & Chorister Pl.

MUNICIPALITY: Flemington

COUNT BY: O. Grunson DATE: 6/8/17

TIME from 4pm to ... S M T W (T) F S (CIRCLE DAY)



SKETCH SURVEY AREA (INCLUDE LANDMARKS)

START TIME	MOVEMENT NUMBER															TOTAL
	1	2	3	4	5	6	Pedestrians:			1	2	3	4	5	6	
4:00	—	2	—	4	1	6				—	—	—	1	—	5	
4:15	—	1	—	5	—	4				—	—	—	1	—	2	
4:30	1	3	—	8	—	5				—	—	—	—	—	—	
4:45	2	1	—	7	—	7				—	—	—	1	—	—	
5:00	1	2	—	1	1	4				—	—	—	1	—	2	
5:15	—	4	—	8	—	4				—	—	—	—	—	—	
5:30	2	4	—	6	—	4				—	—	—	1	—	2	
5:45	—	4	—	4	2	1				—	—	—	—	—	4	
6:00	—	2	—	13	1	—				—	—	—	1	—	1	
6:15	1	1	1	4	—	3				3	—	-	3	-	2	
PEAK HOUR TOTAL																

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

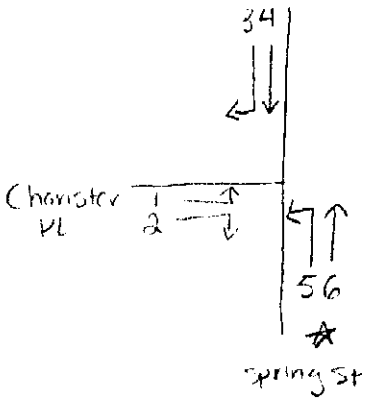
PROJECT #: CLIENT: Spartan

INTERSECTION: Spring St & Chorister PL

MUNICIPALITY: Flemington

COUNT BY: O. Grunsch DATE: 6/8/17

TIME from 7am to 9am S M T W (T) F S (CIRCLE DAY)



SKETCH SURVEY AREA (INCLUDE LANDMARKS)

START TIME	MOVEMENT NUMBER 1	2	3	4	5	6	Pedestrians: 1	2	3	4	5	6	TOTAL
7:00	–	2	–	1	–	1	–	–	–	2	–	4	
7:15	–	1	–	1	1	2	–	–	1	1	–	1	
7:30	–	–	–	2	–	–	–	–	–	–	–	1	
7:45	–	–	–	3	–	4	1	–	2	–	–	2	
8:00	–	1	–	3	–	2	–	–	–	–	1	–	
8:15	1	1	2	14	2	3	–	–	–	–	–	–	
8:30	1	7	–	5	2	3	–	–	–	–	–	1	
8:45	–	1	–	3	–	4	–	1	–	3	1	1	
PEAK HOUR TOTAL													

Chorister Place and Spring Street
Thursday, June 8th, 2017, 7:00 - 9:00 a.m.
Thursday, June 8th, 2017, 4:00 - 6:30 p.m.

AM Counts

	Passenger Vehicles					Total		
	1	2	3	4	5	6		
7:00 AM	0	2	0	1	0	1	4	
7:15 AM	0	1	0	1	1	2	5	
7:30 AM	0	0	0	2	0	0	2	
7:45 AM	0	0	0	3	0	4	7	18
8:00 AM	0	1	0	3	0	2	6	20
8:15 AM	1	1	2	14	2	3	23	38
8:30 AM	1	7	0	5	2	3	18	54
8:45 AM	0	1	0	3	0	4	8	55
Peak Hour	2	10	2	25	4	12	**PHF**	**0.6**

PM Counts

	Passenger Vehicles					Total		
	1	2	3	4	5	6		
4:00 PM	0	2	0	4	1	6	13	
4:15 PM	0	1	0	5	0	4	10	
4:30 PM	1	3	0	8	0	3	15	
4:45 PM	2	1	0	7	0	7	17	55
5:00 PM	1	2	0	1	1	4	9	51
5:15 PM	0	4	0	8	0	4	16	57
5:30 PM	2	4	0	6	0	4	16	58
5:45 PM	0	4	0	4	2	1	11	52
6:00 PM	0	2	0	13	1	0	16	59
6:15 PM	1	1	1	4	0	3	10	53
Peak Hour	3	14	0	19	3	13	**PHF**	**0.92**

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

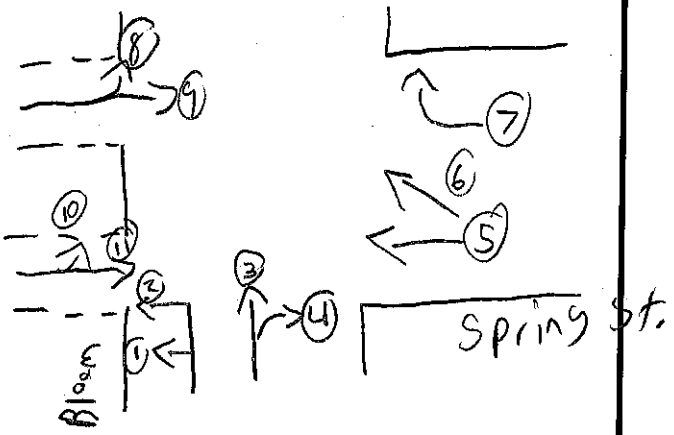
PROJECT #: CLIENT: Spartan

INTERSECTION: Bloomfield and Spring St.

MUNICIPALITY: Flemington

COUNT BY: Eric C. DATE: 6/8/17

TIME from 7AM to 9AM S M T W (T) F S (CIRCLE DAY)



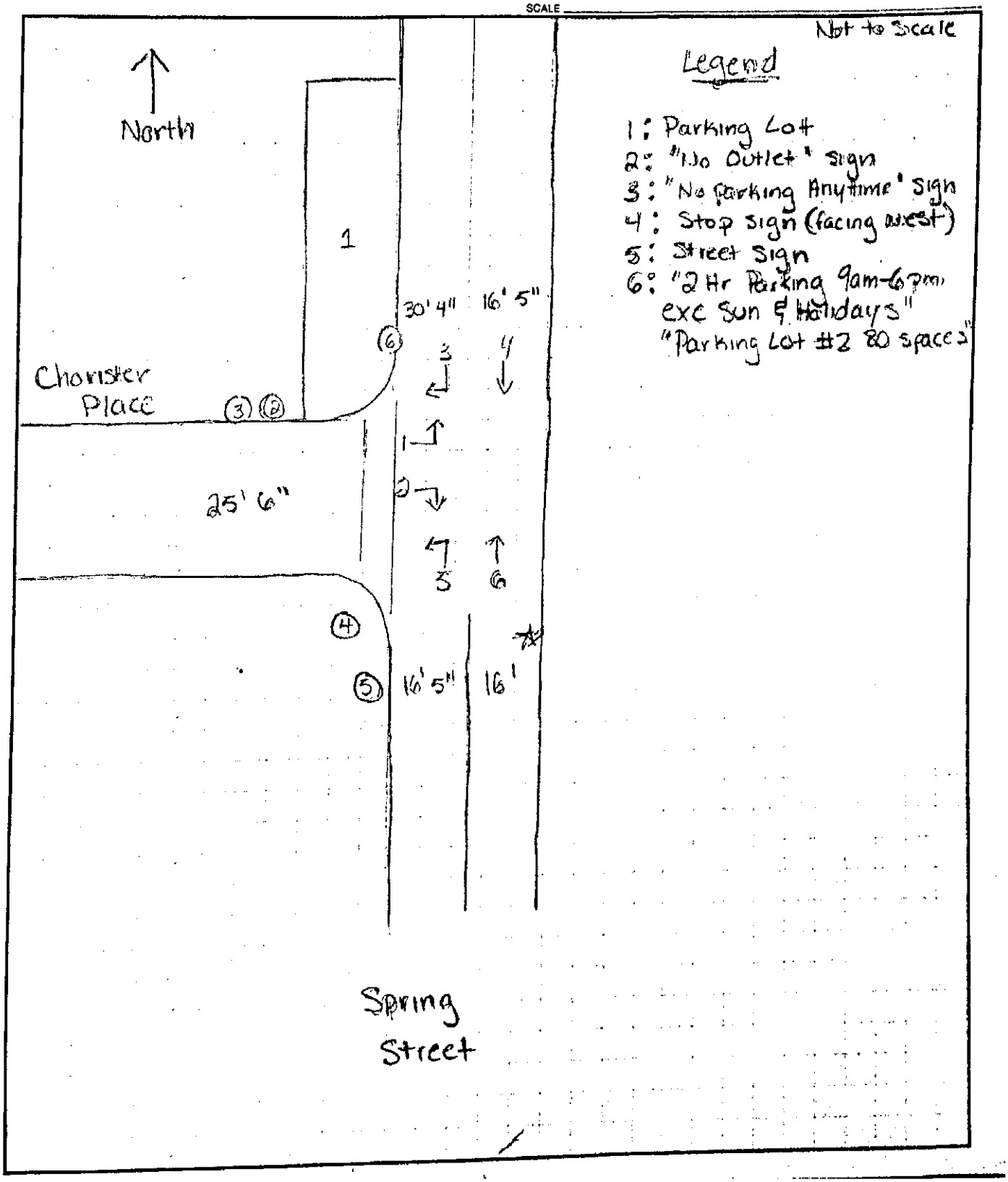
SKETCH SURVEY AREA (INCLUDE LANDMARKS)

Passenger Vehicles

START TIME	MOVEMENT NUMBER 1	2	3	4	5	6	7	8	9	10	11	TOTAL
7:00	1	–	10	–	–	–	1	1	–	–	–	
7:15	2	1	10	–	–	1	1	–	–	–	–	
7:30	–	1	6	–	–	–	–	2	1	–	–	
7:45	–	2	4	1	–	2	1	1	–	–	–	
8:00	–	1	4	2	–	1	–	–	–	–	–	
8:15	–	2	7	3	–	–	–	1	2	–	–	
8:30	–	–	5	3	–	4	–	1	–	–	–	
8:45	–	2	9	2	–	3	7	–	2	–	–	
PEAK HOUR TOTAL												

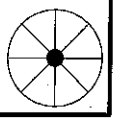
DOLAN & DEAN
CONSULTING ENGINEERS, LLC
792 Chimney Rock Rd Ste B
Martinsville, NJ 08836-2271
(732) 469-0600

JOB
SHEET NO. OF Spring St Concept
CALCULATED BY Olivia Gronsorn DATE 6/8/17
CHECKED BY DATE
SCALE



TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW



DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

PROJECT #: CLIENT: Spartan

INTERSECTION: Bloomfield and Spring St.

MUNICIPALITY: Flemington

COUNT BY: Eric C. DATE: 6/8/17

TIME from 7AM to 9AM

S M T W (T) F S
(CIRCLE DAY)

SKETCH SURVEY AREA (INCLUDE LANDMARKS)

Heavy Vehicles

START TIME	MOVEMENT NUMBER 1	2	3	4	5	6	7	8	9	10	11						TOTAL
7:00																	
7:15																	
7:30																	
7:45		1															
8:00			1														
8:15								1	1								
8:30																	
8:45																	
PEAK HOUR TOTAL																	

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

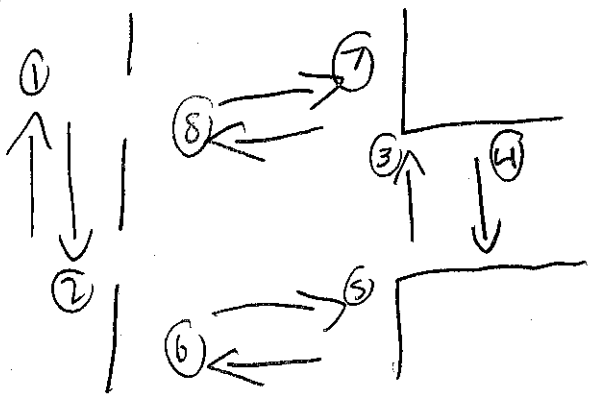
PROJECT #: CLIENT: Spartan

INTERSECTION: Bloomfield and Spring St.

MUNICIPALITY: Flemington

COUNT BY: Eric C. DATE: 6/7/17

TIME from 7 AM to 9 AM S M T W T F S (CIRCLE DAY)



SKETCH SURVEY AREA (INCLUDE LANDMARKS)

Pedestrians

START TIME	MOVEMENT NUMBER 1	2	3	4	5	6	7	8	TOTAL
7:00	II		I					II	
7:15		III			I		I	I	
7:30								I	
7:45		IIIII						I	
8:00		III		I					
8:15	III								
8:30		I						I	
8:45				I		I	I		
PEAK HOUR TOTAL									

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

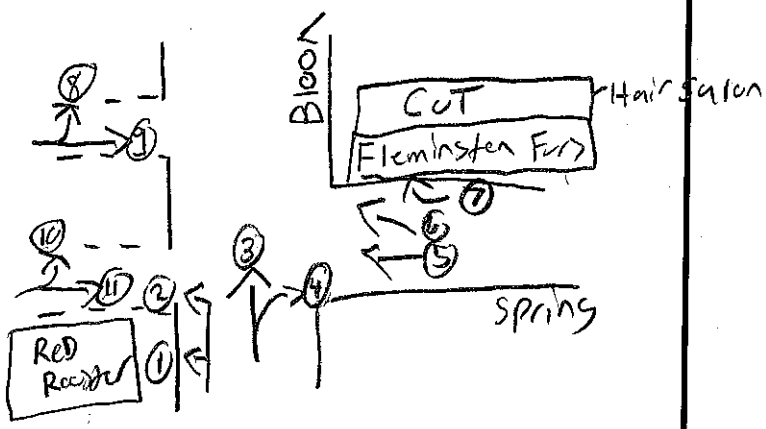
PROJECT #: CLIENT: Spartan

INTERSECTION: Bloomfield and Spring St.

MUNICIPALITY: Flemington

COUNT BY: Eric C. DATE: 6/7/17

TIME from 4 PM to 6:30 PM S M T (W) T F S
(CIRCLE DAY)



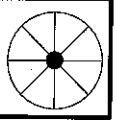
SKETCH SURVEY AREA (INCLUDE LANDMARKS)

Passenger Vehicles

START TIME	MOVEMENT NUMBER 1	2	3	4	5	6	7	8	9	10	11	TOTAL
4:00	3	—	13	2	—	3	1	3	1	1	—	
4:15	2	—	9	3	—	2	1	1	1	—	1	
4:30	—	—	13	7	—	3	1	4	1	—	1	
4:45	1	—	14	6	—	4	4	4	1	—	—	
5:00	—	—	13	5	—	2	4	3	—	1	1	
5:15	2	—	7	1	—	1	2	11	1	—	1	
5:30	5	—	9	5	—	—	1	2	—	—	—	
5:45	1	2	8	—	—	1	2	2	2	1	—	
6:00	1	1	15	2	1	2	—	3	1	—	—	
6:15	2	—	9	4	—	2	1	1	—	1	—	
PEAK HOUR TOTAL												

Notes; Red Rooster Grill Draws a good amount of traffic. May have Higher Impact on Fridays and weekends PM.

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW 

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

PROJECT #: CLIENT: Spartan

INTERSECTION: Bloomfield and Spring St.

MUNICIPALITY: Flemington

COUNT BY: Eric C. DATE: 6/7/17

TIME from 4 PM to 6:30 PM S M T (W) T F S (CIRCLE DAY)

SKETCH SURVEY AREA (INCLUDE LANDMARKS)

Heavy Vehicles

START TIME	MOVEMENT NUMBER 1	2	3	4	5	6	7	8	9	10	11						TOTAL
4:00																	
4:15																	
4:30						1											
4:45																	
5:00																	
5:15																	
5:30																	
5:45																	
6:00																	
6:15																	
PEAK HOUR TOTAL																	

TRAFFIC SURVEY SHEET

INDICATE NORTH BY ARROW

DOLAN & DEAN
CONSULTING ENGINEERS

792 Chimney Rock Road
Suite B
Martinsville, NJ 08836
(732) 469-0600
(732) 469-0663 fax

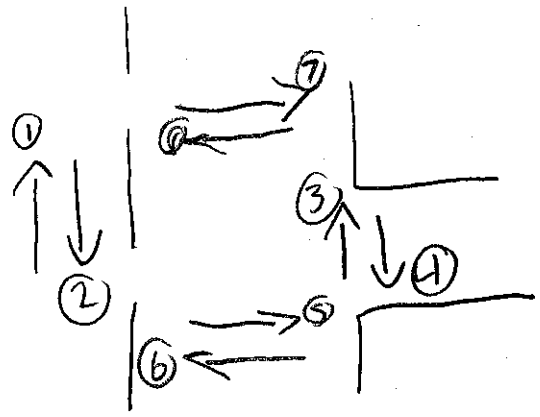
PROJECT #: CLIENT: Spartan

INTERSECTION: Bloomfield and Spring St.

MUNICIPALITY: Flemington

COUNT BY: Eric C. DATE: 6/7/17

TIME from 4 PM to 6:30 PM S M T (W) T F S
(CIRCLE DAY)



SKETCH SURVEY AREA (INCLUDE LANDMARKS)

Pedestrians

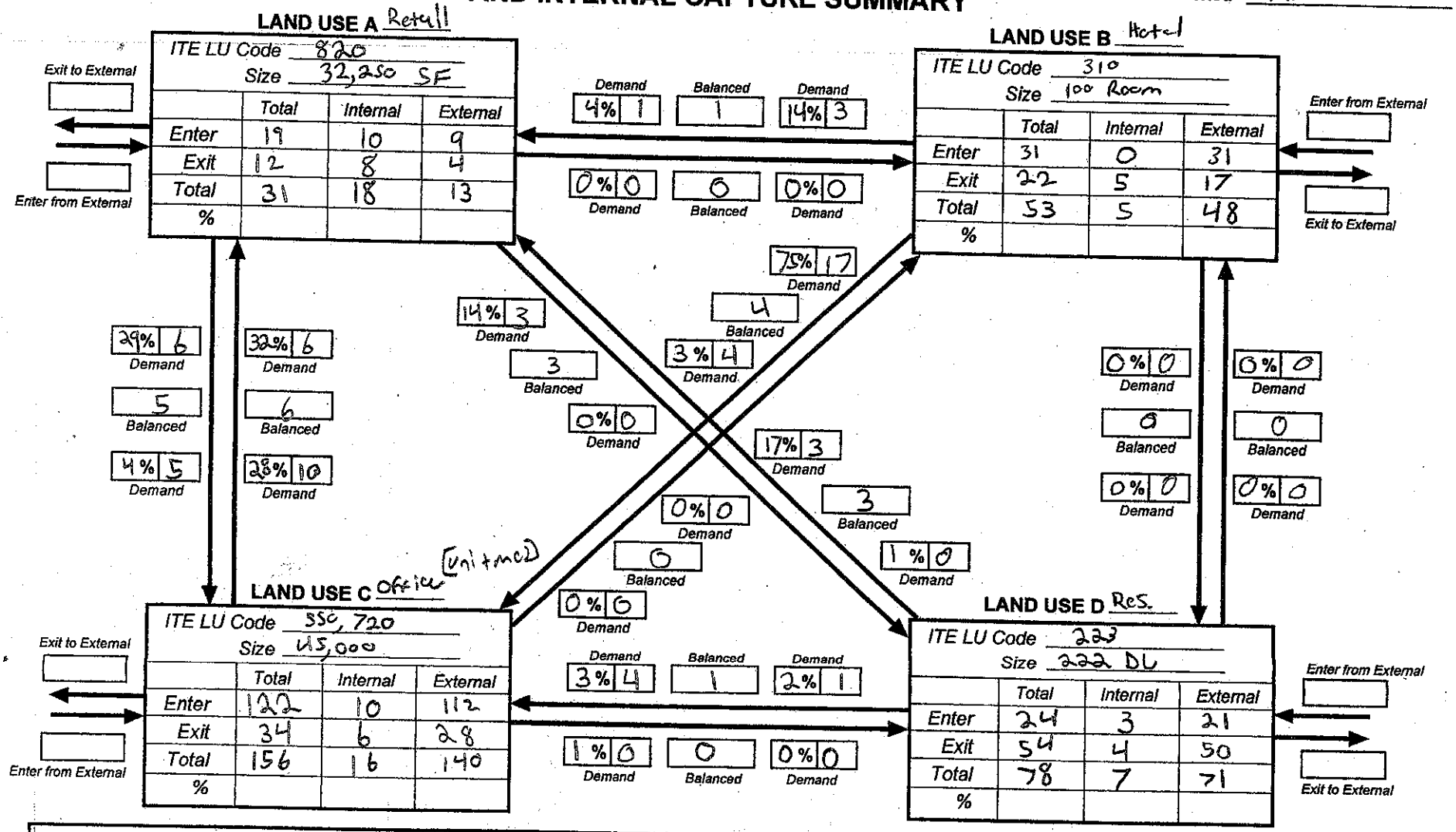
START TIME	MOVEMENT NUMBER 1	2	3	4	5	6	7	8	TOTAL
4:00	II								
4:15	III	1		II					
4:30	I								
4:45		1	1				1	1	
5:00	1	1		1					
5:15	II					1			
5:30	1	1				1			
5:45								IIII	
6:00		II	II						
6:15						1			
PEAK HOUR TOTAL									

Flemington Fair closed

Analyst Ec
Date 6/22/17

MULTI- USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt
Time Period AM



Net External Trips for Multi-Use Development

	LAND USE A (Retail)	LAND USE B (Hotel)	LAND USE C (Office)	LAND USE D (Res.)	TOTAL
Enter	9	31	112	21	
Exit	4	17	28	50	
Total	13	48	140	71	272
Single-Use Trip Gen. Est.	31	53	156	78	318

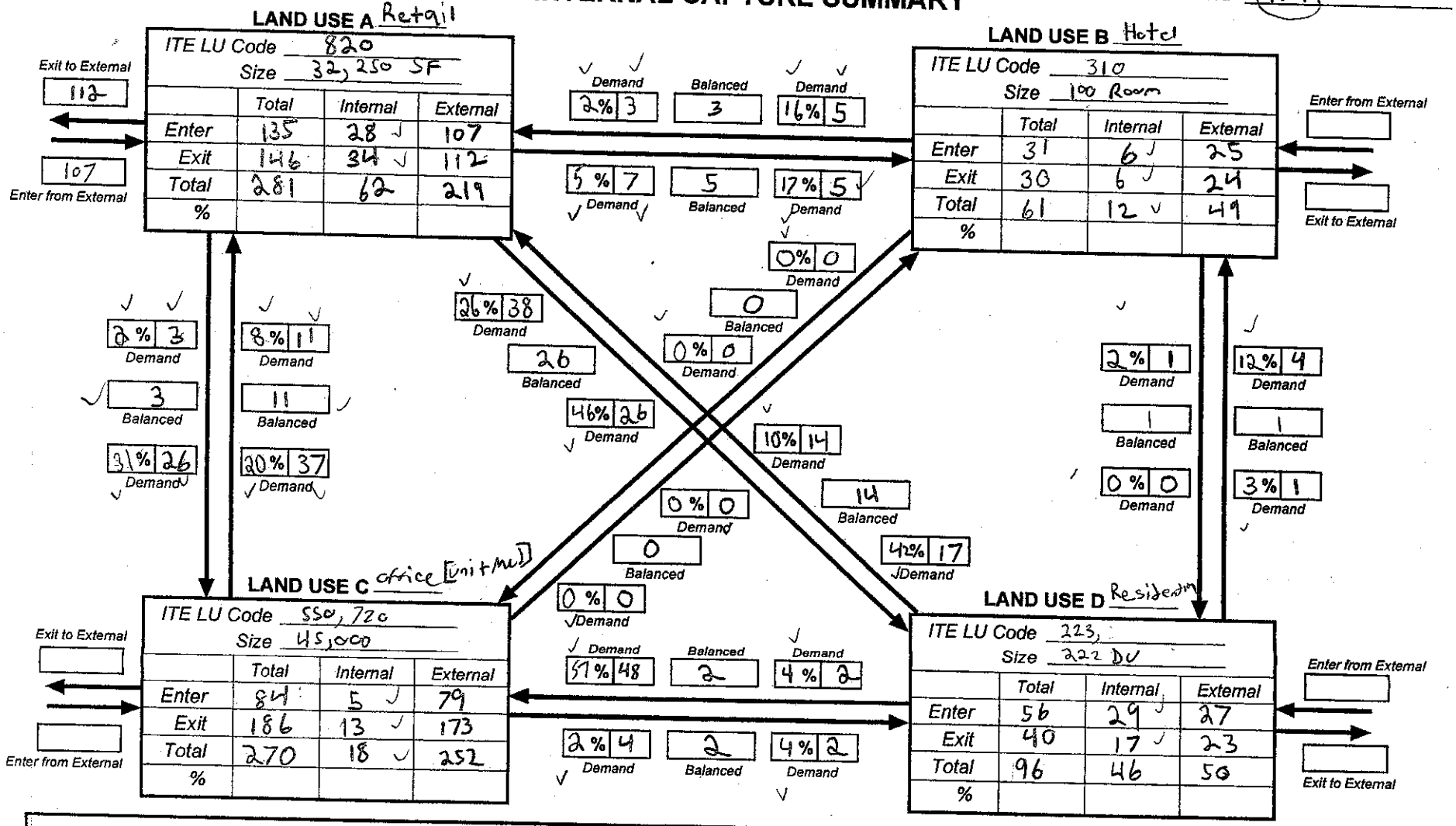
Source: Kaku Associates, Inc.

INTERNAL CAPTURE 14 90

Analyst EC/DJ
Date 6/21/17

MULTI- USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt
Time Period PM



Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	LAND USE D	TOTAL
Enter	107	25	79	27	
Exit	112	24	173	23	
Total	219	49	252	50	570
Single-Use Trip Gen. Est.	281	61	270	196	808

Source: Kaku Associates, Inc.

INTERNAL CAPTURE 29%

HCS 2010 Two-Way Stop-Control Report

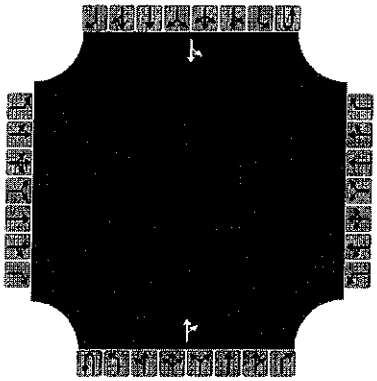
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	AM Peak Ex
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Main Street
Peak Hour Factor	0.87
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration												TR		LT		
Volume, V (veh/h)											403	32		11	300	
Percent Heavy Vehicles (%)														4		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.14		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.24		

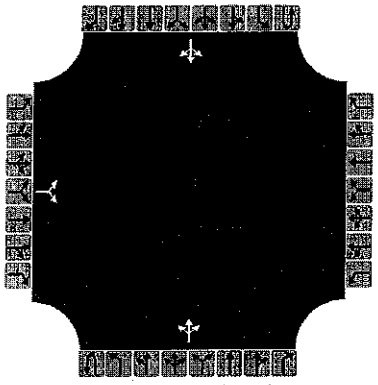
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														13		
Capacity, c (veh/h)														1052		
v/c Ratio														0.01		
95% Queue Length, Q_{95} (veh)														0.0		
Control Delay (s/veh)														8.5		
Level of Service, LOS														A		
Approach Delay (s/veh)														0.4		
Approach LOS																

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Main & Choirister
Agency/Co.	DD	Jurisdiction	
Date Performed	6/19/2017	East/West Street	Choirister Place
Analysis Year	2017	North/South Street	Main Street
Time Analyzed	AM Peak ex	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description			

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								LTR				LTR	
Volume, V (veh/h)		1		1						4	416	1		3	373	1
Percent Heavy Vehicles (%)		3		3						3				3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1				4.1		
Critical Headway (sec)		6.43		6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5		3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53		3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			2							4				3		
Capacity, c (veh/h)			412							1133				1087		
v/c Ratio			0.00							0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.0							0.0				0.0		
Control Delay (s/veh)			13.8							8.2				8.3		
Level of Service, LOS			B							A				A		
Approach Delay (s/veh)		13.8								0.1				0.1		
Approach LOS		B														

HCS 2010 Two-Way Stop-Control Report

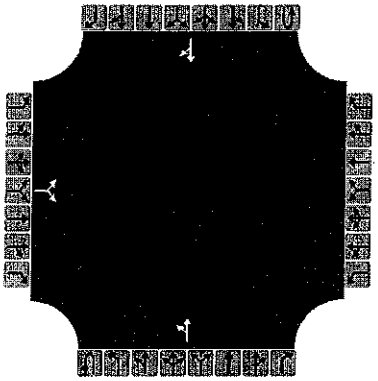
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Am Peak ex
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Spring & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Spring Street
Peak Hour Factor	0.60
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		2		10						4	12				25	2
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

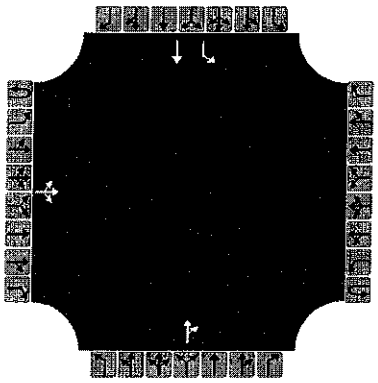
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20							7						
Capacity, c (veh/h)			1014							1576						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			8.6							7.3						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.6								1.9							
Approach LOS	A															

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Spring & Bloomfield
Agency/Co.	DD	Jurisdiction	
Date Performed	6/19/2017	East/West Street	Bloomfield Avenue
Analysis Year	2017	North/South Street	Spring Street
Time Analyzed	Am Peak ex	Peak Hour Factor	0.64
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description			

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		1	1	0
Configuration			LTR									TR		L	T	
Volume, V (veh/h)		5	26	10							8	7		3	5	
Percent Heavy Vehicles (%)		5									5	5		5	5	
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		0.0									6.5	6.2		7.1	6.5	
Critical Headway (sec)		0.00									6.55	6.25		7.15	6.55	
Base Follow-Up Headway (sec)		0.0									4.0	3.3		0.0	4.0	
Follow-Up Headway (sec)		0.00									4.04	3.34		0.00	4.04	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		8										23		5	8	
Capacity, c (veh/h)		0										903		0	813	
v/c Ratio												0.03			0.01	
95% Queue Length, Q_{95} (veh)												0.1			0.0	
Control Delay (s/veh)												9.1			9.5	
Level of Service, LOS												A			A	
Approach Delay (s/veh)										9.1						
Approach LOS										A						

HCS 2010 Two-Way Stop-Control Report

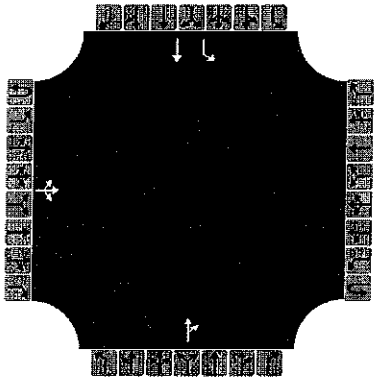
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Pm Peak ex
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Spring & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Spring Street
Peak Hour Factor	0.88
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		1	1	0
Configuration			LTR									TR		L	T	
Volume, V (veh/h)		3	47	19							11	11		23	6	
Percent Heavy Vehicles (%)		1									1	1		1	1	
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		0.0									6.5	6.2		7.1	6.5	
Critical Headway (sec)		0.00									6.51	6.21		7.11	6.51	
Base Follow-Up Headway (sec)		0.0									4.0	3.3		0.0	4.0	
Follow-Up Headway (sec)		0.00									4.01	3.31		0.00	4.01	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3										24		26	7	
Capacity, c (veh/h)		0										904		0	811	
v/c Ratio												0.03			0.01	
95% Queue Length, Q_{95} (veh)												0.1			0.0	
Control Delay (s/veh)												9.1			9.5	
Level of Service, LOS												A			A	
Approach Delay (s/veh)										9.1						
Approach LOS										A						

HCS 2010 Two-Way Stop-Control Report

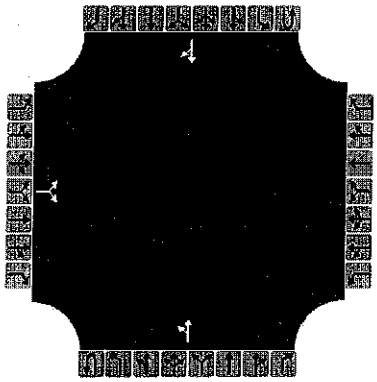
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Pm Peak ex
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Spring & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Spring Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		3		14						3	13				19	0
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			18							3						
Capacity, c (veh/h)			1047							1608						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			8.5							7.2						
Level of Service, LOS			A							A						
Approach Delay (s/veh)	8.5								1.3							
Approach LOS	A															

HCS 2010 Two-Way Stop-Control Report

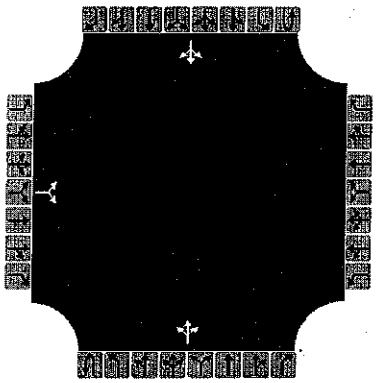
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	PMPeak ex
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Main Street
Peak Hour Factor	0.94
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								LTR				LTR	
Volume, V (veh/h)		1		2						0	444	0		6	497	7
Percent Heavy Vehicles (%)		3		3						3				3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1				4.1		
Critical Headway (sec)		6.43		6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5		3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53		3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			3							0				6		
Capacity, c (veh/h)			401							1026				1084		
v/c Ratio			0.01							0.00				0.01		
95% Queue Length, Q_{95} (veh)			0.0							0.0				0.0		
Control Delay (s/veh)			14.0							8.5				8.3		
Level of Service, LOS			B							A				A		
Approach Delay (s/veh)		14.0								0.0				0.2		
Approach LOS		B														

HCS 2010 Two-Way Stop-Control Report

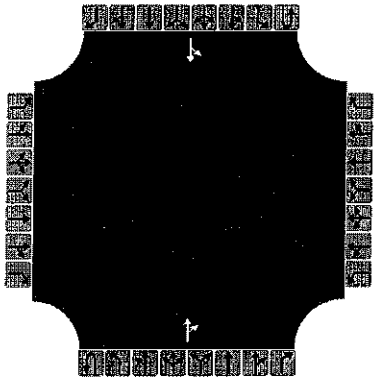
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	PM Peak Ex
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration												TR		LT		
Volume, V (veh/h)											515	28		26	415	
Percent Heavy Vehicles (%)														1		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.11		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.21		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														28		
Capacity, c (veh/h)														990		
v/c Ratio														0.03		
95% Queue Length, Q_{95} (veh)														0.1		
Control Delay (s/veh)														8.7		
Level of Service, LOS														A		
Approach Delay (s/veh)														0.8		
Approach LOS																

HCS 2010 Two-Way Stop-Control Report

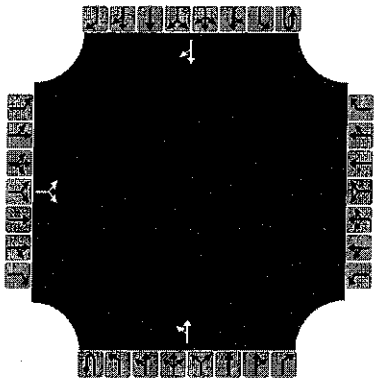
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Am NoBuild
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Spring & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Spring Street
Peak Hour Factor	0.60
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		3		11						5	13				27	3
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

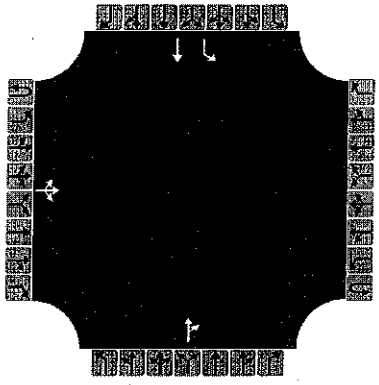
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			23							8						
Capacity, c (veh/h)			1000							1570						
v/c Ratio			0.02							0.01						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			8.7							7.3						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		8.7								2.0						
Approach LOS		A														

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Spring & Bloomfield
Agency/Co.	DD	Jurisdiction	
Date Performed	6/19/2017	East/West Street	Bloomfield Avenue
Analysis Year	2017	North/South Street	Spring Street
Time Analyzed	Am NoBuild	Peak Hour Factor	0.64
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description			

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		1	1	0
Configuration			LTR									TR		L	T	
Volume, V (veh/h)		6	29	11							9	8		4	6	
Percent Heavy Vehicles (%)		5									5	5		5	5	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9										26		6	9	
Capacity, c (veh/h)		0										893		0	806	
v/c Ratio												0.03			0.01	
95% Queue Length, Q_{95} (veh)												0.1			0.0	
Control Delay (s/veh)												9.2			9.5	
Level of Service, LOS												A			A	
Approach Delay (s/veh)									9.2							
Approach LOS									A							

HCS 2010 Two-Way Stop-Control Report

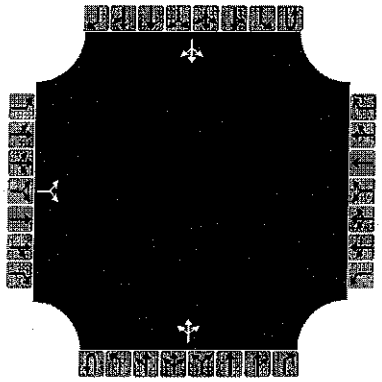
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	AM NoBuild
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Main Street
Peak Hour Factor	0.89
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								LTR				LTR	
Volume, V (veh/h)		2		2						5	458	2		4	410	2
Percent Heavy Vehicles (%)		3		3						3				3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4							6				4		
Capacity, c (veh/h)			370							1092				1043		
v/c Ratio			0.01							0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.0							0.0				0.0		
Control Delay (s/veh)			14.8							8.3				8.5		
Level of Service, LOS			B							A				A		
Approach Delay (s/veh)		14.8								0.2				0.1		
Approach LOS		B														

HCS 2010 Two-Way Stop-Control Report

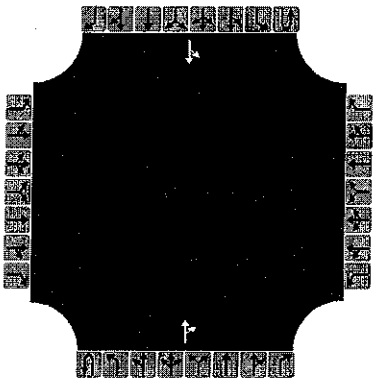
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	AM NoBuild
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Main Street
Peak Hour Factor	0.87
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration												TR		LT		
Volume, V (veh/h)											443	35		12	330	
Percent Heavy Vehicles (%)														4		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														14		
Capacity, c (veh/h)														1009		
v/c Ratio														0.01		
95% Queue Length, Q_{95} (veh)														0.0		
Control Delay (s/veh)														8.6		
Level of Service, LOS														A		
Approach Delay (s/veh)														0.5		
Approach LOS																

HCS 2010 Two-Way Stop-Control Report

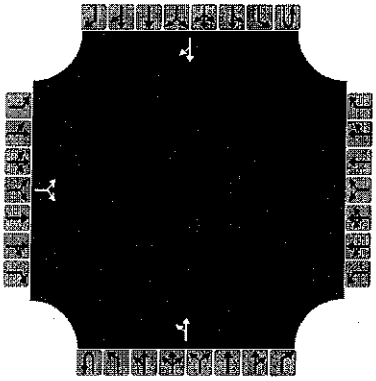
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Pm NoBuild
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Spring & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Spring Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		4		15						4	14				21	1
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

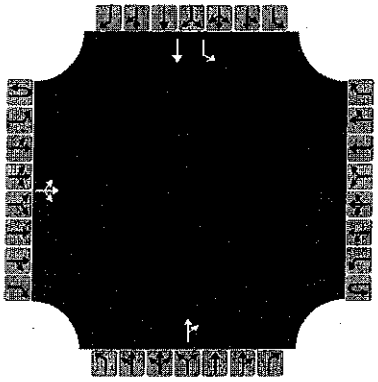
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20							4						
Capacity, c (veh/h)			1039							1604						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			8.5							7.2						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		8.5								1.5						
Approach LOS		A														

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Spring & Bloomfield
Agency/Co.	DD	Jurisdiction	
Date Performed	6/19/2017	East/West Street	Bloomfield Avenue
Analysis Year	2017	North/South Street	Spring Street
Time Analyzed	Pm NoBuild	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description			

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		1	1	0
Configuration			LTR									TR		L	T	
Volume, V (veh/h)		4	52	21							12	12		25	7	
Percent Heavy Vehicles (%)		1									1	1		1	1	
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

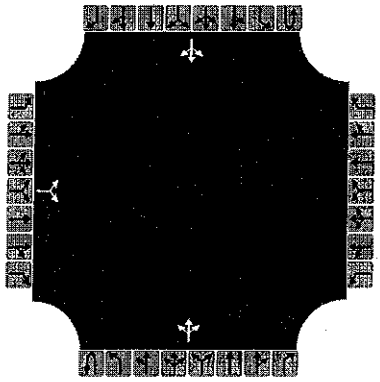
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5										28		28	8	
Capacity, c (veh/h)		0										893		0	799	
v/c Ratio												0.03			0.01	
95% Queue Length, Q_{95} (veh)												0.1			0.0	
Control Delay (s/veh)												9.2			9.6	
Level of Service, LOS												A			A	
Approach Delay (s/veh)										9.2						
Approach LOS										A						

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Main & Choirister
Agency/Co.	DD	Jurisdiction	
Date Performed	6/19/2017	East/West Street	Choirister Place
Analysis Year	2017	North/South Street	Main Street
Time Analyzed	PM NoBuild	Peak Hour Factor	0.94
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description			

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								LTR				LTR	
Volume, V (veh/h)		2		3						1	488	1		7	547	8
Percent Heavy Vehicles (%)		3		3						3				3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			5							1				7		
Capacity, c (veh/h)			339							979				1040		
v/c Ratio			0.01							0.00				0.01		
95% Queue Length, Q_{95} (veh)			0.0							0.0				0.0		
Control Delay (s/veh)			15.8							8.7				8.5		
Level of Service, LOS			C							A				A		
Approach Delay (s/veh)		15.8								0.0				0.2		
Approach LOS		C														

HCS 2010 Two-Way Stop-Control Report

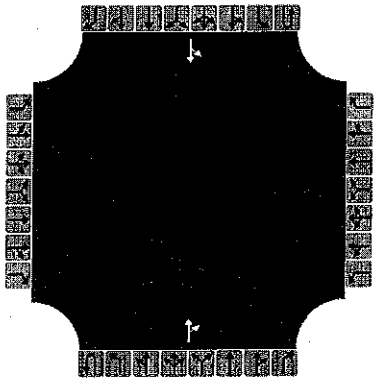
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	PM NoBuild
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration												TR		LT		
Volume, V (veh/h)											566	31		29	456	
Percent Heavy Vehicles (%)														1		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														32		
Capacity, c (veh/h)														942		
v/c Ratio														0.03		
95% Queue Length, Q_{95} (veh)														0.1		
Control Delay (s/veh)														9.0		
Level of Service, LOS														A		
Approach Delay (s/veh)														0.9		
Approach LOS																

HCS 2010 Two-Way Stop-Control Report

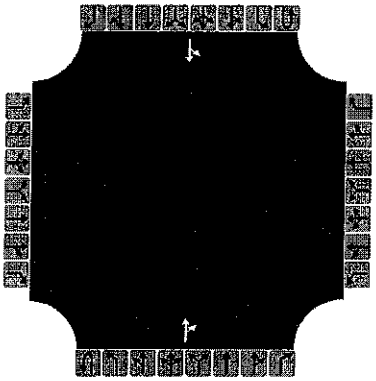
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Main Street
Peak Hour Factor	0.87
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration												TR		LT		
Volume, V (veh/h)											443	66		78	330	
Percent Heavy Vehicles (%)														4		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.14		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.24		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														90		
Capacity, c (veh/h)														979		
v/c Ratio														0.09		
95% Queue Length, Q_{95} (veh)														0.3		
Control Delay (s/veh)														9.1		
Level of Service, LOS														A		
Approach Delay (s/veh)														2.6		
Approach LOS																

HCS 2010 Two-Way Stop-Control Report

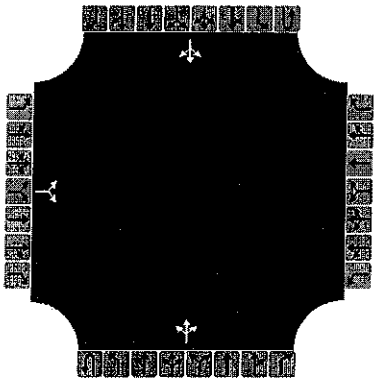
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Main Street
Peak Hour Factor	0.89
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								LTR				LTR	
Volume, V (veh/h)		2		2						5	489	33		4	410	2
Percent Heavy Vehicles (%)		3		3						3				3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1				4.1		
Critical Headway (sec)		6.43		6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5		3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53		3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4							6				4		
Capacity, c (veh/h)			352							1092				983		
v/c Ratio			0.01							0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.0							0.0				0.0		
Control Delay (s/veh)			15.4							8.3				8.7		
Level of Service, LOS			C							A				A		
Approach Delay (s/veh)		15.4								0.2				0.1		
Approach LOS		C														

HCS 2010 Two-Way Stop-Control Report

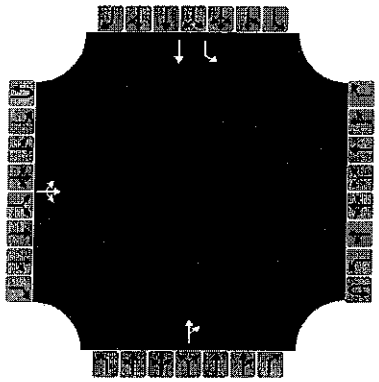
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Am Build
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Spring & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Spring Street
Peak Hour Factor	0.64
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		1	1	0
Configuration			LTR									TR		L	T	
Volume, V (veh/h)		6	29	108							9	73		4	6	
Percent Heavy Vehicles (%)		5									5	5		5	5	
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		0.0									6.5	6.2		7.1	6.5	
Critical Headway (sec)		0.00									6.55	6.25		7.15	6.55	
Base Follow-Up Headway (sec)		0.0									4.0	3.3		0.0	4.0	
Follow-Up Headway (sec)		0.00									4.04	3.34		0.00	4.04	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		9										128		6	9	
Capacity, c (veh/h)		0										890		0	664	
v/c Ratio												0.14			0.01	
95% Queue Length, Q_{95} (veh)												0.5			0.0	
Control Delay (s/veh)												9.7			10.5	
Level of Service, LOS												A			B	
Approach Delay (s/veh)										9.7						
Approach LOS										A						

HCS 2010 Two-Way Stop-Control Report

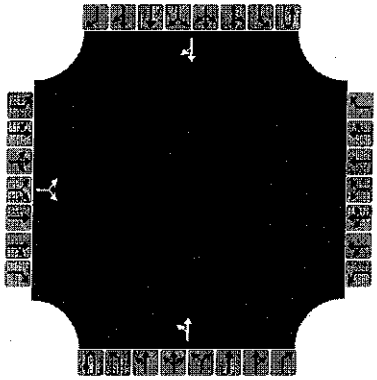
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Am Build
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Spring & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Spring Street
Peak Hour Factor	0.60
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		33		11						0	58				61	0
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

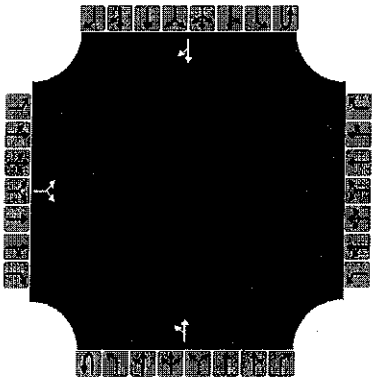
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			73							0						
Capacity, c (veh/h)			829							1503						
v/c Ratio			0.09							0.00						
95% Queue Length, Q_{95} (veh)			0.3							0.0						
Control Delay (s/veh)			9.8							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		9.8								0.0						
Approach LOS		A														

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Spring and Site Driveway
Agency/Co.	DD	Jurisdiction	
Date Performed	7/13/2017	East/West Street	Site Driveway
Analysis Year	2017	North/South Street	Spring street
Time Analyzed	AM Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		65		34						76	15				17	97
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.41		6.21						4.11						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.51		3.31						2.21						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			108							83						
Capacity, c (veh/h)			777							1470						
v/c Ratio			0.14							0.06						
95% Queue Length, Q_{95} (veh)			0.5							0.2						
Control Delay (s/veh)			10.4							7.6						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		10.4								6.4						
Approach LOS		B														

HCS 2010 Two-Way Stop-Control Report

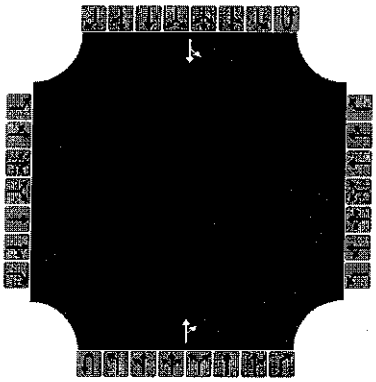
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Main & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Main Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration												TR		LT		
Volume, V (veh/h)											552	66		122	441	
Percent Heavy Vehicles (%)														1		
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)														4.1		
Critical Headway (sec)														4.11		
Base Follow-Up Headway (sec)														2.2		
Follow-Up Headway (sec)														2.21		

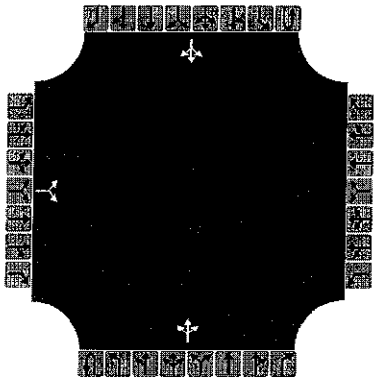
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)														133		
Capacity, c (veh/h)														923		
v/c Ratio														0.14		
95% Queue Length, Q_{95} (veh)														0.5		
Control Delay (s/veh)														9.6		
Level of Service, LOS														A		
Approach Delay (s/veh)														3.5		
Approach LOS																

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Main & Choirister
Agency/Co.	DD	Jurisdiction	
Date Performed	6/19/2017	East/West Street	Choirister Place
Analysis Year	2017	North/South Street	Main Street
Time Analyzed	PM Build	Peak Hour Factor	0.94
Intersection Orientation	North-South	Analysis Time Period (hrs)	1.00
Project Description			

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR								LTR				LTR	
Volume, V (veh/h)		2		3						1	509	52		7	532	8
Percent Heavy Vehicles (%)		3		3						3				3		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1				4.1		
Critical Headway (sec)		6.43		6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5		3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53		3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			5							1				7		
Capacity, c (veh/h)			333							992				975		
v/c Ratio			0.02							0.00				0.01		
95% Queue Length, Q_{95} (veh)			0.0							0.0				0.0		
Control Delay (s/veh)			16.0							8.6				8.7		
Level of Service, LOS			C							A				A		
Approach Delay (s/veh)		16.0								0.0				0.2		
Approach LOS		C														

HCS 2010 Two-Way Stop-Control Report

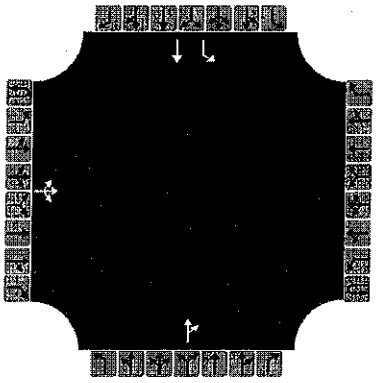
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Pm Build
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Spring & Bloomfield
Jurisdiction	
East/West Street	Bloomfield Avenue
North/South Street	Spring Street
Peak Hour Factor	0.88
Analysis Time Period (hrs)	1.00

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	0	0		0	1	0		1	1	0
Configuration			LTR									TR		L	T	
Volume, V (veh/h)		4	52	149							12	218		25	7	
Percent Heavy Vehicles (%)		1									1	1		1	1	
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		0.0									6.5	6.2		7.1	6.5	
Critical Headway (sec)		0.00									6.51	6.21		7.11	6.51	
Base Follow-Up Headway (sec)		0.0									4.0	3.3		0.0	4.0	
Follow-Up Headway (sec)		0.00									4.01	3.31		0.00	4.01	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5										262		28	8	
Capacity, c (veh/h)		0										895		0	665	
v/c Ratio												0.29			0.01	
95% Queue Length, Q_{95} (veh)												1.2			0.0	
Control Delay (s/veh)												10.7			10.5	
Level of Service, LOS												B			B	
Approach Delay (s/veh)										10.7						
Approach LOS										B						

HCS 2010 Two-Way Stop-Control Report

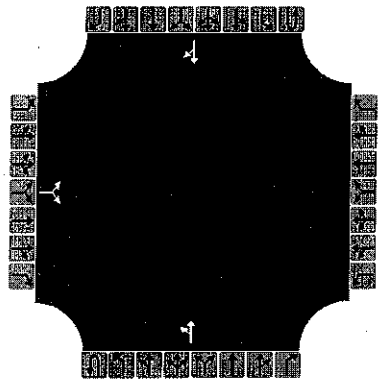
General Information

Analyst	EC
Agency/Co.	DD
Date Performed	6/19/2017
Analysis Year	2017
Time Analyzed	Pm Build
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Spring & Choirister
Jurisdiction	
East/West Street	Choirister Place
North/South Street	Spring Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		55		15						0	73				139	0
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

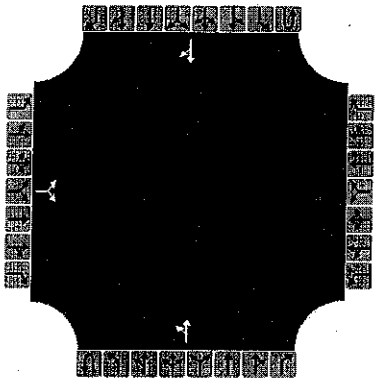
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			76							0						
Capacity, c (veh/h)			788							1443						
v/c Ratio			0.10							0.00						
95% Queue Length, Q_{95} (veh)			0.3							0.0						
Control Delay (s/veh)			10.1							7.5						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		10.1								0.0						
Approach LOS		B														

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EC	Intersection	Spring and Site Driveway
Agency/Co.	DD	Jurisdiction	
Date Performed	7/13/2017	East/West Street	Site Driveway
Analysis Year	2017	North/South Street	Spring street
Time Analyzed	PM Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description			

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		214		118						110	18				28	128
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.41		6.21						4.11						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.51		3.31						2.21						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			361							120						
Capacity, c (veh/h)			680							1414						
v/c Ratio			0.53							0.08						
95% Queue Length, Q_{95} (veh)			3.1							0.3						
Control Delay (s/veh)			16.1							7.8						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		16.1								6.8						
Approach LOS		C														