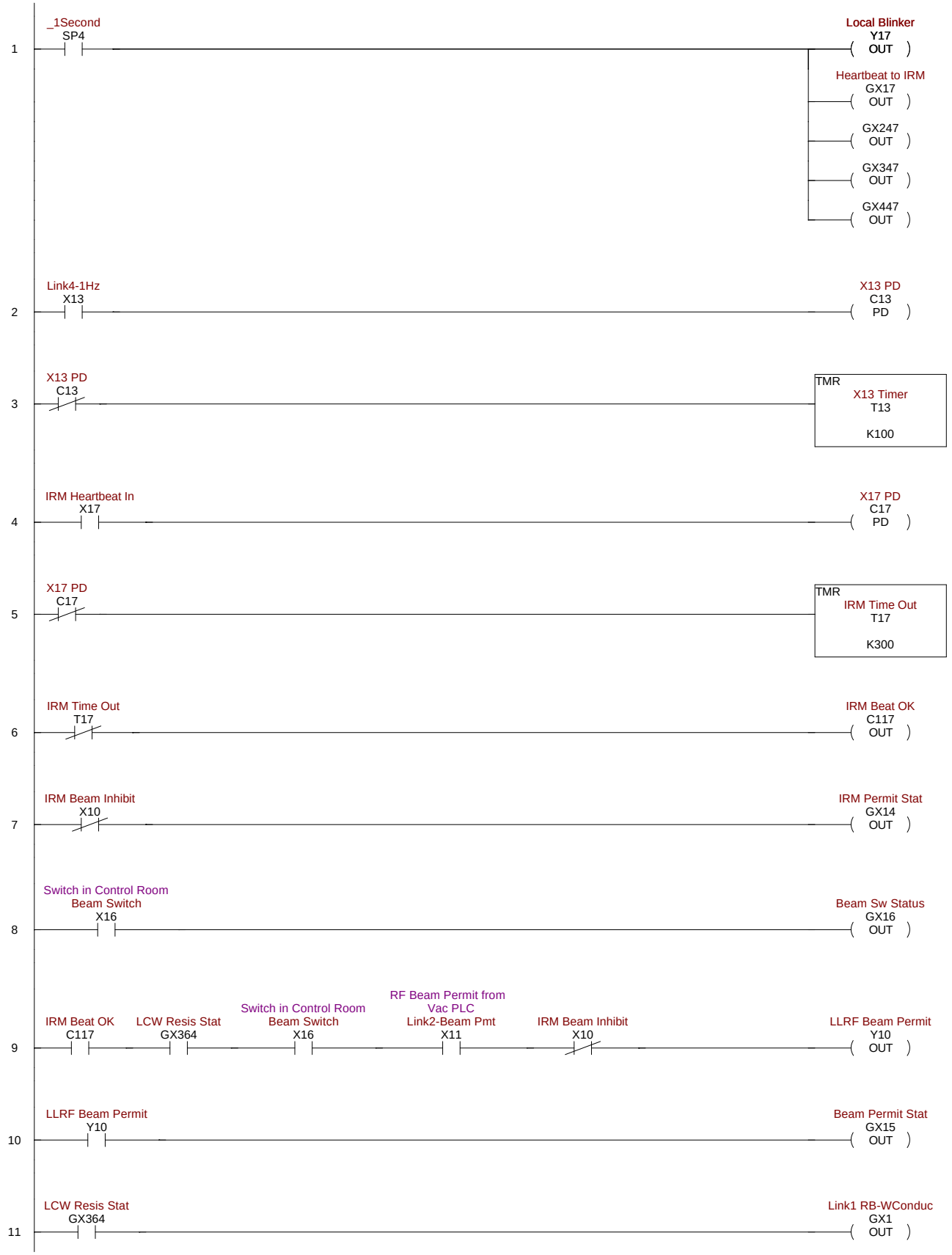
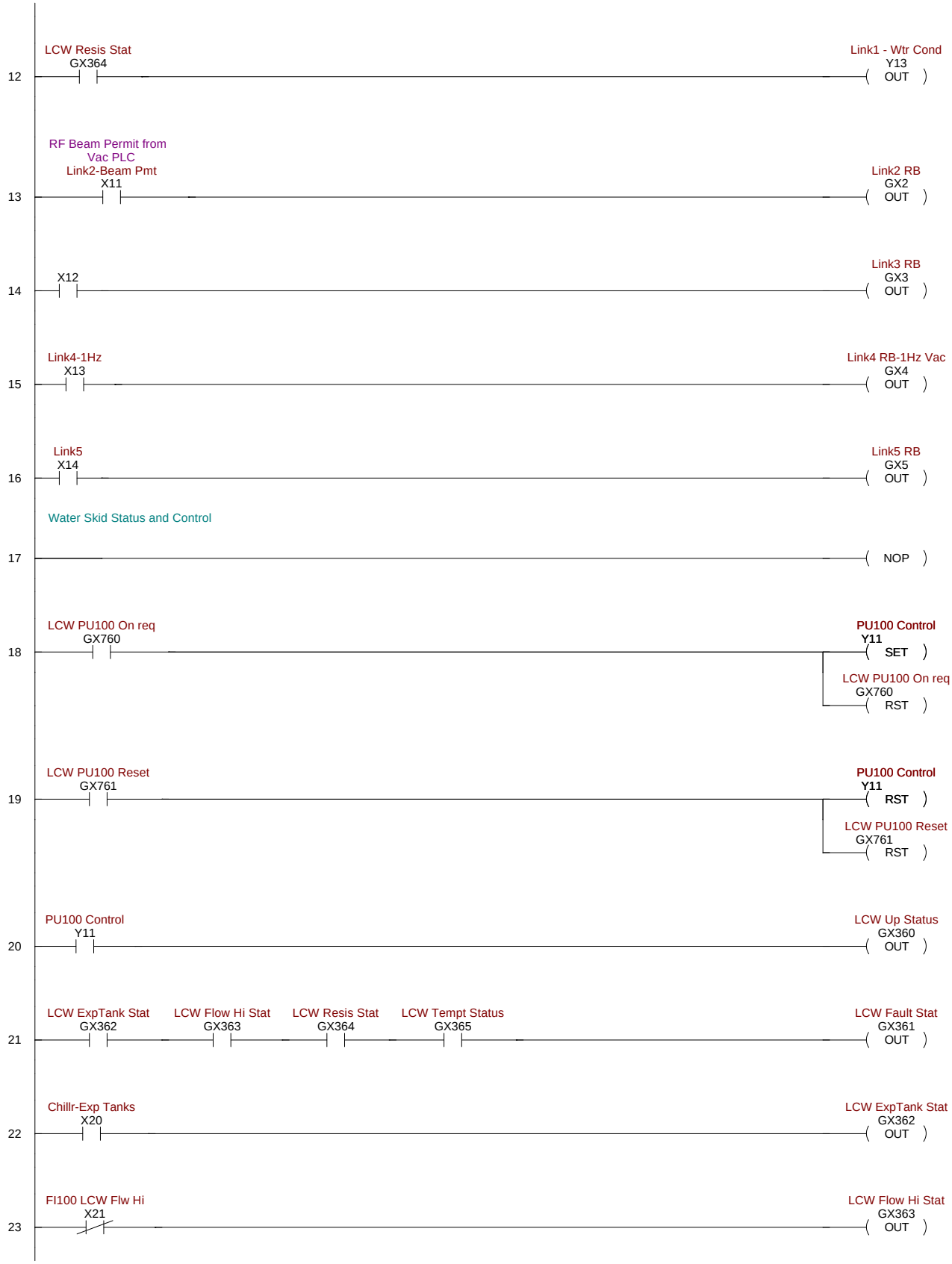
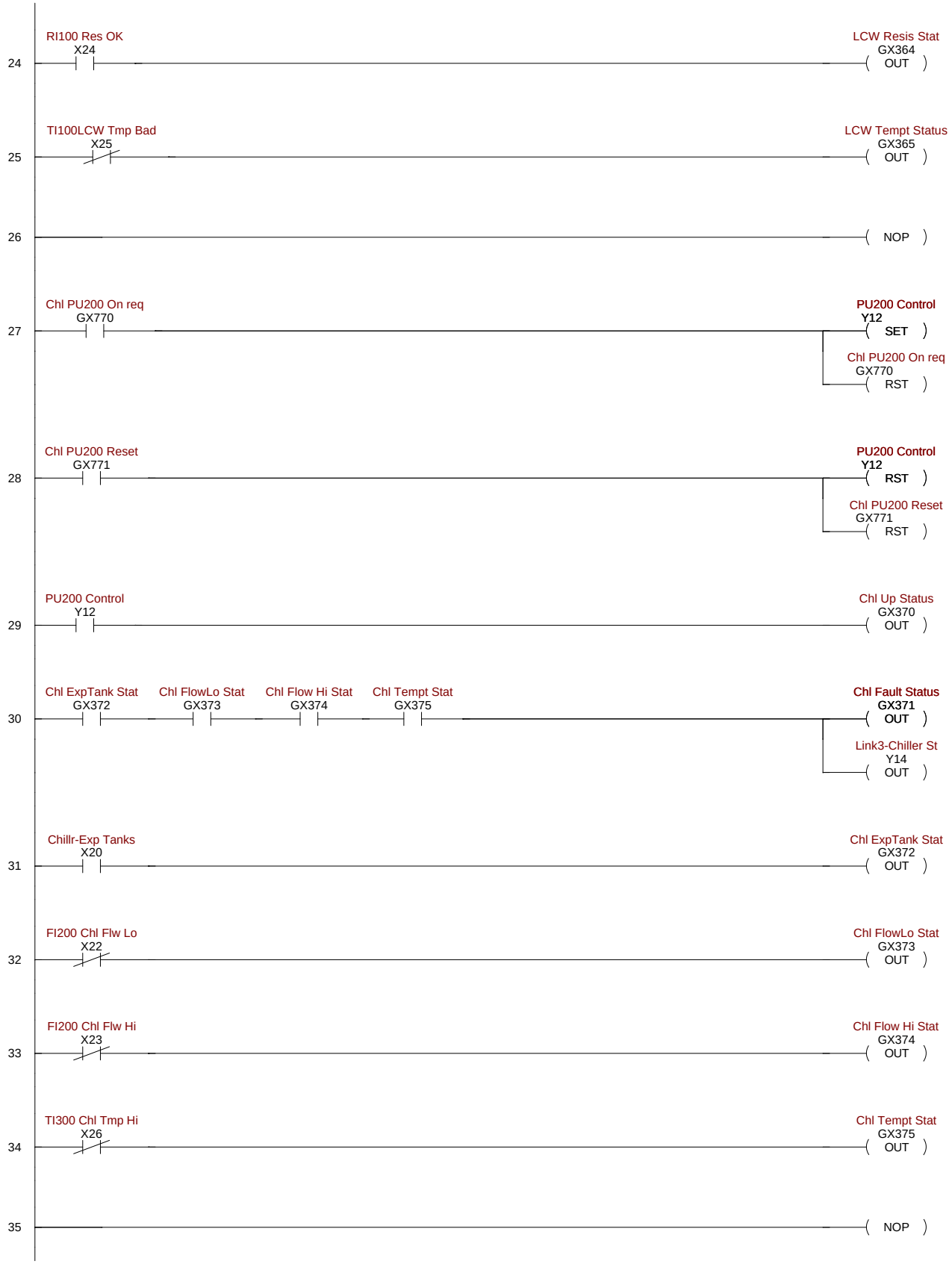

1
_1Second
SP4
Local Blinker
Y17
OUT
Heartbeat to IRM
GX17
OUT
GX247
OUT
GX347
OUT
GX447
OUT
2
Link4-1Hz
X13
X13 PD
C13
PD
3
X13 PD
C13
TMR
X13 Timer
T13
K100
4
IRM Heartbeat In
X17
X17 PD
C17
PD
5
X17 PD
C17
TMR
IRM Time Out
T17
K300
6
IRM Time Out
T17
IRM Beat OK
C117
OUT
7
IRM Beam Inhibit
X10
IRM Permit Stat
GX14
OUT
8
Switch in Control Room
Beam Switch
X16
Beam Sw Status
GX16
OUT
9
IRM Beat OK
C117
LCW Resis Stat
GX364
Switch in Control Room
Beam Switch
X16
RF Beam Permit from
Vac PLC
Link2-Beam Pmt
X11
IRM Beam Inhibit
X10
LLRF Beam Permit
Y10
OUT
10
LLRF Beam Permit
Y10
Beam Permit Stat
GX15
OUT
11
LCW Resis Stat
GX364
Link1 RB-WConduc
GX1
OUT


12
LCW Resis Stat
GX364
Link1 - Wtr Cond
Y13
OUT
13
RF Beam Permit from
Vac PLC
Link2-Beam Pmt
X11
Link2 RB
GX2
OUT
14
X12
Link3 RB
GX3
OUT
15
Link4-1Hz
X13
Link4 RB-1Hz Vac
GX4
OUT
16
Link5
X14
Link5 RB
GX5
OUT
Water Skid Status and Control
17
NOP
18
LCW PU100 On req
GX760
PU100 Control
Y11
SET
LCW PU100 On req
GX760
RST
19
LCW PU100 Reset
GX761
PU100 Control
Y11
RST
LCW PU100 Reset
GX761
RST
20
PU100 Control
Y11
LCW Up Status
GX360
OUT
21
LCW ExpTank Stat
GX362
LCW Flow Hi Stat
GX363
LCW Resis Stat
GX364
LCW Tempt Status
GX365
LCW Fault Stat
GX361
OUT
22
Chillr-Exp Tanks
X20
LCW ExpTank Stat
GX362
OUT
23
FI100 LCW Flw Hi
X21
LCW Flow Hi Stat
GX363
OUT


24
RI100 Res OK
X24
LCW Resis Stat
GX364
OUT
25
TI100LCW Tmp Bad
X25
LCW Tempt Status
GX365
OUT
26
NOP
27
Chl PU200 On req
GX770
PU200 Control
Y12
SET
Chl PU200 On req
GX770
RST
28
Chl PU200 Reset
GX771
PU200 Control
Y12
RST
Chl PU200 Reset
GX771
RST
29
PU200 Control
Y12
Chl Up Status
GX370
OUT
30
Chl ExpTank Stat
GX372
Chl FlowLo Stat
GX373
Chl Flow Hi Stat
GX374
Chl Tempt Stat
GX375
Chl Fault Status
GX371
OUT
Link3-Chiller St
Y14
OUT
31
Chillr-Exp Tanks
X20
Chl ExpTank Stat
GX372
OUT
32
FI200 Chl Flw Lo
X22
Chl FlowLo Stat
GX373
OUT
33
FI200 Chl Flw Hi
X23
Chl Flow Hi Stat
GX374
OUT
34
TI300 Chl Tmp Hi
X26
Chl Tempt Stat
GX375
OUT
35
NOP

36 NOP

37 NOP

Power Supplies Down From Here

38 NOP

LS1

39 NOP

40 LS1 ON GX420 | LS1 NF GX21 → LEBT Steer 1 Ctl Y0 SET; LS1 ON GX420 RST

41 LS1 RE GX421 → LEBT Steer 1 Ctl Y0 RST; LS1 ON GX420 RST; LS1 RE GX421 RST; LS1 NF GX21 SET; LS1 CI GX23 SET; LS1 GC GX24 SET

42 IRM Beat OK C117 / LS1 OC GX422 → LEBT Steer 1 Ctl Y0 RST; LS1 NF GX21 RST

43 LS1 OC GX422 → LS1 CI GX23 RST

44 LEBT Steer 1 Ctl Y0 → LS1 Up GX20 OUT

45 On SP1 → LS1 Kx GX22 OUT

LS2

46 — NOP

47 — LS2 ON GX430 — LS2 NF GX31 — LEBT Steer 2 Ctl Y1 SET; LS2 ON GX430 RST

48 — LS2 RE GX431 — LEBT Steer 2 Ctl Y1 RST; LS2 ON GX430 RST; LS2 RE GX431 RST; LS2 NF GX31 SET; LS2 CI GX33 SET; LS2 GC GX34 SET

49 — IRM Beat OK C117 (NC); LS2 OC GX432 — LEBT Steer 2 Ctl Y1 RST; LS2 NF GX31 RST

50 — LS2 OC GX432 — LS2 CI GX33 RST

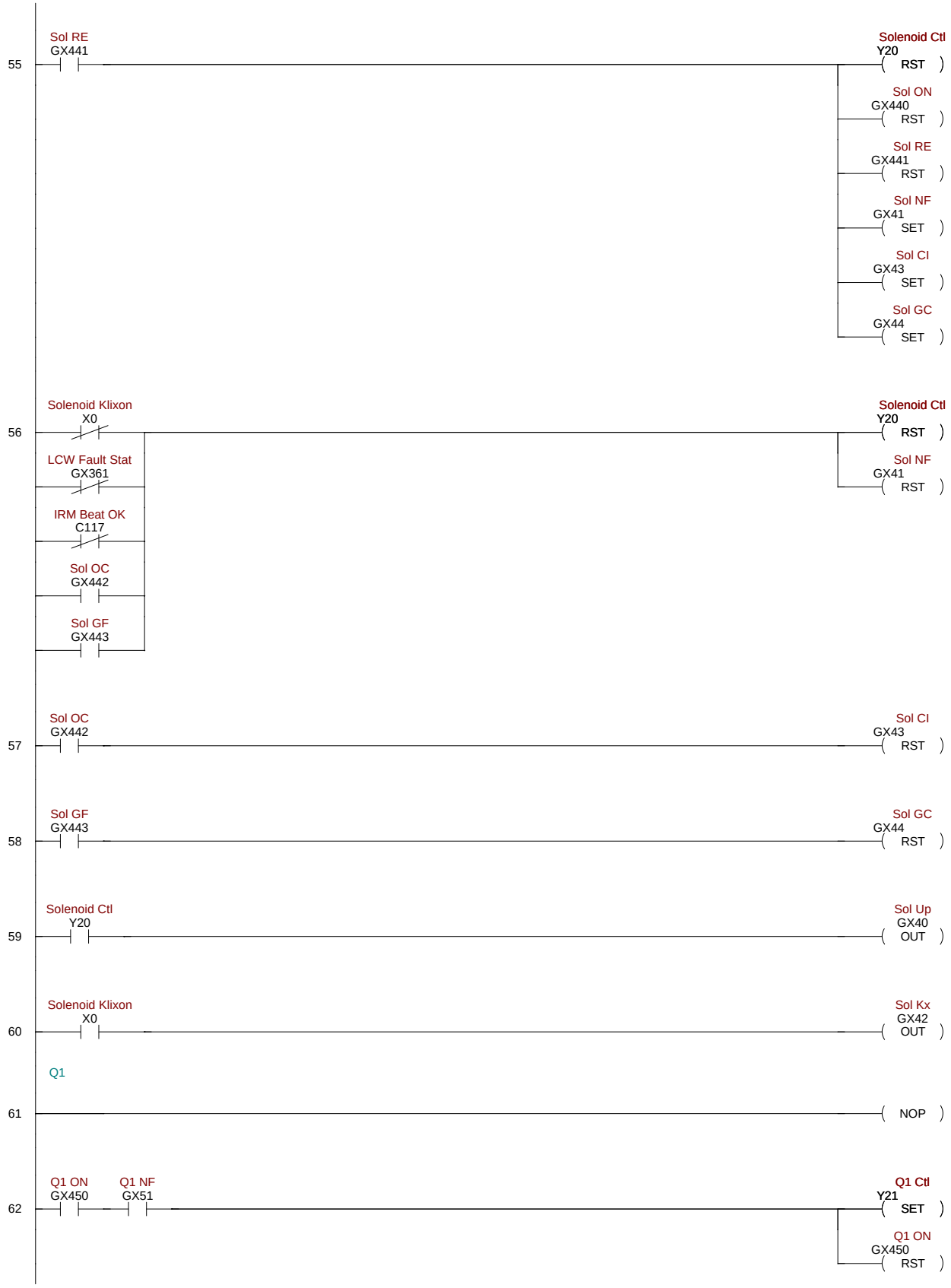
51 — LEBT Steer 2 Ctl Y1 — LS2 Up GX30 OUT

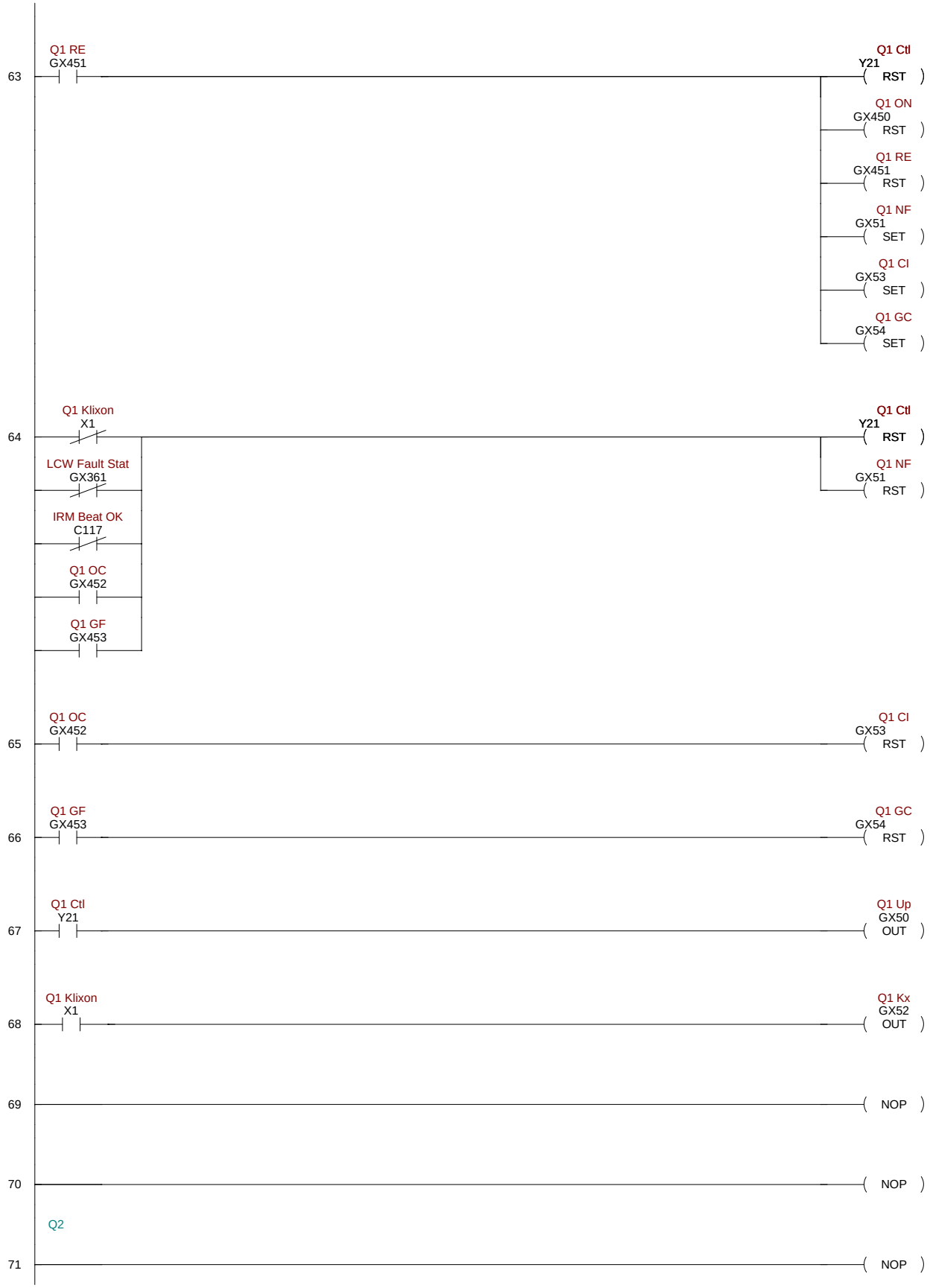
52 — _On SP1 — LS2 Kx GX32 OUT

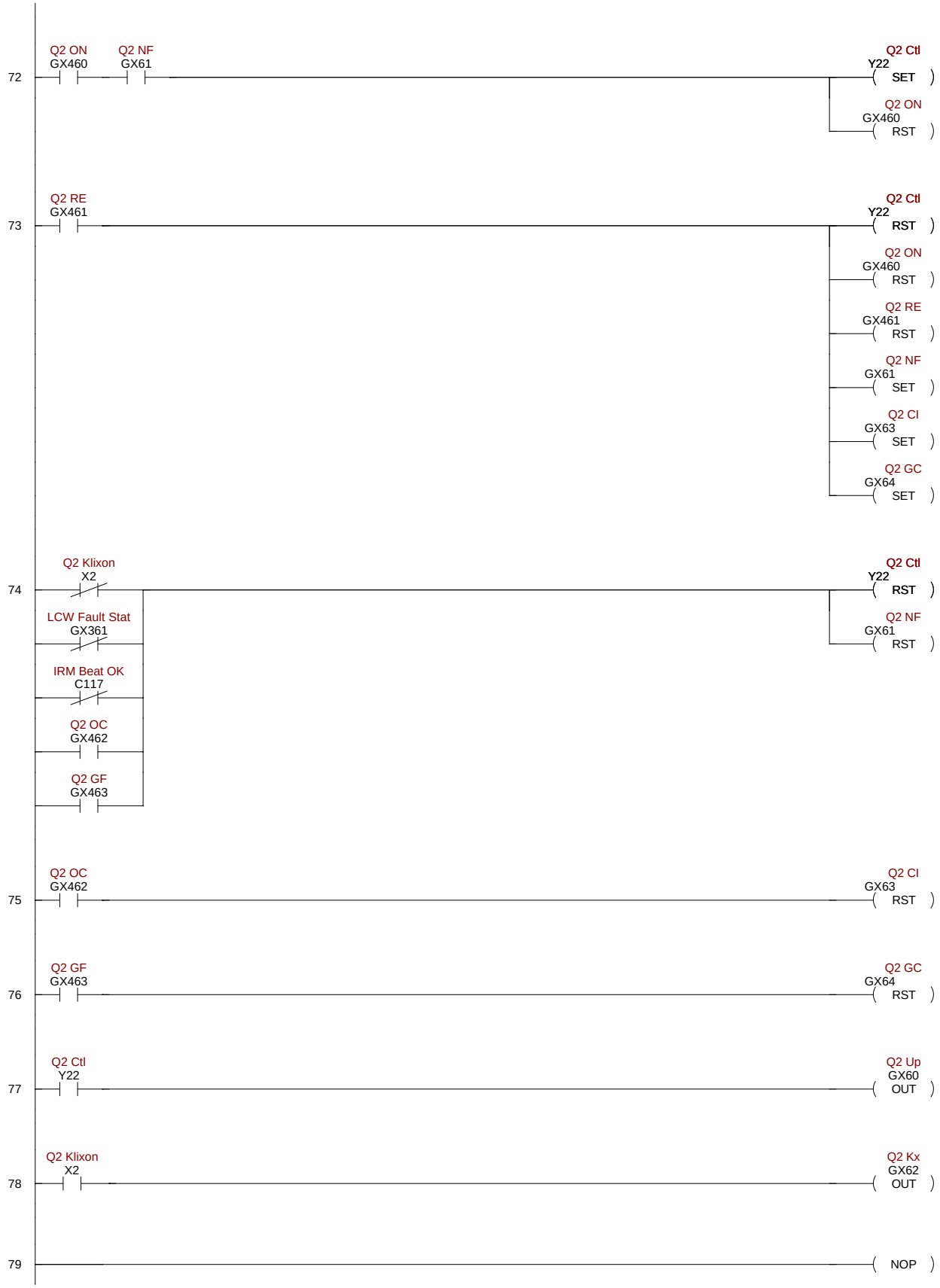
Sol

53 — NOP

54 — Sol ON GX440 — Sol NF GX41 — Solenoid Ctl Y20 SET; Sol ON GX440 RST


55
Sol RE
GX441
Solenoid Ctl
Y20
RST
Sol ON
GX440
RST
Sol RE
GX441
RST
Sol NF
GX41
SET
Sol CI
GX43
SET
Sol GC
GX44
SET
56
Solenoid Klixon
X0
LCW Fault Stat
GX361
IRM Beat OK
C117
Sol OC
GX442
Sol GF
GX443
Solenoid Ctl
Y20
RST
Sol NF
GX41
RST
57
Sol OC
GX442
Sol CI
GX43
RST
58
Sol GF
GX443
Sol GC
GX44
RST
59
Solenoid Ctl
Y20
Sol Up
GX40
OUT
60
Solenoid Klixon
X0
Sol Kx
GX42
OUT
Q1
61
NOP
62
Q1 ON
GX450
Q1 NF
GX51
Q1 Ctl
Y21
SET
Q1 ON
GX450
RST


63
Q1 RE
GX451
Q1 Ctl
Y21
RST
Q1 ON
GX450
RST
Q1 RE
GX451
RST
Q1 NF
GX51
SET
Q1 CI
GX53
SET
Q1 GC
GX54
SET
64
Q1 Klixon
X1
Q1 Ctl
Y21
RST
LCW Fault Stat
GX361
Q1 NF
GX51
RST
IRM Beat OK
C117
Q1 OC
GX452
Q1 GF
GX453
65
Q1 OC
GX452
Q1 CI
GX53
RST
66
Q1 GF
GX453
Q1 GC
GX54
RST
67
Q1 Ctl
Y21
Q1 Up
GX50
OUT
68
Q1 Klixon
X1
Q1 Kx
GX52
OUT
69
NOP
70
NOP
Q2
71
NOP


72
Q2 ON
GX460
Q2 NF
GX61
Q2 Ctl
Y22
SET
Q2 ON
GX460
RST
73
Q2 RE
GX461
Q2 Ctl
Y22
RST
Q2 ON
GX460
RST
Q2 RE
GX461
RST
Q2 NF
GX61
SET
Q2 CI
GX63
SET
Q2 GC
GX64
SET
74
Q2 Klixon
X2
LCW Fault Stat
GX361
IRM Beat OK
C117
Q2 OC
GX462
Q2 GF
GX463
Q2 Ctl
Y22
RST
Q2 NF
GX61
RST
75
Q2 OC
GX462
Q2 CI
GX63
RST
76
Q2 GF
GX463
Q2 GC
GX64
RST
77
Q2 Ctl
Y22
Q2 Up
GX60
OUT
78
Q2 Klixon
X2
Q2 Kx
GX62
OUT
79
NOP

Alp

80 — NOP

81 — Alp ON GX470 — Alp NF GX71 — Alpha Ctl Y23 SET; Alp ON GX470 RST

82 — Alp RE GX471 — Alpha Ctl Y23 RST; Alp ON GX470 RST; Alp RE GX471 RST; Alp NF GX71 SET; Alp CI GX73 SET; Alp GC GX74 SET

83 — Alpha Klixon X3; LCW Fault Stat GX361; IRM Beat OK C117; Alp OC GX472; Alp GF GX473 — Alpha Ctl Y23 RST; Alp NF GX71 RST

84 — Alp OC GX472 — Alp CI GX73 RST

85 — Alp GF GX473 — Alp GC GX74 RST

86 — Alpha Ctl Y23 — Alp Up GX70 OUT

87 — Alpha Klixon X3 — Alp Kx GX72 OUT

88 NOP

AIT

89 NOP

90 AIT ON GX500 — AIT NF GX101 — Alpha Trim Ctl Y24 SET; AIT ON GX500 RST

91 AIT RE GX501 — Alpha Trim Ctl Y24 RST; AIT ON GX500 RST; AIT RE GX501 RST; AIT NF GX101 SET; AIT CI GX103 SET; AIT GC GX104 SET

92 IRM Beat OK C117 / AIT OC GX502 — Alpha Trim Ctl Y24 RST; AIT NF GX101 RST

93 AIT OC GX502 — AIT CI GX103 RST

94 Alpha Trim Ctl Y24 — AIT Up GX100 OUT

95 _On SP1 — AIT Kx GX102 OUT

96 NOP

97 NOP

Q1T

98 NOP

99 Q1T ON GX530 — Q1T NF GX131 → MEBT Q1T Ctl Y2 SET; Q1T ON GX530 RST

100 Q1T RE GX531 → MEBT Q1T Ctl Y2 RST; Q1T ON GX530 RST; Q1T RE GX531 RST; Q1T NF GX131 SET; Q1T CI GX133 SET; Q1T GC GX134 SET

101 IRM Beat OK C117 / Q1T OC GX532 → MEBT Q1T Ctl Y2 RST; Q1T NF GX131 RST

102 Q1T OC GX532 → Q1T CI GX133 RST

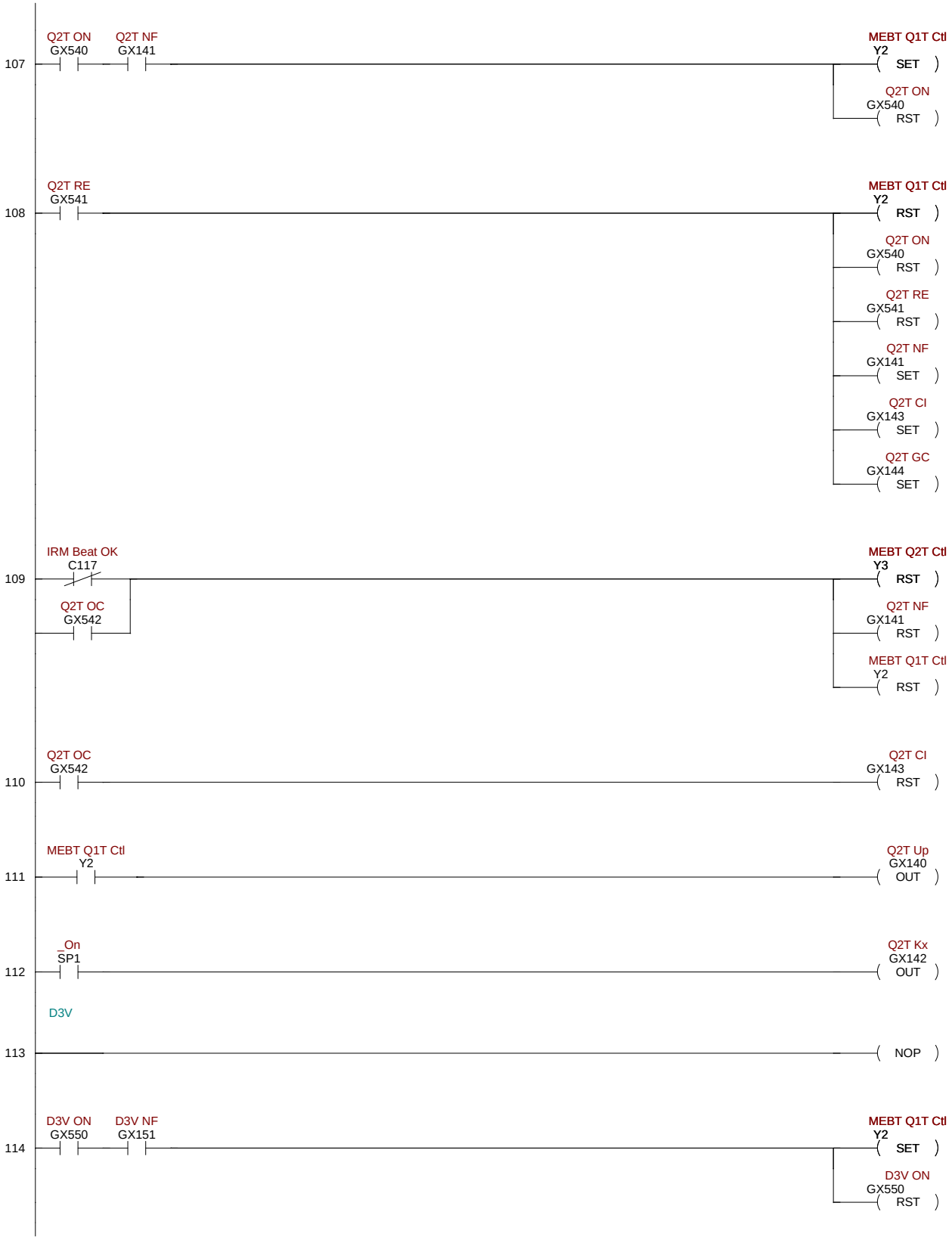
103 MEBT Q1T Ctl Y2 → Q1T Up GX130 OUT

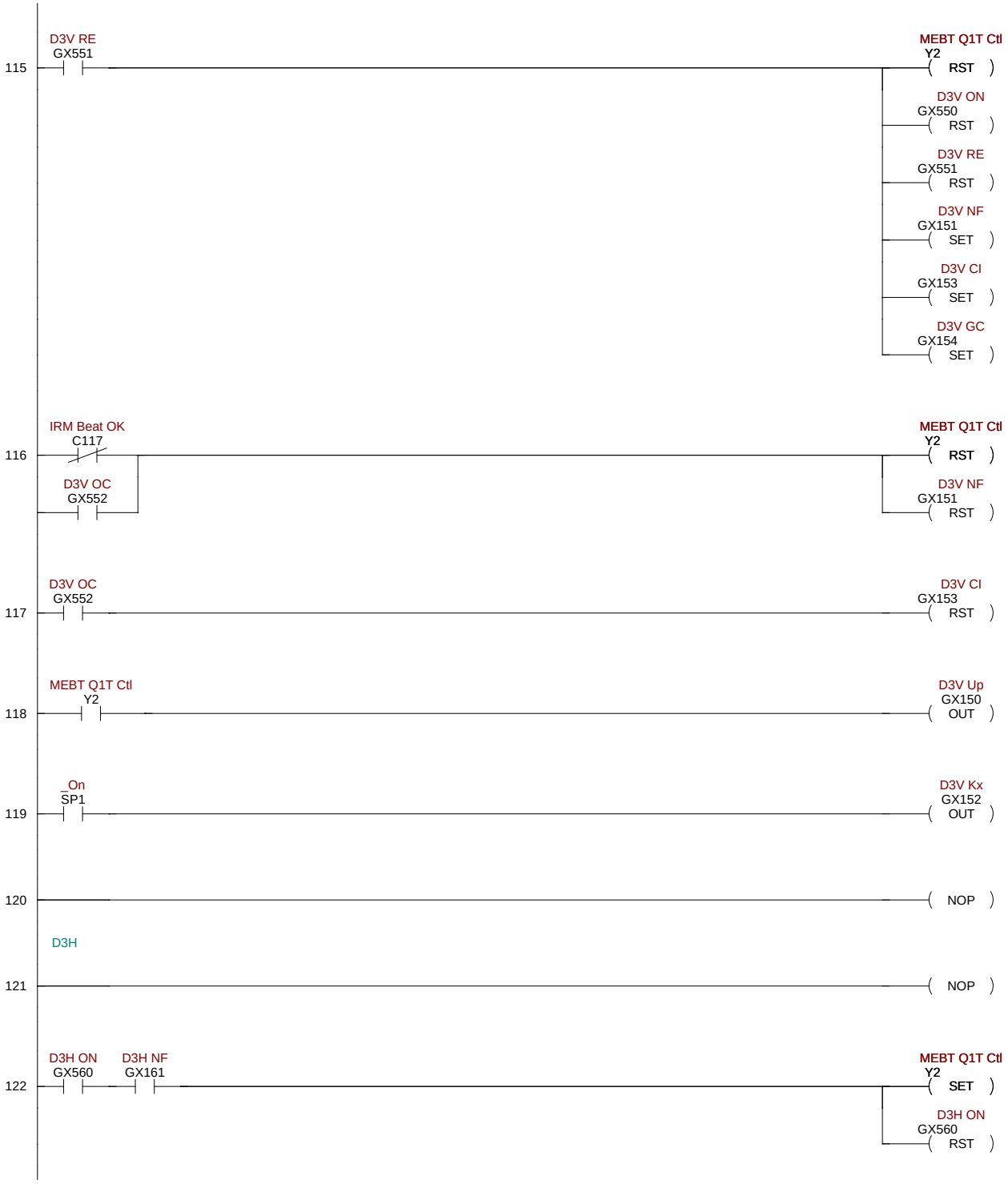
104 On SP1 → Q1T Kx GX132 OUT

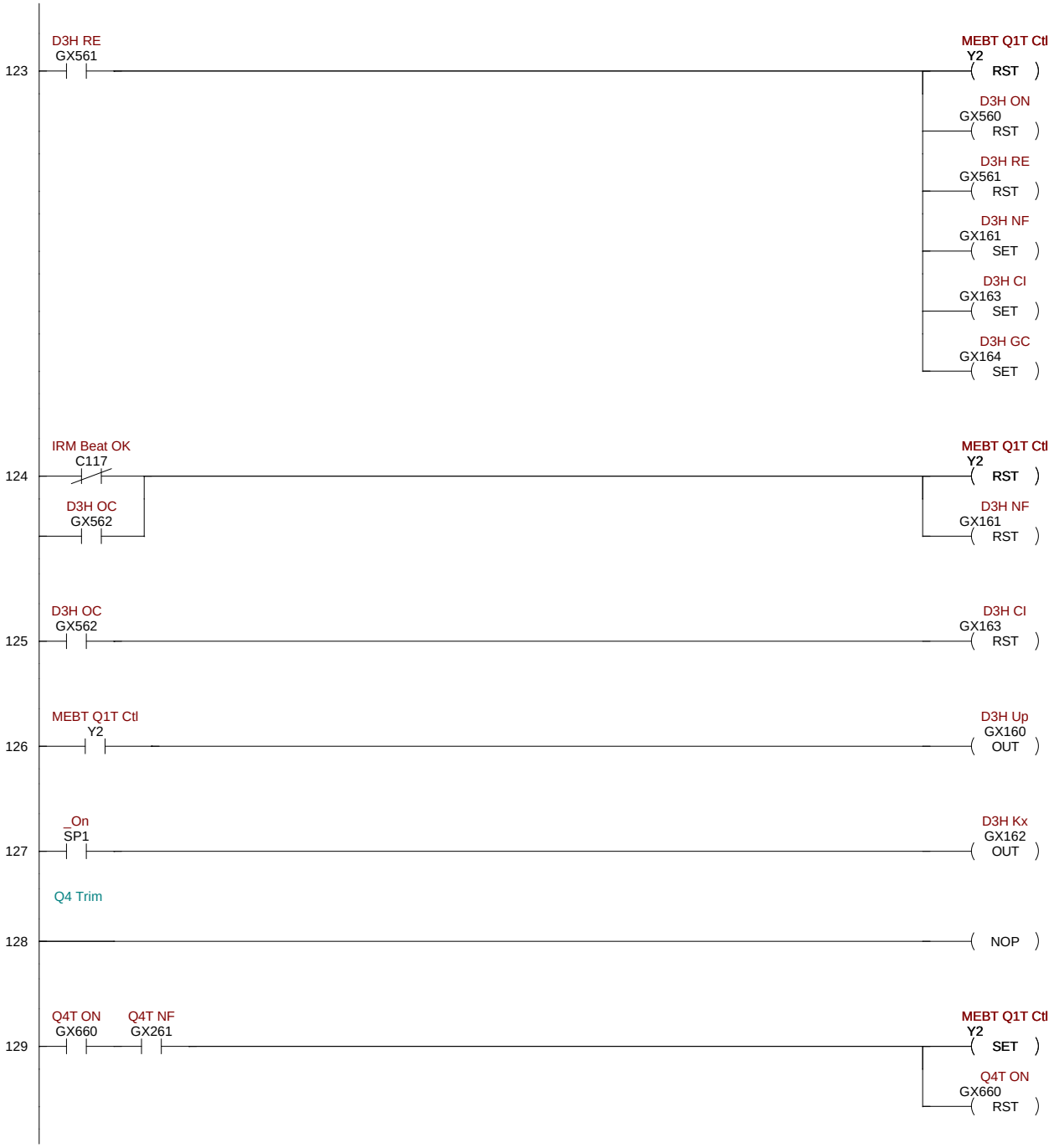
105 NOP

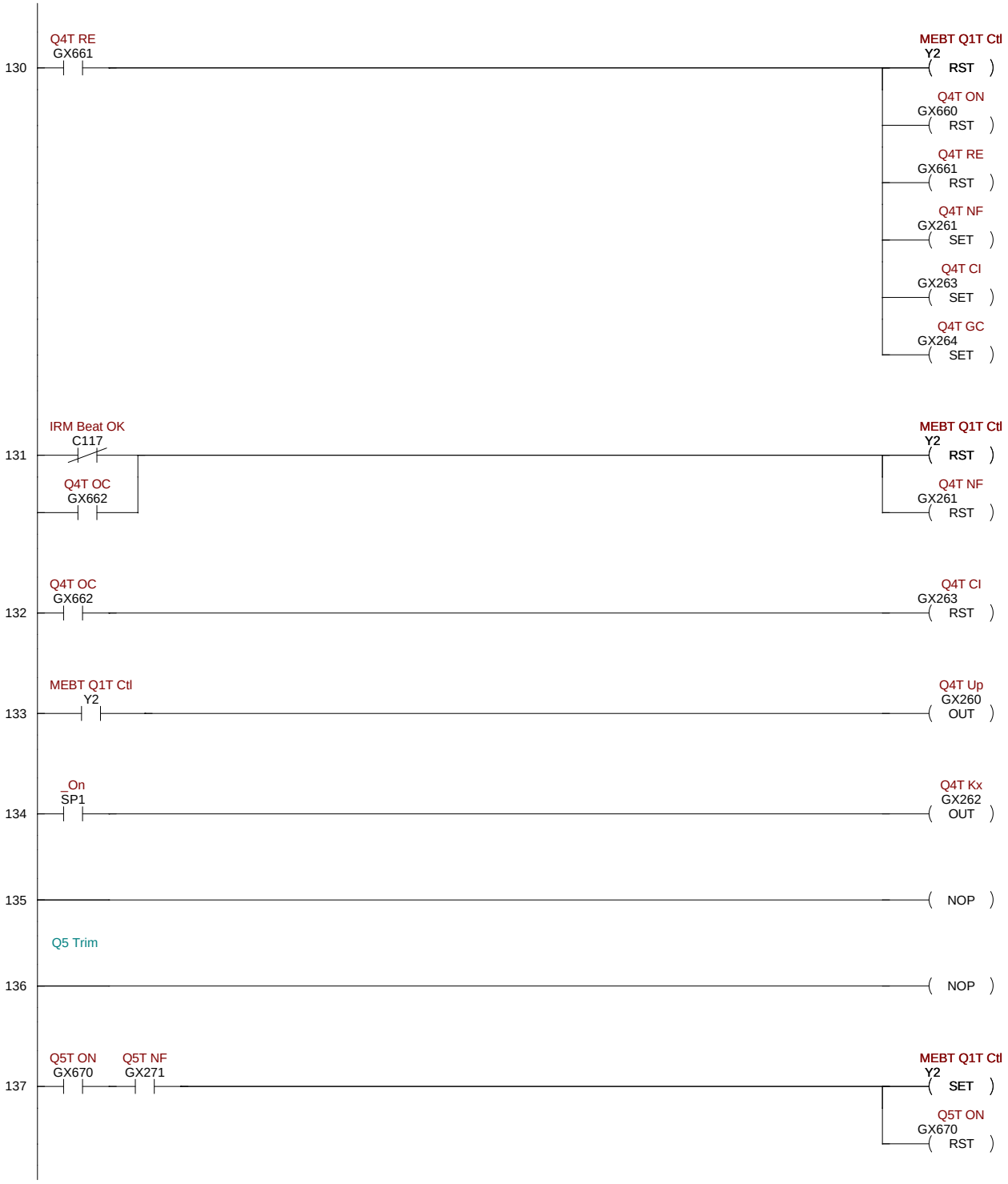
Q2 Trim

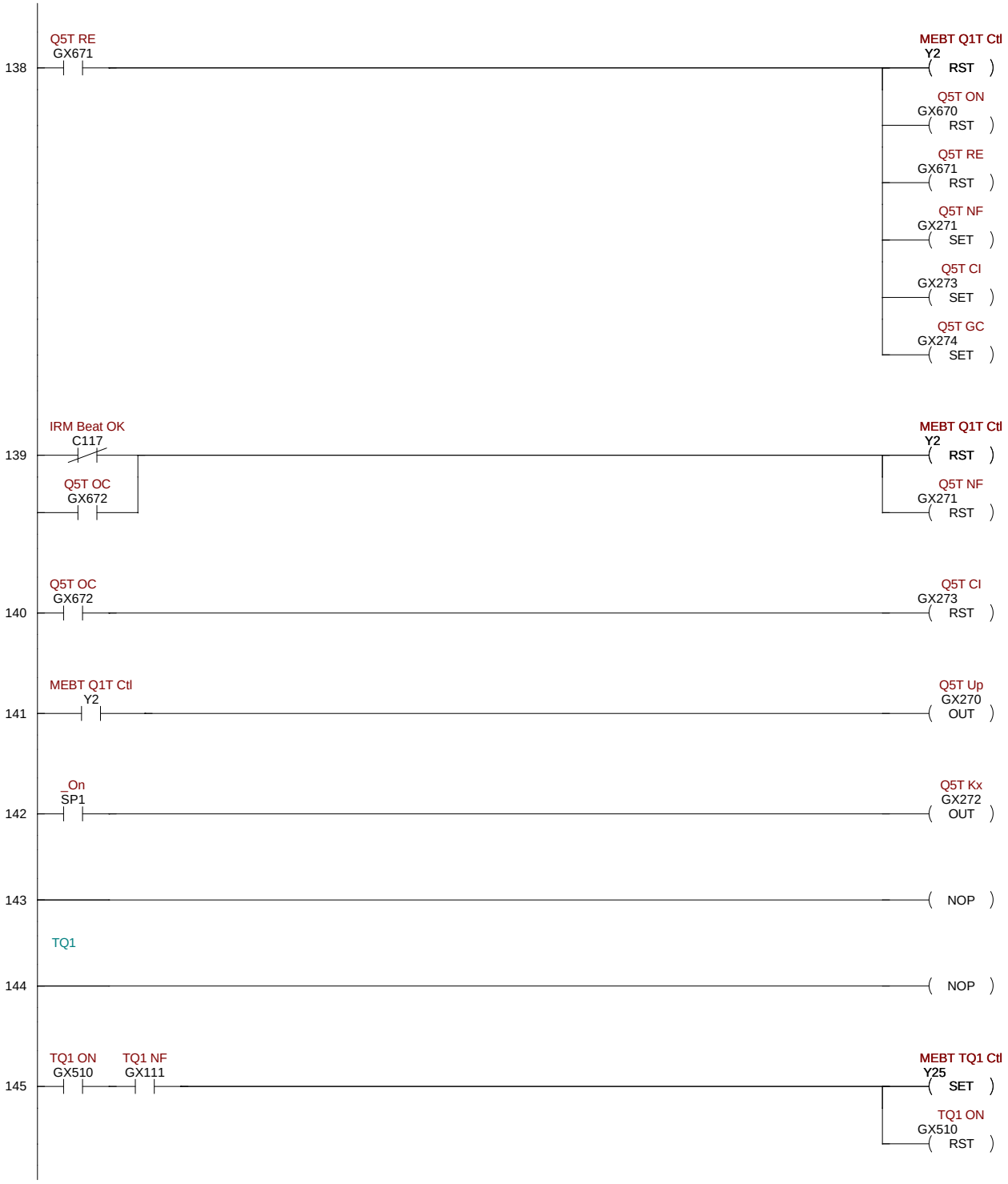
106 NOP

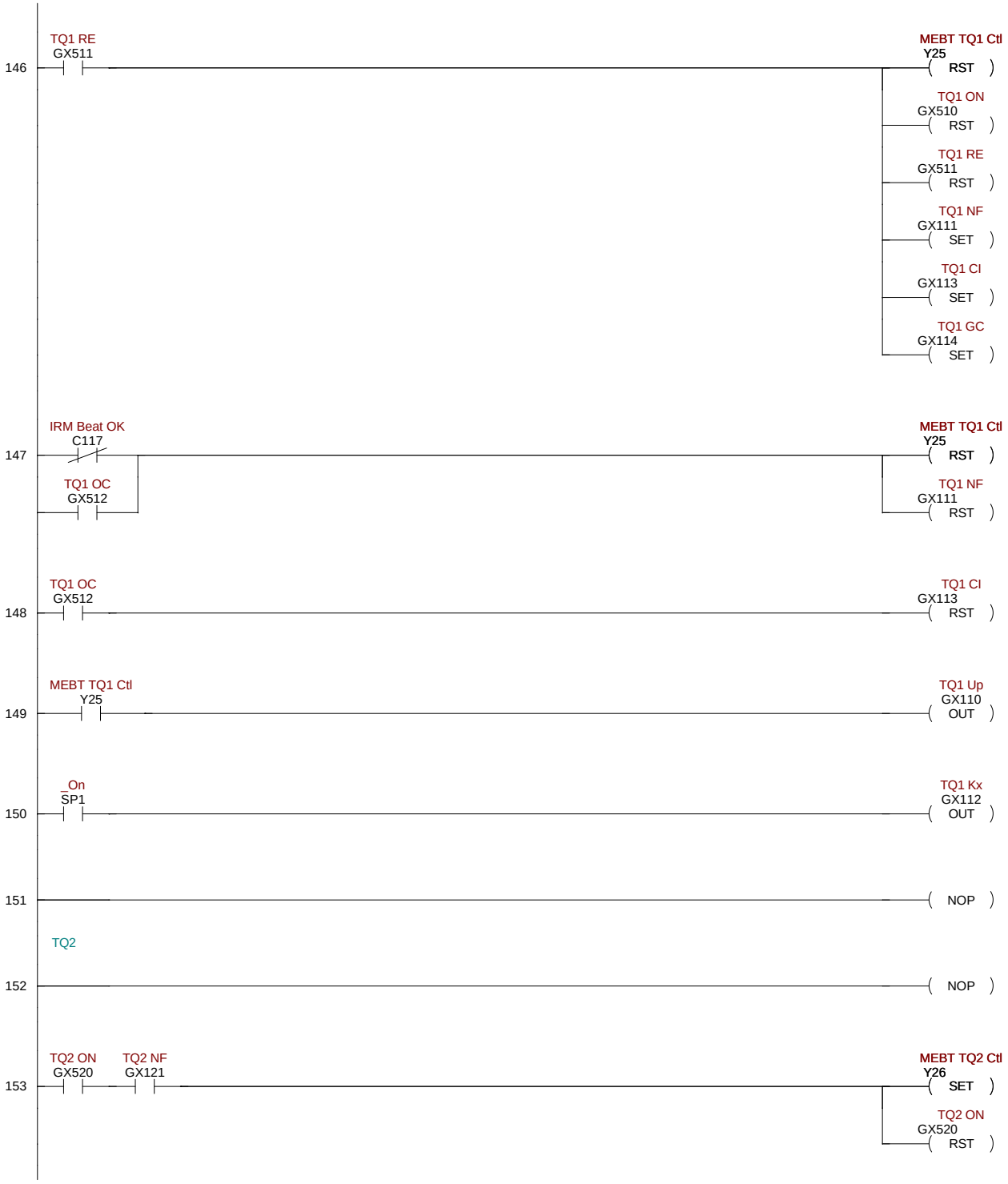

107
Q2T ON
GX540
Q2T NF
GX141
MEBT Q1T Ctl
Y2
SET
Q2T ON
GX540
RST
108
Q2T RE
GX541
MEBT Q1T Ctl
Y2
RST
Q2T ON
GX540
RST
Q2T RE
GX541
RST
Q2T NF
GX141
SET
Q2T CI
GX143
SET
Q2T GC
GX144
SET
109
IRM Beat OK
C117
Q2T OC
GX542
MEBT Q2T Ctl
Y3
RST
Q2T NF
GX141
RST
MEBT Q1T Ctl
Y2
RST
110
Q2T OC
GX542
Q2T CI
GX143
RST
111
MEBT Q1T Ctl
Y2
Q2T Up
GX140
OUT
112
_On
SP1
Q2T Kx
GX142
OUT
D3V
113
NOP
114
D3V ON
GX550
D3V NF
GX151
MEBT Q1T Ctl
Y2
SET
D3V ON
GX550
RST

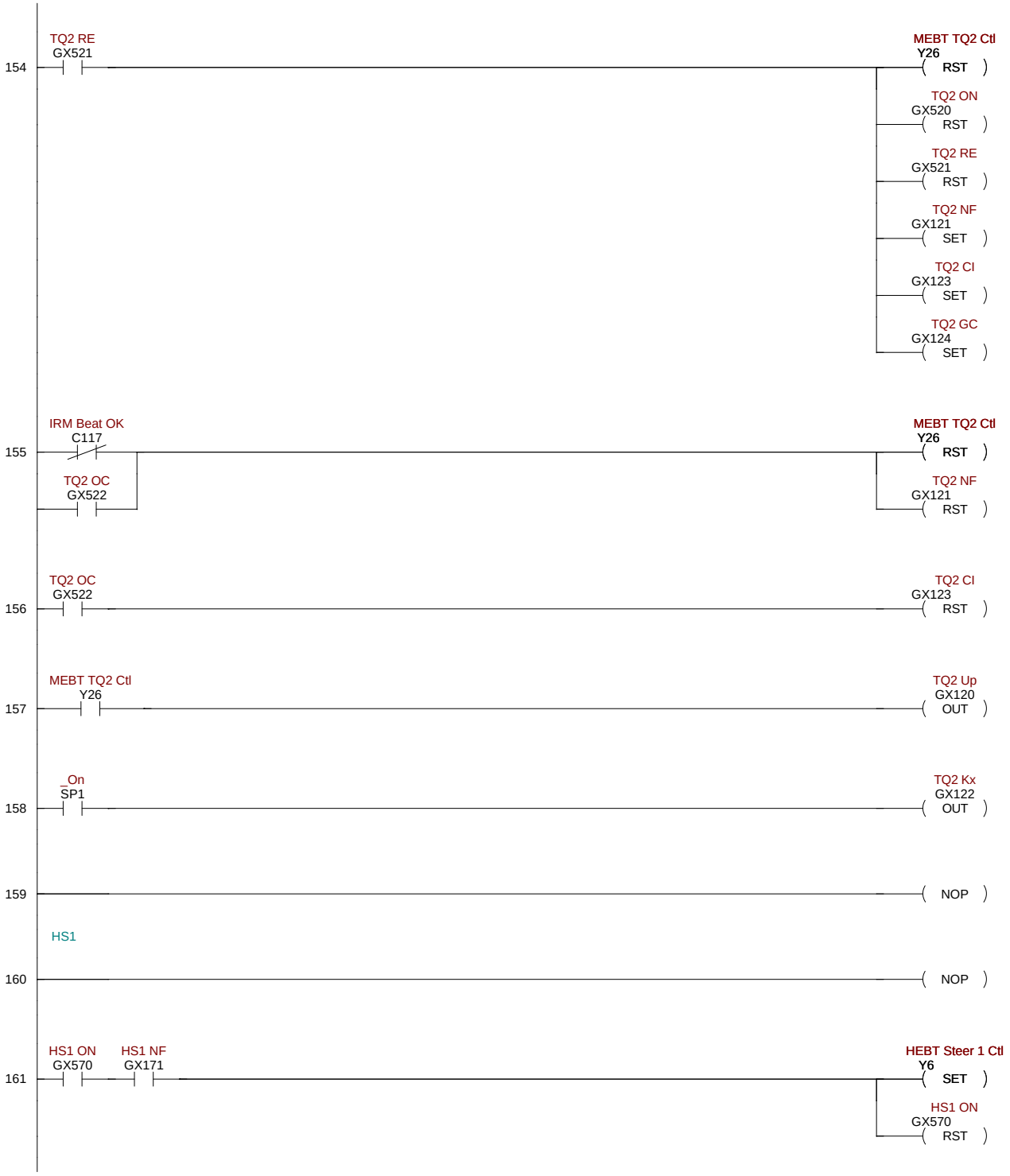

115
D3V RE
GX551
MEBT Q1T Ctl
Y2
RST
D3V ON
GX550
RST
D3V RE
GX551
RST
D3V NF
GX151
SET
D3V CI
GX153
SET
D3V GC
GX154
SET
116
IRM Beat OK
C117
D3V OC
GX552
MEBT Q1T Ctl
Y2
RST
D3V NF
GX151
RST
117
D3V OC
GX552
D3V CI
GX153
RST
118
MEBT Q1T Ctl
Y2
D3V Up
GX150
OUT
119
_On
SP1
D3V Kx
GX152
OUT
120
NOP
D3H
121
NOP
122
D3H ON
GX560
D3H NF
GX161
MEBT Q1T Ctl
Y2
SET
D3H ON
GX560
RST

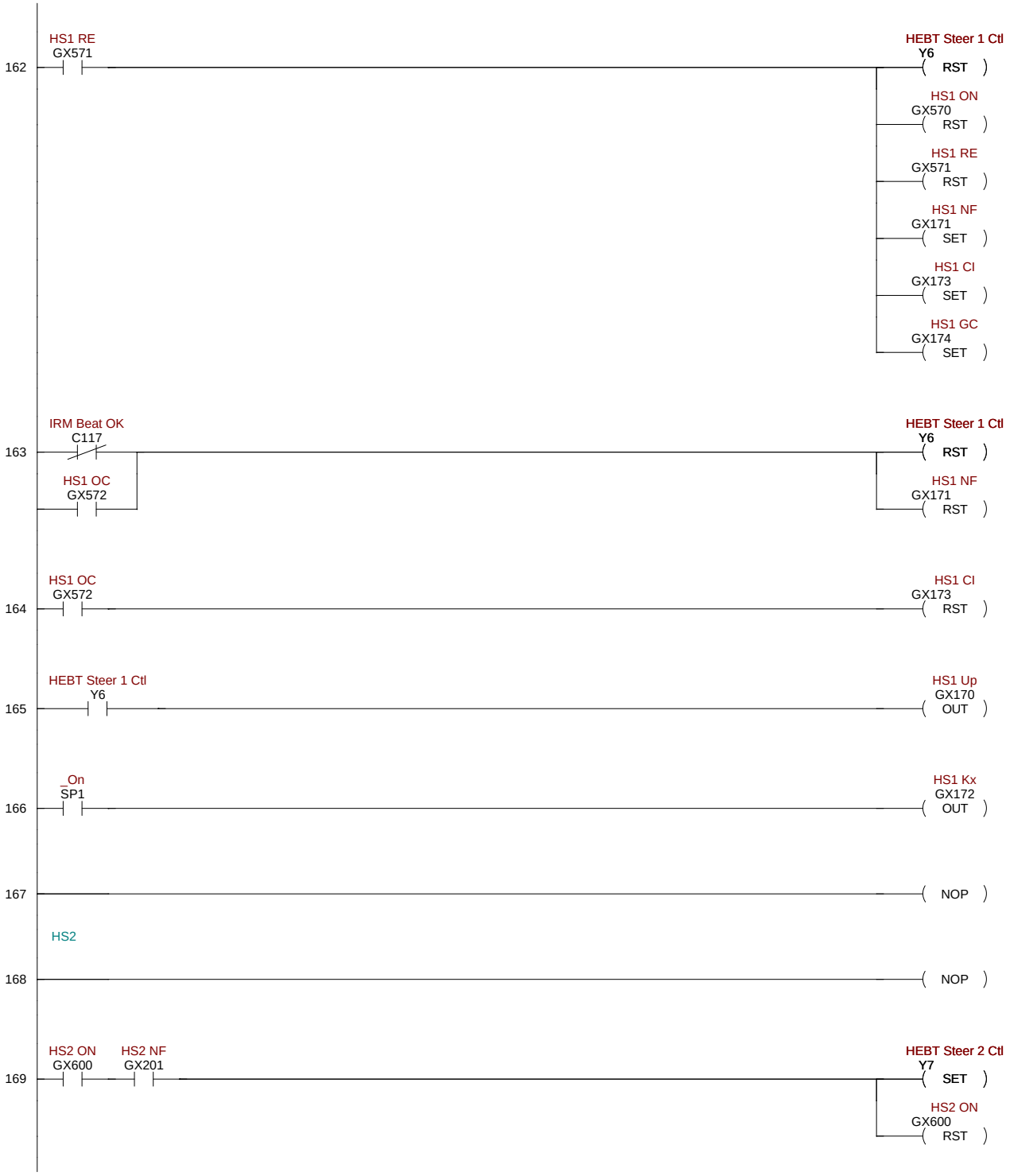

123
D3H RE
GX561
MEBT Q1T Ctl
Y2
RST
D3H ON
GX560
RST
D3H RE
GX561
RST
D3H NF
GX161
SET
D3H CI
GX163
SET
D3H GC
GX164
SET
124
IRM Beat OK
C117
D3H OC
GX562
MEBT Q1T Ctl
Y2
RST
D3H NF
GX161
RST
125
D3H OC
GX562
D3H CI
GX163
RST
126
MEBT Q1T Ctl
Y2
D3H Up
GX160
OUT
127
_On
SP1
D3H Kx
GX162
OUT
Q4 Trim
128
NOP
129
Q4T ON
GX660
Q4T NF
GX261
MEBT Q1T Ctl
Y2
SET
Q4T ON
GX660
RST

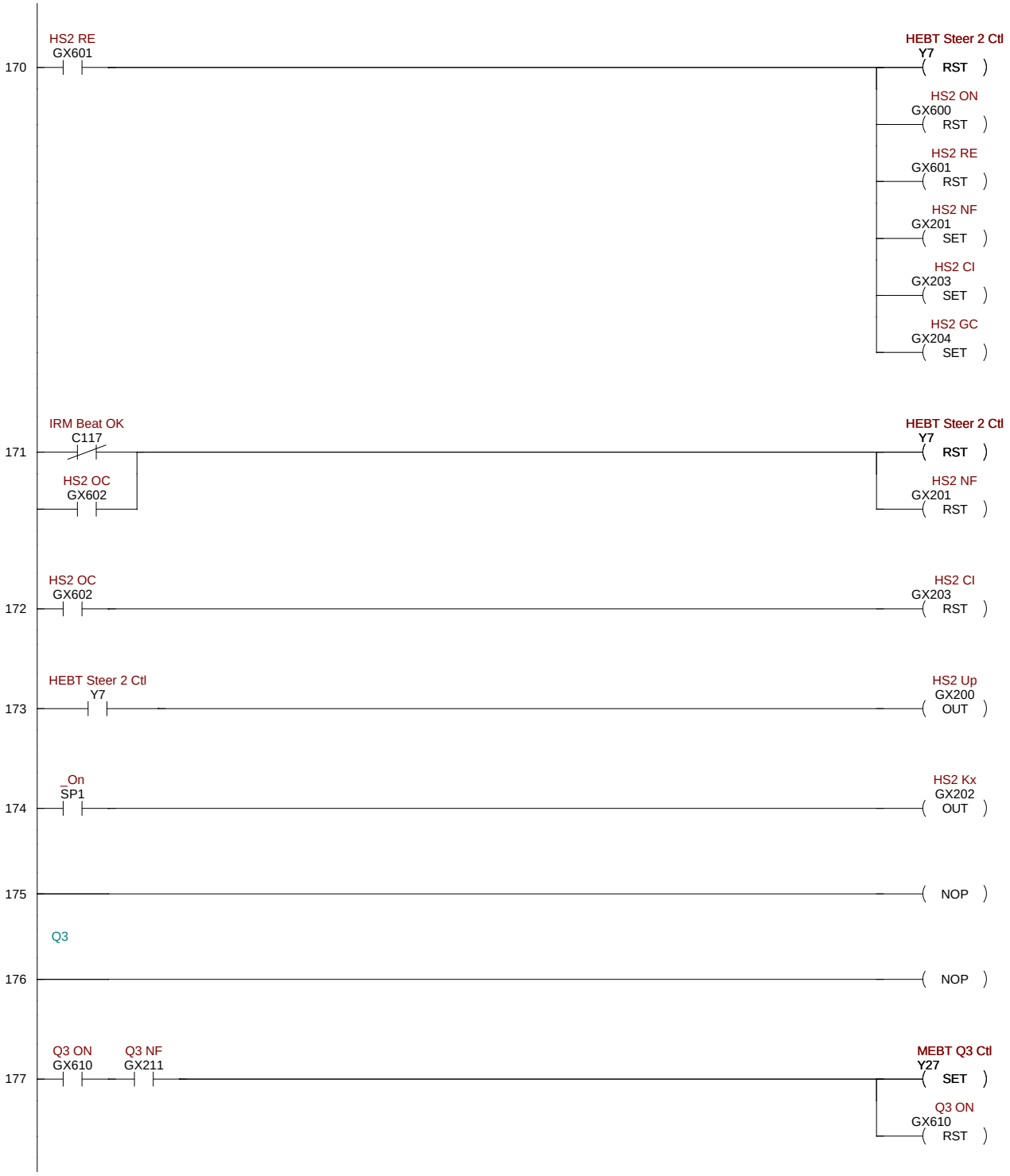

130
Q4T RE
GX661
MEBT Q1T Ctl
Y2
RST
Q4T ON
GX660
RST
Q4T RE
GX661
RST
Q4T NF
GX261
SET
Q4T CI
GX263
SET
Q4T GC
GX264
SET
131
IRM Beat OK
C117
Q4T OC
GX662
MEBT Q1T Ctl
Y2
RST
Q4T NF
GX261
RST
132
Q4T OC
GX662
Q4T CI
GX263
RST
133
MEBT Q1T Ctl
Y2
Q4T Up
GX260
OUT
134
_On
SP1
Q4T Kx
GX262
OUT
135
NOP
Q5 Trim
136
NOP
137
Q5T ON
GX670
Q5T NF
GX271
MEBT Q1T Ctl
Y2
SET
Q5T ON
GX670
RST

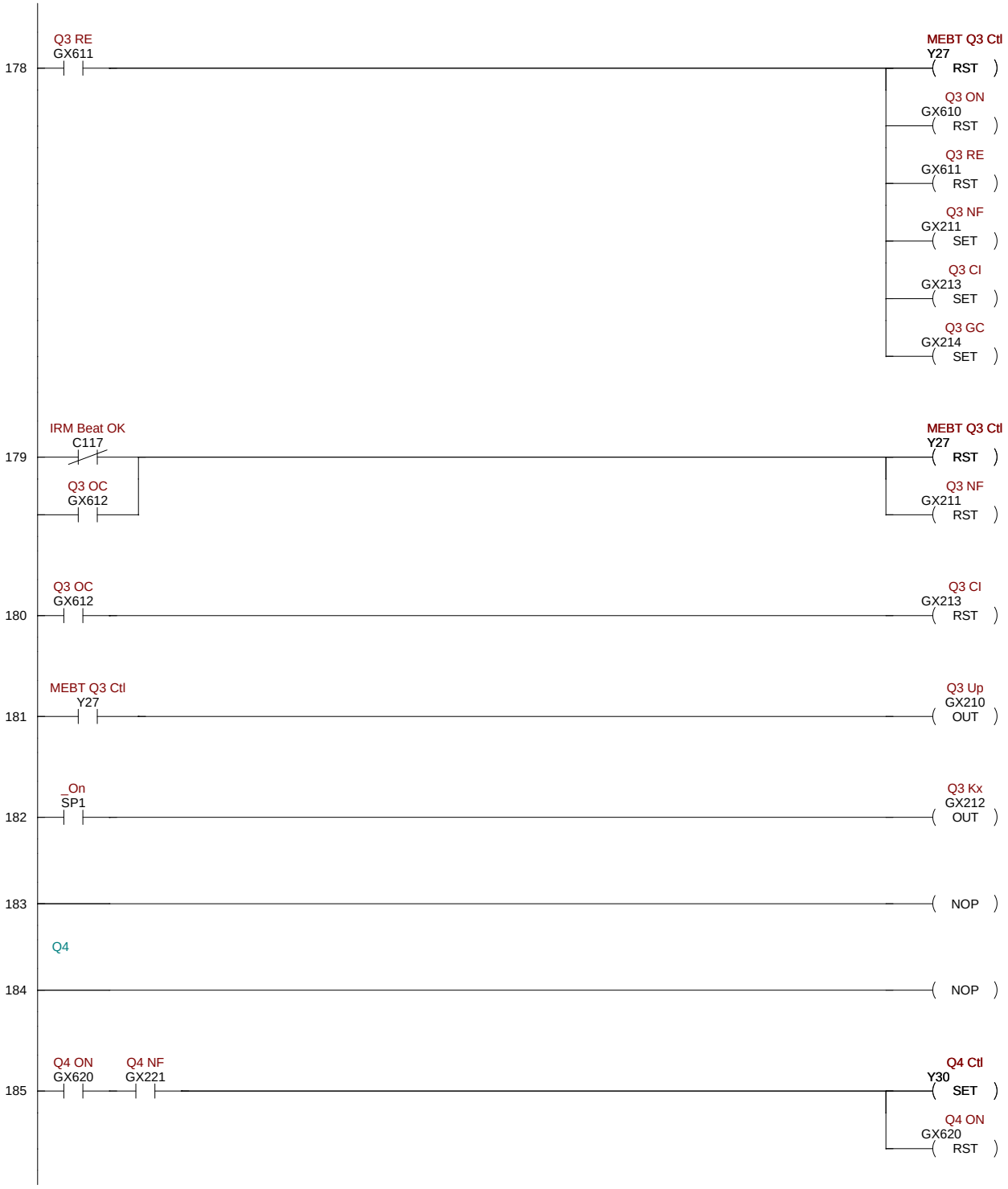

138
Q5T RE
GX671
MEBT Q1T Ctl
Y2
RST
Q5T ON
GX670
RST
Q5T RE
GX671
RST
Q5T NF
GX271
SET
Q5T CI
GX273
SET
Q5T GC
GX274
SET
139
IRM Beat OK
C117
Q5T OC
GX672
MEBT Q1T Ctl
Y2
RST
Q5T NF
GX271
RST
140
Q5T OC
GX672
Q5T CI
GX273
RST
141
MEBT Q1T Ctl
Y2
Q5T Up
GX270
OUT
142
_On
SP1
Q5T Kx
GX272
OUT
143
NOP
TQ1
144
NOP
145
TQ1 ON
GX510
TQ1 NF
GX111
MEBT TQ1 Ctl
Y25
SET
TQ1 ON
GX510
RST

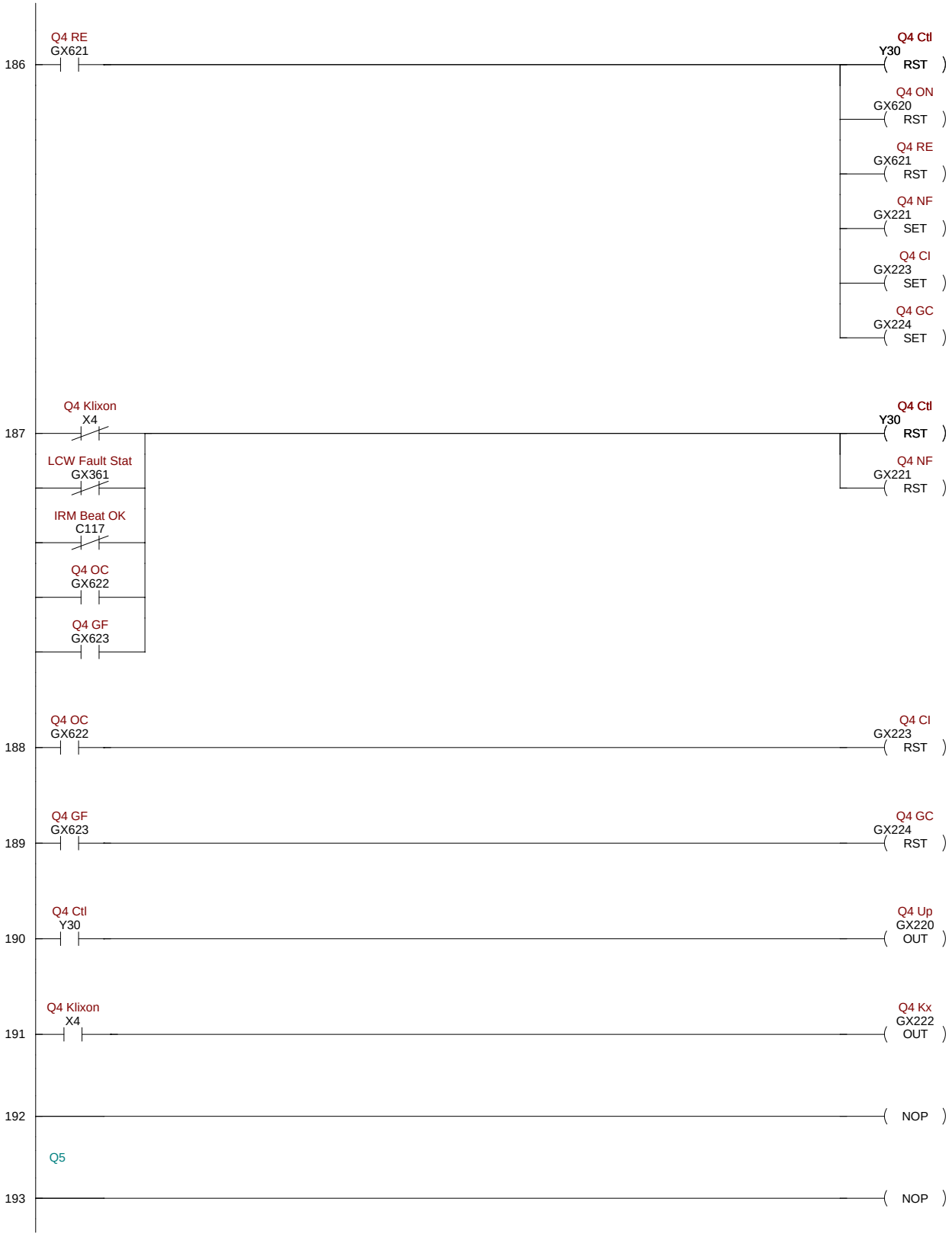

146
TQ1 RE
GX511
MEBT TQ1 Ctl
Y25
RST
TQ1 ON
GX510
RST
TQ1 RE
GX511
RST
TQ1 NF
GX111
SET
TQ1 CI
GX113
SET
TQ1 GC
GX114
SET
147
IRM Beat OK
C117
TQ1 OC
GX512
MEBT TQ1 Ctl
Y25
RST
TQ1 NF
GX111
RST
148
TQ1 OC
GX512
TQ1 CI
GX113
RST
149
MEBT TQ1 Ctl
Y25
TQ1 Up
GX110
OUT
150
_On
SP1
TQ1 Kx
GX112
OUT
151
NOP
TQ2
152
NOP
153
TQ2 ON
GX520
TQ2 NF
GX121
MEBT TQ2 Ctl
Y26
SET
TQ2 ON
GX520
RST

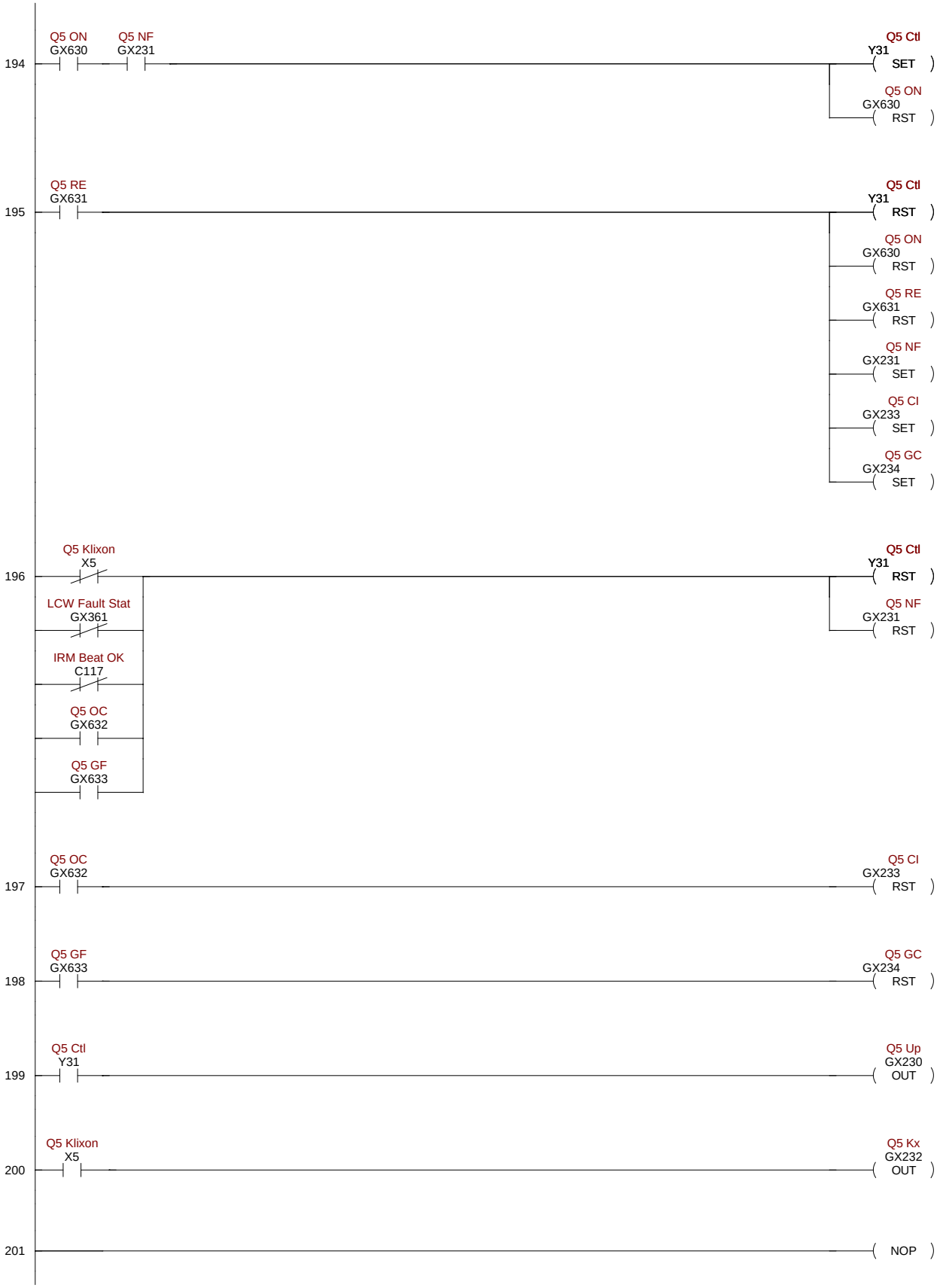

154
TQ2 RE
GX521
MEBT TQ2 Ctl
Y26
RST
TQ2 ON
GX520
RST
TQ2 RE
GX521
RST
TQ2 NF
GX121
SET
TQ2 CI
GX123
SET
TQ2 GC
GX124
SET
155
IRM Beat OK
C117
TQ2 OC
GX522
MEBT TQ2 Ctl
Y26
RST
TQ2 NF
GX121
RST
156
TQ2 OC
GX522
TQ2 CI
GX123
RST
157
MEBT TQ2 Ctl
Y26
TQ2 Up
GX120
OUT
158
_On
SP1
TQ2 Kx
GX122
OUT
159
NOP
HS1
160
NOP
161
HS1 ON
GX570
HS1 NF
GX171
HEBT Steer 1 Ctl
Y6
SET
HS1 ON
GX570
RST


162
HS1 RE
GX571
HEBT Steer 1 Ctl
Y6
RST
HS1 ON
GX570
RST
HS1 RE
GX571
RST
HS1 NF
GX171
SET
HS1 CI
GX173
SET
HS1 GC
GX174
SET
163
IRM Beat OK
C117
HS1 OC
GX572
HEBT Steer 1 Ctl
Y6
RST
HS1 NF
GX171
RST
164
HS1 OC
GX572
HS1 CI
GX173
RST
165
HEBT Steer 1 Ctl
Y6
HS1 Up
GX170
OUT
166
_On
SP1
HS1 Kx
GX172
OUT
167
NOP
HS2
168
NOP
169
HS2 ON
GX600
HS2 NF
GX201
HEBT Steer 2 Ctl
Y7
SET
HS2 ON
GX600
RST


170
HS2 RE
GX601
HEBT Steer 2 Ctl
Y7
RST
HS2 ON
GX600
RST
HS2 RE
GX601
RST
HS2 NF
GX201
SET
HS2 CI
GX203
SET
HS2 GC
GX204
SET
171
IRM Beat OK
C117
HS2 OC
GX602
HEBT Steer 2 Ctl
Y7
RST
HS2 NF
GX201
RST
172
HS2 OC
GX602
HS2 CI
GX203
RST
173
HEBT Steer 2 Ctl
Y7
HS2 Up
GX200
OUT
174
_On
SP1
HS2 Kx
GX202
OUT
175
NOP
Q3
176
NOP
177
Q3 ON
GX610
Q3 NF
GX211
MEBT Q3 Ctl
Y27
SET
Q3 ON
GX610
RST


178
Q3 RE
GX611
MEBT Q3 Ctl
Y27
RST
Q3 ON
GX610
RST
Q3 RE
GX611
RST
Q3 NF
GX211
SET
Q3 CI
GX213
SET
Q3 GC
GX214
SET
179
IRM Beat OK
C117
Q3 OC
GX612
MEBT Q3 Ctl
Y27
RST
Q3 NF
GX211
RST
180
Q3 OC
GX612
Q3 CI
GX213
RST
181
MEBT Q3 Ctl
Y27
Q3 Up
GX210
OUT
182
_On
SP1
Q3 Kx
GX212
OUT
183
NOP
Q4
184
NOP
185
Q4 ON
GX620
Q4 NF
GX221
Q4 Ctl
Y30
SET
Q4 ON
GX620
RST


186
Q4 RE
GX621
Q4 Ctl
Y30
RST
Q4 ON
GX620
RST
Q4 RE
GX621
RST
Q4 NF
GX221
SET
Q4 CI
GX223
SET
Q4 GC
GX224
SET
187
Q4 Klixon
X4
LCW Fault Stat
GX361
IRM Beat OK
C117
Q4 OC
GX622
Q4 GF
GX623
Q4 Ctl
Y30
RST
Q4 NF
GX221
RST
188
Q4 OC
GX622
Q4 CI
GX223
RST
189
Q4 GF
GX623
Q4 GC
GX224
RST
190
Q4 Ctl
Y30
Q4 Up
GX220
OUT
191
Q4 Klixon
X4
Q4 Kx
GX222
OUT
192
NOP
Q5
193
NOP


194
Q5 ON
GX630
Q5 NF
GX231
Q5 Ctl
Y31
SET
Q5 ON
GX630
RST
195
Q5 RE
GX631
Q5 Ctl
Y31
RST
Q5 ON
GX630
RST
Q5 RE
GX631
RST
Q5 NF
GX231
SET
Q5 CI
GX233
SET
Q5 GC
GX234
SET
196
Q5 Klixon
X5
LCW Fault Stat
GX361
IRM Beat OK
C117
Q5 OC
GX632
Q5 GF
GX633
Q5 Ctl
Y31
RST
Q5 NF
GX231
RST
197
Q5 OC
GX632
Q5 CI
GX233
RST
198
Q5 GF
GX633
Q5 GC
GX234
RST
199
Q5 Ctl
Y31
Q5 Up
GX230
OUT
200
Q5 Klixon
X5
Q5 Kx
GX232
OUT
201
NOP

HQ

202 ( NOP )

203 HQ ON GX640 | HQ NF GX241 | → HEBT Quad Ctl Y32 ( SET ); HQ ON GX640 ( RST )

204 HQ RE GX641 | → HEBT Quad Ctl Y32 ( RST ); HQ ON GX640 ( RST ); HQ RE GX641 ( RST ); HQ NF GX241 ( SET ); HQ CI GX243 ( SET ); HQ GC GX244 ( SET )

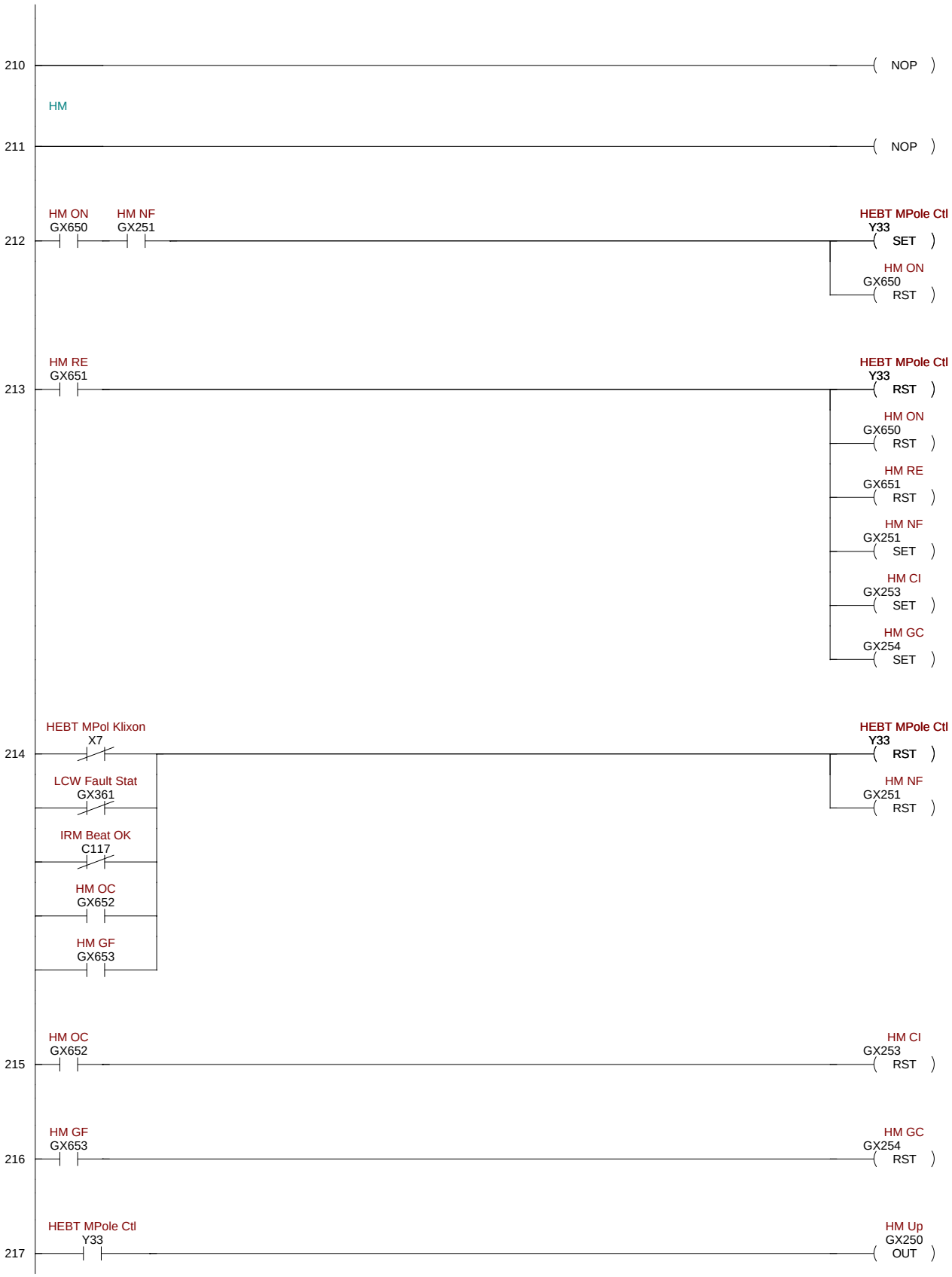
205 HEBT Quad Klixon X6 / LCW Fault Stat GX361 / IRM Beat OK C117 / HQ OC GX642 / HQ GF GX643 | → HEBT Quad Ctl Y32 ( RST ); HQ NF GX241 ( RST )

206 HQ OC GX642 | → HQ CI GX243 ( RST )

207 HQ GF GX643 | → HQ GC GX244 ( RST )

208 HEBT Quad Ctl Y32 | → HQ Up GX240 ( OUT )

209 HEBT Quad Klixon X6 | → HQ Kx GX242 ( OUT )


210
NOP
HM
211
NOP
HM ON
GX650
HM NF
GX251
212
HEBT MPole Ctl
Y33
SET
HM ON
GX650
RST
HM RE
GX651
213
HEBT MPole Ctl
Y33
RST
HM ON
GX650
RST
HM RE
GX651
RST
HM NF
GX251
SET
HM CI
GX253
SET
HM GC
GX254
SET
HEBT MPol Klixon
X7
214
HEBT MPole Ctl
Y33
RST
HM NF
GX251
RST
LCW Fault Stat
GX361
IRM Beat OK
C117
HM OC
GX652
HM GF
GX653
HM OC
GX652
215
HM CI
GX253
RST
HM GF
GX653
216
HM GC
GX254
RST
HEBT MPole Ctl
Y33
217
HM Up
GX250
OUT

HEBT MPol Klixon
X7
HM Kx
GX252
OUT
218
219
NOP
220
END
221
NOP