

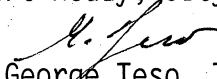


**CITY OF CAMBRIDGE**  
**INTEROFFICE CORRESPONDENCE**

RECEIVED  
91 FEB -8 AM 11:33  
OFFICE OF THE CITY MANAGER

**To** Robert Healy, City Manager

**Date** Feb. 8, 1991

**From**   
George Teso, Traffic Director

**Reference**

**Subject** City Council Order #4 dated 5/21/90 Re; Signalization of the Interseciton of Sparks St., Brattle St., & Craigie St.

The Traffic Department has completed its traffic study of this intersection and the results indicate that a traffic signal is warranted under the criteria setforth by the Commonwealth of Massachusetts. A copy of the study is enclosed.

This intersection will be placed on a priority list and reevaluated at a later date. I will also meet with the neighborhood group before any final decision is made.

BRATTLE SPARKS AND CRAIGIE STREET  
INTERSECTION ANALYSIS

PREPARED BY  
CITY OF CAMBRIDGE  
TRAFFIC AND PARKING DEPARTMENT  
JANUARY 1991

BRATTLE, SPARKS AND CRAIGIE  
INTERSECTION ANALYSIS

A. PURPOSE

The purpose of this study is to collect and analyze data to determine if there is a need to improve the existing traffic controls and by what means. The data which was collected consisted of accident reports, site characteristics, speed checks and volume counts.

B. EXISTING CONDITIONS

The intersection of Brattle Sparks and Craigie streets is currently controlled by stop signs for Spark Street and Craigie street. These controls are backed up with two pedestal flashers; one facing southbound traffic on the northern leg of Sparks Street, the other is a three way flasher with yellow beacons for both directions on Brattle Street and a red beacon for southbound Craigie Street. We have recently replaced the flashers with new 12 inch faces to make them more visible. Each leg of the intersection has a zebra striped crosswalk for the school crossing.

Brattle Street is a 50 feet wide, two directional roadway with permit parking allowed on both sides. Craigie Street is a 34 foot wide, two directional roadway with permit parking allowed on one side at the intersection. Sparks street is a 27 foot wide roadway with travel allowed in the southerly direction only and permit parking allowed on one side. The junction of these three roadways is expansive and is located in the historical district. A school and church are nearby which tends to increase the number of pedestrians and vehicles using this intersection. In addition, this is a high tourist area with many people site-seeing and unfamiliar with the roads.

C. BASE TRAFFIC VOLUMES

By the use of mechanical counters average daily traffic counts were obtained and shown to be approximately 5000 cars per day per direction on Brattle Street. The peak hours, determined from 1981 counts were from 8am to 9am and from 5pm to 6pm. Manual turning movement counts were then performed to get accurate data. These counts showed the morning peak hour at an average eastbound volume of 680 vehicles and westbound of 330 vehicles. Evening peak hour counts were averaged at 350 eastbound and 488 westbound. Table 1 shows a comparison of 1981 and 1991 counts for the peak hours.

TABLE 1

## BRATTLE STREET VOLUME COMPARISONS

	AVERAGE VOLUME 1981	AVERAGE VOLUME 1991	PERCENT CHANGE 1981 TO 1991
EASTBOUND			
7am - 8am	641	325	(32%)
8am - 9am	371	680	30%
4pm - 5pm	363	337	(4%)
5pm - 6pm	353	350	0%
WESTBOUND			
7am - 8am	214	242	6%
8am - 9am	192	330	26%
4pm - 5pm	368	422	11%
5pm - 6pm	456	488	4%

By using the existing 24 hour counts from 1981 the following ADT percentages were calculated and used to determine estimated ADT's from present peak hour counts.

TABLE 2

ESTIMATED AVERAGE DAILY TRAFFIC FOR  
BRATTLE STREET 1991

	WESTBOUND			EASTBOUND		
	x%ADT=peak	ADT	81 ADT	x%ADT=peak	ADT	81 ADT
AM	10%	5025		5%	5720	
PM	7%	4907		8%	11375	
AVERAGE		4966	5112		8547	4680

Weekend volumes were down from weekday volumes by approximately 1000 cars in 1981, 4/5ths of commuter traffic. This is a small percentage drop. In addition to the Brattle street traffic there is an estimated ADT of 5800 for Sparks Street and 4200 for Craigie Street. These volumes were

calculated by taking the average of the two peaks divided by .08. This is using the estimate that the peak hour is 8% of the Average Daily Traffic.

D. ACCIDENT STUDY

An accident study was conducted by the Traffic Department with the cooperation for the Cambridge Police Department and as shown in the attached diagram there were a total of 11 accidents in 2.5 years surveyed. Eight of the eleven accidents were right angle collisions. Three of the collisions resulted in personal injury, the remainder resulted in property damage.

E. SPEED STUDY

Several speed checks were done in the area for free flowing traffic. The results showed that the 85th percentile speeds were 30 MPH in both directions for Brattle Street. At this location Brattle Street is posted for 25 MPH. Craigie Street westbound traffic showed an 85th percentile speed of 29 MPH falling just below the 30MPH speed limit set forth by the State for residential areas.

F. CONCLUSION

By analyzing the data and visually inspecting the location it was determined that a problem exists with vehicles trying to enter the flow of traffic from Sparks Street and Craigie Street. Because the intersection is so open cars slowly inch their way out hoping to find a gap that allows them to safely proceed. Pedestrian safety is reduced when drivers are concentrating on traffic flows. The other concern for pedestrian safety is the length of the east leg crossing of Brattle Street, 100 feet.

To improve safety for vehicle as well as pedestrian traffic it is our recommendation that a channelization island be installed at the juncture of Brattle Street and Craigie Street along with fully operational signals.

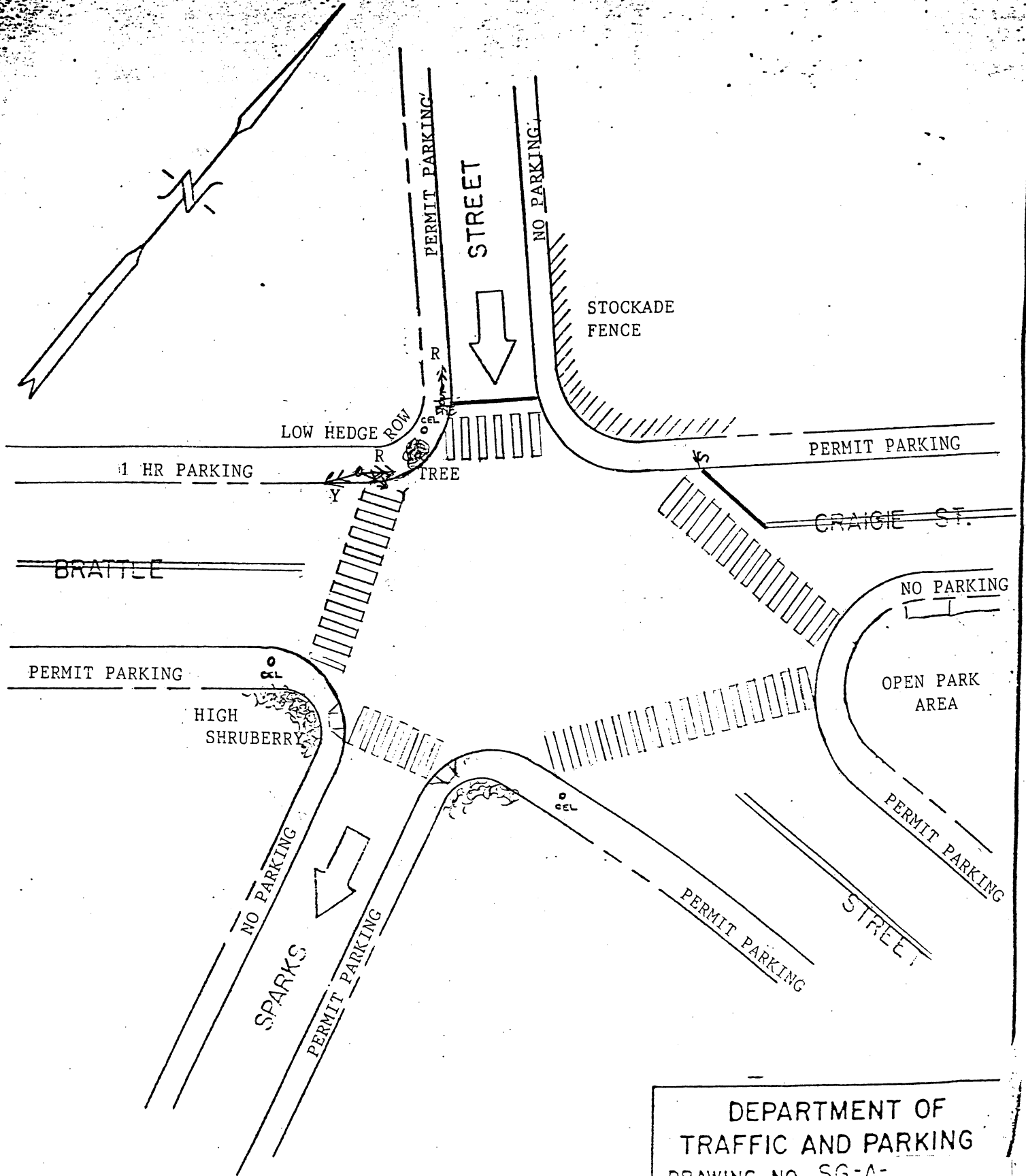
The island will perform several functions. It will lessen the expanse of the intersection by moving the juncture of Brattle Street and Craigie Street up to that with Sparks Street. It will shorten the length of the pedestrian crossings at both Brattle Street and Craige Street, and will also provide a safe placement of traffic signals.

Signalization will provide a greater degree of safety to vehicles using Sparks and Craigie Streets as well as pedestrians crossing in this area.

SKETCH SHOWING LOCATION OF EXISTING CONDITIONS

COMMONWEALTH OF MASSACHUSETTS  
 DEPARTMENT OF PUBLIC WORKS  
 100 NASHUA STREET  
 BOSTON

CITY CAMBRIDGE  
 LOCATION SPARKS STREET AT  
 BRATTLE STREET  
 DATE Jan 91 PERMIT NO.



DEPARTMENT OF  
 TRAFFIC AND PARKING  
 DRAWING NO. SG-A-  
 APPROVED \_\_\_\_\_

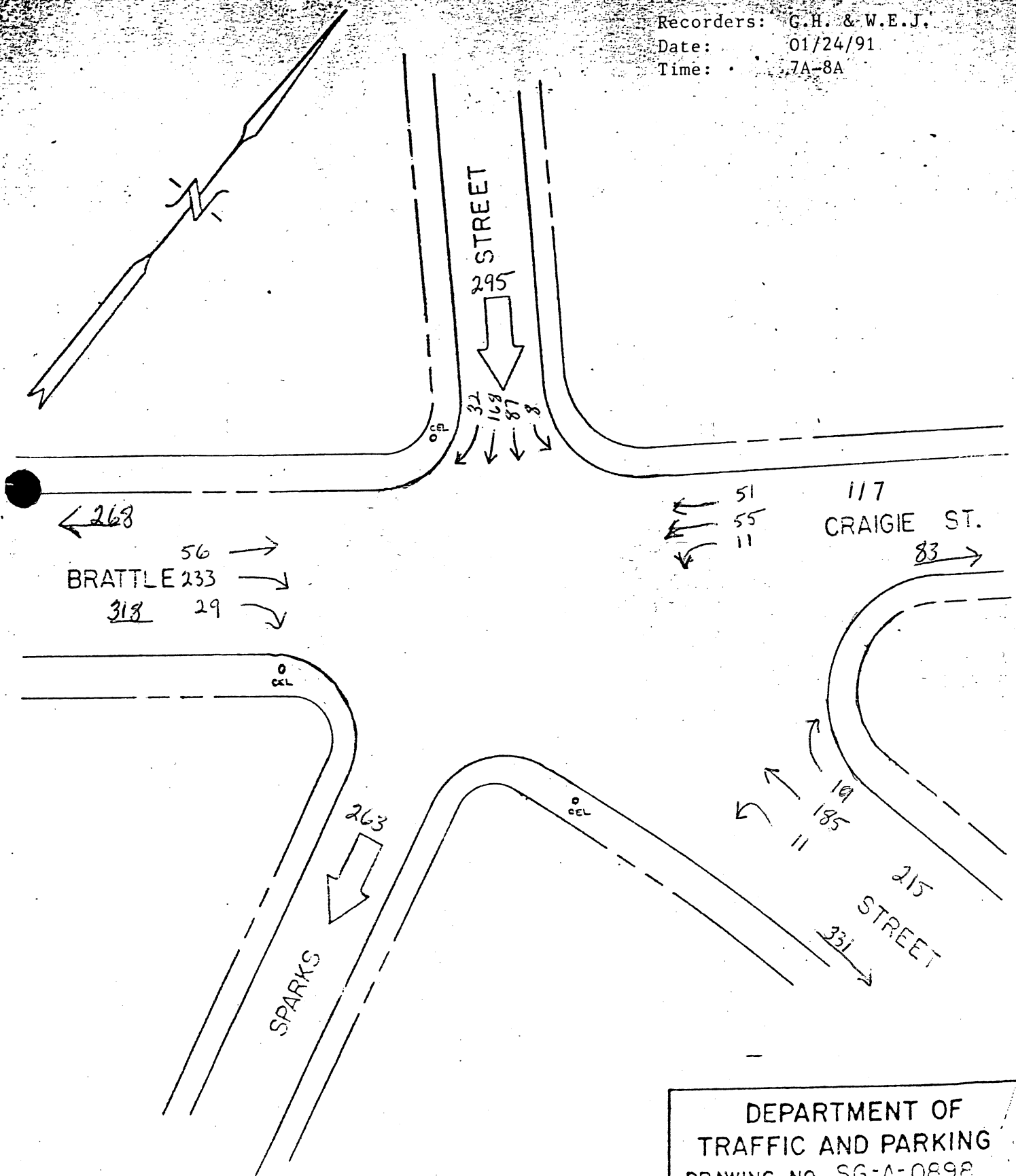
SCALE 1" = 40'

SKETCH SHOWING LOCATION OF TRAFFIC SIGNALS

COMMONWEALTH OF MASSACHUSETTS  
 DEPARTMENT OF PUBLIC WORKS  
 100 NASHUA STREET  
 BOSTON

CITY CAMBRIDGE  
 LOCATION SPARKS STREET AT BRATTLE STREET  
 DATE PERMIT NO.

Recorders: G.H. & W.E.J.  
 Date: 01/24/91  
 Time: 7A-8A



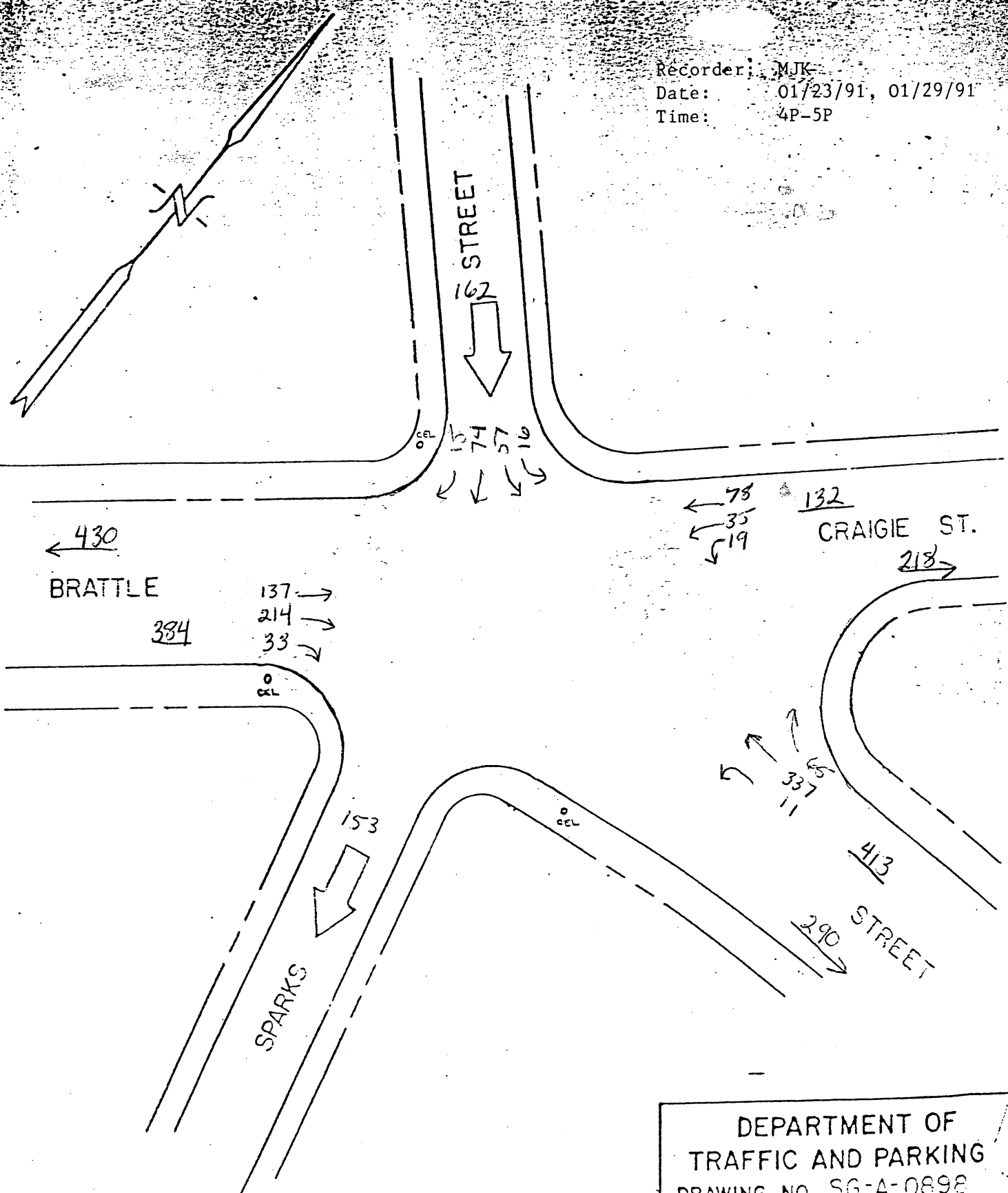
DEPARTMENT OF  
 TRAFFIC AND PARKING  
 DRAWING NO. SG-A-0898  
 APPROVED \_\_\_\_\_

SKETCH SHOWING LOCATION OF TRAFFIC SIGNALS

COMMONWEALTH OF MASSACHUSETTS  
 DEPARTMENT OF PUBLIC WORKS  
 100 NASHUA STREET  
 BOSTON

CITY CAMBRIDGE  
 LOCATION SPARKS STREET AT BRATTLE STREET  
 DATE PERMIT NO.

Recorder: MJK  
 Date: 01/23/91, 01/29/91  
 Time: 4P-5P



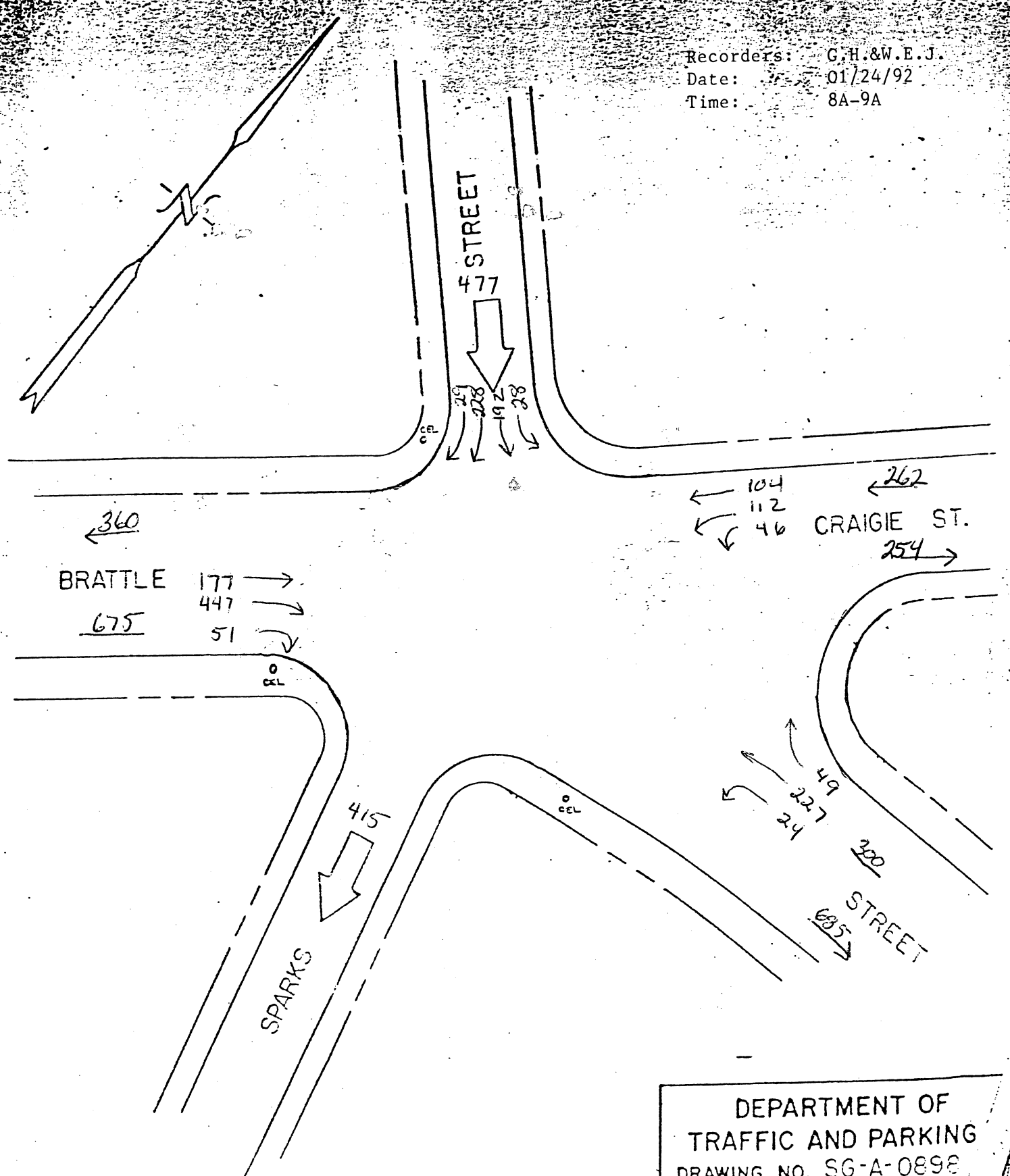
DEPARTMENT OF  
 TRAFFIC AND PARKING  
 DRAWING NO. SG-A-0898  
 APPROVED \_\_\_\_\_

SKETCH SHOWING LOCATION OF TRAFFIC SIGNALS

COMMONWEALTH OF MASSACHUSETTS  
 DEPARTMENT OF PUBLIC WORKS  
 100 NASHUA STREET  
 BOSTON

CITY CAMBRIDGE  
 LOCATION SPARKS STREET AT BRATTLE STREET  
 DATE PERMIT NO.

Recorders: G.H.&W.E.J.  
 Date: 01/24/92  
 Time: 8A-9A



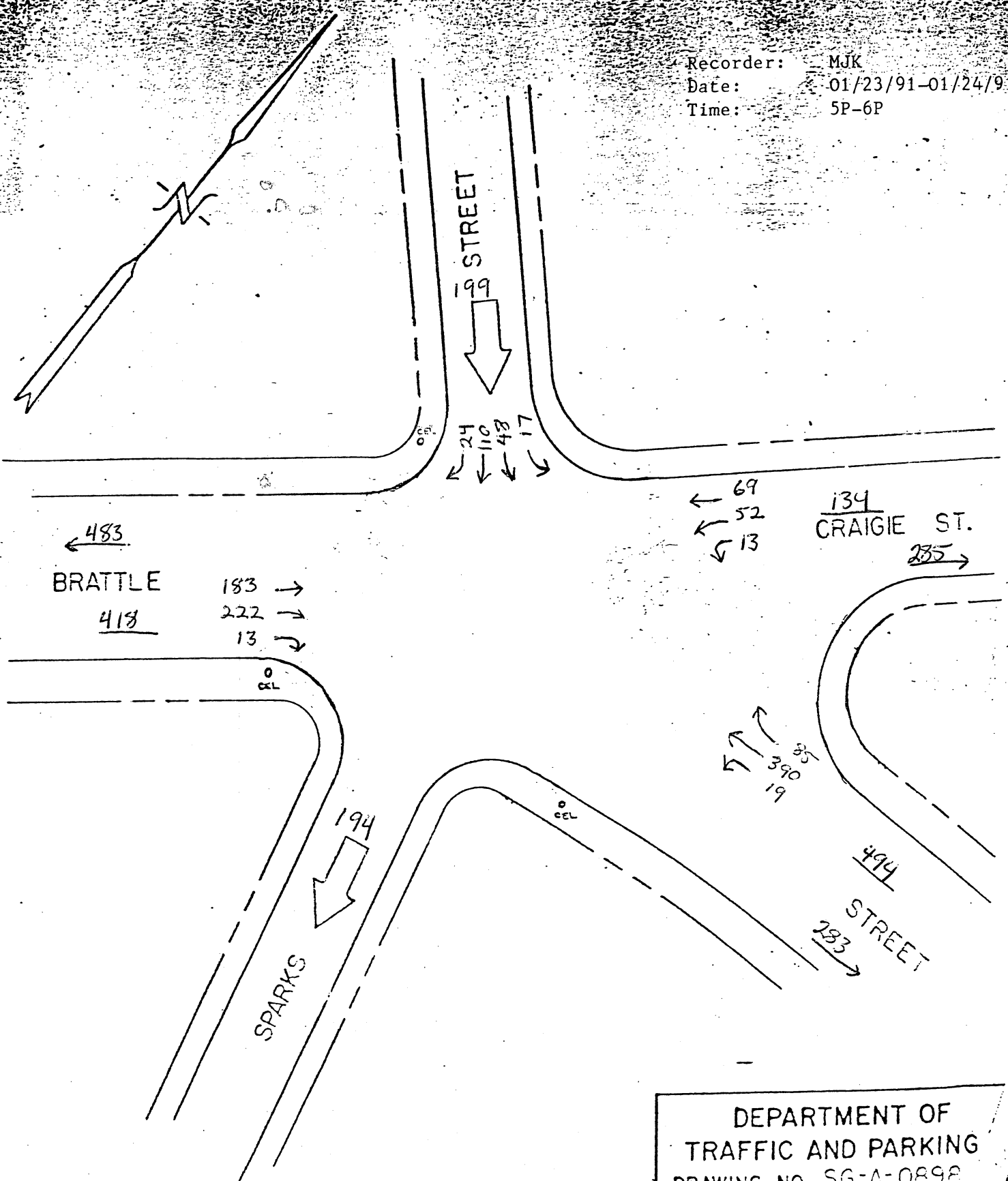
DEPARTMENT OF  
 TRAFFIC AND PARKING  
 DRAWING NO. SG-A-0898  
 APPROVED \_\_\_\_\_

SKETCH SHOWING LOCATION OF TRAFFIC SIGNALS

COMMONWEALTH OF MASSACHUSETTS  
 DEPARTMENT OF PUBLIC WORKS  
 100 NASHUA STREET  
 BOSTON

CITY CAMBRIDGE  
 LOCATION SPARKS STREET AT BRATTLE STREET  
 DATE PERMIT NO.

Recorder: MJK  
 Date: 01/23/91-01/24/91  
 Time: 5P-6P



DEPARTMENT OF  
 TRAFFIC AND PARKING  
 DRAWING NO. SG-A-0898  
 APPROVED \_\_\_\_\_

SPARKS

TRAFFIC COUNT  
AT THE INTERSECTION OF

Brattle - Brewster

DATE 11/3/81

DIRECTION south

WEATHER Fair

COMPILED BY Esposito

HOUR PERIOD	MON	TUES	WED	THURS	FRI	WEEKDAY SUB-TOTAL	SAT	SUN	TOTAL
-------------	-----	------	-----	-------	-----	-------------------	-----	-----	-------

AM

2400			4	9					
0100			3	4					
0200			1	2					
0300			3	3					
0400			11	6					
0500			29	32					
0600			182	182					
0700			560	588					
0800			482	422					
0900			199	197					
1000			192	169					
1100		177	196	179					
1200		177	183						

PM

1300		160	191	177					
1400		193	200	173					
1500		242	248	203					
1600		225	219	257					
1700		209	199	220					
1800		164	177	17					
1900		114	130						
2000		77	78						
2100		73	89						
2200		52	49						
2300		23	27						
TOTAL									

AVERAGE WEEKDAY VOLUME 2744

AVERAGE DAY VOLUME

REMARKS



BRATTLE ST.

TRAFFIC COUNT  
AT THE INTERSECTION OF

ASH & HAWTHORN

DATE 5/5/81

DIRECTION EAST

WEATHER \_\_\_\_\_

COMPILED BY H-A

HOUR BEGIN	MON	TUES	WED	THURS	FRI	WEEKDAY	SAT	SUN	TOTAL
						SUB-TOTAL			
AM									
2400	19	27	38	24	38		91	77	
0100	18	14	23	17	15		43	36	
0200	10	4	6	11	11		17	24	
0300	5	4	6	14	3		12	19	
0400	10	12	10	11	11		12	10	
0500	25	32	30	32	19		15	12	
0600	144	123	143	129	143		53	22	
0700	387	375	342	392	406	4380	72	72	
0800	675	615	675	641	601	4641	185	64	
0900	364	418	365	349	358	4371	284	143	
1000	254	240	246	230	212		314	241	
1100	209	201	247	260	259		323	212	
1200	261	260	253	291	284		289	244	
P M									
1300	205	275	278	251	266		263	286	
1400	247	238	239	282	287		260	278	
1500	263	324	324	355	326		294	254	
1600	325	401	331	376	381	4363	269	225	
1700	311	397	381	332	345	4353	206	211	
1800	295	285	342	350	317		187	199	
1900	252	294	329	272	378		257	236	
2000	164	160	182	192	219		179	131	
2100	120	139	159	138	175		137	134	
2200	135	126	131	131	125		131	92	
2300	66	72	76	107	145	16	116	70	
TOTAL	4764	5036	5156	5287	5318	5112	4009	3292	

AVERAGE WEEKDAY VOLUME 5112

AVERAGE DAY VOLUME 3650

BATTLE ST.

TRAFFIC COUNT  
AT THE INTERSECTION OF

ASH & HAWTHORN

DATE 5/5/81

DIRECTION WEST

WEATHER \_\_\_\_\_

COMPILED BY H.A

HOUR BEGIN	WEEKDAY					SUB-TOTAL	SAT	SUN	TOTAL
	MON	TUES	WED	THURS	FRI				
AM									
2400	53	65	57	73	82		156	150	
0100	38	23	35	44	46		95	109	
0200	11	12	12	13	37		78	67	
0300	10	9	15	8	18		21	34	
0400	6	9	12	14	6		19	14	
0500	17	28	19	21	19		16	15	
0600	159	178	170	159	166		69	29	
0700	217	205	214	207	226	214	84	66	
0800	199	190	179	185	209	192	123	73	
0900	188	212	170	209	190	194	219	146	
1000	220	214	223	191	268		267	168	
1100	228	208	234	226	238		294	201	
1200	228	223	271	246	234		279	276	
P M									
1300	221	259	230	263	258		248	245	
1400	259	311	296	303	287		239	245	
1500	339	318	348	282	358		187	266	
1600	343	375	359	367	395	368	272	289	
1700	460	445	481	448	447	456	275	287	
1800	307	340	330	350	352		258	247	
1900	241	253	254	309	262		197	234	
2000	205	199	193	232	243		180	190	
2100	204	173	231	185	201		177	162	
2200	166	194	197	216	201		194	154	
2300	121	121	141	171	263		195	141	
TOTAL	4440	4564	4668	4722	5006	4680	3903	3808	

AVERAGE WEEKDAY VOLUME 4580

AVERAGE DAY VOLUME 3855

REMARKS \_\_\_\_\_

BRATTLE ST.

TRAFFIC COUNT  
AT THE INTERSECTION OF

LARCH & FR. POND  
A B

DATE 5/16/81

DIRECTION EAST

WEATHER \_\_\_\_\_

COMPILED BY H.A.

HOUR BEGIN	WEEKDAY					SUB-TOTAL	SAT	SUN	TOTAL
	MON	TUES	WED	THURS	FRI				
AM									
2400	25	32	29	33	51		88	80	
0100	20	24	19	21	18		44	59	
0200	10	14	11	15	15		31	22	
0300	6	9	8	8	4		15	26	
0400	11	15	12	10	15		13	10	
0500	36	38	34	33	25		11	9	
0600	136	144	122	126	144		61	31	
0700	330	343	354	345	346	A 344	92	52	
0800	468	466	459	455	452	A 460	186	72	
0900	264	275	284	302	301		275	142	
1000	242	248	222	204	252		274	205	
1100	249	251	256	272	271		357	181	
1200	248	254	214	205	259		322	234	
P M									
1300	229	230	233	235	256		273	267	
1400	260	263	258	264	255		300	243	
1500	324	328	344	357	383		298	249	
1600	380	399	339	405	394	A 383	272	244	
1700	271	266	360	350	335	A 316	262	233	
1800	301	311	281	320	291		260	220	
1900	299	303	289	296	312		256	200	
2000	171	182	178	180	195		207	147	
2100	167	175	154	163	176		176	153	
2200	155	161	156	172	151		147	104	
2300	129	131	164	121	156		119	69	
TOTAL	4731	4862	4710	4892	4531		4339	3252	

AVERAGE WEEKDAY VOLUME 4745

AVERAGE DAY VOLUME 3795

TRAFFIC COUNT  
AT THE INTERSECTION OF

BATTLE ST.

LARCH & FR. POND  
A B

DATE 5/6/81

DIRECTION WEST

WEATHER \_\_\_\_\_

COMPILED BY H.A.

HOUR BEGIN	WEEKDAY					SUB-TOTAL	SAT	SUN	TOTAL
	MON	TUES	WED	THURS	FRI				
AM									
2400	38	47	36	46	72		136	114	
0100	27	15	25	39	31		56	83	
0200	10	17	19	12	22		62	56	
0300	10	16	11	14	15		17	23	
0400	6	19	7	9	7		19	7	
0500	19	21	20	24	18		16	10	
0600	185	190	181	185	188		97	42	
0700	221	225	229	227	222	+225	70	48	
0800	257	267	271	242	282	+264	137	60	
0900	177	179	192	198	198		201	120	
1000	196	194	185	181	211		218	154	
1100	194	189	197	180	213		245	188	
1200	225	231	229	237	214		271	258	
P M									
1300	204	214	222	219	244		257	212	
1400	259	261	255	258	282		253	206	
1500	325	312	332	292	306		281	235	
1600	341	351	309	329	351	+336	253	228	
1700	402	414	354	360	359	+378	240	269	
1800	570	511	303	277	270		225	199	
1900	387	377	226	278	215		192	183	
2000	308	297	216	220	191		157	151	
2100	281	232	197	161	178		156	145	
2200	193	181	173	202	152		158	126	
2300	188	154	110	133	183		147	104	
TOTAL	5023	4914	4299	4323	4418		3864	3215	

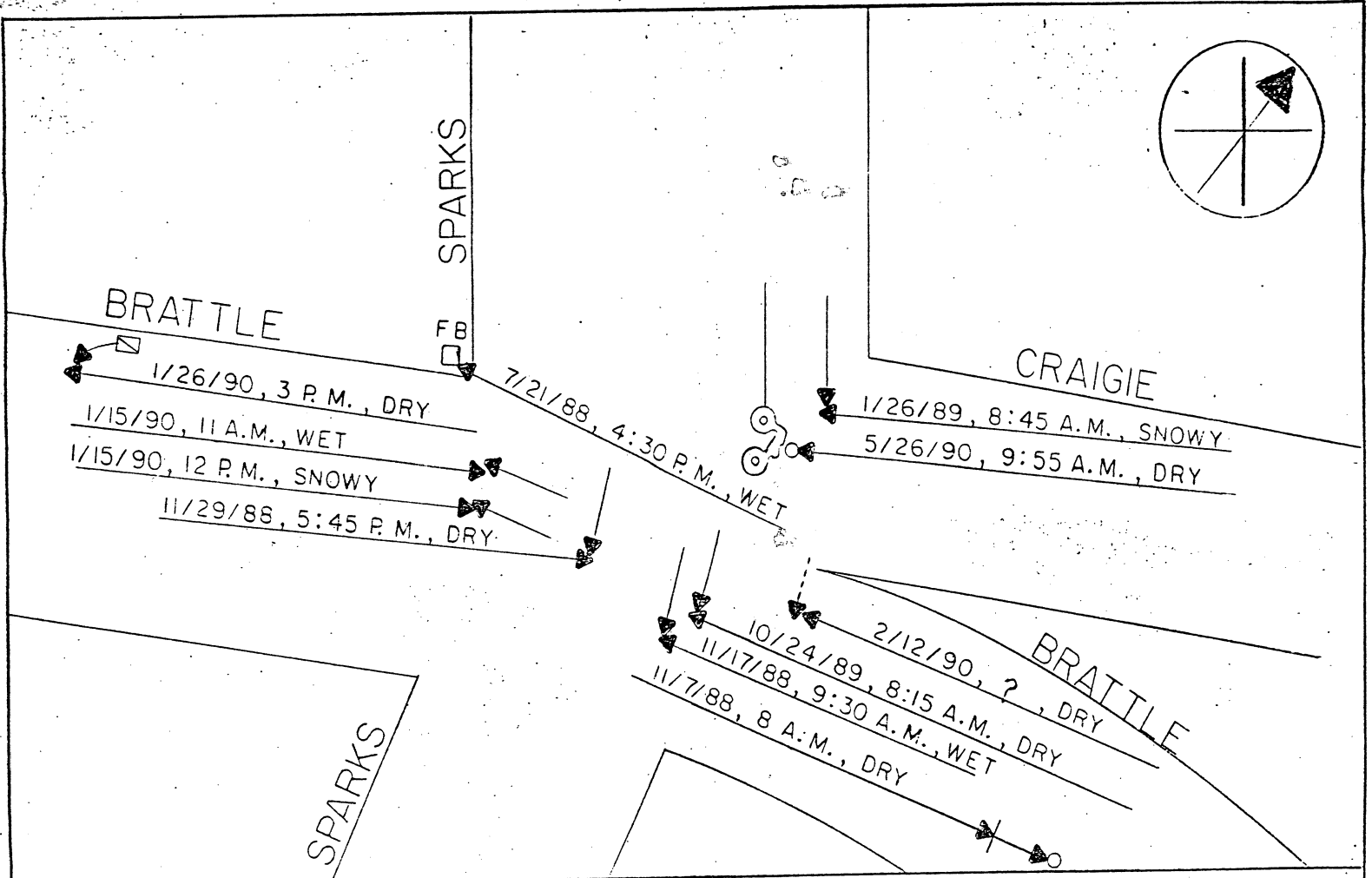
AVERAGE WEEKDAY VOLUME 4595

AVERAGE DAY VOLUME 3539

CITY OF CAMBRIDGE

COLLISION DIAGRAM

Location BRATTLE & SPARKS Number of Accidents 11  
 From 6/1/88 To 6/1/90 Date 8/27/90  
 Data Obtained From CAMBRIDGE POLICE DEPT. By E. J.



- Legend**
- ← Moving Motor Vehicle
  - ← - - - Pedestrian
  - ☐ Parked Vehicle
  - Fixed Object
  - ⊕ Fatal Accident
  - ⊗ Personal Injury
  - ⊘ Property Damage
  - ← Trolley
  - ⊕ Out of Control
  - ⊕ Rear End
  - ⊕ Right Angle

Accident Summary					By Years				
By Types									
Type	Fatal	Inj.	Prop. Damage	Total	Year	M.V.	M.V. Ped.	Other	Total
Head On					88	3			4
Side Swipe					89	2			2
M.V. Ped.		1		1	90	4	1		5
Fixed Object			1	1					
Right Angle			7	7					
Others		2		2					
<b>Total</b>		<b>3</b>	<b>8</b>	<b>11</b>		<b>9</b>	<b>1</b>	<b>1</b>	<b>11</b>

Date 8/27/90 Compiled By E. J.





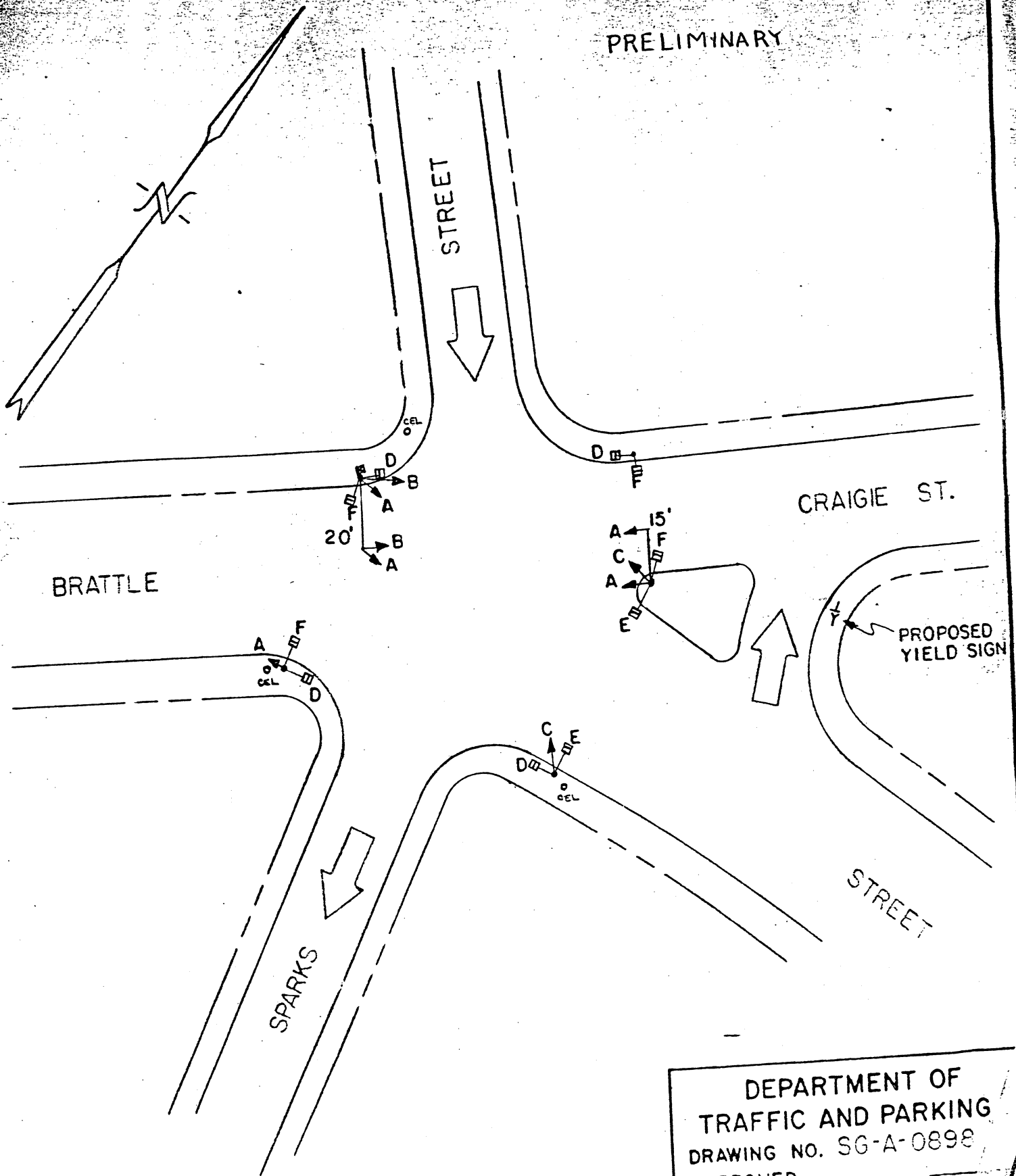


SKETCH SHOWING LOCATION OF TRAFFIC SIGNALS

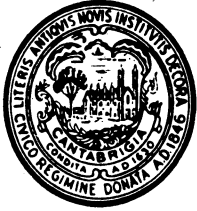
COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF PUBLIC WORKS  
100 NASHUA STREET  
BOSTON

CITY CAMBRIDGE  
LOCATION SPARKS STREET AT BRATTLE STREET  
DATE \_\_\_\_\_ PERMIT NO. \_\_\_\_\_

PRELIMINARY



DEPARTMENT OF  
TRAFFIC AND PARKING  
DRAWING NO. SG-A-0898  
APPROVED \_\_\_\_\_



CITY OF CAMBRIDGE

CAMBRIDGE, MASSACHUSETTS 02139

TEL. 349-4300

FAX. 349-4307

EXECUTIVE DEPARTMENT  
ROBERT W. HEALY  
City Manager

RICHARD C. ROSSI  
Deputy City Manager

February 11, 1991

To The Honorable, The City Council:

In response to Awaiting Report Item No. 3, regarding the intersection of Sparks Street, Brattle Street and Craigie Street, please find attached a report received from George Teso, Director of Traffic & Parking.

Very truly yours,

Robert W. Healy  
City Manager

RWH/mev  
attachment

CONSENT AGENDA # 9 *5/272*

Awaiting Report Item No. 3 regarding  
the intersection of Sparks, Brattle and  
Craigie Streets.

In City Council,

February 11, 1991

*Placed on file*