

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

May 29, 1981

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 300
NO/RCC:ms
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Gentlemen:

AUXILIARY VENTILATION SYSTEM MODIFICATION
SURRY POWER STATION - UNITS 1 AND 2

As indicated in our letter Serial No. 045A/020177 of June 6, 1978 this letter is to inform you that our latest construction schedule indicates that Surry Unit 1, which is presently in a steam generator outage, is due to be loaded with fuel on or about June 1, 1981 and made critical by July 1, 1981. Over 85 percent of the modification work required for upgrading the auxiliary ventilation system to its final design would be completed by the Unit 1 start-up date. To complete the modification and upgrading, approximately two additional months of work is required with both units at power. Included is work necessitated by the requirements of Increased Range of Radiation Monitoring (NUREG-0578 and 0737). Final testing and balancing, tentatively scheduled during the Unit 2 refueling outage in the Fall of 1981, will have to be completed to permit the implementation of the new technical specifications which were transmitted to you in October 1980 (letter Serial No. 862).

The scope of work and the estimated extent of its completion by the Unit 1 start-up date is shown on Attachment I to this letter. The item descriptions of work have been grouped into eight broad categories which constitute the eight objectives of the auxiliary ventilation system modification. The "Remarks" column highlights the safety aspects of, and manual actions required for, the incomplete items of work. It must be pointed out that the entire modification is being performed under conditions equal to or more stringent than the original station design conditions. Also, all major equipment necessary for the upgrading of the system (i.e., new fans, new filter train and dampers) have been installed. Control and instrumentation equipment for the automatic initiation of the system will not be totally functional and will require some operator manual actions. In addition, instrumentation to verify the performance of the filter trains is installed and operable. For each item or group of items of work, the ventilation system is aligned in a manner compatible with station operating conditions. Each ventilation system alignment is illustrated diagrammatically and displayed in the control room, showing the mode of ventilation system operation and the work being performed during that particular alignment (See Attachment II).

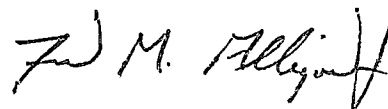
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Testing and balancing are the final steps of the auxiliary ventilation system modification. It is a design feature of the system that final balancing has to start with the purge system operational; therefore, either Unit 1 or 2 must be in a shutdown mode. This postpones the completion of the balancing and testing and, therefore, of the implementation of the Technical Specifications until after the refueling outage of Unit 2 presently scheduled for the fall of 1981. To improve this schedule, we are presently investigating the feasibility of performing balancing in two phases; the first phase to coincide with the present outage of Unit 1 and the second phase to start immediately after completion of the modification work.

If you have any questions or require additional information please contact us.

Very truly yours,



for B. R. Sylvia
Manager - Nuclear
Operations and Maintenance

cc: Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
Region II

ATTACHMENT I

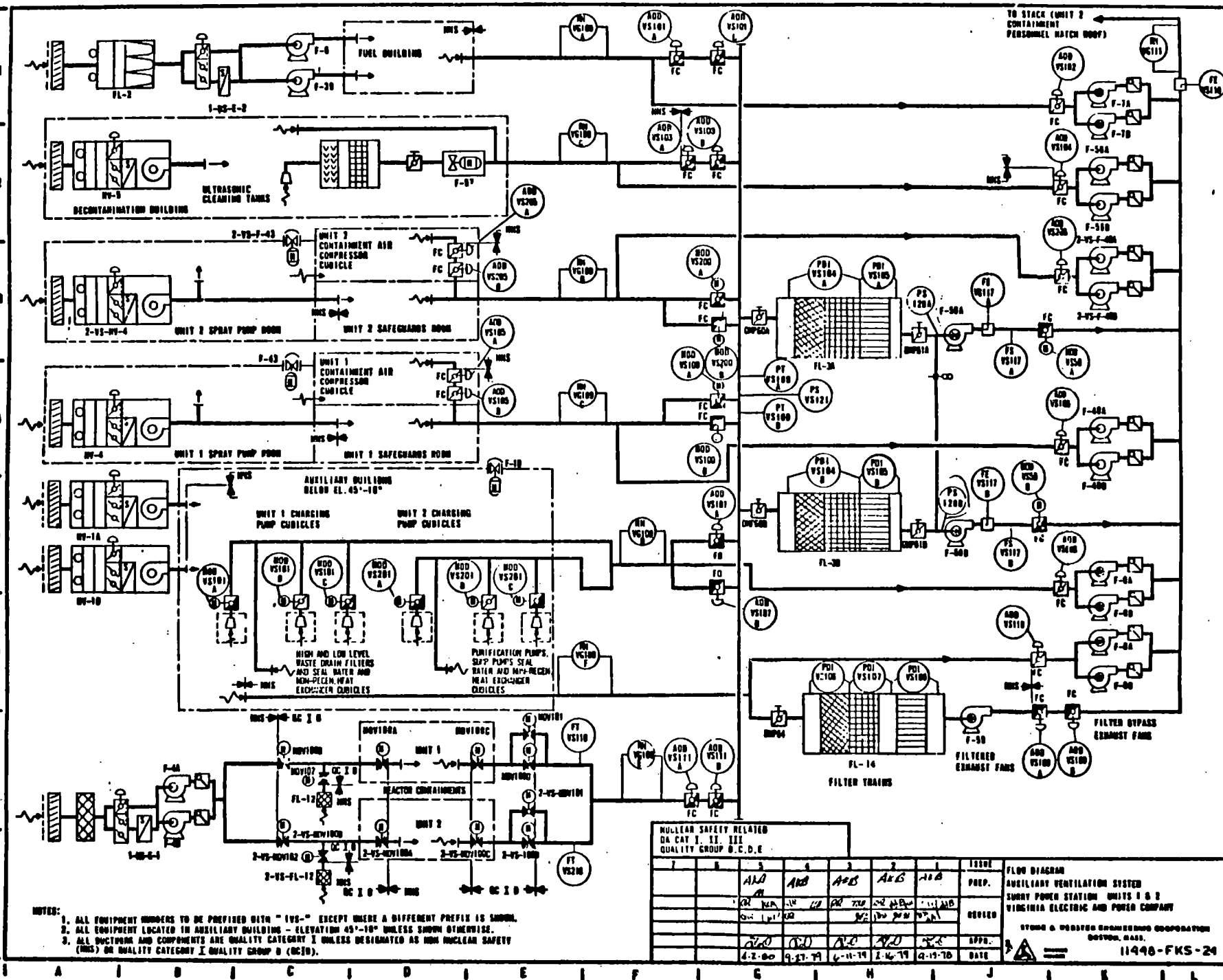
- . Auxiliary Ventilation System Objectives
- . System Diagram

ATTACHMENT I

A. <u>Filtering ECCS Leakage Following a LOCA Without Exceeding Filter Capacity</u>	Proposed Status as of Unit 1 Start-up	Remarks
(1) Install a two-position damper in the exhaust duct of each charging pump cubicle to automatically open and exhaust air when the pump operates and close when pump stops.	30% installed	Existing balancing dampers are manually opened and closed in cubicles where motor operated dampers have not been installed.
(2) Disconnect the exhaust ducts of nonsafety-related equipment cubicles from the charging pump exhaust system and connect them to the Auxiliary Building general area exhaust system.	Complete	None
The above two changes will reduce the flow rate of the ECCS equipment area exhaust air to the capacity of one filter train (36,000 cfm).		
(3) Install perforated plate air distribution and straightening subplenums in the inlet and outlet plenums of the two safety-related filter housings to provide uniform air flow through the filter elements.	Complete	Air distribution to be calibrated and fine tuned during final testing and balancing.
(4) Seismically support the safeguards and charging pump exhaust ducts to qualify the entire ECCS leakage collection and filtration system as a safety-grade system.	30% installed on Safeguards Exhaust 30% installed on Charging Pump Exhaust	None
(5) Adjust the supply air rate to the Auxiliary Building to match the exhaust rate reduced in item (1), above.	Not started	Adjustment to be performed during final testing and balancing.
B. <u>Limiting ECCS Equipment Area Temperature Following a LOCA</u>		
Install the two safety-related, high-head fans (1-VS-F-58A and B), sized to draw 36,000 cfm from ECCS equipment areas through the safety-related filters following a LOCA.	Complete	None
C. <u>Design Features for Periodic Verification of Filter Performance</u>		
For each one of the two safety-related filter trains, install 18 charcoal canisters in parallel with the main adsorber tray banks. The canisters will be filled with the same adsorbent as the main adsorber trays and will be removable from the outlet plenum for laboratory analysis.	Complete	Residence time through canisters to be REDUCED to match adsorber bed residence time during final testing and balancing.

D. <u>Controlling the Release of Filtered ECCS Leakage in Wake of Unit 2 Containment</u>	Proposed Status as of Unit 1 Start-up	Remarks
(1) Install a new stack on the roof of the personnel hatch of Unit 2 containment and divert the discharges of the exhaust fans from the old stack to the new stack.	Complete except new nonsafety-related fan (1-VS-F-59) discharges to old stack.	Fan 1-VS-F-59 may be manually tripped from Unit 2 Switchgear Room in the Service Bldg.
(2) Install a new sampling point and flow element for continuous radiation and flow rate monitoring of releases through the new stack.	Complete	None
(3) Provide automatic power interruption to nonsafety-related exhaust fans which potentially bypass the safety-related filters	Incomplete for Auxiliary Building fans	Manually interruptible from control room
(4) Provide automatic power interruption to nonsafety-related supply fans which potentially pressurize ECCS equipment areas.	Complete for Safeguards Building. Not started in Auxiliary Building	None Manually interruptible from control room
E. <u>Redundancy of Safety-Related Components</u>		
(1) The 36,000 cfm capacity of each filter train equals the maximum design exhaust flow rate from ECCS equipment areas.	Complete	None
(2) The capacity of each high-head fan (1-VS-F-58A and B) is 100 percent.	Complete	None
(3) Install parallel dampers for each of the safeguards and charging pump exhaust systems to provide redundant flow paths to the filters following a LOCA.	Complete	None
(4) Install dampers in series for the other exhaust systems to provide redundant closure following a LOCA.	Complete	None
F. <u>Upgrading Purge Exhaust System to Safety Classification</u>		
Install seismic supports for Units 1 and 2 purge exhaust ducts between the containment purge exhaust isolation valves and the safety-related filters.	30% Complete	None
G. <u>Filtering Frequently Contaminated Exhaust Air</u>		
(1) Install a nonsafety-related filter for the treatment of the Auxiliary Building general area exhaust system.	Complete	None
(2) Replace all defective diversion dampers with heavy-duty dampers having specified and tested leakage characteristics.	Complete	None

H. <u>Restoring Original Design Air Flow Rates of the Auxiliary Building and Purge Exhaust Systems</u>	Proposed Status as of Unit 1 Start-up	<u>Remarks</u>
(1) Install a nonsafety-related high-head fan (1-VS-F-59), sized to draw the design flow rate of the auxiliary building general area exhaust system through the nonsafety-related filter.	Complete	None
(2) Install automatic capacity control for fans 1-VS-F-58A and B to draw any of the other exhaust systems, including the purge, through the safety-related filters, each at its respective design flow rate.	Installed	Manual control from control room during construction. Automatic control following final testing and balancing.
(3) All existing fans will be used only to draw the exhaust systems when bypassing the filters. Remove purge exhaust fans (1-VS-F-5A) and B, since purge air is rarely released without filtration.	Complete	None



ATTACHMENT II

- . Summary of Abbreviations (Page 1)
- . Outline of Sequential System Modifications
(Pages 2 thru 13)

SUMMARY OF ABBREVIATIONS
OUTLINE OF SEQUENTIAL SYSTEM MODIFICATIONS

F - Fuel Building

D - Decon Building

SG - Safe Guards Building (Recir. Spray and LHSI Pump House)

RC - Reactor Containment 1 and 2

C - Central Area Exhaust System (Charging Pump Cubicles)

G - General Area Exhaust System

MOD - Motor Operated Damper

AOD - Air Operated Damper

DMP - Manual Damper

TD - Temporary Duct

Temp 1A - Temporary Damper installed in conjunction with Steam Generator Replacement Project

Temp 1B - Temporary Damper installed in conjunction with Steam Generator Replacement Project

Temp 2A - Temporary Damper installed in conjunction with Steam Generator Replacement Project

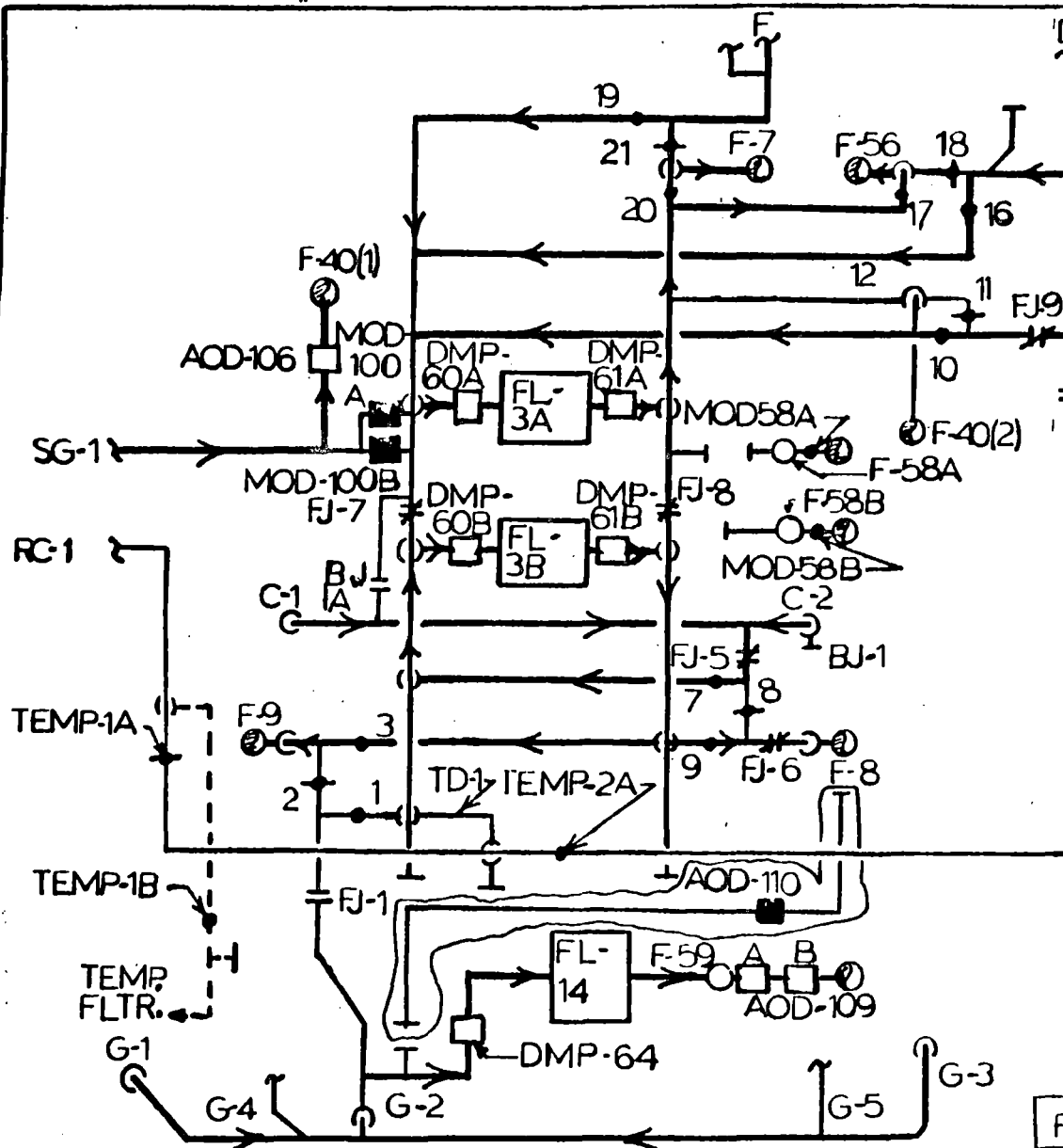
FJ - Flanged Joint

F - Fan

FL - Filter

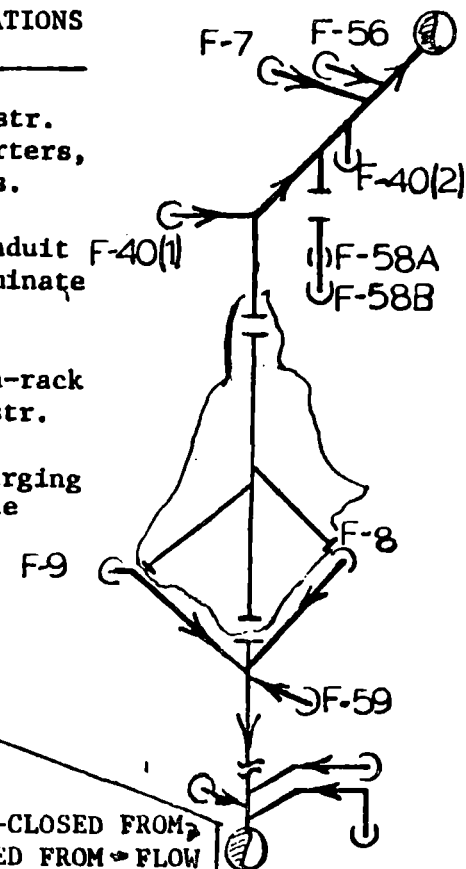
BJ - Blind Joint

PROCEDURE STEP 4.1



OTHER MODIFICATIONS
NOT SHOWN

1. Instal. instr. racks, starters, elec. boxes.
2. Instal. conduit F-40(1) Pull & terminate cables.
3. Instal. non-rack mounted instr.
4. Instal. charging pump cubicle dampers.



SYMBOLS

- CAPPED JOINT
- EXISTING DAMPER-CLOSED FROM
- NEW DAMPER-CLOSED FROM FLOW
- NEW DAMPER-OPEN FOR FLOW
- EXISTING DAMPER-OPEN FOR FLOW
- EXH. ABOVE ROOF
- FLANGED JOINT-CLOSED
- FLANGED JOINT-OPEN

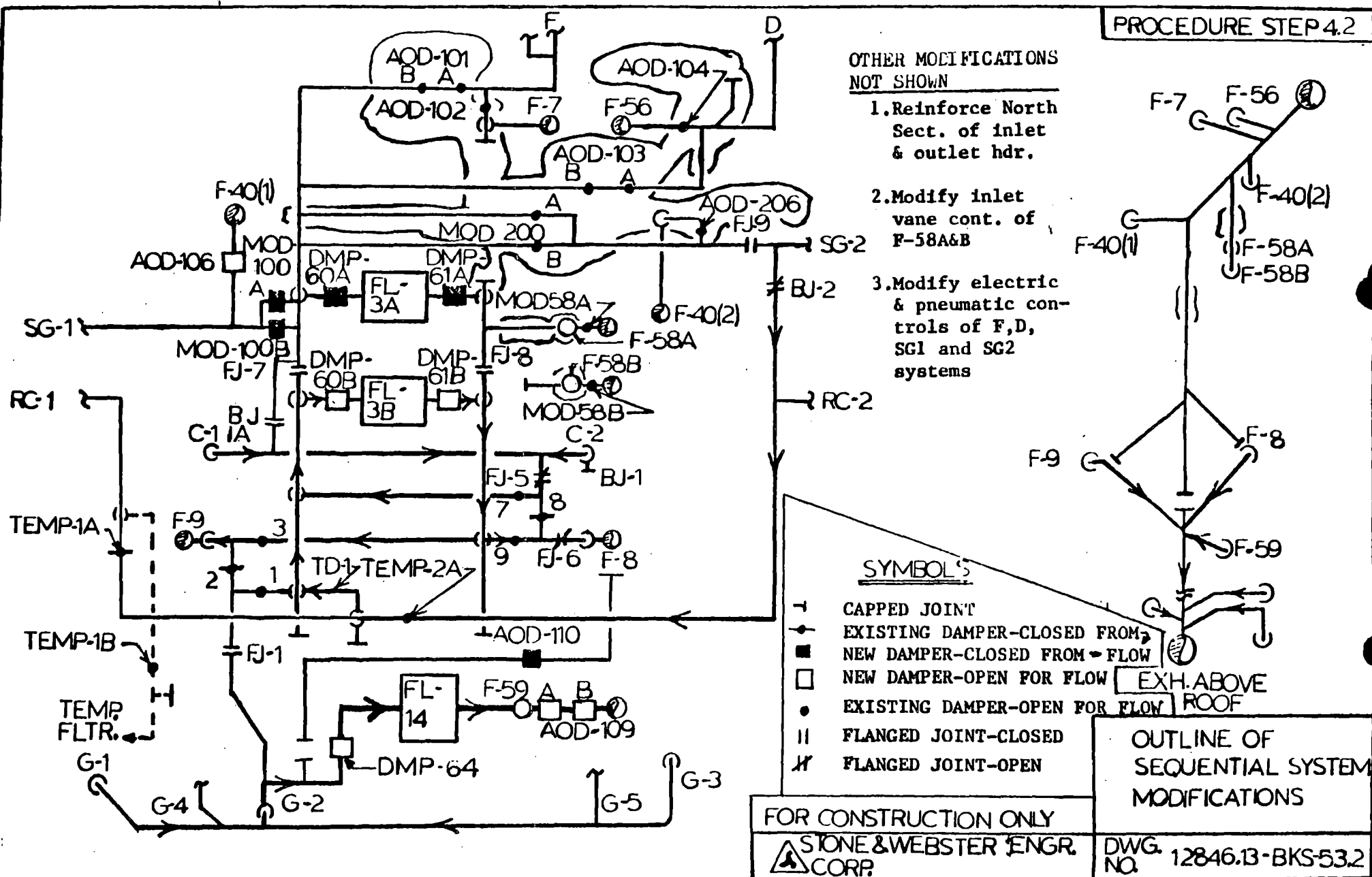
OUTLINE OF
SEQUENTIAL SYSTEM
MODIFICATIONS

FOR CONSTRUCTION ONLY

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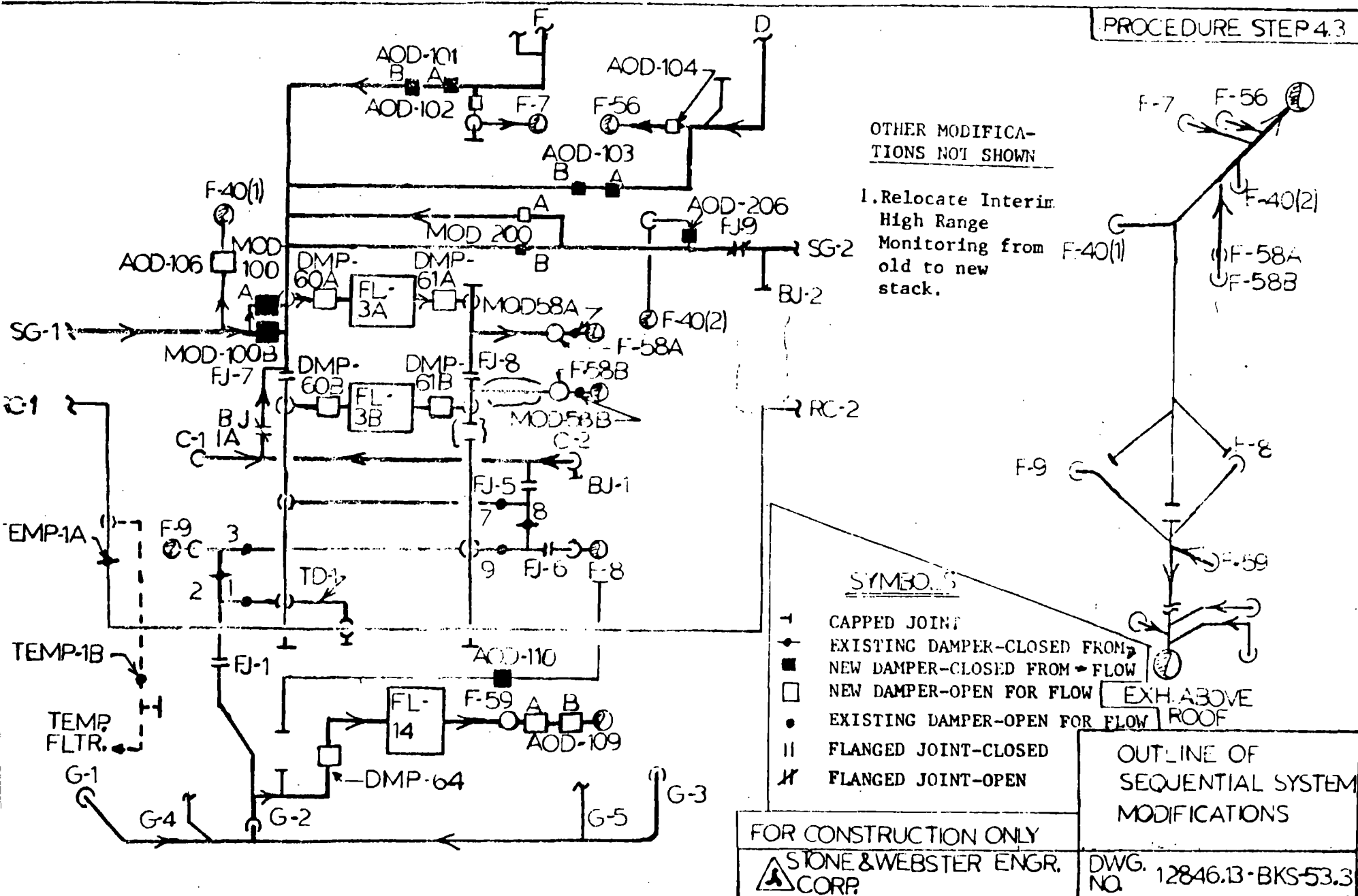
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PROCEDURE STEP 4.3



PROCEDURE STEP 4.4

OTHER MODIFICATIONS NOT SHOWN.

1. Relocate
RN-VG-109E&F &
connect 109E&F
to multipoint
sampler.
2. Modify electric
& pneumatic
controls of C &
RC systems

STABOL'S

- 1 CAPPED JOINT
 — EXISTING DAMPER-CLOSED FROM
 ■ NEW DAMPER-CLOSED FROM → FLOW
 □ NEW DAMPER-OPEN FOR FLOW
 • EXISTING DAMPER-OPEN FOR FLOW
 || FLANGED JOINT-CLOSED
 // FLANGED JOINT-OPEN
- EXH. ABOVE
 ROOF
 OUTLINE OF
 SEQUENTIAL

OUTLINE OF SEQUENTIAL SYSTEM MODIFICATIONS

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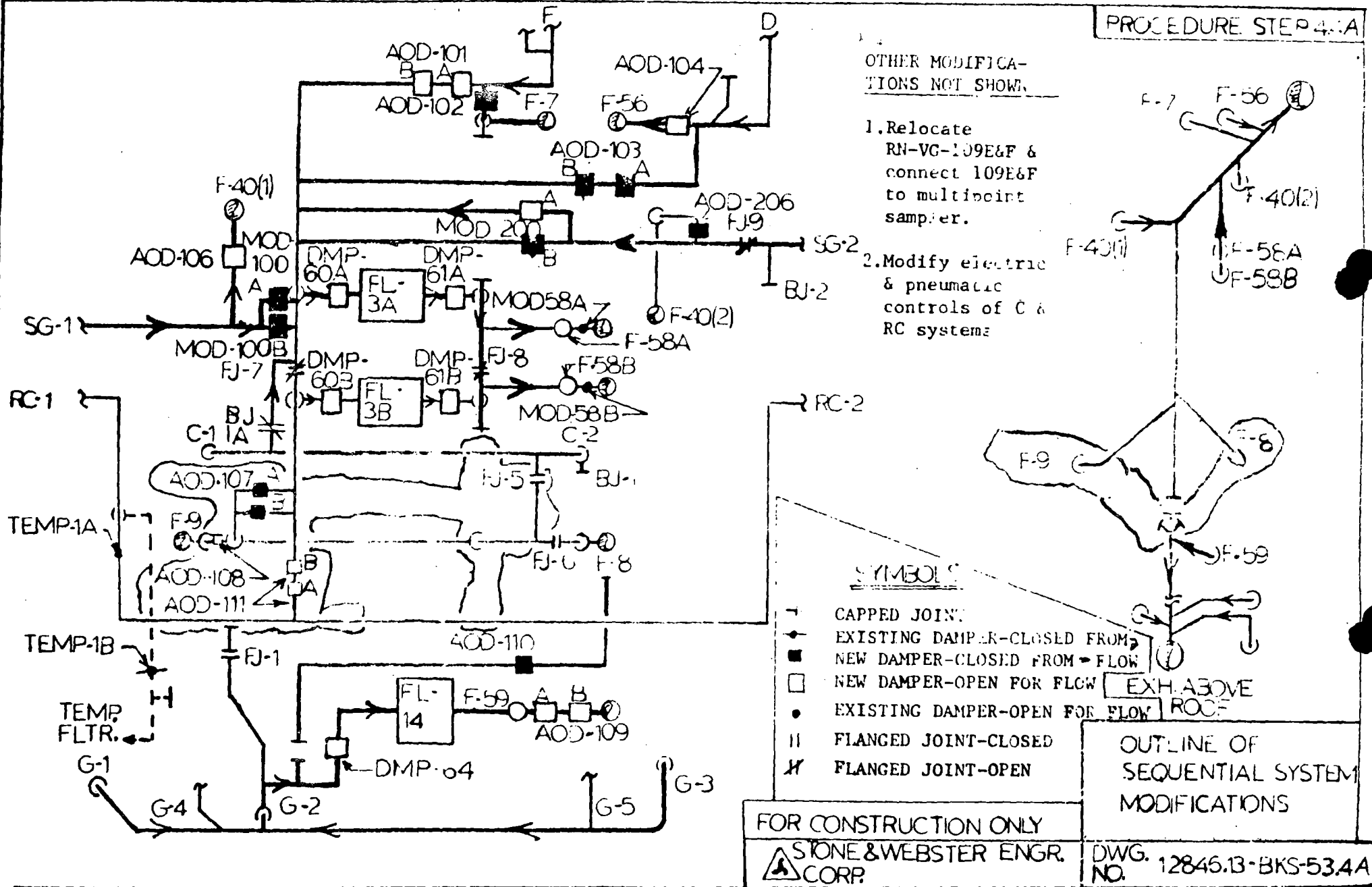
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PROCEDURE STEP 4.1A

OTHER MODIFICATIONS NOT SHOWN.

1. Relocate
RN-VG-109E&F &
connect 109E&F
to multipoint
sampler.

2. Modify electric
& pneumatic
controls of C &
RC system.



SYMBOLS

- CAPPED JOINT
- ◆ EXISTING DAMPER-CLOSED FROM FLOW
- NEW DAMPER-CLOSED FROM FLOW
- NEW DAMPER-OPEN FOR FLOW
- EXISTING DAMPER-OPEN FOR FLOW
- || FLANGED JOINT-CLOSED
- ⋈ FLANGED JOINT-OPEN

OUTLINE OF
SEQUENTIAL SYSTEM
MODIFICATIONS

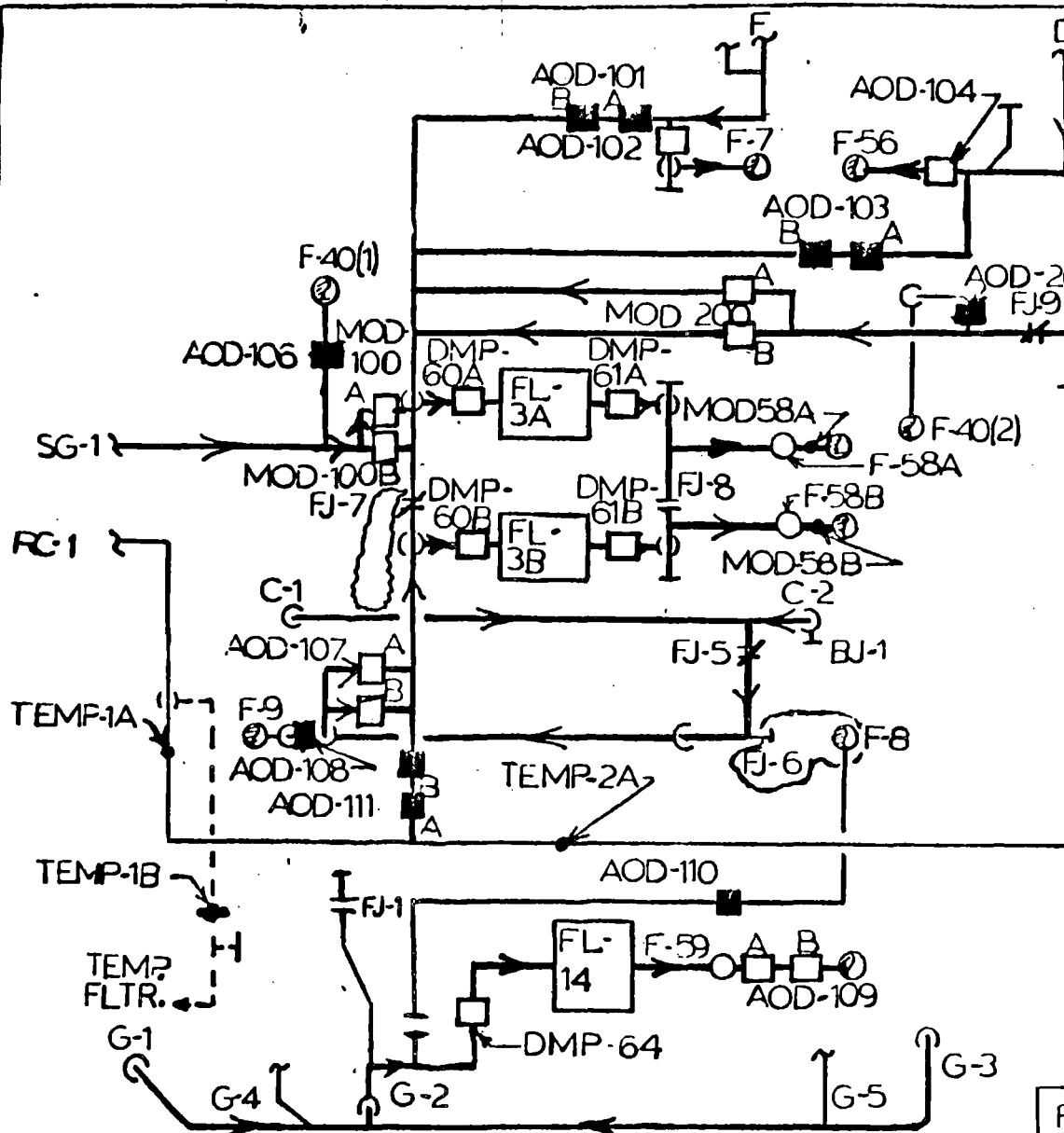
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PROCEDURE STEP 4.5.



OTHER MODIFICATIONS
NOT SHOWN

1. Change Speed of Fans
1-VS-HV-1A&B

2. Install new switches for HV-1A&B, F-8A&B, & F-9A&B

3. Switchover power sources F-8, F-9

4. Modify power & control circuitry F-8, F-9, HV-1A & B

SYMBOLS

- CAPPED JOINT
- EXISTING DAMPER-CLOSED FROM
- NEW DAMPER-CLOSED FROM FLOW
- NEW DAMPER-OPEN FOR FLOW
- EXISTING DAMPER-OPEN FOR FLOW
- || FLANGED JOINT-CLOSED
- ⋈ FLANGED JOINT-OPEN

EXH. ABOVE
ROOF

OUTLINE OF
SEQUENTIAL SYSTEM
MODIFICATIONS

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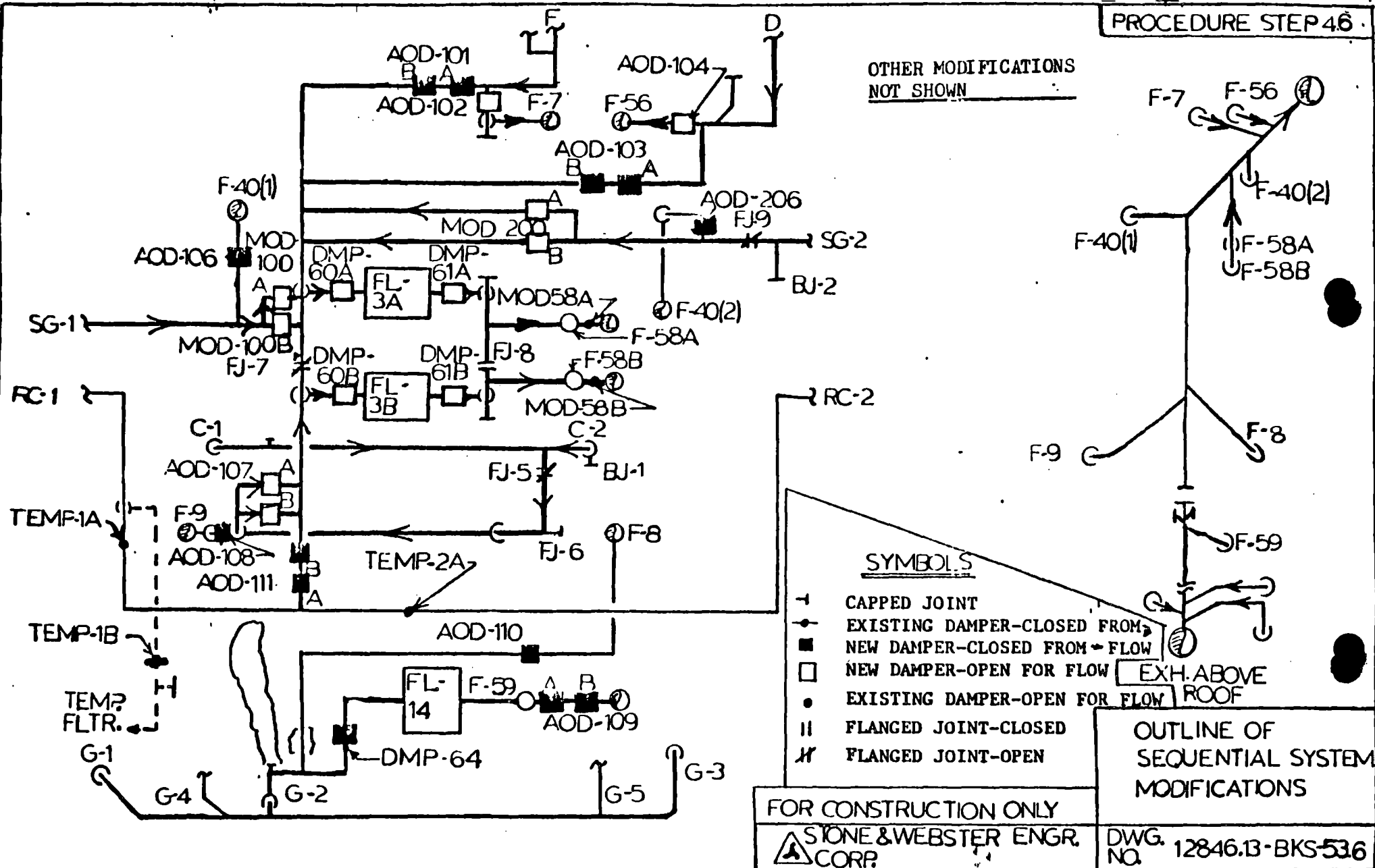
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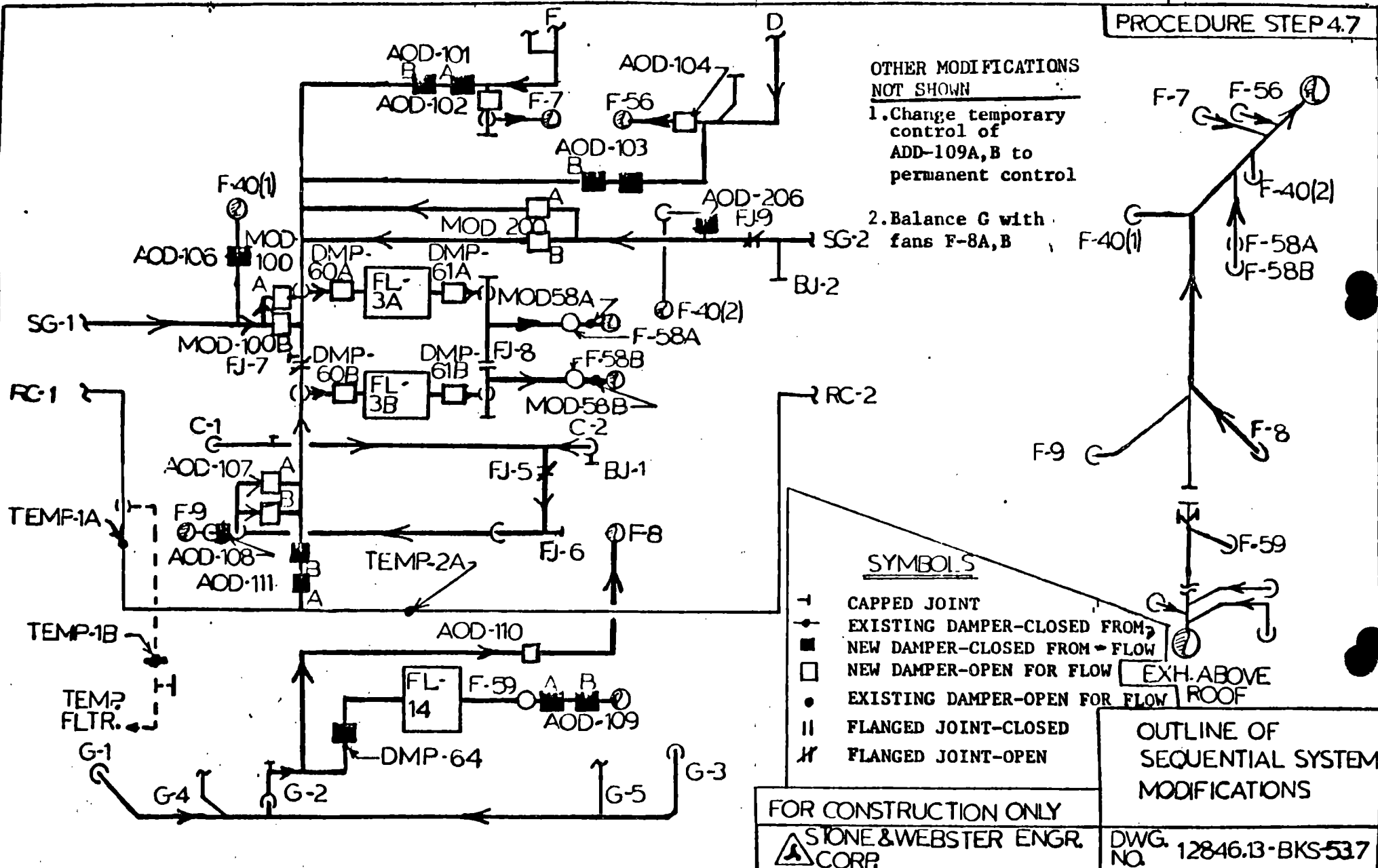
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PROCEDURE STEP 4.6

OTHER MODIFICATIONS
NOT SHOWN



PROCEDURE STEP 4.7



OTHER MODIFICATIONS
NOT SHOWN

1. Change temporary control of ADD-109A,B to permanent control
2. Balance G with fans F-8A,B

SYMBOLS

- CAPPED JOINT
- EXISTING DAMPER-CLOSED FROM
- NEW DAMPER-CLOSED FROM → FLOW
- NEW DAMPER-OPEN FOR FLOW
- EXISTING DAMPER-OPEN FOR FLOW
- || FLANGED JOINT-CLOSED
- ≡ FLANGED JOINT-OPEN

OUTLINE OF SEQUENTIAL SYSTEM MODIFICATIONS

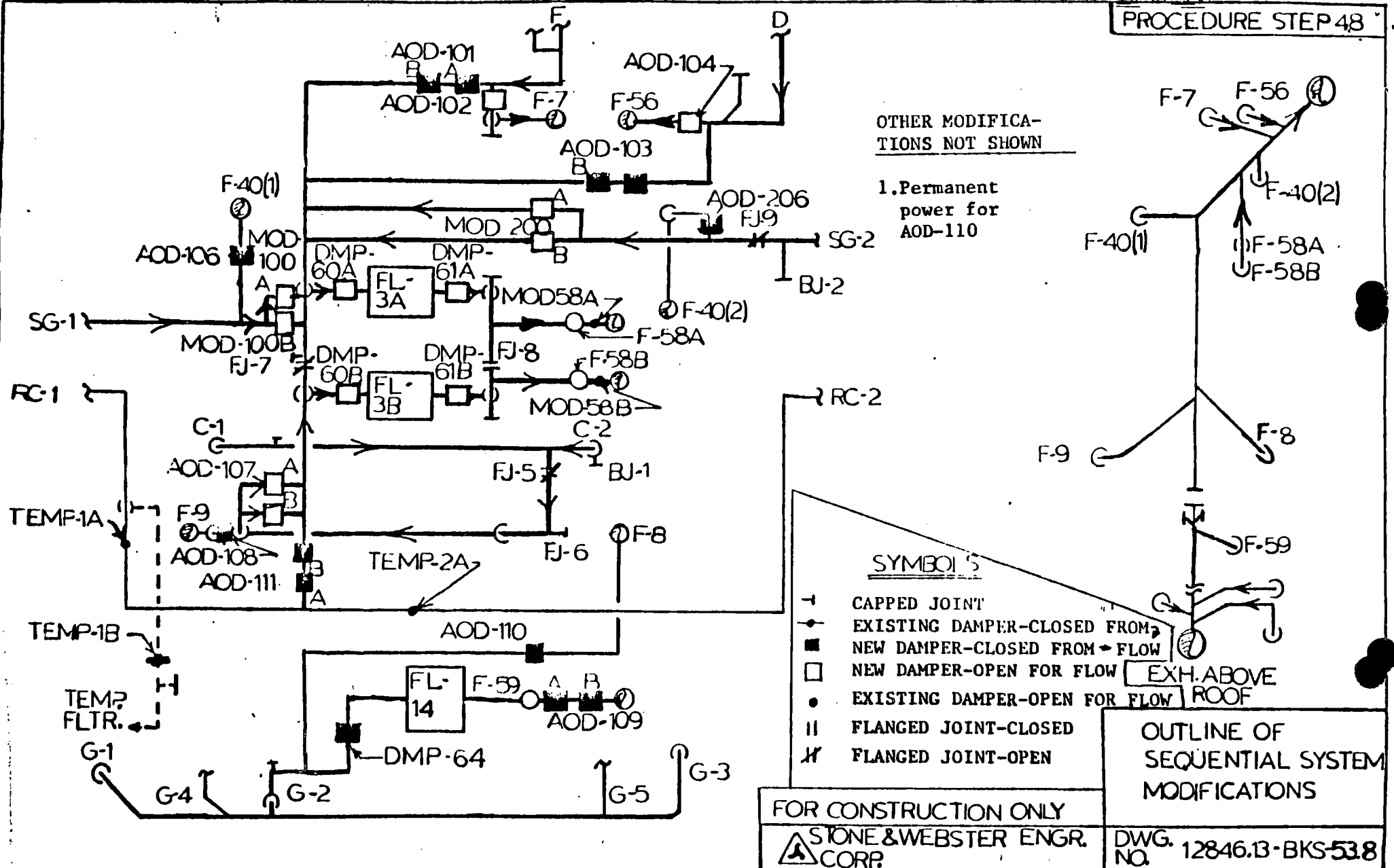
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PROCEDURE STEP 48

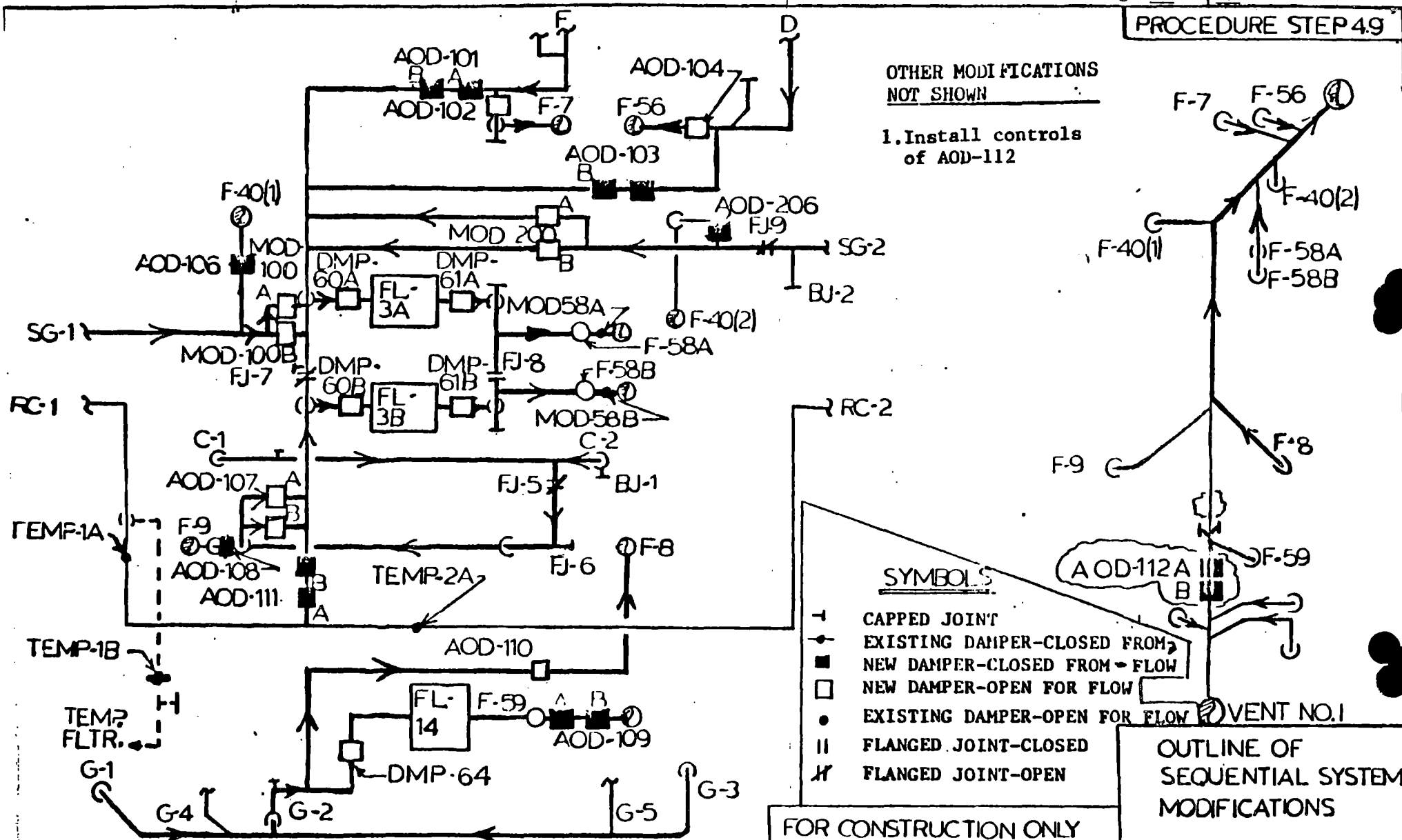


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PROCEDURE STEP 4.9

OTHER MODIFICATIONS
NOT SHOWN

1. Install controls
of AOD-112



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OUTLINE OF
SEQUENTIAL SYSTEM
MODIFICATIONS

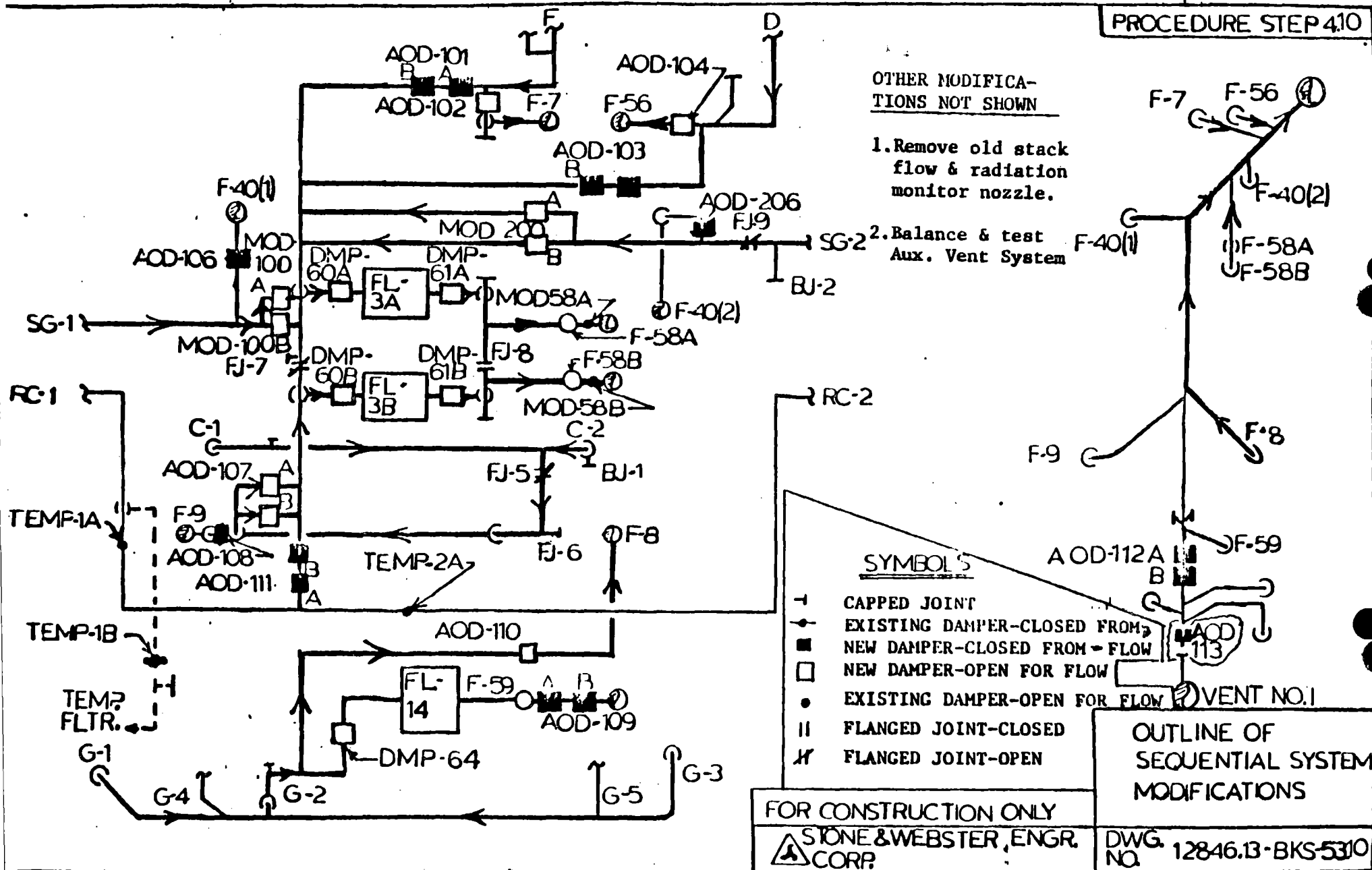
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PROCEDURE STEP 4.10

OTHER MODIFICATIONS NOT SHOWN

1. Remove old stack flow & radiation monitor nozzle.
2. Balance & test Aux. Vent System



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PROCEDURE STEP 411.

