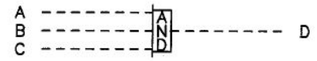
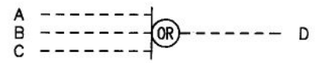
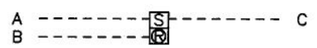
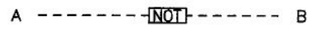
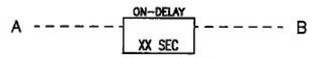
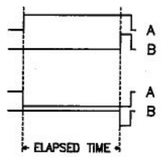
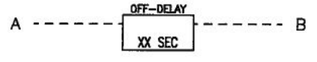
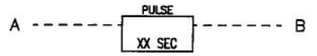
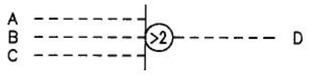
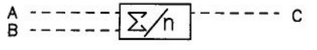
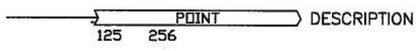
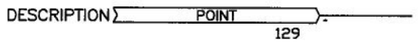
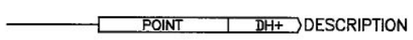
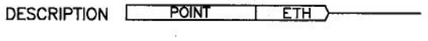
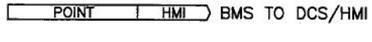
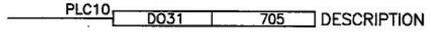
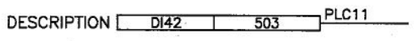
"AND"		OUTPUT "D" IS LOGIC "1" WHEN ALL INPUTS "A", "B" AND "C" ARE A LOGIC "1".
"OR"		OUTPUT "D" IS LOGIC "1" WHEN ANY INPUTS "A", "B" OR "C" ARE A LOGIC "1".
MAINTAINED MEMORY		OUTPUT "C" IS SET TO A LOGIC "1" WHEN INPUT "A" IS OR HAS BEEN A LOGIC "1". OUPUT "C" WILL REMAIN A LOGIC "1" UNTIL INPUT "B" IS A LOGIC "1" AND INPUT "A" IS A LOGIC "0". (SET OVERRIDES RESET)
MAINTAINED MEMORY		OUTPUT "C" IS SET TO A LOGIC "1" WHEN INPUT "A" IS OR HAS BEEN A LOGIC "1" OUPUT "C" WILL REMAIN A LOGIC "1" UNTIL INPUT "B" IS A LOGIC "1" (RESET OVERRIDES SET)
LOGICAL NOT		OUTPUT "B" IS ALWAYS THE INVERTED STATE OF INPUT "A".
ON DELAY TIMER		 OUTPUT "B" IS A LOGIC "1" AFTER INPUT "A" HAS BEEN A LOGIC "1" GREATER THAN THE STATED TIME. OUTPUT "B" IS A LOGIC "0" WHEN INPUT "A" IS A LOGIC "0".
OFF DELAY TIMER		OUTPUT "B" IS A LOGIC "1" IMMEDIATELY WHEN "A" IS A LOGIC "1". OUTPUT "B" WILL RETURN TO A LOGIC "0" TO A LOGIC "0" AFTER THE STATED TIME.
PULSE TIMER		OUTPUT "B" IS A LOGIC "1" IMMEDIATELY WHEN "A" IS A LOGIC "1". WHEN INPUT "A" RETURNS TO LOGIC "0", OUTPUT "B" IS A LOGIC "1" FOR THE DURATION OF THE STATED TIME, AND INPUT "A" IS A LOGIC "1" THEN RETURNS TO A LOGIC "0".
ONE SHOT TIMER		OUTPUT "B" IS A LOGIC "1" IMMEDIATELY WHEN "A" IS A LOGIC "1". OUTPUT "B" RETURNS TO LOGIC "0" AFTER ONE SCAN OF THE APPLICATION.
QUALIFIED LOGICAL X OF Y COUNTER		COUNTER OUTPUT "D" IS A LOGIC "1" WHEN THE NUMBER OF INPUTS THAT ARE A LOGIC "1" SATISFIES THE CONDITION SHOWN.
		OUTPUT "C" IS A MATHEMATICAL AVERAGE BETWEEN INPUTS "A" AND "B"
		INTERNALLY GENERATED LOGIC SIGNAL (POINT) DIRECTED TO ANOTHER SHEET OF LOGIC. THE NUMBER INSIDE THE BOX REPRESENTS THE FIRST DESTINATION LINE NUMBER, ADDITIONAL DESTINATION LINE NUMBERS ARE SHOWN BELOW THE SYMBOL.
		INTERNALLY GENERATED LOGIC SIGNAL (POINT) DIRECTED TO THIS SHEET OF LOGIC. THE NUMBER INSIDE THE BOX REPRESENTS SOURCE SIGNAL LINE NUMBER.
		LOGIC SIGNAL TO A DATA HIGHWAY OR COMMUNICATION LINK AND THE ASSOCIATED ADDRESS (ADDR).
		LOGIC SIGNAL FROM A DATA HIGHWAY OR COMMUNICATION LINK AND THE ASSOCIATED ADDRESS (ADDR).
		INDICATES MEMORY BIT TRANSFER TO DCS AND/OR HMI
		HARDWIRED OUTPUT INCLUDING THE PLC ADDRESS (DO31) AND SCHEMATIC LINE NUMBER (705) WHERE THE CARD RESIDES.
		HARDWIRED INPUT INCLUDING THE PLC ADDRESS (DI42) AND SCHEMATIC LINE NUMBER (503) WHERE THE CARD RESIDES
		ANALOG SIGNALING
		DIGITAL SIGNALING

NOTES:
1. BURNER MANAGEMENT SYSTEM (BMS) IS DESIGNED AS FAIL SAFE, I.E. DE-ENERGIZED TO TRIP.
2. INPUT DEVICES AND LOGIC SEGMENTS ARE DEPICTED AS FOLLOWS:
   STATED CONDITION IS LOGIC VALUE 1
   NON-STATED CONDITION IS LOGIC VALUE 0
3. LOGIC FLOW WILL ALWAYS BE FROM LEFT TO RIGHT THROUGH ANY LOGIC GATE.
4. TYPICAL CROSS-REFERENCE EXAMPLE: =S/305
REFERENCES THE SCHEMATIC DIAGRAM SHEET 3, LINE 05.
=L REFERS TO THE LOGIC DIAGRAM.

ABBREVIATIONS:
BMS – BURNER MANAGEMENT SYSTEM
DB – DUCT BURNER
DCS – DISTRIBUTIVE CONTROL SYSTEM
F.O. – FIRST OUT (CAUSE OF TRIP)
FTC – FAILED TO CLOSE
FTO – FAILED TO OPEN
GT – GAS TURBINE
HMI – HUMAN-MACHINE INTERFACE (LOCATED AT BMS CABINET)
HRSG – HEAT RECOVERY STEAM GENERATOR
I/P – CURRENT PRESSURE TRANSDUCER
MFT – MASTER FUEL TRIP
MFTFO – MASTER FUEL TRIP FIRST OUT
PRESS – PRESSURE
SSO – SAFETY SHUTOFF
TEG – TURBINE EXHAUST GAS
TEMP – TEMPERATURE

MEC/KMEC
Duct Burner-BMS Logic Diagram

VOGT POWER INTERNATIONAL
V17494-BUXD-5006-03
25-May-2016

VOGT POWER INTERNATIONAL	
Released, Work May Proceed	
Bell, Milton	May-31-2016

MAY 18 2016

MIDDLETOWN PROJECT
MIDDLETOWN, OH
VPI PROJECT #: V17494
VPI PO #: V0009467

KINGS MOUNTAIN PROJECT
KINGS MOUNTAIN, NC
VPI PROJECT #: V17495
VPI PO #: V0009986

REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	CGS	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
LEGEND

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 1 OF 24	B	B10238-071-01	D

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PROJECT REFERENCE DOCUMENTS

DOC ID	DESCRIPTION	DRAWING NUMBER
1	BILL OF MATERIAL	B10238–000–01
2	FUEL SKID G.A.	B10238–030–01
3	BLOWER SKID G.A.	B10238–045–01
4	ELEMENT G.A.	B10238–020–01
5	P & ID	B10238–005–01
6	SCHEMATIC	B10238–070–01
7	CABINET	B10238–060–01
8	LOGIC	B10238–071–01
9	SEQUENCE	B10238–072–01
10	IO LIST	B10238–073–01
11	SYSTEM ARCHITECTURE	B10238–XXX–XX
12	BLOWER SKID JBOX	B10238–XXX–XX
13	BURNER FRONT JBOX	B10238–XXX–XX
14	HESI JBOX	402391–01
15	GRAPHICS SCREENS	B10238–074–01
16	FAT PROCEDURE	TBD–01
17		
18		
19		
20		
21		
22		
23		
24		
25		

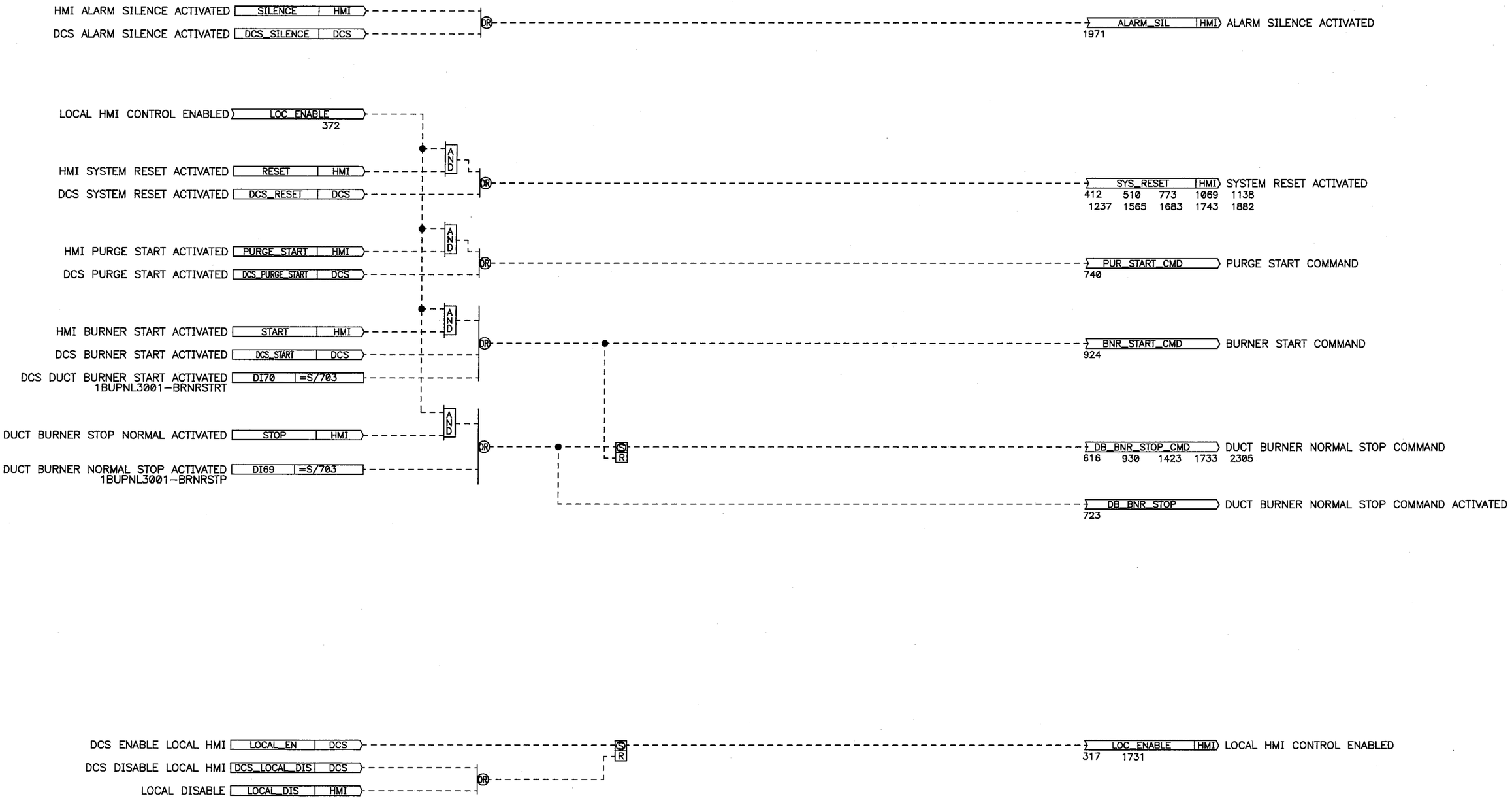
REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

SEE FORNEY CORPORATION STANDARD 348384–01 FOR TOLERANCES.
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
TABLE OF CONTENTS

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238–071–01	D
	SHT 2 OF 24			



REV	DATE	DR	ENG	RWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
OPERATOR INPUT COMMANDS

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 3 OF 24

NOTE: NO DUCT BURNER TRIP SIGNAL IS A COMPOSITE SIGNAL MADE UP OF THE FOLLOWING:

- HP Steam Pressure Not High High
- Reheat SH Outlet Steam Pressure Not High High
- HPSH Outlet Steam Pressure Not Bad Quality
- Hot Reheat Outlet Steam Pressure Not Bad Quality
- HPSH Steam Temperature Not High High
- Hot Reheat Outlet Steam Temperature Not High High
- Steam Turbine Not Tripped

△D

NAME: DFO_STD
DATAFILE: DFO_STD

MASTER FUEL TRIP FUNCTION BLOCK

SYSTEM RESET ACTIVATED } SYS_RESET 323 → RESET

MASTER FUEL TRIP } MFT 573 → TRIPCOND → NOT

DUCT BURNER TRIP SIGNAL FROM DCS } DB_TRIP 2129 → AND → MFT01 → IN1

DUCT BURNER IN SERVICE } DB_IN_SERVICE 1613 → AND

DRUM LEVEL LOW LOW } DLLL 2136 → AND → MFT02 → IN2

STEAM OUTLET TEMPERATURE HIGH HIGH } SOTHH 2143 → AND → MFT03 → IN3

GT LOAD < 90% } GT_LOAD 2150 → AND → MFT04 → IN4

HP, IP & LP DRUM PRESSURE HIGH HIGH } DPHH 2157 → AND → MFT05 → IN5

△D DUCT BURNER FAILED TO LIGHT PULSE } DB_FAIL_LO 1509 → AND → MFT06 → IN6

STACK DAMPER NOT OPEN } SDNOP 2171 → AND → MFT07 → IN7

INSTRUMENT AIR PRESSURE LOW LOW } IA_LL 2243 → AND → ON-DELAY TM08 5 SEC → MFT08 → IN8

MAIN GAS SUPPLY PRESSURE LOW LOW } MGS_LL 2229 → AND → ON-DELAY TM09 3 SEC → MFT09 → IN9

MAIN GAS HEADER PRESSURE HIGH HIGH } MGH_HH 2236 → AND → ON-DELAY TM10 3 SEC → MFT10 → IN10

ANY ADJACENT ELEMENTS NOT IN SERVICE } ANY_ADJ_OFF 1827 → AND → ON-DELAY TM11 1 SEC → MFT11 → IN11

SCANNER COOLING AIR PRESSURE LOW LOW } SA_LL 2250 → AND → ON-DELAY TM12 2 MIN → MFT12 → IN12

AND → SR → FOL1 → MFTFO_01 HMI } MFTFO – DB TRIP SIGNAL FROM DCS

AND → SR → FOL2 → MFTFO_02 HMI } MFTFO – DRUM LEVEL LOW LOW

AND → SR → FOL3 → MFTFO_03 HMI } MFTFO – STEAM OUTLET TEMP HIGH HIGH

AND → SR → FOL4 → MFTFO_04 HMI } MFTFO – GT LOAD < 90%

AND → SR → FOL5 → MFTFO_05 HMI } MFTFO – HP, IP & LP DRUM PRESS HIGH HIGH

AND → SR → FOL6 → MFTFO_06 HMI } MFTFO – DUCT BURNER FAILED TO LIGHT △D

AND → SR → FOL7 → MFTFO_07 HMI } MFTFO – STACK DAMPER NOT OPEN

AND → SR → FOL8 → MFTFO_08 HMI } MFTFO – INSTRUMENT AIR PRESS LOW LOW

AND → SR → FOL9 → MFTFO_09 HMI } MFTFO – MAIN GAS SUPPLY PRESS LOW LOW

AND → SR → FOL10 → MFTFO_10 HMI } MFTFO – MAIN GAS HEADER PRESS HIGH HIGH

AND → SR → FOL11 → MFTFO_11 HMI } MFTFO – LOSS OF ADJACENT ELEMENTS

AND → SR → FOL12 → MFTFO_12 HMI } MFTFO – SCANNER AIR PRESS LOW LOW

OR → PMFT → MFT_PARTIAL 572 } MASTER FUEL TRIP CONDITION PRESENT PARTIAL

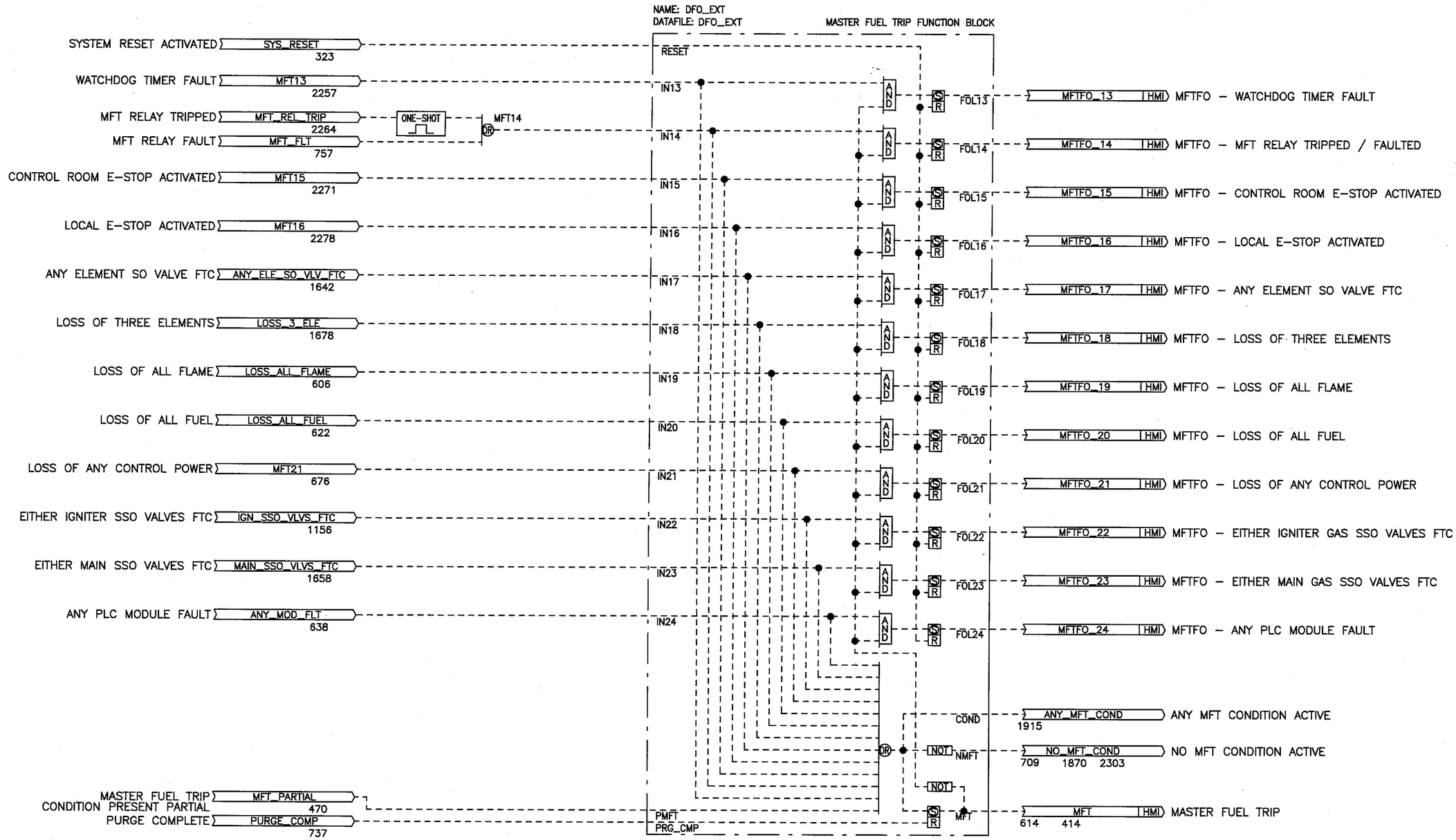
REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MASTER FUEL TRIPS – 1

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 4 OF 24	B	B10238-071-01	D



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

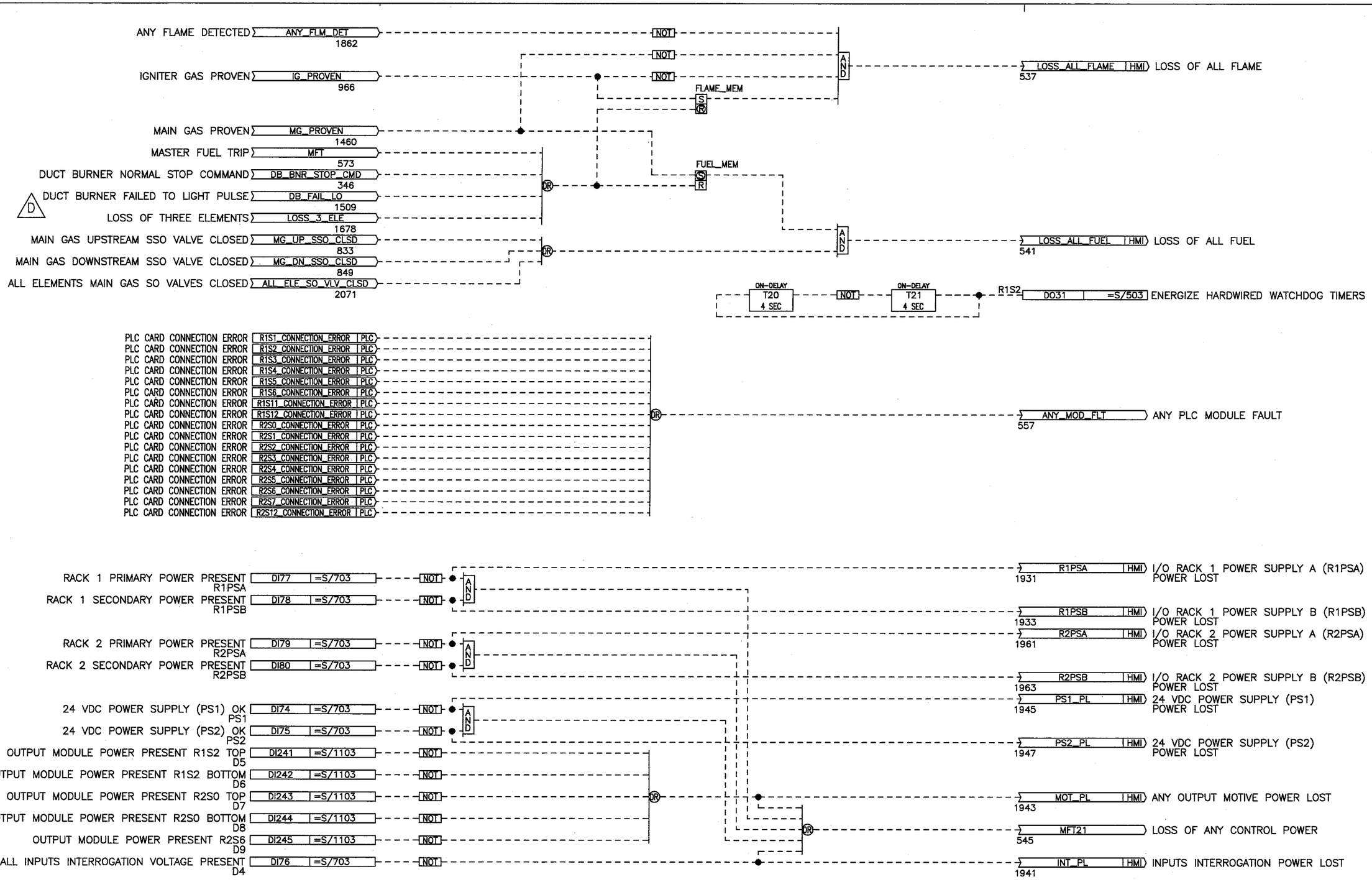
SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MASTER FUEL TRIPS – 2

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 5 OF 24



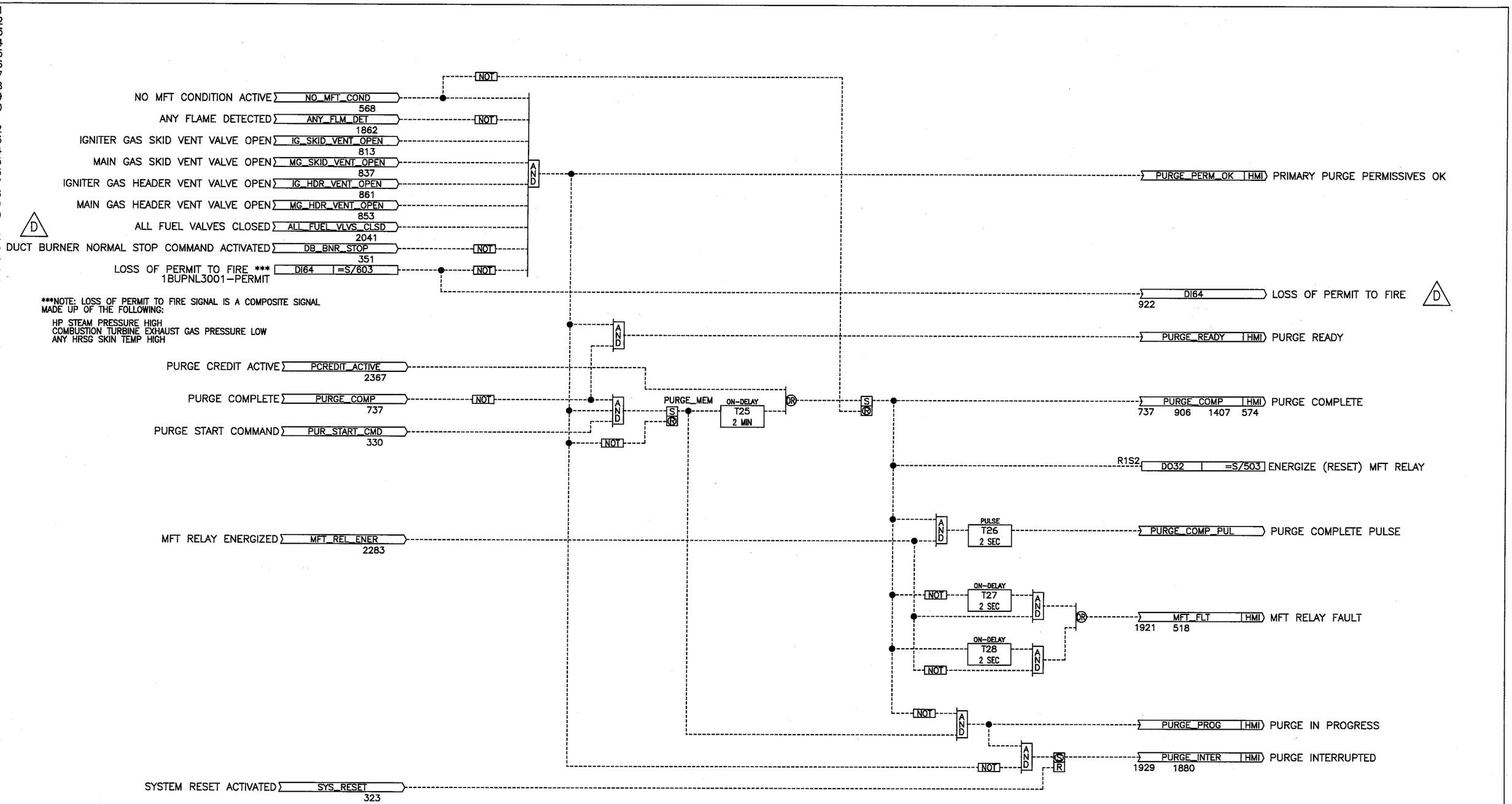
REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MASTER FUEL TRIPS – 3

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 6 OF 24	B	B10238-071-01	D



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
PURGE

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 7 OF 24	B	B10238-071-01	D

IGNITER GAS UPSTREAM SSO VALVE OPEN 1BU-ZS03313	DI50	=S/603	IG_UP_SSO_OPEN 967 1029	IGNITER GAS UPSTREAM SSO VALVE OPEN
IGNITER GAS UPSTREAM SSO VALVE CLOSED 1BU-ZSC3313	DI51	=S/603	IG_UP_SSO_CLSD 1045 2044	IGNITER GAS UPSTREAM SSO VALVE CLOSED
IGNITER GAS SKID VENT VALVE OPEN 1BU-ZS03602	DI52	=S/603	IG_SKID_VENT_OPEN 1049 713 2316	IGNITER GAS SKID VENT VALVE OPEN
IGNITER GAS SKID VENT VALVE CLOSED 1BU-ZSC3602	DI53	=S/603	IG_SKID_VENT_CLSD 969 1033	IGNITER GAS SKID VENT VALVE CLOSED
IGNITER GAS DOWNSTREAM SSO VALVE OPEN 1BU-ZS03314	DI54	=S/603	IG_DN_SSO_OPEN 971 1037	IGNITER GAS DOWNSTREAM SSO VALVE OPEN
IGNITER GAS DOWNSTREAM SSO VALVE CLOSED 1BU-ZSC3314	DI55	=S/603	IG_DN_SSO_CLSD 1053 2046	IGNITER GAS DOWNSTREAM SSO VALVE CLOSED
MAIN GAS UPSTREAM SSO VALVE OPEN 1BU-ZS03301	DI56	=S/603	MG_UP_SSO_OPEN 1461 1525	MAIN GAS UPSTREAM SSO VALVE OPEN
MAIN GAS UPSTREAM SSO VALVE CLOSED 1BU-ZSC3301	DI57	=S/603	MG_UP_SSO_CLSD 622 2048 1541	MAIN GAS UPSTREAM SSO VALVE CLOSED
MAIN GAS SKID VENT VALVE OPEN 1BU-ZS03601	DI58	=S/603	MG_SKID_VENT_OPEN 1545 715 2311	MAIN GAS SKID VENT VALVE OPEN
MAIN GAS SKID VENT VALVE CLOSED 1BU-ZSC3601	DI59	=S/603	MG_SKID_VENT_CLSD 1529 1463	MAIN GAS SKID VENT VALVE CLOSED
MAIN GAS DOWNSTREAM SSO VALVE OPEN 1BU-ZS03302	DI60	=S/603	MG_DN_SSO_OPEN 1465 1533	MAIN GAS DOWNSTREAM SSO VALVE OPEN
MAIN GAS DOWNSTREAM SSO VALVE CLOSED 1BU-ZSC3302	DI61	=S/603	MG_DN_SSO_CLSD 624 2050 1549	MAIN GAS DOWNSTREAM SSO VALVE CLOSED
MAIN GAS HEADER VENT VALVE OPEN 1BU-ZSO3651	DI65	=S/703	MG_HDR_VENT_OPEN 719 2313 1553	MAIN GAS HEADER VENT VALVE OPEN
MAIN GAS HEADER VENT VALVE CLOSED 1BU-ZSC3651	DI66	=S/703	MG_HDR_VENT_CLSD 1467 1537	MAIN GAS HEADER VENT VALVE CLOSED
IGNITER GAS HEADER VENT VALVE OPEN 1BU-ZSO3661	DI67	=S/703	IG_HDR_VENT_OPEN 1057 717 2319	IGNITER GAS HEADER VENT VALVE OPEN
IGNITER GAS HEADER VENT VALVE CLOSED 1BU-ZSC3661	DI68	=S/703	IG_HDR_VENT_CLSD 973 1041	IGNITER GAS HEADER VENT VALVE CLOSED
Z-PURGE PRESSURE NOT LOW 1IA-PSL3521	DI71	=S/703	NOT	DO27 =S/503 Z-PURGE MALFUNCTION
				ZPPL HMI 1935 Z-PURGE PRESSURE LOW
PANEL TEMPERATURE NOT HIGH PTS	DI72	=S/703	NOT	PTH HMI PANEL TEMP HIGH
				DO168 =S/903 PANEL TEMP INCORRECT
				OR PT_ALM 1951 PANEL TEMP INCORRECT ALARM
PANEL TEMPERATURE NOT LOW PTS	DI62	=S/603	NOT	PTC HMI PANEL TEMP LOW
HESI POWER PRESENT HPP1 & HPP2	DI73	=S/703	NOT	HESI_PL HMI 910 1937 HESI POWER LOST

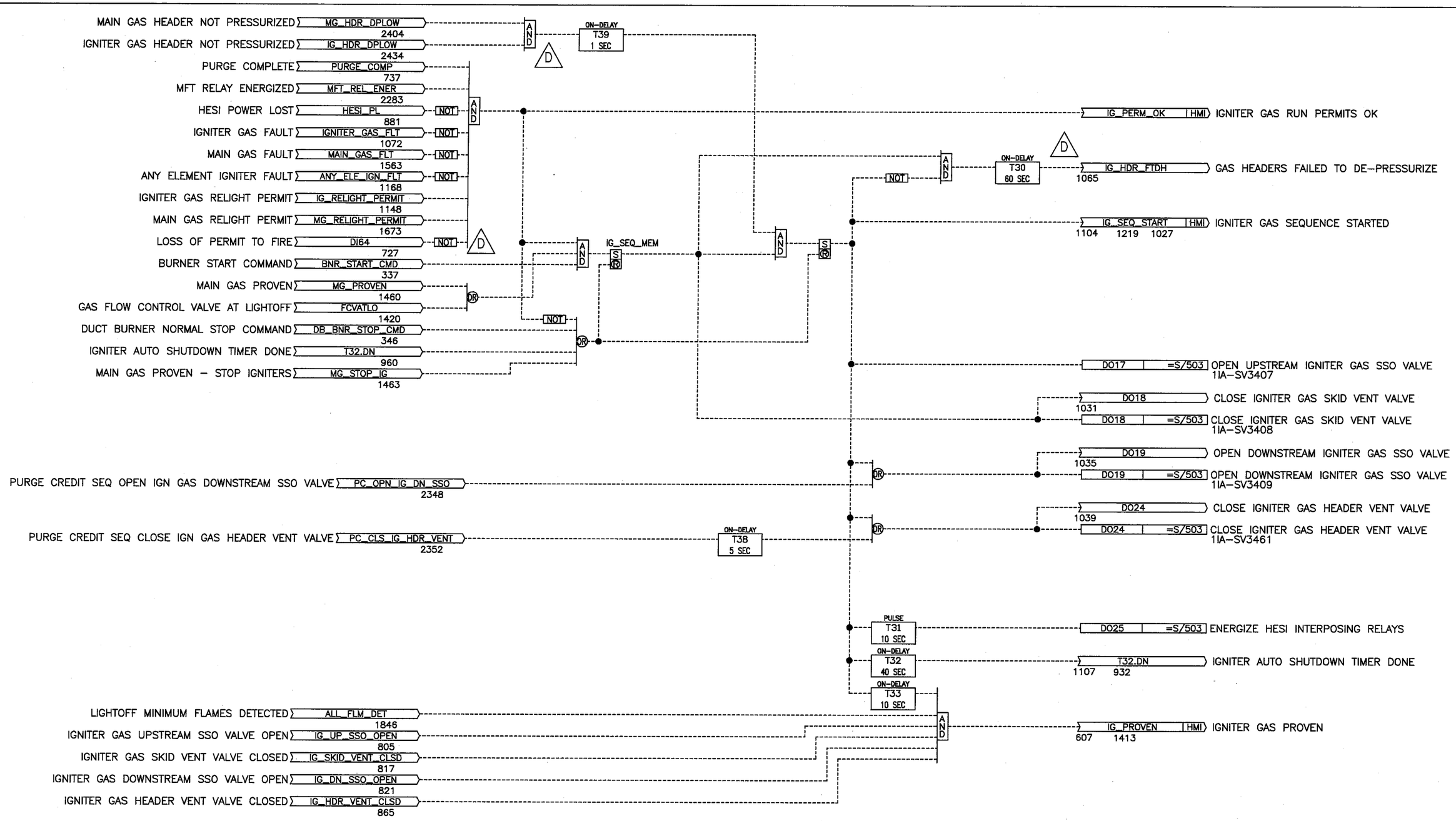
REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
COMMON DIGITAL INPUTS

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 8 OF 24	B	B10238-071-01	D



REV	DATE	DR	ENG	RWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

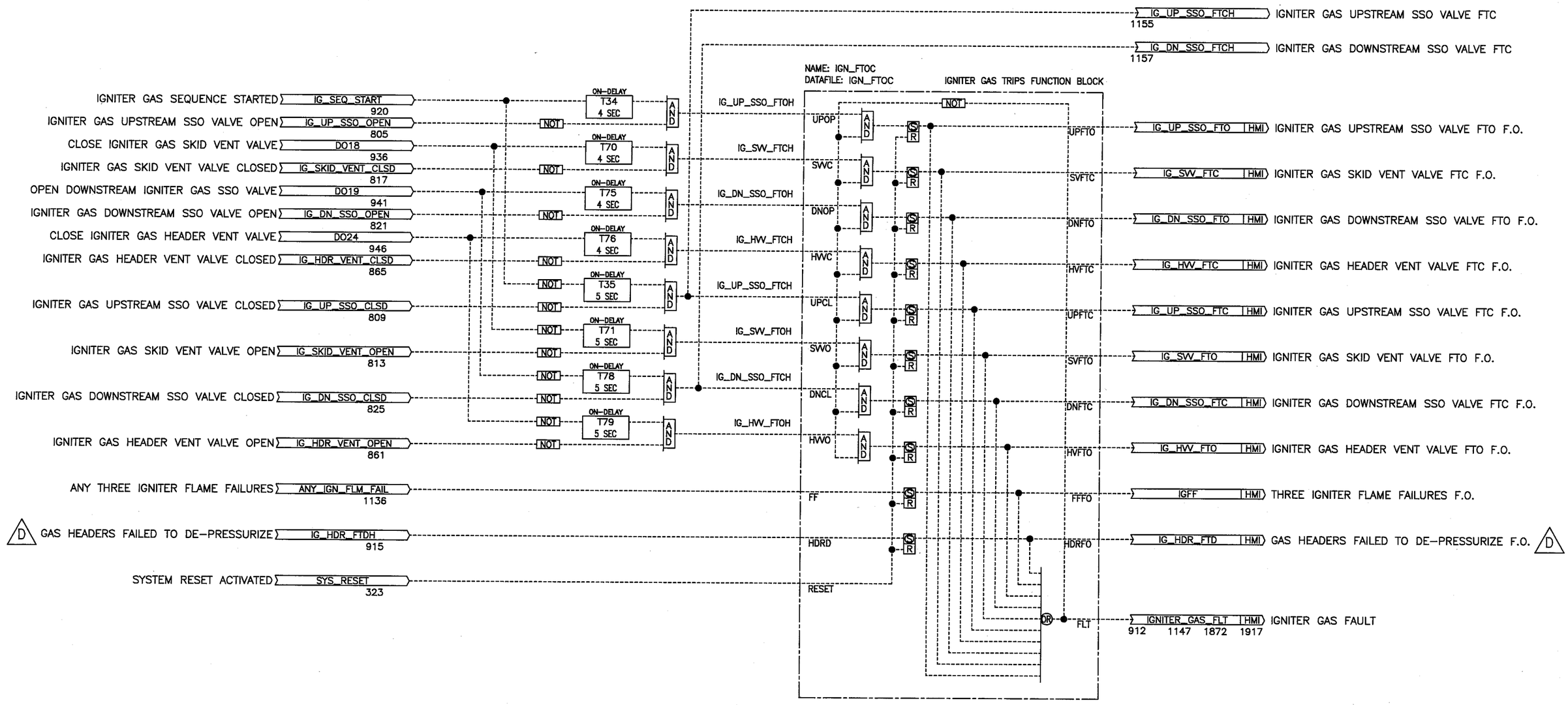
SEE FORNEY CORPORATION STANDARD 348384–01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
IGNITER GAS – 1

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238–071–01	D

SHT 9 OF 24



REV	DATE	DR	ENG	RWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

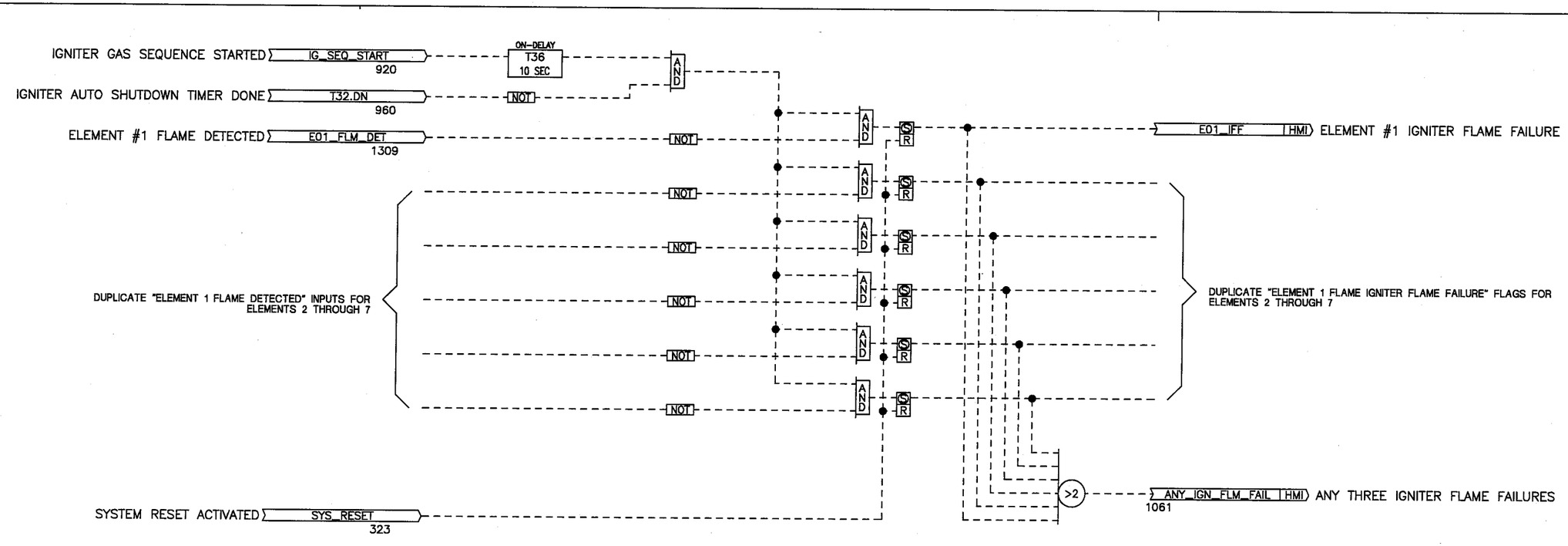
SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

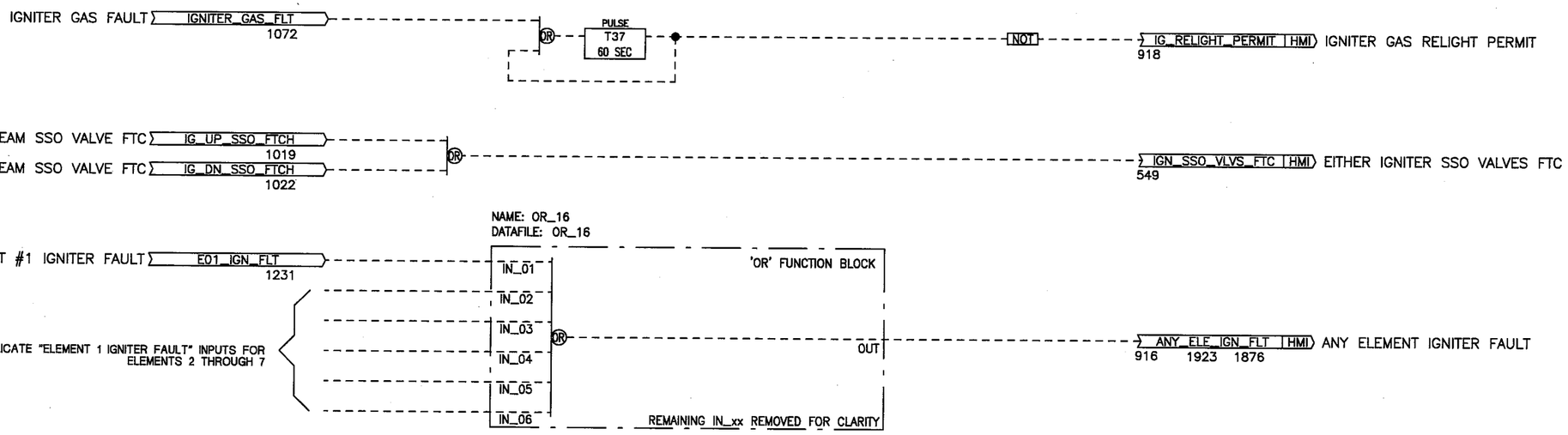
TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
IGNITER GAS - 2

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 10 OF 24





REV	DATE	DR	ENG	RWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

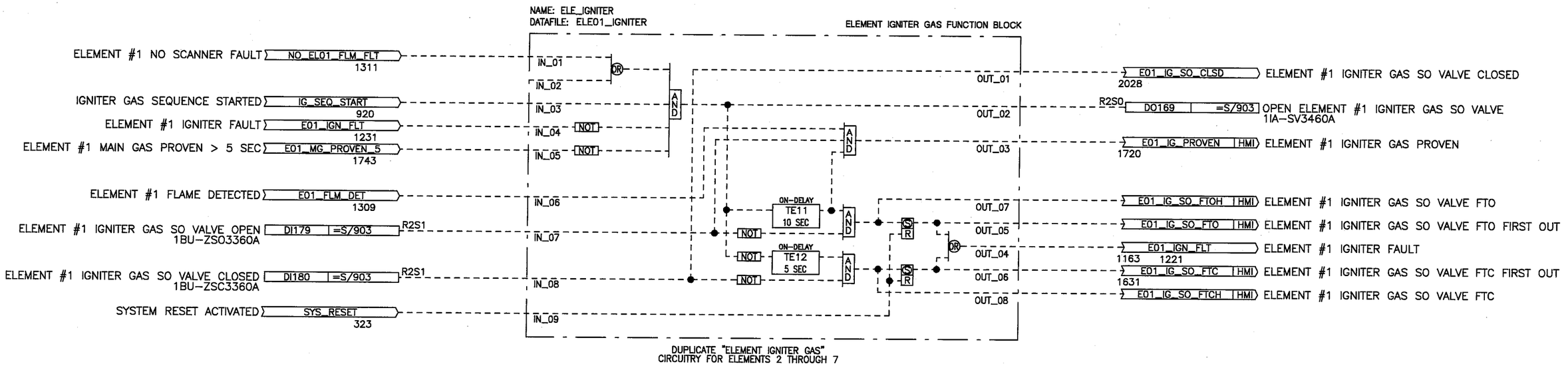
SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
IGNITER FLAME FAILURE

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 11 OF 24



THE CHART IS THE REPRESENTATION OF ALL THE INPUTS/OUTPUTS/INTERNAL TIMERS REQUIRED FOR EACH ELEMENT. IN_XX IS NOTED AS THE INPUT REQUIRED FOR THE FUNCTION BLOCK, OUT_XX IS NOTED AS THE OUTPUT OF THE FUNCTION BLOCK. USE BMS I/O LIST (B10238-073-01) AS A REFERENCE

POINT NAME	FUNCTION TEXT	EMNT 1	EMNT 2	EMNT 3	EMNT 4	EMNT 5	EMNT 6	EMNT 7
IN_01	ELEMENT #_ NO FLAME SCANNER FAULT	NO_EL01_FLM_FLT	NO_EL02_FLM_FLT	NO_EL03_FLM_FLT	NO_EL04_FLM_FLT	NO_EL05_FLM_FLT	NO_EL06_FLM_FLT	NO_EL07_FLM_FLT
IN_02								
IN_03	IGNITER GAS SEQUENCE STARTED	IG_SEQ_START	IG_SEQ_START	IG_SEQ_START	IG_SEQ_START	IG_SEQ_START	IG_SEQ_START	IG_SEQ_START
IN_04	ELEMENT #_ IGNITER FAULT	E01_IGN_FLT	E02_IGN_FLT	E03_IGN_FLT	E04_IGN_FLT	E05_IGN_FLT	E06_IGN_FLT	E07_IGN_FLT
IN_05	ELEMENT #_ MAIN GAS PROVEN > 5 SEC	E01_MG_PROVEN_5	E02_MG_PROVEN_5	E03_MG_PROVEN_5	E04_MG_PROVEN_5	E05_MG_PROVEN_5	E06_MG_PROVEN_5	E07_MG_PROVEN_5
IN_06	ELEMENT #_ FLAME DETECTED	E01_FLM_DET	E02_FLM_DET	E03_FLM_DET	E04_FLM_DET	E05_FLM_DET	E06_FLM_DET	E07_FLM_DET
IN_07	ELEMENT #_ IGNITER GAS SO VALVE OPEN	DI179	DI187	DI195	DI203	DI211	DI219	DI227
IN_08	ELEMENT #_ IGNITER GAS SO VALVE CLOSED	DI180	DI188	DI196	DI204	DI212	DI220	DI228
IN_09	SYSTEM RESET	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET
OUT_01	ELEMENT #_ IGNITER GAS SO VALVE CLOSED	E01_IG_SO_CLSD	E02_IG_SO_CLSD	E03_IG_SO_CLSD	E04_IG_SO_CLSD	E05_IG_SO_CLSD	E06_IG_SO_CLSD	E07_IG_SO_CLSD
OUT_02	OPEN ELEMENT #_ IGNITER GAS SO VALVE	DO169	DO170	DO171	DO172	DO173	DO174	DO175
OUT_03	ELEMENT #_ IGNITER GAS PROVEN	E01_IG_PROVEN	E02_IG_PROVEN	E03_IG_PROVEN	E04_IG_PROVEN	E05_IG_PROVEN	E06_IG_PROVEN	E07_IG_PROVEN
OUT_04	ELEMENT #_ IGNITER FAULT	E01_IGN_FLT	E02_IGN_FLT	E03_IGN_FLT	E04_IGN_FLT	E05_IGN_FLT	E06_IGN_FLT	E07_IGN_FLT
OUT_05	ELEMENT #_ IGNITER GAS SO VALVE FTO FIRST OUT	E01_IG_SO_FTO	E02_IG_SO_FTO	E03_IG_SO_FTO	E04_IG_SO_FTO	E05_IG_SO_FTO	E06_IG_SO_FTO	E07_IG_SO_FTO
OUT_06	ELEMENT #_ IGNITER GAS SO VALVE FTC FIRST OUT	E01_IG_SO_FTC	E02_IG_SO_FTC	E03_IG_SO_FTC	E04_IG_SO_FTC	E05_IG_SO_FTC	E06_IG_SO_FTC	E07_IG_SO_FTC
OUT_07	ELEMENT #_ IGNITER GAS SO VALVE FTO	E01_IG_SO_FTOH	E02_IG_SO_FTOH	E03_IG_SO_FTOH	E04_IG_SO_FTOH	E05_IG_SO_FTOH	E06_IG_SO_FTOH	E07_IG_SO_FTOH
OUT_08	ELEMENT #_ IGNITER GAS SO VALVE FTC	E01_IG_SO_FTCH	E02_IG_SO_FTCH	E03_IG_SO_FTCH	E04_IG_SO_FTCH	E05_IG_SO_FTCH	E06_IG_SO_FTCH	E07_IG_SO_FTCH

REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
ELEMENT 1 IGNITER GAS - 1

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 12 OF 24

ELEMENT #1 FLAME DETECTED 1BU-SCN3585A_FD — DI181 =S/903 — E01_FLM_DET (1110 1227 1841 1739) — ELEMENT #1 FLAME DETECTED

ELEMENT #1 SCANNER FAULT DETECTED 1BU-SCN3585A_CF — DI182 =S/903 — NOT — NO_EL01_FLM_FLT (1215 1707) — ELEMENT #1 NO SCANNER FAULT

NOT — E01_SCNR_FLT (1804) — ELEMENT #1 FLAME SCANNER FAULT ALARM

ELEMENT #2 FLAME DETECTED 1BU-SCN3585B_FD — DI189 =S/903 — E02_FLM_DET — ELEMENT #2 FLAME DETECTED

ELEMENT #2 SCANNER FAULT DETECTED 1BU-SCN3585B_CF — DI190 =S/903 — NOT — NO_EL02_FLM_FLT — ELEMENT #2 NO SCANNER FAULT

NOT — E02_SCNR_FLT — ELEMENT #2 FLAME SCANNER FAULT ALARM

ELEMENT #3 FLAME DETECTED 1BU-SCN3585C_FD — DI197 =S/1003 — E03_FLM_DET — ELEMENT #3 FLAME DETECTED

ELEMENT #3 SCANNER FAULT DETECTED 1BU-SCN3585C_CF — DI198 =S/1003 — NOT — NO_EL03_FLM_FLT — ELEMENT #3 NO SCANNER FAULT

NOT — E03_SCNR_FLT — ELEMENT #3 FLAME SCANNER FAULT ALARM

ELEMENT #4 FLAME DETECTED 1BU-SCN3585D_FD — DI205 =S/1003 — E04_FLM_DET — ELEMENT #4 FLAME DETECTED

ELEMENT #4 SCANNER FAULT DETECTED 1BU-SCN3585D_CF — DI206 =S/1003 — NOT — NO_EL04_FLM_FLT — ELEMENT #4 NO SCANNER FAULT

NOT — E04_SCNR_FLT — ELEMENT #4 FLAME SCANNER FAULT ALARM

ELEMENT #5 FLAME DETECTED 1BU-SCN3585E_FD — DI213 =S/1003 — E05_FLM_DET — ELEMENT #5 FLAME DETECTED

ELEMENT #5 SCANNER FAULT DETECTED 1BU-SCN3585E_CF — DI214 =S/1003 — NOT — NO_EL05_FLM_FLT — ELEMENT #5 NO SCANNER FAULT

NOT — E05_SCNR_FLT — ELEMENT #5 FLAME SCANNER FAULT ALARM

ELEMENT #6 FLAME DETECTED 1BU-SCN3585F_FD — DI221 =S/1003 — E06_FLM_DET — ELEMENT #6 FLAME DETECTED

ELEMENT #6 SCANNER FAULT DETECTED 1BU-SCN3585F_CF — DI222 =S/1003 — NOT — NO_EL06_FLM_FLT — ELEMENT #6 NO SCANNER FAULT

NOT — E06_SCNR_FLT — ELEMENT #6 FLAME SCANNER FAULT ALARM

ELEMENT #7 FLAME DETECTED 1BU-SCN3585G_FD — DI229 =S/1103 — E07_FLM_DET — ELEMENT #7 FLAME DETECTED

ELEMENT #7 SCANNER FAULT DETECTED 1BU-SCN3585G_CF — DI230 =S/1103 — NOT — NO_EL07_FLM_FLT — ELEMENT #7 NO SCANNER FAULT

NOT — E07_SCNR_FLT — ELEMENT #7 FLAME SCANNER FAULT ALARM

REV	DATE	DR	ENG	RVWD	DESCRIPTION
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A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

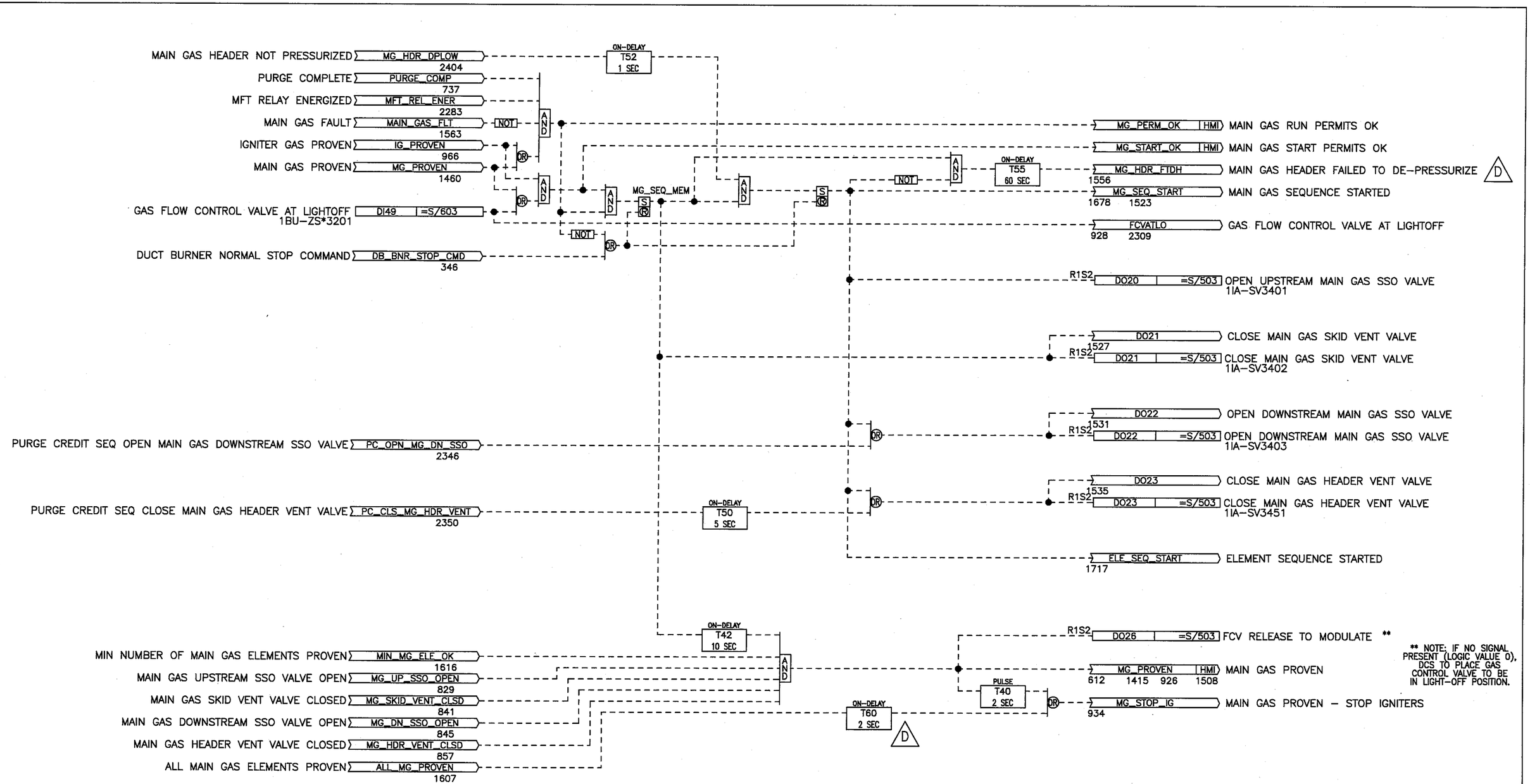
SEE FORNEY CORPORATION STANDARD 348384-01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
ELEMENT 1 IGNITER GAS – 2

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 13 OF 24



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
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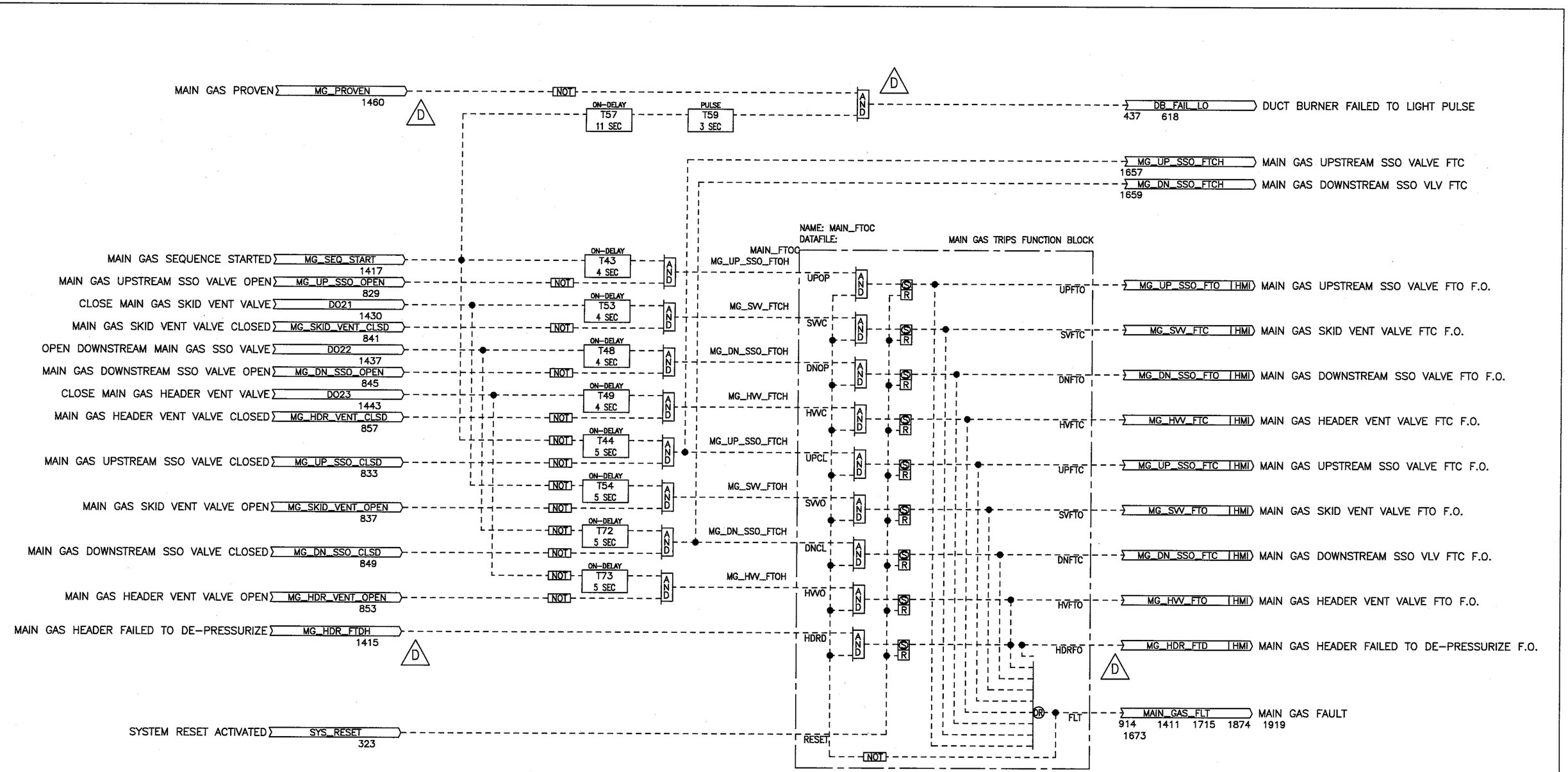
TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MAIN GAS - 1

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 14 OF 24



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

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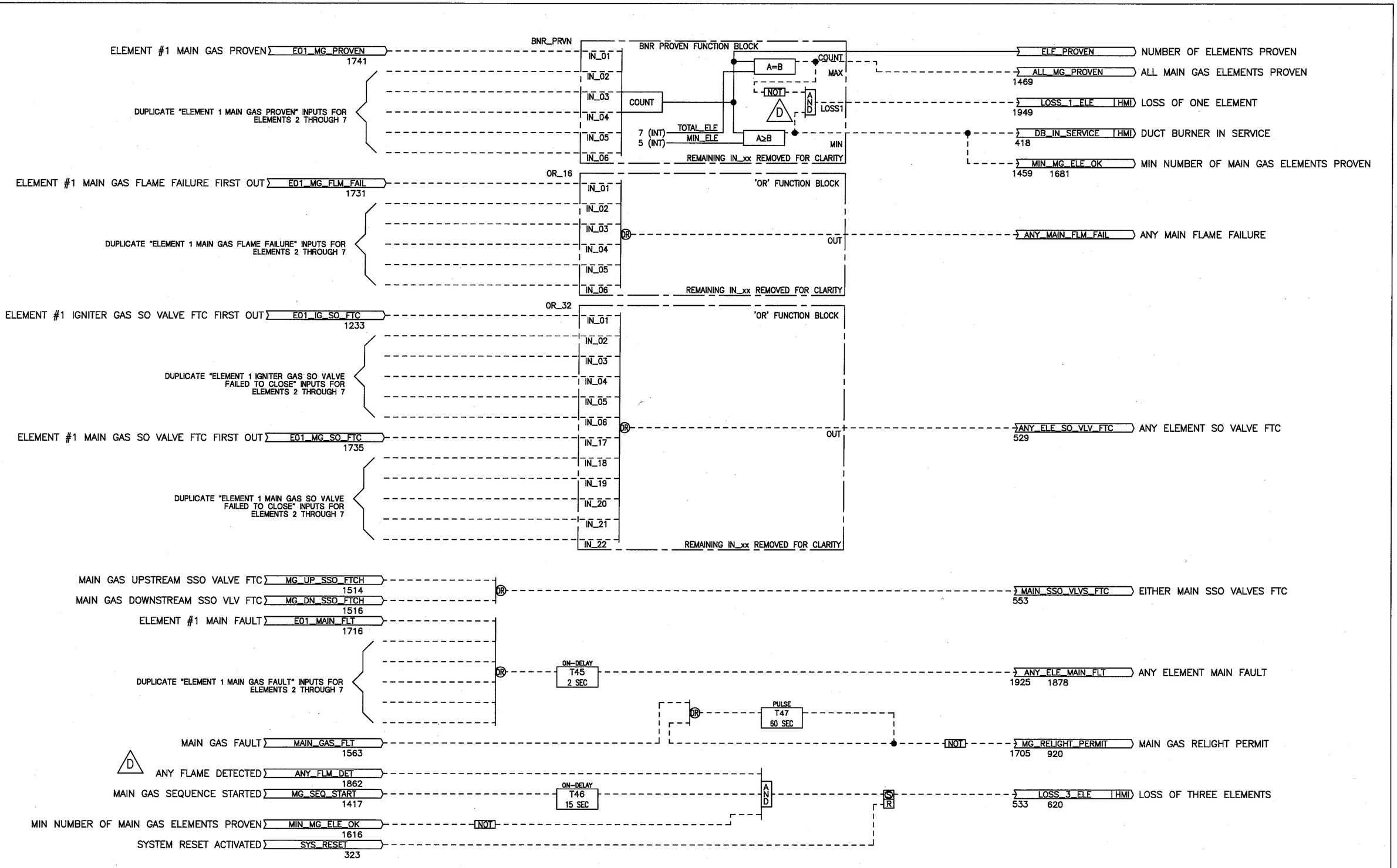
TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MAIN GAS - 2

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 15 OF 24



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

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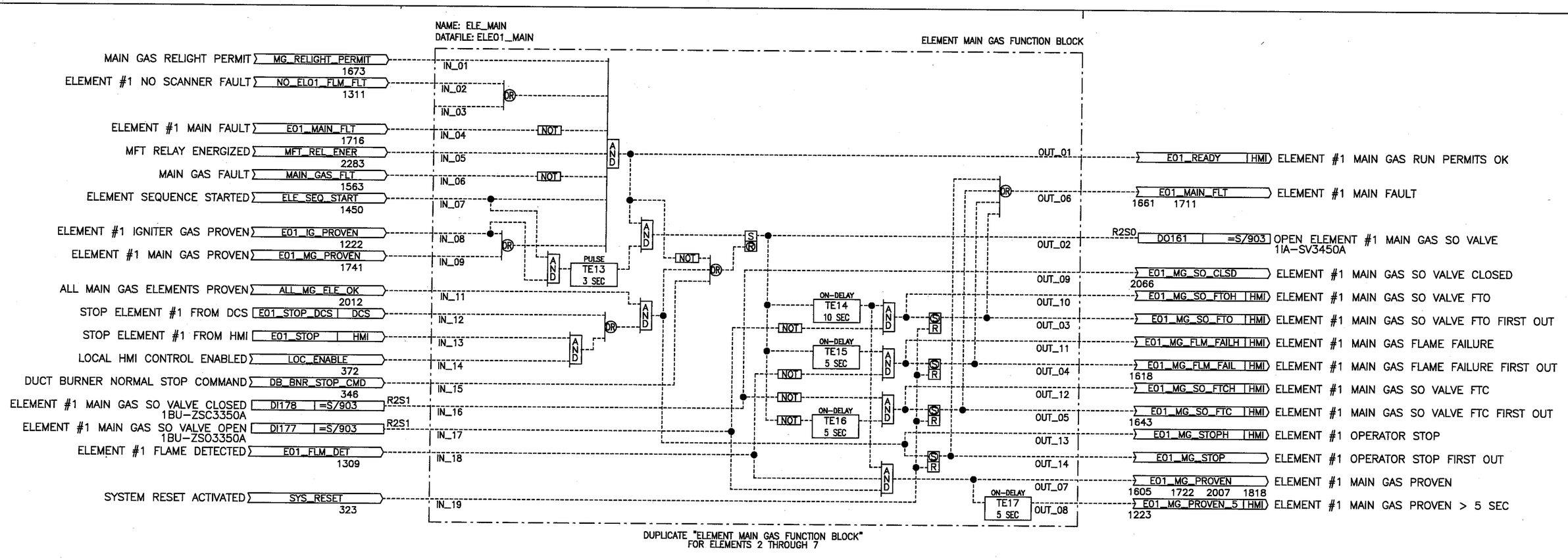
TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MAIN GAS – 3

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 16 OF 24



THE CHART IS THE REPRESENTATION OF ALL THE INPUTS/OUTPUTS/INTERNAL TIMERS REQUIRED FOR EACH ELEMENT.

IN_XX IS NOTED AS THE INPUT REQUIRED FOR THE FUNCTION BLOCK,

OUT_XX IS NOTED AS THE OUTPUT OF THE FUNCTION BLOCK.

USE BMS I/O LIST (B10238-073-01) AS A REFERENCE

POINT NAME	FUNCTION TEXT	EMNT 1	EMNT 2	EMNT 3	EMNT 4	EMNT 5	EMNT 6	EMNT 7
IN_01	MAIN GAS RELIGHT PERMIT	MG_RELIGHT_PERMIT	MG_RELIGHT_PERMIT	MG_RELIGHT_PERMIT	MG_RELIGHT_PERMIT	MG_RELIGHT_PERMIT	MG_RELIGHT_PERMIT	MG_RELIGHT_PERMIT
IN_02	ELEMENT #_ NO FLAME SCANNER FAULT	NO_EL01_FLM_FLT	NO_EL02_FLM_FLT	NO_EL03_FLM_FLT	NO_EL04_FLM_FLT	NO_EL05_FLM_FLT	NO_EL06_FLM_FLT	NO_EL07_FLM_FLT
IN_03								
IN_04	ELEMENT #_ MAIN FAULT	E01_MAIN_FLT	E02_MAIN_FLT	E03_MAIN_FLT	E04_MAIN_FLT	E05_MAIN_FLT	E06_MAIN_FLT	E07_MAIN_FLT
IN_05	MFT RELAY ENERGIZED	MFT_REL_ENER	MFT_REL_ENER	MFT_REL_ENER	MFT_REL_ENER	MFT_REL_ENER	MFT_REL_ENER	MFT_REL_ENER
IN_06	MAIN GAS FAULT	MAIN_GAS_FLT	MAIN_GAS_FLT	MAIN_GAS_FLT	MAIN_GAS_FLT	MAIN_GAS_FLT	MAIN_GAS_FLT	MAIN_GAS_FLT
IN_07	ELEMENT SEQUENCE STARTED	ELE_SEQ_START	ELE_SEQ_START	ELE_SEQ_START	ELE_SEQ_START	ELE_SEQ_START	ELE_SEQ_START	ELE_SEQ_START
IN_08	ELEMENT #_ IGNITER GAS PROVEN	E01_IG_PROVEN	E02_IG_PROVEN	E03_IG_PROVEN	E04_IG_PROVEN	E05_IG_PROVEN	E06_IG_PROVEN	E07_IG_PROVEN
IN_09	ELEMENT #_ MAIN GAS PROVEN	E01_MG_PROVEN	E02_MG_PROVEN	E03_MG_PROVEN	E04_MG_PROVEN	E05_MG_PROVEN	E06_MG_PROVEN	E07_MG_PROVEN
IN_10								
IN_11	ALL MAIN GAS ELEMENTS PROVEN	ALL_MG_ELE_OK	ALL_MG_ELE_OK	ALL_MG_ELE_OK	ALL_MG_ELE_OK	ALL_MG_ELE_OK	ALL_MG_ELE_OK	ALL_MG_ELE_OK
IN_12	STOP ELEMENT #_ FROM DCS	E01_STOP_DCS	E02_STOP_DCS	E03_STOP_DCS	E04_STOP_DCS	E05_STOP_DCS	E06_STOP_DCS	E07_STOP_DCS
IN_13	STOP ELEMENT #_ FROM HMI	E01_STOP	E02_STOP	E03_STOP	E04_STOP	E05_STOP	E06_STOP	E07_STOP
IN_14	LOCAL ENABLED	LOC_ENABLE	LOC_ENABLE	LOC_ENABLE	LOC_ENABLE	LOC_ENABLE	LOC_ENABLE	LOC_ENABLE
IN_15	DUCT BURNER STOP COMMAND	DB_BNR_STOP_CMD	DB_BNR_STOP_CMD	DB_BNR_STOP_CMD	DB_BNR_STOP_CMD	DB_BNR_STOP_CMD	DB_BNR_STOP_CMD	DB_BNR_STOP_CMD
IN_16	ELEMENT #_ MAIN GAS SO VALVE CLOSED	DI178	DI186	DI194	DI202	DI210	DI218	DI226
IN_17	ELEMENT #_ MAIN GAS SO VALVE OPEN	DI177	DI185	DI193	DI201	DI209	DI217	DI225
IN_18	ELEMENT #_ FLAME DETECTED	E01_FLM_DET	E02_FLM_DET	E03_FLM_DET	E04_FLM_DET	E05_FLM_DET	E06_FLM_DET	E07_FLM_DET
IN_19	SYSTEM RESET ACTIVATED	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET	SYS_RESET
OUT_01	ELEMENT #_ MAIN GAS RUN PERMITS OK	E01_READY	E02_READY	E03_READY	E04_READY	E05_READY	E06_READY	E07_READY
OUT_02	OPEN ELEMENT _ MAIN GAS SO VALVE	DO161	DO162	DO163	DO164	DO165	DO166	DO167
OUT_03	ELEMENT #_ MAIN GAS SO VALVE FTO FIRST OUT	E01_MG_SO_FTO	E02_MG_SO_FTO	E03_MG_SO_FTO	E04_MG_SO_FTO	E05_MG_SO_FTO	E06_MG_SO_FTO	E07_MG_SO_FTO
OUT_04	ELEMENT #_ MAIN GAS FLAME FAILURE FIRST OUT	E01_MG_FLM_FAIL	E02_MG_FLM_FAIL	E03_MG_FLM_FAIL	E04_MG_FLM_FAIL	E05_MG_FLM_FAIL	E06_MG_FLM_FAIL	E07_MG_FLM_FAIL
OUT_05	ELEMENT #_ MAIN GAS SO VALVE FTC FIRST OUT	E01_MG_SO_FTC	E02_MG_SO_FTC	E03_MG_SO_FTC	E04_MG_SO_FTC	E05_MG_SO_FTC	E06_MG_SO_FTC	E07_MG_SO_FTC
OUT_06	ELEMENT #_ MAIN FAULT	E01_MAIN_FLT	E02_MAIN_FLT	E03_MAIN_FLT	E04_MAIN_FLT	E05_MAIN_FLT	E06_MAIN_FLT	E07_MAIN_FLT
OUT_07	ELEMENT #_ MAIN GAS PROVEN	E01_MG_PROVEN	E02_MG_PROVEN	E03_MG_PROVEN	E04_MG_PROVEN	E05_MG_PROVEN	E06_MG_PROVEN	E07_MG_PROVEN
OUT_08	ELEMENT #_ MAIN GAS PROVEN > 5 SEC	E01_MG_PROVEN_5	E02_MG_PROVEN_5	E03_MG_PROVEN_5	E04_MG_PROVEN_5	E05_MG_PROVEN_5	E06_MG_PROVEN_5	E07_MG_PROVEN_5
OUT_09	ELEMENT #_ MAIN GAS SO VALVE CLOSED	E01_MG_SO_CLSD	E02_MG_SO_CLSD	E03_MG_SO_CLSD	E04_MG_SO_CLSD	E05_MG_SO_CLSD	E06_MG_SO_CLSD	E07_MG_SO_CLSD
OUT_10	ELEMENT #_ MAIN GAS SO VALVE FTO	E01_MG_SO_FTOH	E02_MG_SO_FTOH	E03_MG_SO_FTOH	E04_MG_SO_FTOH	E05_MG_SO_FTOH	E06_MG_SO_FTOH	E07_MG_SO_FTOH
OUT_11	ELEMENT #_ MAIN GAS FLAME FAILURE	E01_MG_FLM_FAILH	E02_MG_FLM_FAILH	E03_MG_FLM_FAILH	E04_MG_FLM_FAILH	E05_MG_FLM_FAILH	E06_MG_FLM_FAILH	E07_MG_FLM_FAILH
OUT_12	ELEMENT #_ MAIN GAS SO VALVE FTC	E01_MG_SO_FTCH	E02_MG_SO_FTCH	E03_MG_SO_FTCH	E04_MG_SO_FTCH	E05_MG_SO_FTCH	E06_MG_SO_FTCH	E07_MG_SO_FTCH
OUT_13	ELEMENT #_ OPERATOR STOP	E01_MG_STOPH	E02_MG_STOPH	E03_MG_STOPH	E04_MG_STOPH	E05_MG_STOPH	E06_MG_STOPH	E07_MG_STOPH
OUT_14	ELEMENT #_ OPERATOR STOP FIRST OUT	E01_MG_STOP	E02_MG_STOP	E03_MG_STOP	E04_MG_STOP	E05_MG_STOP	E06_MG_STOP	E07_MG_STOP

REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

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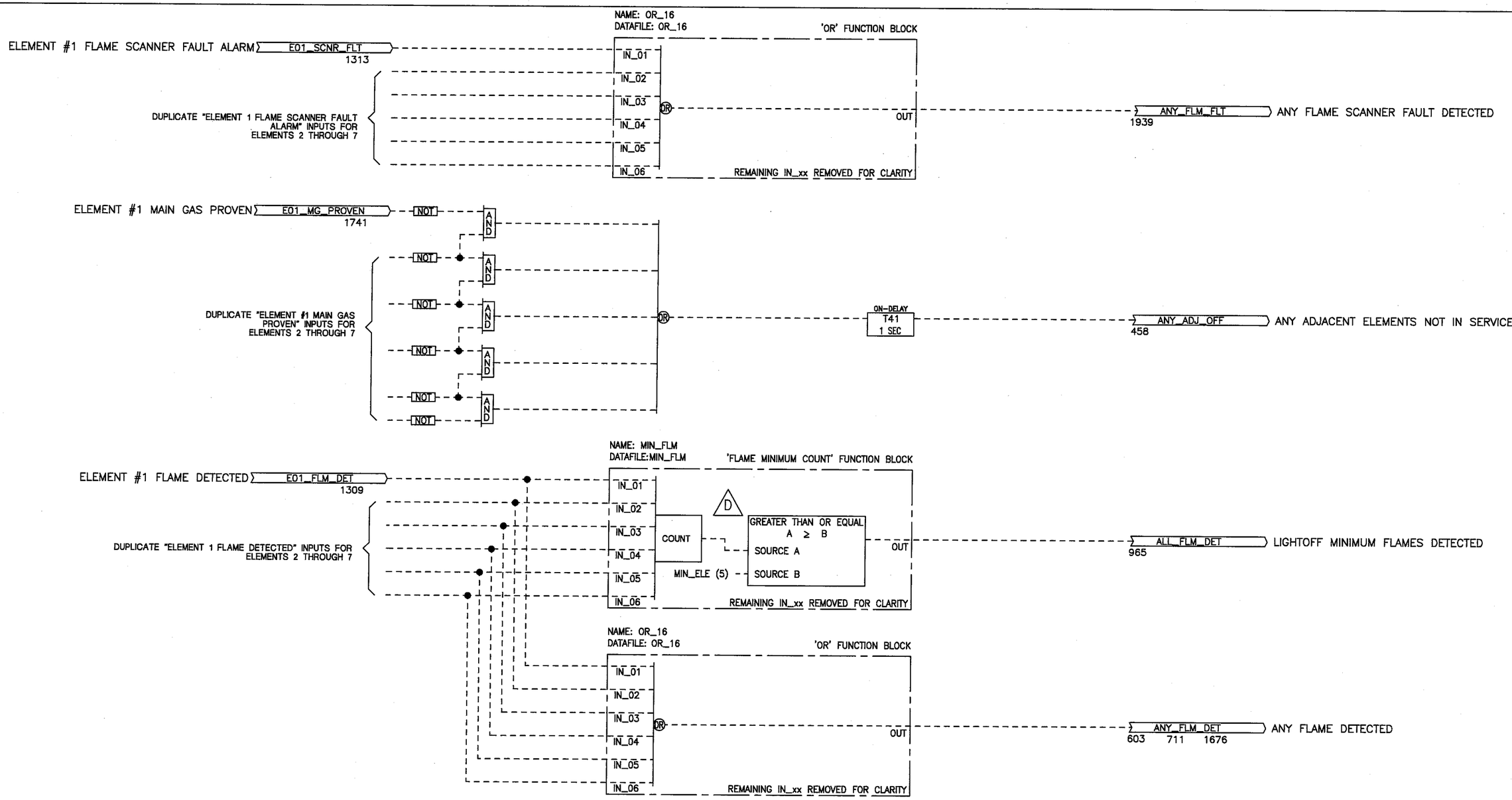
TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
ELEMENT 1 MAIN GAS

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 17 OF 24	B	B10238-071-01	D



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

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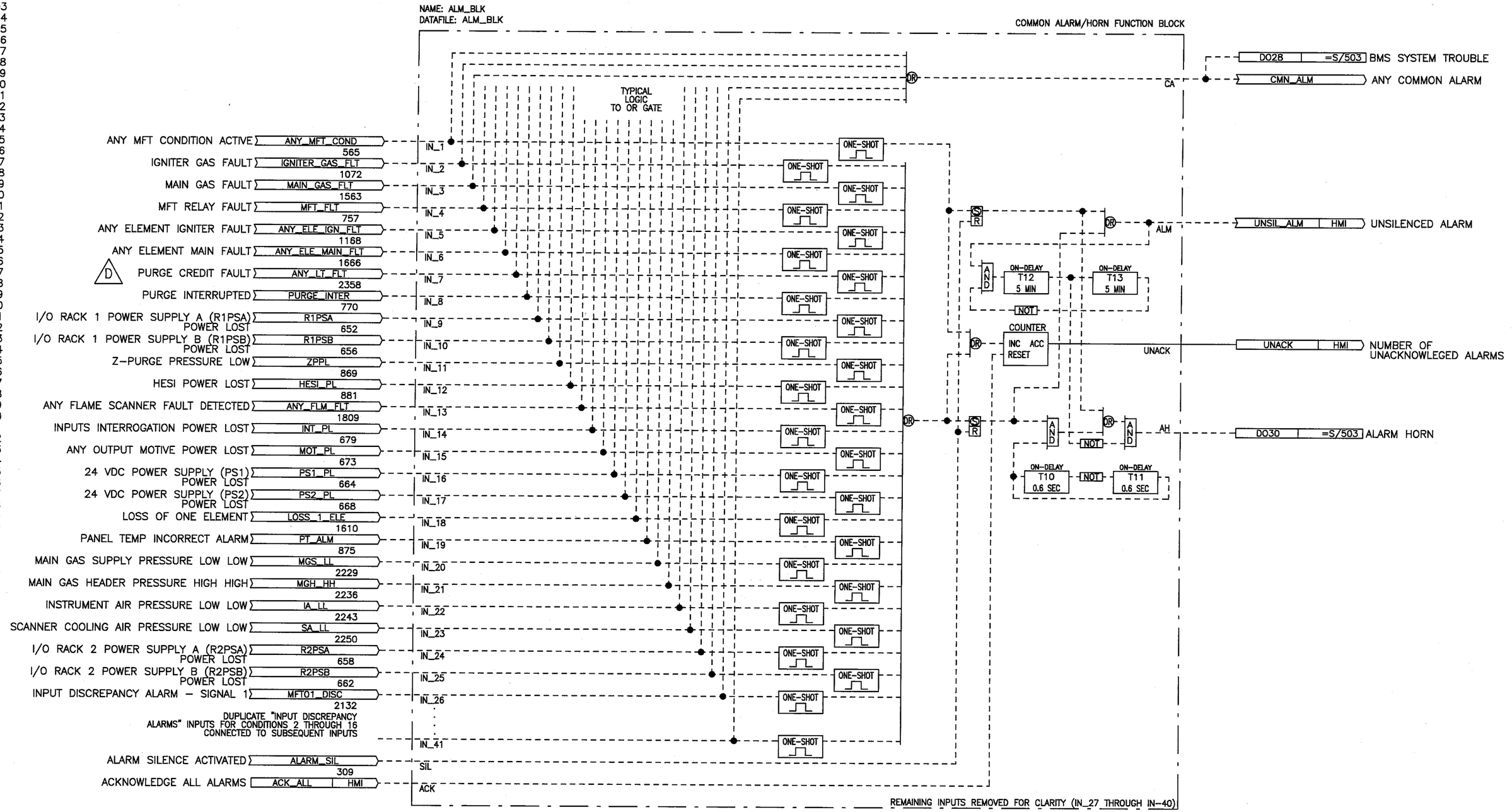
TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MISCELLANEOUS

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 18 OF 24



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

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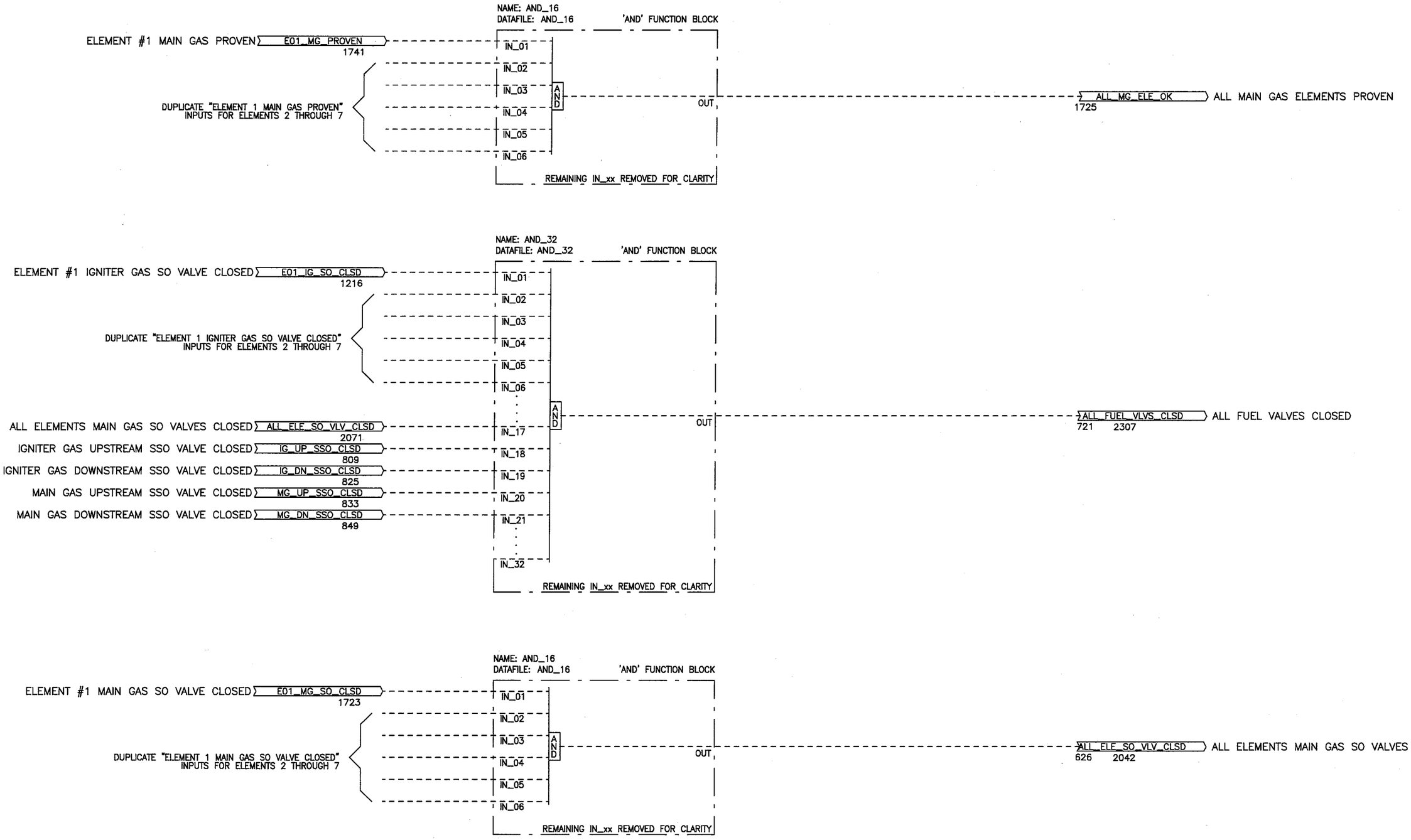
TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
ALARMS

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 19 OF 24	B	B10238-071-01	D



REV	DATE	DR	ENG	RWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

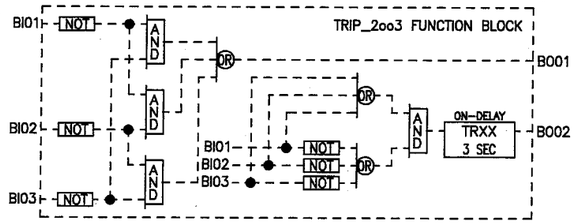
SEE FORNEY CORPORATION STANDARD 348384-Ø1 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
MISCELLANEOUS

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 20 OF 24	B	B10238-071-01	D

TYPICAL DISCREPANCY ALM CIRCUITRY FOR ALL PROVIDED MFT TRIP SIGNALS (SEE BELOW)



NO DUCT BURNER TRIP SIGNAL FROM DCS – A 1BUPNL3001–TRPA	DI01	=S/503	BI01	TRIP_2oo3
NO DUCT BURNER TRIP SIGNAL FROM DCS – B 1BUPNL3001–TRPB	DI33	=S/603	BI02	B001 B002
NO DUCT BURNER TRIP SIGNAL FROM DCS – C 1BUPNL3001–TRPC	DI273	=S/1203	BI03	
DRUM LEVEL NOT LOW LOW – A DCS	DI02	=S/503	BI01	TRIP_2oo3
DRUM LEVEL NOT LOW LOW – B DI02	DI34	=S/603	BI02	B001 B002
DRUM LEVEL NOT LOW LOW – C DI34	DI274	=S/1203	BI03	
STEAM OUTLET TEMPERATURE NOT HIGH HIGH – A DCS	DI03	=S/503	BI01	TRIP_2oo3
STEAM OUTLET TEMPERATURE NOT HIGH HIGH – B DI03	DI35	=S/603	BI02	B001 B002
STEAM OUTLET TEMPERATURE NOT HIGH HIGH – C DI35	DI275	=S/1203	BI03	
GT LOAD > 90% – A DCS	DI04	=S/503	BI01	TRIP_2oo3
GT LOAD > 90% – B DI04	DI36	=S/603	BI02	B001 B002
GT LOAD > 90% – C DI36	DI276	=S/1203	BI03	
HP, IP & LP DRUM PRESSURE NOT HIGH HIGH – A DCS	DI05	=S/503	BI01	TRIP_2oo3
HP, IP & LP DRUM PRESSURE NOT HIGH HIGH – B DI05	DI37	=S/603	BI02	B001 B002
HP, IP & LP DRUM PRESSURE NOT HIGH HIGH – C DI37	DI277	=S/1203	BI03	
SPARE DI POINT – A	DI06	=S/503	BI01	TRIP_2oo3
SPARE DI POINT – B DI06	DI38	=S/603	BI02	B001 B002
SPARE DI POINT – C DI38	DI278	=S/1203	BI03	
STACK DAMPER IN OPEN POSITION – A DCS	DI07	=S/503	BI01	TRIP_2oo3
STACK DAMPER IN OPEN POSITION – B DI07	DI39	=S/603	BI02	B001 B002
STACK DAMPER IN OPEN POSITION – C DI39	DI279	=S/1203	BI03	
SPARE DI POINT – A	DI08	=S/503	BI01	TRIP_2oo3
SPARE DI POINT – B DI08	DI40	=S/603	BI02	B001 B002
SPARE DI POINT – C DI40	DI280	=S/1203	BI03	

DB_TRIP 416	DUCT BURNER TRIP SIGNAL FROM DCS	
MFT01_DISC 1965	INPUT DISCREPANCY ALARM – SIGNAL 1	
DLLL 422	DRUM LEVEL LOW LOW	
MFT02_DISC	INPUT DISCREPANCY ALARM – SIGNAL 2	
SOTHH 426	STEAM OUTLET TEMPERATURE HIGH HIGH	
MFT03_DISC	INPUT DISCREPANCY ALARM – SIGNAL 3	
GT_LOAD 430	GT LOAD < 90%	
MFT04_DISC	INPUT DISCREPANCY ALARM – SIGNAL 4	
DPHH 434	HP, IP & LP DRUM PRESSURE HIGH HIGH	
MFT05_DISC	INPUT DISCREPANCY ALARM – SIGNAL 5	
SPARE06	REDUNDANT SPARE	
MFT06_DISC	INPUT DISCREPANCY ALARM – SIGNAL 6	
SDNOP 442	STACK DAMPER NOT OPEN	
MFT07_DISC	INPUT DISCREPANCY ALARM – SIGNAL 7	
SPARE08	REDUNDANT SPARE	
MFT08_DISC	INPUT DISCREPANCY ALARM – SIGNAL 8	

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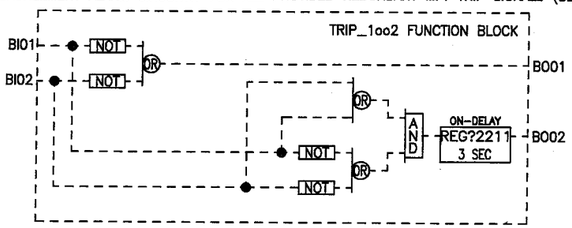
SEE FORNEY CORPORATION STANDARD 348384–01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
REDUNDANT INPUTS VOTING – 1

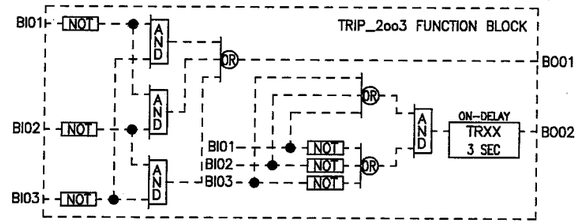
FORNEY® Forney Corporation

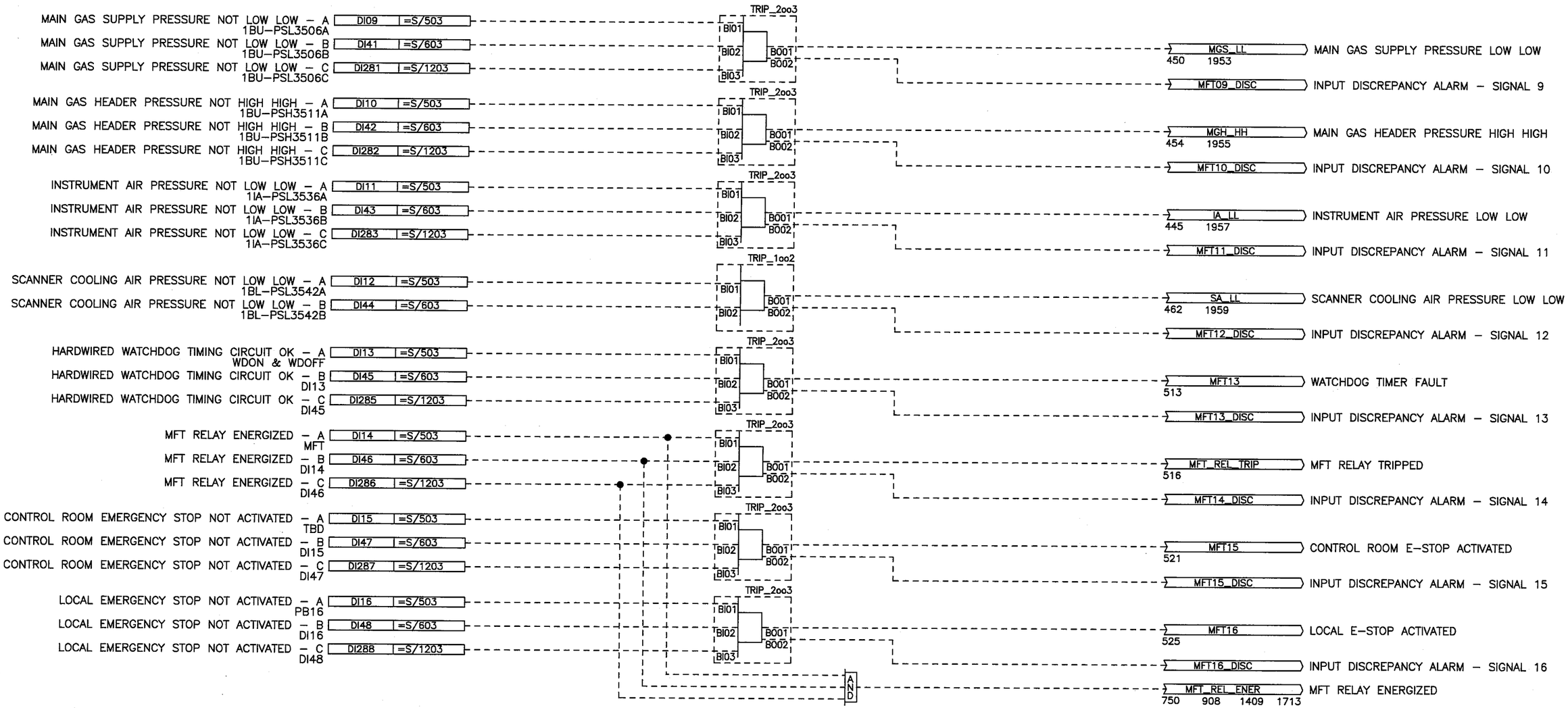
CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 21 OF 24	B	B10238–071–01	D

TYPICAL DISAGREEMENT ALARM CIRCUITRY FOR ALL PROVIDED REDUNDANT MFT TRIP SIGNALS (SEE BELOW)



TYPICAL DISCREPANCY ALM CIRCUITRY FOR ALL PROVIDED MFT TRIP SIGNALS (SEE BELOW)





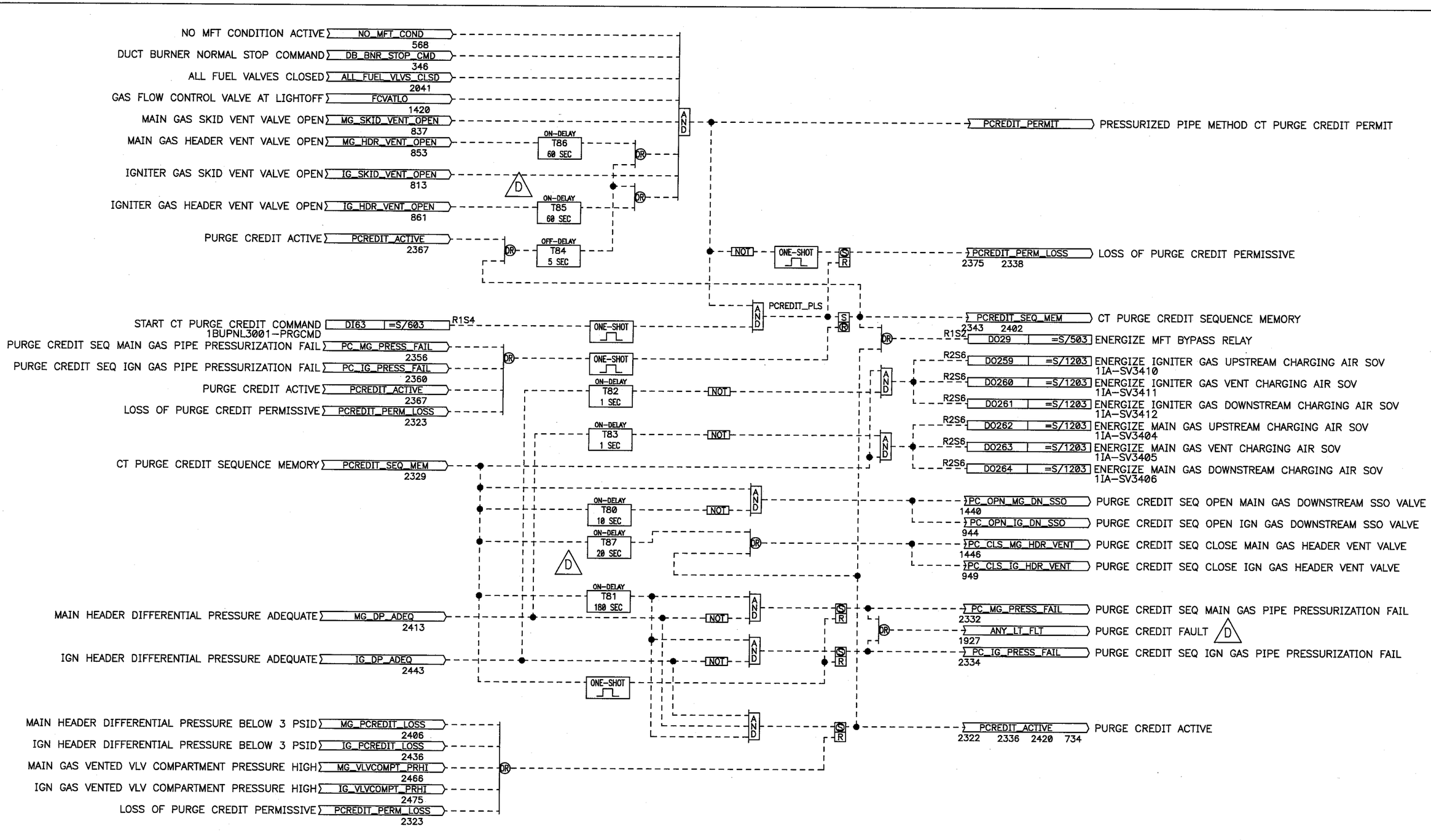
REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

SEE FORNEY CORPORATION STANDARD 348384–01 FOR TOLERANCES. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
REDUNDANT INPUTS VOTING – 2

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 22 OF 24	B	B10238–071–01	D



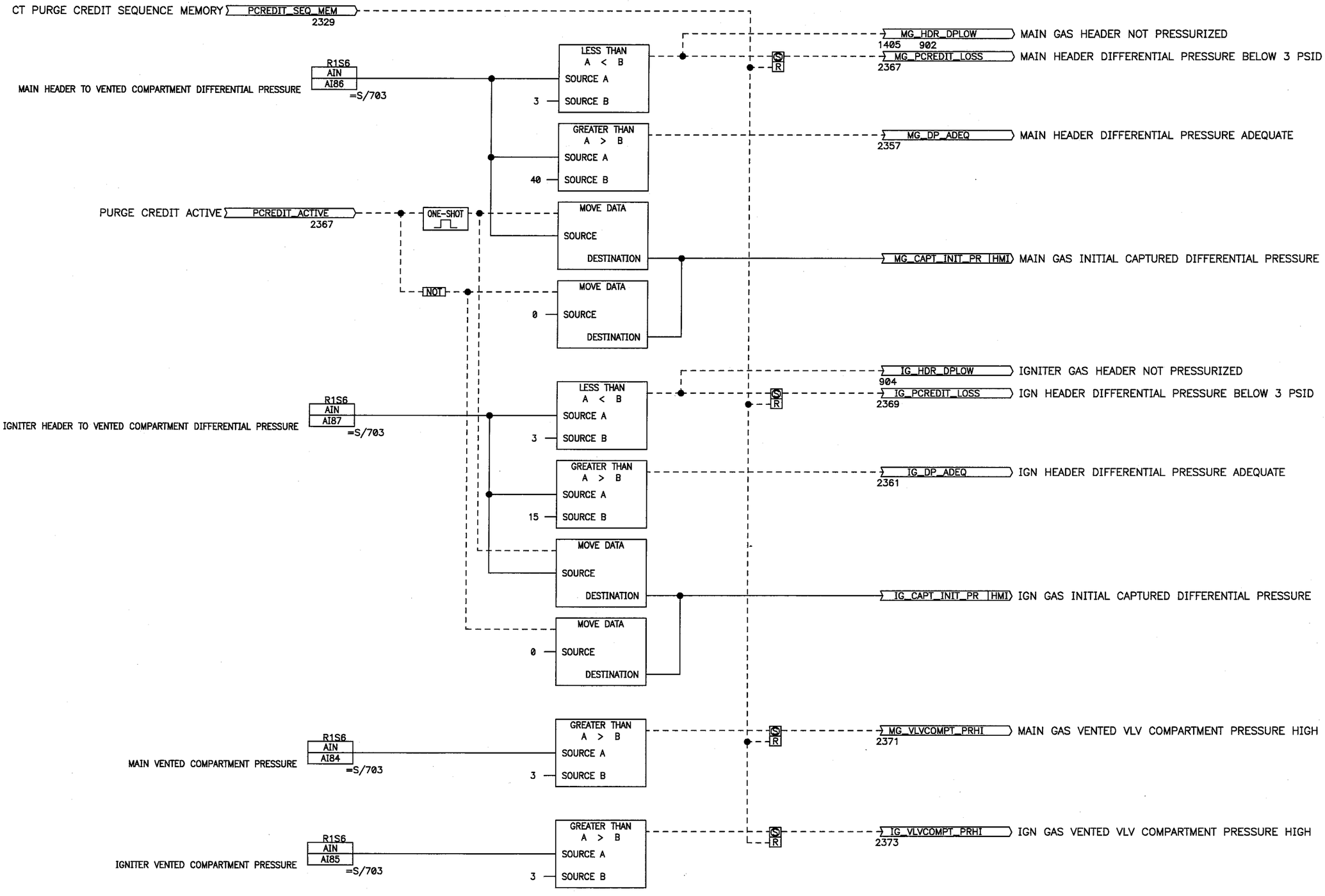
REV	DATE	DR	ENG	RWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

TITLE MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
PURGE CREDIT - 1

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE	B	B10238-071-01	D

SHT 23 OF 24



REV	DATE	DR	ENG	RVWD	DESCRIPTION
D	5/17/16	JH	CJ	BKE	REVISED PER AS BUILT
A	11/25/15	JH	CJ	CGS	FIRST SUBMITTAL

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TITLE: MIDDLETOWN / KINGS MOUNTAIN
DUCT BURNER
BMS LOGIC DIAGRAM
PURGE CREDIT – 2

FORNEY® Forney Corporation

CONTRACT	SCALE	SIZE	DRAWING NUMBER	REV
B10238	NONE SHT 24 OF 24	B	B10238-071-01	D