

**PACIFIC GAS AND ELECTRIC COMPANY  
San Bruno Gas Transmission Line Incident  
Data Response**

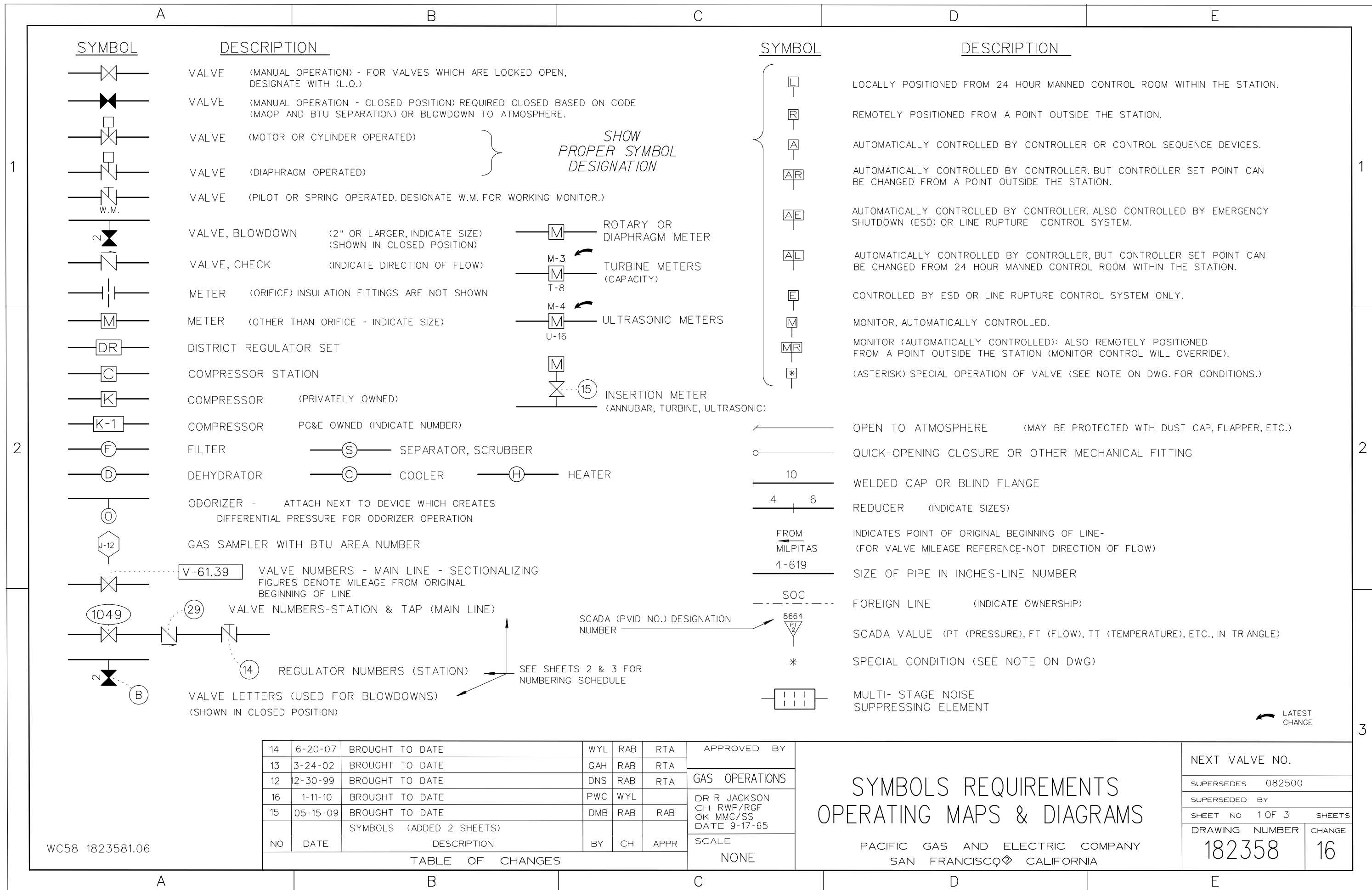
PG&E Data Request No.:	NTSB_053-012		
PG&E File Name:	San Bruno GT Line Incident_DR_NTSB_053-012		
Request Date:	March 7, 2011	Requesting Party:	NTSB
Date Sent:	March 17, 2011	Requestor:	Operations (Chhatre/Nicholson)

**QUESTION 12**

Please explain / provide legend for valve numbering and abbreviations on the Milpitas Terminal operating diagram. What is AR, MR, R, circle S, circle F, etc...

**ANSWER 12**

Attached is the Key/Legend for our Operating Diagrams (1823851.pdf) and the examples of how to read the diagrams (1823582.pdf, 1823583.pdf).



SYMBOL      DESCRIPTION

- VALVE (MANUAL OPERATION) - FOR VALVES WHICH ARE LOCKED OPEN, DESIGNATE WITH (L.O.)
- VALVE (MANUAL OPERATION - CLOSED POSITION) REQUIRED CLOSED BASED ON CODE (MAOP AND BTU SEPARATION) OR BLOWDOWN TO ATMOSPHERE.
- VALVE (MOTOR OR CYLINDER OPERATED)
- VALVE (DIAPHRAGM OPERATED)
- VALVE (PILOT OR SPRING OPERATED. DESIGNATE W.M. FOR WORKING MONITOR.)

SHOW  
PROPER SYMBOL  
DESIGNATION

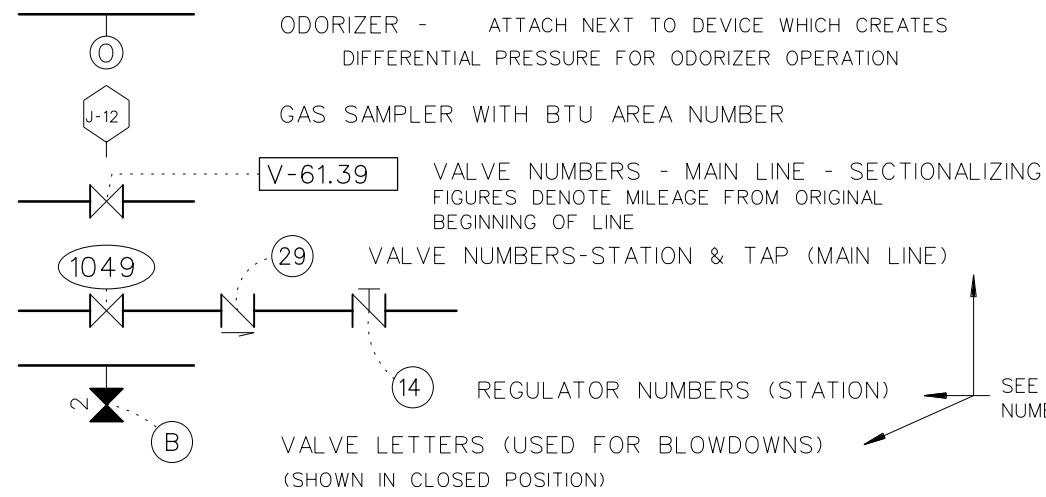
- VALVE, BLOWDOWN (2" OR LARGER, INDICATE SIZE) (SHOWN IN CLOSED POSITION)
- VALVE, CHECK (INDICATE DIRECTION OF FLOW)
- METER (ORIFICE) INSULATION FITTINGS ARE NOT SHOWN
- METER (OTHER THAN ORIFICE - INDICATE SIZE)
- DISTRICT REGULATOR SET
- COMPRESSOR STATION
- COMPRESSOR (PRIVATELY OWNED)
- COMPRESSOR PG&E OWNED (INDICATE NUMBER)
- FILTER
- SEPARATOR, SCRUBBER
- DEHYDRATOR
- COOLER
- HEATER

- ROTARY OR DIAPHRAGM METER
- TURBINE METERS (CAPACITY)
- ULTRASONIC METERS
- INSERTION METER (ANNUBAR, TURBINE, ULTRASONIC)

SYMBOL      DESCRIPTION

- LOCALLY POSITIONED FROM 24 HOUR MANNED CONTROL ROOM WITHIN THE STATION.
- REMOTELY POSITIONED FROM A POINT OUTSIDE THE STATION.
- AUTOMATICALLY CONTROLLED BY CONTROLLER OR CONTROL SEQUENCE DEVICES.
- AUTOMATICALLY CONTROLLED BY CONTROLLER. BUT CONTROLLER SET POINT CAN BE CHANGED FROM A POINT OUTSIDE THE STATION.
- AUTOMATICALLY CONTROLLED BY CONTROLLER. ALSO CONTROLLED BY EMERGENCY SHUTDOWN (ESD) OR LINE RUPTURE CONTROL SYSTEM.
- AUTOMATICALLY CONTROLLED BY CONTROLLER, BUT CONTROLLER SET POINT CAN BE CHANGED FROM 24 HOUR MANNED CONTROL ROOM WITHIN THE STATION.
- CONTROLLED BY ESD OR LINE RUPTURE CONTROL SYSTEM ONLY.
- MONITOR, AUTOMATICALLY CONTROLLED.
- MONITOR (AUTOMATICALLY CONTROLLED): ALSO REMOTELY POSITIONED FROM A POINT OUTSIDE THE STATION (MONITOR CONTROL WILL OVERRIDE).
- (ASTERISK) SPECIAL OPERATION OF VALVE (SEE NOTE ON DWG. FOR CONDITIONS.)

- OPEN TO ATMOSPHERE (MAY BE PROTECTED WITH DUST CAP, FLAPPER, ETC.)
- QUICK-OPENING CLOSURE OR OTHER MECHANICAL FITTING
- WELDED CAP OR BLIND FLANGE
- REDUCER (INDICATE SIZES)
- INDICATES POINT OF ORIGINAL BEGINNING OF LINE- (FOR VALVE MILEAGE REFERENCE-NOT DIRECTION OF FLOW)
- SIZE OF PIPE IN INCHES-LINE NUMBER
- FOREIGN LINE (INDICATE OWNERSHIP)
- SCADA VALUE (PT (PRESSURE), FT (FLOW), TT (TEMPERATURE), ETC., IN TRIANGLE)
- SPECIAL CONDITION (SEE NOTE ON DWG)
- MULTI-STAGE NOISE SUPPRESSING ELEMENT



SCADA (PVID NO.) DESIGNATION NUMBER

SEE SHEETS 2 & 3 FOR NUMBERING SCHEDULE

LATEST CHANGE

NO	DATE	DESCRIPTION	BY	CH	APPR
14	6-20-07	BROUGHT TO DATE	WYL	RAB	RTA
13	3-24-02	BROUGHT TO DATE	GAH	RAB	RTA
12	12-30-99	BROUGHT TO DATE	DNS	RAB	RTA
16	1-11-10	BROUGHT TO DATE	PWC	WYL	
15	05-15-09	BROUGHT TO DATE	DMB	RAB	RAB
SYMBOLS (ADDED 2 SHEETS)					
TABLE OF CHANGES					

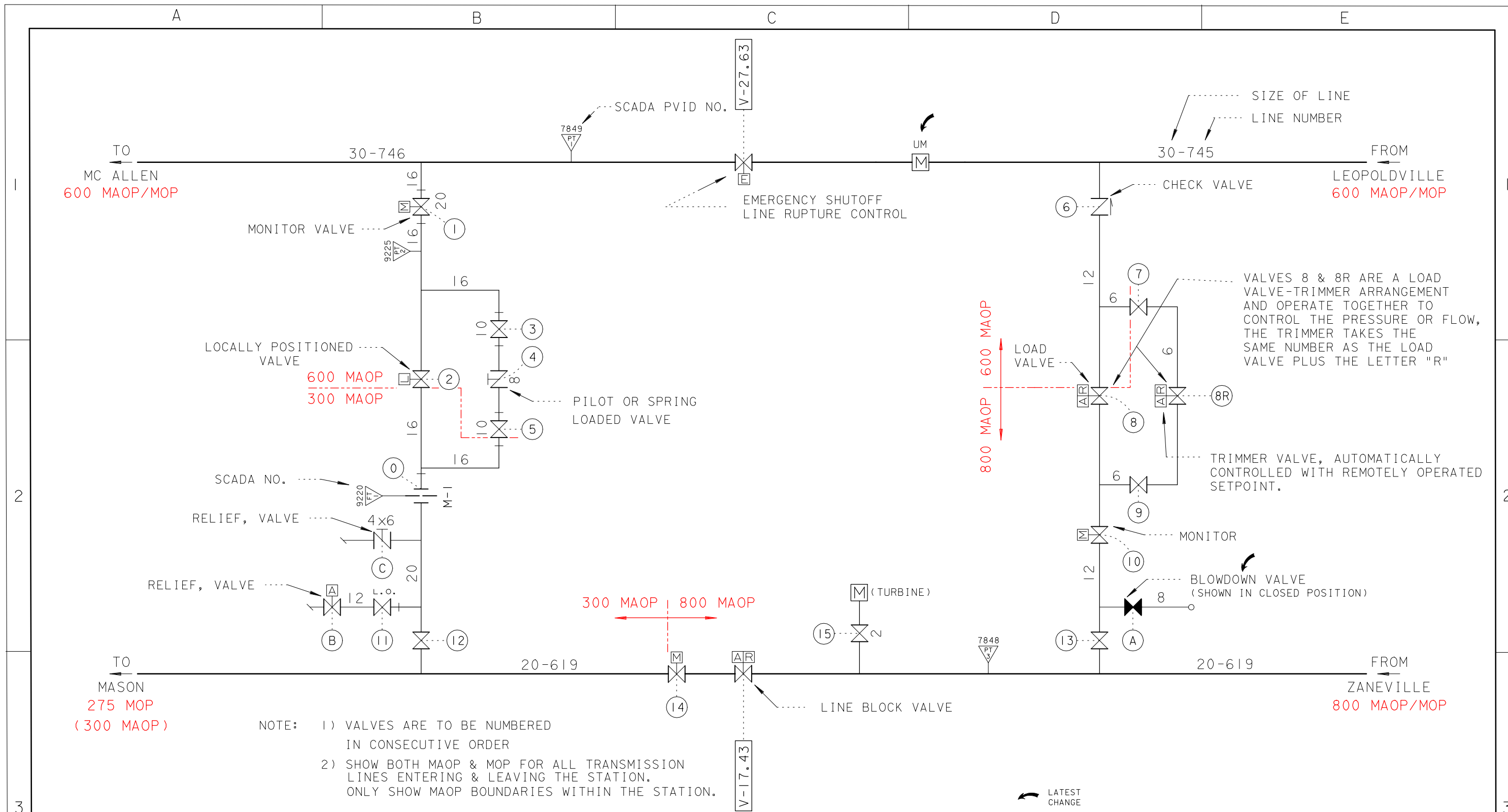
APPROVED BY	
GAS OPERATIONS	
DR R JACKSON CH RWP/RGF OK MMC/SS DATE 9-17-65	
SCALE	NONE

SYMBOLS REQUIREMENTS  
OPERATING MAPS & DIAGRAMS

PACIFIC GAS AND ELECTRIC COMPANY  
SAN FRANCISCO CALIFORNIA

NEXT VALVE NO.	
SUPERSEDES 082500	
SUPERSEDED BY	
SHEET NO 1 OF 3	SHEETS
DRAWING NUMBER	CHANGE
182358	16

WC58 1823581.06



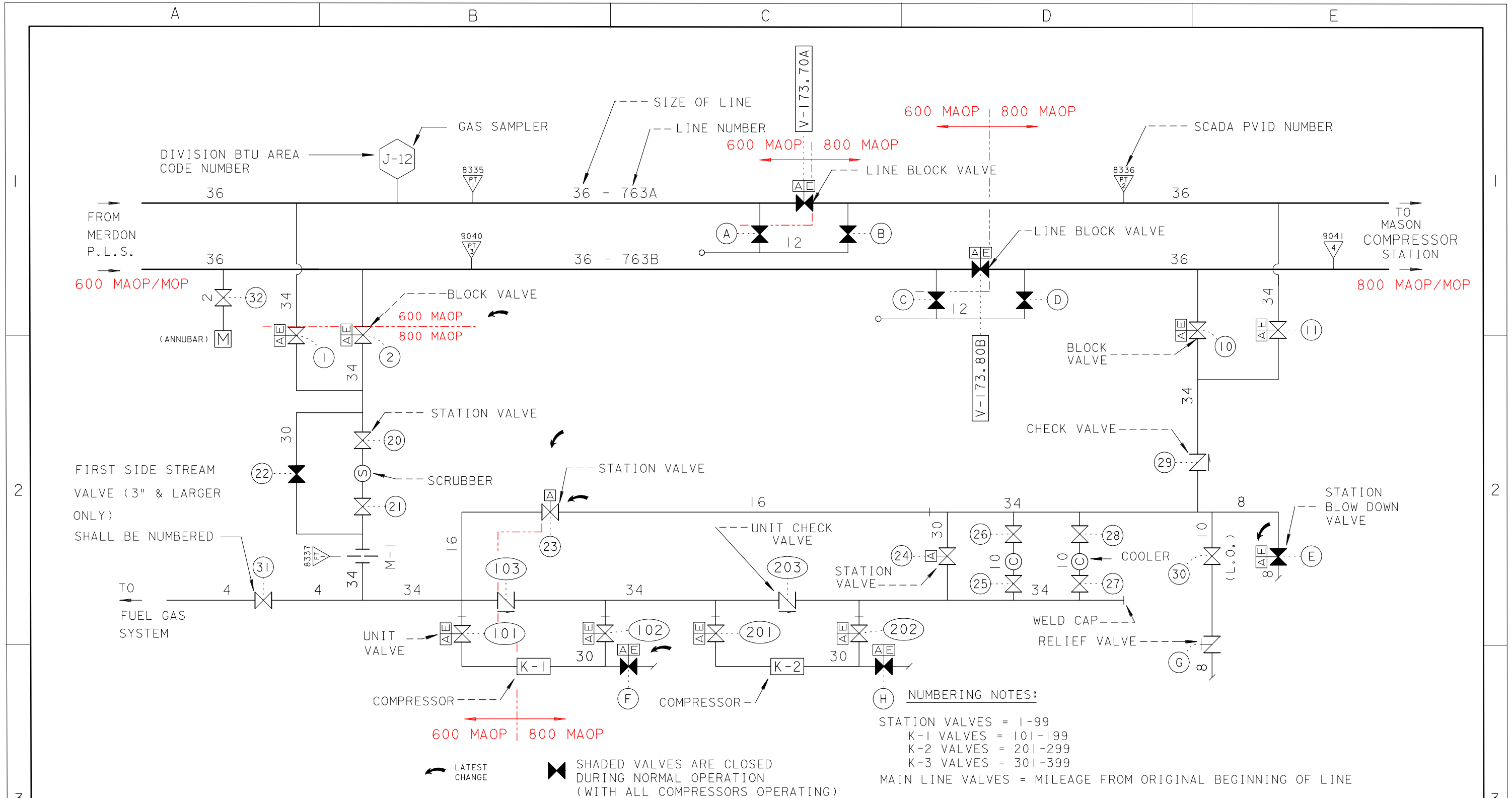
NO	DATE	DESCRIPTION	BY	CH	APPR
8	4-22-96	BROUGHT TO DATE	WYL	RAB	RCB
7	7-84	ISSUE FOR APPROVAL			CJS
6	8-1-75	STANDARD PRACTICE 464-3			GB
5	11-1-74	TITLE CHANGE & BROUGHT TO DATE			
10	12-30-99	BROUGHT TO DATE	DNS	RAB	
9	8-20-97	BROUGHT TO DATE	TAB	RAB	RTA

TABLE OF CHANGES

APPROVED BY	
GAS OPERATIONS	
DR B LIVELY CH RWP/RGF OK MMC/SS DATE 2-11-74	
SCALE NONE	

SYMBOLS REQUIREMENTS  
OPERATING MAPS & DIAGRAMS  
(REGULATOR STATION)  
PACIFIC GAS AND ELECTRIC COMPANY  
SAN FRANCISCO CALIFORNIA

NEXT VALVE NO. 16	
SUPERSEDES	
SUPERSEDED BY	
SHEET NO 2 OF 3	SHEETS
DRAWING NUMBER	CHANGE
182358	10



NUMBERING NOTES:  
 STATION VALVES = 1-99  
 K-1 VALVES = 101-199  
 K-2 VALVES = 201-299  
 K-3 VALVES = 301-399  
 MAIN LINE VALVES = MILEAGE FROM ORIGINAL BEGINNING OF LINE

LATEST CHANGE (indicated by a curved arrow)  
 SHADED VALVES ARE CLOSED DURING NORMAL OPERATION (WITH ALL COMPRESSORS OPERATING)

NO	DATE	DESCRIPTION	BY	CH	APPR
8	4-22-96	BROUGHT TO DATE	WYL	RAB	RCB
7	7-84	ISSUE FOR APPROVAL			CJS
6	8-1-75	STANDARD PRACTICE 464-3			GB
5	11-1-74	TITLE CHANGE & BROUGHT TO DATE			
10	3-24-02	BROUGHT TO DATE	GAH	RAB	RTA
9	8-20-97	BROUGHT TO DATE	TAB	RAB	RTA

**SYMBOLS REQUIREMENTS**  
**OPERATING MAPS & DIAGRAMS**  
 (COMPRESSOR STATION)

PACIFIC GAS AND ELECTRIC COMPANY  
 SAN FRANCISCO, CALIFORNIA

NEXT VALVE NO.	
SUPERSEDES	
SUPERSEDED BY	
SHEET NO 3 OF 3	SHEETS
DRAWING NUMBER	CHANGE
182358	10

WC58 1823583.G06  
 1-24-02 GAH