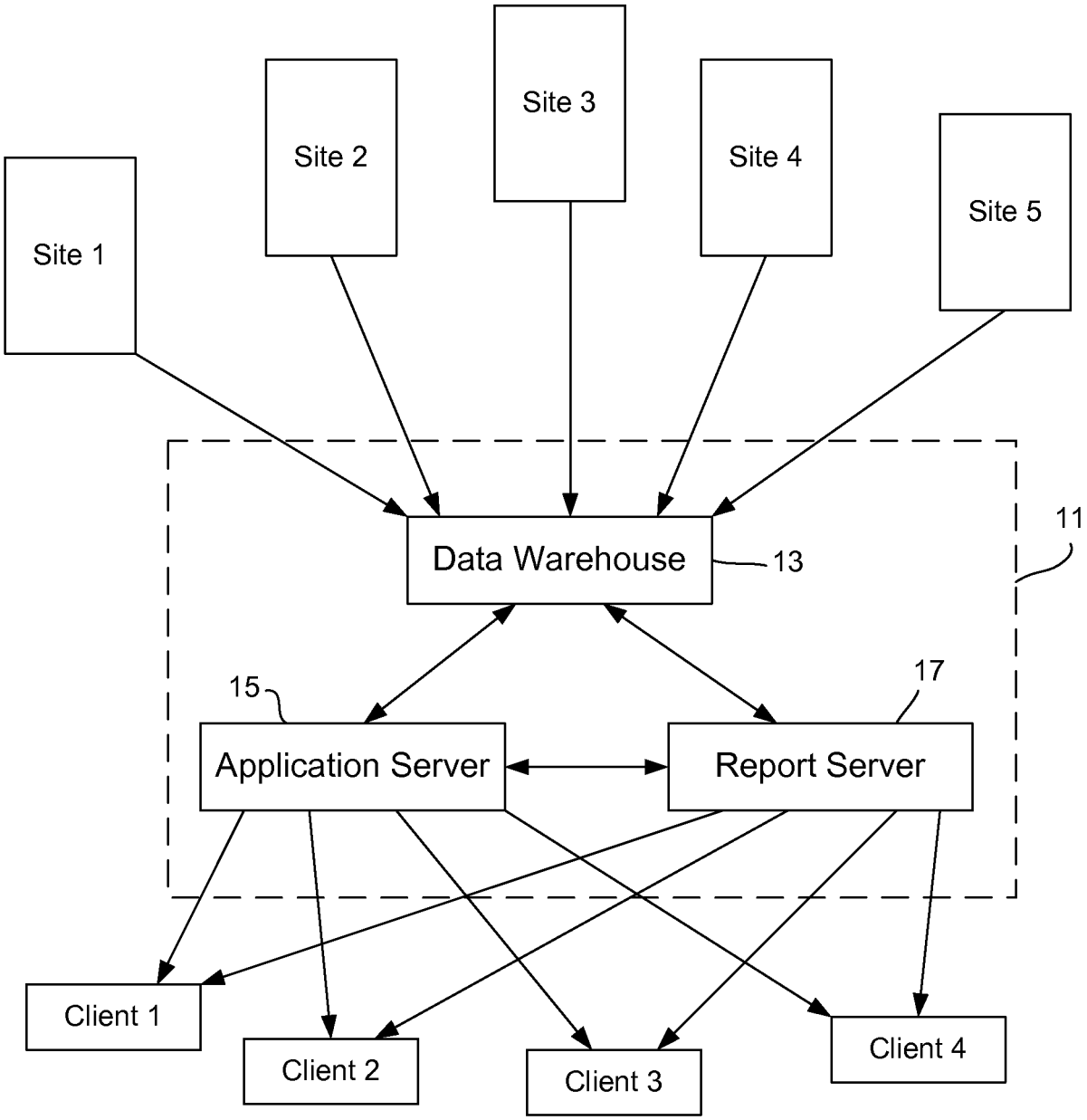

Site 1
Site 2
Site 3
Site 4
Site 5
11
Data Warehouse
13
15
17
Application Server
Report Server
Client 1
Client 2
Client 3
Client 4

Figure 1A

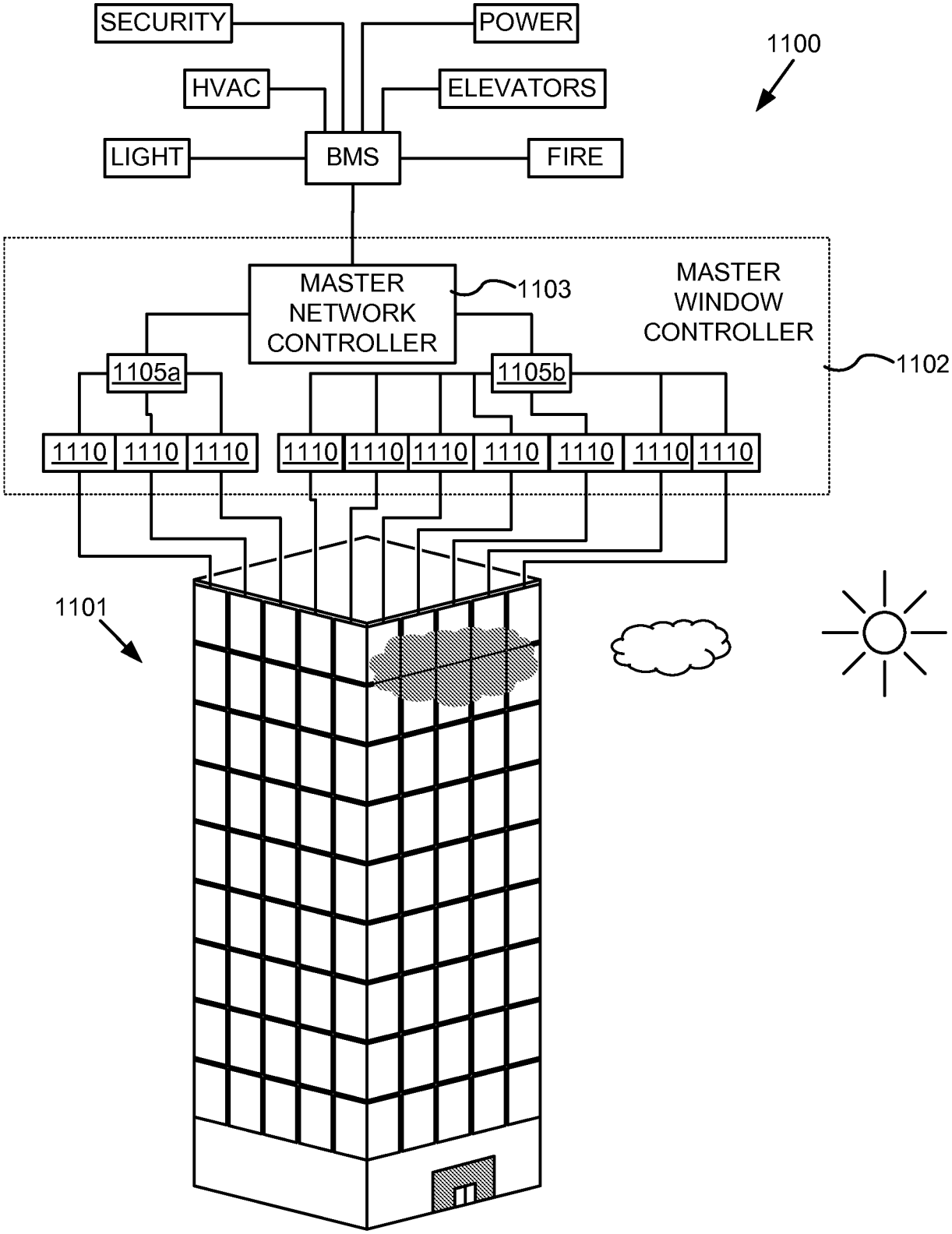

SECURITY
POWER
1100
HVAC
ELEVATORS
LIGHT
BMS
FIRE
MASTER
NETWORK
CONTROLLER
1103
MASTER
WINDOW
CONTROLLER
1102
1105a
1105b
1110
1101

Figure 1B

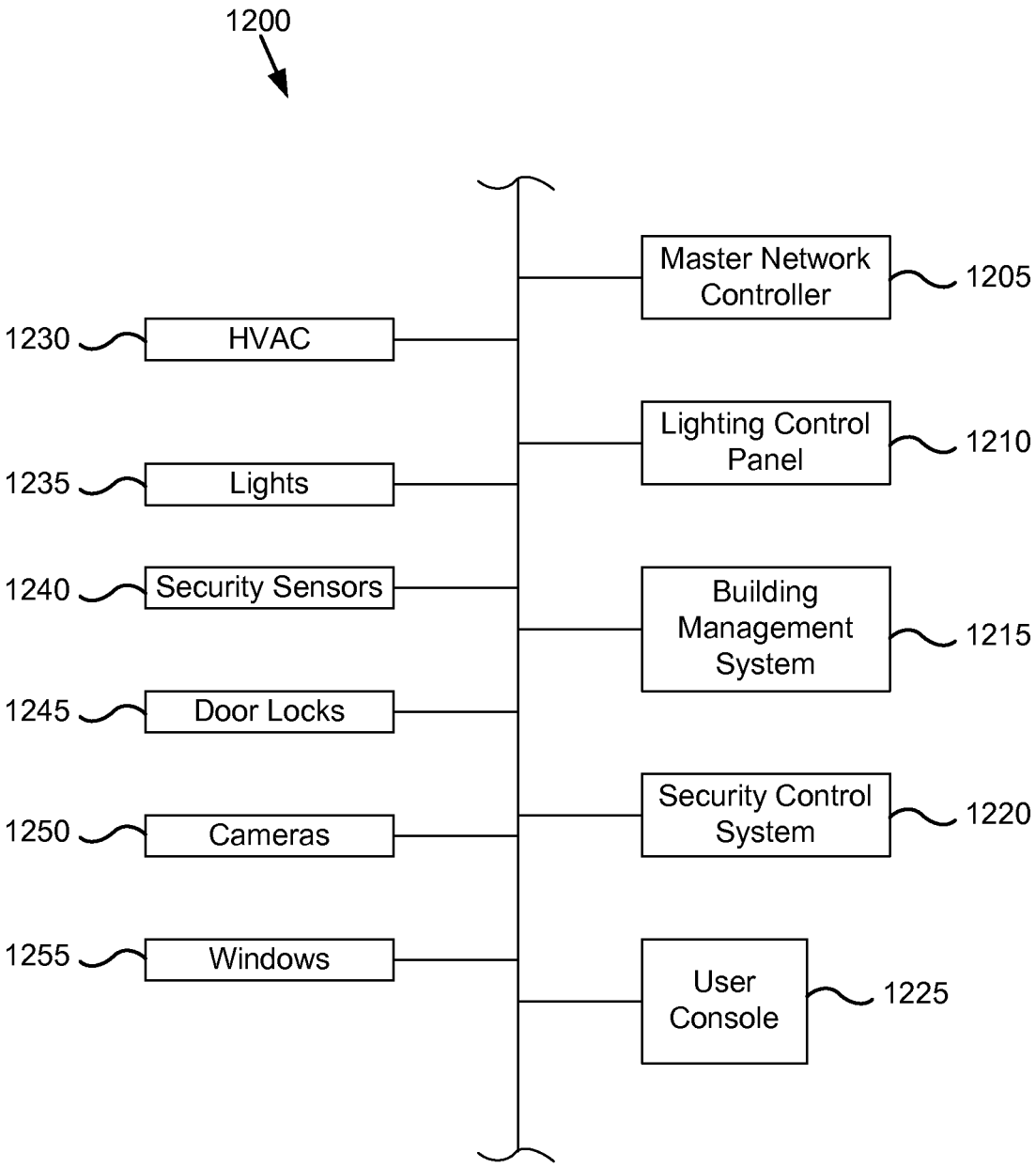

1200
Master Network Controller
1205
1230
HVAC
Lighting Control Panel
1210
1235
Lights
1240
Security Sensors
Building Management System
1215
1245
Door Locks
Security Control System
1220
1250
Cameras
1255
Windows
User Console
1225

Figure 1C

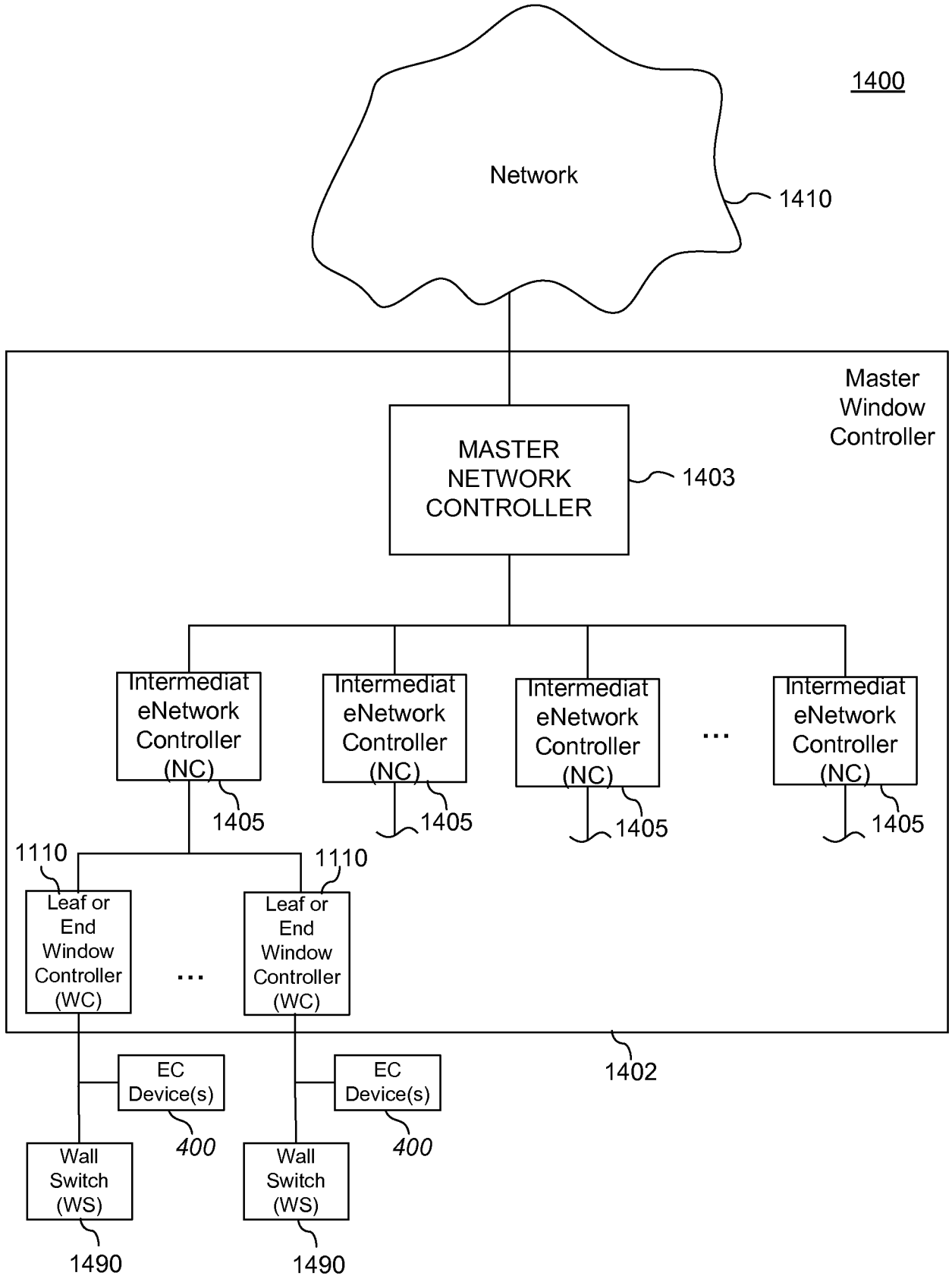

1400
Network
1410
Master
Window
Controller
MASTER
NETWORK
CONTROLLER
1403
Intermediat
eNetwork
Controller
(NC)
1405
Intermediat
eNetwork
Controller
(NC)
1405
Intermediat
eNetwork
Controller
(NC)
1405
...
Intermediat
eNetwork
Controller
(NC)
1405
1110
1110
Leaf or
End
Window
Controller
(WC)
...
Leaf or
End
Window
Controller
(WC)
1402
EC
Device(s)
400
EC
Device(s)
400
Wall
Switch
(WS)
1490
Wall
Switch
(WS)
1490

Figure 1D

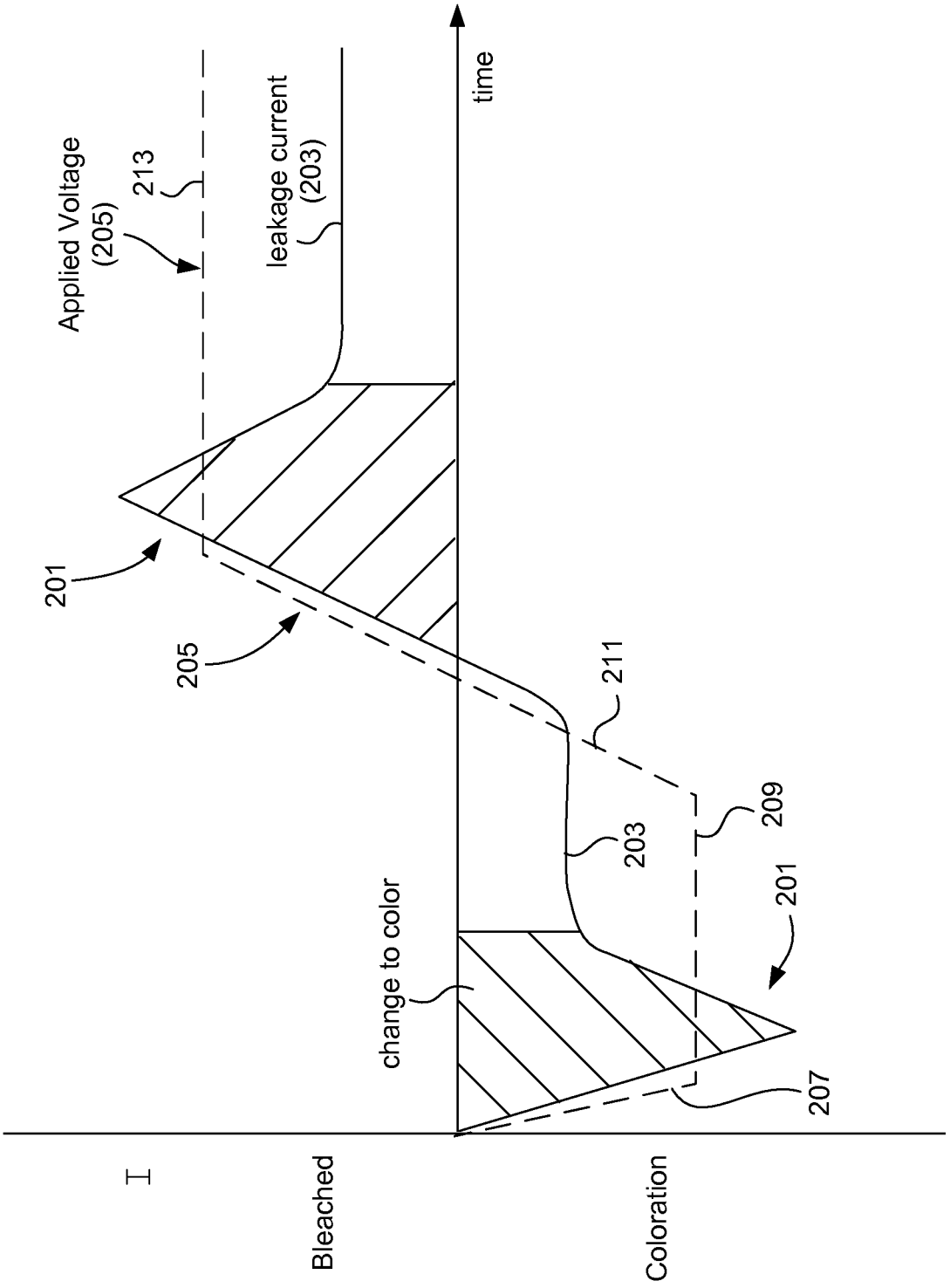

time
Applied Voltage
(205)
213
leakage current
(203)
201
205
211
209
203
201
change to color
207
I
Bleached
Coloration

Figure 2

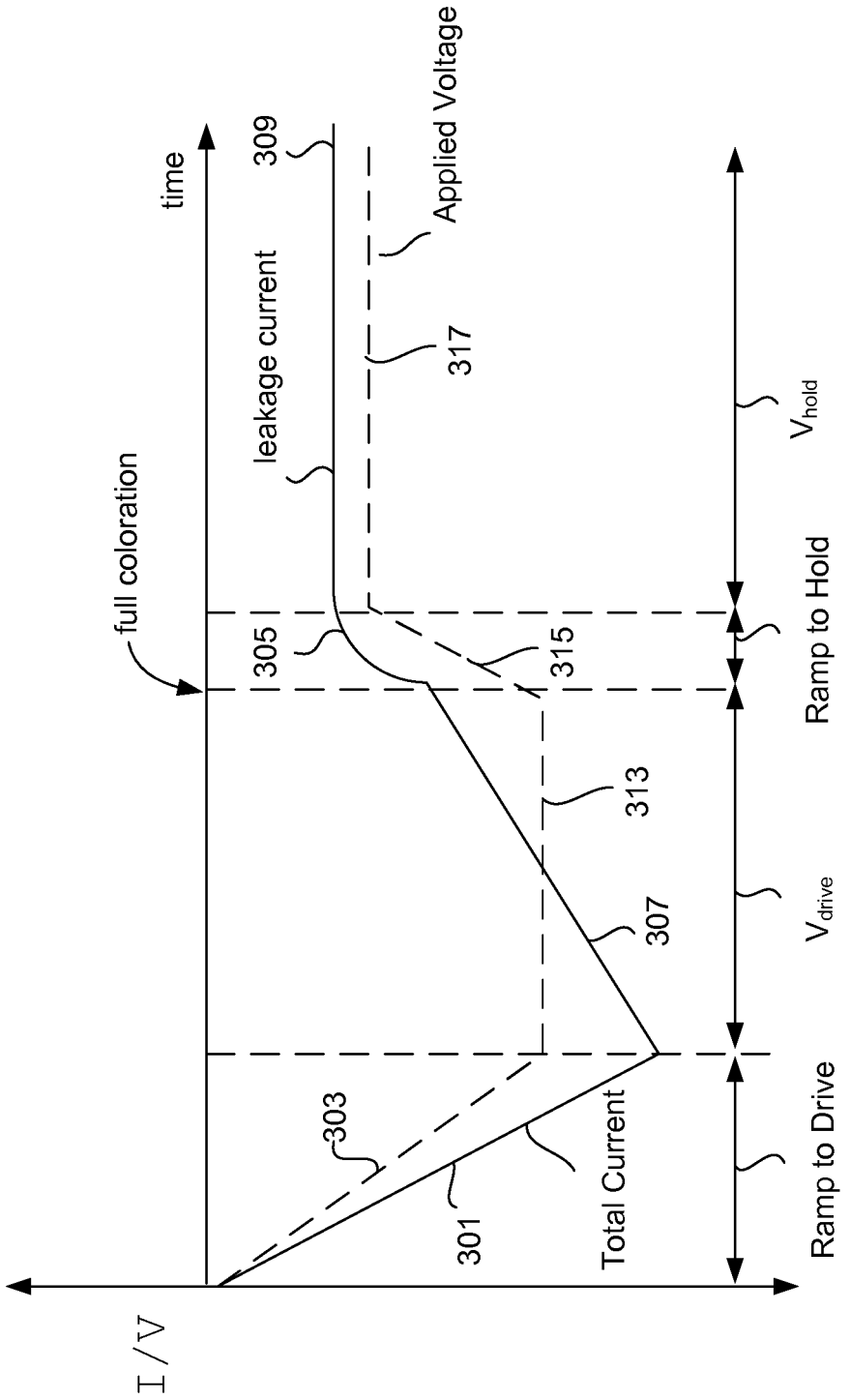

I / V
time
full coloration
leakage current
309
Applied Voltage
317
305
315
313
307
303
301
Total Current
V_{hold}
V_{drive}
Ramp to Hold
Ramp to Drive

Figure 3

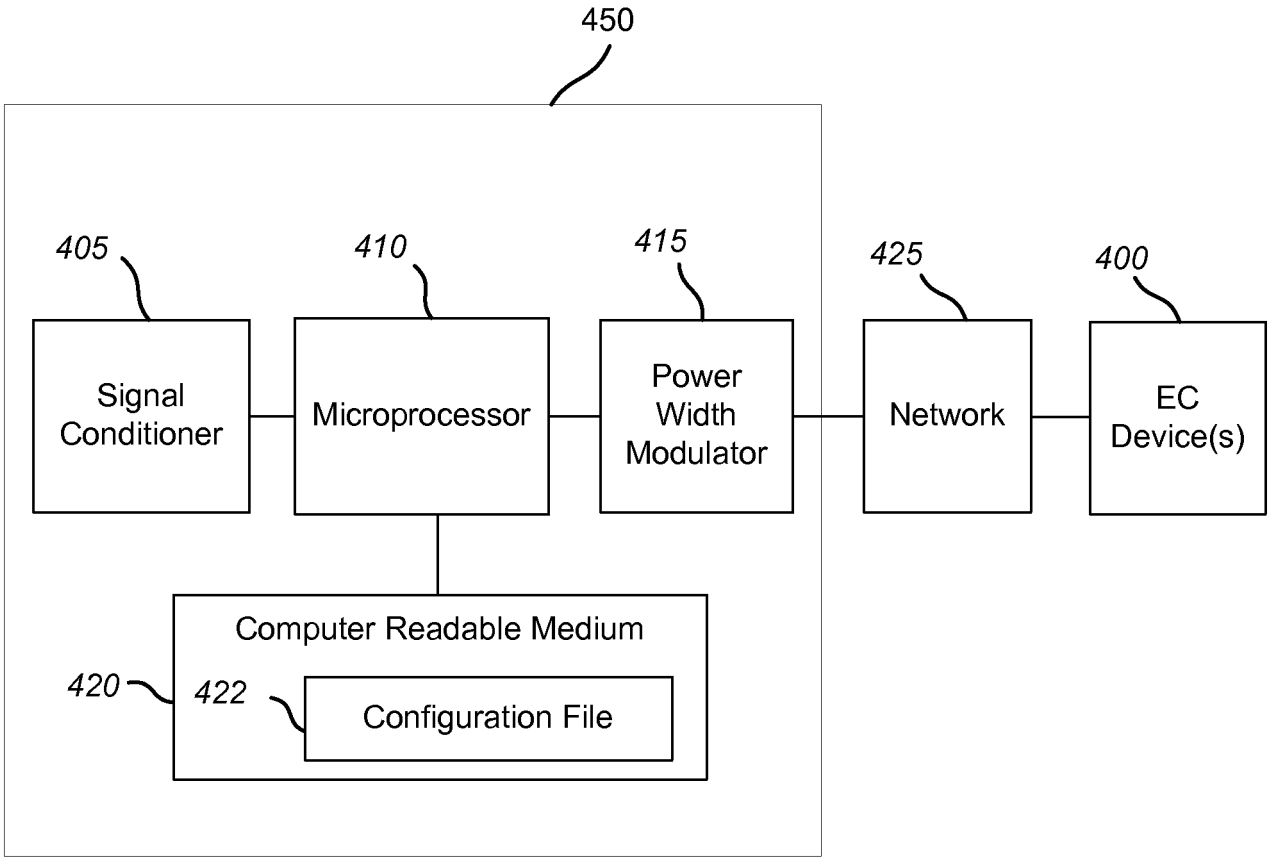

450
405
410
415
425
400
Signal Conditioner
Microprocessor
Power Width Modulator
Network
EC Device(s)
Computer Readable Medium
420
422
Configuration File

Figure 4

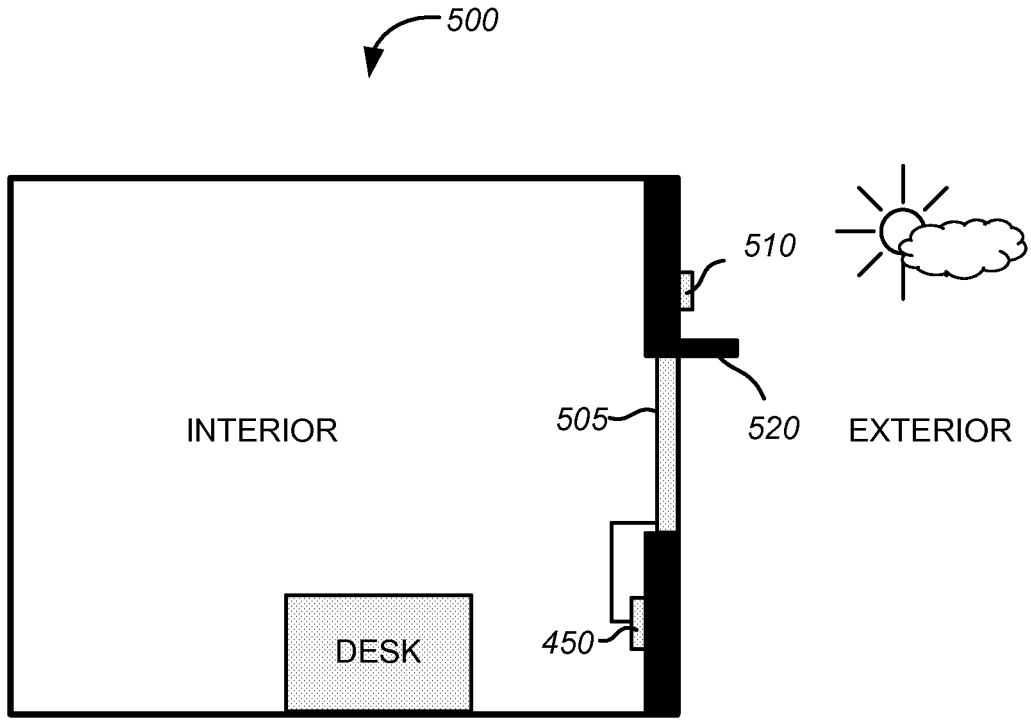
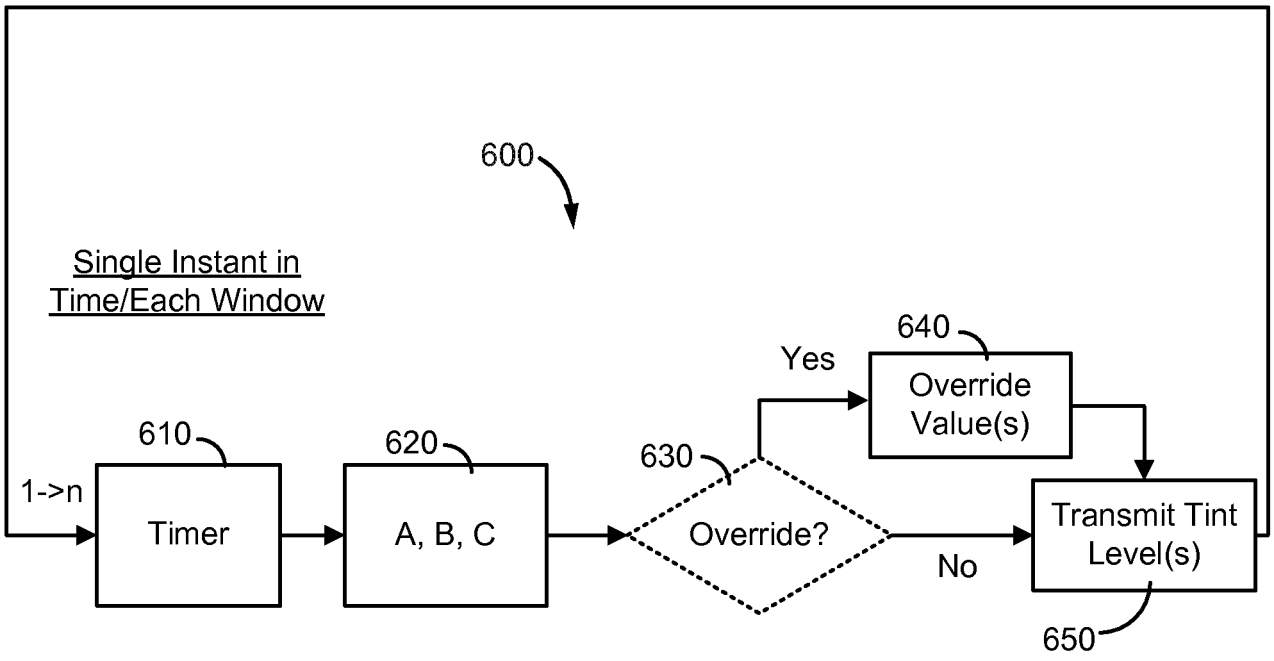
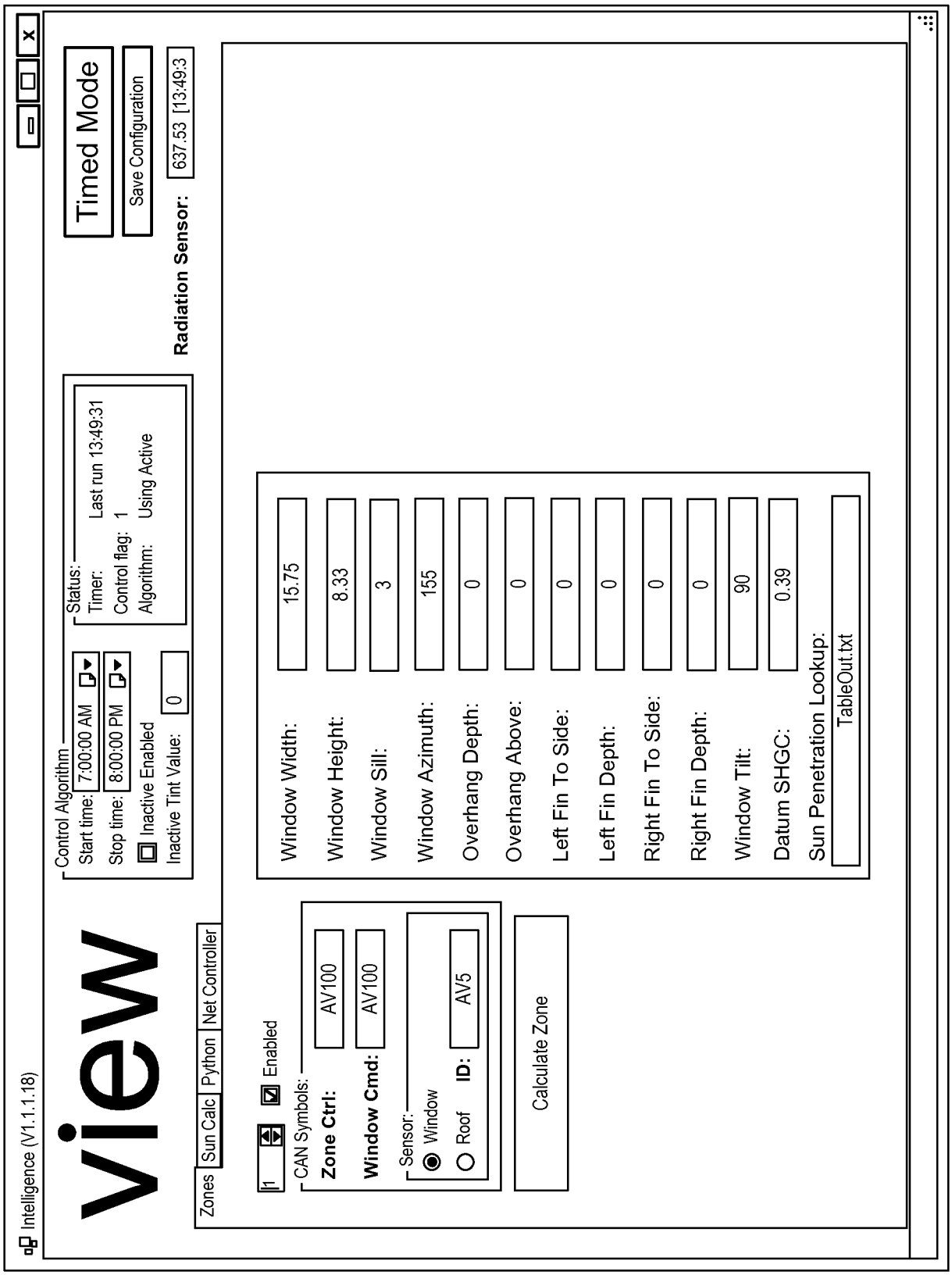


Figure 5



A - Direct Sunlight Penetration
B - Clear Sky Prediction
C - Real-time Irradiance accounting for obstructed and reflected

Figure 6



1405

Figure 7

SITE STATUS DASHBOARD
view
Dynamic Glass
Home
New Site
Reports
About
Details
Name
Status
UpdateDateTime
Details Location_A 2/27/2014 5:16:33 AM
Details Location_B 2/27/2014 5:16:33 AM
Details Location_C 2/27/2014 5:16:33 AM
Details Location_D 2/27/2014 5:16:33 AM
Details Location_E 2/27/2014 5:16:33 AM
Details Location_F 2/27/2014 5:16:33 AM
Details Location_G 2/27/2014 5:16:33 AM
Details Location_H 2/27/2014 5:16:33 AM
Details Location_I 2/27/2014 5:16:33 AM
Details Location_J 2/27/2014 5:16:33 AM
Details Location_K 2/27/2014 5:16:33 AM
Details Location_L 2/27/2014 5:16:33 AM
Details Location_M 2/27/2014 5:16:33 AM
Details Location_N 2/27/2014 5:16:33 AM
Details Location_O 2/27/2014 5:16:33 AM
Details Location_P 2/27/2014 5:16:33 AM
Details Location_Q 2/27/2014 5:16:33 AM
Details Location_R 2/27/2014 5:16:33 AM
Site Condition Status Details:
Site Status History:
Window Controller Status Details:

Figure 8

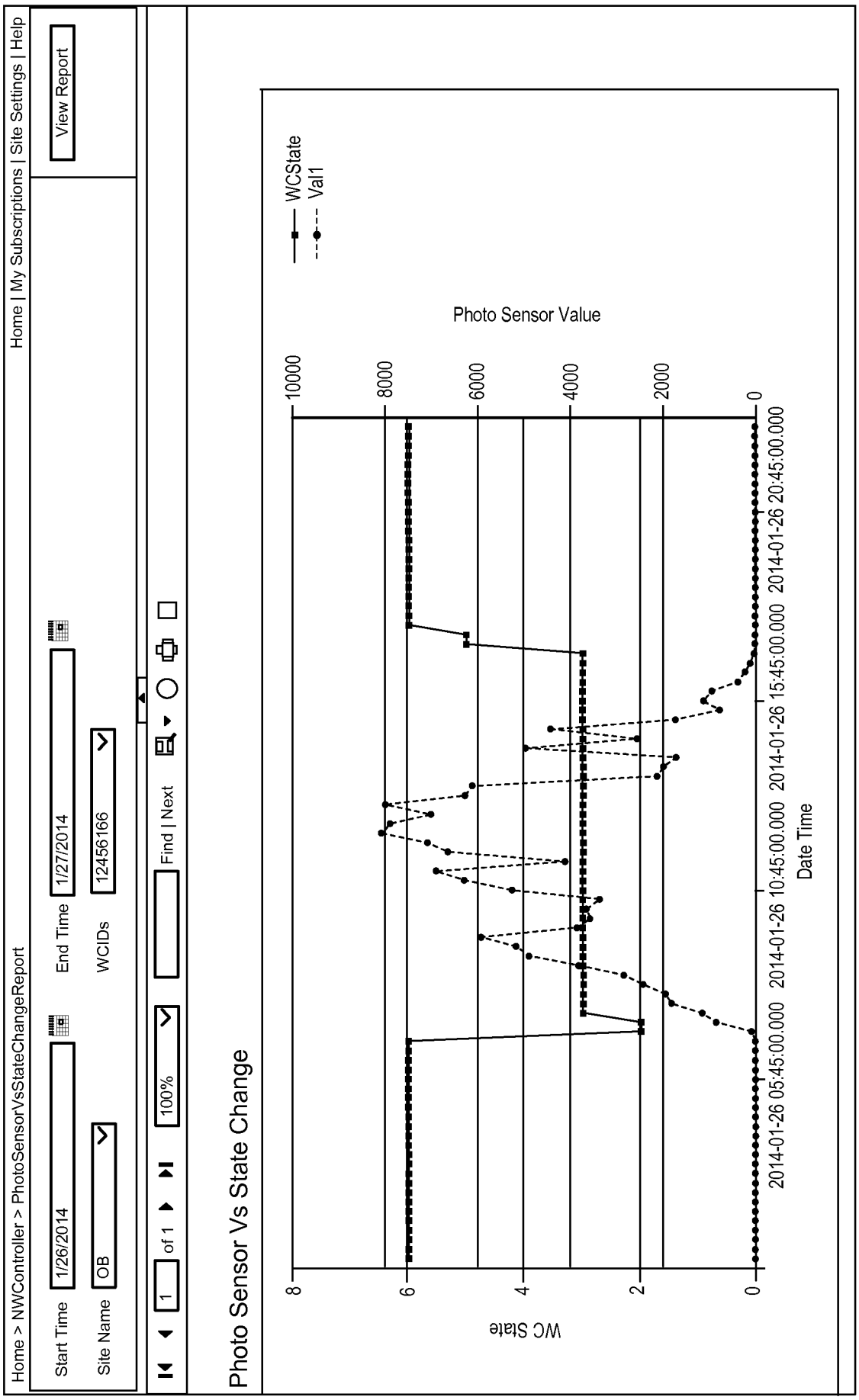
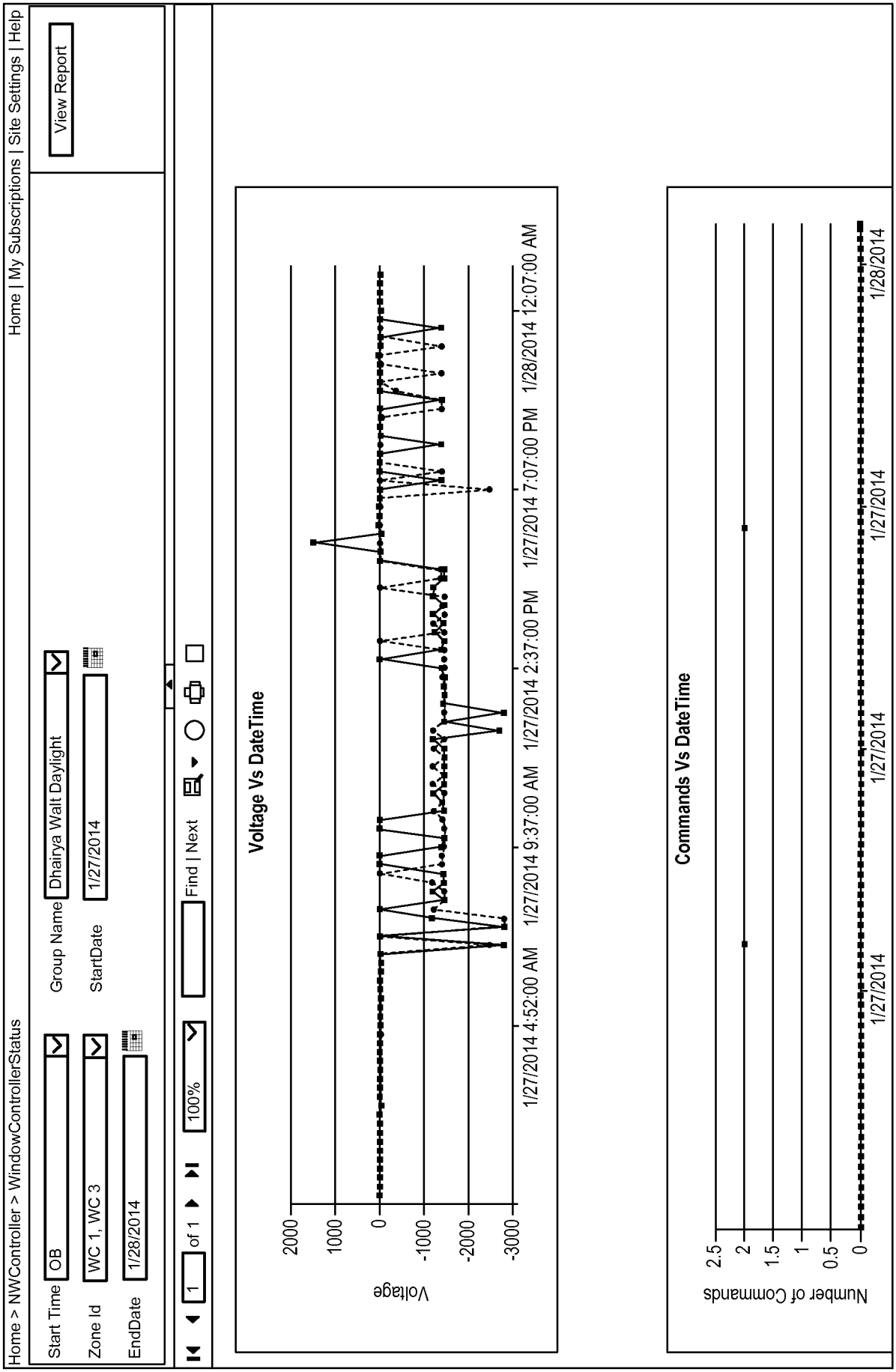
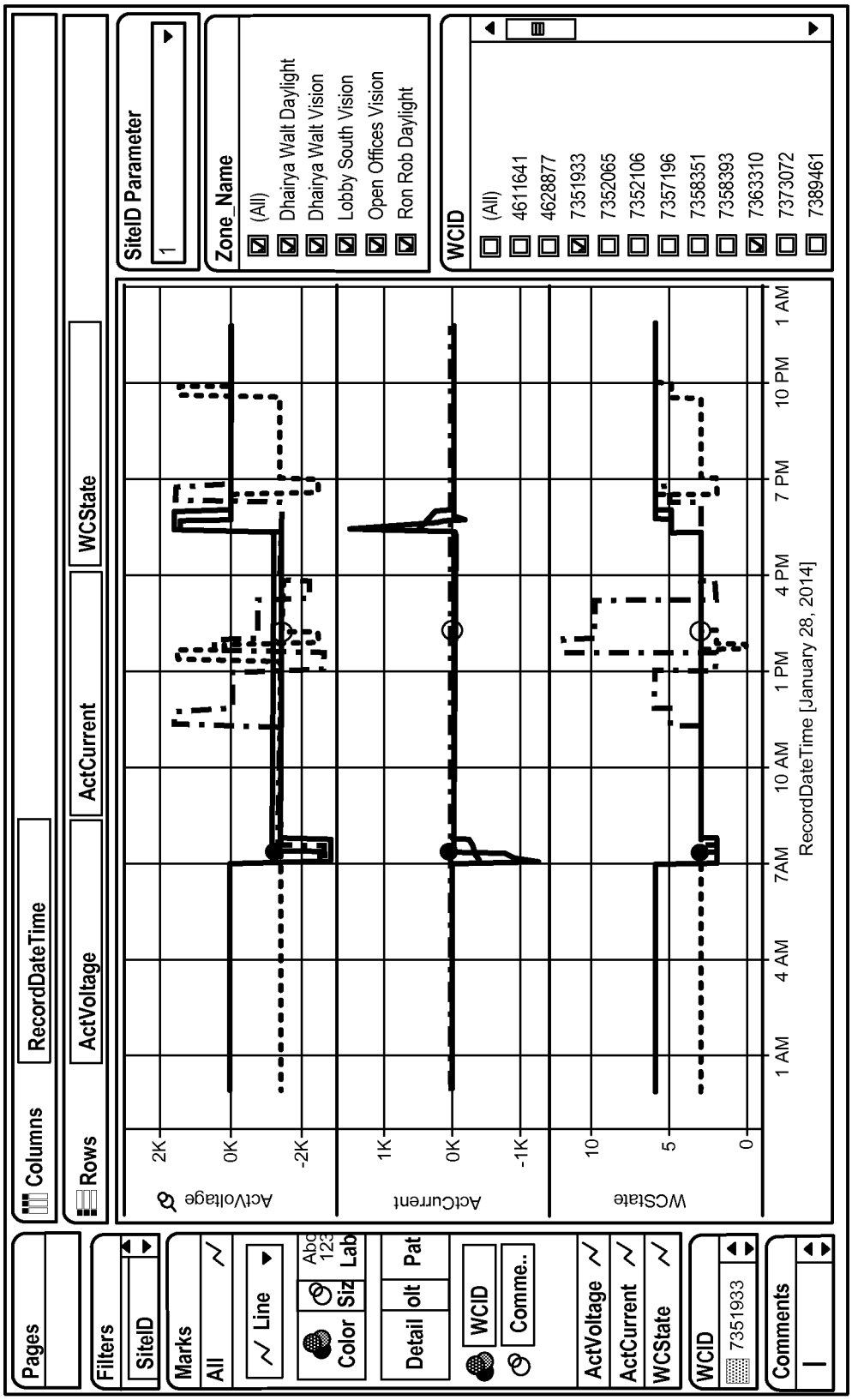

Home > NWController > PhotoSensorVsStateChangeReport
Home | My Subscriptions | Site Settings | Help
Start Time 1/26/2014
End Time 1/27/2014
Site Name OB
WCIDs 12456166
View Report
1 of 1
100%
Find | Next
Photo Sensor Vs State Change
WCState
Val1
Photo Sensor Value
10000
8000
6000
4000
2000
0
WC State
8
6
4
2
0
2014-01-26 05:45:00.000
2014-01-26 10:45:00.000
2014-01-26 15:45:00.000
2014-01-26 20:45:00.000
Date Time

Figure 9



Shows window response to commands issued

Figure 10



Compare state transitions of windows connected to different network controllers.

Figure 11

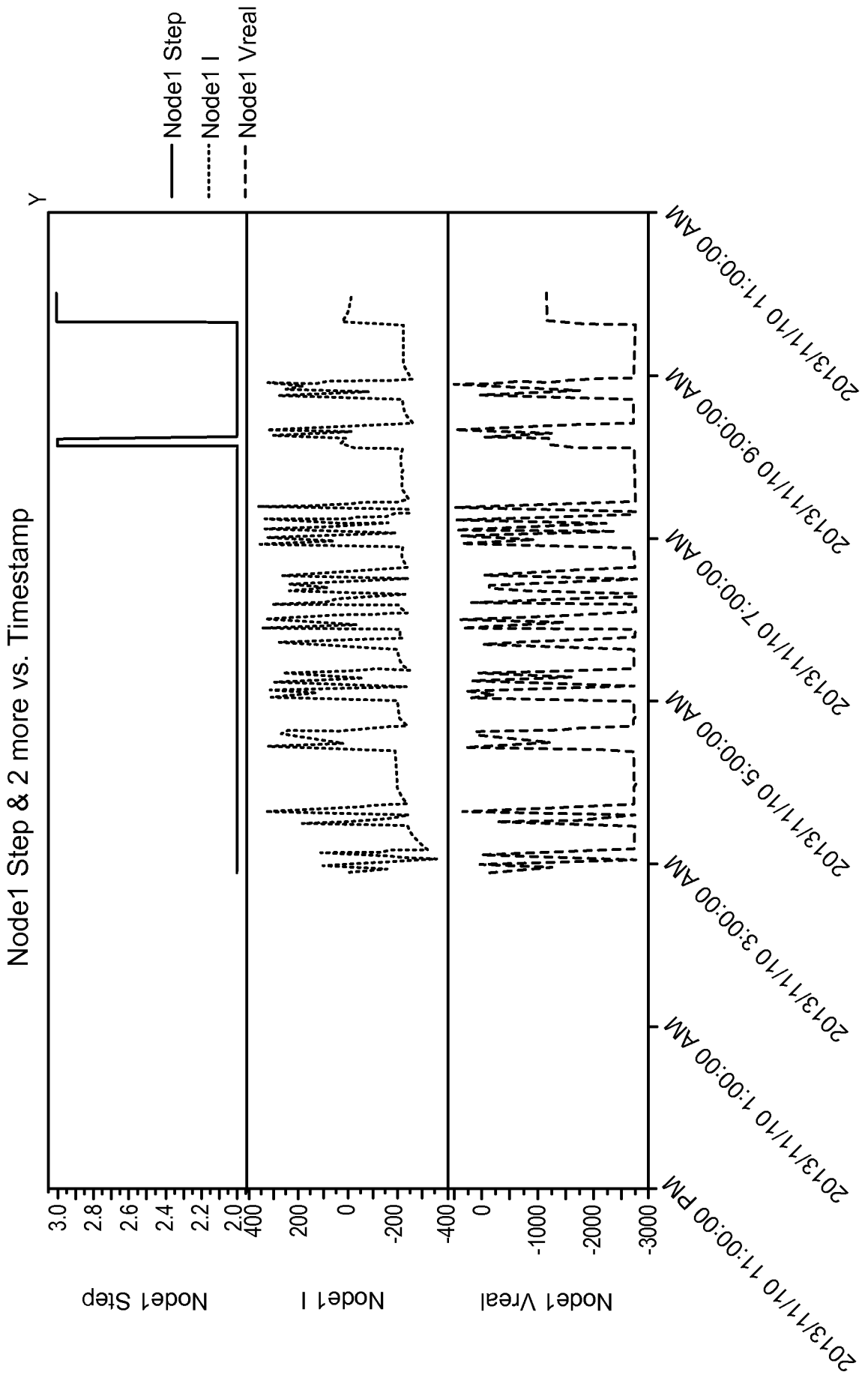

Node1 Step & 2 more vs. Timestamp
Y
Node1 Step
Node1 I
Node1 Vreal
Node1 Step
Node1 I
Node1 Vreal
3.0
2.8
2.6
2.4
2.2
2.0
400
200
0
-200
-400
0
-1000
-2000
-3000
2013/11/10 11:00:00 PM
2013/11/10 1:00:00 AM
2013/11/10 3:00:00 AM
2013/11/10 5:00:00 AM
2013/11/10 7:00:00 AM
2013/11/10 9:00:00 AM
2013/11/10 11:00:00 AM
Timestamp

Figure 12

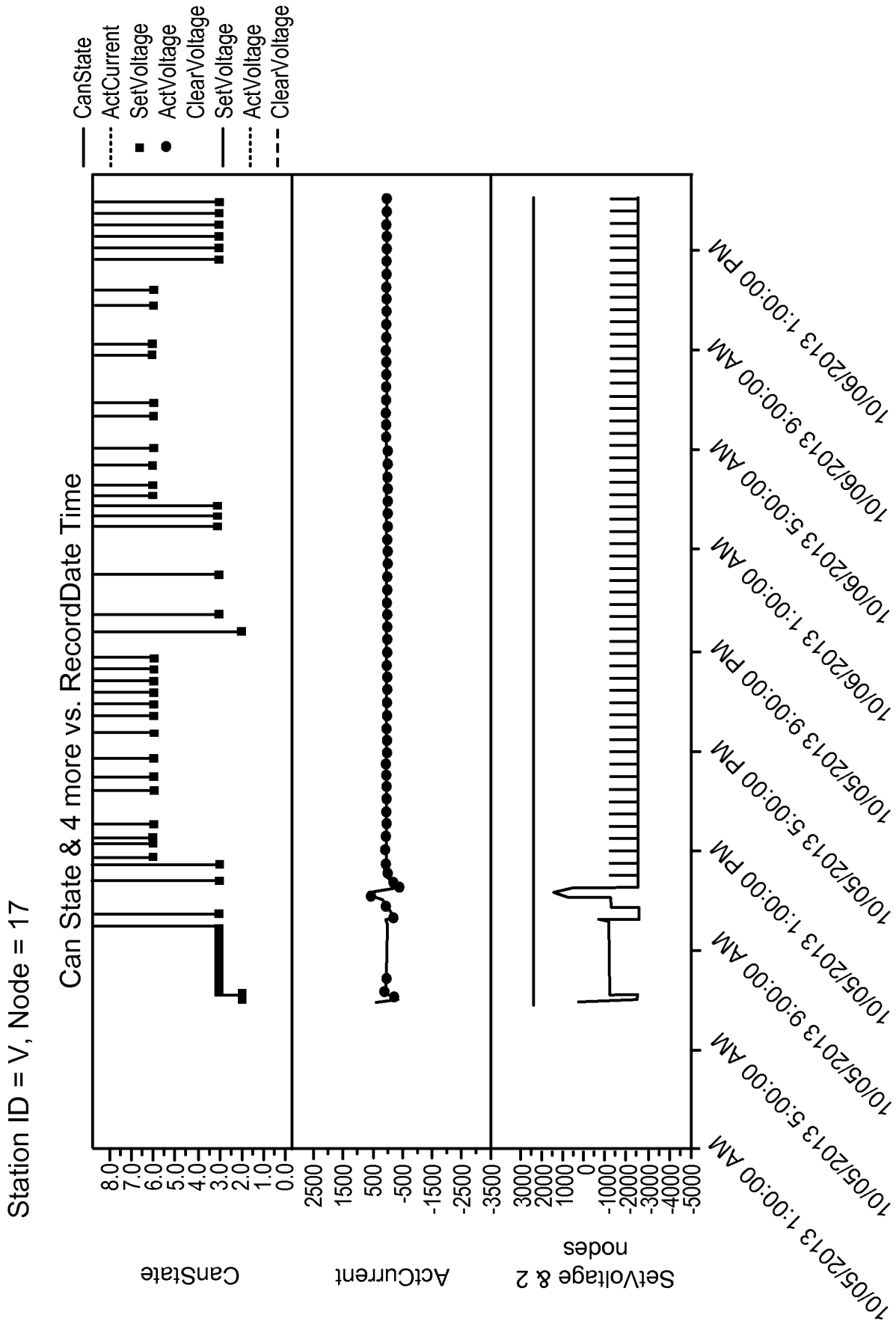

Station ID = V, Node = 17
Can State & 4 more vs. RecordDate Time
CanState
ActCurrent
SetVoltage
ActVoltage
ClearVoltage
SetVoltage
ActVoltage
ClearVoltage
CanState
ActCurrent
SetVoltage & 2 nodes
10/05/2013 1:00:00 AM
10/05/2013 5:00:00 AM
10/05/2013 9:00:00 AM
10/05/2013 1:00:00 PM
10/05/2013 5:00:00 PM
10/05/2013 9:00:00 PM
10/06/2013 1:00:00 AM
10/06/2013 5:00:00 AM
10/06/2013 9:00:00 AM
10/06/2013 1:00:00 PM

Figure 13

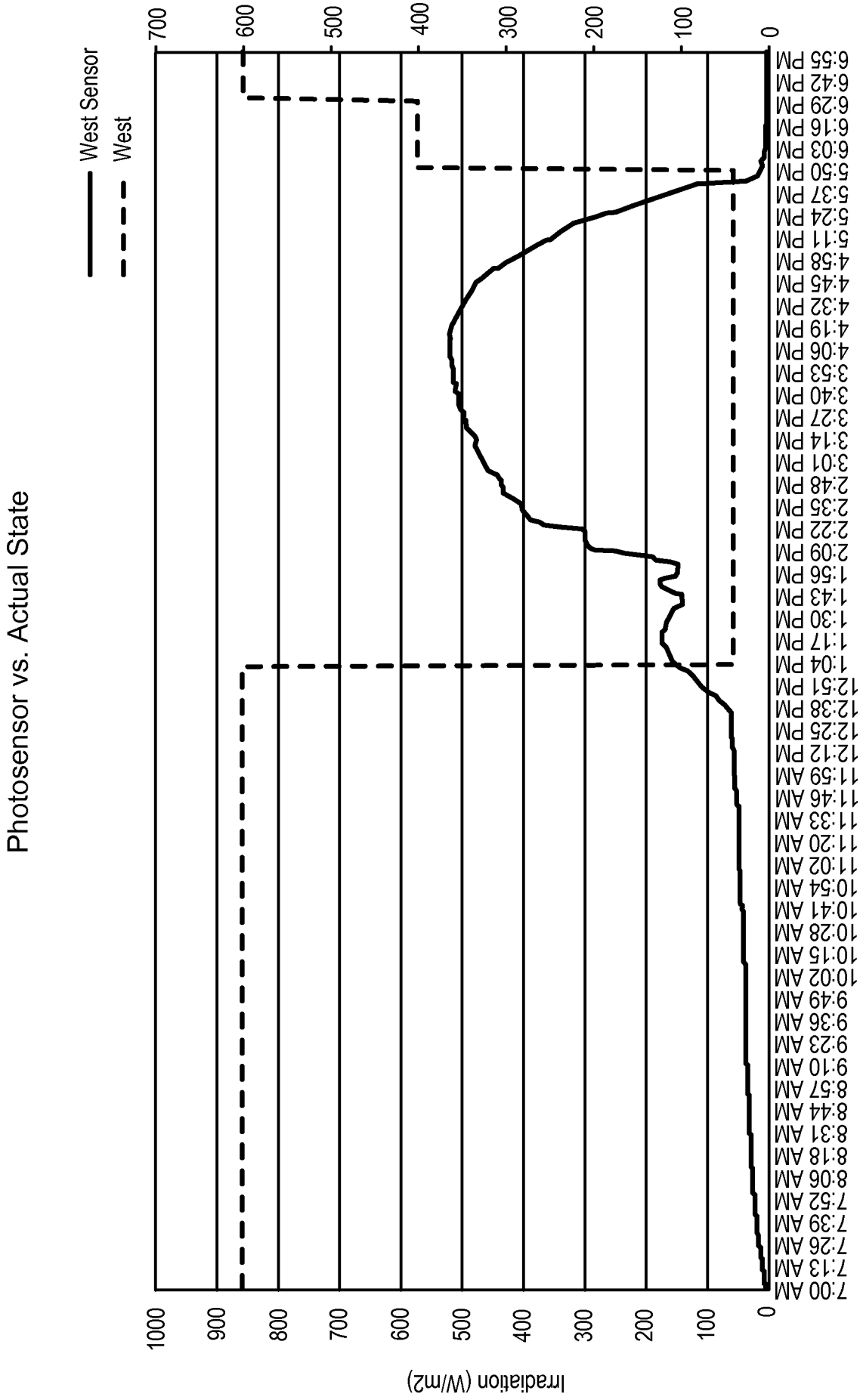

Photosensor vs. Actual State
West Sensor
West
Irradiation (W/m2)
0
100
200
300
400
500
600
700
800
900
1000
7:00 AM
7:13 AM
7:26 AM
7:39 AM
7:52 AM
8:06 AM
8:18 AM
8:31 AM
8:44 AM
8:57 AM
9:10 AM
9:23 AM
9:36 AM
9:49 AM
10:02 AM
10:15 AM
10:28 AM
10:41 AM
10:54 AM
11:02 AM
11:20 AM
11:33 AM
11:46 AM
11:59 AM
12:12 PM
12:25 PM
12:38 PM
12:51 PM
1:04 PM
1:17 PM
1:30 PM
1:43 PM
1:56 PM
2:09 PM
2:22 PM
2:35 PM
2:48 PM
3:01 PM
3:14 PM
3:27 PM
3:40 PM
3:53 PM
4:06 PM
4:19 PM
4:32 PM
4:45 PM
4:58 PM
5:11 PM
5:24 PM
5:37 PM
5:50 PM
6:03 PM
6:16 PM
6:29 PM
6:42 PM
6:55 PM

Figure 14A

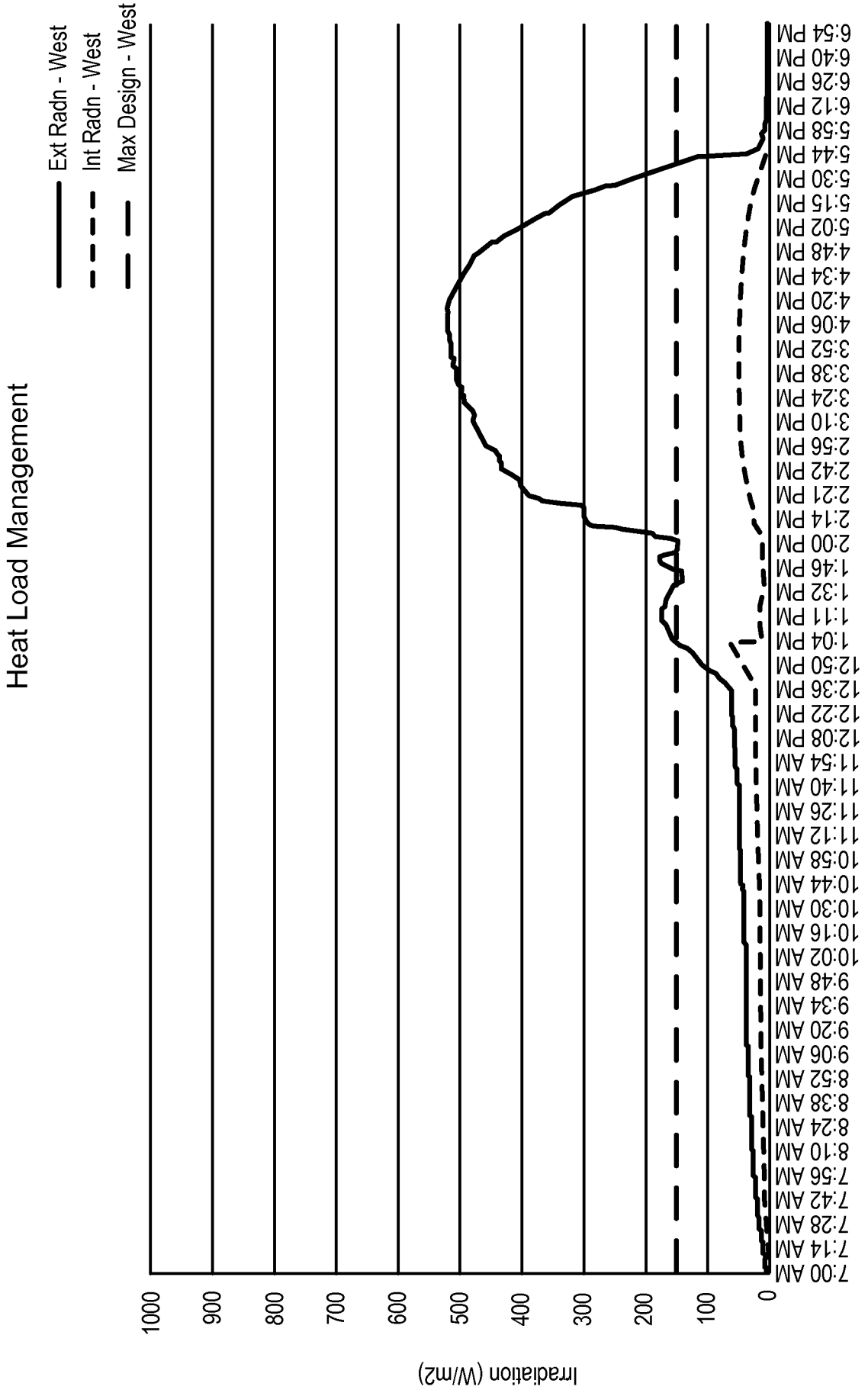

Heat Load Management
Ext Radn - West
Int Radn - West
Max Design - West
Irradiation (W/m2)
1000
900
800
700
600
500
400
300
200
100
0
7:00 AM
7:14 AM
7:28 AM
7:42 AM
7:56 AM
8:10 AM
8:24 AM
8:38 AM
8:52 AM
9:06 AM
9:20 AM
9:34 AM
9:48 AM
10:02 AM
10:16 AM
10:30 AM
10:44 AM
10:58 AM
11:12 AM
11:26 AM
11:40 AM
11:54 AM
12:08 PM
12:22 PM
12:36 PM
12:50 PM
1:04 PM
1:11 PM
1:32 PM
1:46 PM
2:00 PM
2:14 PM
2:21 PM
2:42 PM
2:56 PM
3:10 PM
3:24 PM
3:38 PM
3:52 PM
4:06 PM
4:20 PM
4:34 PM
4:48 PM
5:02 PM
5:15 PM
5:30 PM
5:44 PM
5:58 PM
6:12 PM
6:26 PM
6:40 PM
6:54 PM

Figure 14B

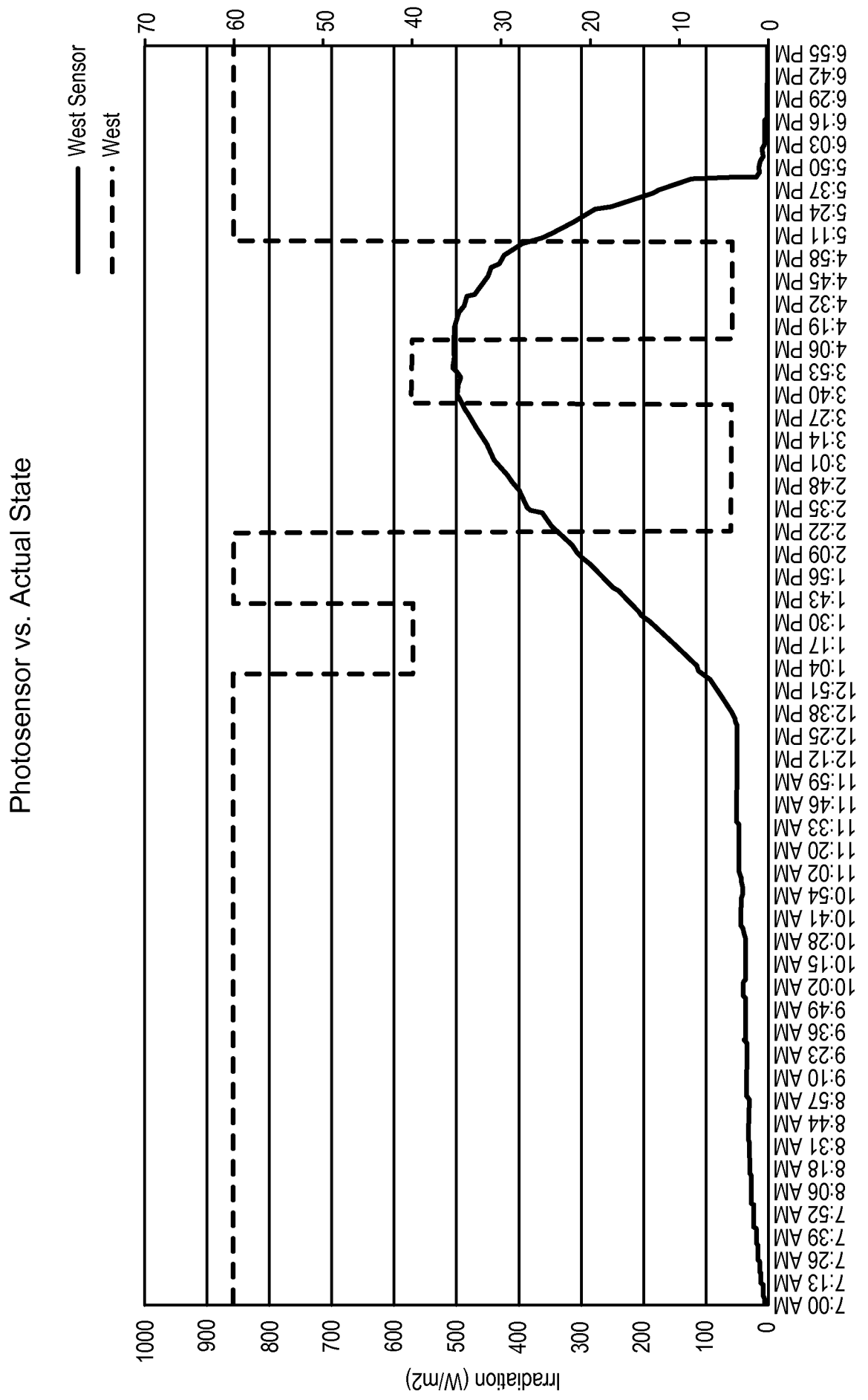

Photosensor vs. Actual State
West Sensor
West
Irradiation (W/m2)
0
100
200
300
400
500
600
700
800
900
1000
0
10
20
30
40
50
60
70
7:00 AM
7:13 AM
7:26 AM
7:39 AM
7:52 AM
8:06 AM
8:18 AM
8:31 AM
8:44 AM
8:57 AM
9:10 AM
9:23 AM
9:36 AM
9:49 AM
10:02 AM
10:15 AM
10:28 AM
10:41 AM
10:54 AM
11:02 AM
11:20 AM
11:33 AM
11:46 AM
11:59 AM
12:12 PM
12:25 PM
12:38 PM
12:51 PM
1:04 PM
1:17 PM
1:30 PM
1:43 PM
1:56 PM
2:09 PM
2:22 PM
2:35 PM
2:48 PM
3:01 PM
3:14 PM
3:27 PM
3:40 PM
3:53 PM
4:06 PM
4:19 PM
4:32 PM
4:45 PM
4:58 PM
5:11 PM
5:24 PM
5:37 PM
5:50 PM
6:03 PM
6:16 PM
6:29 PM
6:42 PM
6:55 PM

Figure 14C

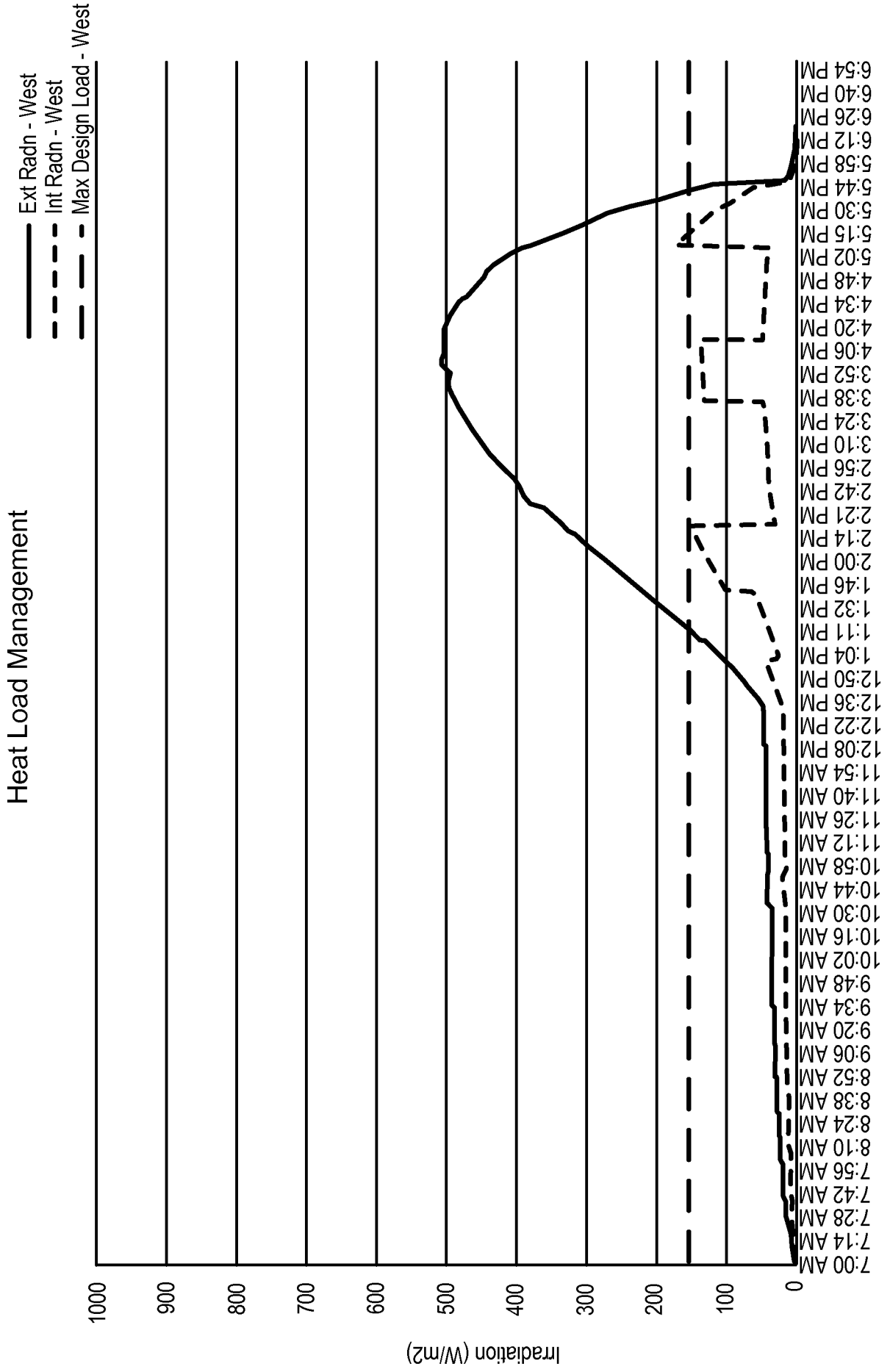

Heat Load Management
Ext Radn - West
Int Radn - West
Max Design Load - West
Irradiation (W/m2)
0
100
200
300
400
500
600
700
800
900
1000
7:00 AM
7:14 AM
7:28 AM
7:42 AM
7:56 AM
8:10 AM
8:24 AM
8:38 AM
8:52 AM
9:06 AM
9:20 AM
9:34 AM
9:48 AM
10:02 AM
10:16 AM
10:30 AM
10:44 AM
10:58 AM
11:12 AM
11:26 AM
11:40 AM
11:54 AM
12:08 PM
12:22 PM
12:36 PM
12:50 PM
1:04 PM
1:11 PM
1:32 PM
1:46 PM
2:00 PM
2:14 PM
2:21 PM
2:42 PM
2:56 PM
3:10 PM
3:24 PM
3:38 PM
3:52 PM
4:06 PM
4:20 PM
4:34 PM
4:48 PM
5:02 PM
5:15 PM
5:30 PM
5:44 PM
5:58 PM
6:12 PM
6:26 PM
6:40 PM
6:54 PM

Figure 14D

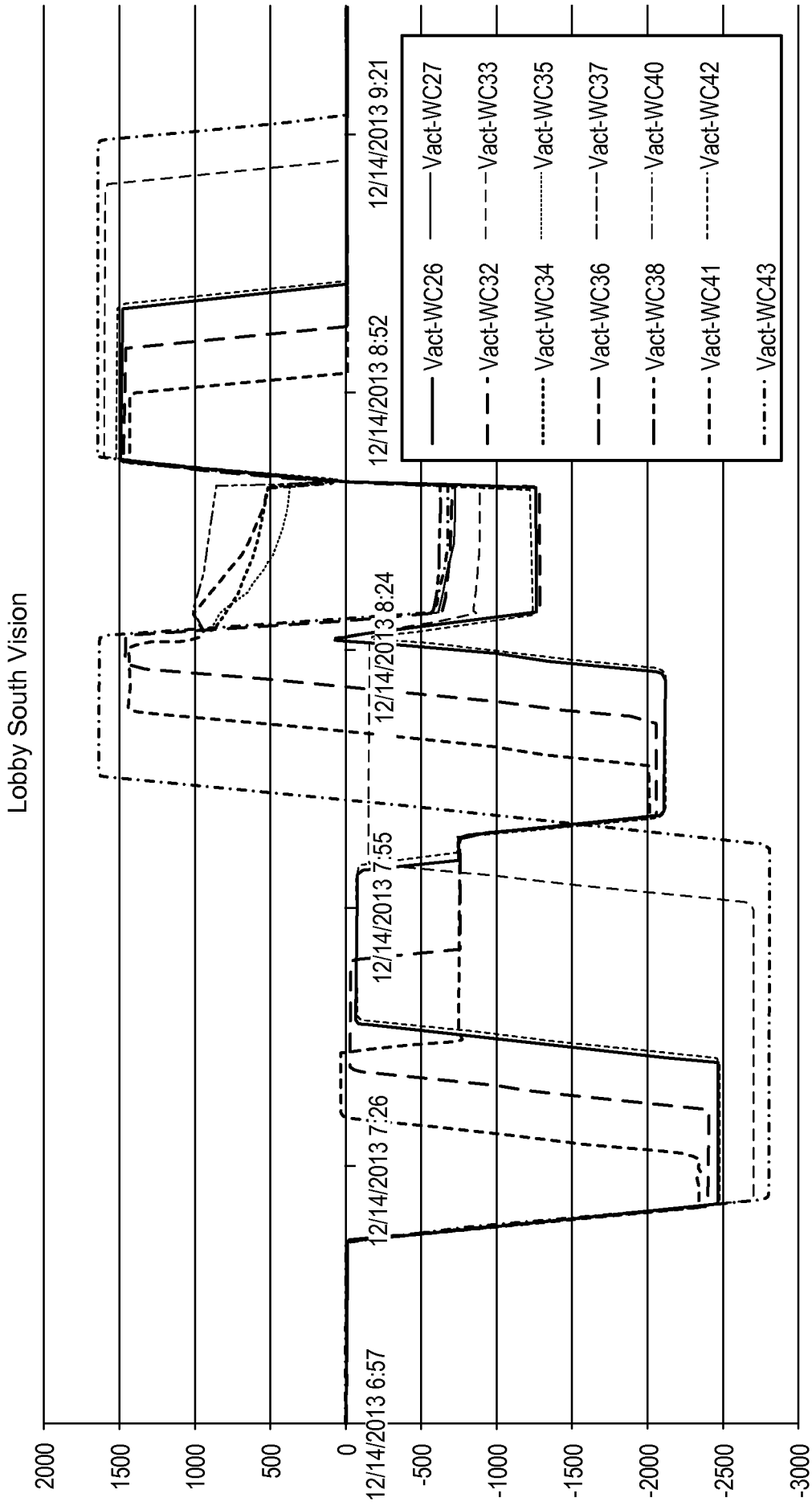

Lobby South Vision
2000
1500
1000
500
0
-500
-1000
-1500
-2000
-2500
-3000
12/14/2013 6:57
12/14/2013 7:26
12/14/2013 7:55
12/14/2013 8:24
12/14/2013 8:52
12/14/2013 9:21
Vact-WC26
Vact-WC27
Vact-WC32
Vact-WC33
Vact-WC34
Vact-WC35
Vact-WC36
Vact-WC37
Vact-WC38
Vact-WC40
Vact-WC41
Vact-WC42
Vact-WC43

Figure 15

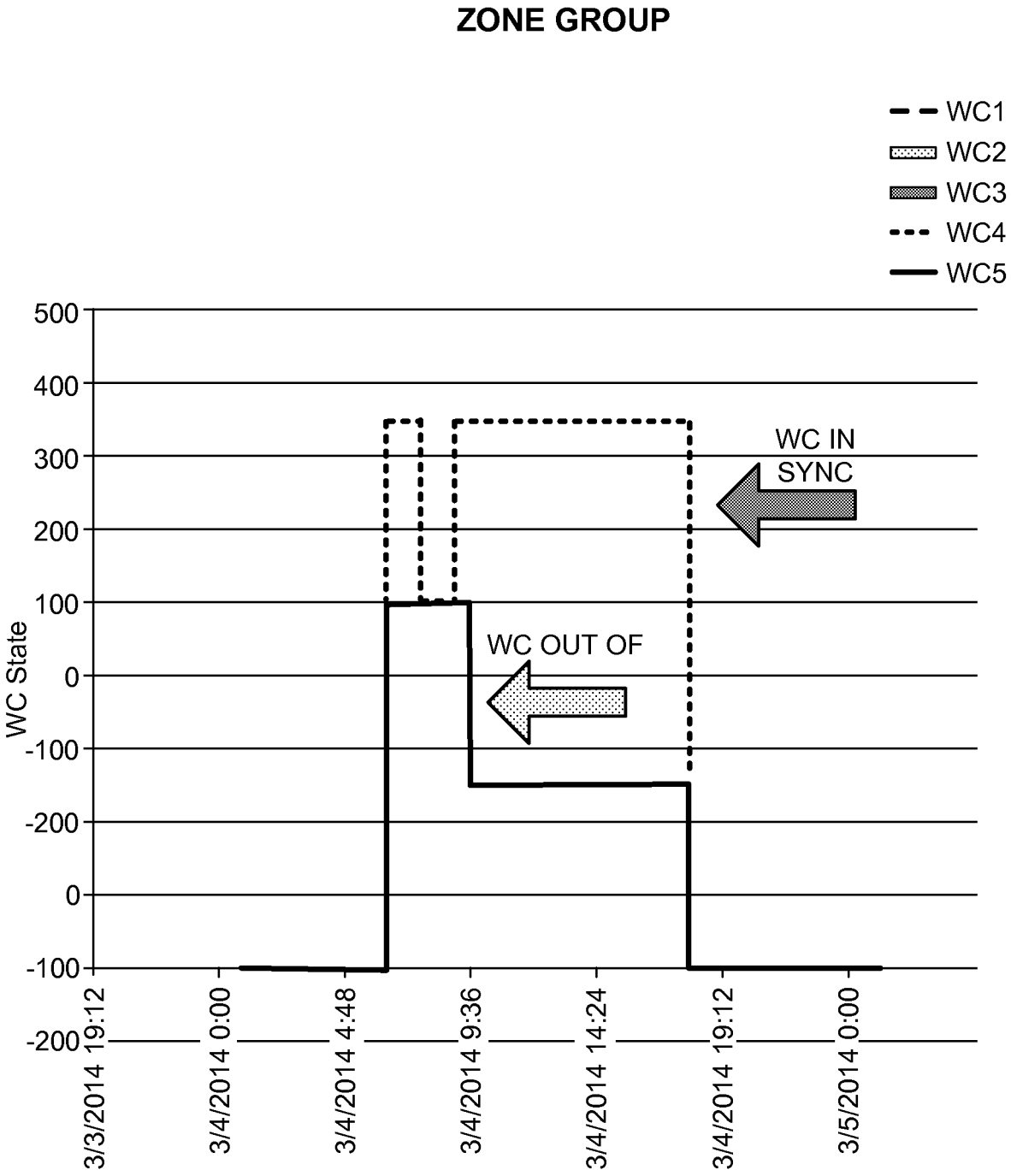

ZONE GROUP
WC1
WC2
WC3
WC4
WC5
500
400
300
200
100
0
-100
-200
0
-100
-200
WC State
WC IN SYNC
WC OUT OF
3/3/2014 19:12
3/4/2014 0:00
3/4/2014 4:48
3/4/2014 9:36
3/4/2014 14:24
3/4/2014 19:12
3/5/2014 0:00

Figure 16

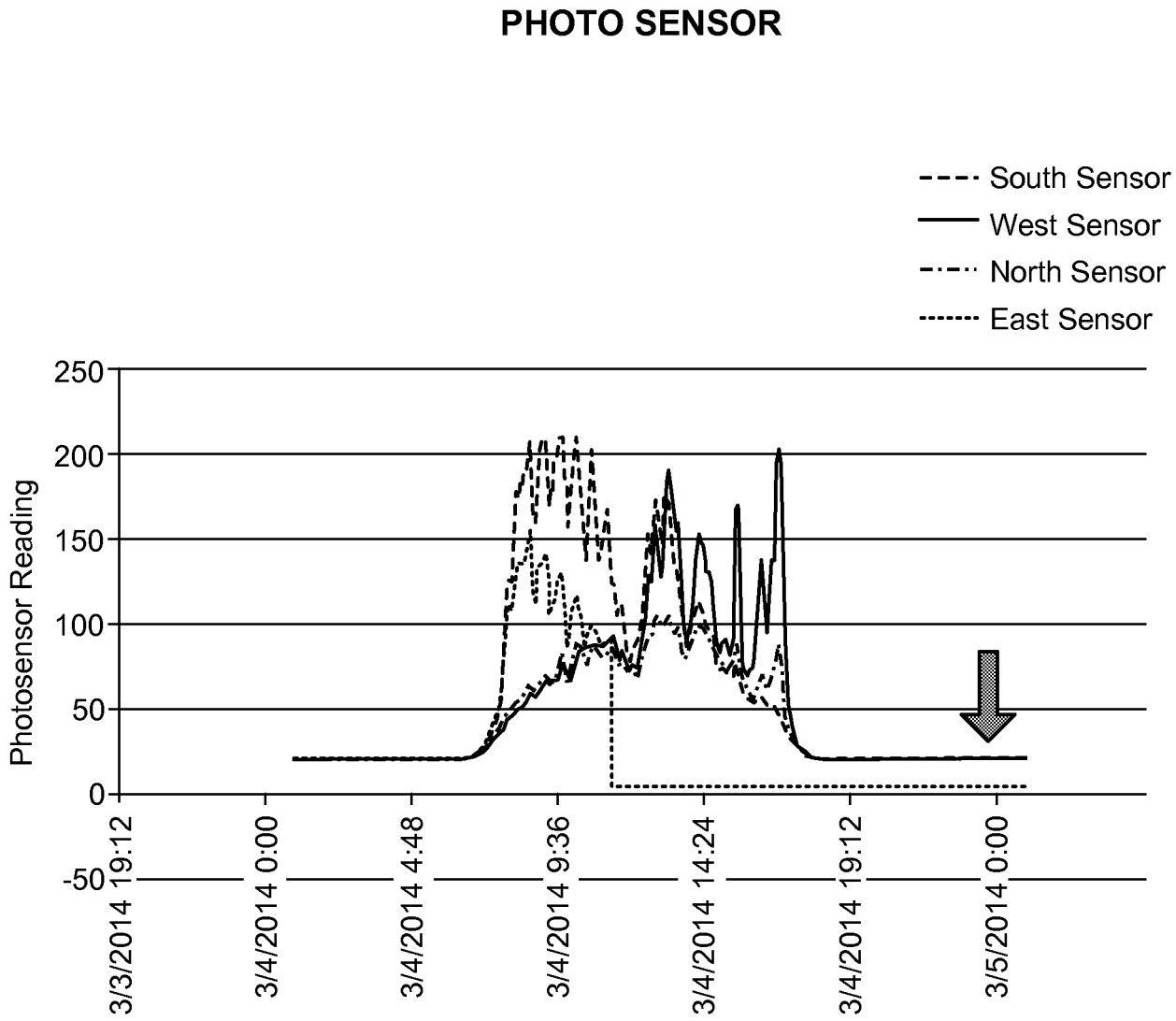

PHOTO SENSOR
South Sensor
West Sensor
North Sensor
East Sensor
Photosensor Reading
250
200
150
100
50
0
-50
3/3/2014 19:12
3/4/2014 0:00
3/4/2014 4:48
3/4/2014 9:36
3/4/2014 14:24
3/4/2014 19:12
3/5/2014 0:00

Figure 17

ZONE #	WC#	WC ID/BAR CODE	FRAME	IGU #	W	H	SF	NOTES
ZONE-1	WC1		FRAME-F	W1	54 1/8	68 1/8	25.61	
				W2	54 1/8	68 1/8	25.61	
	WC2			W3	54 1/8	68 1/8	25.61	
				W4	54 1/8	68 1/8	25.61	
	WC3		FRAME-E	W5	52 5/8	68 1/8	24.90	
				W6	52 5/8	68 1/8	24.90	
	WC4			W7	52 5/8	68 1/8	24.90	
				W8	52 5/8	68 1/8	24.90	
	WC5		FRAME-D	W9	52 5/8	68 1/8	24.90	
				W10	52 5/8	68 1/8	24.90	
	WC6			W11	52 5/8	68 1/8	24.90	
				W12	52 5/8	68 1/8	24.90	
	WC7		FRAME-C	W13	52 5/8	68 1/8	24.90	
				W14	52 5/8	68 1/8	24.90	
	WC8			W15	52 5/8	68 1/8	24.90	
				W16	52 5/8	68 1/8	24.90	
	WC9		FRAME-B	W17	52 5/8	68 1/8	24.90	
				W18	52 5/8	68 1/8	24.90	
	WC10			W19	52 5/8	68 1/8	24.90	
				W20	52 5/8	68 1/8	24.90	
	WC11		FRAME-A	W21	52 9/16	68 1/8	24.87	
				W22	52 9/16	68 1/8	24.87	
	WC12			W23	52 9/16	68 1/8	24.87	

Figure 18A

SUBSTITUTE SHEET (RULE 26)

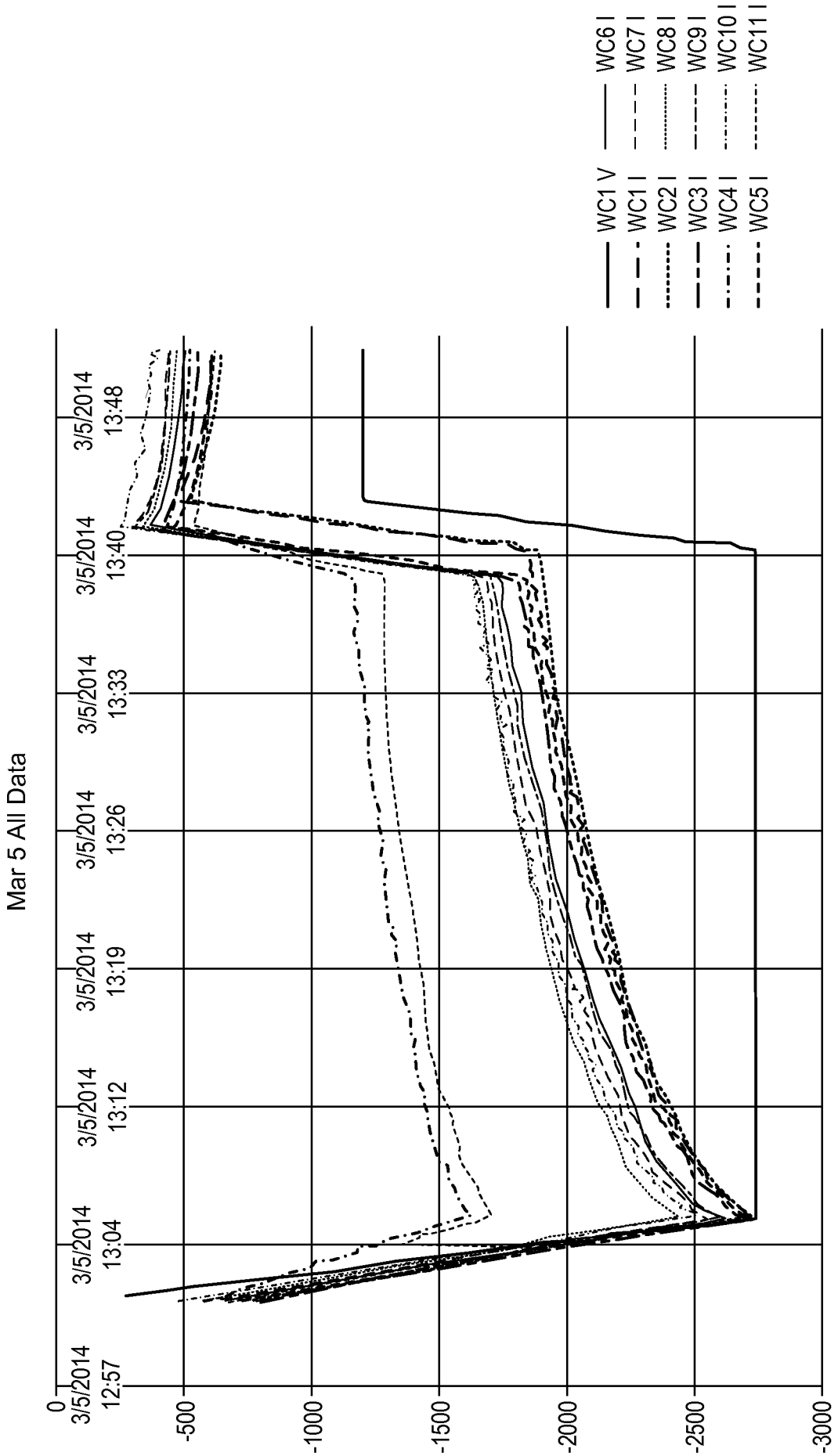

Mar 5 All Data
WC1 V
WC1 I
WC2 I
WC3 I
WC4 I
WC5 I
WC6 I
WC7 I
WC8 I
WC9 I
WC10 I
WC11 I
0
-500
-1000
-1500
-2000
-2500
-3000
3/5/2014 12:57
3/5/2014 13:04
3/5/2014 13:12
3/5/2014 13:19
3/5/2014 13:26
3/5/2014 13:33
3/5/2014 13:40
3/5/2014 13:48

Figure 18B

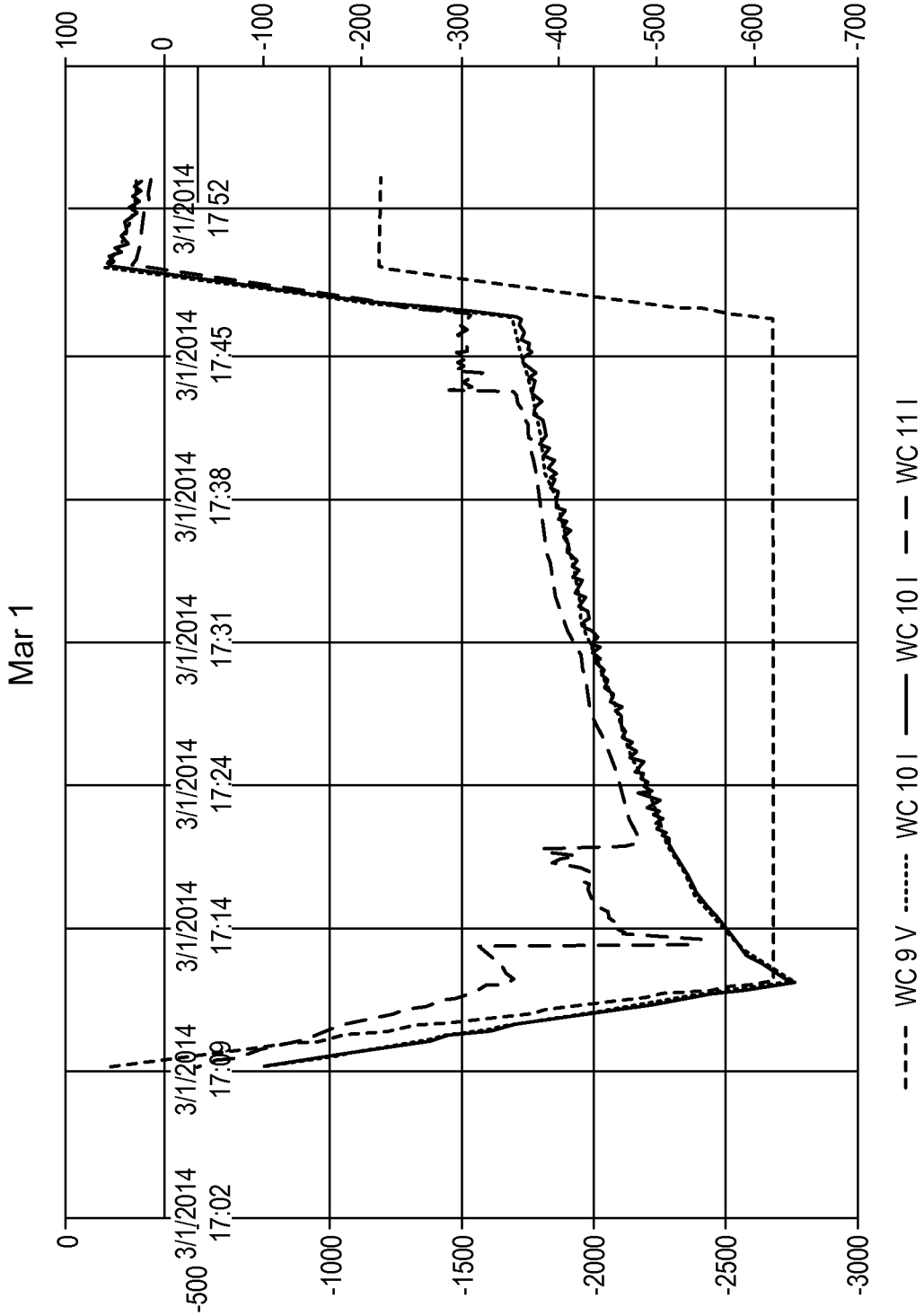

100
0
-100
-200
-300
-400
-500
-600
-700
0
-500
-1000
-1500
-2000
-2500
-3000
Mar 1
3/1/2014 17:02
3/1/2014 17:09
3/1/2014 17:14
3/1/2014 17:24
3/1/2014 17:31
3/1/2014 17:38
3/1/2014 17:45
3/1/2014 17:52
WC 9 V
WC 10 I
WC 10 I
WC 11 I

Figure 18C

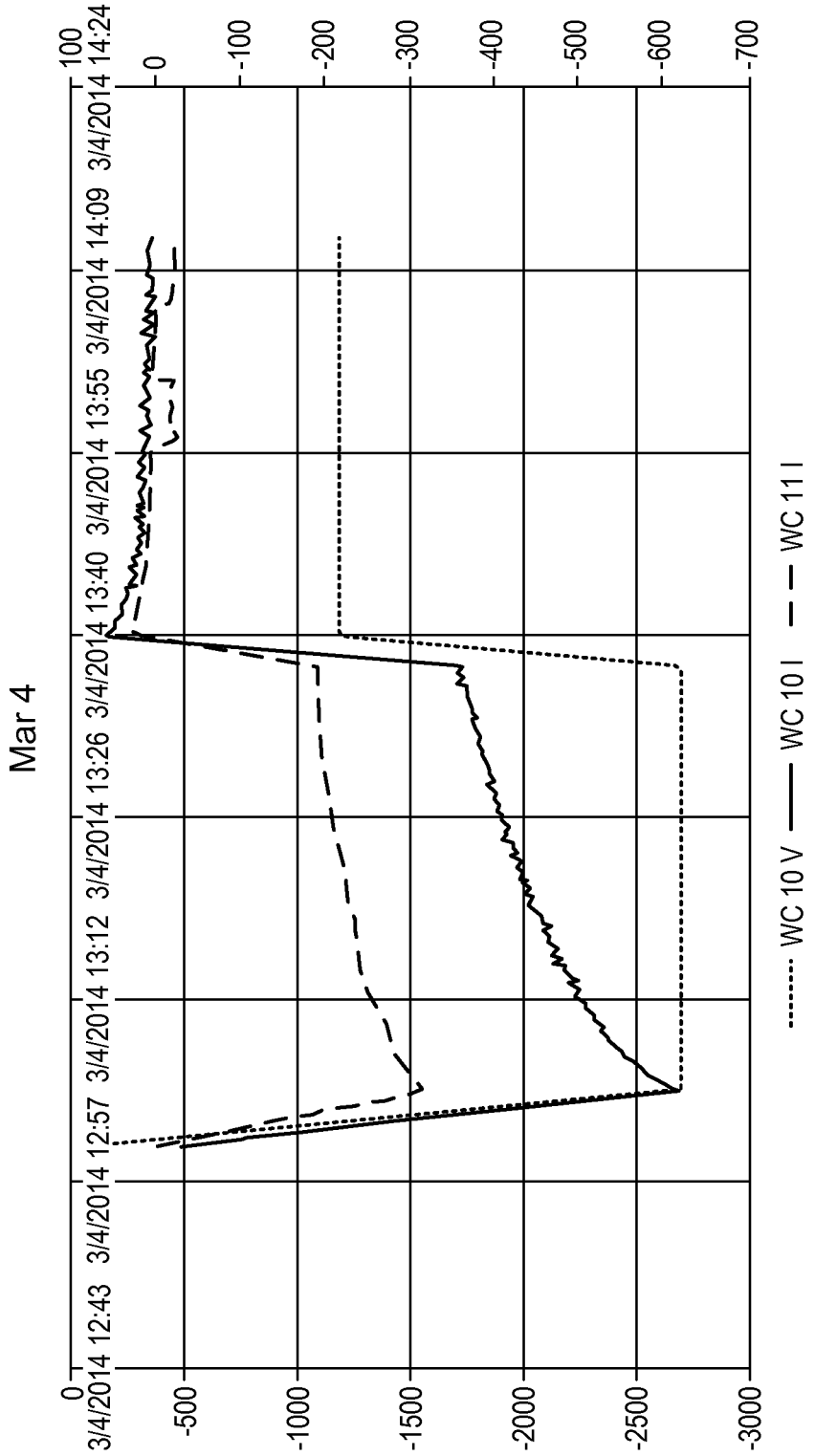

Mar 4
3/4/2014 12:43
3/4/2014 12:57
3/4/2014 13:12
3/4/2014 13:26
3/4/2014 13:40
3/4/2014 13:55
3/4/2014 14:09
3/4/2014 14:24
0
-500
-1000
-1500
-2000
-2500
-3000
100
0
-100
-200
-300
-400
-500
-600
-700
WC 10 V
WC 10 I
WC 11 I

Figure 18D

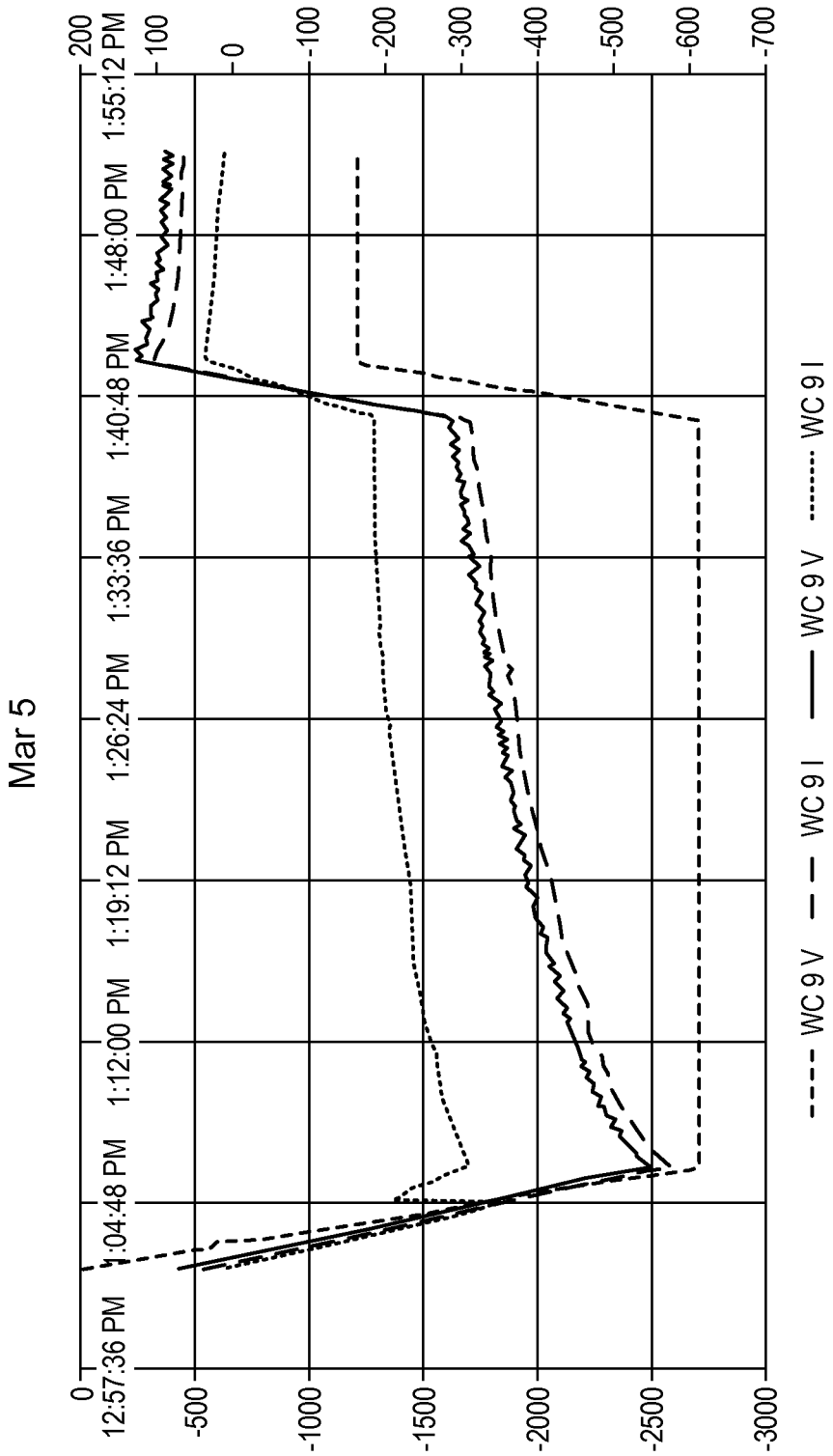

Mar 5
12:57:36 PM
1:04:48 PM
1:12:00 PM
1:19:12 PM
1:26:24 PM
1:33:36 PM
1:40:48 PM
1:48:00 PM
1:55:12 PM
200
100
0
-100
-200
-300
-400
-500
-600
-700
0
-500
-1000
-1500
-2000
-2500
-3000
WC 9 V
WC 9 I
WC 9 V
WC 9 I

Figure 18E

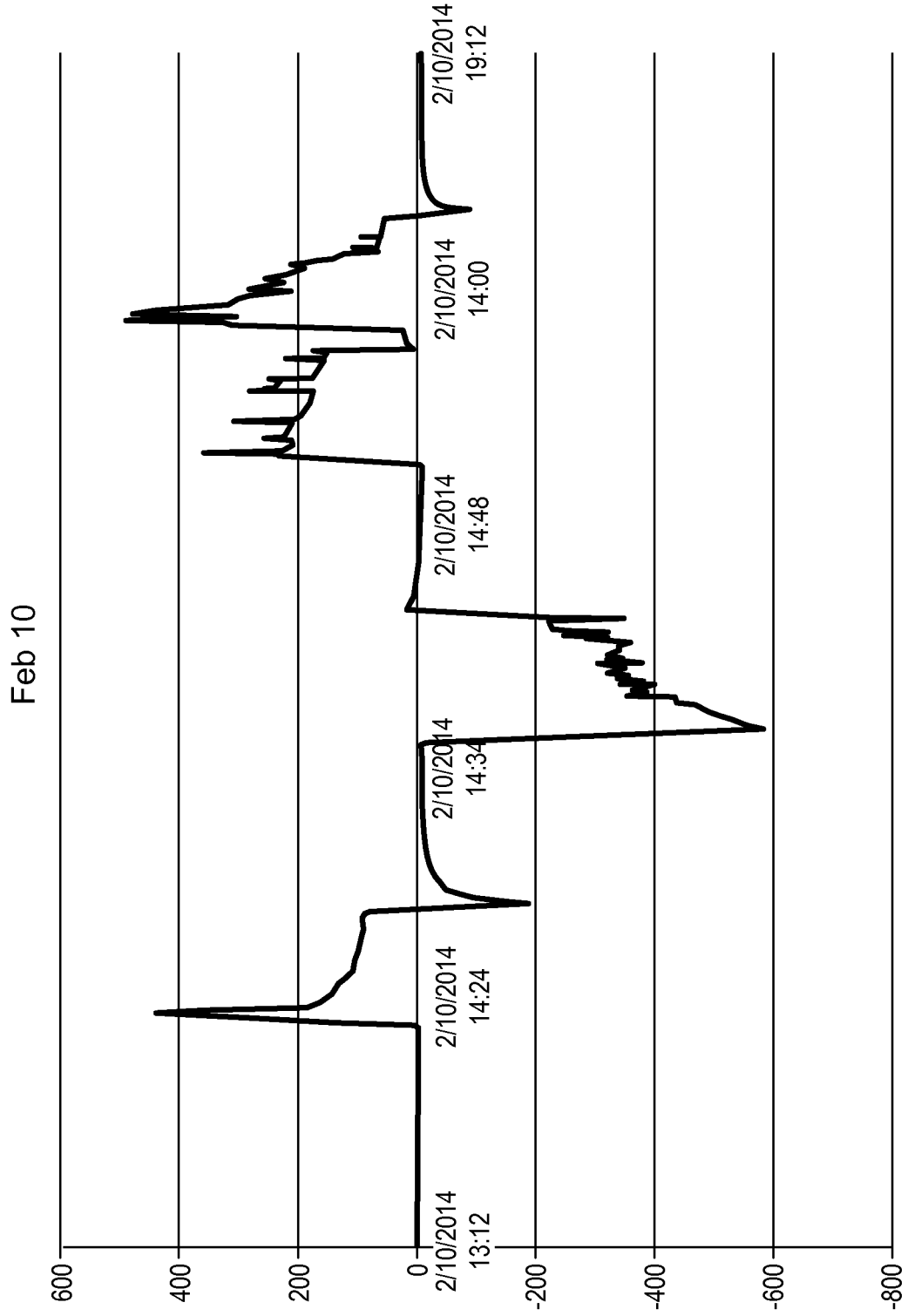

Feb 10
600
400
200
0
-200
-400
-600
-800
2/10/2014 13:12
2/10/2014 14:24
2/10/2014 14:34
2/10/2014 14:48
2/10/2014 14:00
2/10/2014 19:12

Figure 18F

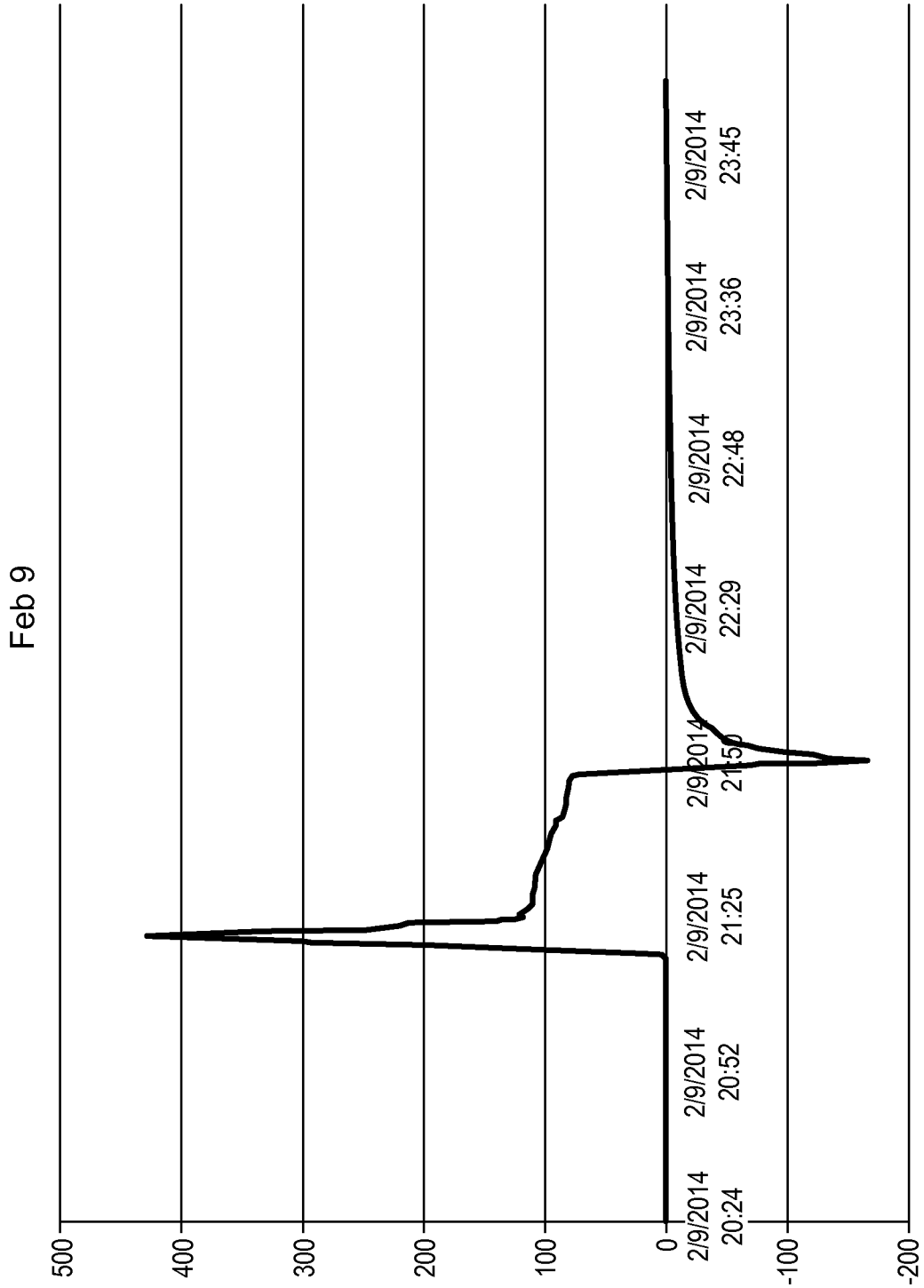

Feb 9
500
400
300
200
100
0
-100
-200
2/9/2014 20:24
2/9/2014 20:52
2/9/2014 21:25
2/9/2014 21:50
2/9/2014 22:29
2/9/2014 22:48
2/9/2014 23:36
2/9/2014 23:45

Figure 18G

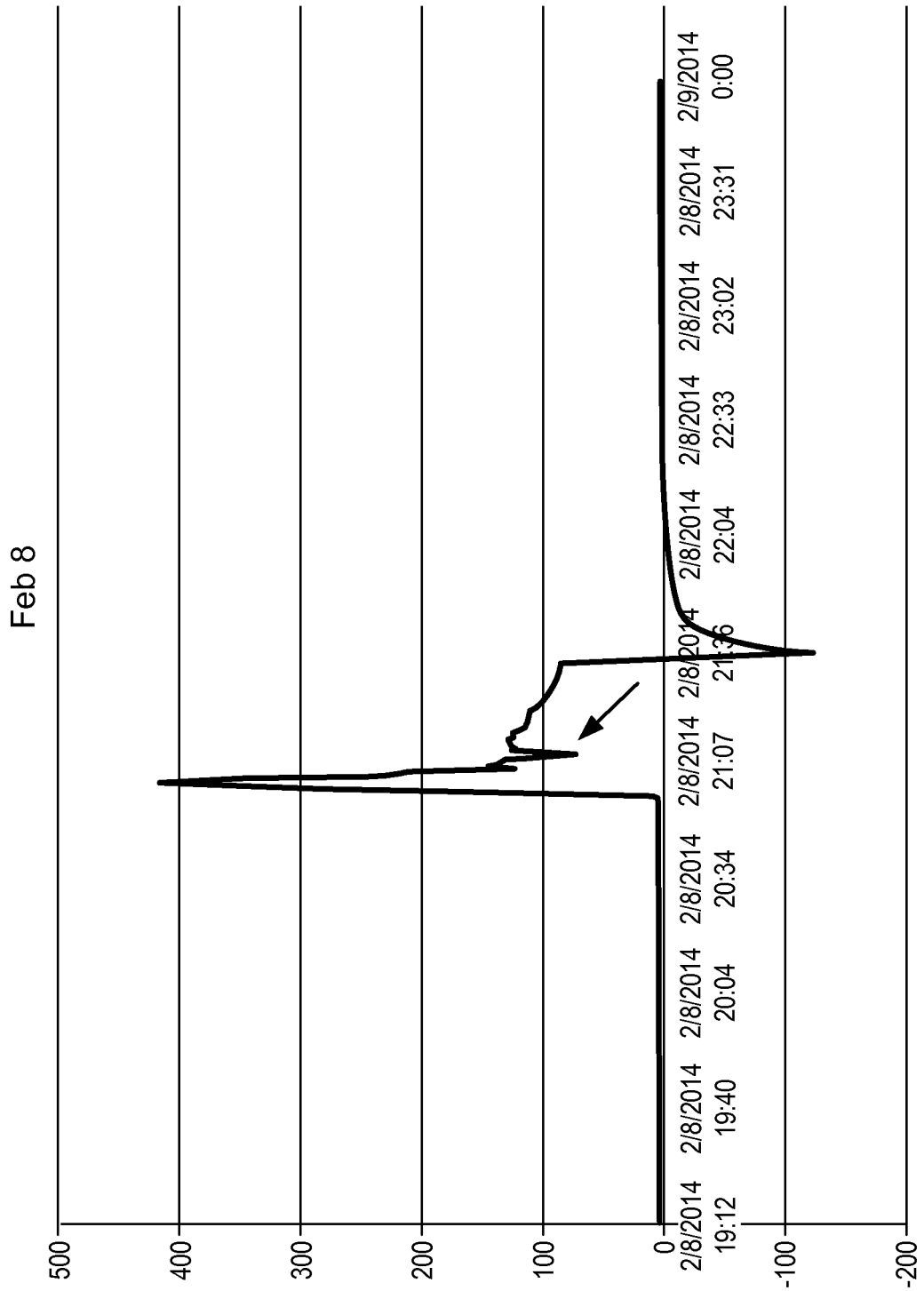

Feb 8
500
400
300
200
100
0
-100
-200
2/8/2014 19:12
2/8/2014 19:40
2/8/2014 20:04
2/8/2014 20:34
2/8/2014 21:07
2/8/2014 21:36
2/8/2014 22:04
2/8/2014 22:33
2/8/2014 23:02
2/8/2014 23:31
2/9/2014 0:00

Figure 18H