FIG. 1

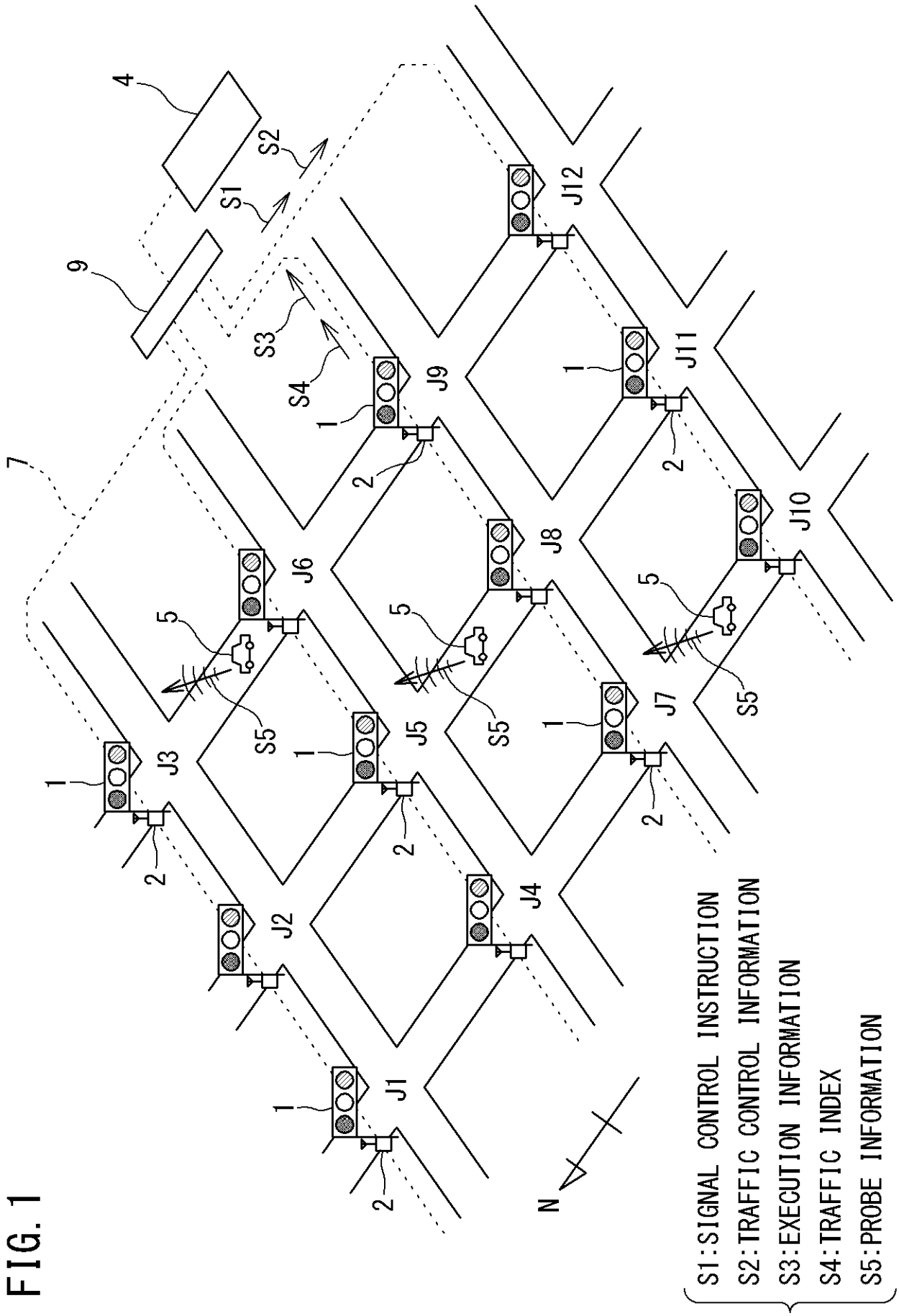

4
S1
S2
9
S3
S4
7
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J12
1
2
5
S5
N
S1:SIGNAL CONTROL INSTRUCTION
S2:TRAFFIC CONTROL INFORMATION
S3:EXECUTION INFORMATION
S4:TRAFFIC INDEX
S5:PROBE INFORMATION

FIG. 2

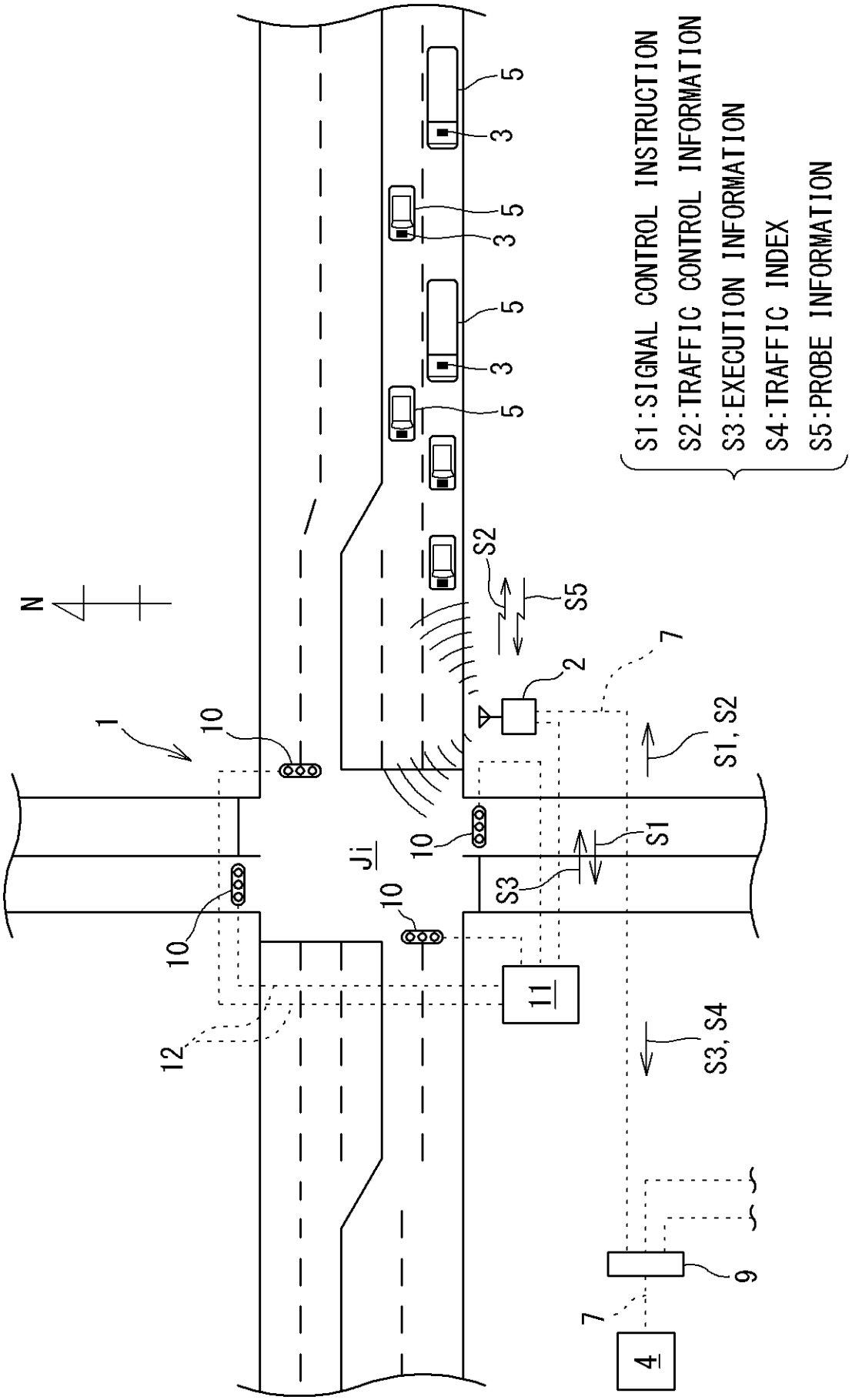

S1:SIGNAL CONTROL INSTRUCTION
S2:TRAFFIC CONTROL INFORMATION
S3:EXECUTION INFORMATION
S4:TRAFFIC INDEX
S5:PROBE INFORMATION
N
1
2
3
4
5
7
9
10
11
12
Ji
S1
S1, S2
S2
S3
S3, S4
S5

FIG. 3

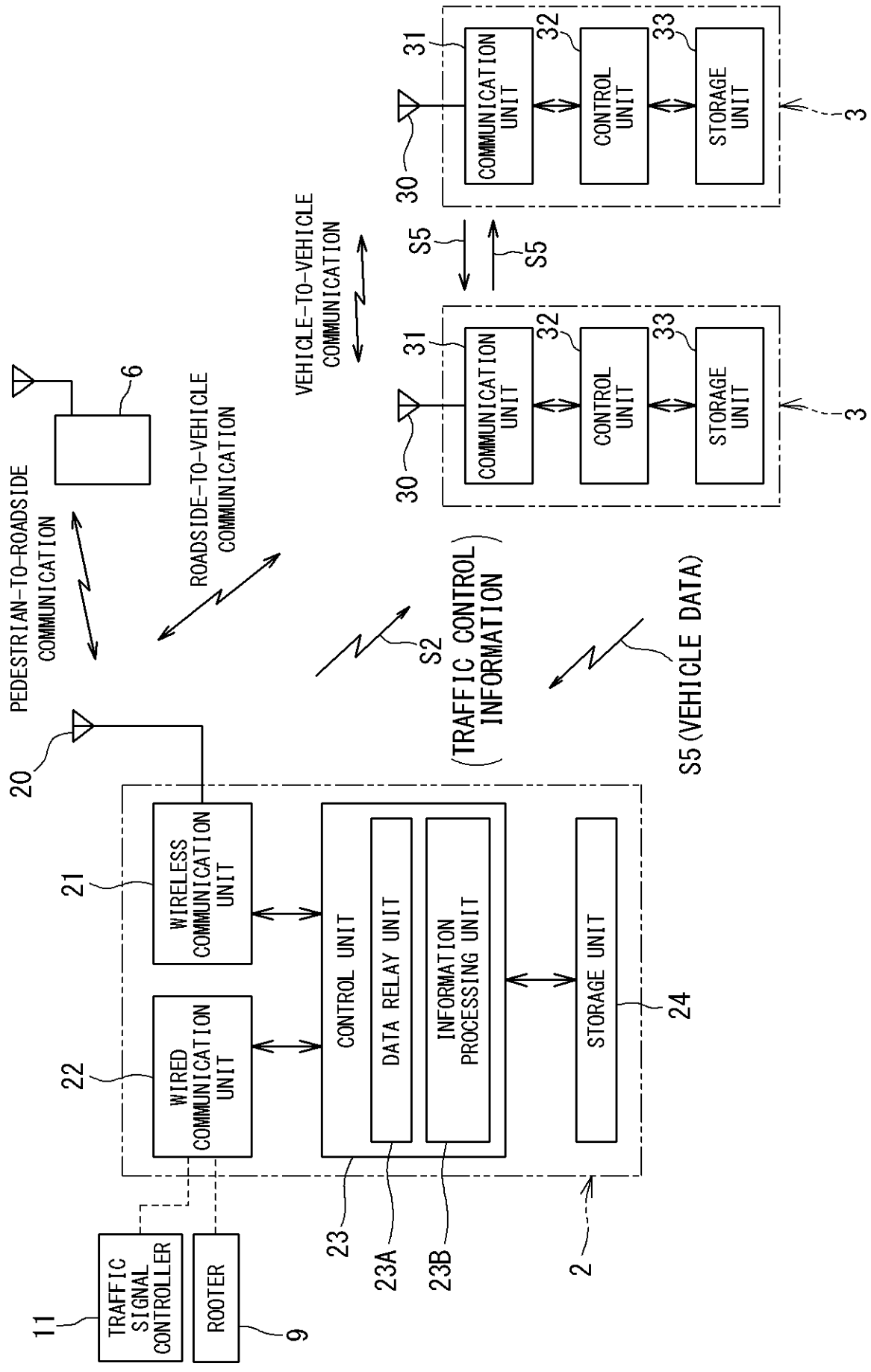

TRAFFIC SIGNAL CONTROLLER
11
ROOTER
9
23
23A
23B
2
WIRELESS COMMUNICATION UNIT
21
WIRED COMMUNICATION UNIT
22
CONTROL UNIT
DATA RELAY UNIT
INFORMATION PROCESSING UNIT
STORAGE UNIT
24
20
PEDESTRIAN-TO-ROADSIDE COMMUNICATION
ROADSIDE-TO-VEHICLE COMMUNICATION
6
VEHICLE-TO-VEHICLE COMMUNICATION
S2
(TRAFFIC CONTROL INFORMATION)
S5 (VEHICLE DATA)
S5
S5
30
31
COMMUNICATION UNIT
32
CONTROL UNIT
33
STORAGE UNIT
3
30
31
COMMUNICATION UNIT
32
CONTROL UNIT
33
STORAGE UNIT
3

FIG. 4

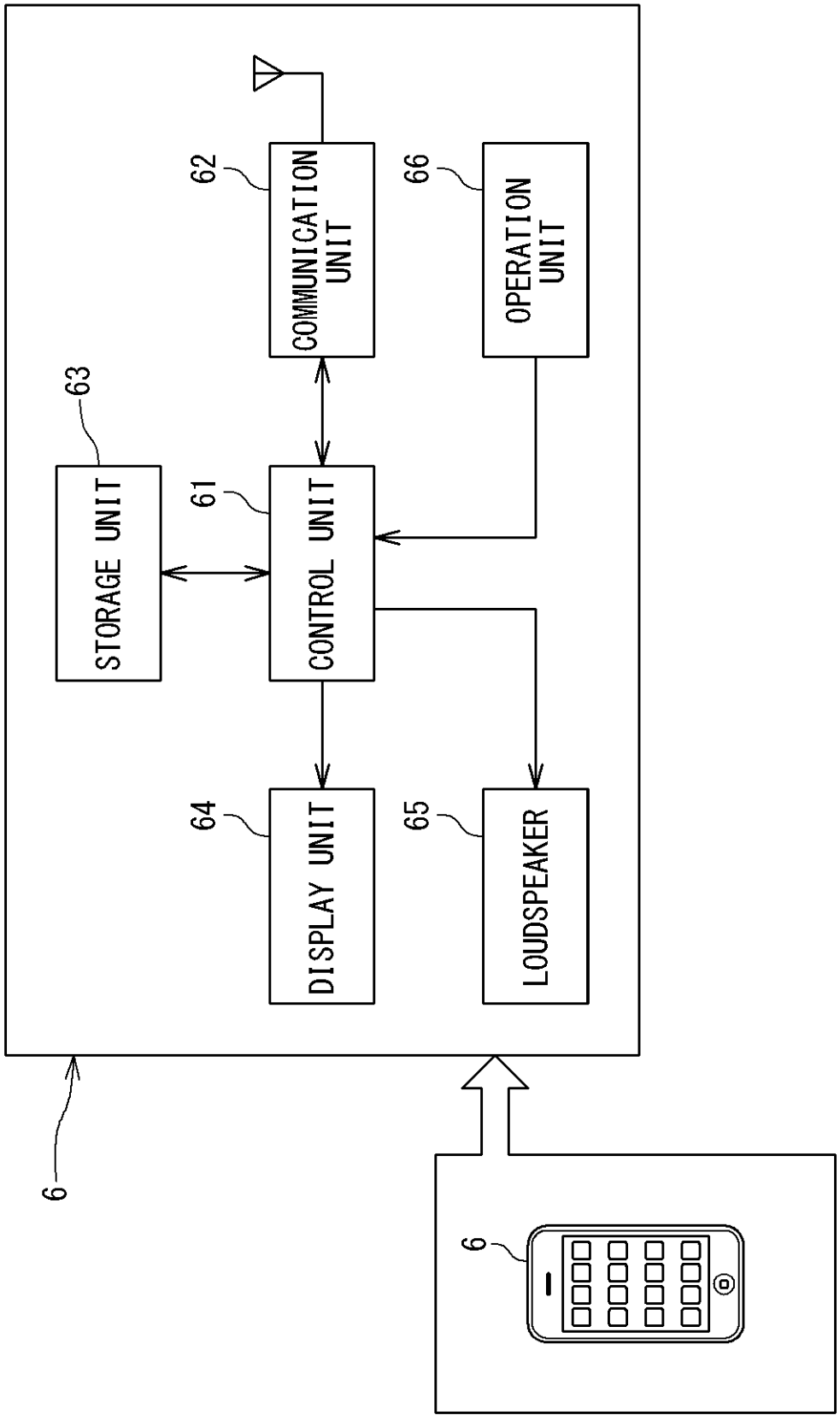

62
COMMUNICATION UNIT
66
OPERATION UNIT
63
STORAGE UNIT
61
CONTROL UNIT
64
DISPLAY UNIT
65
LOUDSPEAKER
6
6

FIG. 5

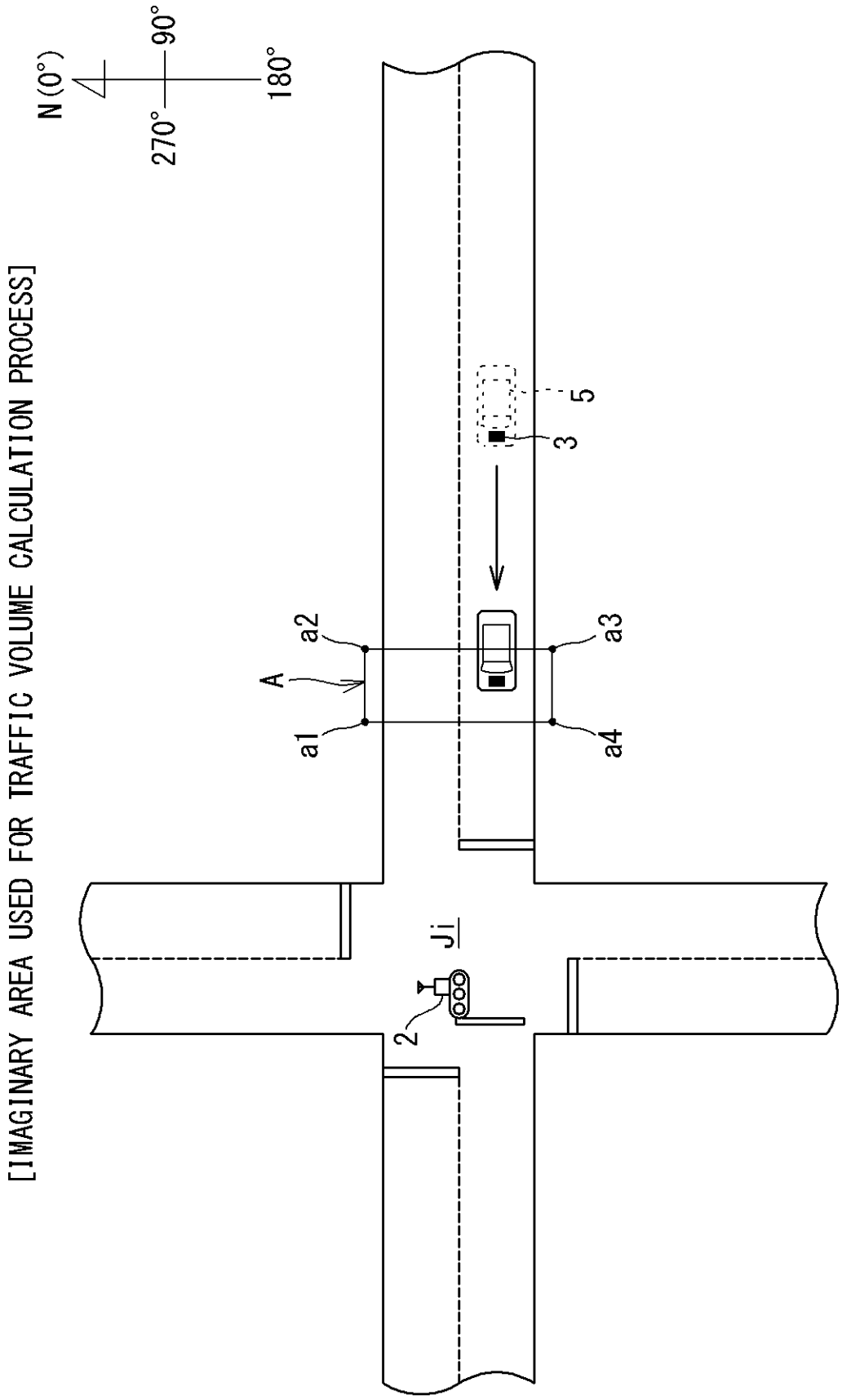

[IMAGINARY AREA USED FOR TRAFFIC VOLUME CALCULATION PROCESS]
N(0°)
90°
180°
270°
5
3
a2
a3
A
a1
a4
Ji
2

FIG. 6

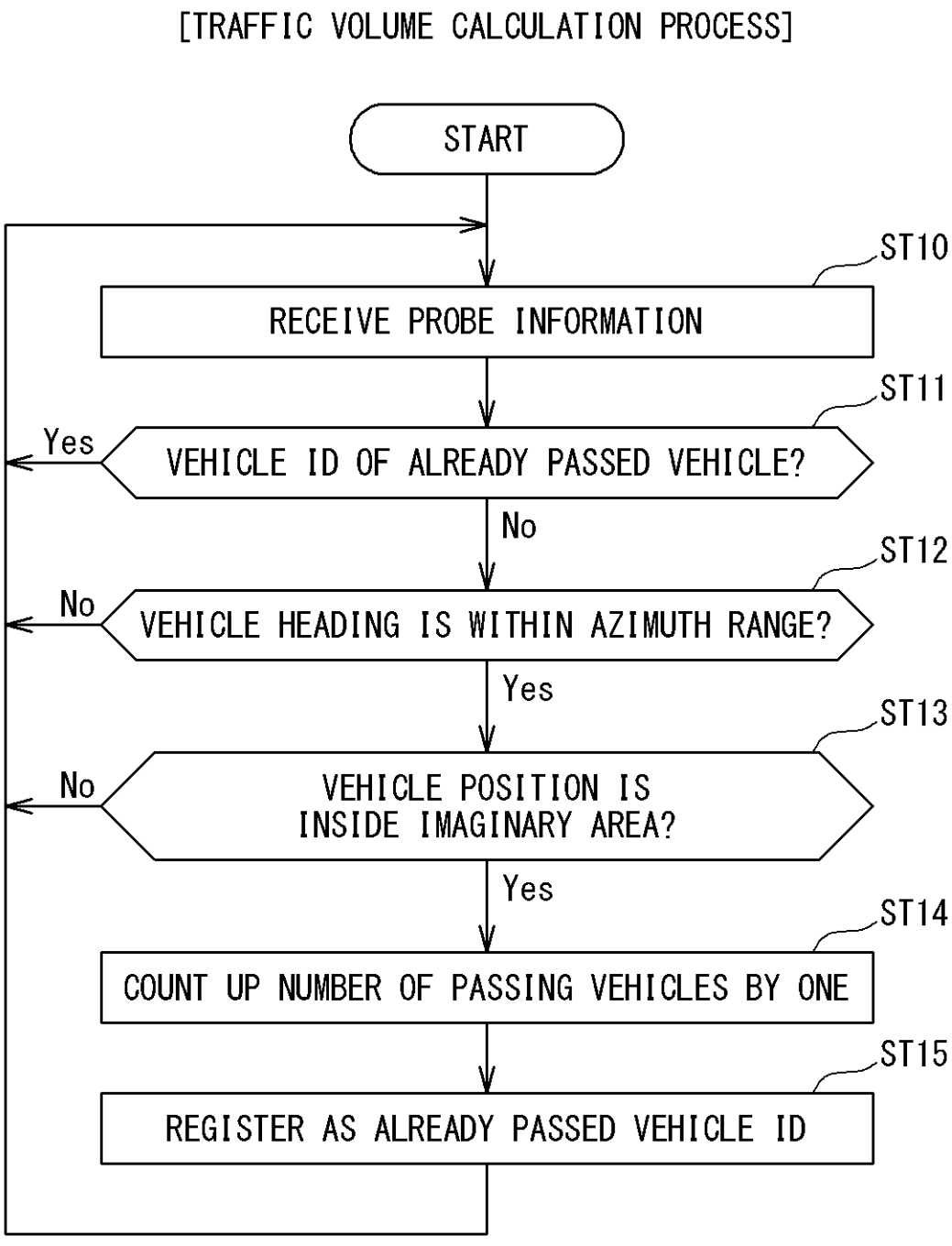

[TRAFFIC VOLUME CALCULATION PROCESS]
START
ST10
RECEIVE PROBE INFORMATION
ST11
Yes
VEHICLE ID OF ALREADY PASSED VEHICLE?
No
ST12
No
VEHICLE HEADING IS WITHIN AZIMUTH RANGE?
Yes
ST13
No
VEHICLE POSITION IS
INSIDE IMAGINARY AREA?
Yes
ST14
COUNT UP NUMBER OF PASSING VEHICLES BY ONE
ST15
REGISTER AS ALREADY PASSED VEHICLE ID

FIG. 7

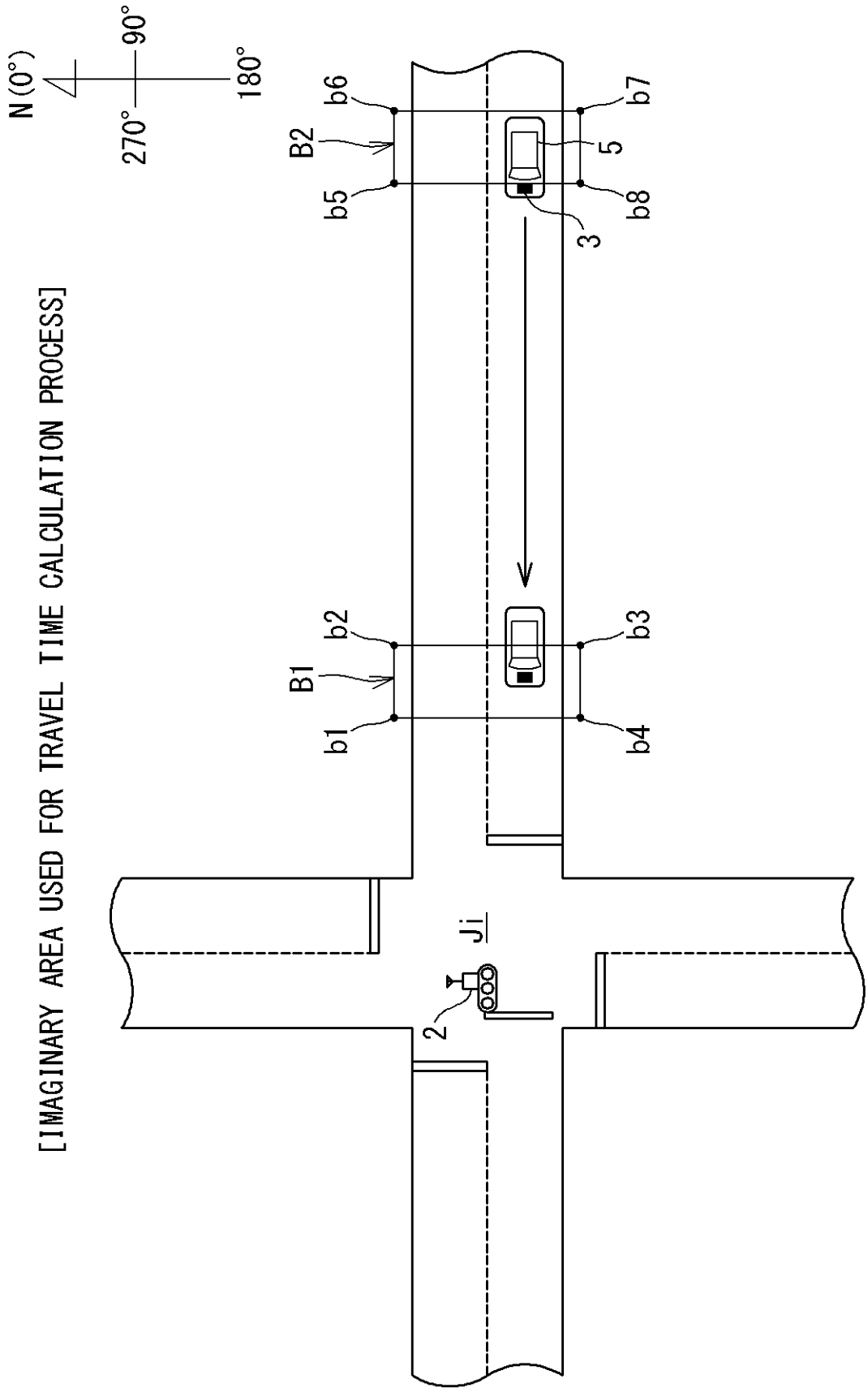

[IMAGINARY AREA USED FOR TRAVEL TIME CALCULATION PROCESS]
N (0°)
90°
180°
270°
B1
B2
b1
b2
b3
b4
b5
b6
b7
b8
3
5
2
Ji

FIG. 8

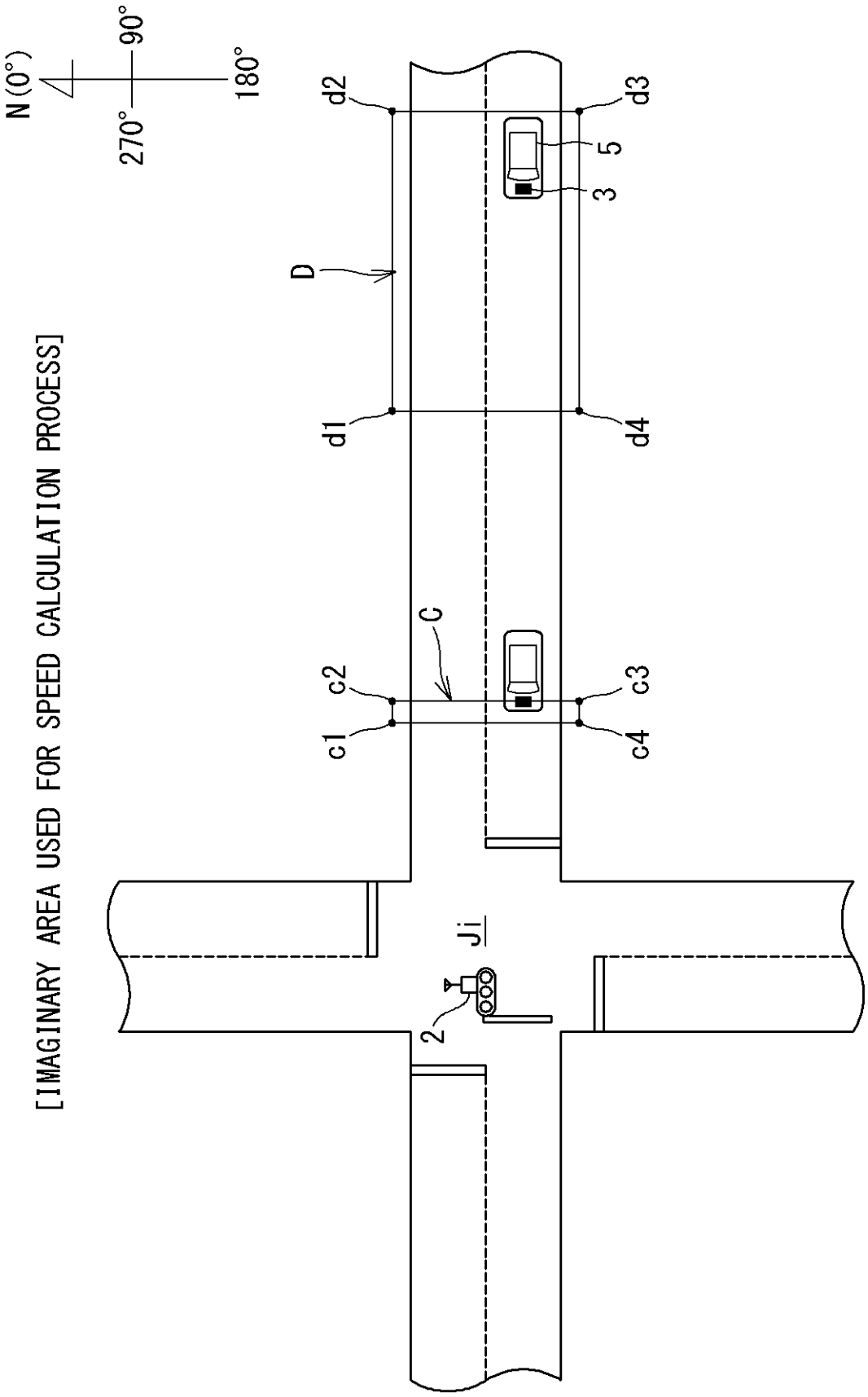

[IMAGINARY AREA USED FOR SPEED CALCULATION PROCESS]
N(0°)
90°
180°
270°
d2
d3
d1
d4
D
C
c2
c3
c1
c4
Ji
2
3
5

FIG. 9(a)

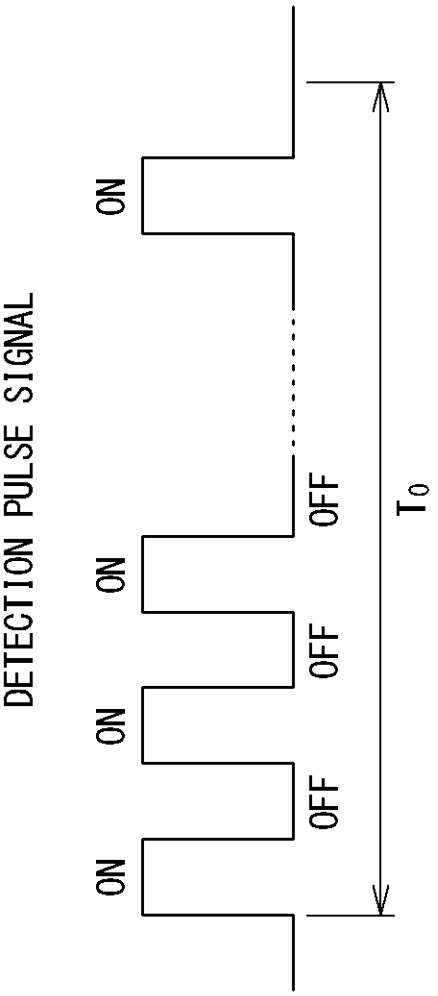

DETECTION PULSE SIGNAL
ON
OFF
ON
OFF
ON
OFF
ON
OFF
T_0

FIG. 9(b)

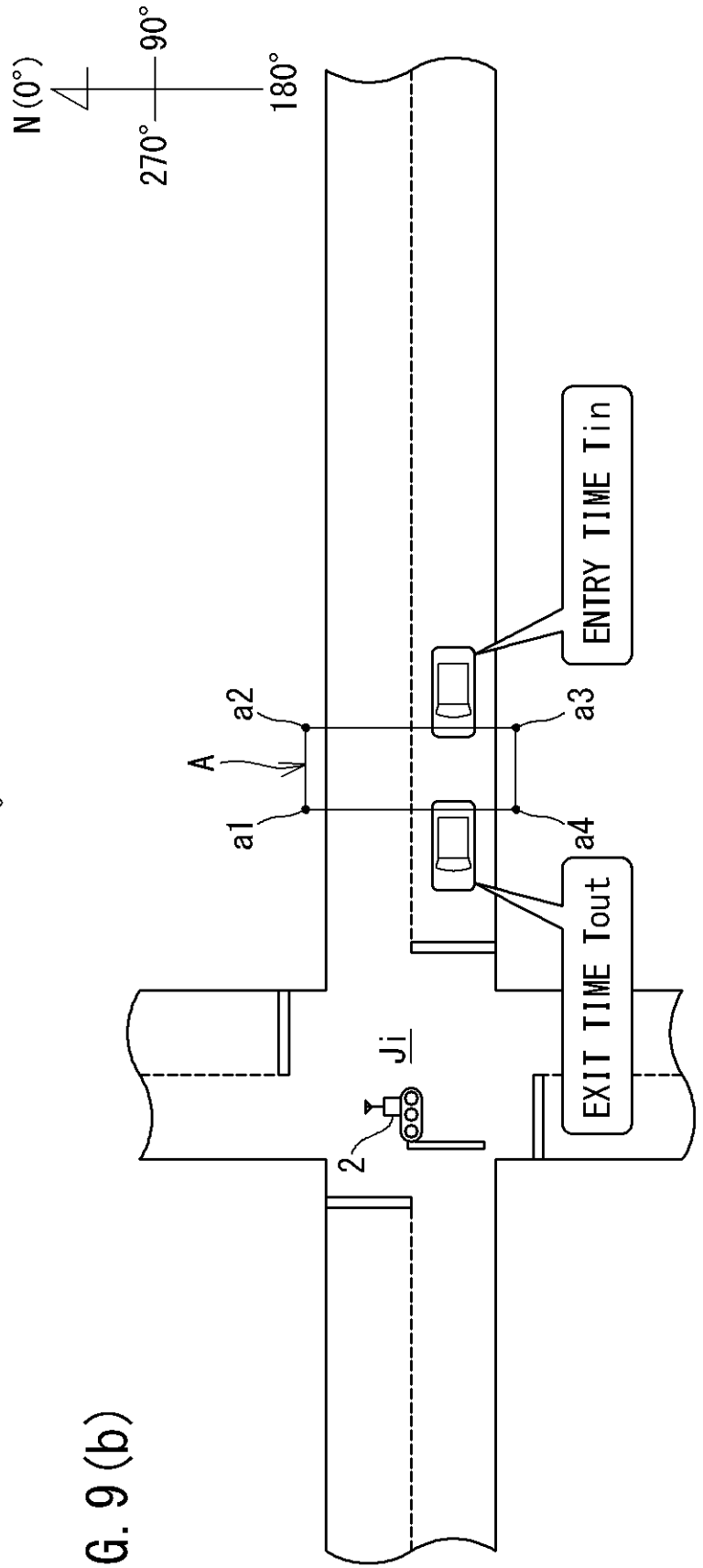

N(0°)
90°
180°
270°
ENTRY TIME Tin
EXIT TIME Tout
a1
a2
a3
a4
A
Ji
2

FIG. 10

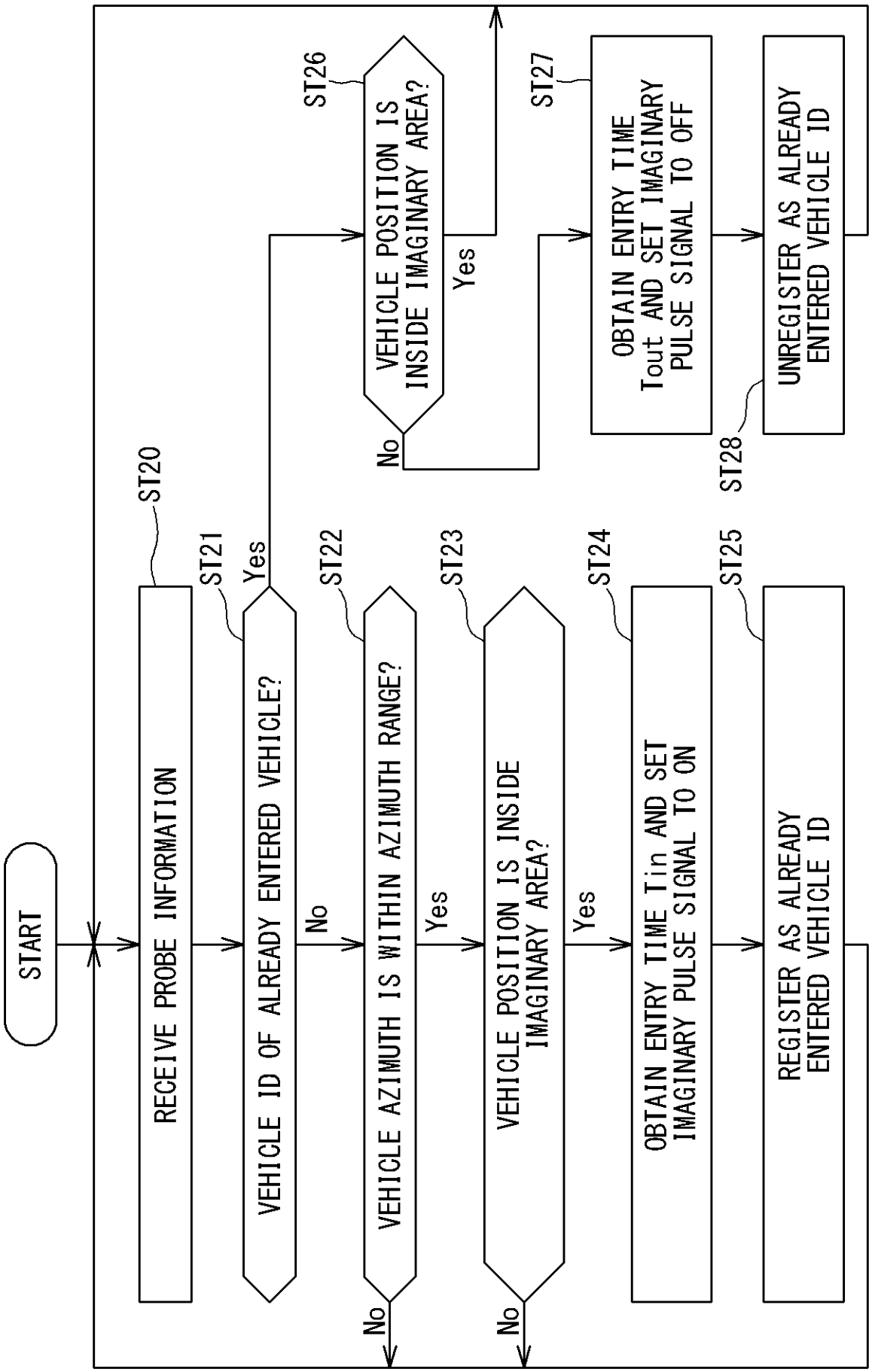

[IMAGINARY PULSE SIGNAL GENERATION PROCESS]
START
RECEIVE PROBE INFORMATION
ST20
VEHICLE ID OF ALREADY ENTERED VEHICLE?
ST21
Yes
No
VEHICLE AZIMUTH IS WITHIN AZIMUTH RANGE?
ST22
Yes
No
VEHICLE POSITION IS INSIDE IMAGINARY AREA?
ST23
Yes
No
OBTAIN ENTRY TIME Tin AND SET IMAGINARY PULSE SIGNAL TO ON
ST24
REGISTER AS ALREADY ENTERED VEHICLE ID
ST25
VEHICLE POSITION IS INSIDE IMAGINARY AREA?
ST26
Yes
No
OBTAIN ENTRY TIME Tout AND SET IMAGINARY PULSE SIGNAL TO OFF
ST27
UNREGISTER AS ALREADY ENTERED VEHICLE ID
ST28

FIG. 11(a)

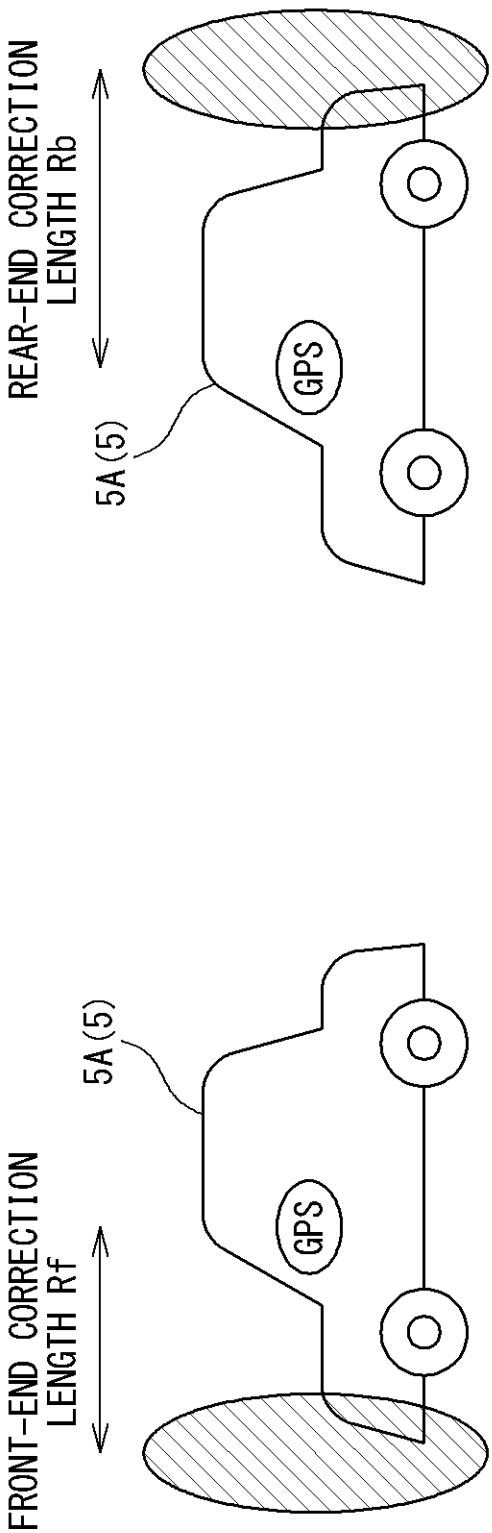


FIG. 11(b)

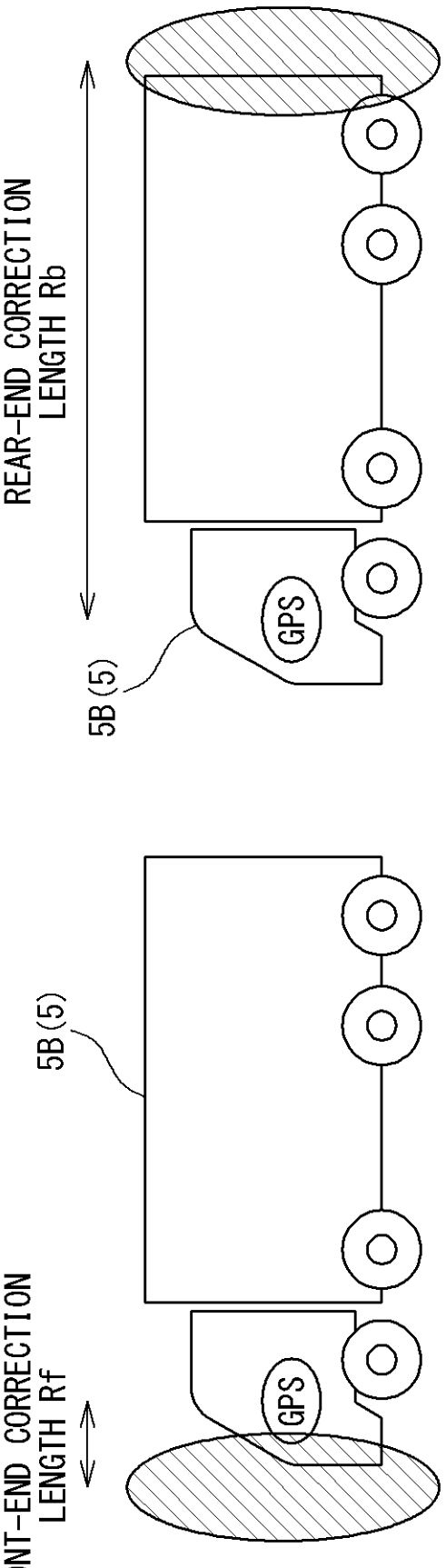


FIG. 12

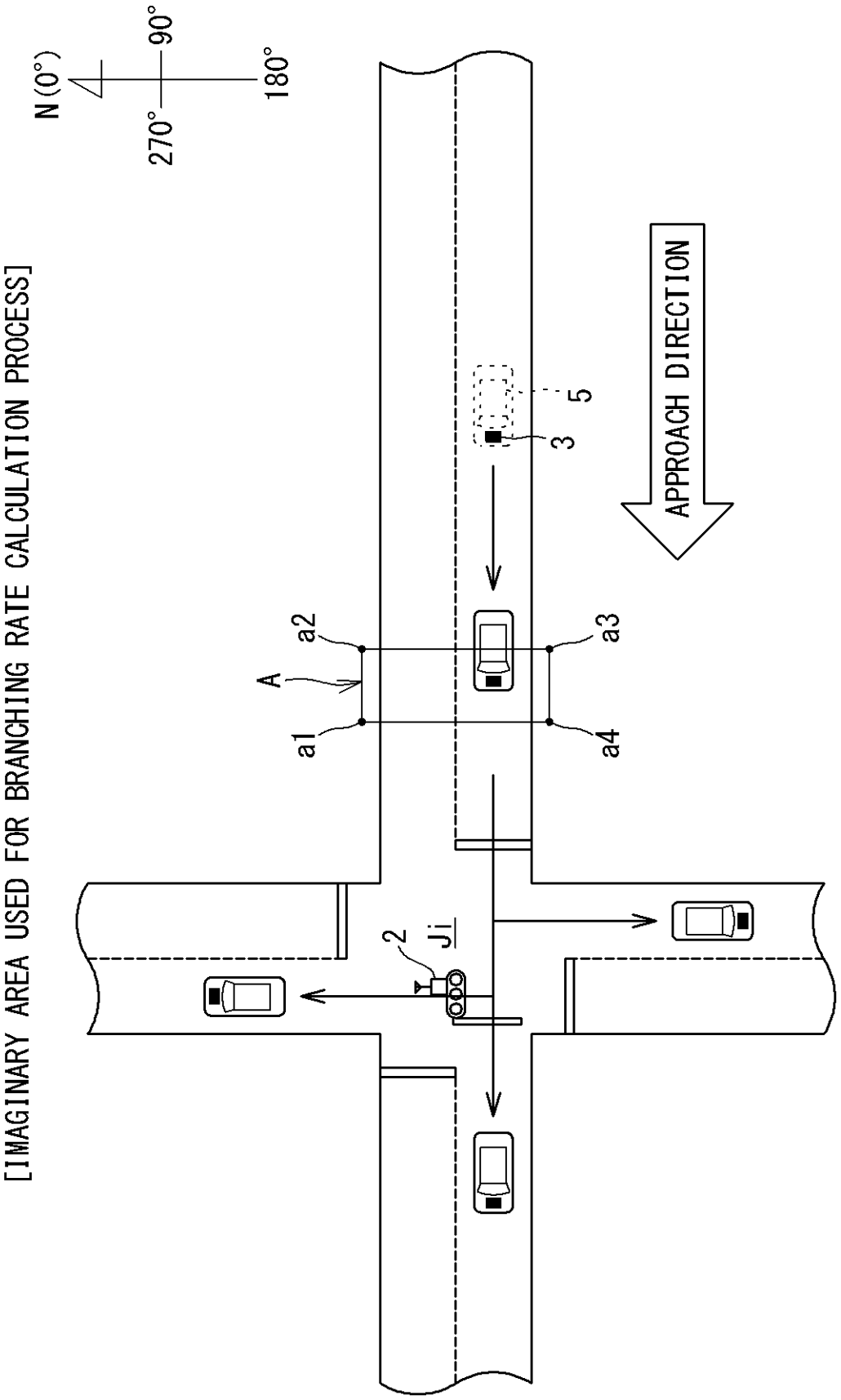

[IMAGINARY AREA USED FOR BRANCHING RATE CALCULATION PROCESS]
N (0°)
90°
180°
270°
APPROACH DIRECTION
5
3
a2
a3
A
a1
a4
2
Ji

FIG. 13

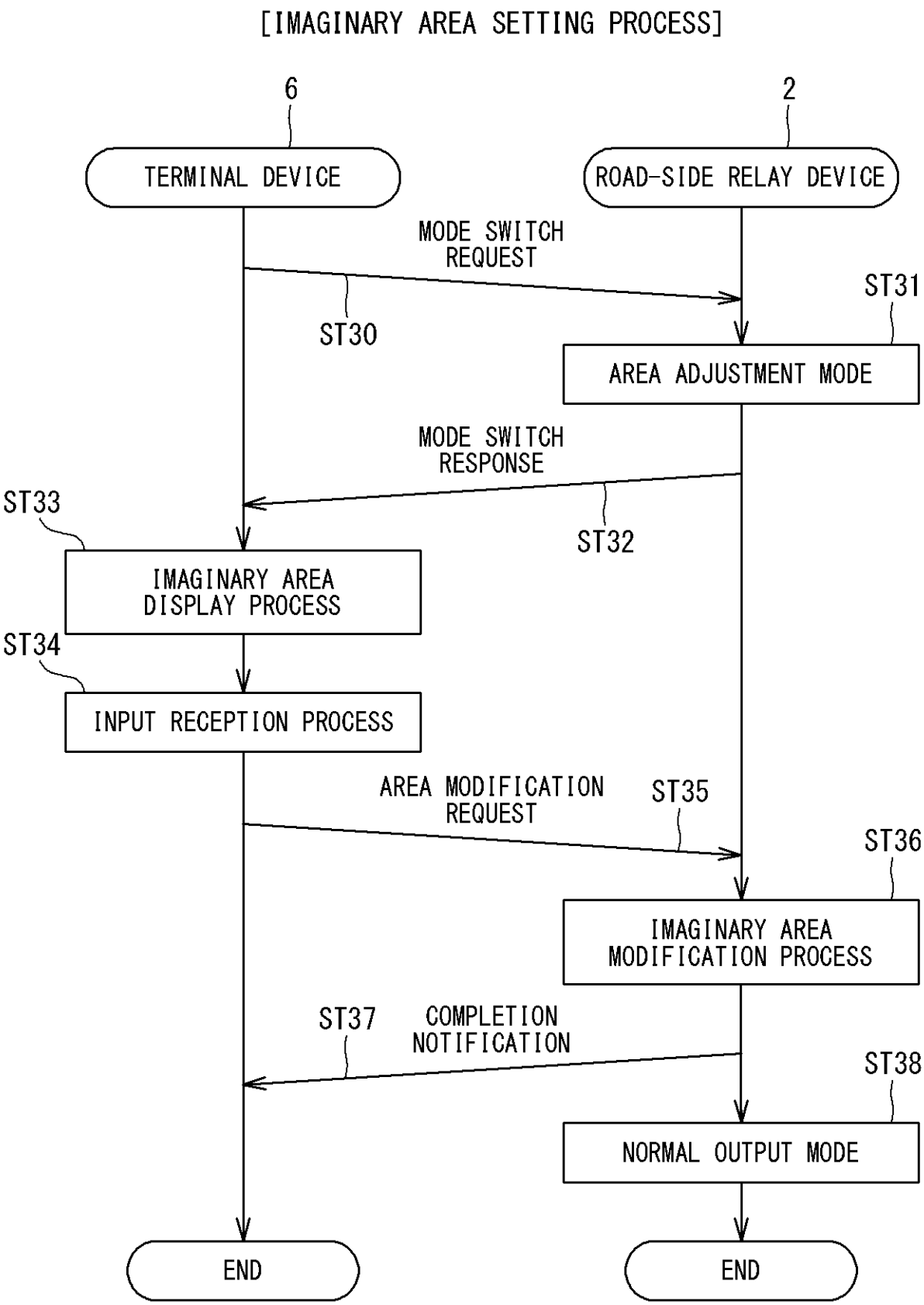

[IMAGINARY AREA SETTING PROCESS]
6
2
TERMINAL DEVICE
ROAD-SIDE RELAY DEVICE
MODE SWITCH REQUEST
ST30
ST31
AREA ADJUSTMENT MODE
MODE SWITCH RESPONSE
ST32
ST33
IMAGINARY AREA DISPLAY PROCESS
ST34
INPUT RECEPTION PROCESS
AREA MODIFICATION REQUEST
ST35
ST36
IMAGINARY AREA MODIFICATION PROCESS
ST37
COMPLETION NOTIFICATION
ST38
NORMAL OUTPUT MODE
END
END

FIG. 14

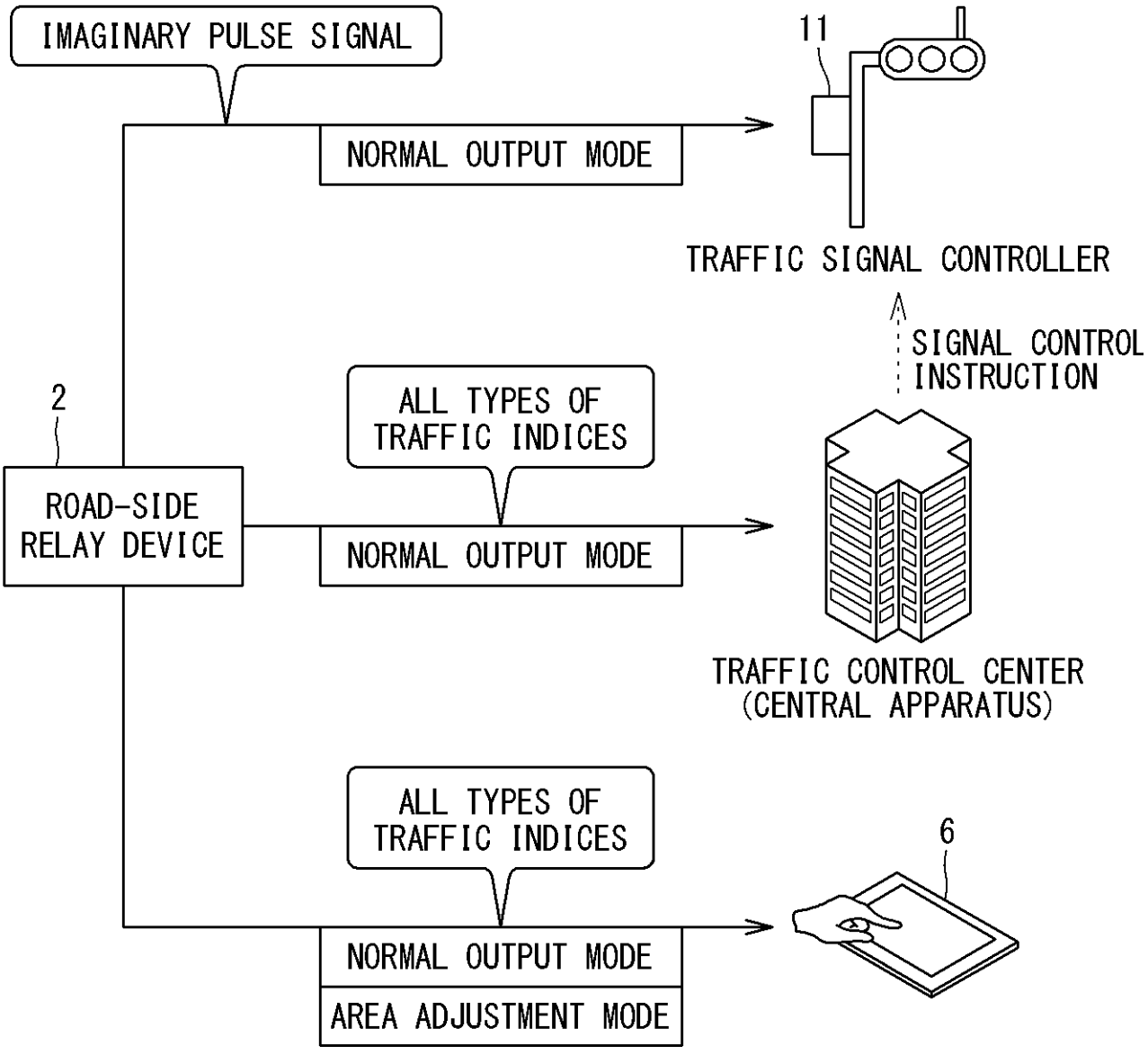

IMAGINARY PULSE SIGNAL
NORMAL OUTPUT MODE
11
TRAFFIC SIGNAL CONTROLLER
SIGNAL CONTROL INSTRUCTION
2
ROAD-SIDE RELAY DEVICE
ALL TYPES OF TRAFFIC INDICES
NORMAL OUTPUT MODE
TRAFFIC CONTROL CENTER (CENTRAL APPARATUS)
ALL TYPES OF TRAFFIC INDICES
6
NORMAL OUTPUT MODE
AREA ADJUSTMENT MODE

FIG. 15

[IMAGINARY AREA CORRESPONDING TO TYPES OF LOCAL ADAPTIVE CONTROLS]

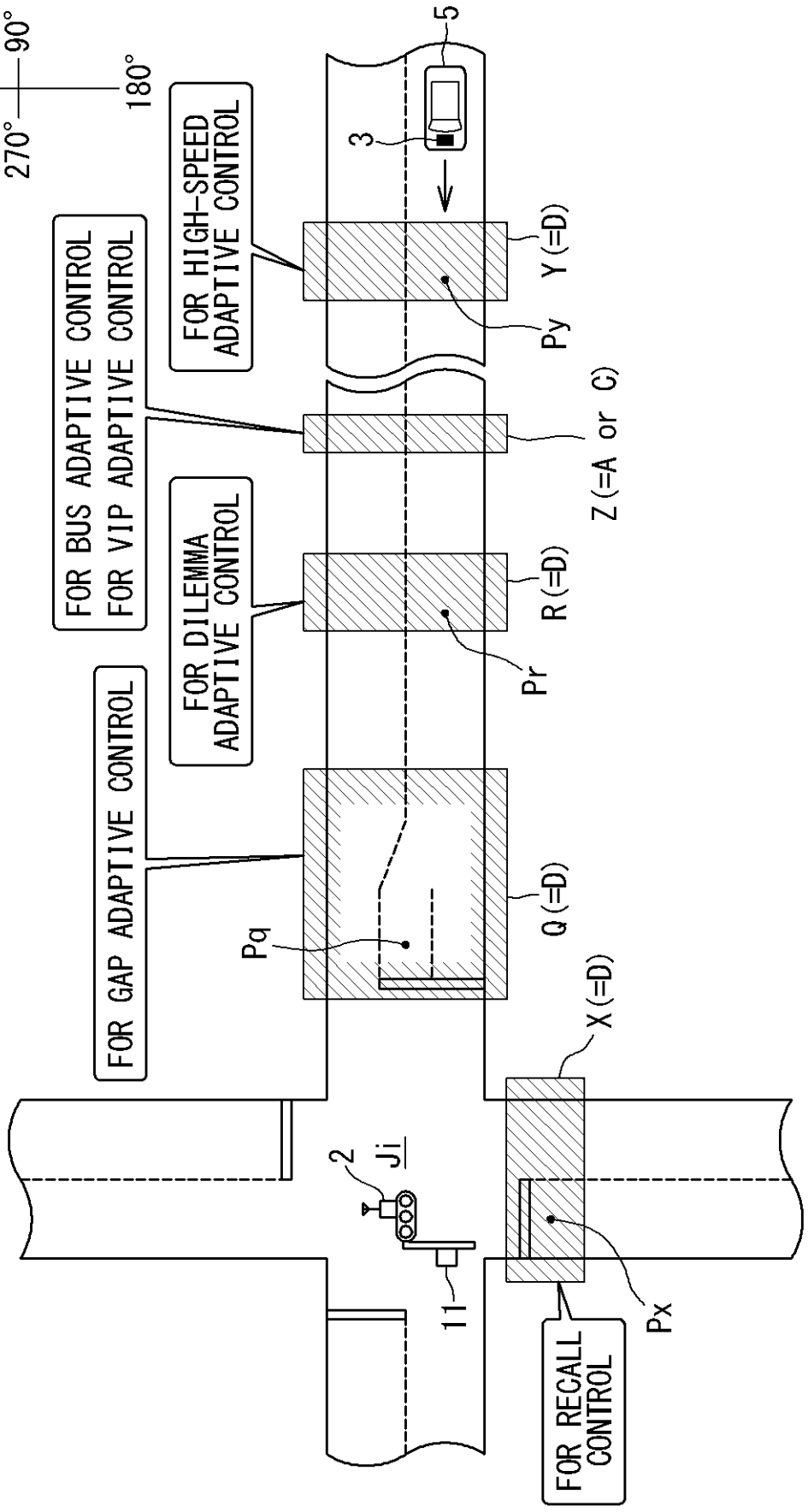


FIG. 16

[IMAGINARY AREA CORRESPONDING TO MULTIPLE APPROACH PATHS]

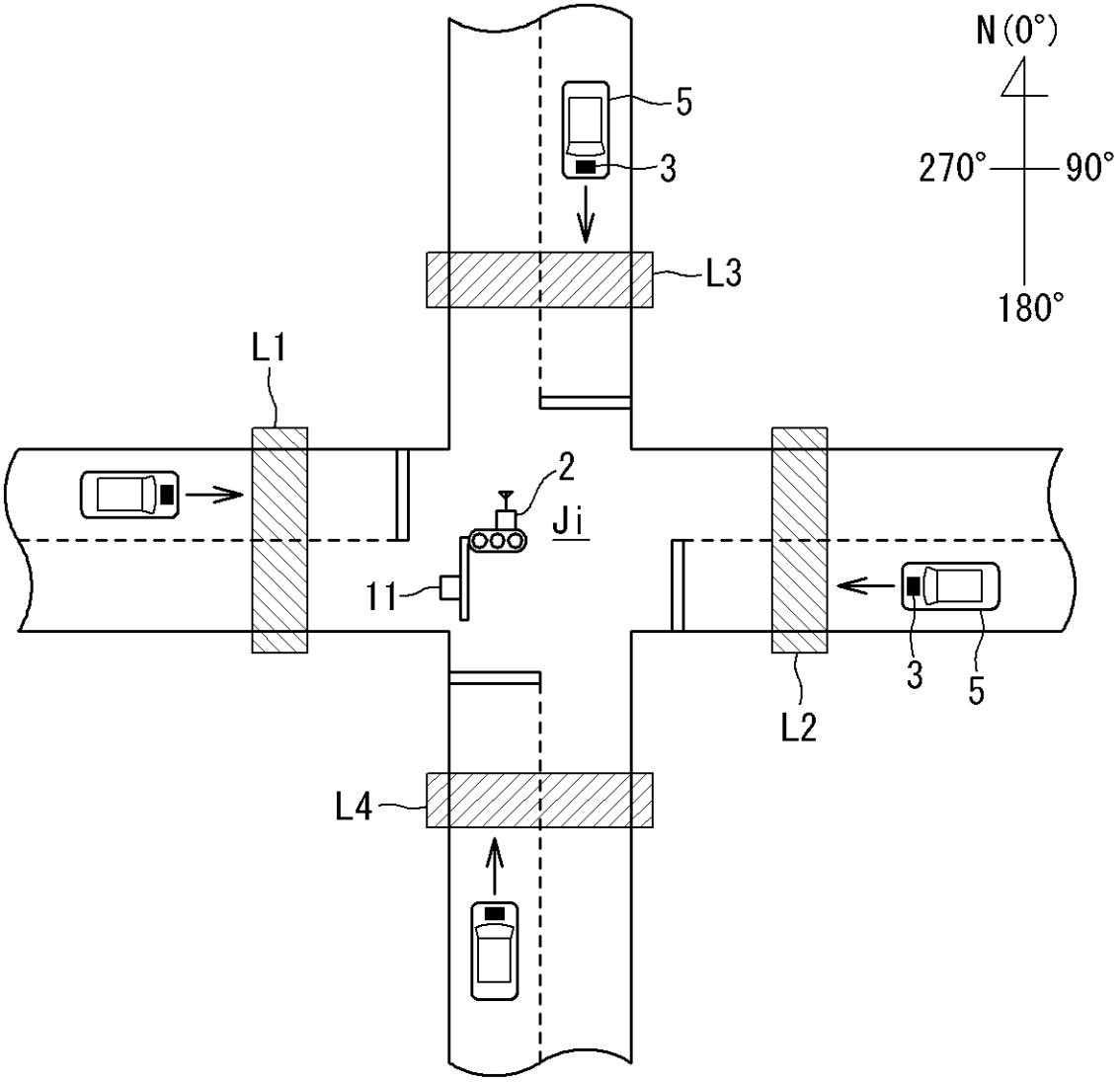


FIG. 17(a)

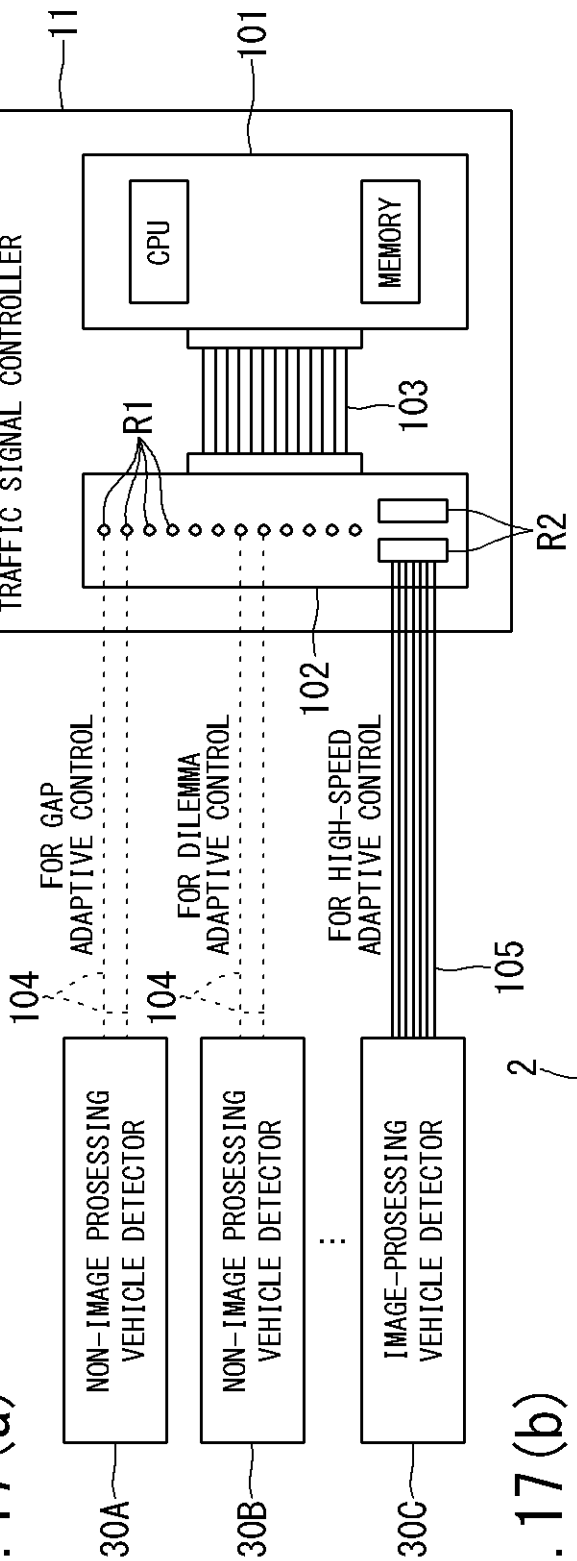


FIG. 17(b)

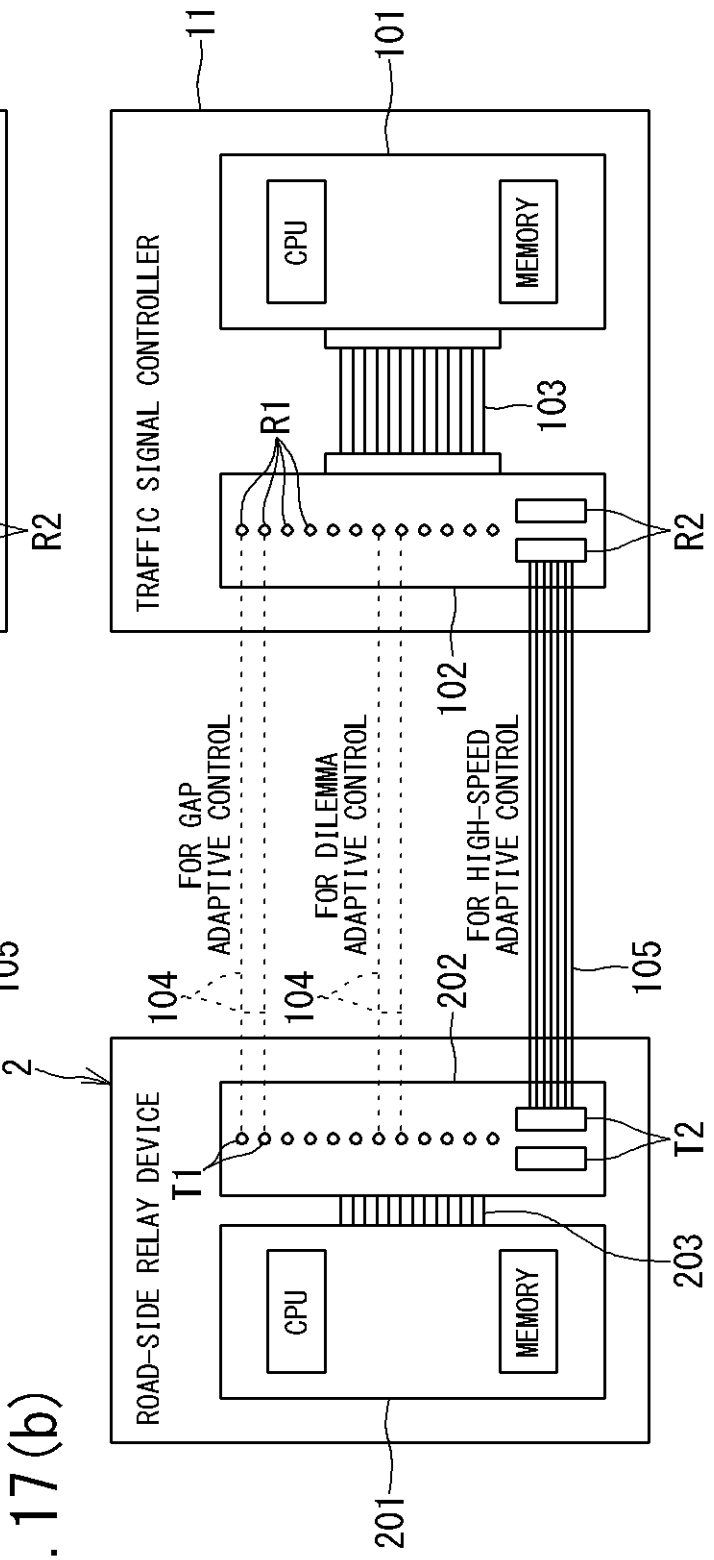


FIG. 18

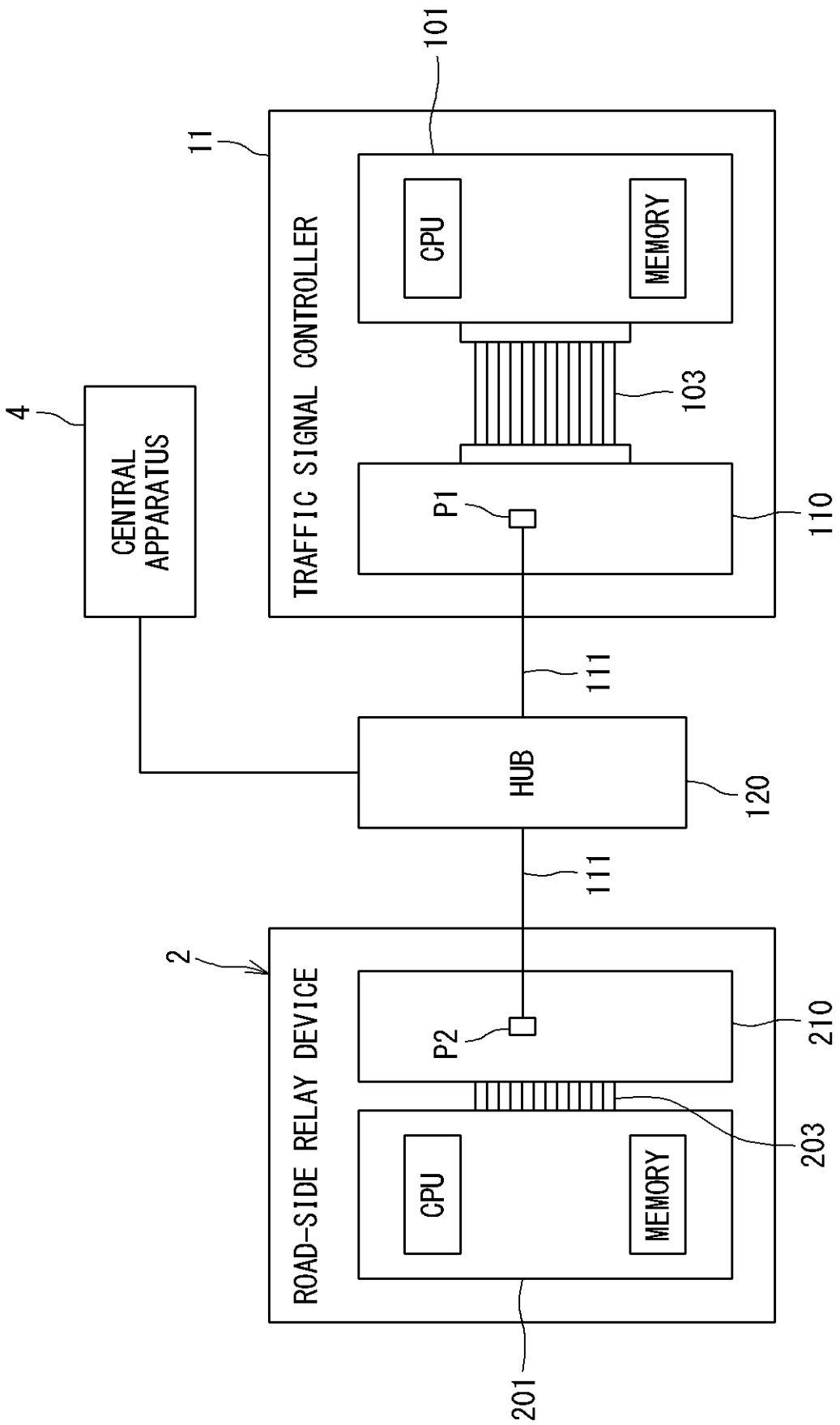
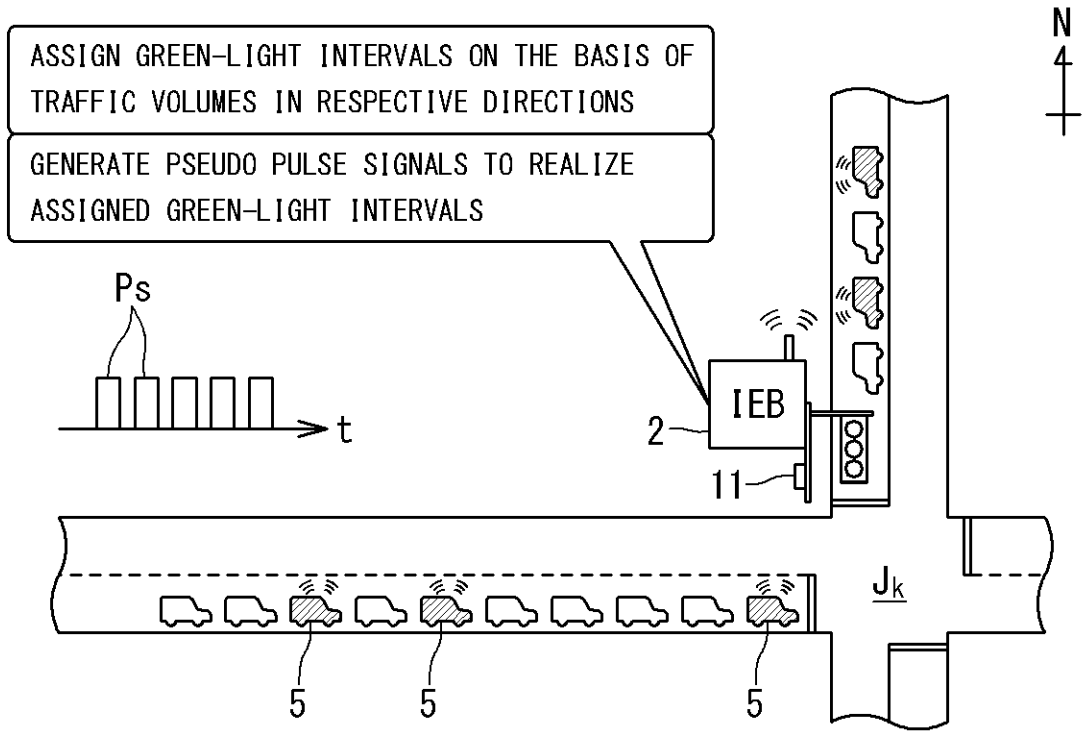

101
11
TRAFFIC SIGNAL CONTROLLER
CPU
MEMORY
103
4
CENTRAL APPARATUS
P1
110
111
HUB
120
111
2
ROAD-SIDE RELAY DEVICE
P2
210
CPU
MEMORY
203
201

FIG. 19


[OUTLINE OF DETECTOR EMULATION]
ASSIGN GREEN-LIGHT INTERVALS ON THE BASIS OF TRAFFIC VOLUMES IN RESPECTIVE DIRECTIONS
GENERATE PSEUDO PULSE SIGNALS TO REALIZE ASSIGNED GREEN-LIGHT INTERVALS
Ps
t
IEB
2
11
N
Jk
5
5
5