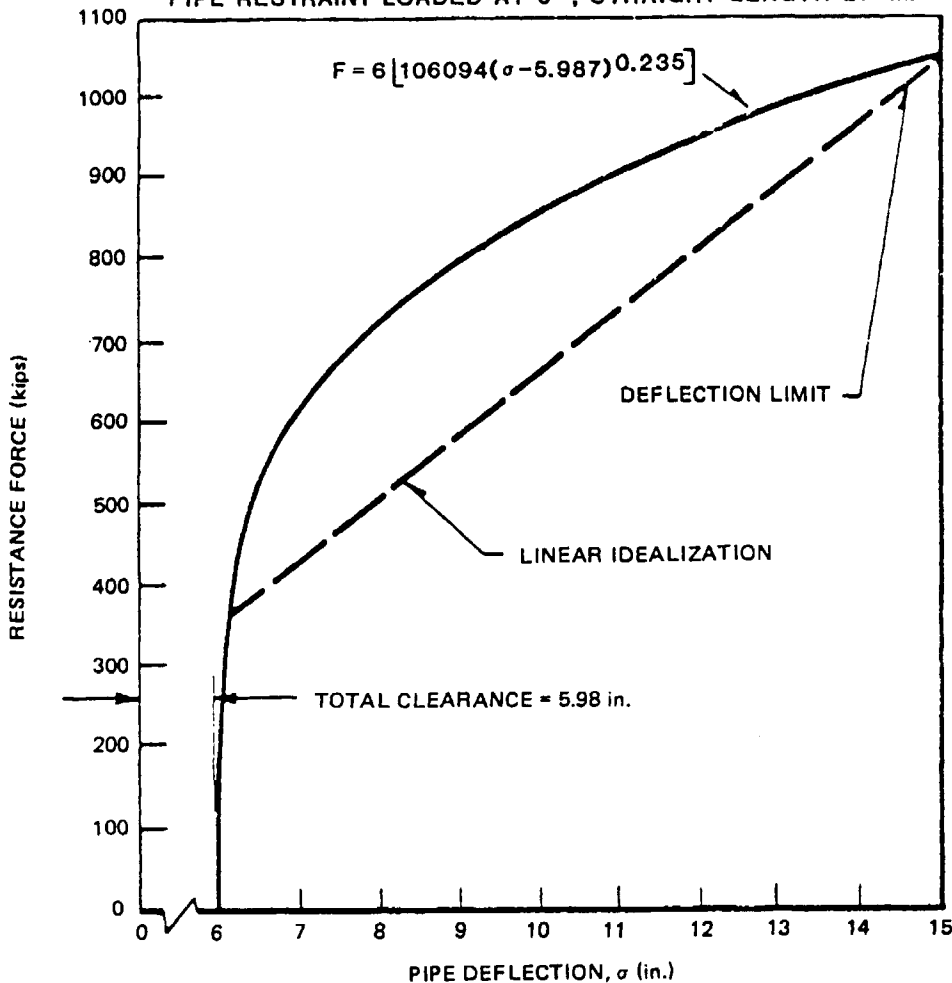
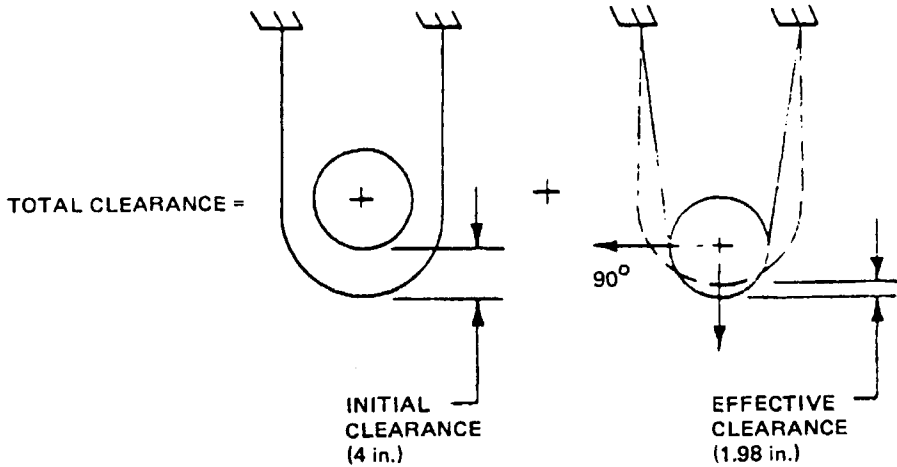




TYPICAL FORCE DEFLECTION CURVE FOR A 6-BAR, 24-in. PIPE RESTRAINT LOADED AT 0°, STRAIGHT LENGTH 27-in.

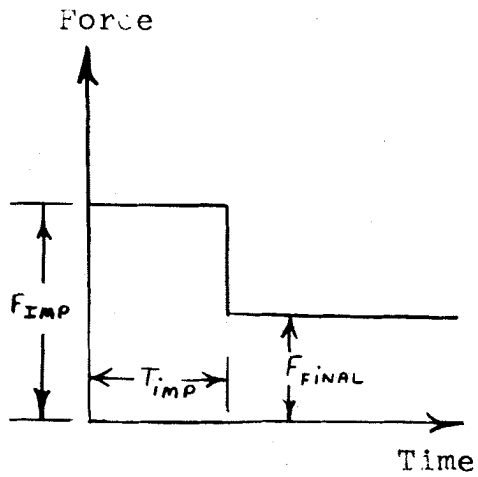


FOR CLINTON, $\sigma = 8.194$, WHICH DEFINES THE UPPER LOAD LIMIT FOR PIPE RESTRAINT

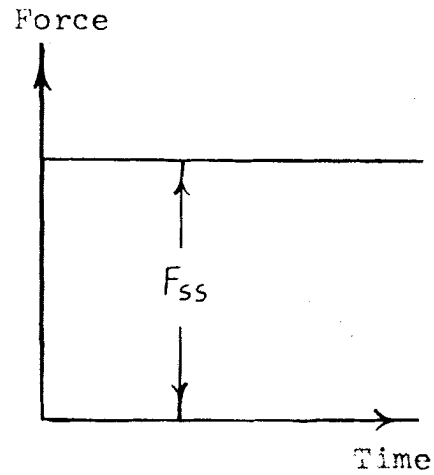


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FIGURE 3.6-2
 TYPICAL RESTRAINT
 FORCE-DEFLECTION CURVE



$$F_{SS} < F_{IMP}$$



$$F_{SS} > F_{IMP}$$

PIPE THRUST

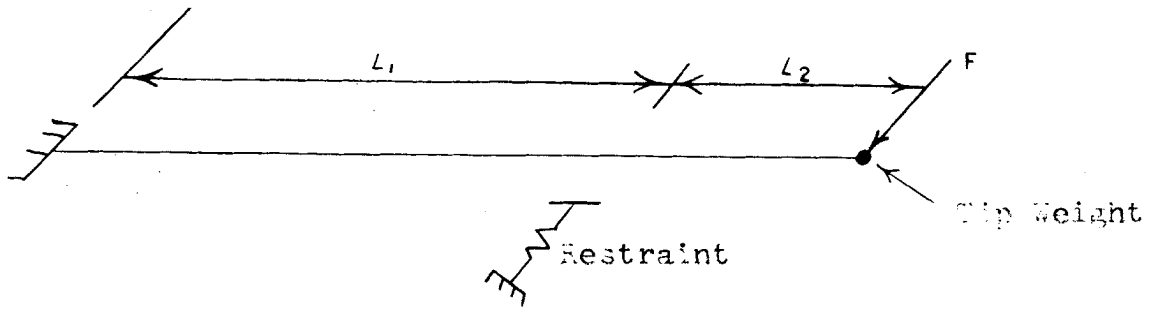
RESULTING FROM A CIRCUMFERENTIAL BREAK

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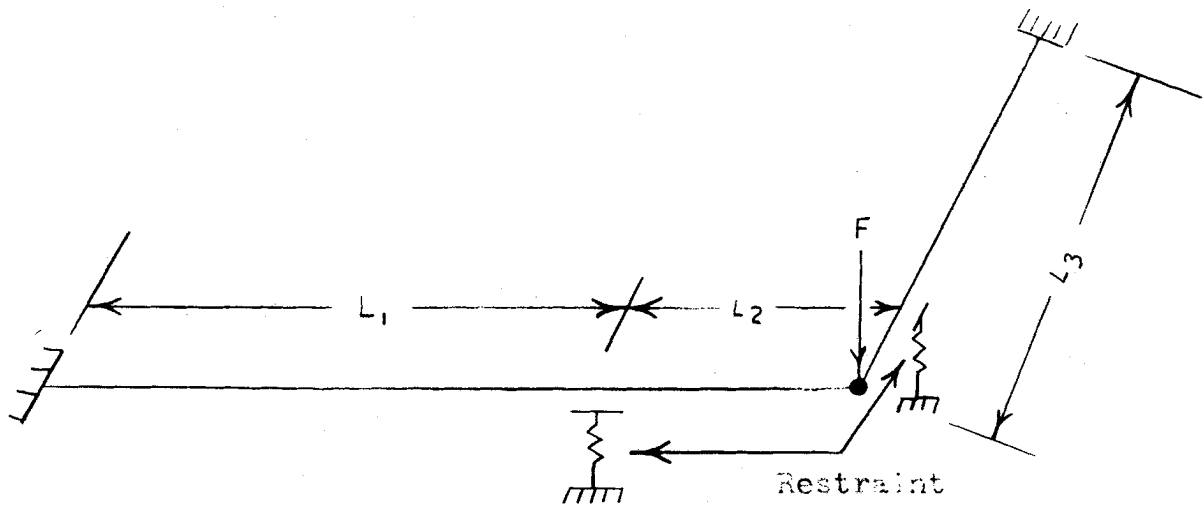
FIGURE 3.6-3

PIPE THRUST

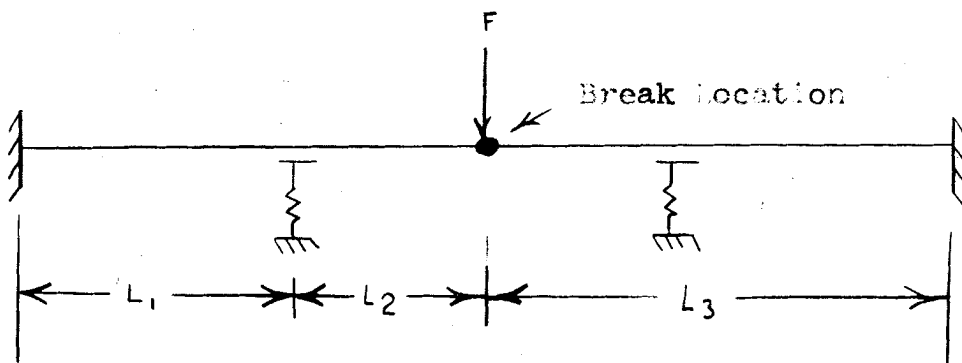
FIGURE 3.6-4
HAS BEEN DELETED



Circumferential Break at Elbow



Longitudinal Break at an Elbow



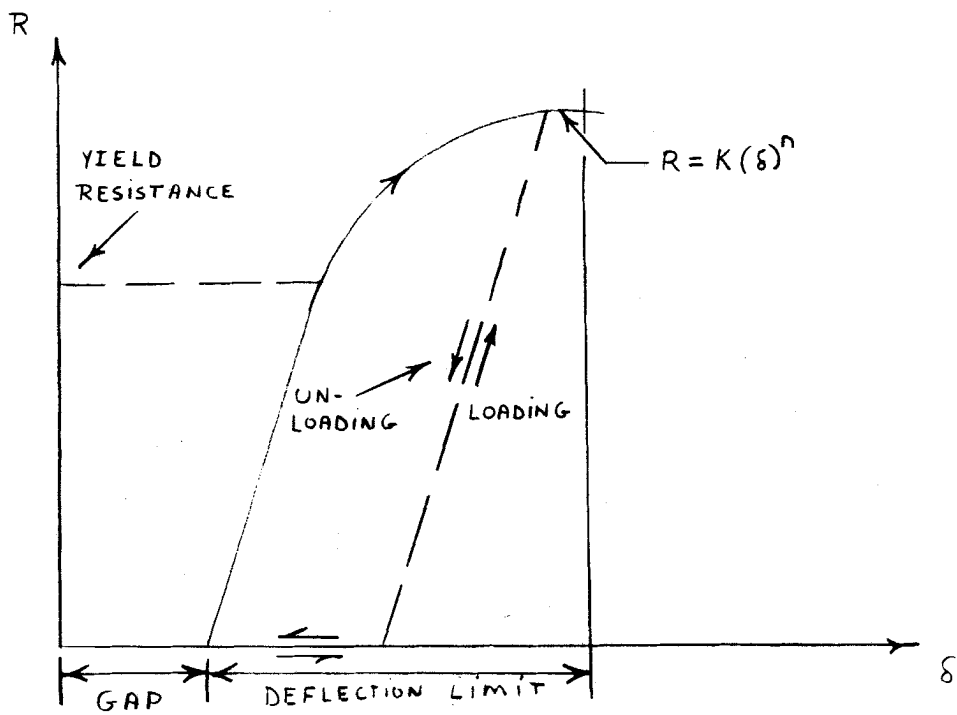
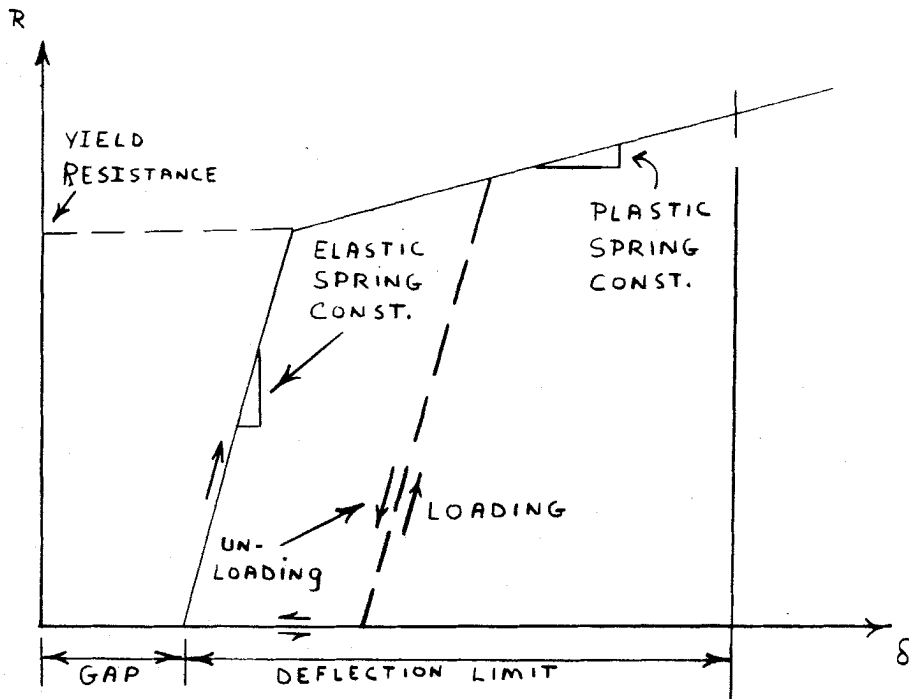
Longitudinal Break at an Interior Point

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FIGURE 3.6-5

PIPE WHIP MODELS - FINITE
 DIFFERENCE METHOD

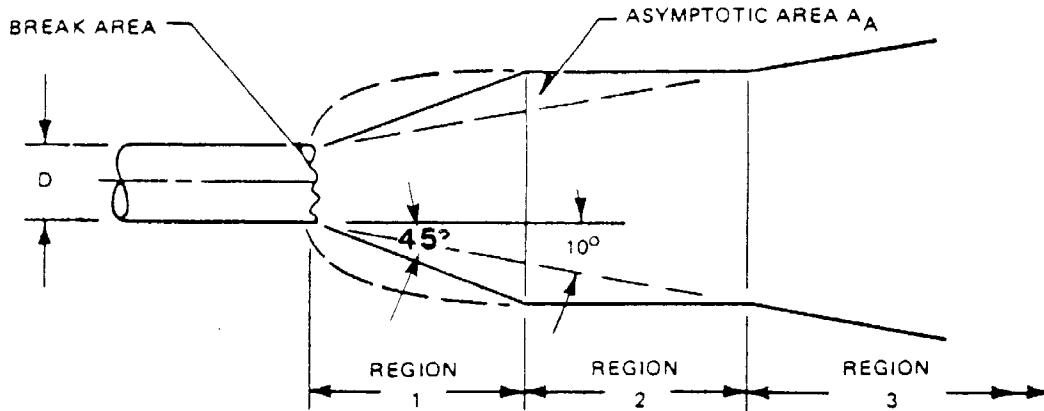
FIGURE 3.6-6
HAS BEEN DELETED



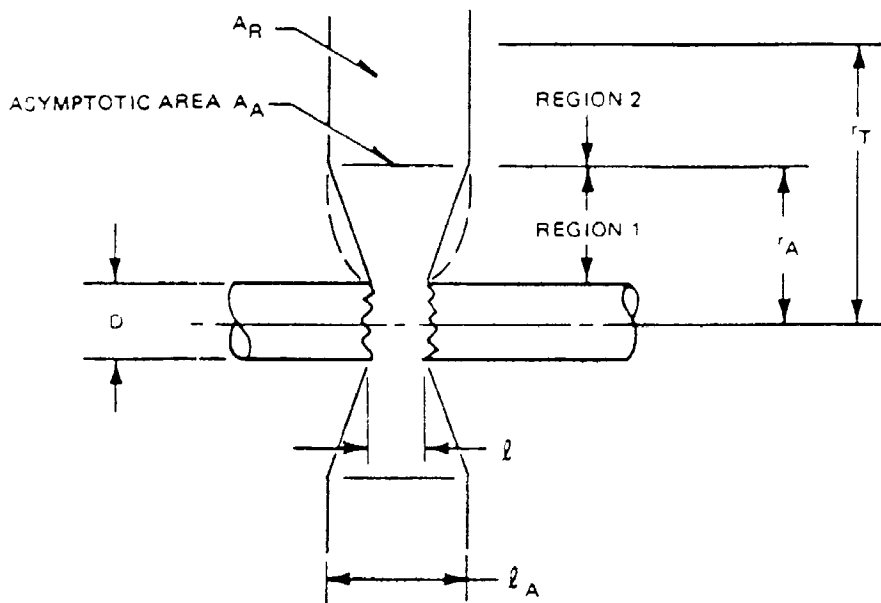
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FIGURE 3.6-7

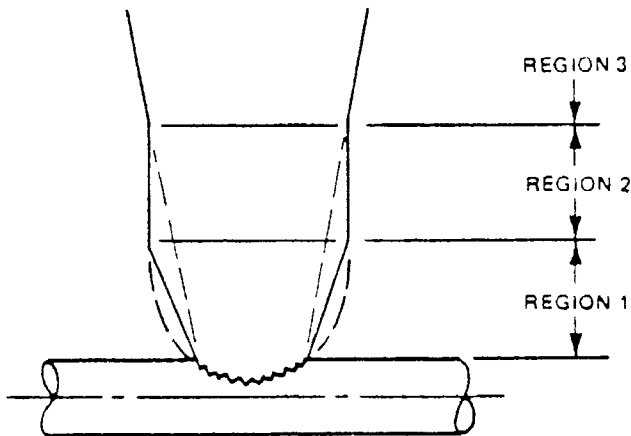
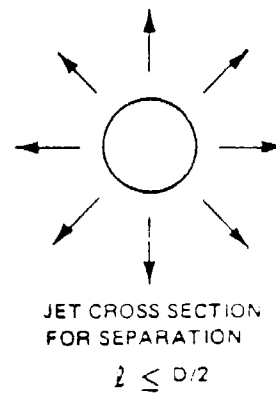
RESTRAINT PROPERTIES



(A) CIRCUMFERENTIAL BREAK - FULL SEPARATION

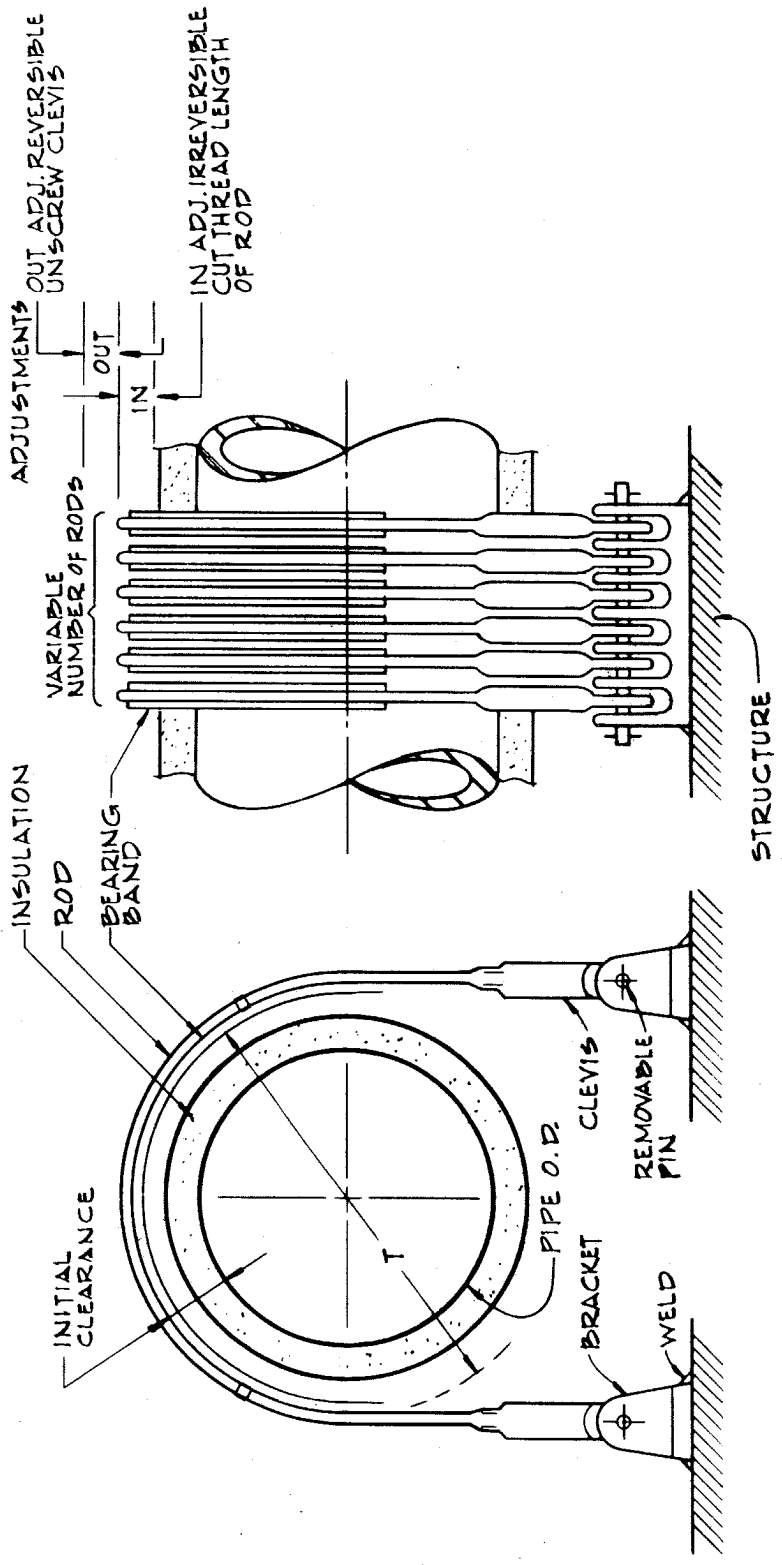


(B) CIRCUMFERENTIAL BREAK - PARTIAL SEPARATION



(C) LONGITUDINAL BREAK

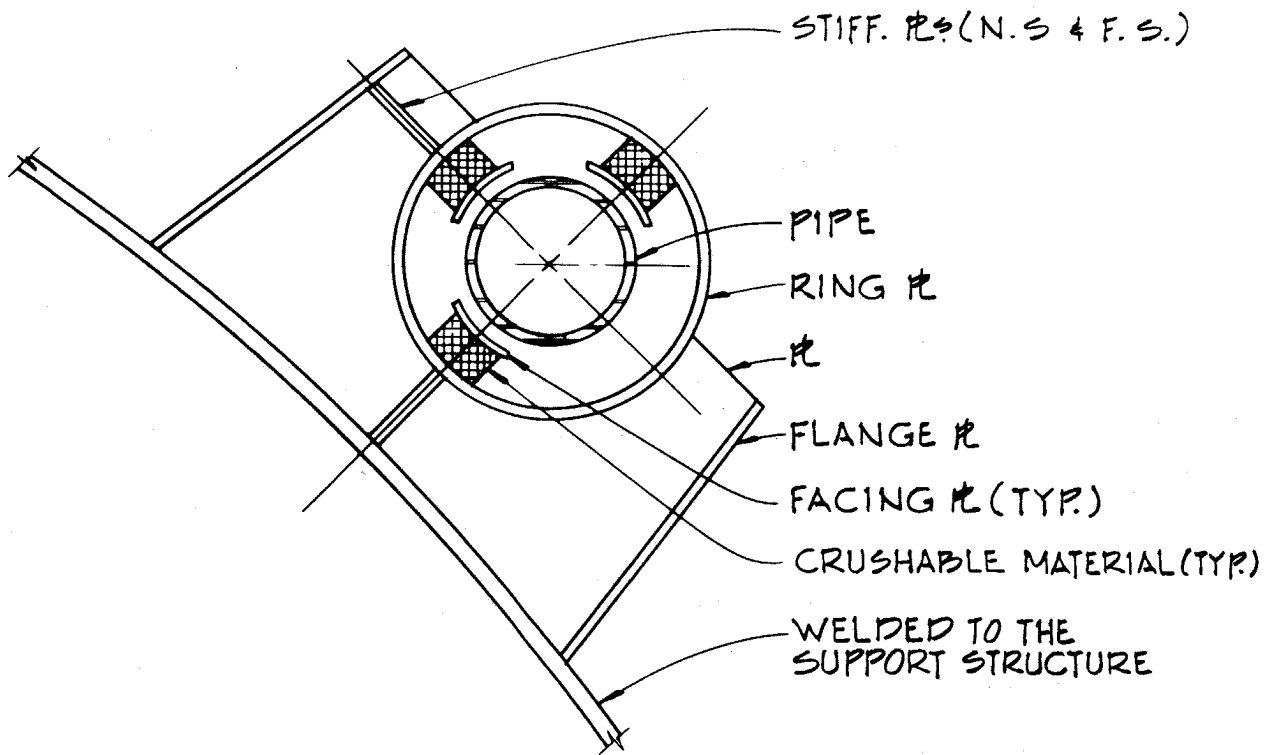
FIGURES 3.6-9 AND 3.6-10
HAVE BEEN DELETED



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FIGURE 3.6-11

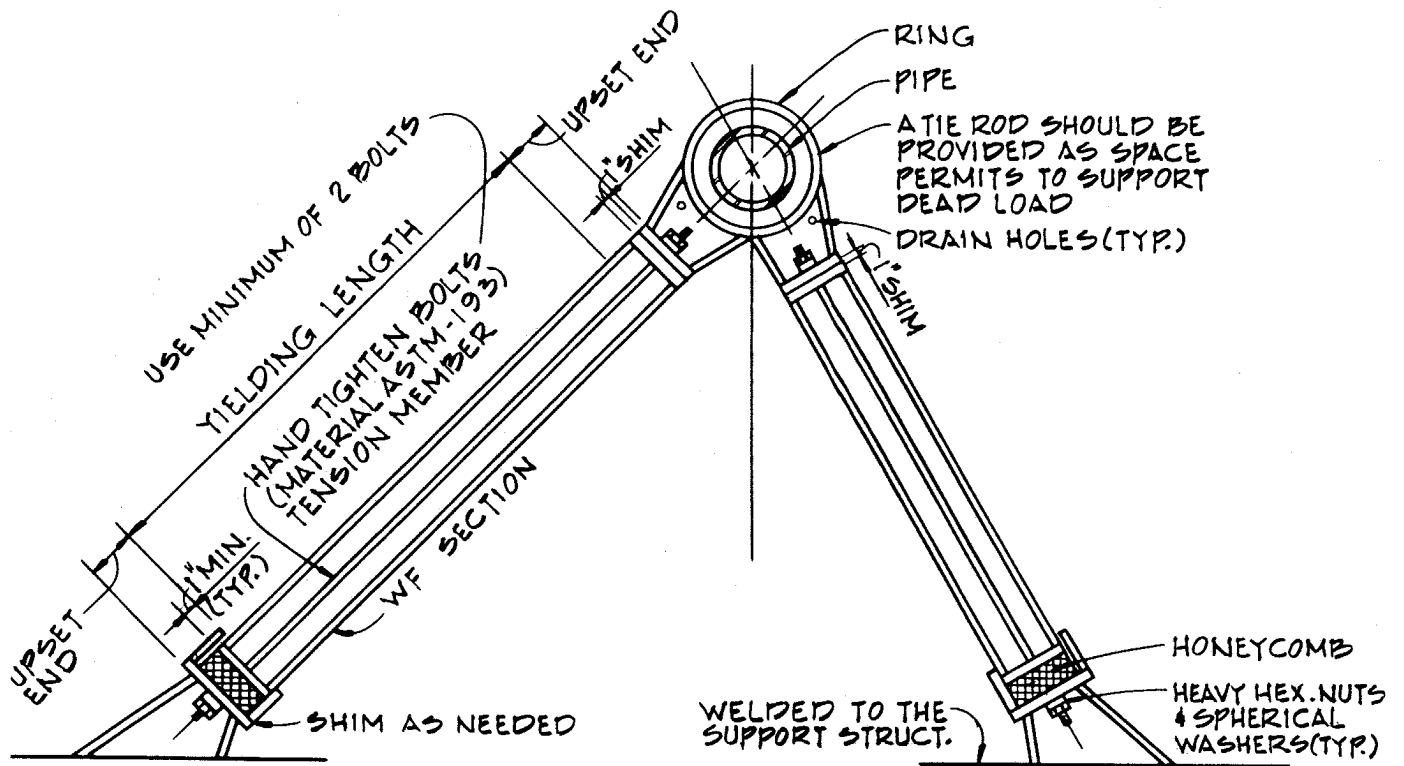
TYPICAL TENSION RESTRAINT



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FIGURE 3.6-12

TYPICAL CRUSHABLE MATERIAL RESTRAINT



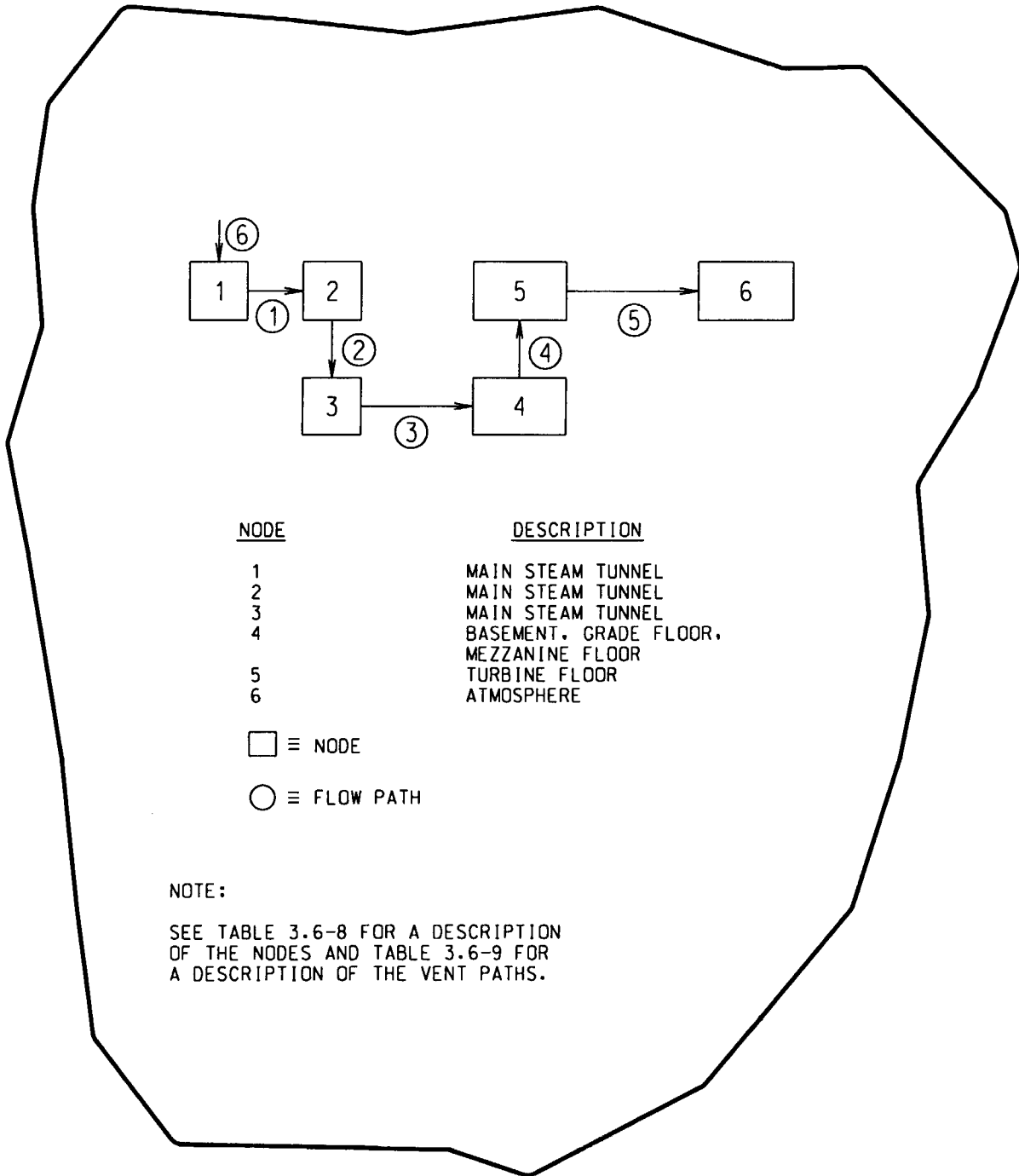
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FIGURE 3.6-13

TYPICAL TWO-LEGGED RESTRAINT

CPS/USAR

Figure 3.6-14
Deleted



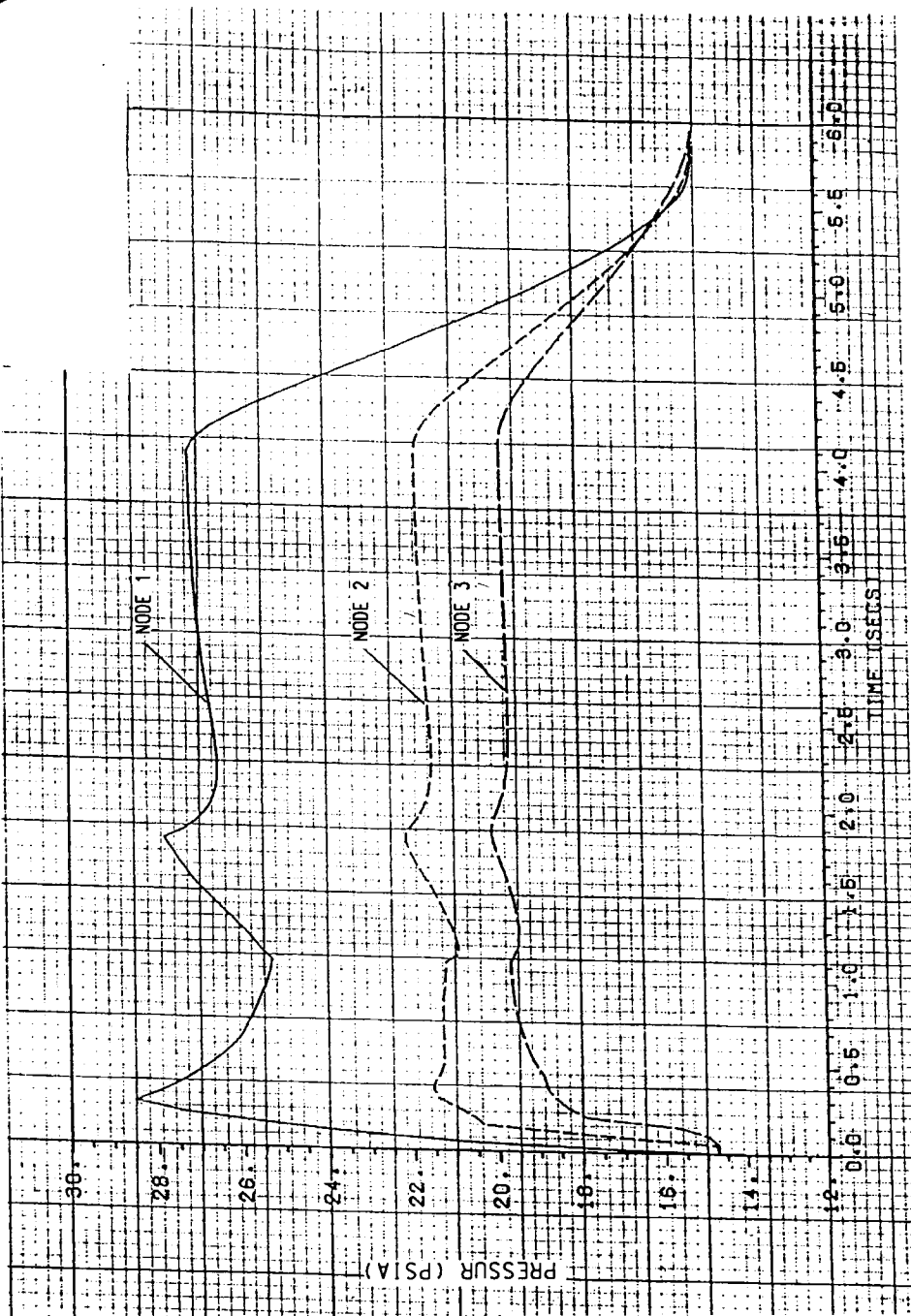
<u>NODE</u>	<u>DESCRIPTION</u>
1	MAIN STEAM TUNNEL
2	MAIN STEAM TUNNEL
3	MAIN STEAM TUNNEL
4	BASEMENT, GRADE FLOOR, MEZZANINE FLOOR
5	TURBINE FLOOR
6	ATMOSPHERE

□ ≡ NODE
○ ≡ FLOW PATH

NOTE:
SEE TABLE 3.6-8 FOR A DESCRIPTION
OF THE NODES AND TABLE 3.6-9 FOR
A DESCRIPTION OF THE VENT PATHS.

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FIGURE 3.6-15
NODALIZATION SCHEMATIC FOR
SIMULTANEOUS MAIN STEAMLIN AND
FEEDWATER LINE BREAK IN
THE STEAM TUNNEL



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FIGURE 3.6-16
PRESSURE VS. TIME -
LINE BREAK IN STEAM TUNNEL