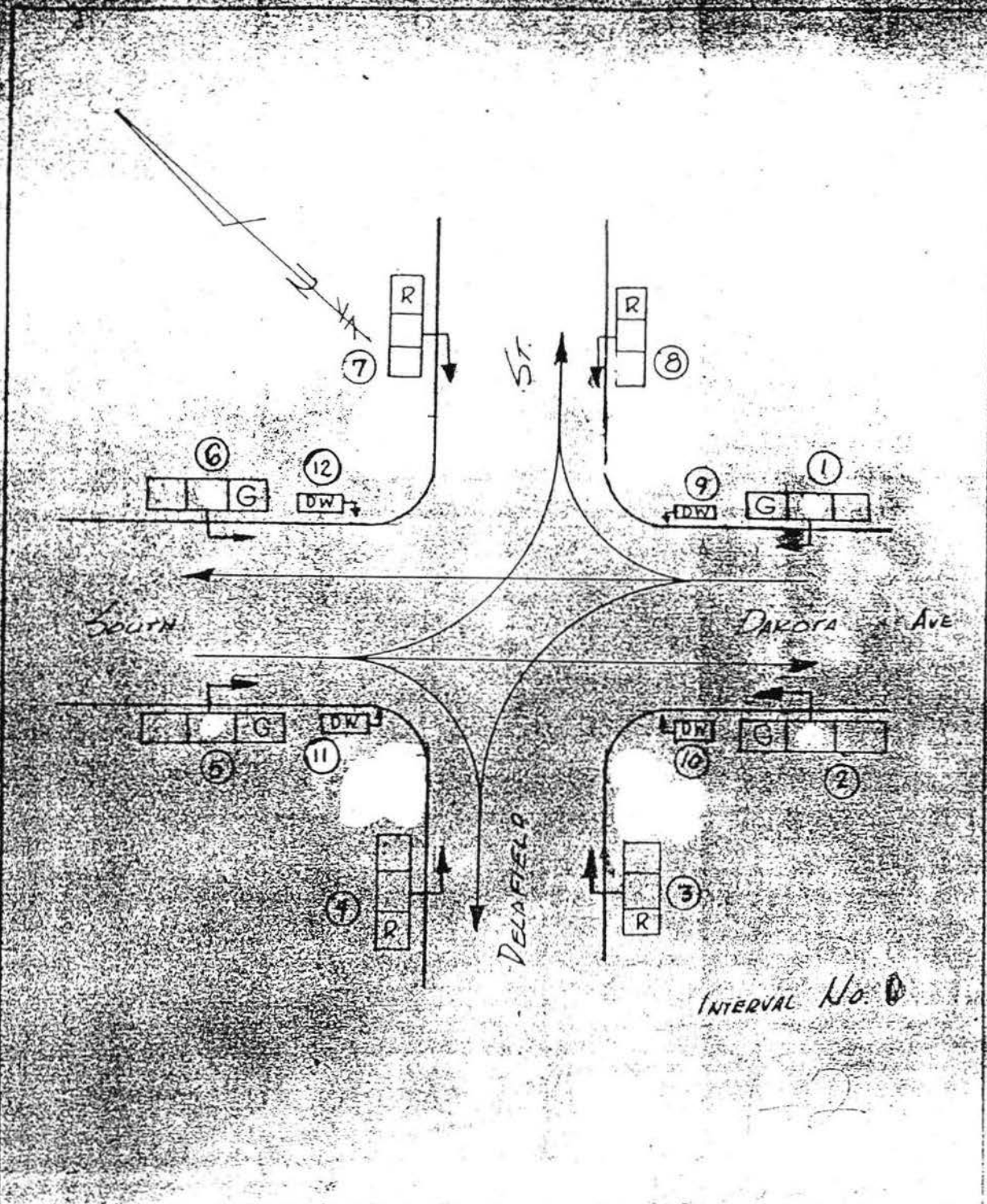


APPENDIX C

DDOT Traffic Signal Timings

TIMING PLAN SCHEDULE			TS- 1240		SOUTH DAKOTA AVENUE AND DELAFIELD STREET N.E.																									
						LOCATION																								
PLAN	PERIOD	DATE	DEPARTMENT OF PUBLIC WORKS WASHINGTON, D.C. BUREAU OF TRAFFIC SERVICES										S-DRAWING NO:									SHEET 1								
													CONTROLLER			ISNUM			ACISA											
													170			678			3206											
DESCRIPTION			TIMING PLAN NUMBER																											
			1		2		3		4		5		6		7		8													
INTERVAL			NO.	NO.	S	C	S	C	S	C	S	C	S	C	S	C	S	C	S	C	S	C	S	C	S	C				
SOUTH DAKOTA AVENUE GREEN			F	1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
SOUTH DAKOTA AVENUE GREEN			V	2	30	40	35	45	35	45	60	70	55	65	55	65	75	85	75	85										
SOUTH DAKOTA AVENUE YELLOW			F	3	5	45	5	50	5	50	5	75	5	70	5	70	5	90	5	90										
DELAFIELD STREET GREEN + FW			F	4	10	55	10	60	10	60	10	85	10	80	10	80	10	100	10	100										
DELAFIELD STREET GREEN + FW			V	5	3	58	8	68	8	68	3	88	8	88	8	88	8	108	8	108										
DELAFIELD STREET GREEN + FDW			F	6	7	65	7	75	7	75	7	95	7	95	7	95	7	115	7	115										
DELAFIELD STREET YELLOW + DW			F	7	5	70	5	80	5	80	5	100	5	100	5	100	5	120	5	120										
CYCLE LENGTH					70		80		80		100		100		100		120		120											
OFFSET					10		78		6		11		36		22		14		98											
PREPARED BY:			WWM		WWM		WWM		NJ		NJ		NJ		NJ		NJ													
DATE TO SHOP:			7/8/87		7/8/87		7/8/87		1/7/04		1/7/04		1/7/04		1/7/04		1/7/04													
WORK OR SHOP ORDER NO:									S01-04-01		S01-04-01		S01-04-01		S01-04-01		S01-04-01													
APPROVED BY:					R GHAMAN				WWM		WWM		WWM		WWM		WWM													
DATE INSTALLED:									2/23/04		2/23/04		2/23/04		2/23/04		2/23/04													
INSTALLED BY:									BY		BY		BY		BY		BY													

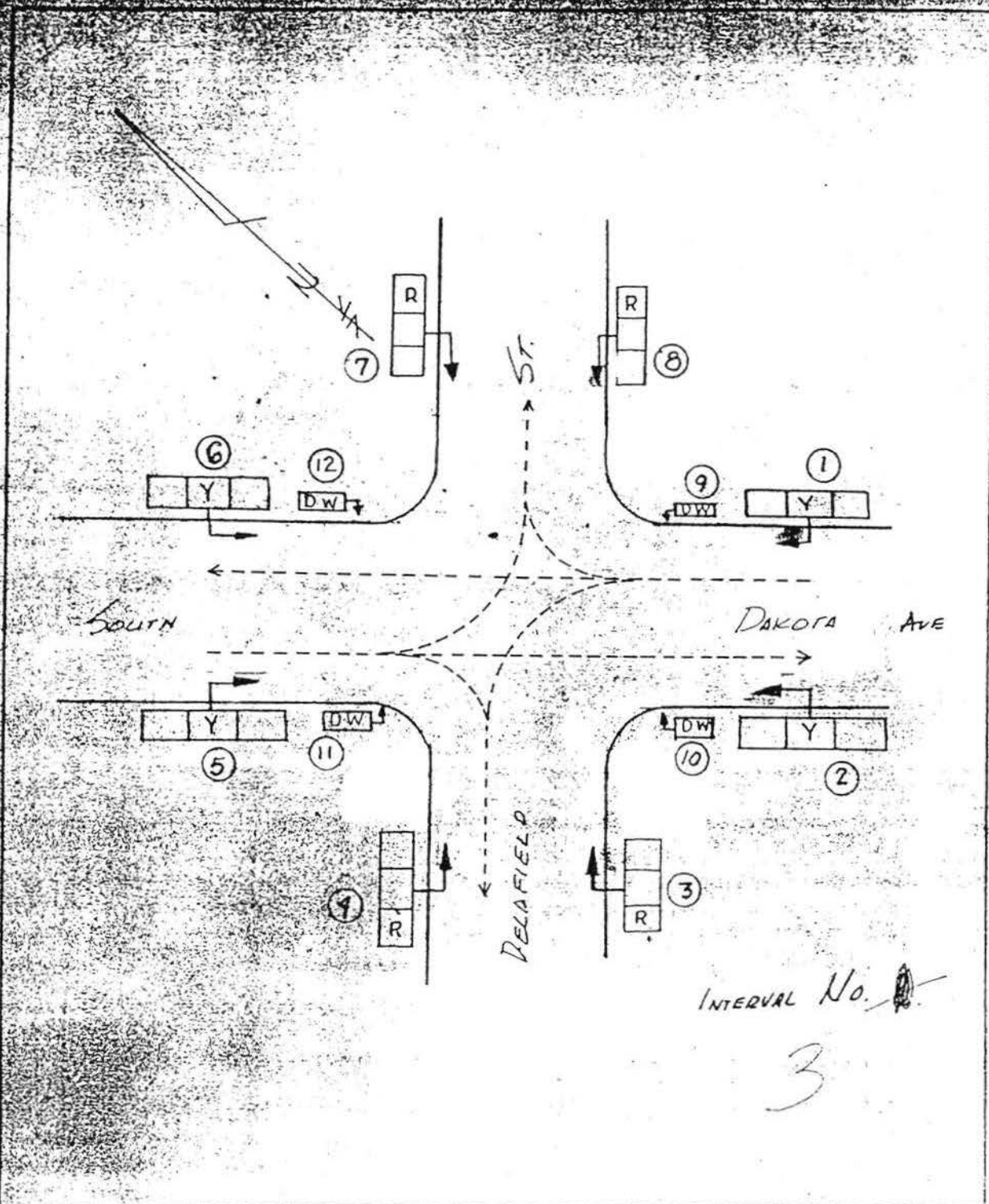
S=Seconds
C=Cummulative secs
F=Fixed interval
V=Variable Interval
= Force Off (circle the interval)



SIGNAL OPERATION

SOUTH DAKOTA AVE & DELAFIELD ST N.E.

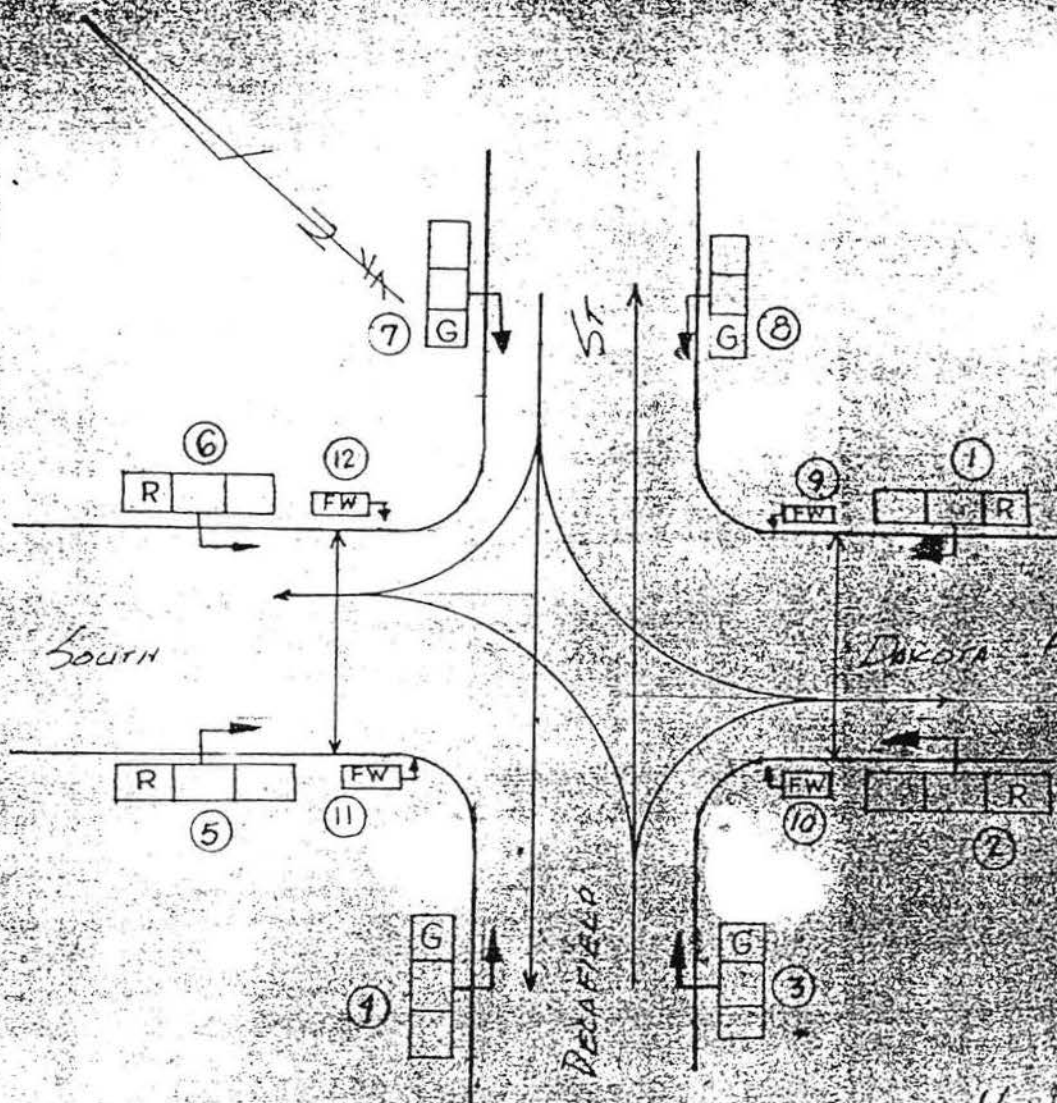
DEPARTMENT OF HIGHWAYS & TRAFFIC, D. C. BUREAU OF TRAFFIC ENGINEERING & OPERATIONS		Submitted Traffic Signal Engineer	T. S.
Designed by	Date	Recommended Traffic Control Engineer	12:40
Checked by	Date	Approved Traffic Operations Engineer	Sheet 1 of 5
In Service	1-09-70	Scale	NONE



SIGNAL OPERATION

SOUTH DAKOTA AVE & DELAFIELD ST. N.E.

DEPARTMENT OF HIGHWAYS & TRAFFIC, D. C. BUREAU OF TRAFFIC ENGINEERING & OPERATIONS			Submitted	T. S.
			Traffic Signal Engineer	
Designed by			Recommended	1240
Checked by	Date		Traffic Control Engineer	
Drawn by	Date		Approved	Sheet 2 of 5
In Service	Scale	NONE	Traffic Operations Engineer	

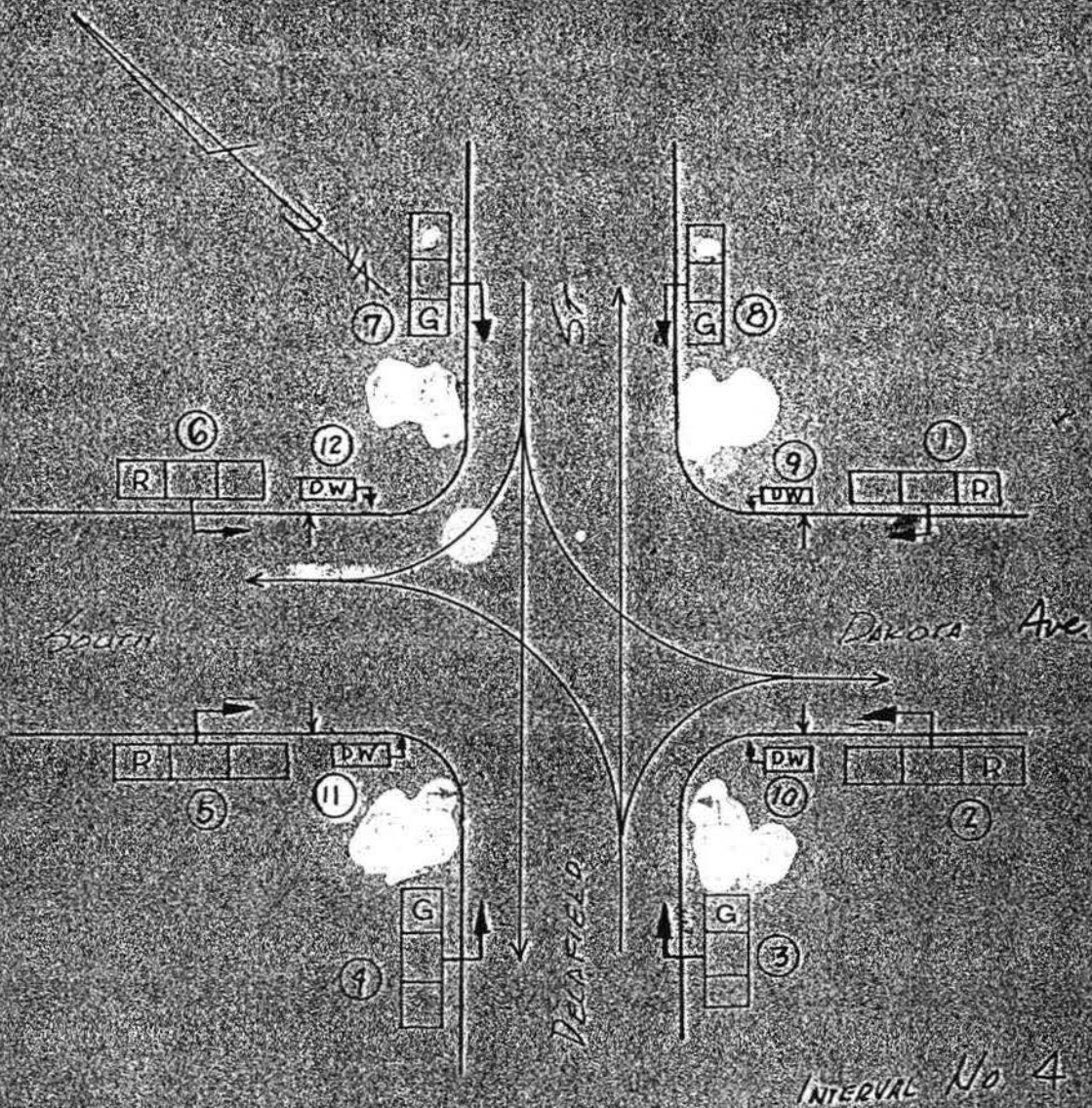


SIGNAL OPERATION

SOUTH DAKOTA AVE & DELAFIELD ST. N.E.

DEPARTMENT OF HIGHWAYS & TRAFFIC, D. C.			Submitted	T. S.
BUREAU OF TRAFFIC ENGINEERING & OPERATIONS			Traffic Signal Engineer	
Designed by			Recommended	1240
Checked by	Date		Traffic Control Engineer	
Drawn by	Date		Approved	Sheet
In Service	Scale	NONE	Traffic Operations Engineer	

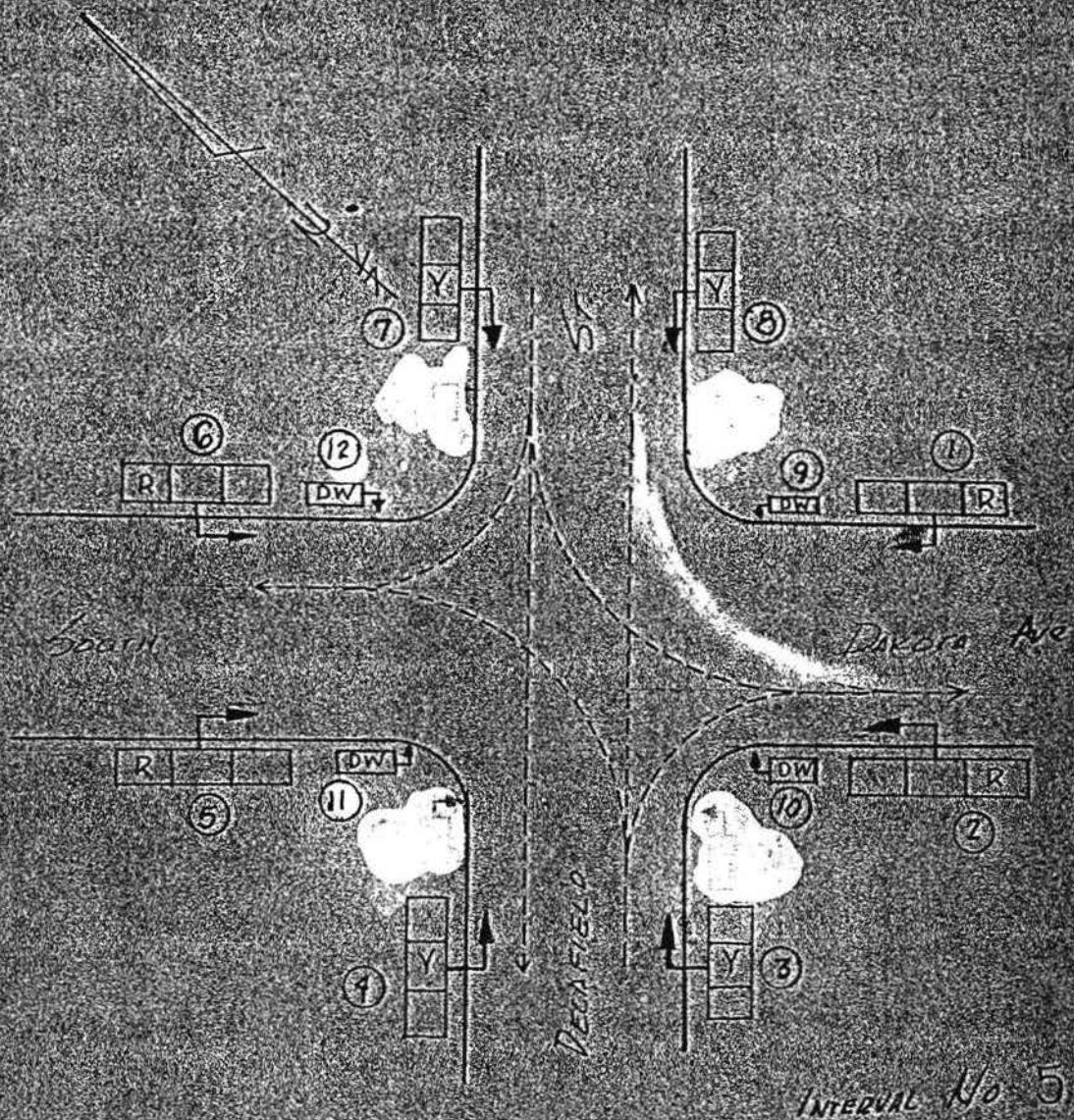
3 of 5



SIGNAL OPERATION

SOUTH DAKOTA AVE & DELAFIELD ST. N.E

DEPARTMENT OF HIGHWAYS & TRAFFIC D. C.		Submitted	T. S.
BUREAU OF TRAFFIC ENGINEERING & OPERATIONS		Traffic Signal Engineer	
Designed by		Recommended	1240
Checked by	Date	Traffic Control Engineer	
Drawn by	Date	Approved	Sheet
In Service	Scale NONE	Traffic Operations Engineer	

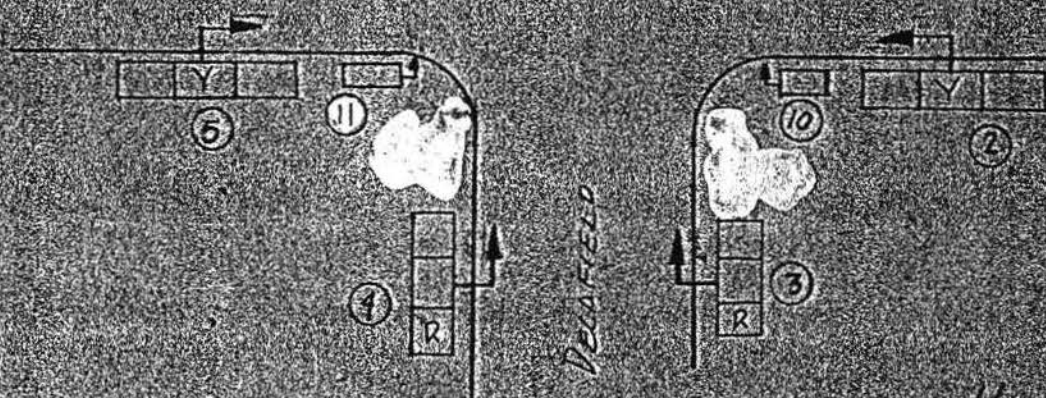
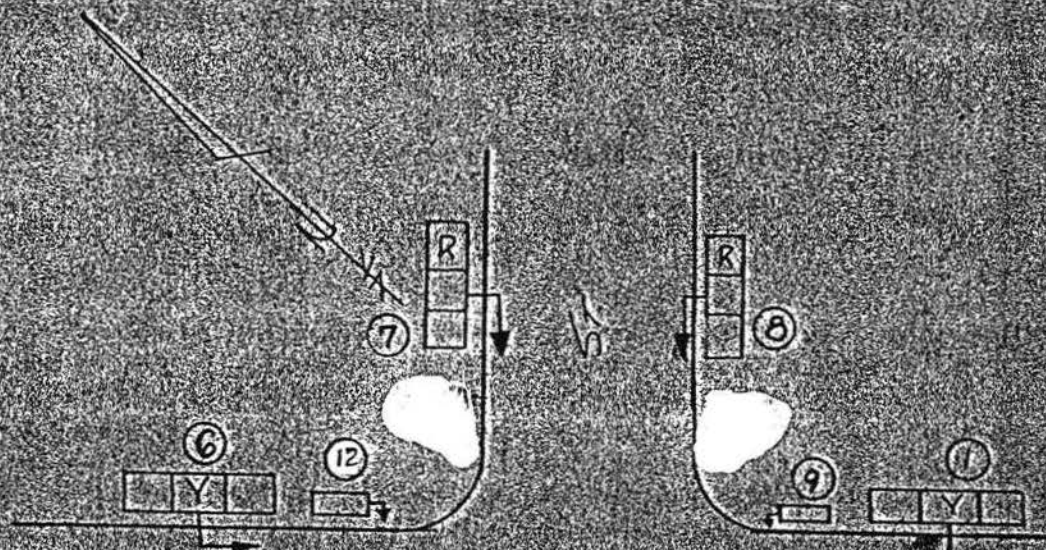


SIGNAL OPERATION

SOUTH DAKOTA AVE & DELAFIELD ST. N.E.

DEPARTMENT OF HIGHWAYS & TRAFFIC, D. C.		Submitted	T. S.
BUREAU OF TRAFFIC ENGINEERING & OPERATIONS		Traffic Signal Engineer	
Designed by		Recommended	1240
Checked by <i>MA</i>	Date	Traffic Control Engineer	
Drawn by	Date	Approved	Sheet
In Service	Scale NONE	Traffic Operations Engineer	

5 of 5



INTERVAL NO FLASH
24 HOUR

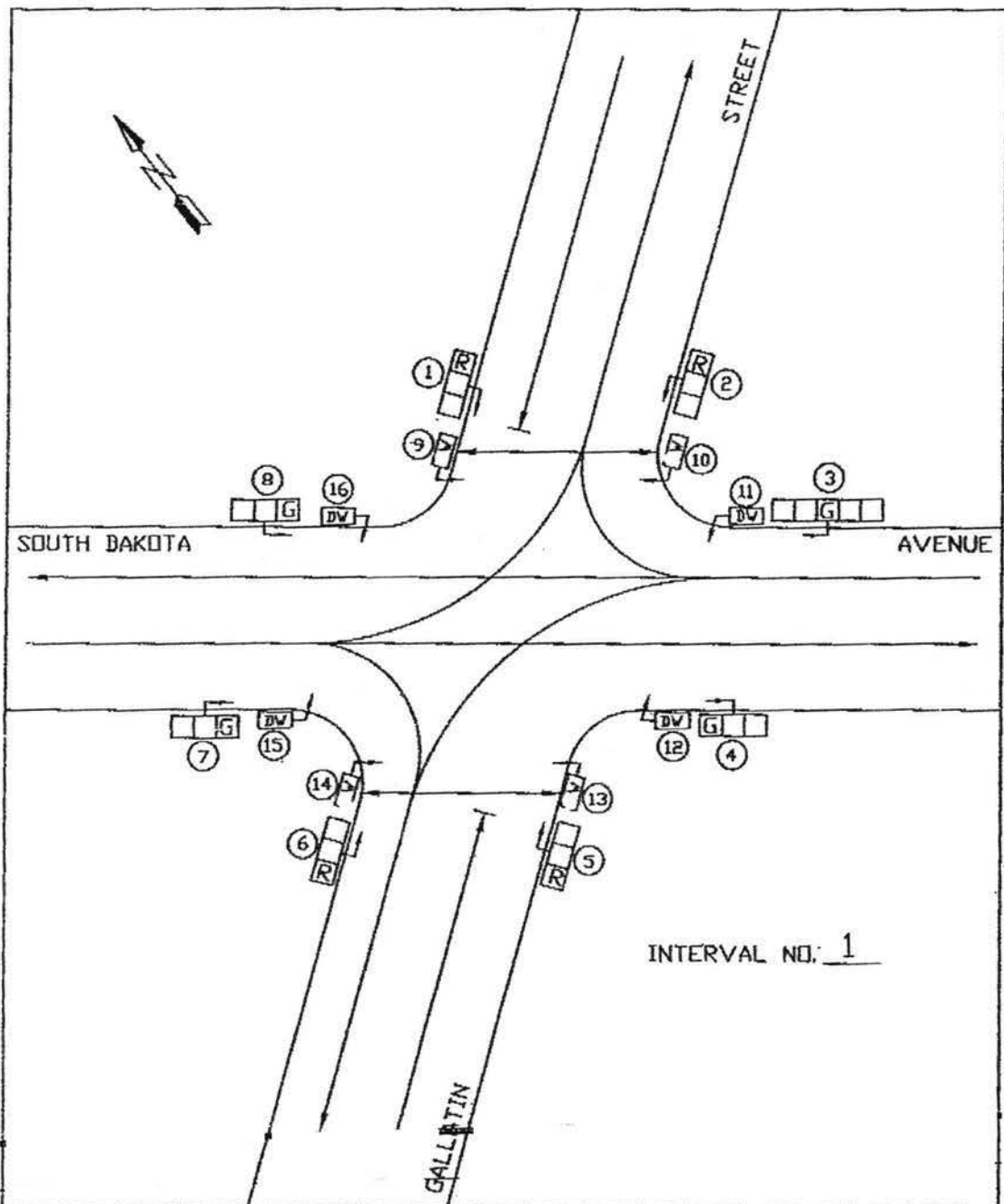
SIGNALS operate on colors 24
hours per day. Flashing for
emergency use only.

SIGNAL OPERATION

South Dakota Ave & Delafield St. N.E.

DEPARTMENT OF HIGHWAYS & TRAFFIC, D. C. BUREAU OF TRAFFIC ENGINEERING & OPERATIONS		Submitted Traffic Signal Engineer	T.S. 1240
Designed by		Recommended	
Checked by	Date	Traffic Control Engineer	Flash
Drawn by	Date	Approved	
In Service	Scale	None	Traffic Operations Engineer

#2067 P.018 /032

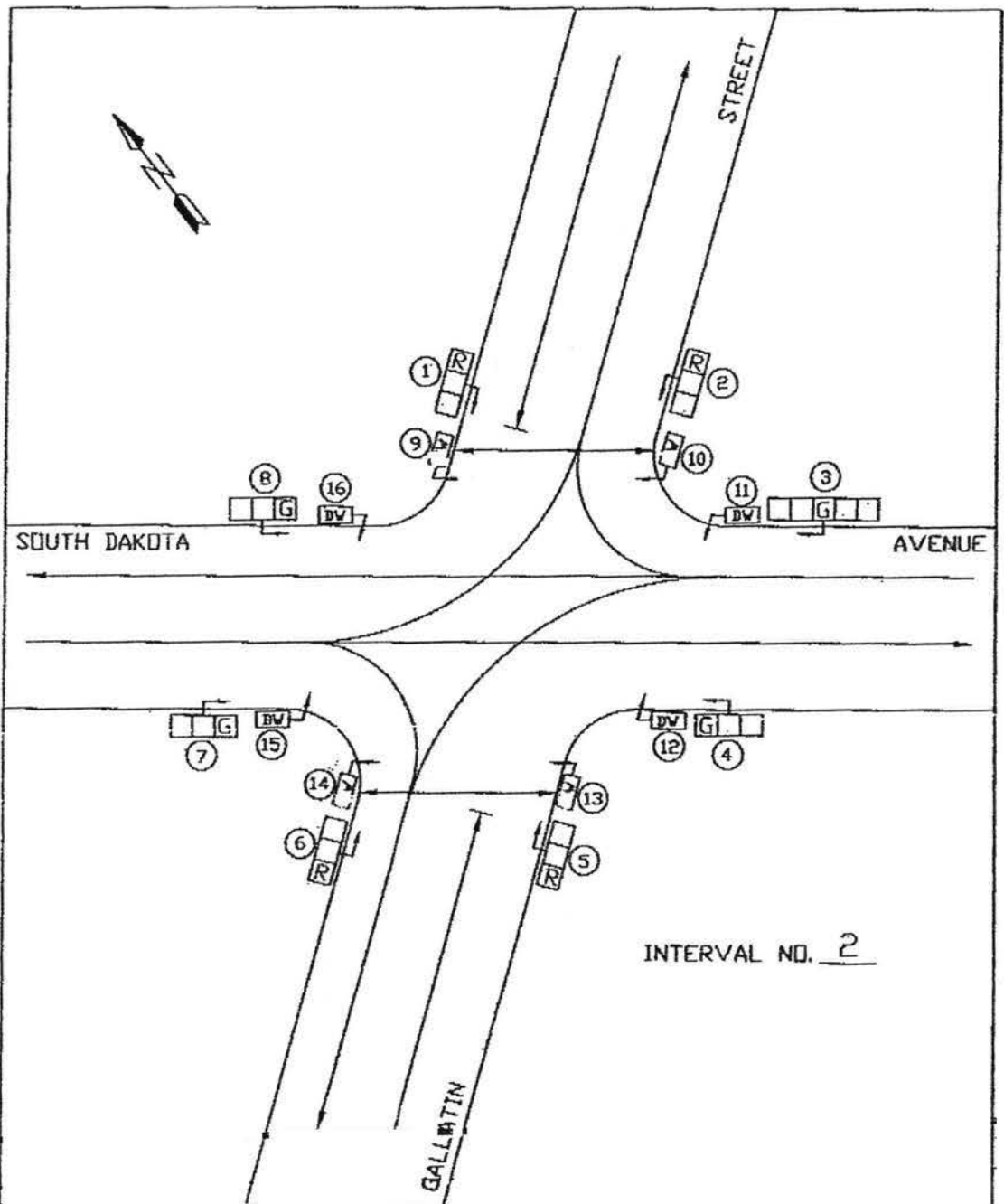


TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

CHECK BY: J.E. AMIAGBOSI 7/22/04
DRAWN BY: TH 9/11/02
IN SERVICE

DESIGNED BY: *Nacum*
SUBMITTED BY: *Johnny Amagbosi* 7/22/04
APPROVED BY: *William W. McDermott* 9/9/04
T.S. 1575-C
SHEET 1 OF 13



TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

DESIGNED BY: _____

T.S.

SUBMITTED BY: _____

CHIEF OF SIGNAL DESIGN BRANCH

1575-C

APPROVED BY: _____

DIVISION CHIEF

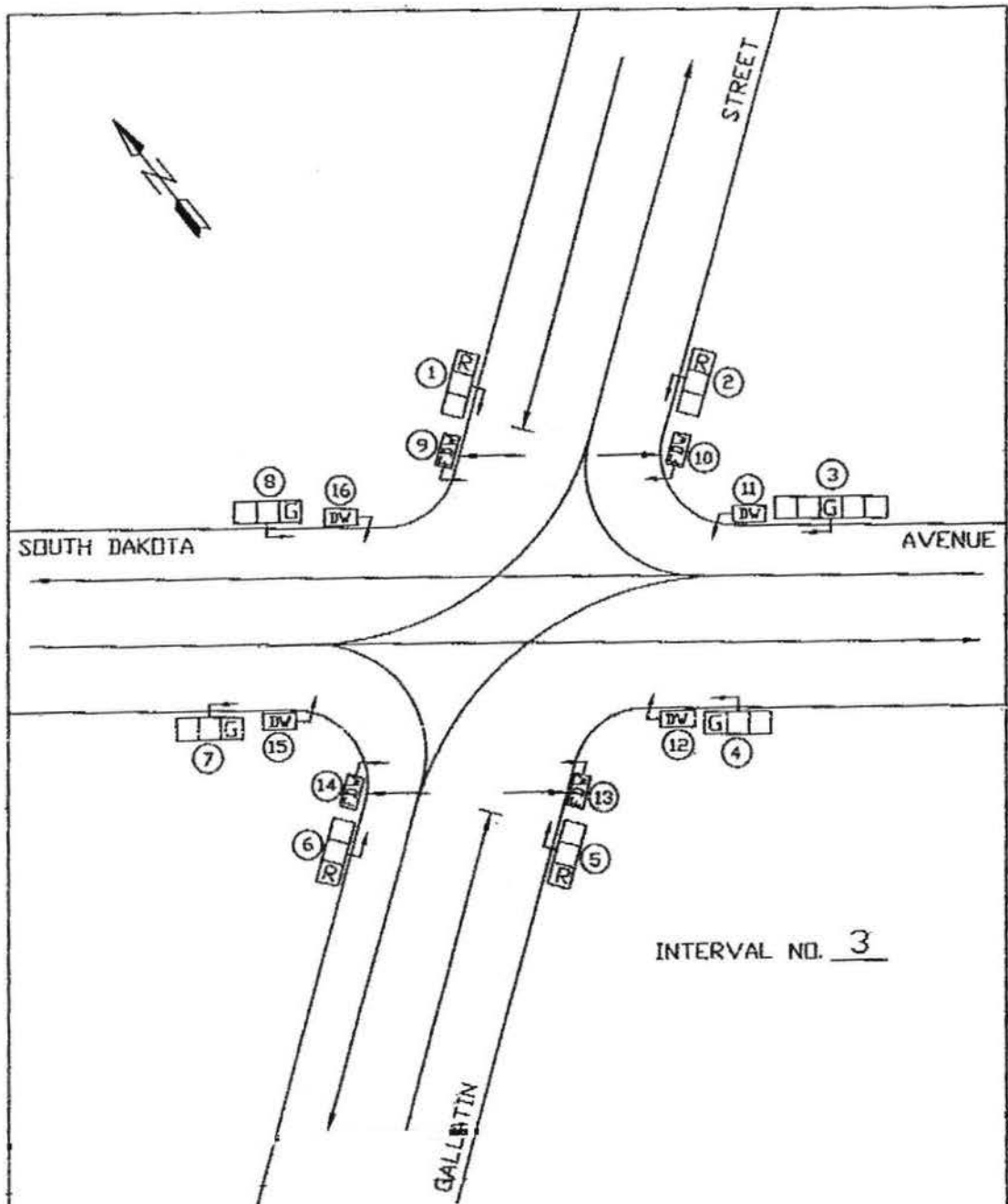
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2 OF 13

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TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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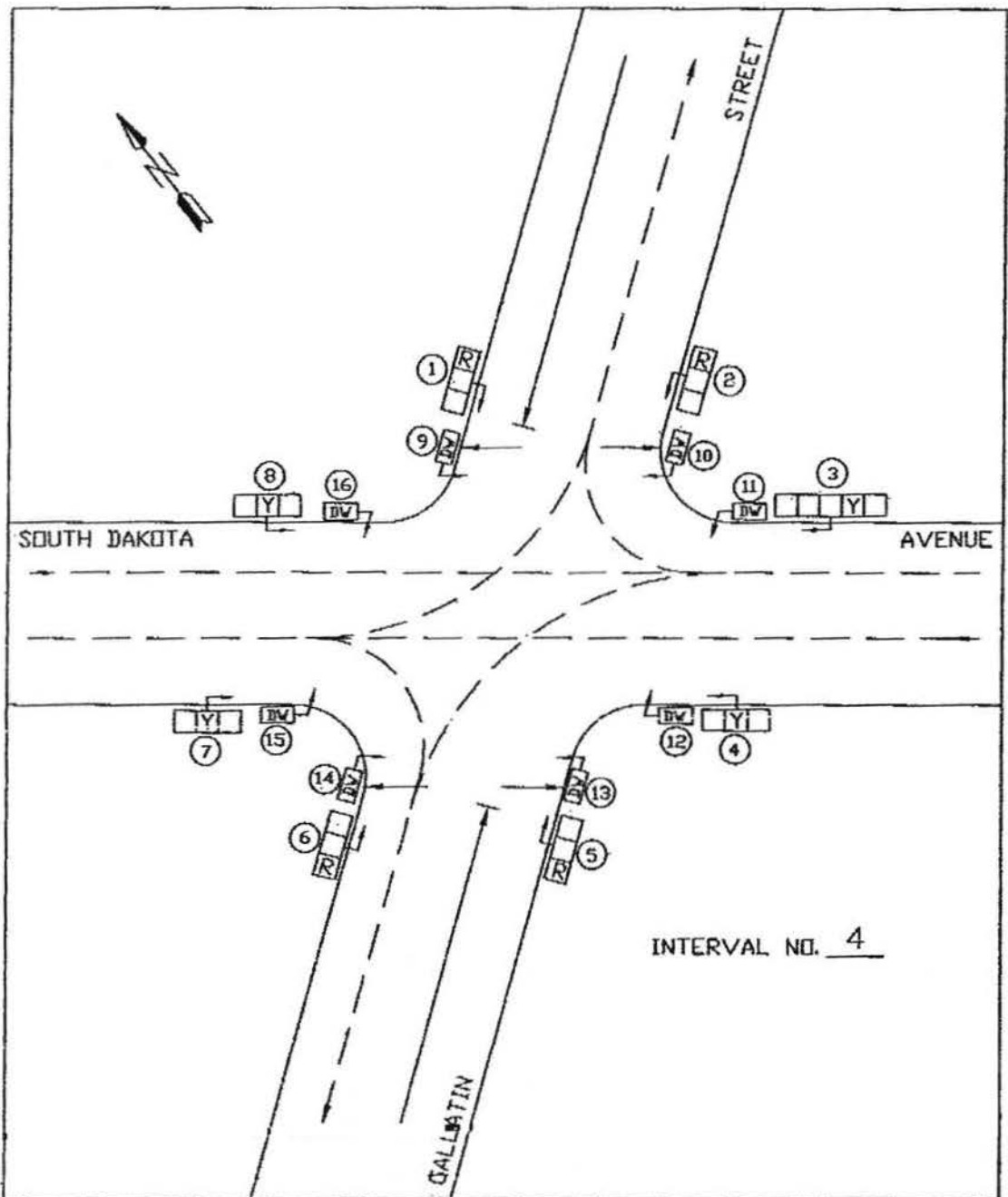
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CHIEF OF SIGNAL DESIGN BRANCH

APPROVED BY: _____
DIVISION CHIEF

T.S.
1575-C

SHEET

3 OF 13



TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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SUBMITTED BY:

CHIEF OF SIGNAL DESIGN BRANCH

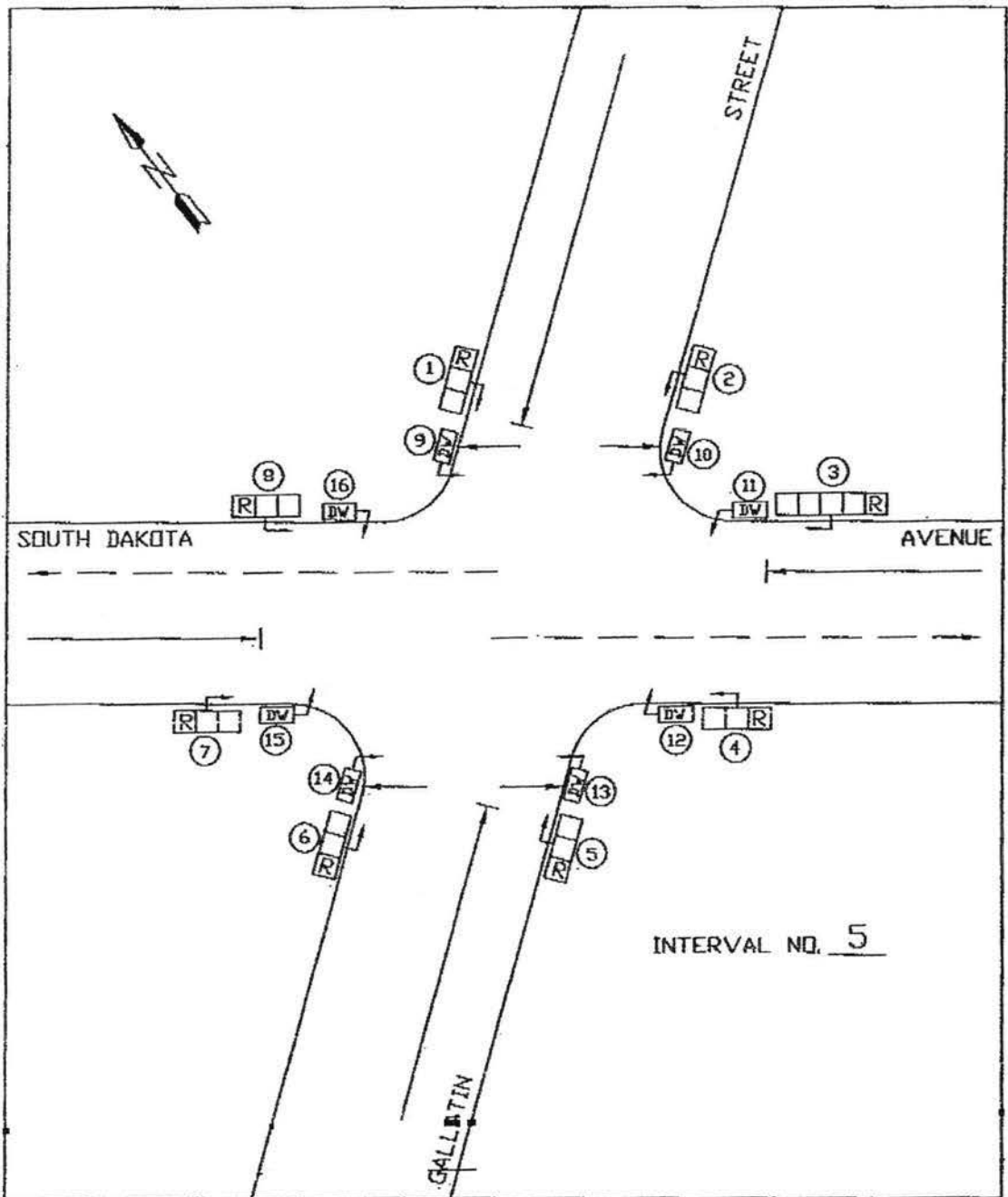
APPROVED BY:

DIVISION CHIEF

T.S.
1575-C

SHEET

4 OF 13



TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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CHIEF OF SIGNAL DESIGN BRANCH

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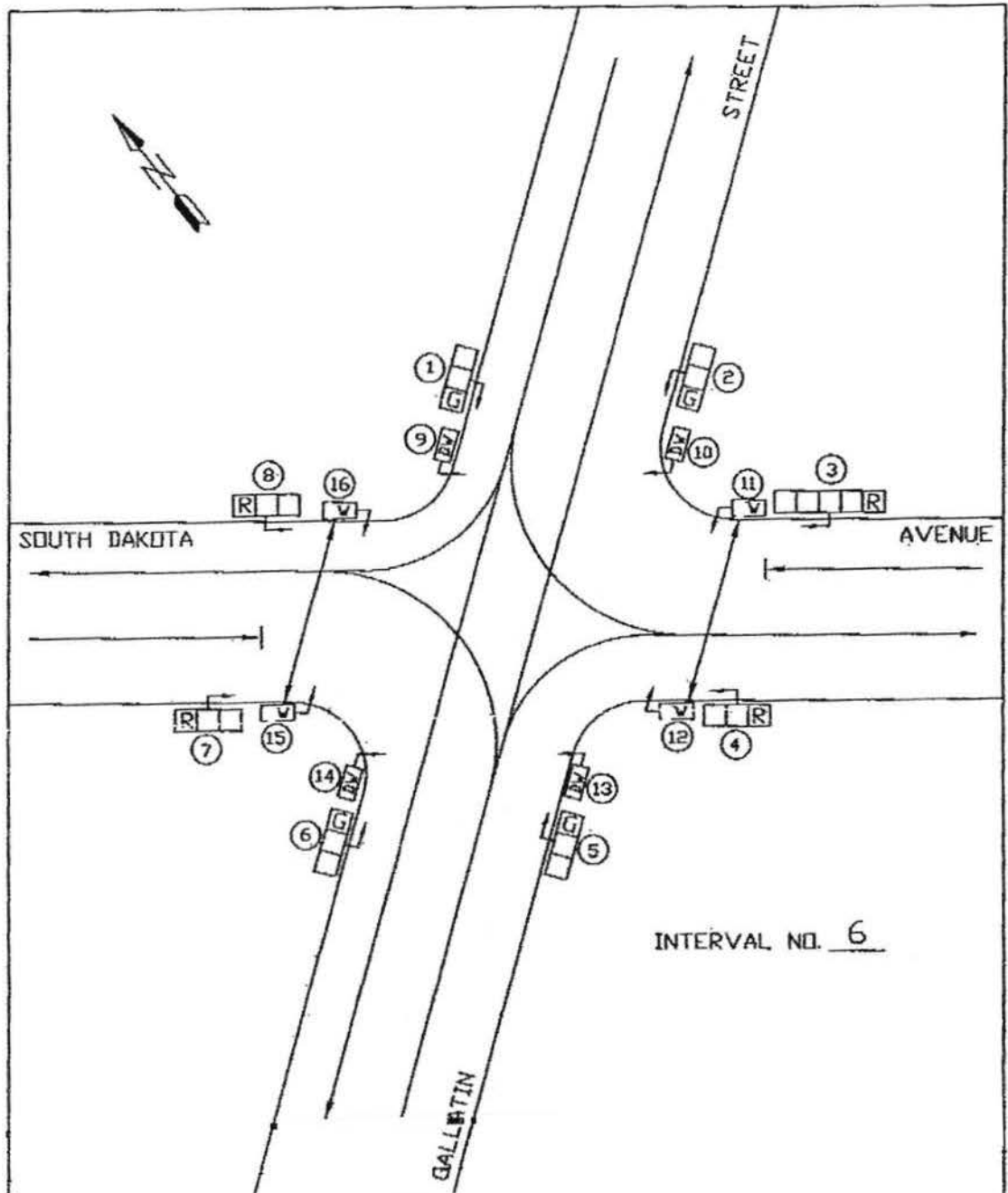
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5 OF 13

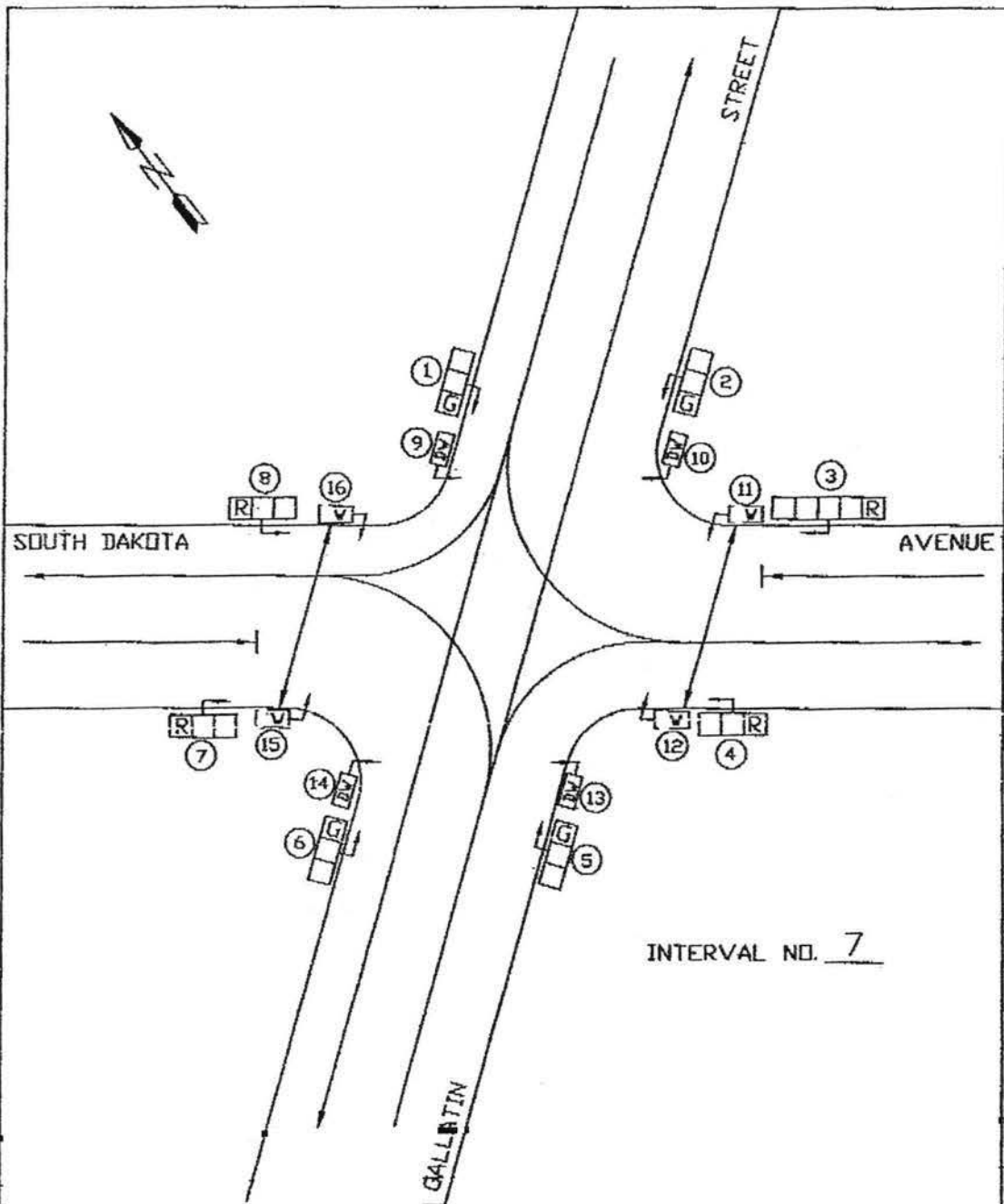
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TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS BUREAU OF TRAFFIC SERVICES TRAFFIC SIGNAL SYSTEM DIVISION		DESIGNED BY: _____	T.S. 1575-C
CHECK BY: _____		SUBMITTED BY: _____ CHIEF OF SIGNAL DESIGN BRANCH	SHEET
DRAWN BY: TH		APPROVED BY: _____ DIVISION CHIEF	6 OF 13
IN SERVICE			



INTERVAL NO. 7

TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

DESIGNED BY: _____

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1575-C

SUBMITTED BY: _____
CHIEF OF SIGNAL DESIGN BRANCH

SHEET

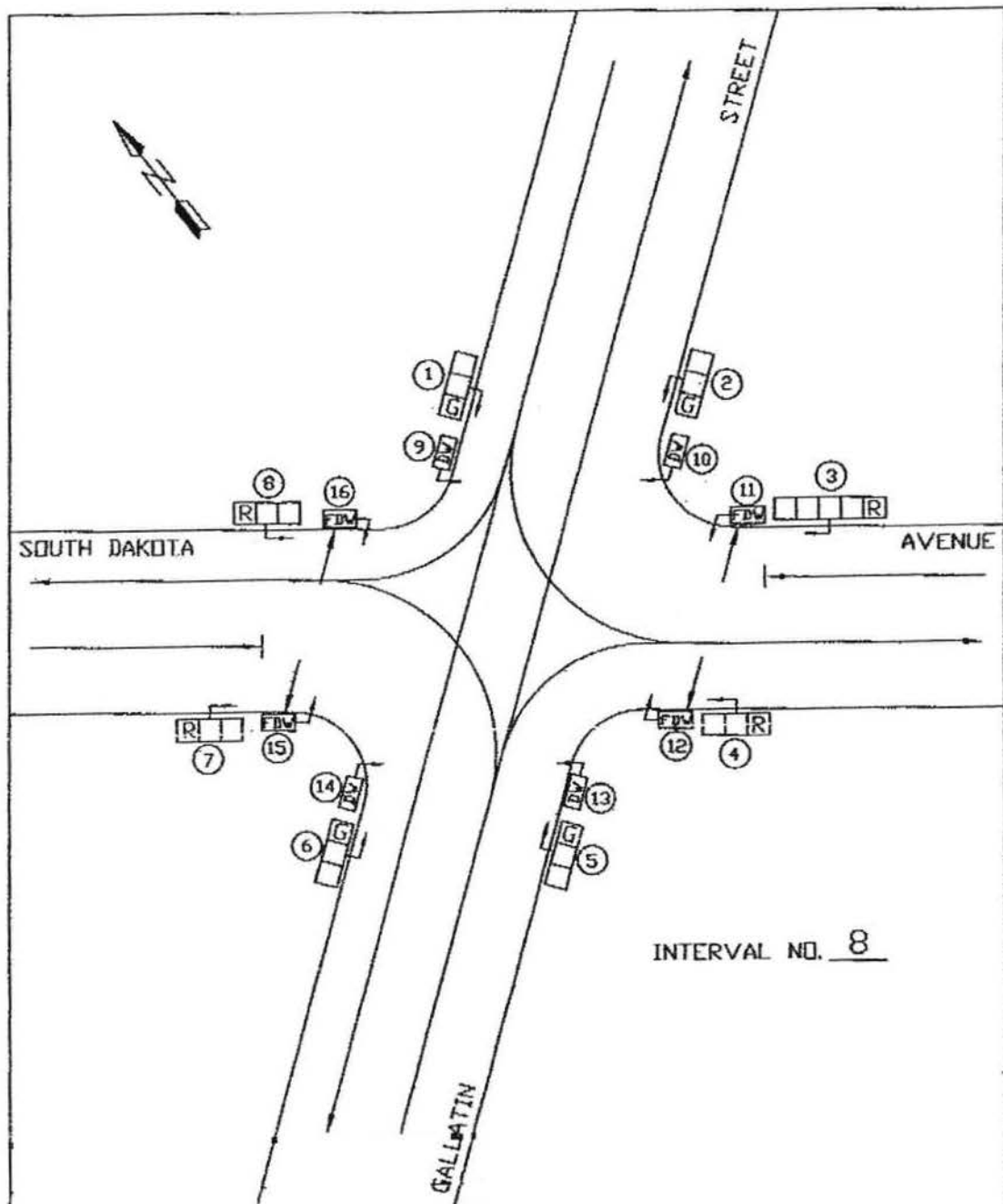
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7 OF 13

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TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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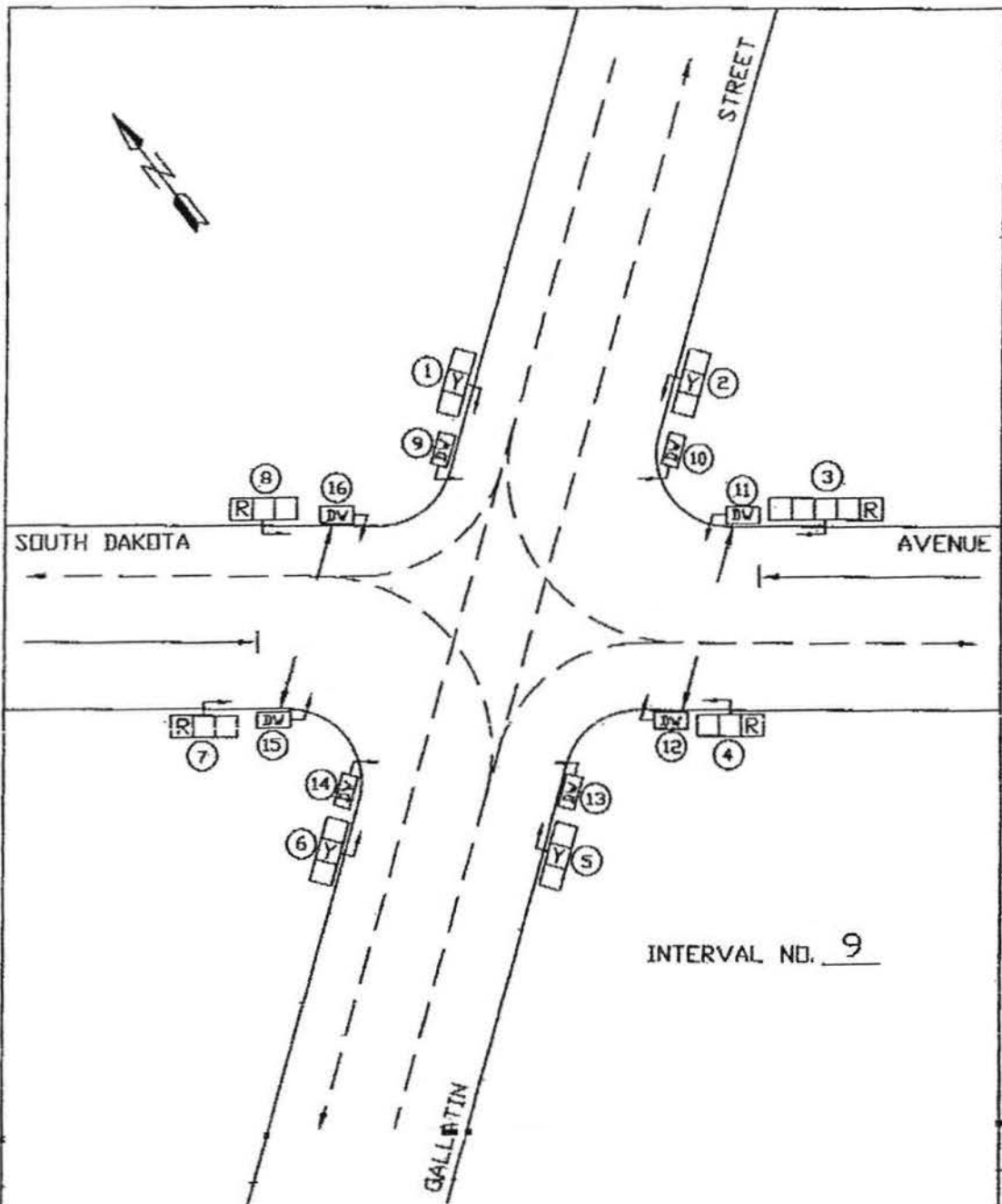
SUBMITTED BY: _____
CHIEF OF SIGNAL DESIGN BRANCH

APPROVED BY: _____
DIVISION CHIEF

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8 OF 13



TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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CHIEF OF SIGNAL DESIGN BRANCH

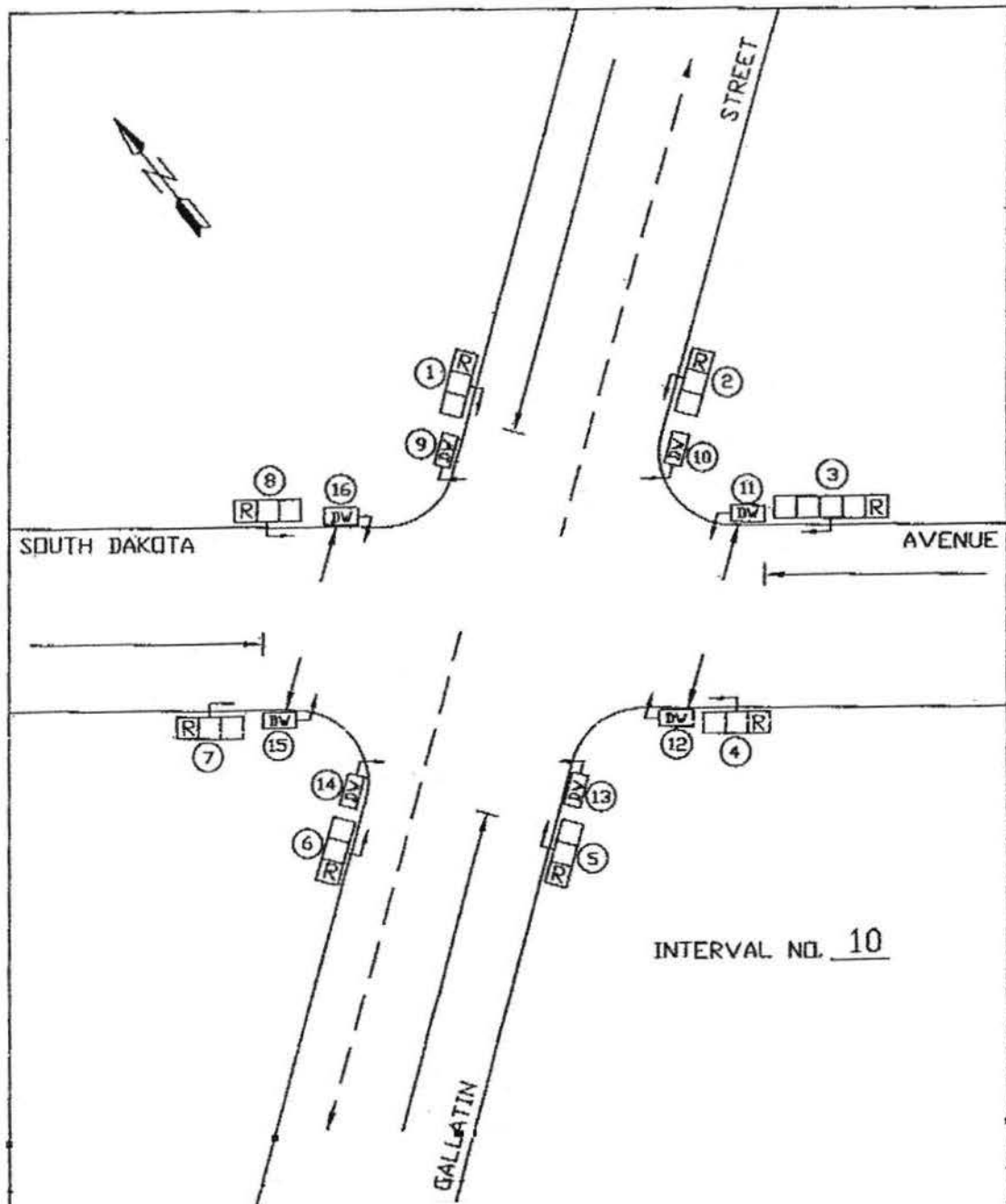
APPROVED BY:

DIVISION CHIEF

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TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
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TRAFFIC SIGNAL SYSTEM DIVISION

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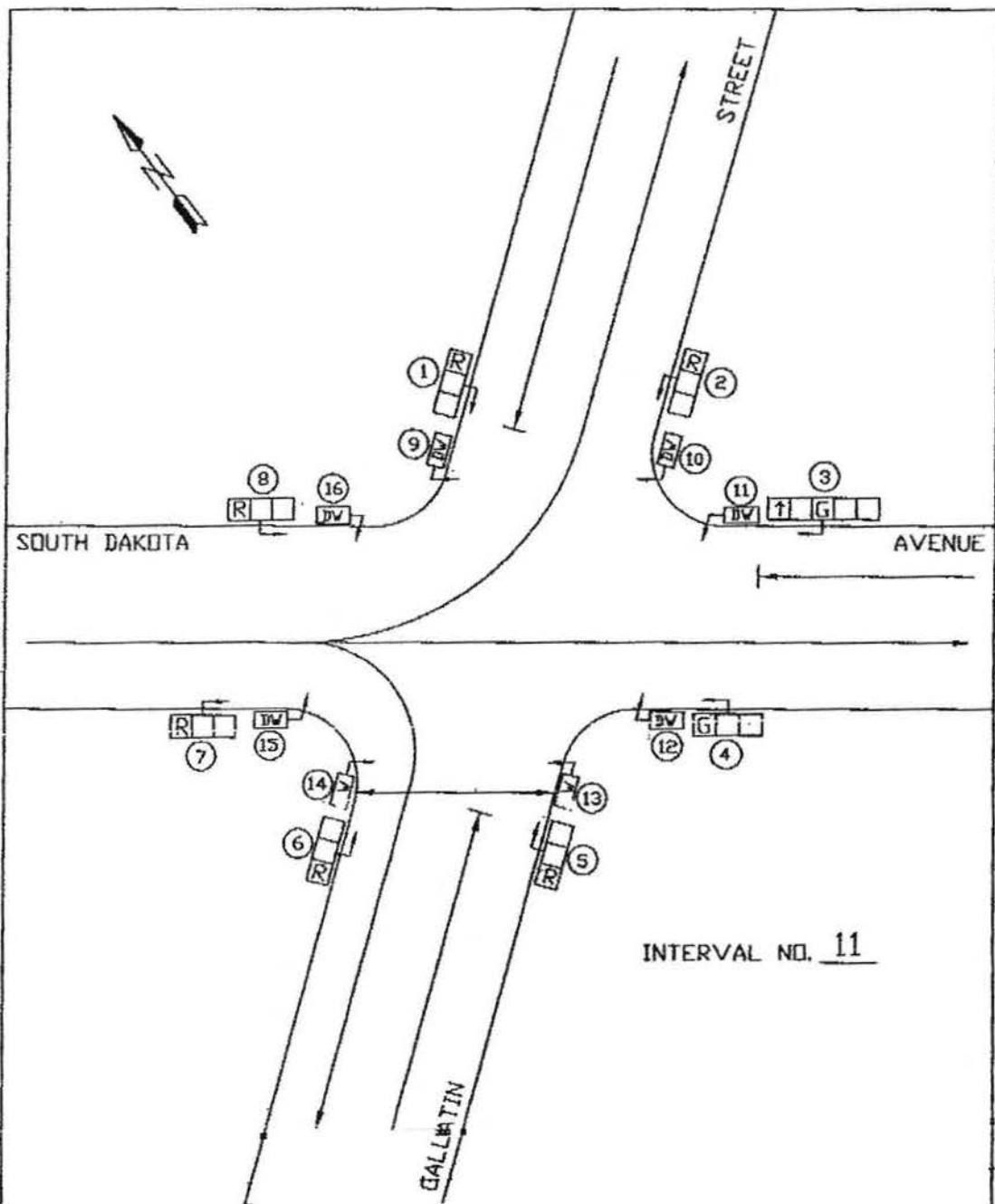
DIVISION CHIEF

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SHEET

10 OF 13



TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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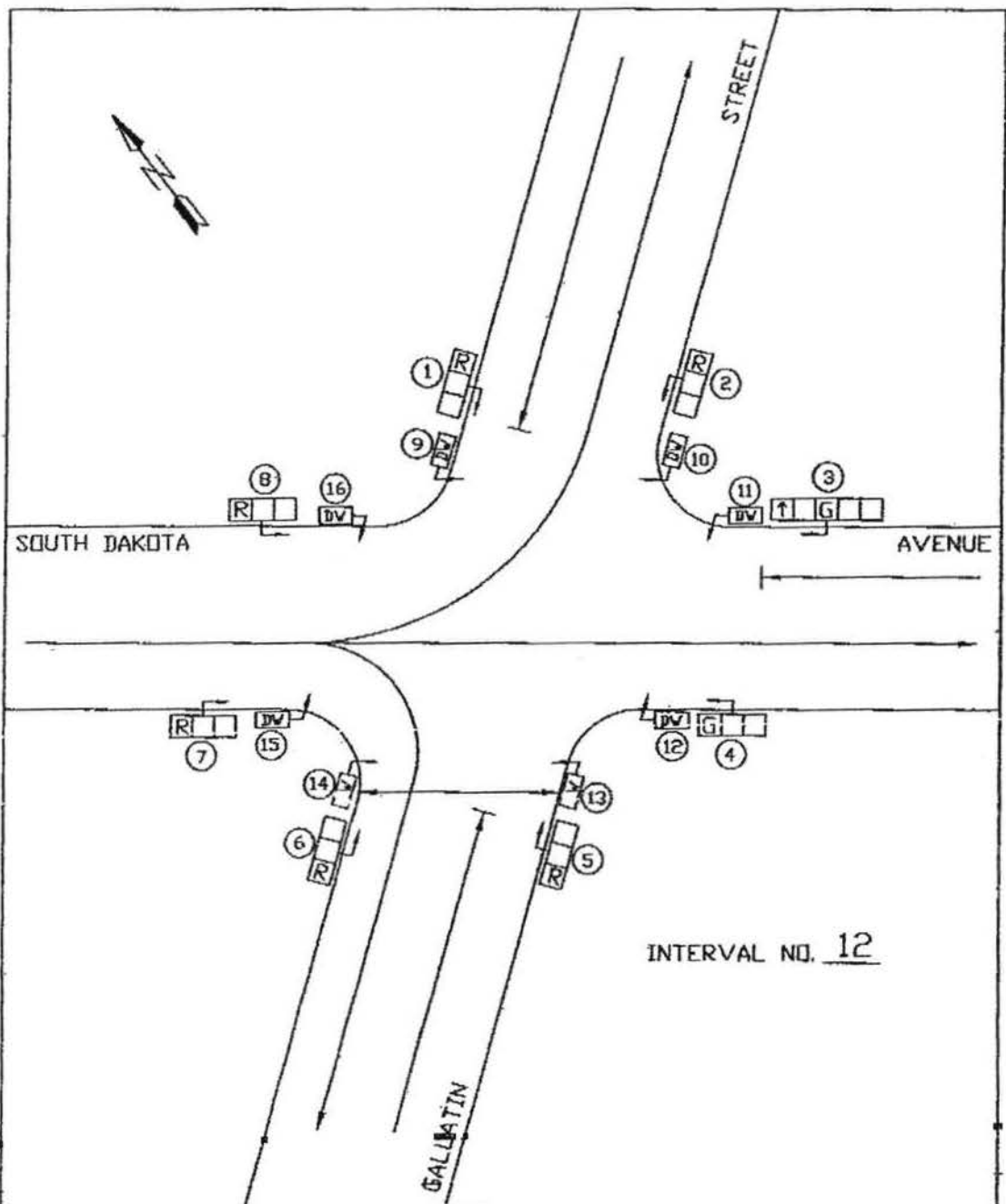
DIVISION CHIEF

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1575-C

SHEET

11 OF 13



TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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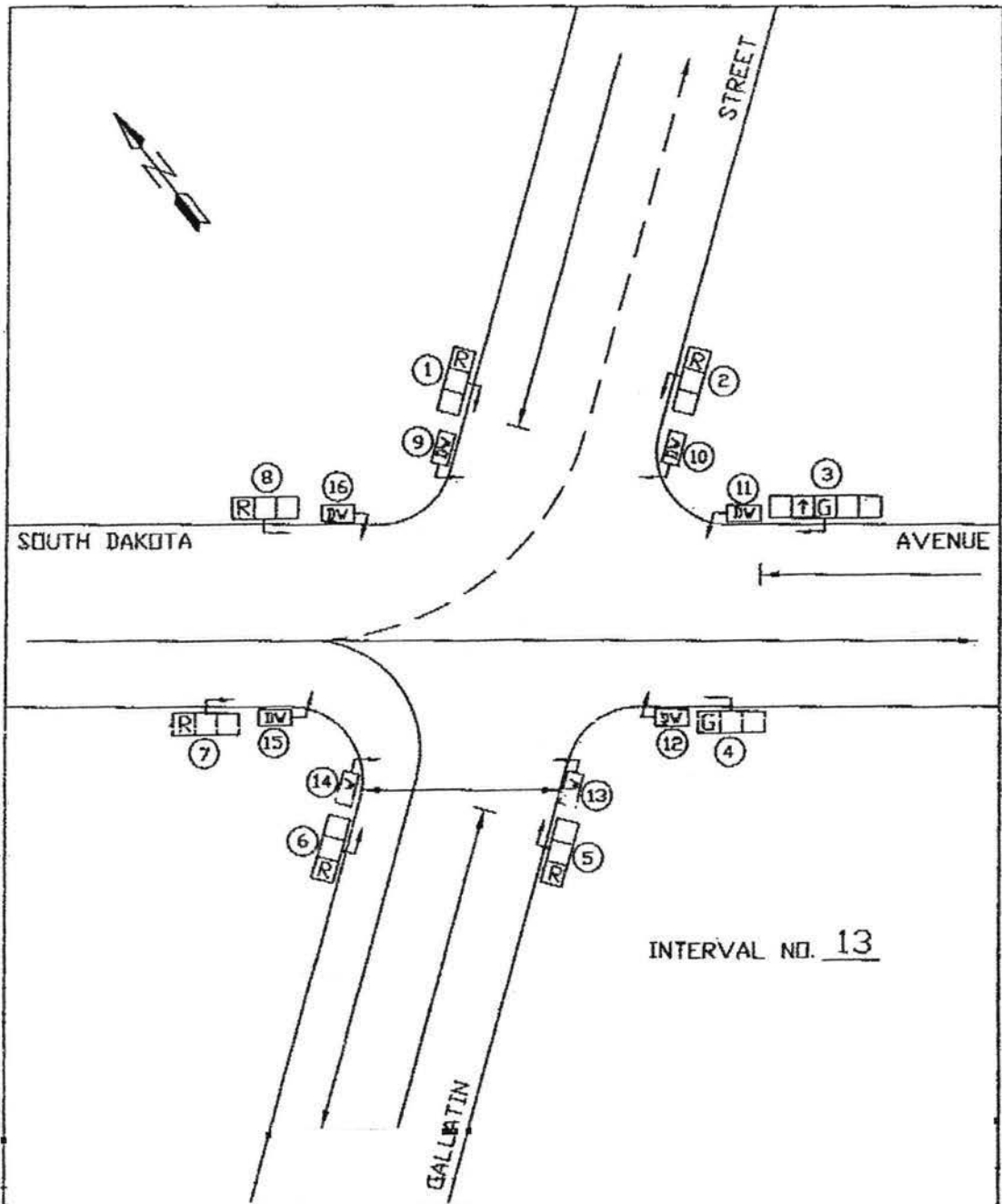
CHIEF OF SIGNAL DESIGN BRANCH

DIVISION CHIEF

T.S.
1575-C

SHEET

12 OF 13



TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

DESIGNED BY : _____

T.S.
1575-C

SUBMITTED BY : _____
CHIEF OF SIGNAL DESIGN BRANCH

SHEET

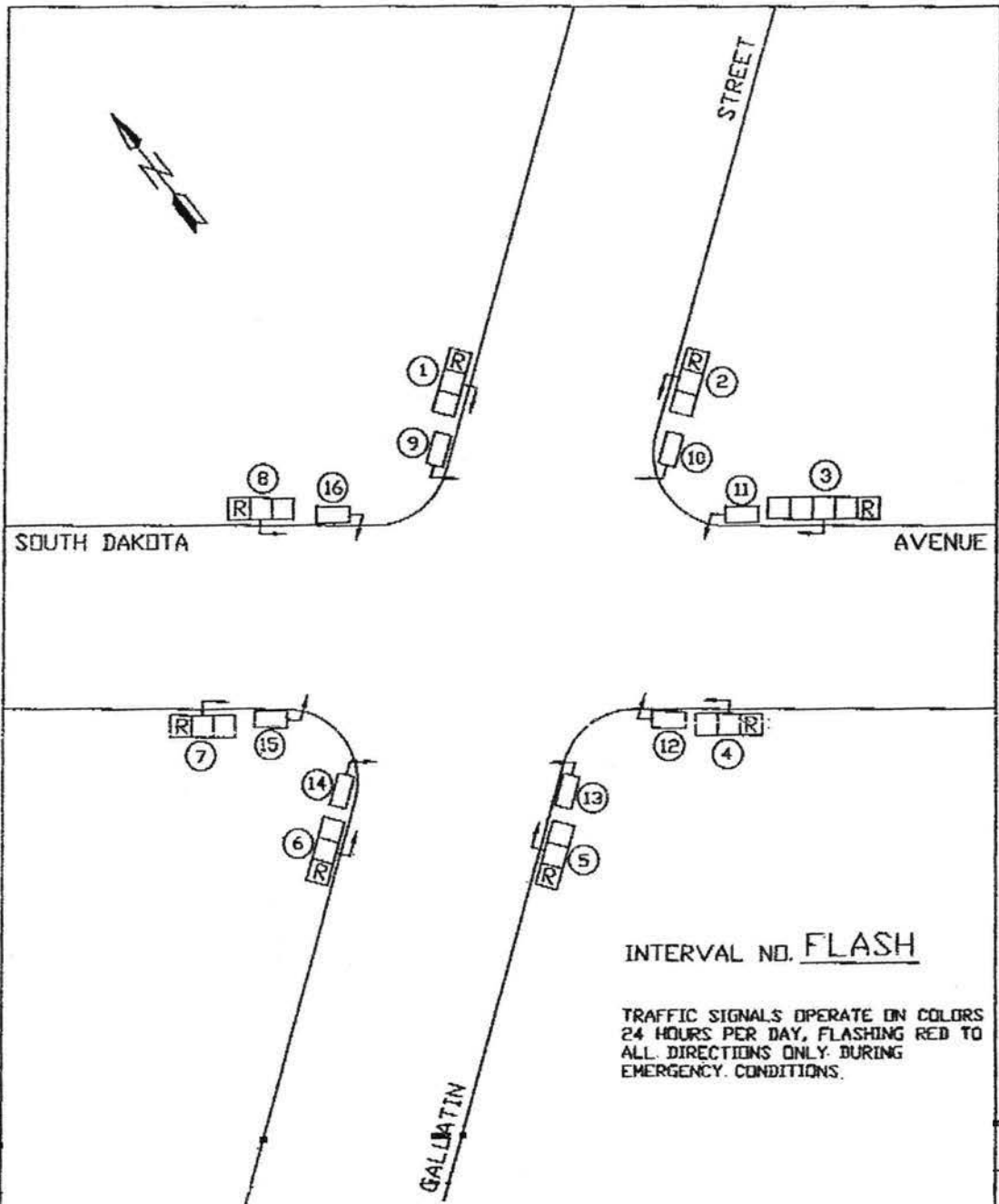
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DIVISION CHIEF

13 OF 13

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TRAFFIC SIGNAL OPERATION
SOUTH DAKOTA AVENUE AND GALLATIN STREET, N.E.

D.C. DEPARTMENT OF PUBLIC WORKS
BUREAU OF TRAFFIC SERVICES
TRAFFIC SIGNAL SYSTEM DIVISION

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SUBMITTED BY: _____

CHIEF OF SIGNAL DESIGN BRANCH

APPROVED BY: _____

DIVISION CHIEF

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1575-C

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OF

APPENDIX D

Level of Service Descriptions

Level of Service Criteria¹

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. Specifically, level of service criteria is stated in terms of the average control delay per vehicle. The criteria for signalized intersections are given in Table I. Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio and the volume to capacity ratio for the lane group in question.

Table I
Level-of-Service Criteria for Signalized Intersections

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (SEC/VEH)
A	≤ 10.0
B	> 10.0 and ≤ 20.0
C	> 20.0 and ≤ 35.0
D	> 35.0 and ≤ 55.0
E	> 55.0 and ≤ 80.0
F	> 80.0

LOS A describes operations with very low delay, up to 10 seconds per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

LOS B describes operations with delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay.

LOS C describes operations with delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

LOS D describes operations with delay greater than 35 and up to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from a combination of unfavorable progression, long cycle lengths or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E describes operations with delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences.

LOS F describes operations with delay in excess of 80 seconds per vehicle. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It also may occur at high volume to capacity ratios with many individual cycle failures. Poor progression and long cycle lengths also may be major contributing causes to such delay levels.

The level of service criteria for stop controlled intersections is given in Table 2. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in queue. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation.

Table 2
Level of Service Criteria for Stop Controlled Intersections

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (SEC/VEH)
A	≤ 10
B	$> 10 \text{ and } \leq 15$
C	$> 15 \text{ and } \leq 25$
D	$> 25 \text{ and } \leq 35$
E	$> 35 \text{ and } \leq 50$
F	> 50

The level of service criteria for stop controlled intersections is somewhat different from the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, several driver behavior considerations combine to make delays at signalized intersections less onerous than at unsignalized intersections.

For example, drivers at signalized intersections are able to relax during the red interval, where drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the total delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection.

¹ Highway Capacity Manual, Transportation Research Board, Washington D.C., 2000.

APPENDIX E

Existing Capacity Analysis

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	JMR			Intersection	1-Emerson St/Industrial Drive		
Agency/Co.	Wells & Associates, LLC			Jurisdiction	Washington, DC		
Date Performed	7/24/2006			Analysis Year	2006 Existing Conditions		
Analysis Time Period	AM Peak						
Project Description 3273 Emerson Park Phase 2							
East/West Street: Emerson Street				North/South Street: Industrial Driveway			
Intersection Orientation: East-West				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	0	0	0	26	0	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	0	0	0	28	0	0	
Proportion of heavy vehicles, P_{HV}	2	-	-	2	-	-	
Median type	Undivided						
RT Channelized?			0			0	
Lanes	0	1	0	0	1	0	
Configuration			TR	LT			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	0	0	12	0	0	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	0	0	13	0	0	0	
Proportion of heavy vehicles, P_{HV}	2	0	2	2	0	2	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT		LR			
Volume, v (vph)		28		13			
Capacity, c_m (vph)		1623		1085			
v/c ratio		0.02		0.01			
Queue length (95%)		0.05		0.04			

Control Delay (s/veh)		7.3		8.4			
LOS		A		A			
Approach delay (s/veh)	—	—	8.4				
Approach LOS	—	—	A				

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Version 4.1d

TWO-WAY STOP CONTROL SUMMARY									
General Information					Site Information				
Analyst		JMR			Intersection		1-Emerson St/Industrial Drive		
Agency/Co.		Wells & Associates, LLC			Jurisdiction		Washington, DC		
Date Performed		7/24/2006			Analysis Year		2006 Existing Conditions		
Analysis Time Period		PM Peak							
Project Description 3273 Emerson Park Phase 2									
East/West Street: Emerson Street					North/South Street: Industrial Driveway				
Intersection Orientation: East-West					Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments									
Major Street		Eastbound			Westbound				
Movement		1	2	3	4	5	6		
		L	T	R	L	T	R		
Volume (veh/h)		0	0	0	8	0	0		
Peak-hour factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)		0	0	0	8	0	0		
Proportion of heavy vehicles, P _{HV}		2	-	-	2	-	-		
Median type		Undivided							
RT Channelized?				0				0	
Lanes		0	1	0	0	1	0		
Configuration				TR	LT				
Upstream Signal			0			0			
Minor Street		Northbound			Southbound				
Movement		7	8	9	10	11	12		
		L	T	R	L	T	R		
Volume (veh/h)		0	0	13	0	0	0		
Peak-hour factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)		0	0	14	0	0	0		
Proportion of heavy vehicles, P _{HV}		2	0	2	2	0	2		
Percent grade (%)		0			0				
Flared approach			N			N			
Storage			0			0			
RT Channelized?				0			0		
Lanes		0	0	0	0	0	0		
Configuration			LR						
Control Delay, Queue Length, Level of Service									
Approach		EB	WB	Northbound			Southbound		
Movement		1	4	7	8	9	10	11	12
Lane Configuration			LT		LR				
Volume, v (vph)			8		14				
Capacity, c _m (vph)			1623		1085				
v/c ratio			0.00		0.01				
Queue length (95%)			0.01		0.04				

Control Delay (s/veh)		7.2		8.4			
LOS		A		A			
Approach delay (s/veh)	—	—	8.4				
Approach LOS	—	—	A				

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TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	JMR				Intersection	2-Emerson Street/6th Street		
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC		
Date Performed	7/24/2006				Analysis Year	2006 Existing Conditions		
Analysis Time Period	AM Peak							
Project Description 3273 Emerson Park Phase 2								
East/West Street: Emerson Street					North/South Street: 6th Street			
Intersection Orientation: East-West					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	7	5	0	0	8	4		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	7	5	0	0	8	4		
Proportion of heavy vehicles, P_{HV}	2	-	-	0	-	-		
Median type	Undivided							
RT Channelized?			0			0		
Lanes	0	1	0	0	1	0		
Configuration	LT					TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	17	0	18		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	0	0	18	0	20		
Proportion of heavy vehicles, P_{HV}	0	0	0	2	0	2		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
Volume, v (vph)	7						38	
Capacity, c_m (vph)	1607						1027	
v/c ratio	0.00						0.04	
Queue length (95%)	0.01						0.12	

Control Delay (s/veh)	7.3					8.6	
LOS	A					A	
Approach delay (s/veh)	—	—				8.6	
Approach LOS	—	—				A	

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TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	JMR			Intersection	2-Emerson Street/6th Street			
Agency/Co.	Wells & Associates, LLC			Jurisdiction	Washington, DC			
Date Performed	7/24/2006			Analysis Year	2006 Existing Conditions			
Analysis Time Period	PM Peak							
Project Description 3273 Emerson Park Phase 2								
East/West Street: Emerson Street				North/South Street: 6th Street				
Intersection Orientation: East-West				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	2	11	0	0	3	13		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	2	12	0	0	3	14		
Proportion of heavy vehicles, P_{HV}	2	-	-	0	-	-		
Median type	Undivided							
RT Channelized?			0			0		
Lanes	0	1	0	0	1	0		
Configuration	LT					TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	18	0	5		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	0	0	20	0	5		
Proportion of heavy vehicles, P_{HV}	0	0	0	2	0	2		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
Volume, v (vph)	2						25	
Capacity, c_m (vph)	1600						1004	
v/c ratio	0.00						0.02	
Queue length (95%)	0.00						0.08	

Control Delay (s/veh)	7.3					8.7	
LOS	A					A	
Approach delay (s/veh)	--	--				8.7	
Approach LOS	--	--				A	

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ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	JMR				Intersection	3-8th Street/Emerson Street			
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC			
Date Performed	7/24/2006				Analysis Year	2006 Existing Conditions			
Analysis Time Period	AM Peak								
Project ID 3273 Emerson Park Phase 2									
East/West Street: Emerson Street					North/South Street: 8th Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound					Westbound			
Movement	L	T	R	L	T	R			
Volume	7	0	15	0	0	0			
%Thrus Left Lane	50			50					
Approach	Northbound					Southbound			
Movement	L	T	R	L	T	R			
Volume	2	17	0	0	63	10			
%Thrus Left Lane	50			50					
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LR				LT		TR		
PHF	0.90				0.90		0.90		
Flow Rate	23				20		81		
% Heavy Vehicles	2				2		2		
No. Lanes	1		0		1		1		
Geometry Group	1				1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.3				0.1		0.0		
Prop. Right-Turns	0.7				0.0		0.1		
Prop. Heavy Vehicle									
hLT-adj	0.2	0.2			0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6			-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7			1.7	1.7	1.7	1.7	
hadj, computed	3.79				3.79		3.79		
Departure Headway and Service Time									
hd, initial value	3.20				3.20		3.20		
x, initial	0.02				0.02		0.07		
hd, final value	3.79				3.79		3.79		
x, final value	0.02				0.02		0.09		
Move-up time, m	2.0				2.0		2.0		
Service Time	1.8		1.8		1.8		1.8		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity	273				270		331		
Delay	6.88				7.17		7.30		
LOS	A				A		A		
Approach: Delay	6.88				7.17		7.30		
LOS	A				A		A		
Intersection Delay	7.20								
Intersection LOS	A								

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	JMR				Intersection	3-8th Street/Emerson Street			
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC			
Date Performed	7/24/2006				Analysis Year	2006 Existing Conditions			
Analysis Time Period	PM Peak								
Project ID 3273 Emerson Park Phase 2									
East/West Street: Emerson Street					North/South Street: 8th Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume	10	0	19		0	0	0		
%Thrus Left Lane	50				50				
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume	11	33	0		0	82	9		
%Thrus Left Lane	50				50				
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LR				LT		TR		
PHF	0.90				0.90		0.90		
Flow Rate	32				48		101		
% Heavy Vehicles	2				2		2		
No. Lanes	1		0		1		1		
Geometry Group	1				1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.3				0.3		0.0		
Prop. Right-Turns	0.7				0.0		0.1		
Prop. Heavy Vehicle									
hLT-adj	0.2	0.2			0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6			-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7			1.7	1.7	1.7	1.7	
hadj, computed	3.93				3.93		3.93		
Departure Headway and Service Time									
hd, initial value	3.20				3.20		3.20		
x, initial	0.03				0.04		0.09		
hd, final value	3.93				3.93		3.93		
x, final value	0.03				0.06		0.11		
Move-up time, m	2.0				2.0		2.0		
Service Time	1.9		1.9		1.9		1.9		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity	282				298		351		
Delay	7.07				7.39		7.49		
LOS	A				A		A		
Approach: Delay	7.07				7.39		7.49		
LOS	A				A		A		
Intersection Delay	7.39								
Intersection LOS	A								

TWO-WAY STOP CONTROL SUMMARY									
General Information					Site Information				
Analyst	JMR				Intersection	4-South Dakota Ave/8th Street			
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC			
Date Performed	7/24/2006				Analysis Year	2006 Existing Conditions			
Analysis Time Period	AM Peak								
Project Description 3273 Emerson Park Phase 2									
East/West Street: 8th Street					North/South Street: South Dakota Avenue				
Intersection Orientation: North-South					Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments									
Major Street	Northbound			Southbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	10	973	4	0	859	64			
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90			
Hourly Flow Rate, HFR	11	1081	4	0	954	71			
Percent Heavy Vehicles	2	--	--	2	--	--			
Median Type	Undivided								
RT Channelized			0			0			
Lanes	0	2	0	0	2	0			
Configuration	LT		TR	LT		TR			
Upstream Signal		0			0				
Minor Street	Westbound			Eastbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	7	6	0	14	3	8			
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90			
Hourly Flow Rate, HFR	7	6	0	15	3	8			
Percent Heavy Vehicles	2	2	2	2	2	2			
Percent Grade (%)	0			0					
Flared Approach		N			N				
Storage		0			0				
RT Channelized			0			0			
Lanes	0	1	0	0	1	0			
Configuration		LTR			LTR				
Delay, Queue Length, and Level of Service									
Approach	NB	SB	Westbound			Eastbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	LT	LT	LTR			LTR			
v (vph)	11	0	13			26			
C (m) (vph)	673	639	57			89			
v/c	0.02	0.00	0.23			0.29			
95% queue length	0.05	0.00	0.78			1.09			
Control Delay	10.4	10.6	85.9			61.3			
LOS	B	B	F			F			
Approach Delay	--	--	85.9			61.3			
Approach LOS	--	--	F			F			

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TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	JMR			Intersection	4-South Dakota Ave/8th Street			
Agency/Co.	Wells & Associates, LLC			Jurisdiction	Washington, DC			
Date Performed	7/24/2006			Analysis Year	2006 Existing Conditions			
Analysis Time Period	PM Peak							
Project Description 3273 Emerson Park Phase 2								
East/West Street: 8th Street				North/South Street: South Dakota Avenue				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	24	922	9	4	757	72		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR	26	1024	10	4	841	80		
Percent Heavy Vehicles	2	—	—	2	—	—		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	2	0	0	2	0		
Configuration	LT		TR	LT		TR		
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	2	5	1	28	9	10		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR	2	5	1	31	10	11		
Percent Heavy Vehicles	2	2	2	2	2	2		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LT		LTR			LTR	
v (vph)	26	4		8			52	
C (m) (vph)	737	668		66			91	
v/c	0.04	0.01		0.12			0.57	
95% queue length	0.11	0.02		0.39			2.61	
Control Delay	10.1	10.4		66.9			87.7	
LOS	B	B		F			F	
Approach Delay	—	—	66.9			87.7		
Approach LOS	—	—	F			F		

SHORT REPORT												
General Information						Site Information						
Analyst Agency or Co. Wells & Associates, LLC Date Performed 7/24/2006 Time Period AM Peak						Intersection 5-South Dakota Ave/Delafield Area Type All other areas Jurisdiction Washington, DC Analysis Year 2006 Existing Conditions						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	0	0	0	2	0	0	2	0
Lane group		LTR			LR			TR			LT	
Volume (vph)	45	15	22	67		30		877	10	3	877	
% Heavy veh	2	2	2	2		2		2	2	2	2	
PHF	0.90	0.90	0.90	0.90		0.90		0.90	0.90	0.90	0.90	
Actuated (P/A)	P	P	P	P		P		P	P	P	P	
Startup lost time		2.0			2.0			2.0			2.0	
Ext. eff. green		2.0			2.0			2.0			2.0	
Arrival type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0			
Lane Width		15.0			15.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			4			0	
Unit Extension		3.0			3.0			3.0			3.0	
Phasing	EW Perm	02	03	04	NS Perm	06	07	08				
Timing	G = 25.0	G =	G =	G =	G = 65.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 100.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		91			107			985			977	
Lane group cap.		481			374			2207			2124	
v/c ratio		0.19			0.29			0.45			0.46	
Green ratio		0.25			0.25			0.65			0.65	
Unif. delay d1		29.5			30.3			8.6			8.7	
Delay factor k		0.50			0.50			0.50			0.50	
Increm. delay d2		0.9			1.9			0.7			0.7	
PF factor		1.000			1.000			1.000			1.000	
Control delay		30.4			32.2			9.3			9.5	
Lane group LOS		C			C			A			A	
Apprch. delay		30.4			32.2			9.3			9.5	
Approach LOS		C			C			A			A	
Intersec. delay		11.4		Intersection LOS							B	

SHORT REPORT												
General Information						Site Information						
Analyst JMR						Intersection 5-South Dakota Ave/Delafield						
Agency or Co. Wells & Associates, LLC						Area Type All other areas						
Date Performed 7/24/2006						Jurisdiction Washington, DC						
Time Period PM Peak						Analysis Year 2006 Existing Conditions						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	0	0	0	2	0	0	2	0
Lane group		LTR			LR			TR			LT	
Volume (vph)	42	29	17	37		42		836	38	10	758	
% Heavy veh	2	2	2	2		2		2	2	2	2	
PHF	0.90	0.90	0.90	0.90		0.90		0.90	0.90	0.90	0.90	
Actuated (P/A)	P	P	P	P		P		P	P	P	P	
Startup lost time		2.0			2.0			2.0			2.0	
Ext. eff. green		2.0			2.0			2.0			2.0	
Arrival type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0			
Lane Width		15.0			15.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0			6			0	
Unit Extension		3.0			3.0			3.0			3.0	
Phasing	EW Perm	02	03	04	NS Perm	06	07	08				
Timing	G = 25.0	G =	G =	G =	G = 65.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25		Cycle Length C = 100.0										
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		98			88			971			853	
Lane group cap.		487			400			2187			2095	
v/c ratio		0.20			0.22			0.44			0.41	
Green ratio		0.25			0.25			0.65			0.65	
Unif. delay d1		29.6			29.8			8.6			8.3	
Delay factor k		0.50			0.50			0.50			0.50	
Increm. delay d2		0.9			1.3			0.7			0.6	
PF factor		1.000			1.000			1.000			1.000	
Control delay		30.5			31.0			9.3			8.9	
Lane group LOS		C			C			A			A	
Apprch. delay		30.5			31.0			9.3			8.9	
Approach LOS		C			C			A			A	
Intersec. delay		11.1		Intersection LOS							B	

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	JMR				Intersection	6-8th Street/Delafield Street			
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC			
Date Performed	7/24/2006				Analysis Year	2006 Existing Conditions			
Analysis Time Period	AM Peak								
Project ID 3273 Emerson Park Phase 2									
East/West Street: Delafield Street					North/South Street: 8th Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume	5	13	2		0	0	0		
%Thrus Left Lane	50				50				
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume	0	14	56		5	64	6		
%Thrus Left Lane	50				50				
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR				LTR		LTR		
PHF	0.90				0.90		0.90		
Flow Rate	21				77		82		
% Heavy Vehicles	2				2		2		
No. Lanes	1		0		1		1		
Geometry Group	1				1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.2				0.0		0.1		
Prop. Right-Turns	0.1				0.8		0.1		
Prop. Heavy Vehicle									
hLT-adj	0.2	0.2			0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6			-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7			1.7	1.7	1.7	1.7	
hadj, computed	4.24				4.24		4.24		
Departure Headway and Service Time									
hd, initial value	3.20				3.20		3.20		
x, initial	0.02				0.07		0.07		
hd, final value	4.24				4.24		4.24		
x, final value	0.02				0.08		0.09		
Move-up time, m	2.0				2.0		2.0		
Service Time	2.2		2.2		2.2		2.2		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity	271				327		332		
Delay	7.35				6.87		7.42		
LOS	A				A		A		
Approach: Delay	7.35				6.87		7.42		
LOS	A				A		A		
Intersection Delay	7.18								
Intersection LOS	A								

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst		JMR			Intersection		6-8th Street/Delafield Street		
Agency/Co.		Wells & Associates, LLC			Jurisdiction		Washington, DC		
Date Performed		7/24/2006			Analysis Year		2006 Existing Conditions		
Analysis Time Period		PM Peak							
Project ID 3273 Emerson Park Phase 2									
East/West Street: Delafield Street					North/South Street: 8th Street				
Volume Adjustments and Site Characteristics									
Approach		Eastbound			Westbound				
Movement	L	T	R	L	T	R			
Volume	14	11	0	0	0	0			
%Thrus Left Lane	50			50					
Approach		Northbound			Southbound				
Movement	L	T	R	L	T	R			
Volume	5	32	62	9	68	15			
%Thrus Left Lane	50			50					
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR				LTR		LTR		
PHF	0.90				0.90		0.90		
Flow Rate	27				108		101		
% Heavy Vehicles	2				2		2		
No. Lanes	1		0		1		1		
Geometry Group	1				1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.6				0.0		0.1		
Prop. Right-Turns	0.0				0.6		0.2		
Prop. Heavy Vehicle									
hLT-adj	0.2	0.2			0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6			-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7			1.7	1.7	1.7	1.7	
hadj, computed	4.47				4.47		4.47		
Departure Headway and Service Time									
hd, initial value	3.20				3.20		3.20		
x, initial	0.02				0.10		0.09		
hd, final value	4.47				4.47		4.47		
x, final value	0.03				0.11		0.11		
Move-up time, m	2.0				2.0		2.0		
Service Time	2.5		2.5		2.5		2.5		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity	277				358		351		
Delay	7.62				7.19		7.53		
LOS	A				A		A		
Approach: Delay	7.62				7.19		7.53		
LOS	A				A		A		
Intersection Delay	7.39								
Intersection LOS	A								

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	JMR				Intersection	7-Buchanan Street/6th Street			
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC			
Date Performed	7/24/2006				Analysis Year	2006 Existing Conditions			
Analysis Time Period	AM Peak								
Project ID 3273 Emerson Park Phase 2									
East/West Street: Buchanan Street					North/South Street: 6th Street				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume	0	0	1		80	3	17		
%Thrus Left Lane	50				50				
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume	1	8	20		7	12	0		
%Thrus Left Lane	50				50				
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	0.90		0.90		0.90		0.90		
Flow Rate	1		109		31		20		
% Heavy Vehicles	0		3		6		13		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.8		0.0		0.3		
Prop. Right-Turns	1.0		0.2		0.7		0.0		
Prop. Heavy Vehicle									
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	3.52		3.52		3.52		3.52		
Departure Headway and Service Time									
hd, initial value	3.20		3.20		3.20		3.20		
x, initial	0.00		0.10		0.03		0.02		
hd, final value	3.52		3.52		3.52		3.52		
x, final value	0.00		0.12		0.03		0.02		
Move-up time, m	2.0		2.0		2.0		2.0		
Service Time	1.5		1.5		1.5		1.5		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity	251		359		281		270		
Delay	6.52		7.71		6.98		7.58		
LOS	A		A		A		A		
Approach: Delay	6.52		7.71		6.98		7.58		
LOS	A		A		A		A		
Intersection Delay	7.55								
Intersection LOS	A								

ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	JMR				Intersection	7-Buchanan Street/6th Street		
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC		
Date Performed	7/24/2006				Analysis Year	2006 Existing Conditions		
Analysis Time Period	PM Peak							
Project ID 3273 Emerson Park Phase 2								
East/West Street: Buchanan Street					North/South Street: 6th Street			
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R		L	T	R	
Volume	0	0	0		38	0	6	
%Thrus Left Lane	50				50			
Approach	Northbound				Southbound			
Movement	L	T	R		L	T	R	
Volume	0	6	102		12	5	0	
%Thrus Left Lane	50				50			
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.90		0.90		0.90		0.90	
Flow Rate	0		48		119		18	
% Heavy Vehicles	2		2		2		2	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.0		0.9		0.0		0.7	
Prop. Right-Turns	0.0		0.1		0.9		0.0	
Prop. Heavy Vehicle								
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	4.25		4.25		4.25		4.25	
Departure Headway and Service Time								
hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.00		0.04		0.11		0.02	
hd, final value	4.25		4.25		4.25		4.25	
x, final value	0.00		0.06		0.12		0.02	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	2.2		2.2		2.2		2.2	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	0		298		369		268	
Delay	7.25		7.56		6.95		7.38	
LOS	A		A		A		A	
Approach: Delay	7.25		7.56		6.95		7.38	
LOS	A		A		A		A	
Intersection Delay	7.15							
Intersection LOS	A							

TWO-WAY STOP CONTROL SUMMARY								
General Information					Site Information			
Analyst	JMR				Intersection	8-South Dakota/Buchanan		
Agency/Co.	Wells & Associates, LLC				Jurisdiction	Washington, DC		
Date Performed	8/2/2006				Analysis Year	2006 Existing Conditions		
Analysis Time Period	AM Peak							
Project Description 3273 Emerson Park Phase 2								
East/West Street: Buchanan Street					North/South Street: South Dakota Avenue			
Intersection Orientation: North-South					Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	38	818	0	2	878	0		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR	42	908	0	2	975	0		
Percent Heavy Vehicles	2	—	—	2	—	—		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	2	0	0	2	0		
Configuration	LT		TR	LT		TR		
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	0	2	1	0	1	27		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR	0	2	1	0	1	30		
Percent Heavy Vehicles	2	2	2	2	2	2		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LT		LTR			LTR	
v (vph)	42	2		3			31	
C (m) (vph)	702	744		83			414	
v/c	0.06	0.00		0.04			0.07	
95% queue length	0.19	0.01		0.11			0.24	
Control Delay	10.5	9.9		50.0			14.4	
LOS	B	A		E			B	
Approach Delay	—	—	50.0			14.4		
Approach LOS	—	—	E			B		

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TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	JMR			Intersection	8-South Dakota/Buchanan			
Agency/Co.	Wells & Associates, LLC			Jurisdiction	Washington, DC			
Date Performed	8/2/2006			Analysis Year	2006 Existing Conditions			
Analysis Time Period	PM Peak							
Project Description 3273 Emerson Park Phase 2								
East/West Street: Buchanan Street				North/South Street: South Dakota Avenue				
Intersection Orientation: North-South				Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume	13	786	1	1	739	0		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR	14	873	1	1	821	0		
Percent Heavy Vehicles	2	-	-	2	-	-		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	2	0	0	2	0		
Configuration	LT		TR	LT		TR		
Upstream Signal		0			0			
Minor Street	Westbound			Eastbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume	2	0	1	8	9	36		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate, HFR	2	0	1	8	10	40		
Percent Heavy Vehicles	2	2	2	2	2	2		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LT		LTR			LTR	
v (vph)	14	1		3			58	
C (m) (vph)	804	768		133			231	
v/c	0.02	0.00		0.02			0.25	
95% queue length	0.05	0.00		0.07			0.96	
Control Delay	9.6	9.7		32.7			25.7	
LOS	A	A		D			D	
Approach Delay	-	-	32.7			25.7		
Approach LOS	-	-	D			D		

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SHORT REPORT												
General Information							Site Information					
Analyst JMR Agency or Co. Wells & Associates, LLC Date Performed 8/2/2006 Time Period AM Peak							Intersection 9-South Dakota Ave/Gallatin Area Type All other areas Jurisdiction Washington, DC Analysis Year 2006 Existing Conditions					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Lane group		LTR			LTR			LTR			LTR	
Volume (vph)	23	4	13	15	12	109	6	890	5	54	812	8
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time		2.0			2.0			2.0			2.0	
Ext. eff. green		2.0			2.0			2.0			2.0	
Arrival type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	5		0	5		0	14		0	14		0
Lane Width		16.0			16.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			4			0			0	
Unit Extension		3.0			3.0			3.0			3.0	
Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08				
Timing	G = 16.0	G =	G =	G =	G = 11.0	G = 58.0	G =	G =				
	Y = 6	Y =	Y =	Y =	Y = 4	Y = 5	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 100.0					
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		44			151			1002			971	
Lane group cap.		238			285			1884			1777	
v/c ratio		0.18			0.53			0.53			0.55	
Green ratio		0.16			0.16			0.58			0.73	
Unif. delay d1		36.4			38.5			12.8			6.1	
Delay factor k		0.50			0.50			0.50			0.50	
Increment. delay d2		1.7			6.9			1.1			1.2	
PF factor		1.000			1.000			1.000			1.000	
Control delay		38.1			45.4			13.8			7.3	
Lane group LOS		D			D			B			A	
Apprch. delay		38.1			45.4			13.8			7.3	
Approach LOS		D			D			B			A	
Intersec. delay		13.6			Intersection LOS						B	

SHORT REPORT												
General Information							Site Information					
Analyst <i>JMR</i> Agency or Co. <i>Wells & Associates, LLC</i> Date Performed <i>8/2/2006</i> Time Period <i>PM Peak</i>							Intersection <i>9-South Dakota Ave/Gallatin</i> Area Type <i>All other areas</i> Jurisdiction <i>Washington, DC</i> Analysis Year <i>2006 Existing Conditions</i>					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Lane group		LTR			LTR			LTR			LTR	
Volume (vph)	21	11	11	8	12	96	4	852	9	140	742	13
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup lost time		2.0			2.0			2.0			2.0	
Ext. eff. green		2.0			2.0			2.0			2.0	
Arrival type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	3		0	3		0	18		0	18		0
Lane Width		16.0			16.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			3			0			0	
Unit Extension		3.0			3.0			3.0			3.0	
Phasing	EW Perm	02	03	04	SB Only	NS Perm	07	08				
Timing	G = 16.0	G =	G =	G =	G = 11.0	G = 58.0	G =	G =				
	Y = 6	Y =	Y =	Y =	Y = 4	Y = 5	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 100.0					
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		47			129			961			994	
Lane group cap.		271			290			1890			1592	
v/c ratio		0.17			0.44			0.51			0.62	
Green ratio		0.16			0.16			0.58			0.73	
Unif. delay d1		36.3			38.0			12.5			6.7	
Delay factor k		0.50			0.50			0.50			0.50	
Increm. delay d2		1.4			4.9			1.0			1.9	
PF factor		1.000			1.000			1.000			1.000	
Control delay		37.7			42.9			13.5			8.6	
Lane group LOS		D			D			B			A	
Apprch. delay		37.7			42.9			13.5			8.6	
Approach LOS		D			D			B			A	
Intersec. delay		13.5			Intersection LOS						B	