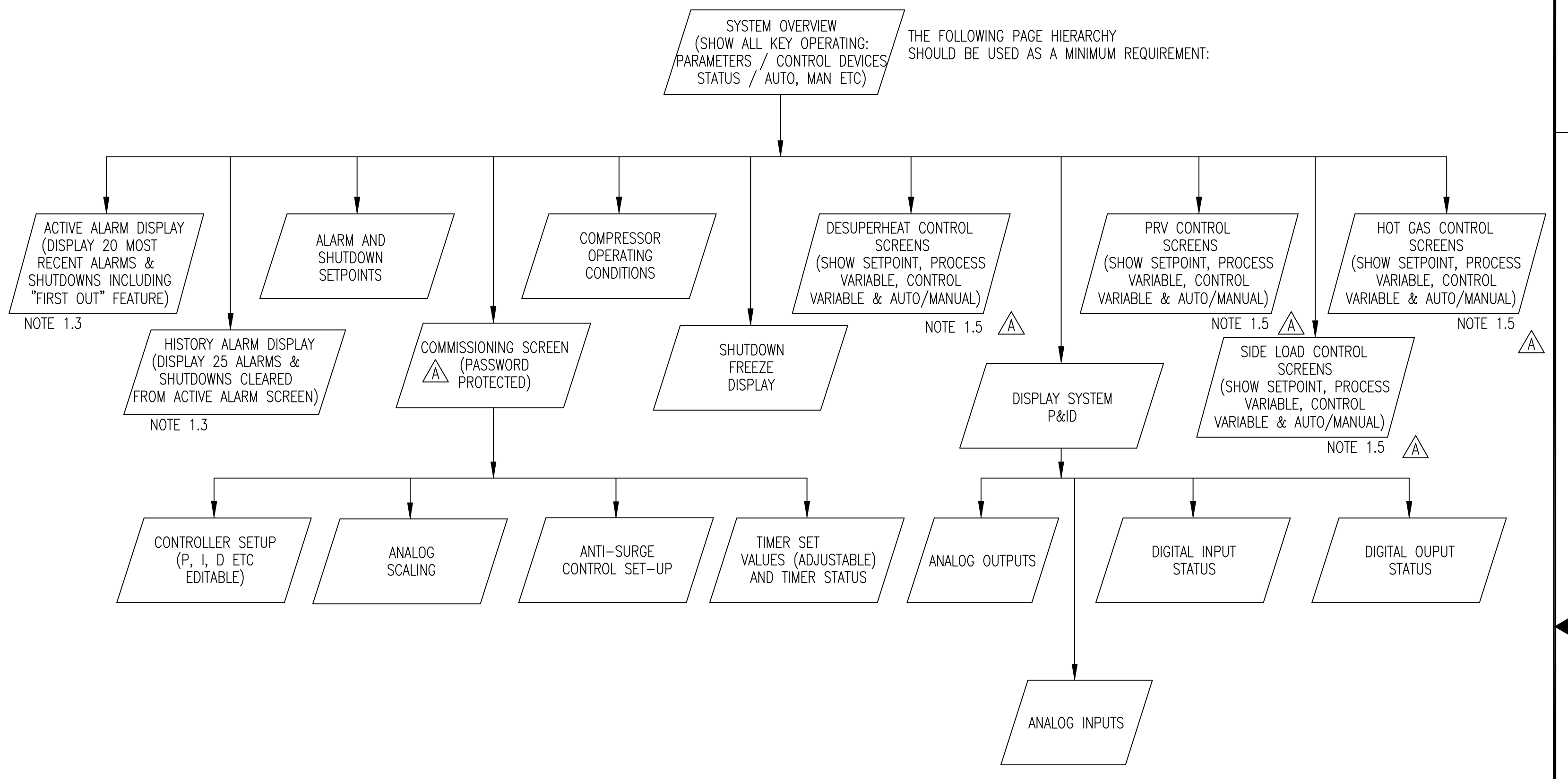
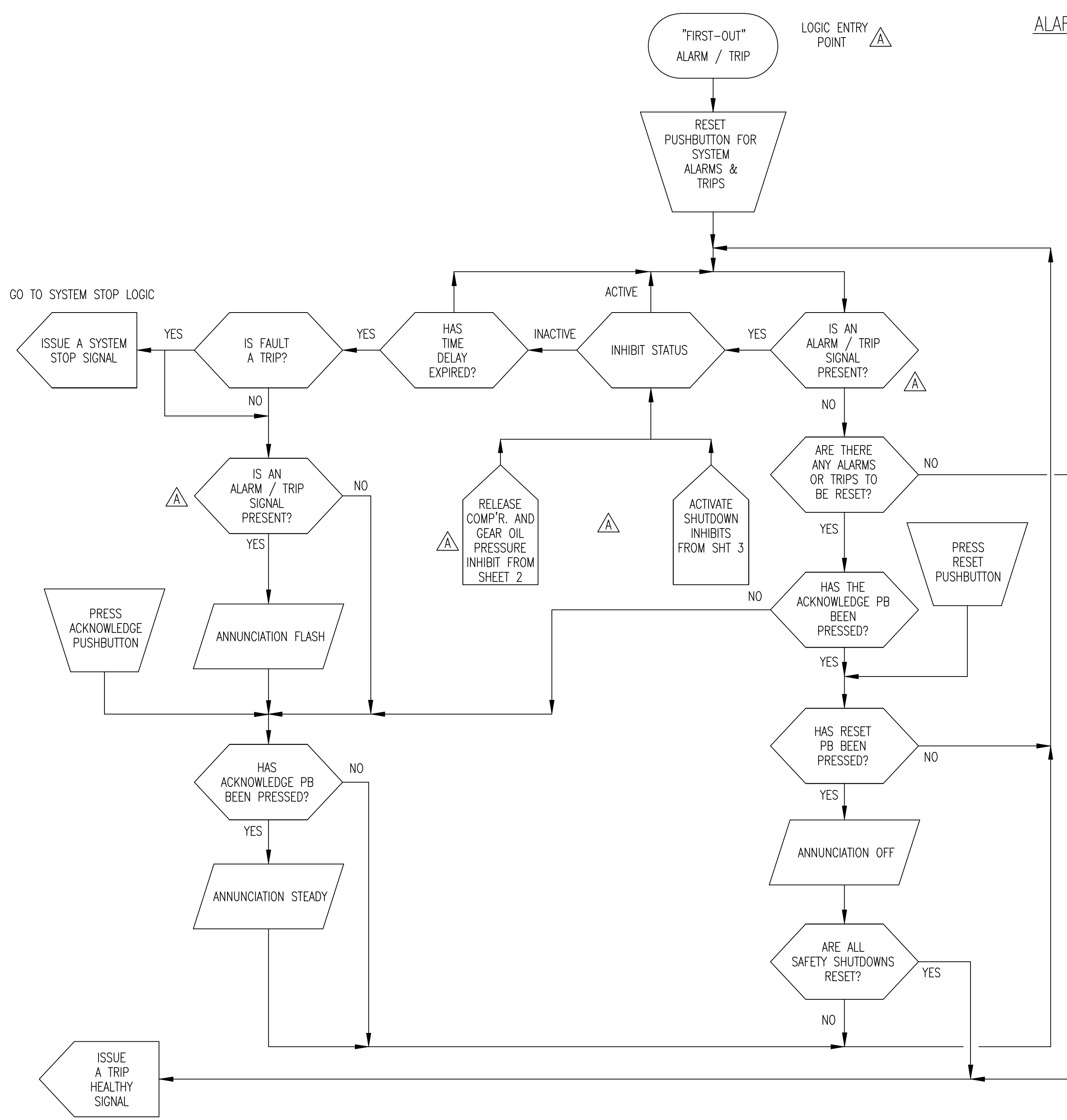


REVISION HISTORY							
ZONE	REV	ECN	DESCRIPTION	DATE	DR	CHK	APPD
.	A	.	REVISIONS PER CUSTOMER AND ENGINEERING REVIEW REFER TO REVISION TRIANGLE /A	5/22/09	TTP	HWK	TTP
.	B	.	REVISIONS PER FAT AND ENGINEERING REVIEW REFER TO REVISION TRIANGLE /B	12/21/09	TTP	HWK	TTP
.	C	.	AS-BUILT CHANGES FOR TRAIN 1 REFER TO REVISION TRIANGLE /C	2/22/10	JES	TTP	TTP

ALARM & TRIP LOGIC

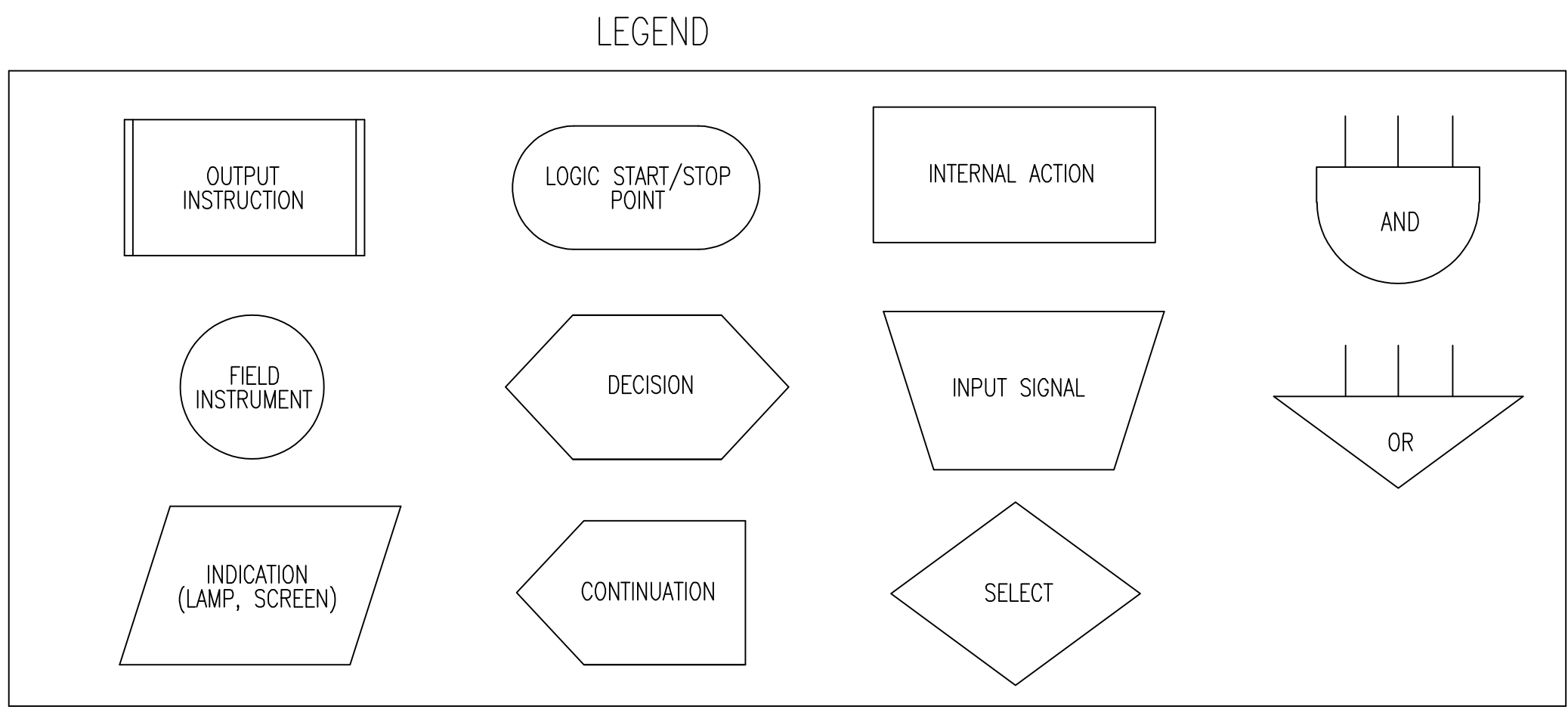
VIDEO DISPLAY REQUIREMENTS



GO TO SYSTEM START LOGIC (SHEET 2)

- NOTE:
- 1.1) ALL ANALOG INPUTS REQUIRE FAULT DETECTION FOR UNDER/OVER RANGE SIGNAL AND OPEN CIRCUIT.
 - 1.2) PROVISIONS TO OVERRIDE A FEW INDIVIDUAL SIGNALS AT SHUTDOWN, TO PREVENT NUISANCE ALARMS TO BE PROVIDED.
 - 1.3) ACTIVE ALARM SCREEN MUST DISPLAY 20 ACTIVE ALARMS AND SHUTDOWNS. WHEN THE ALARM OR SHUTDOWN IS CLEARED, THE ALARM OR SHUTDOWN IS MOVED TO ALARM HISTORY SCREEN. THIS SCREEN TO DISPLAY 25 OF THE LAST ALARMS OR SHUTDOWNS. THE "FIRST OUT" SHUTDOWN MUST APPEAR ON THE ACTIVE ALARM SCREEN.
 - 1.4) ALARM & SHUTDOWN DELAYS ARE TO BE IN ACCORDANCE WITH AES 1300.08 UNLESS OTHERWISE INDICATED. LEVEL ALARMS AND SHUTDOWNS ARE 5 SECONDS.
 - 1.5) MANUAL MODE AVAILABLE AT LEVEL 2 AND ABOVE SECURITY ONLY, CAPACITY CONTROL SETPOINTS AVAILABLE AT LEVEL 1

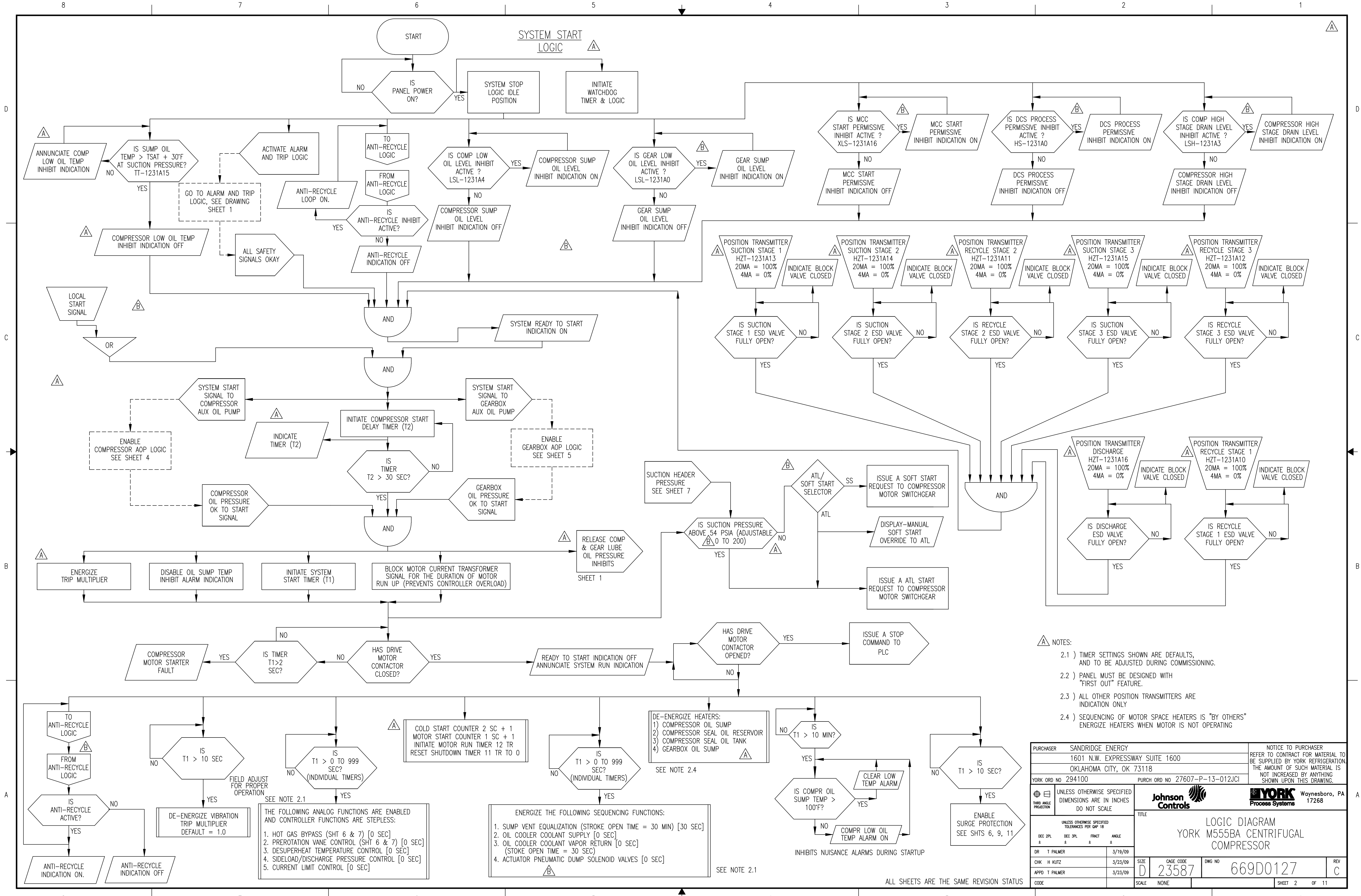
- 1.6) TAG NUMBERS SHOWN ARE FOR TRAIN 1 ITEM 1000, LETTER "A" IN TAG NUMBER SHALL BE SEQUENCED "B" THRU "F" FOR ITEMS 2000 THRU 6000.
- 1.7) FOR TRAIN 2 TAG NUMBERS REPLACE "1231A" WITH "1331A" THRU "1331E" FOR ITEMS 8000 THRU 12000. FOR ITEMS 8000 THRU 12000.



THIS DRAWING CERTIFIED
 FOR SANDRIDGE ENERGY
 ORDER NO. 294100
 YORK REFRIGERATION
 Waynesboro, PA
 PER T. PALMER DATE 5/7/09

PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100	PURCH ORD NO 27607-P-13-012JC1	UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18 DEC 2PL DEC 3PL FRACT ANGLE ± ± ± ±	
THIRD ANGLE PROJECTION		YORK Process Systems	
TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR		Waynesboro, PA 17268	
DR T PALMER	3/19/09	SIZE D	CAGE CODE 23587
CHK H KUTZ	3/23/09	DWG NO 669D0127	REV C
APPD T PALMER	3/23/09	SCALE NONE	SHEET 1 OF 11

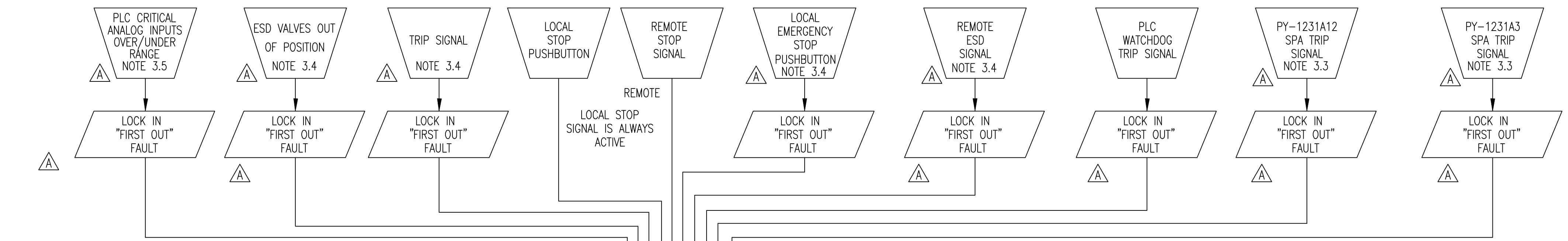
ALL SHEETS ARE THE SAME REVISION STATUS



PURCHASER SANDRIDGE ENERGY		NOTICE TO PURCHASER	
1601 N.W. EXPRESSWAY SUITE 1600		REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
OKLAHOMA CITY, OK 73118		YORK	
YORK ORD NO 294100	PURCH ORD NO 27607-P-13-012JC1	Waynesboro, PA 17268	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DO NOT SCALE			
TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR			
UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18			
DEC 2PL	DEC 3PL	FRAC	ANGLE
DR T PALMER	3/19/09	SIZE D	CAGE CODE 23587
CHK H KUTZ	3/23/09	DWG NO 669D0127	REV C
APPD T PALMER	3/23/09	SCALE NONE	SHEET 2 OF 11

ALL SHEETS ARE THE SAME REVISION STATUS

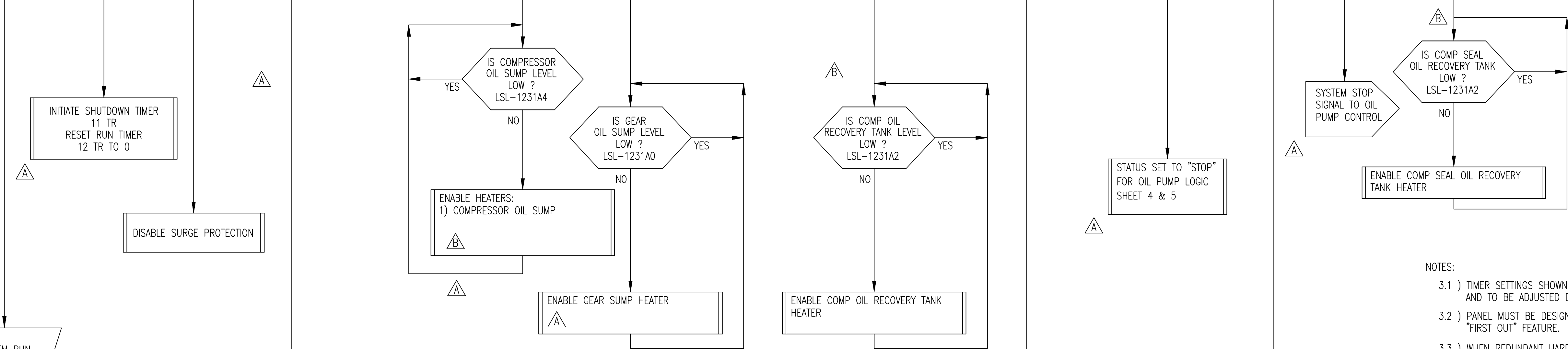
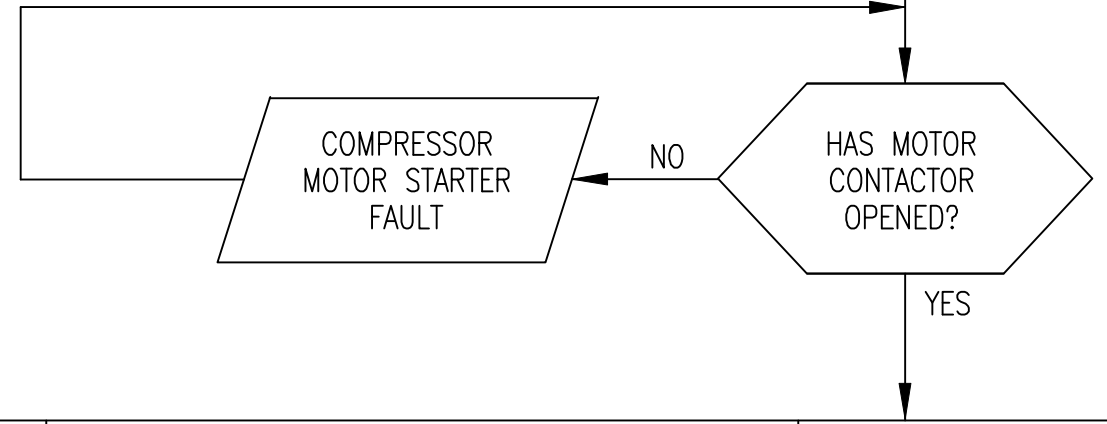
SYSTEM STOP LOGIC



STOP SIGNAL:
ANY STOP OR TRIP SIGNAL BREAKS
AND UNLATCHES THE TRIP CHAIN.
(SEE NOTE 3.2)

ISSUE A STOP REQUEST
TO COMPRESSOR MOTOR
SWITCHGEAR

WAIT 0-2
SECONDS
NOTE 3.1



INITIATE SHUTDOWN TIMER
11 TR
RESET RUN TIMER
12 TR TO 0

DISABLE SURGE PROTECTION

THE FOLLOWING ANALOG FUNCTIONS ARE OVERRIDDEN
1) HOT GAS BYPASS -OPEN
2) PREROTATION VANES -CLOSED
3) DESUPERHEAT TC -CLOSED
4) SIDeload/DISCHARGE PC -CLOSED

DE-ENERGIZE THE FOLLOWING SEQUENCING FUNCTIONS
1) SUMP VENT EQUALIZATION
2) OIL COOLER COOLANT SUPPLY
3) OIL COOLER COOLANT VAPOR RETURN
4) ACTUATOR SHUT OFF VALVES

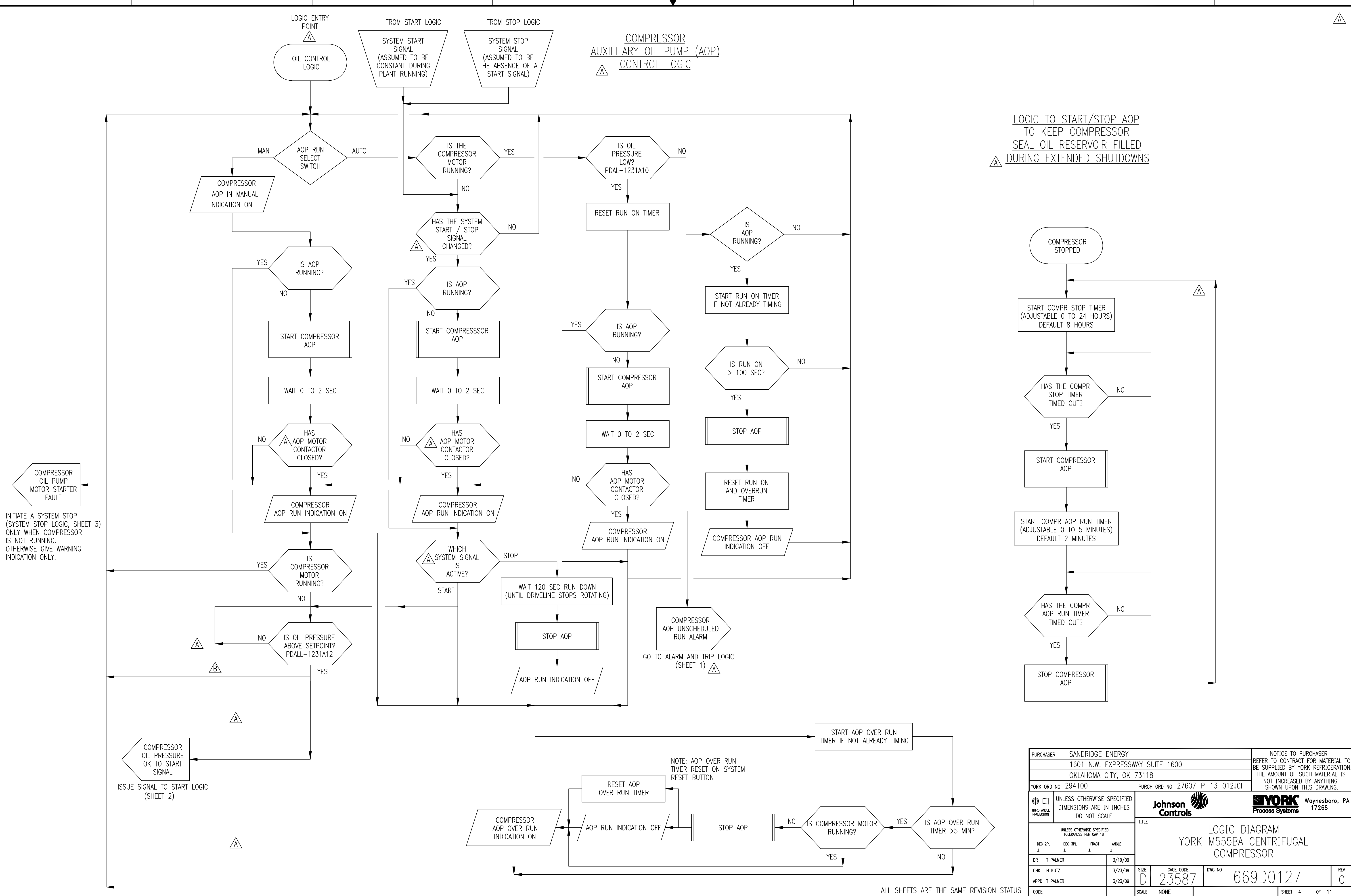
ISSUE ANY SHUTDOWN
INHIBITS:
1) COMPRESSOR OIL PRESSURE (PDALL & PDAL)
2) GEARBOX OIL PRESSURE (PALL & PAL)
ETC.,
GO TO ALARM AND TRIP LOGIC

- NOTES:
- 3.1) TIMER SETTINGS SHOWN ARE DEFAULTS, AND TO BE ADJUSTED DURING COMMISSIONING.
 - 3.2) PANEL MUST BE DESIGNED WITH "FIRST OUT" FEATURE.
 - 3.3) WHEN REDUNDANT HARD WIRED OIL FAILURE & DISCHARGE PRESSURE CONTACTS ARE FURNISHED, THE CONTACTS MUST BE DPDT. ONE CONTACT MUST BE WIRED TO THE PLC TO ADVISE THE PLC THAT A SHUTDOWN HAS OCCURRED. THE SECOND CONTACT MUST BE WIRED TO DE-ENERGIZE THE MOTOR STARTER. NOTE THAT THE OIL FAILURE CONTACTS MUST BE BYPASSED DURING START-UP AND SHUTDOWN.
 - 3.4) REFER TO PNEUMATIC ELECTRIC DIAGRAM FOR SUMMARY OF ALARM AND SHUTDOWN INPUTS
 - 3.5) CRITICAL ANALOG INPUTS CONSIST OF TRANSMITTER SIGNALS ASSOCIATED WITH A SHUTDOWN SHOWN ON PROJECT P&ID. LOSS OF ANY SIGNAL CONSTITUTES A SHUTDOWN.

PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100	PURCH ORD NO 27607-P-13-012JCI	YORK Process Systems Waynesboro, PA 17268	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DO NOT SCALE		TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR	
DR T PALMER	3/19/09	SIZE D	CAGE CODE 23587
CHK H KUTZ	3/23/09	DWG NO 669D0127	REV C
APPD T PALMER	3/23/09	SCALE NONE	SHEET 3 OF 11

COMPRESSOR
AUXILIARY OIL PUMP (AOP)
CONTROL LOGIC

LOGIC TO START/STOP AOP
TO KEEP COMPRESSOR
SEAL OIL RESERVOIR FILLED
DURING EXTENDED SHUTDOWNS



INITIATE A SYSTEM STOP
(SYSTEM STOP LOGIC, SHEET 3)
ONLY WHEN COMPRESSOR
IS NOT RUNNING.
OTHERWISE GIVE WARNING
INDICATION ONLY.

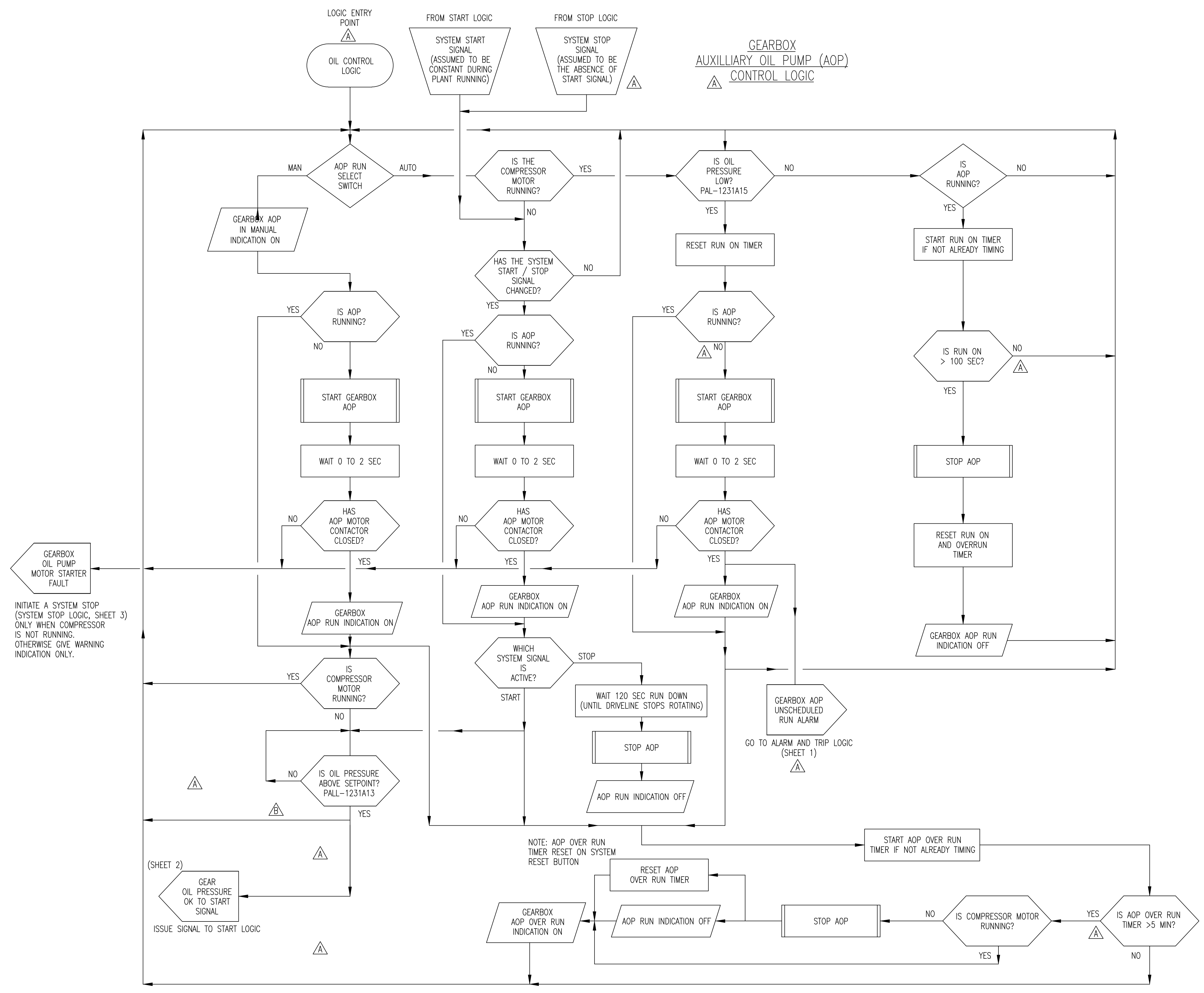
ISSUE SIGNAL TO START LOGIC
(SHEET 2)

NOTE: AOP OVER RUN
TIMER RESET ON SYSTEM
RESET BUTTON

ALL SHEETS ARE THE SAME REVISION STATUS

PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100		PURCH ORD NO 27607-P-13-012JCI	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DO NOT SCALE		 	
TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR			
DR T PALMER	DEC 31 2009	SIZE D	CAGE CODE 23587
CHK H KUTZ	3/23/09	DWG NO 669D0127	REV C
APPD T PALMER	3/23/09	SCALE NONE	SHEET 4 OF 11

**GEARBOX
AUXILLIARY OIL PUMP (AOP)
CONTROL LOGIC**



GEARBOX OIL PUMP MOTOR STARTER FAULT
INITIATE A SYSTEM STOP (SYSTEM STOP LOGIC, SHEET 3) ONLY WHEN COMPRESSOR IS NOT RUNNING. OTHERWISE GIVE WARNING INDICATION ONLY.

NOTE: AOP OVER RUN TIMER RESET ON SYSTEM RESET BUTTON

(SHEET 2)
GEAR OIL PRESSURE OK TO START SIGNAL
ISSUE SIGNAL TO START LOGIC

PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100		PURCH ORD NO 27607-P-13-012JCI	
UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18 DEC 2PL ± DEC 3PL ± FRACT ± ANGLE ±			
DR T PALMER		3/19/09	
CHK H KUTZ		3/23/09	
APPD T PALMER		3/23/09	
CODE		SCALE NONE	
TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR			
REV C		Waynesboro, PA 17268	
D 23587		DWG NO 669D0127	
SHEET 5		OF 11	

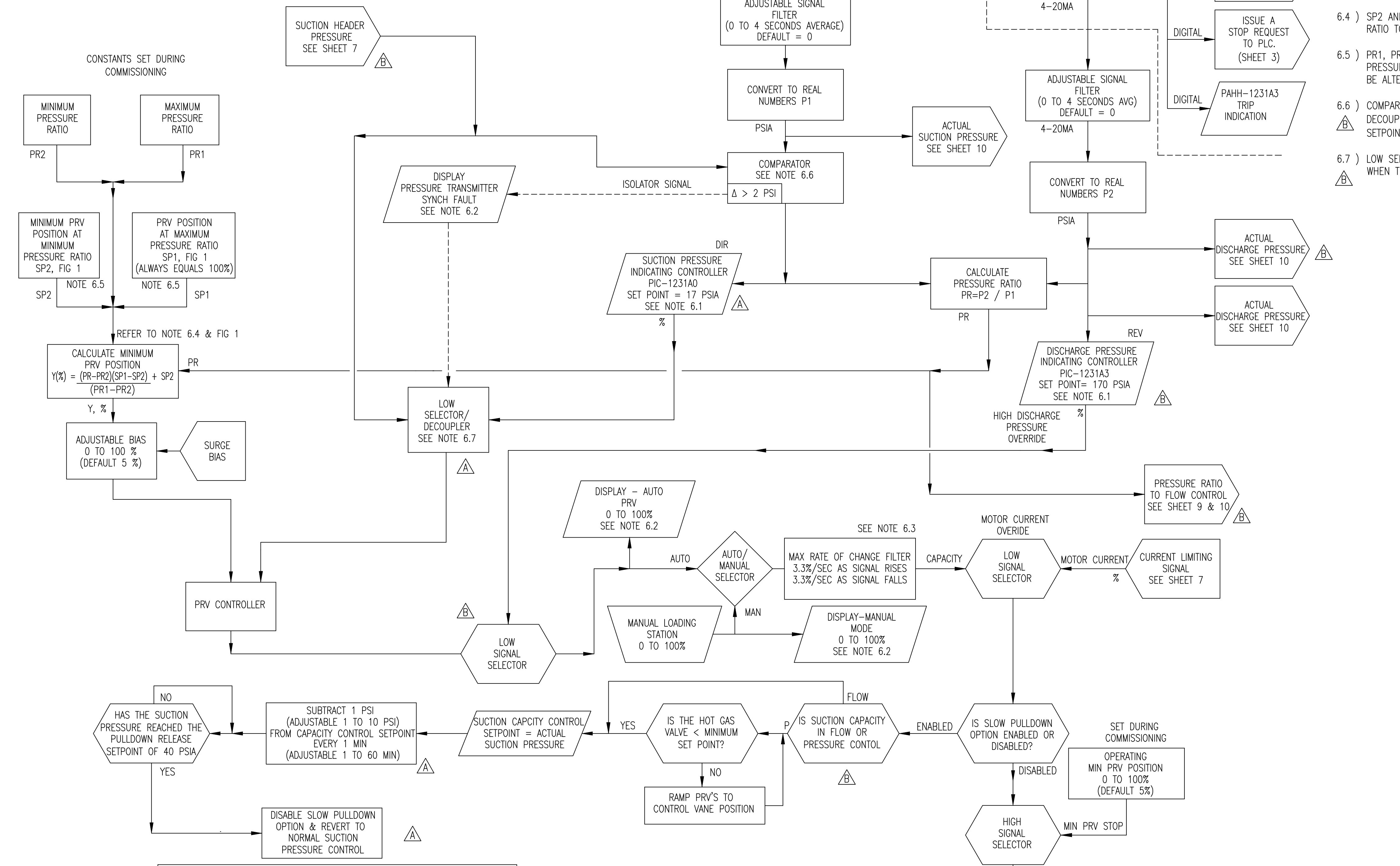
ALL SHEETS ARE THE SAME REVISION STATUS

FIELD INPUTS

CUSTOMER HAS GUARANTEED THAT SYSTEM CONTROL (BY OTHER) WILL BE MANIPULATED TO PREVENT ANY JCI/YORK COMPRESSORS FROM PART LOAD OPERATION FOR MORE THAN BRIEF AND INFREQUENT EXCURSIONS.

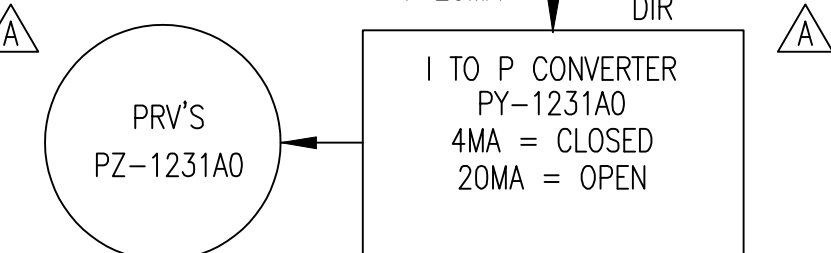
PANEL DEVICES

CONTROLLER LOGIC



CONTROLLER OPERATION MODE INDICATOR:
 DISPLAY THE FOLLOWING CONTROL INDICATION WHENEVER THE FOLLOWING IS TRUE:
 MANUAL INDICATION - WHENEVER THE AUTO / MAN SWITCH IS SET TO MAN
 PRESSURE CONTROL INDICATION - IF P>M & P<C
 MINIMUM PRV POSITION INDICATION - IF M>P & M<C
 MOTOR CURRENT CONTROL INDICATION - IF C<P & C<M
 WHERE
 P = PRESSURE CONTROLLER OUTPUT SIGNAL
 M = MINIMUM PRV POSITION SIGNAL
 C = MOTOR CURRENT CONTROLLER OUTPUT SIGNAL

FIELD OUTPUTS



NOTES

- A TEXT/GRAPHICS DISPLAY INTERFACE IS REQUIRED TO DRIVE PLC
- 6.1) ALL CONTROLLERS REQUIRE A SCREEN PAGE FOR ADJUSTMENT AND DISPLAY OF THE FOLLOWING VARIABLES:
 A) PROCESS VARIABLE IN ENGINEERING UNITS
 B) SETPOINT IN ENGINEERING UNITS, AND FRONT OF PANEL ADJUSTABLE
 C) SIGNAL OUTPUT AS 0-100%
 THE PROPORTIONAL, AND RESET (INTEGRAL) VALUES ARE TO BE CONFIGURABLE, BY REFERENCE TO THE COMMISSIONING SCREEN
- 6.2) DISPLAYS REQUIRE A SCREEN PAGE FOR ADJUSTMENTS AND DISPLAY OF THE FOLLOWING VARIABLES
 A) SIGNAL OUTPUT AS 0-100%
- 6.3) RATE OF CHANGE FILTERS VALUES SHOWN ARE DEFAULT, TO BE ADJUSTED DURING COMMISSIONING.
- 6.4) SP2 AND Y % IN TERMS OF % OPEN. USE FULL OPEN PRESSURE RATIO AND MINIMUM OPERATING PRESSURE RATIO TO DEFINE THE CONTROL LINE. SP1 = 100%
- 6.5) PR1, PR2, SP1, AND SP2 ARE PASSWORD ADJUSTABLE, INITIAL FACTORY SETPOINTS ARE USUALLY THE PREDICTED PRESSURE RATIOS AT 100% AND 13% PRV POSITIONS. SETPOINTS ARE ADJUSTABLE AT PASSWORD LEVEL AND MAY BE ALTERED BY THE YORK START-UP TECHNICIAN BASED ON FIELD SURGE TESTING.
- 6.6) COMPARATOR COMPARES LOCAL AND HEADER SUCTION PRESSURE SIGNALS. THE COMPARATOR TRIGGERS THE DECOUPLER IF HEADER PRESSURE SIGNAL DEVIATES FROM THE LOCAL SIGNAL BY MORE THAN SETPOINT (DELTA SETPOINT ADJUSTABLE AT PASSWORD LEVEL, RANGE 0-10 PSI)
- 6.7) LOW SELECTOR/DECOUPLER SELECTS THE HEADER PRESSURE SIGNAL UNLESS TRIGGERED BY THE COMPARATOR, WHEN TRIGGERED THE DECOUPLER SELECTS THE LOCAL CONTROL SIGNAL.

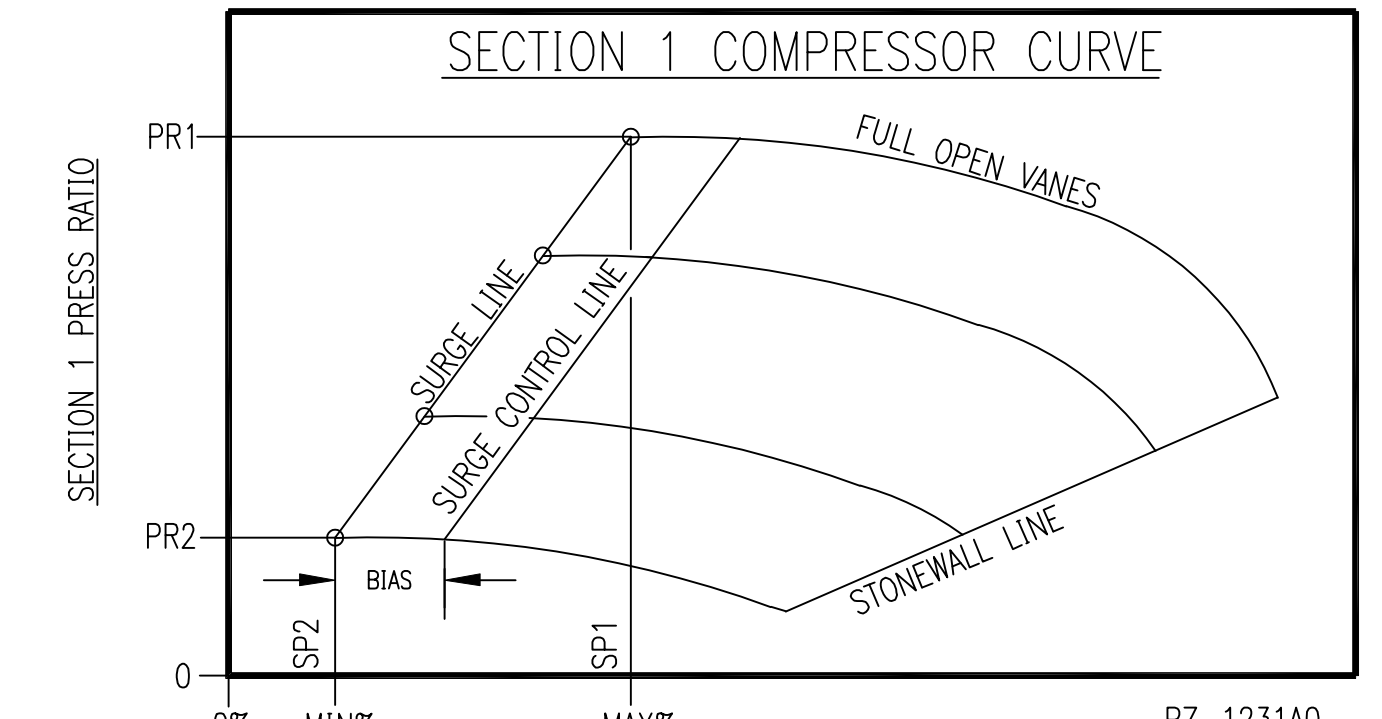


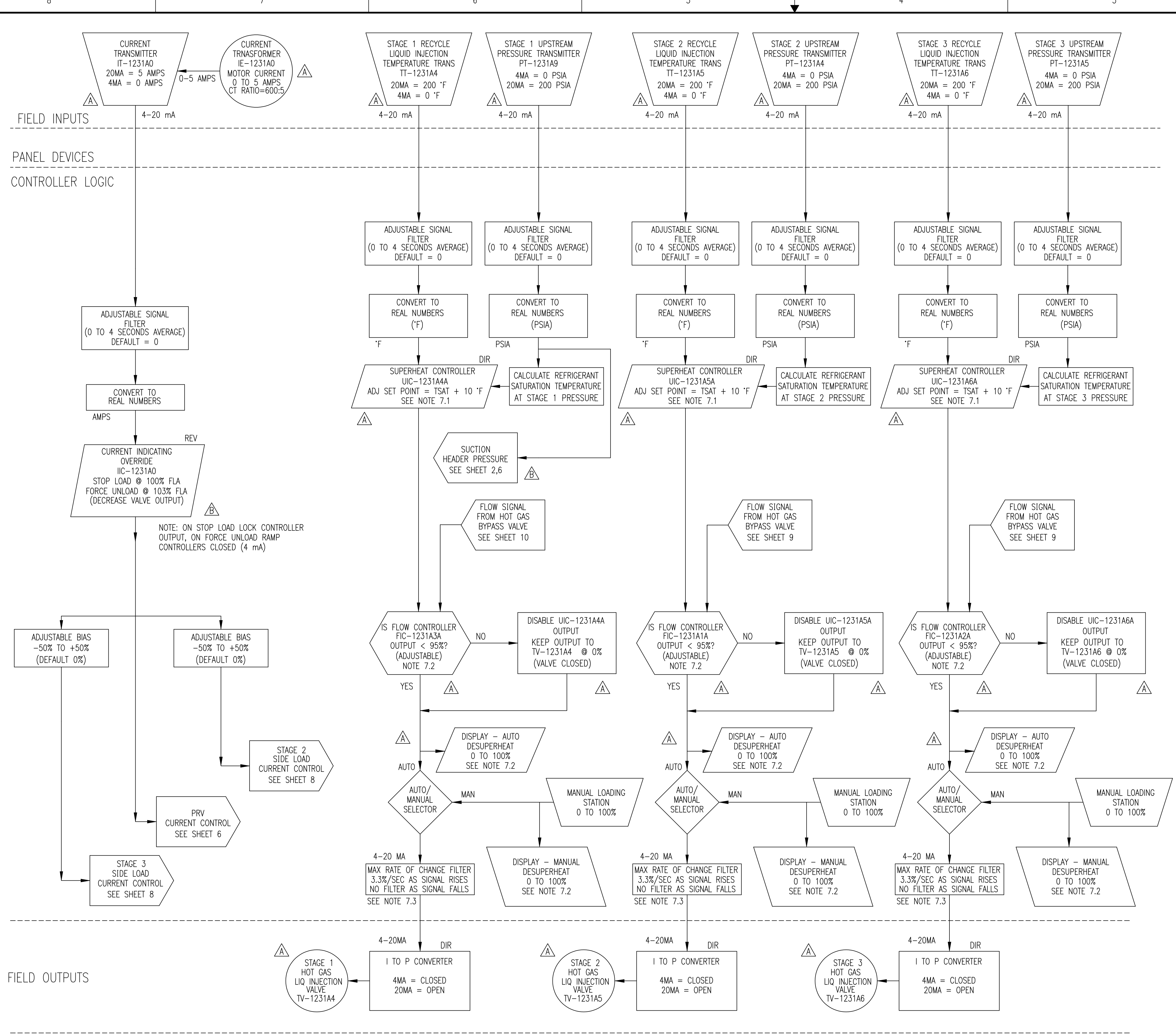
FIGURE 1

INITIAL SET VALUES	
PR1	8.6
PR2	6.9
SP1	100%
SP2	13%

VALUES ARE SUBJECT TO CHANGE DURING COMMISSIONING

PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100		PURCH ORD NO 27607-P-13-012JCI	
UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18			
TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR		WAYNESBORO, PA 17268	
DR T PALMER	3/19/09	SIZE D	CAGE CODE 23587
CHK H KUTZ	3/23/09	DWG NO 669D0127	REV C
APPD T PALMER	3/23/09	SCALE NONE	SHEET 6 OF 11
CODE			

ALL SHEETS ARE THE SAME REVISION STATUS



NOTES

A TEXT/GRAPHICS DISPLAY INTERFACE IS REQUIRED TO DRIVE PLC.

7.1) ALL CONTROLLERS REQUIRE A SCREEN PAGE FOR ADJUSTMENT AND DISPLAY OF THE FOLLOWING VARIABLES:

- A) PROCESS VARIABLE IN ENGINEERING UNITS
- B) SETPOINT IN ENGINEERING UNITS, AND FRONT OF PANEL ADJUSTABLE
- C) SIGNAL OUTPUT AS 0-100%

THE PROPORTIONAL, AND RESET (INTEGRAL) VALUES ARE TO BE CONFIGURABLE, BY REFERENCE TO A COMMISSIONING SCREEN.

7.2) DISPLAYS REQUIRE A SCREEN PAGE FOR ADJUSTMENTS AND DISPLAY OF THE FOLLOWING VARIABLES

- A) SIGNAL OUTPUT AS 0-100%

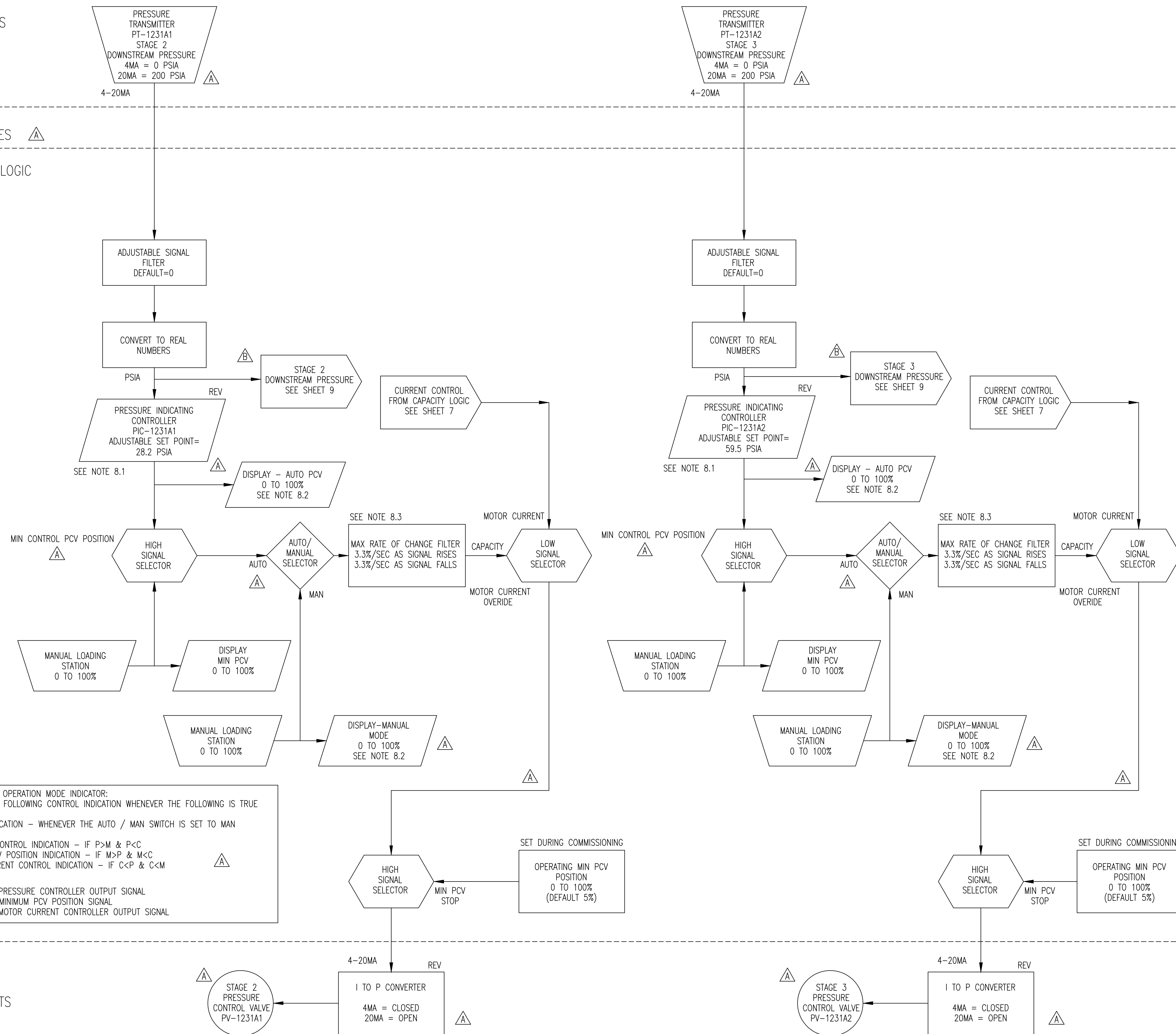
7.3) RATE OF CHANGE FILTERS VALUES SHOWN ARE DEFAULT, TO BE ADJUSTED DURING COMMISSIONING.

PURCHASER SANDRIDGE ENERGY		1601 N.W. EXPRESSWAY SUITE 1600		OKLAHOMA CITY, OK 73118		YORK ORD NO 294100		PURCH ORD NO 27607-P-13-012JCI		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18		DEC 2PL ±		DEC 3PL ±		FRACT ±		ANGLE ±			
TITLE		LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR									
DR T PALMER	CHK H KUTZ	APPD T PALMER	CODE	DATE 3/19/09	DATE 3/23/09	DATE 3/23/09	SCALE NONE	CAGE CODE D 23587	DWG NO 669D0127	REV C	
ALL SHEETS ARE THE SAME REVISION STATUS										SHEET 7 OF 11	

FIELD INPUTS

PANEL DEVICES

CONTROLLER LOGIC



NOTES

- 8.1) ALL CONTROLLERS REQUIRE A TEXT/GRAPHICS PAGE FOR ADJUSTMENT AND DISPLAY OF THE FOLLOWING VARIABLES:
 - A) PROCESS VARIABLE IN ENGINEERING UNITS
 - B) SETPOINT IN ENGINEERING UNITS, AND FRONT OF PANEL ADJUSTABLE
 - C) SIGNAL OUTPUT AS 0-100% THE PROPORTIONAL, AND RESET (INTEGRAL) VALUES ARE TO BE CONFIGURABLE, BY REFERENCE TO A COMMISSIONING SCREEN.
- 8.2) DISPLAYS REQUIRE A TEXT/GRAPHICS PAGE FOR ADJUSTMENTS AND DISPLAY OF THE FOLLOWING VARIABLES:
 - A) SIGNAL OUTPUT AS 0-100%
- 8.3) RATE OF CHANGE FILTERS VALUES SHOWN ARE DEFAULT, TO BE ADJUSTED DURING COMMISSIONING.

CONTROLLER OPERATION MODE INDICATOR:
 DISPLAY THE FOLLOWING CONTROL INDICATION WHENEVER THE FOLLOWING IS TRUE

MANUAL INDICATION - WHENEVER THE AUTO / MAN SWITCH IS SET TO MAN

PRESSURE CONTROL INDICATION - IF P>M & P<C
 MINIMUM PCV POSITION INDICATION - IF M>P & M<C
 MOTOR CURRENT CONTROL INDICATION - IF C<P & C<M

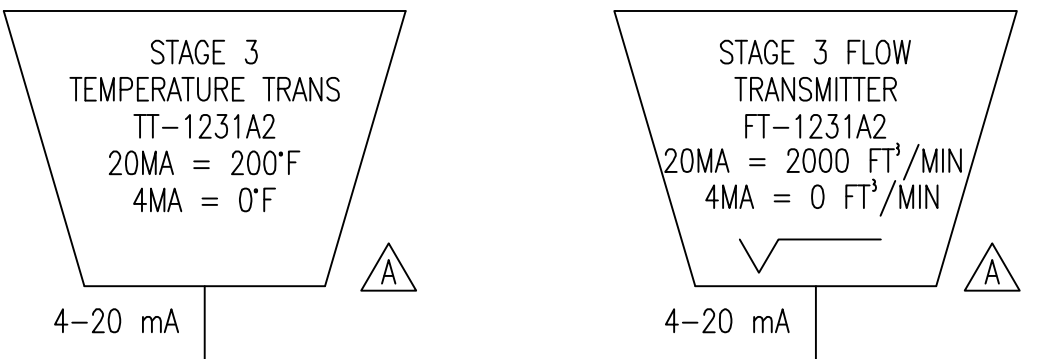
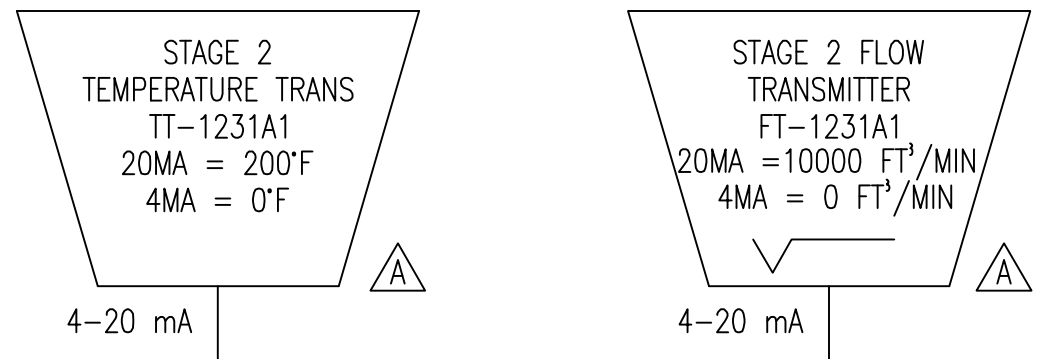
WHERE
 P = PRESSURE CONTROLLER OUTPUT SIGNAL
 M = MINIMUM PCV POSITION SIGNAL
 C = MOTOR CURRENT CONTROLLER OUTPUT SIGNAL

FIELD OUTPUTS

PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100	PURCH ORD NO 27607-P-13-012JCI	YORK Process Systems	
UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18		TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR	
DR T PALMER	3/19/09	SIZE D	CAGE CODE 23587
CHK H KUTZ	3/23/09	DWG NO 669D0127	REV C
APPD T PALMER	3/23/09	SCALE NONE	SHEET 8 OF 11

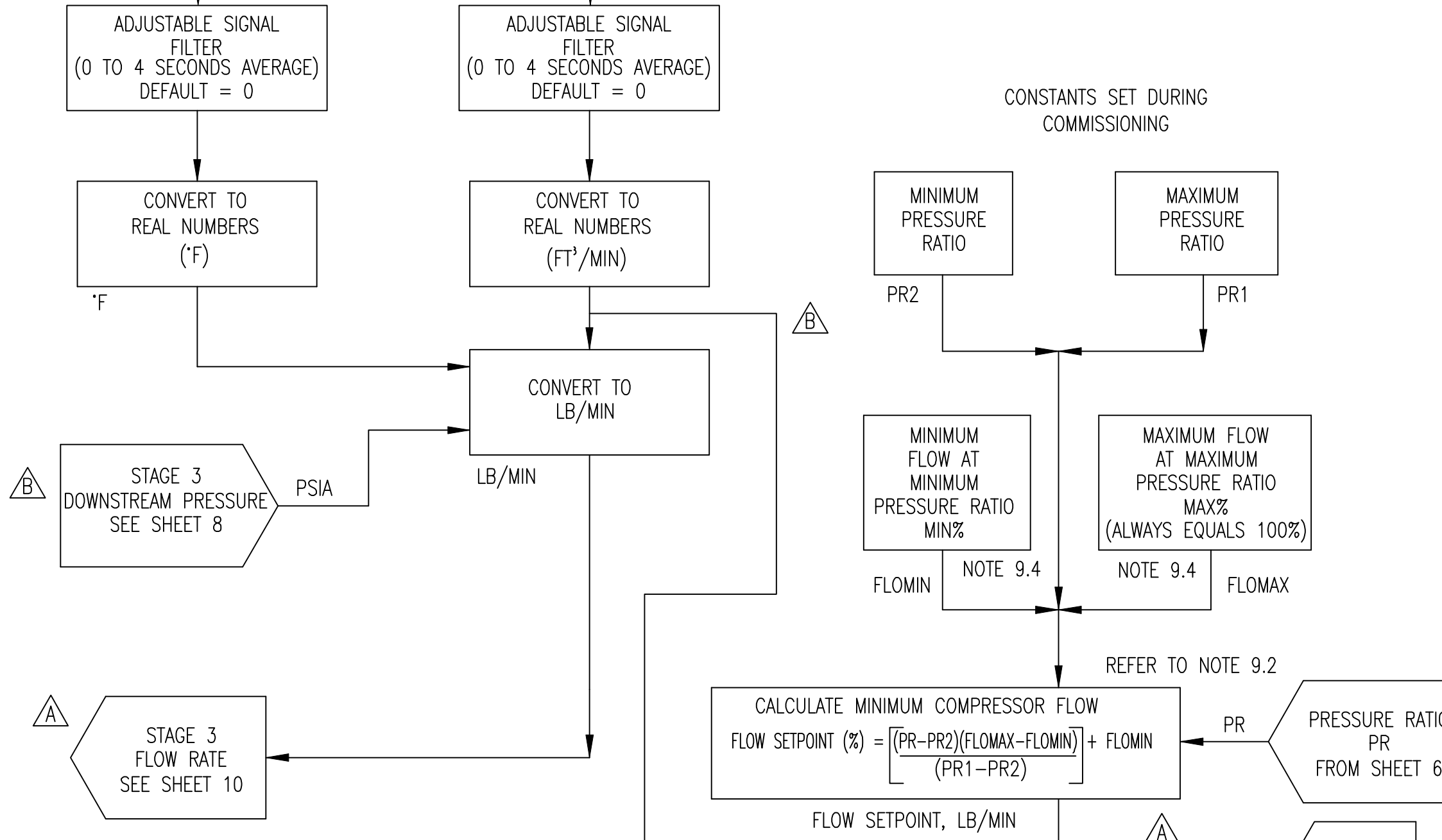
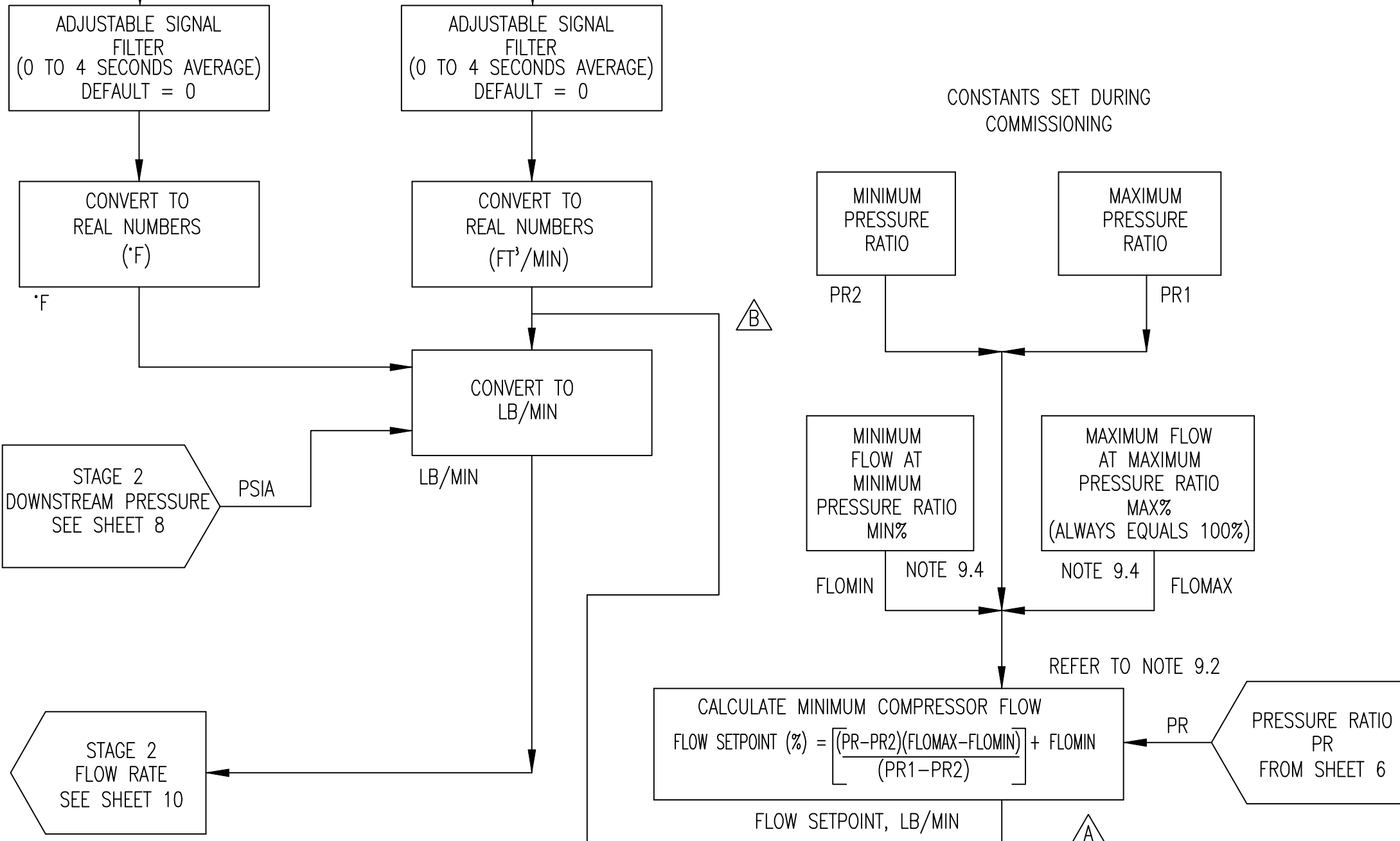
ALL SHEETS ARE THE SAME REVISION STATUS

FIELD INPUTS



PANEL DEVICES

CONTROLLER LOGIC

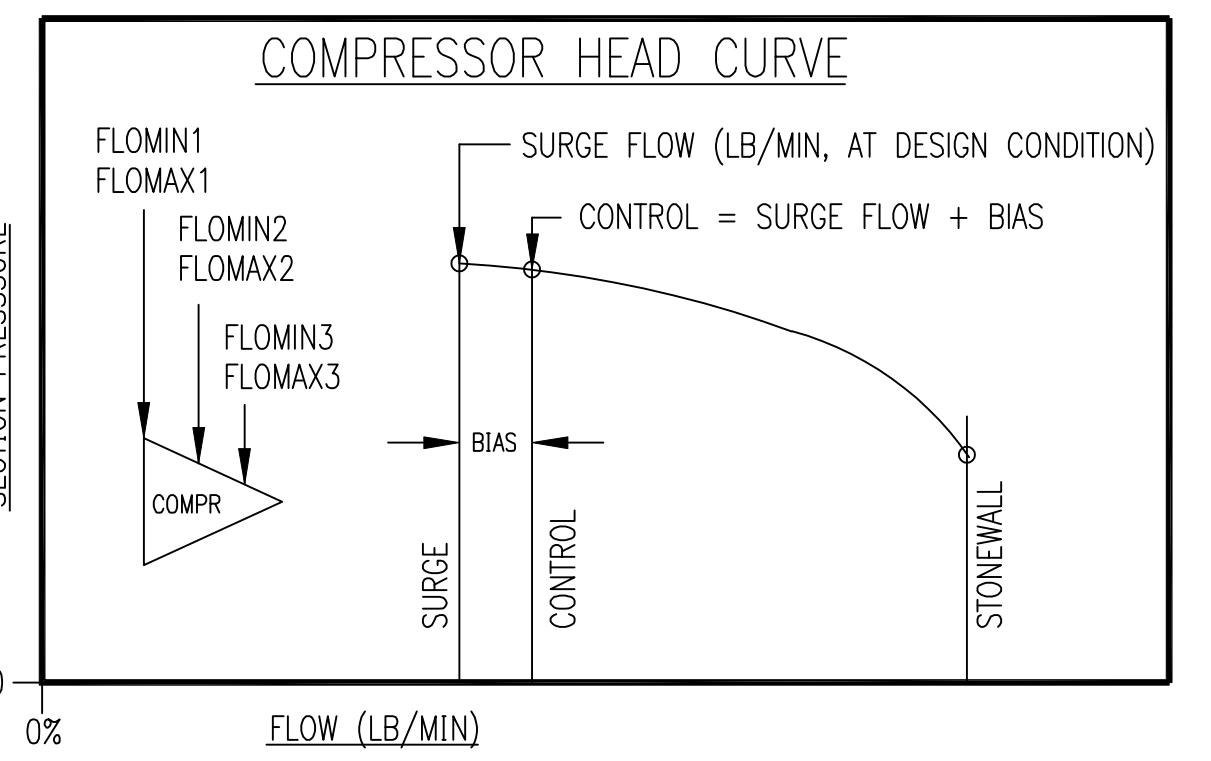


- NOTES
- A TEXT/GRAPHICS DISPLAY INTERFACE IS REQUIRED TO DRIVE PLC.
- 9.1) ALL CONTROLLERS REQUIRE A SCREEN PAGE FOR ADJUSTMENT AND DISPLAY OF THE FOLLOWING VARIABLES:
A) PROCESS VARIABLE IN ENGINEERING UNITS
B) SETPOINT IN ENGINEERING UNITS, AND FRONT OF PANEL ADJUSTABLE
C) SIGNAL OUTPUT AS 0-100%
- THE PROPORTIONAL, AND RESET (INTEGRAL) VALUES ARE TO BE CONFIGURABLE, BY REFERENCE TO A COMMISSIONING SCREEN.
- 9.2) DISPLAYS REQUIRE A SCREEN PAGE FOR ADJUSTMENTS AND DISPLAY OF THE FOLLOWING VARIABLES
A) SIGNAL OUTPUT AS 0-100%
- 9.3) RATE OF CHANGE FILTERS VALUES SHOWN ARE DEFAULT, TO BE ADJUSTED DURING COMMISSIONING.
- 9.4) PR1, PR2, FLOMAX AND FLOMIN ARE PASSWORD ADJUSTABLE. INITIAL FACTORY SETPOINTS ARE USUALLY THE PREDICTED PRESSURE RATIOS AT 100% AND 13% PRV POSITIONS. FLOMAX IS FACTORY SET AT THE SURGE POINT WITH FULL OPEN VANES AND FLOMIN IS SET AT THE SURGE POINT WITH THE VANES AT APPROXIMATELY 13% OPEN (SEE FIGURE 2). SETPOINTS ARE ADJUSTABLE AT PASSWORD LEVEL AND MAY BE ALTERED BY THE YORK START-UP TECHNICIAN BASED ON FIELD SURGE TESTING. SETPOINT CALCULATED BY FUNCTION PASSED TO FIC.

FV-1231A1		FV-1231A2	
PR1	8.6	PR1	8.6
PR2	6.9	PR2	6.9
FLOMAX2	3425	FLOMAX3	2375
FLOMIN2	2404	FLOMIN3	1668

VALUES ARE SUBJECT TO CHANGE DURING COMMISSIONING

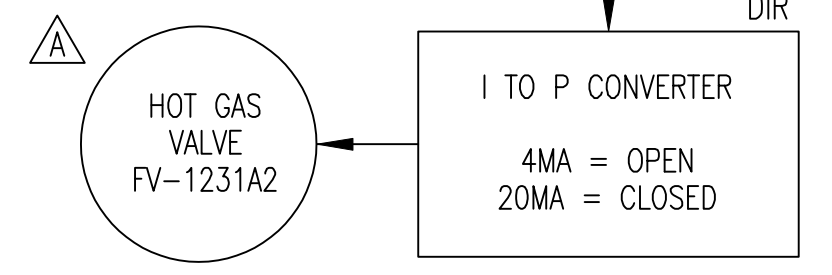
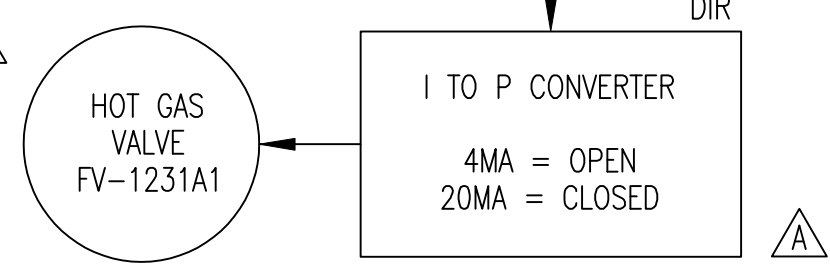
FIGURE 2



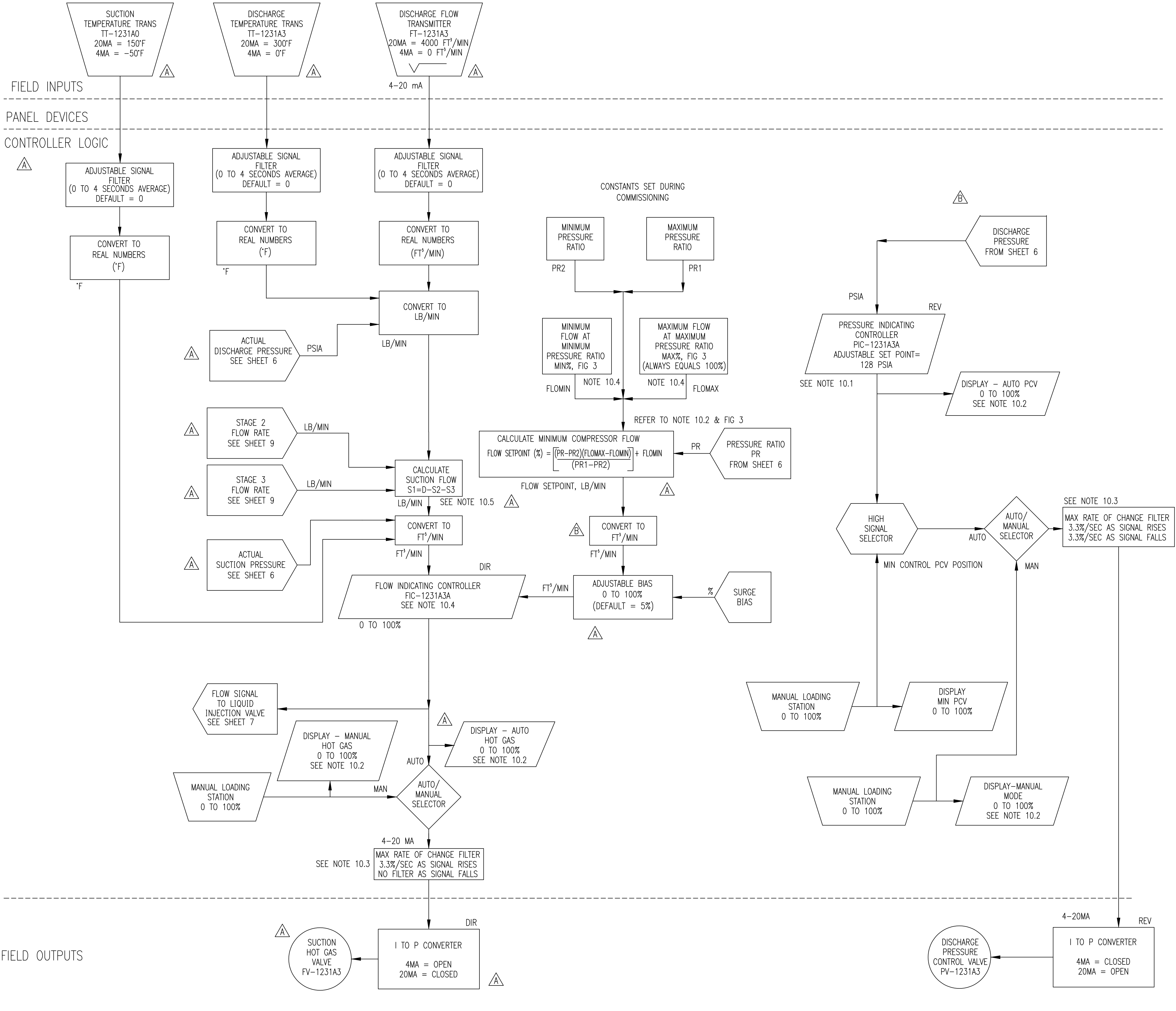
CALC IN LB/MIN
 $FLOMAX2 = SURGE FLOW - FLOMAX1$
 $FLOMIN2 = \frac{FLOMIN1}{FLOMAX1} \times SURGE FLOW - FLOMIN1$

CALC IN LB/MIN
 $FLOMAX3 = SURGE FLOW - FLOMAX2$
 $FLOMIN3 = \frac{FLOMIN1}{FLOMAX1} \times SURGE FLOW - FLOMIN2$

FIELD OUTPUTS



PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100	YORK THIRD ANGLE PROJECTION	PURCH ORD NO 27607-P-13-012UC1	UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18
DR T PALMER	DEC 2PL	3/19/09	DEC 3PL
CHK H KUTZ	DEC 3PL	3/23/09	FRACT
APPD T PALMER	DEC 3PL	3/23/09	ANGLE
CODE	SCALE NONE	SIZE D	CAGE CODE 23587
		DWG NO 669D0127	REV C
		SHEET 9 OF 11	

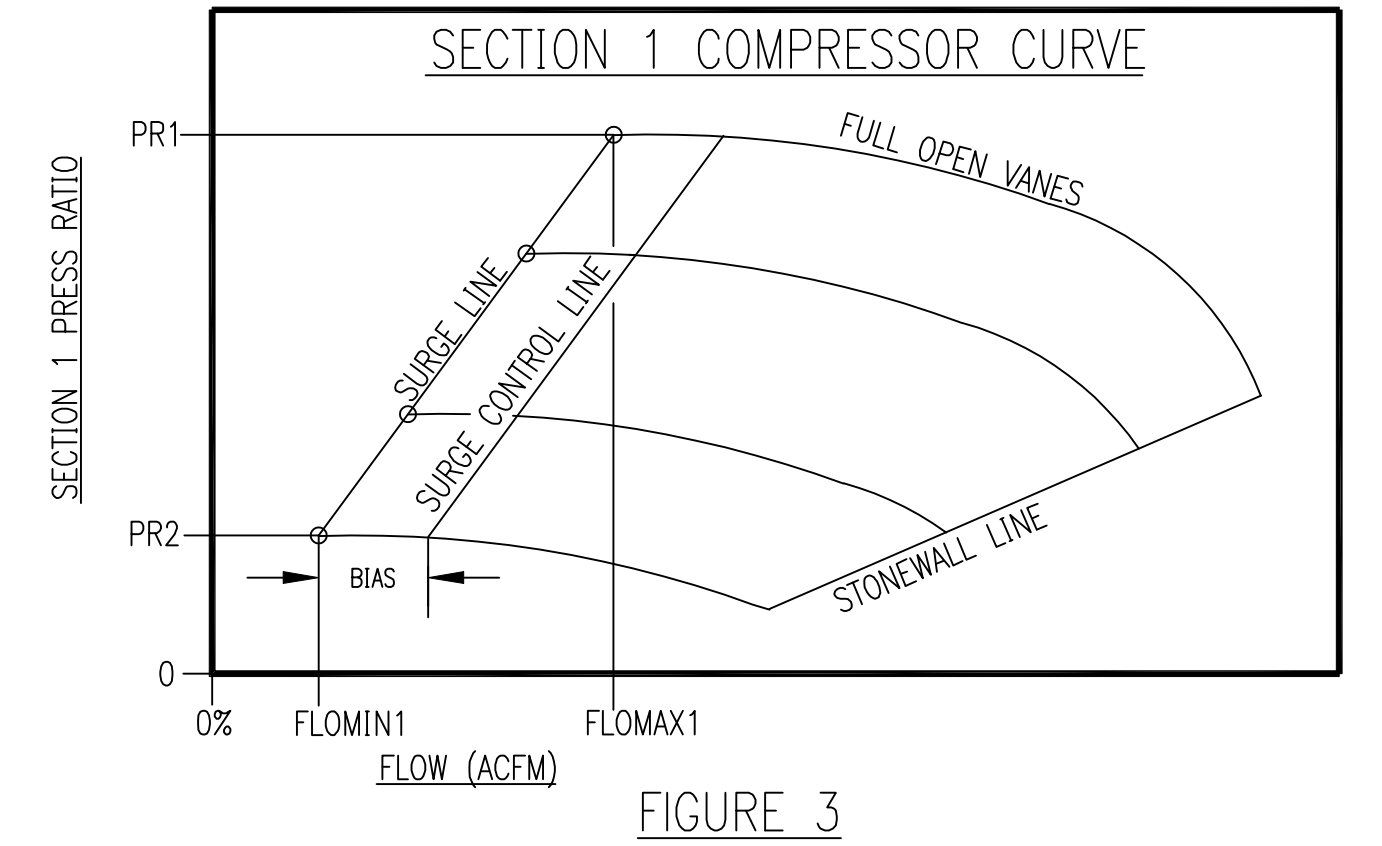


- NOTES**
- A TEXT/GRAPHICS DISPLAY INTERFACE IS REQUIRED TO DRIVE PLC.
- 10.1) ALL CONTROLLERS REQUIRE A SCREEN PAGE FOR ADJUSTMENT AND DISPLAY OF THE FOLLOWING VARIABLES:
- A) PROCESS VARIABLE IN ENGINEERING UNITS
 - B) SETPOINT IN ENGINEERING UNITS, AND FRONT OF PANEL ADJUSTABLE
 - C) SIGNAL OUTPUT AS 0-100%
- THE PROPORTIONAL, AND RESET (INTEGRAL) VALUES ARE TO BE CONFIGURABLE, BY REFERENCE TO A COMMISSIONING SCREEN.
- 10.2) DISPLAYS REQUIRE A SCREEN PAGE FOR ADJUSTMENTS AND DISPLAY OF THE FOLLOWING VARIABLES
- A) SIGNAL OUTPUT AS 0-100%
- 10.3) RATE OF CHANGE FILTERS VALUES SHOWN ARE DEFAULT, TO BE ADJUSTED DURING COMMISSIONING.
- 10.4) PR1, PR2, FLOMAX AND FLOMIN ARE PASSWORD ADJUSTABLE. INITIAL FACTORY SETPOINTS ARE USUALLY THE PREDICTED PRESSURE RATIOS AT 100% AND 13% PRV POSITIONS. FLOMAX IS FACTORY SET AT THE SURGE POINT WITH FULL OPEN VANES AND FLOMIN IS SET AT THE SURGE POINT WITH THE VANES AT APPROXIMATELY 13% OPEN (SEE FIGURE 3). SETPOINTS ARE ADJUSTABLE AT PASSWORD LEVEL AND MAY BE ALTERED BY THE YORK START-UP TECHNICIAN BASED ON FIELD SURGE TESTING. SETPOINT CALCULATED BY FUNCTION PASSED TO FIC.
- 10.5) DEFINITION OF VARIABLES:
- S1 = STAGE 1 SUCTION FLOW
 - S2 = STAGE 2 SUCTION FLOW
 - S3 = STAGE 3 SUCTION FLOW
 - D = DISCHARGE FLOW

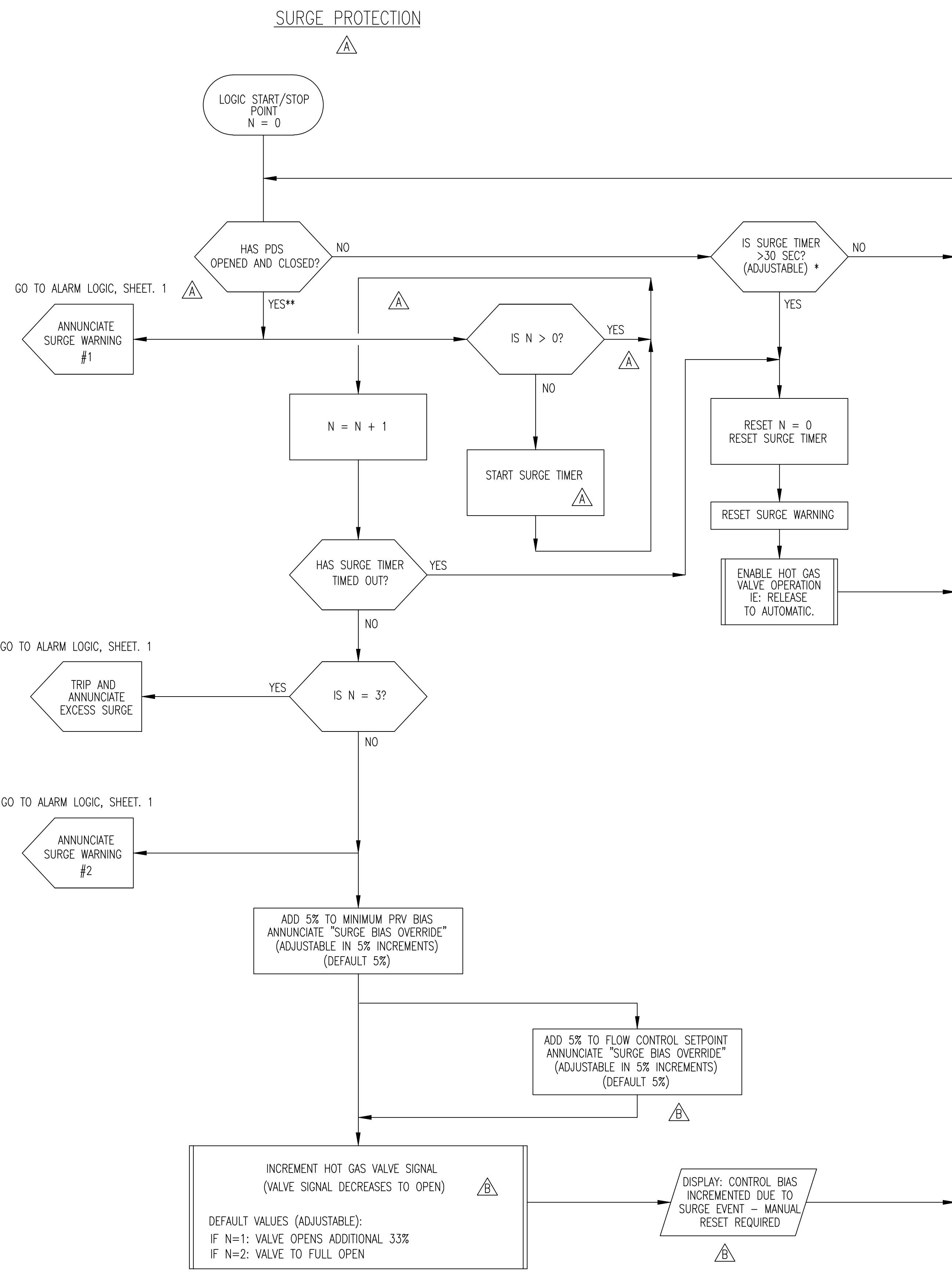
FV-1231A3

INITIAL SET VALUES	
PR1	8.6
PR2	6.9
FLOMAX1	1175
FLOMIN1	825

VALUES ARE SUBJECT TO CHANGE DURING COMMISSIONING

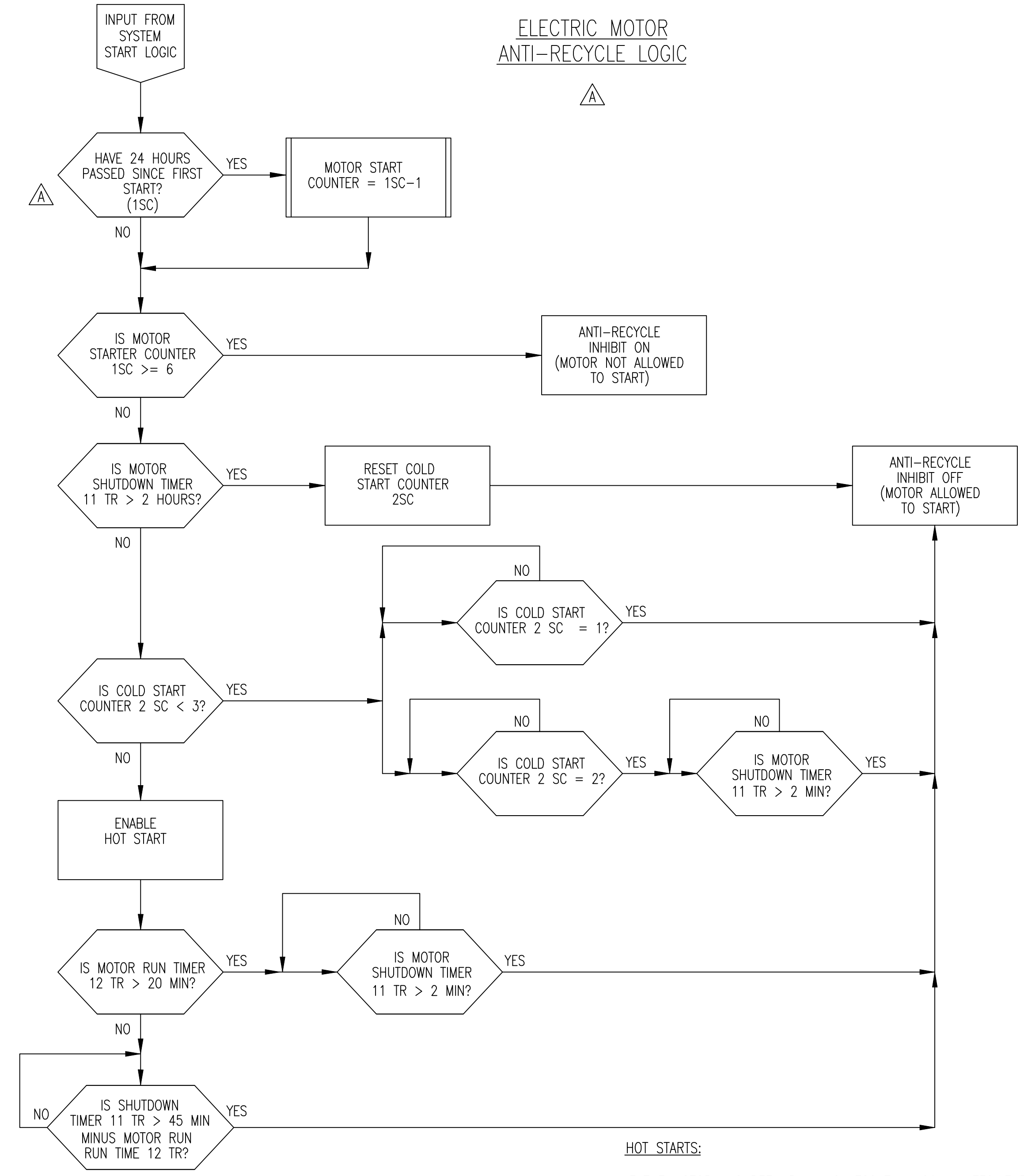


PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100		PURCH ORD NO 27607-P-13-012UC1	
UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18 DEC 2PL ± DEC 3PL ± FRACT ± ANGLE ±			
DR T PALMER		3/19/09	
CHK H KUTZ		3/23/09	
APPD T PALMER		3/23/09	
CODE		SCALE NONE	
TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR		DWG NO 669D0127	
REV C		SHEET 10 OF 11	



* SUBJECT TO EVALUATION AND CHANGE DURING COMMISSIONING BY YORK START-UP TECHNICIAN.

△ ** STATE MUST COMPLETELY CYCLE. SWITCH MUST OPEN AND CLOSE AGAIN FOR "YES" CONDITION. FOR TRANSMITTER, PRESSURE MUST TRANSIT FROM LESS THAN TO GREATER THAN AND BACK TO LESS THAN SETPOINT. SCALE TRANSMITTER -50 TO +250 PSI, SET AT +5 PSI AND SHUT DOWN ON OUT OF RANGE.



ANTI-RECYCLE OPERATION:

△ IF THE MOTOR HAS BEEN SHUT DOWN FOR 2 HOURS, THE COOL DOWN (ANTI-RECYCLE) TIME WILL BE 0 (ZERO) MINUTES FOR THE FIRST COLD START AND 2 MINUTES FOR THE SECOND COLD START. ANY ADDITIONAL STARTS WOULD BE CONSIDERED HOT STARTS.

COLD STARTS:

HOT STARTS:

IF THE MOTOR HAS BEEN RUNNING LESS THAN 20 MINUTES, THE COOL DOWN TIME WILL BE THE DIFFERENCE BETWEEN 45 MINUTES AND THE HOT MOTOR RUNNING TIME SINCE THE LAST START. FOR EXAMPLE, IF THE MOTOR HAS RUN FOR 5 MINUTES SINCE THE LAST START, THE COOL DOWN TIME = 45 - 5 = 40 MINUTES.

IF THE MOTOR HAS BEEN RUNNING 20 MINUTES OR LONGER, THE COOL DOWN TIME WILL BE 2 MINUTES.

NOTE THAT ONLY 6 STARTS ARE PERMITTED IN ANY 24 HOUR PERIOD.

△ EACH START WILL BE RESET 24 HOURS AFTER THE START WAS INITIATED, THUS ALLOWING ANOTHER RESTART AND REDEFINING THE BEGINNING OF THE 24 HOUR PERIOD.

PURCHASER SANDRIDGE ENERGY 1601 N.W. EXPRESSWAY SUITE 1600 OKLAHOMA CITY, OK 73118		NOTICE TO PURCHASER REFER TO CONTRACT FOR MATERIAL TO BE SUPPLIED BY YORK REFRIGERATION. THE AMOUNT OF SUCH MATERIAL IS NOT INCREASED BY ANYTHING SHOWN UPON THIS DRAWING.	
YORK ORD NO 294100		PURCH ORD NO 27607-P-13-012JCI	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DO NOT SCALE			
UNLESS OTHERWISE SPECIFIED TOLERANCES PER QWP 18			
TITLE LOGIC DIAGRAM YORK M555BA CENTRIFUGAL COMPRESSOR		Waynesboro, PA 17268	
DR T PALMER	3/19/09	SIZE D	CAGE CODE 23587
CHK H KUTZ	3/23/09	DWG NO 669D0127	REV C
APPD T PALMER	3/23/09	SCALE NONE	SHEET 11 OF 11

ALL SHEETS ARE THE SAME REVISION STATUS