

WASK - 312 BAGPIPE OPERATORS HANDBOOK

WASK

The complete kit comprises the following:

- 4 off Teeset bases complete with the attachment chains and saddle rubbers.
- 4 off Canopies to fit in above complete with integral vent valves.
- 4 off bagpipes complete with inflation tubes and control handles.
- Sets of 3 sizes of nose and guides shoes; these being:

1" nose with fixed shoe for 3" or 4" (80 or 100 mm) mains.

1½" nose with snap-in shoe for 6" (150 mm) main.

(shoes for 5" and 7" mains are optional extras).

2" nose with snap-in shoes for 8" (200 mm) 10" (250 mm) and 12" (300 mm) mains.

(shoes for 9" mains are optional extras).

- 1 off each 1", 1½" and 2" completion plug drivers.
- 4 off Blanking caps.
- 4 off Storage boxes and necessary tools and instructions

The gross shipping weight of all the above is 140 kg (308 lbs) being:

2 boxes 43¾" x 11" x 6" high (1110 x 280 x 155) @ 35 kg (77lbs) each.

2 boxes 19¾" x 12¾" x 12¾" high (495 x 312 x 325) @ 35 kg (77 lbs) each.

- Before commencing operations with the equipment it is recommended that the user refers to all relevant National and Local Regulations for the use of Bagpipes for stopping off gas mains to ascertain limiting pressures, allowable tappings, dimensions etc. Which may with and must take precedence over any information given herein.
- Relevant Standards :
 1. BG/PS/DIS 8.6.2 Bag Stop operations.
 2. GBE/DIS 5.6 Commissioning and De-Commissioning of Pipelines, Mains and Services.
 3. IGE/TD3:1992 Sections 8 and 9.

Installation Procedure

1. After marking out required positions of holes in main as per Table and using the small spanner provided, fasten the 4 Teeset bases (or 6 if using bypass heads) on to a cleaned section of main with the securing chains, selecting the correct size of rubber saddle from the four alternatives provided; the main sizes being clearly marked on the rubber.
Check that the valve slides fully, and leave in the open position.

NOMINAL SIZE MAIN	Inches	3	4	(5)	6	(7)	8	(9)	10	12
	mm	80	100	150		200		250		300
Max. allowable. Mains Pressure BGC/PS/E4	lb/sq"	5		4			3		1½	
	m bar	350		300			200		100	
Min. distance from edge of intended cut out to Secondary Tapping	Inches	16		18		20		22		24
	mm	400		450		500		550		600
Min. distance from Secondary Tapping to Primary Tapping to Bypass Tapping.	Inches	16		18		20		22		24
	mm	400		450		500		550		600
Tapping size-BSP Parallel* (Rp)		1		1½			2			
Bag Inflation Pressure	lb/sq"	10		8			5		4	
	m bar	700		600			400		300	

*To BS21 Table 2.

2. Fasten correct size of Tap into Teeset drill spindle using hexagon screwdriver provided and fit spindle into drilling head retaining it in the raised position with the securing pin, which is chained to the head.
3. Fit the drill head into the base, pressing home, also pressing vent button to assist this operation. Using the large spanner provided rotate the head clockwise to lock automatically.
4. Check that the valveplate is open, and lower drill to main; fit the ratchet handle to drive clockwise and swing bridle into position. Drill and Tap main in normal manner taking care to avoid excessive feed and also disengaging feed whilst tapping. Withdraw spindle, and retain in raised position with securing pin. Close valveplate (note that mark on valve actuating spindle points to the position of the valve plate).
5. Depress the vent button, to release residual pressure in the head. Keep button depressed and rotate the drill head anti-clockwise using the large spanner. Remove the drill head and fit the blanking caps to each base in turn. At this stage the operation could be temporarily suspended if desired.

Fit the bypass pipes, purge and commission

Diagrams 5, 6 & 7

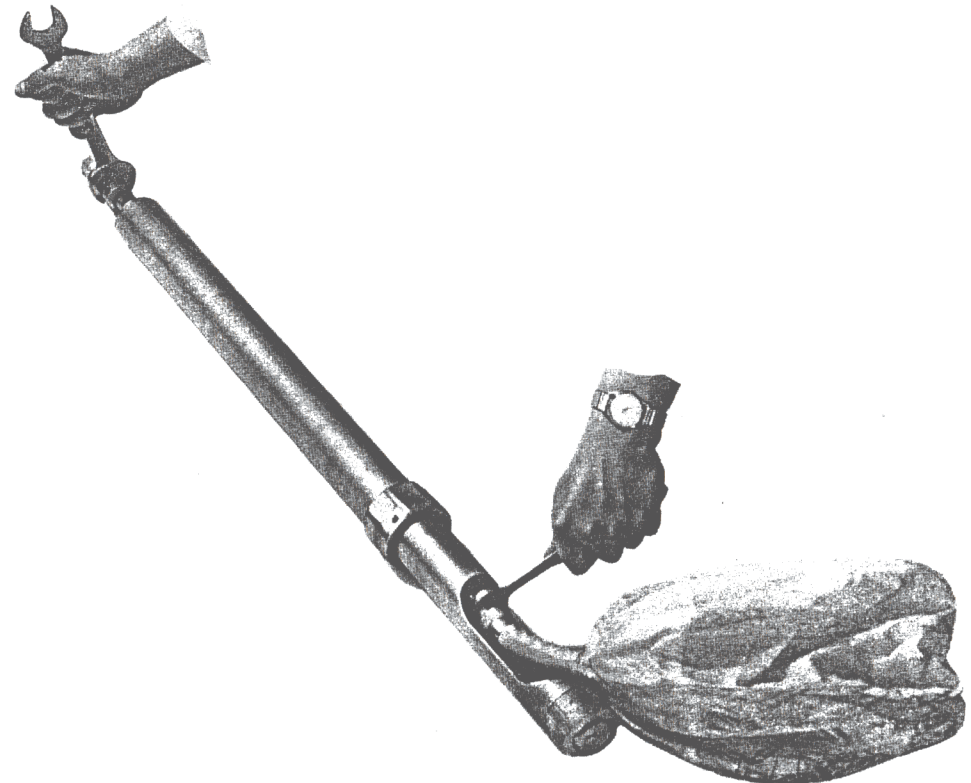
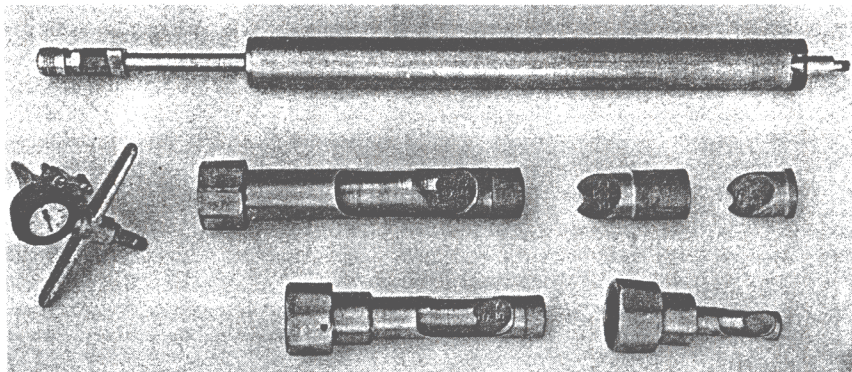
Prepare the 4 bagpipes as follows:

1. Select correct nose/shoe combination and screw on to bagpipes
2. Fit correct size bags to inflation tubes and ensure joint soundness and bag condition by trial inflation.
3. Set direction collars to correct height engraved on inflation tube and also to point towards the natural curvature of the bag.
4. Deflate bags, fold and withdraw into bagpipes
5. Fit bagpipes fully into canopies and tighten each gland nut
6. Ensure Teeset base valves are shut and remove blanking caps
7. Fit bagpipe and canopy assemblies into Teeset bases
8. Attach control handles
9. Leak test via canopy valves

Diagram 8

Connect vent pipes, flame traps and nitrogen cylinder

Diagram 9



Procedure for inserting a bag into the main

1. Ensure canopy valve is closed
2. Ease off canopy gland nut until bagpipe can be moved.
3. Open base valve and push bagpipe fully into main.
4. Ensure the marking or oiler on top of the bagpipe is aligned with the main and **FIRMLY TIGHTEN THE GLAND NUT.**
5. Align the direction indicator collar with the main and push the handle down until the collar contacts the top of the bagpipe when the bag will be correctly placed in the main.
6. Inflate the bag to the pressure stated in the Table.

For Sequence of insertion and inflation refer to diagrams 10 to 13.

Cut and complete job on main, and test and purge new section

Diagrams 14, 15 and 16

Procedure for removing a bag from the main (Also for replacing a failed bag)

1. Deflate bag by opening cock on handle and withdraw bag into its bagpipe.
2. Ease off the canopy gland nut, lift the bagpipe to its fullest extent and retighten the gland nut.
3. Close the base valve, relieve the pressure and remove the canopy.

[If replacing a failed bag, disconnect it from the inflation tube and fit a new bag (which should be on hand for such an emergency) test, and re-insert into main as previously described.]

4. Fit blanking cap.

For Sequence of deflation and withdrawal see diagrams 17 & 18.

For dismantling Sequence see diagrams 19 to 22.

Completion procedure

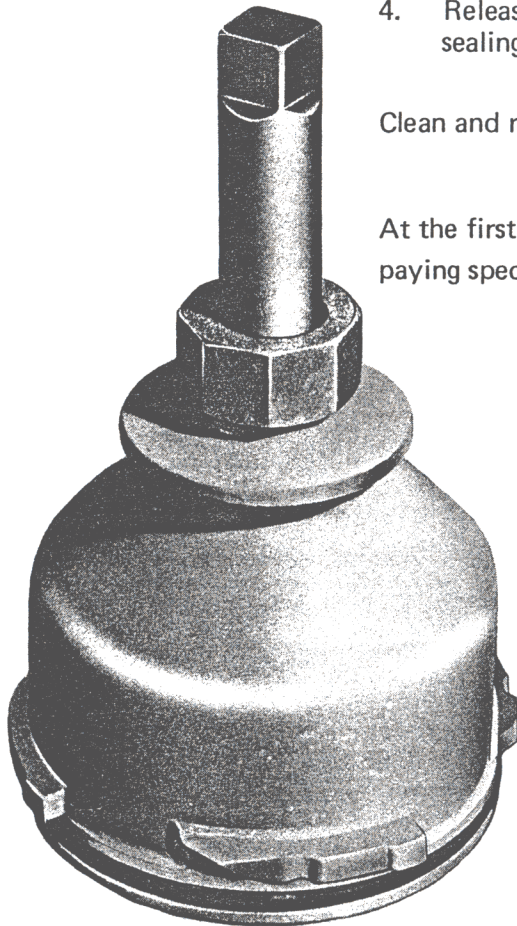
The 4 tapped holes (or 6 if using bypass heads) are now plugged off as follows:

1. Screw plug into holder and screw on to solid Teeset fitting spindle.
2. Take the fitting spindle and slide it into the fitting canopy, tightening gland nut hand tight. Locate canopy in a similar manner to before keeping valve closed.
3. Open valve, lower plug, and screw into tapped hole. Depress the vent button until all pressure is released, slacken the gland nut and remove the canopy in a similar manner to before leaving the spindle attached to the plug.
4. Release the chain and remove the machine base from the main, tighten the sealing washer on the plug.

See diagrams 23 to 26.

Clean and replace all equipment in its original boxes.

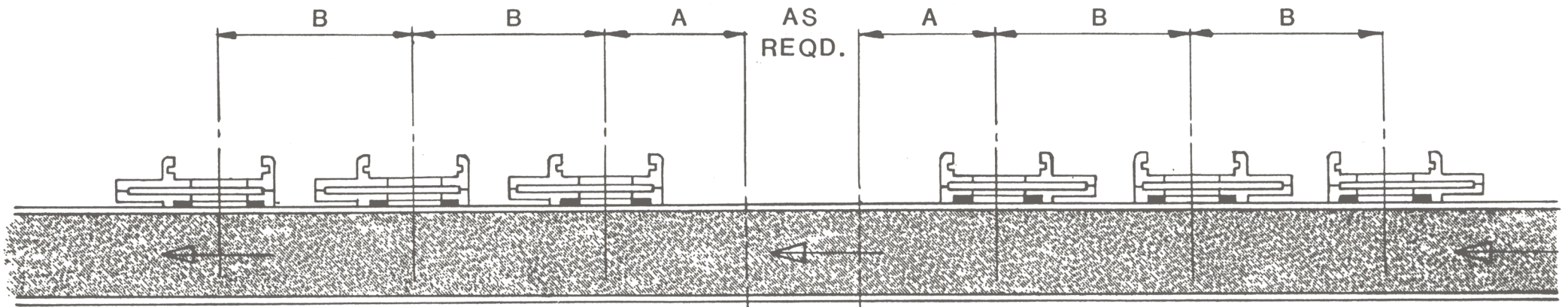
At the first available opportunity the equipment should be carefully inspected, paying special attention to the bags and gauges.



STAGE 1.

- A) SELECT CORRECT SIZE OF SADDLE RUBBER &
- B) CHAIN 6 TEESET BASES TO MAIN IN REQUIRED POSITIONS AS PER TABLE, LEAVING VALVES OPEN.
- C) CHECK MAIN PRESSURE DOES NOT EXCEED FIGURES GIVEN IN TABLE.

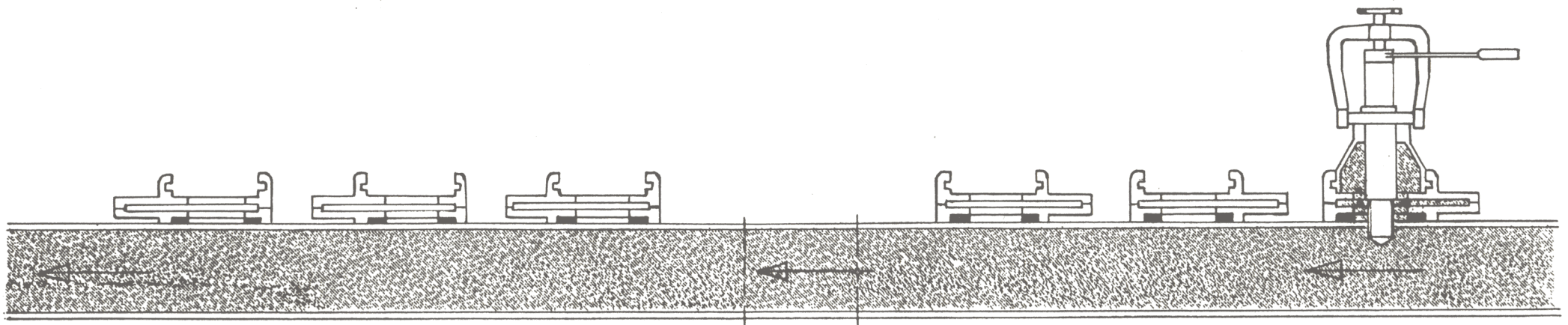
NOM. SIZE MAIN	INS MM	3	4	5	6	7	8	9	10	12
		80	100	150		200		250		300
A	INS	16	18	20	22	24				
	MM	400	450	500	550	600				
B	INS	16	18	20	22	24				
	MM	400	450	500	550	600				
MAX. MAIN PRESSURE	PSI	5	4	4	3	1.1/2				
	MBAR	350	300	300	200	100				



STAGE 2

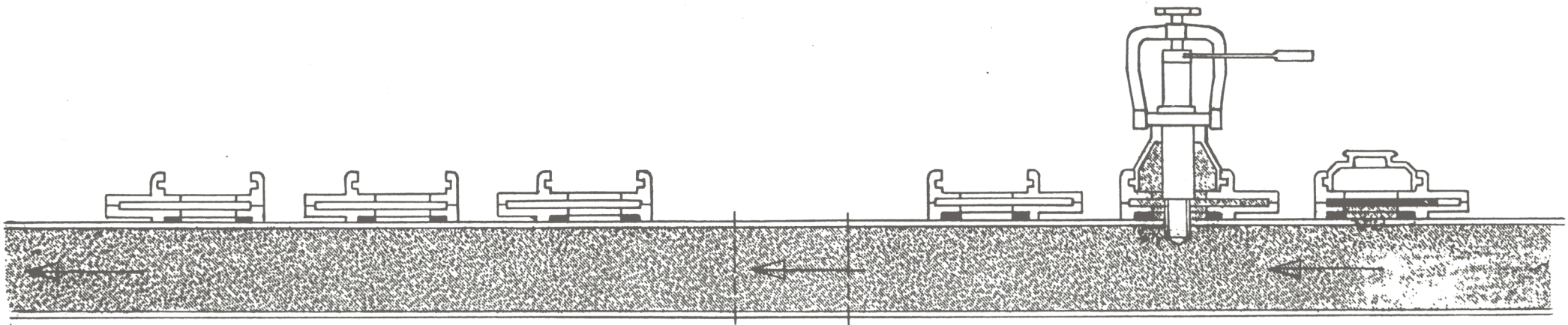
- A) DRILL & TAP ALL HOLES AS PER TABLE
- B) CLOSING BASE VALVES AFTER WITHDRAWAL OF TAP

NOM. SIZE	INS	3	4	5	6	7	8	9	10	12
MAIN	MM	80	100	150			200	250	300	
TAPPING SIZE	BSP	1		1.1/2		2				

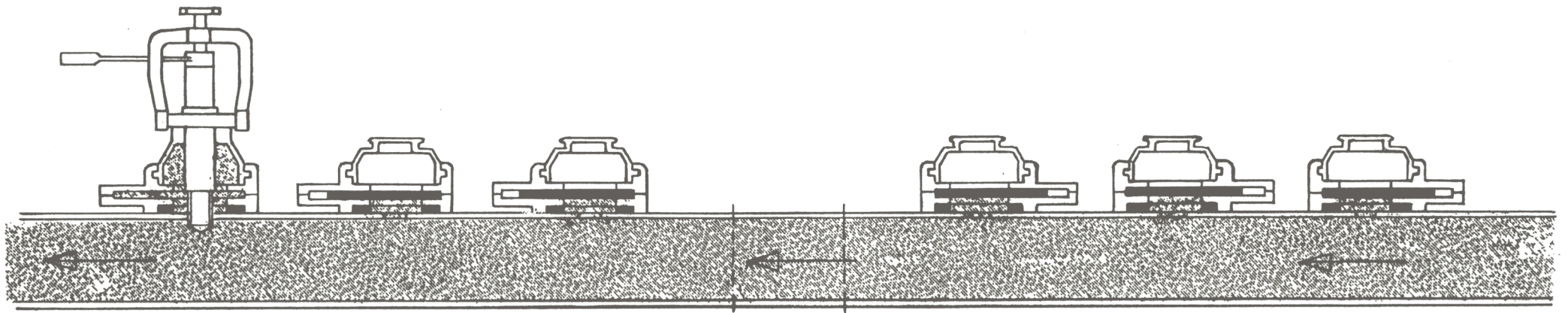


STAGE 2 (CONT.)

- C) REMOVE DRILL TURRET
- D) FIT BLANKING CAPS TO EACH BASE IN TURN

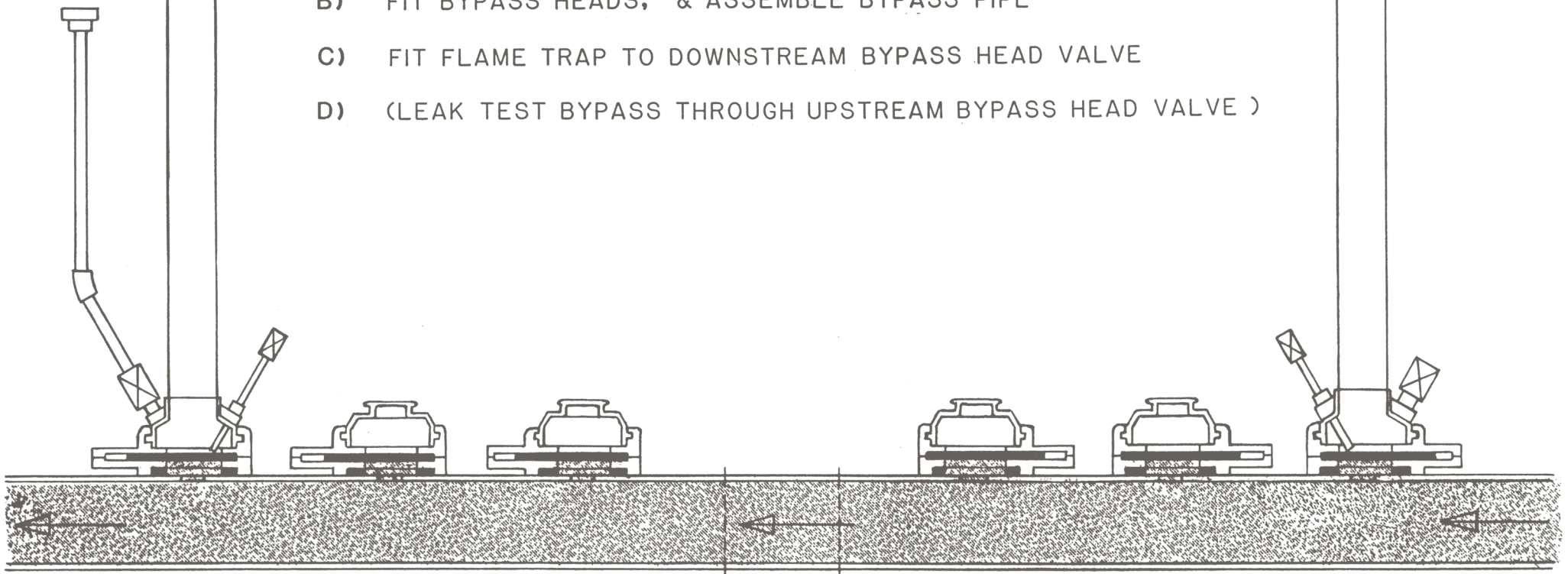


STAGE 2 (CONT.)



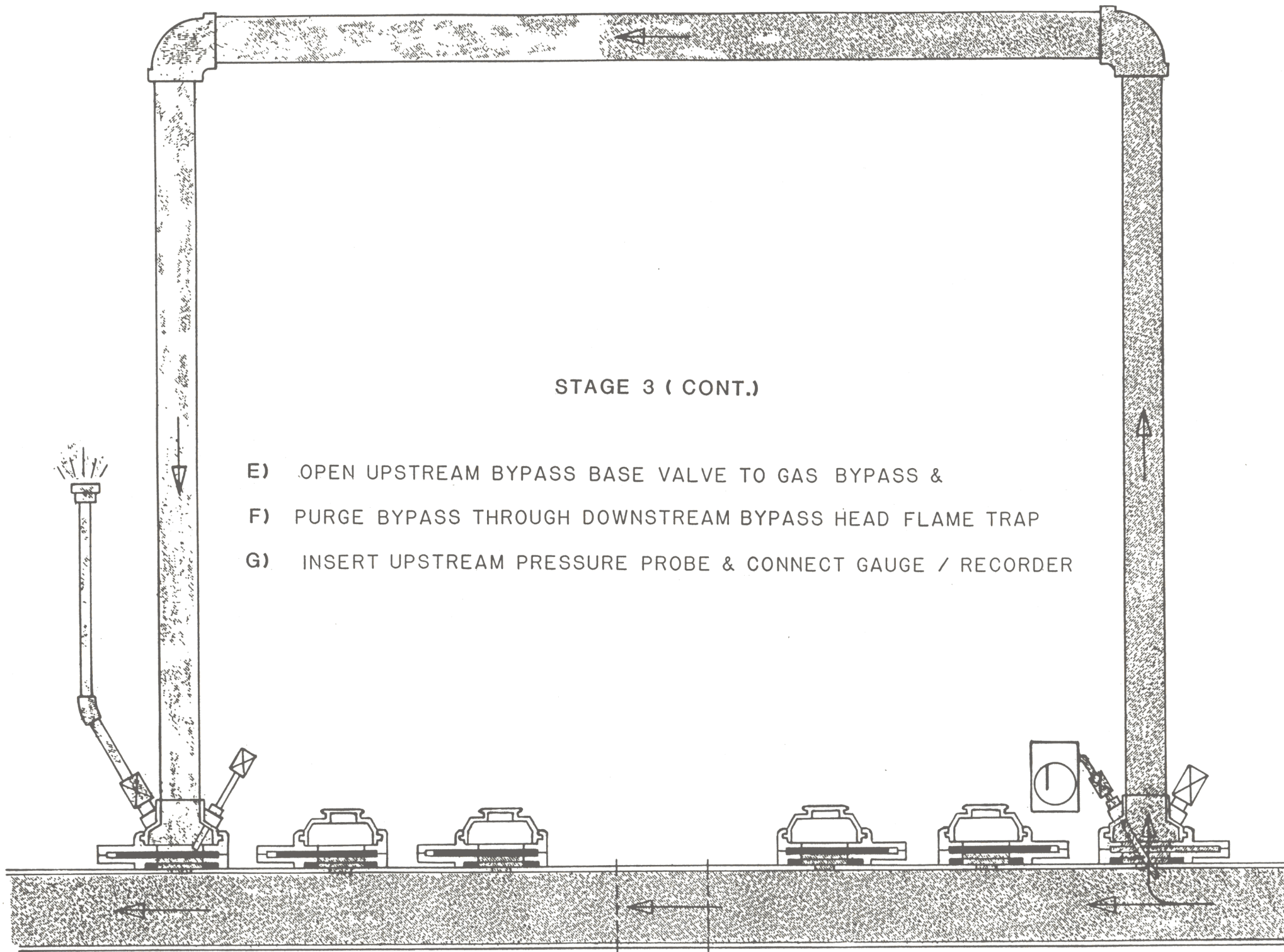
STAGE 3

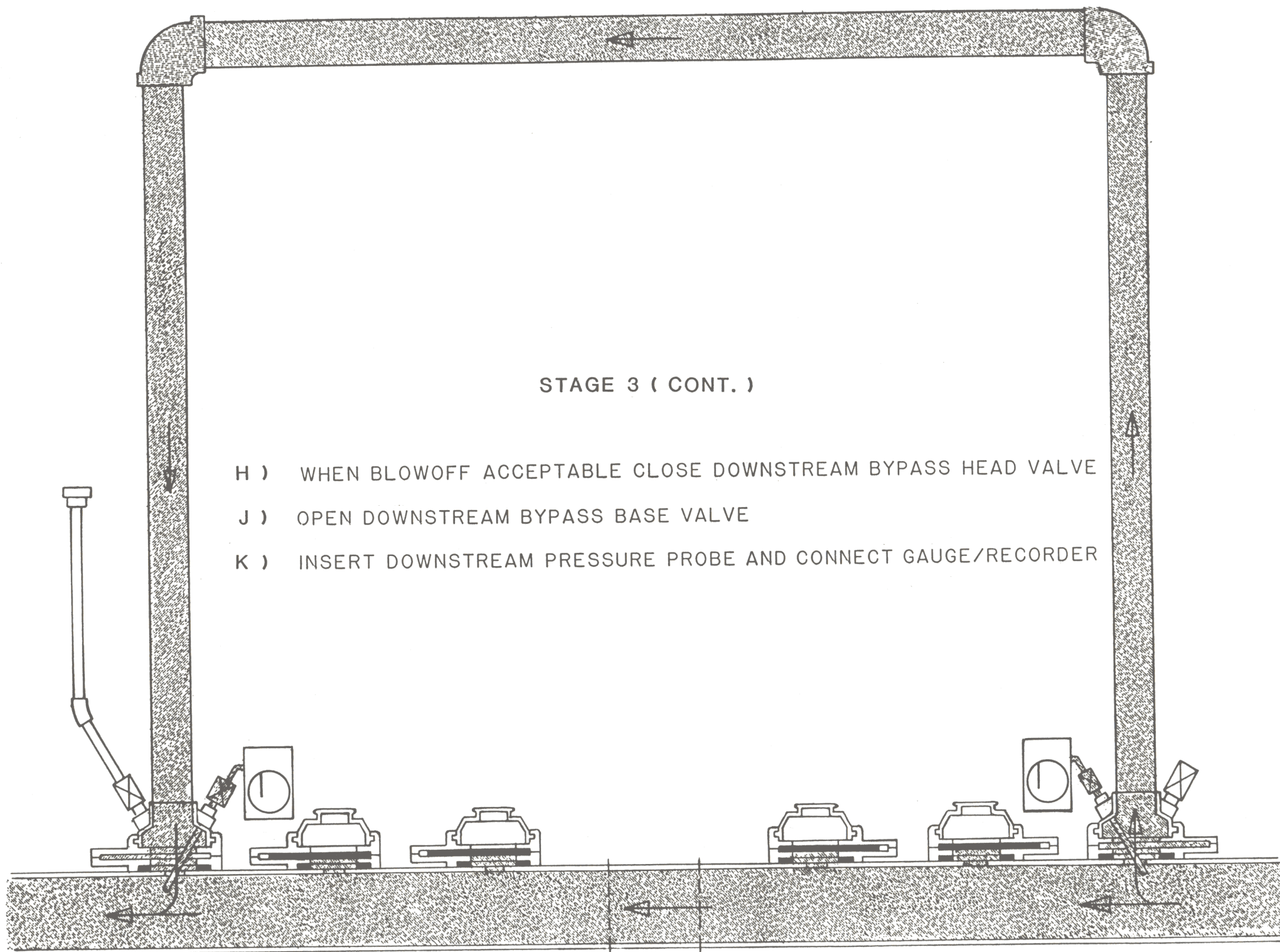
- A) REMOVE OUTER BLANKING CAPS
- B) FIT BYPASS HEADS, & ASSEMBLE BYPASS PIPE
- C) FIT FLAME TRAP TO DOWNSTREAM BYPASS HEAD VALVE
- D) (LEAK TEST BYPASS THROUGH UPSTREAM BYPASS HEAD VALVE)



STAGE 3 (CONT.)

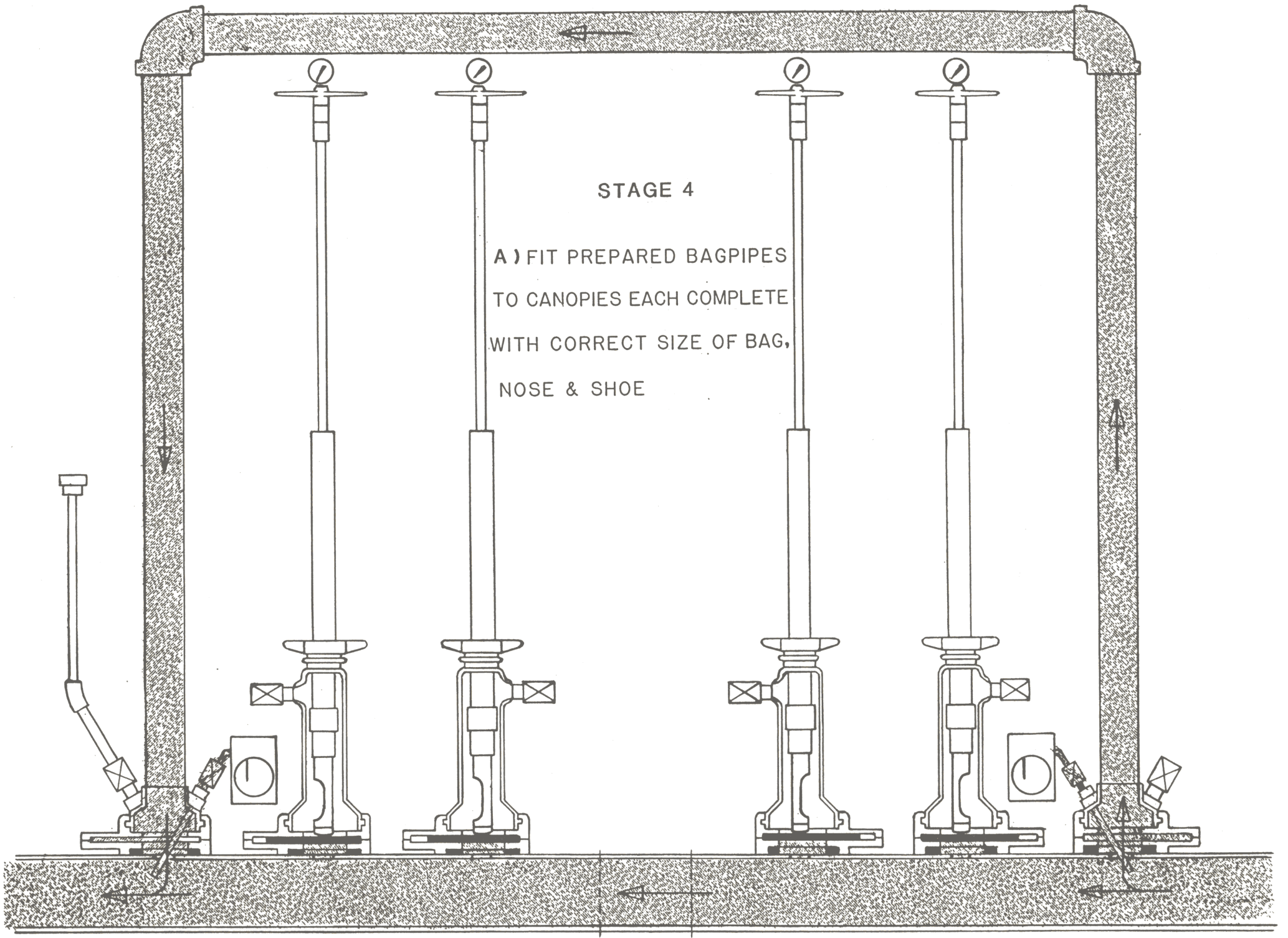
- E) OPEN UPSTREAM BYPASS BASE VALVE TO GAS BYPASS &
- F) PURGE BYPASS THROUGH DOWNSTREAM BYPASS HEAD FLAME TRAP
- G) INSERT UPSTREAM PRESSURE PROBE & CONNECT GAUGE / RECORDER





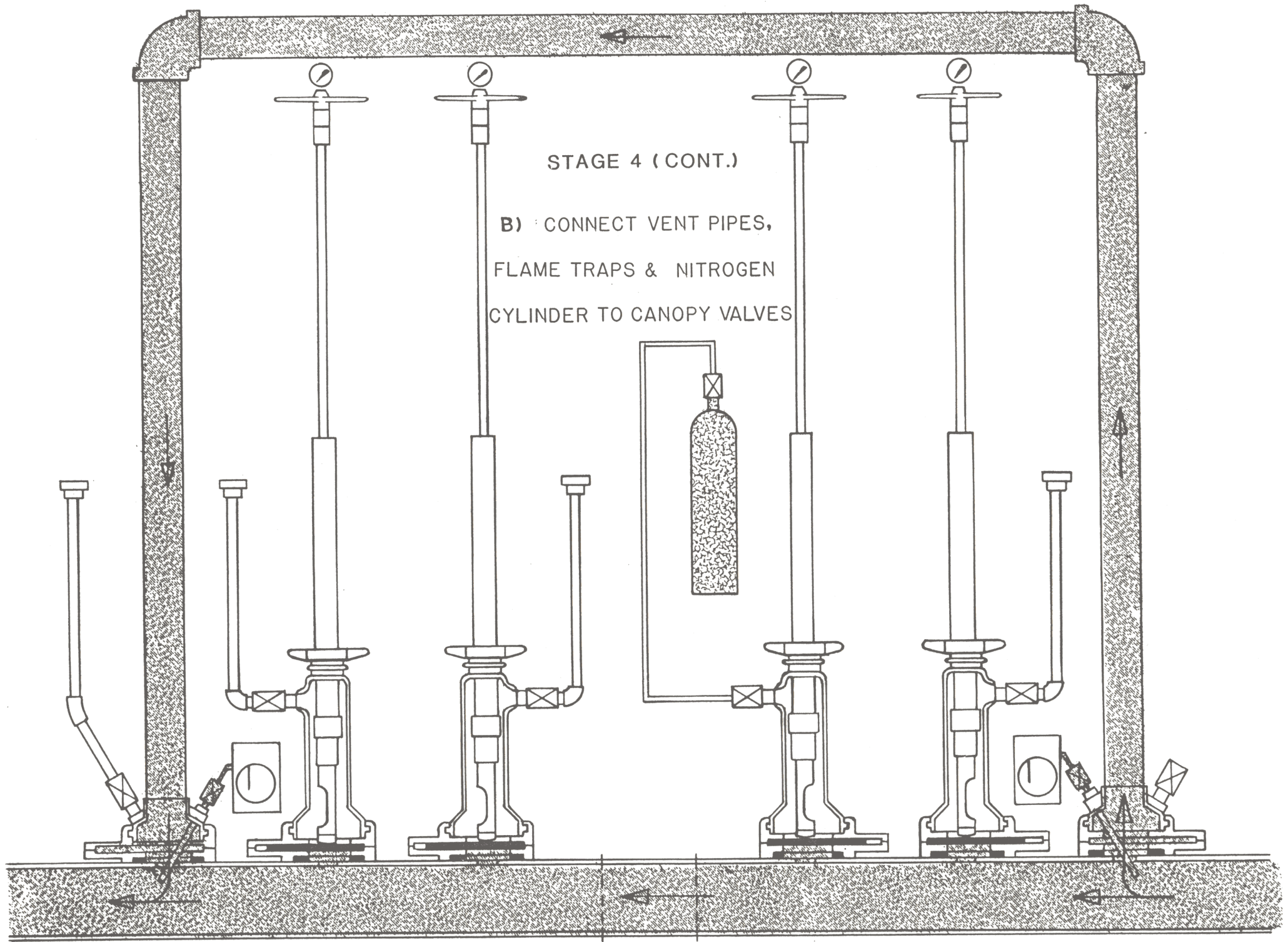
STAGE 3 (CONT.)

- H) WHEN BLOWOFF ACCEPTABLE CLOSE DOWNSTREAM BYPASS HEAD VALVE
- J) OPEN DOWNSTREAM BYPASS BASE VALVE
- K) INSERT DOWNSTREAM PRESSURE PROBE AND CONNECT GAUGE/RECORDER



STAGE 4

A) FIT PREPARED BAGPIPES
TO CANOPIES EACH COMPLETE
WITH CORRECT SIZE OF BAG,
NOSE & SHOE



STAGE 5

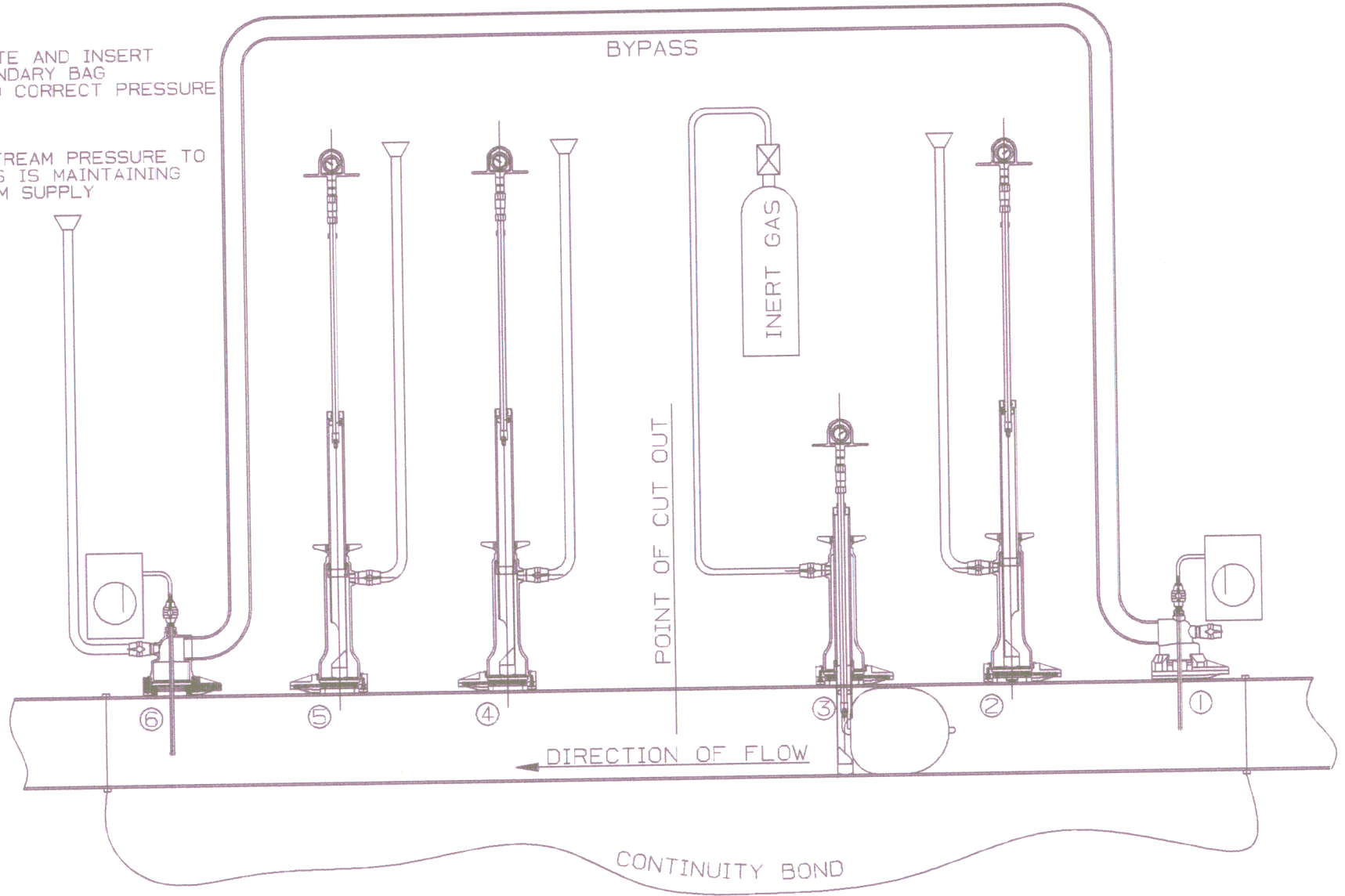
PROCEDURE (STAGE 5)

STATION No. 3

- A. OPEN VALVEPLATE AND INSERT UPSTREAM SECONDARY BAG
- B. INFLATE BAG TO CORRECT PRESSURE

STATION No. 6

- C. MONITOR DOWNSTREAM PRESSURE TO ENSURE BYPASS IS MAINTAINING THE DOWNSTREAM SUPPLY

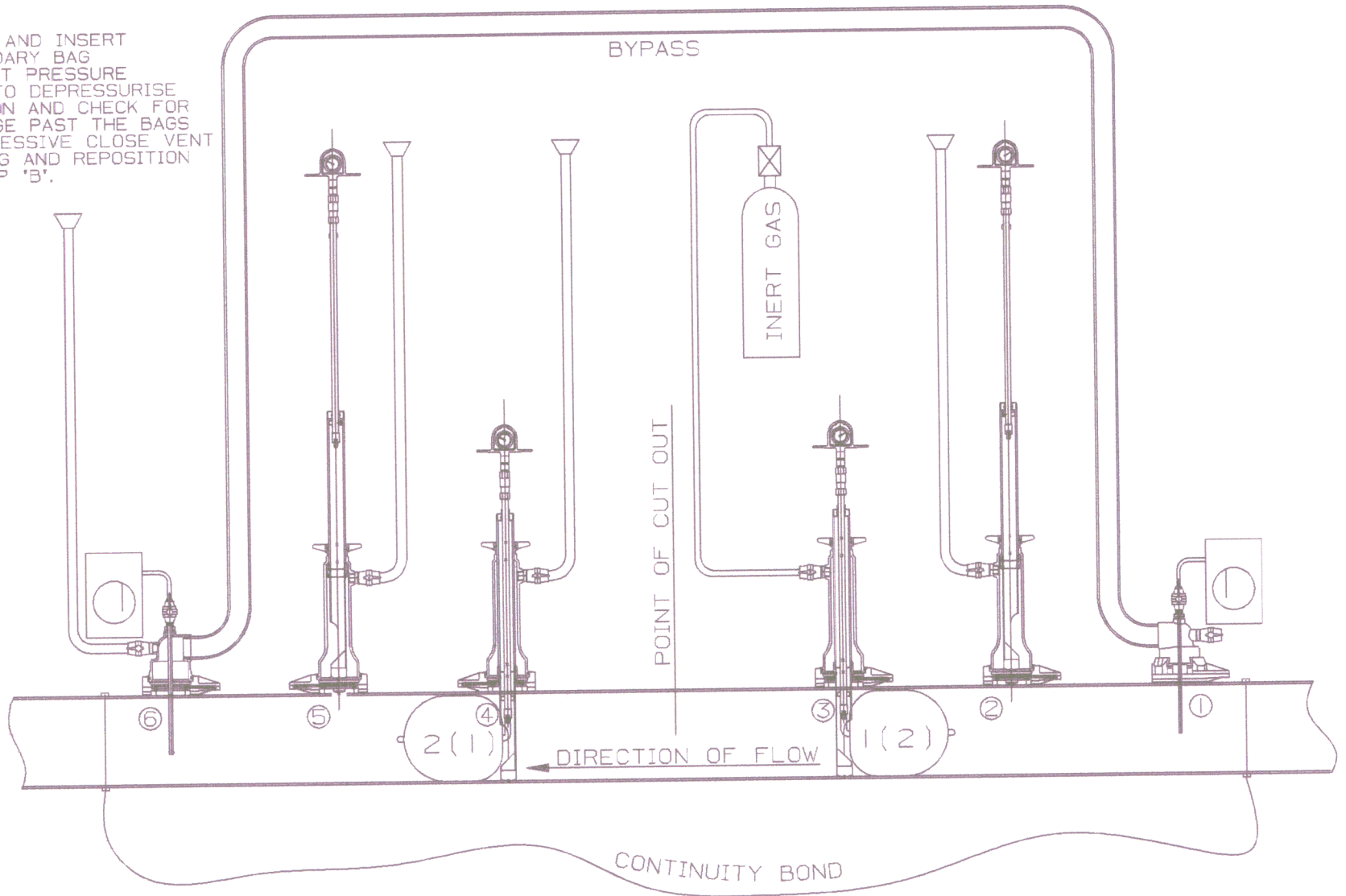


PROCEDURE (STAGE 6)

STAGE 6

STATION Nos. 4

- A. OPEN VALVE PLATE AND INSERT DOWNSTREAM SECONDARY BAG
- B. INFLATE TO CORRECT PRESSURE
- C. OPEN VENT VALVE TO DEPRESSURISE THE CENTRE SECTION AND CHECK FOR ACCEPTABLE LEAKAGE PAST THE BAGS
- D. IF LEAKAGE IS EXCESSIVE CLOSE VENT VALVE DEFLATE BAG AND REPOSITION REPEAT FROM STEP 'B'.

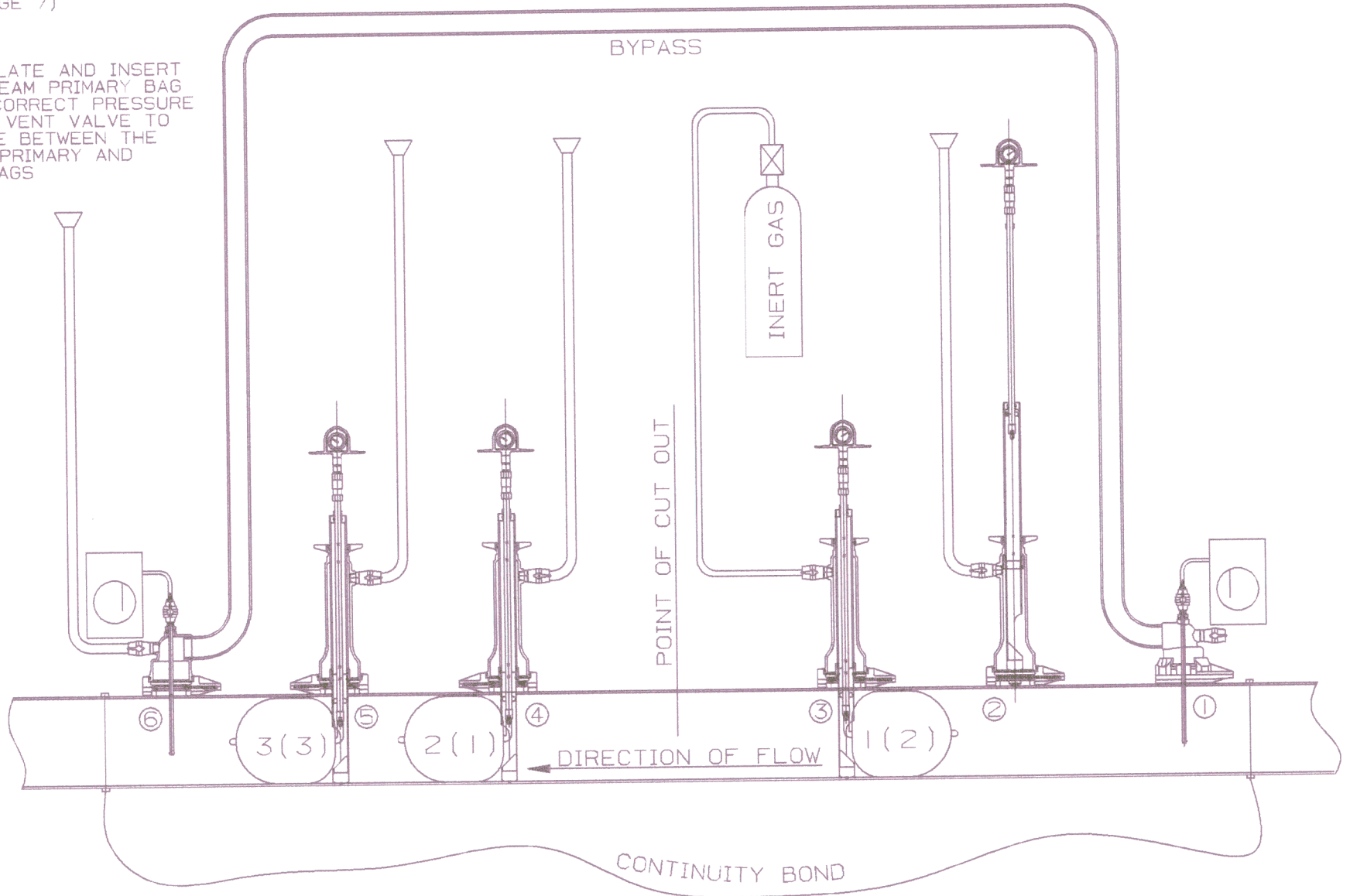


STAGE 7

PROCEDURE (STAGE 7)

STATION Nos. 5

- A. OPEN VALVEPLATE AND INSERT THE DOWNSTREAM PRIMARY BAG
- B. INFLATE TO CORRECT PRESSURE
- C. OPEN CANOPY VENT VALVE TO DEPRESSURISE BETWEEN THE DOWNSTREAM PRIMARY AND SECONDARY BAGS



PROCEDURE (STAGE 8)

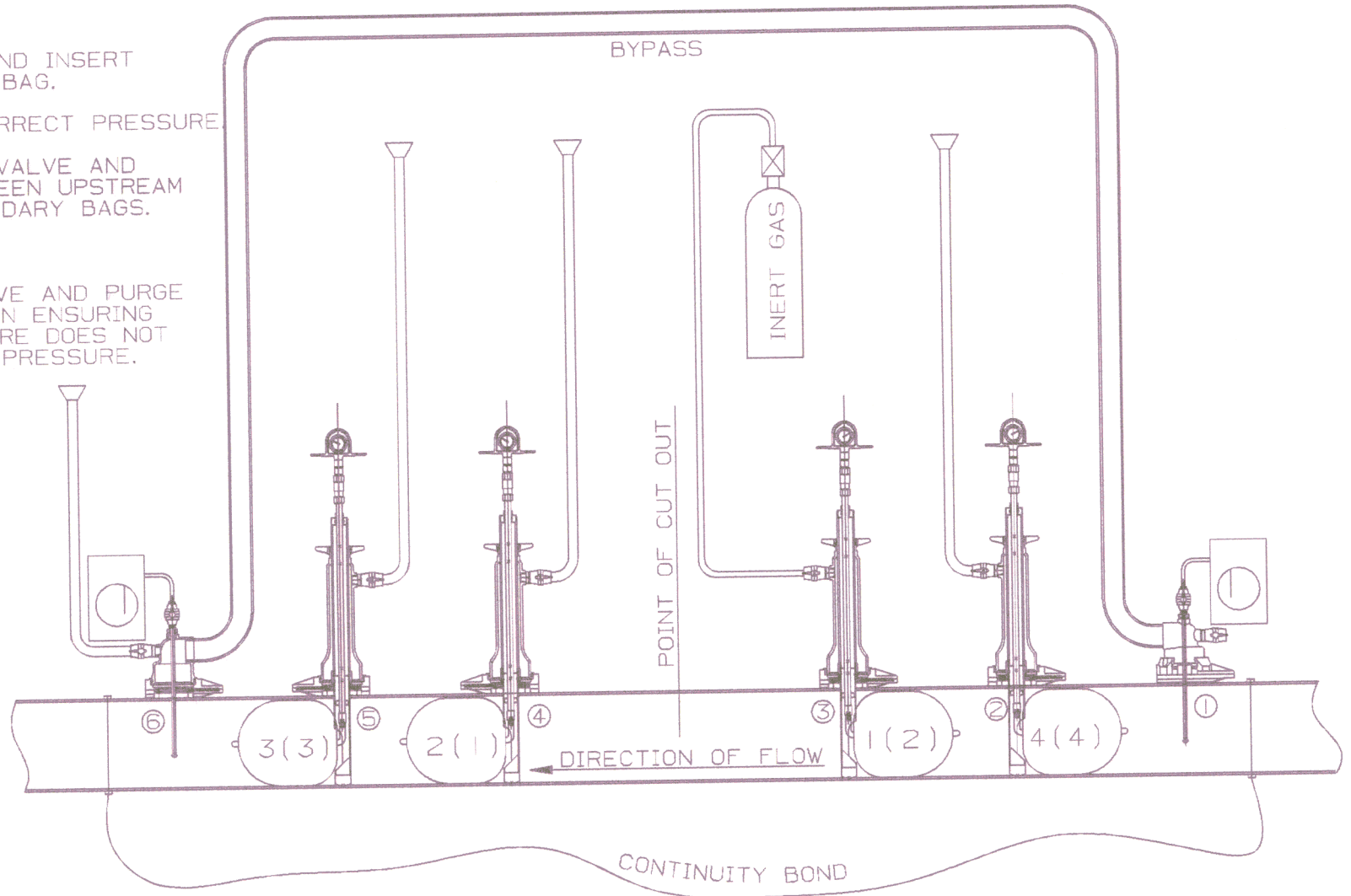
STAGE 8

STATION No. 2

- A. OPEN VALVEPLATE AND INSERT UPSTREAM PRIMARY BAG.
- B. INFLATE TO THE CORRECT PRESSURE.
- C. OPEN CANOPY VENT VALVE AND DEPRESSURISE BETWEEN UPSTREAM PRIMARY AND SECONDARY BAGS.

STATION No. 3

- D. OPEN NITROGEN VALVE AND PURGE THE CENTRE SECTION ENSURING THAT PURGE PRESSURE DOES NOT EXCEED 1/3 MAINS PRESSURE.

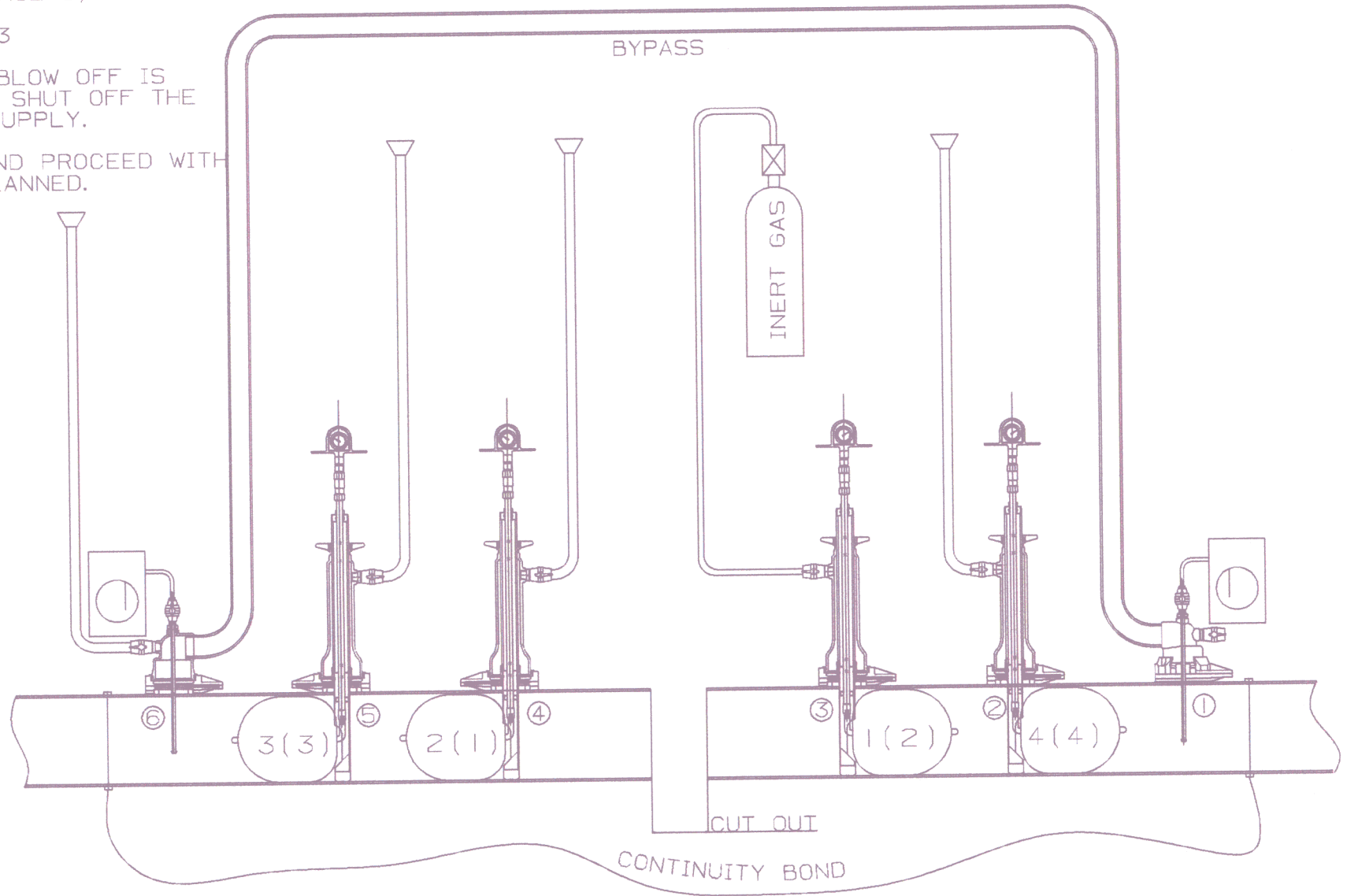


STAGE 9

PROCEDURE (STAGE 9)

STATION Nos. 3

- A. WHEN VENT BLOW OFF IS ACCEPTABLE SHUT OFF THE NITROGEN SUPPLY.
- B. CUT MAIN AND PROCEED WITH WORK AS PLANNED.

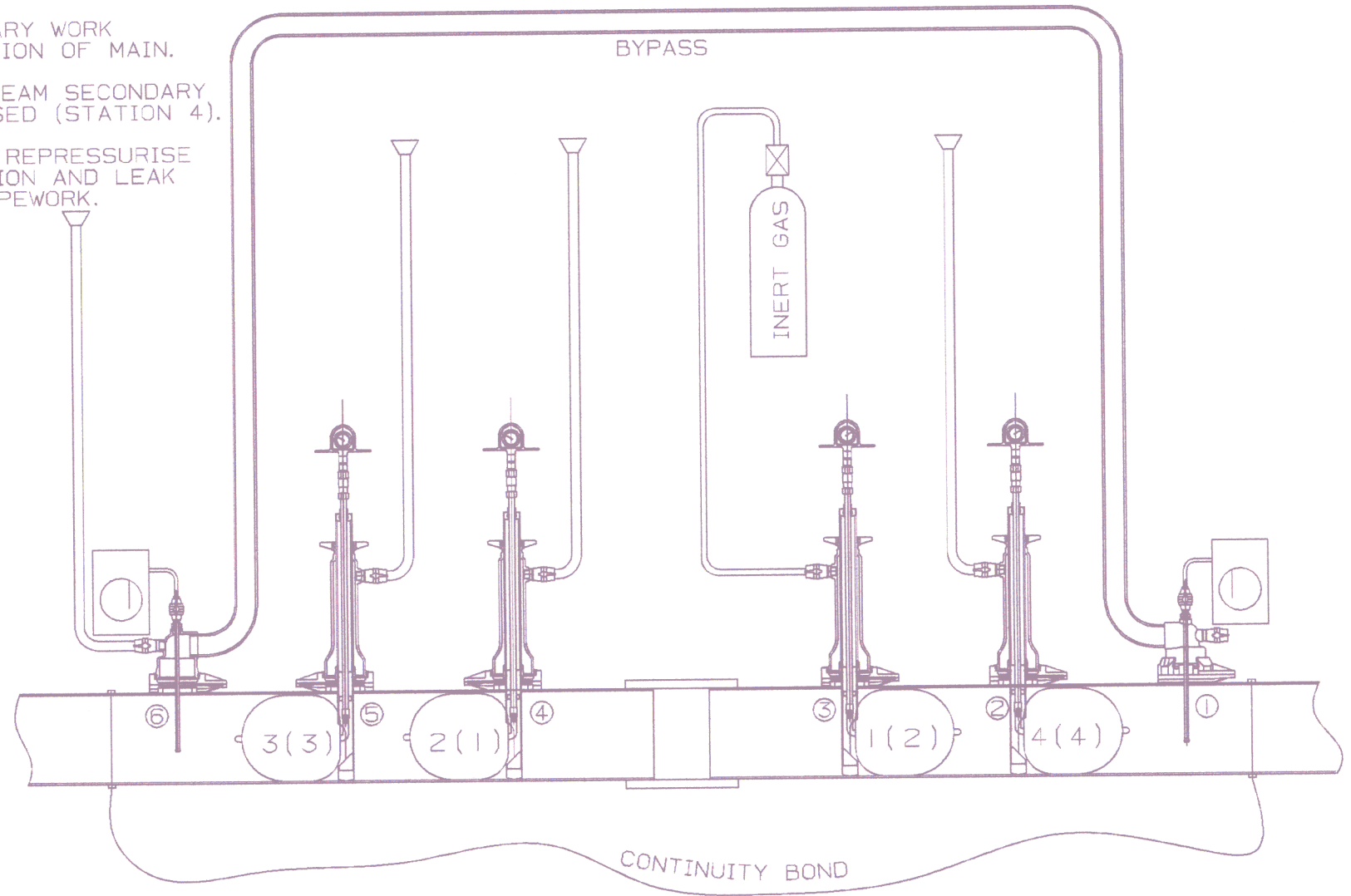


PROCEDURE (STAGE 9A)

STATION No. 3

- C. COMPLETE NECESSARY WORK ON CUT-OUT SECTION OF MAIN.
- D. WITH THE DOWNSTREAM SECONDARY VENT VALVE CLOSED (STATION 4).
- E. USE NITROGEN TO REPRESSURISE THE CENTRE SECTION AND LEAK TEST THE NEW PIPEWORK.

STAGE 9 (CONTINUED)



PROCEDURE (STAGE 10)

STAGE 10

STATION No. 2

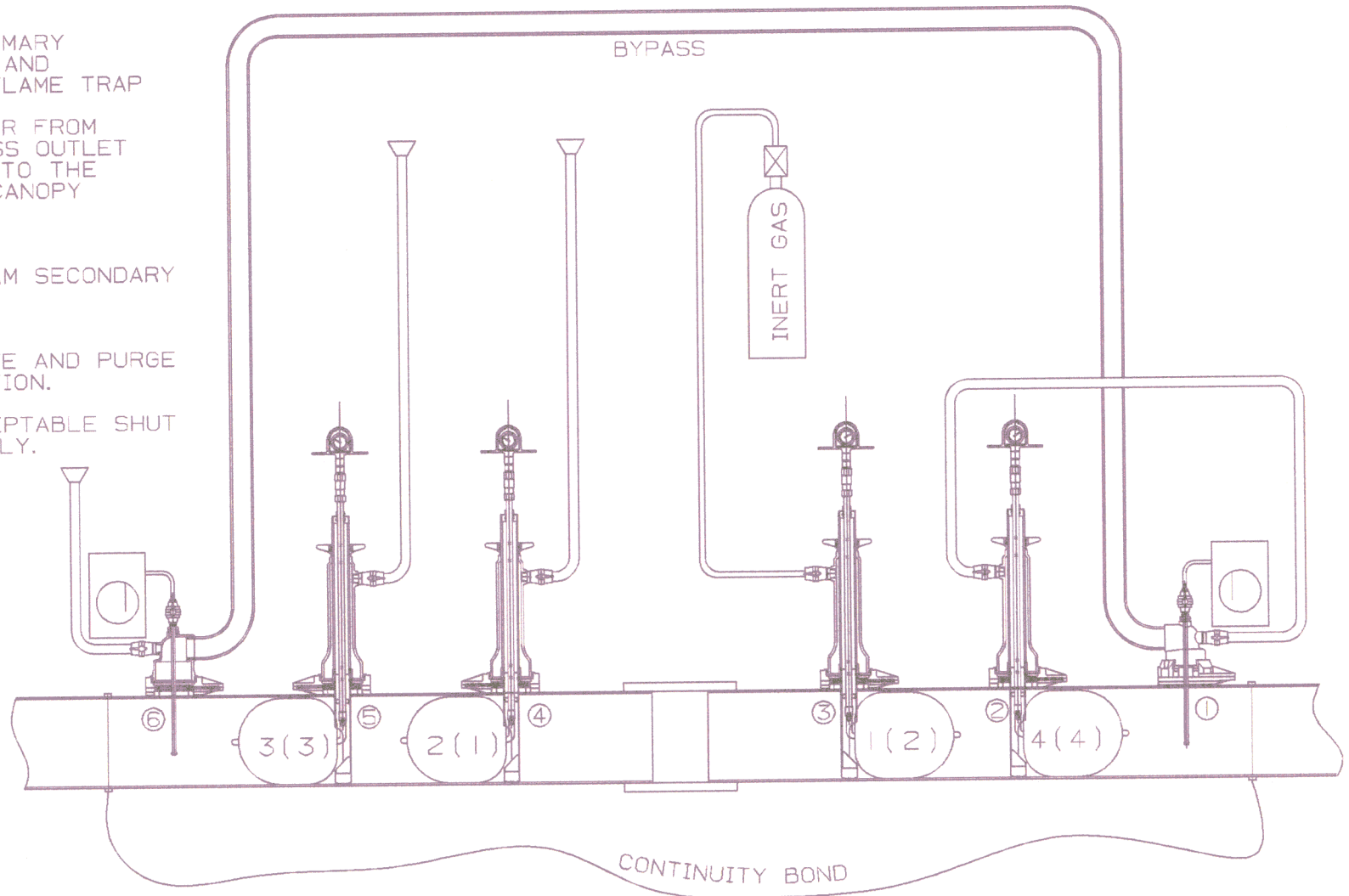
- A. CLOSE UPSTREAM PRIMARY CANOPY VENT VALVE AND REMOVE VENT PIPE/FLAME TRAP
- B. CONNECT A GAS RIDER FROM THE UPSTREAM BYPASS OUTLET VALVE (STATION 1) TO THE UPSTREAM PRIMARY CANOPY VENT VALVE.

STATION No. 4

- C. OPEN THE DOWNSTREAM SECONDARY VENT VALVE

STATION No. 3

- D. OPEN NITROGEN VALVE AND PURGE THE NEW PIPE SECTION.
- E. WHEN BLOW-OFF ACCEPTABLE SHUT OFF NITROGEN SUPPLY.



PROCEDURE (STAGE II)

STAGE II

STATION Nos. 3 AND 4

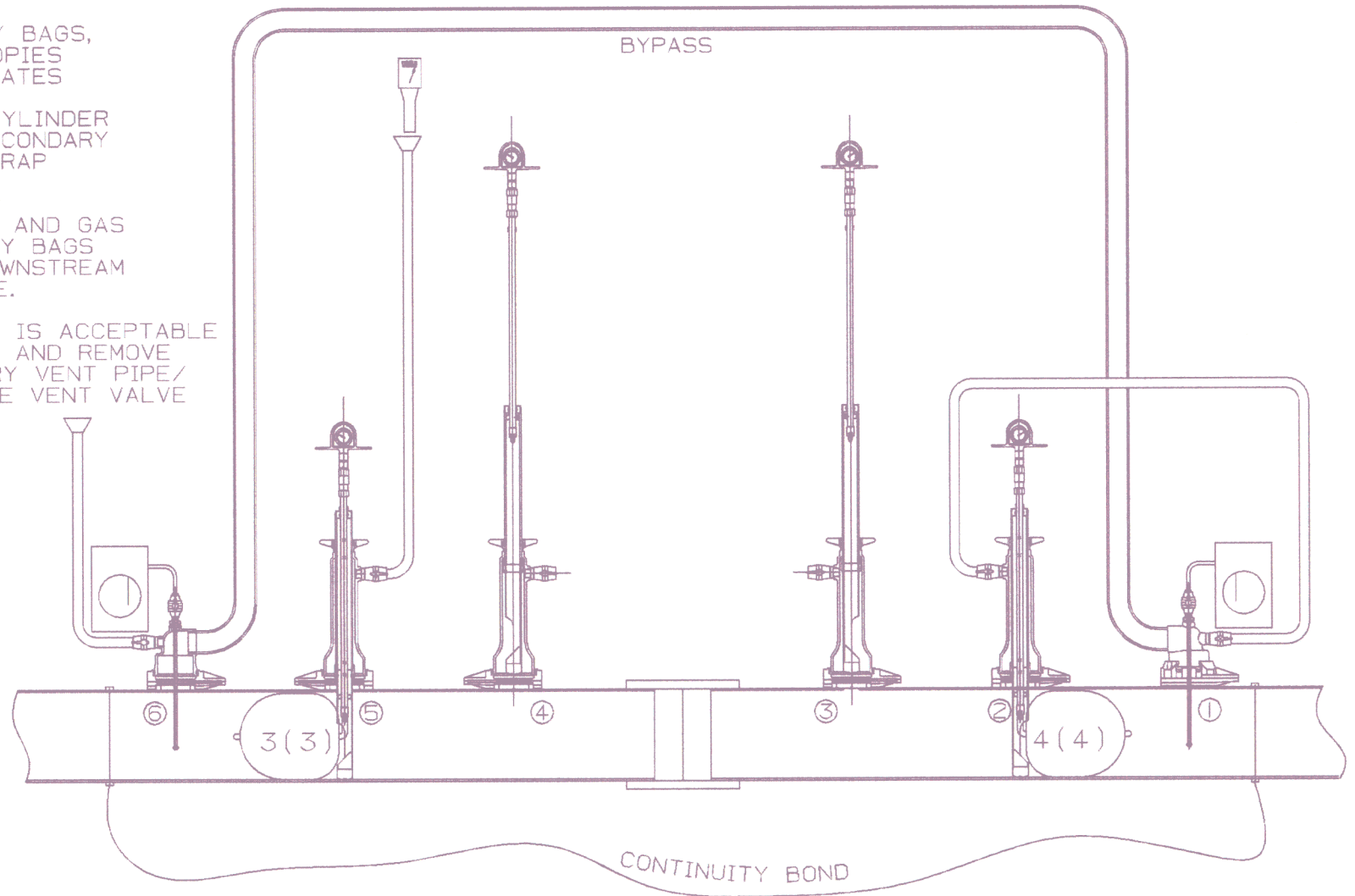
A. DEFLATE SECONDARY BAGS,
RECOVER INTO CANOPIES
AND CLOSE VALVEPLATES

B. REMOVE NITROGEN CYLINDER
AND DOWNSTREAM SECONDARY
VENT PIPE/FLAME TRAP

STATION Nos. 1 AND 2

C. OPEN RIDER VALVES AND GAS
UP BETWEEN PRIMARY BAGS
MONITOR AT THE DOWNSTREAM
PRIMARY VENT PIPE.

D. WHEN GAS BLOW-OFF IS ACCEPTABLE
CLOSE RIDER VALVE AND REMOVE
DOWNSTREAM PRIMARY VENT PIPE/
FLAME TRAP. ENSURE VENT VALVE
IS CLOSED.

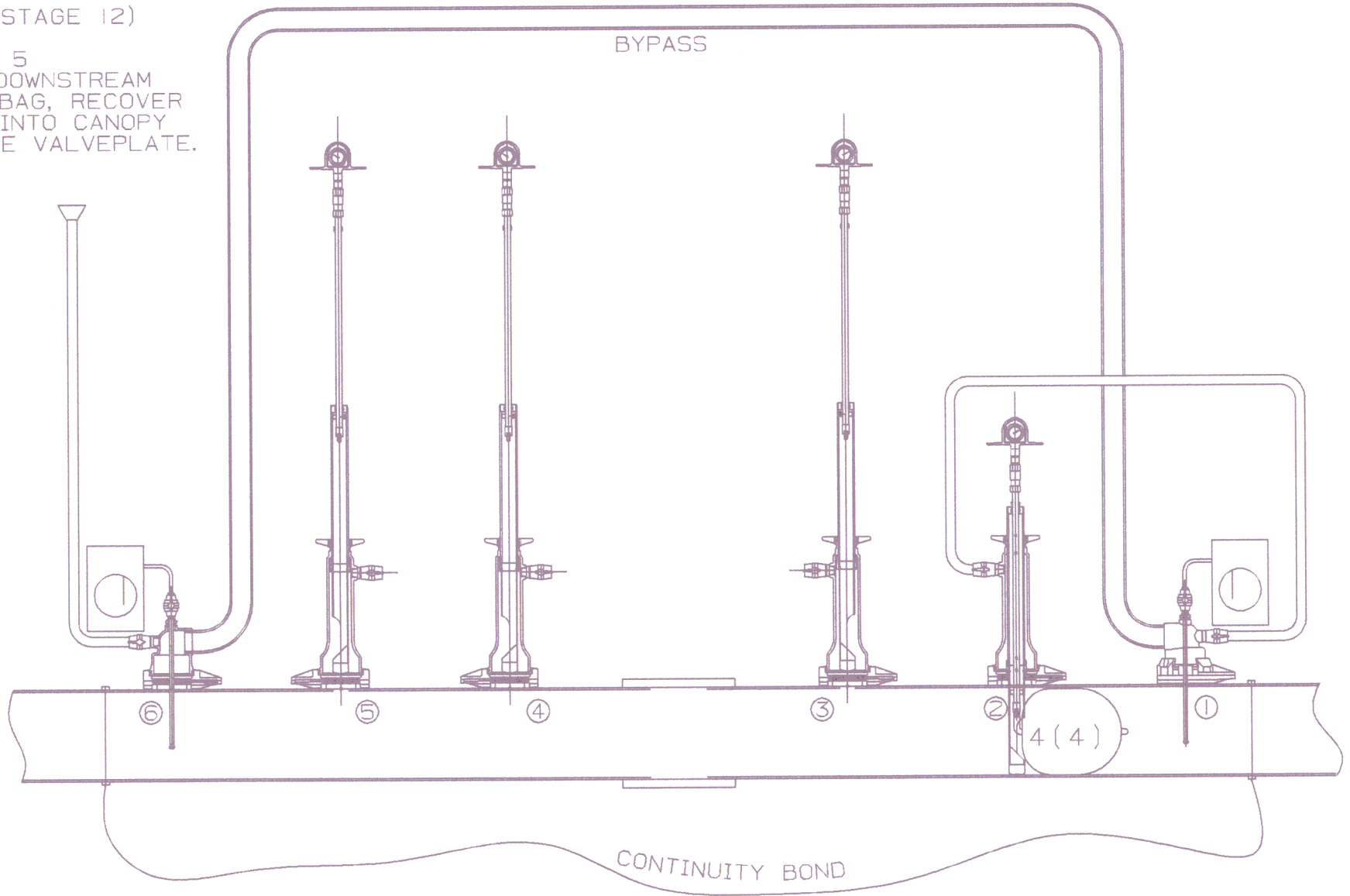


STAGE 12

PROCEDURE (STAGE 12)

STATION No. 5

- A. DEFLATE DOWNSTREAM PRIMARY BAG, RECOVER BAGTUBE INTO CANOPY AND CLOSE VALVEPLATE.

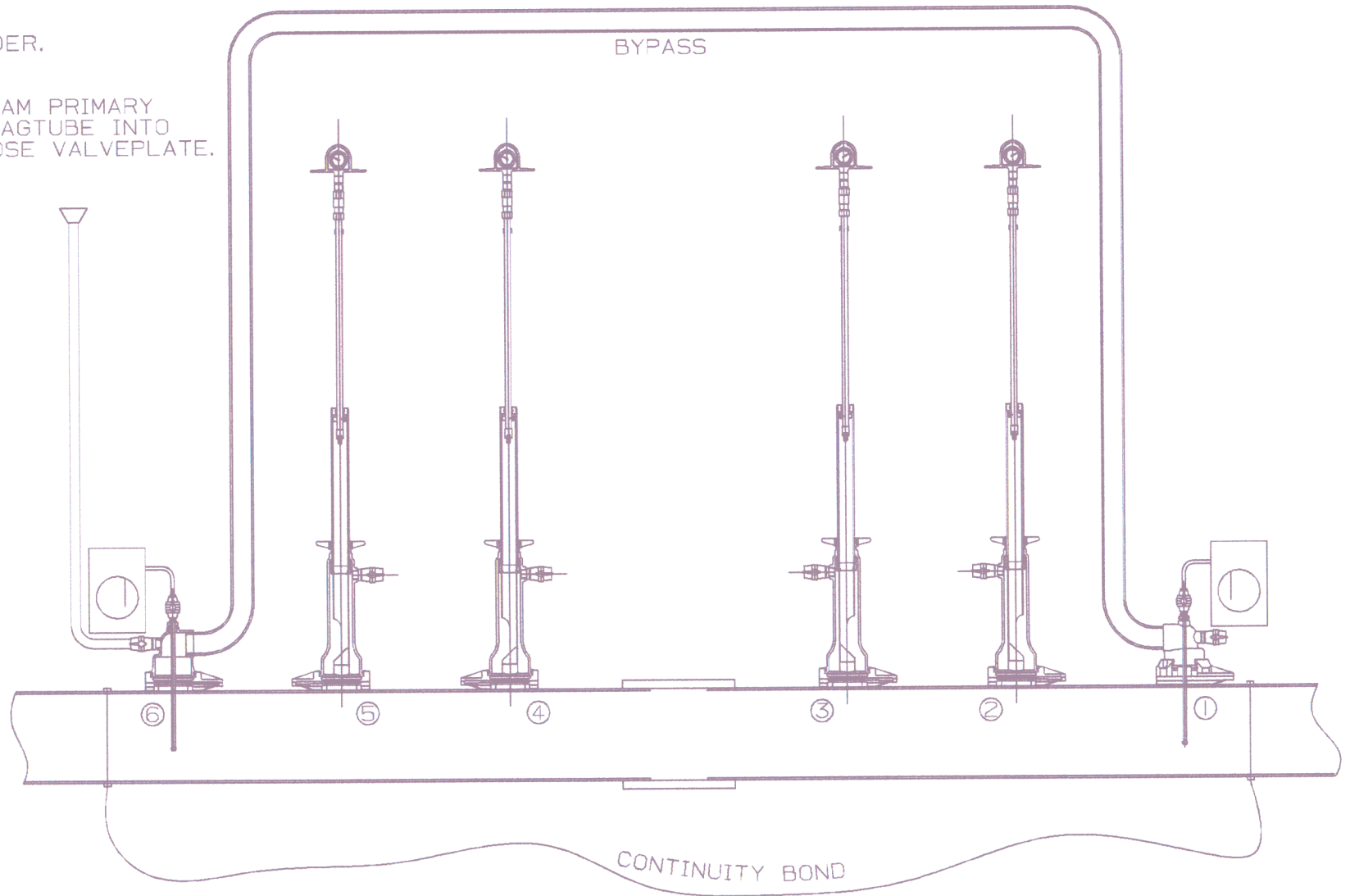


STAGE 13

PROCEDURE (STAGE 13)

STATION No. 1
A. REMOVE GAS RIDER.

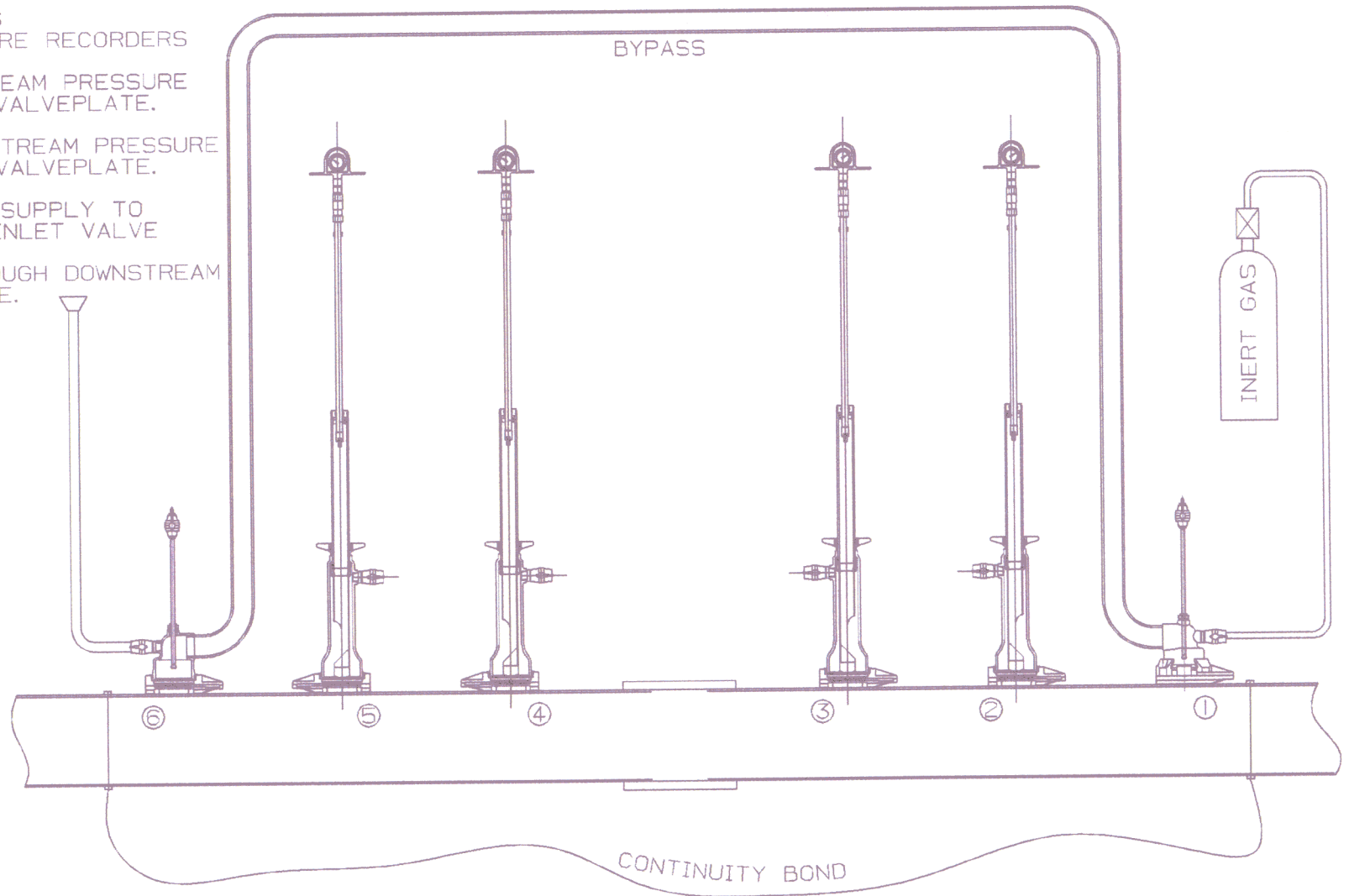
STATION No.2
B. DEFLATE UPSTREAM PRIMARY
BAG, RECOVER BAGTUBE INTO
CANOPY AND CLOSE VALVEPLATE.



PROCEDURE (STAGE 14)

STAGE 14

- STATION Nos. 1 AND 6
- A. DISCONNECT PRESSURE RECORDERS
 - B. RETRACT THE UPSTREAM PRESSURE PROBE AND CLOSE VALVEPLATE.
 - C. RETRACT THE DOWNSTREAM PRESSURE PROBE AND CLOSE VALVEPLATE.
 - D. CONNECT NITROGEN SUPPLY TO UPSTREAM BYPASS INLET VALVE
 - E. PURGE BYPASS THROUGH DOWNSTREAM BYPASS VENT VALVE.

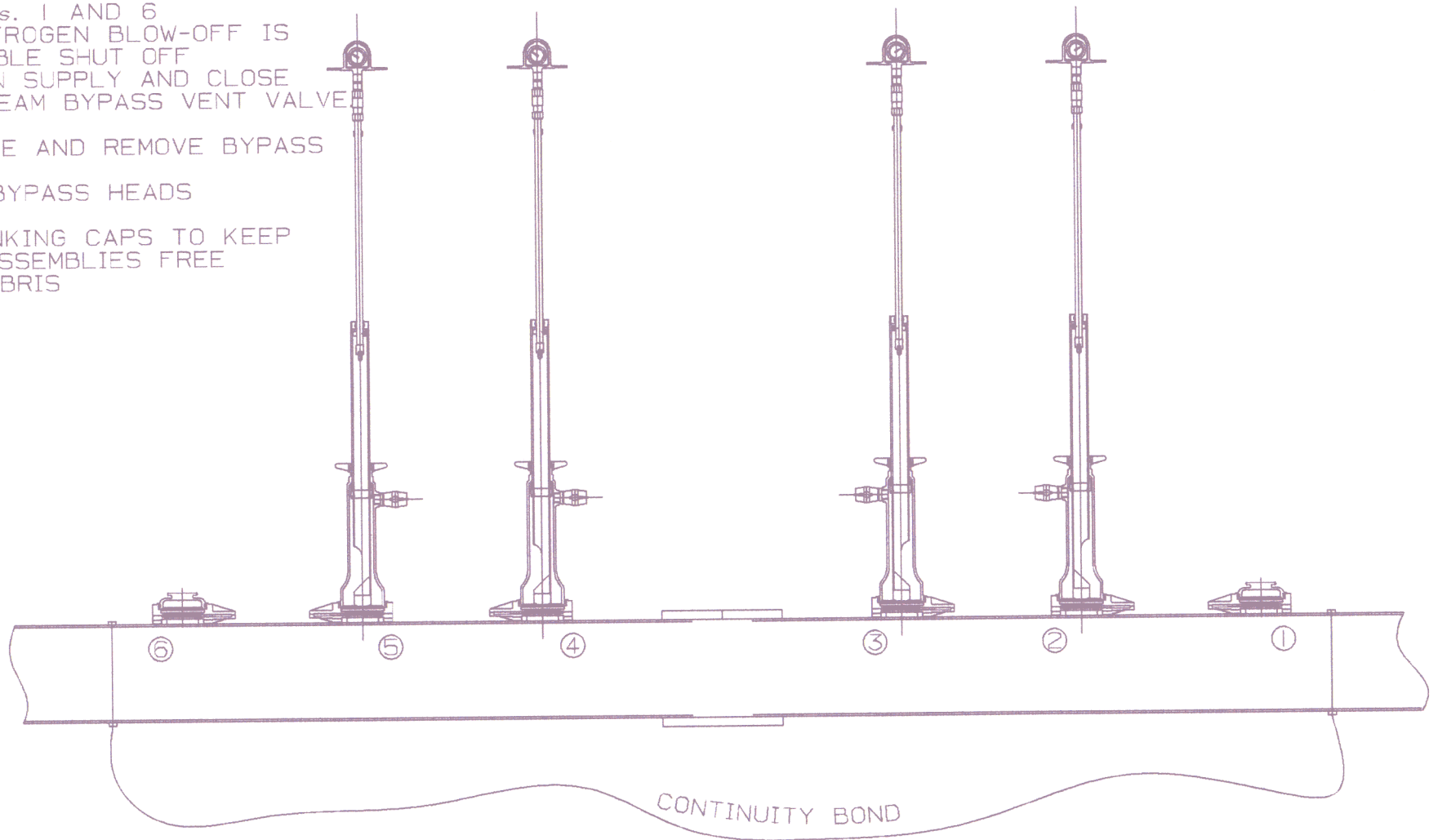


STAGE 15

PROCEDURE (STAGE 15)

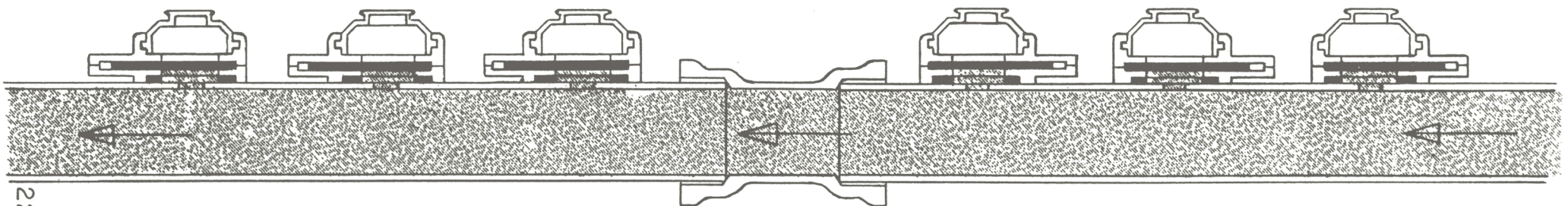
STATION Nos. 1 AND 6

- A. WHEN NITROGEN BLOW-OFF IS ACCEPTABLE SHUT OFF NITROGEN SUPPLY AND CLOSE DOWNSTREAM BYPASS VENT VALVE
- B. DISMANTLE AND REMOVE BYPASS
- C. REMOVE BYPASS HEADS
- D. FIT BLANKING CAPS TO KEEP VALVE ASSEMBLIES FREE FROM DEBRIS



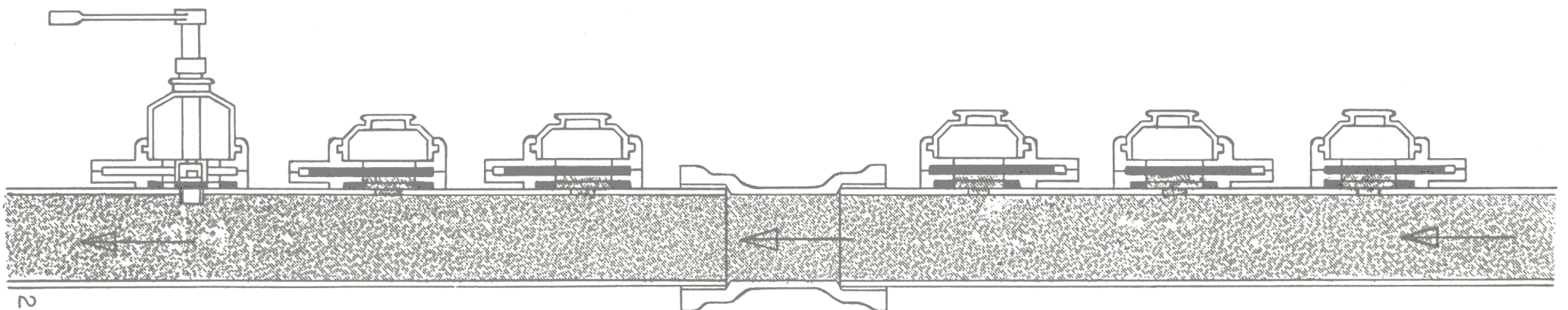
STAGE 16

- A) REMOVE THE FOUR CANOPIES COMPLETE WITH BAGPIPES
- B) FIT BLANKING CAPS



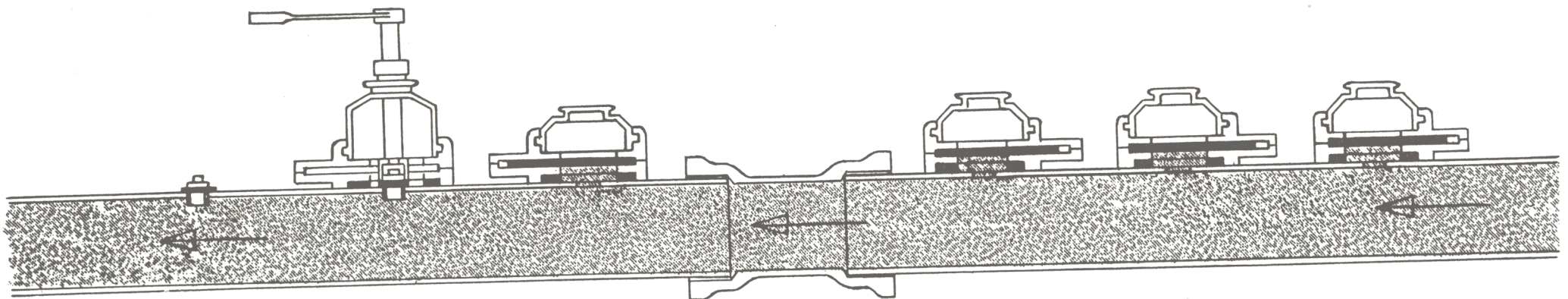
STAGE 17

A) FIT COMPLETION PLUGS INTO ALL SIX HOLES USING TEESET
FITTING HEAD AND CORRECT SIZE OF PLUG DRIVER SUPPLIED

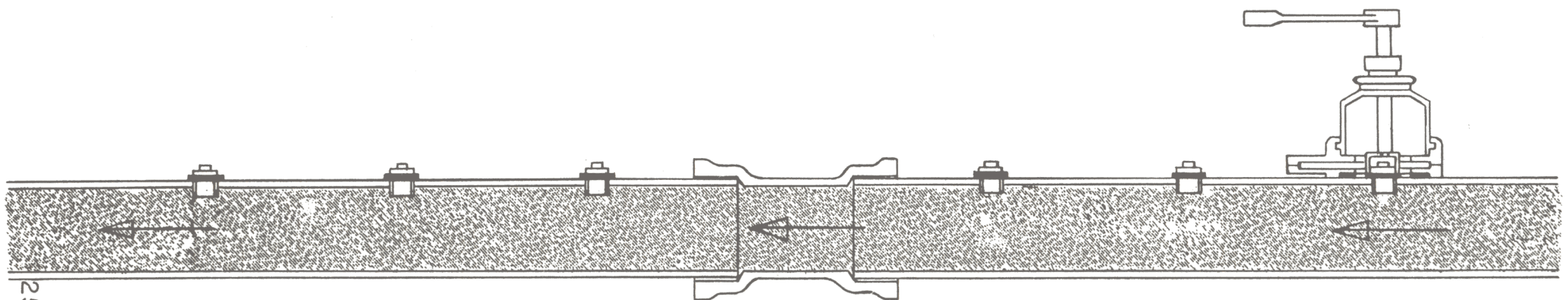


STAGE 17 (CONT.)

B) REMOVE BASES AS EACH PLUG IS FITTED

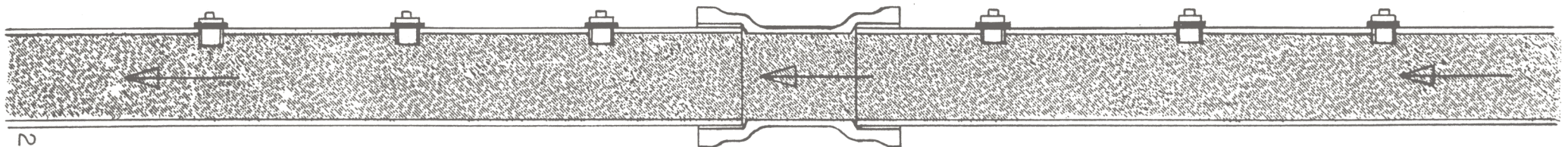


STAGE 17 (CONTD.)



STAGE 17 (CONCLUDED)

C) LEAK TEST ALL JOINTS



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