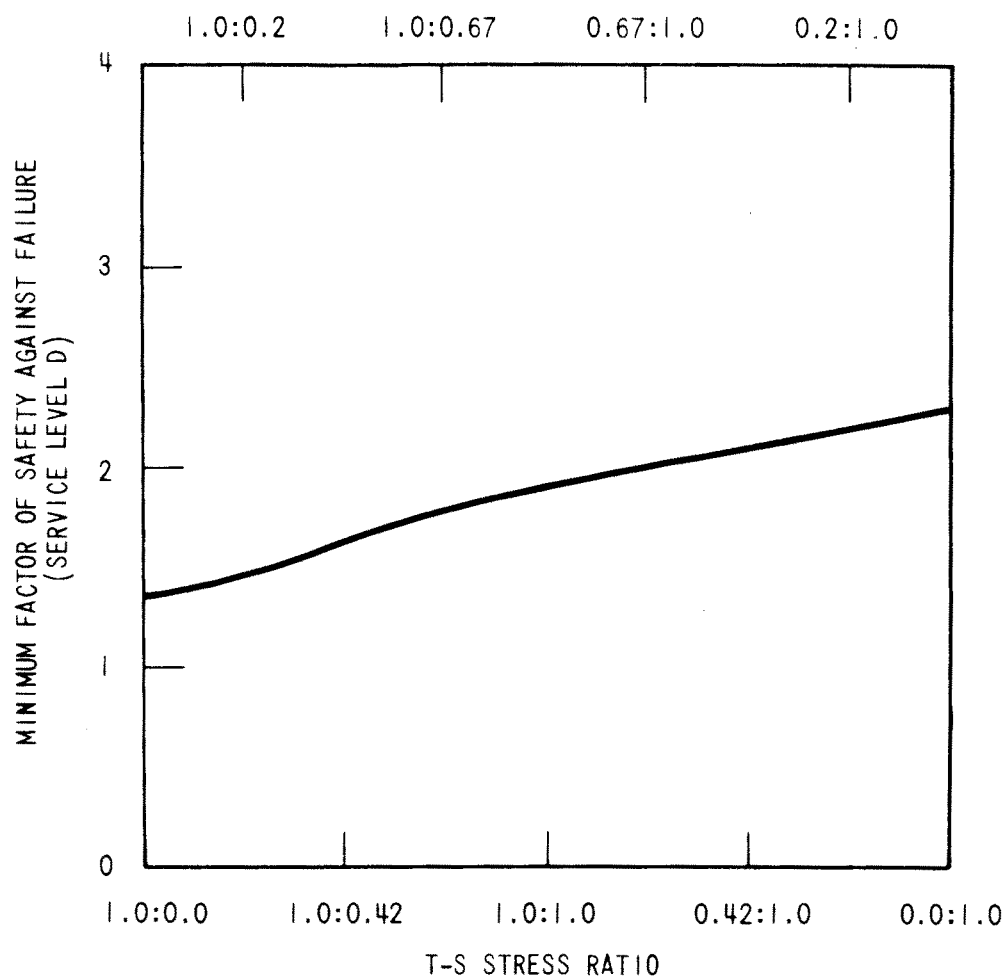


CALLAWAY PLANT

FIGURE 3A-1

COMPARISON OF TENSILE STRESS
FOR BOLTS

**CALLAWAY PLANT****FIGURE 3A-2**

**FACTOR OF SAFETY AGAINST FAILURE
UNDER SERVICE LEVEL D AS A
FUNCTION OF T-S RATIO**

FSAR Figure 3B-1 withheld per RIS 2015-17

REV OL-8
11/95

FSAR Figure 3B-1 withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3B – 1 AUXILIARY BUILDING EL. 1974 HAZARDS ANALYSIS ROOM LOCATIONS

FSAR Figure 3B-2 withheld per RIS 2015-17

H

G

F

E

D

C

B

Rev. OL-0
6/86

CALLAWAY PLANT
FIGURE 3B-2
PLAN AND ELEVATION
VIEW OF MAIN
STEAM/MAIN FEEDWATER
ISOLATION VALVE
COMPARTMENT
(SK-C-250)

8

7

6

5

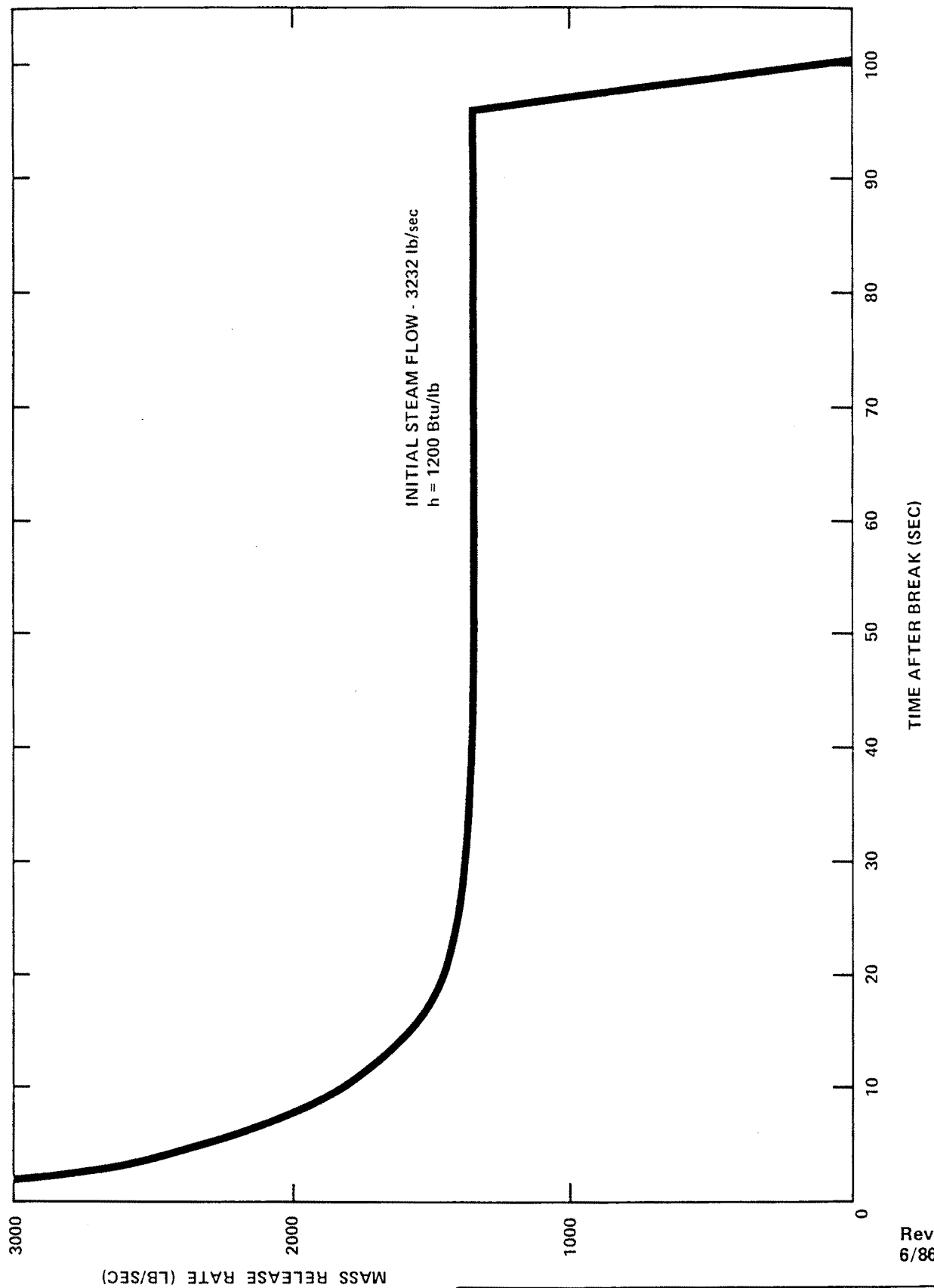
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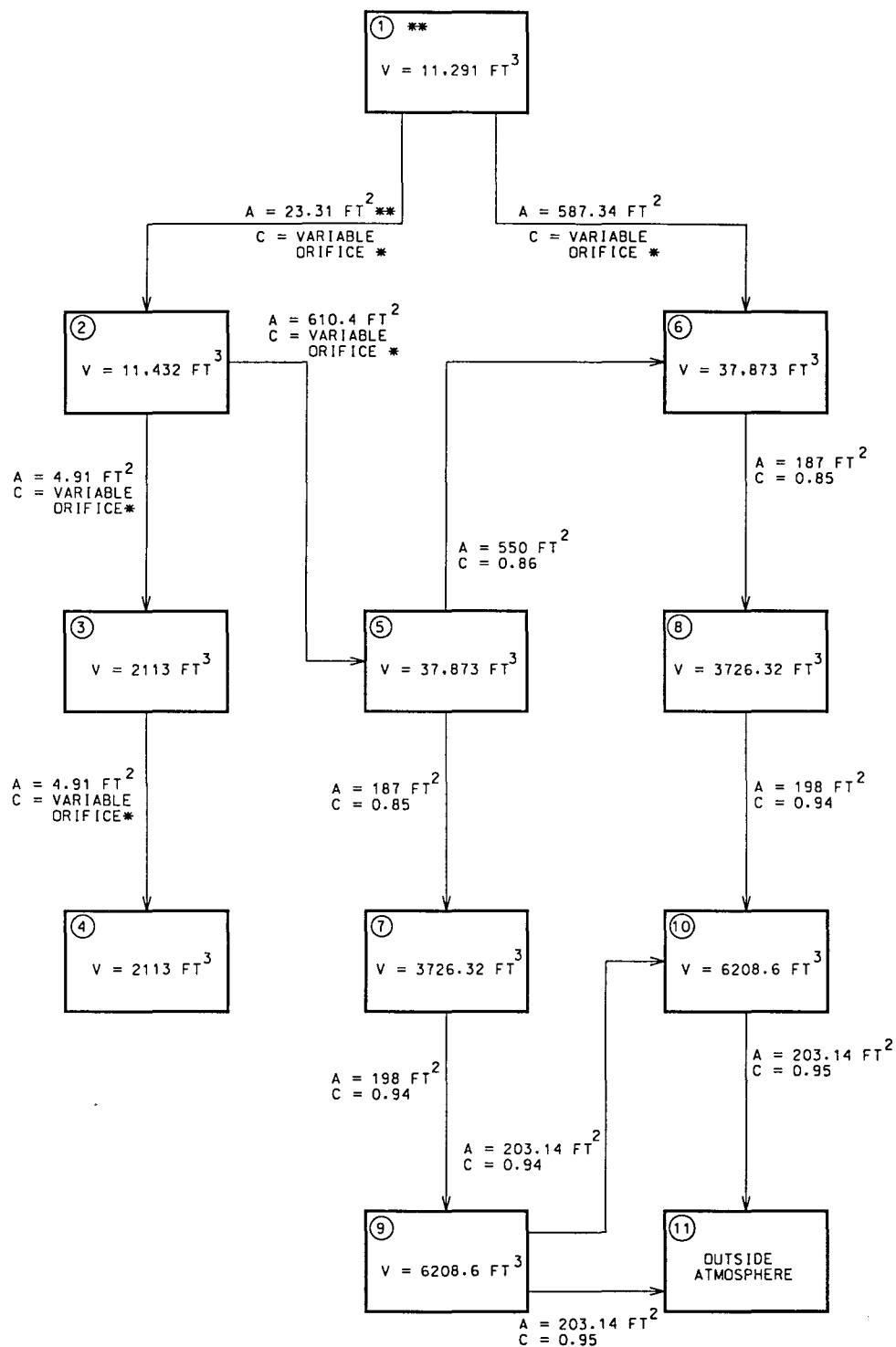
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FSAR Figure 3B-2 withheld per RIS 2015-17



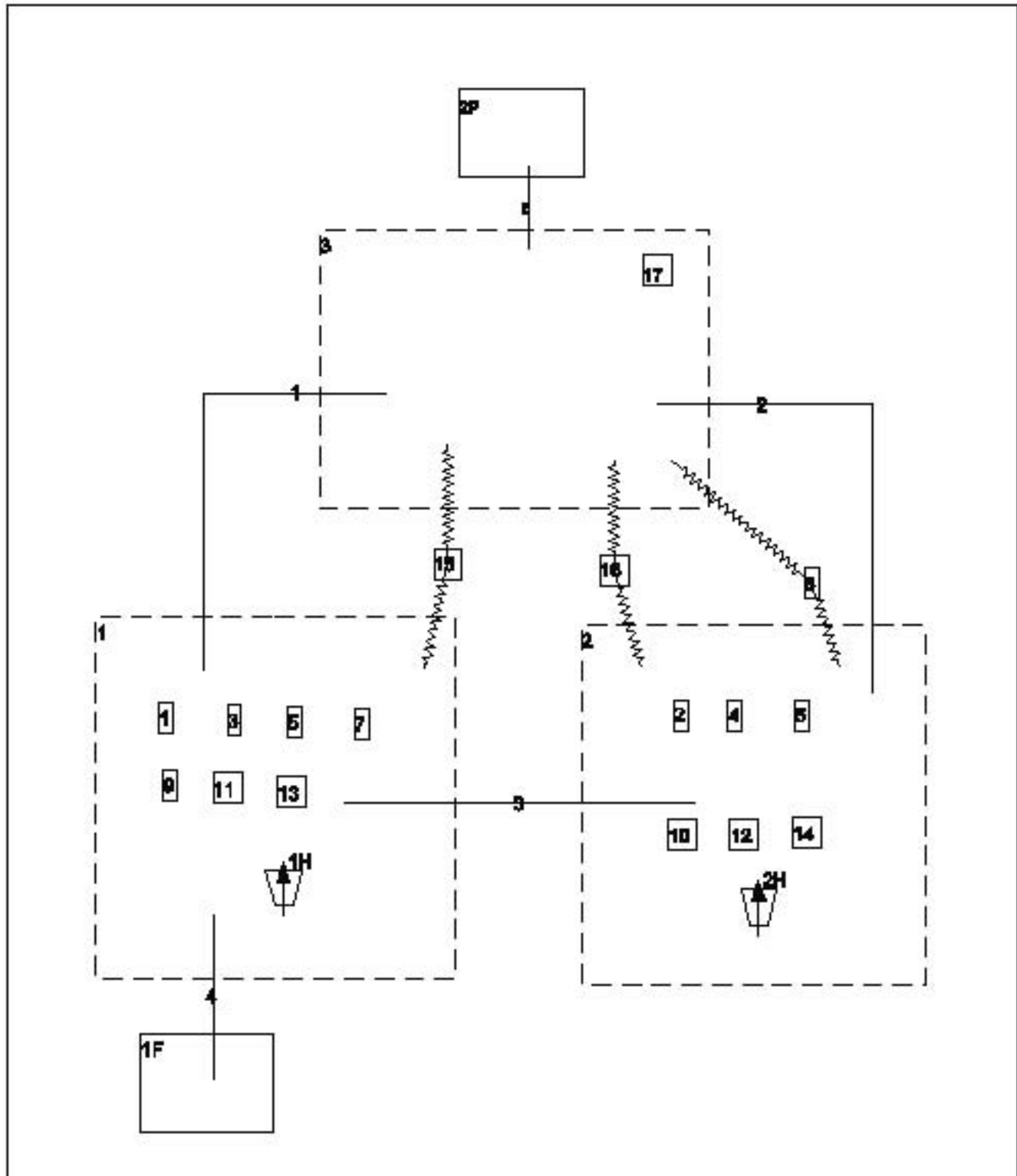
Rev. OL-0
6/86

CALLAWAY PLANT
FIGURE 3B-3
MASS RELEASE RATE
FOLLOWING A 1.4 FT² STEAM LINE BREAK



REV. OL-10
11/98

CALLAWAY PLANT
 FIGURE 3B-4
 NODALIZATION MODEL FOR
 MAIN STEAM / MAIN FEEDWATER
 ISOLATION VALVE COMPARTMENT
 PRESSURE ANALYSIS

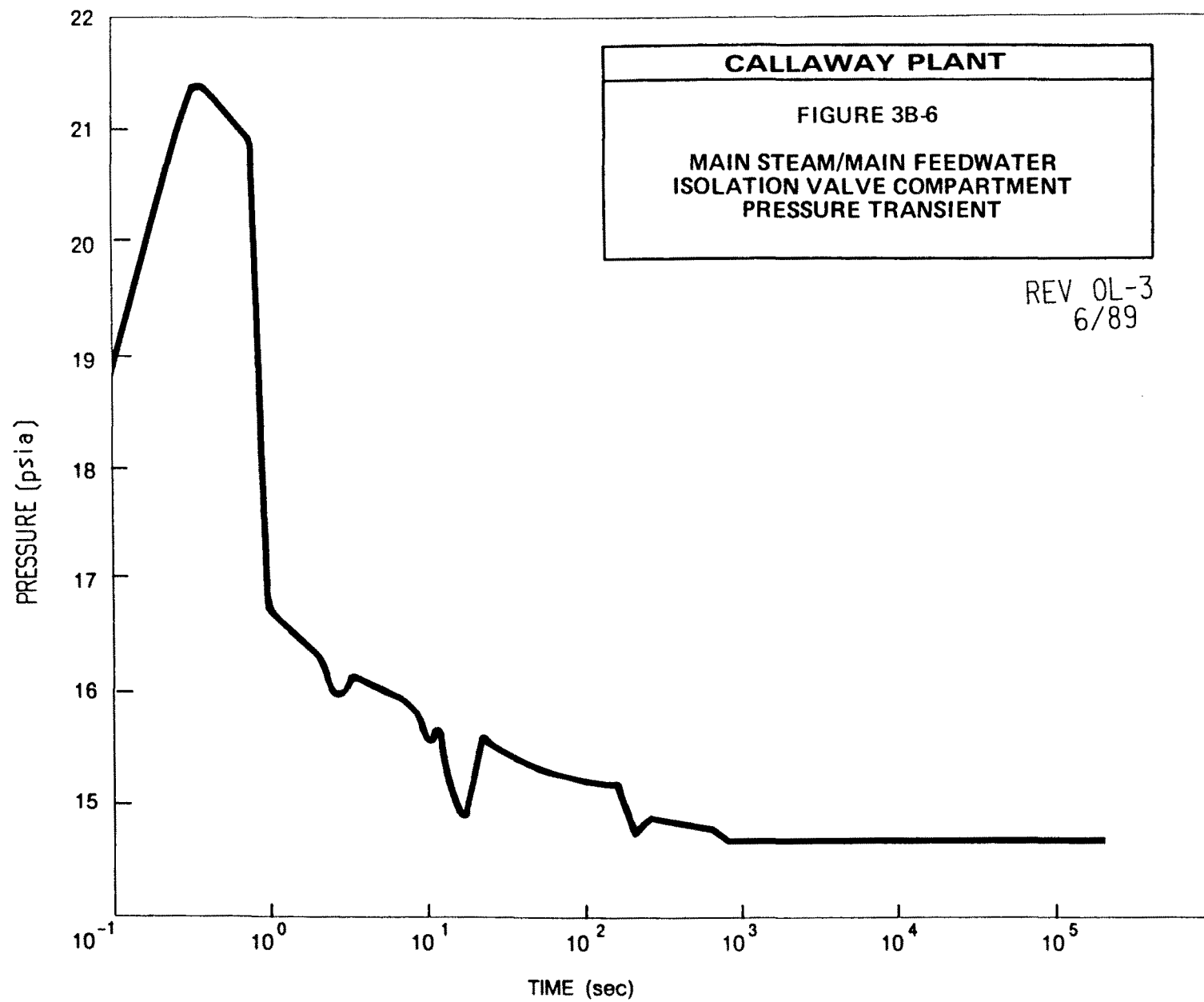


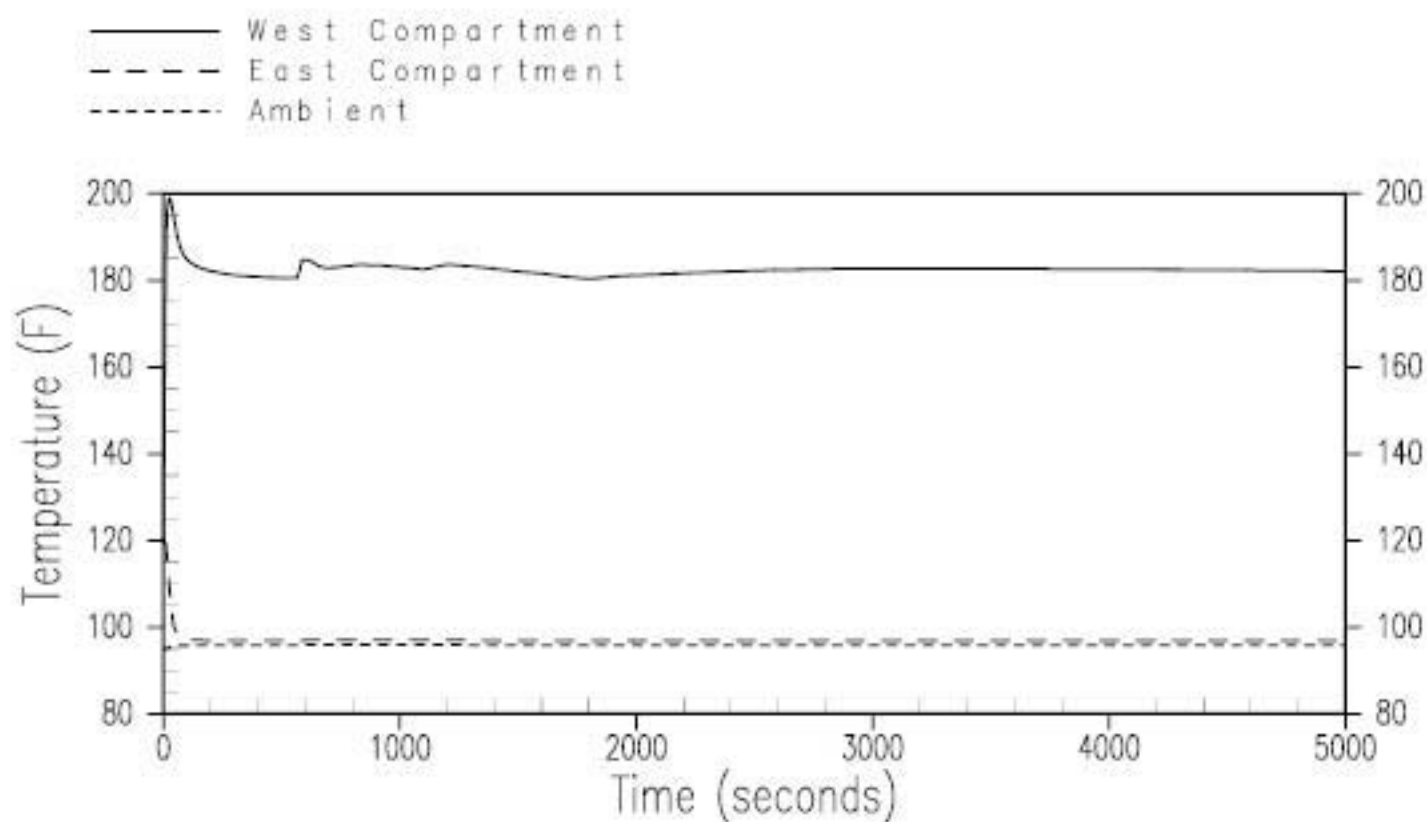
REV. 0L-15
5/06

CALLAWAY PLANT

FIGURE 3B-5

**NODALIZATION MODEL FOR
MAIN STEAM / MAIN FEEDWATER
ISOLATION VALVE COMPARTMENT
TEMPERATURE ANALYSIS**



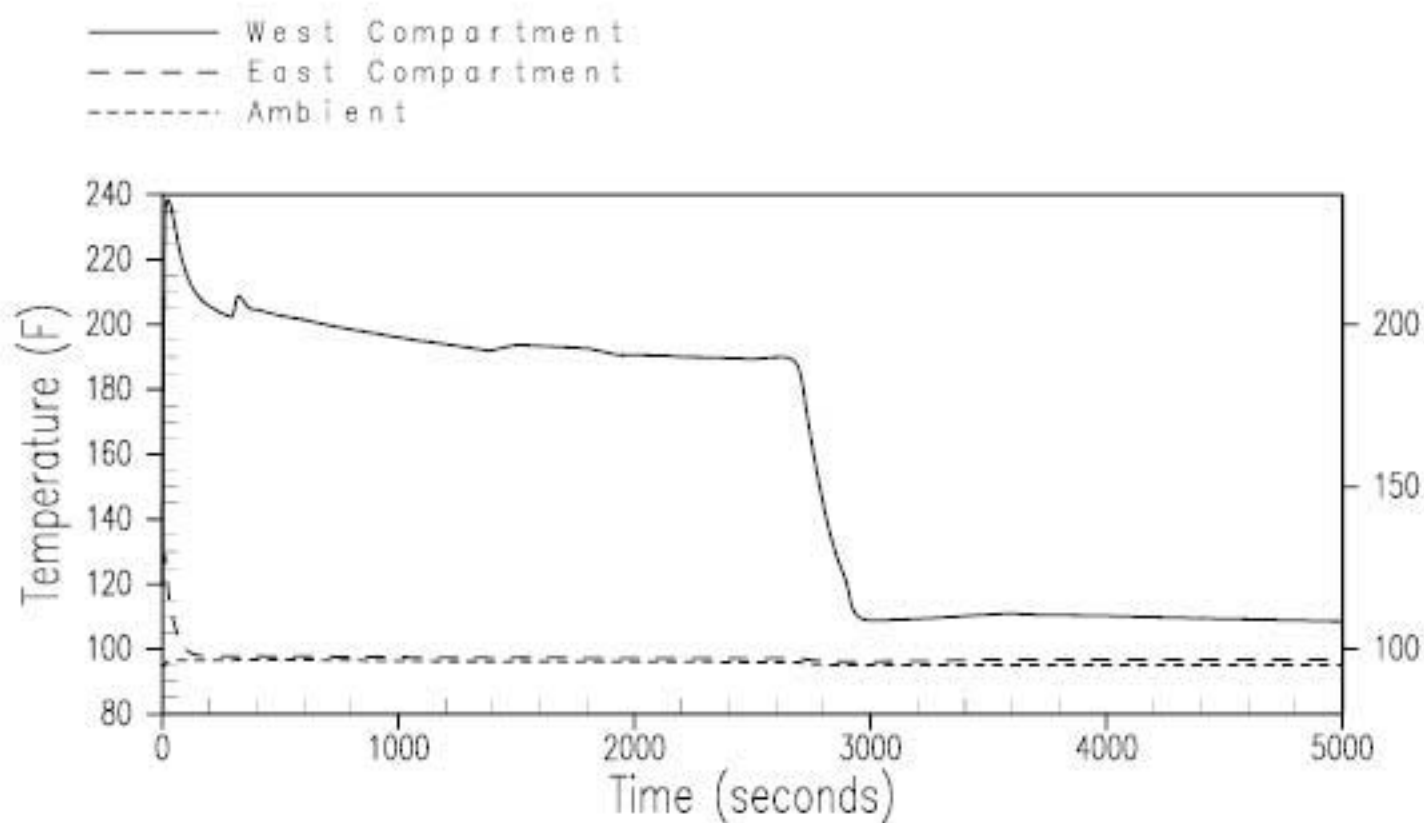


REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 3B-7

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.06 FT² BREAK CASE

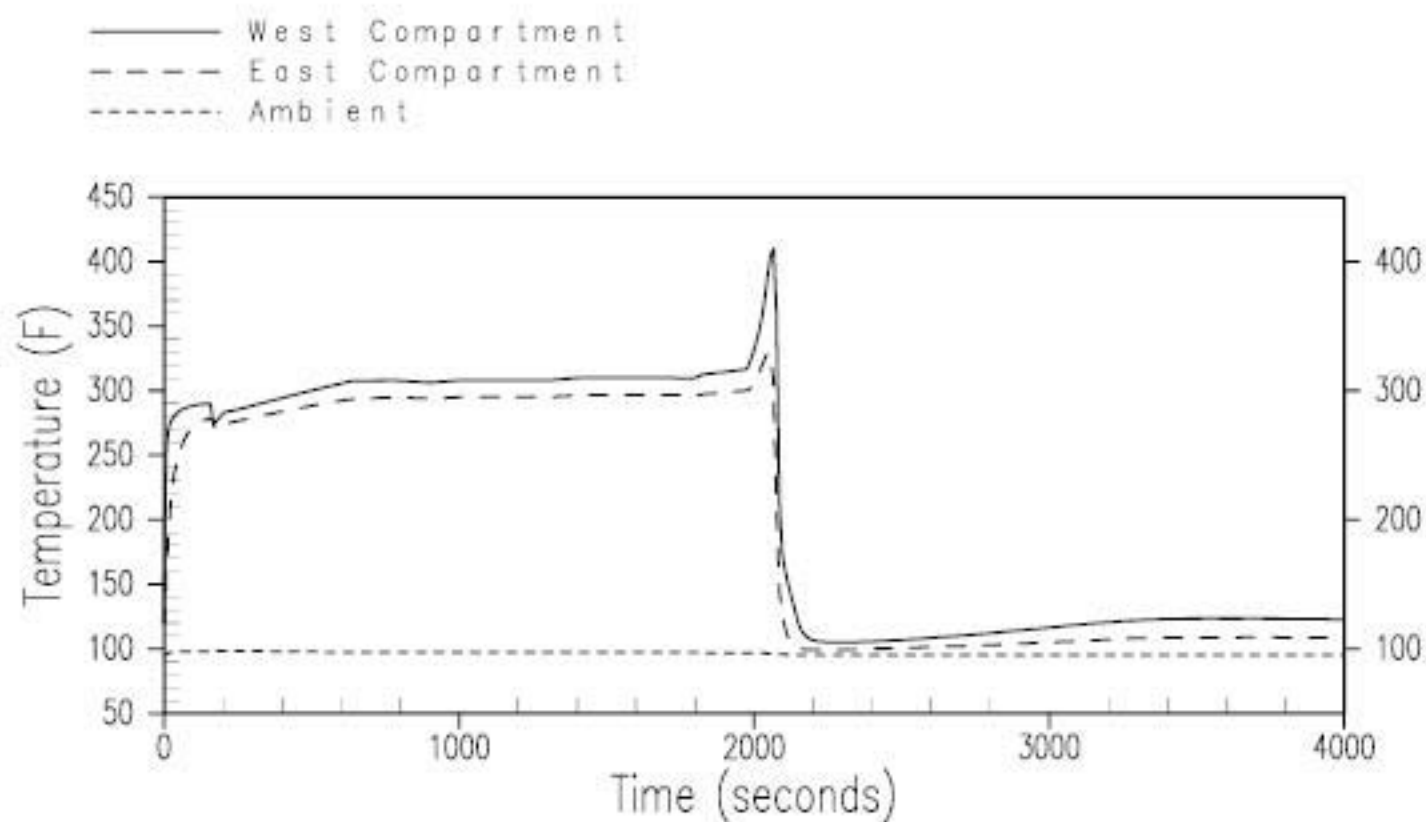


REV. OL-16
5/88

CALLAWAY PLANT

FIGURE 3B-8

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.1 FT² BREAK CASE

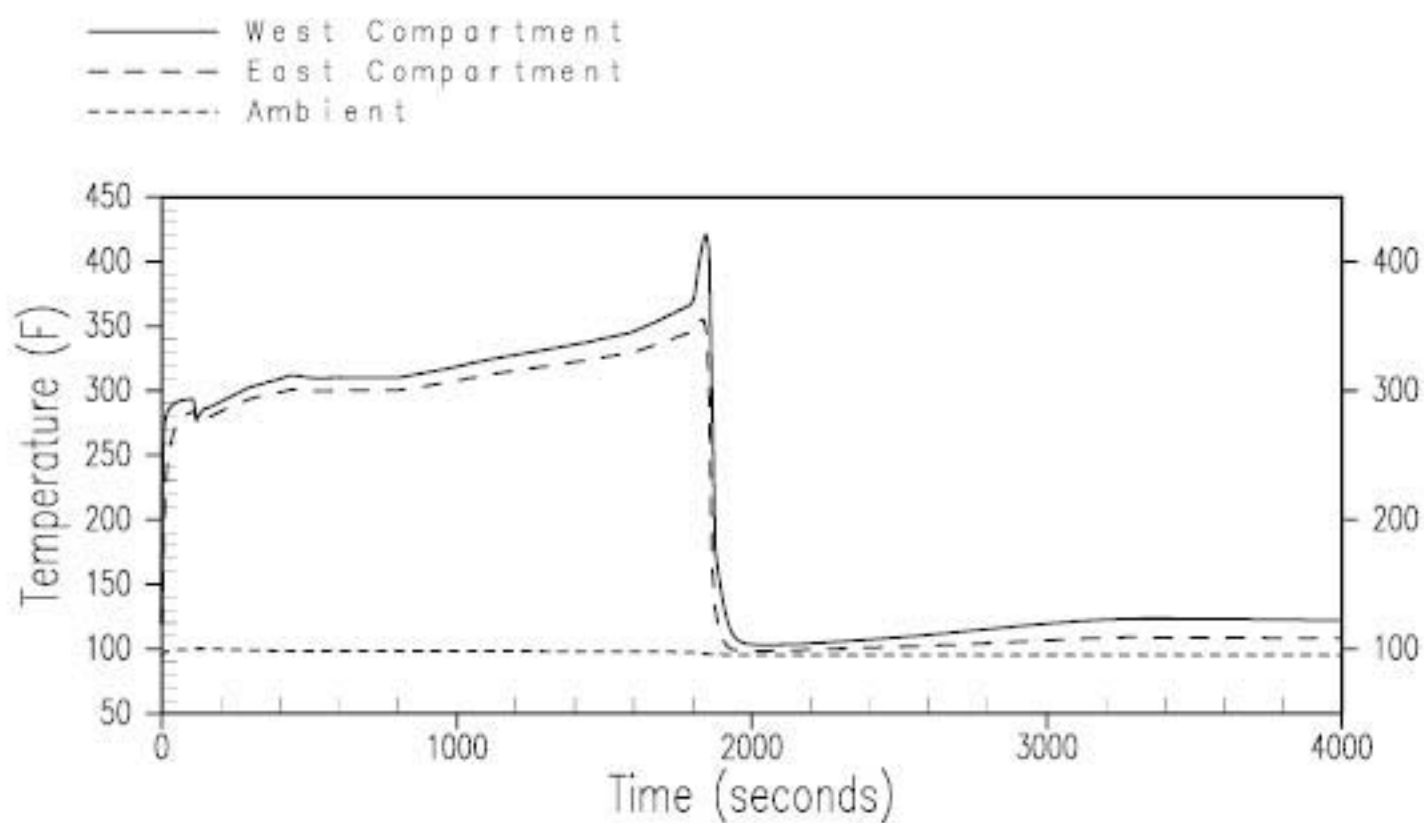


REV. OL-16
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CALLAWAY PLANT

FIGURE 3B-9

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.2 FT² BREAK CASE



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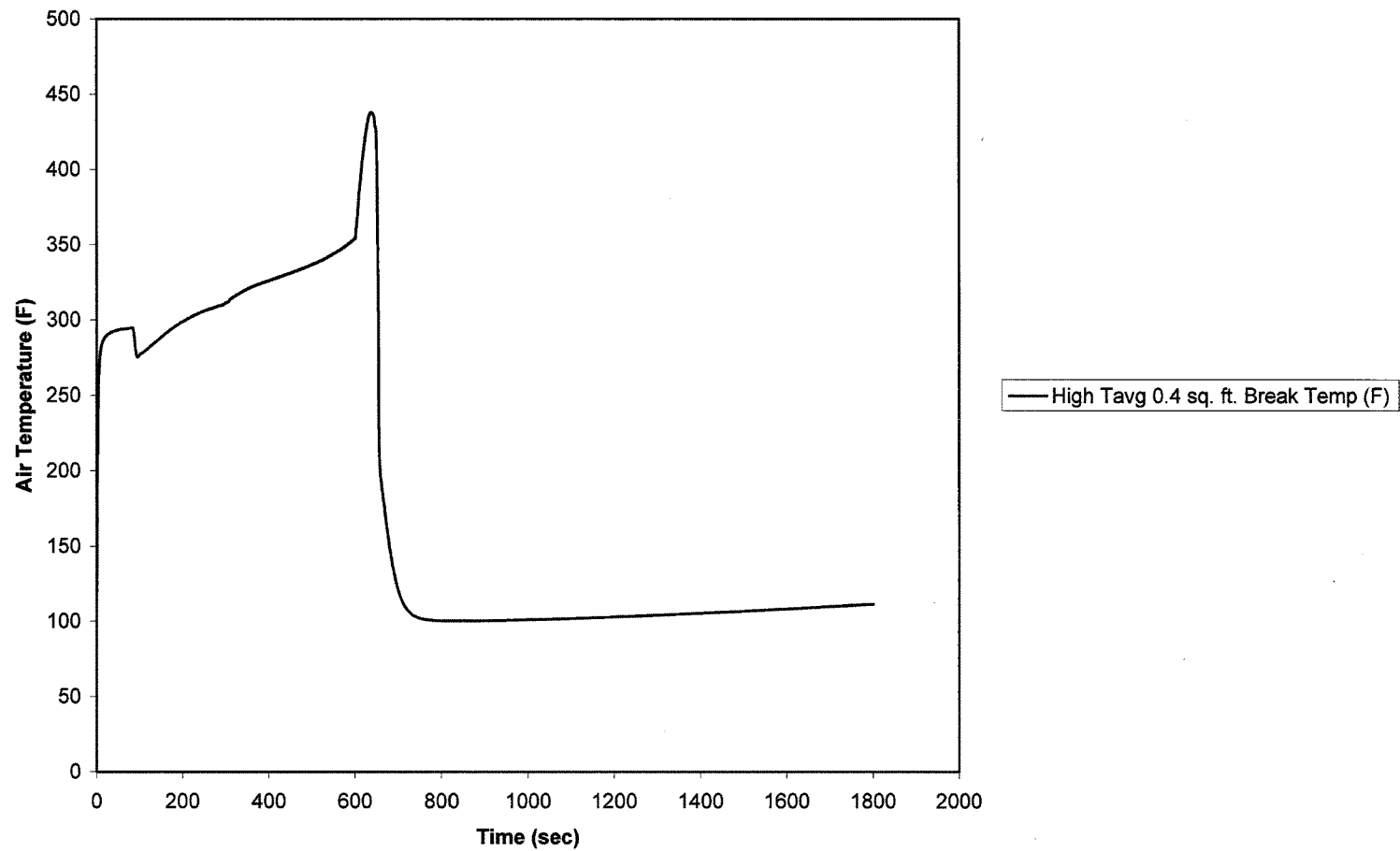
CALLAWAY PLANT

FIGURE 3B-10

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.3 FT² BREAK CASE

Figure 3B-10A Deleted

High Tavg 0.4 sq. ft. Break Room Temp (F)



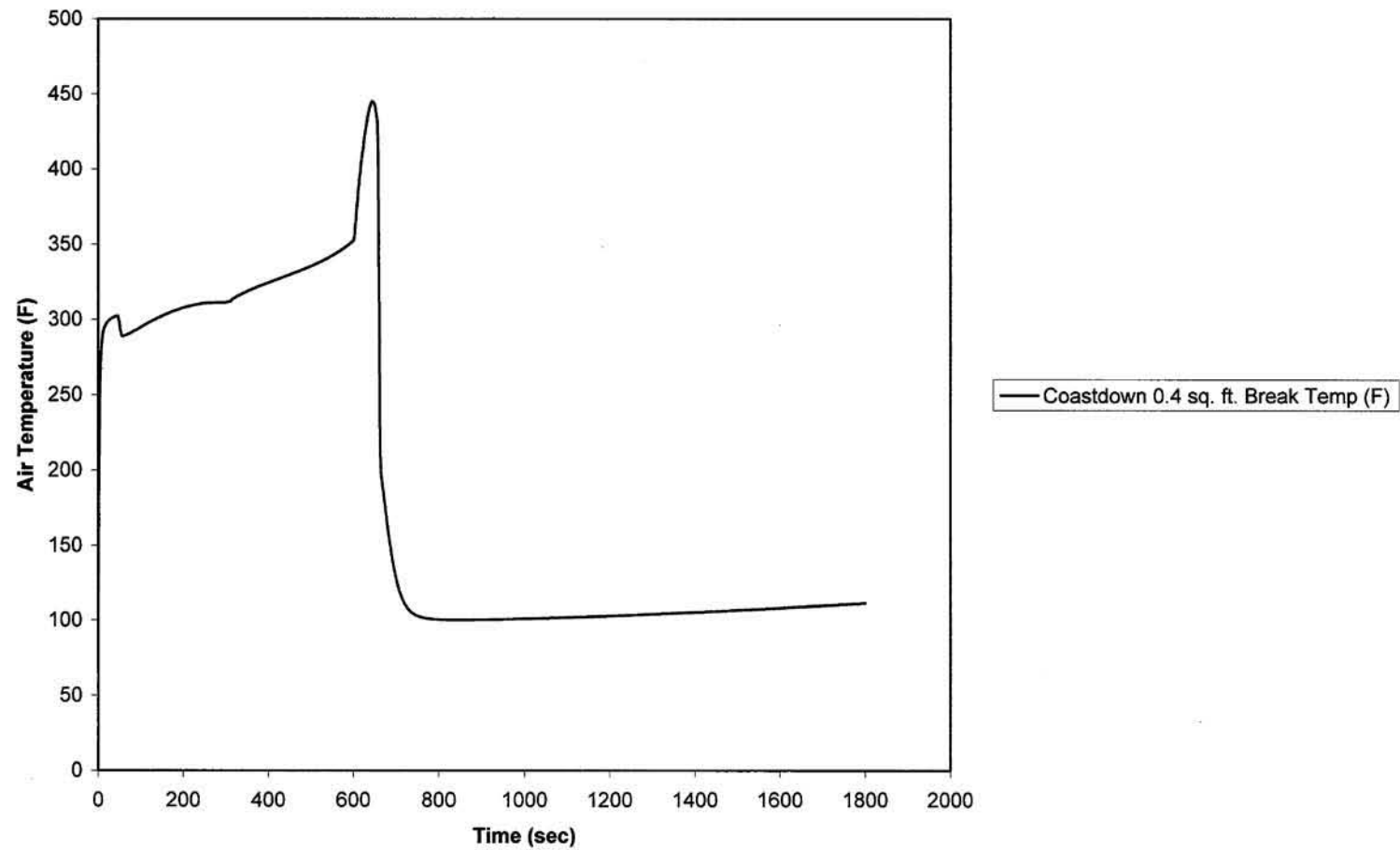
CALLAWAY PLANT

FIGURE 3B-11

MAIN STEAM / MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.4 FT² BREAK CASE

REV. 16 1/10

Coastdown 0.4 sq. ft. Break Room Temp (F)

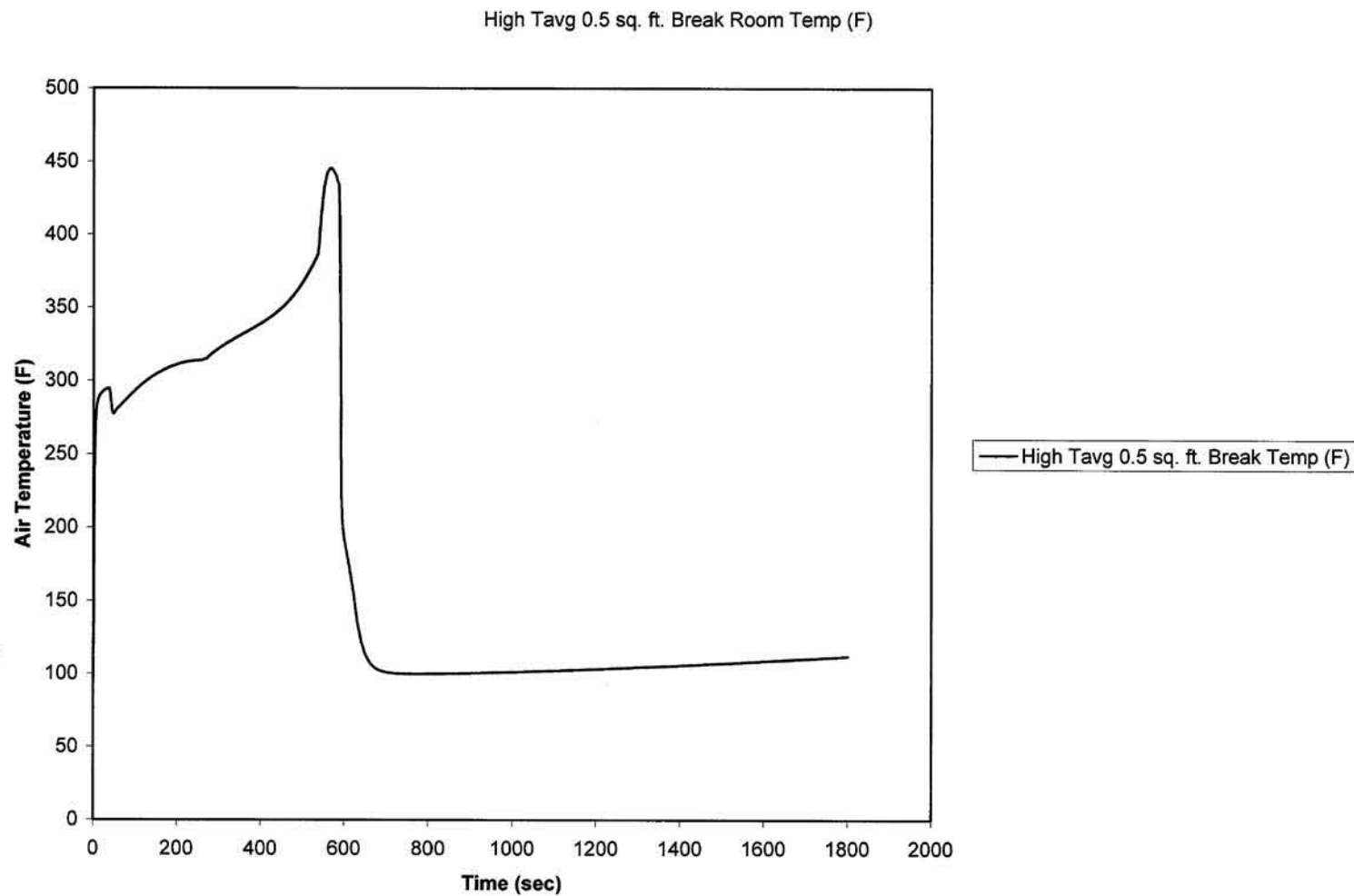


CALLAWAY PLANT

FIGURE 3B-11A

**MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 0.4 FT² BREAK CASE FOR TAVG
COASTDOWN**

REV. 1 1/10



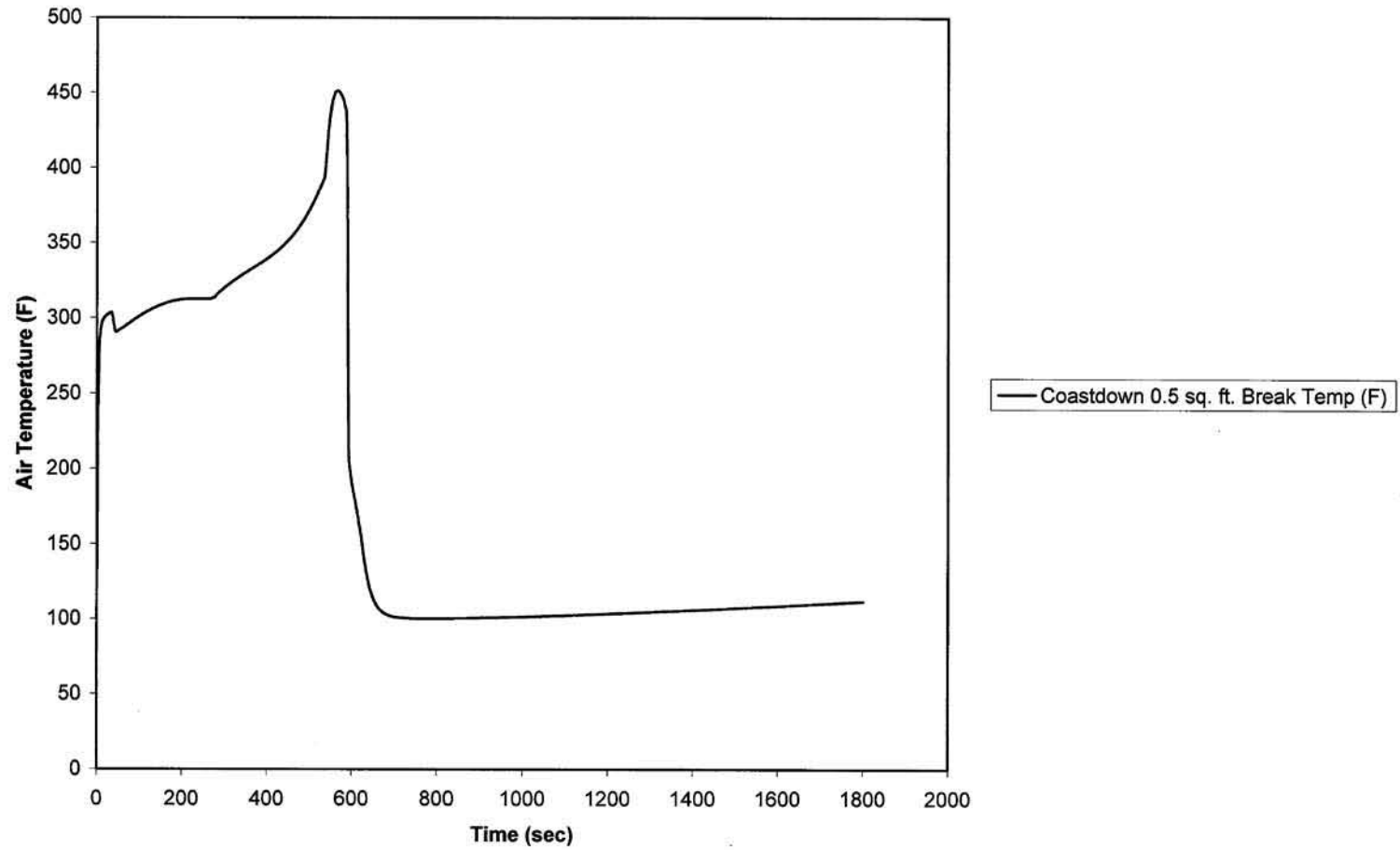
CALLAWAY PLANT

FIGURE 3B-12

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.5 FT² BREAK CASE

Rev. 16 1/10

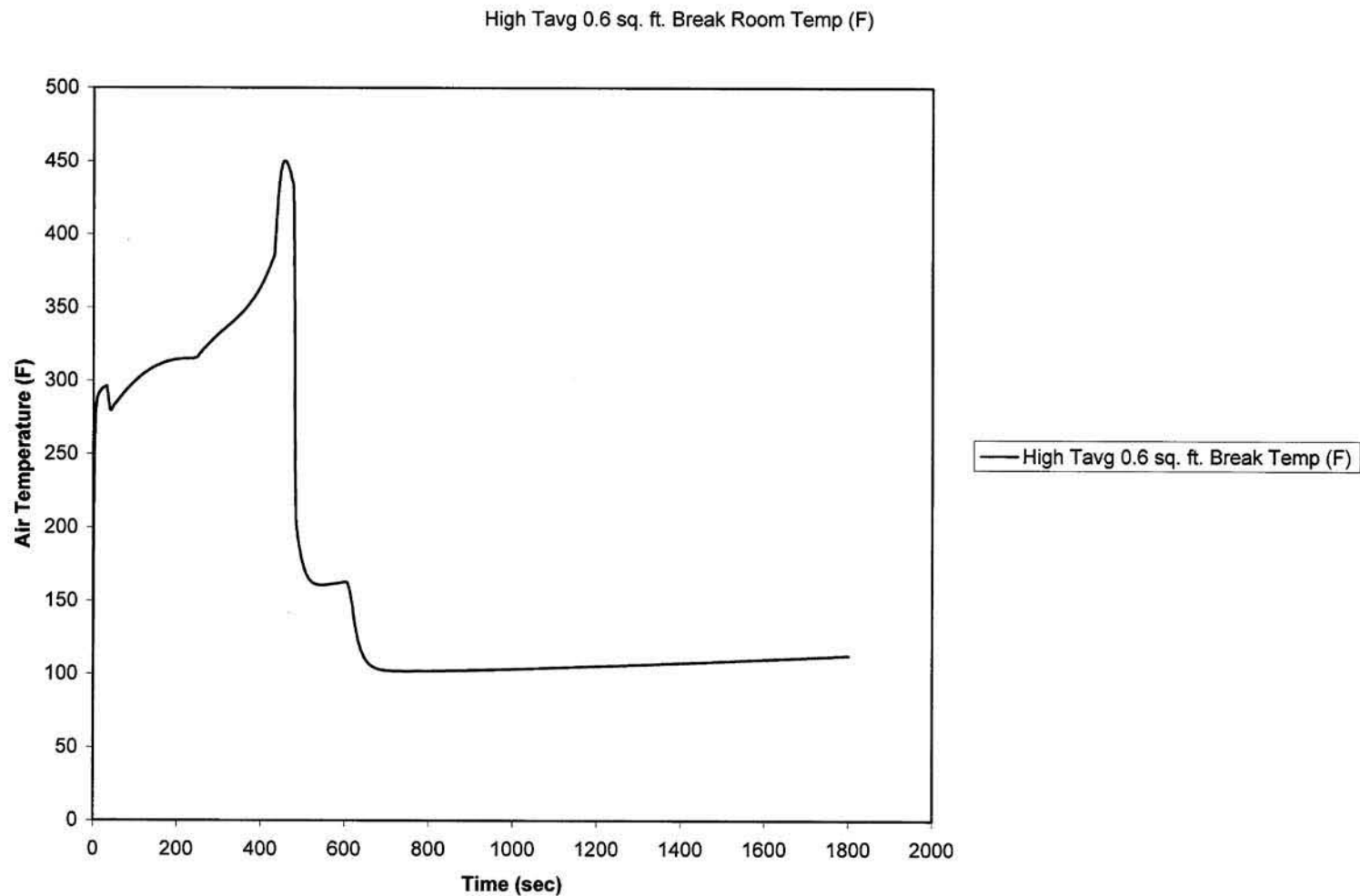
Coastdown 0.5 sq. ft. Break Room Temp (F)



CALLAWAY PLANT

FIGURE 3B-12A

**MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 0.5 FT² BREAK CASE FOR TAVG
COASTDOWN
REV. 1 1/10**

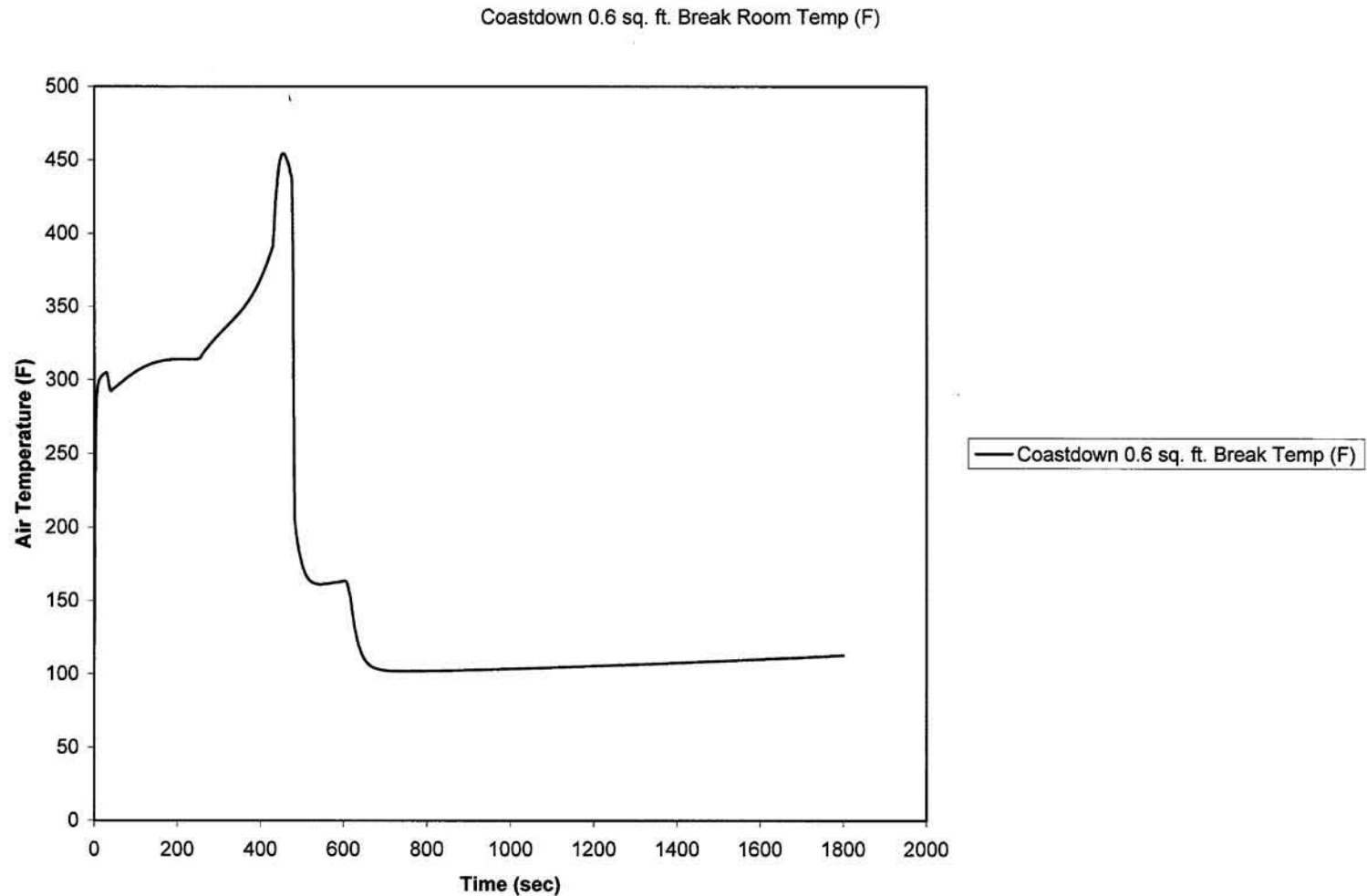


CALLAWAY PLANT

FIGURE 3B-13

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.6 FT² BREAK CASE

REV. 16 1/10

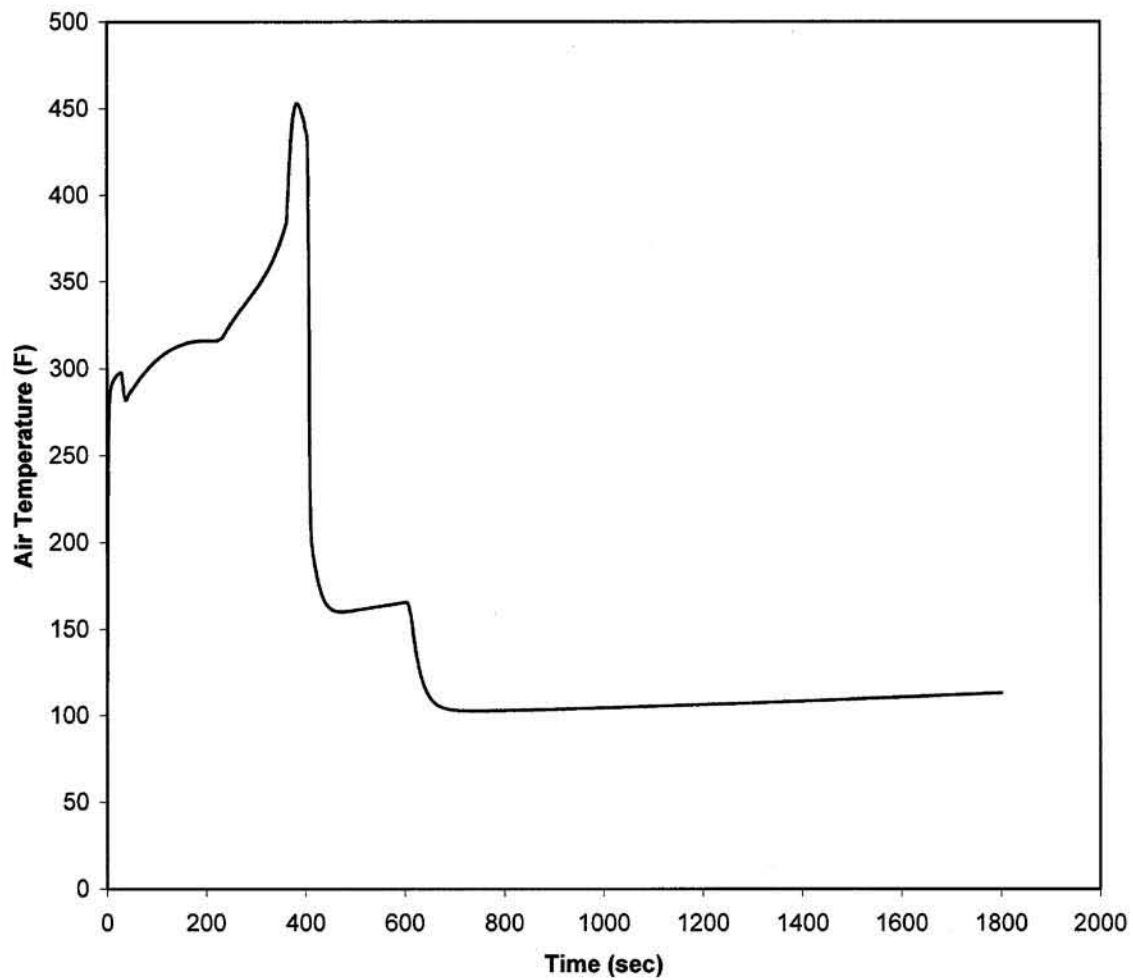


CALLAWAY PLANT

FIGURE 3B-13A

**MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 0.6 FT² BREAK CASE FOR TAVG
COASTDOWN
REV. 1 1/10**

High Tavg 0.7 sq. ft. Break Room Temp (F)



— High Tavg 0.7 sq. ft. Break Temp (F)

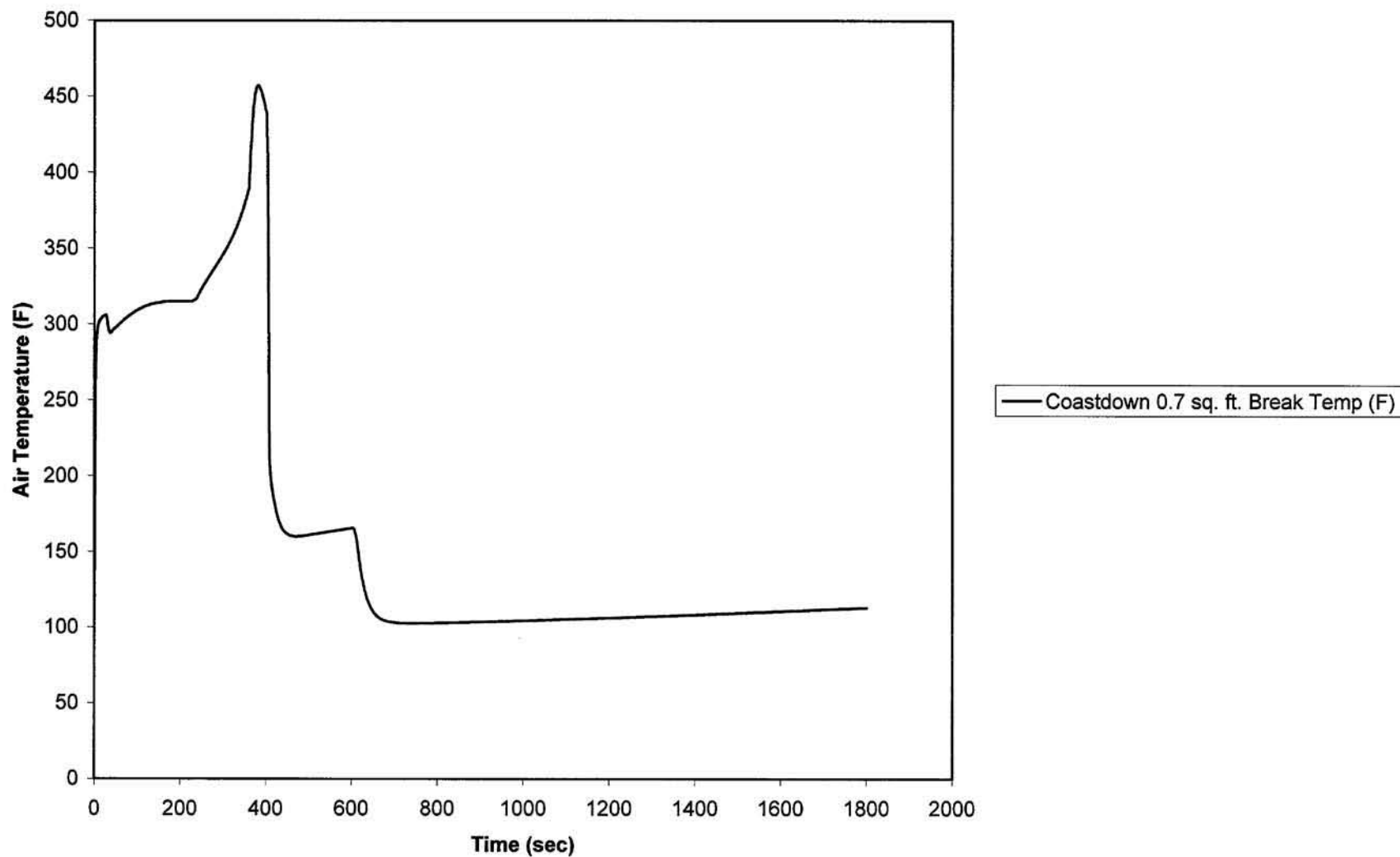
CALLAWAY PLANT

FIGURE 3B-14

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.7 FT² BREAK CASE

REV. 16 1/10

Coastdown 0.7 sq. ft. Break Room Temp (F)



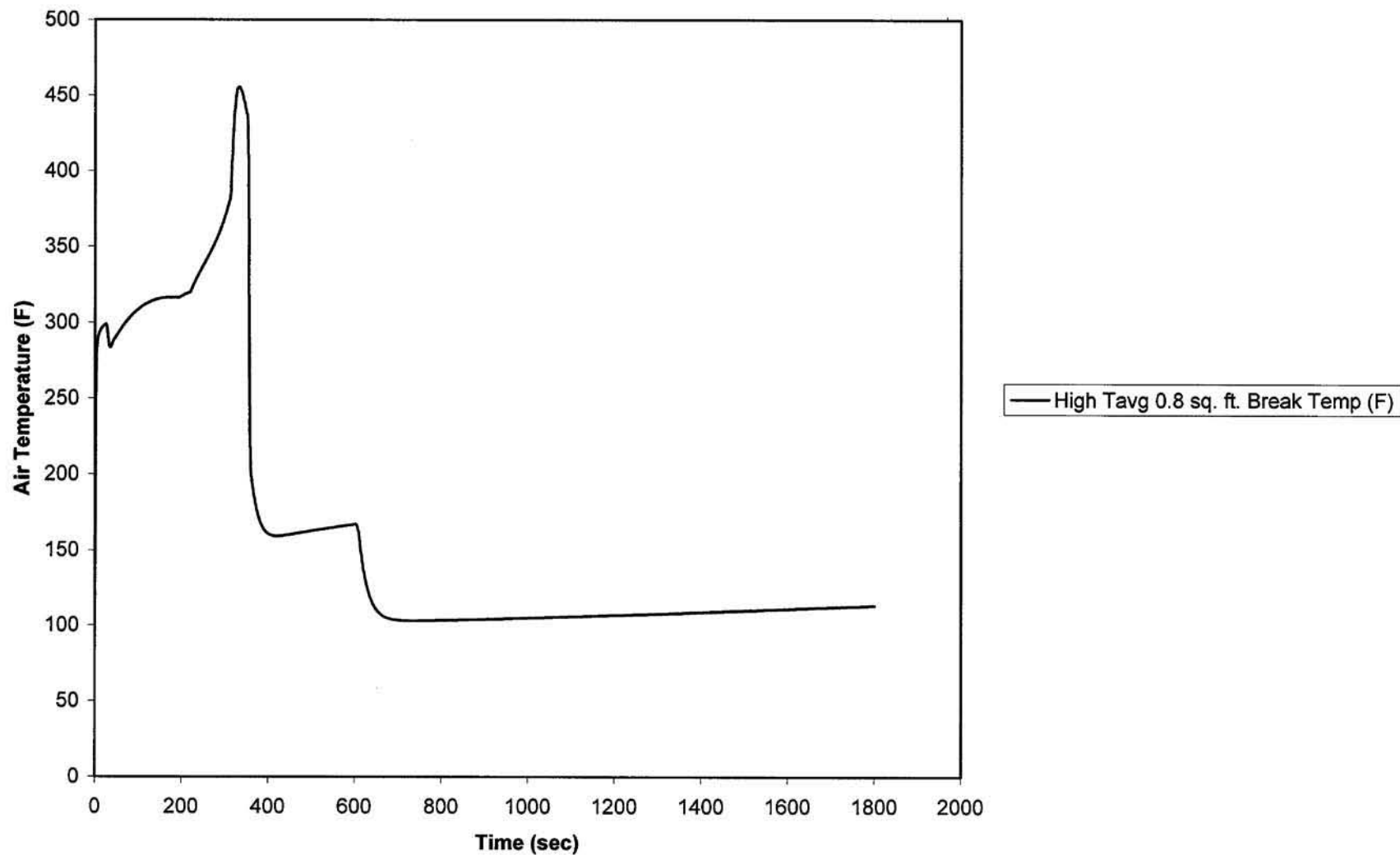
CALLAWAY PLANT

FIGURE 3B-14A

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 0.7 FT² BREAK CASE FOR TAVG
COASTDOWN

REV. 1 1/10

High Tavg 0.8 sq. ft. Break Room Temp (F)



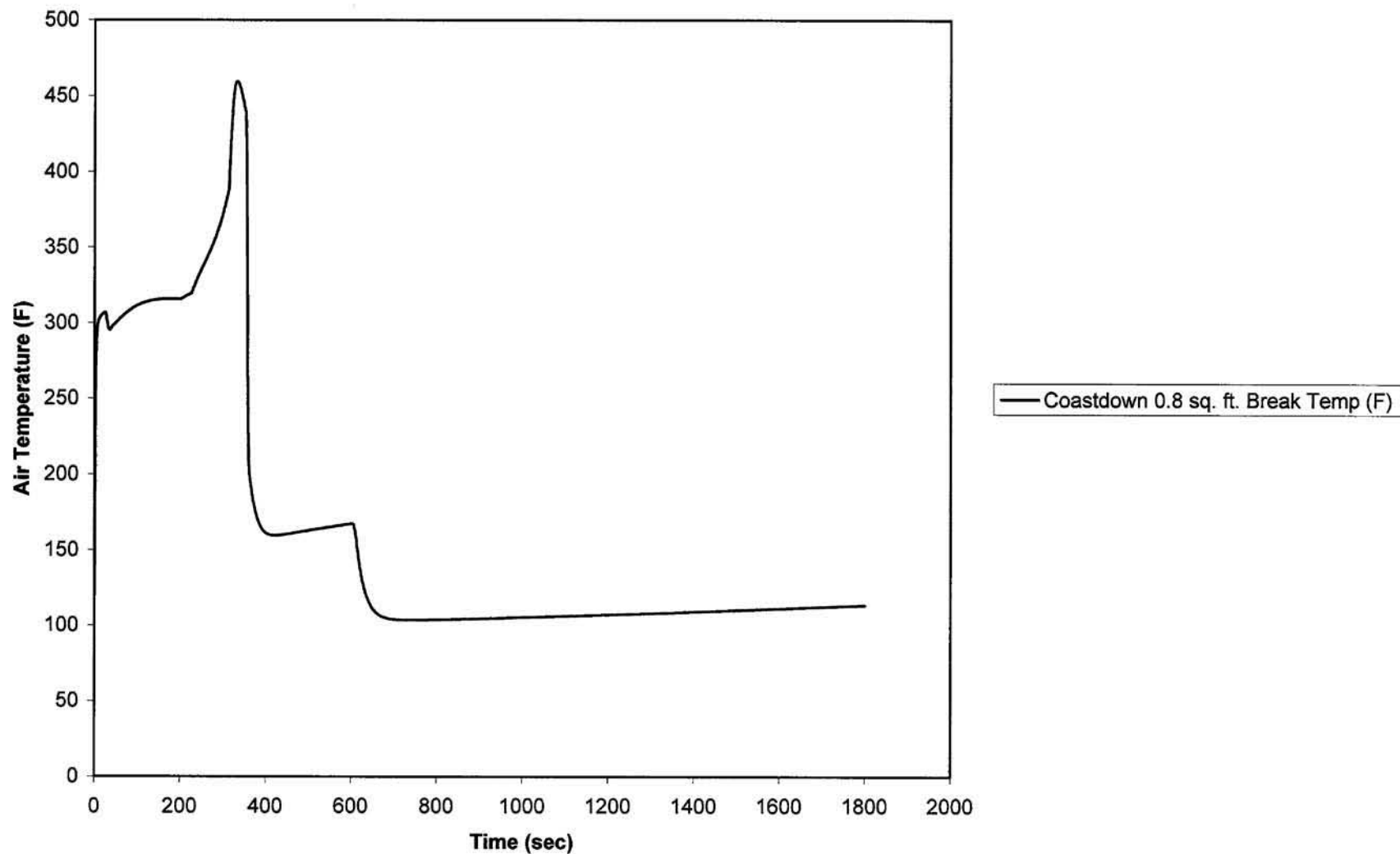
CALLAWAY PLANT

FIGURE 3B-15

**MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.8 FT² BREAK CASE**

REV. 16 1/10

Coastdown 0.8 sq. ft. Break Room Temp (F)



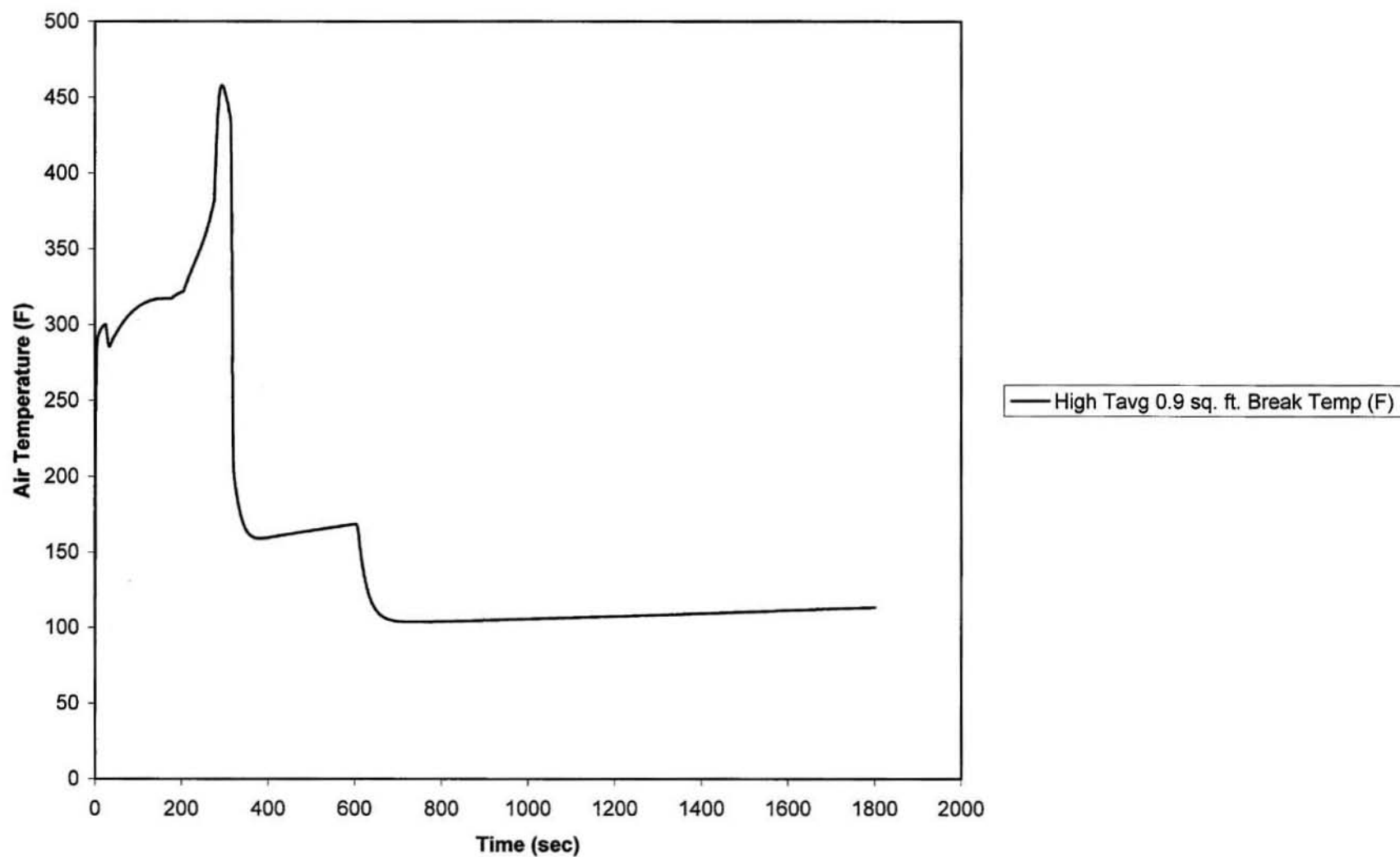
CALLAWAY PLANT

FIGURE 3B-15A

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 0.8 FT² BREAK CASE FOR TAVG
COASTDOWN

REV. 1 1/10

High Tavg 0.9 sq. ft. Break Room Temp (F)



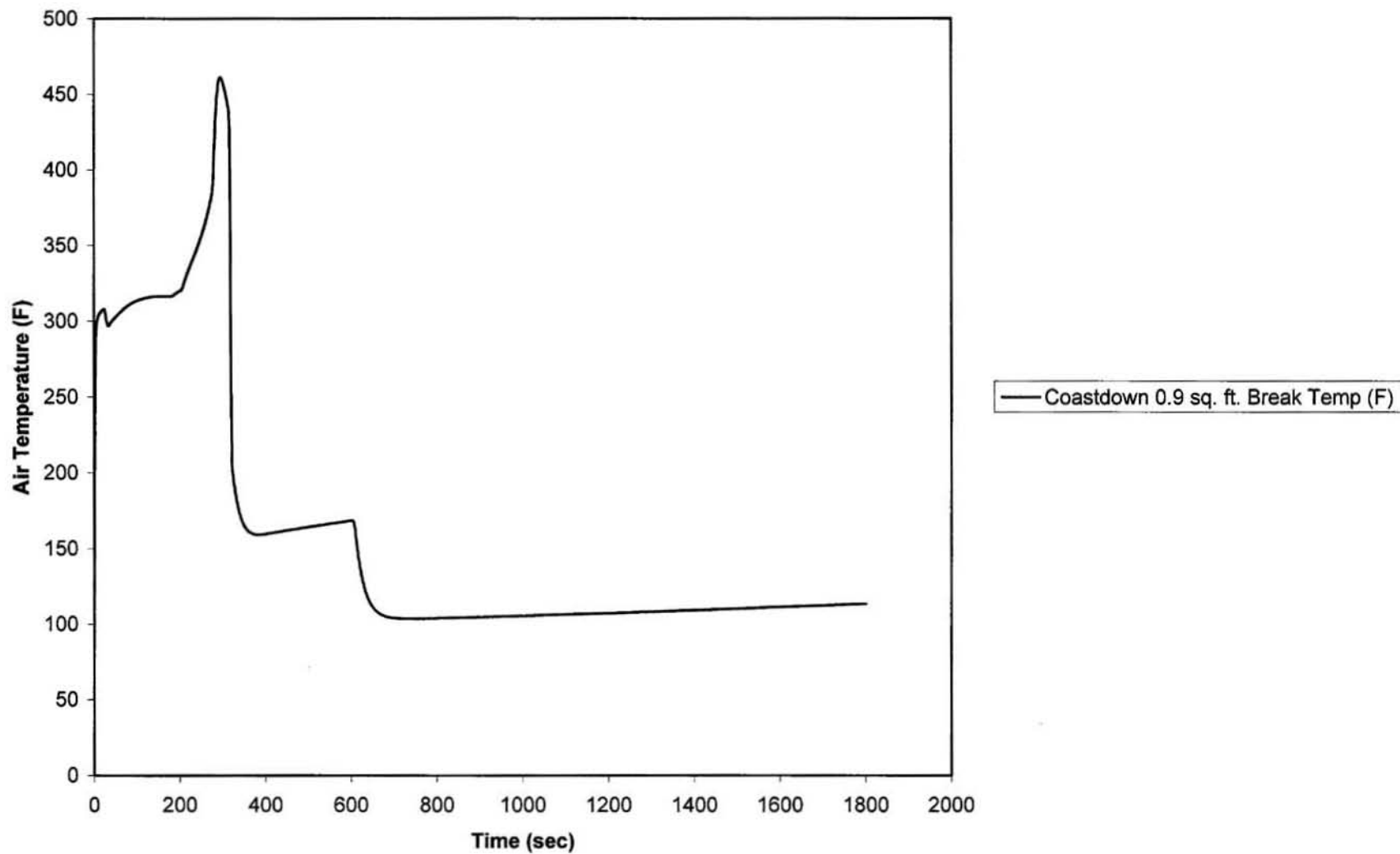
CALLAWAY PLANT

FIGURE 3B-16

MAIN STEAM/ MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
0.9 FT² BREAK CASE

REV. 16 1/10

Coastdown 0.9 sq. ft. Break Room Temp (F)



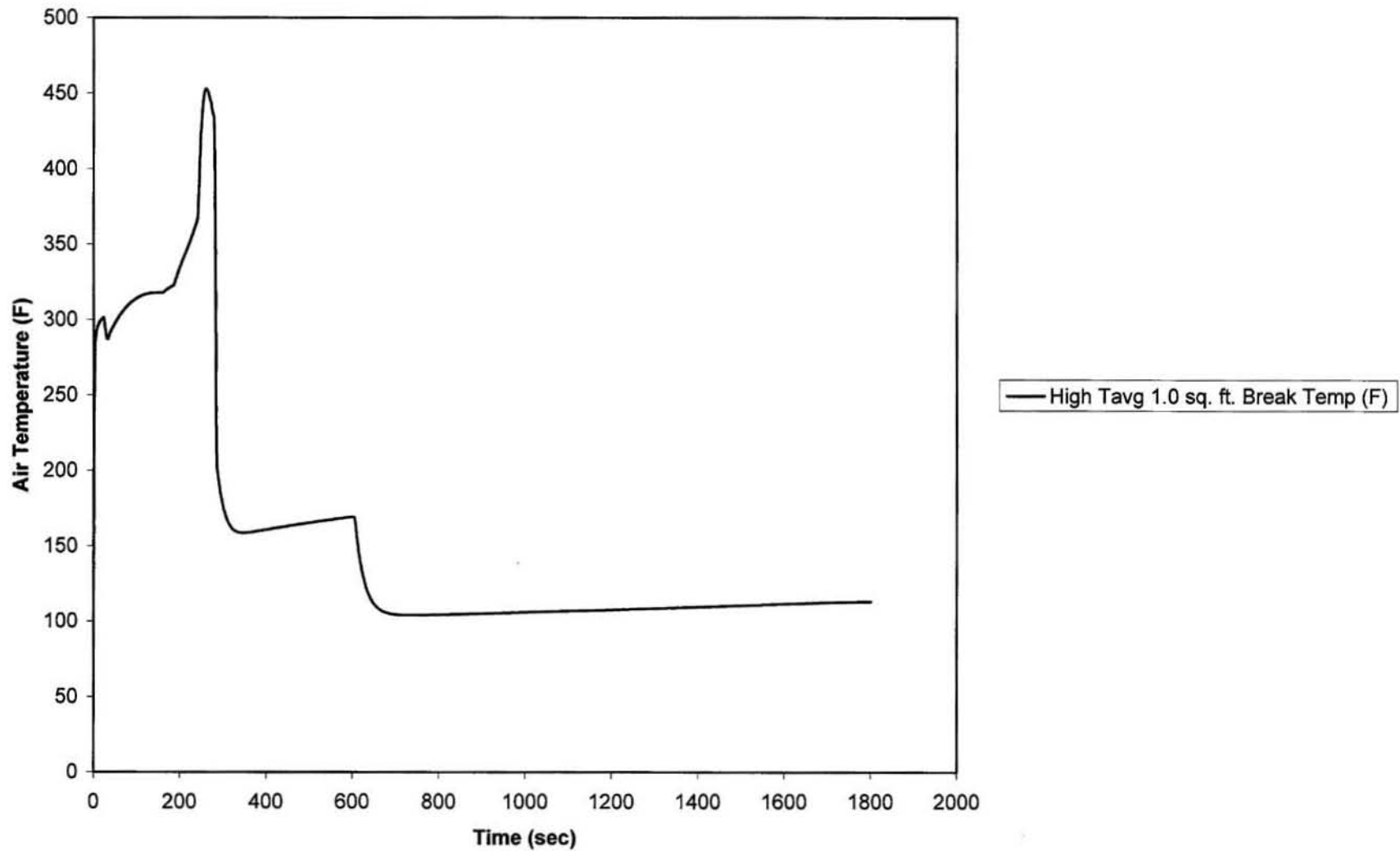
CALLAWAY PLANT

FIGURER 3B-16A

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 0.9 FT² BREAK CASE FOR TAVG
COASTDOWN

REV. 1 1/10

High Tavg 1.0 sq. ft. Break Room Temp (F)



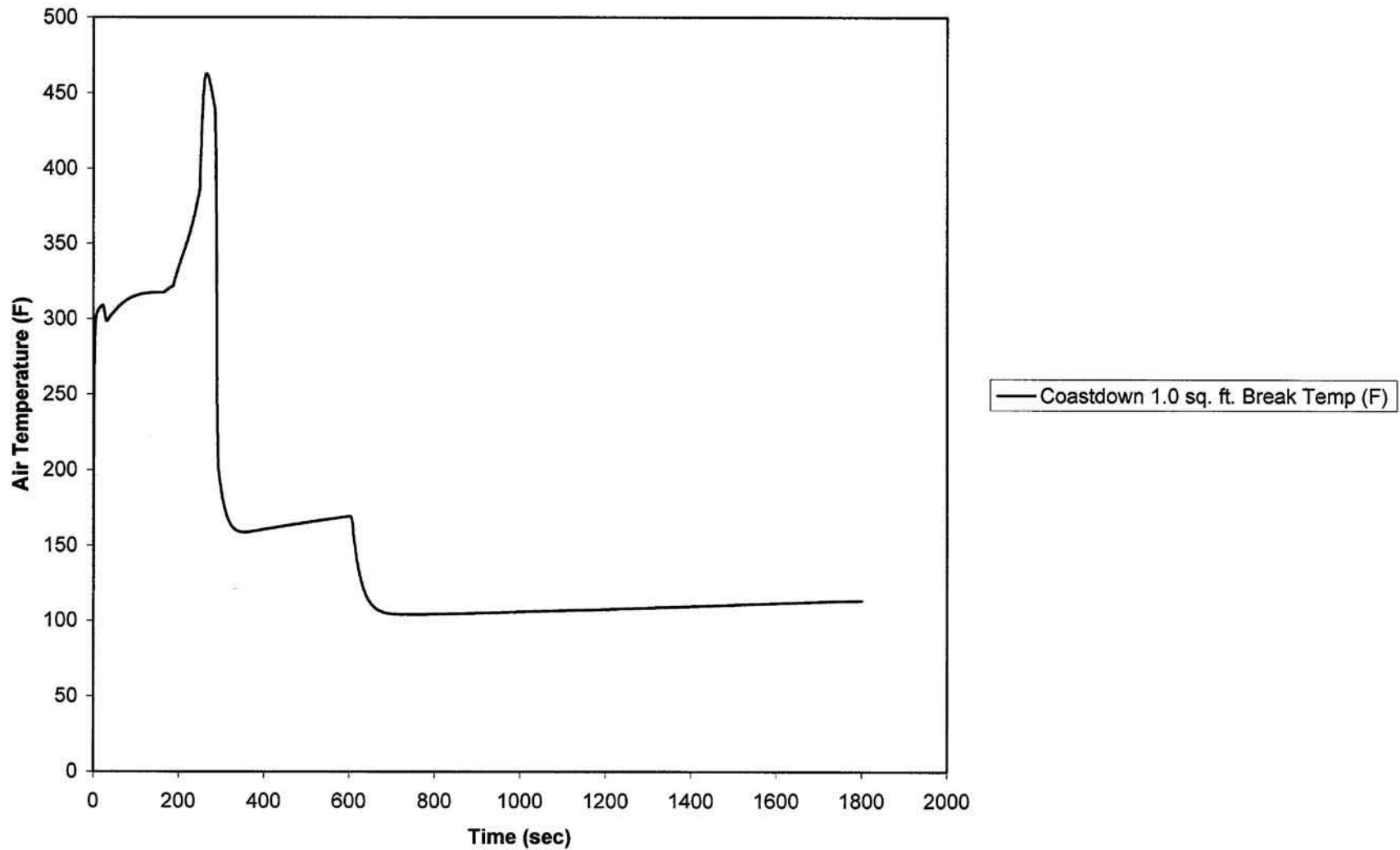
CALLAWAY PLANT

FIGURE 3B-17

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
1.0 FT² BREAK CASE

REV. 16 1/10

Coastdown 1.0 sq. ft. Break Room Temp (F)



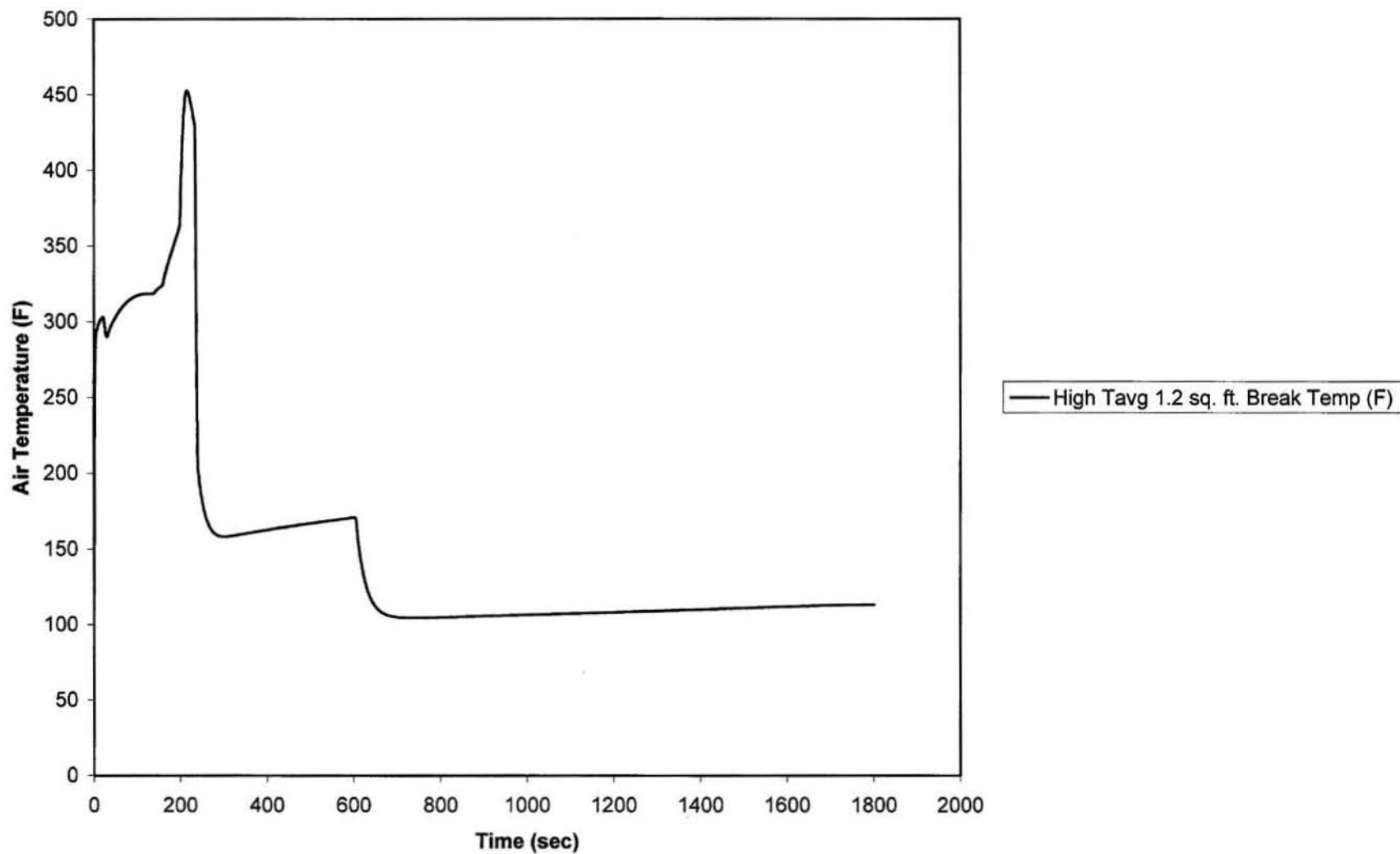
CALLAWAY PLANT

FIGURE 3B-17A

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 1.0 FT² BREAK CASE FOR TAVG
COASTDOWN

REV. 1 1/10

High Tavg 1.2 sq. ft. Break Room Temp (F)

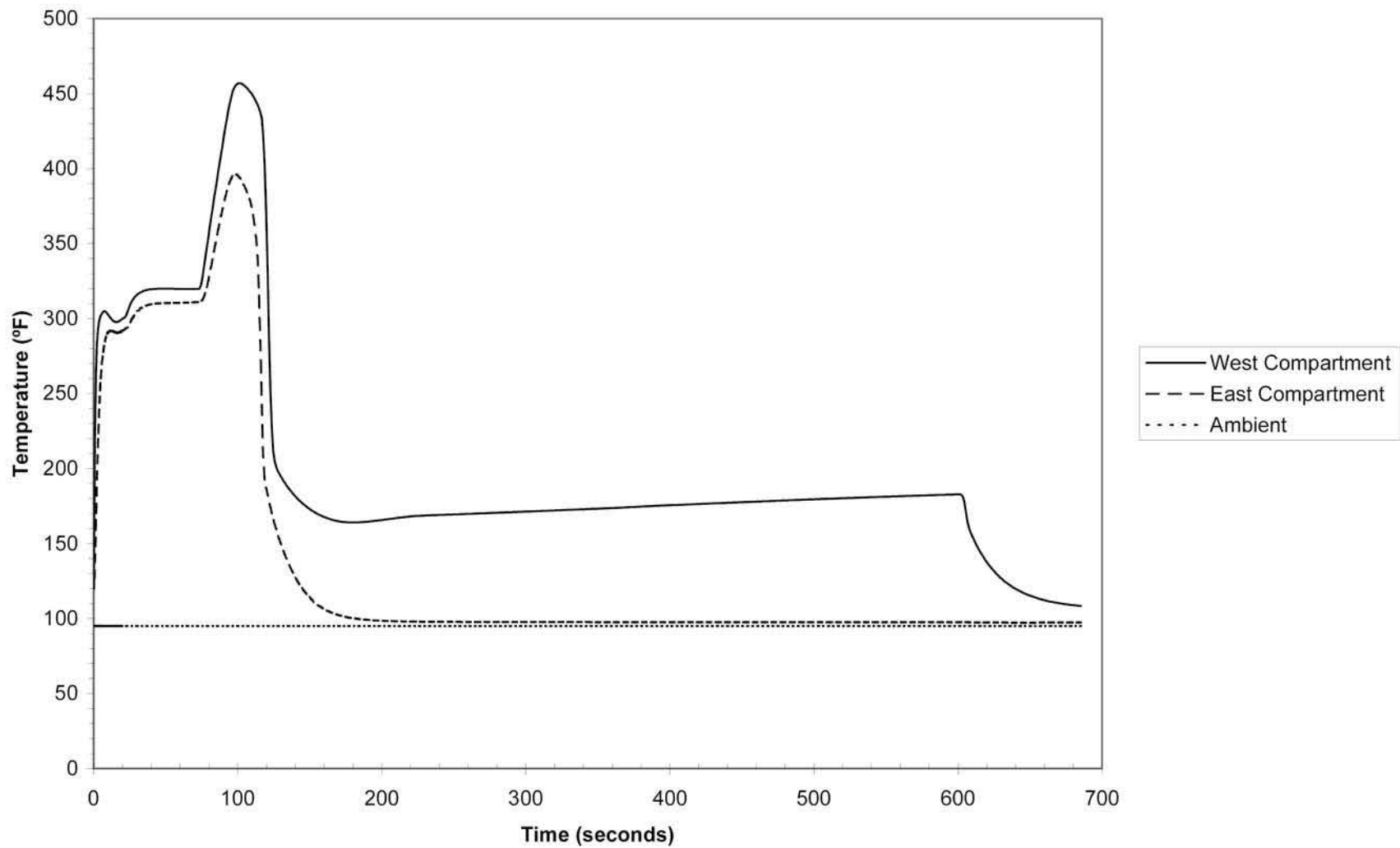


CALLAWAY PLANT

FIGURE 3B-18

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
1.2 FT² BREAK CASE

REV. 16 1/10

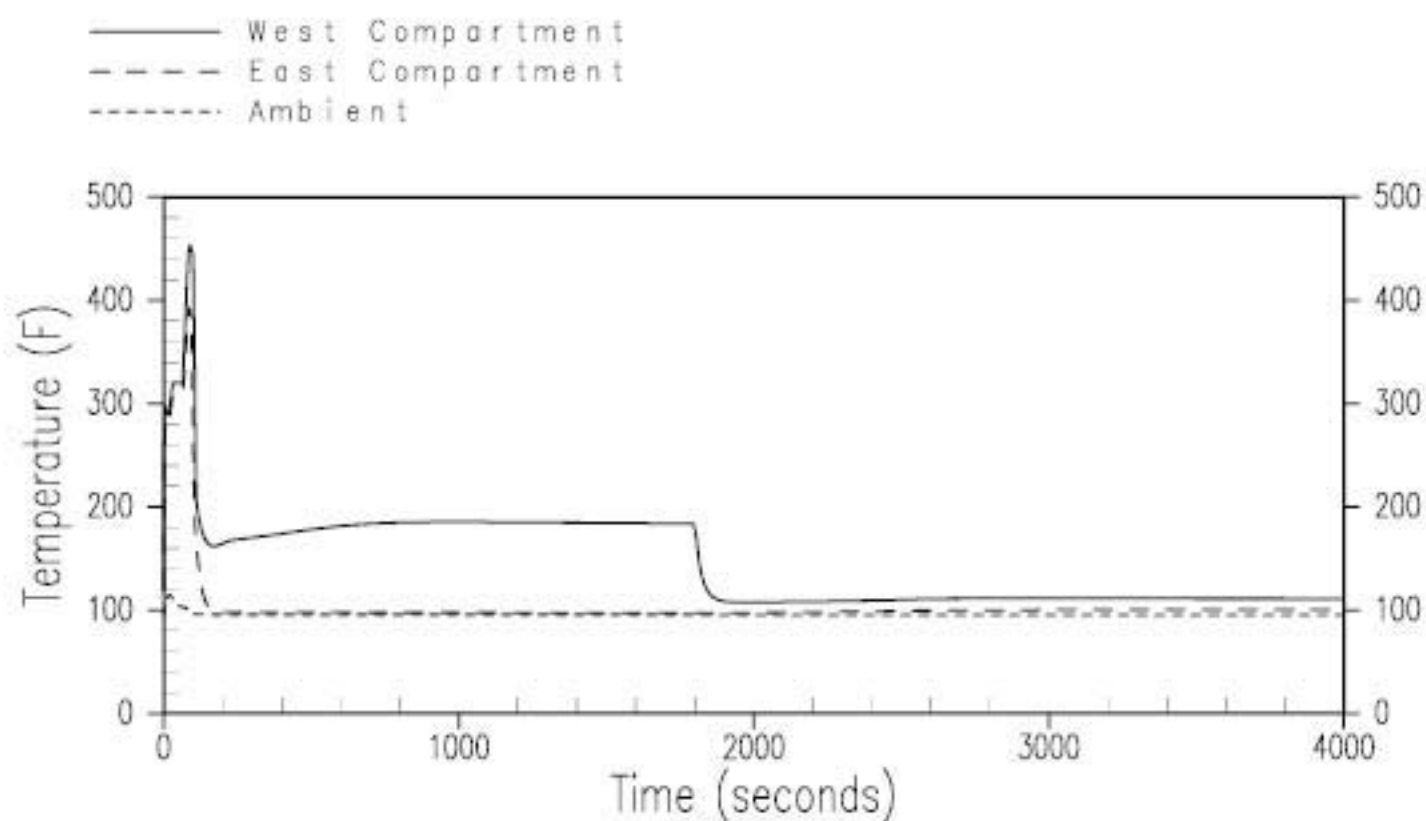


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7/07

CALLAWAY PLANT

FIGURE 3B-18A

**MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE
TRANSIENT 1.2 FT² BREAK CASE FOR TAVG
COASTDOWN**

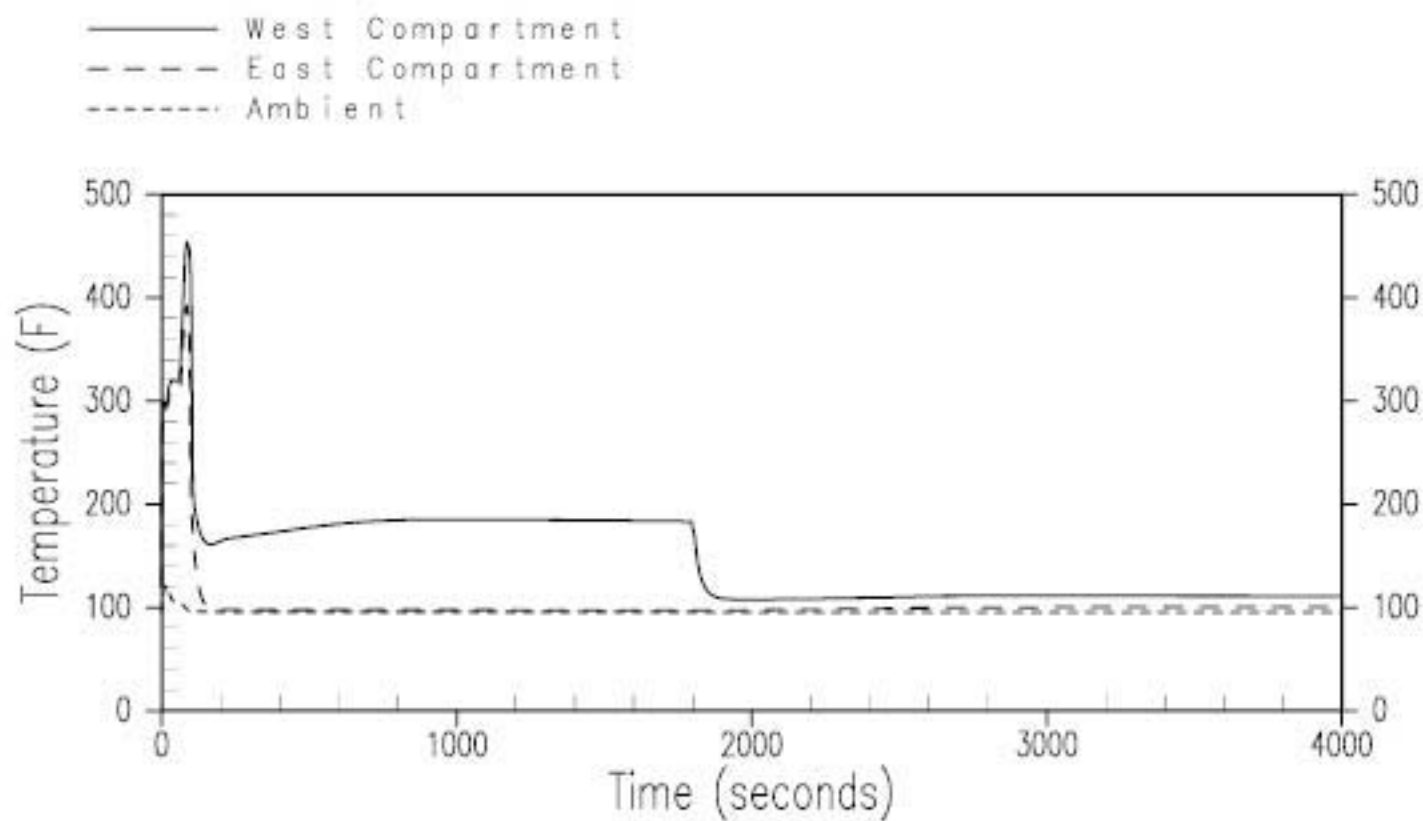


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5/88

CALLAWAY PLANT

FIGURE 3B-19

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
1.4 FT² BREAK CASE

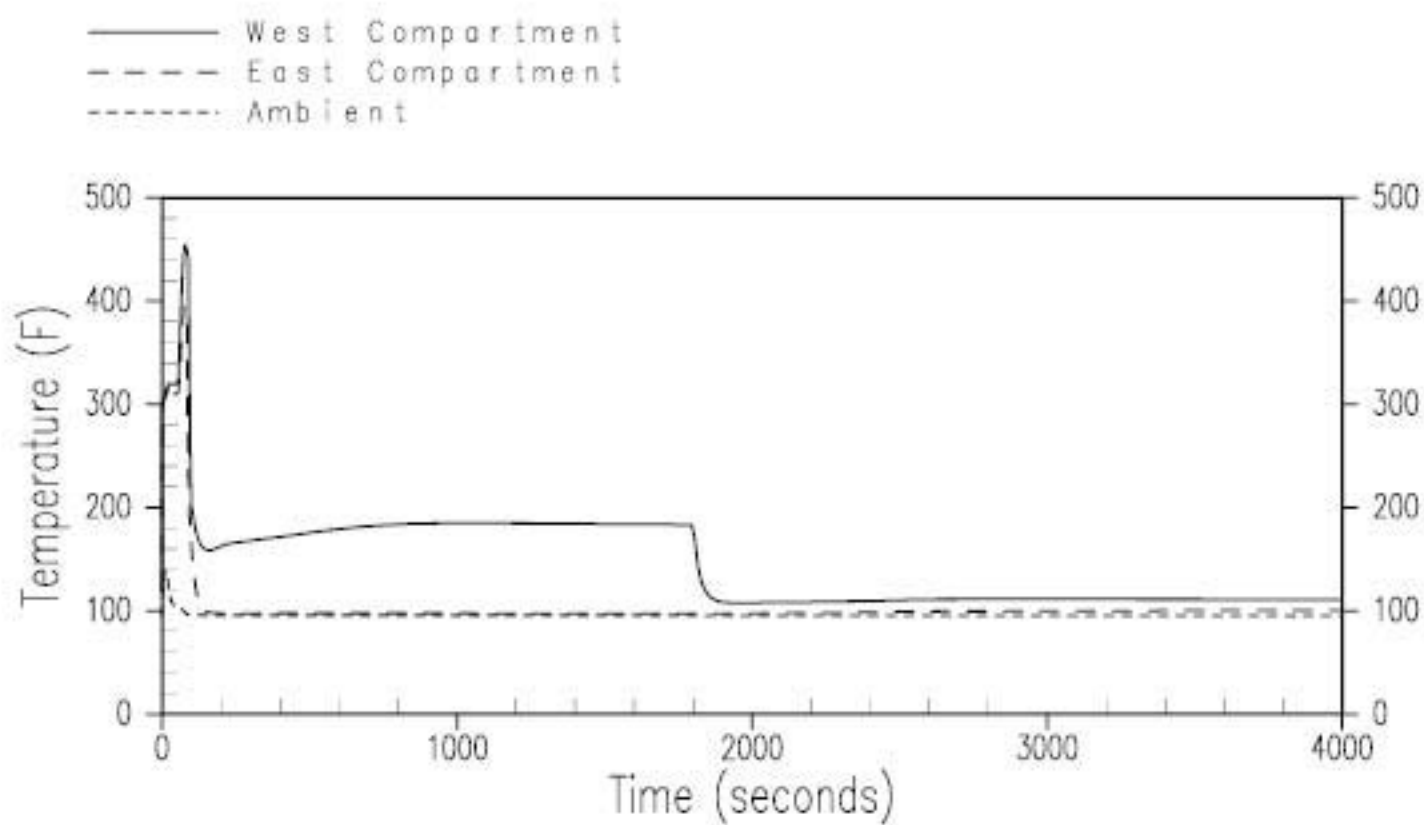


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5/88

CALLAWAY PLANT

FIGURE 3B-20

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
2.0 FT² BREAK CASE

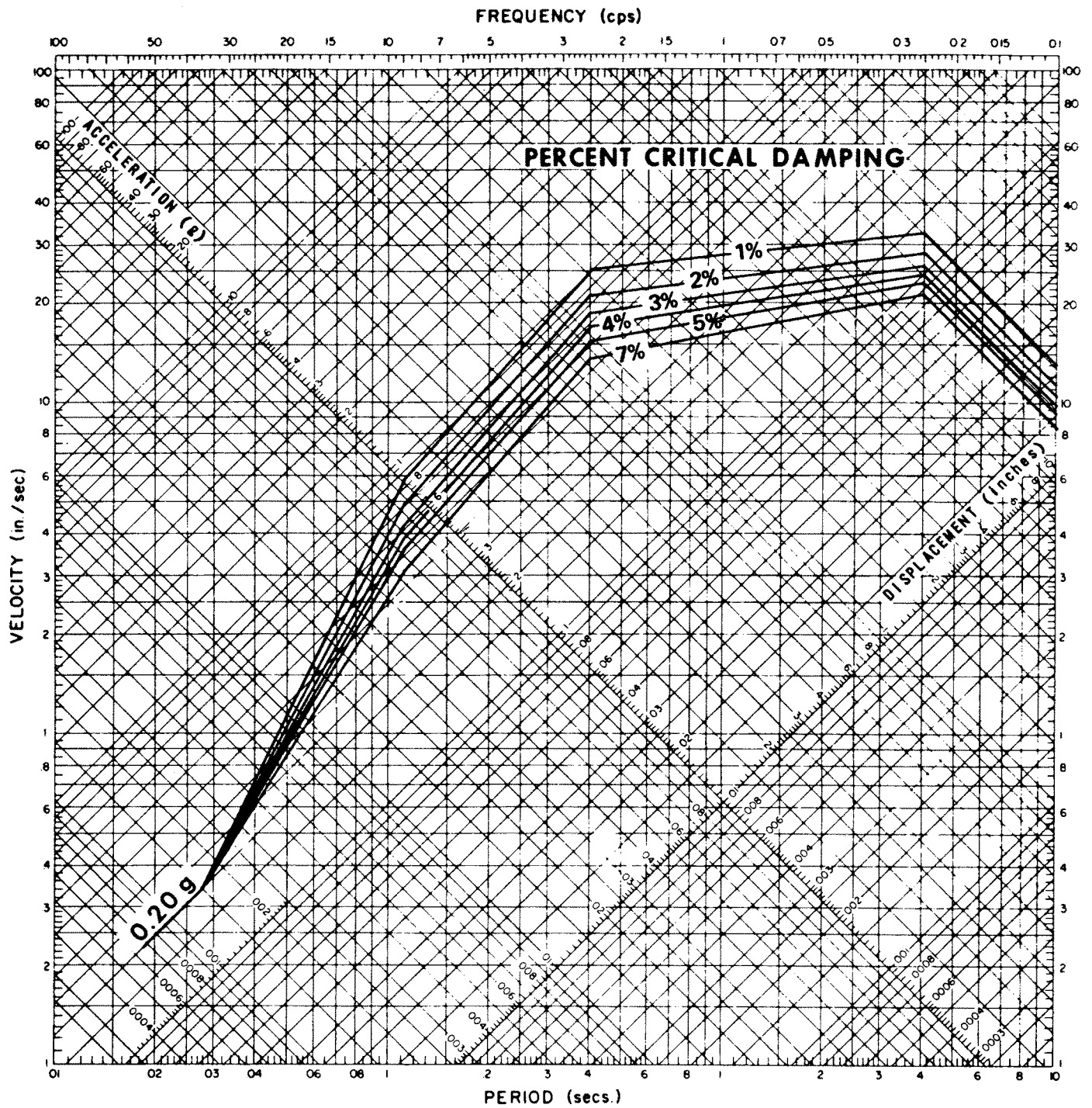


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5/88

CALLAWAY PLANT

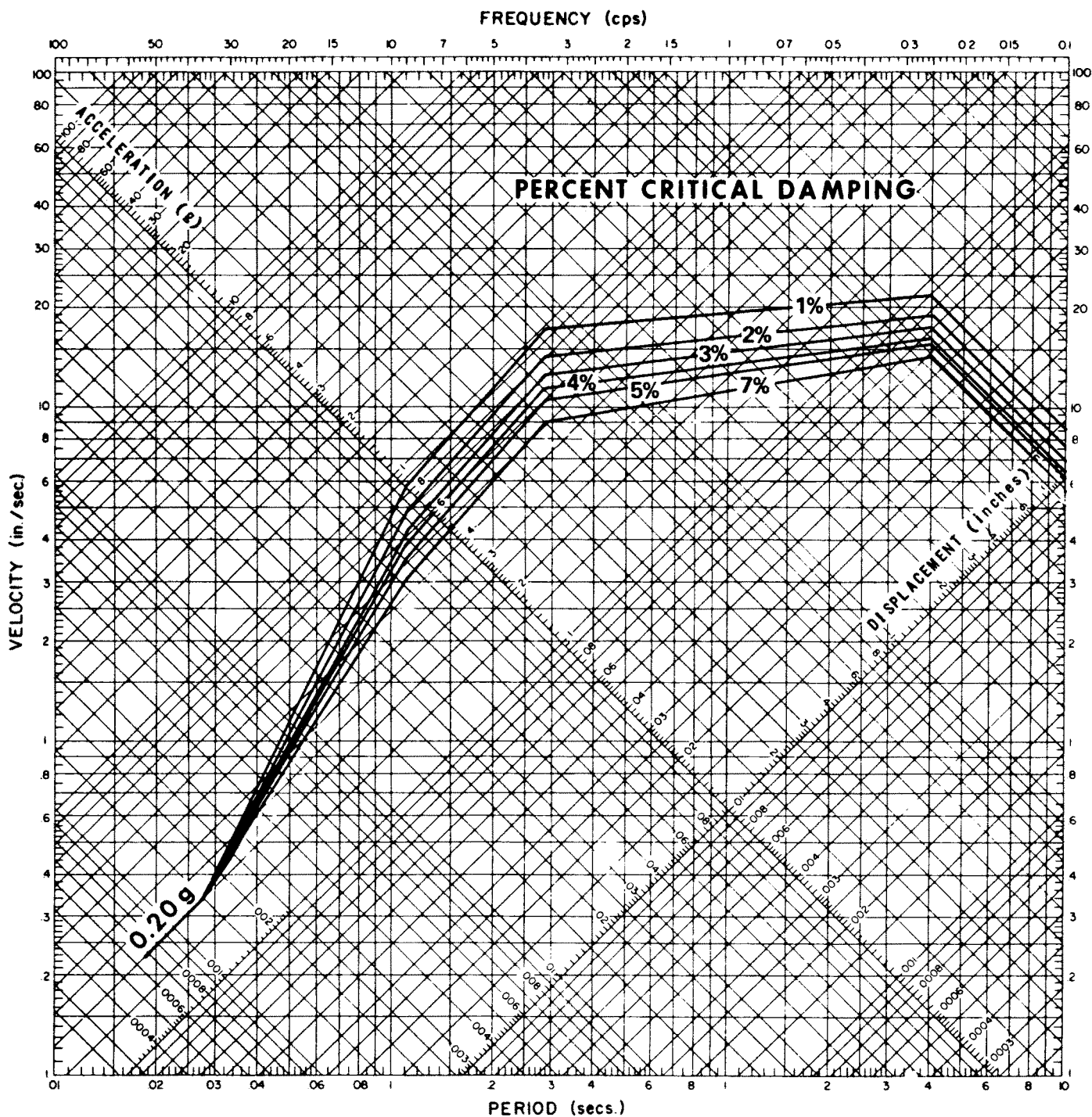
FIGURE 3B-21

MAIN STEAM/MAIN FEEDWATER ISOLATION
VALVE COMPARTMENT TEMPERATURE TRANSIENT
4.6 FT² BREAK CASE



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CALLAWAY PLANT
FIGURE 3.7(B)-1
SSE HORIZONTAL GROUND SPECTRA
0.20g

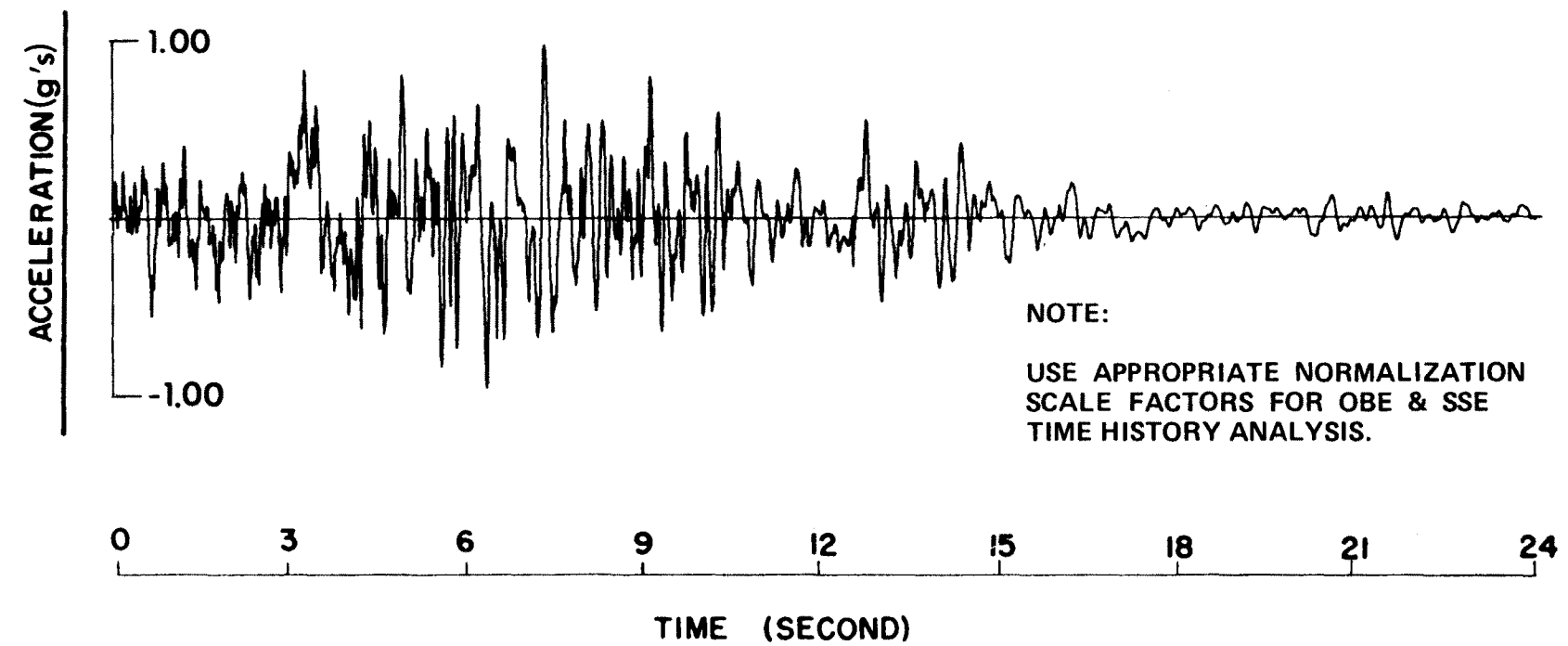


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CALLAWAY PLANT

FIGURE 3.7(B)-2

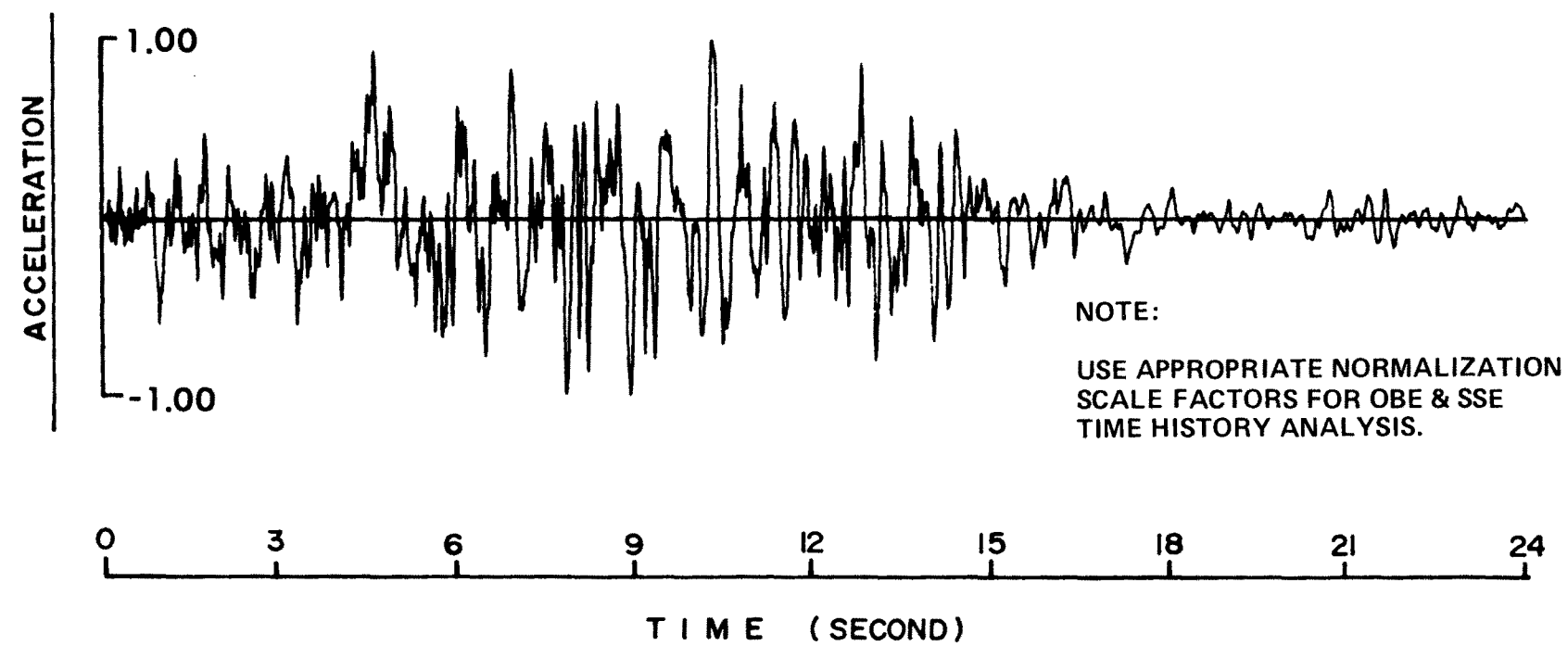
**SSE VERTICAL GROUND SPECTRA
0.20g**



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CALLAWAY PLANT

**FIGURE 3.7(B)-3
SYNTHESIZED TIME HISTORY VERTICAL
(OBE AND SSE)**



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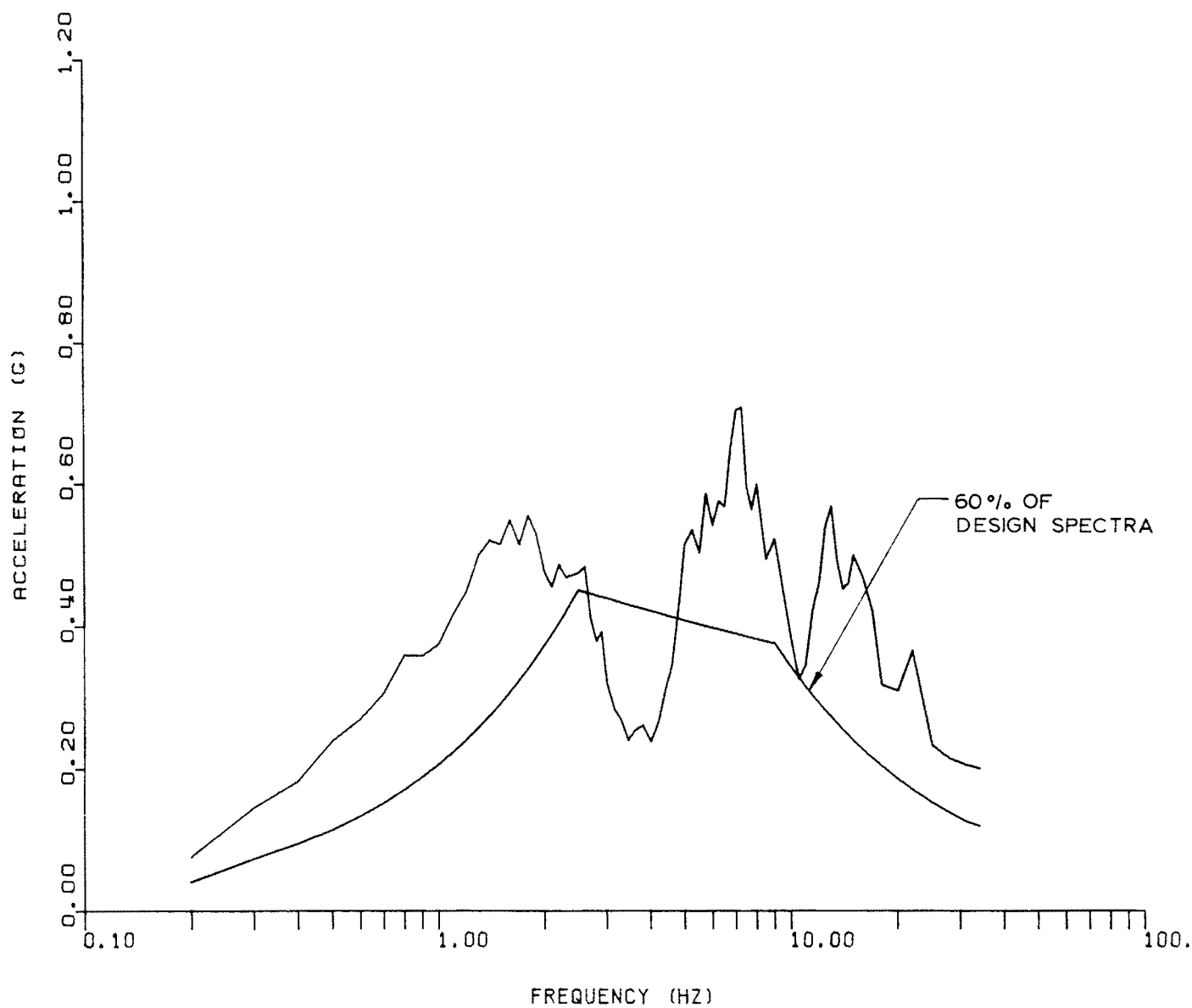
CALLAWAY PLANT
<p>FIGURE 3.7(B)-4</p> <p>SYNTHESIZED TIME HISTORY HORIZONTAL (OBE AND SSE)</p>

Figure 3.7(B)-5 Deleted

Figure 3.7(B)-6 Deleted

Figure 3.7(B)-7 Deleted

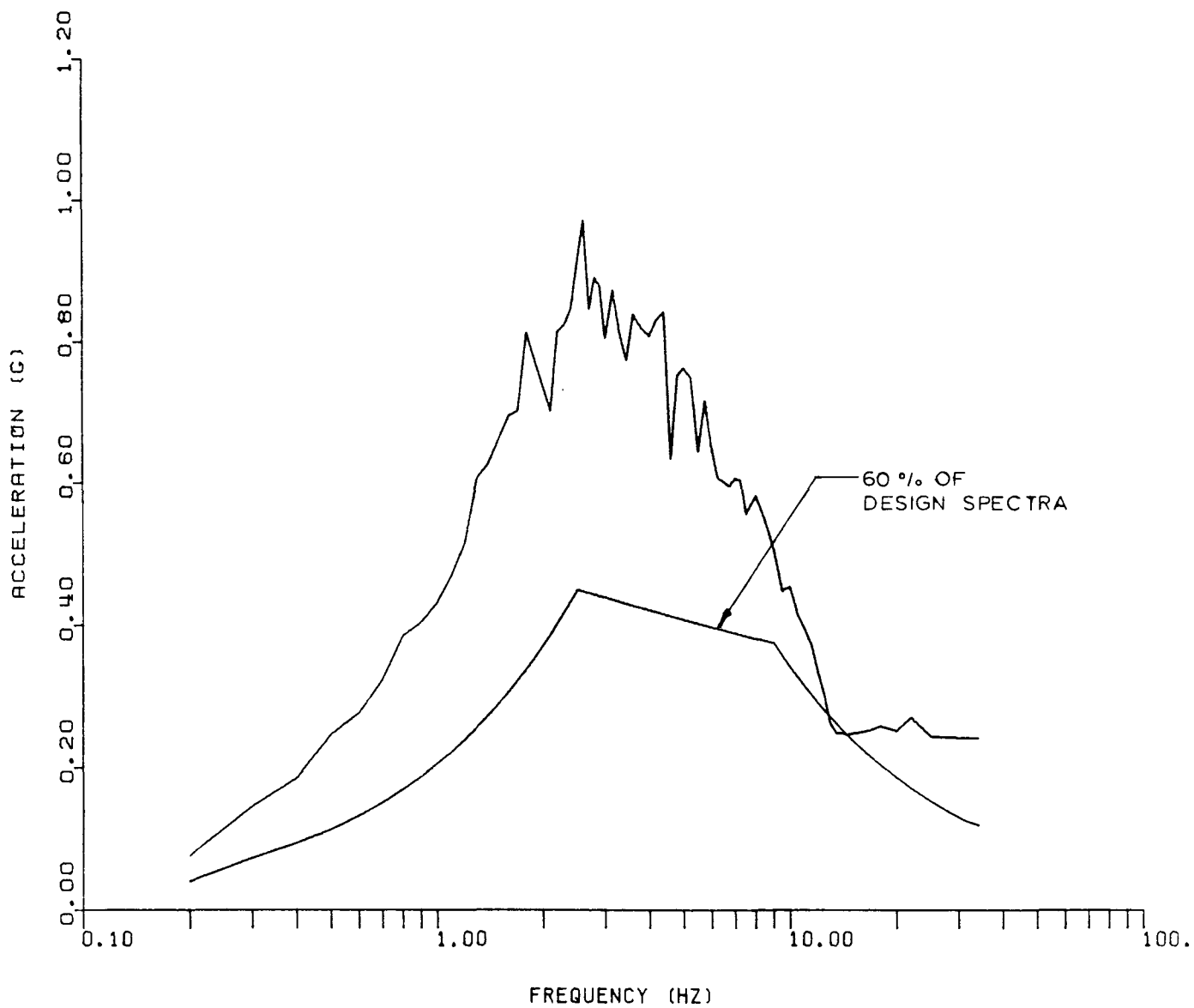
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CALLAWAY PLANT

FIGURE 3.7(B)-9A
TYPICAL FREE-FIELD BASE
ELEVATION SPECTRA
CALLAWAY SITE

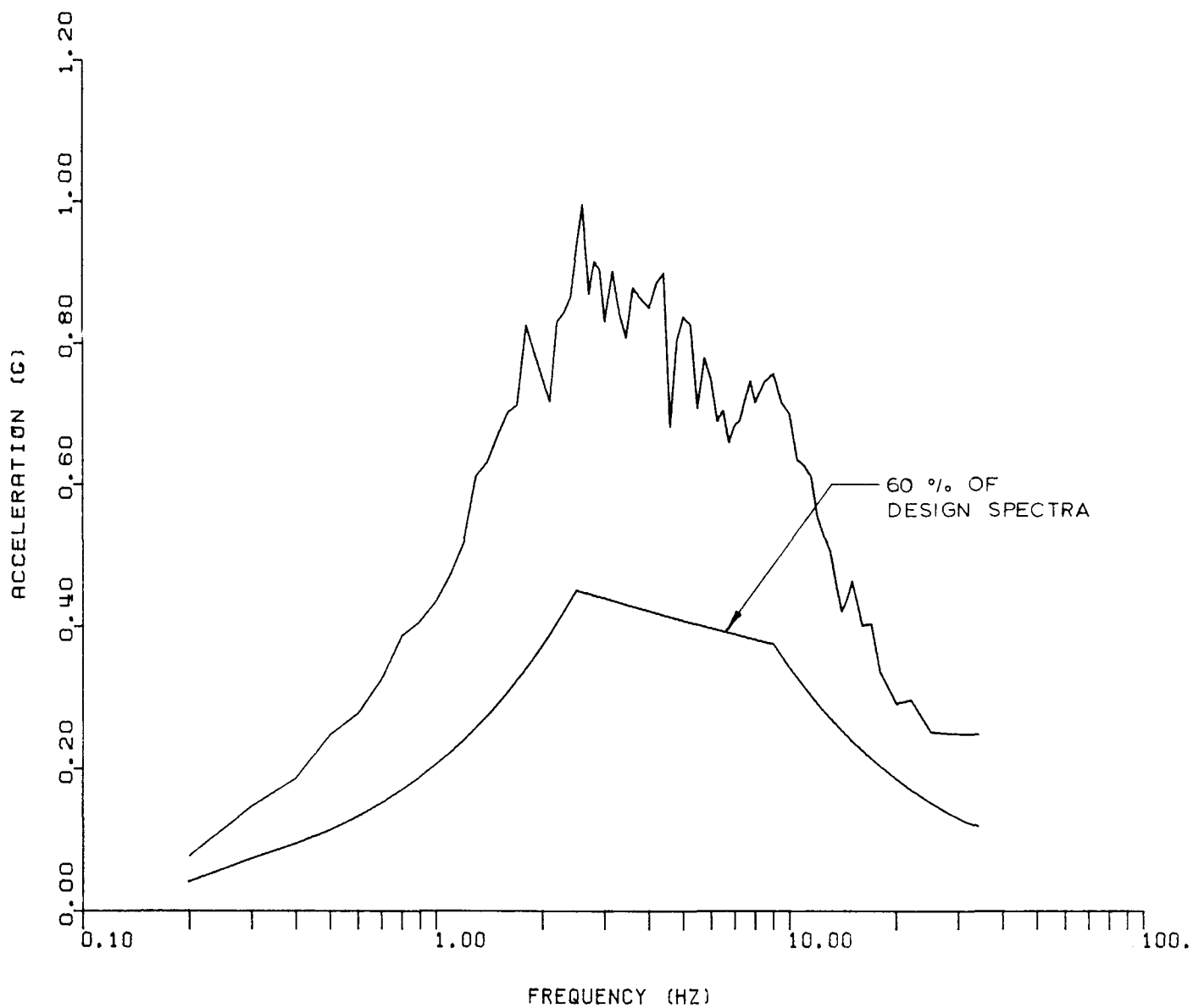


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CALLAWAY PLANT

FIGURE 3.7(B)-9B

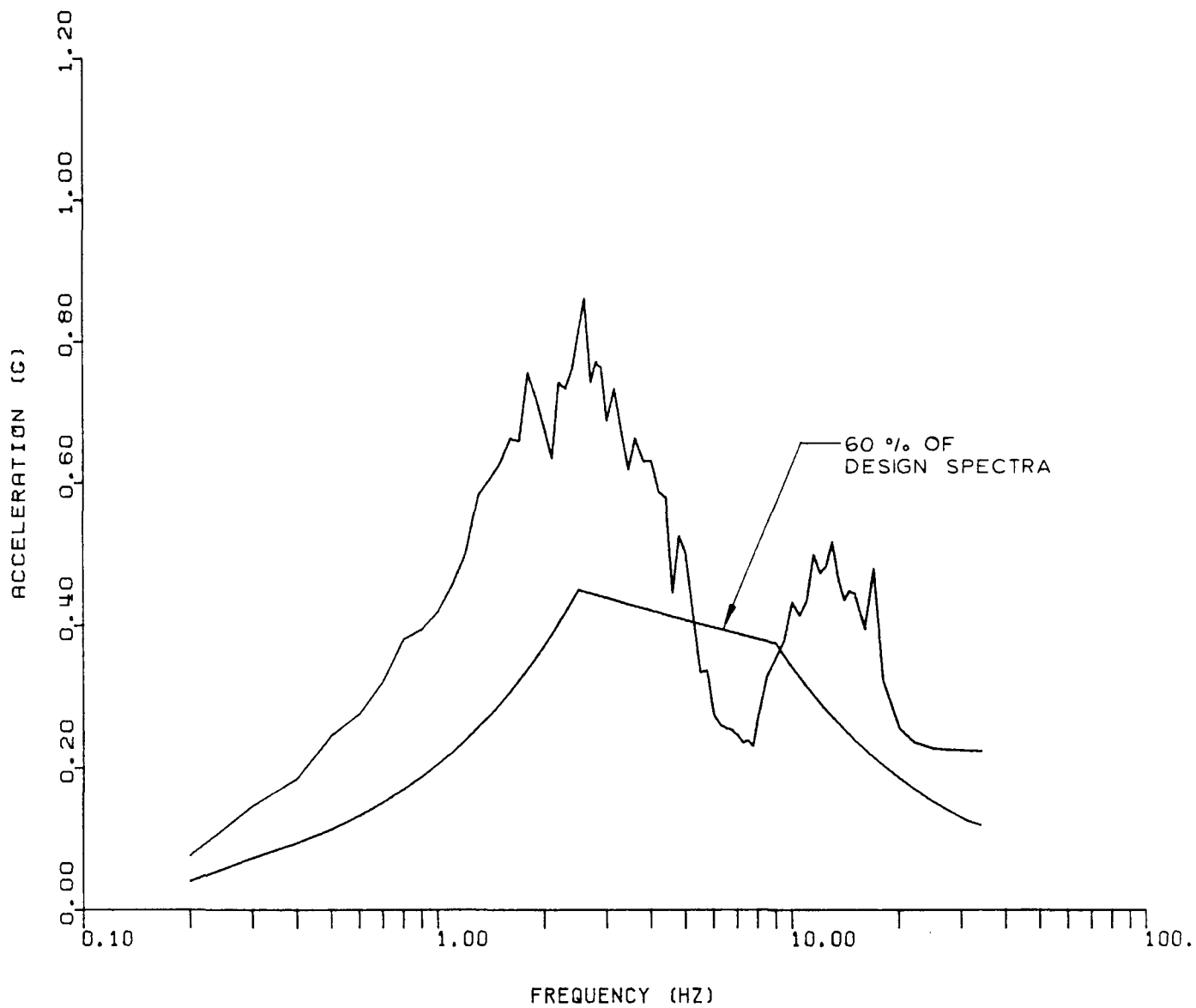
**TYPICAL FREE-FIELD BASE
ELEVATION SPECTRA
STERLING SITE**



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CALLAWAY PLANT

FIGURE 3.7(B)-9C
TYPICAL FREE-FIELD BASE
ELEVATION SPECTRA
TYRONE SITE

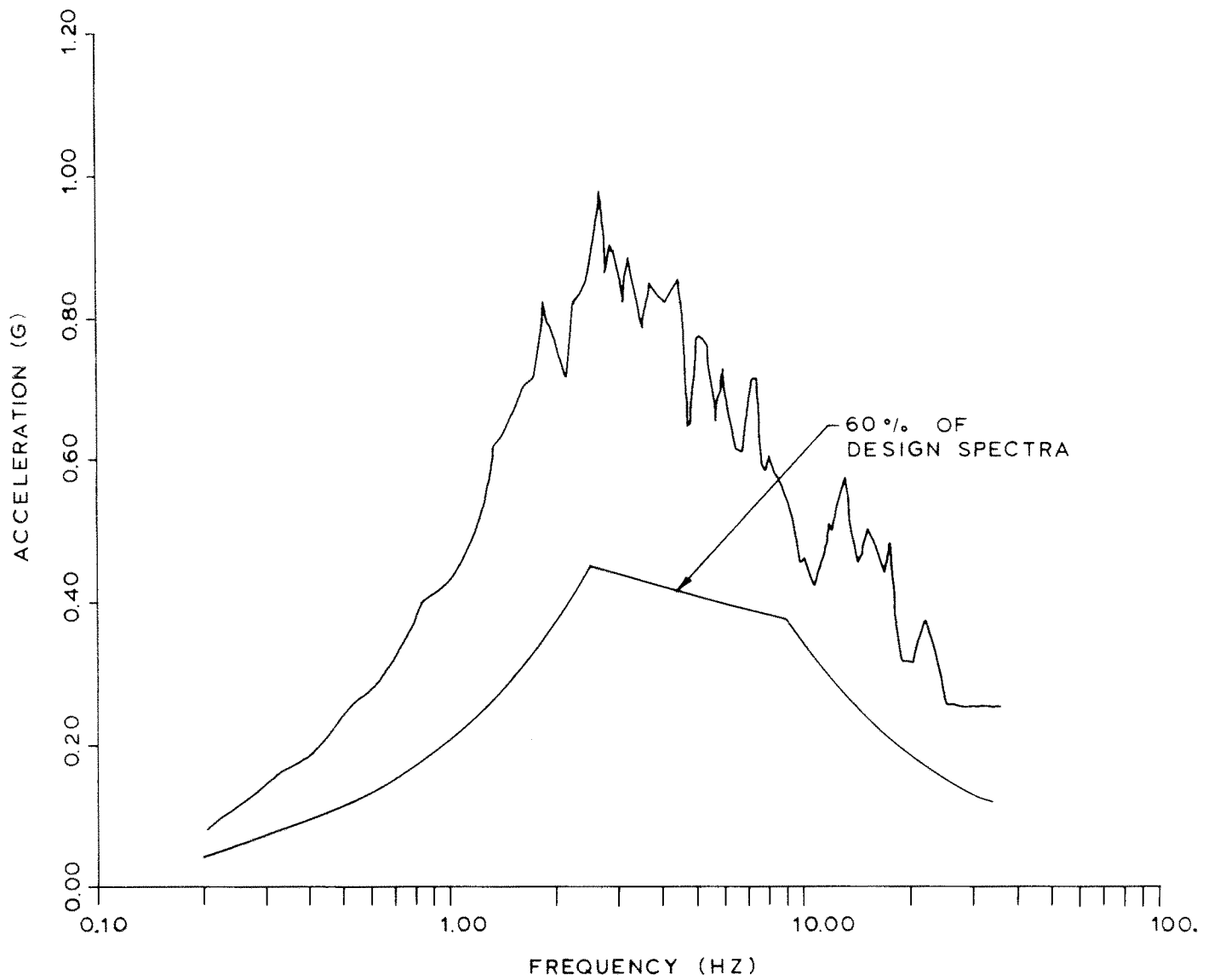


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FIGURE 3.7(B)-9D

**TYPICAL FREE-FIELD BASE
ELEVATION SPECTRA
WOLF CREEK SITE**



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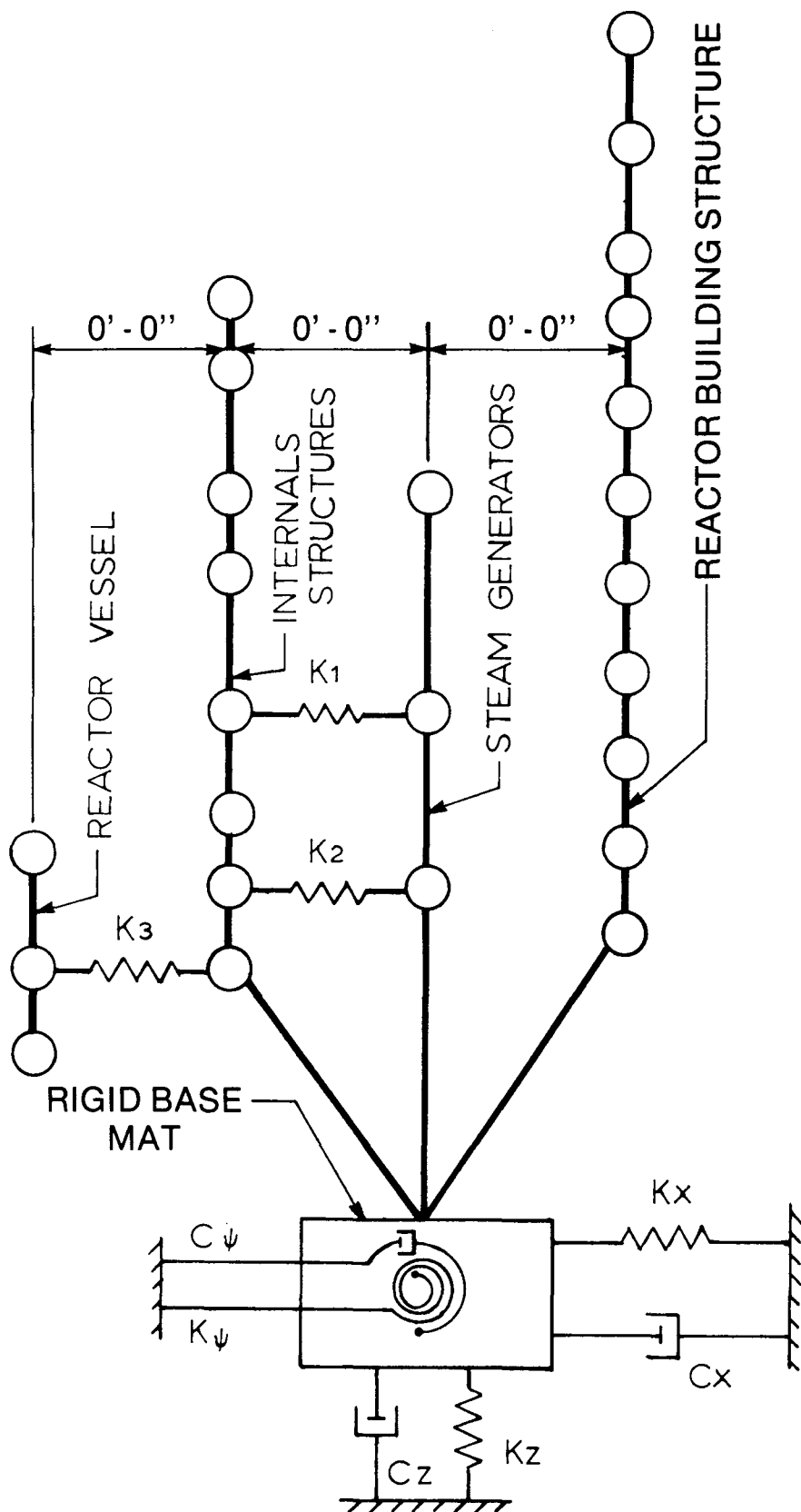
CALLAWAY PLANT

FIGURE 3.7(B)-10

**TYPICAL, FREE-FIELD BASE
ELEVATION SPECTRA
THREE SITE ENVELOPE**

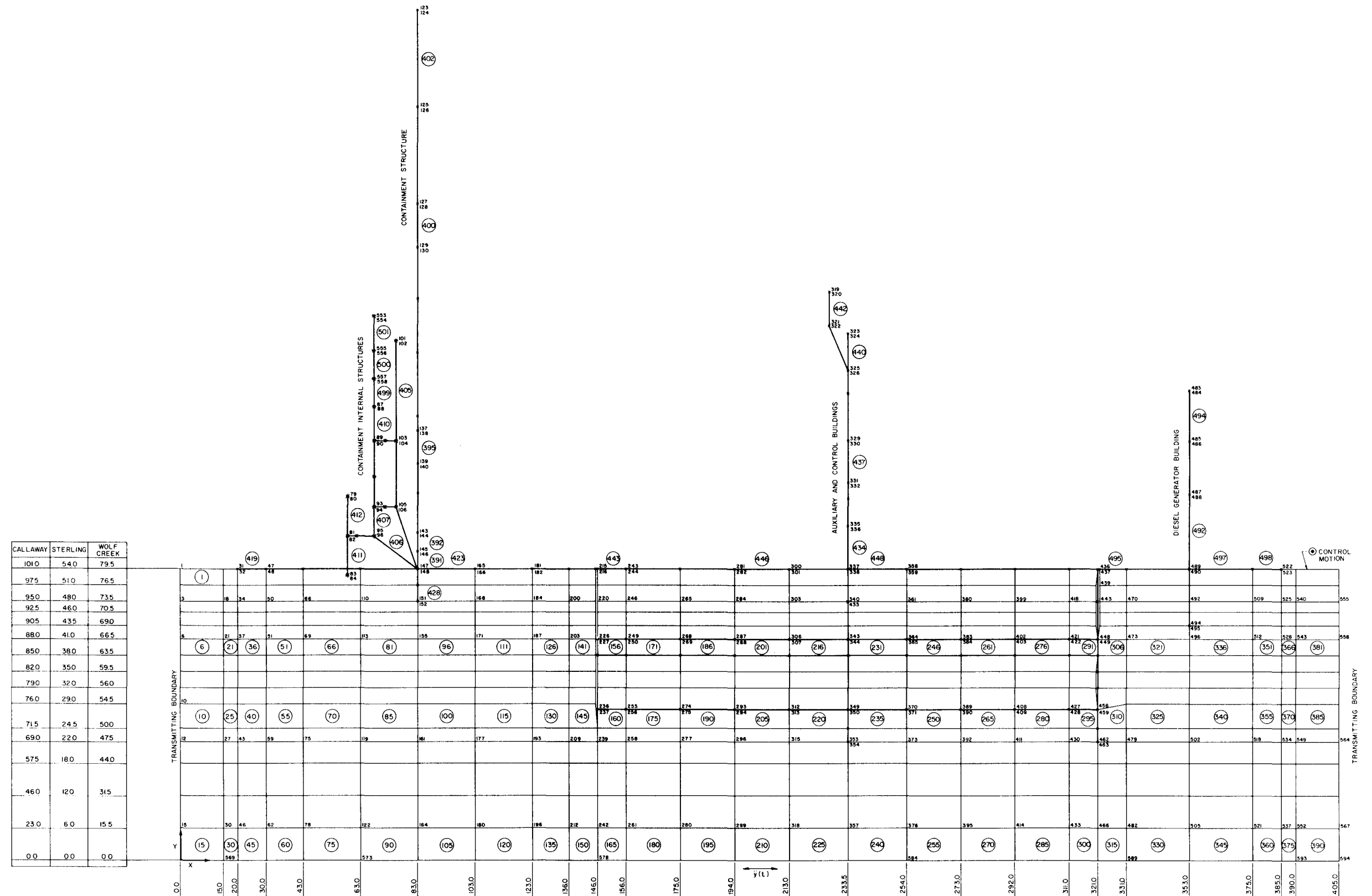
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Figure 3.7(B)-11B Deleted



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FIGURE 3.7(B)-12
MATH. MODEL FOR REACTOR BUILDING AND INTERNAL STRUCTURES



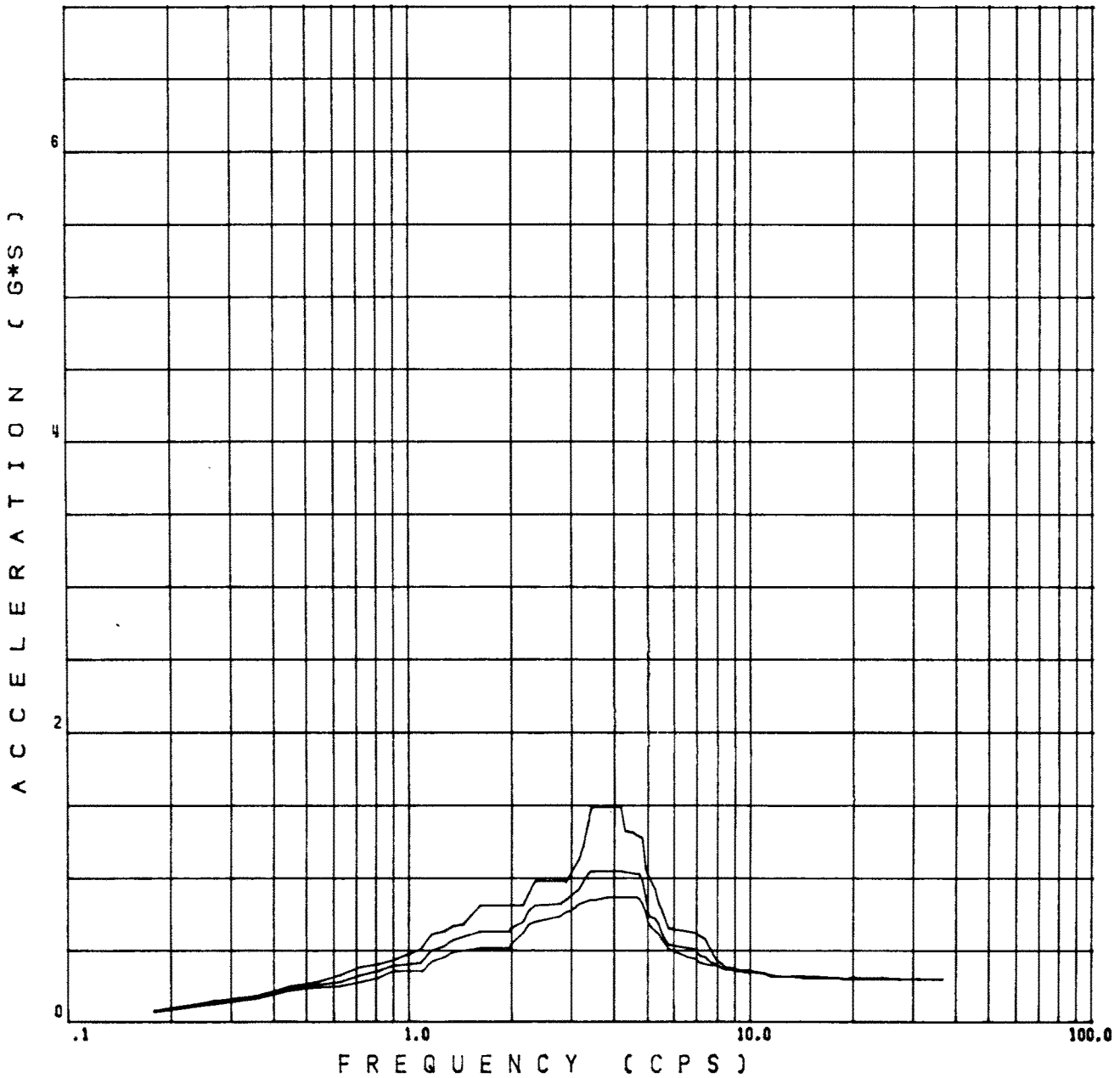
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CALLAWAY PLANT

FIGURE 3.7(B)-13
FINITE-ELEMENT MODEL

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

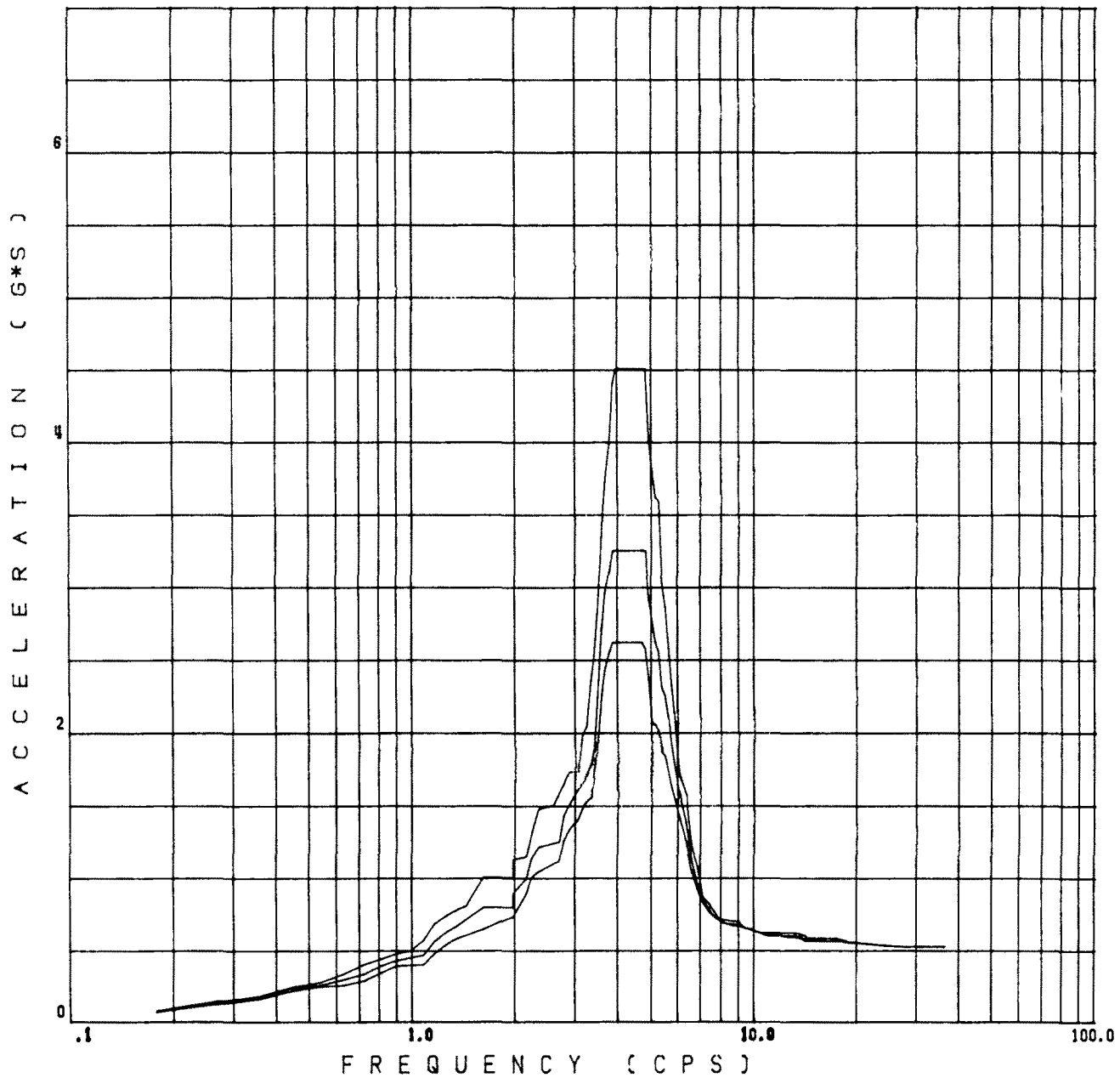
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CALLAWAY PLANT

**FIGURE 3.7(B)-14A
SPECTRA - CONTAINMENT BUILDING
SSE
NORTH-SOUTH DIRECTION
POLAR CRANE LOCATION
CALLAWAY SITE**

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

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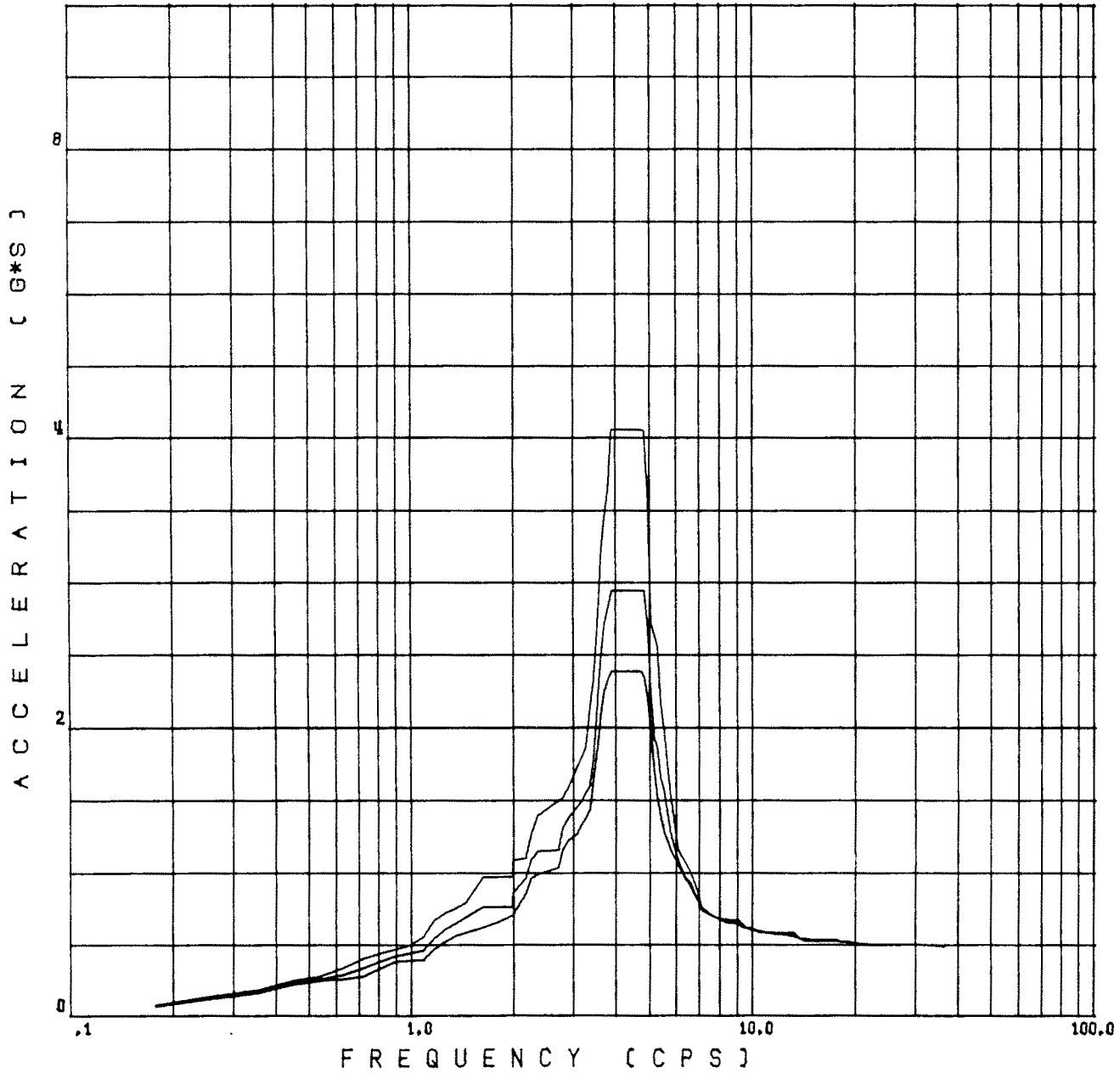
CALLAWAY PLANT

FIGURE 3.7(B)-14B
SPECTRA - CONTAINMENT BUILDING
SSE
NORTH-SOUTH DIRECTION
POLAR CRANE LOCATION
STERLING SITE

Figure 3.7(B)-14C Deleted

DAMPING VALUES

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DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

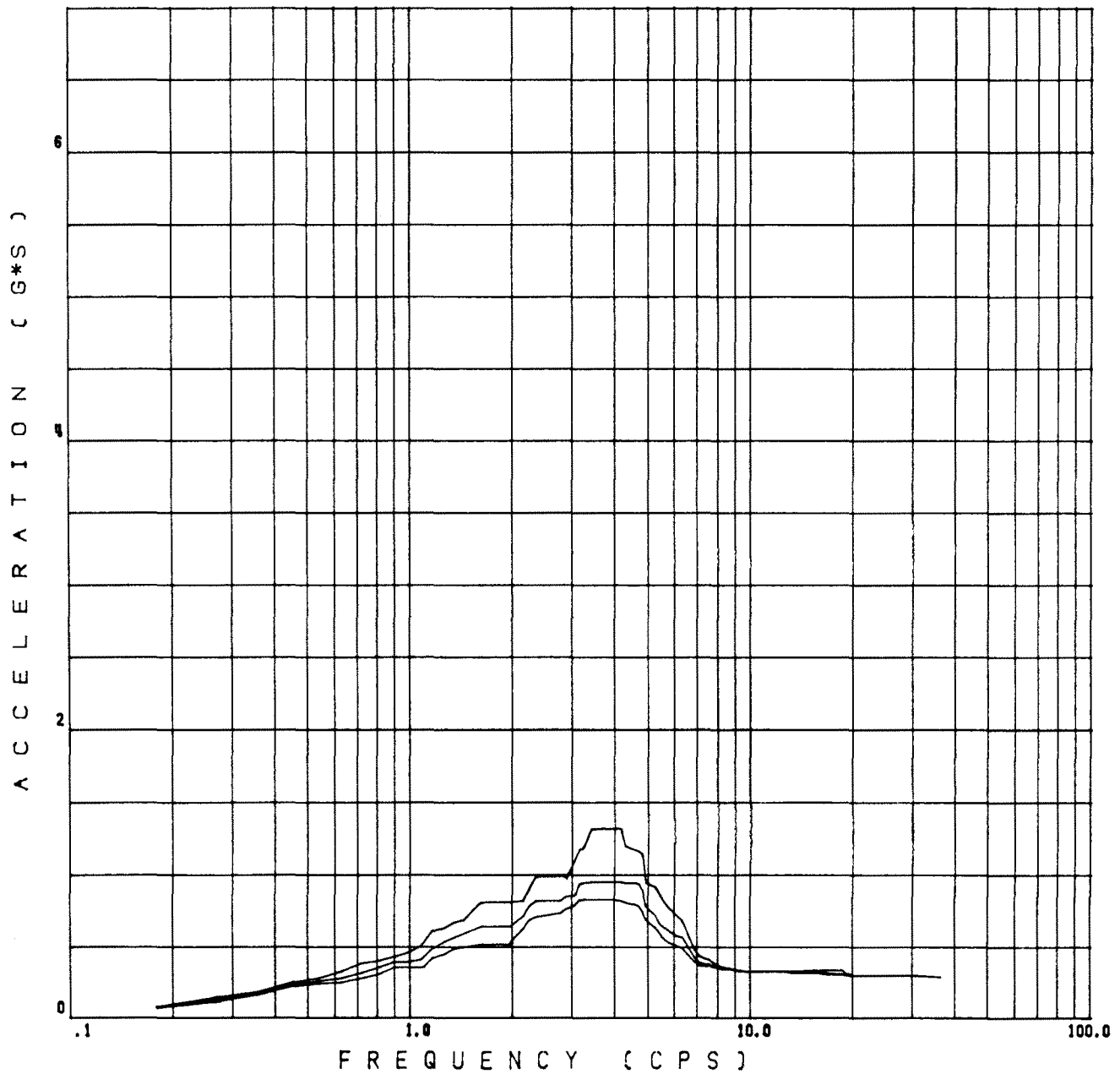
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CALLAWAY PLANT

**FIGURE 3.7(B)-14D
SPECTRA - CONTAINMENT BUILDING
SSE
NORTH-SOUTH DIRECTION
POLAR CRANE LOCATION
WOLF CREEK SITE**

DAMPING VALUES

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DESIGN FLOOR RESPONSE SPECTRA

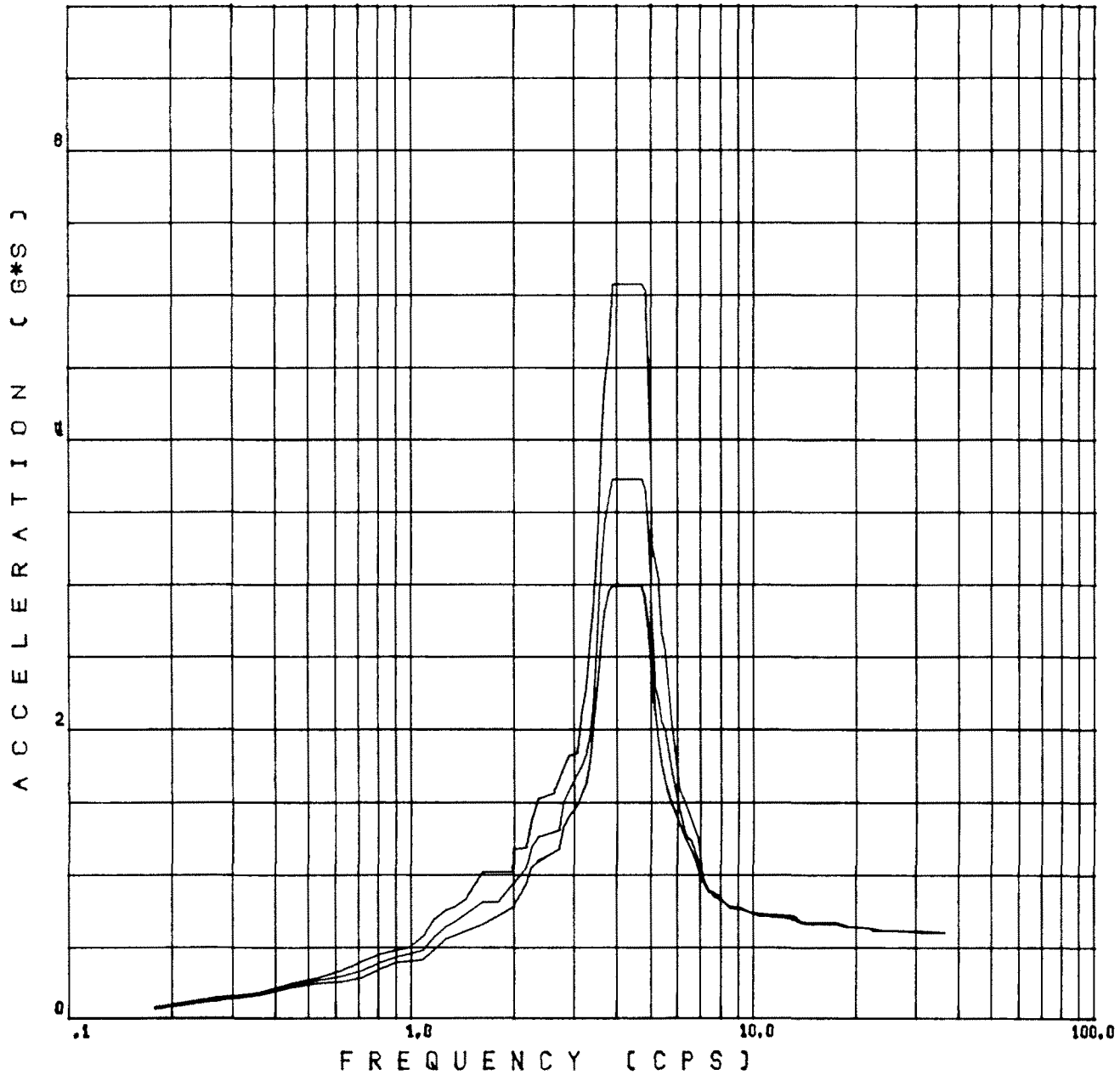
EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

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CALLAWAY PLANT
FIGURE 3.7(B)-14E SPECTRA - CONTAINMENT BUILDING SSE EAST-WEST DIRECTION POLAR CRANE LOCATION CALLAWAY SITE

DAMPING VALUES

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DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

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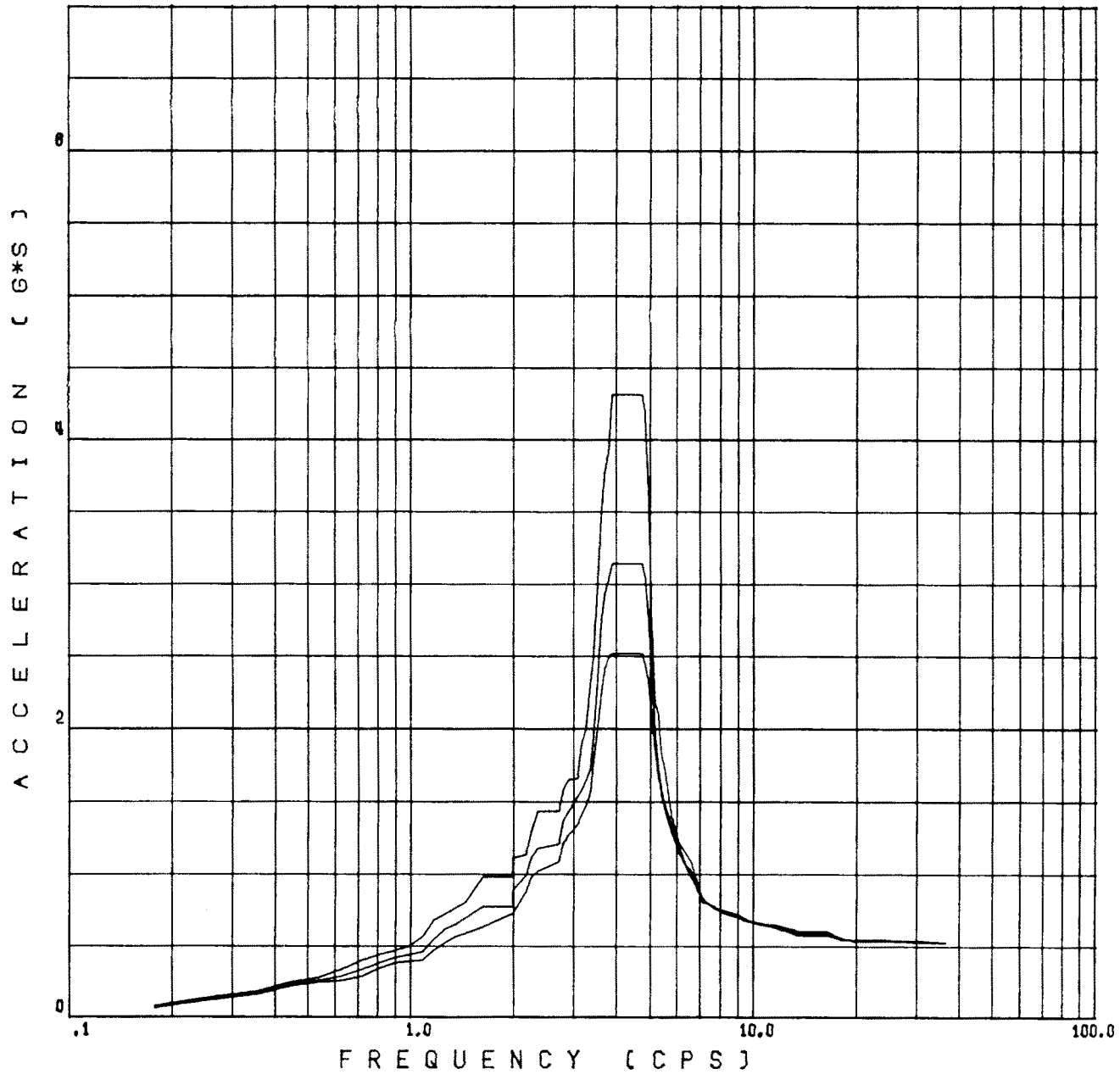
CALLAWAY PLANT

**FIGURE 3.7(B)-14F
SPECTRA - CONTAINMENT BUILDING
SSE
EAST-WEST DIRECTION
POLAR CRANE LOCATION
STERLING SITE**

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DAMPING VALUES

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DESIGN FLOOR RESPONSE SPECTRA

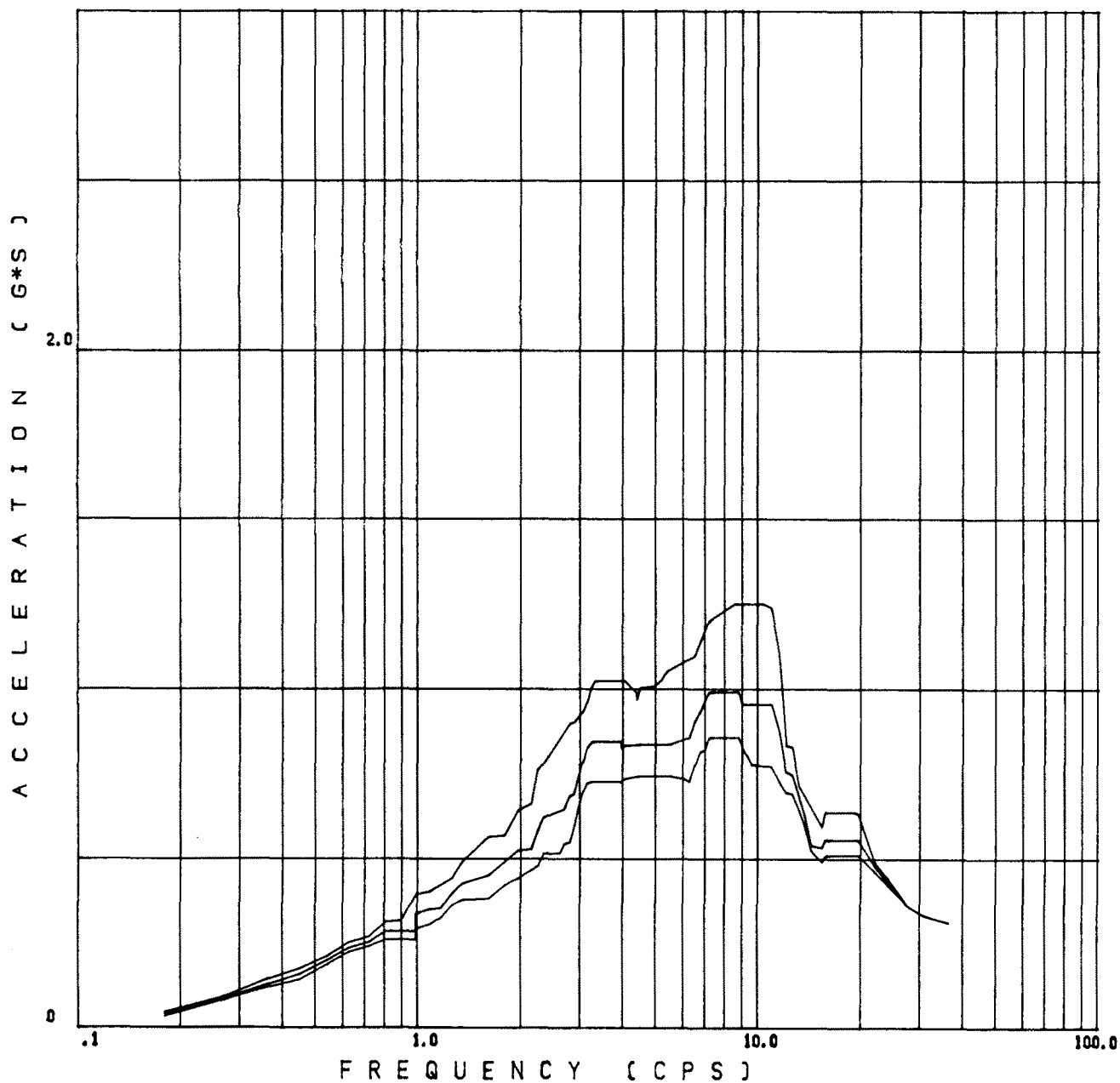
EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

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CALLAWAY PLANT
FIGURE 3.7(B)-14H
SPECTRA - CONTAINMENT BUILDING
SSE
EAST-WEST DIRECTION
POLAR CRANE LOCATION
WOLF CREEK SITE

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0''
REF. FIGURE 3.7(B)-17

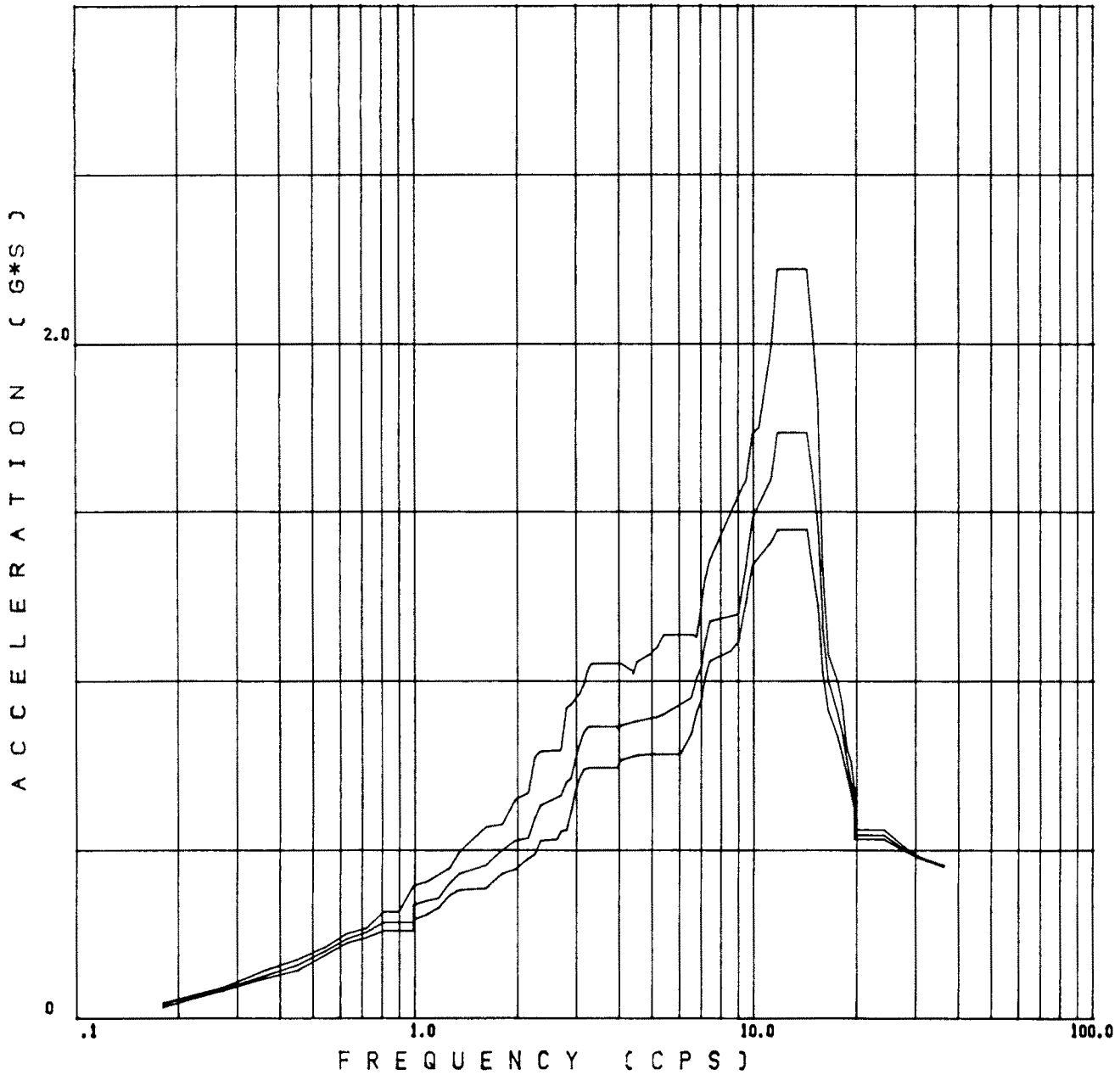
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CALLAWAY PLANT

FIGURE 3.7(B)-14I
SPECTRA - CONTAINMENT BUILDING
SSE
VERTICAL DIRECTION
POLAR CRANE LOCATION
CALLAWAY SITE

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0''
REF. FIGURE 3.7(B)-17

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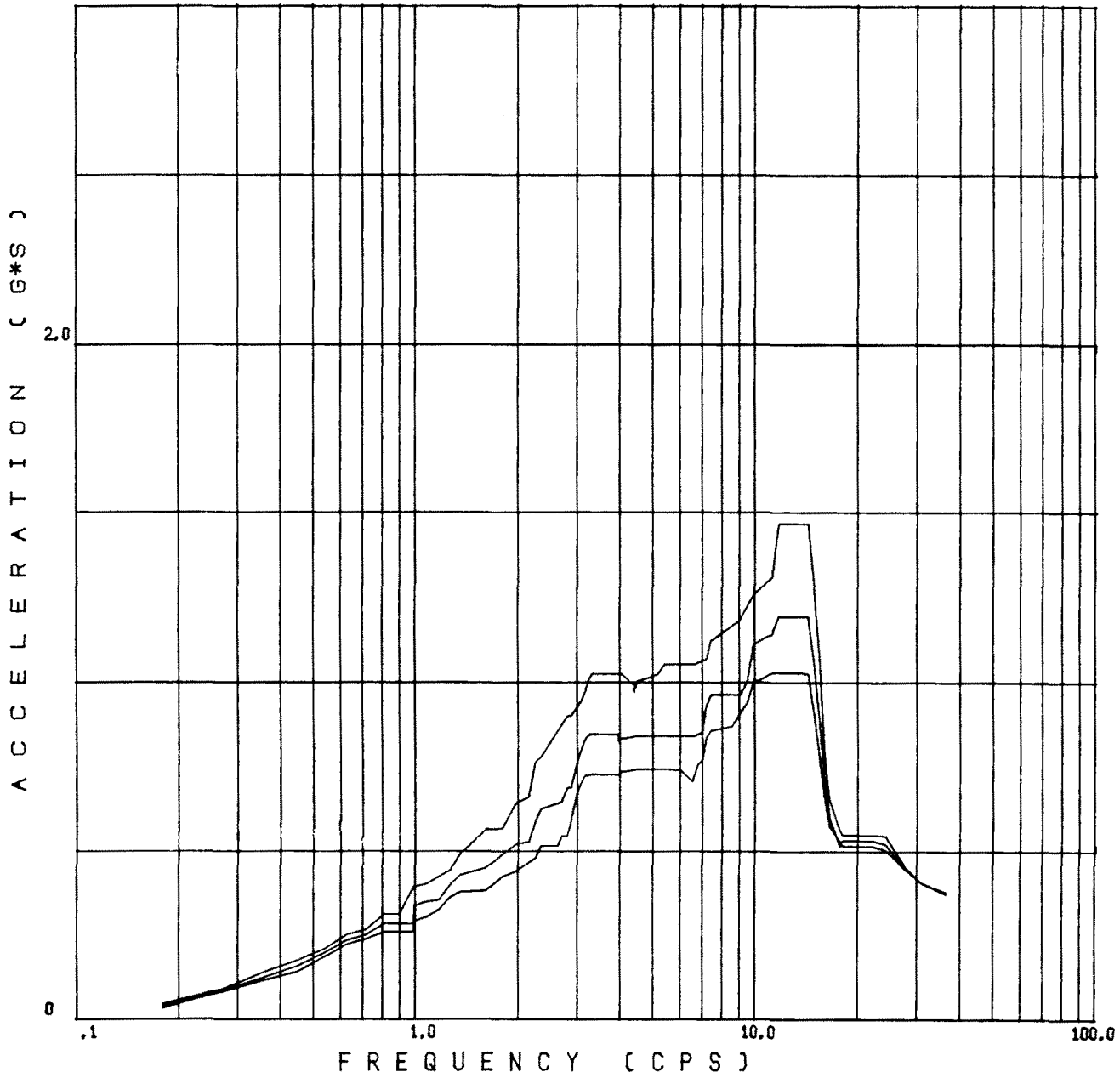
CALLAWAY PLANT

FIGURE 3.7(B)-14J
SPECTRA - CONTAINMENT BUILDING
SSE
VERTICAL DIRECTION
POLAR CRANE LOCATION
STERLING SITE

Figure 3.7(B)-14K Deleted

DAMPING VALUES

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DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

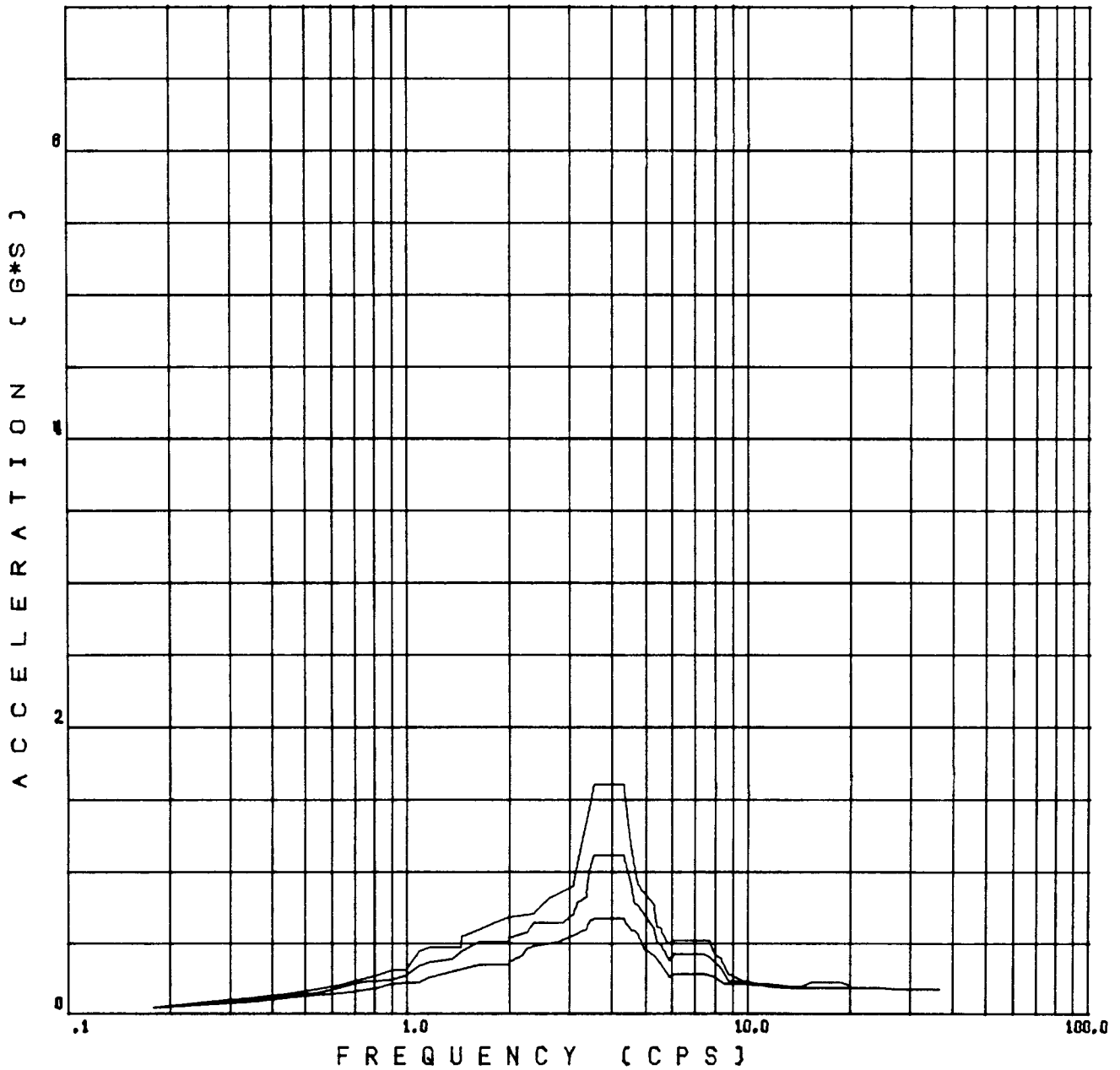
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CALLAWAY PLANT

FIGURE 3.7(B)-14L
SPECTRA - CONTAINMENT BUILDING
SSE
VERTICAL DIRECTION
POLAR CRANE LOCATION
WOLF CREEK SITE

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

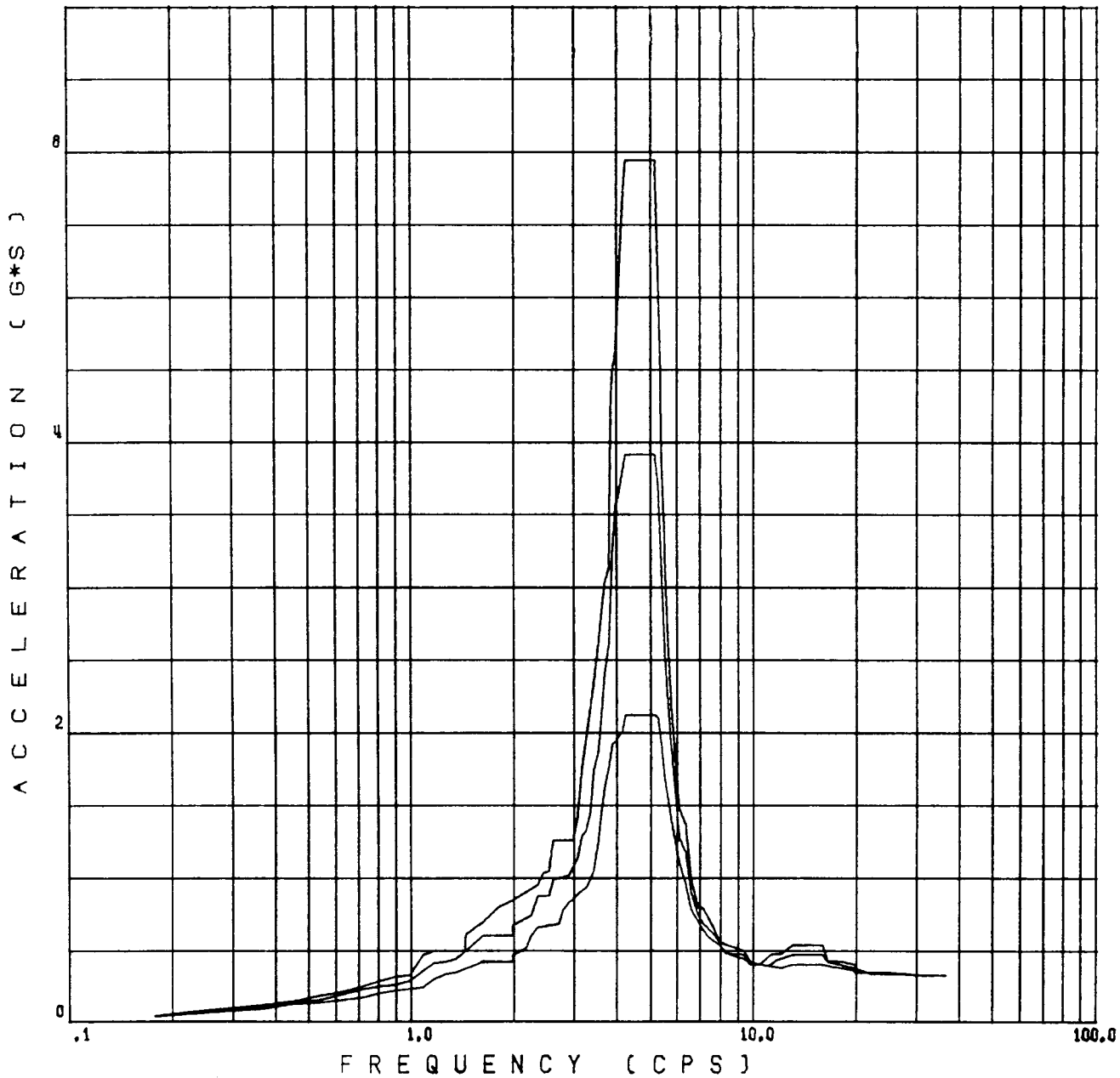
EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

Rev. OL-0
6/86

CALLAWAY PLANT
FIGURE 3.7(B)-14M
SPECTRA - CONTAINMENT BUILDING
OBE
NORTH-SOUTH DIRECTION
POLAR CRANE LOCATION
CALLAWAY SITE

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

Rev. OL-0
6/86

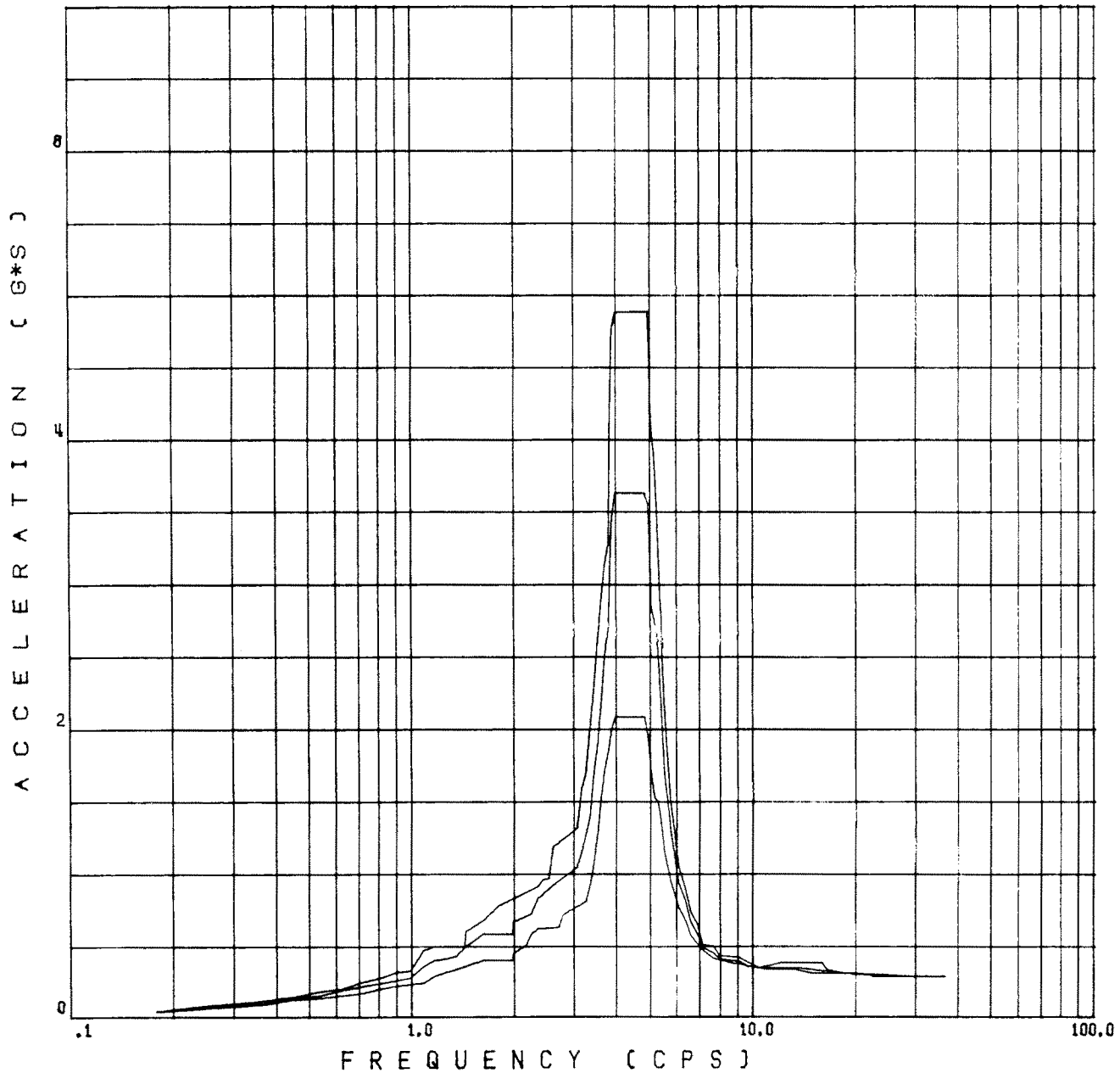
CALLAWAY PLANT

FIGURE 3.7(B)-14N
SPECTRA - CONTAINMENT BUILDING
OBE
NORTH-SOUTH DIRECTION
POLAR CRANE LOCATION
STERLING SITE

Figure 3.7(B)-14O Deleted

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0''
REF. FIGURE 3.7(B)-17

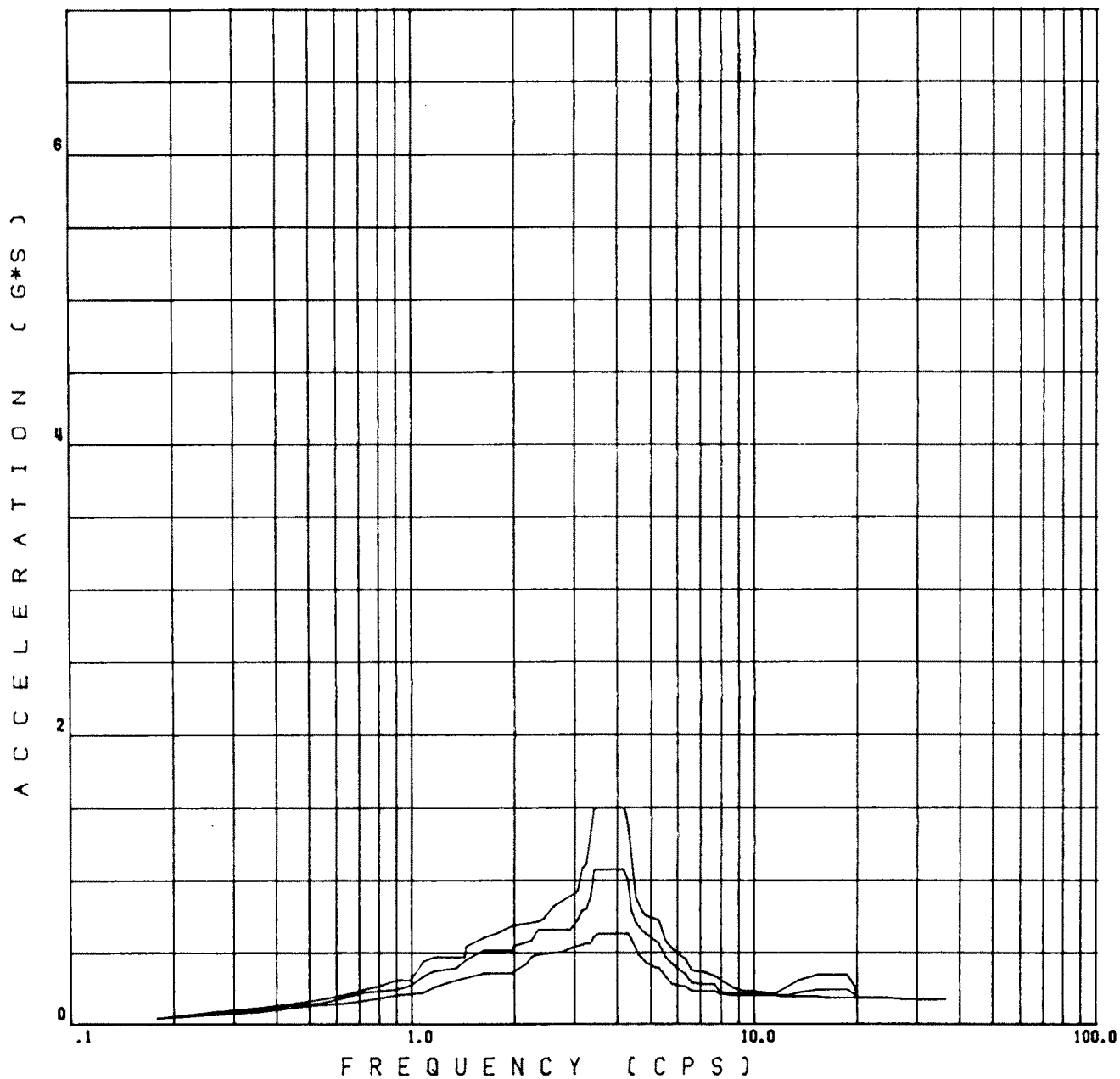
Rev. OL-0
6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-14P
SPECTRA - CONTAINMENT BUILDING
OBE
NORTH-SOUTH DIRECTION
POLAR CRANE LOCATION
WOLF CREEK SITE**

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

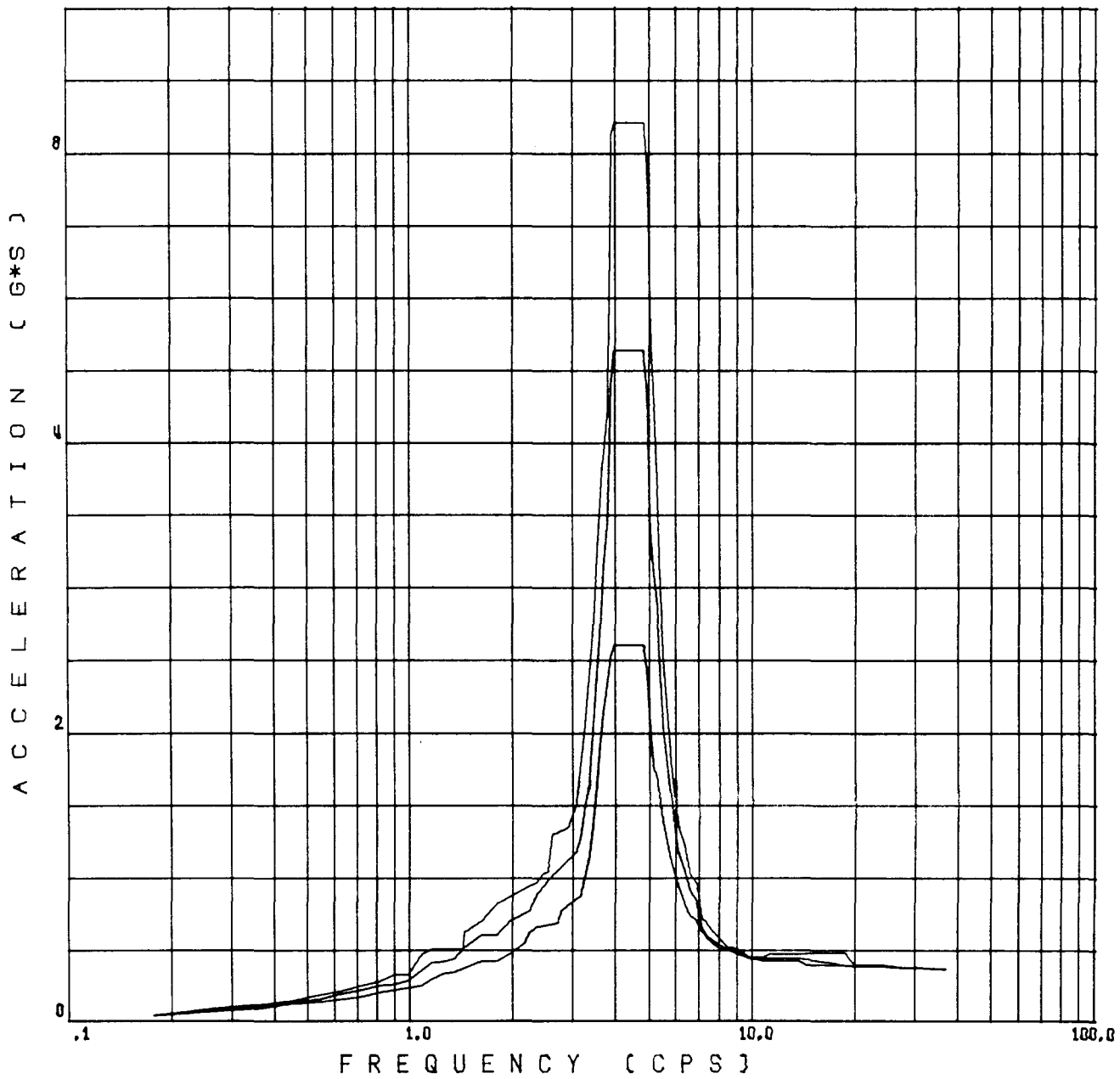
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6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-14Q
SPECTRA - CONTAINMENT BUILDING
OBE
EAST-WEST DIRECTION
POLAR CRANE LOCATION
CALLAWAY SITE**

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

Rev. OL-0
6/86

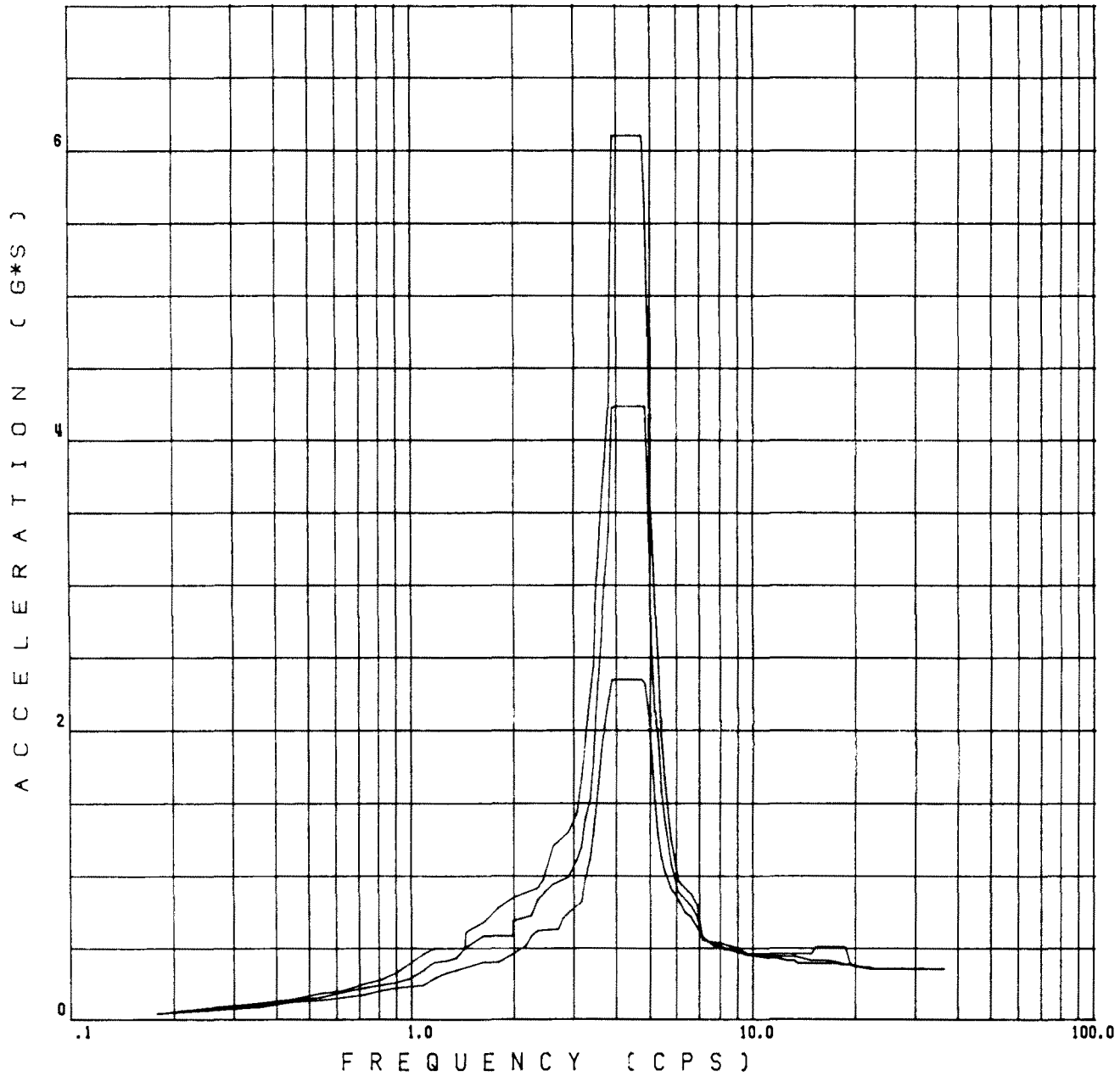
CALLAWAY PLANT

FIGURE 3.7(B)-14R
SPECTRA - CONTAINMENT BUILDING
OBE
EAST-WEST DIRECTION
POLAR CRANE LOCATION
STERLING SITE

Figure 3.7(B)-14S Deleted

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

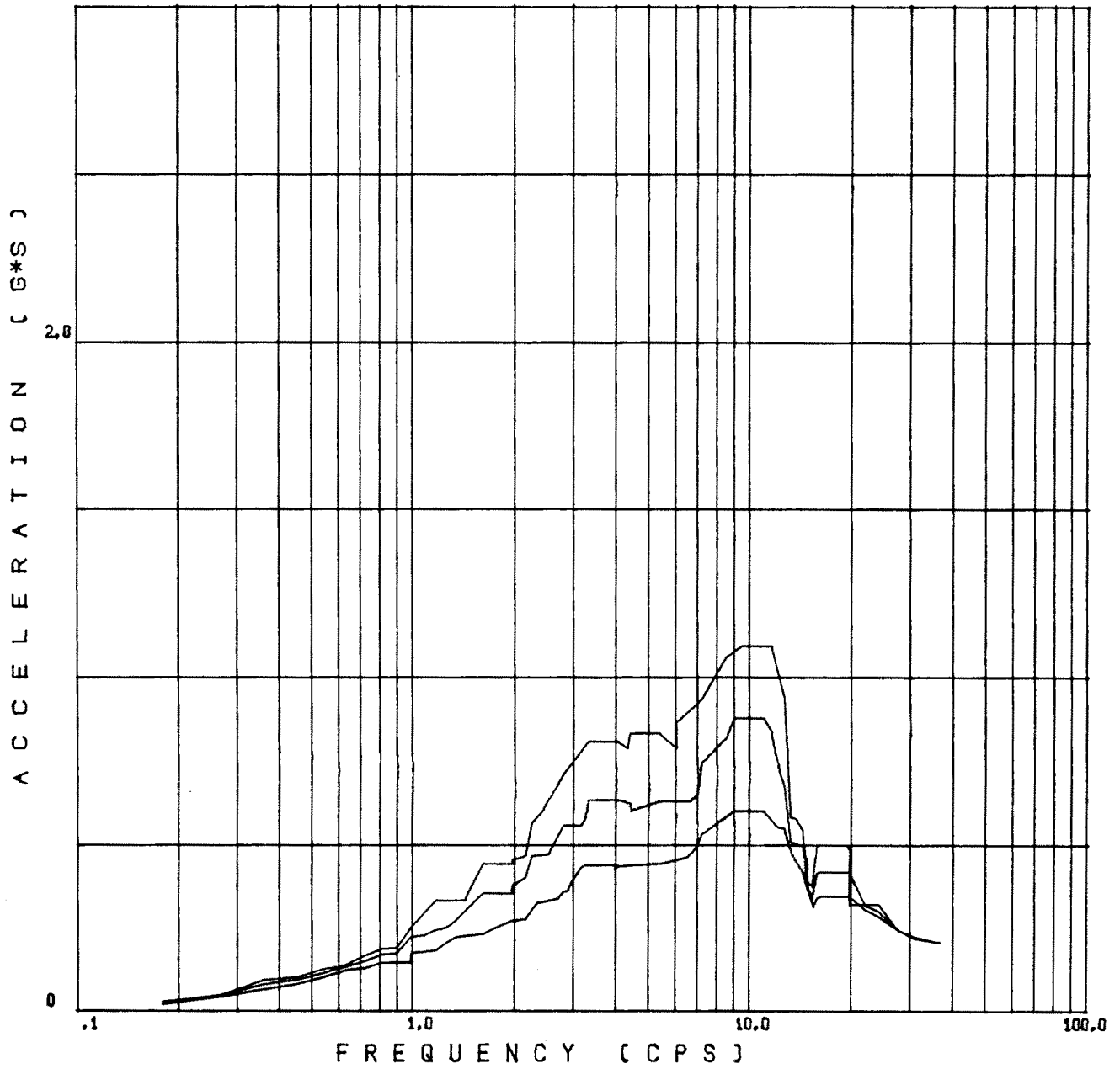
Rev. OL-0
6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-14T
SPECTRA - CONTAINMENT BUILDING
OBE
EAST-WEST DIRECTION
POLAR CRANE LOCATION
WOLF CREEK SITE**

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

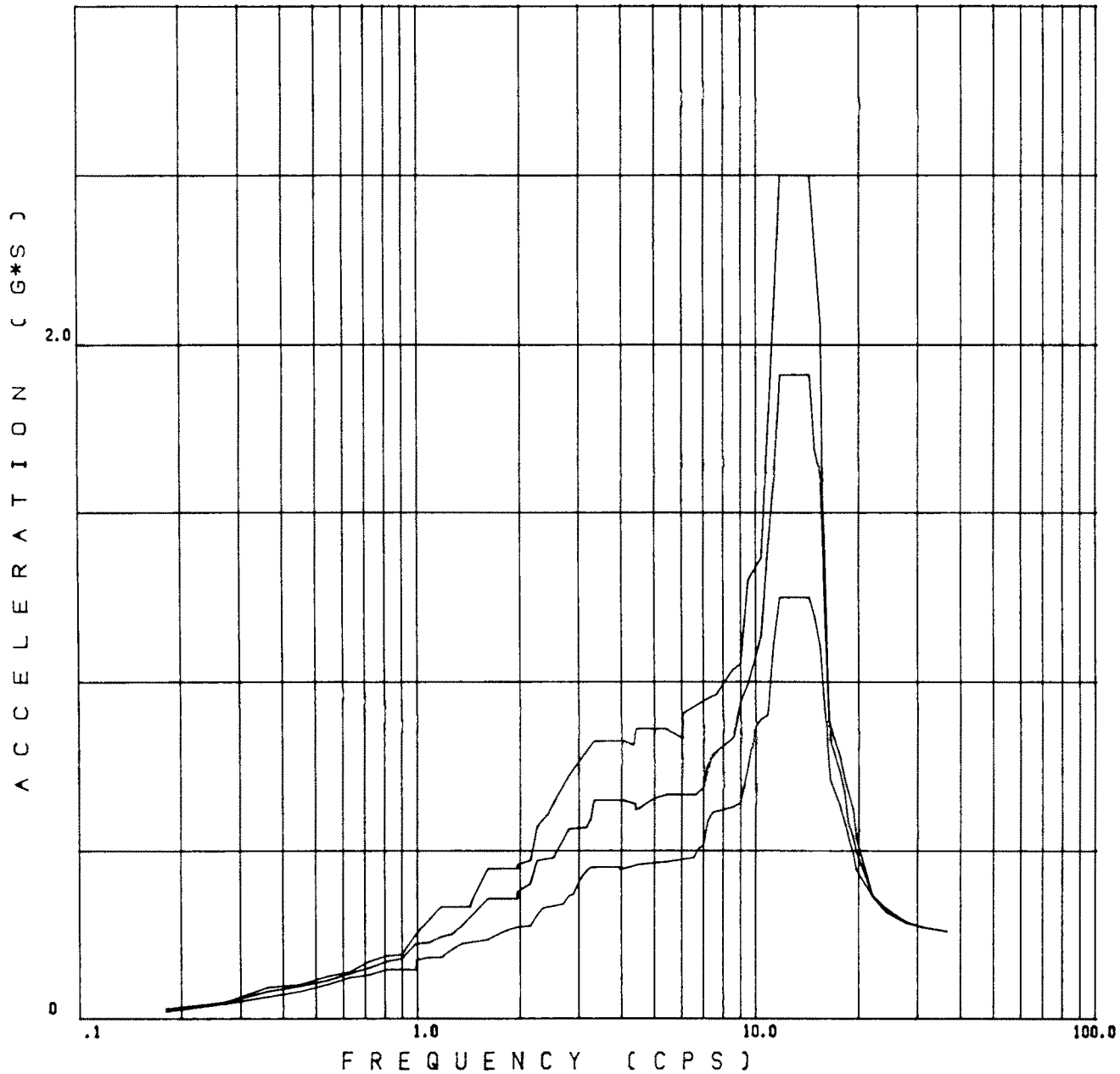
Rev. OL-0
6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-14U
SPECTRA - CONTAINMENT BUILDING
OBE
VERTICAL DIRECTION
POLAR CRANE LOCATION
CALLAWAY SITE**

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

Rev. OL-0
6/86

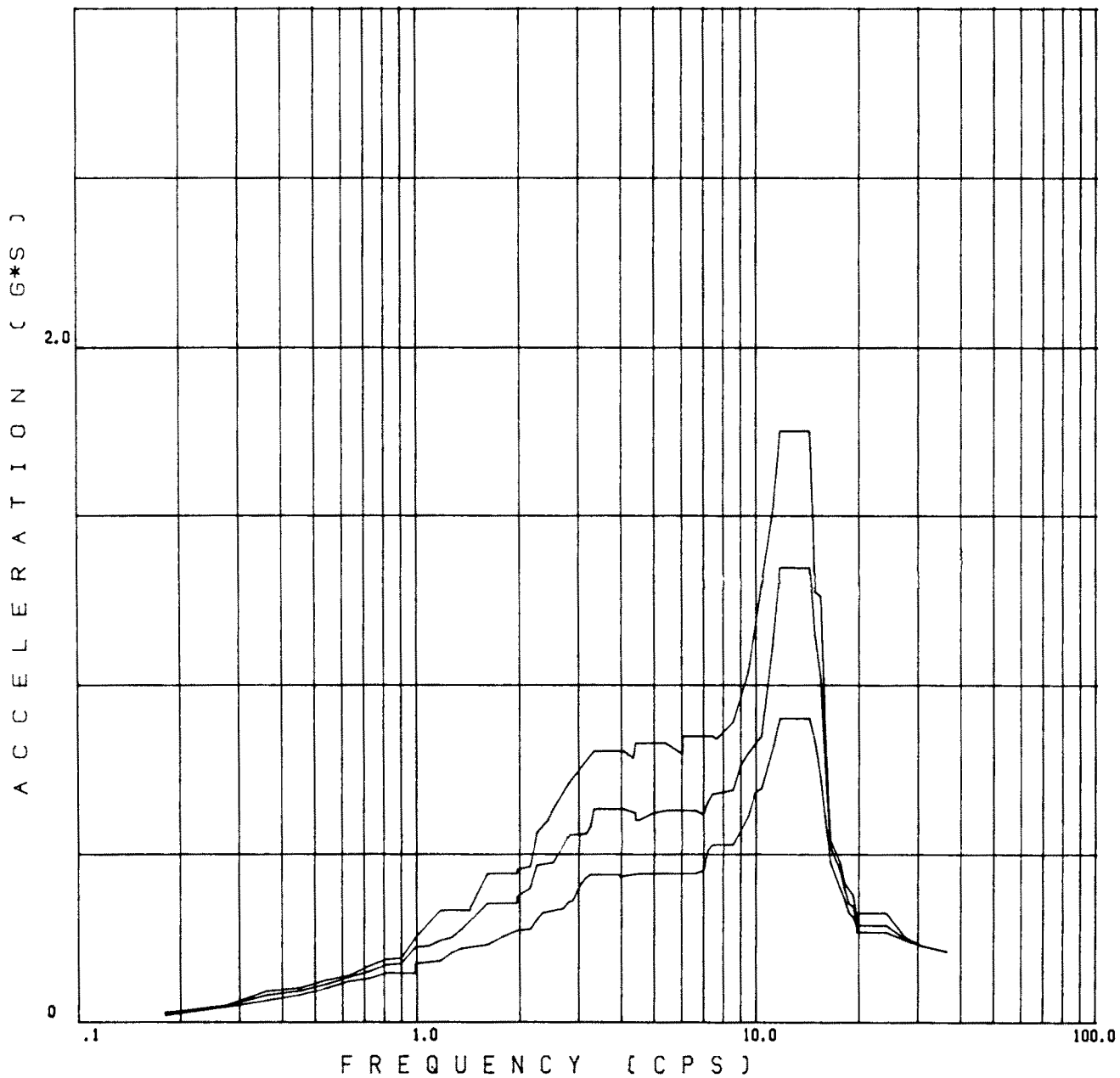
CALLAWAY PLANT

FIGURE 3.7(B)-14V
SPECTRA - CONTAINMENT BUILDING
OBE
VERTICAL DIRECTION
POLAR CRANE LOCATION
STERLING SITE

Figure 3.7(B)-14W Deleted

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2119' - 0"
REF. FIGURE 3.7(B)-17

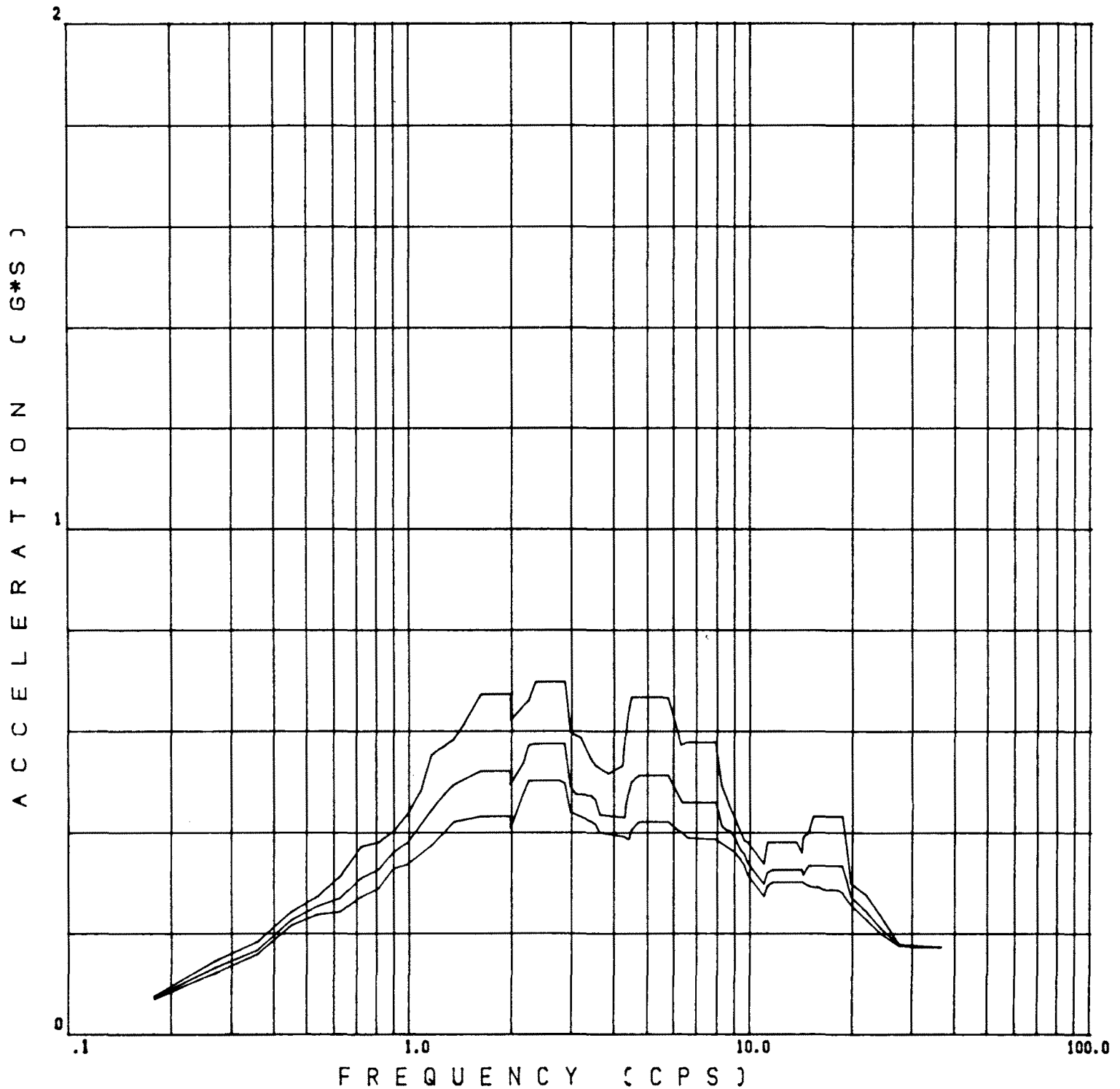
Rev. OL-0
6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-14X
SPECTRA - CONTAINMENT BUILDING
OBE
VERTICAL DIRECTION
POLAR CRANE LOCATION
WOLF CREEK SITE**

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

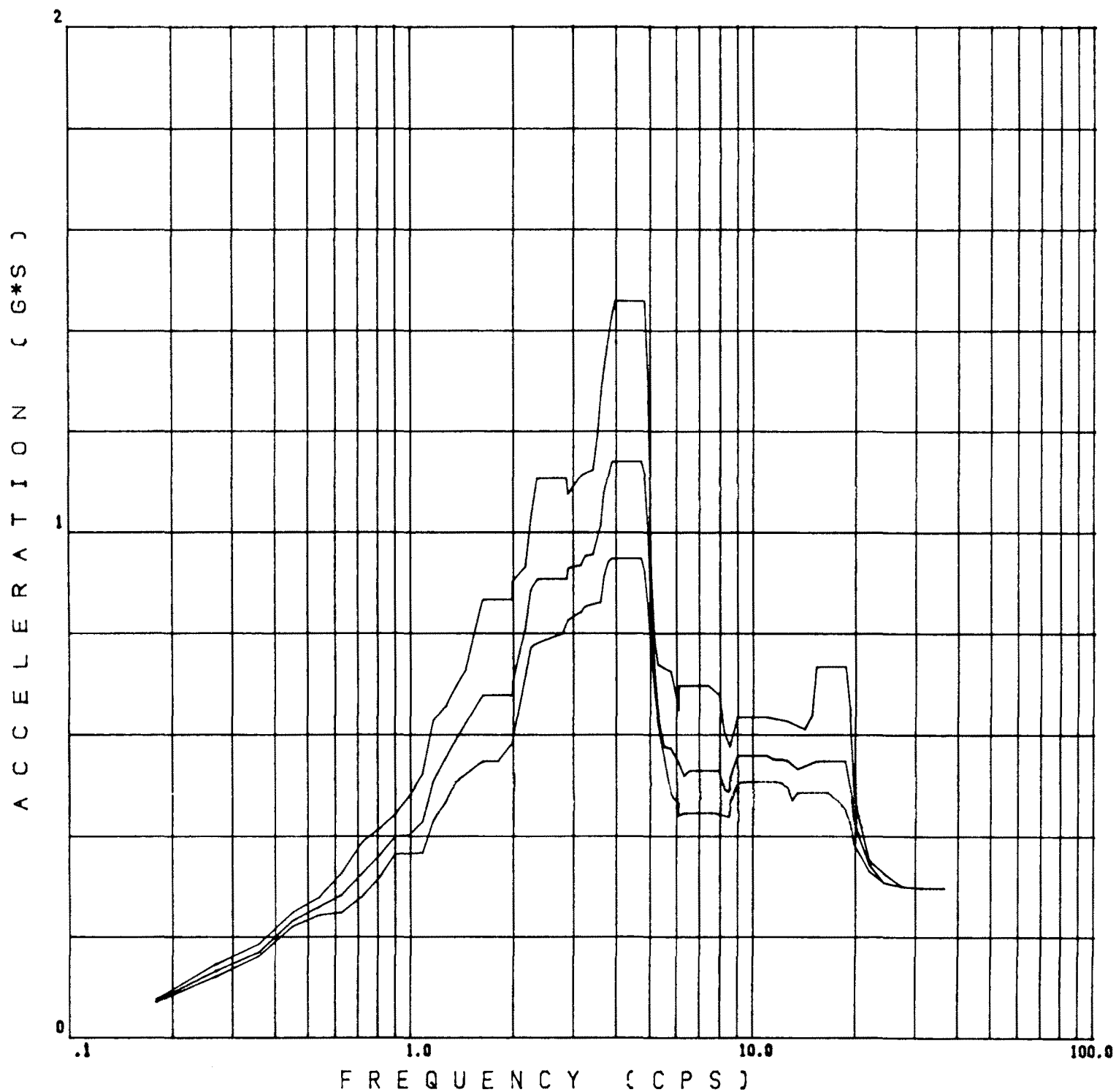
Rev. OL-0
6/86

CALLAWAY PLANT

FIGURE 3.7(B)-15A
SPECTRA - CONTAINMENT BUILDING
SSE
NORTH-SOUTH DIRECTION
STEAM GENERATOR UPPER SUPPORT
CALLAWAY SITE

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

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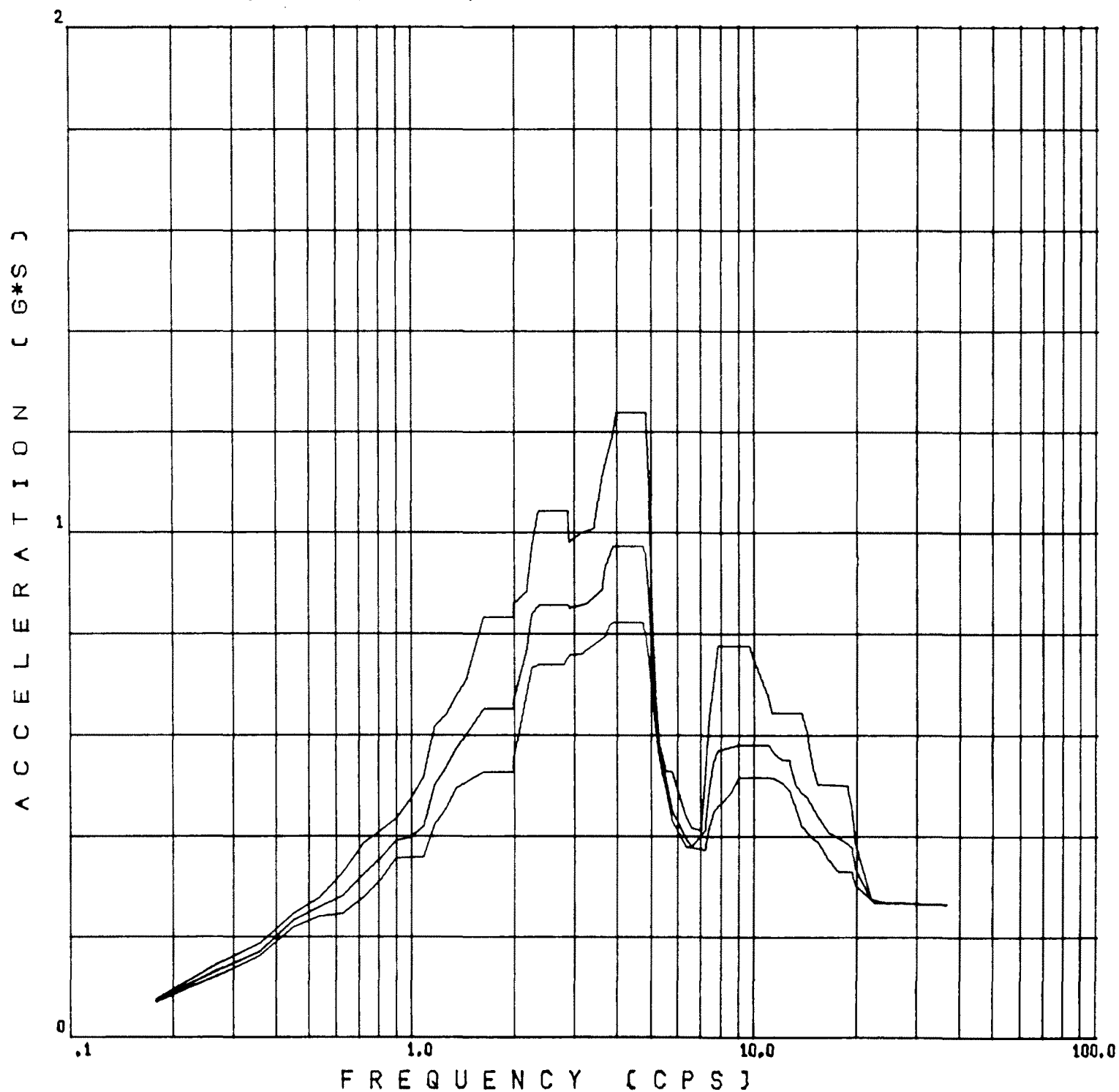
CALLAWAY PLANT

**FIGURE 3.7(B)-15B
SPECTRA - CONTAINMENT BUILDING
SSE
NORTH-SOUTH DIRECTION
STEAM GENERATOR UPPER SUPPORT
STERLING SITE**

Figure 3.7(B)-15C Deleted

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

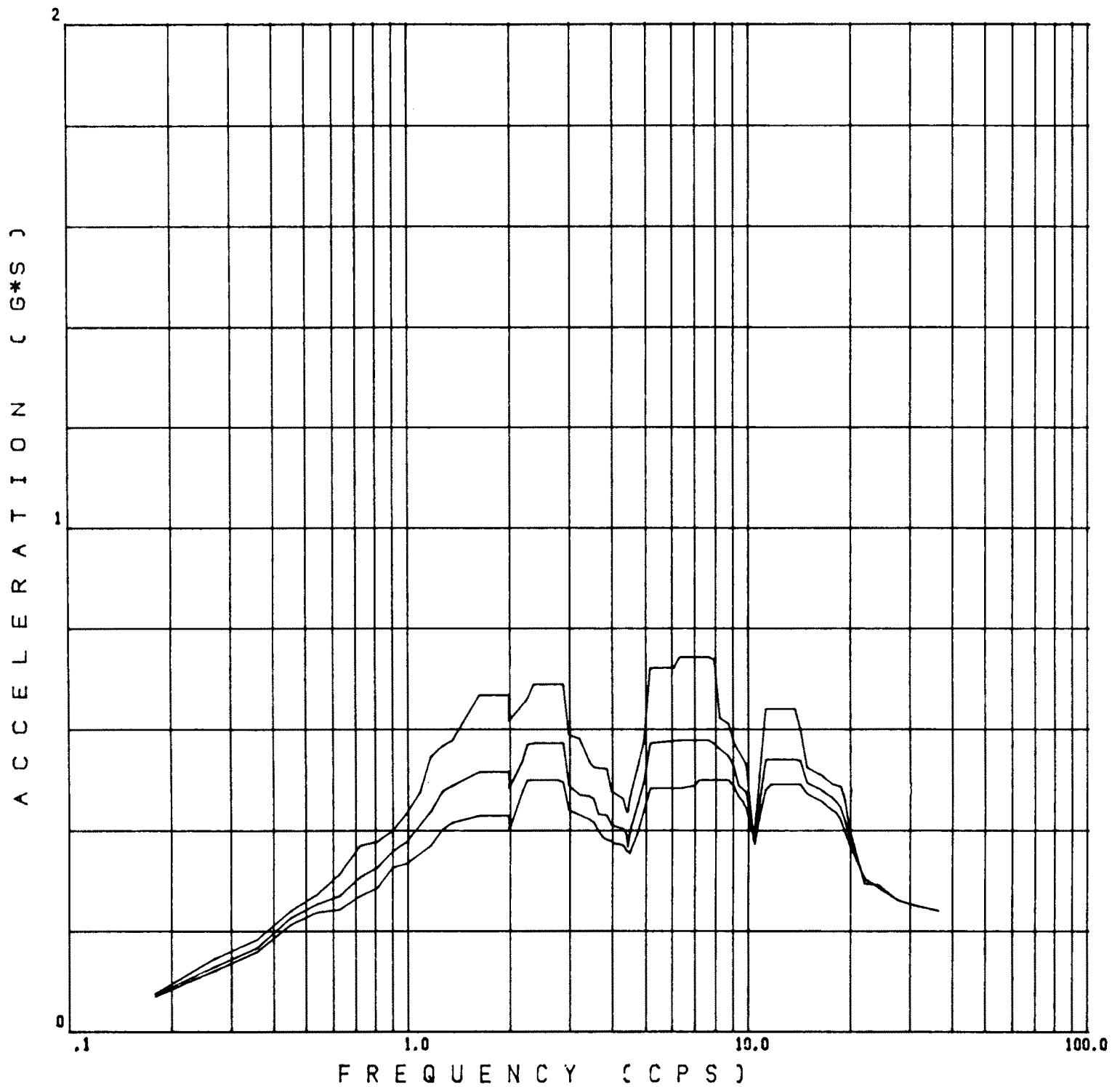
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6/86

CALLAWAY PLANT

FIGURE 3.7(B)-15D
SPECTRA - CONTAINMENT BUILDING
SSE
NORTH-SOUTH DIRECTION
STEAM GENERATOR UPPER SUPPORT
WOLF CREEK SITE

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

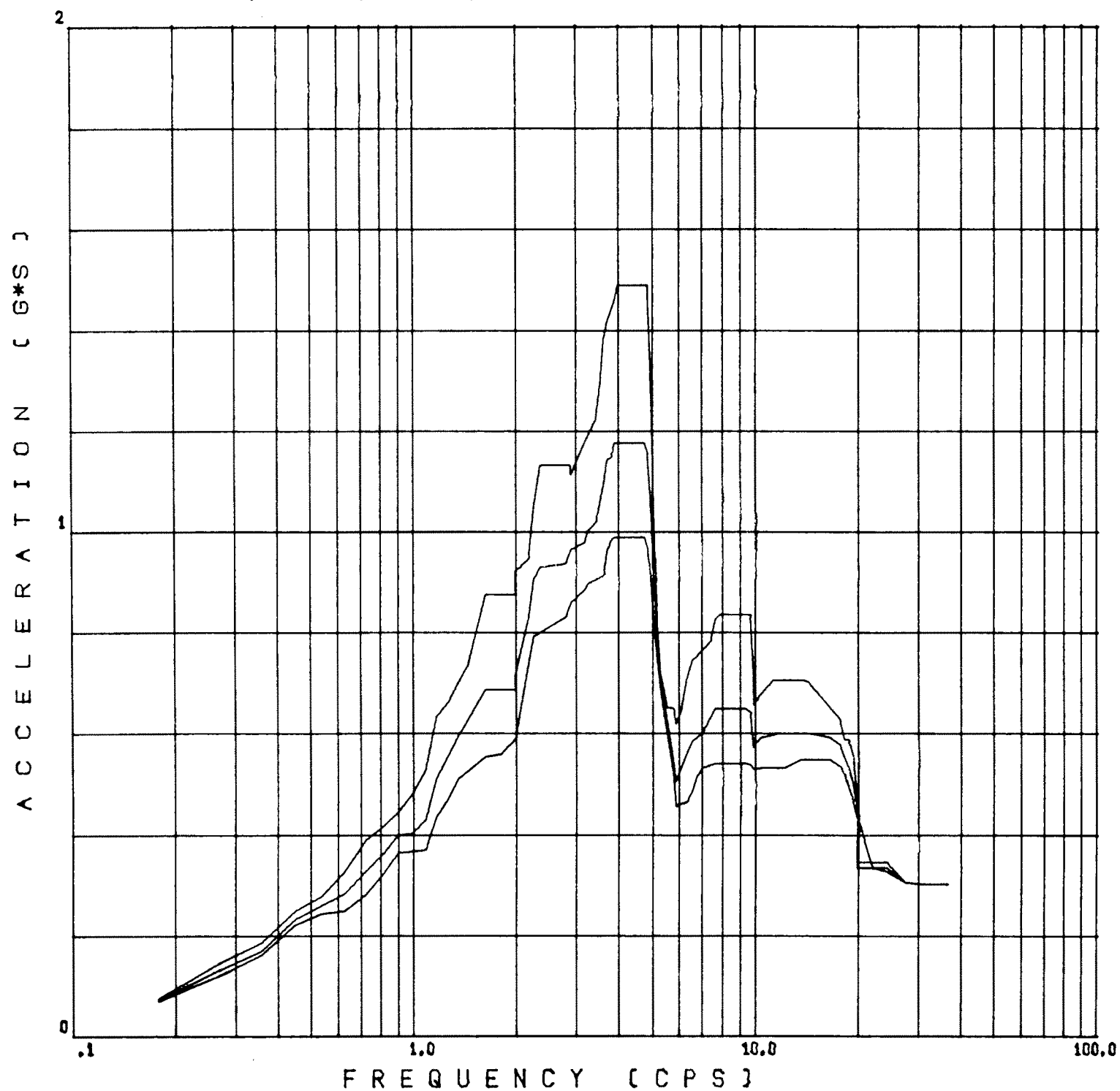
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6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-15E
SPECTRA - CONTAINMENT BUILDING
SSE
EAST-WEST DIRECTION
STEAM-GENERATOR UPPER SUPPORT
CALLAWAY SITE**

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6''
REF. FIGURE 3.7(B)-17

Rev. OL-0
6/86

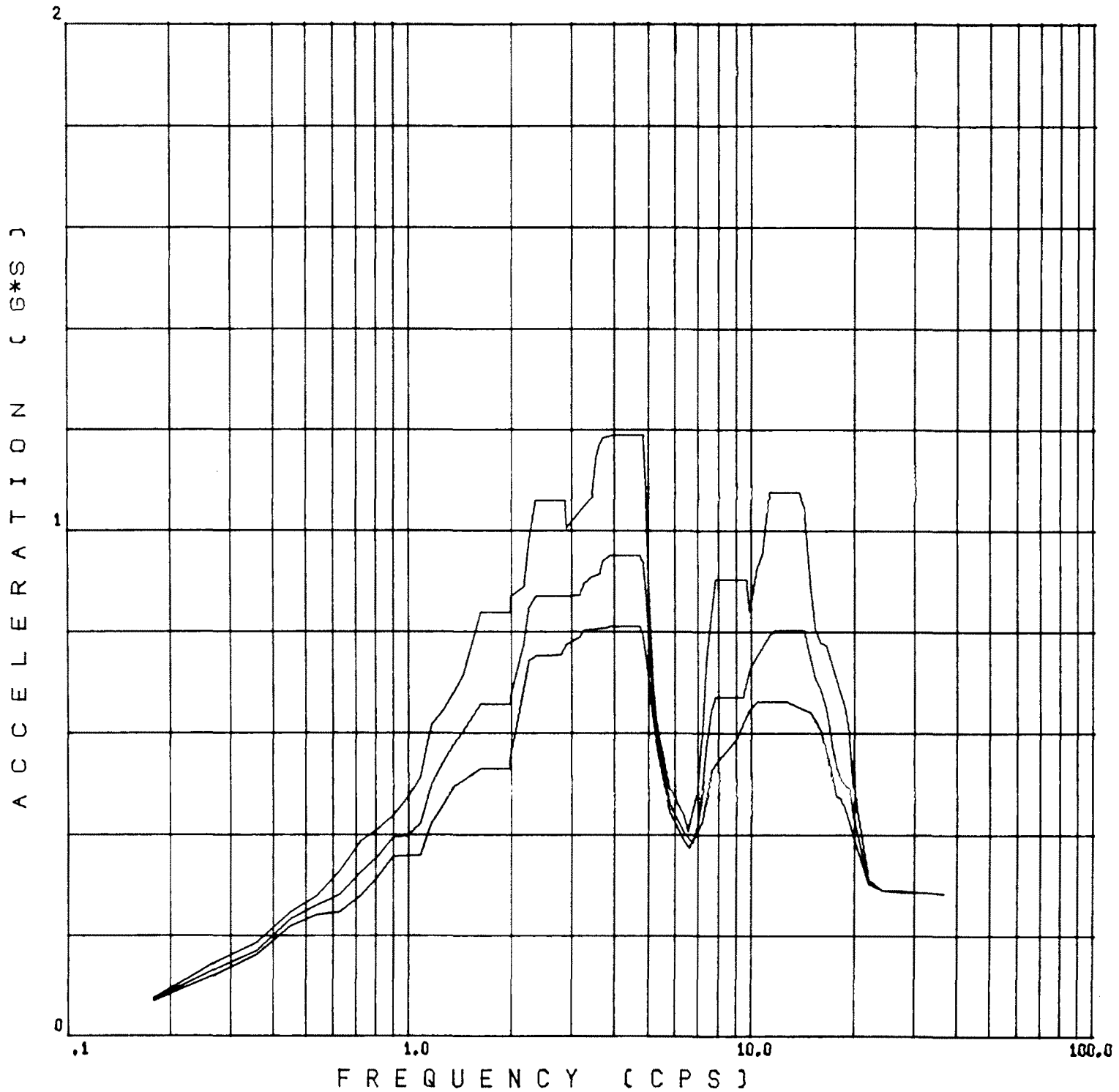
CALLAWAY PLANT

**FIGURE 3.7(B)-15F
SPECTRA - CONTAINMENT BUILDING
SSE
EAST-WEST DIRECTION
STEAM GENERATOR UPPER SUPPORT
STERLING SITE**

Figure 3.7(B)-15G Deleted

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

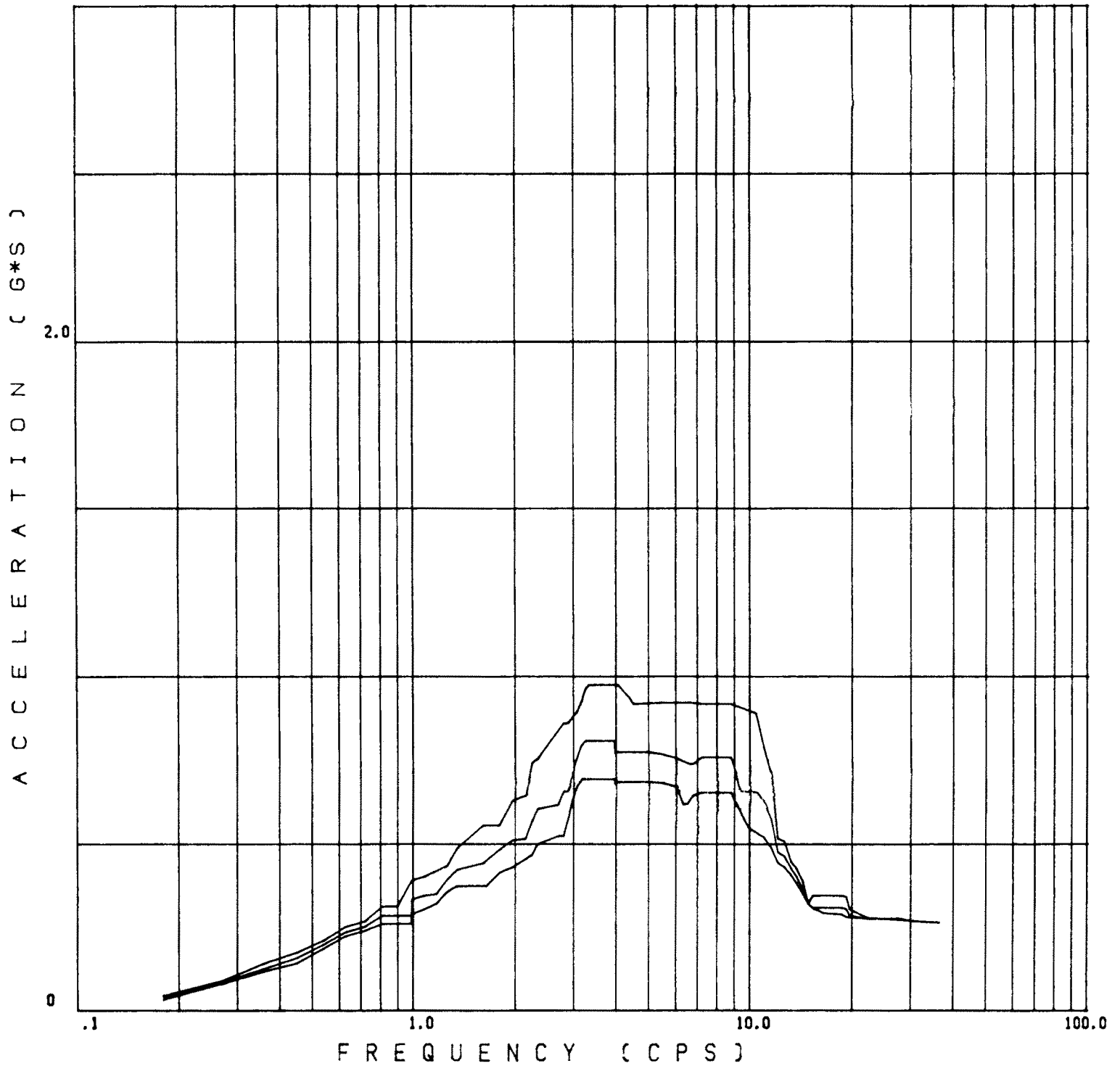
Rev. OL-0
6/86

CALLAWAY PLANT

FIGURE 3.7(B)-15H
SPECTRA - CONTAINMENT BUILDING
SSE
EAST-WEST DIRECTION
STEAM GENERATOR UPPER SUPPORT
WOLF CREEK SITE

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

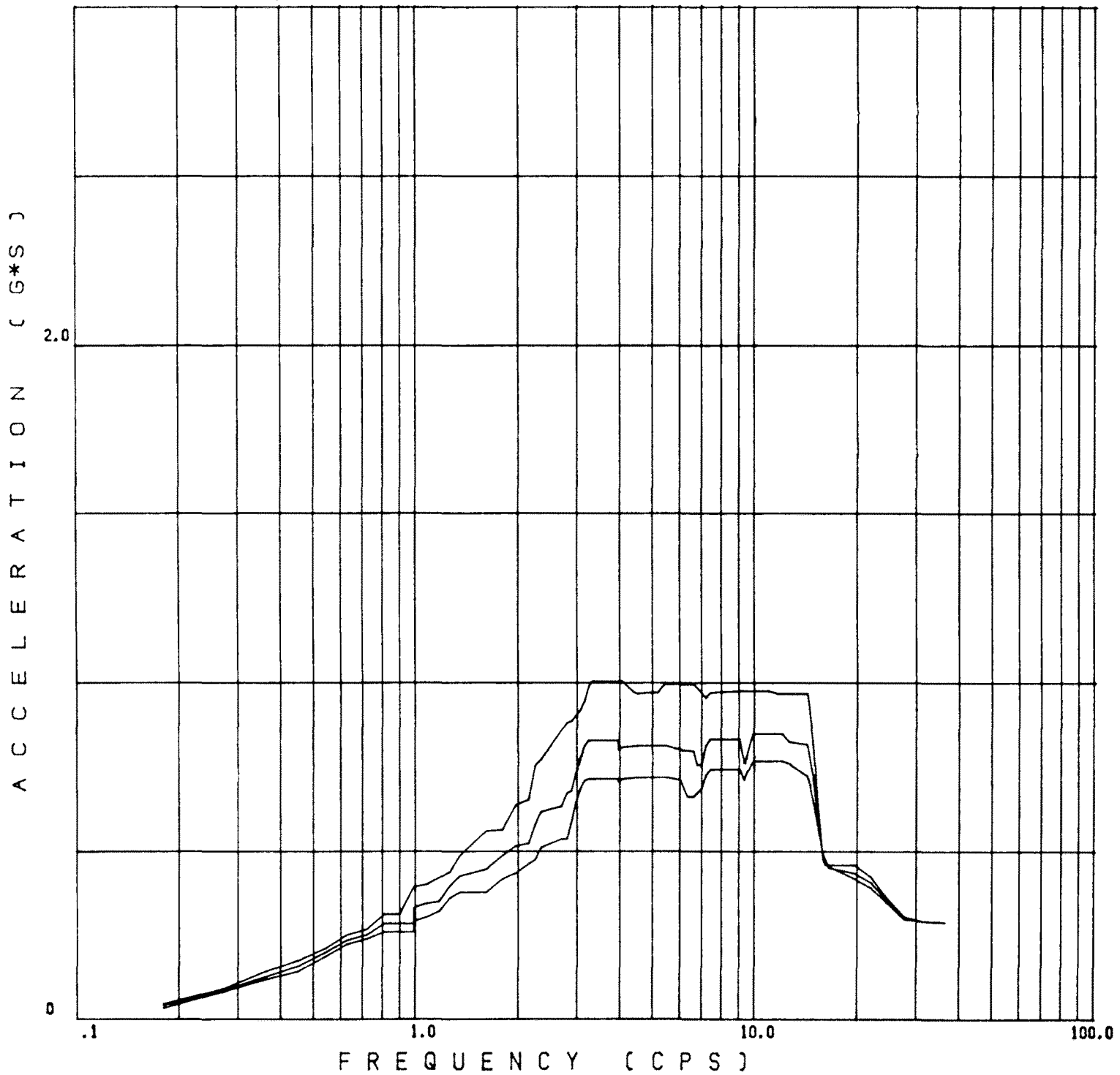
EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

Rev. OL-0
6/86

CALLAWAY PLANT
FIGURE 3.7(B)-15I SPECTRA - CONTAINMENT BUILDING SSE VERTICAL DIRECTION STEAM GENERATOR UPPER SUPPORT CALLAWAY SITE

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

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6/86

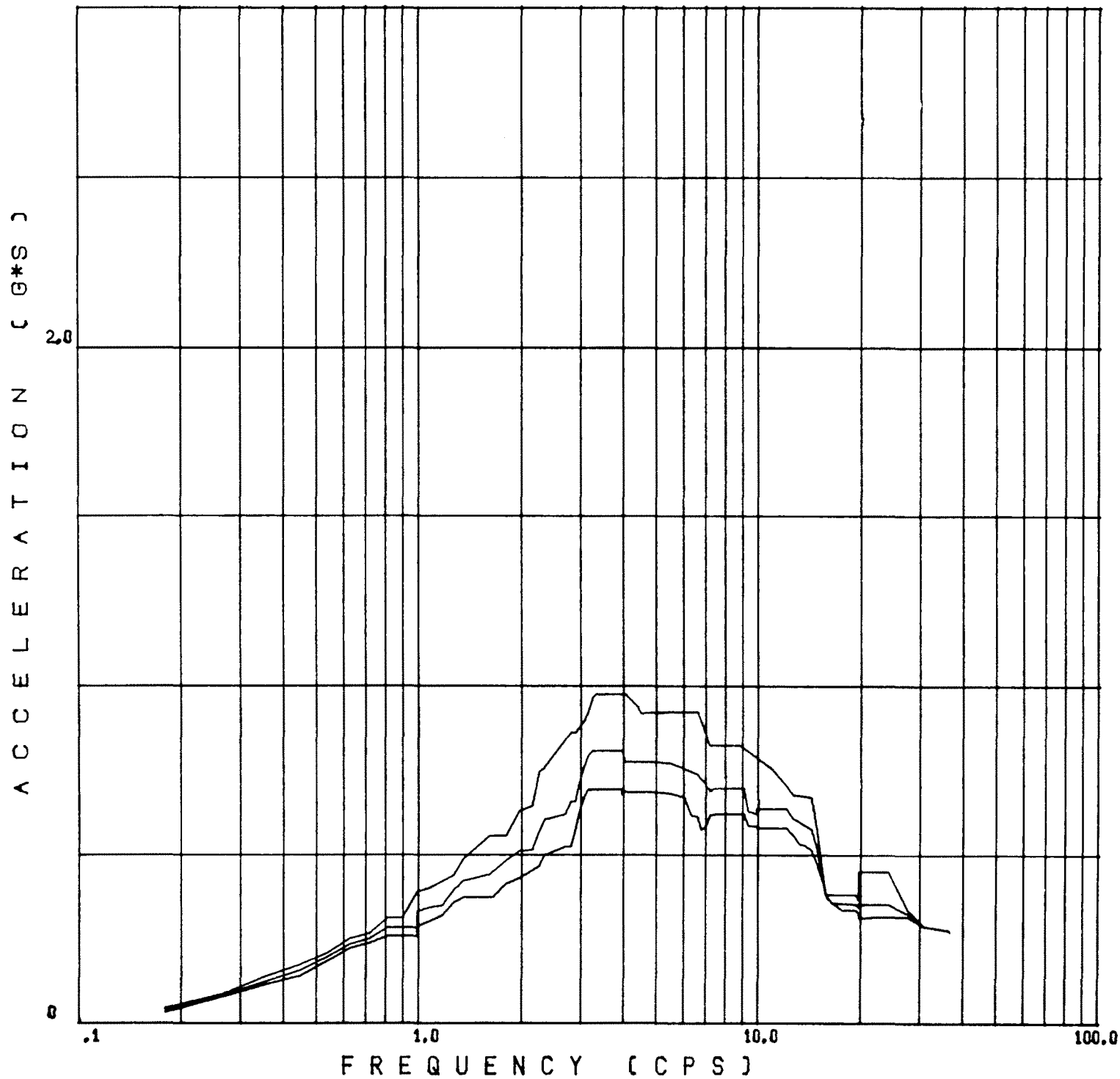
CALLAWAY PLANT

FIGURE 3.7(B)-15J
SPECTRA - CONTAINMENT BUILDING
SSE
VERTICAL DIRECTION
STEAM GENERATOR UPPER SUPPORT
STERLING SITE

Figure 3.7(B)-15K Deleted

DAMPING VALUES

.0300, .0500, .0700,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6''
REF. FIGURE 3.7(B)-17

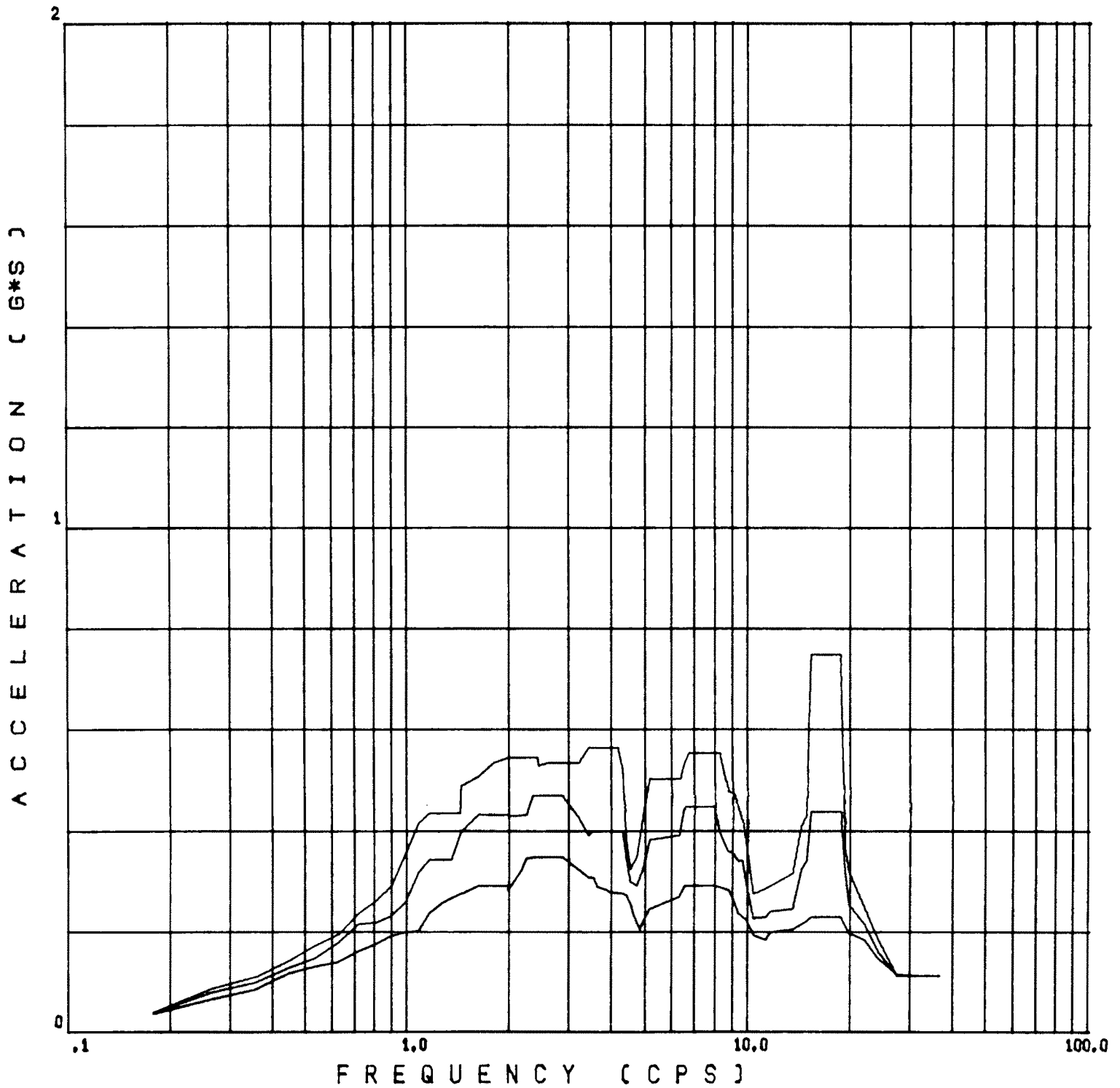
Rev. OL-0
6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-15L
SPECTRA - CONTAINMENT BUILDING
SSE
VERTICAL DIRECTION
STEAM GENERATOR UPPER SUPPORT
WOLF CREEK SITE**

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6''
REF. FIGURE 3.7(B)-17

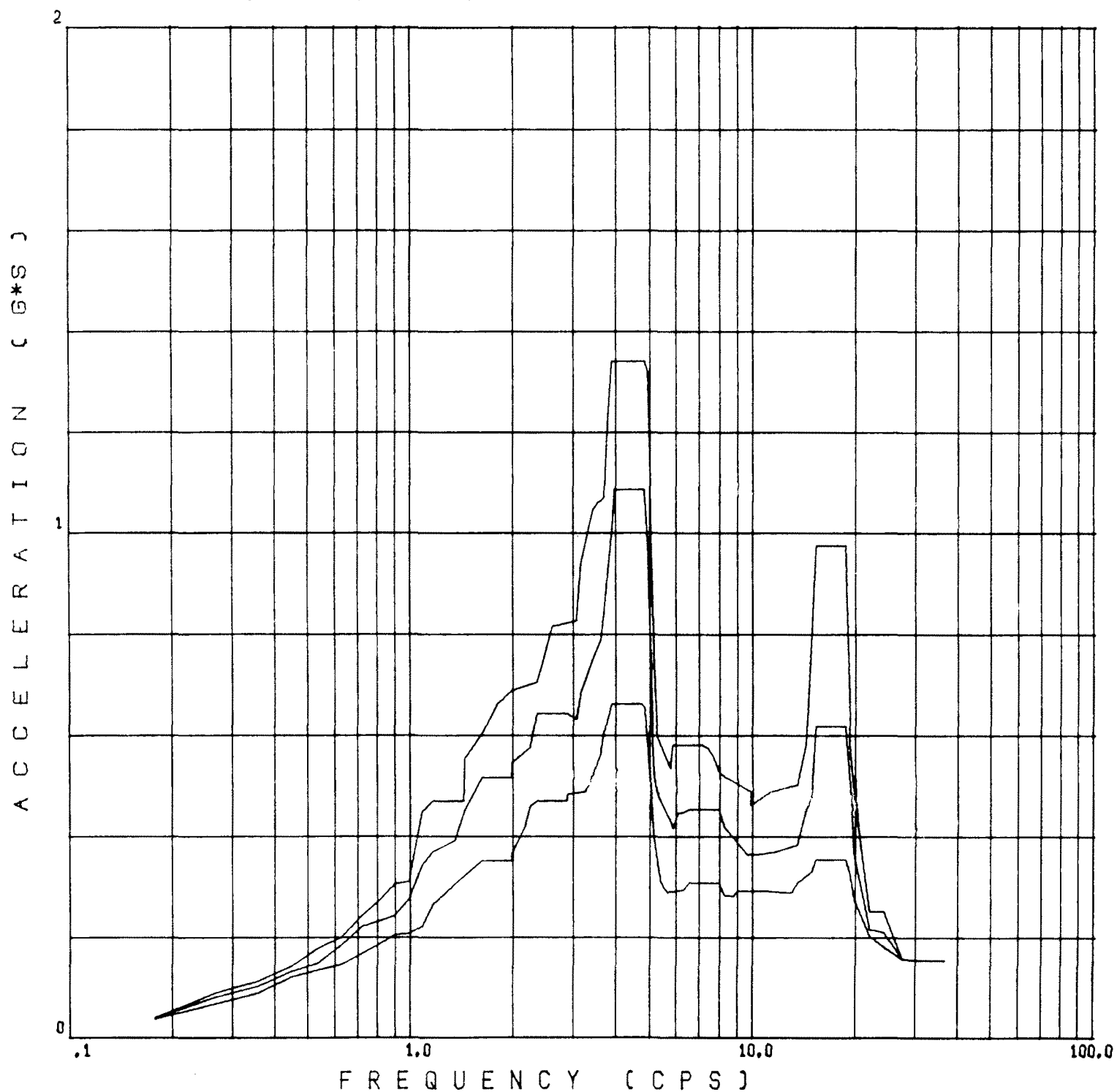
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6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-15M
SPECTRA - CONTAINMENT BUILDING
OBE
NORTH-SOUTH DIRECTION
STEAM GENERATOR UPPER SUPPORT
CALLAWAY SITE**

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

Rev. OL-0
6/86

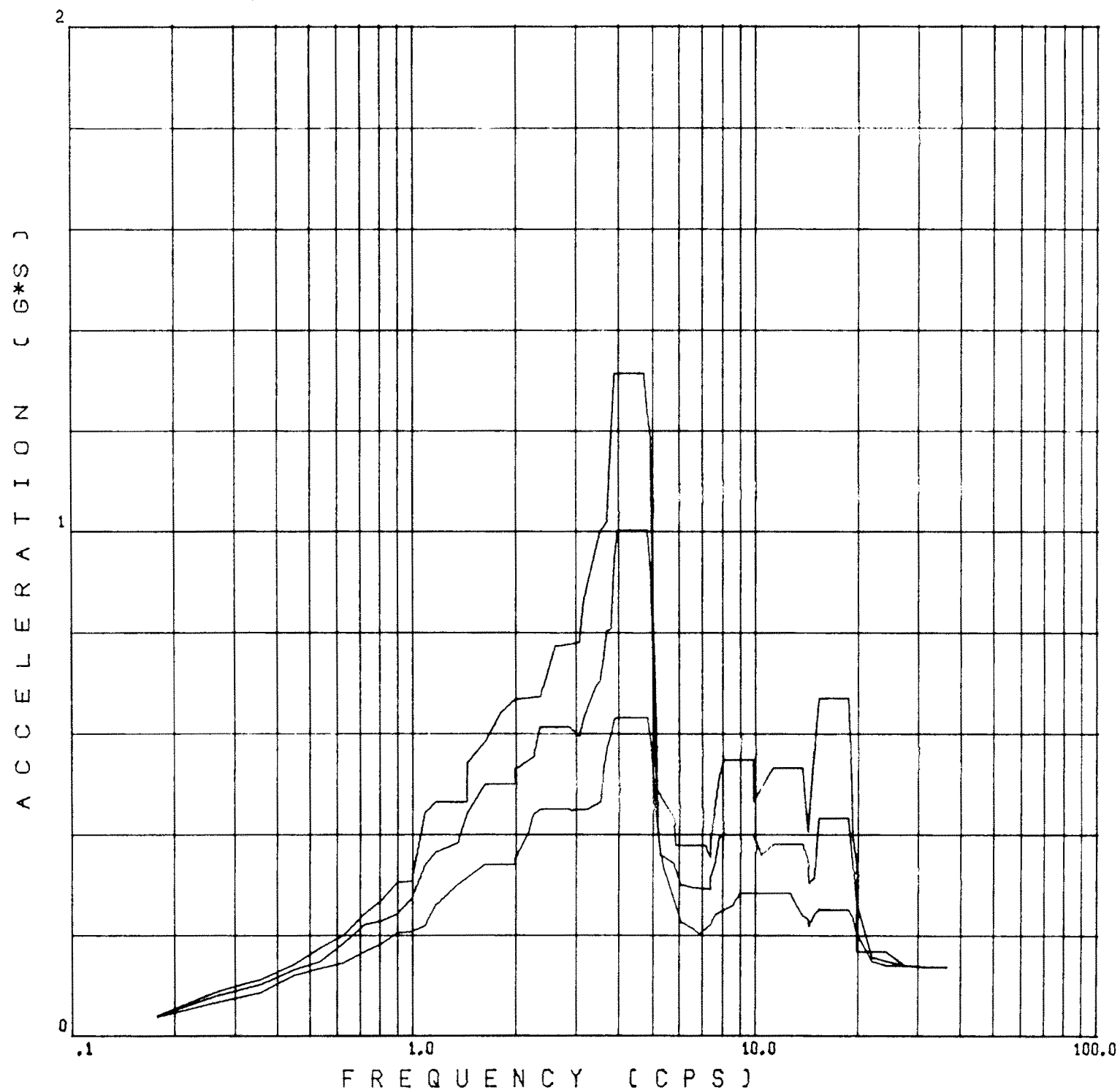
CALLAWAY PLANT

**FIGURE 3.7(B)-15N
SPECTRA - CONTAINMENT BUILDING
OBE
NORTH-SOUTH DIRECTION
STEAM GENERATOR UPPER SUPPORT
STERLING SITE**

Figure 3.7(B)-150 Deleted

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6''
REF. FIGURE 3.7(B)-17

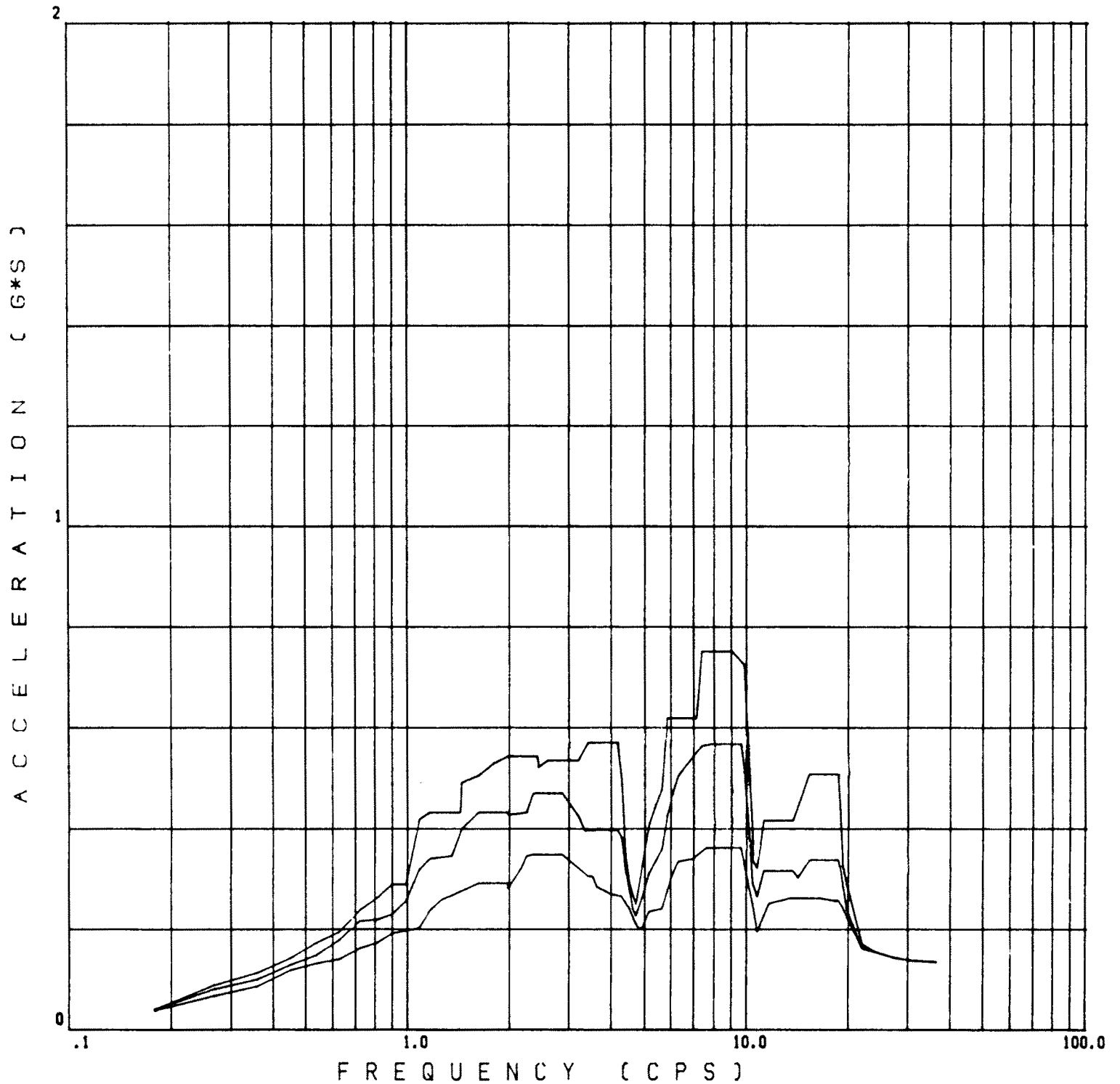
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6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-15P
SPECTRA - CONTAINMENT BUILDING
OBE
NORTH-SOUTH DIRECTION
STEAM GENERATOR UPPER SUPPORT
WOLF CREEK SITE**

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

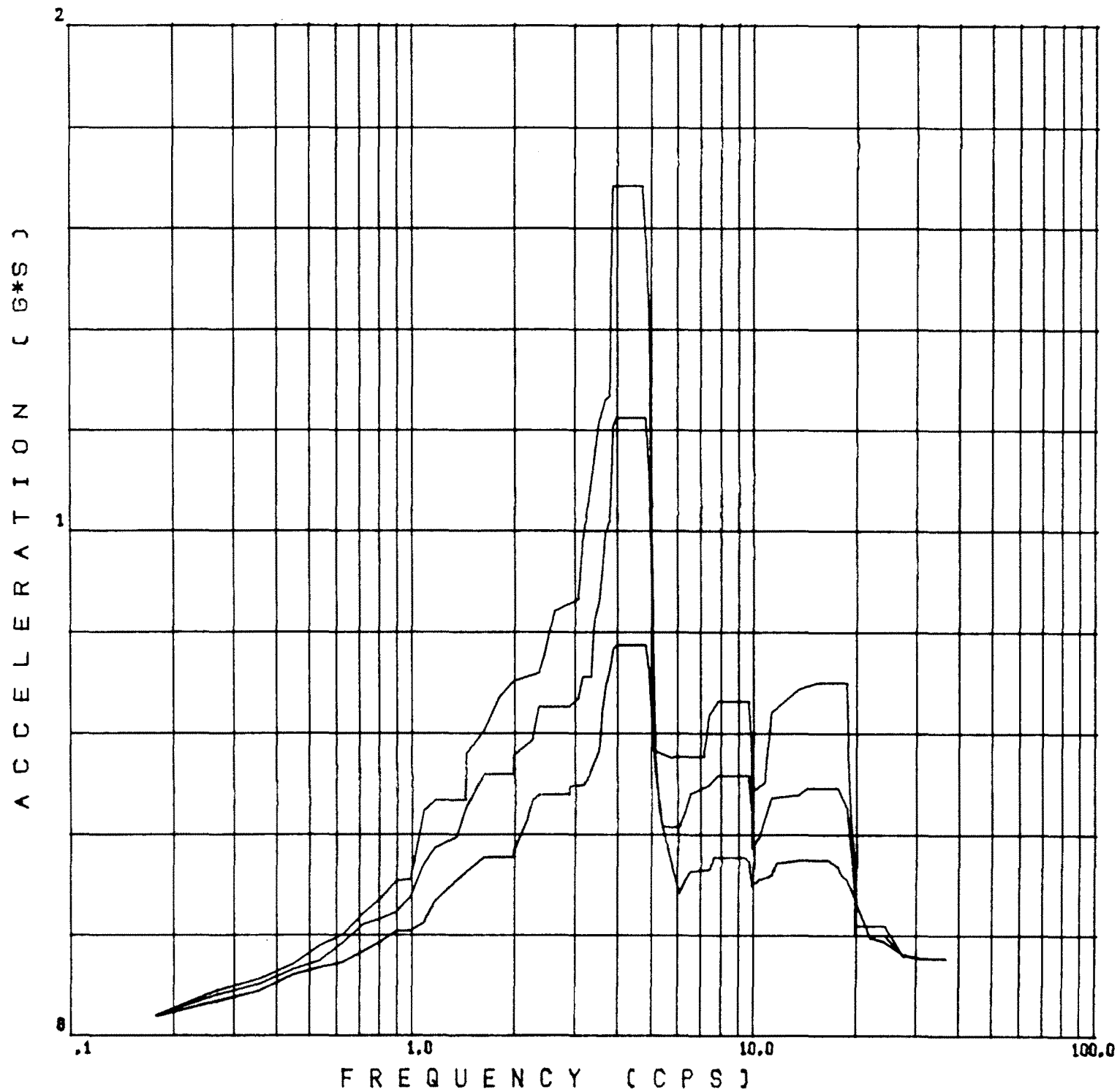
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6/86

CALLAWAY PLANT

FIGURE 3.7(B)-15Q
SPECTRA - CONTAINMENT BUILDING
OBE
EAST-WEST DIRECTION
STEAM GENERATOR UPPER SUPPORT
CALLAWAY SITE

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

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6/86

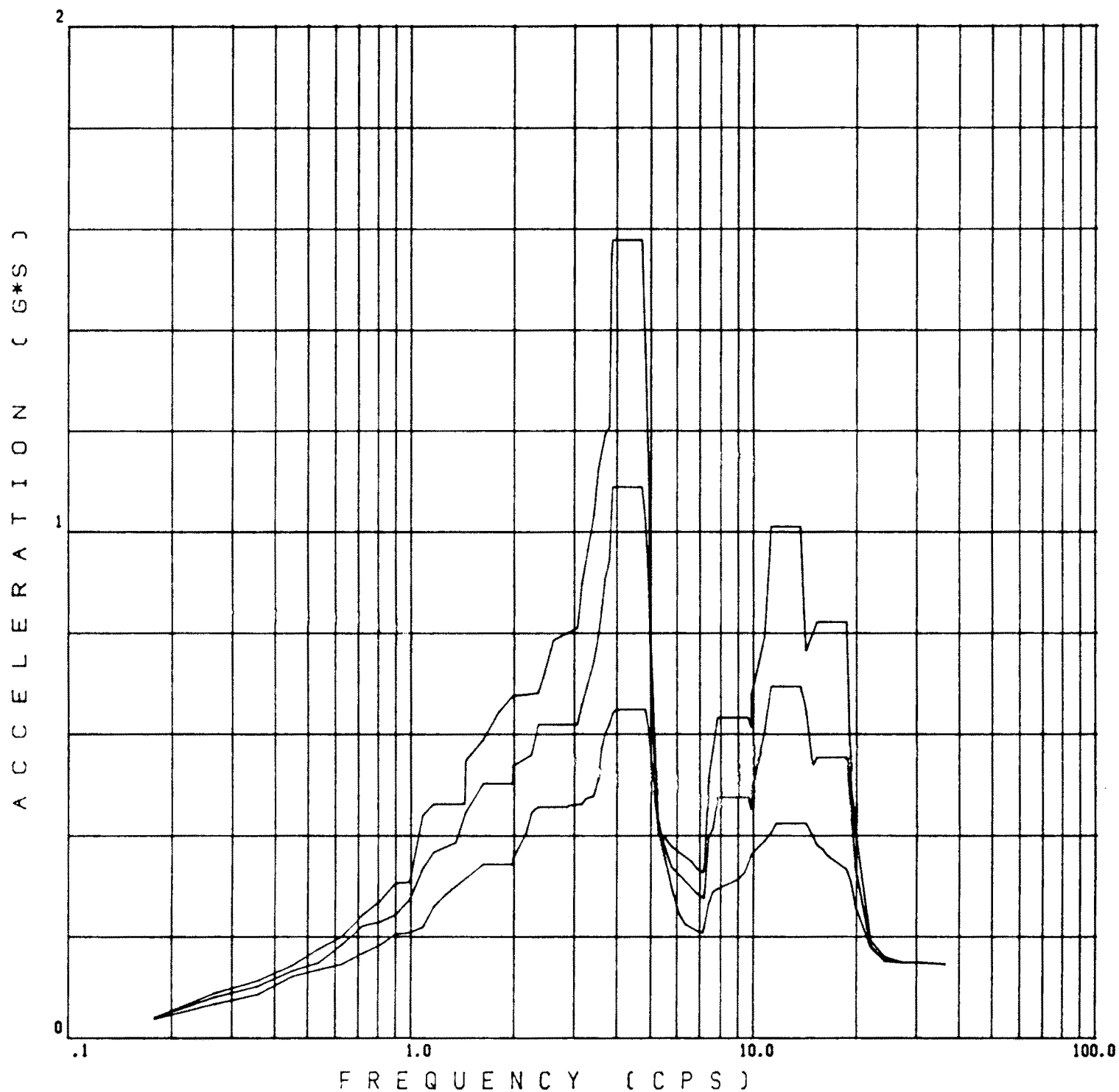
CALLAWAY PLANT

**FIGURE 3.7(B)-15R
SPECTRA - CONTAINMENT BUILDING
OBE
EAST-WEST DIRECTION
STEAM GENERATOR UPPER SUPPORT
STERLING SITE**

Figure 3.7(B)-15S Deleted

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

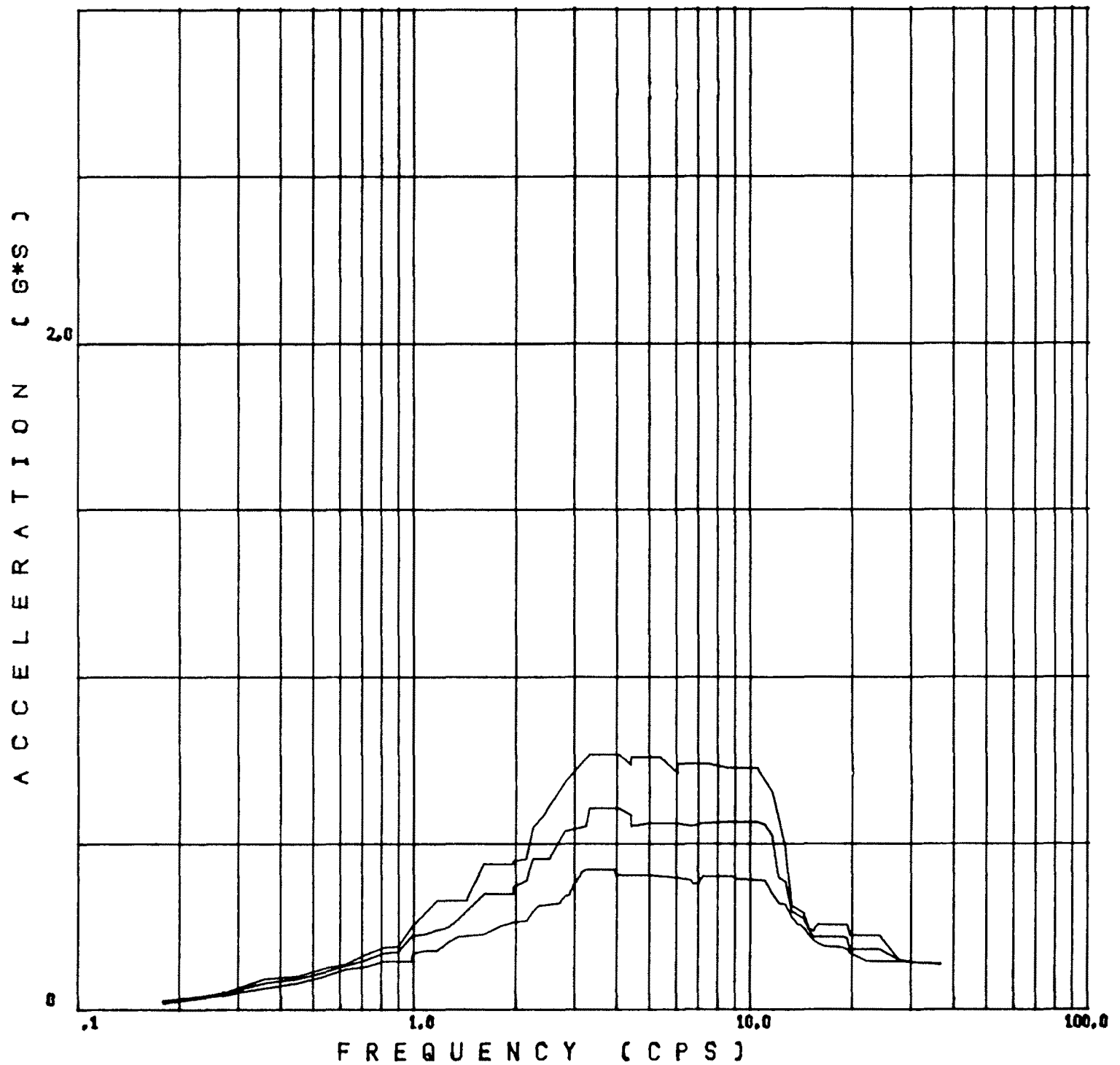
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6/86

CALLAWAY PLANT

FIGURE 3.7(B)-15T
SPECTRA - CONTAINMENT BUILDING
OBE
EAST-WEST DIRECTION
STEAM GENERATOR UPPER SUPPORT
WOLF CREEK SITE

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

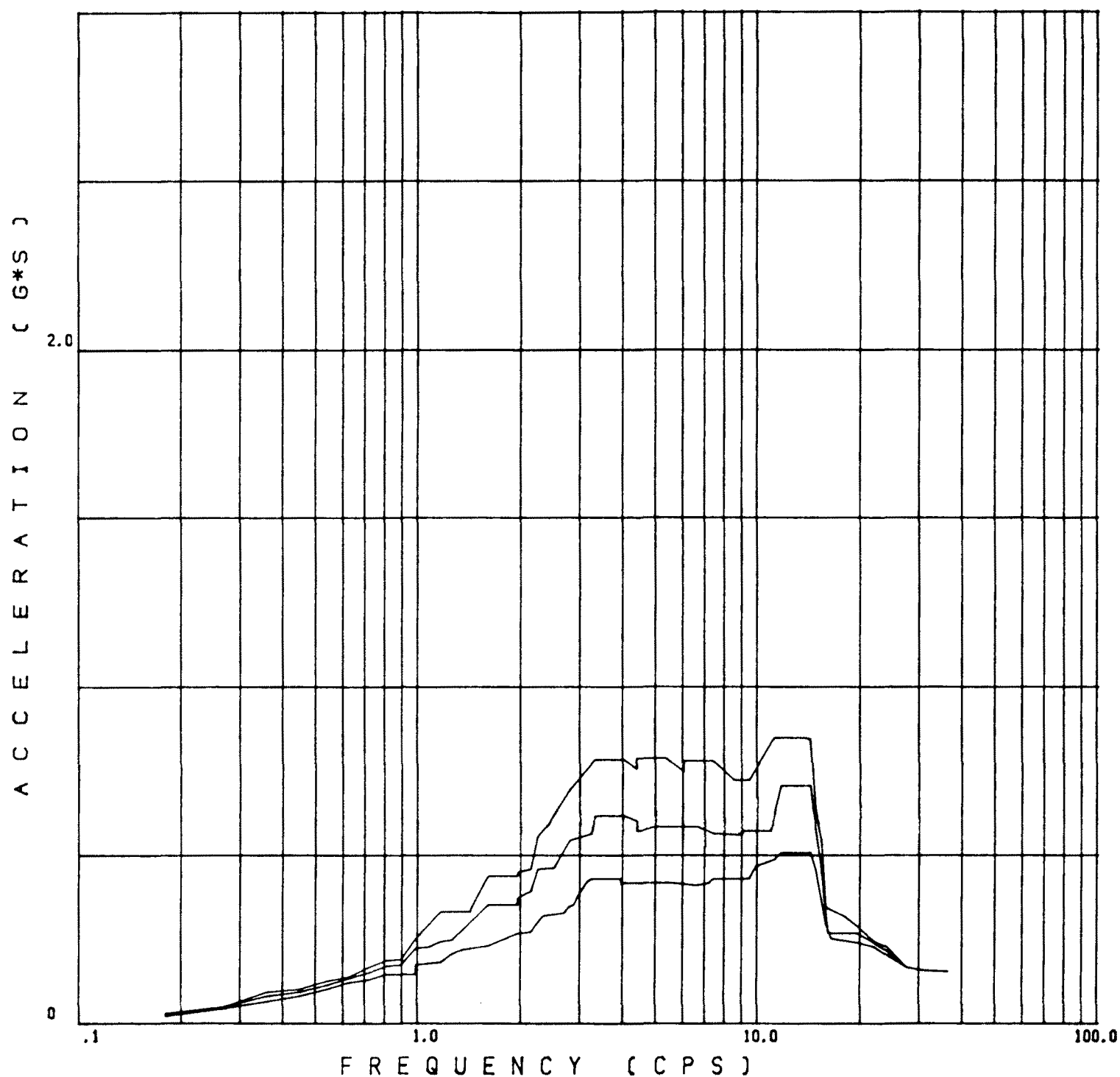
Rev. OL-0
6/86

CALLAWAY PLANT

FIGURE 3.7(B)-15U
SPECTRA - CONTAINMENT BUILDING
OBE
VERTICAL DIRECTION
STEAM GENERATOR UPPER SUPPORT
CALLAWAY SITE

DAMPING VALUES

.0100, .0200, .0500,



DESIGN FLOOR RESPONSE SPECTRA

EL. 2047' - 6"
REF. FIGURE 3.7(B)-17

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6/86

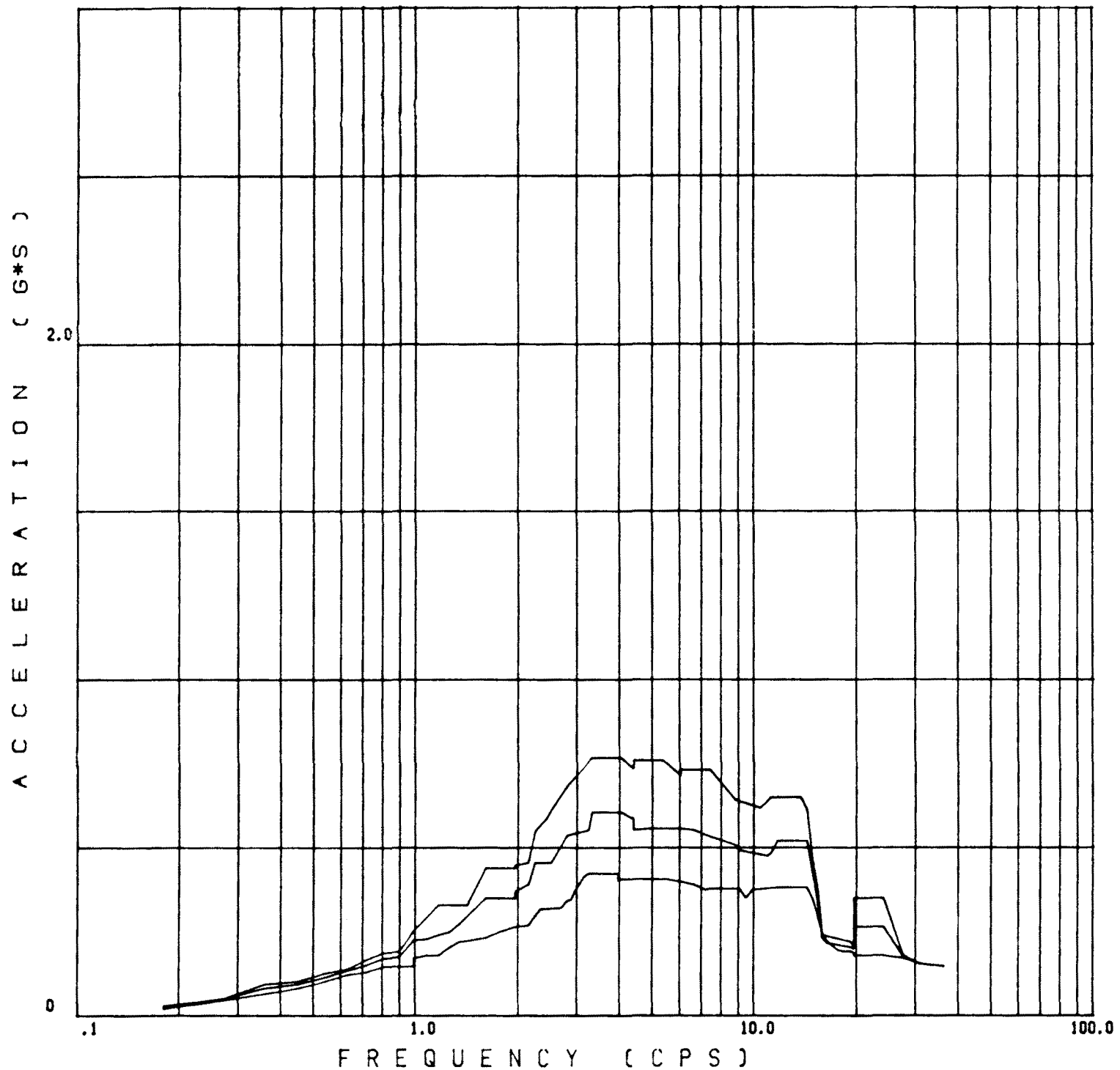
CALLAWAY PLANT

FIGURE 3.7(B)-15V
SPECTRA - CONTAINMENT BUILDING
OBE
VERTICAL DIRECTION
STEAM GENERATOR UPPER SUPPORT
STERLING SITE

Figure 3.7(B)-15W Deleted

DAMPING VALUES

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DESIGN FLOOR RESPONSE SPECTRA

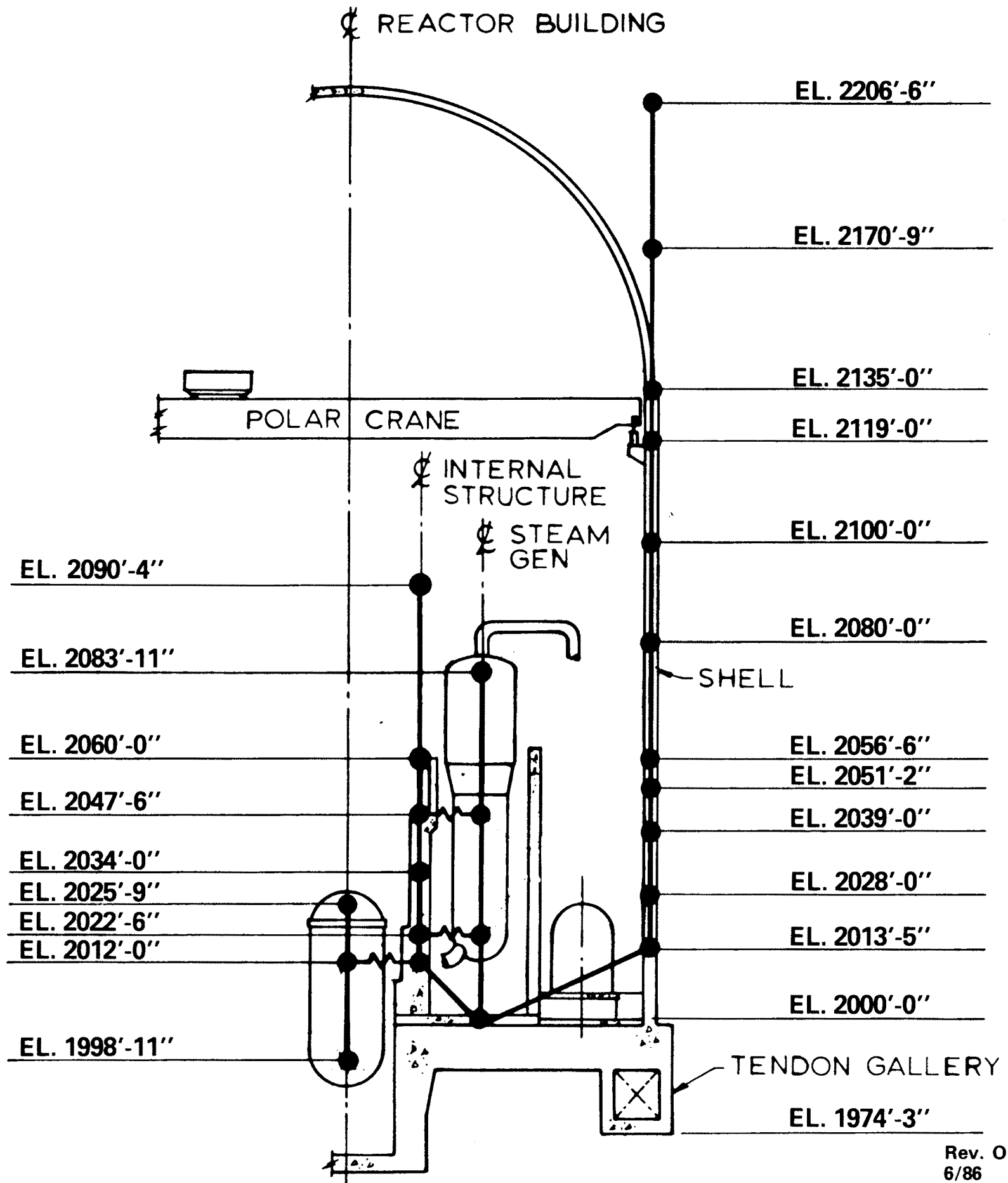
EL. 2047' - 6''
REF. FIGURE 3.7(B)-17

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6/86

CALLAWAY PLANT

**FIGURE 3.7(B)-15X
SPECTRA - CONTAINMENT BUILDING
OBE
VERTICAL DIRECTION
STEAM GENERATOR UPPER SUPPORT
WOLF CREEK SITE**

Figure 3.7(B)-16 Deleted

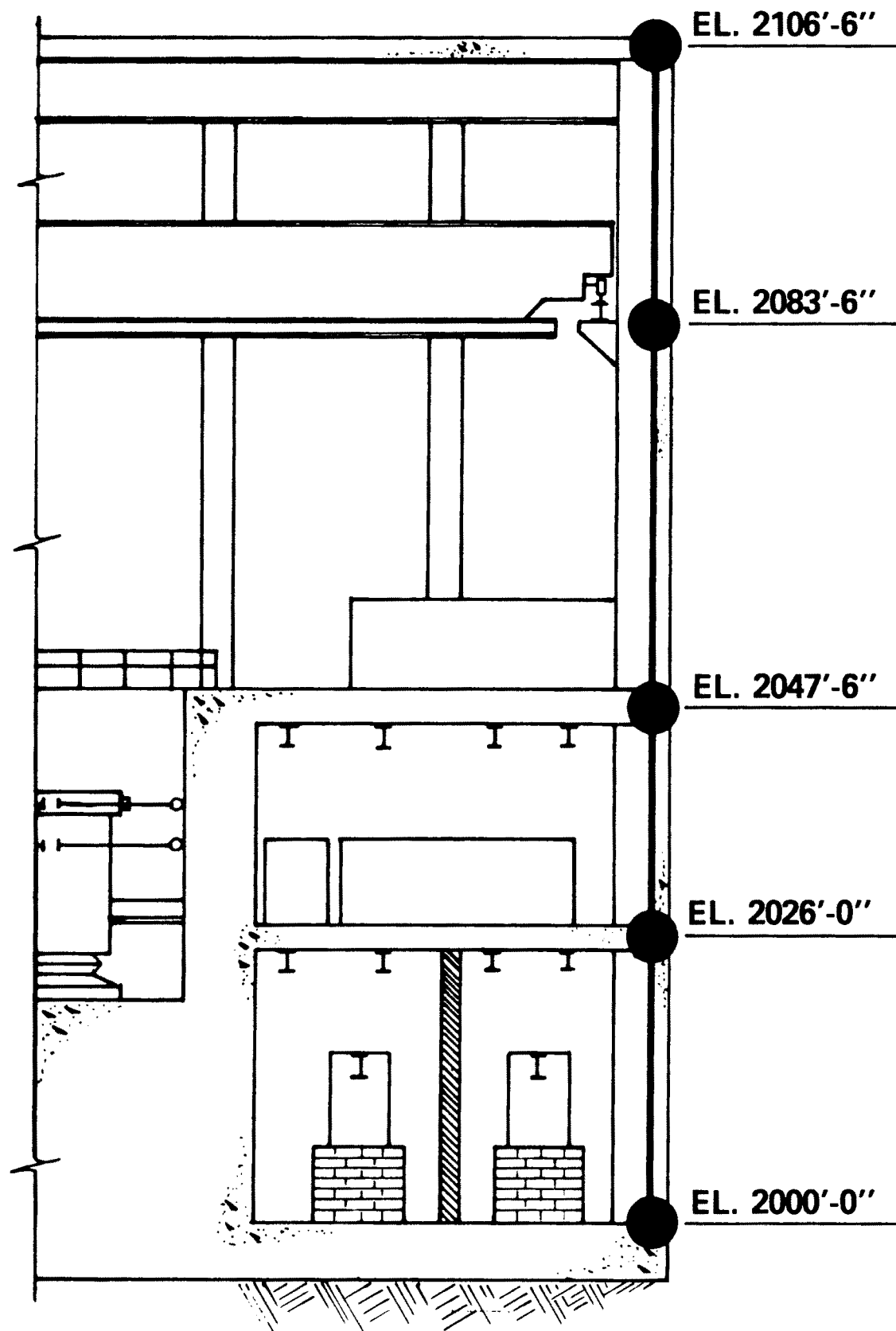


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CALLAWAY PLANT

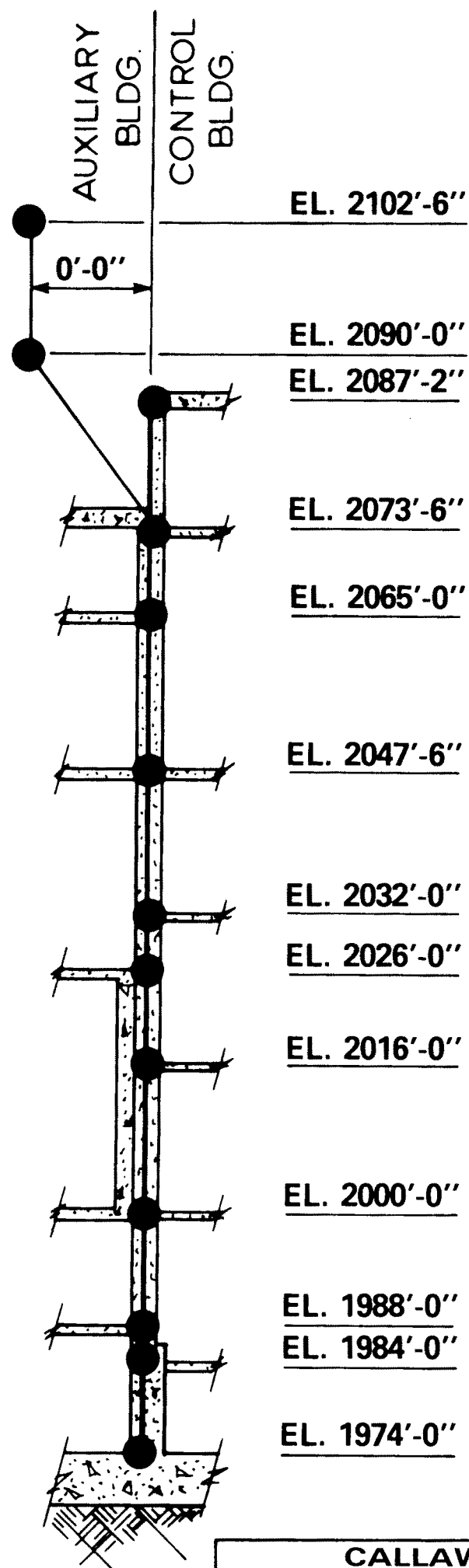
FIGURE 3.7(B)-17

**LUMPED-MASS/FLUSH
MODEL, CONTAINMENT
BUILDING**



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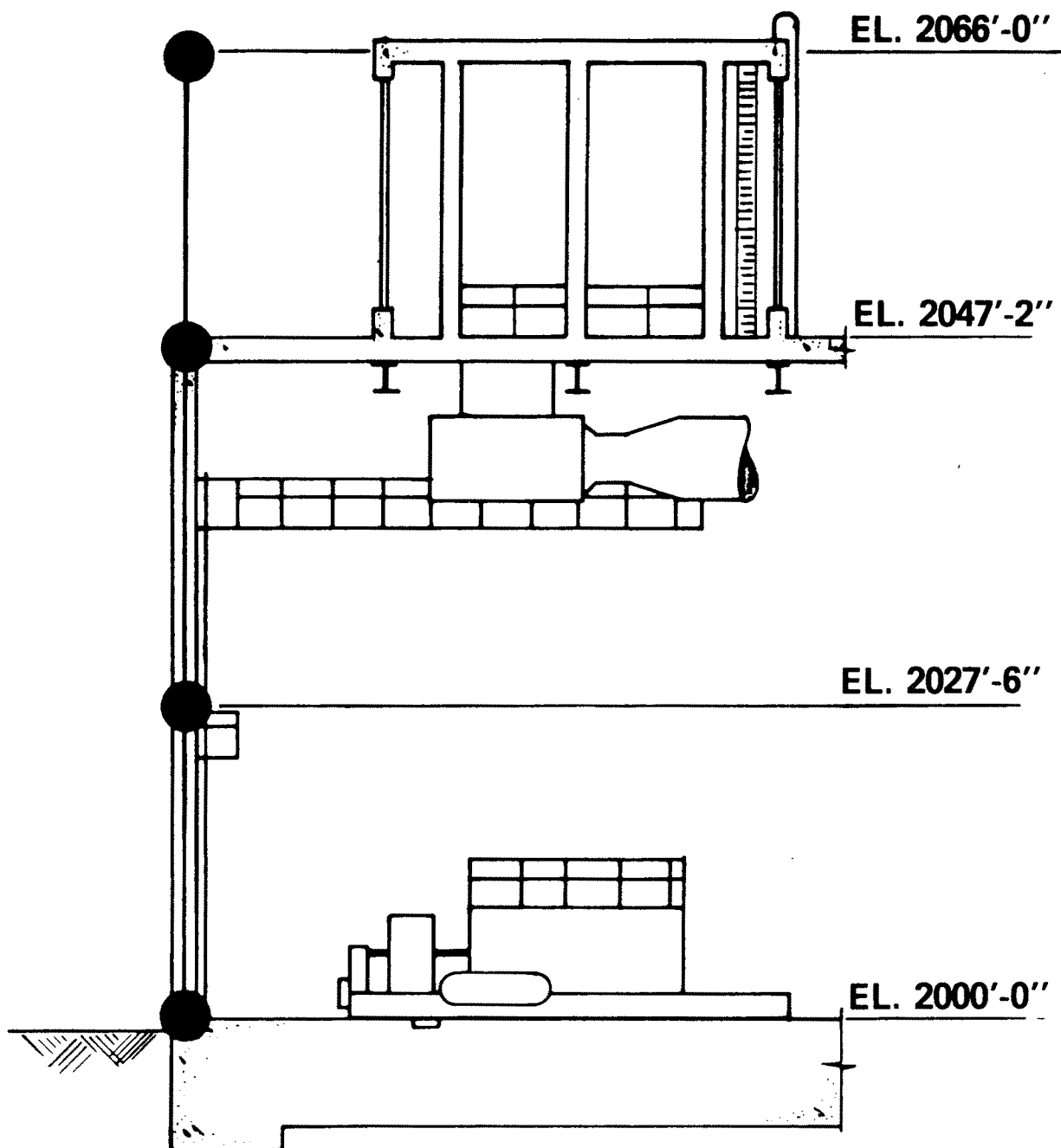
CALLAWAY PLANT
<p>FIGURE 3.7(B)-18</p> <p>LUMPED-MASS/FLUSH MODEL</p> <p>FUEL BUILDING</p>



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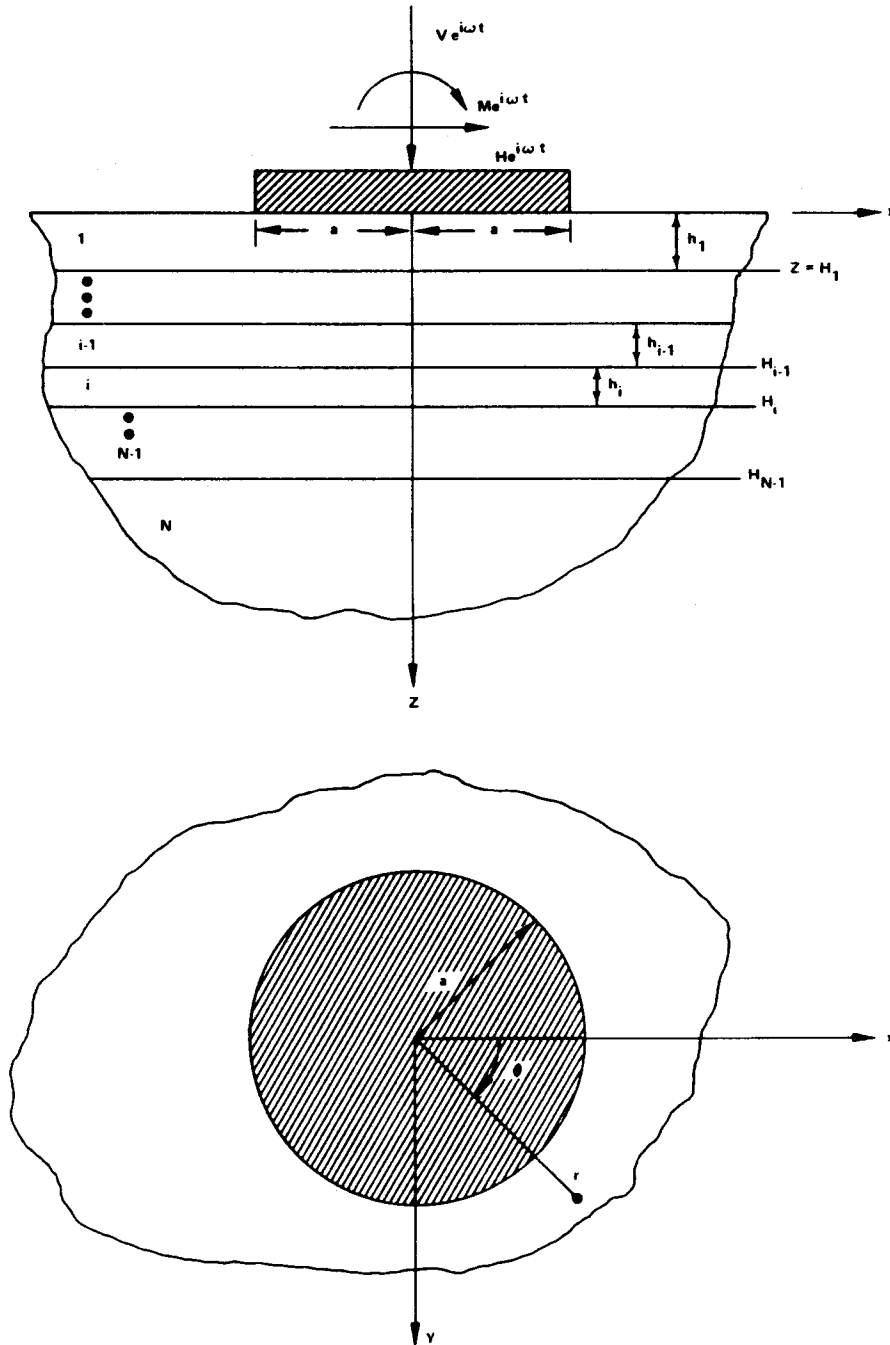
CALLAWAY PLANT

FIGURE 3.7(B)-19
LUMPED-MASS/FLUSH
MODEL AUXILIARY/CONTROL
BUILDING



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CALLAWAY PLANT
<p>FIGURE 3.7(B)-20</p> <p>LUMPED-MASS/FLUSH MODEL DIESEL GENERATOR BUILDING</p>

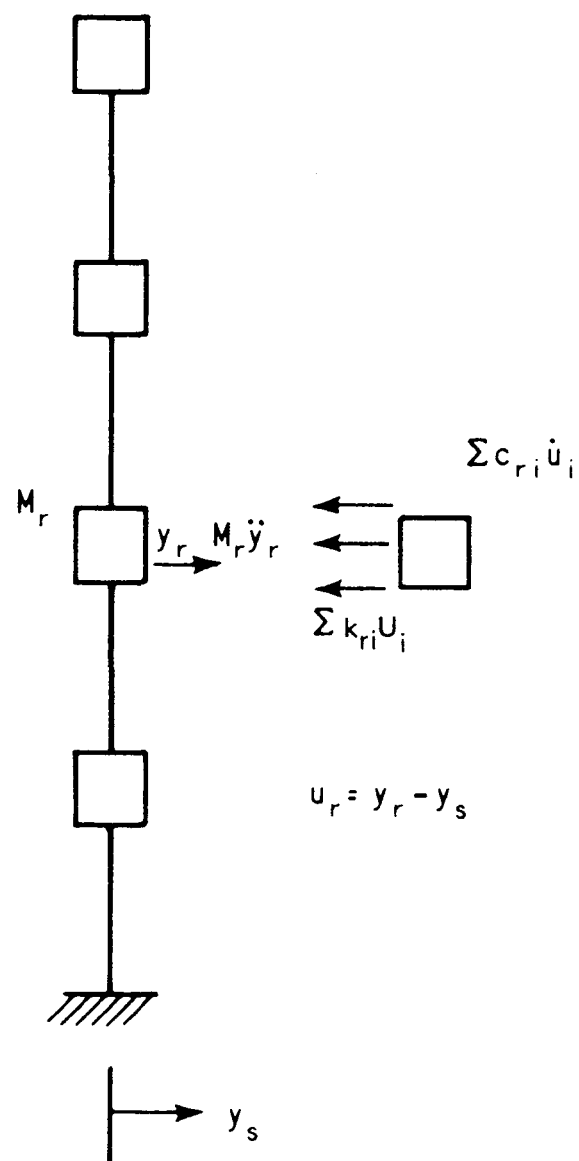


CALLAWAY PLANT

FIGURE 3.7(B) A-1

DESCRIPTION OF THE MODEL

REV. OL-14 12/04

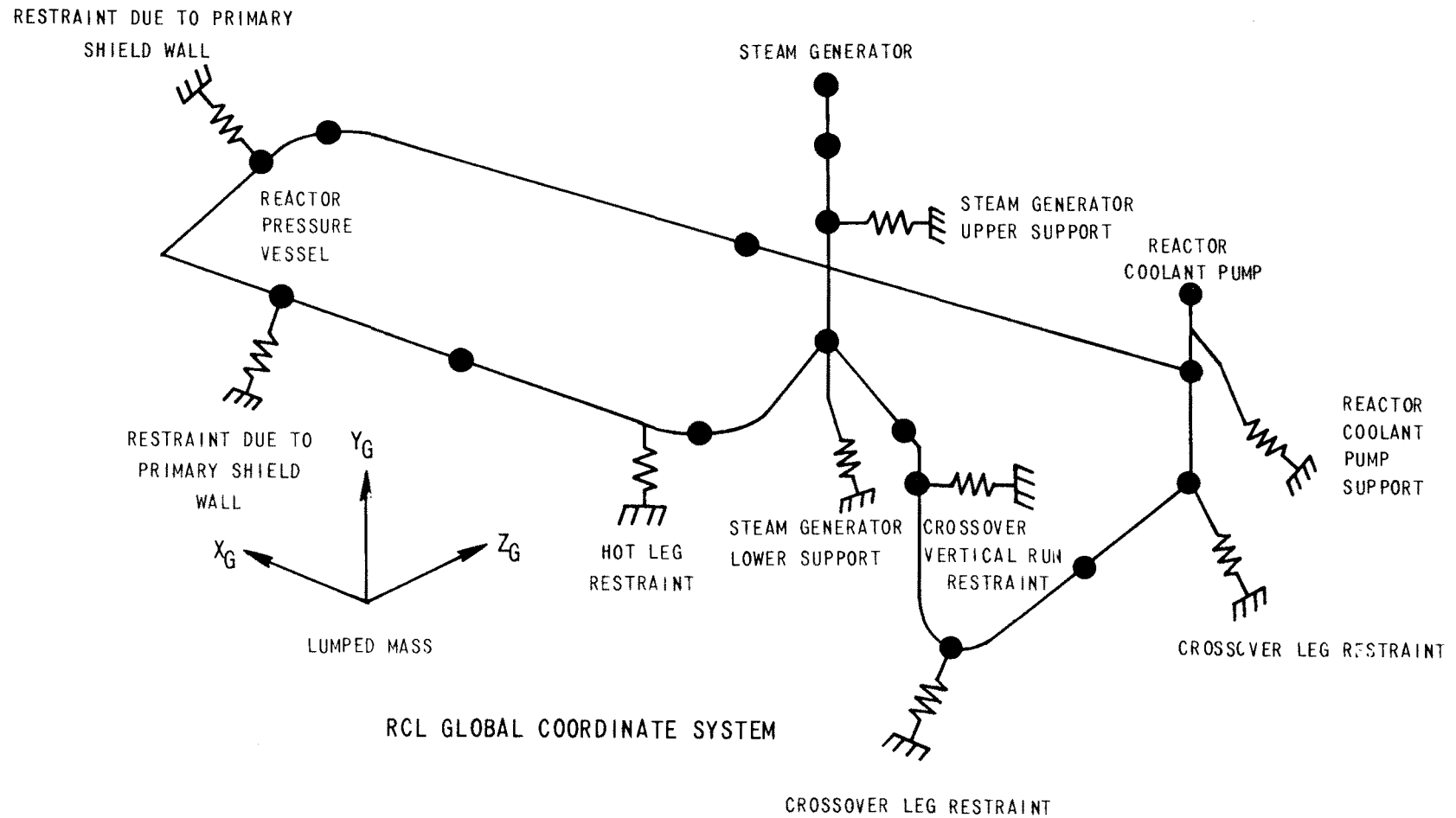


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CALLAWAY PLANT

FIGURE 3.7(N)-1

MULTI-DEGREE-OF-FREEDOM SYSTEM

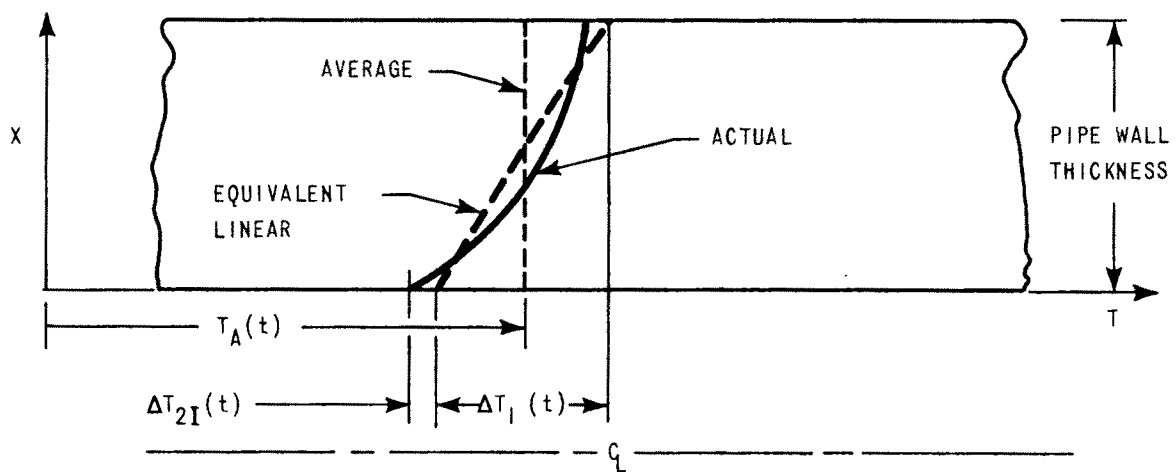


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6/86

CALLAWAY PLANT

FIGURE 3.9(N)-1

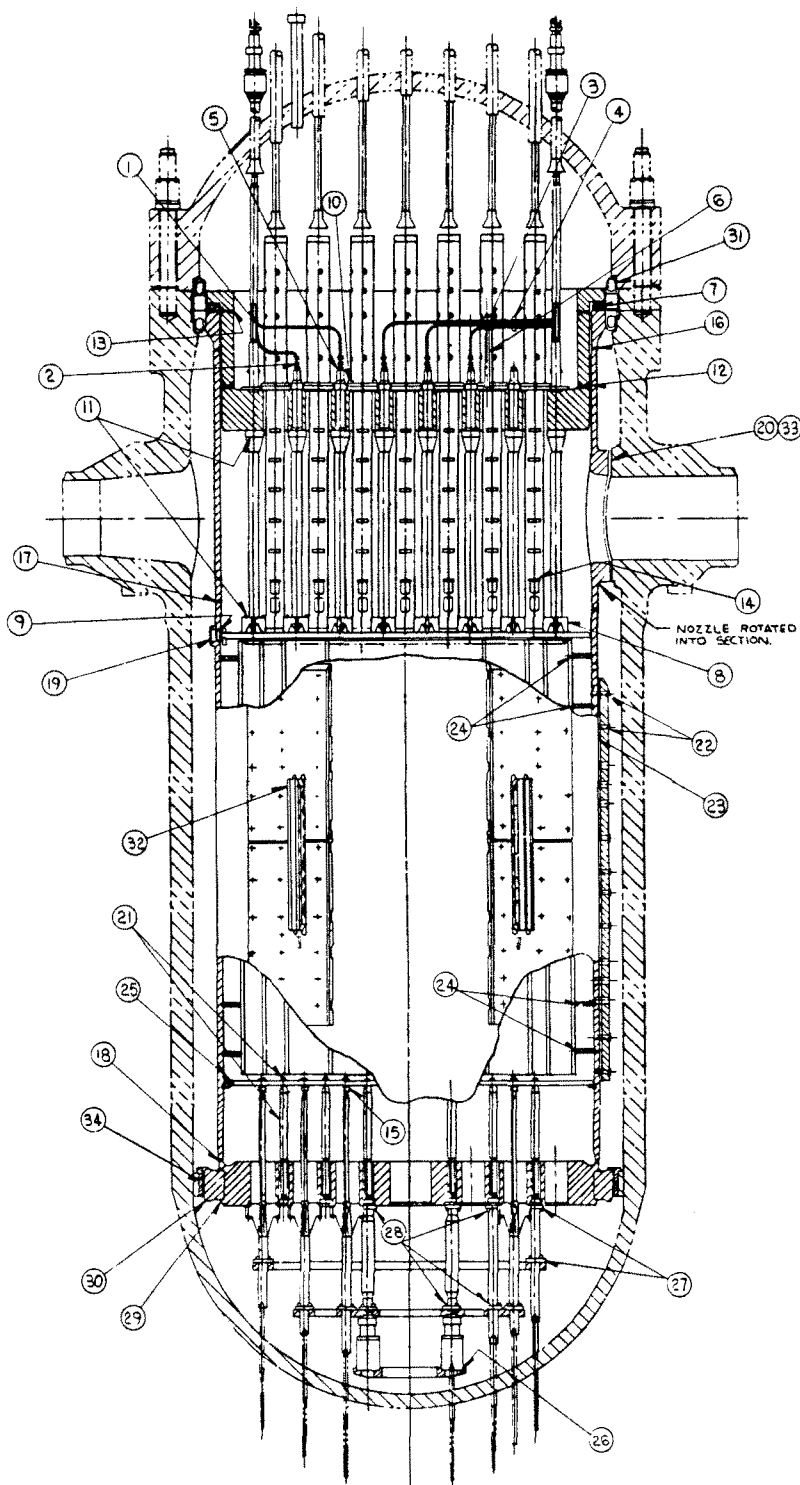
REACTOR COOLANT LOOP SUPPORTS
SYSTEM, DYNAMIC STRUCTURAL MODEL



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CALLAWAY PLANT

FIGURE 3.9(N)-2
THROUGH-WALL THERMAL GRADIENTS



STEP	FEATURES TO BE EXAMINED
1	1 THERMOCOUPLE CONDUIT CLAMPS INSIDE THE THERMOCOUPLE COLUMN
1	5 2 CONDUIT BRAGELON FITTINGS THEIR BANDINGS, AND THE TAB TYPE LOCKS
1	3 CLAMP ARRANGEMENTS AT THE MOUNTING BRACKET LOCATIONS
1	4 CONDUIT CLAMP WELDS
1	5 UPPER SUPPORT COLUMN HUT TO EXTENSION WELDS
1	6 ACCESSIBLE CONDUIT SUPPORT BRACKET WELDS
6	7 HOLD DOWN SPRING INTERFACE SURFACE CONDITION
1	8 ACCESSIBLE WELDS ON SUPPORT COLUMN LOWER NOZZLES
3	9 UPPER CORE PLATE INSERTS
2	10 THERMOCOUPLE COLUMN AND GUIDE TUBE SPHER LOCKING DEVICES
2	11 ACCESSIBLE SUPPORT COLUMN AND CORE PLATE INSERT SCREW LOCKING DEVICES
1	12 UPPER SUPPORT SKIRT TO PLATE GIRTH WELD
1	13 UPPER SUPPORT SKIRT TO FLANGE GIRTH WELD
1	14 ACCESSIBLE GUIDE TUBE WELDS
4	15 ACCESSIBLE (2) INSTRUMENTATION GUIDE COLUMN LOCKING COLLARS NEAREST THE HANWAY
1	16 UPPER BARREL TO FLANGE GIRTH WELD
1	17 UPPER BARREL TO LOWER BARREL GIRTH WELD
1	18 LOWER BARREL TO CORE SUPPORT GIRTH WELD
3	19 UPPER CORE PLATE ALIGNING PIN WELDS AND BEARING SURFACES
6	20 OUTLET NOZZLE INTERFACE SURFACE CONDITION
1	21 CORE SUPPORT COLUMNS AND THEIR SCREW LOCKING DEVICES
1	22 NEUTRON SHIELD PANEL SCREW LOCKING DEVICES
7	23 INTERFACE SURFACES AT THE SPACER PADS ALONG THE TOP AND BOTTOM ENDS OF THE NEUTRON PANELS
1	24 Baffle Assembly SCREW LOCKING ARRANGEMENTS AT THE TWO TOP AND THE TWO BOTTOM FORMER ELEVATIONS
7	25 LOWER CORE PLATE TO CORE BARREL SCREW LOCKING DEVICES ACCESSIBLE AT THE 0°, 90°, 180°, AND 270° AXES
1	26 SECONDARY CORE SUPPORT HOUSING TO BASE PLATE WELD
2	27 LOCKING DEVICES AND CONTACT OF THE BOTTOM INSTRUMENTATION GUIDE COLUMNS WHERE ATTACHED TO THE CORE SUPPORT AND TIE PLATES
1	28 LOCKING DEVICES OF THE SECONDARY CORE SUPPORT COLUMNS WHERE ATTACHED TO THE CORE SUPPORT AND TIE PLATE
1	29 RADIAL SUPPORT KEY WELDS
1	30 RADIAL SUPPORT KEY LOCKING ARRANGEMENTS AND BEARING SURFACES
1	31 HEAD AND VESSEL ALIGNING PINS SCREW LOCKING DEVICES AND BEARING SURFACES
1	32 IRRADIATION SPECIMEN GUIDE SCREW LOCKING DEVICES AND DOWEL PINS
6	33 VESSEL NOZZLE INTERFACE SURFACE CONDITION
1	34 VESSEL CLEVIS LOCKING ARRANGEMENTS AND BEARING SURFACES

NOTES:

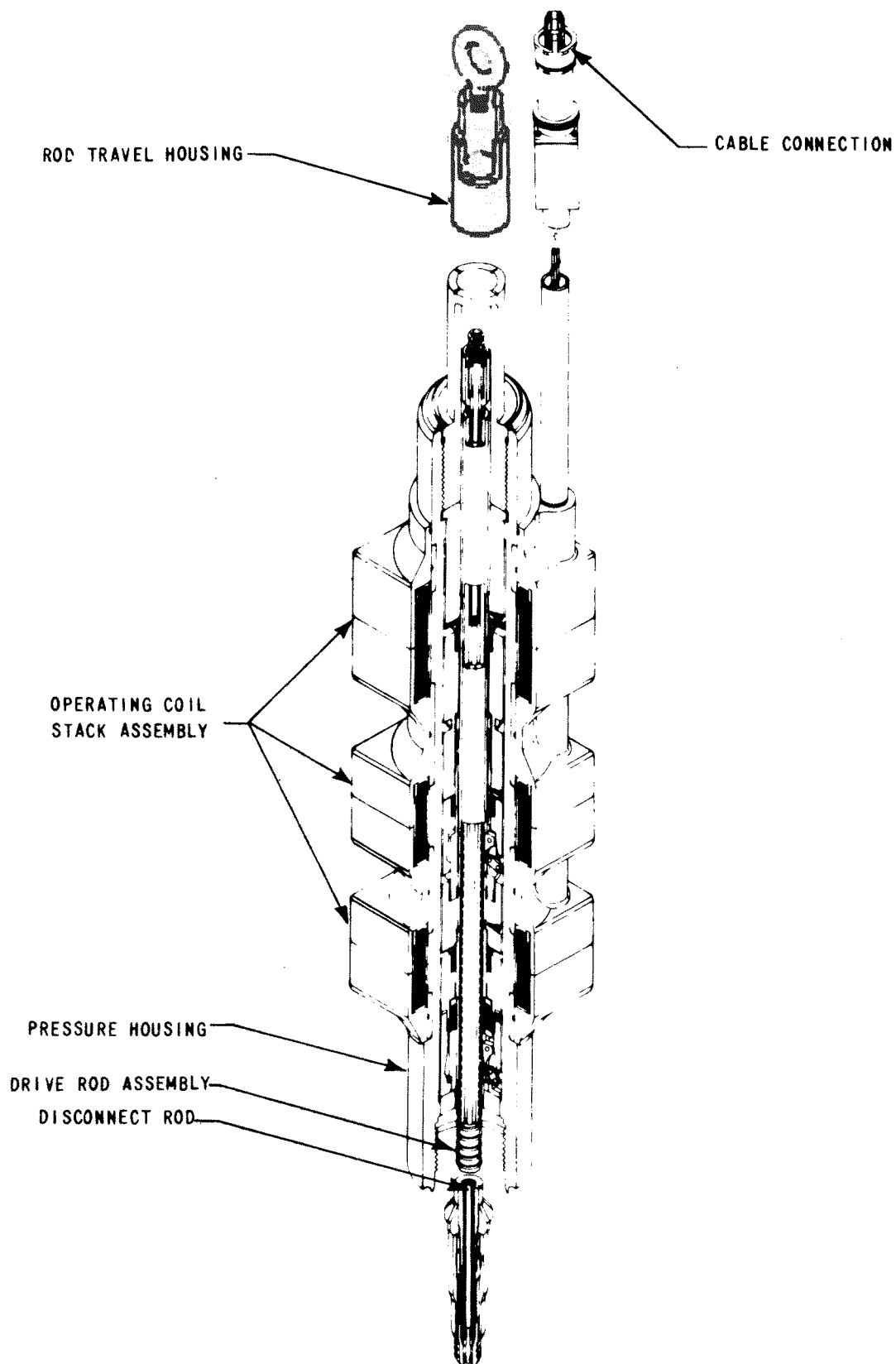
1. VISUALLY EXAMINE WELDS USING 5-10X MAGNIFICATION. NO CRACKS ALLOWED
2. VERIFY THAT LOCKING DEVICES ARE CRIMPED AND UNDAMAGED
3. VERIFY THAT INSERTS ARE SEATED (.0015 (0.038) FEELER MUST NOT PASS THRU INTERFACE)
4. VISUALLY EXAMINE FACES FOR DAMAGE USING 5-10X MAGNIFICATION
5. VERIFY THAT FITTINGS ARE TIGHT
6. VISUALLY EXAMINE INTERFACE SURFACES FOR ANY EVIDENCE OF DAMAGE
7. VERIFY SEATING USING A .0015 (0.038) FEELER GAGE. FEELER MUST NOT PASS THRU 90°
8. VERIFY THAT LOCKING COLLARS ARE TIGHT. NO MOVEMENT ALLOWED

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CALLAWAY PLANT

VIBRATION CHECKOUT FUNCTIONAL TEST INSPECTION POINTS

FIGURE 3.9(N)-3

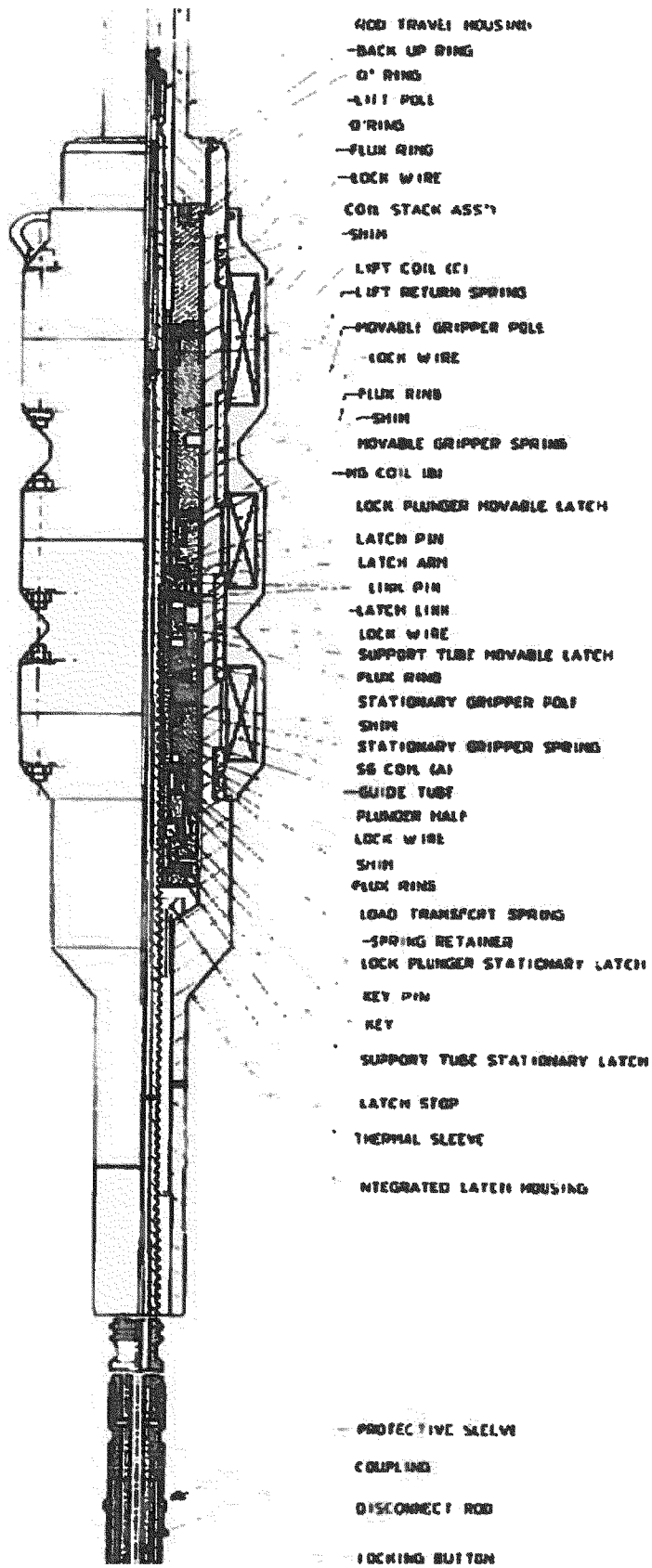


CALLAWAY PLANT

FIGURE 3.9(N)-4

**FULL LENGTH CONTROL ROD
DRIVE MECHANISM**

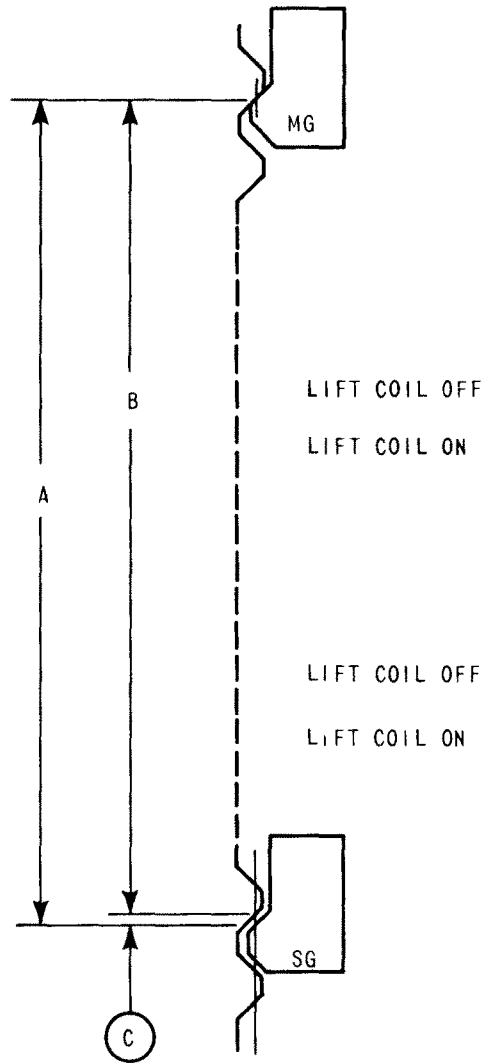
REV. 1 5/15



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FIGURE 3.9(N)-5
 FULL-LENGTH CONTROL ROD
 DRIVE MECHANISM SCHEMATIC
 REV. 1 5/15

BEFORE LOAD TRANSFER



LIFT COIL OFF

LIFT COIL ON

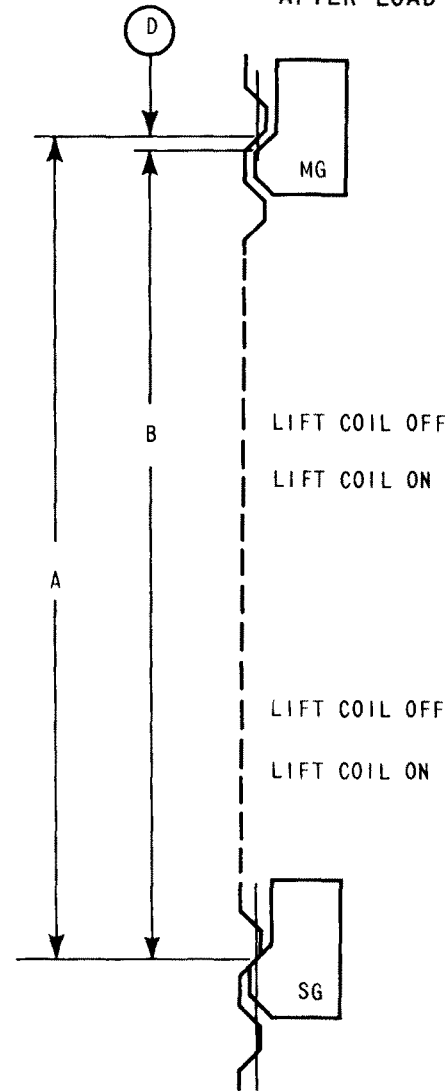
AT 70°		
A	B	(C)
15.640	15.625	0.015
16.265	16.250	0.015

AT 650°		
A	B	(C)
15.725	15.679	0.046
16.375	16.387	0.068

LIFT COIL OFF

LIFT COIL ON

AFTER LOAD TRANSFER



LIFT COIL OFF

LIFT COIL ON

AT 70°		
A	B	(D)
15.625	15.578	0.047
16.258	16.203	0.047

AT 650°		
A	B	(D)
15.679	15.641	0.038
16.387	16.291	0.016

LIFT COIL OFF

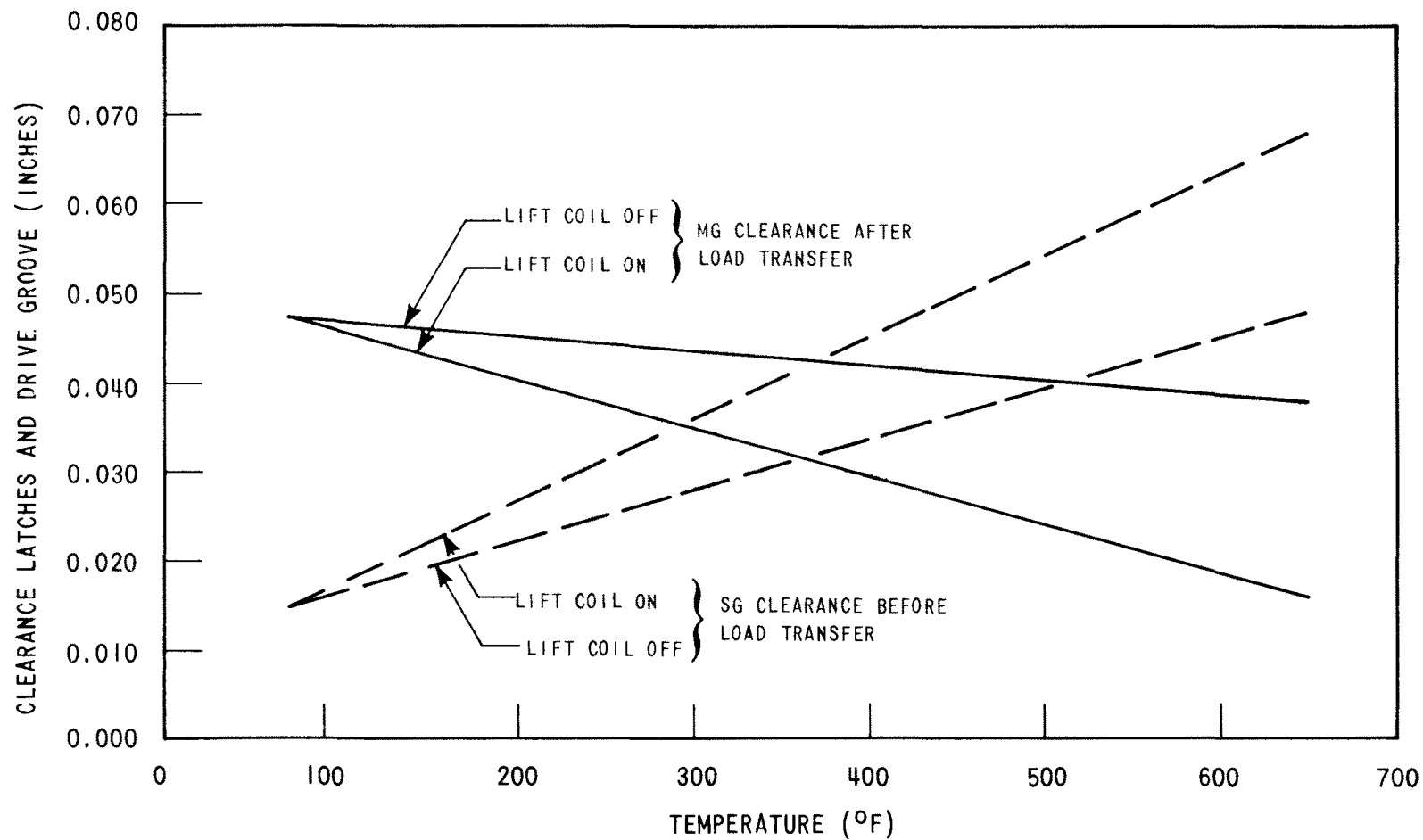
LIFT COIL ON

Rev. OL-0
6/86

CALLAWAY PLANT

FIGURE 3.9(N)-6

NOMINAL LATCH CLEARANCE AT
MINIMUM AND MAXIMUM TEMPERATURE

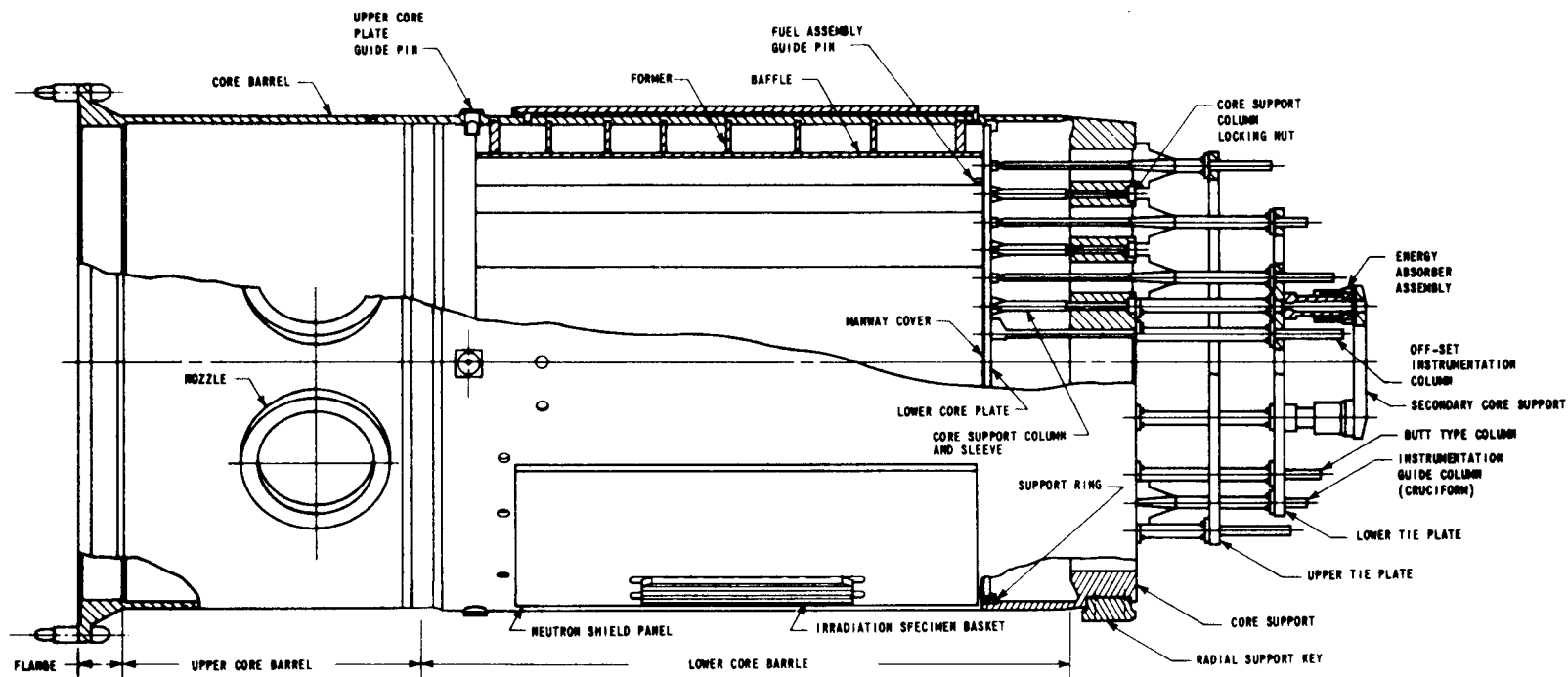


Rev. OL-0
6/86

CALLAWAY PLANT

FIGURE 3.9(N)-7

**CONTROL ROD DRIVE MECHANISM
LATCH CLEARANCE THERMAL EFFECT**

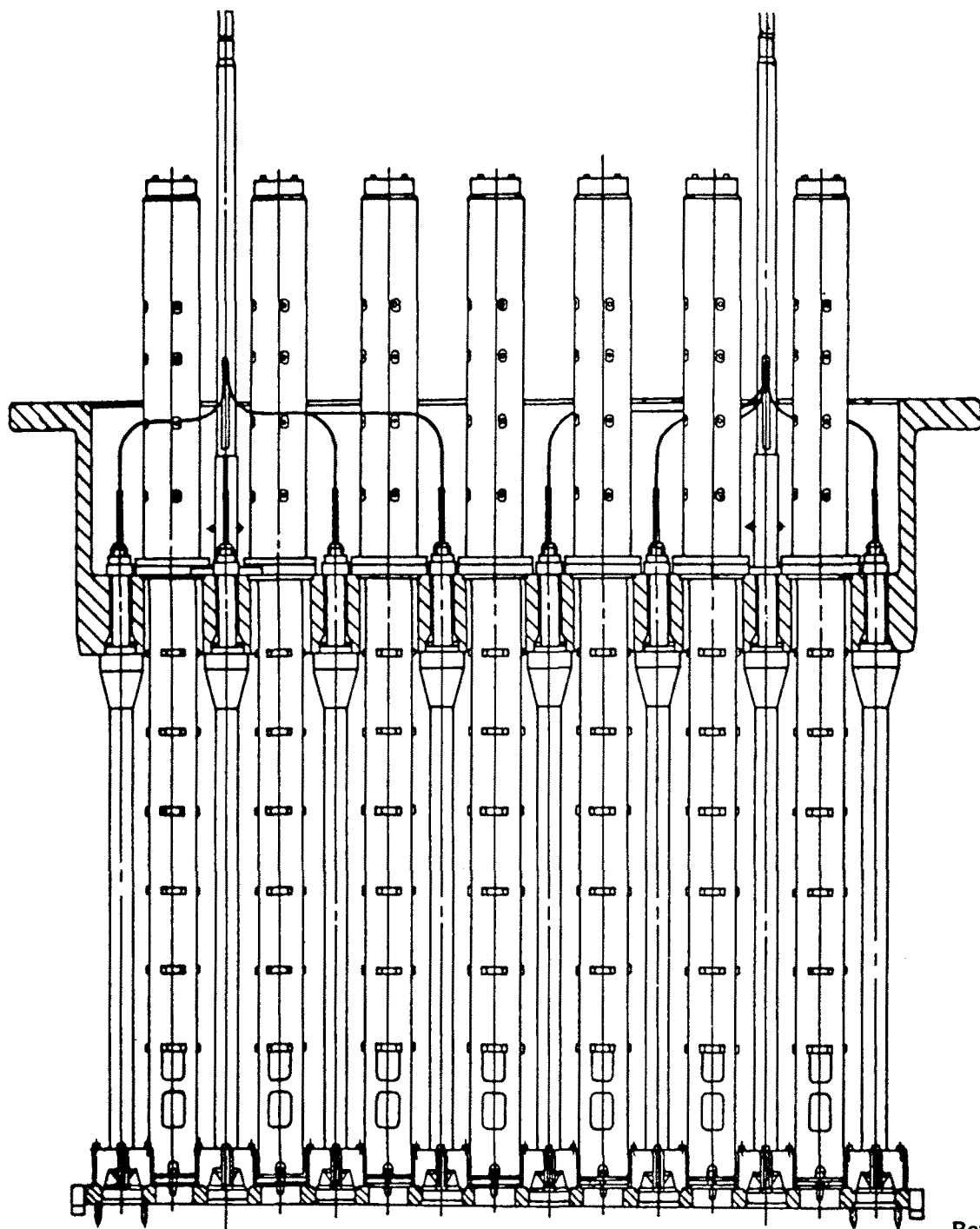


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6/86

CALLAWAY PLANT

FIGURE 3.9(N)-8

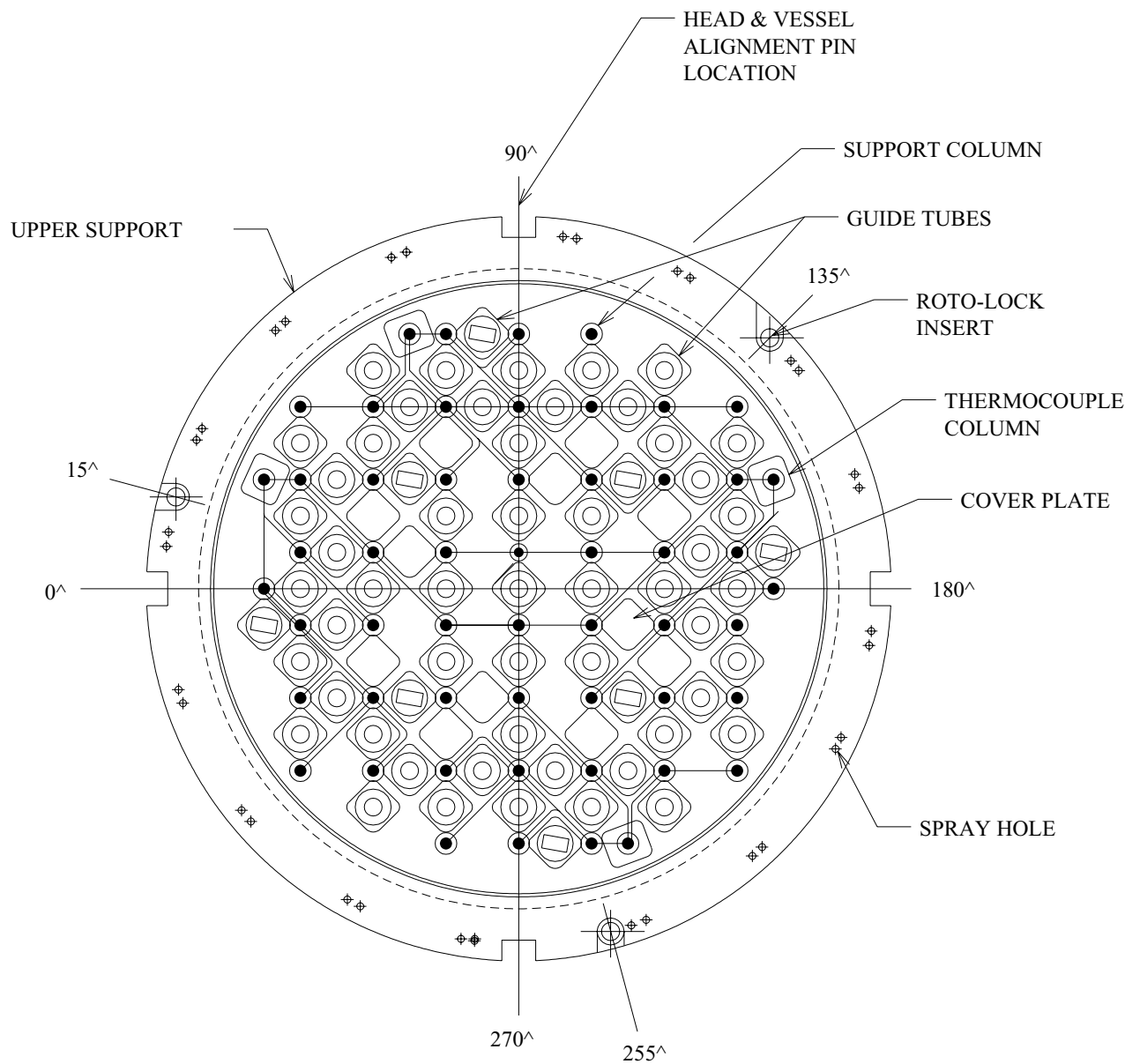
LOWER CORE SUPPORT ASSEMBLY
(CORE BARREL ASSEMBLY)



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6/86

CALLAWAY PLANT

**FIGURE 3.9(N)-9
UPPER CORE SUPPORT STRUCTURE**

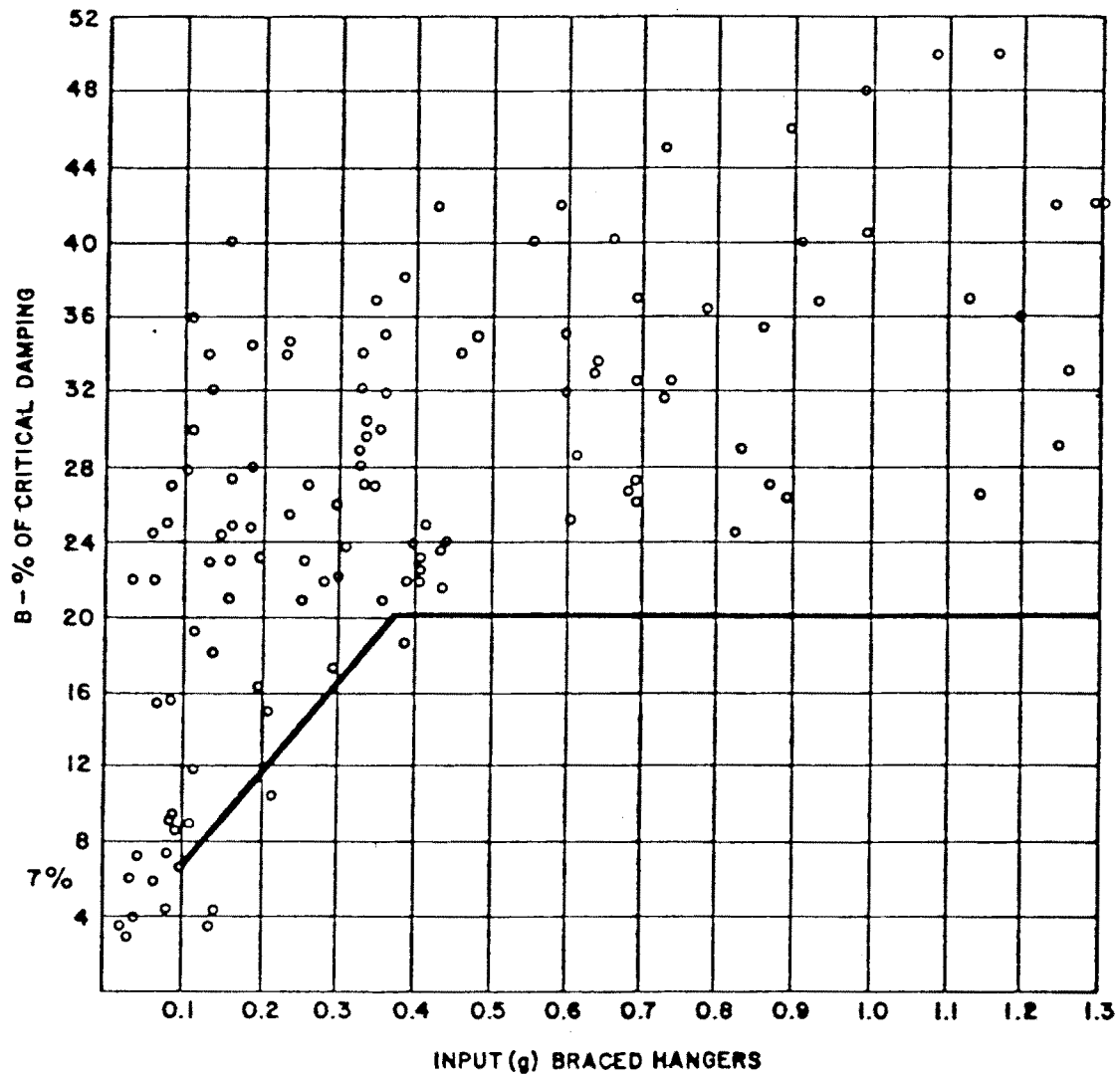


CALLAWAY PLANT

FIGURE 3.9(N)-10

PLAN VIEW OF UPPER CORE
SUPPORT STRUCTURE

REV OL-11 05/00

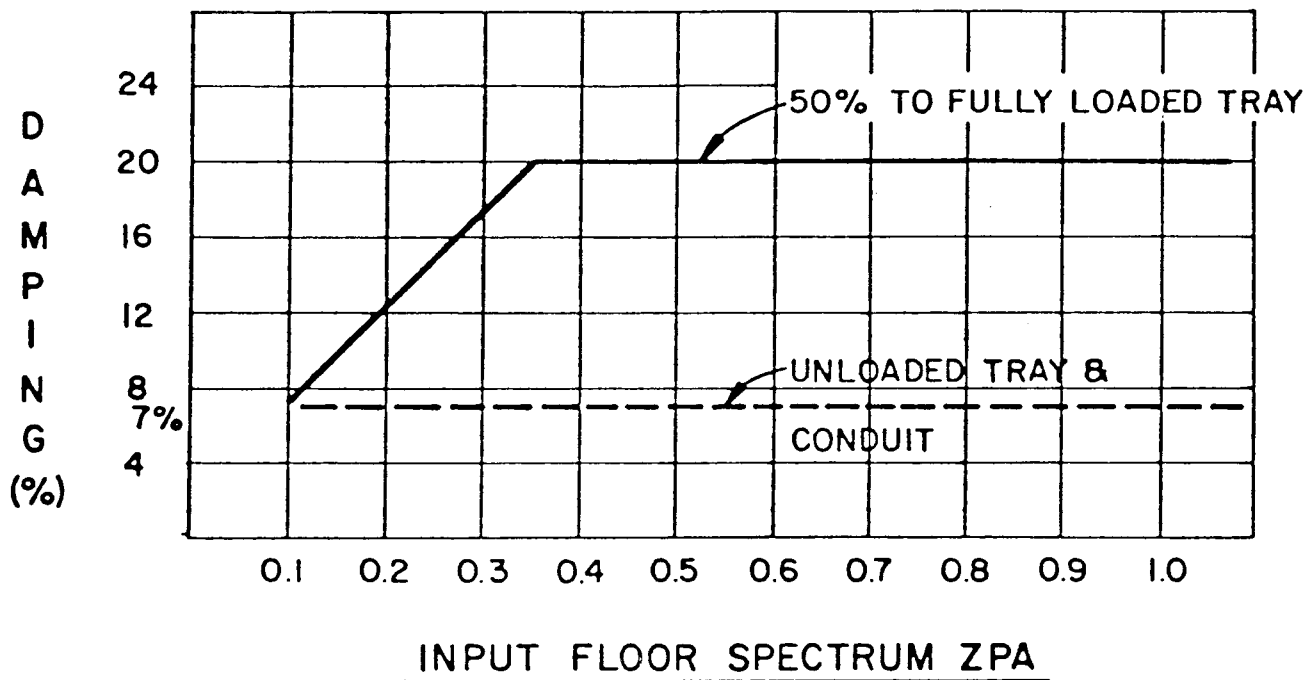


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6/86

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FIGURE 3.10(B)-1

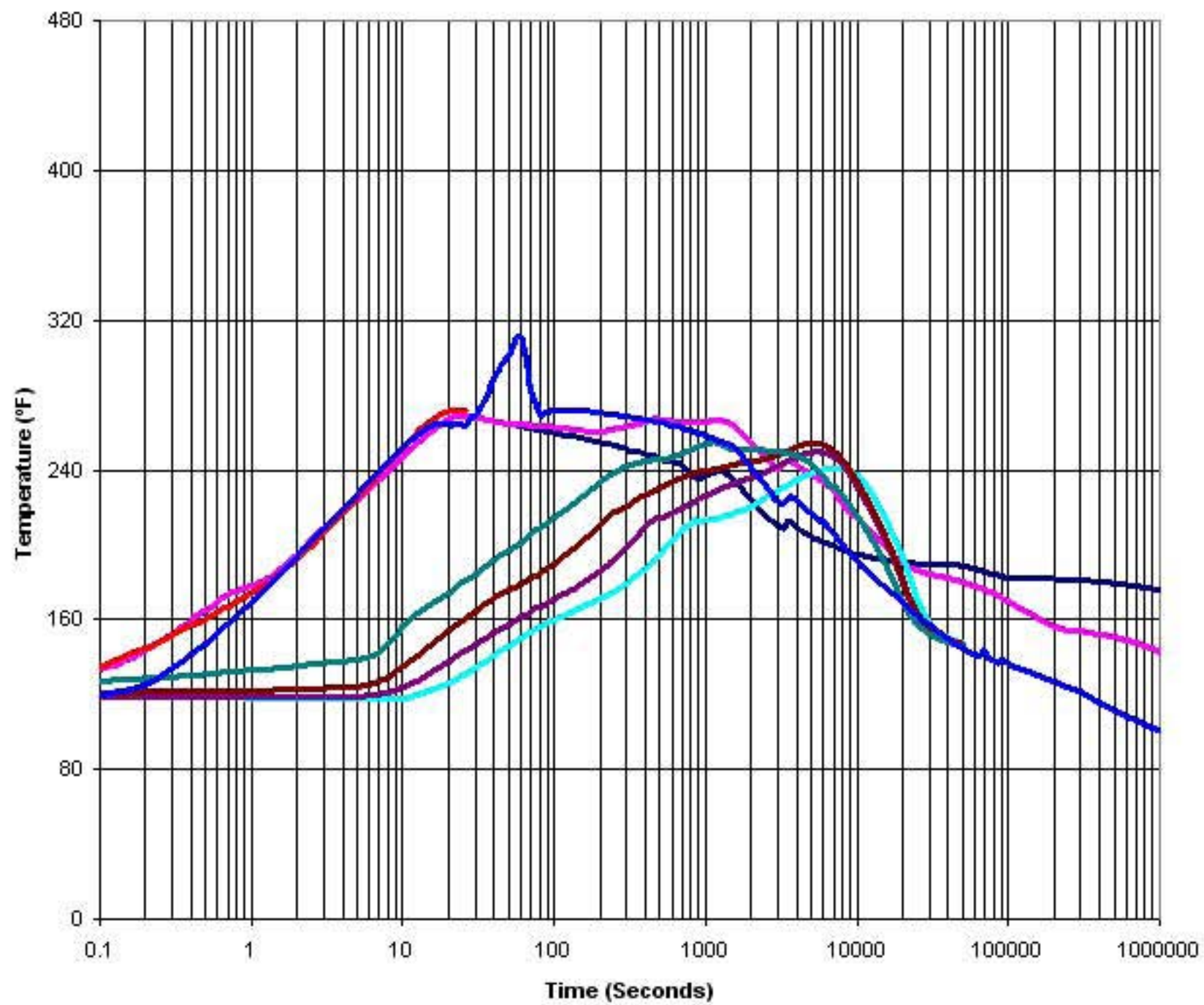
**DAMPING VS. INPUT LEVEL FOR
BRACED HANGER SYSTEMS**



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6/86

CALLAWAY PLANT

FIGURE 3.10(B)-2
LOWER BOUND DAMPING AS A
FUNCTION OF INPUT ZPA

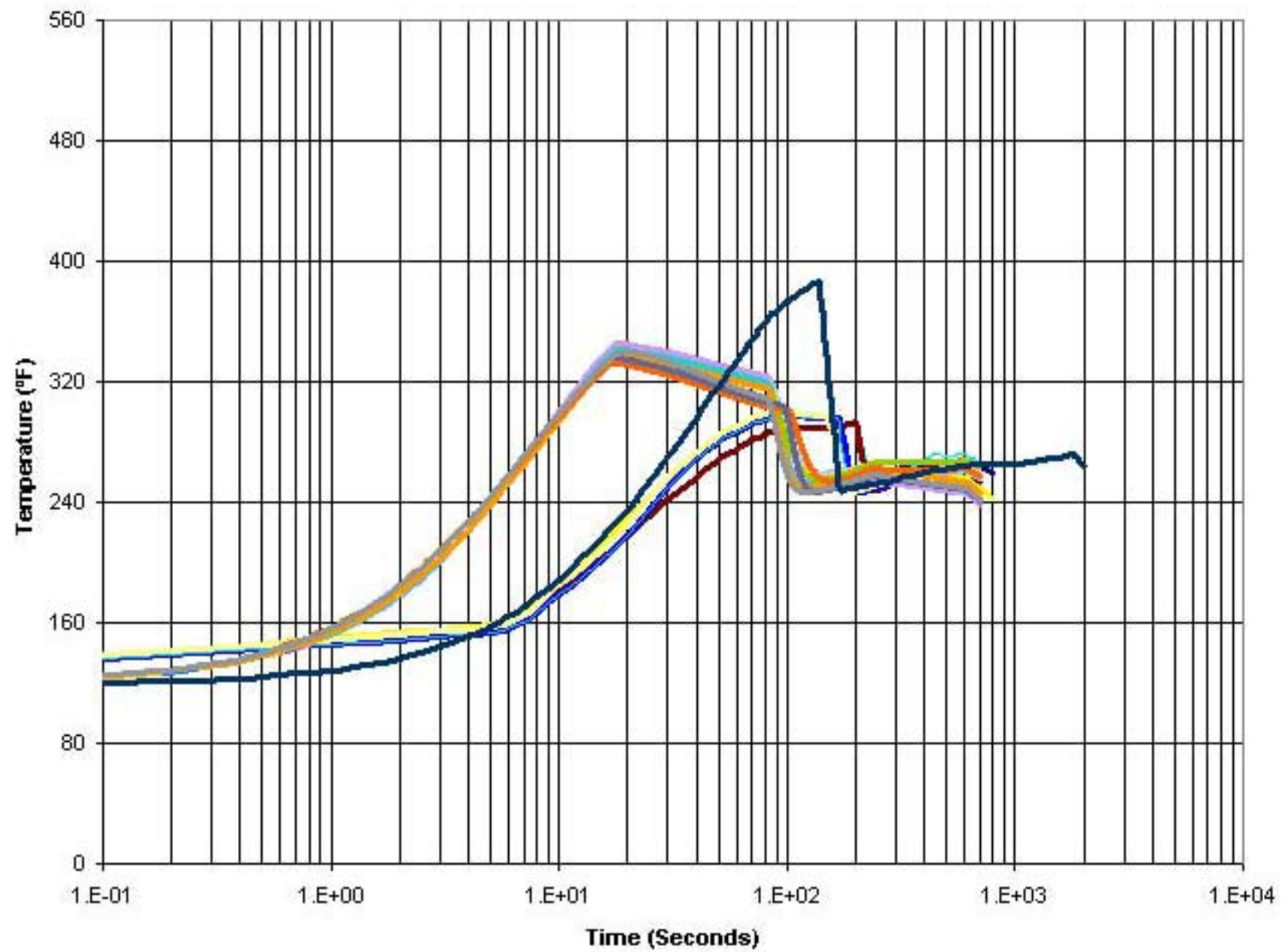


REV. 16
10/07

CALLAWAY PLANT

FIGURE 3.11(B)-1

**CONTAINMENT TEMPERATURE
(LOCA)**

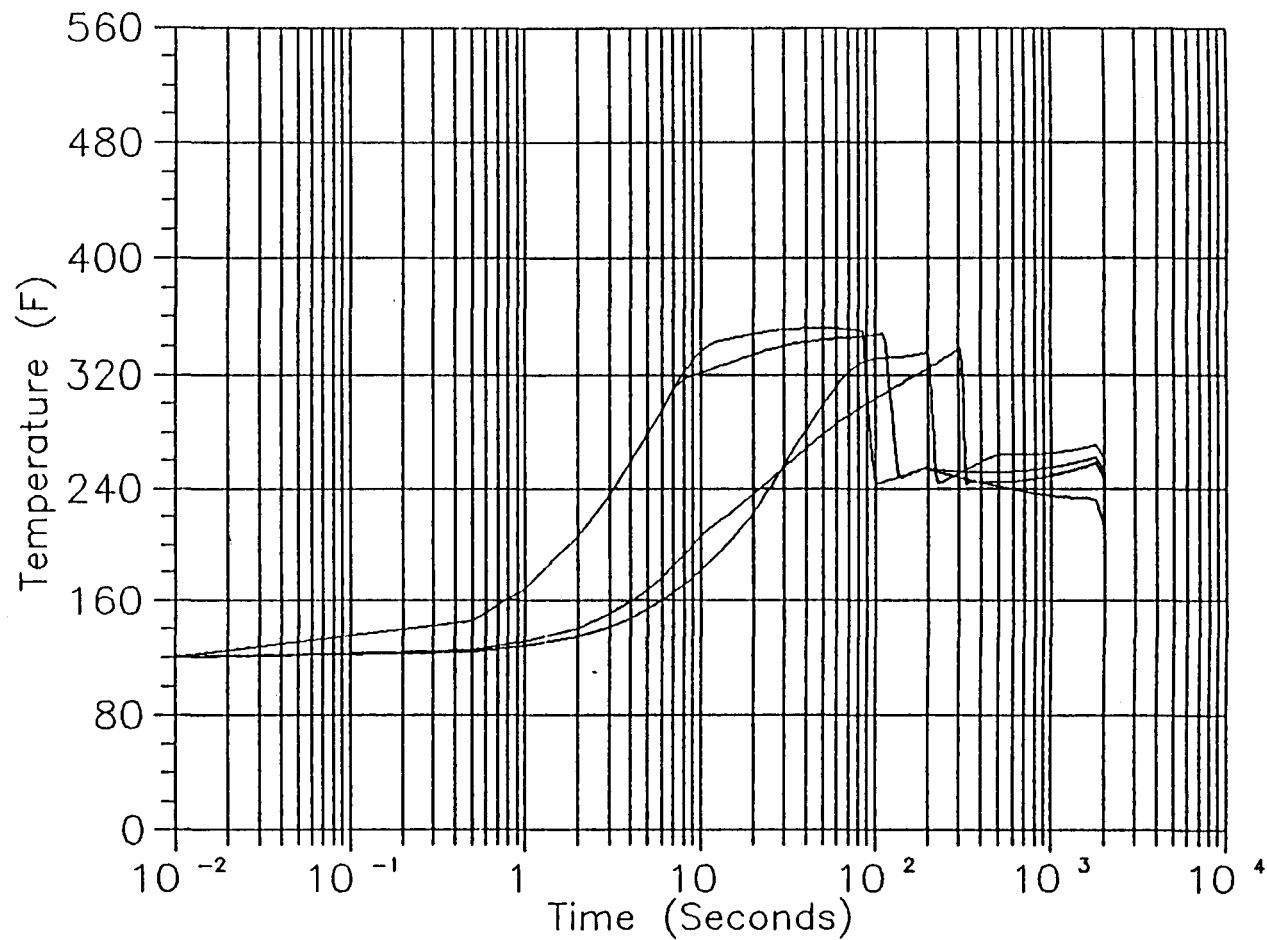


CALLAWAY PLANT

FIGURE 3.11(B)-2

**CONTAINMENT TEMPERATURE
(MSLB)**

REV. 17 10/08

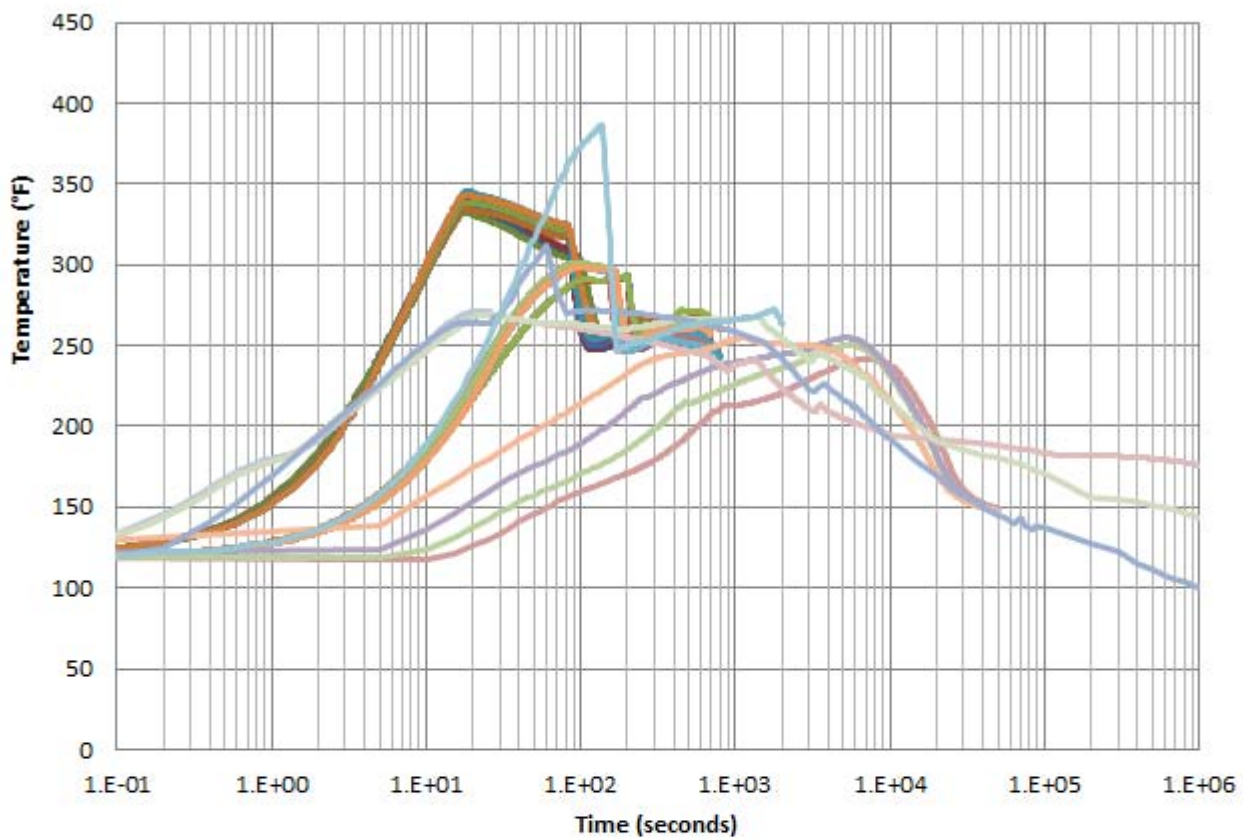


REV OL-12
11/01

NOTE: Containment pressure and temperature response for limiting cases was re-analyzed in June, 2000 to assess a reduction in containment cooler performance. However, the curves were bounded by the curves above or only slightly exceeded the curves well after the peaks. Existing figures in Section 3.11(B) have not been revised since they remain bounding except for portions of the response curves which are exceeded slightly and would result in negligible curve changes relative to scale values utilized.

CALLAWAY PLANT

FIGURE 3.11(B)-2A
CONTAINMENT TEMPERATURE
(MSLB)
UPRATED CONDITIONS

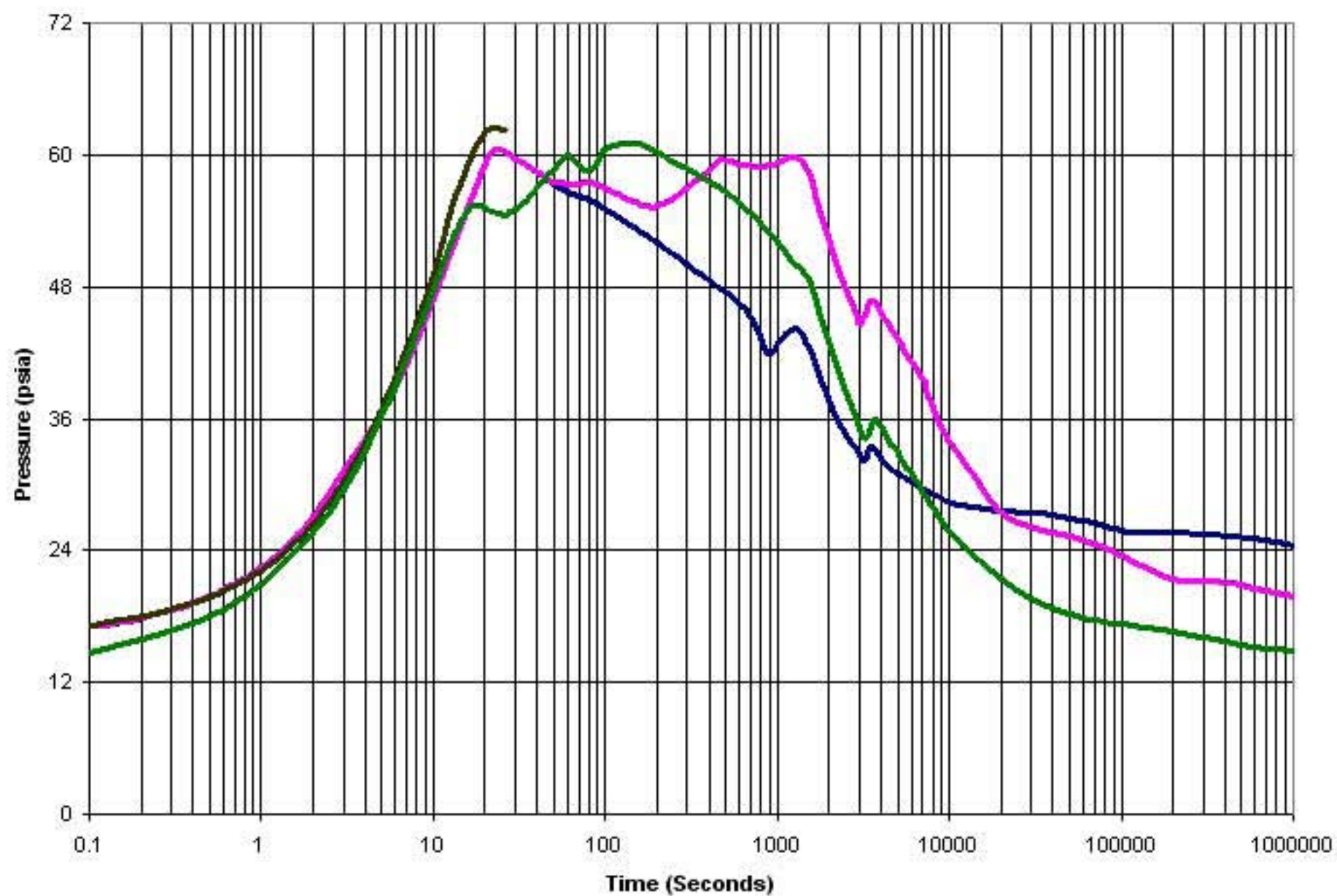


CALLAWAY PLANT

FIGURE 3.11(B)-3

CONTAINMENT TEMPERTURE
(MSLB AND LOCA)

REV. 18 10/13

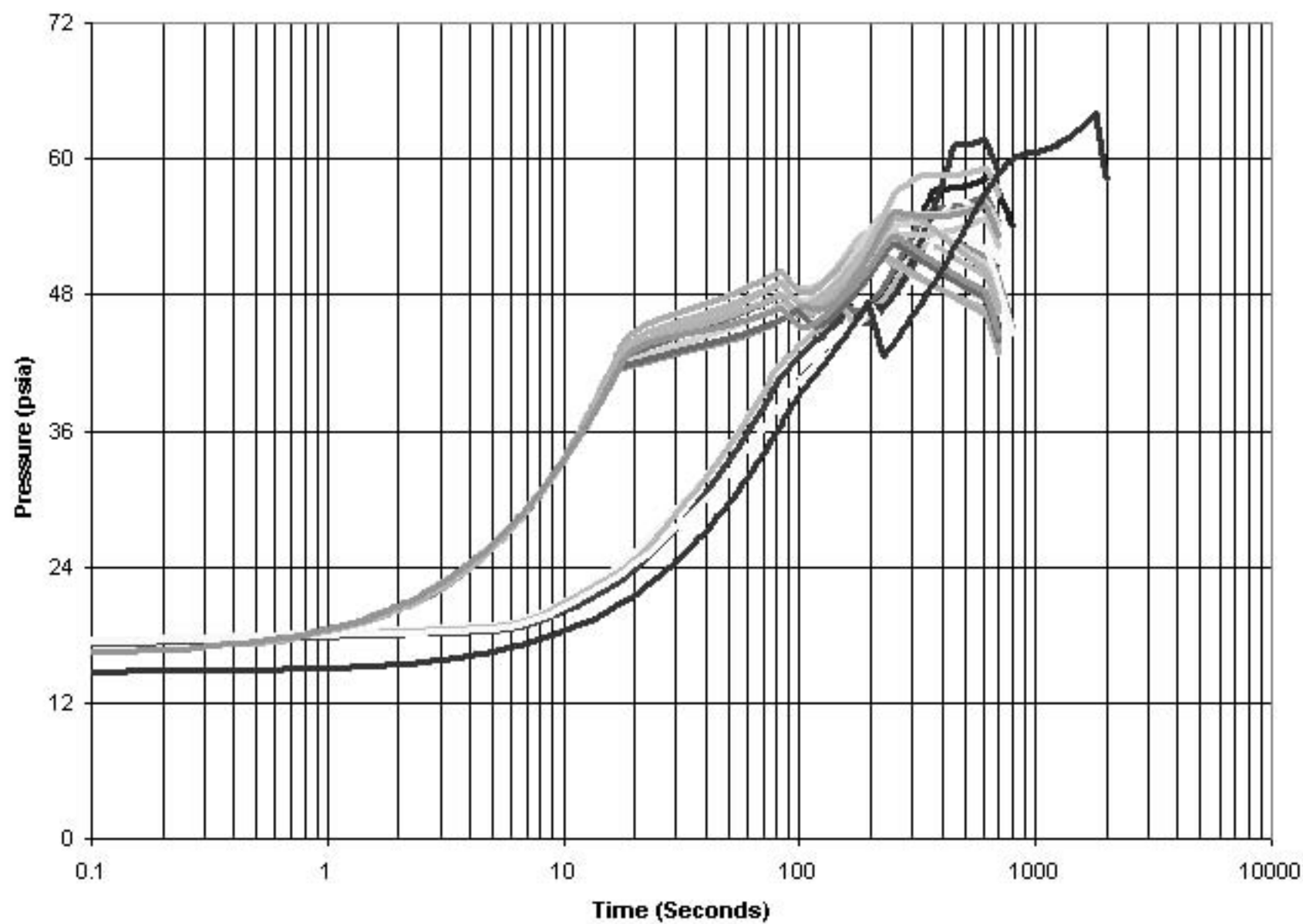


REV. 10
10/07

CALLAWAY PLANT

FIGURE 3.11(B)-4

**CONTAINMENT PRESSURE
(LOCA)**

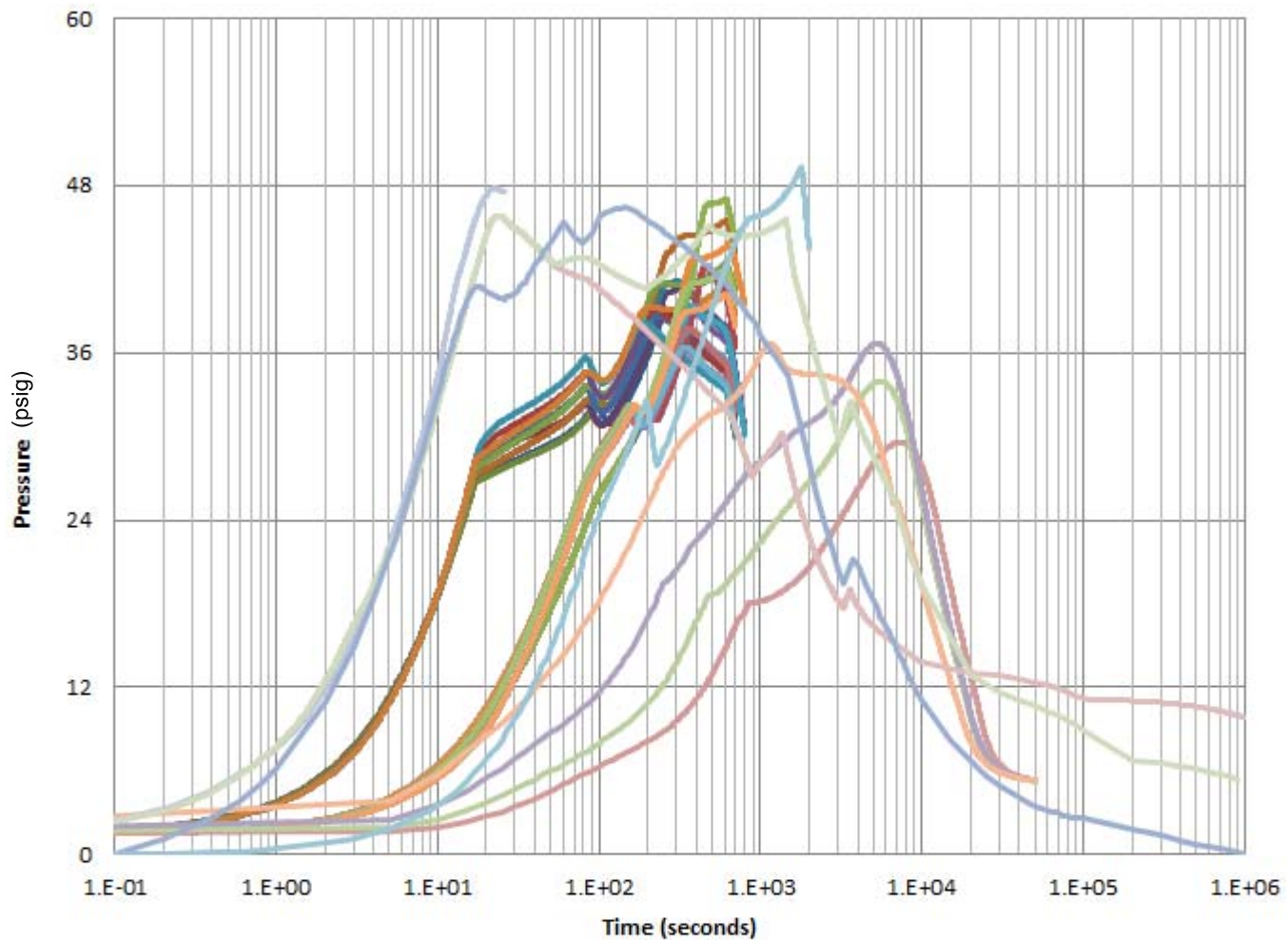


REV. 17
10/08

CALLAWAY PLANT

FIGURE 3.11(B)-5

CONTAINMENT PRESSURE
(MSLB)

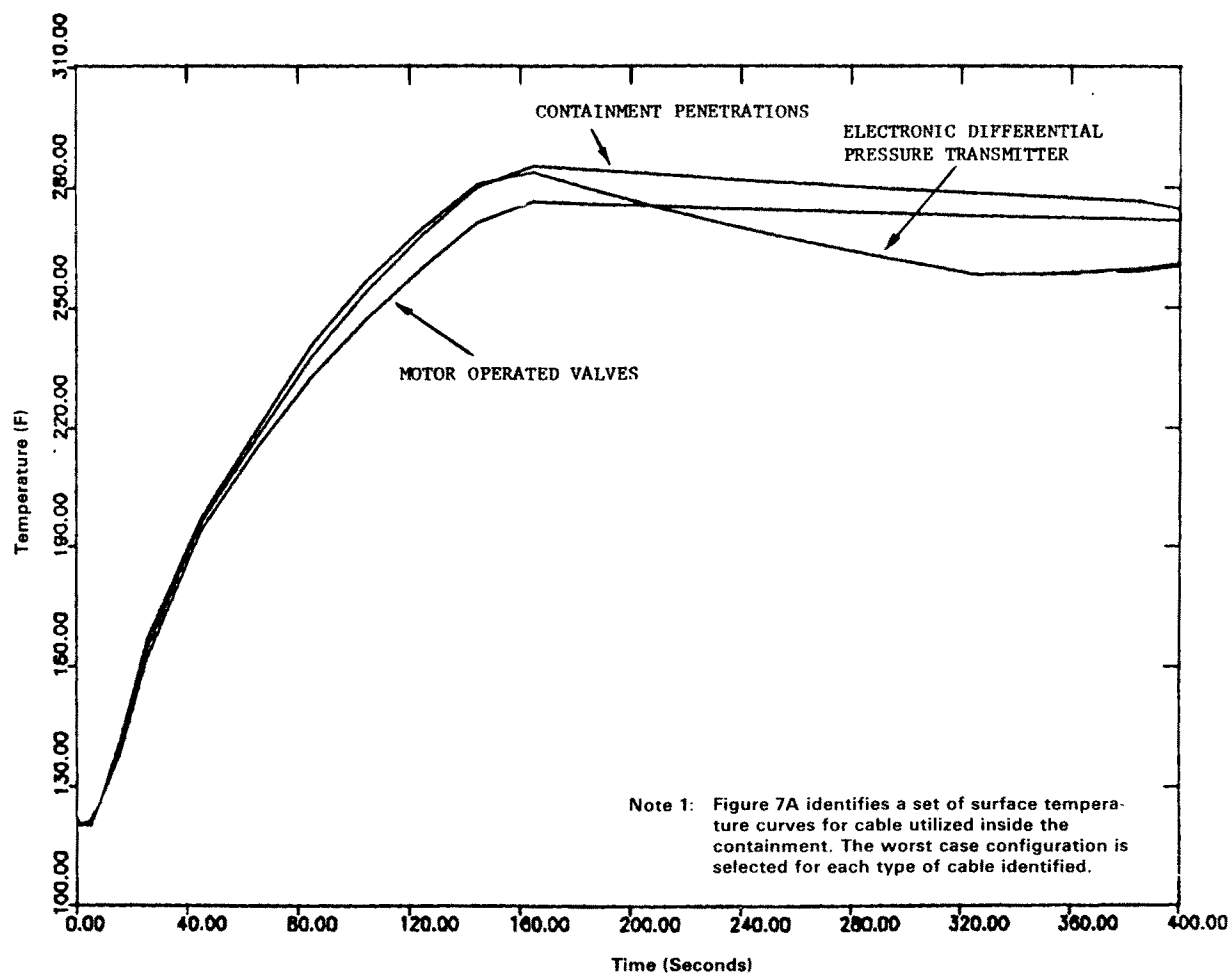


CALLAWAY PLANT

FIGURE 3.11(B)-6

CONTAINMENT PRESSURE
(MSLB AND LOCA)

REV. 18 10/13



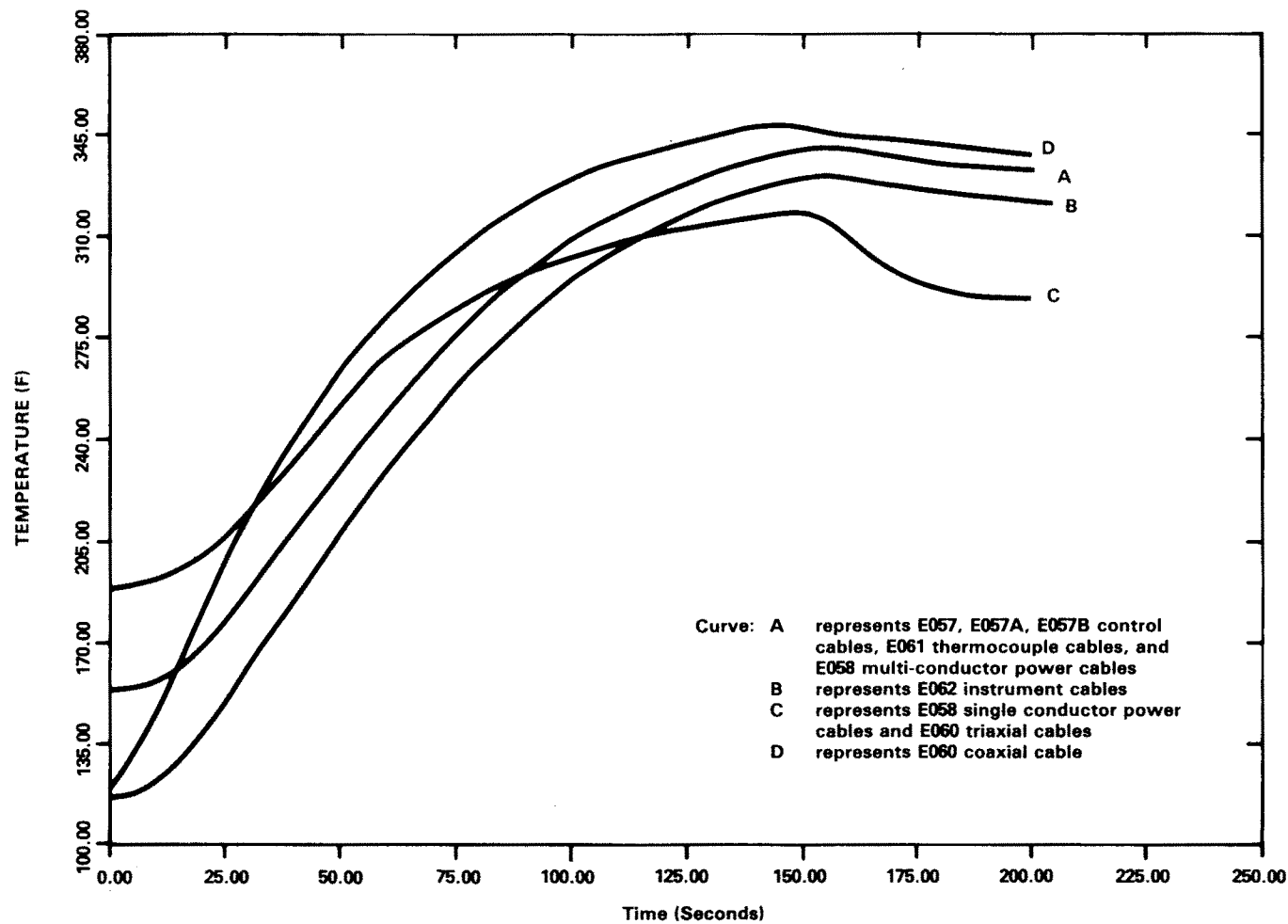
REV. 16
10/06

CALLAWAY PLANT

FIGURE 3.11(B)-7

**SURFACE TEMPERATURE
(MSLB)**

FOR OLD STEAM GENERATORS

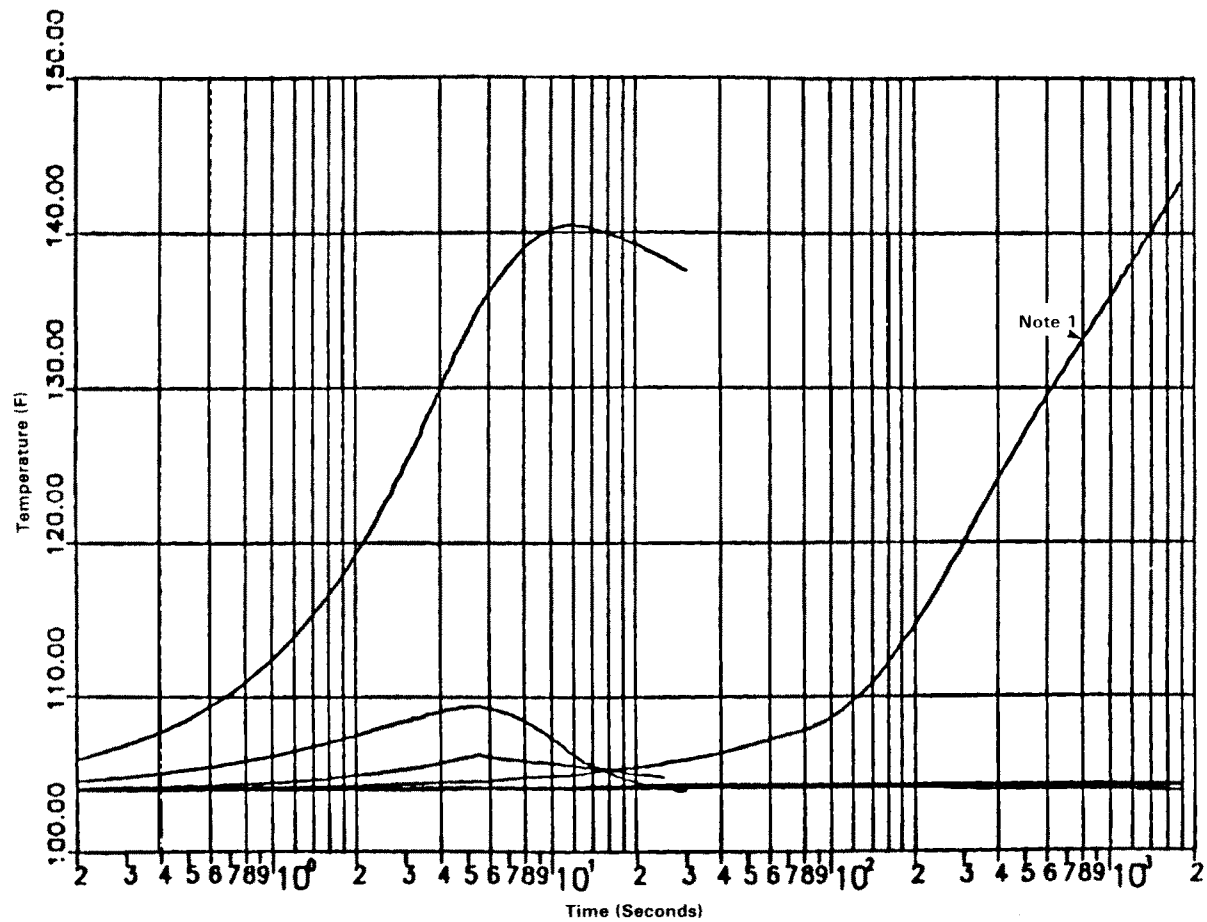


REV. 16
10/06

CALLAWAY PLANT

FIGURE 3.11(B)-7A

**CABLE SURFACE TEMPERATURE
(MSLB)
FOR OLD STEAM GENERATORS**



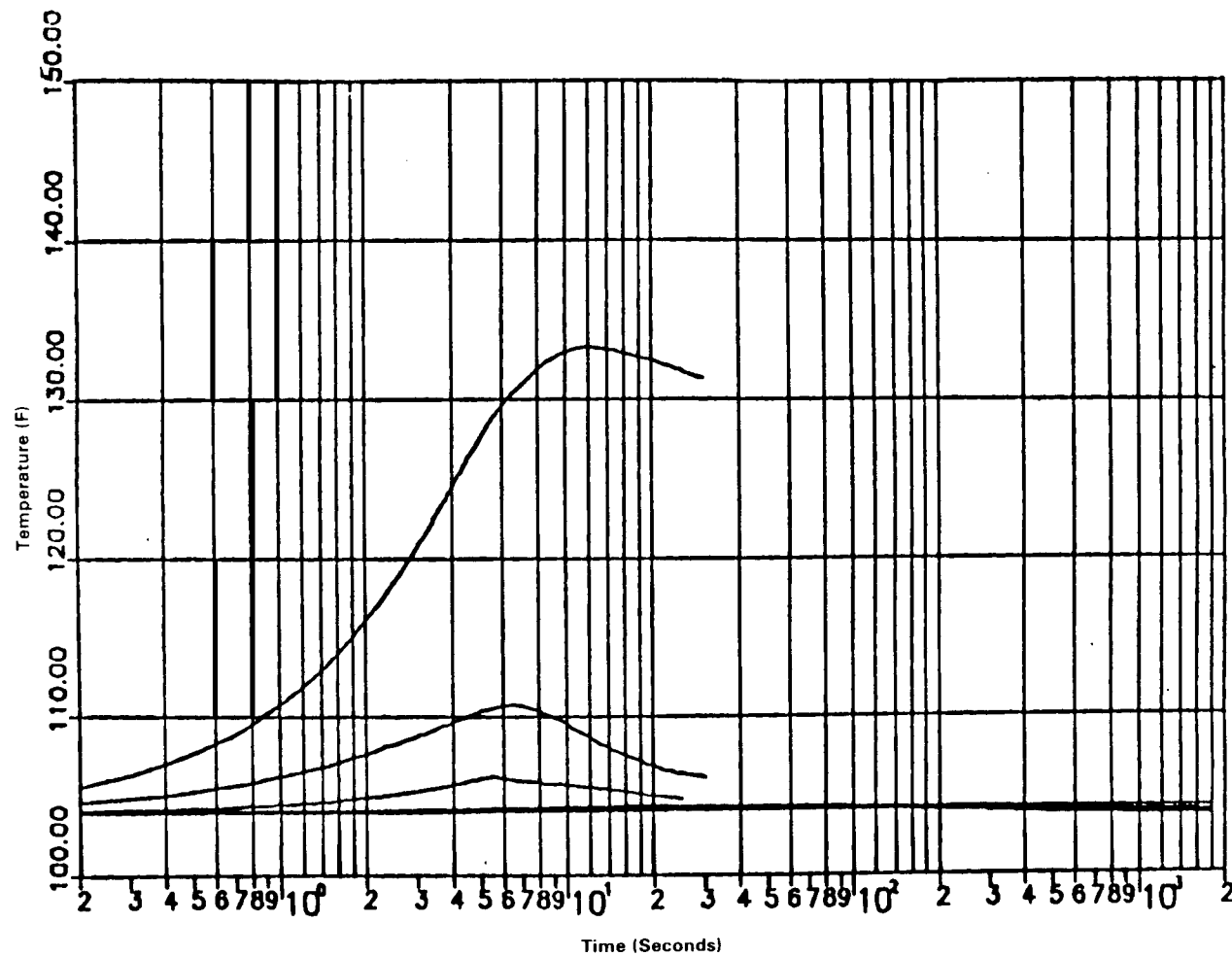
Note 1: Based on finalized values, this curve no longer applies but may have been used in performing detailed equipment qualification. As elimination of this curve results in a decrease in qualification requirements, equipment qualification documentation is conservative and may not have been revised.

CALLAWAY PLANT

FIGURE 3.11(B)-8

AUXILIARY BUILDING HELB
TEMPERATURE (ROOMS 1101-LEFT,
1102, 1119, 1120, AND 1121)

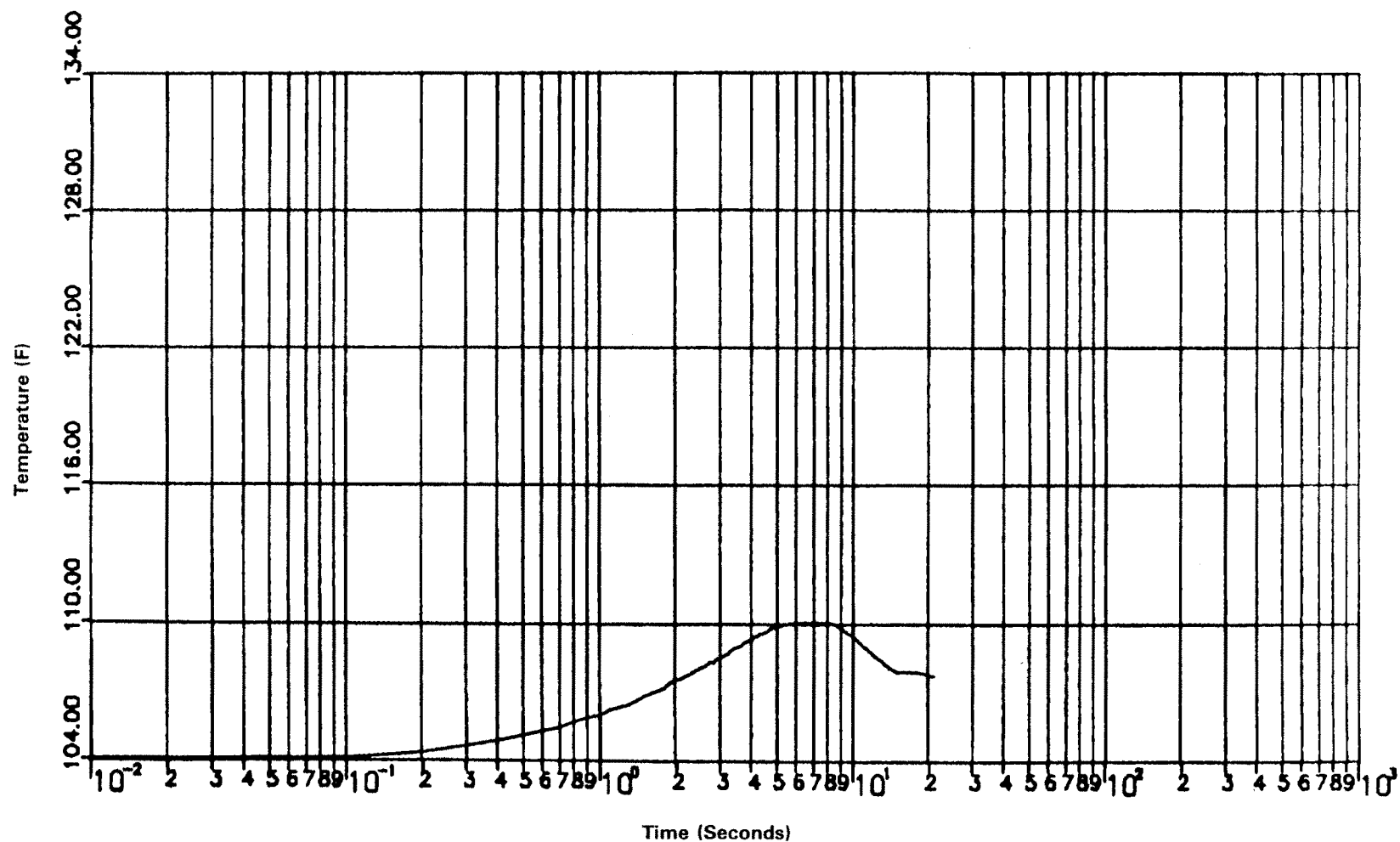
Rev. 9 11/13



CALLAWAY PLANT

FIGURE 3.11(B)-9

**AUXILIARY BUILDING HELB
TEMPERATURE (ROOMS 1101-RIGHT,
1122, 1128, 1129, AND 1130)
Rev. 9 11/13**

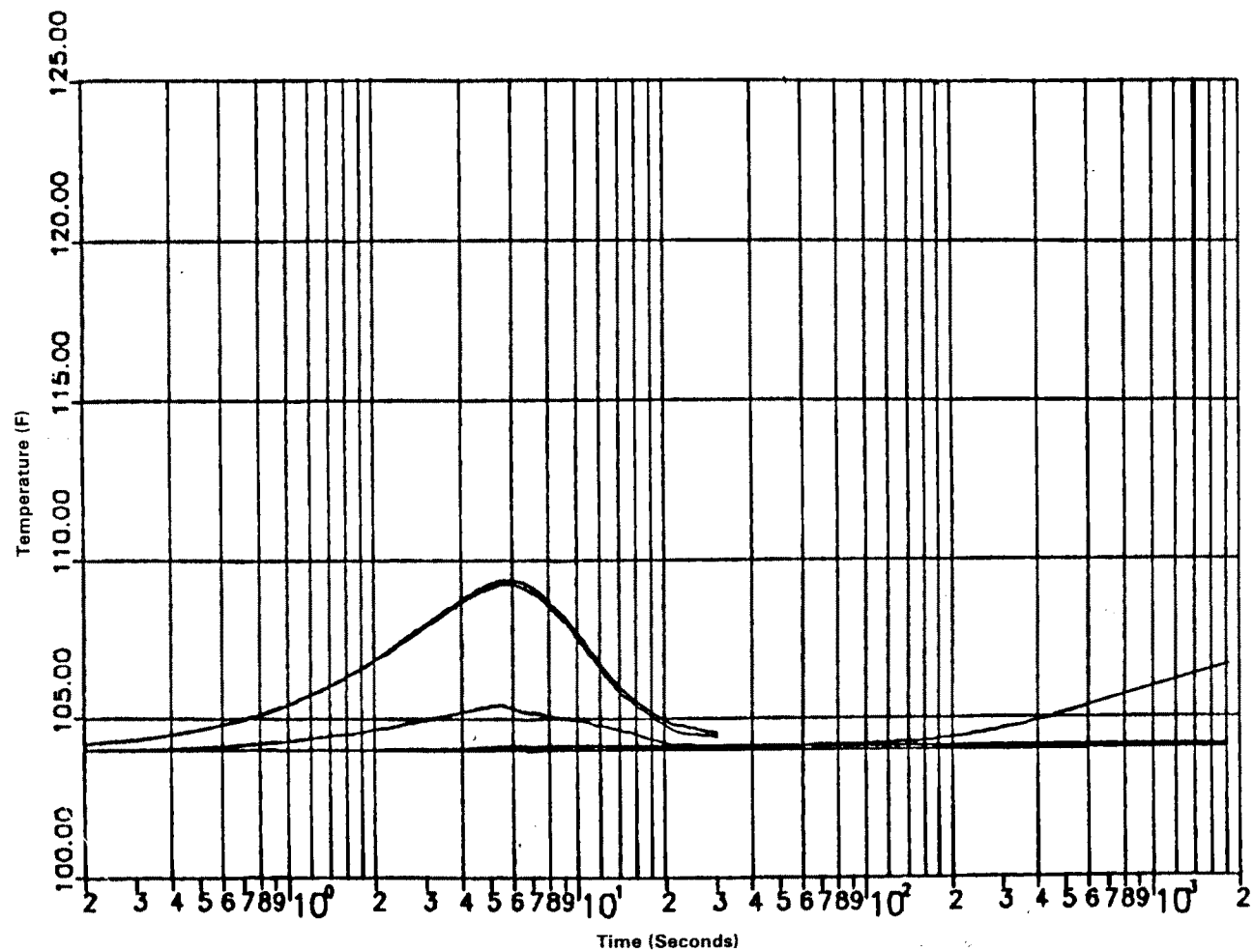


CALLAWAY PLANT

FIGURE 3.11(B)-9A

AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1206 AND 1207)

Rev. 9 11/13

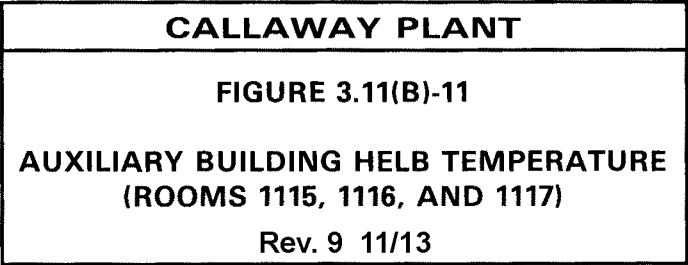


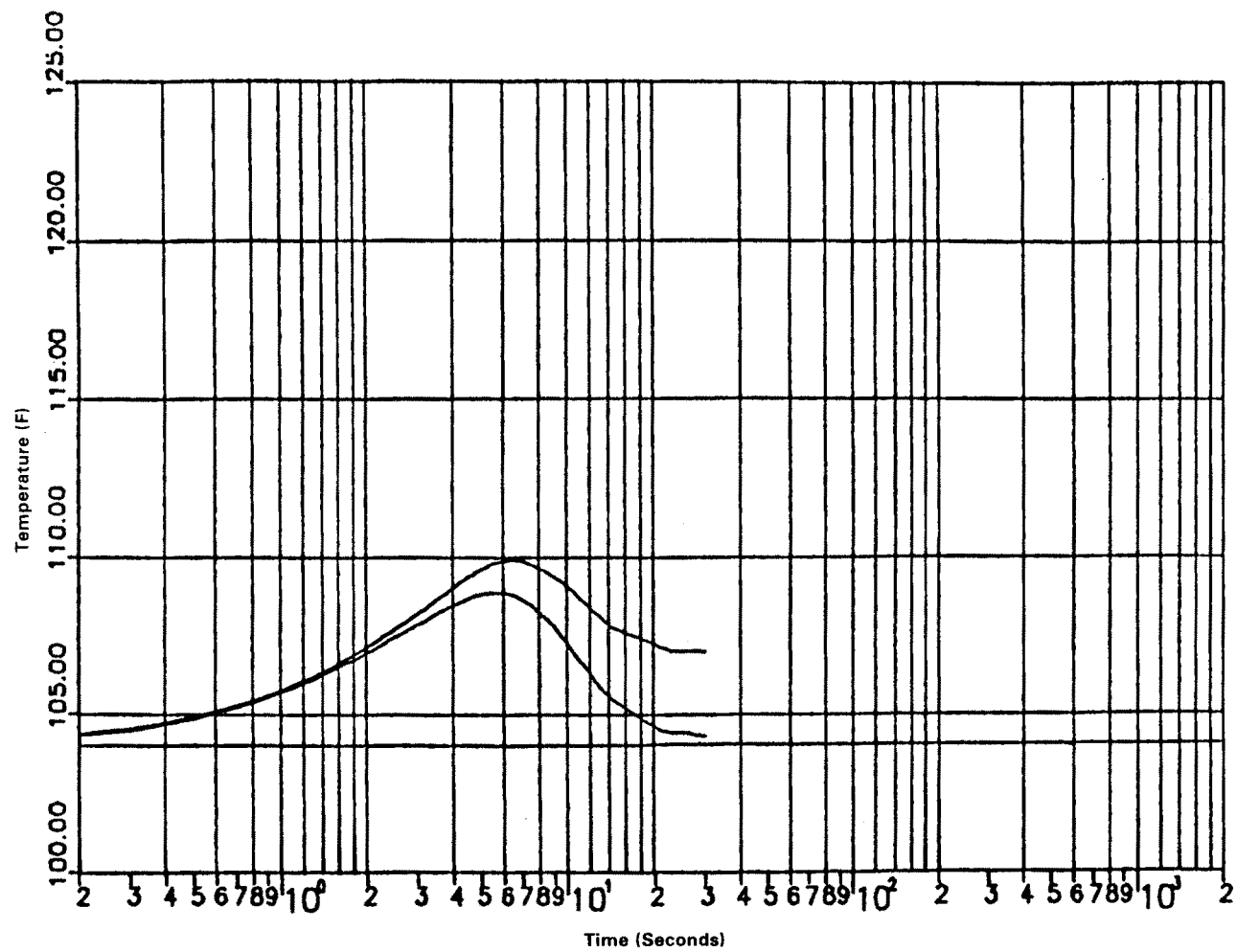
CALLAWAY PLANT

FIGURE 3.11(B)-10

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1107 THROUGH 1114, AND 1127)**

Rev. 9 11/13



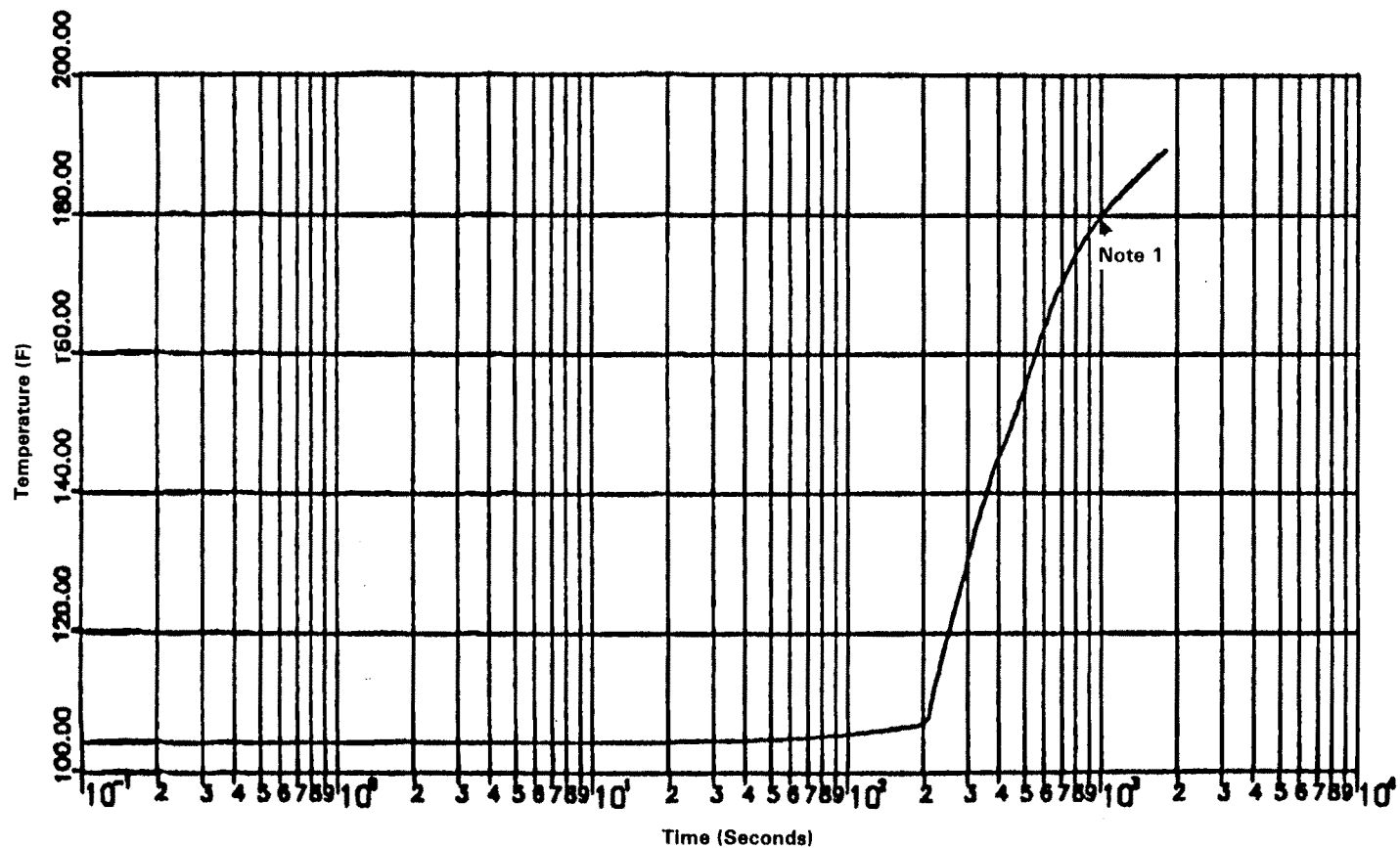


CALLAWAY PLANT

FIGURE 3.11(B)-12

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOM 1126)**

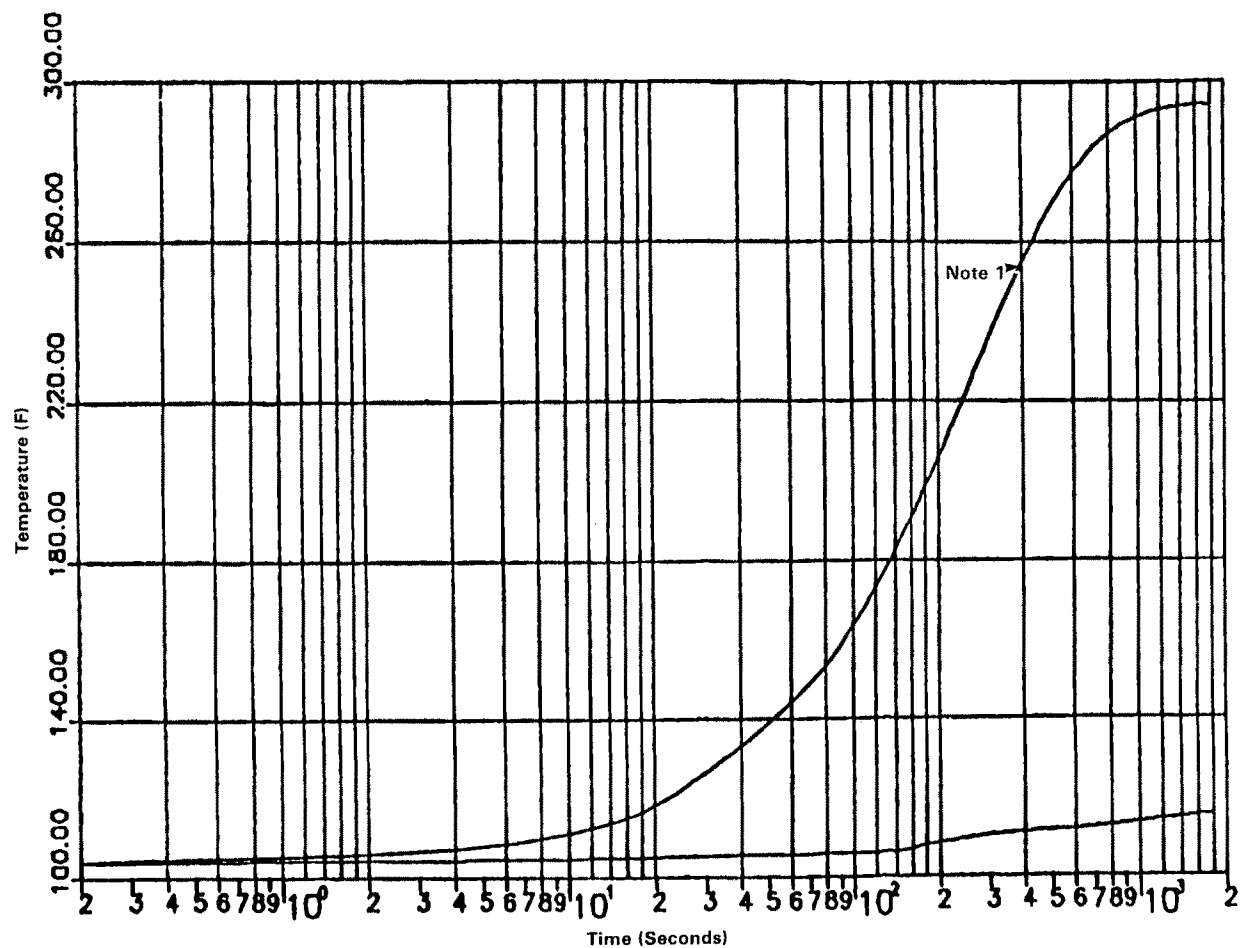
Rev. 9 11/13



Note 1: Based on finalized values, this curve no longer applies but may have been used in performing detailed equipment qualification. As elimination of this curve results in a decrease in qualification requirements, equipment qualification documentation is conservative and may not have been revised.

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6/86

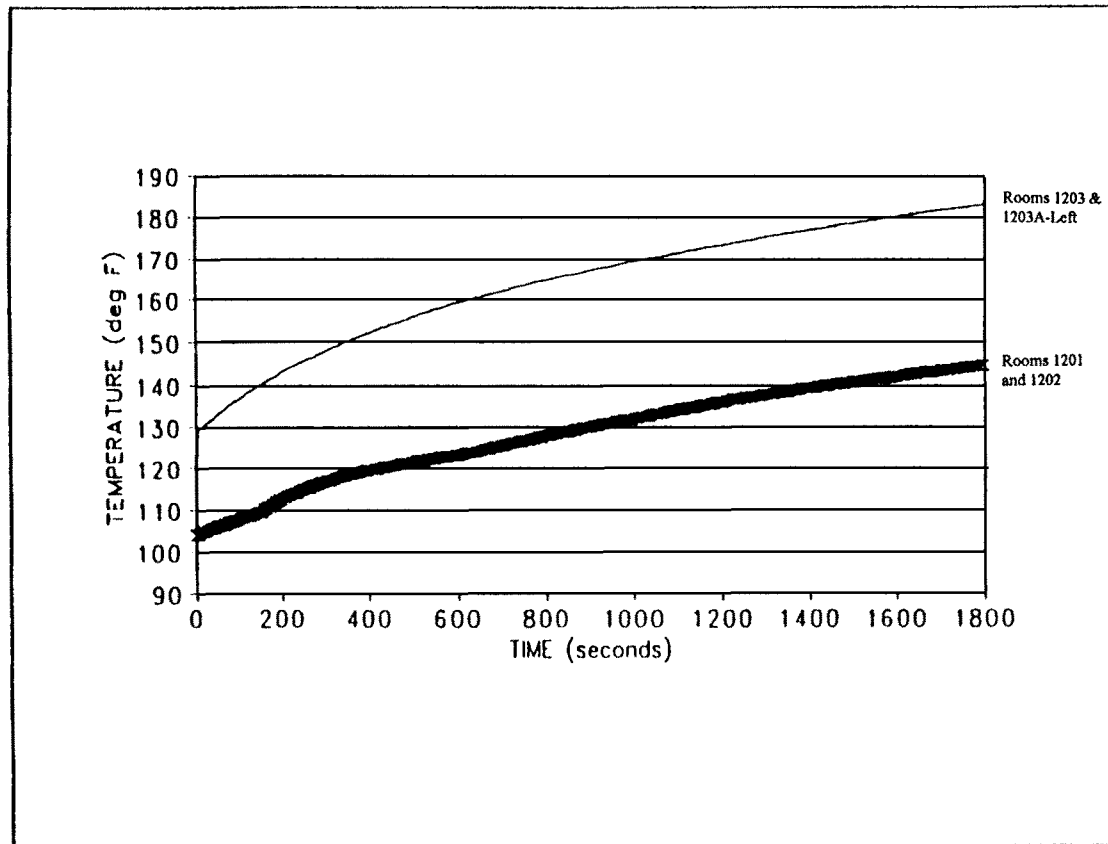
CALLAWAY PLANT
FIGURE 3.11(B)-13
AUXILIARY BUILDING HELB TEMPERATURE (ROOM 1314-CORRIDOR)
Rev. 9 11/13



Note 1: Based on finalized values, this curve no longer applies but may have been used in performing detailed equipment qualification. As elimination of this curve results in a decrease in qualification requirements, equipment qualification documentation is conservative and may not have been revised.

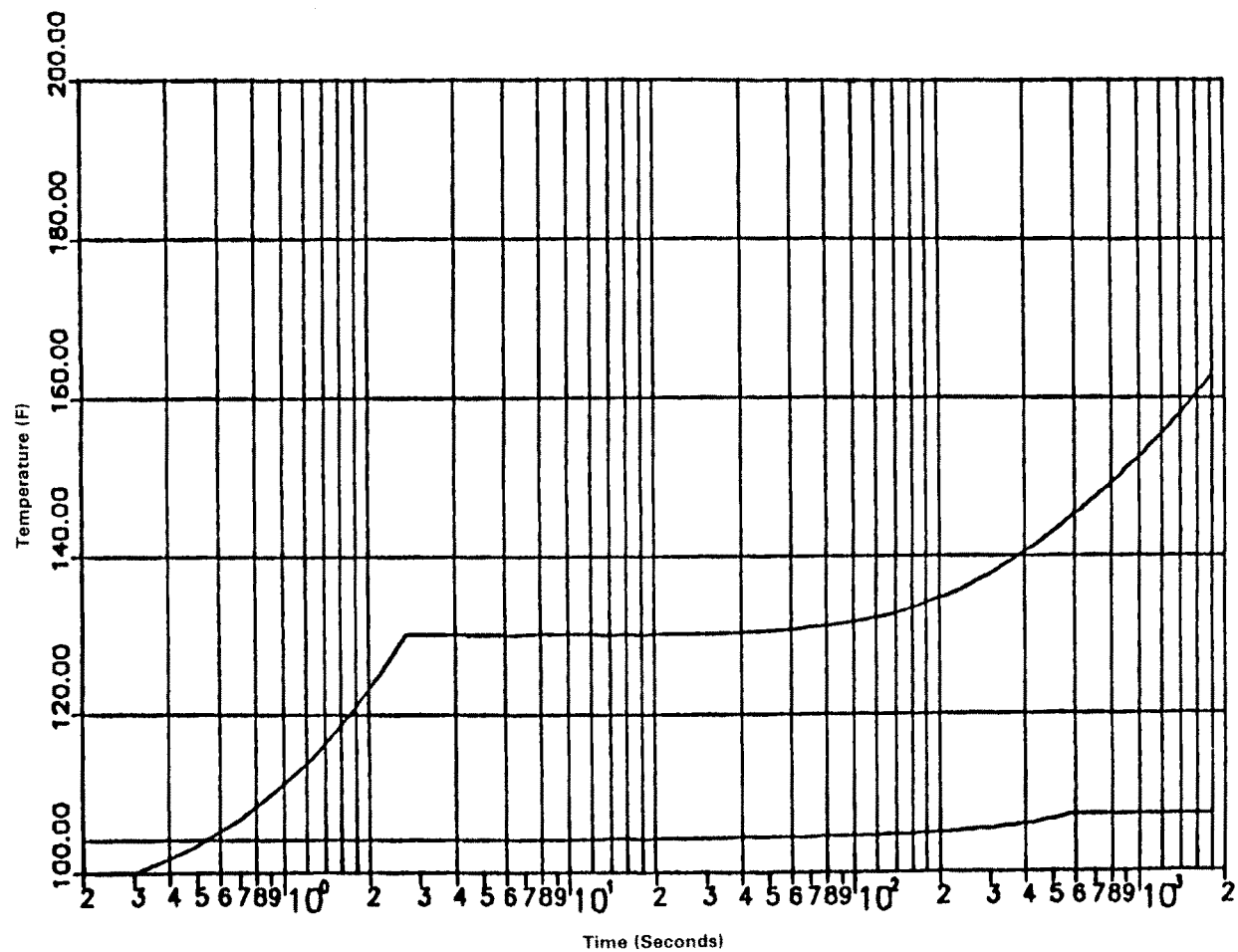
Note 2: Curves based on CVCS letdown flowrate of 75 gpm at time of break.

CALLAWAY PLANT
<p>FIGURE 3.11(B)-14 SHEET 1</p> <p>AUXILIARY BUILDING HELB TEMPERATURE (ROOMS 1201 AND 1202)</p> <p>Rev. 9 11/13</p>



Note: Curves based on CVCS letdown flowrate of 120 gpm at time of break.

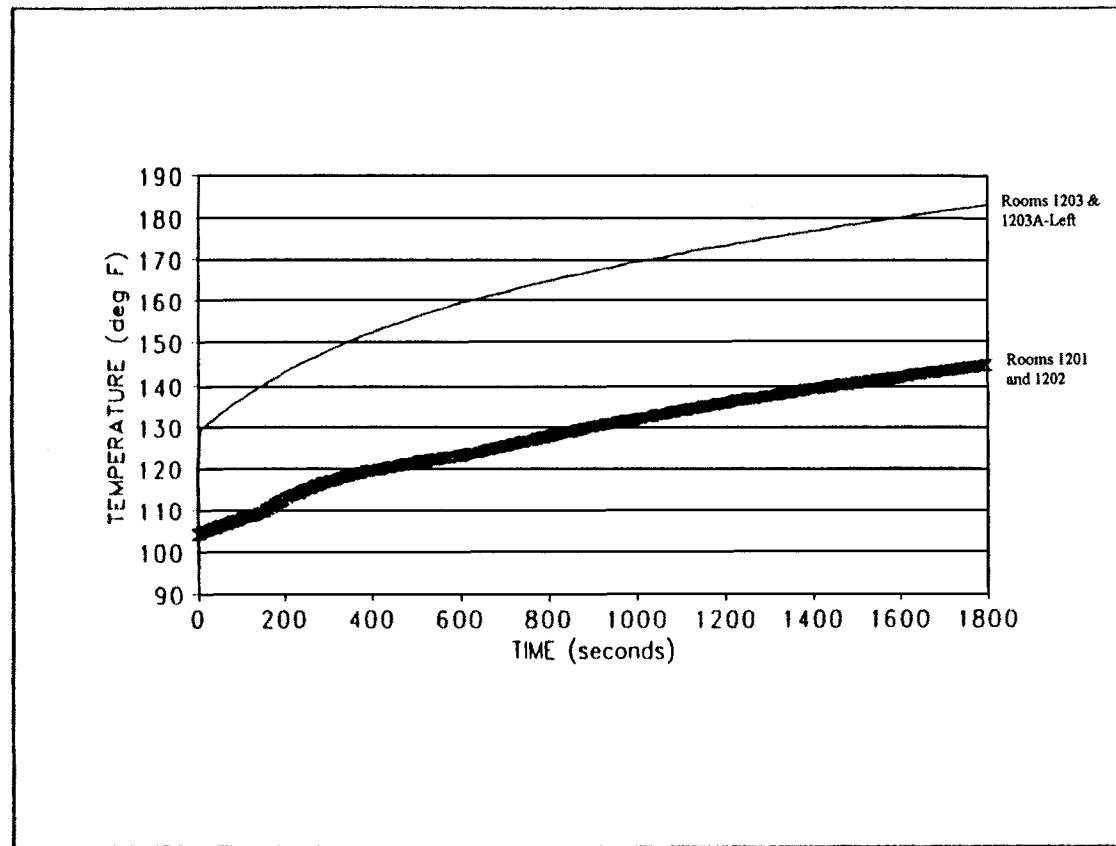
CALLAWAY PLANT
FIGURE 3.11(B)-14 SHEET 2 AUXILIARY BUILDING HELB TEMPERATURE (ROOMS 1201 AND 1202) Rev. 9 11/13



Note: For encapsulated valves, temperatures will be greater than 110 F but below the curve shown.

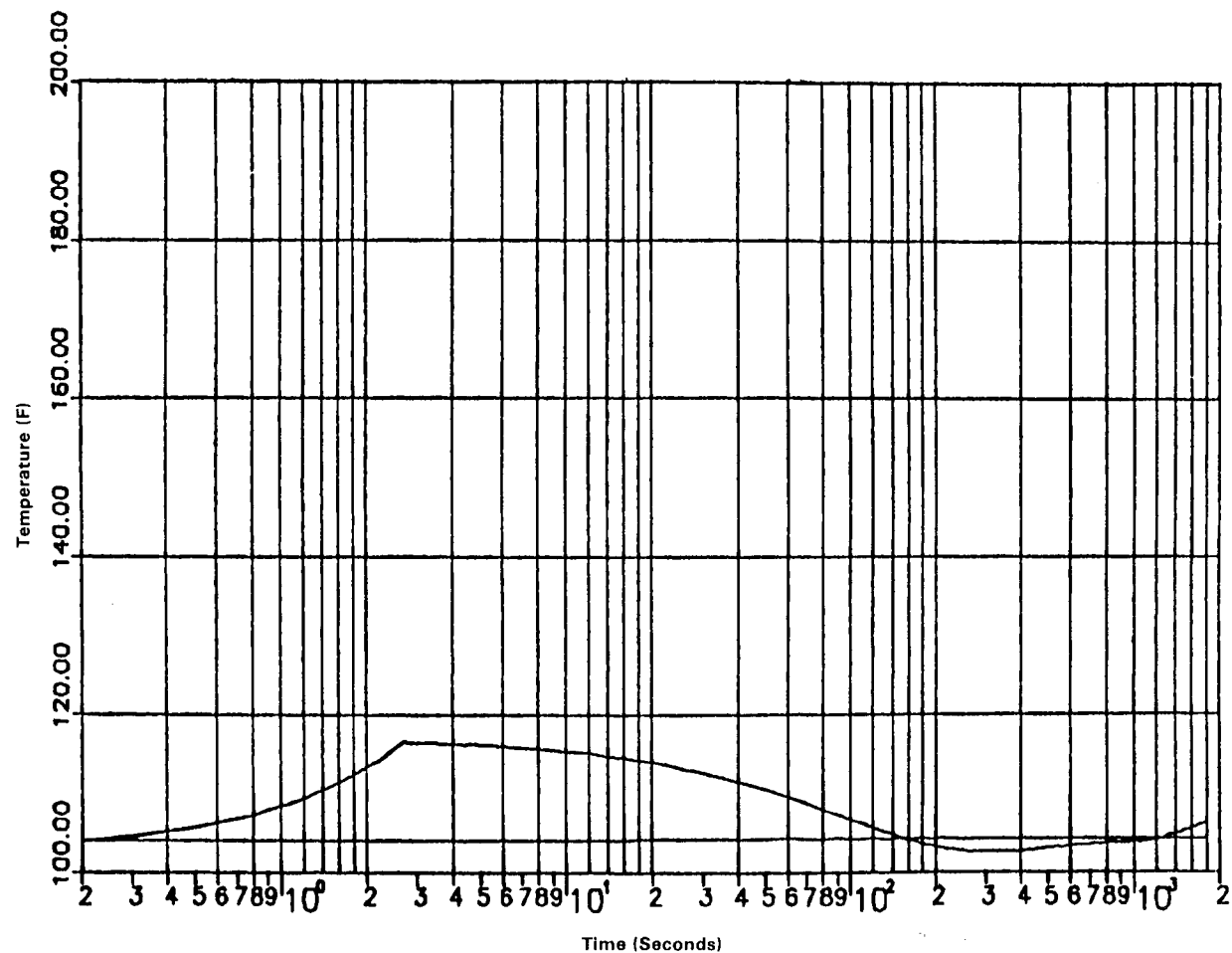
Curves based on CVCS letdown flowrate of 75 gpm at time of break.

CALLAWAY PLANT
<p>FIGURE 3.11(B)-15 SHEET 1 AUXILIARY BUILDING HELB TEMPERATURE (ROOMS 1203 AND 1203A-LEFT) Rev. 9 11/13</p>



Note: Curves based on CVCS letdown flowrate of 120 gpm at time of break.

CALLAWAY PLANT
FIGURE 3.11(B)-15 SHEET 2 AUXILIARY BUILDING HELB TEMPERATURE (ROOMS 1203 AND 1203A-LEFT) Rev. 9 11/13



Note: For encapsulated valves, temperatures will be greater than 110 F but below the curve shown.

Curves based on CVCS letdown flowrate of 75 gpm at time of break.

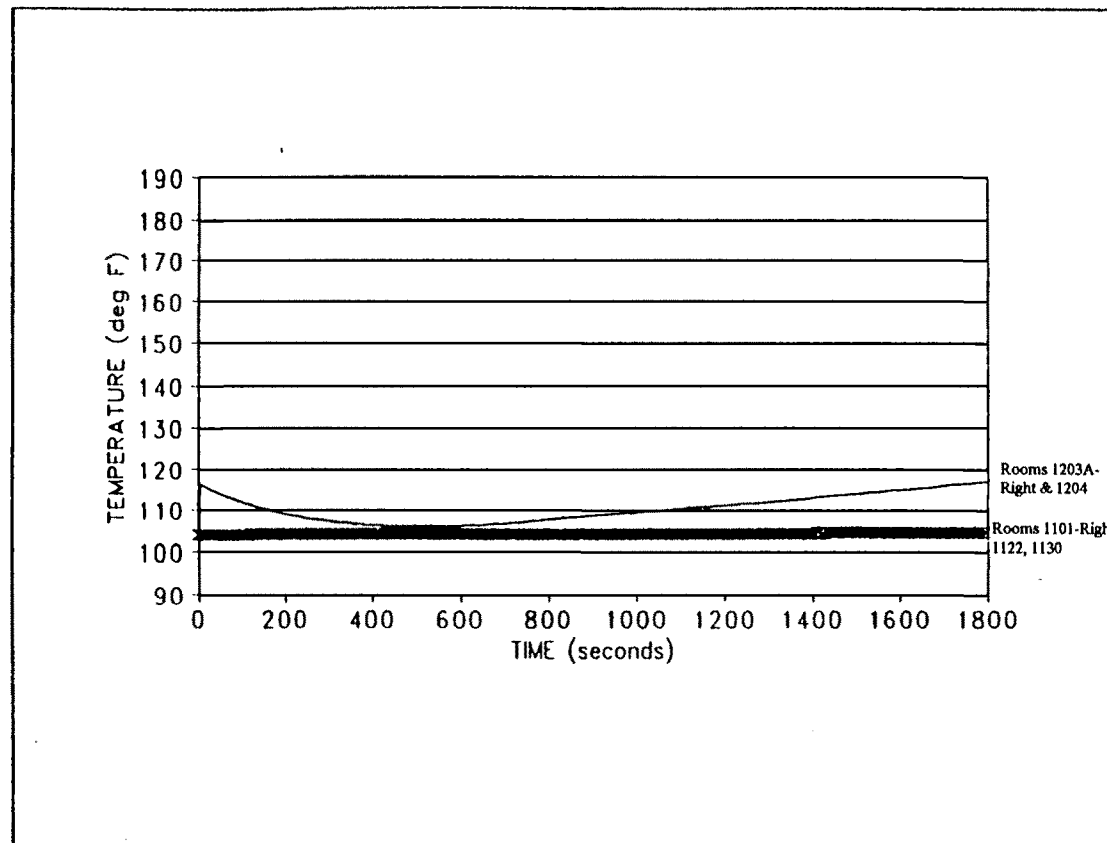
CALLAWAY PLANT

FIGURE 3.11(B)-16

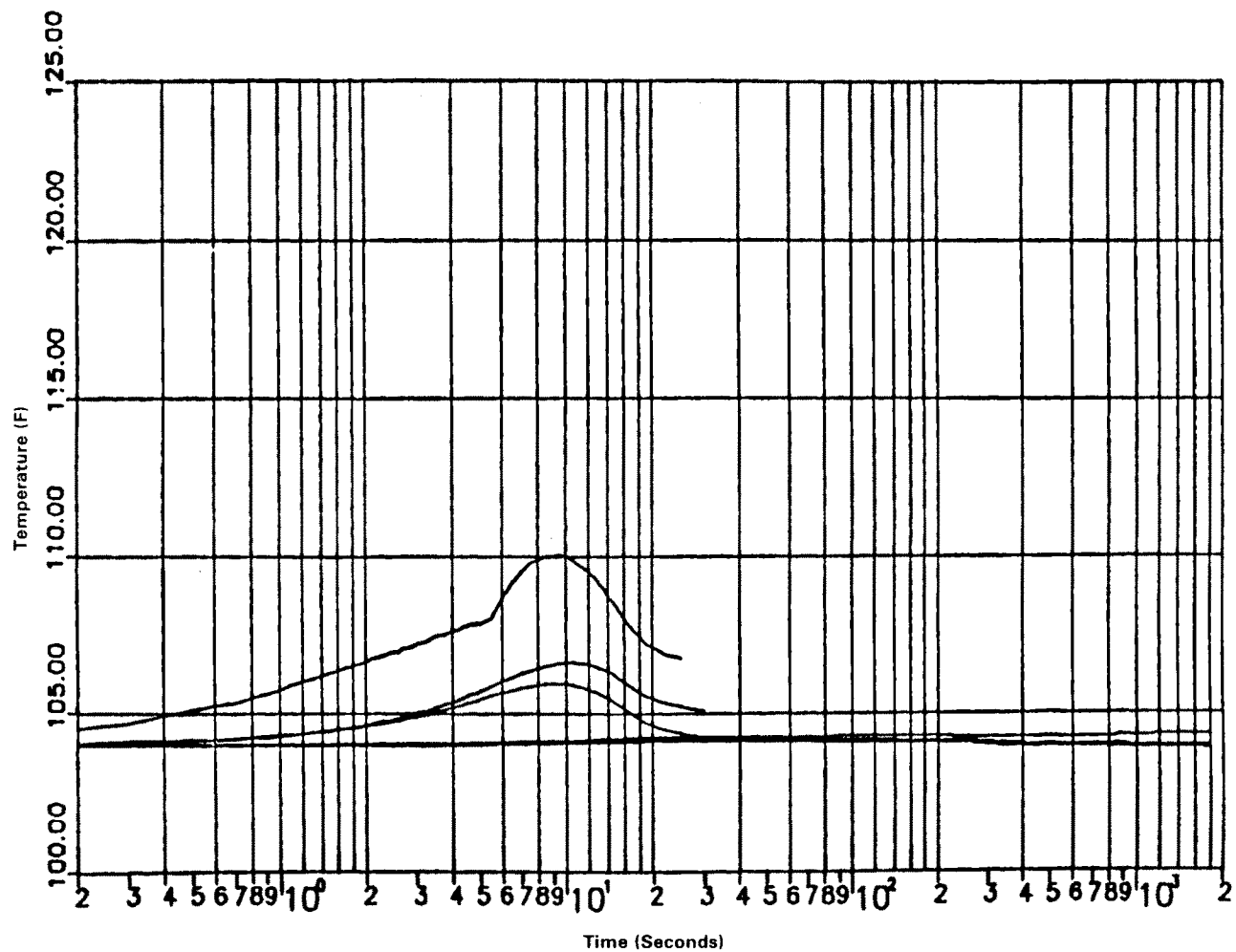
SHEET 1

AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1203A-RIGHT AND 1204)

Rev. 9 11/13



Note: Curves based on CVCS letdown flowrate of 120 gpm at time of break.

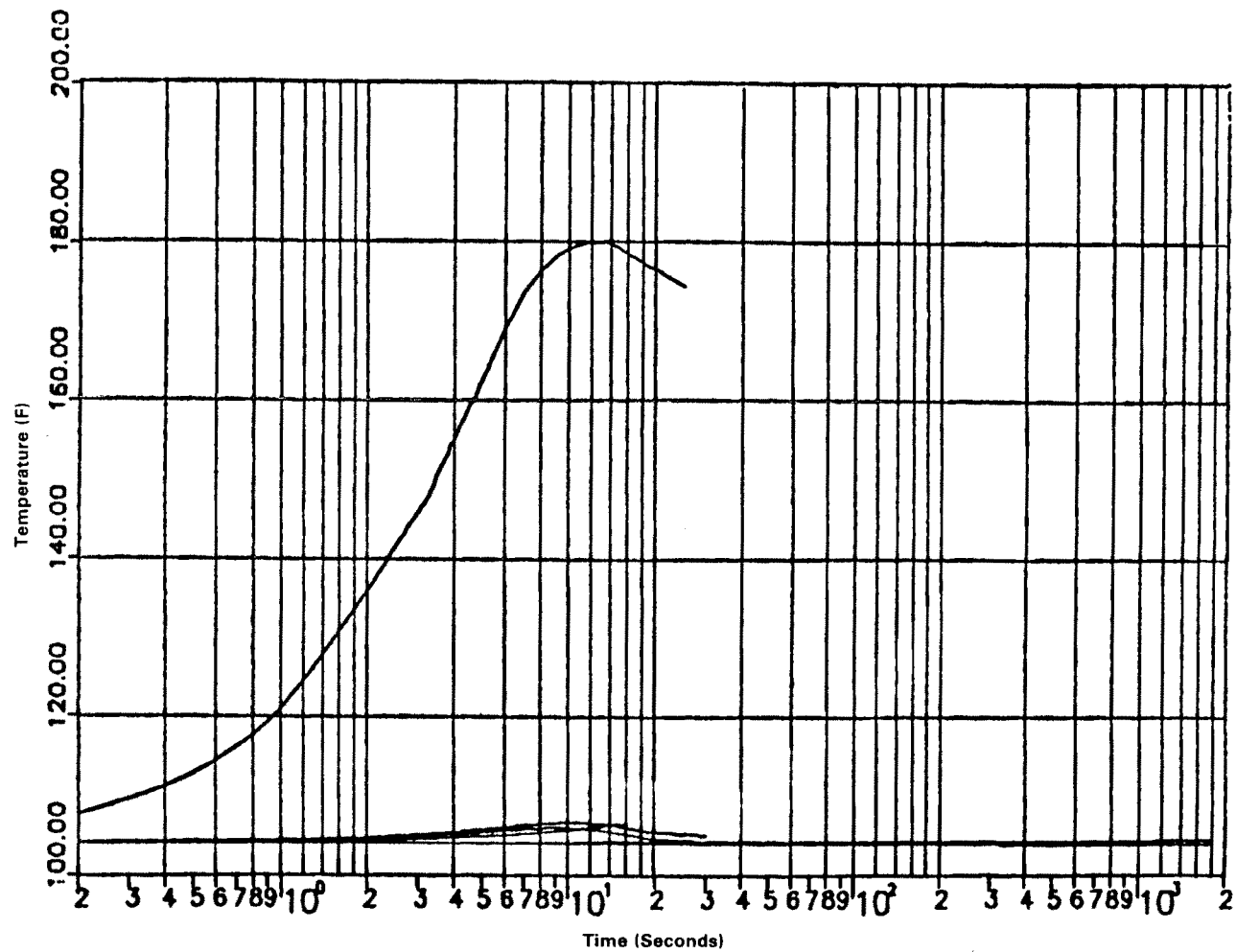


CALLAWAY PLANT

FIGURE 3.11(B)-17

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1301-WEST, 1314, AND 1315)**

Rev. 9 11/13

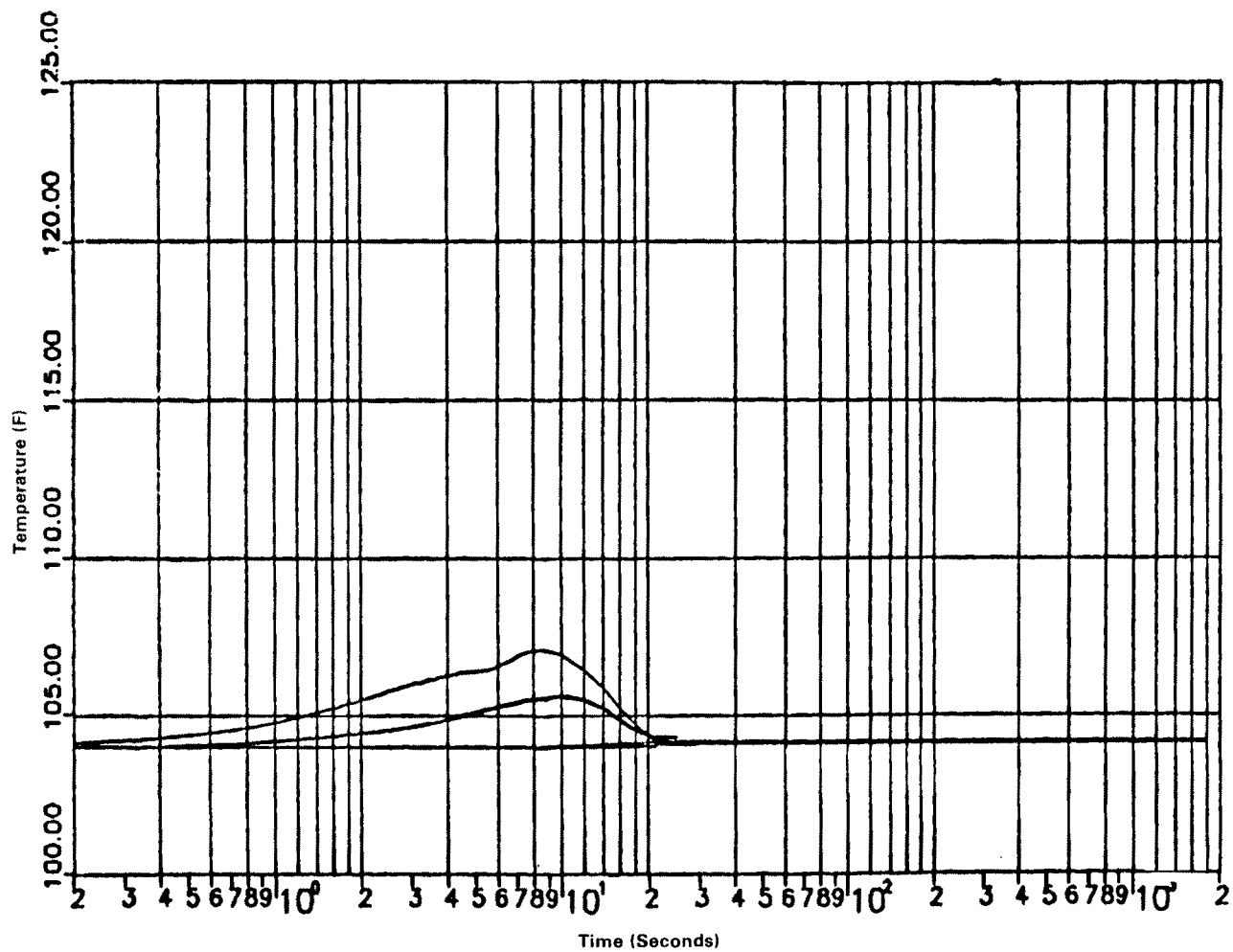


CALLAWAY PLANT

FIGURE 3.11(B)-18

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1301-NORTH AND 1320)**

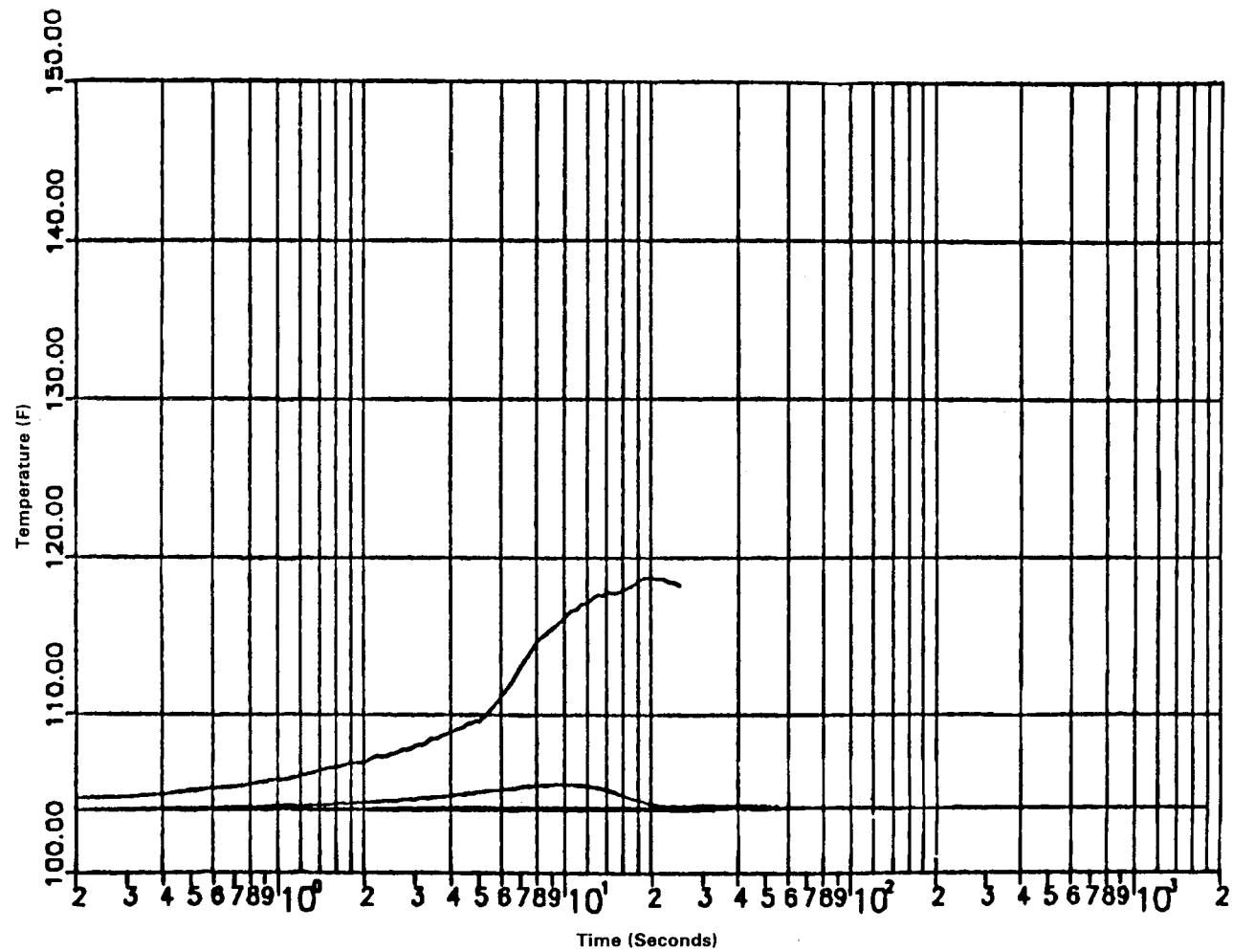
Rev. 9 11/13



CALLAWAY PLANT

FIGURE 3.11(B)-19

AUXILIARY BUILDING HELB TEMPERATURE
 (ROOMS 1302, 1306, 1307, 1308, 1309, 1310,
 1311, 1312, 1316, AND 1317)
 Rev. 9 11/13

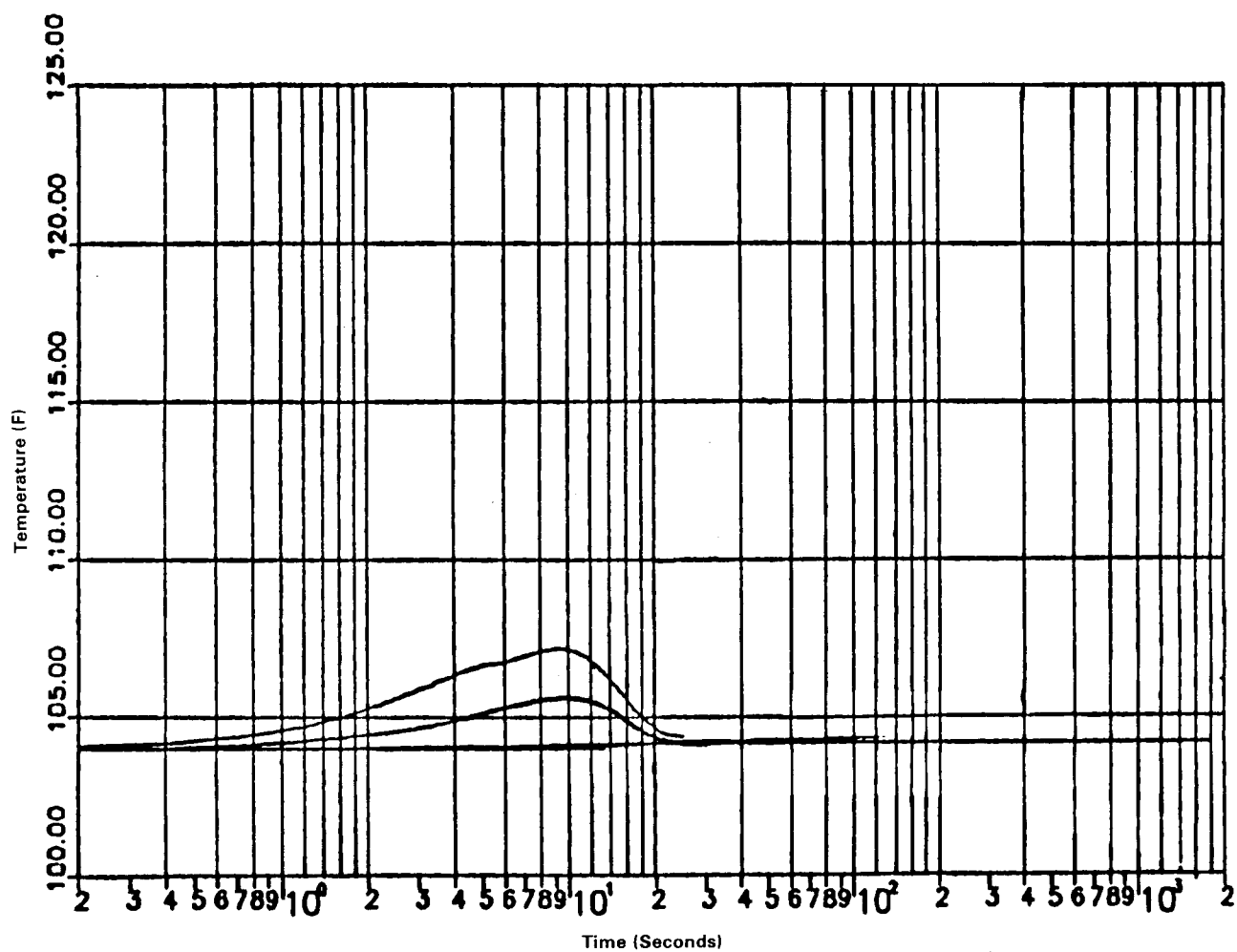


CALLAWAY PLANT

FIGURE 3.11(B)-20

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1313 AND 1318)**

Rev. 9 11/13

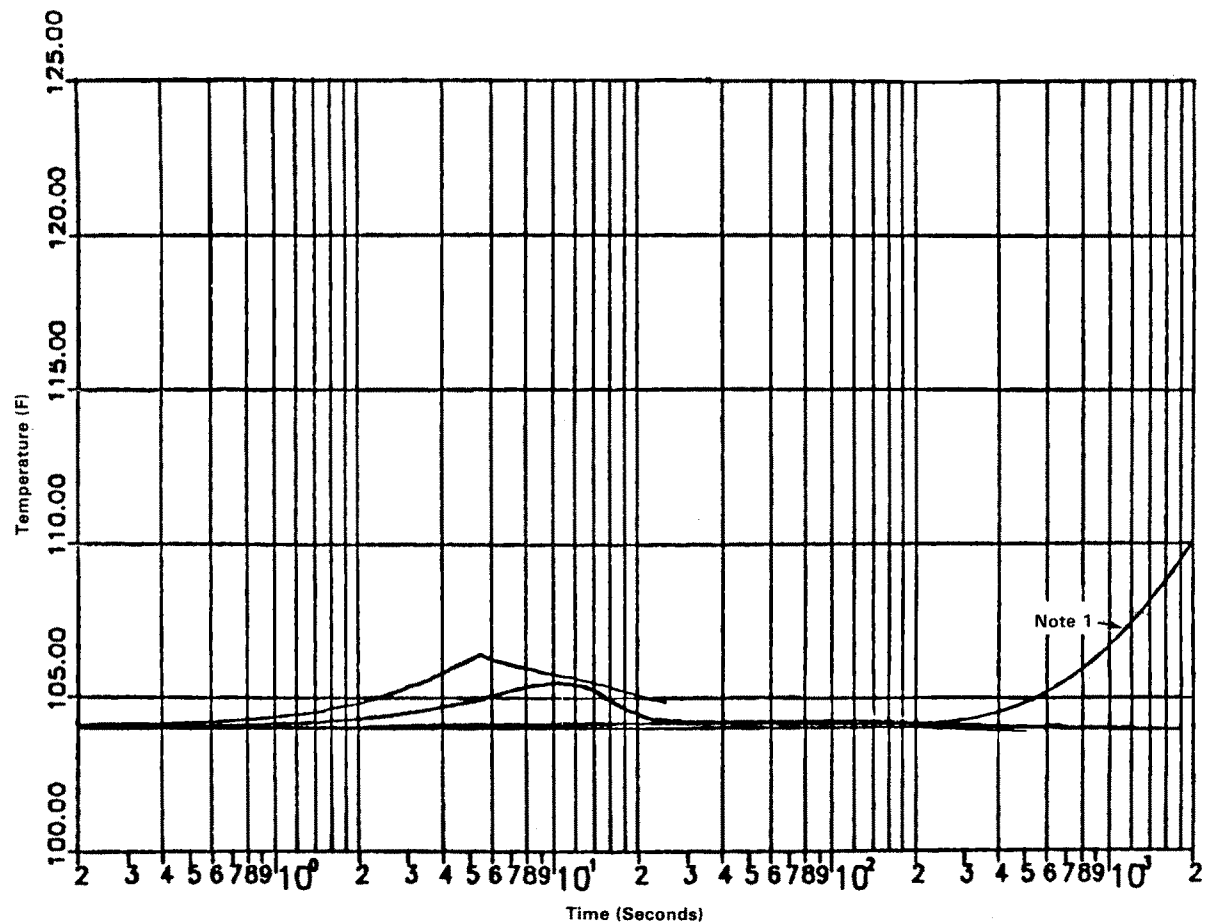


CALLAWAY PLANT

FIGURE 3.11(B)-21

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1322 AND 1323)**

Rev. 9 11/13



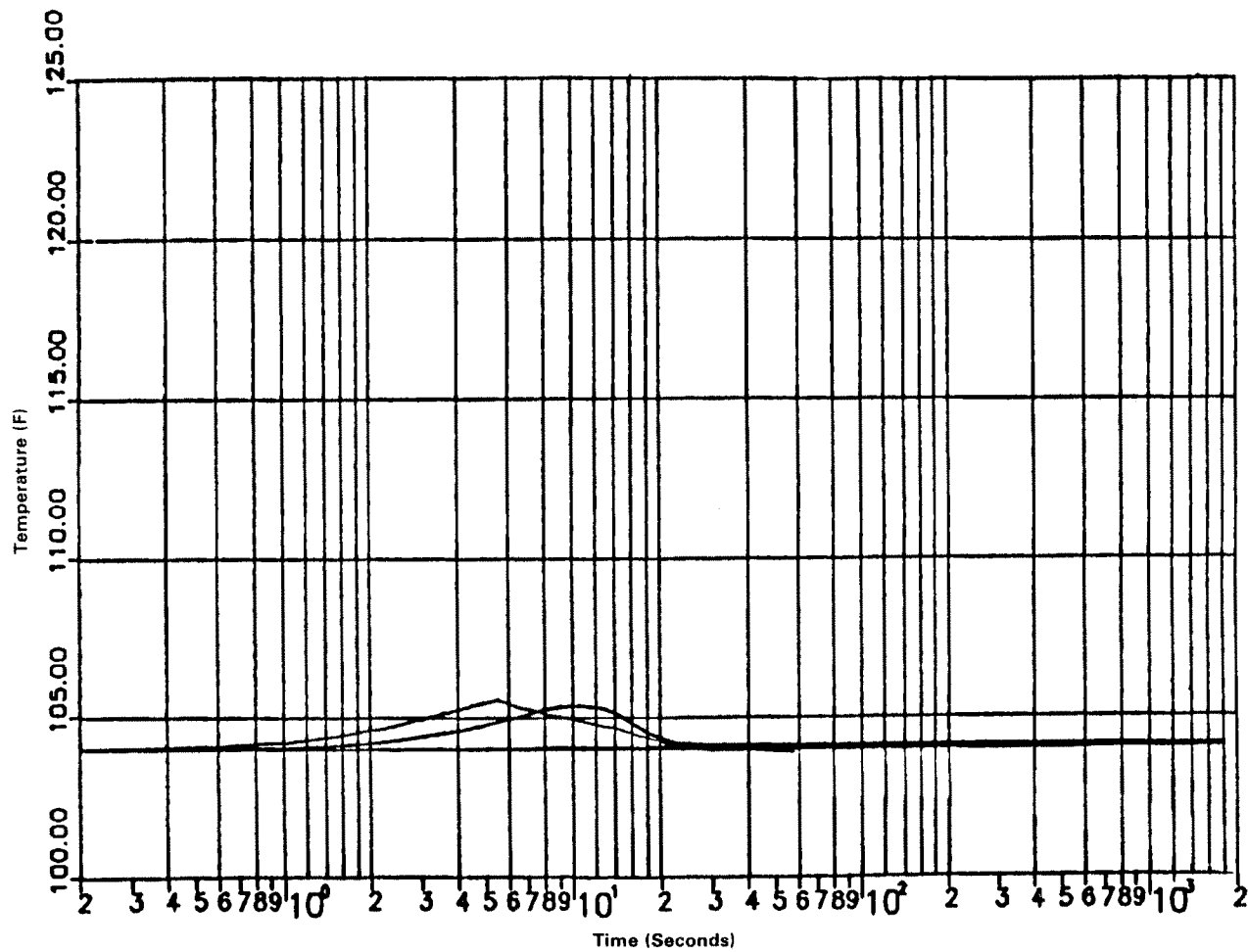
Note 1: Based on finalized values, this curve no longer applies but may have been used in performing detailed equipment qualification. As elimination of this curve results in a decrease in qualification requirements, equipment qualification documentation is conservative and may not have been revised.

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FIGURE 3.11(B)-22

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1401, 1402, 1406, AND 1408)**

Rev. 9 11/13

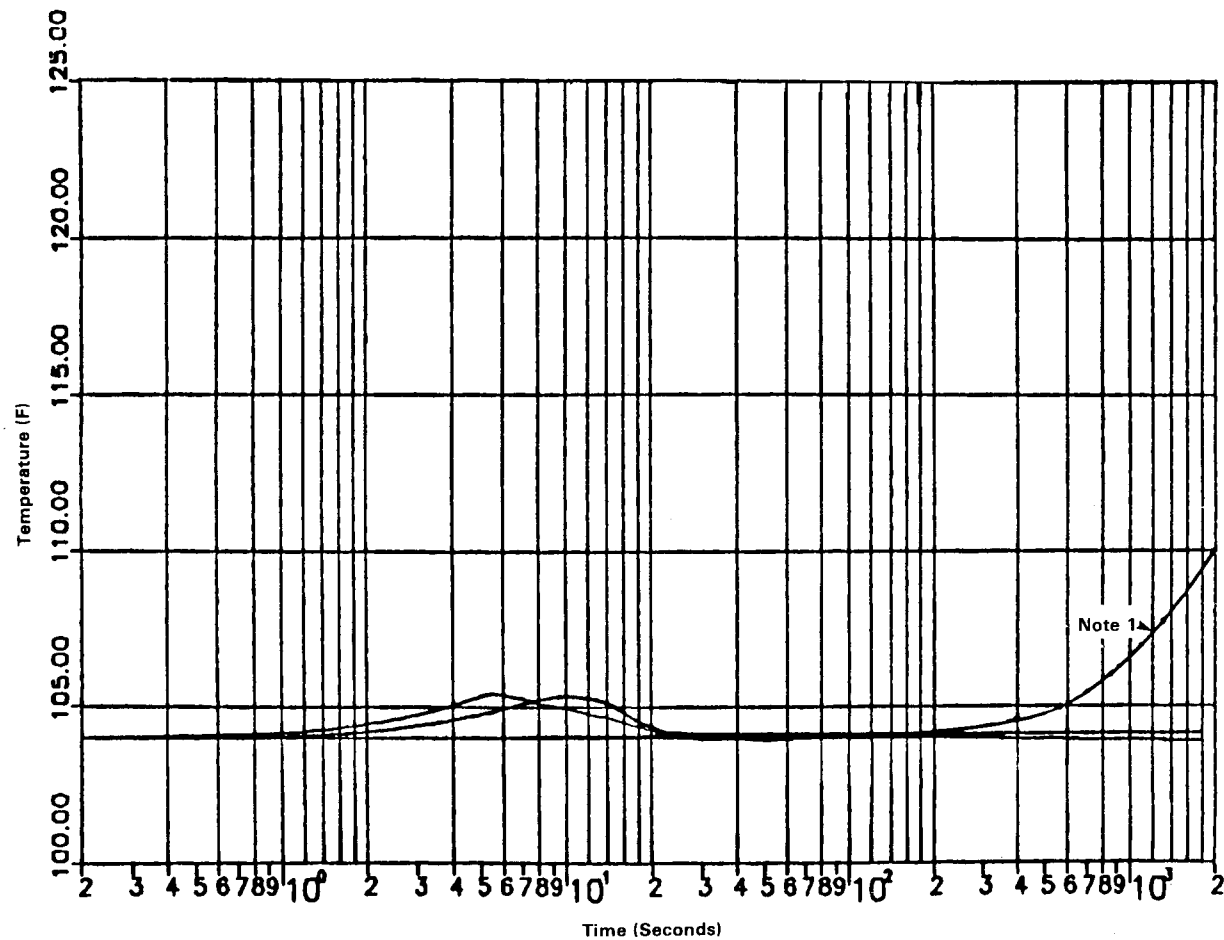


CALLAWAY PLANT

FIGURE 3.11(B)-23

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1405, 1409, AND 1410)**

Rev. 9 11/13



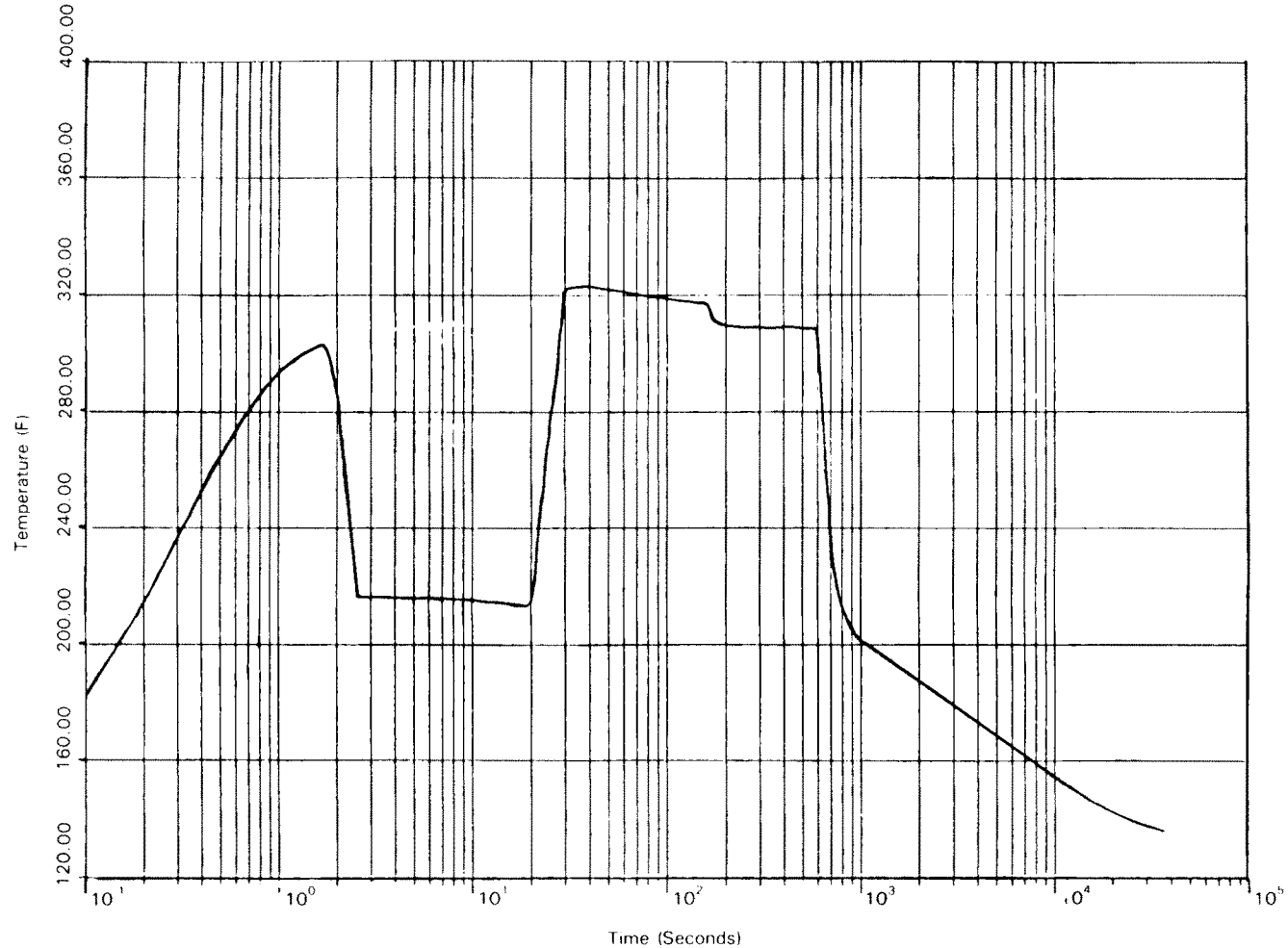
Note 1: Based on finalized values, this curve no longer applies but may have been used in performing detailed equipment qualification. As elimination of this curve results in a decrease in qualification requirements, equipment qualification documentation is conservative and may not have been revised.

CALLAWAY PLANT

FIGURE 3.11(B)-24

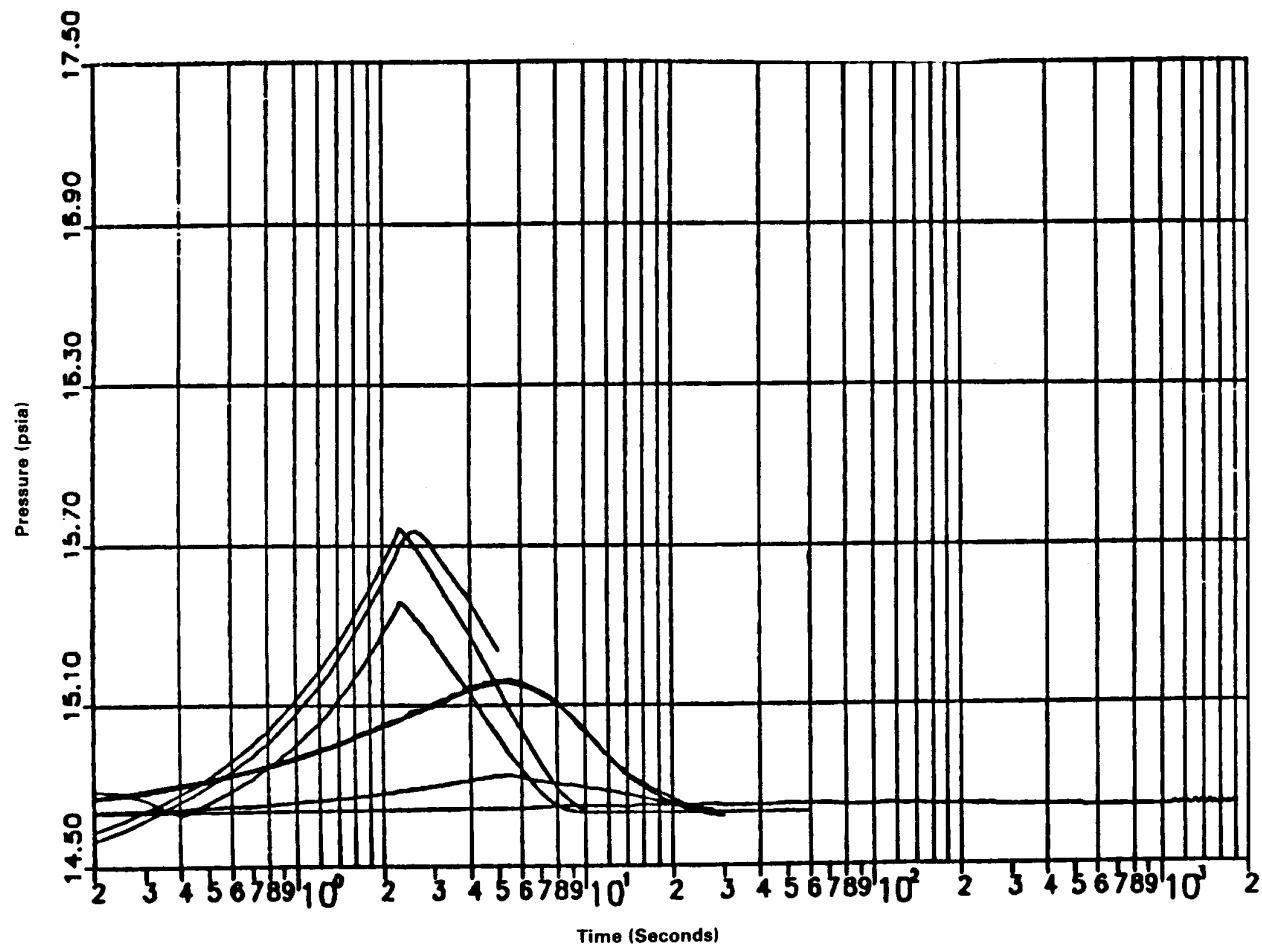
AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1502 THROUGH 1507, AND 1513)

Rev. 9 11/13



NOTE : This figure corresponds to the design value of 324 F, with consideration given to superheated blowdowns, this figure is supplemented by Figures 3B-7, 3B-8, 3B-9, and 3B-10. Refer to Section 3B.4.2.

CALLAWAY PLANT
FIGURE 3.11(B)-25
AUXILIARY BUILDING MSLB TEMPERATURE (ROOMS 1411, 1412, 1508, AND 1509)
REV. 5 11/10

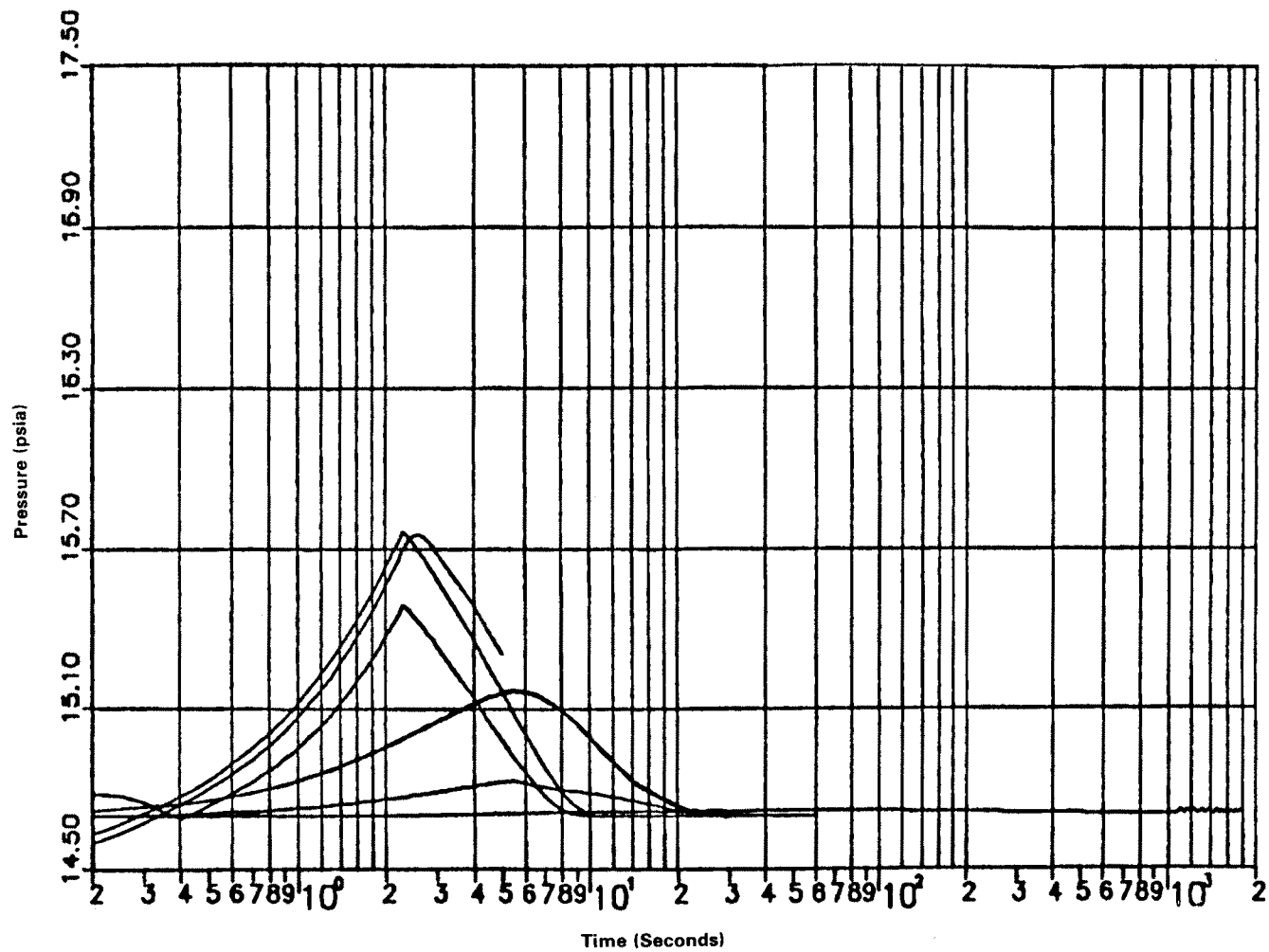


CALLAWAY PLANT

FIGURE 3.11(B)-26

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1101, 1102, 1119, 1120, AND 1121)**

Rev. 9 11/13

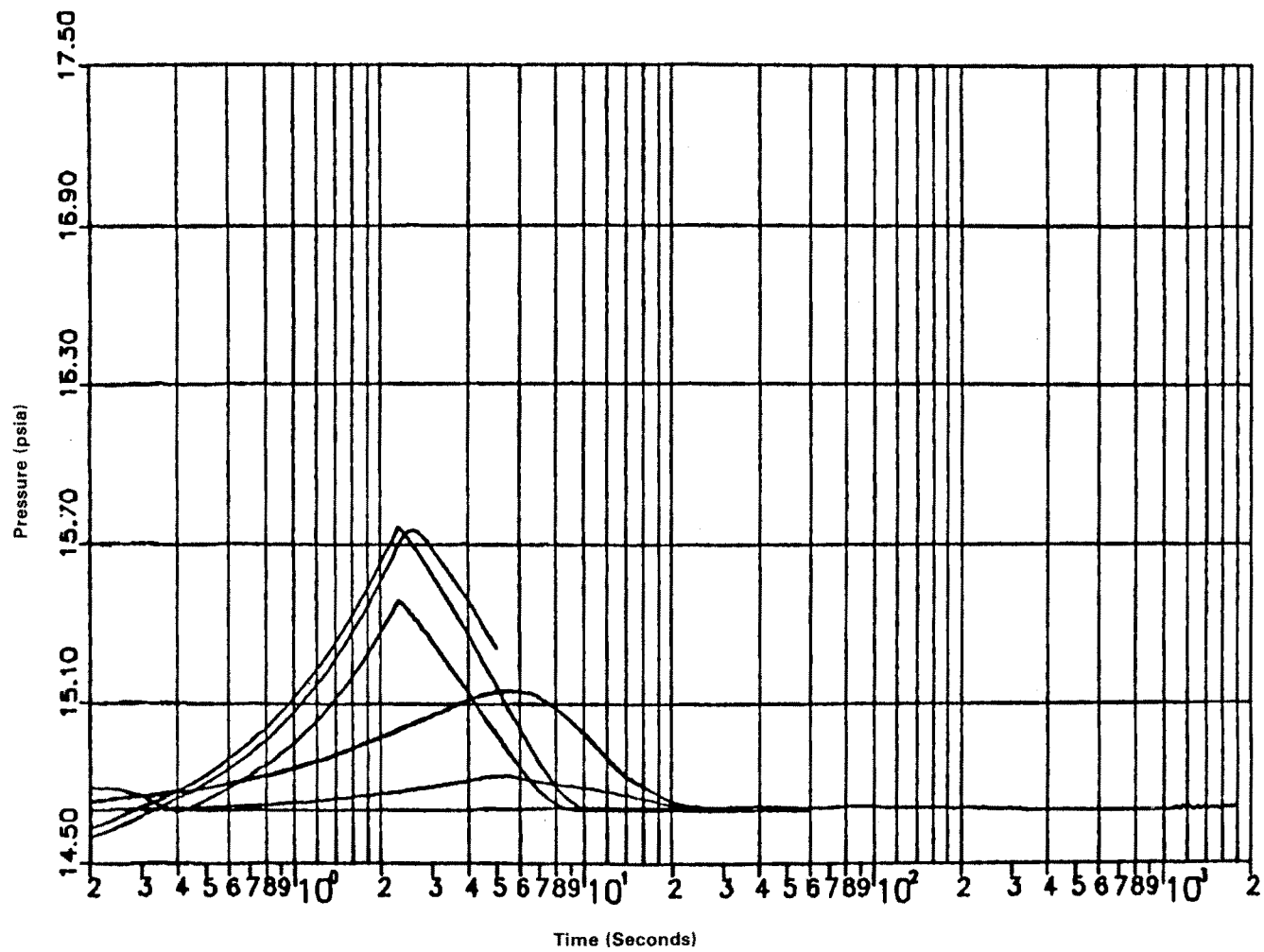


CALLAWAY PLANT

FIGURE 3.11(B)-27

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1107 THROUGH 1114)**

Rev. 9 11/13

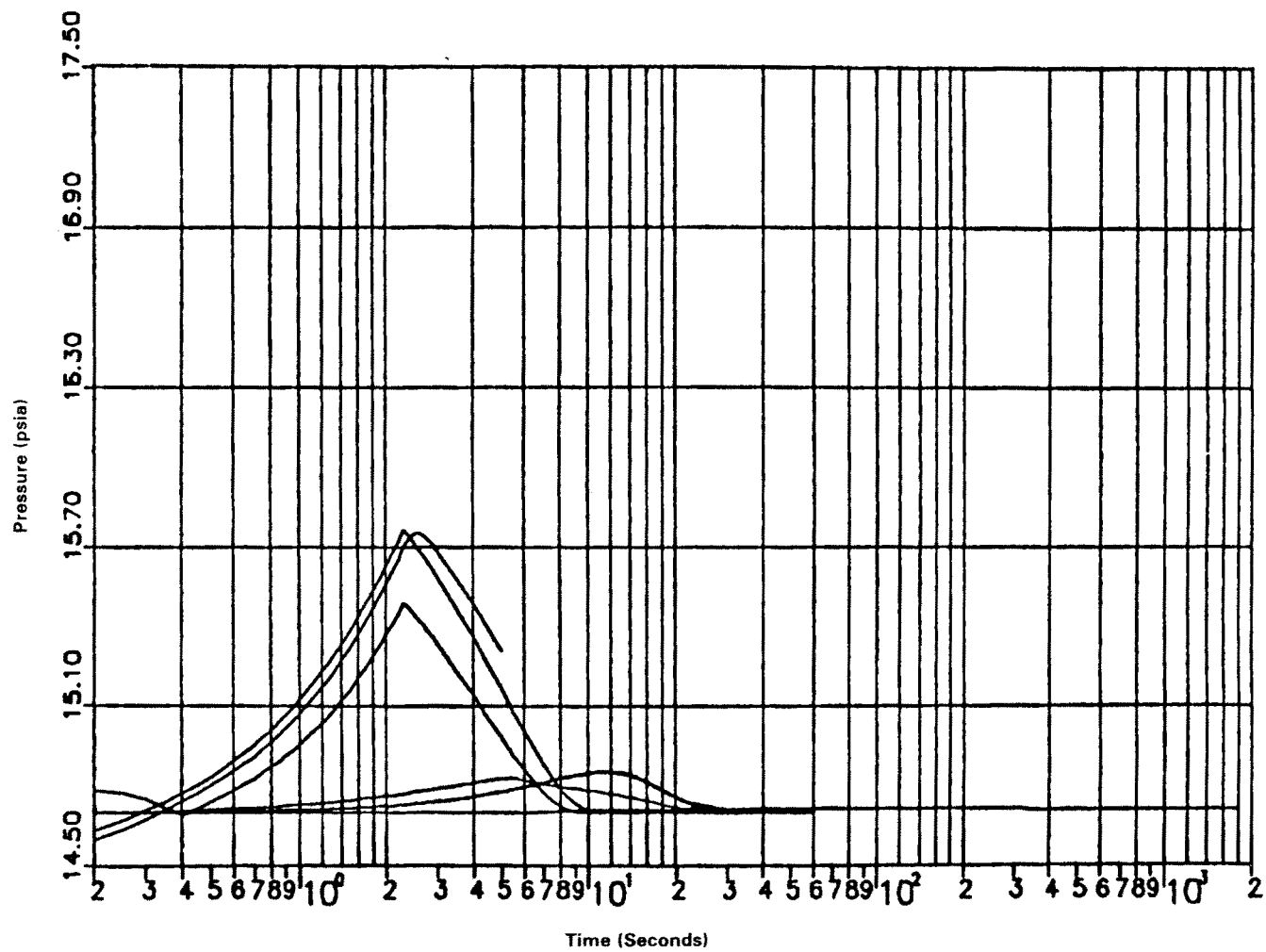


CALLAWAY PLANT

FIGURE 3.11(B)-28

**AUXILIARY BUILDING HELB PRESSURE
(ROOM 1126)**

Rev. 9 11/13

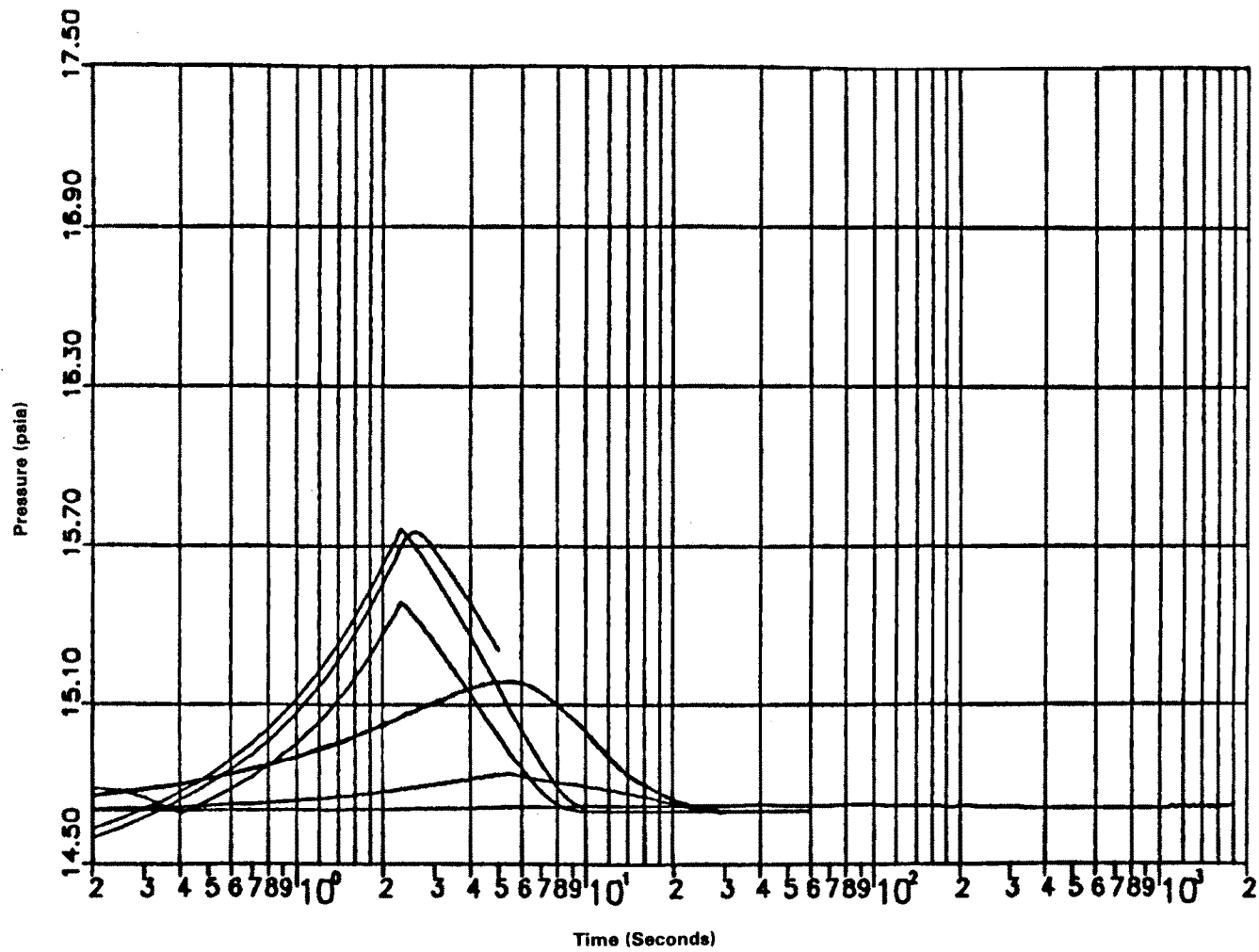


CALLAWAY PLANT

FIGURE 3.11(B)-29

**AUXILIARY BUILDING HELB PRESSURE
(ROOM 1127)**

Rev. 9 11/13

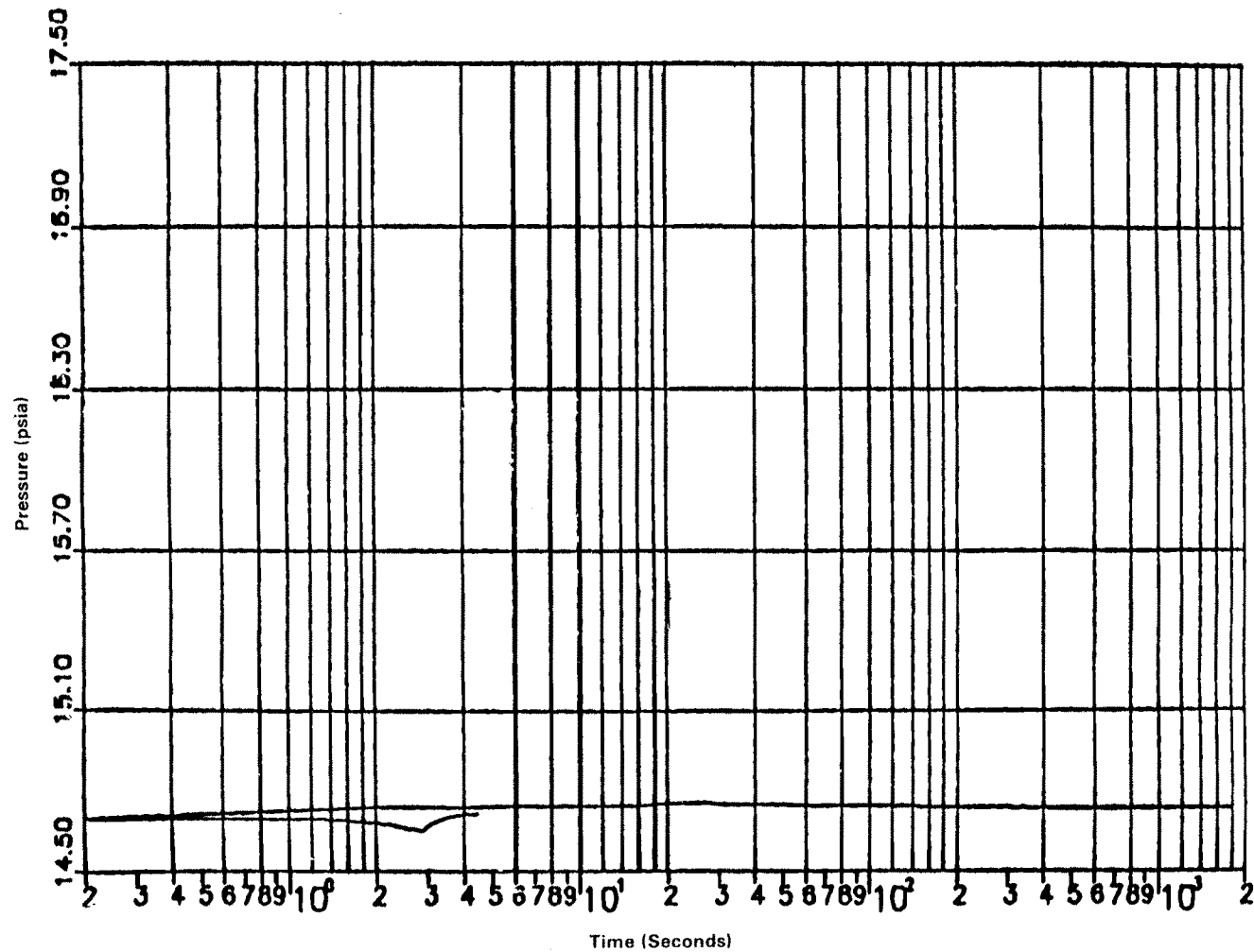


CALLAWAY PLANT

FIGURE 3.11(B)-30

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1122, 1128, 1129, 1130, 1206,
AND 1207)**

Rev. 9 11/13

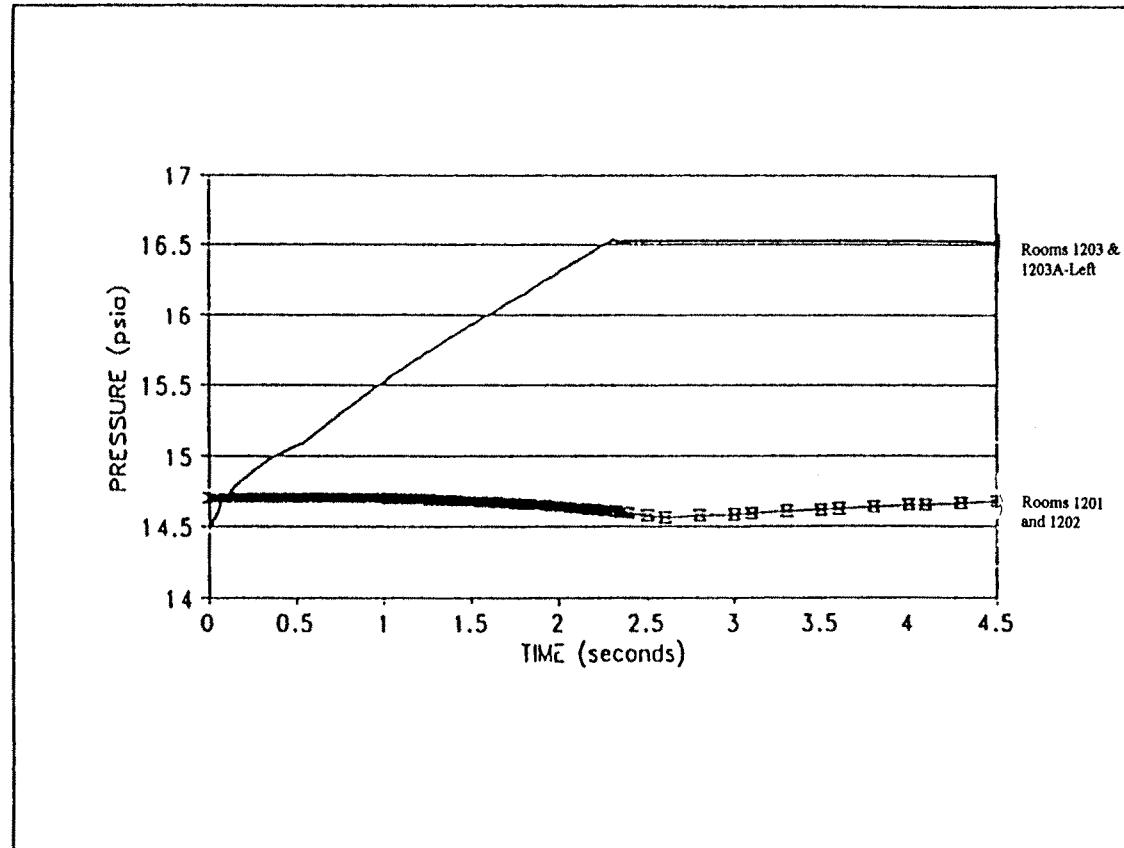


Note Curves based on CVCS letdown flowrate of 75 gpm at time of break.

CALLAWAY PLANT

**FIGURE 3.11(B)-31
SHEET 1
AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1201 AND 1202)**

Rev. 9 11/13

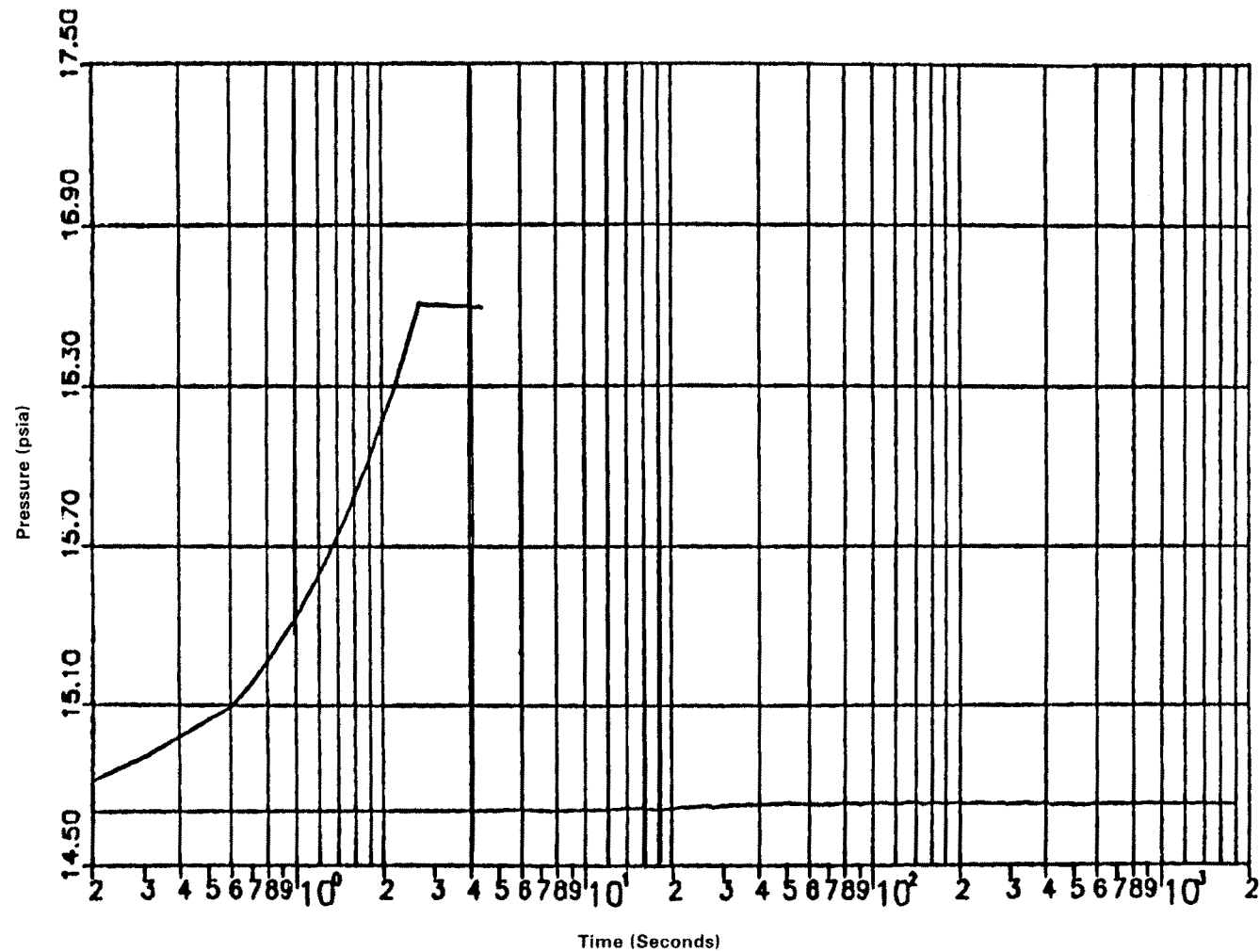


Note: Curves based on CVCS letdown flowrate of 120 gpm at time of break.

CALLAWAY PLANT

FIGURE 3.11(B)-31
SHEET 2
AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1201 AND 1202)

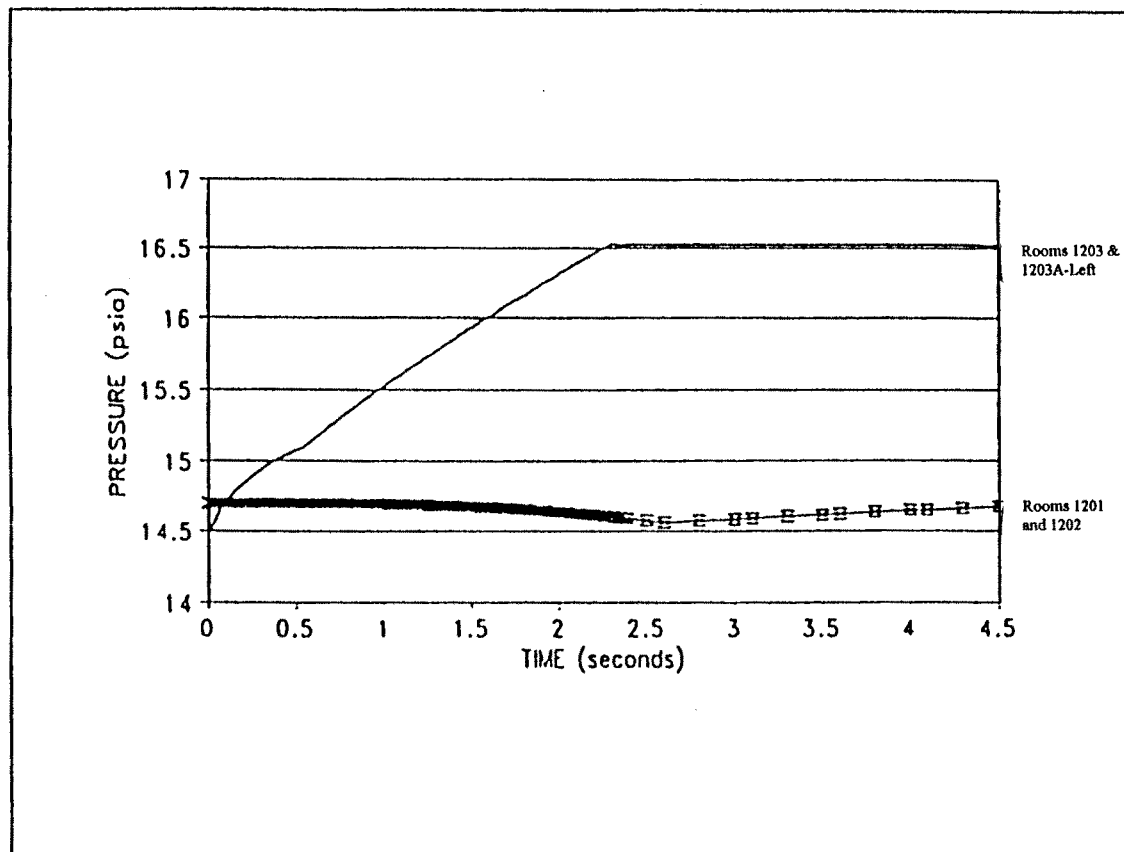
Rev. 9 11/13



Note : Curves based on CVCS letdown flowrate of 75 gpm at time of break.

CALLAWAY PLANT

FIGURE 3.11(B)-32
SHEET 1
AUXILIARY BUILDING HELB PRESSURE
(ROOM 1203)
Rev. 9 11/13

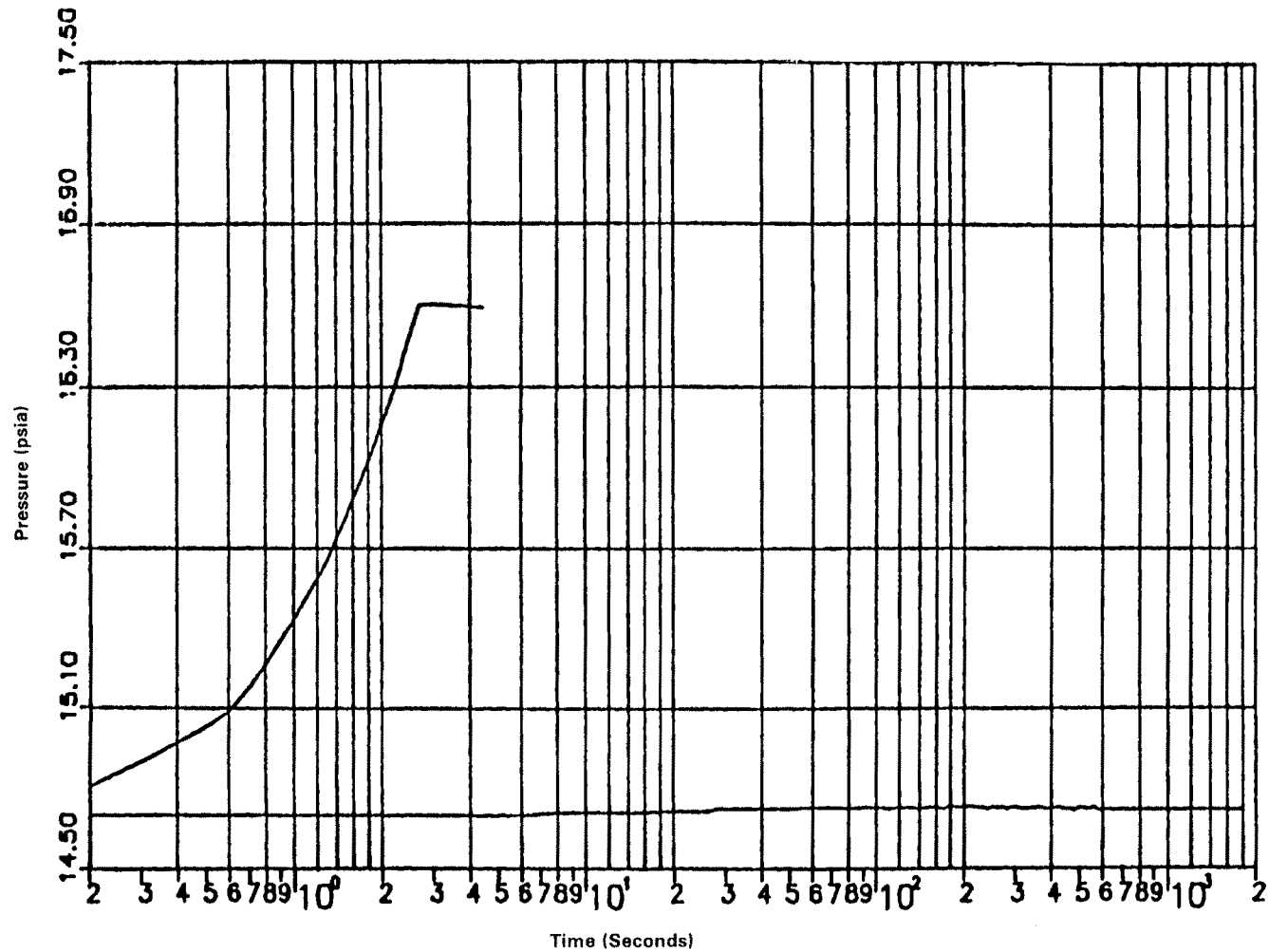


Note: Curves based on CVCS letdown flowrate of 120 gpm at time of break.

CALLAWAY PLANT

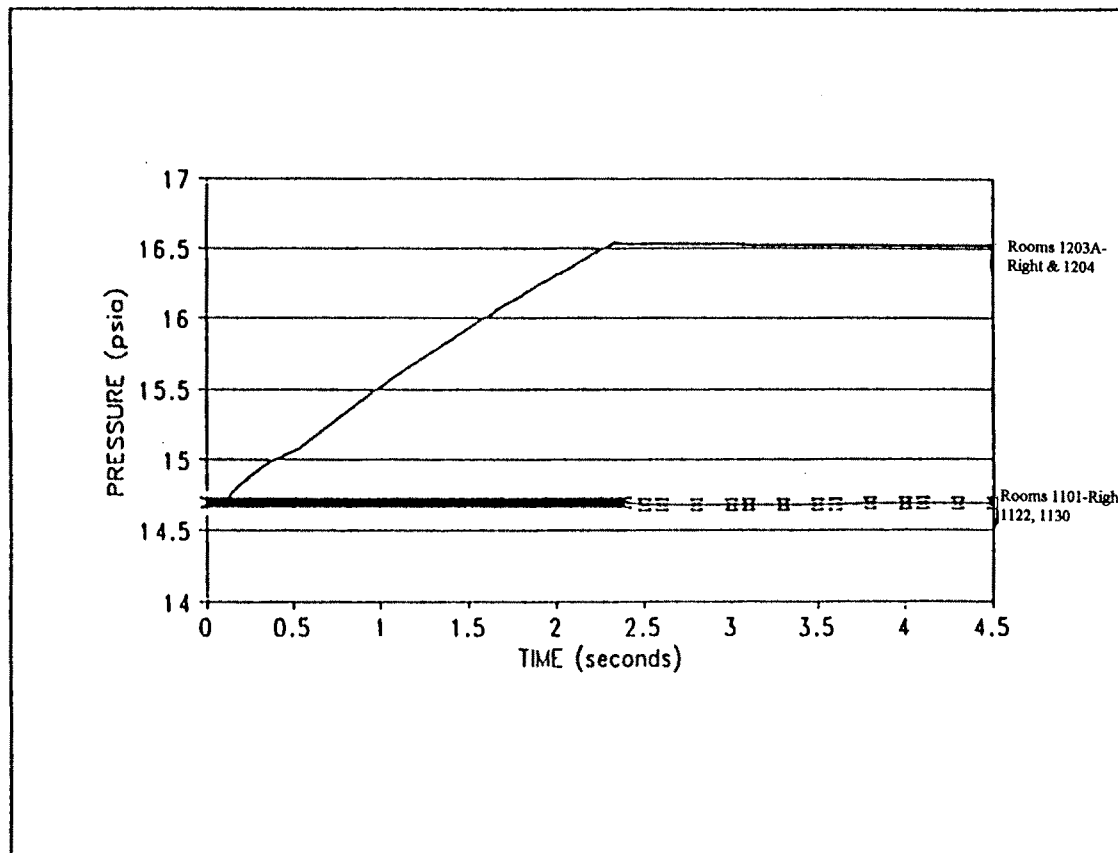
FIGURE 3.11(B)-32
SHEET 2
AUXILIARY BUILDING HELB PRESSURE
(ROOM 1203)

Rev. 9 11/13



Note : Curves based on CVCS letdown flowrate of 75 gpm at time of break.

CALLAWAY PLANT
<p>FIGURE 3.11(B)-33 SHEET 1 AUXILIARY BUILDING HELB PRESSURE (ROOMS 1203A AND 1204) Rev. 9 11/13</p>

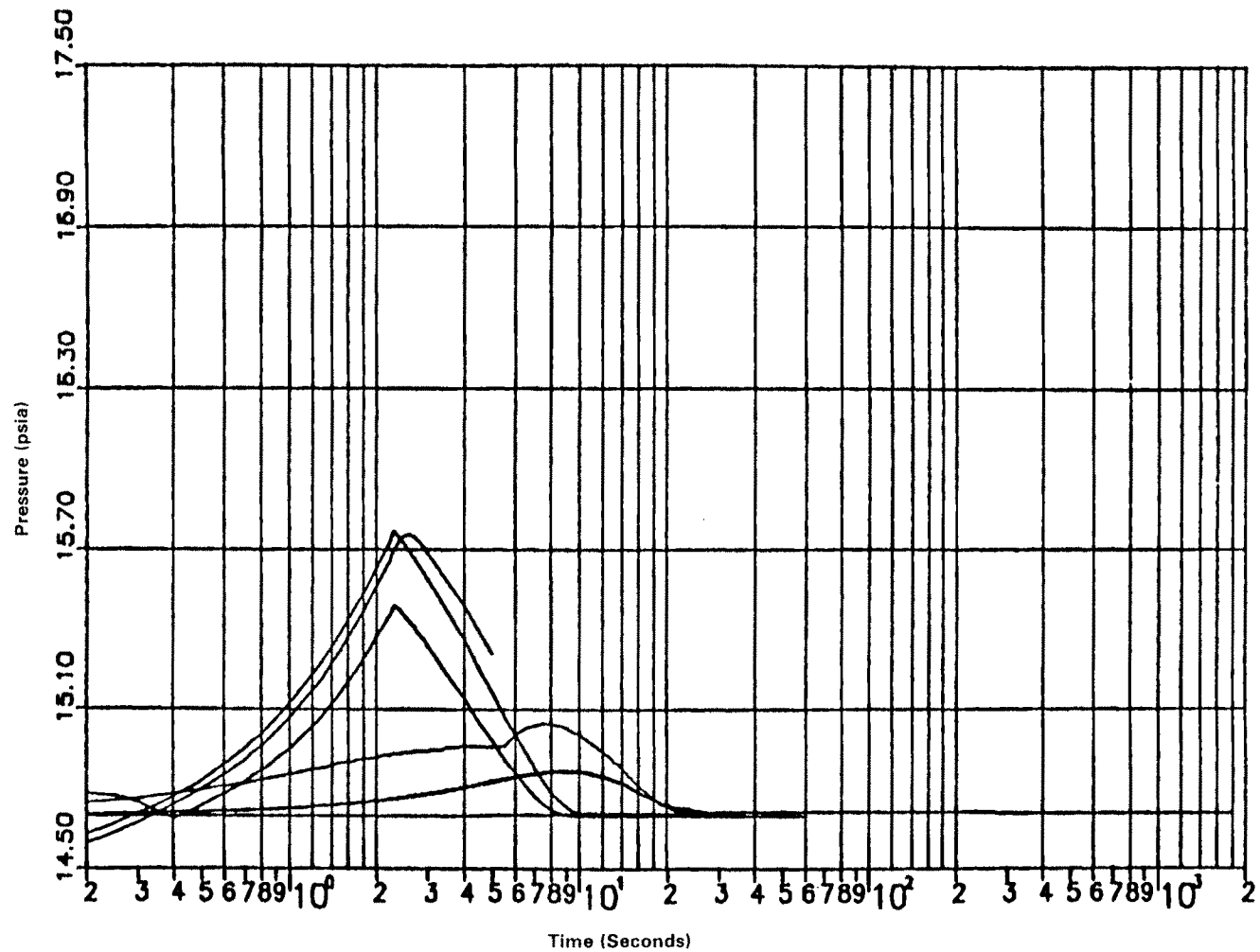


Note: Curves based on CVCS letdown flowrate of 120 gpm at time of break.

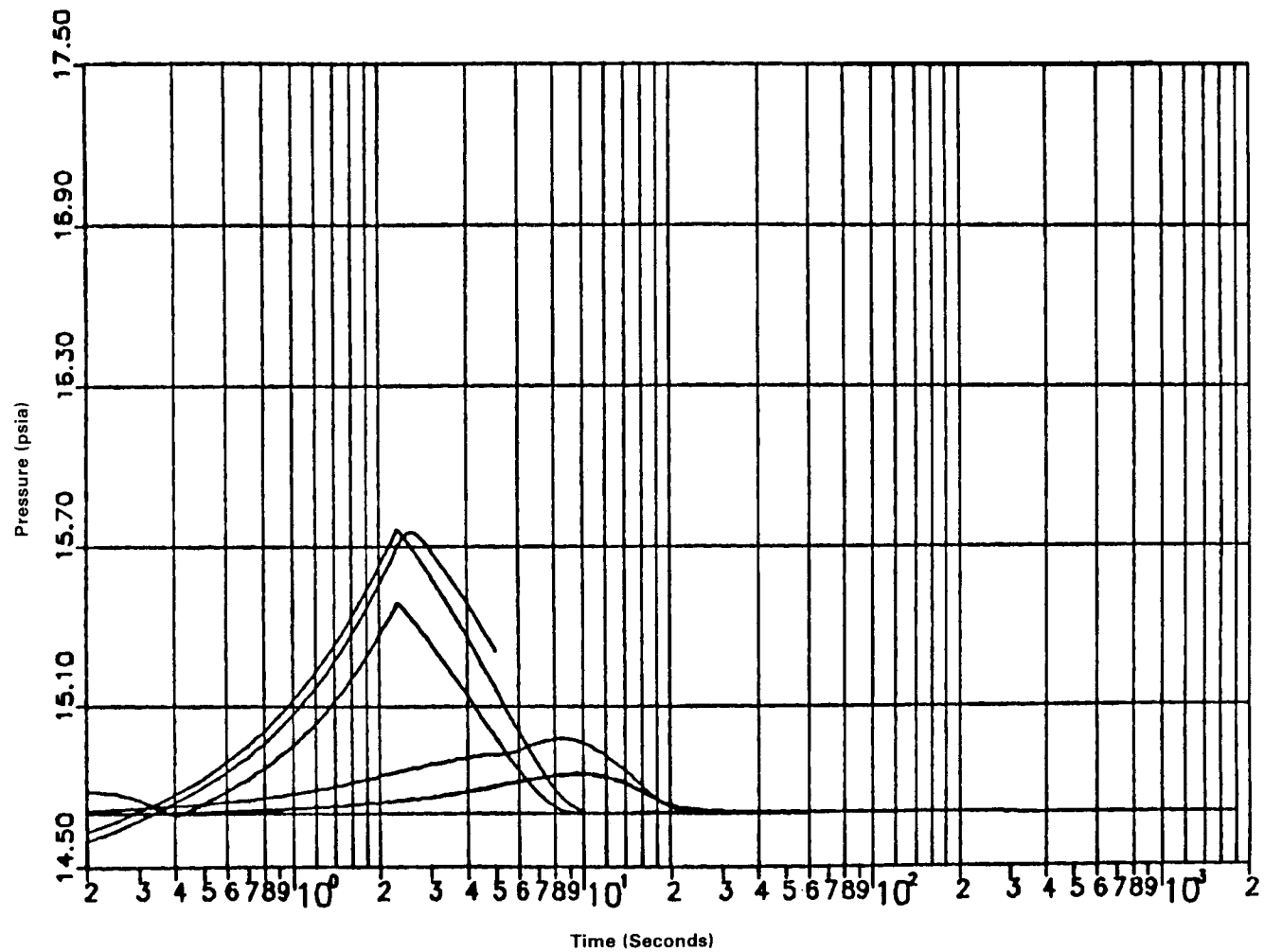
CALLAWAY PLANT

FIGURE 3.11(B)-33
SHEET 2
AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1203A AND 1204)

Rev. 9 11/13



CALLAWAY PLANT
FIGURE 3.11(B)-34
AUXILIARY BUILDING HELB PRESSURE (ROOM 1301)
Rev. 9 11/13

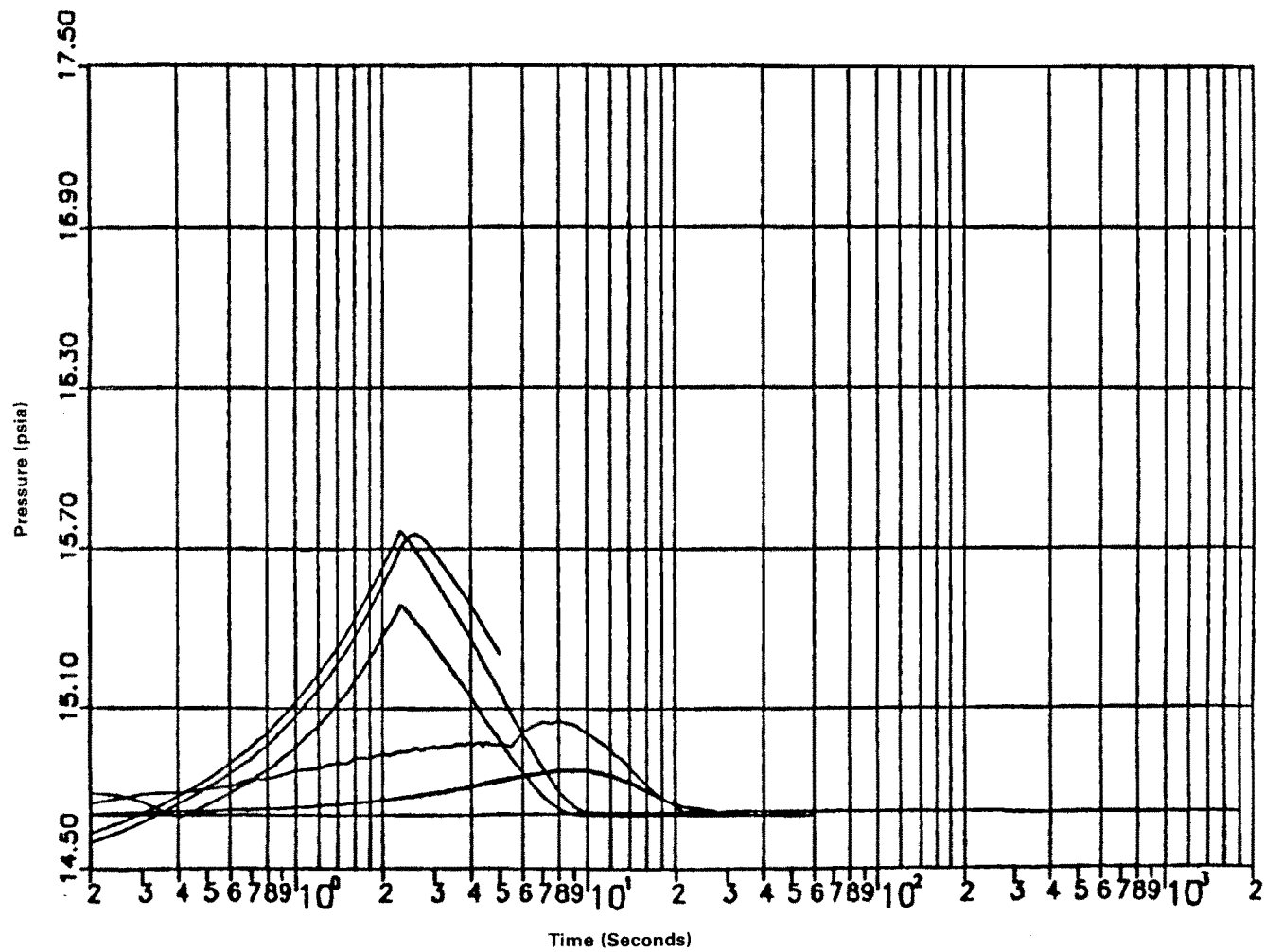


CALLAWAY PLANT

FIGURE 3.11(B)-35

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1302, 1306, 1307 THROUGH 1312, 1316,
AND 1317)**

Rev. 9 11/13

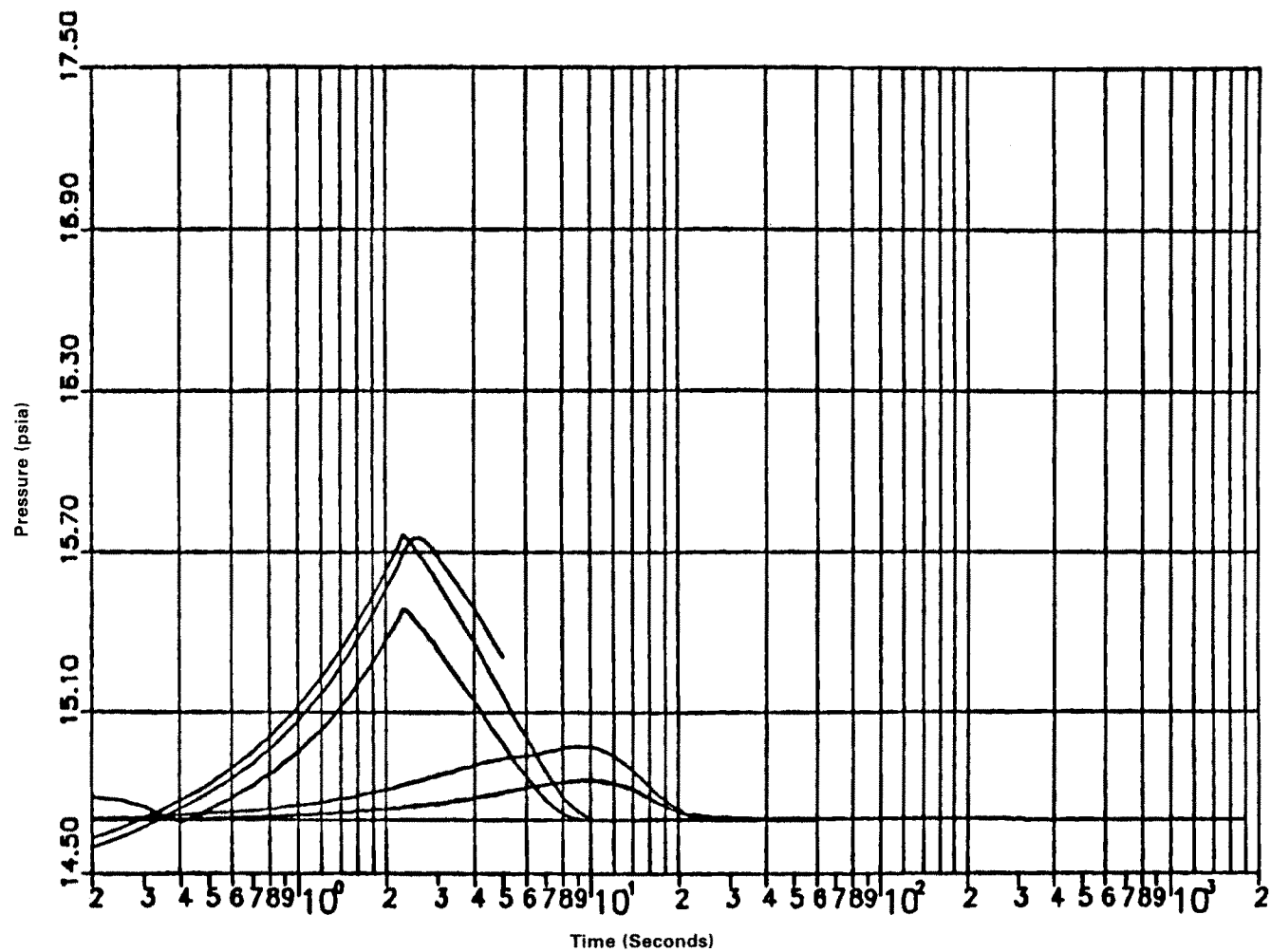


CALLAWAY PLANT

FIGURE 3.11(B)-36

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1314, 1315, AND 1320)**

Rev. 9 11/13

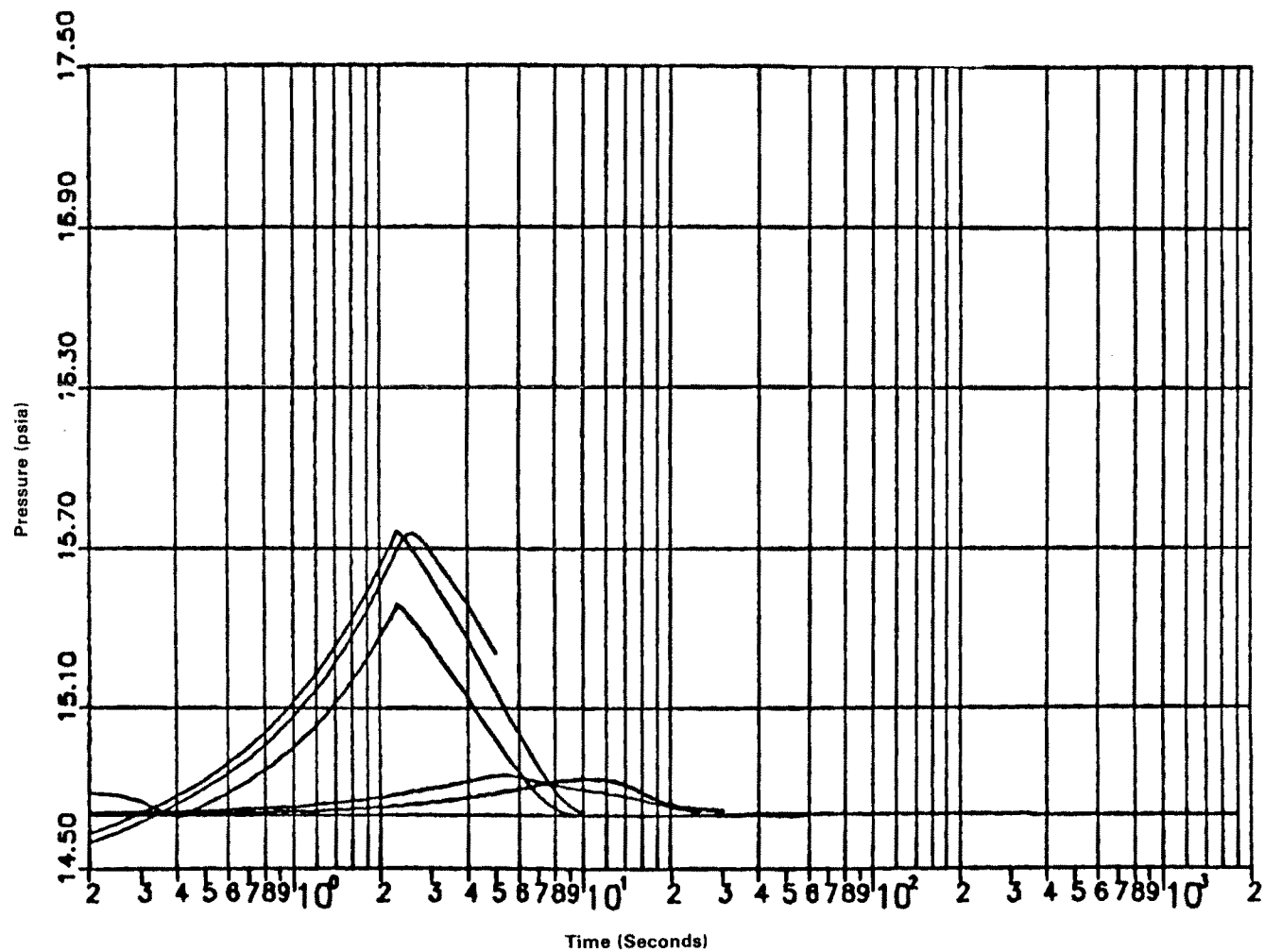


CALLAWAY PLANT

FIGURE 3.11(B)-37

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1322 AND 1323)**

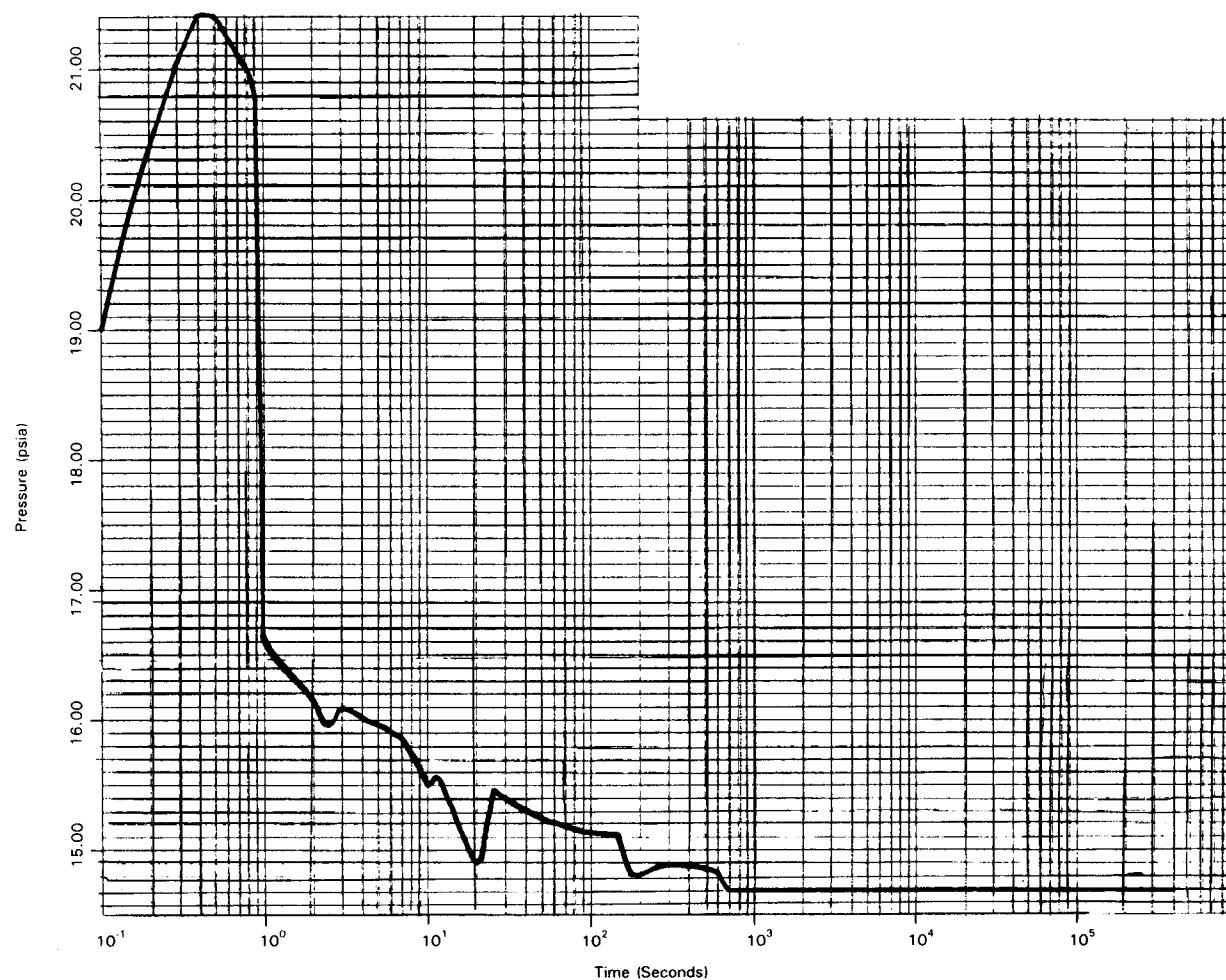
Rev. 9 11/13



CALLAWAY PLANT

FIGURE 3.11(B)-38

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1401, 1402, 1405 THROUGH 1410, 1502,
1507, AND 1513)
Rev. 9 11/13**

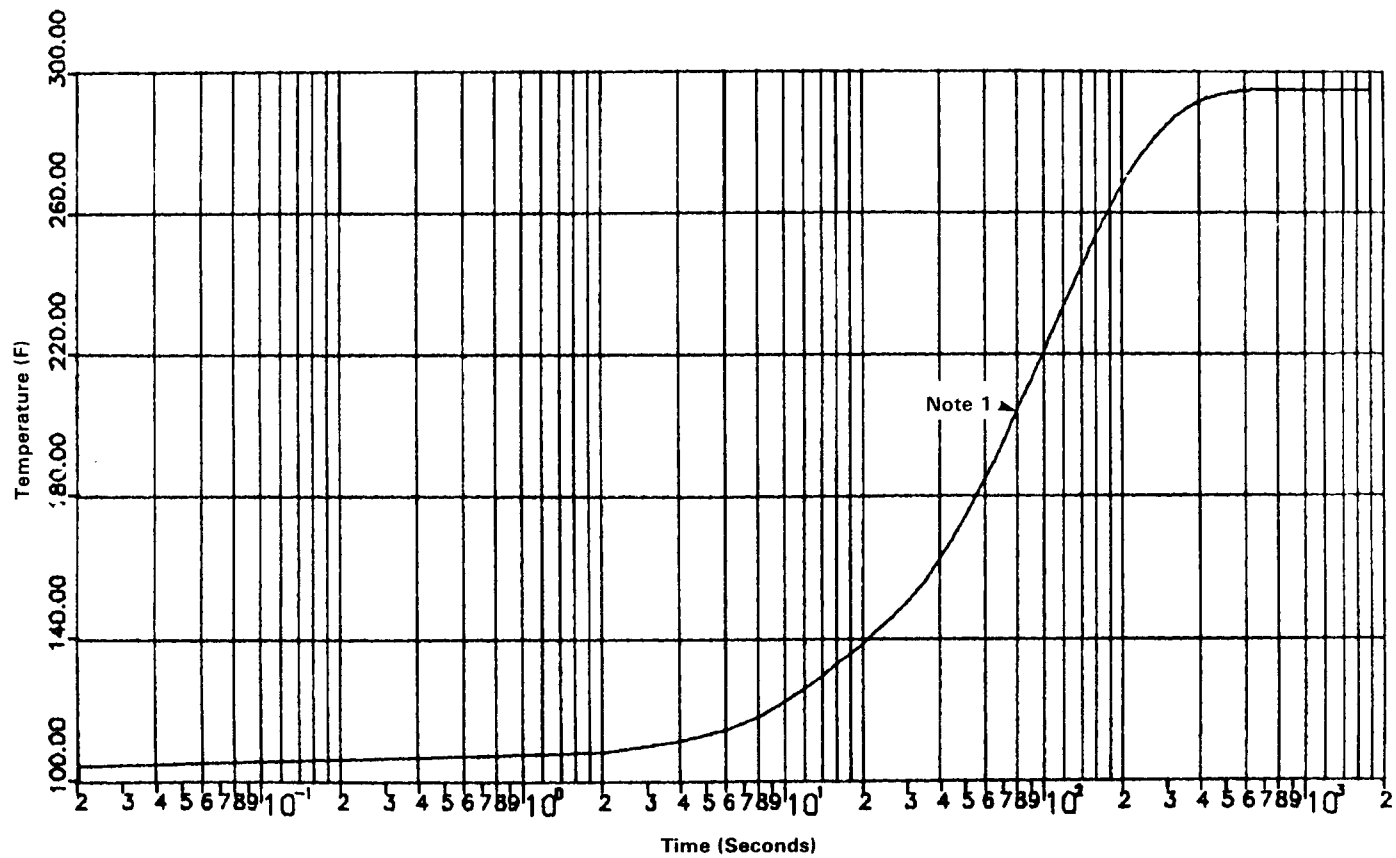


CALLAWAY PLANT

FIGURE 3.11(B)-39

**AUXILIARY BUILDING MSLB PRESSURE
(ROOMS 1411, 1412, 1508, AND 1509)**

REV. 1 11/10



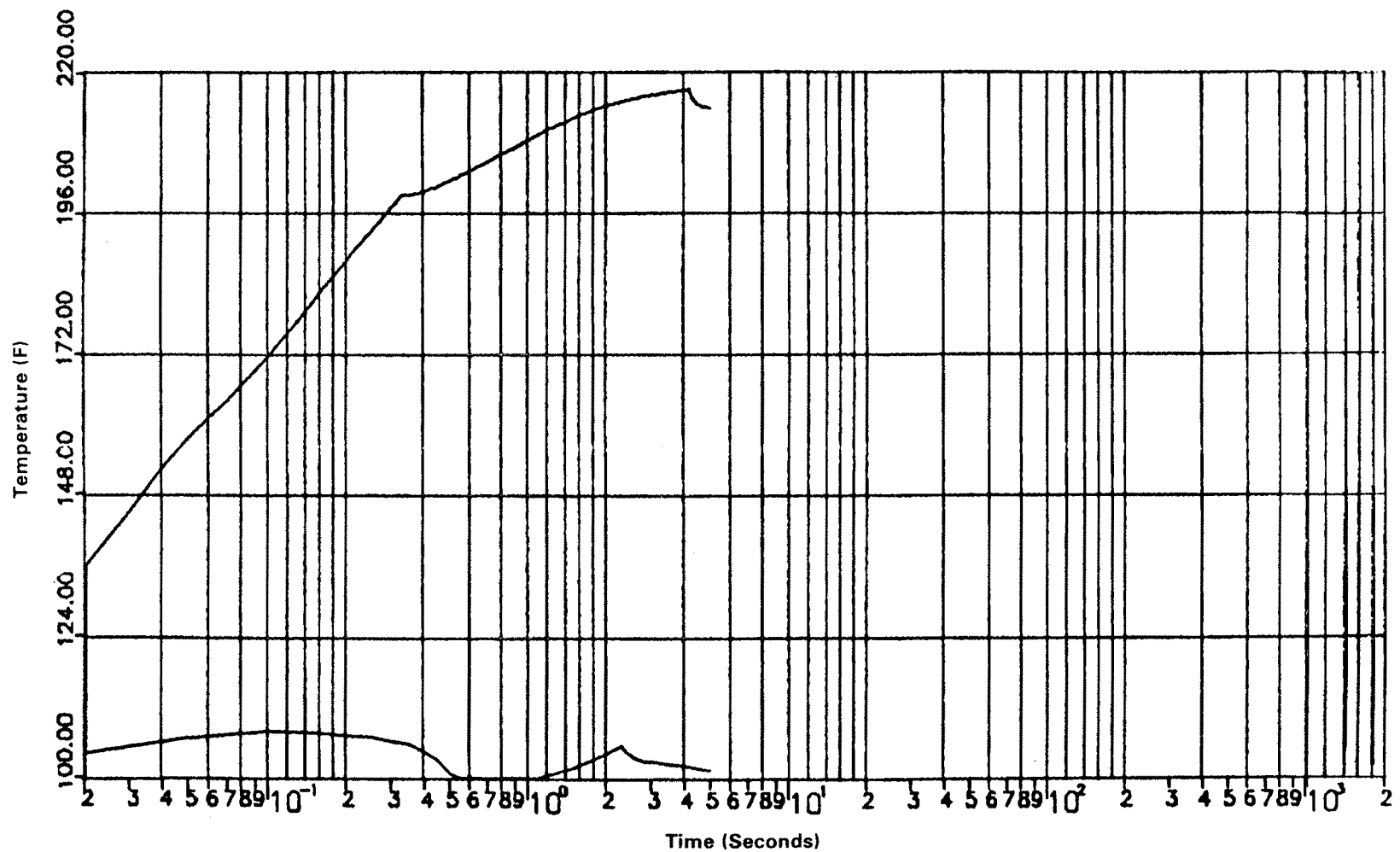
Note 1: Based on finalized values, this curve no longer applies but may have been used in performing detailed equipment qualification. As elimination of this curve results in a decrease in qualification requirements, equipment qualification documentation is conservative and may not have been revised.

CALLAWAY PLANT

FIGURE 3.11(B)-40

AUXILIARY BUILDING HELB TEMPERATURE
(ROOM 1321)

Rev 2 11/13

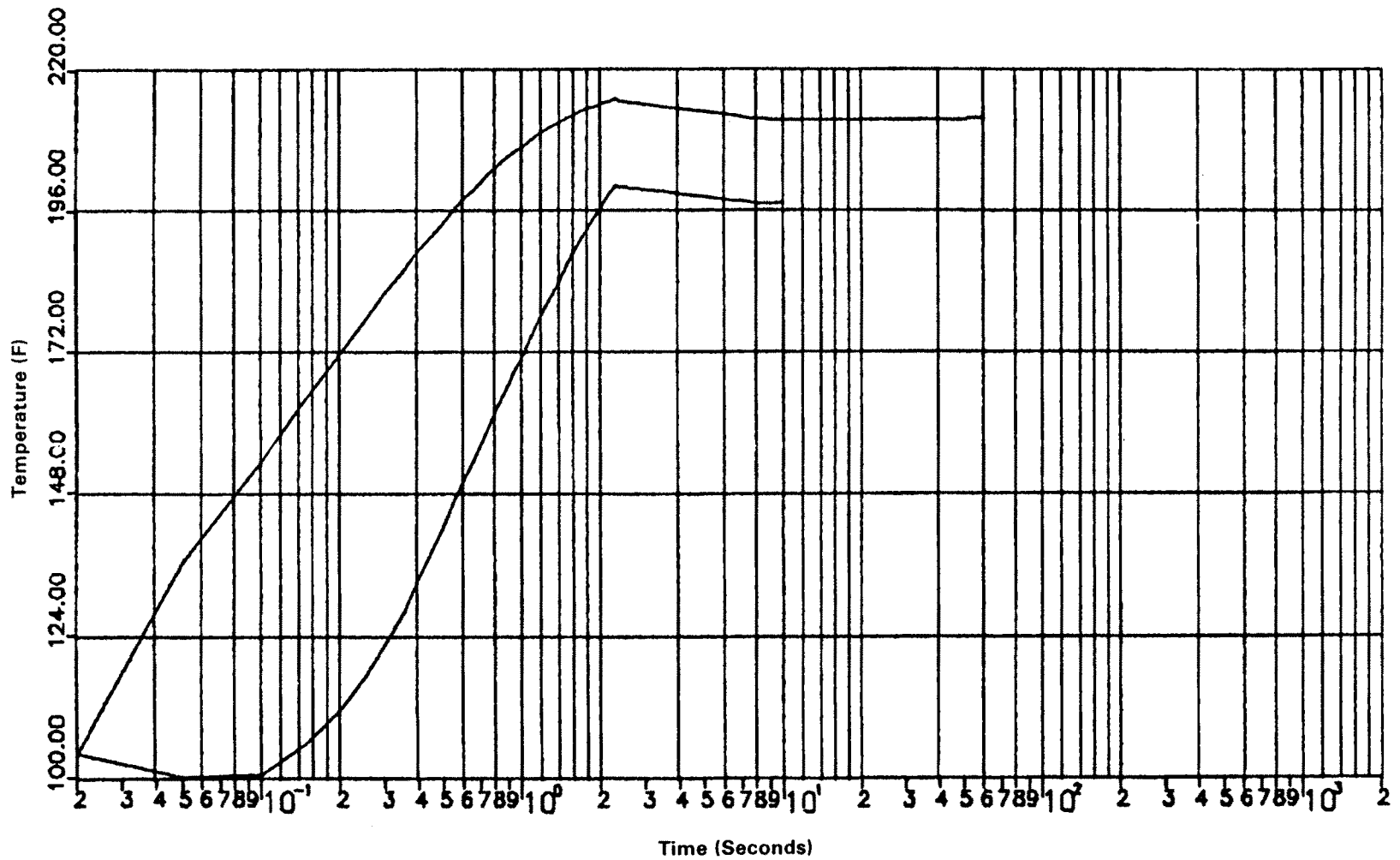


CALLAWAY PLANT

FIGURE 3.11(B)-41

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1103 THROUGH 1106)**

Rev. 2 11/13

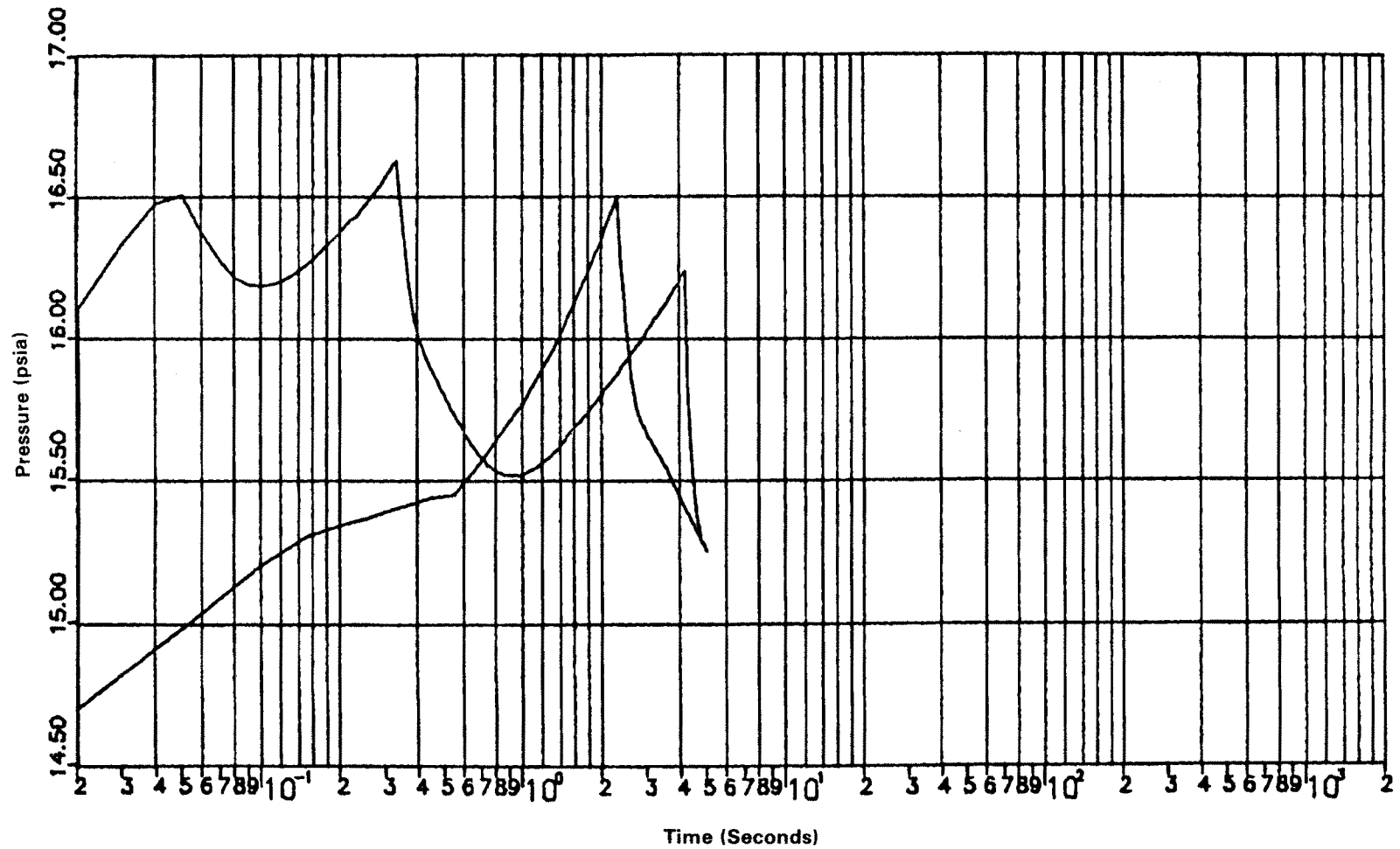


CALLAWAY PLANT

FIGURE 3.11(B)-42

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOMS 1123 THROUGH 1125)**

Rev. 2 11/13

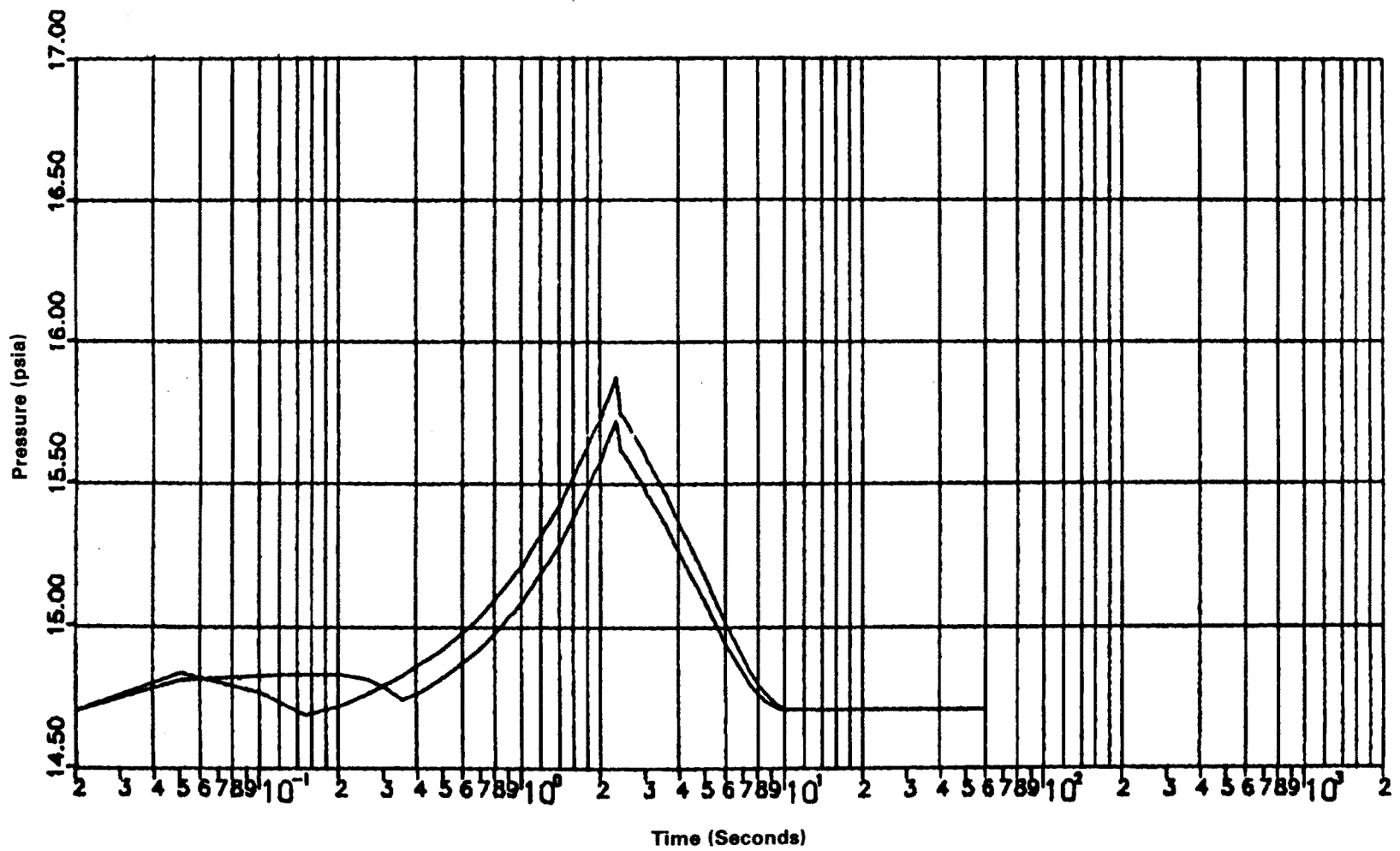


CALLAWAY PLANT

FIGURE 3.11(B)-43

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1103 THROUGH 1106)**

Rev. 2 11/13

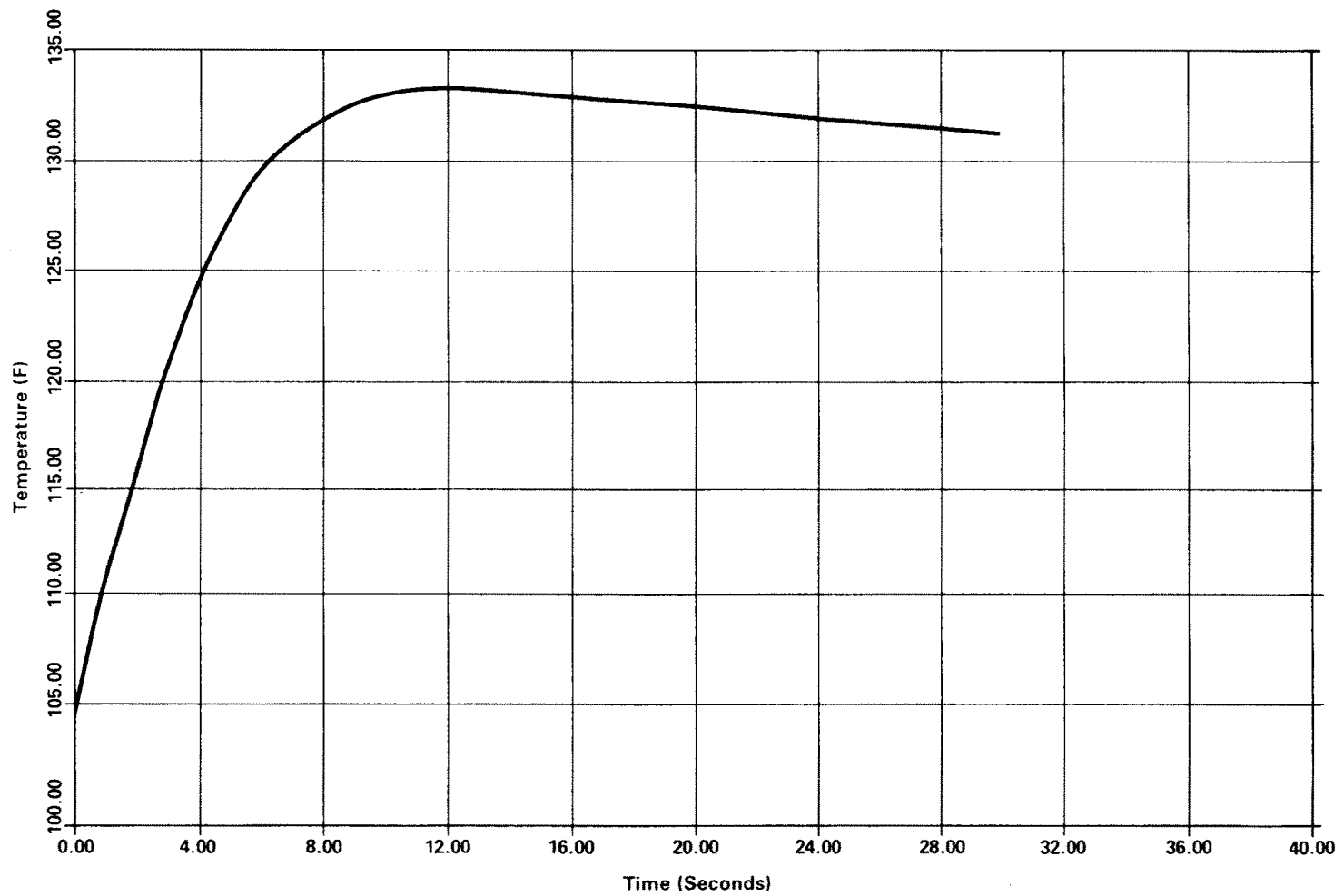


CALLAWAY PLANT

FIGURE 3.11(B)-44

**AUXILIARY BUILDING HELB PRESSURE
(ROOMS 1123 THROUGH 1125)**

Rev. 2 11/13

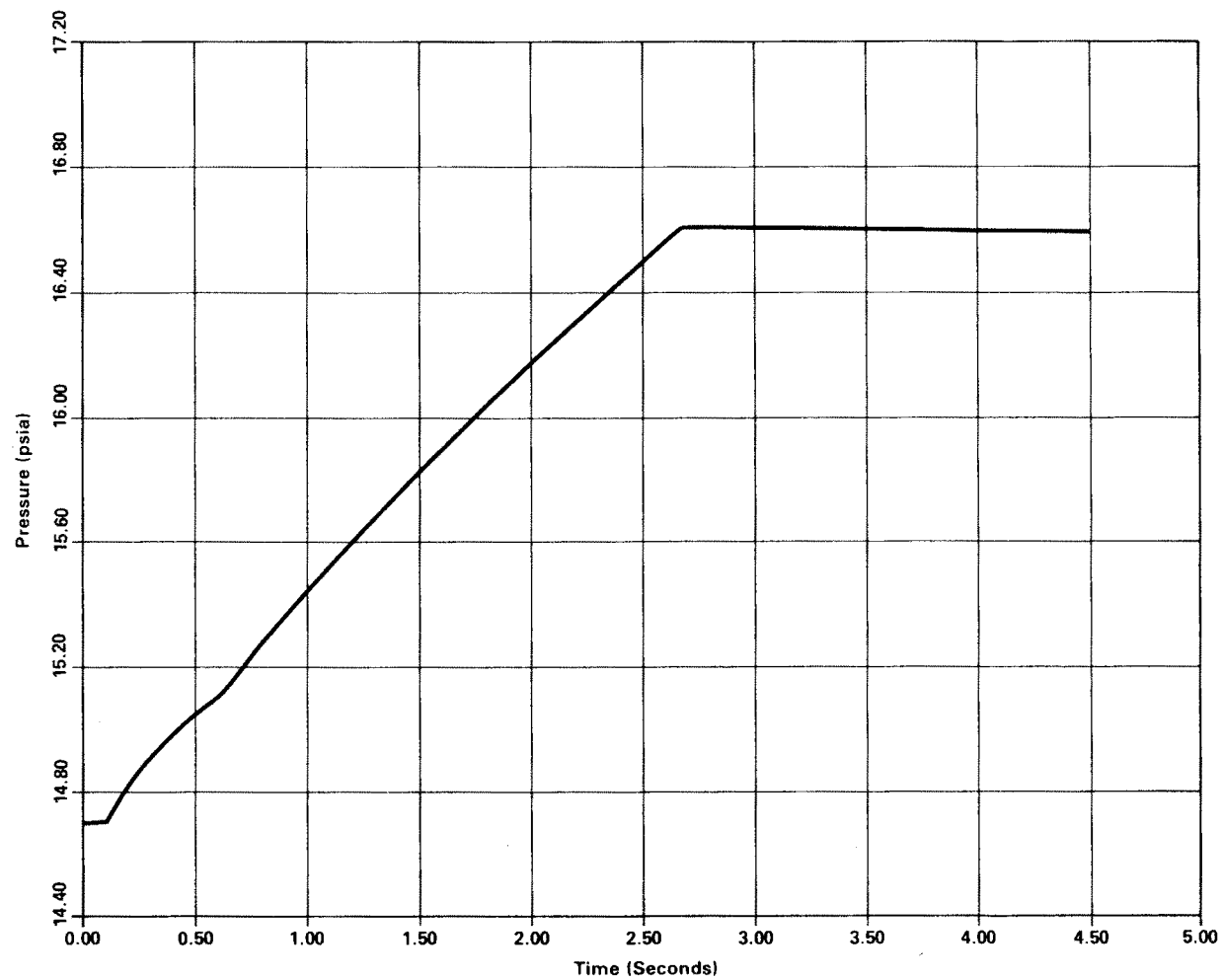


CALLAWAY PLANT

FIGURE 3.11(B)-45

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOM 1205)**

Rev. 2 11/13

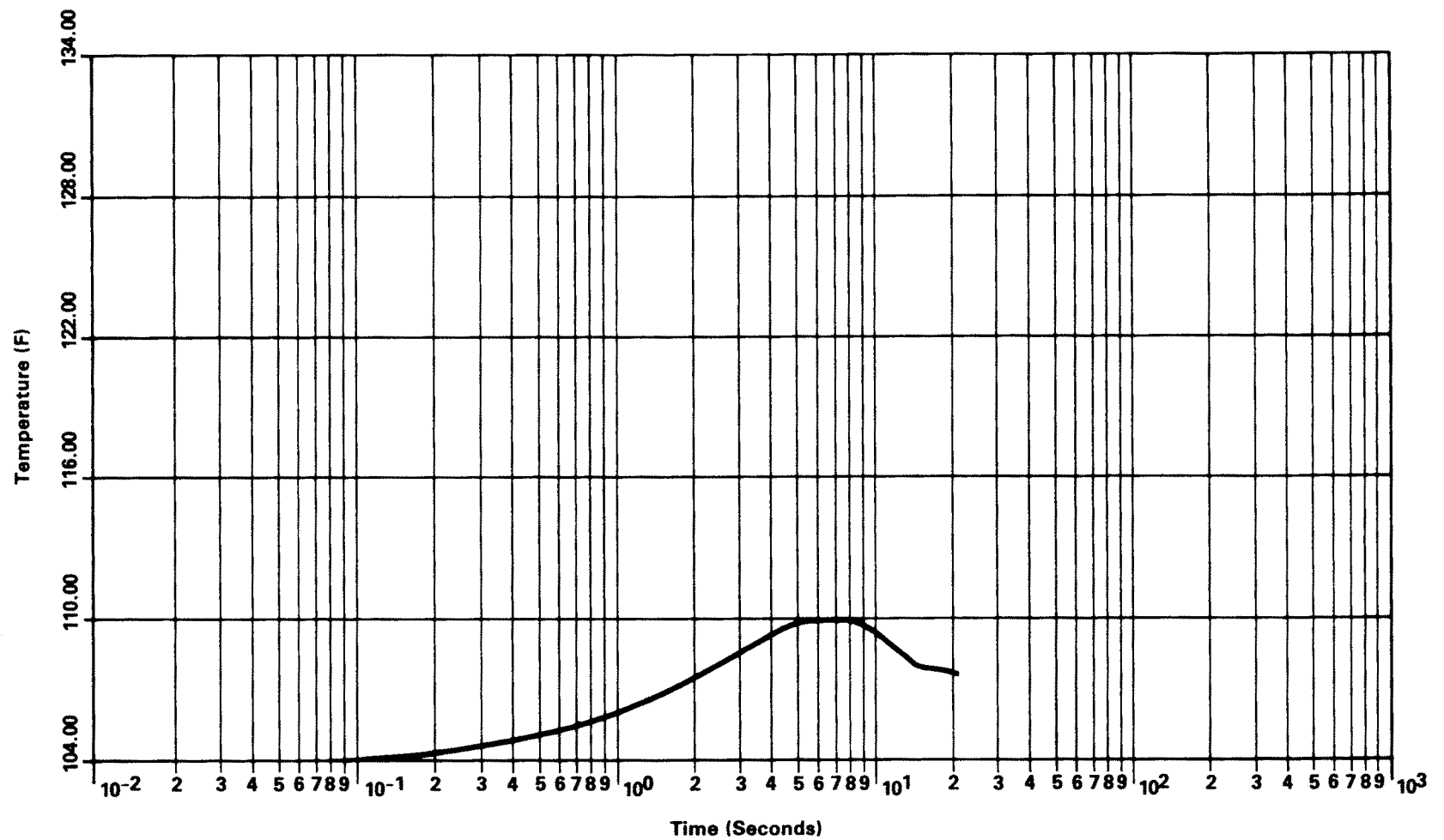


CALLAWAY PLANT

FIGURE 3.11(B)-46

**AUXILIARY BUILDING HELB PRESSURE
(ROOM 1205)**

Rev. 2 11/13

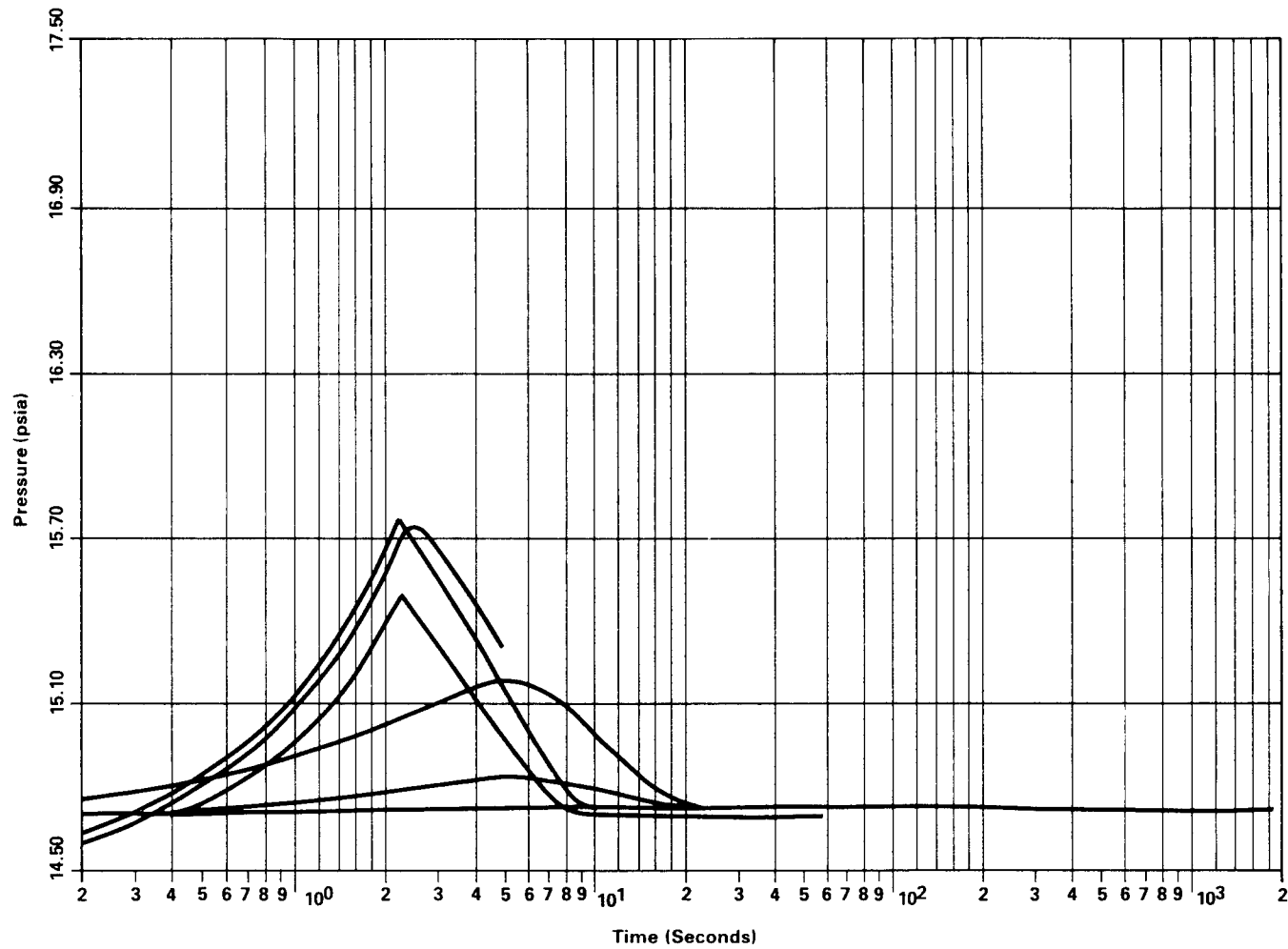


CALLAWAY PLANT

FIGURE 3.11(B)-47

**AUXILIARY BUILDING HELB TEMPERATURE
(ROOM 1329)**

Rev. 2 11/13



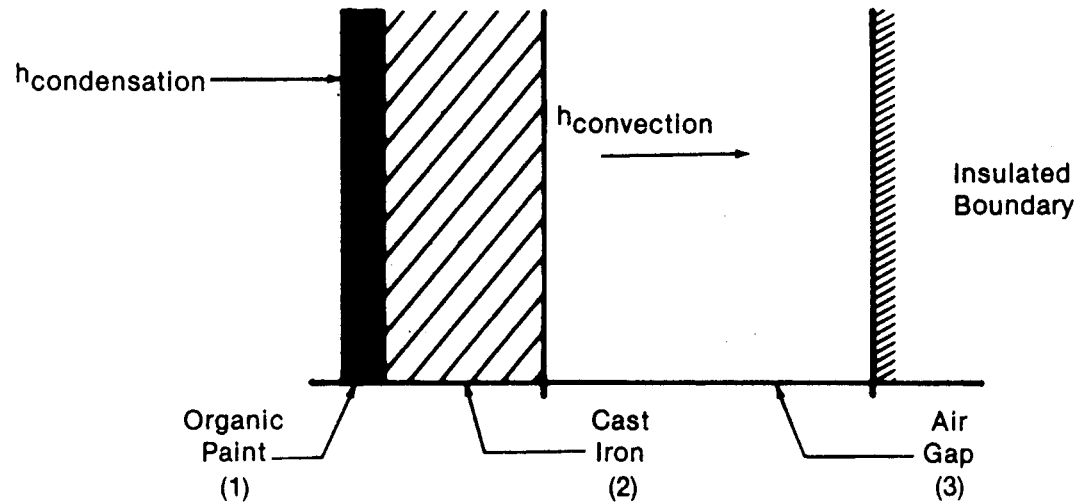
CALLAWAY PLANT

FIGURE 3.11(B)-48

**AUXILIARY BUILDING HELB PRESSURE
(ROOM 1329)**

Rev. 2 11/13

SLAB GEOMETRY (1-D)



Region	Material	Thickness (ft)	No. of Nodes	Thermal Properties K (Btu/hr-ft-°F)	ρC_p (Btu/ft³-°F)
(1)	Organic Paint	.0005 (.006 in)	6	1.0	20.0
(2)	Cast Iron	.01092 (.131 in)	5	25.0	53.0
(3)	Air Gap	.0234 (.2808 in)	2	.017	.0145

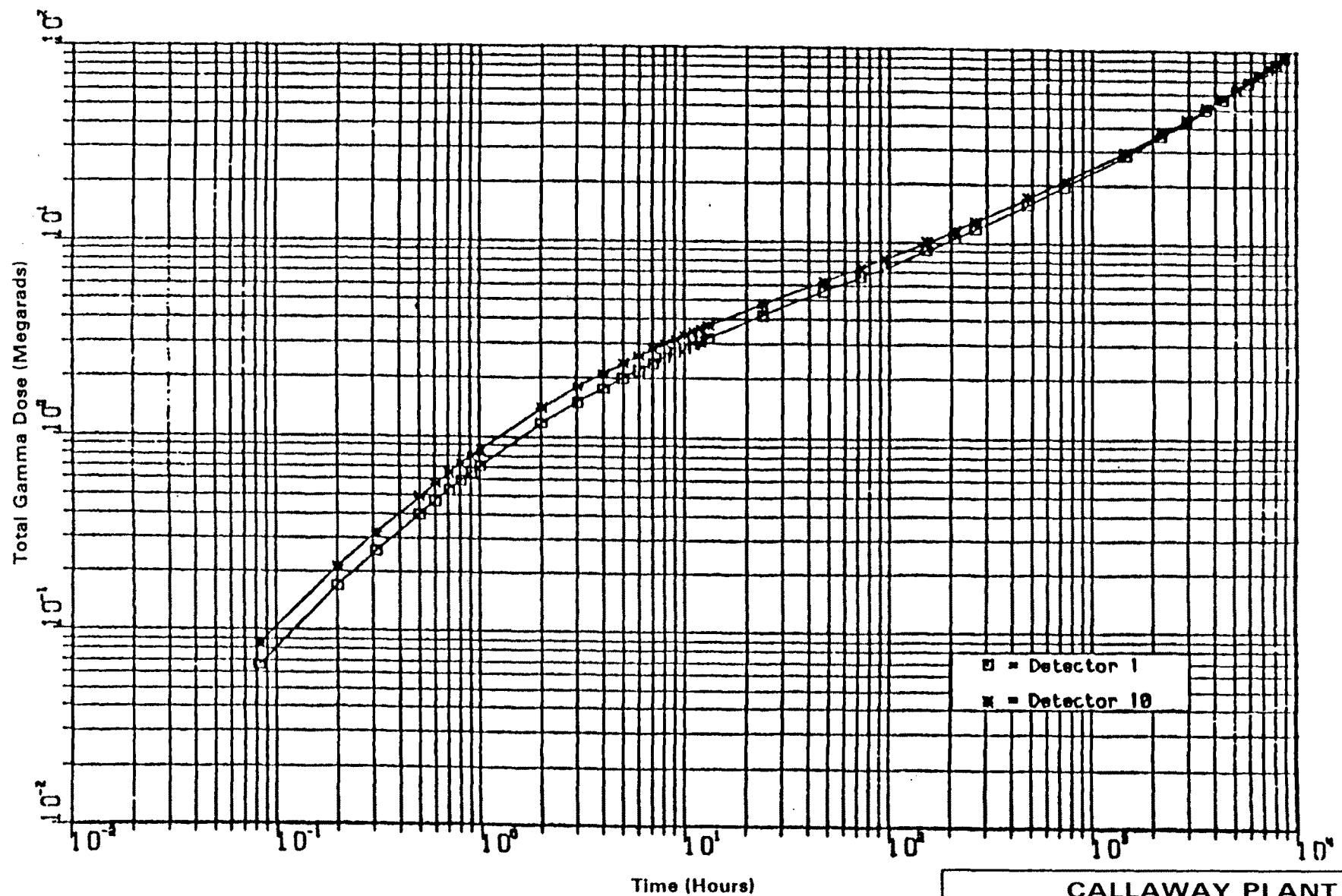
Equiv. Dia = 2.83 ft
Surface Area = 8 ft²

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FIGURE 3.11(B)-49

**TYPICAL THERMAL MODEL FOR
ENVIRONMENTAL QUALIFICATION**



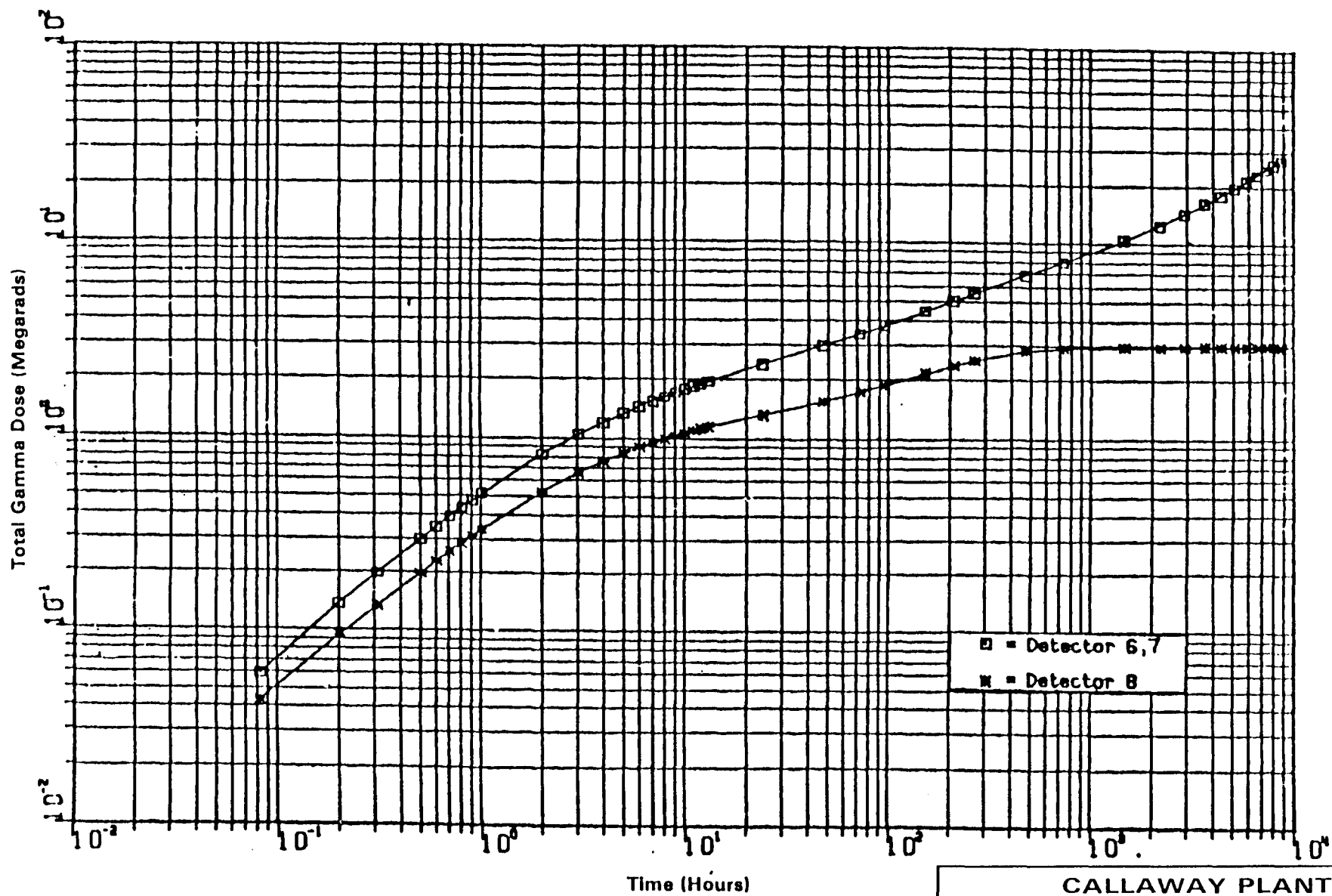
REV. OL-6
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CALLAWAY PLANT

FIGURE 3.11(B)-50

GAMMA DOSE 50% Cs

DETECTORS 1 & 10

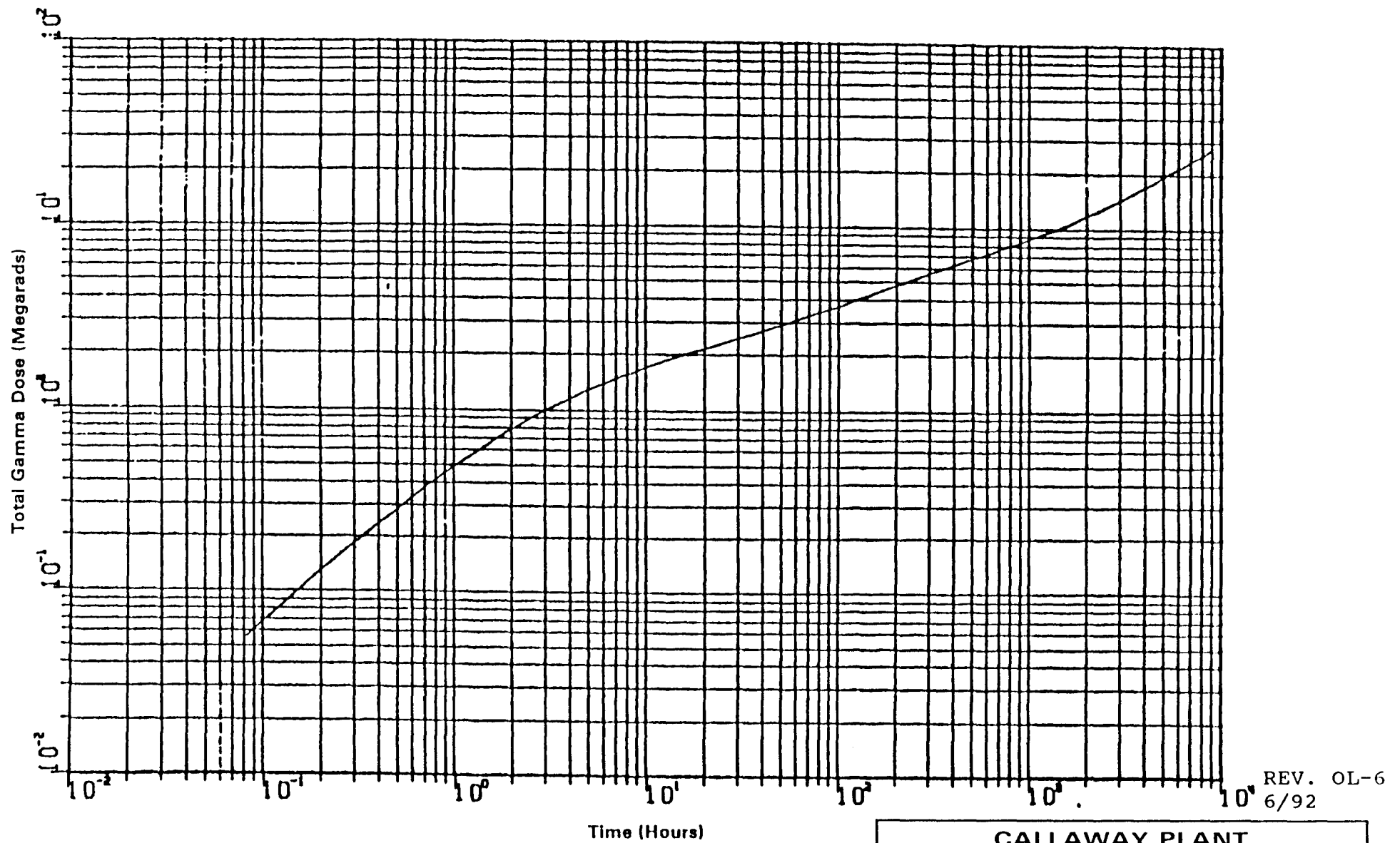


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6/92

CALLAWAY PLANT

FIGURE 3.11(B)-51

GAMMA DOSE 50% Cs
DETECTORS 6,7& 8

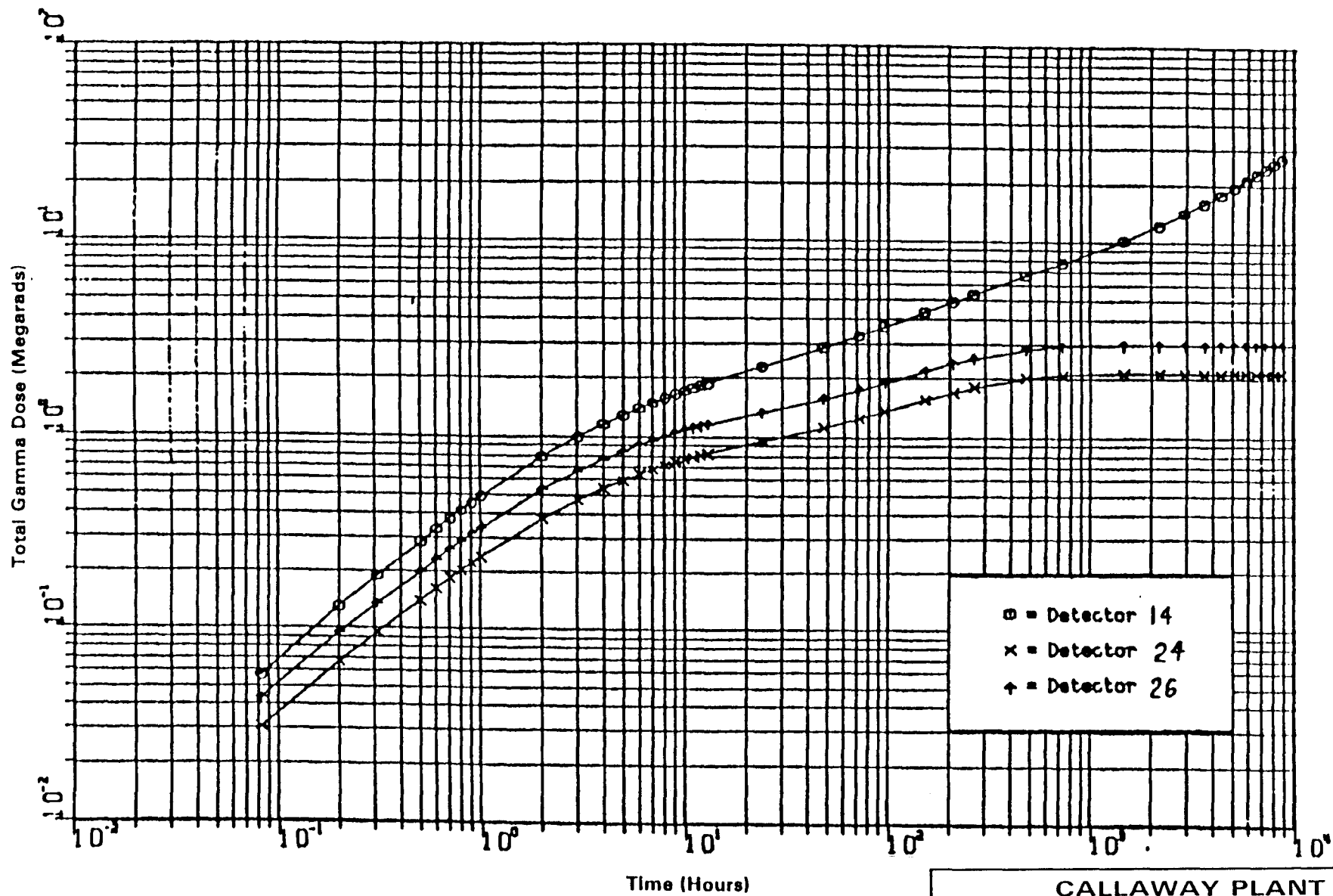


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-52

GAMMA DOSE 50% Cs
DETECTOR 13

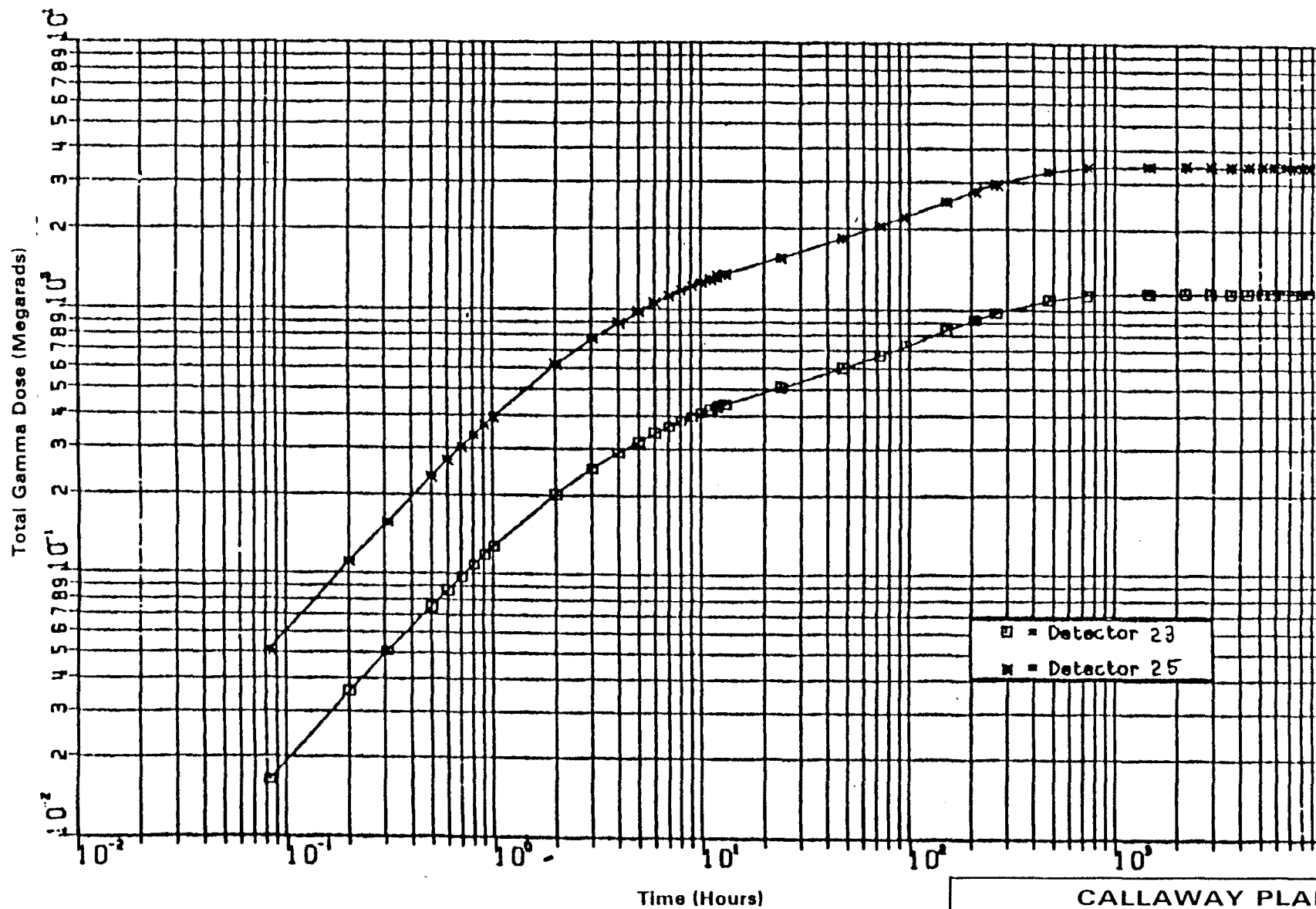


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CALLAWAY PLANT

FIGURE 3.11(B)-53

GAMMA DOSE 50% Cs
DETECTORS 14,24&26

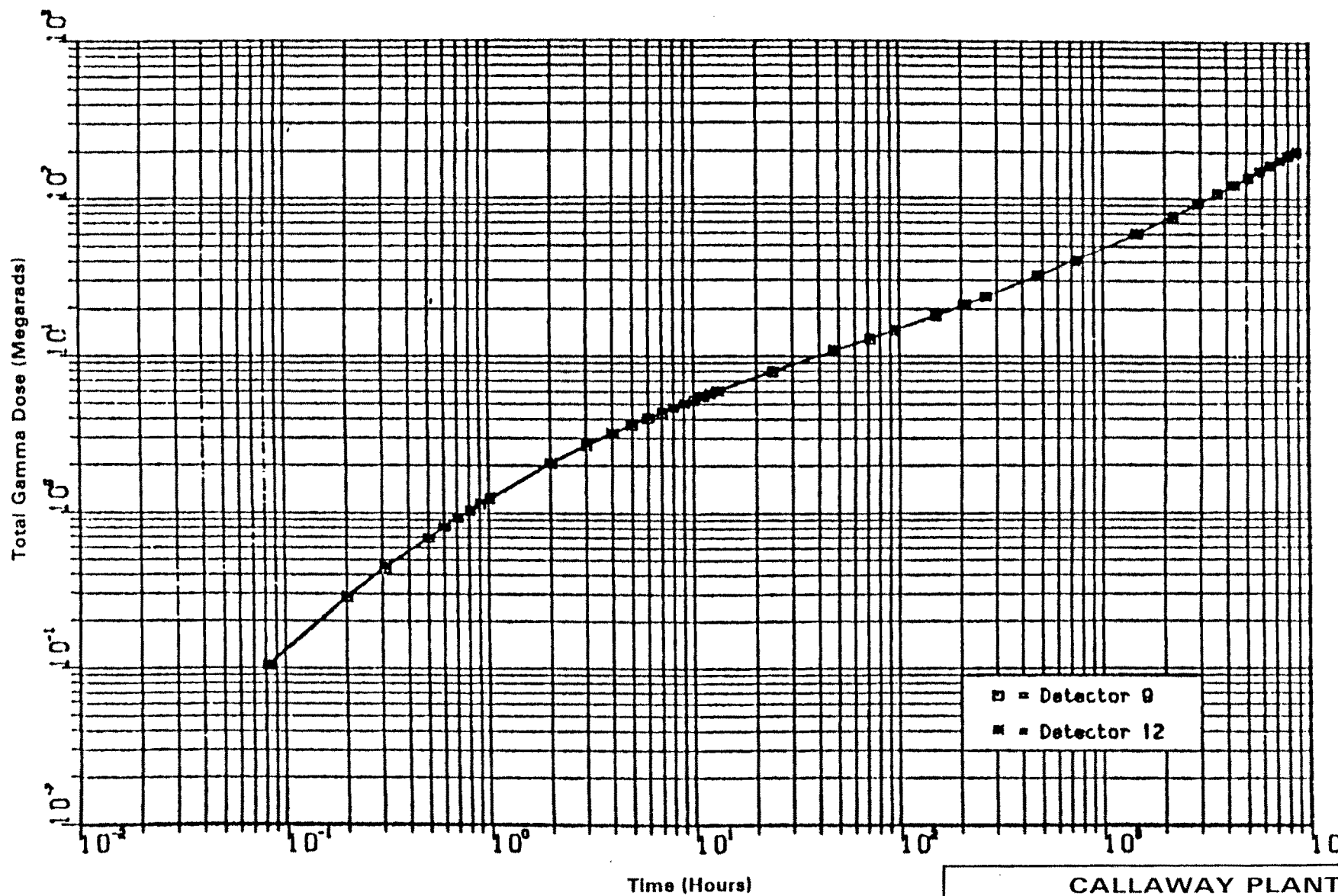


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6/92

CALLAWAY PLANT

FIGURE 3.11(B)-54

GAMMA DOSE 50% Cs
DETECTORS 23&25

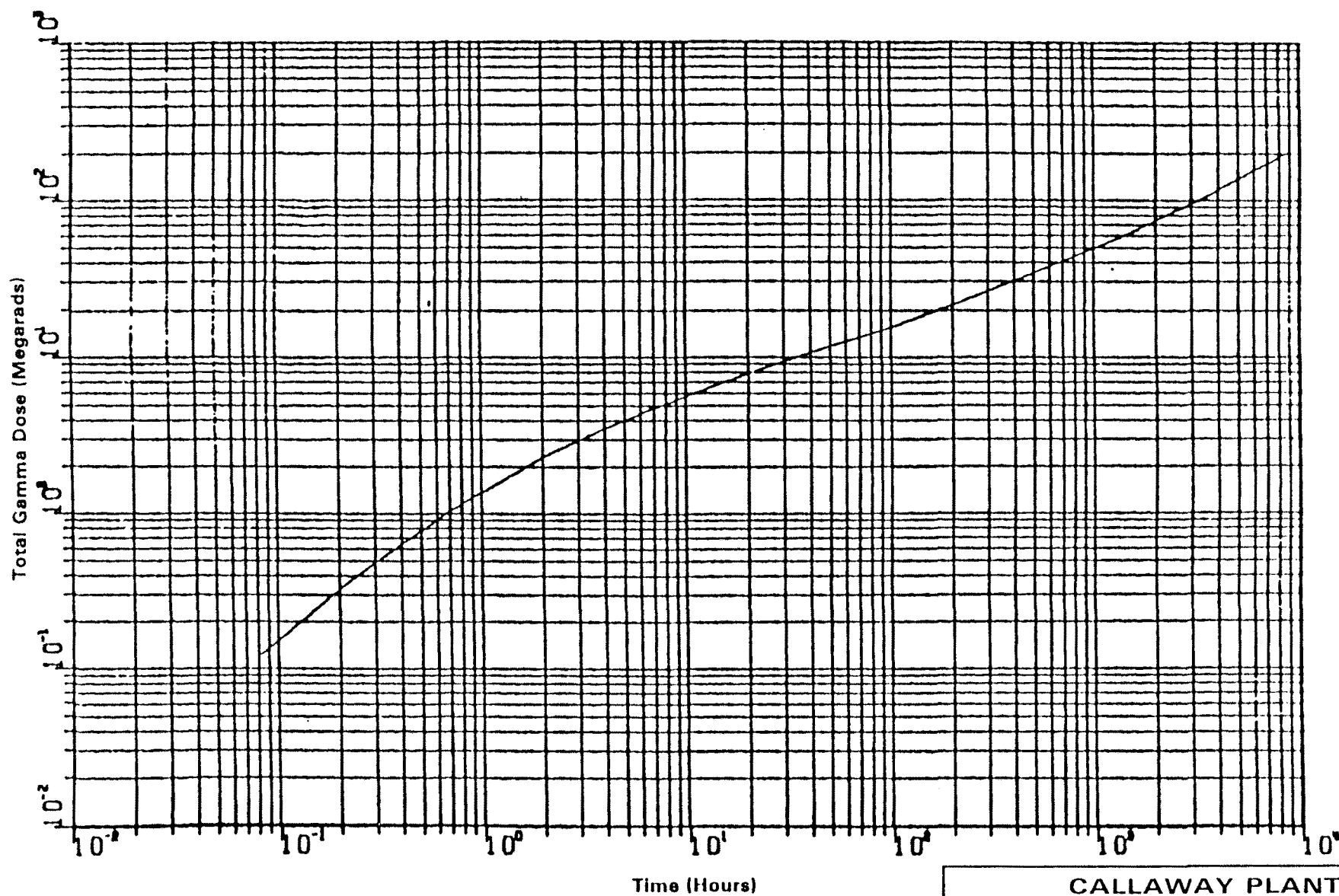


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CALLAWAY PLANT

FIGURE 3.11(B)-55

GAMMA DOSE 50% Cs
DETECTORS 9&12,SUBM

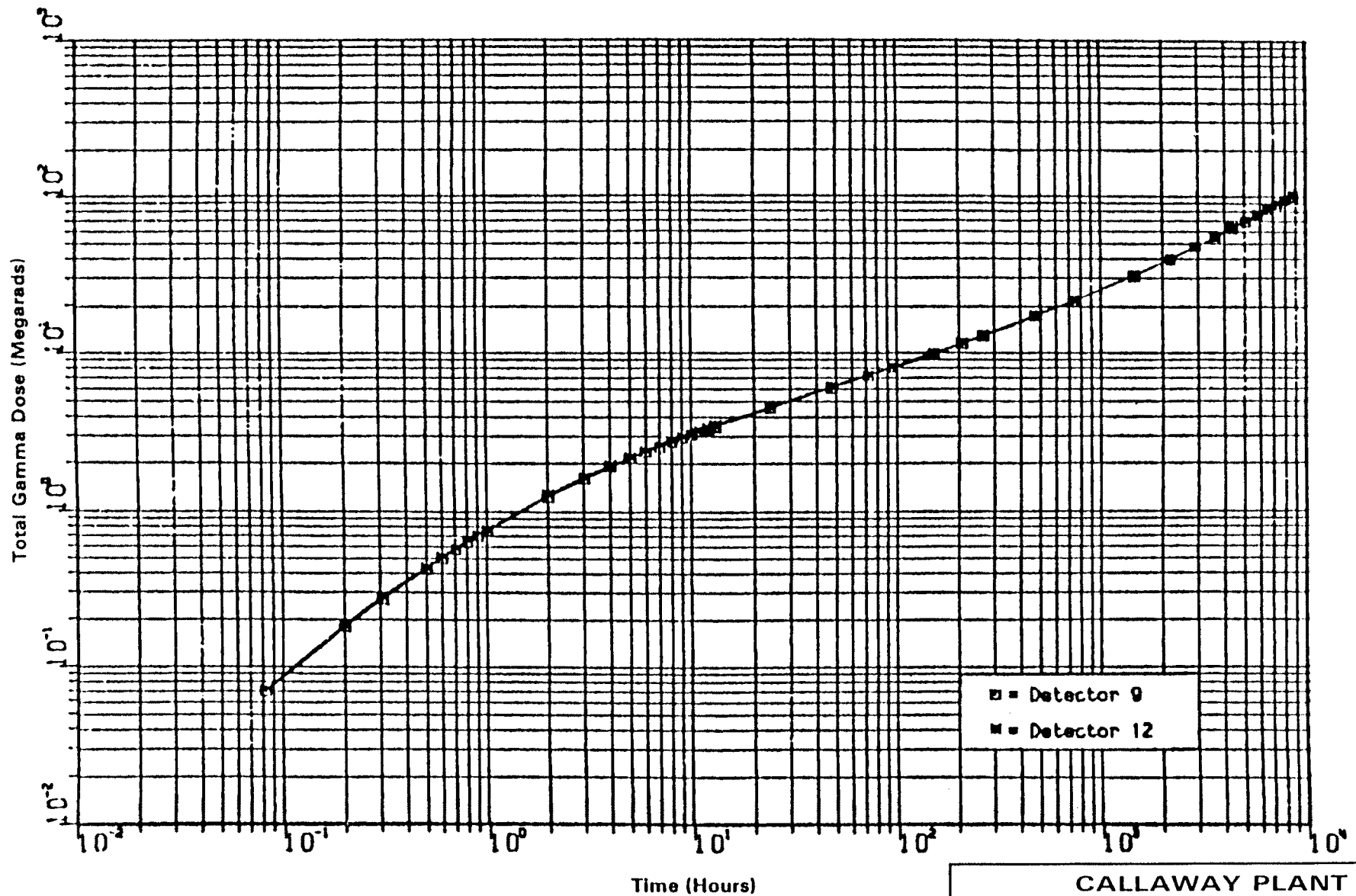


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6/92

CALLAWAY PLANT

FIGURE 3.11(B)-56

GAMMA DOSE 50% Cs
DETECTOR 11,SUBM

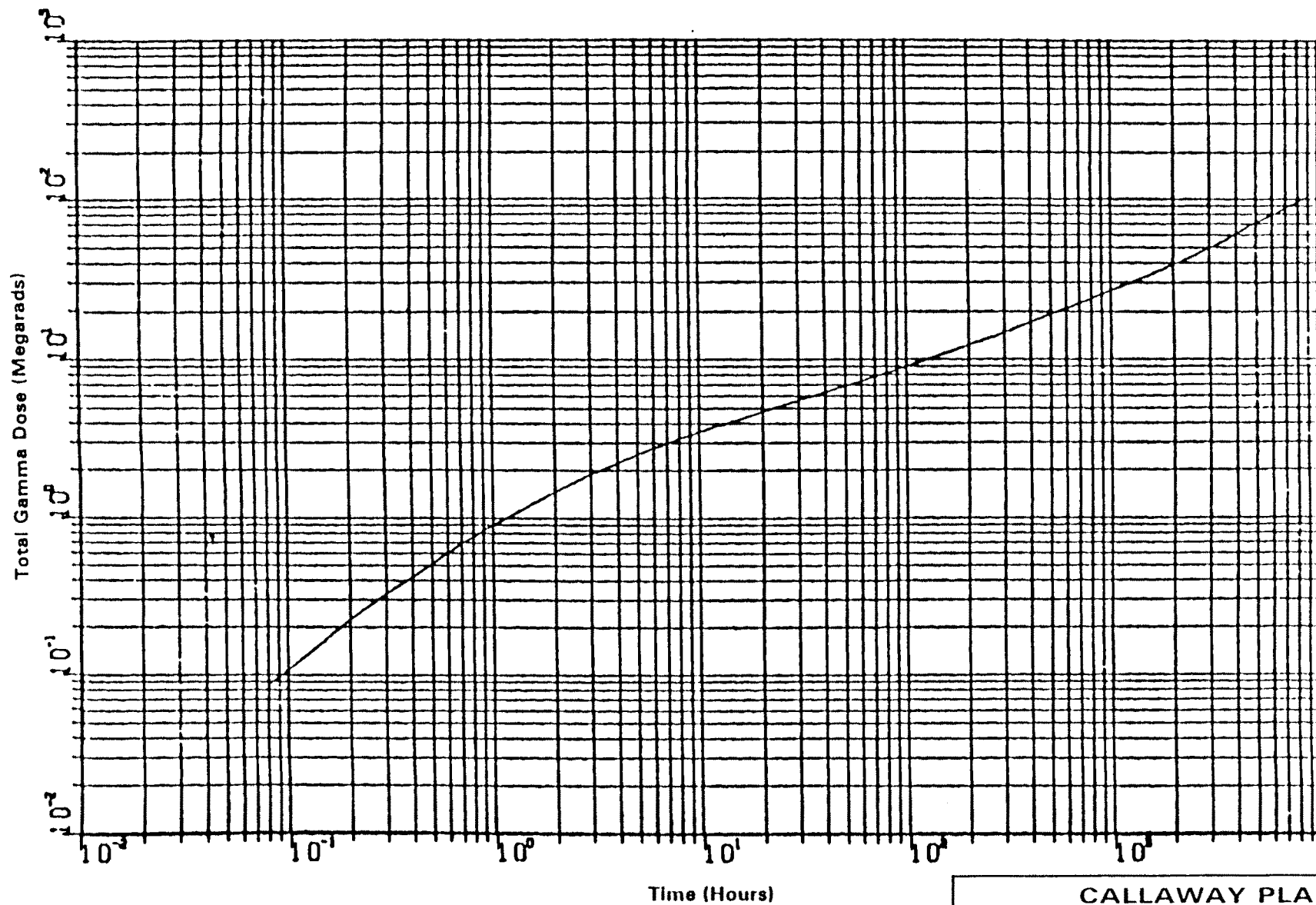


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6/92

CALLAWAY PLANT

FIGURE 3.11(B)-57

GAMMA DOSE 50% Cs
DETECTORS 9&12,SUR

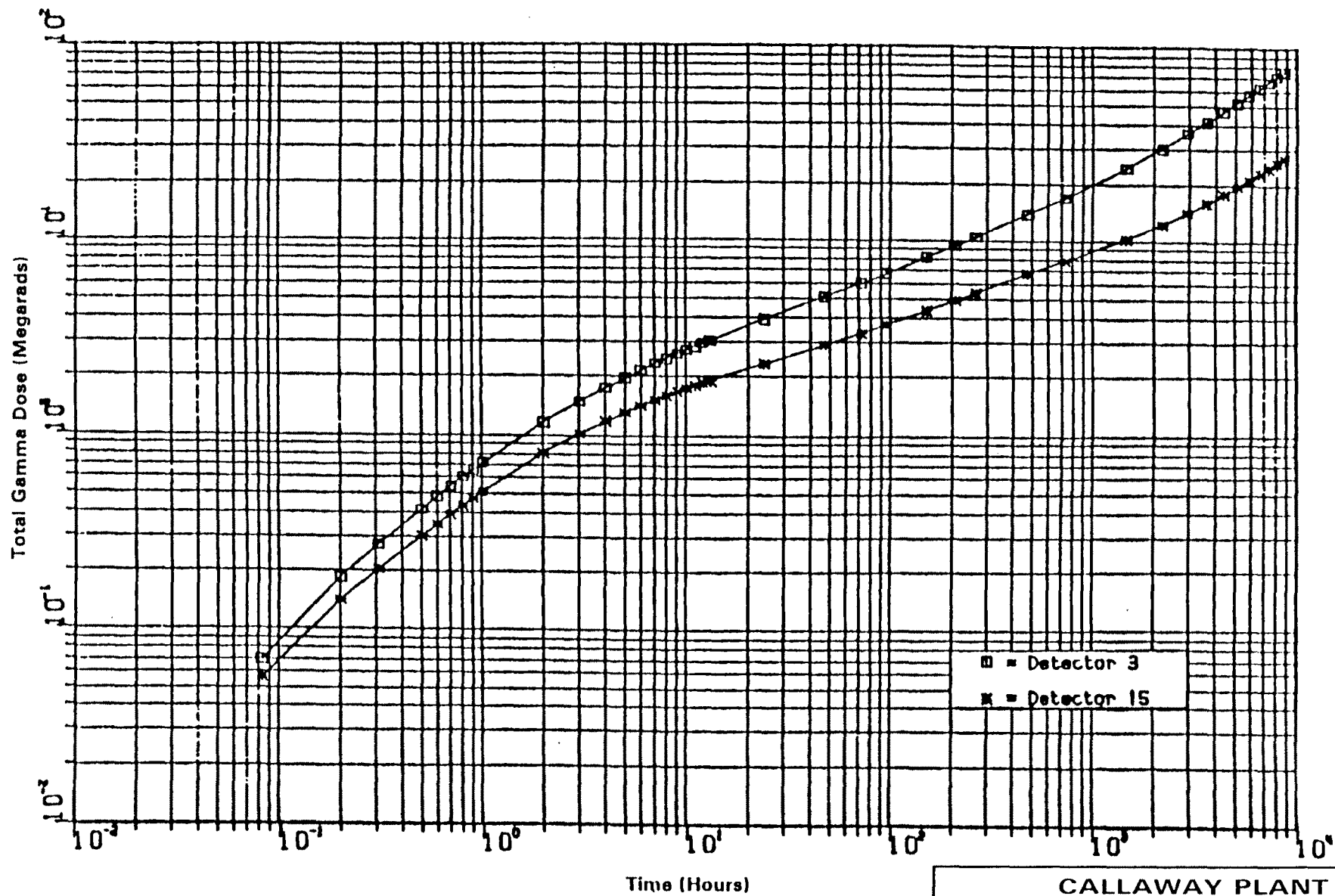


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CALLAWAY PLANT

FIGURE 3.11(B)-58

GAMMA DOSE 50% Cs
DETECTOR 11,SUR

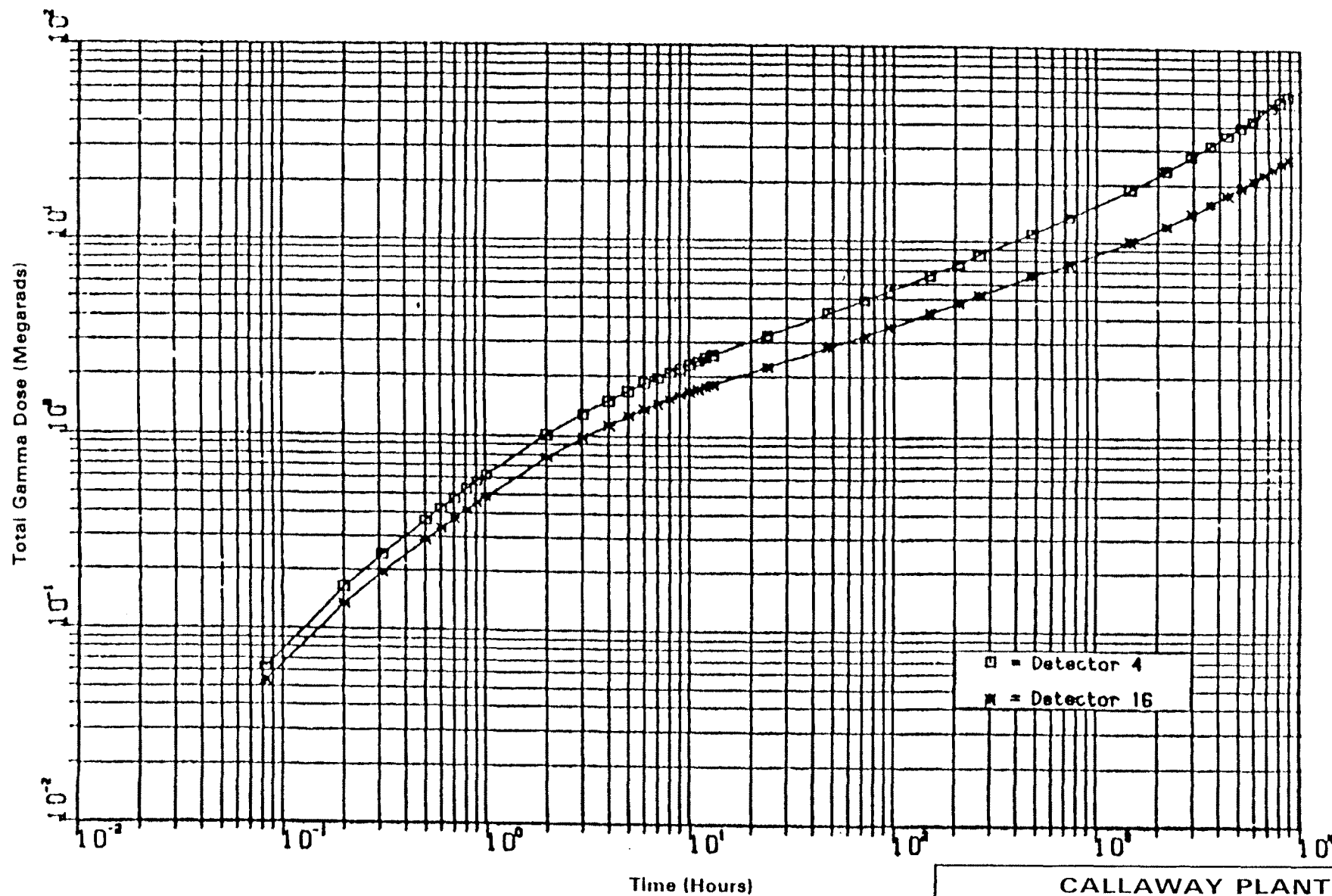


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-59

GAMMA DOSE 50% Cs
DETECTORS 3&15

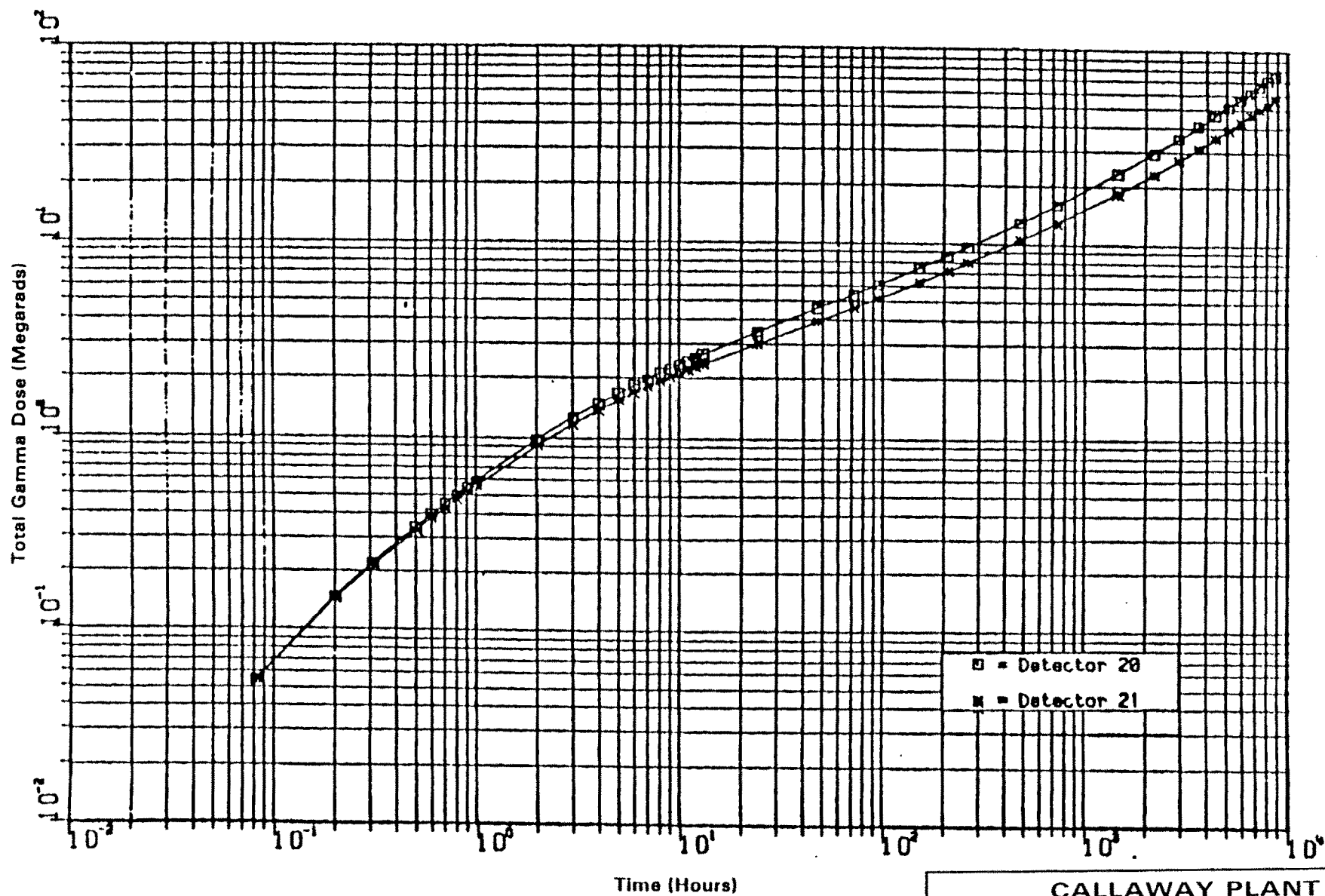


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-60

GAMMA DOSE 50% Cs
DETECTORS 4&16

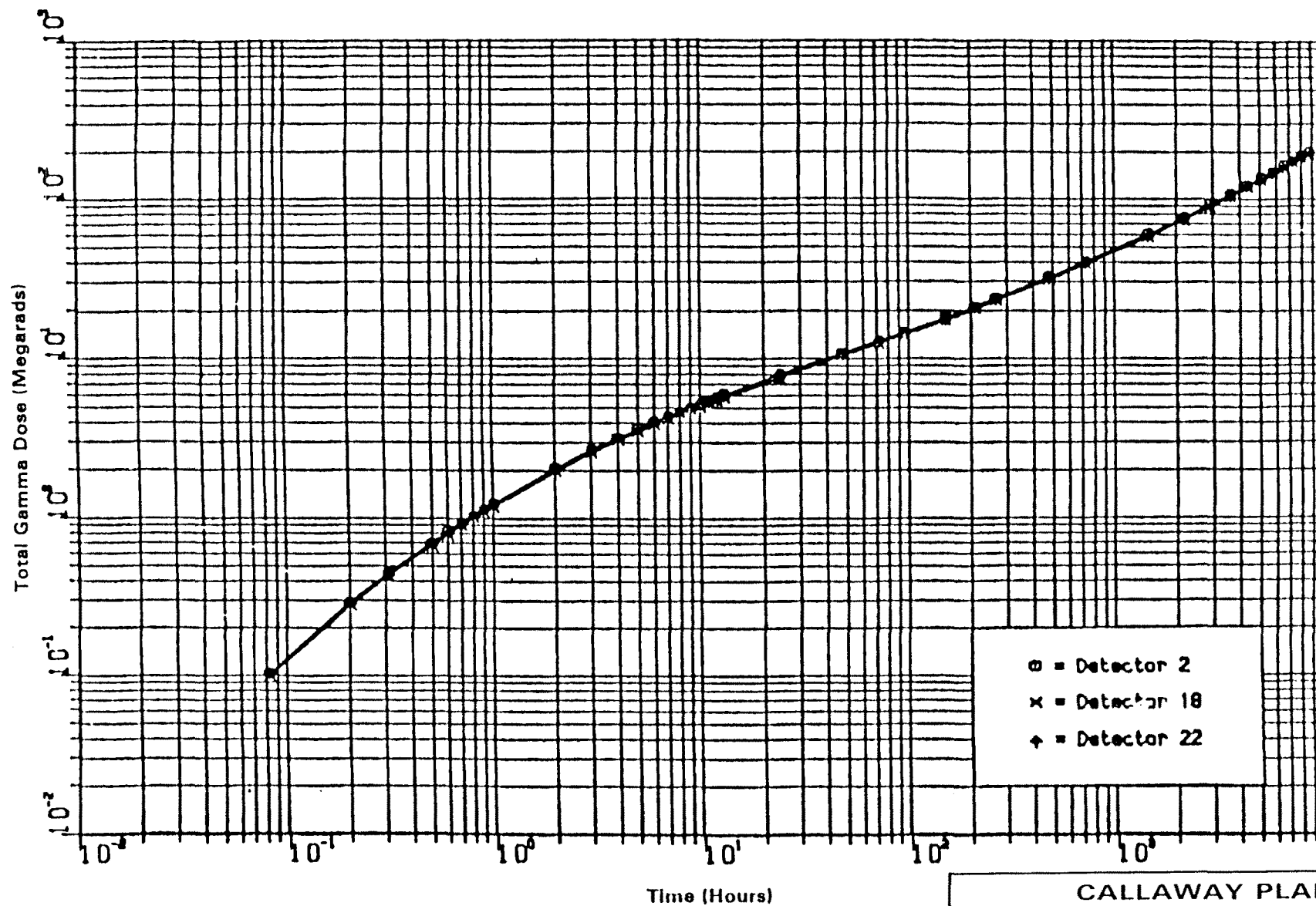


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-61

GAMMA DOSE 50% Cs
DETECTORS 20&21

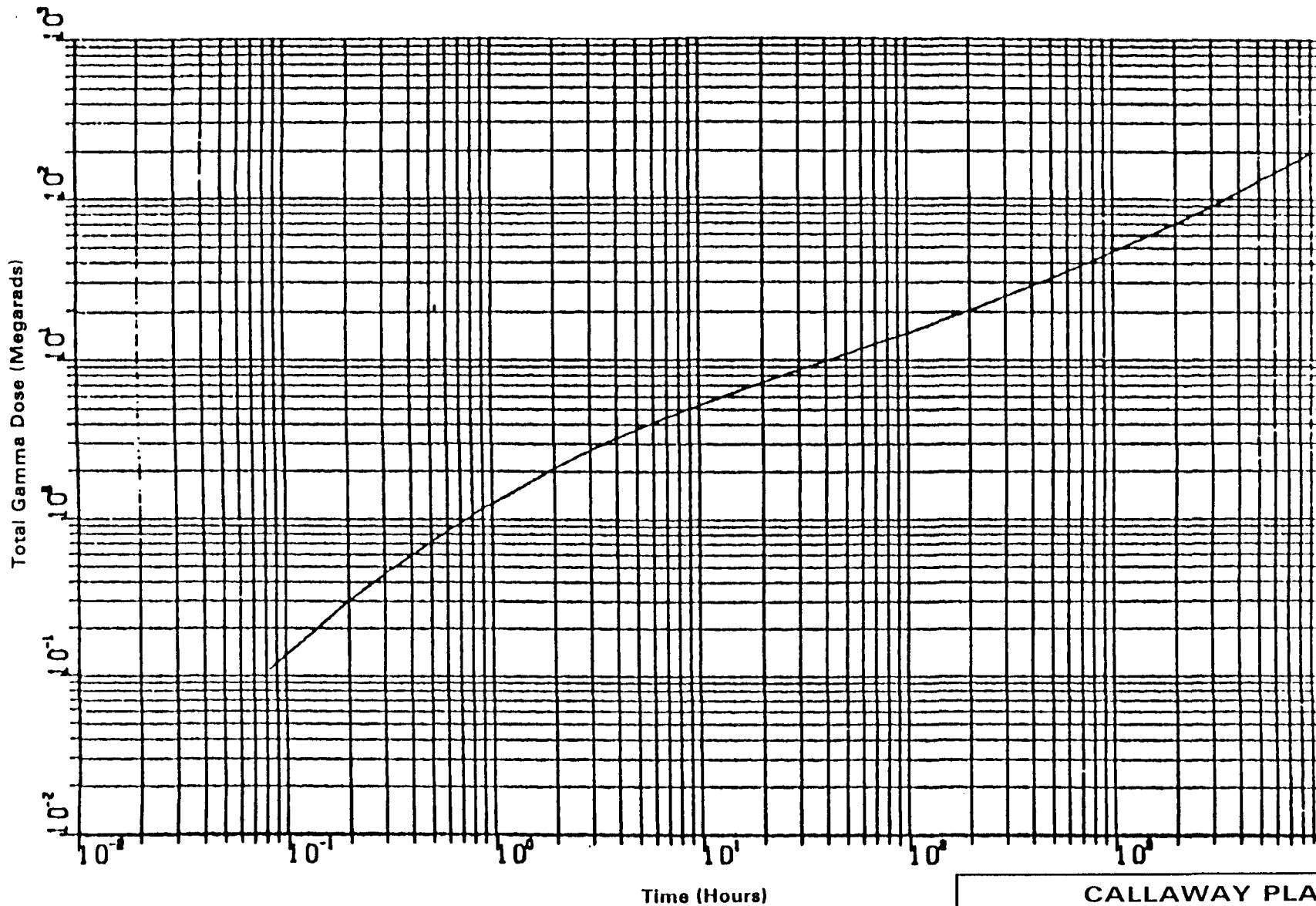


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6/92

CALLAWAY PLANT

FIGURE 3.11(B)-62

GAMMA DOSE 50% Cs
DETECTORS 2,18&22SUB

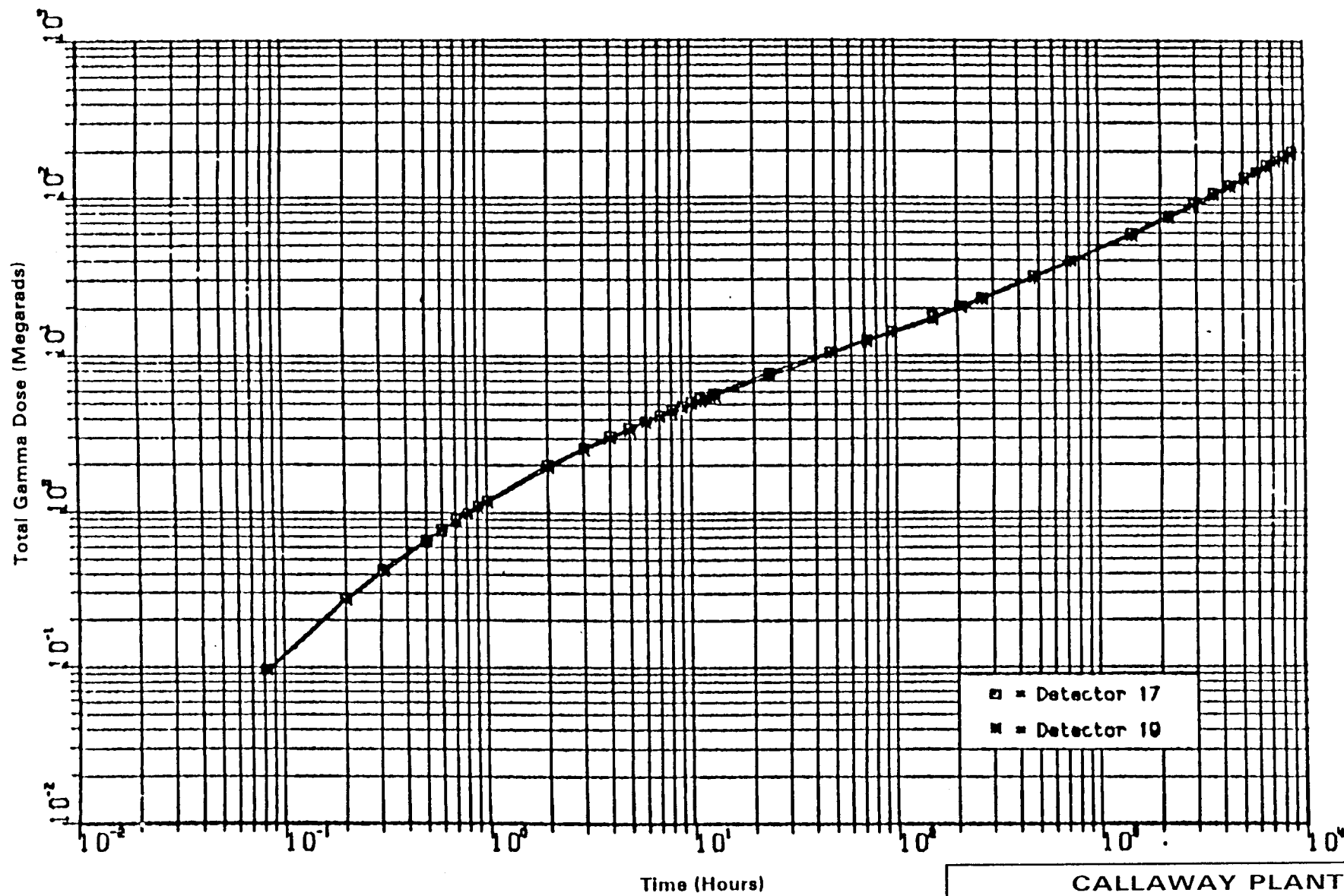


REV. OL-6
6/92

CALLAWAY PLANT

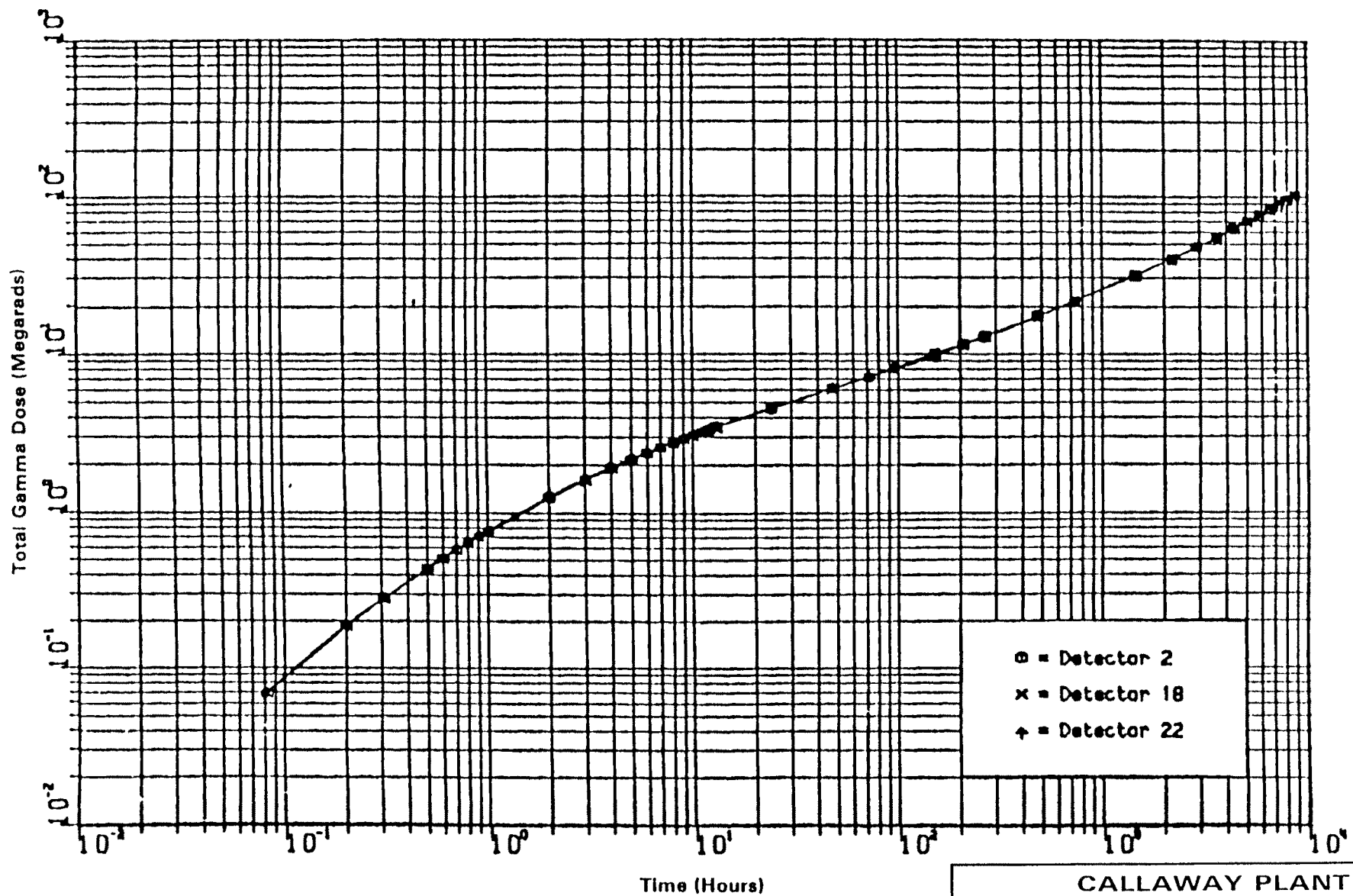
FIGURE 3.11(B)-63

GAMMA DOSE 50% Cs
DETECTOR 5,SUBM



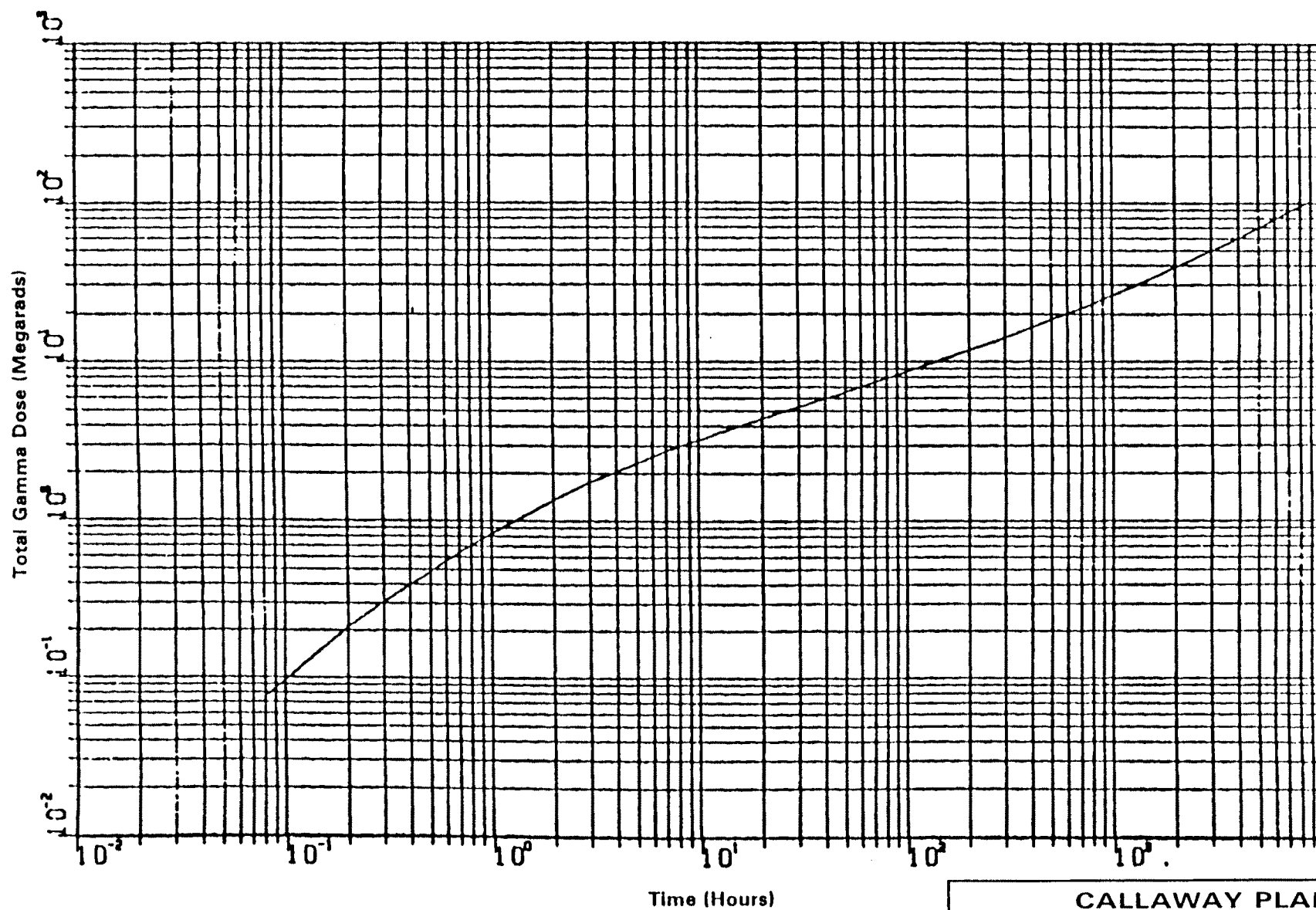
REV. OL-6
6/92

CALLAWAY PLANT
FIGURE 3.11(B)-64
GAMMA DOSE 50% Cs
DETECTOR 17&19,SUBM



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6/92

CALLAWAY PLANT
FIGURE 3.11(B)-65
GAMMA DOSE 50% Cs DETECTORS 2,18&22SUR

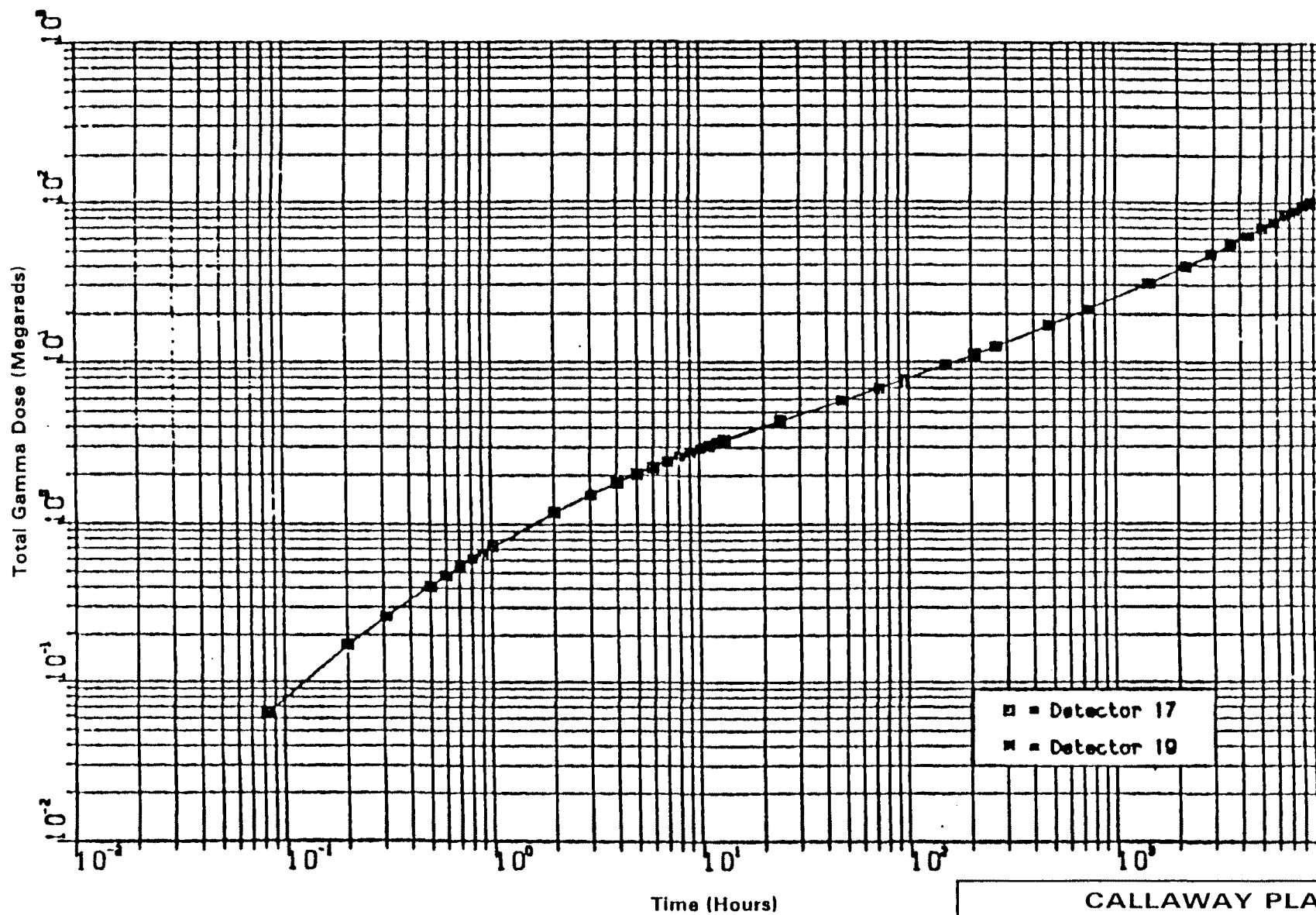


REV. OL-6
6/92

CALLAWAY PLANT

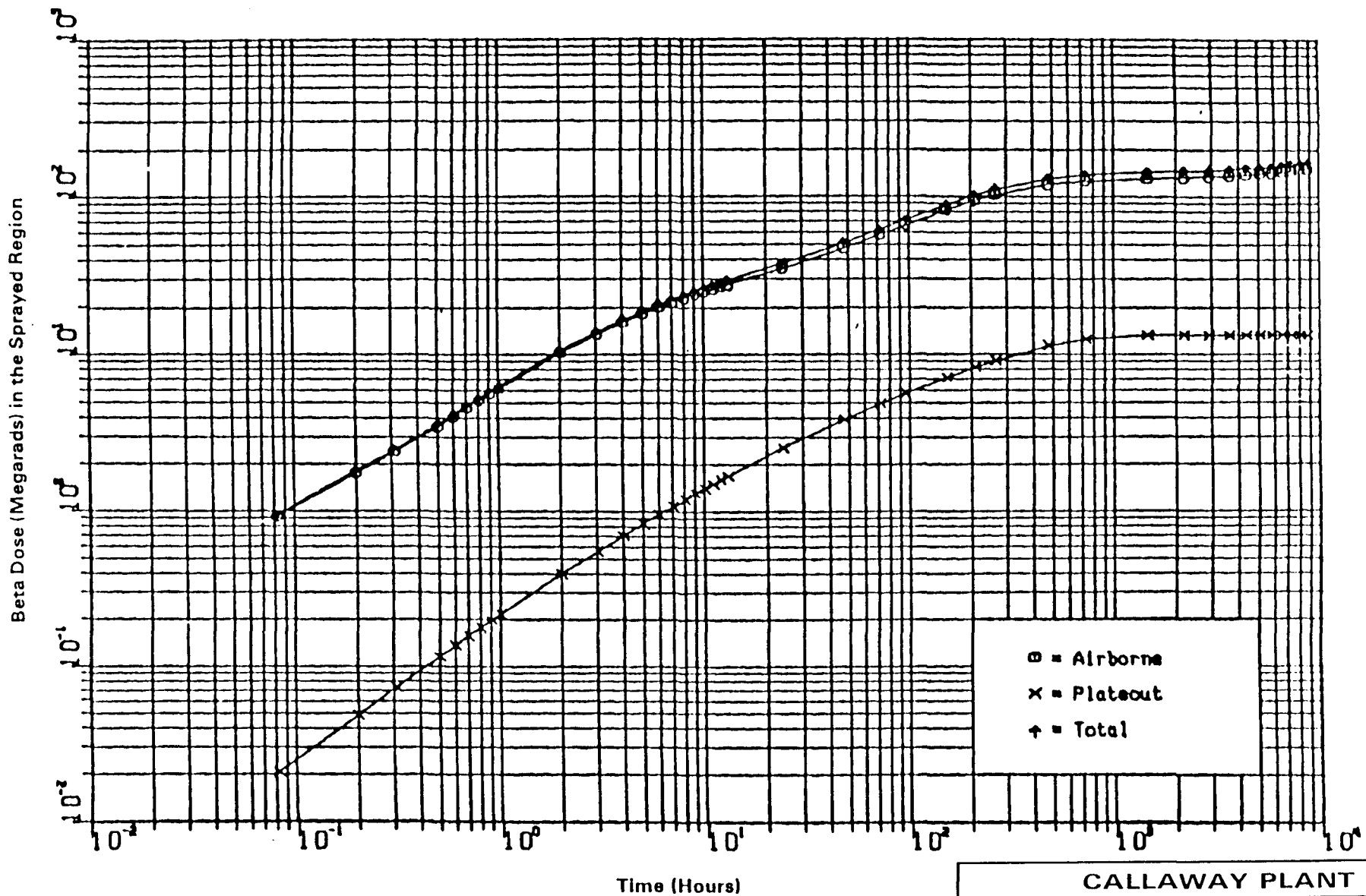
FIGURE 3.11(B)-66

GAMMA DOSE 50% Cs
DETECTOR 5,SUR



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6/92

CALLAWAY PLANT
FIGURE 3.11(B)-67
GAMMA DOSE 50% Cs DETECTORS 17&19,SUR

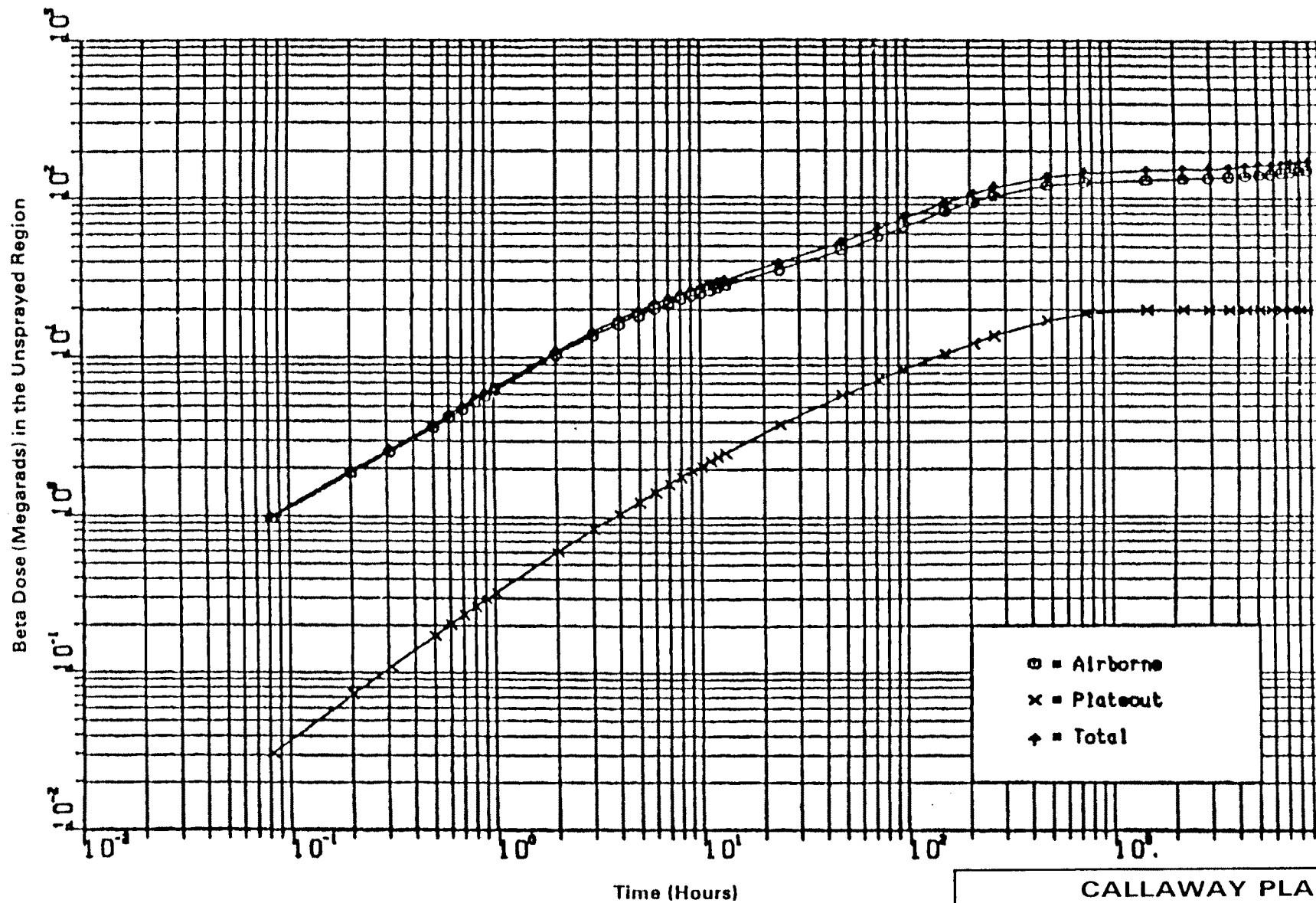


REV. OL-6
6/92

CALLAWAY PLANT

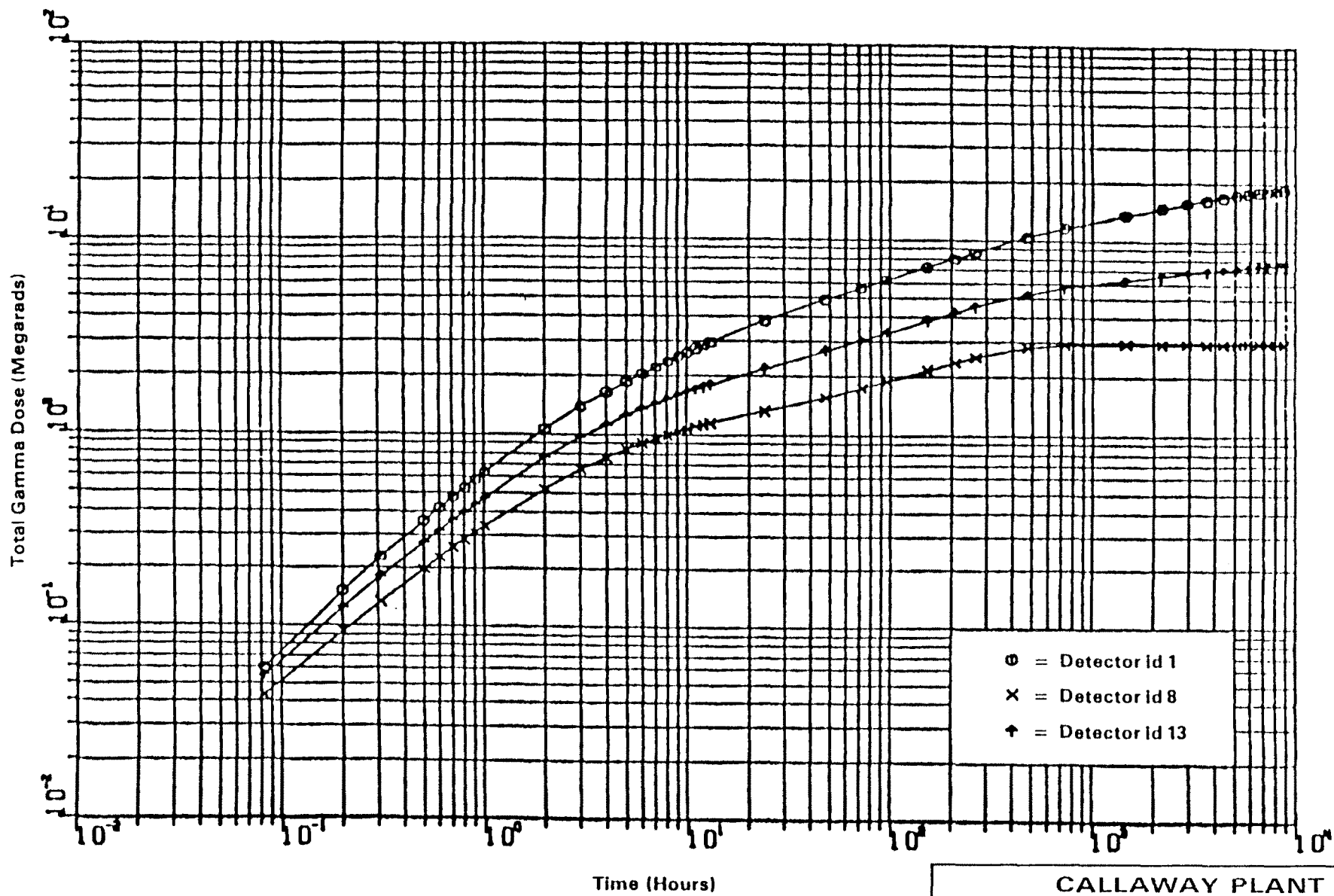
FIGURE 3.11(B)-68

BETA DOSE 50% Cs
DETECTORS 1,6-14,&
23-26



REV. OL-6
6/92

CALLAWAY PLANT
FIGURE 3.11(B)-69
BETA DOSE 50% Cs
DETECTORS 2-5,&
15-22

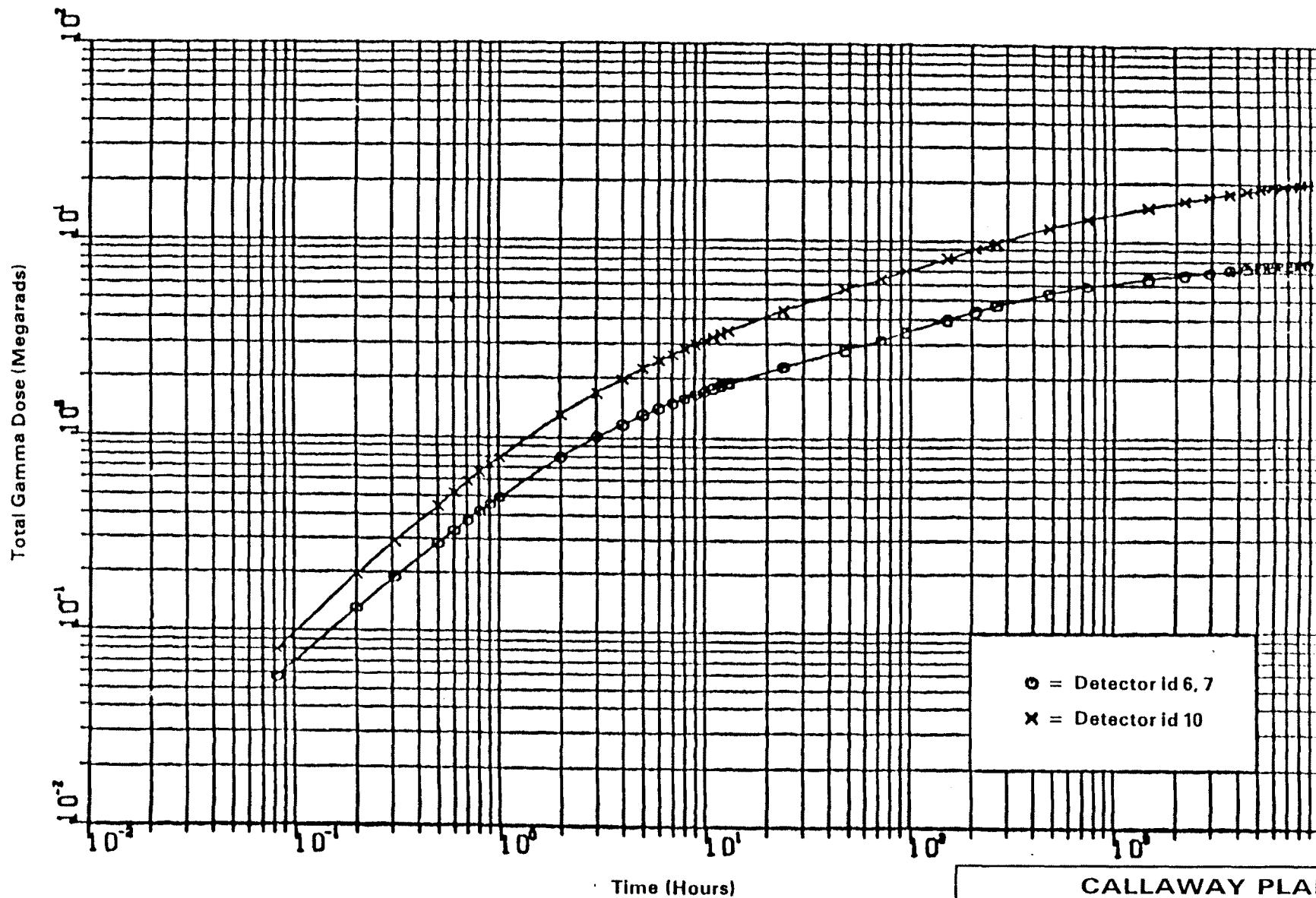


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-70

GAMMA DOSE 1.0% Cs
DETECTORS 1,8&13

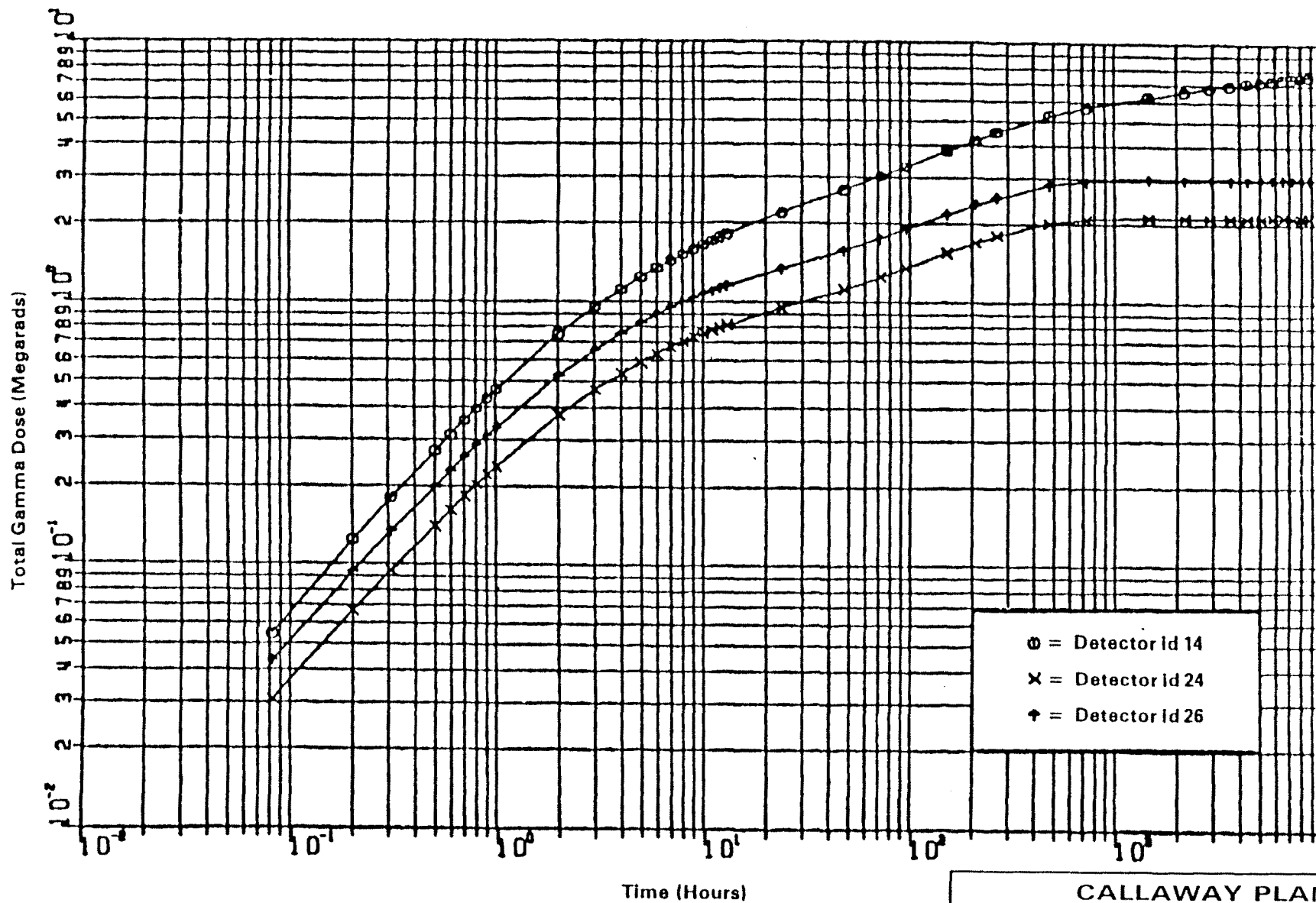


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-71

GAMMA DOSE 1.0% Cs
DETECTORS 6,7&10

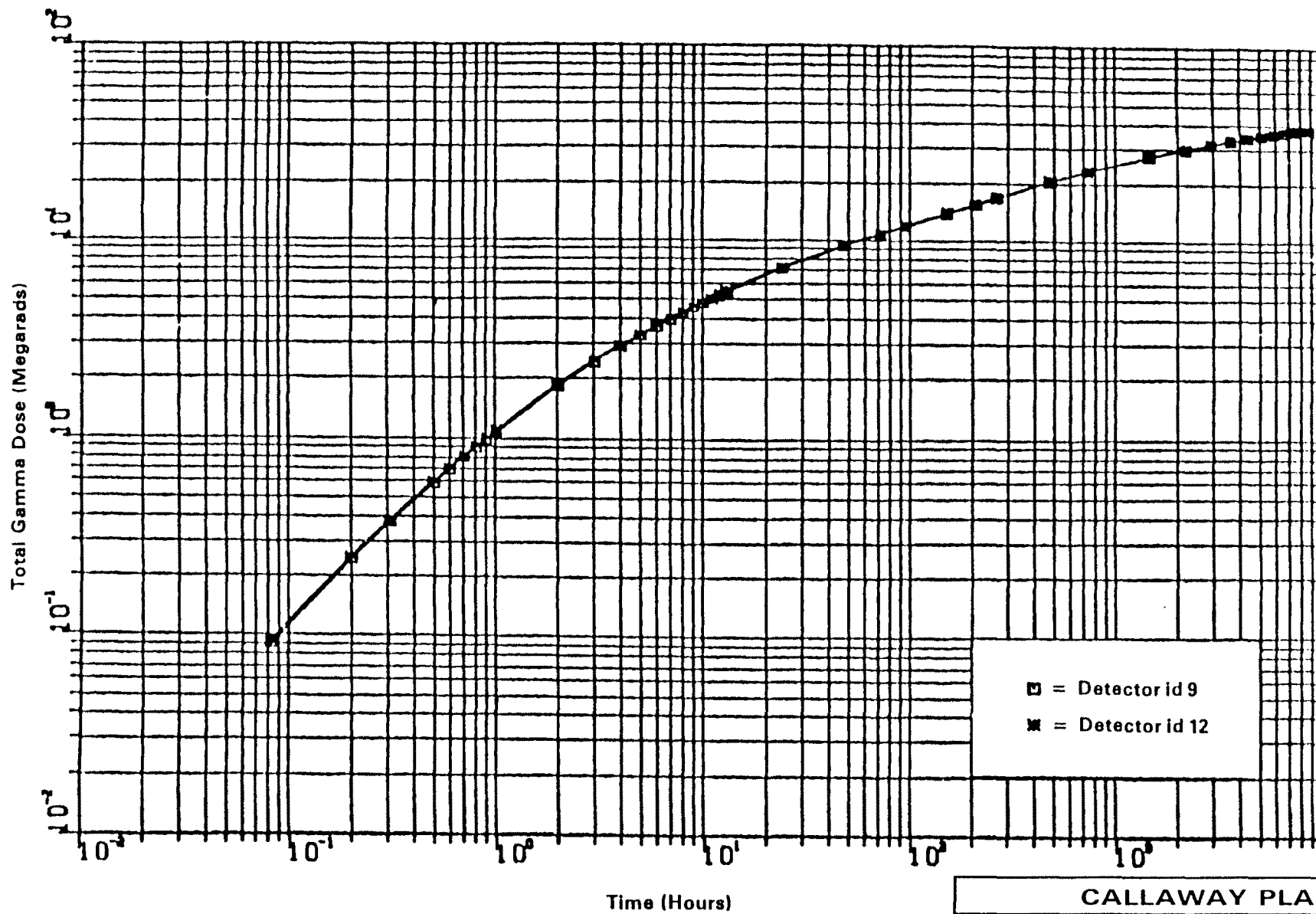


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-72

GAMMA DOSE 1.0% Cs
DETECTORS 14,24&26

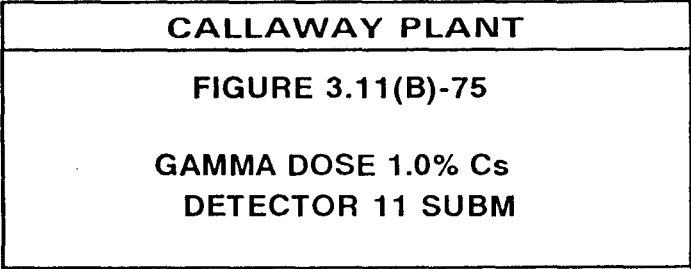


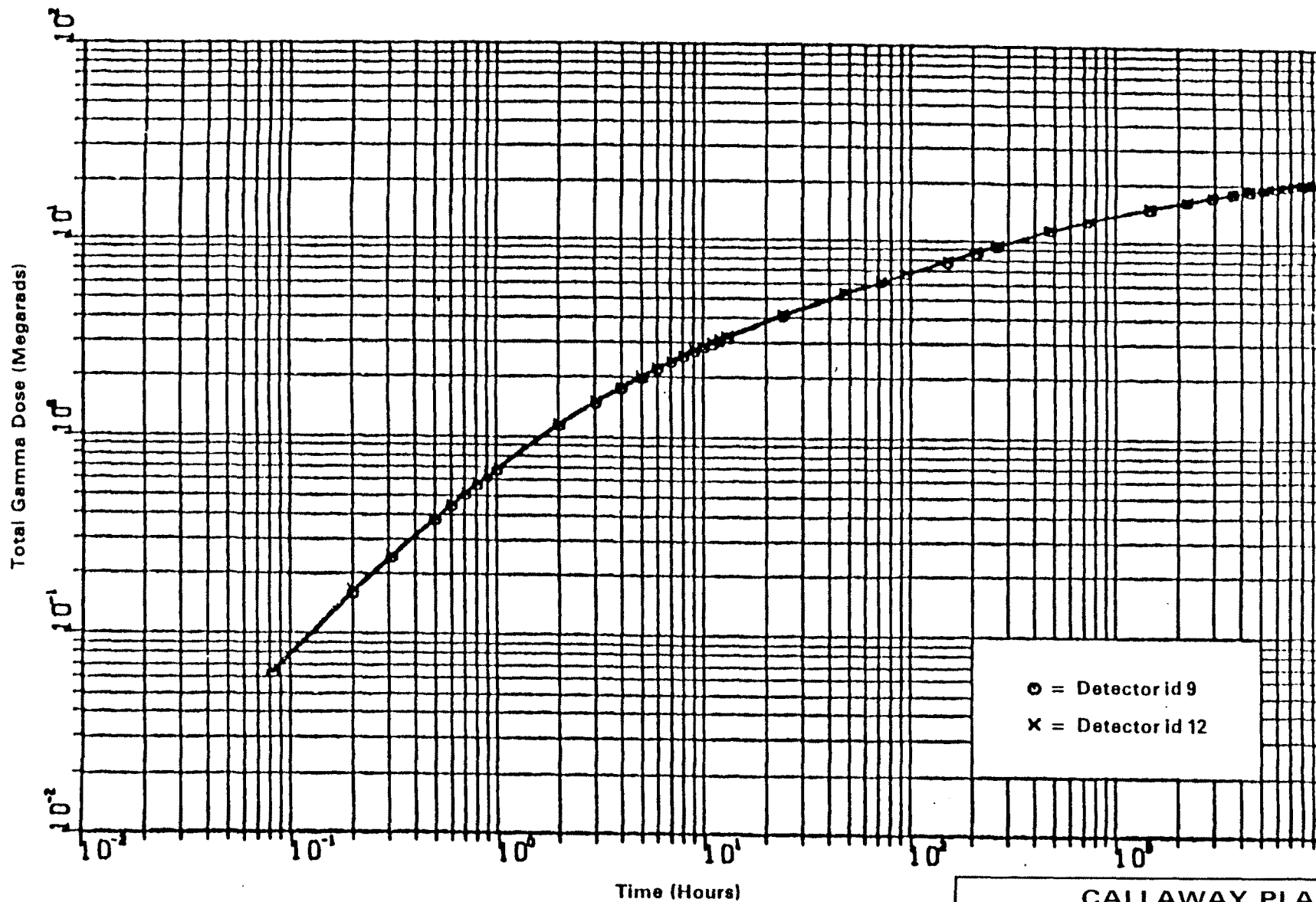
REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-74

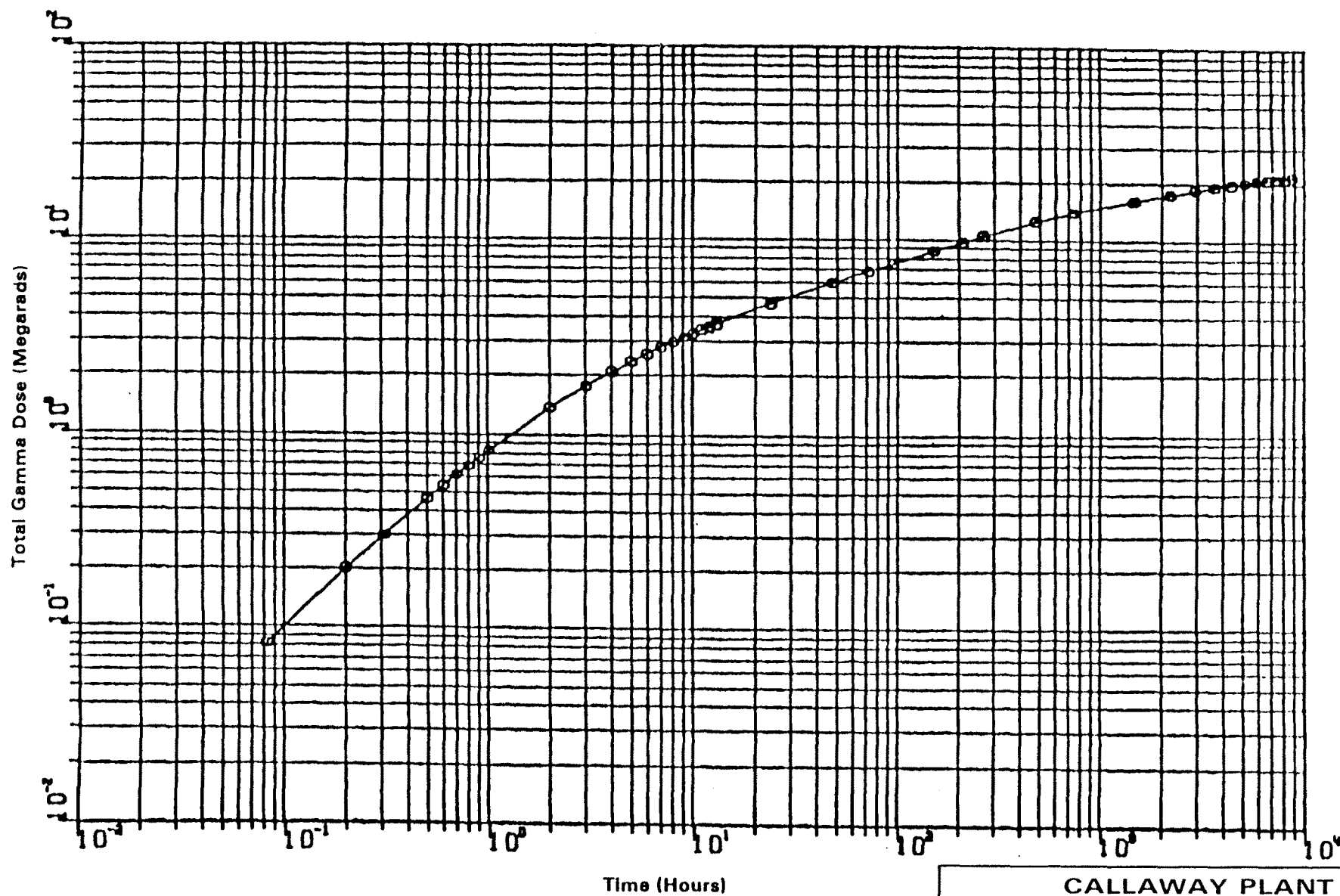
GAMMA DOSE 1.0% Cs
DETECTORS 9&12 SUBM





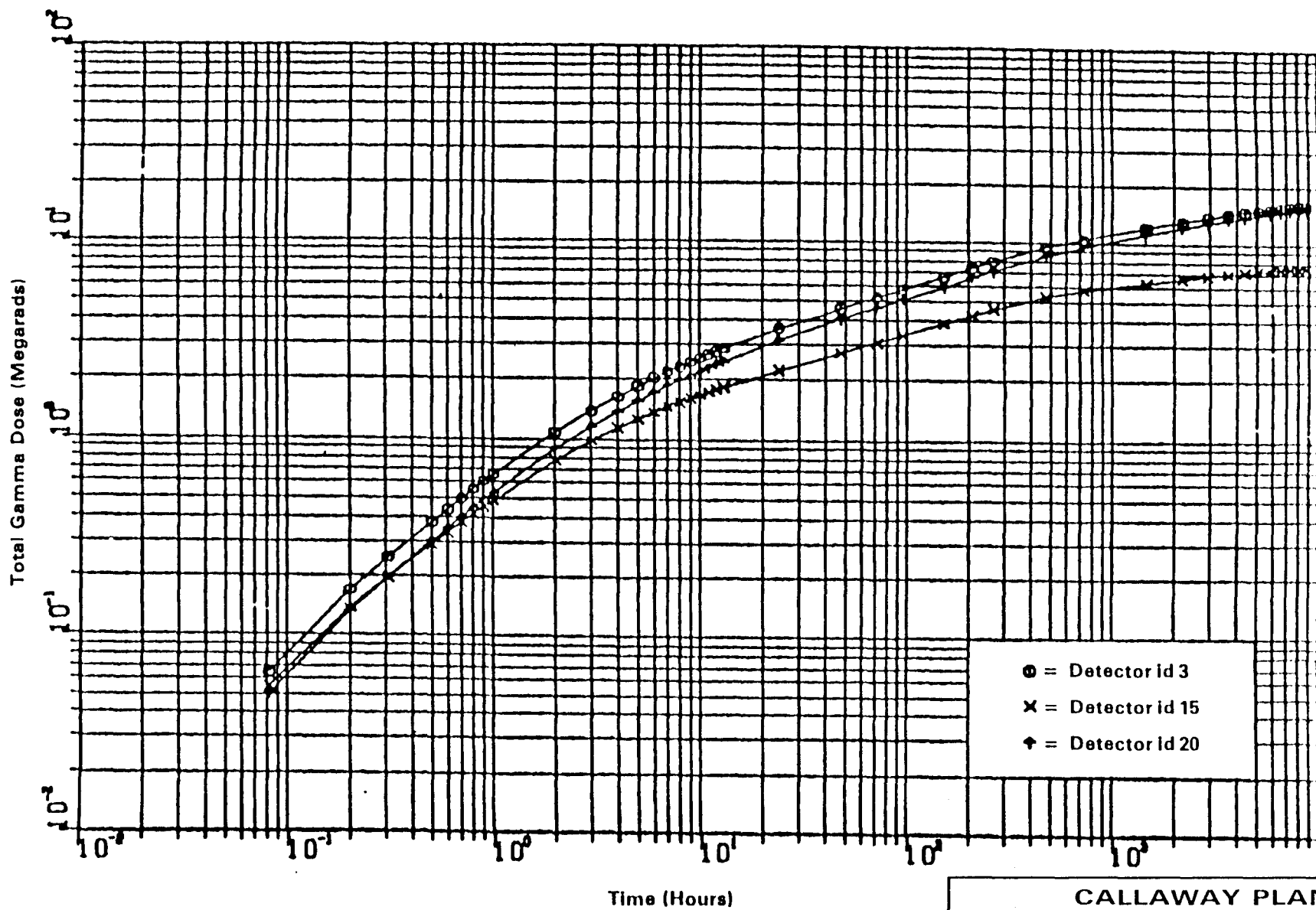
REV. OL-6
6/92

CALLAWAY PLANT
FIGURE 3.11(B)-76
GAMMA DOSE 1.0% Cs
DETECTORS 9&12 SUR



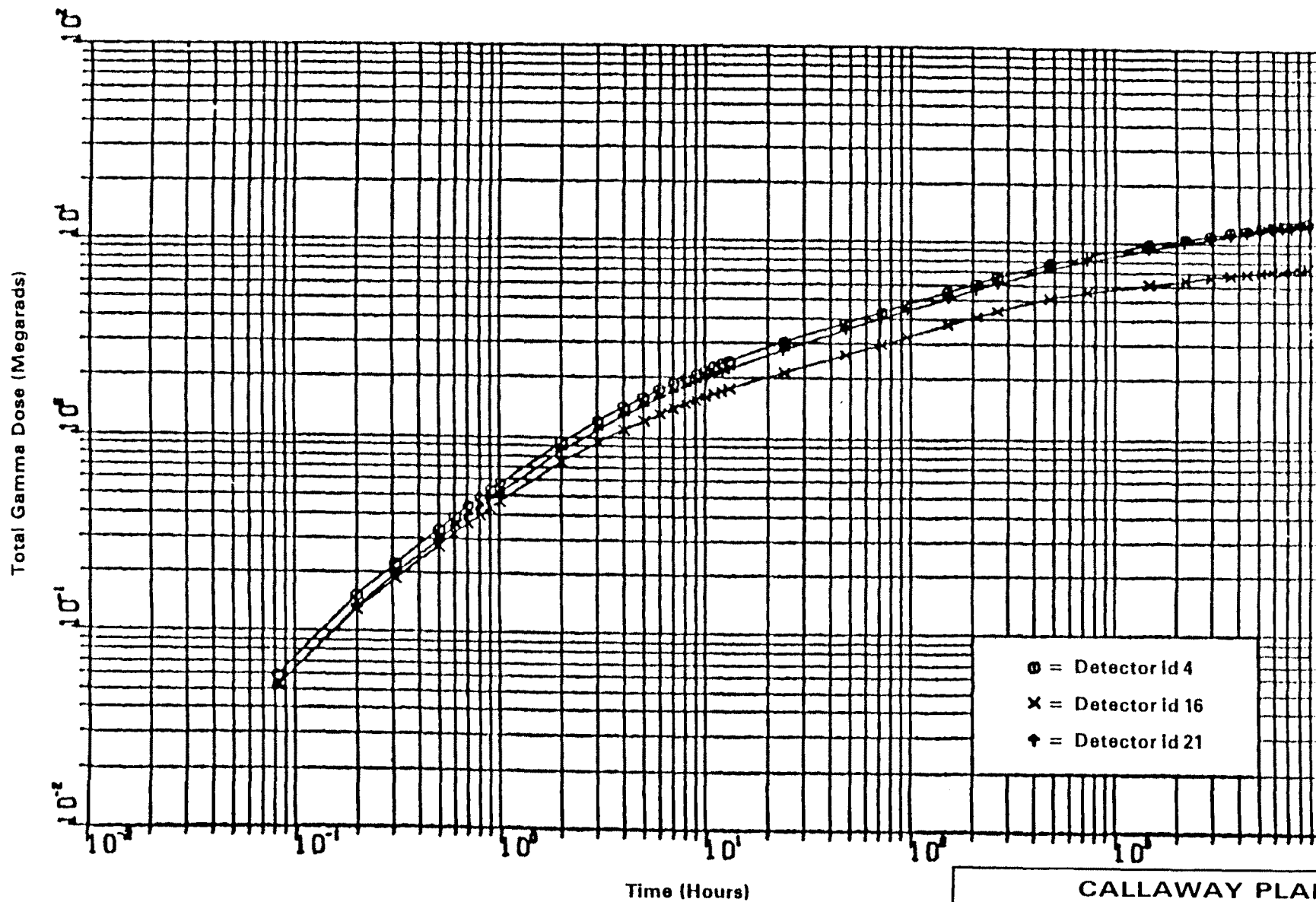
REV. OL-6
6/92

CALLAWAY PLANT
FIGURE 3.11(B)-77
GAMMA DOSE 1.0% Cs DETECTOR 11, SUR



REV. OL-6
6/92

CALLAWAY PLANT
FIGURE 3.11(B)-78
GAMMA DOSE 1.0% Cs DETECTORS 3,15&20

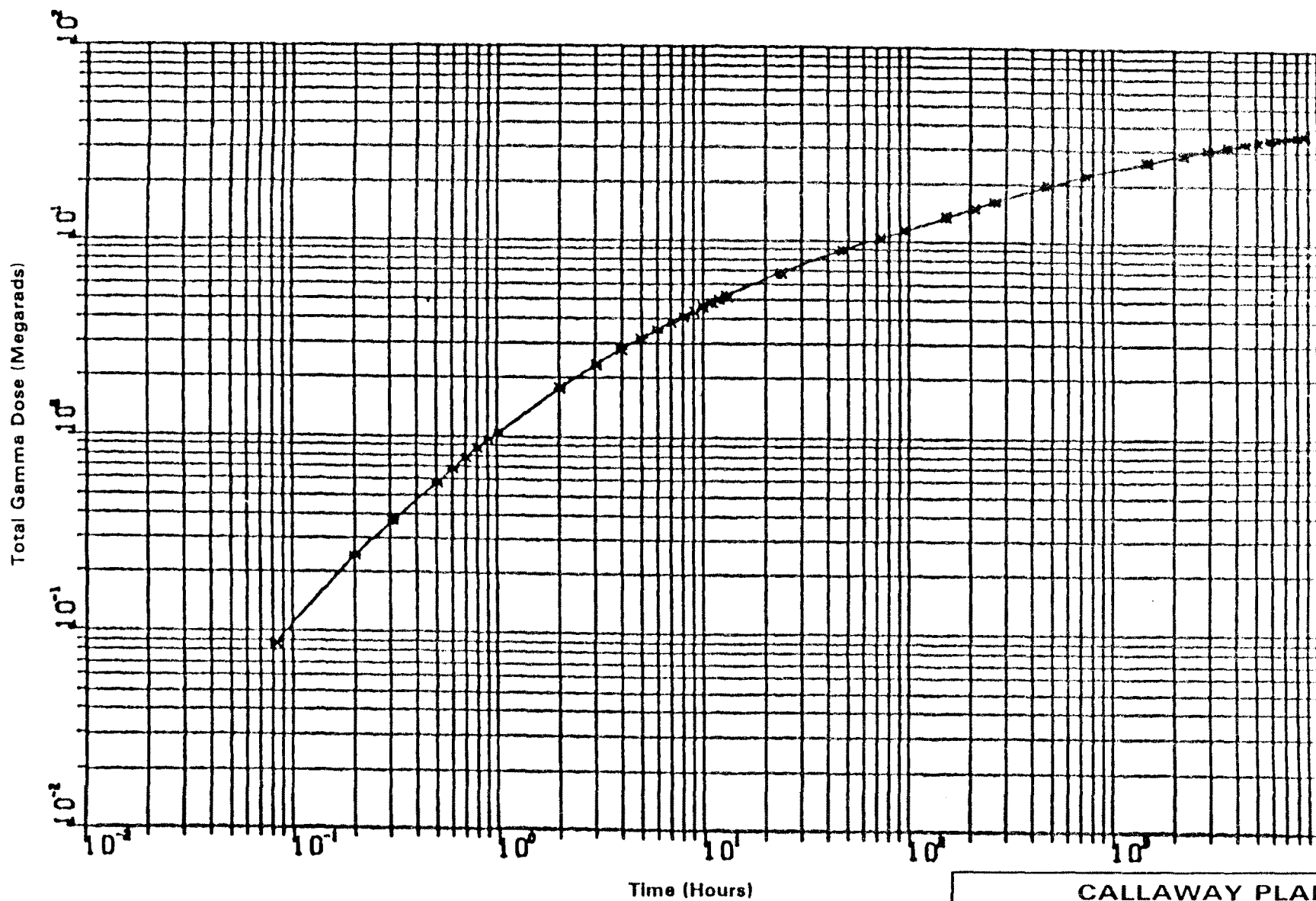


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-79

GAMMA DOSE 1.0% Cs
DETECTORS 4,16&21

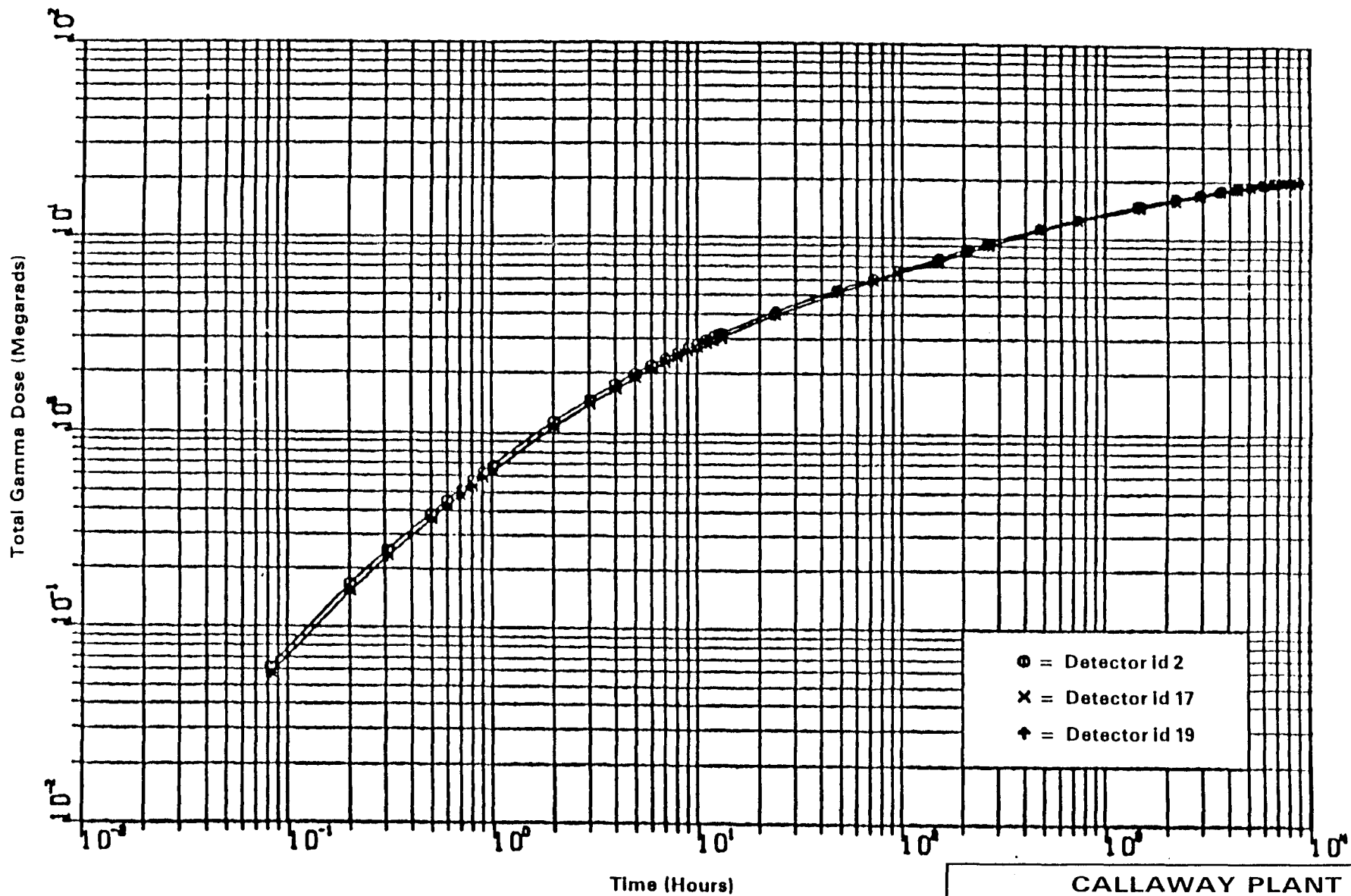


REV. 01-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-80

GAMMA DOSE 1.0% Cs
DETECTORS 2,5,17,
18,19&22 SUBM

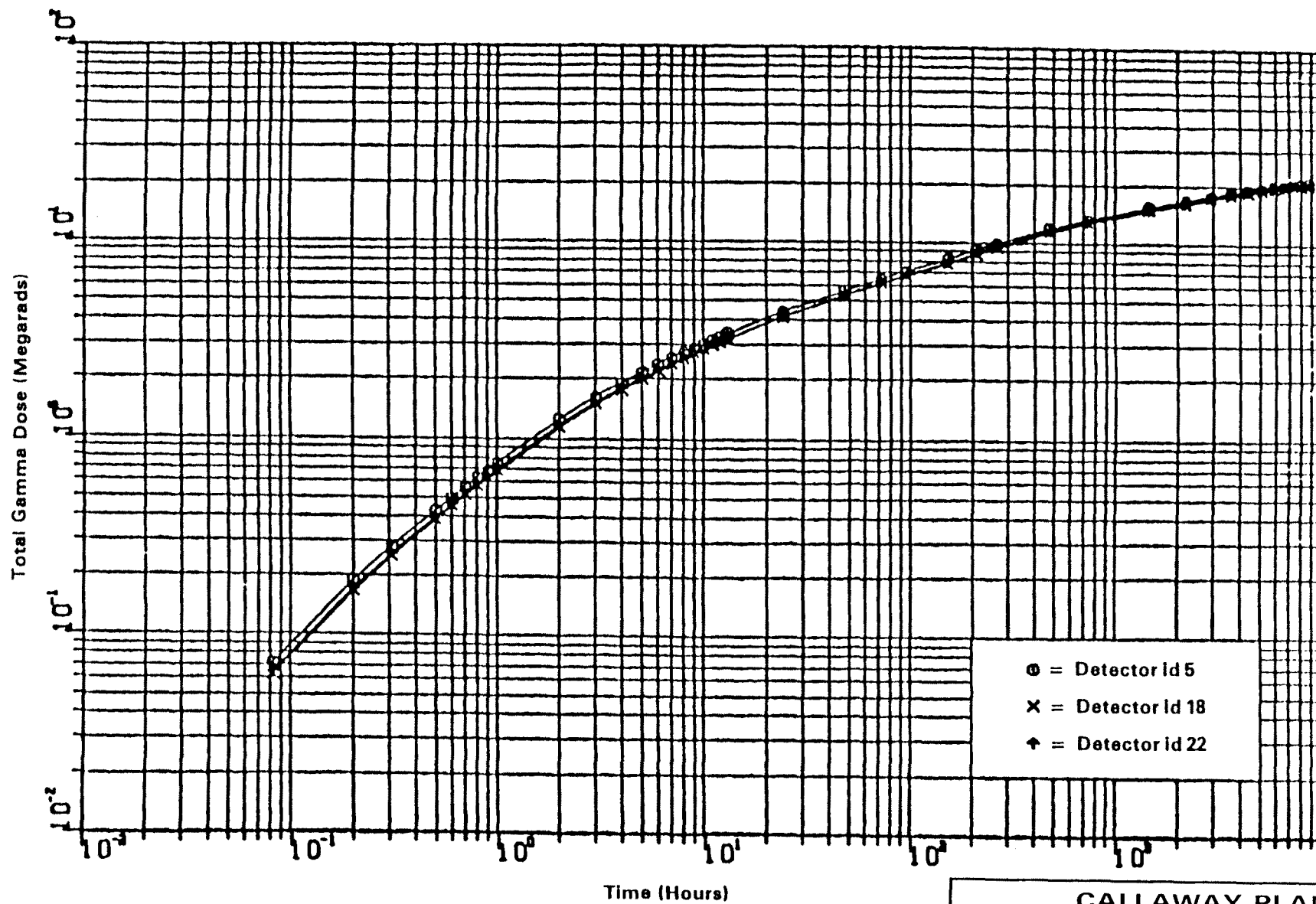


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-81

GAMMA DOSE 1.0% Cs
DETECTORS 2,17,&19SUR

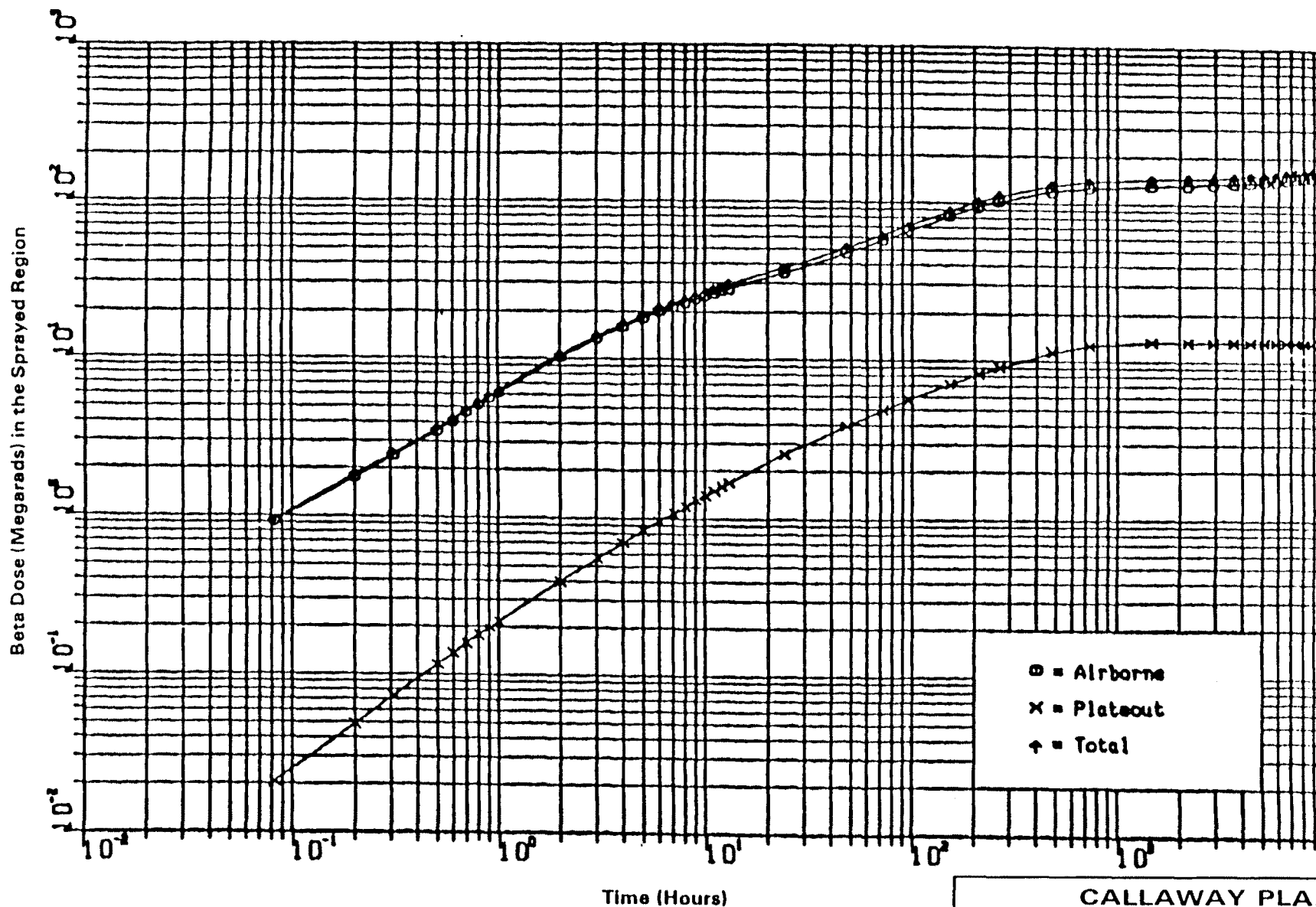


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-82

GAMMA DOSE 1.0% Cs
DETECTORS 5,18&22SUR

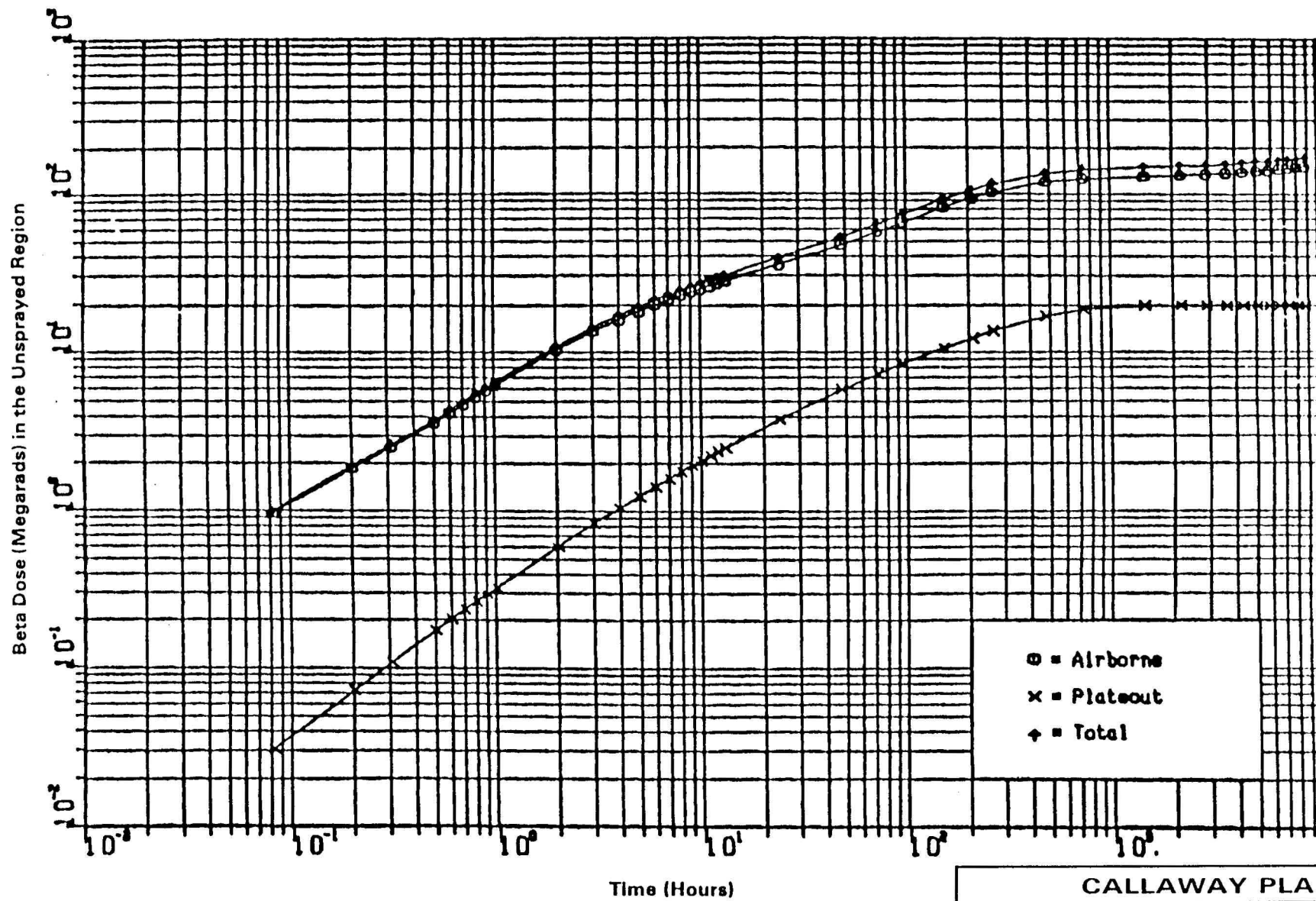


REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-83

BETA DOSE 1.0% Cs
DETECTORS 1,6-14&
23-26



REV. OL-6
6/92

CALLAWAY PLANT

FIGURE 3.11(B)-84

BETA DOSE 1.0% Cs
DETECTORS 2-5&15-22

M-06022

H

G

F

E

D

C

REV OL-11
5/00

CALLAWAY PLANT

FIGURE 3.11(B)-85
DETECTOR LOCATIONS
ELEVATION 2000'-0"

M-06023

H

G

F

E

D

C

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6/92

FSAR Figure 3.11(B)-86 withheld per RIS 2015-17

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FIGURE 3.11(B)-86
DETECTOR LOCATIONS
ELEVATION 2026'-0"

8

7

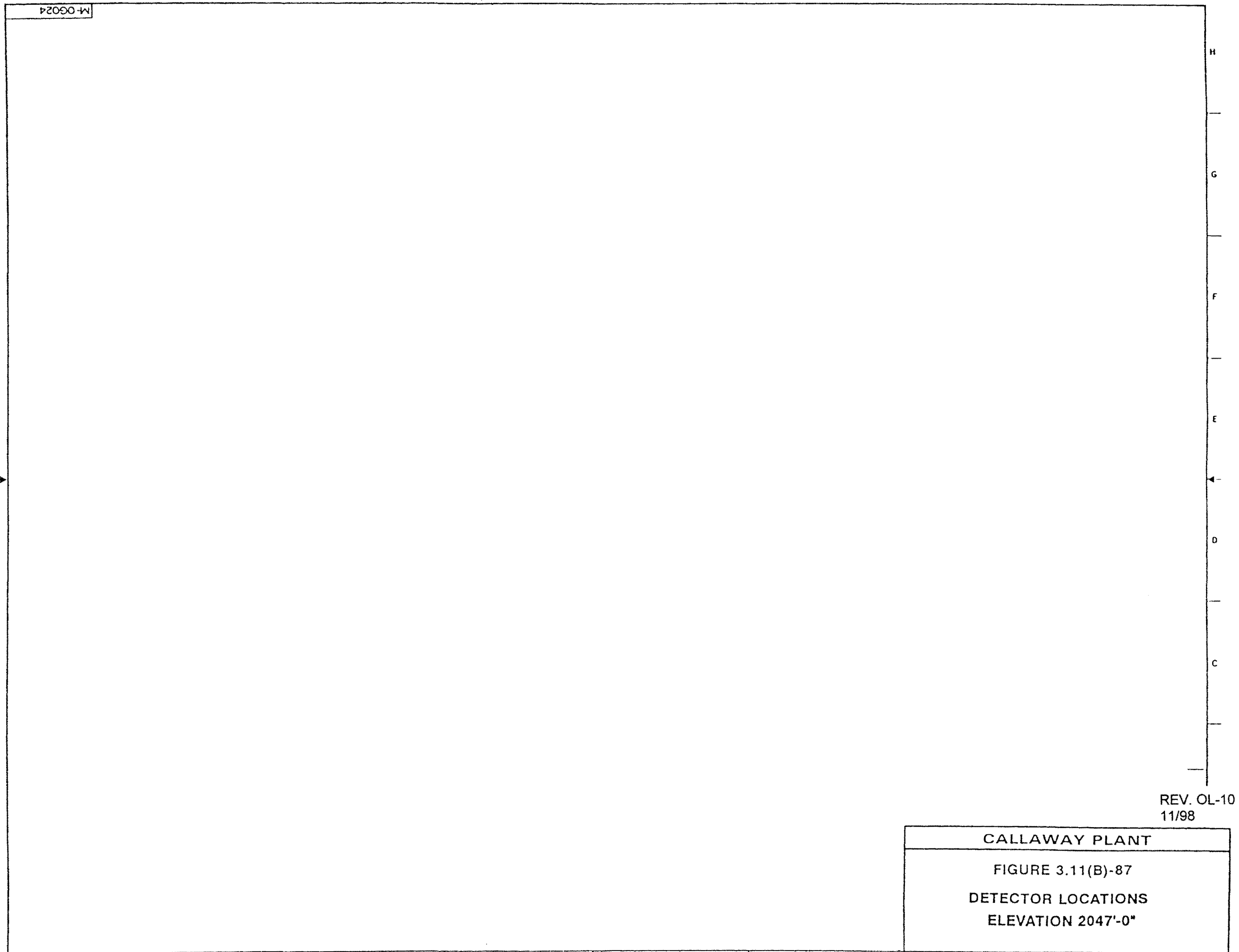
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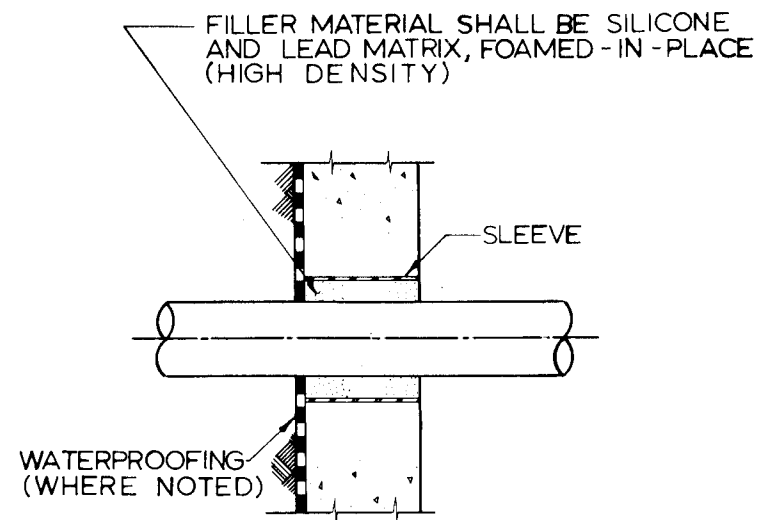
5

4

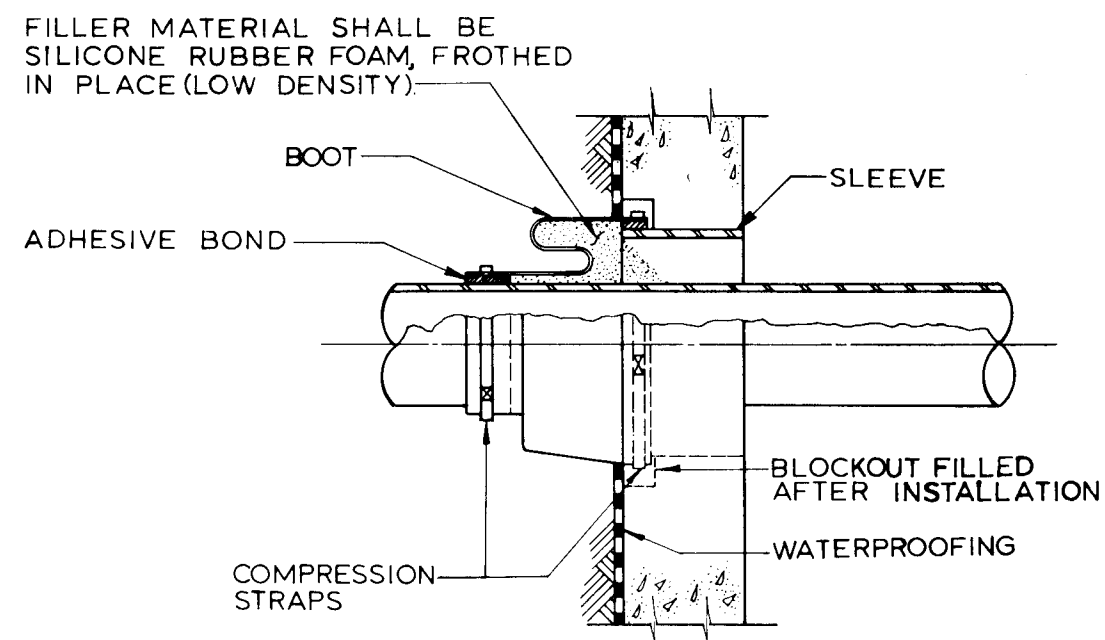
3

1

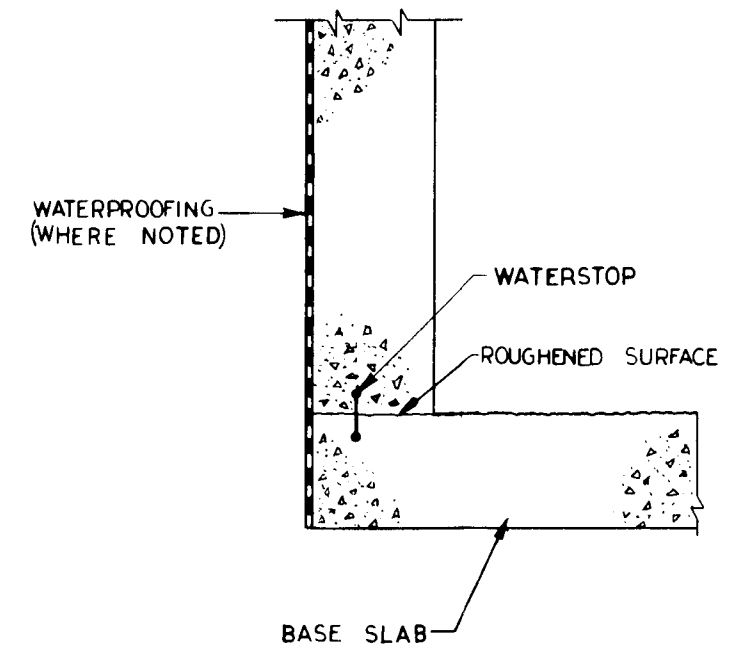




TYPICAL PENETRATION IN WALLS



ALTERNATE PENETRATION IN WALLS
WHEN FLEXIBILITY OF PIPING IS REQUIRED



NOTE

ALL WATERPROOFING WILL BE CARRIED
TO GRADE ELEVATION.

TYPICAL WATERPROOFING APPLICATION

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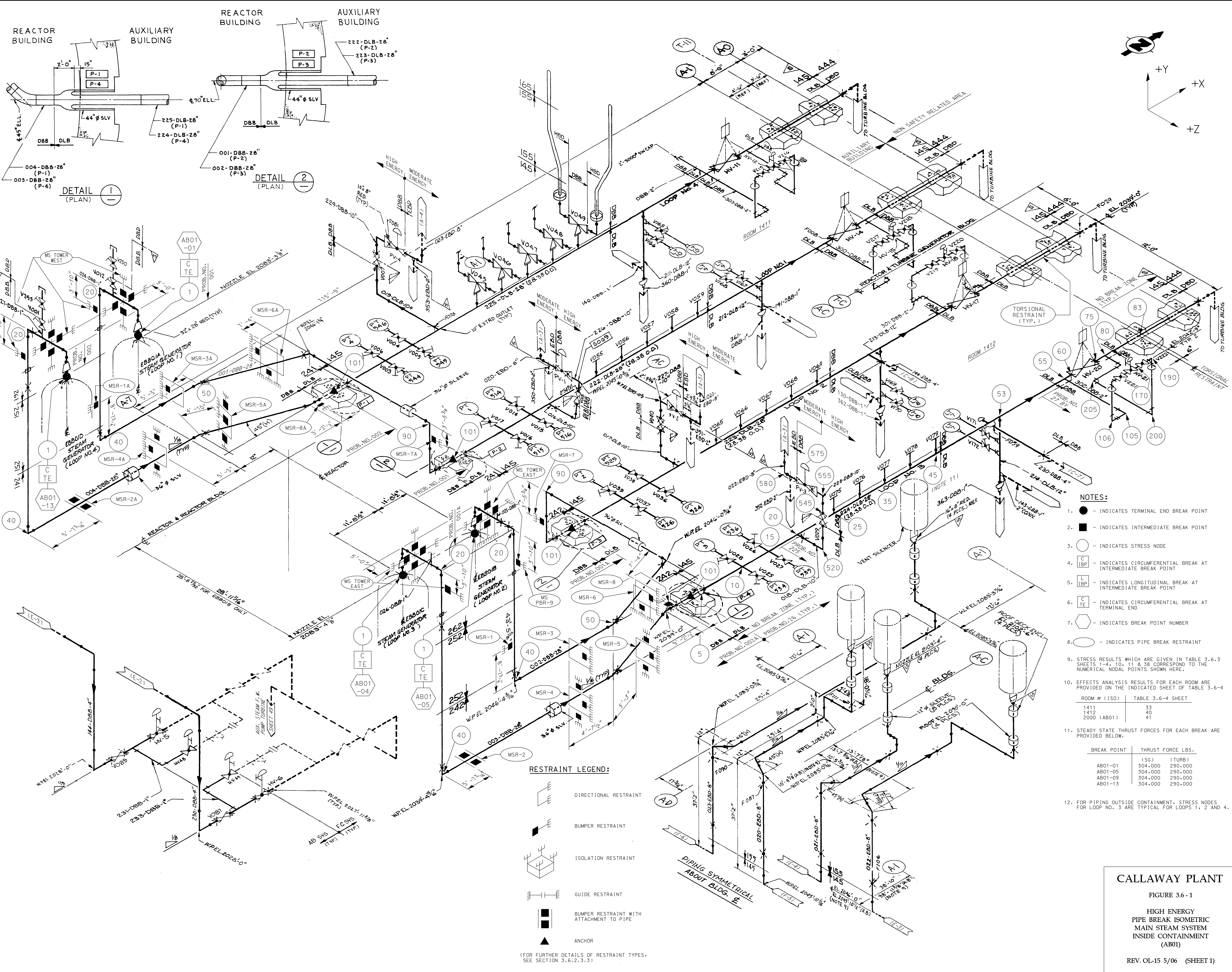
CALLAWAY PLANT

**FIGURE 3.4-1
TYPICAL WATERPROOFING DETAILS**

NOTES TO FIGURE 3.6-1

SHEETS (1-51)

Table 3.6-4, High Energy Pipe Break Effects Analysis Results, list the sheet of Figure 3.6-1 showing the high energy piping in the indicated room. Figure 3.6-1 sheets also indicate which sheet of Table 3.6-4 is applicable for effect analysis. In some cases the Table 3.6-4 sheet associated with the indicated Room No. shown on Figure 3.6-1 (sheet 1-51) is incorrect and should not be used. Refer to Table 3.6-4 to find the correct sheet of Figure 3.6-1 for the indicated Room No.



- NOTES:**
- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - ⊖ - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - ⊓ - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
 - ⊖ - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - ⬡ - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS WHICH ARE GIVEN IN TABLE 3.6.3 SHEETS 1-4, 10, 11 & 38 CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | ROOM # (ISO) | TABLE 3.6-4 SHEET | |
|--------------|-------------------|------|
| | 1411 | 1412 |
| 1411 | 33 | 33 |
| 1412 | 40 | 40 |
| 2000 (AB01) | 41 | 41 |
- | BREAK POINT | THRUST FORCE LBS. | |
|-------------|-------------------|---------|
| | (SG) | (TURB) |
| AB01-01 | 304,000 | 290,000 |
| AB01-05 | 304,000 | 290,000 |
| AB01-09 | 304,000 | 290,000 |
| AB01-13 | 304,000 | 290,000 |
12. FOR PIPING OUTSIDE CONTAINMENT, STRESS NODES FOR LOOP NO. 3 ARE TYPICAL FOR LOOPS 1, 2 AND 4.

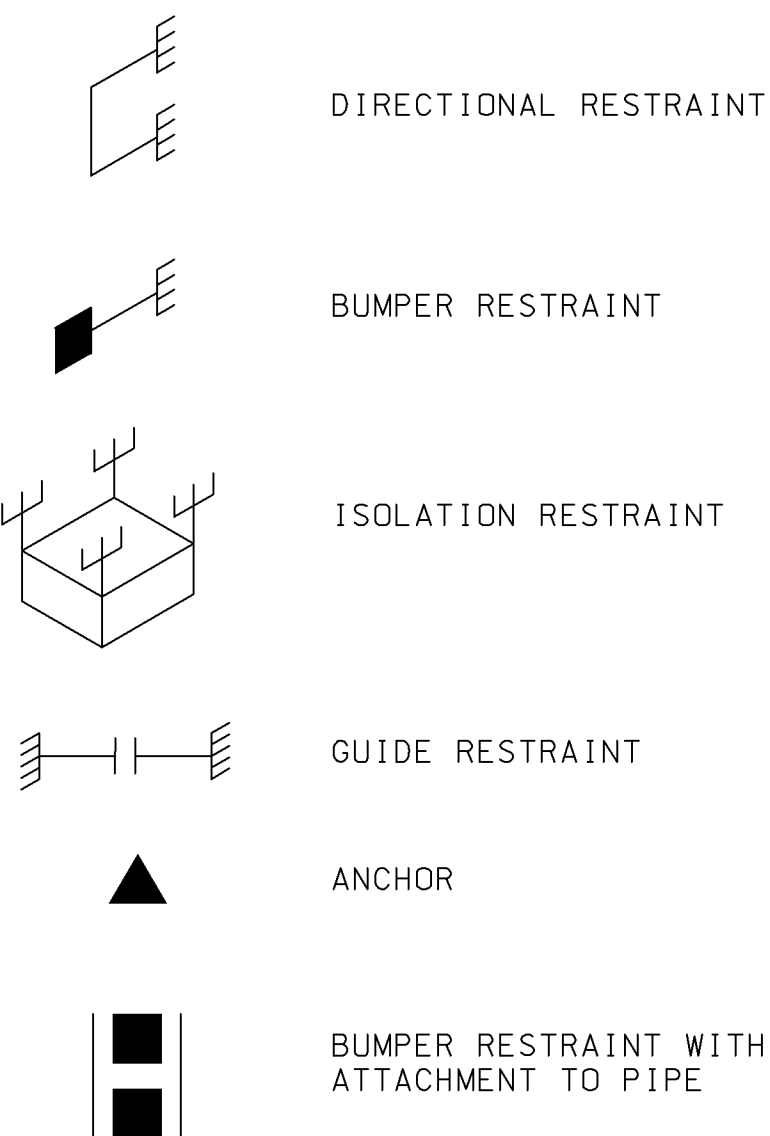
CALLAWAY PLANT

FIGURE 3.6-1

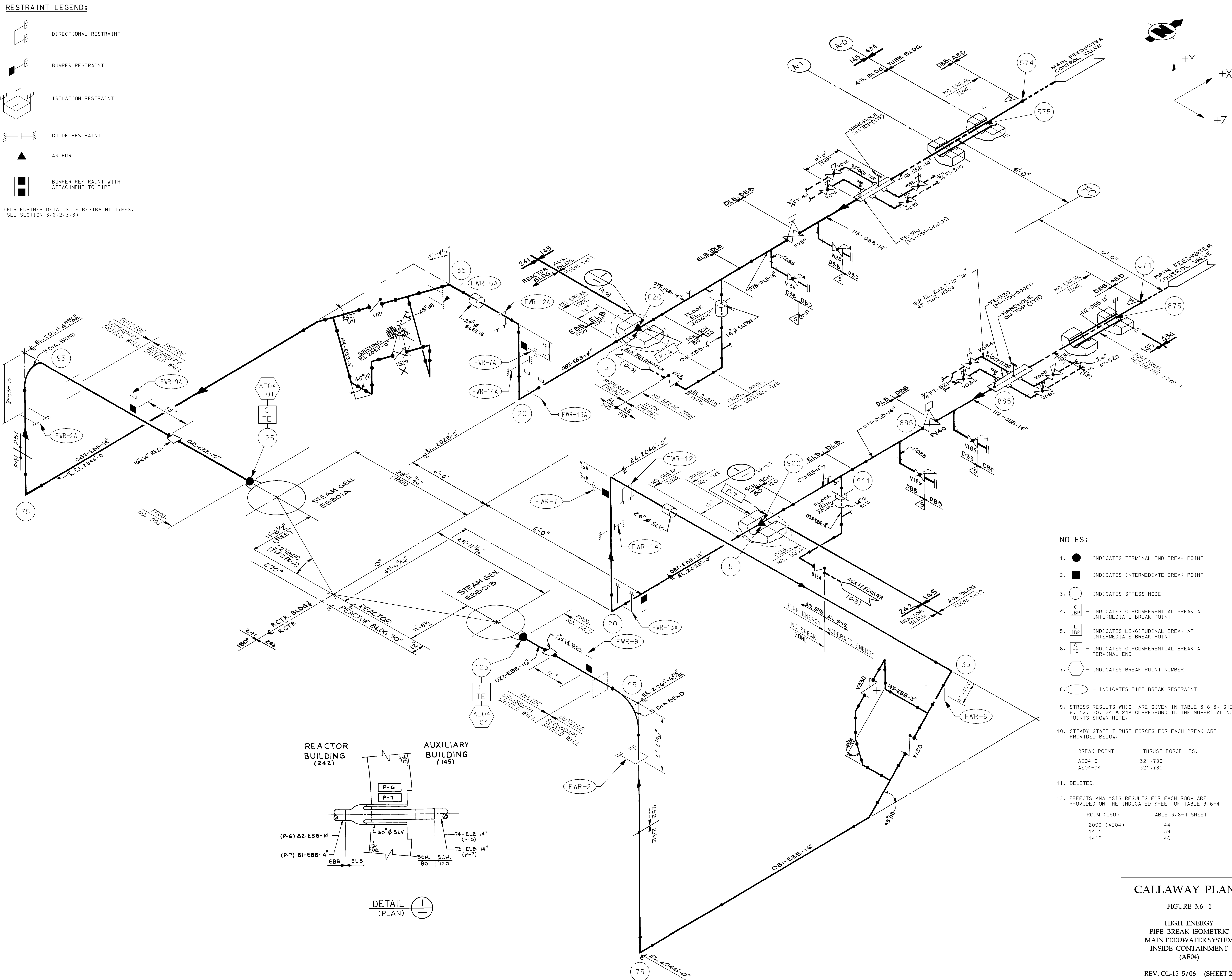
**HIGH ENERGY
PIPE BREAK ISOMETRIC
MAIN STEAM SYSTEM
INSIDE CONTAINMENT
(AB01)**

REV. 01-15 5/06 (SHEET 1)

RESTRAINT LEGEND:



(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)



NOTES:

- - INDICATES TERMINAL END BREAK POINT
- - INDICATES INTERMEDIATE BREAK POINT
- - INDICATES STRESS NODE
- CBP - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
- LBP - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
- CTE - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
- - INDICATES BREAK POINT NUMBER
- - INDICATES PIPE BREAK RESTRAINT
- STRESS RESULTS WHICH ARE GIVEN IN TABLE 3.6-3, SHEETS 5, 6, 12, 20, 24 & 24A CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
- STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.

BREAK POINT	THRUST FORCE LBS.
AE04-01	321,780
AE04-04	321,780

11. DELETED.

12. EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4

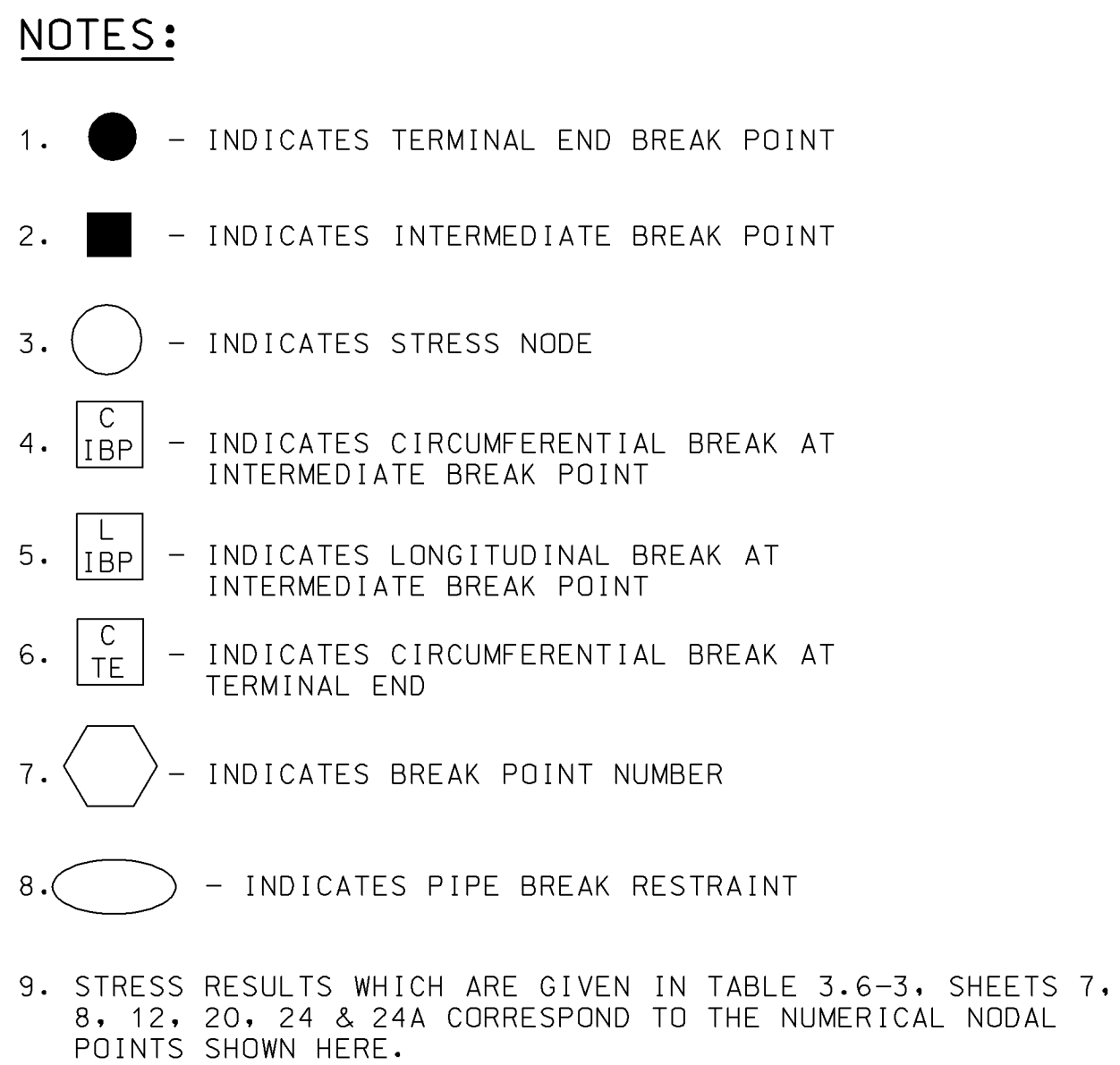
ROOM (ISO)	TABLE 3.6-4 SHEET
2000 (AE04)	44
1411	39
1412	40

CALLAWAY PLANT

FIGURE 3.6-1

HIGH ENERGY
PIPE BREAK ISOMETRIC
MAIN FEEDWATER SYSTEM
INSIDE CONTAINMENT
(AE04)

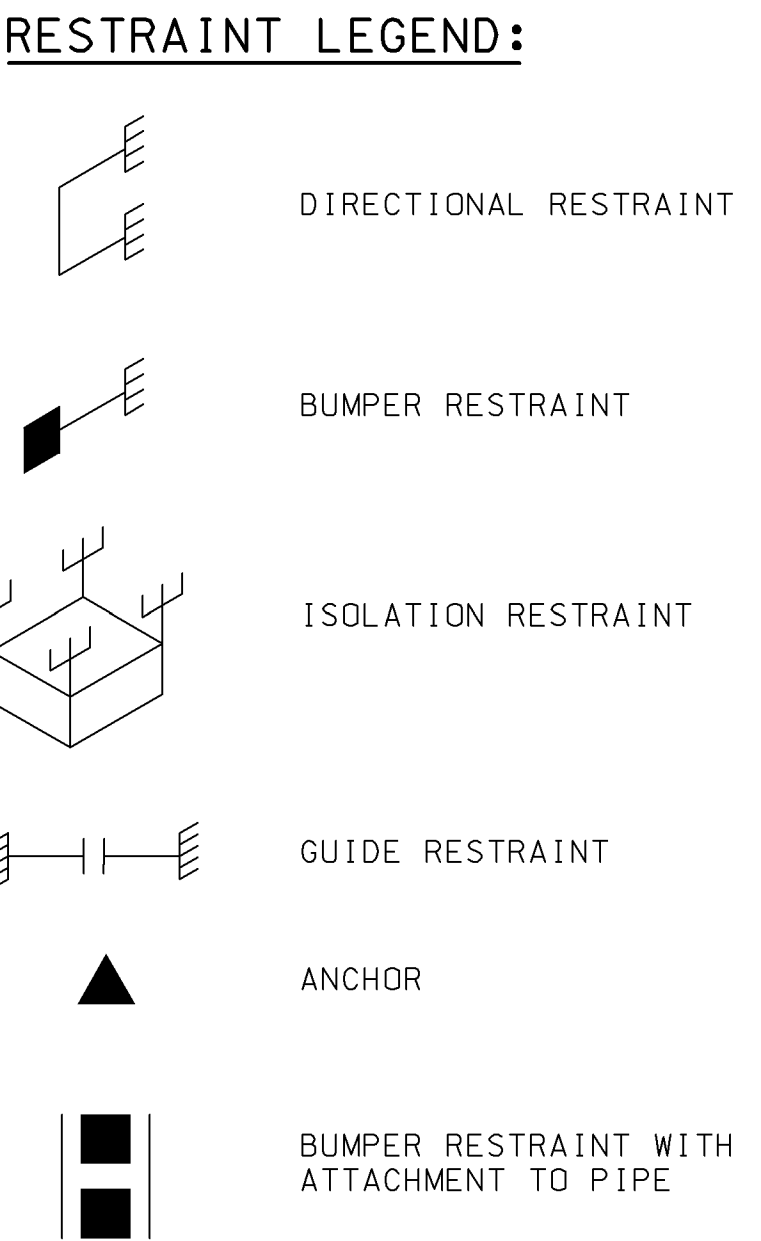
REV. OL-15 5/06 (SHEET 2)



ROOM #	TABLE 3.6-4 SHEET
1411	39
1412	40
2000 (AE05)	45, 46

STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.	
BREAK POINT	THRUST FORCE LBS.
AE05-01	321,780
AE05-04	321,780

12. DELETED.



(FOR FURTHER DETAILS OF RESTRAINT TYPES,
SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT

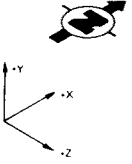
FIGURE 3.6 - 1

HIGH ENERGY
PIPE BREAK ISOMETRIC
MAIN FEEDWATER SYSTEM
INSIDE CONTAINMENT
(AE05)

REV. OL-15 5/06 (SHEET 3)

Figure 3.6-1 (Sheets 4 through 7)

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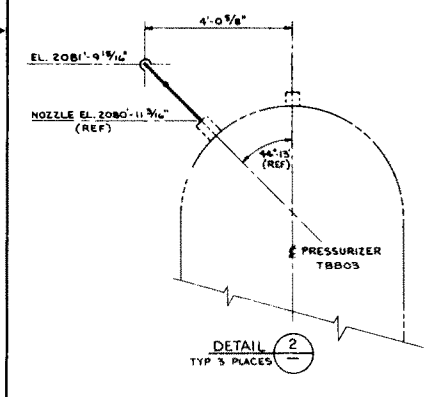
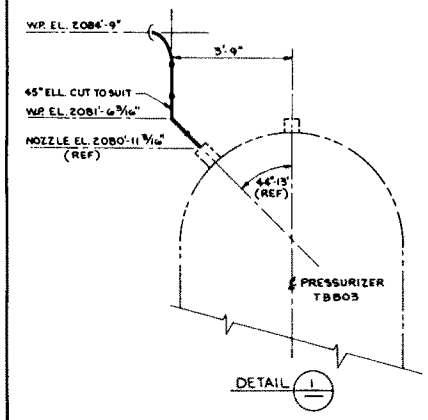
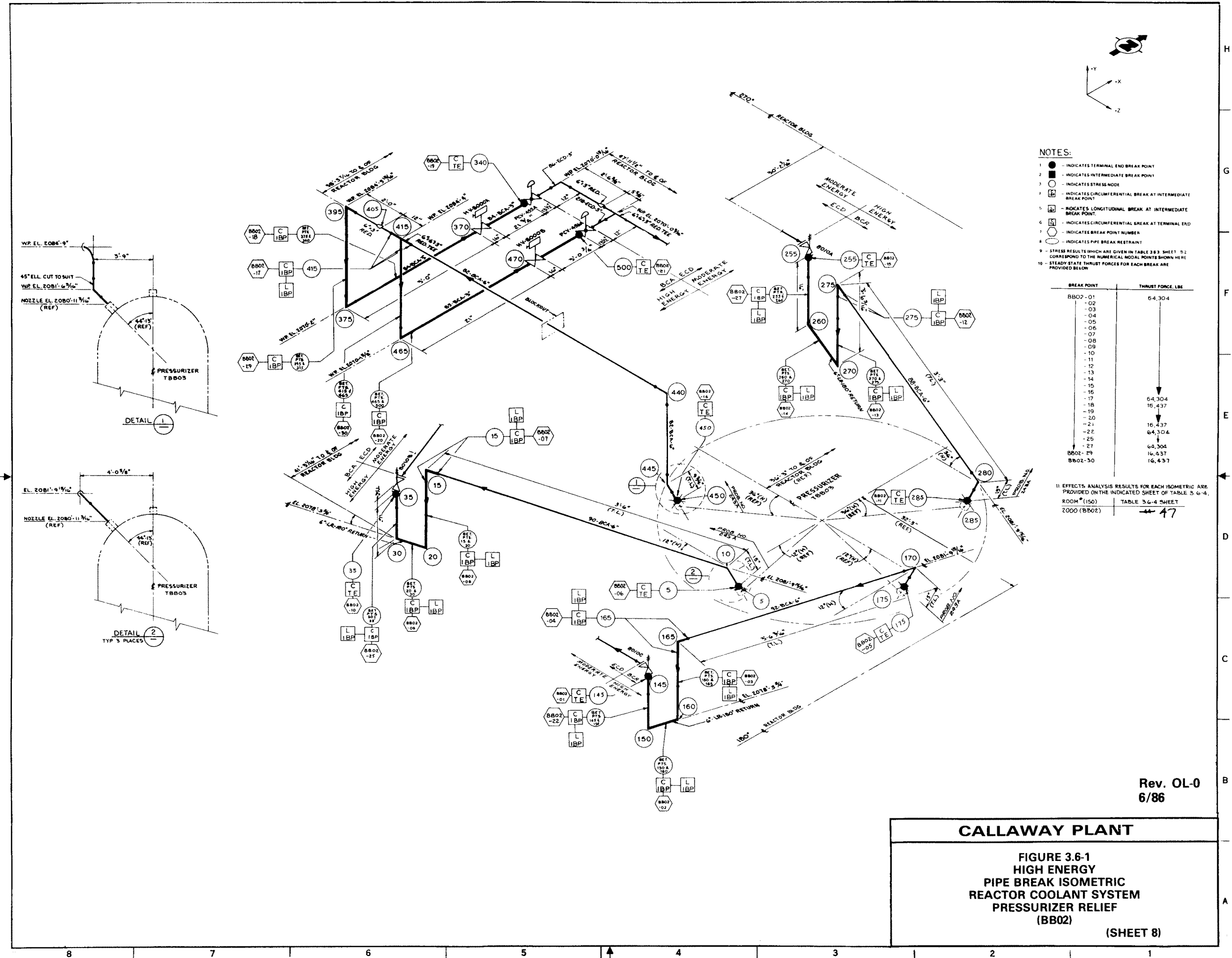


NOTES:

- 1 - INDICATES TERMINAL END BREAK POINT
- 2 - INDICATES INTERMEDIATE BREAK POINT
- 3 - INDICATES STRESS NODE
- 4 - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
- 5 - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
- 6 - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
- 7 - INDICATES BREAK POINT NUMBER
- 8 - INDICATES PIPE BREAK RESTRAINT
- 9 - STRESS RESULTS WHICH ARE GIVEN IN TABLE 3.6.3 SHEET 1-2 CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE
- 10 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW

BREAK POINT	THRUST FORCE, LBS
BB02-01	64,304
-02	
-03	
-04	
-05	
-06	
-07	
-08	
-09	
-10	
-11	
-12	
-13	
-14	
-15	
-16	
-17	
-18	
-19	
-20	
-21	
-22	
-23	
-24	
-25	
-26	
-27	
BB02-29	64,304
BB02-30	16,437

11 EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4, ROOM 150, TABLE 3.6-4 SHEET 2000 (BB02) 47

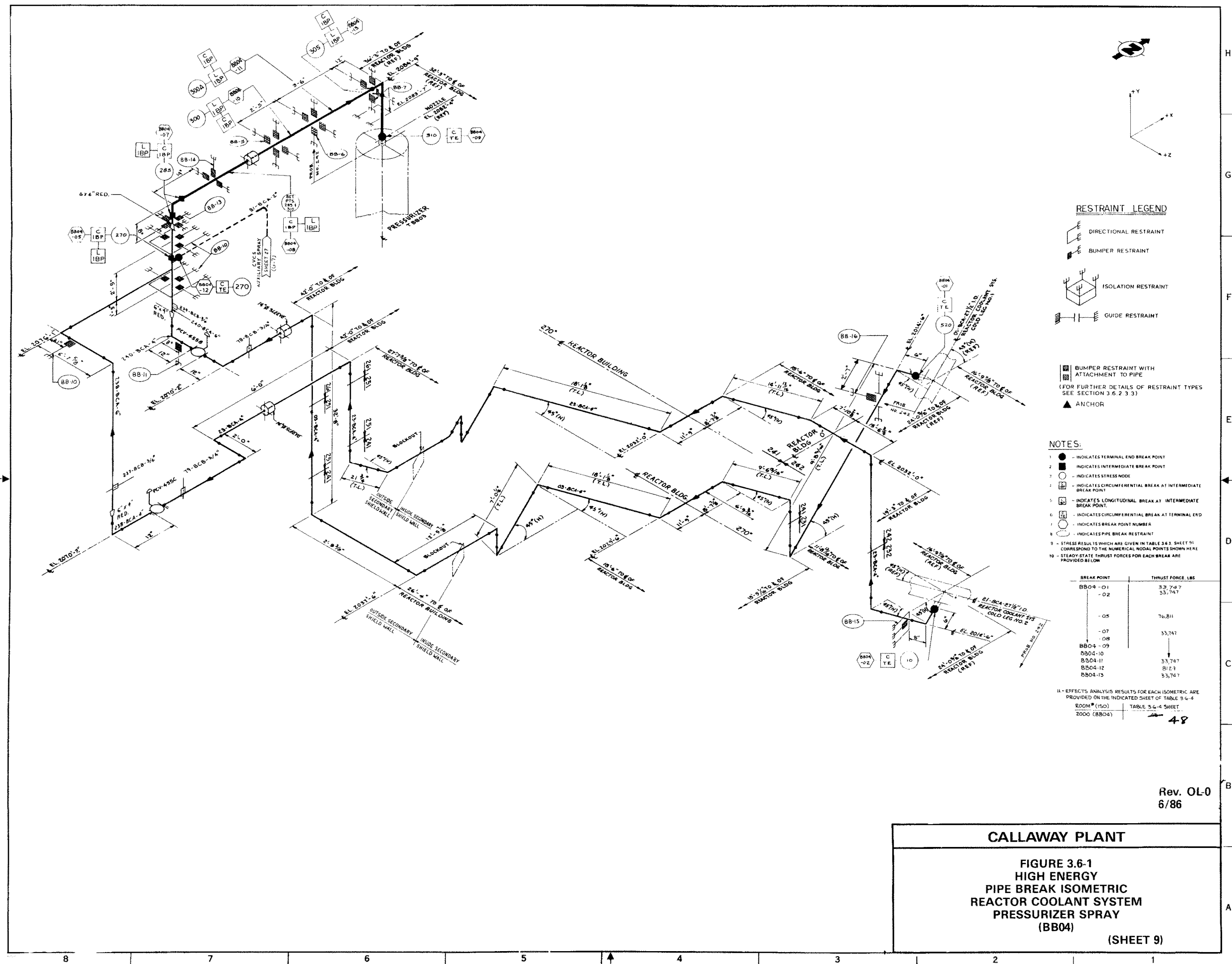


CALLAWAY PLANT

FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
REACTOR COOLANT SYSTEM
PRESSURIZER RELIEF
(BB02)

(SHEET 8)

Rev. OL-0
6/86



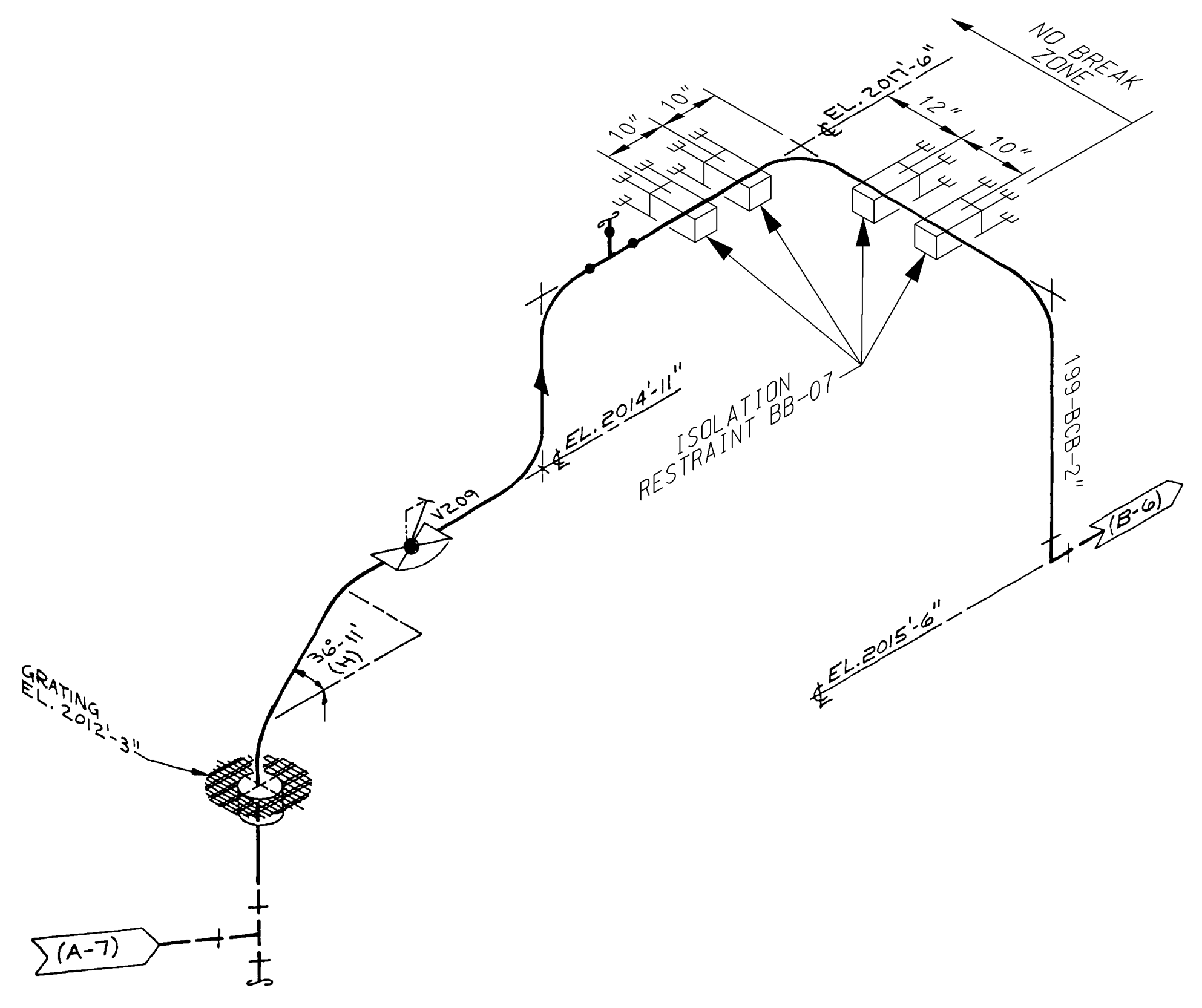
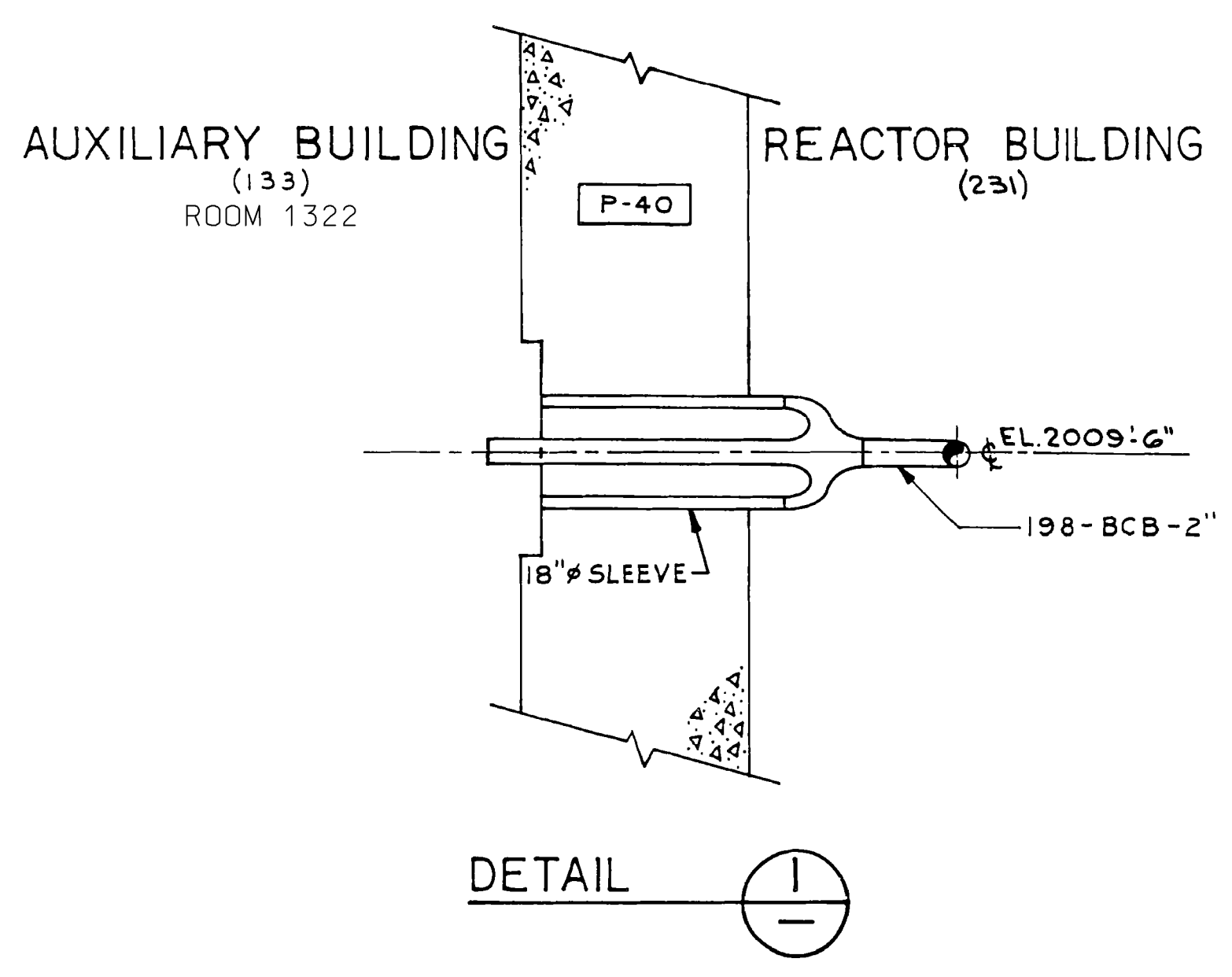
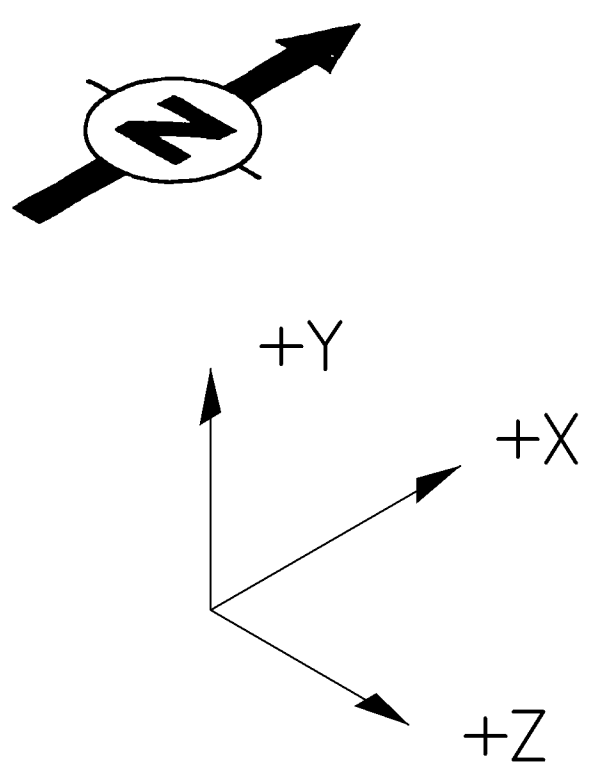
Rev. OL-0
6/86

Figure 3.6-1 Sheet 10 has been deleted.

Figure 3.6-1 Sheet 11 has been deleted.

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E
M
D
C
B
A

8 7 6 5 4 3 2 1

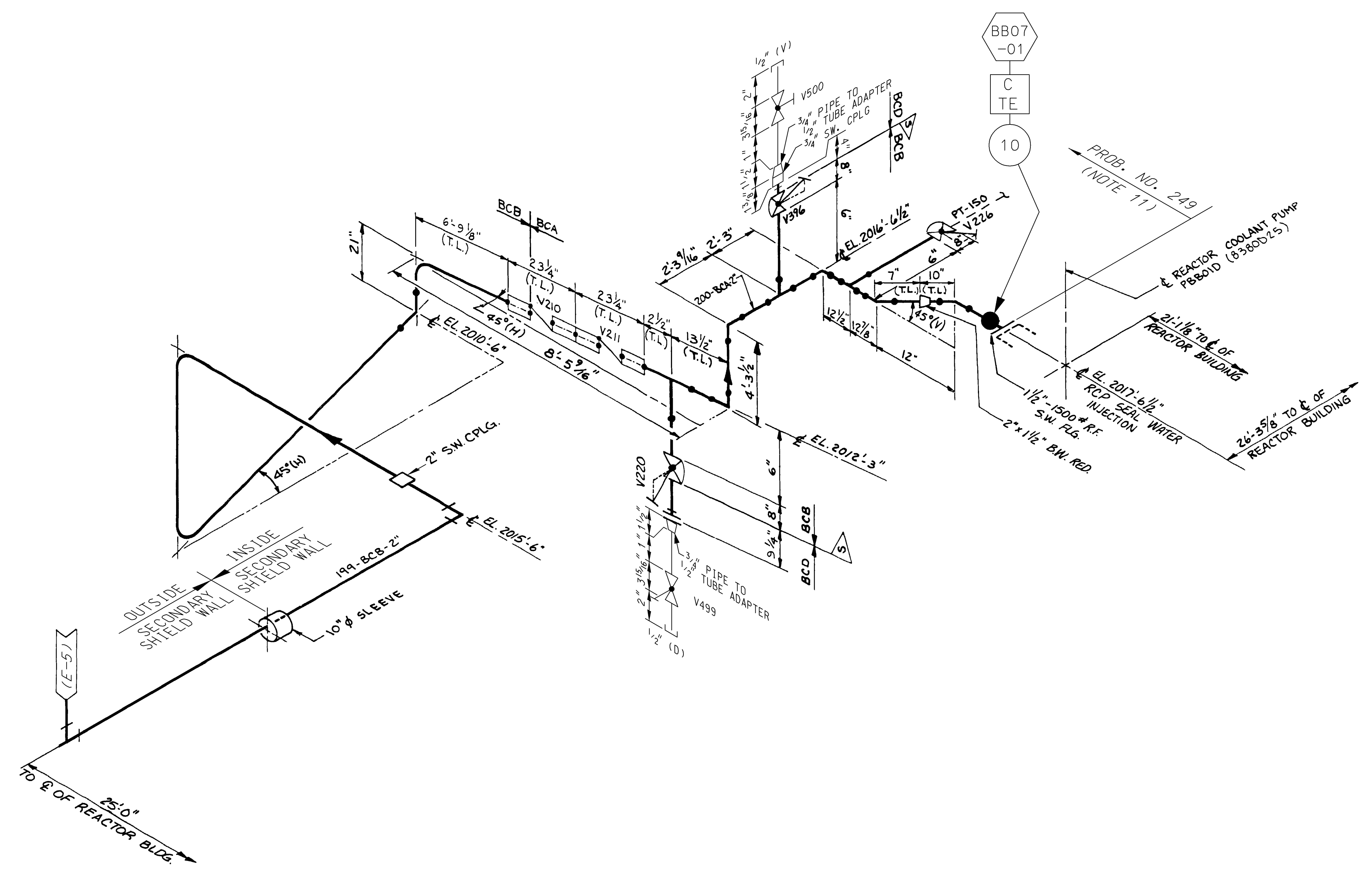
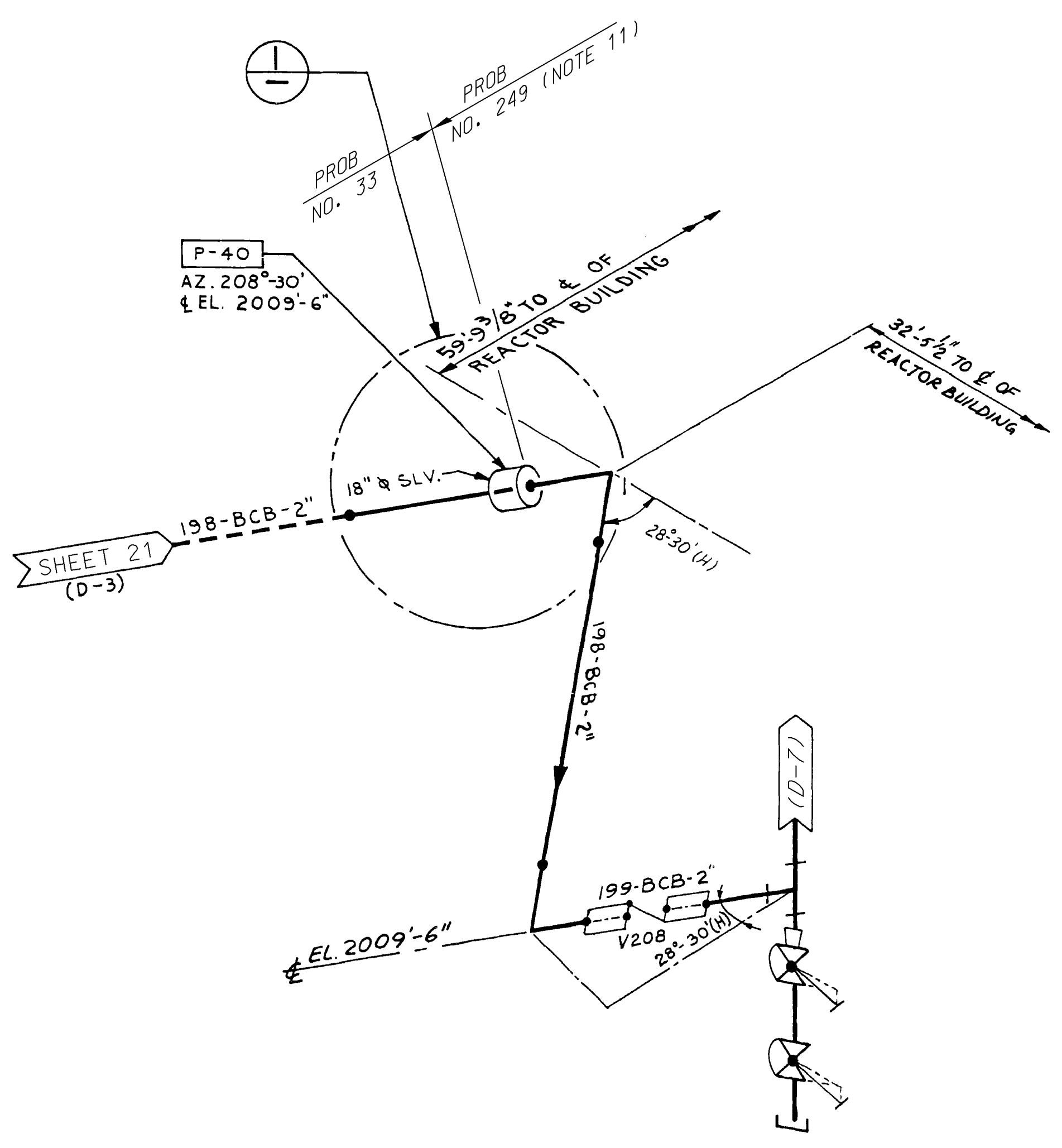
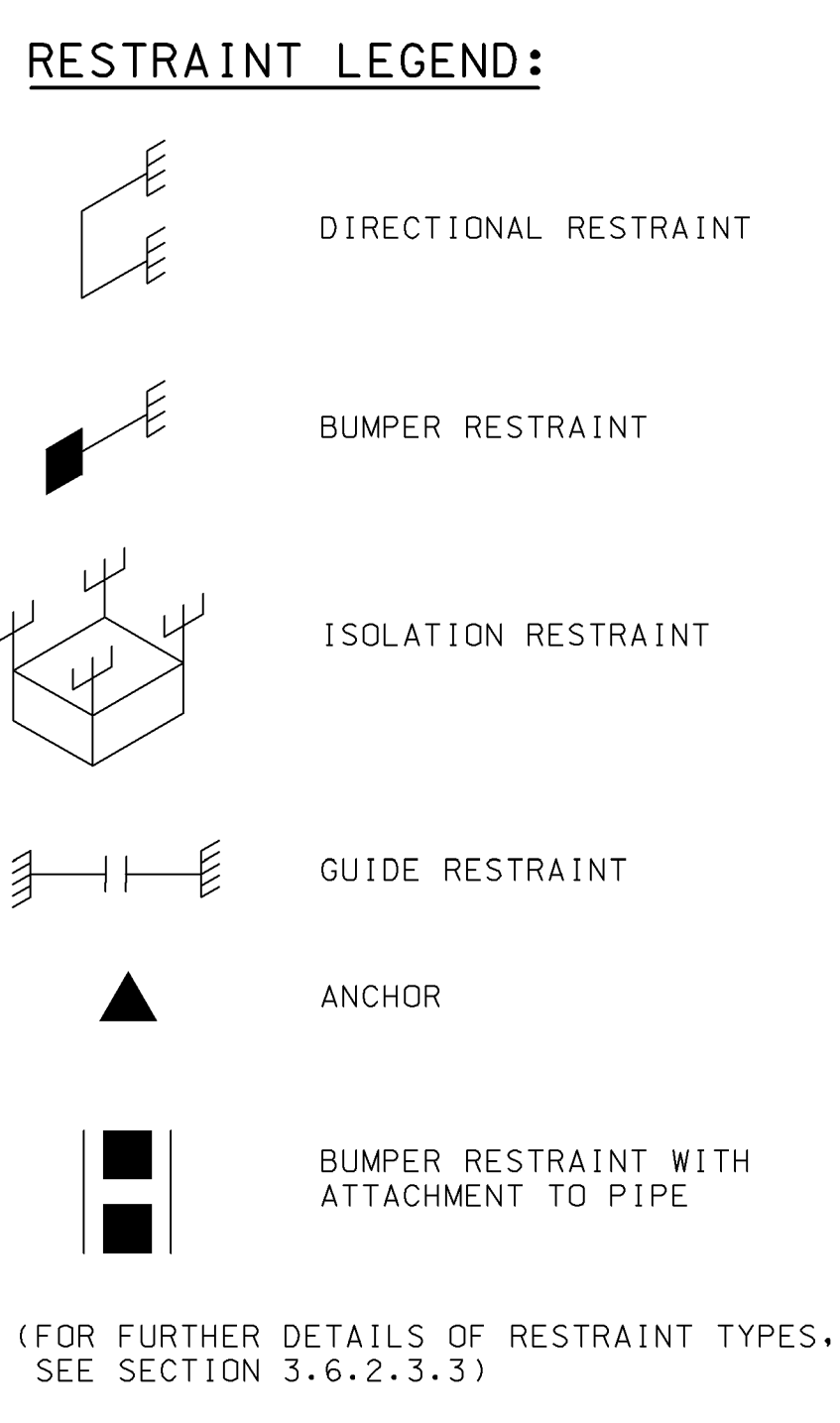


- NOTES:**
- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - | | |
|---|-----|
| C | IBP |
|---|-----|

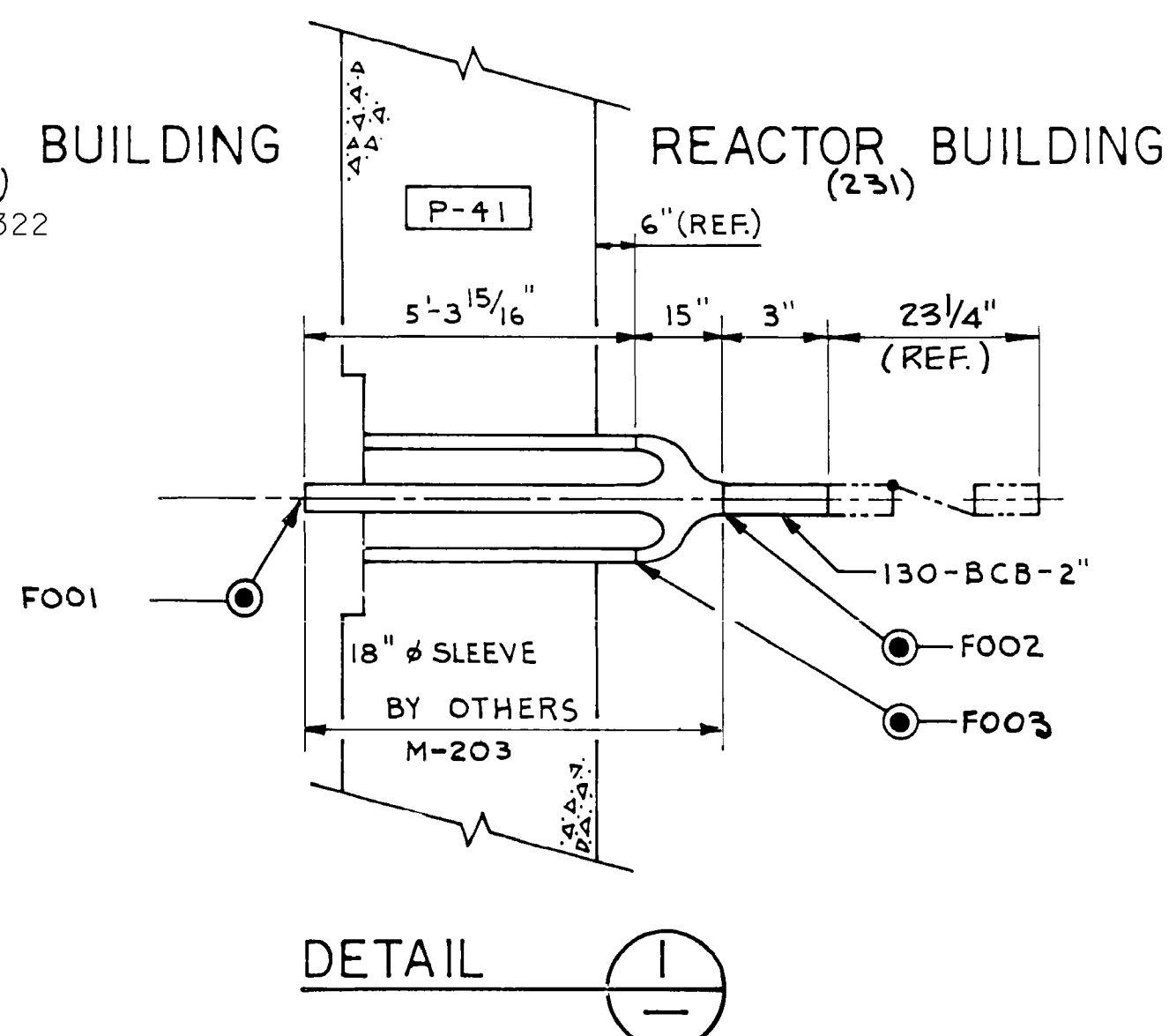
 - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - | | |
|---|-----|
| L | IBP |
|---|-----|

 - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
 - | | |
|---|----|
| C | TE |
|---|----|

 - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - ⬡ - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, SHEET 58 CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | BREAK POINT | THRUST FORCE LBS. |
|----------------|-------------------|
| BB07-01 (LOOP) | 4968 |
| BB07-01 (CVCS) | 132 |
- EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
- | ROOM # (ISO) | TABLE 3.6-4 SHEET |
|--------------|-------------------|
| 2000 (BB07) | 52 |



8 7 6 5 4 3 2 1



- NOTES:**
- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - INDICATES BREAK POINT NUMBER
 - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, CORRESPONDING TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | BREAK POINT | THRUST FORCE LBS. |
|----------------|-------------------|
| BM08-03 (CVCS) | 132 |
| BM08-04 (CVCS) | 132 |
| BM08-09 (LOOP) | 4968 |
| BM08-09 (CVCS) | 132 |
| BM08-12 (CVCS) | 132 |
| BM08-13 (CVCS) | 132 |
- EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
- | ROOM # | TABLE 3.6-4 SHEET |
|--------|-------------------|
| 2000 | 53 |

RESTRAINT LEGEND:

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- ANCHOR
- RIGID HANGER
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE

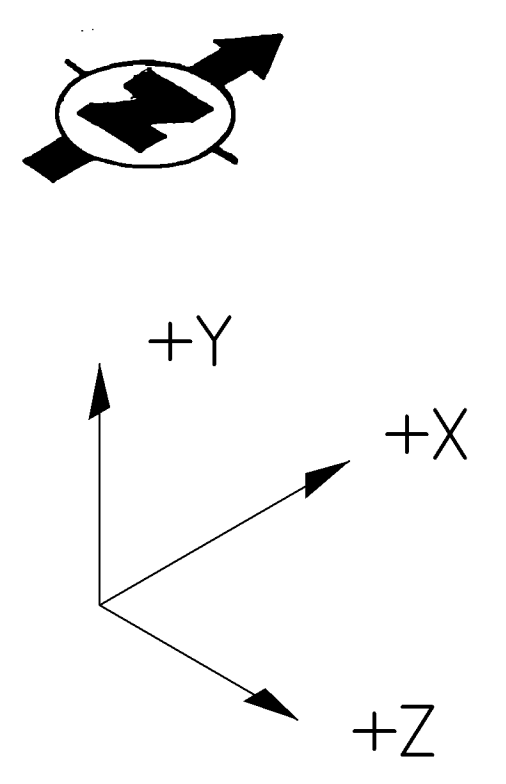
(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT
FIGURE 3.6-1

HIGH ENERGY
PIPE BREAK ISOMETRIC
REACTOR COOLANT PUMP A
SEAL WATER INJECTION
INSIDE CONTAINMENT
(BB08)

H
G
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E
M
D
C
B
A

8 7 6 5 4 3 2 1



NOTES:

- 1. ● - INDICATES TERMINAL END BREAK POINT
- 2. ■ - INDICATES INTERMEDIATE BREAK POINT
- 3. ○ - INDICATES STRESS NODE
- 4. - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
- 5. - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
- 6. - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
- 7. - INDICATES BREAK POINT NUMBER
- 8. - INDICATES PIPE BREAK RESTRAINT
- 9. STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, SHEETS 41 & 60, CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
- 10. STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.

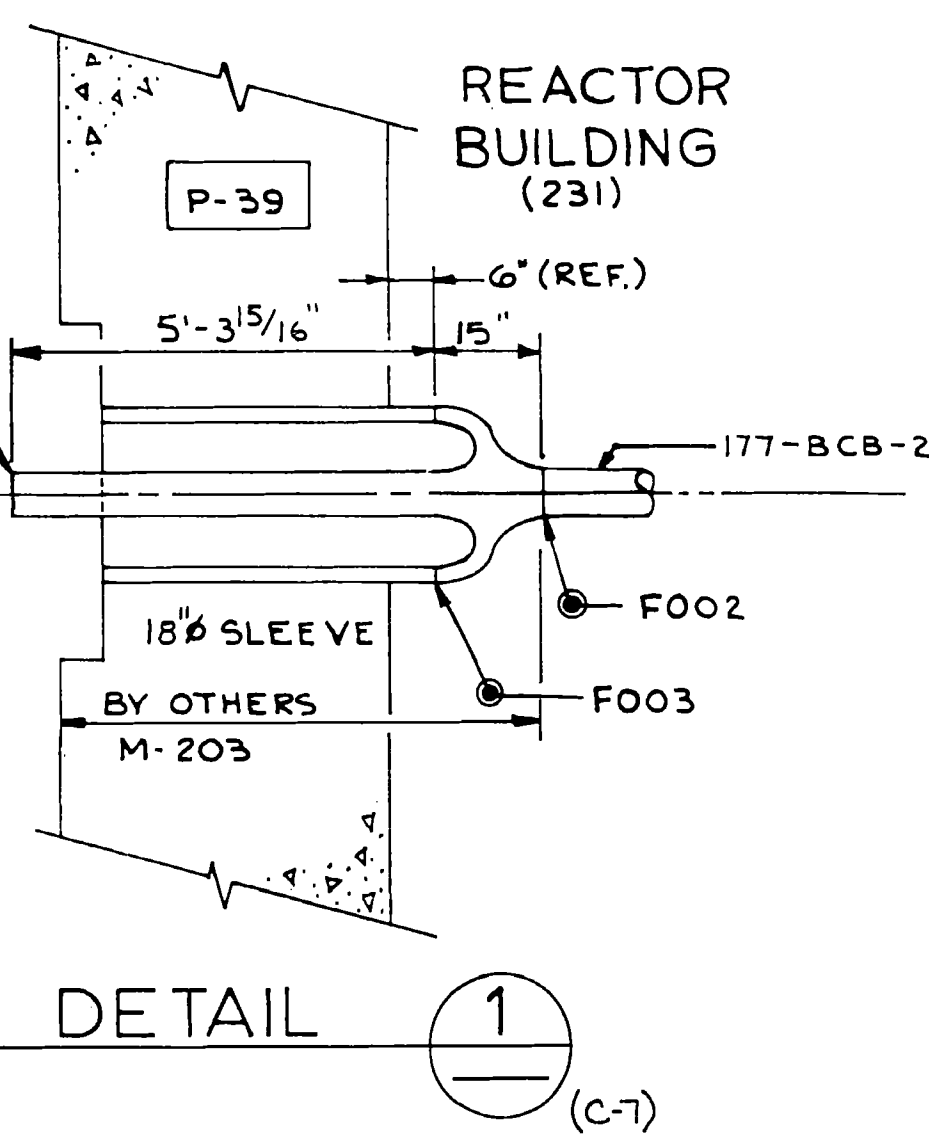
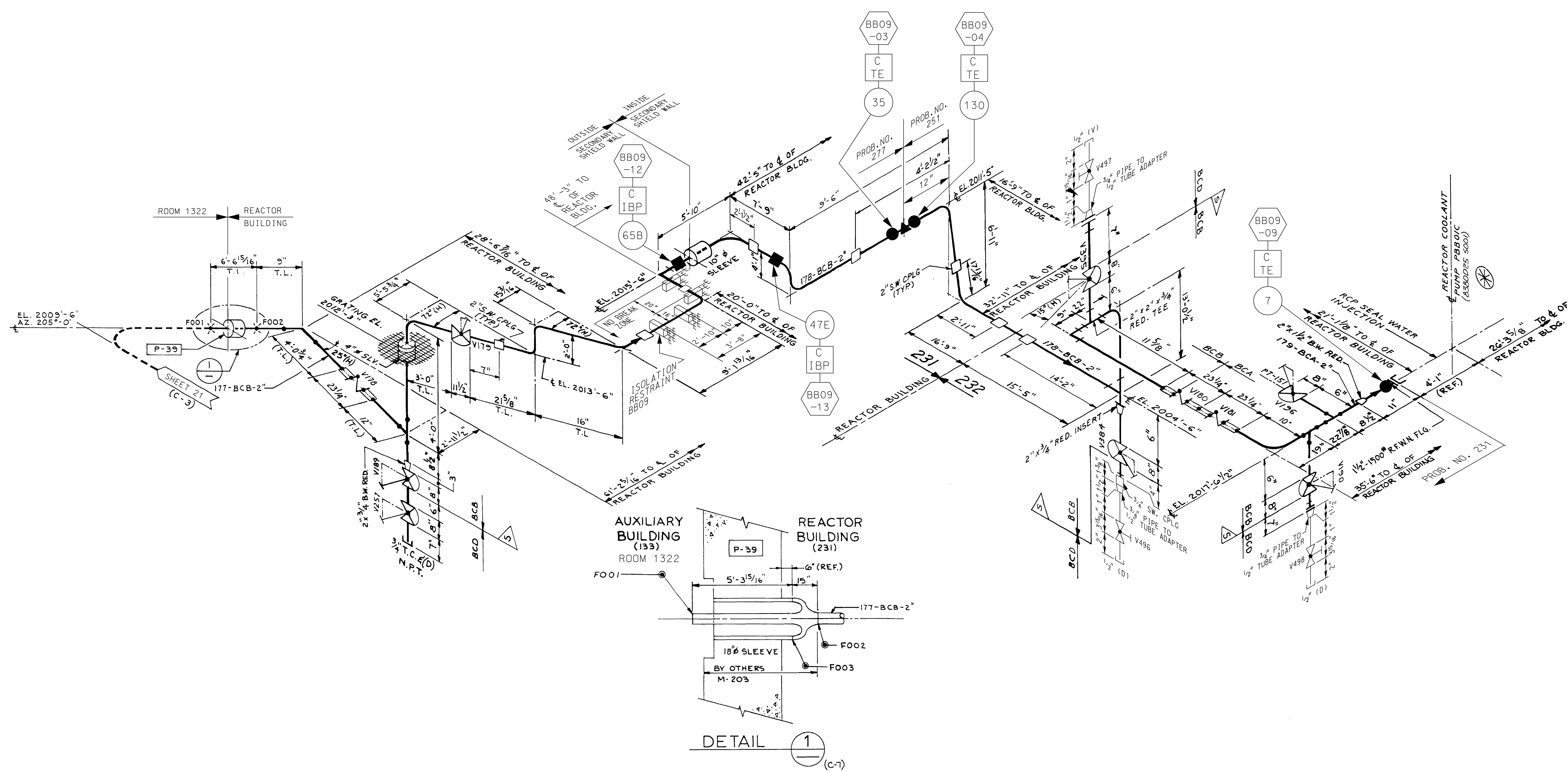
BREAK POINT	THRUST FORCE LBS.
BB09-03 (CVCS)	132
BB09-04 (CVCS)	132
BB09-09 (LOOP)	4968
BB09-09 (CVCS)	132
BB09-12 (CVCS)	132
BB09-13 (CVCS)	132

- 11. EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4

ROOM #	TABLE 3.6-4 SHEET
1322	28
2000	55

RESTRAINT LEGEND:

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
- (FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)
- ANCHOR



CALLAWAY PLANT
FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
REACTOR COOLANT PUMP C
SEAL WATER INJECTION
INSIDE CONTAINMENT
(BB09)
REV. OL-15 5/06 (SHEET 14)

8 7 6 5 4 3 2 1

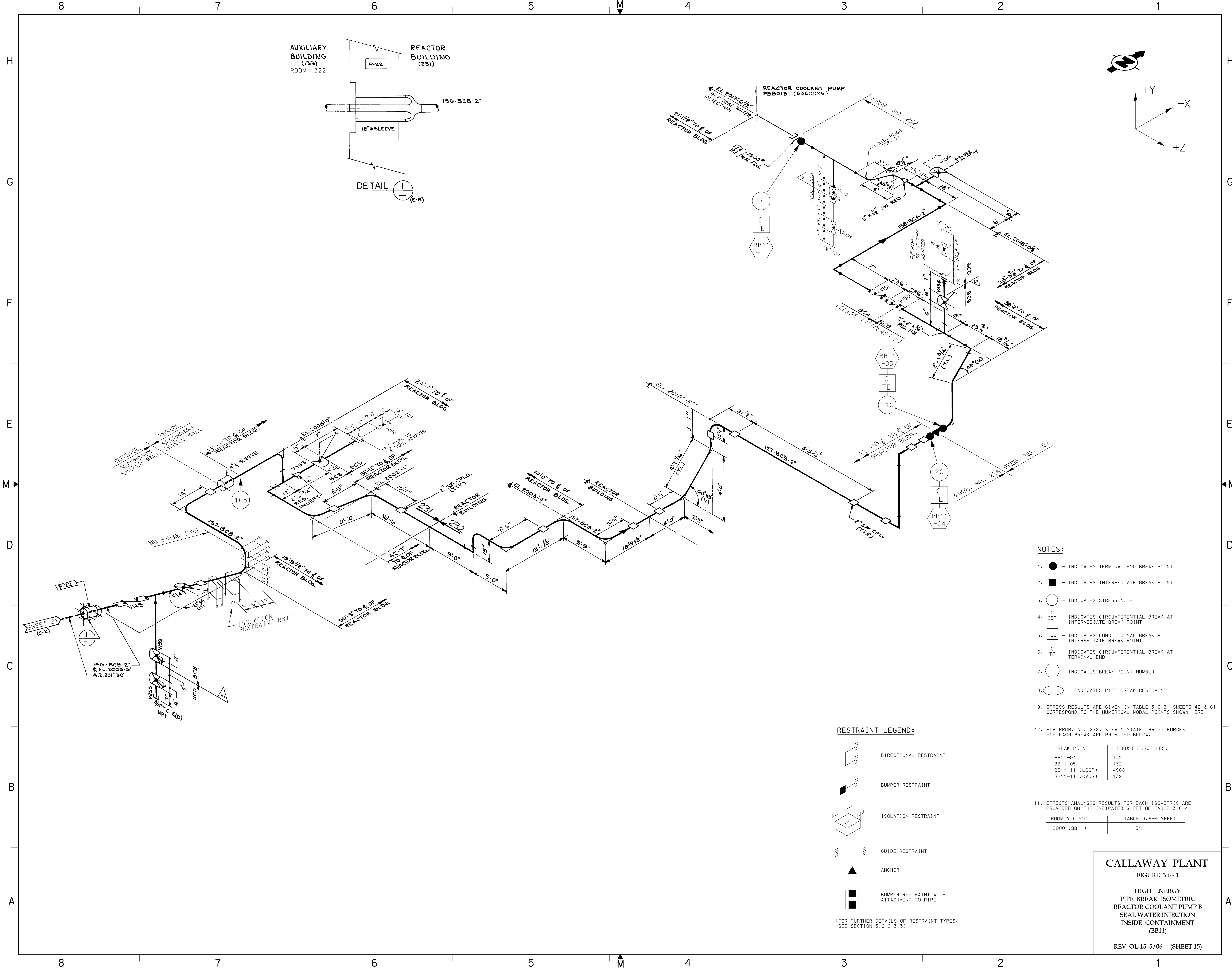
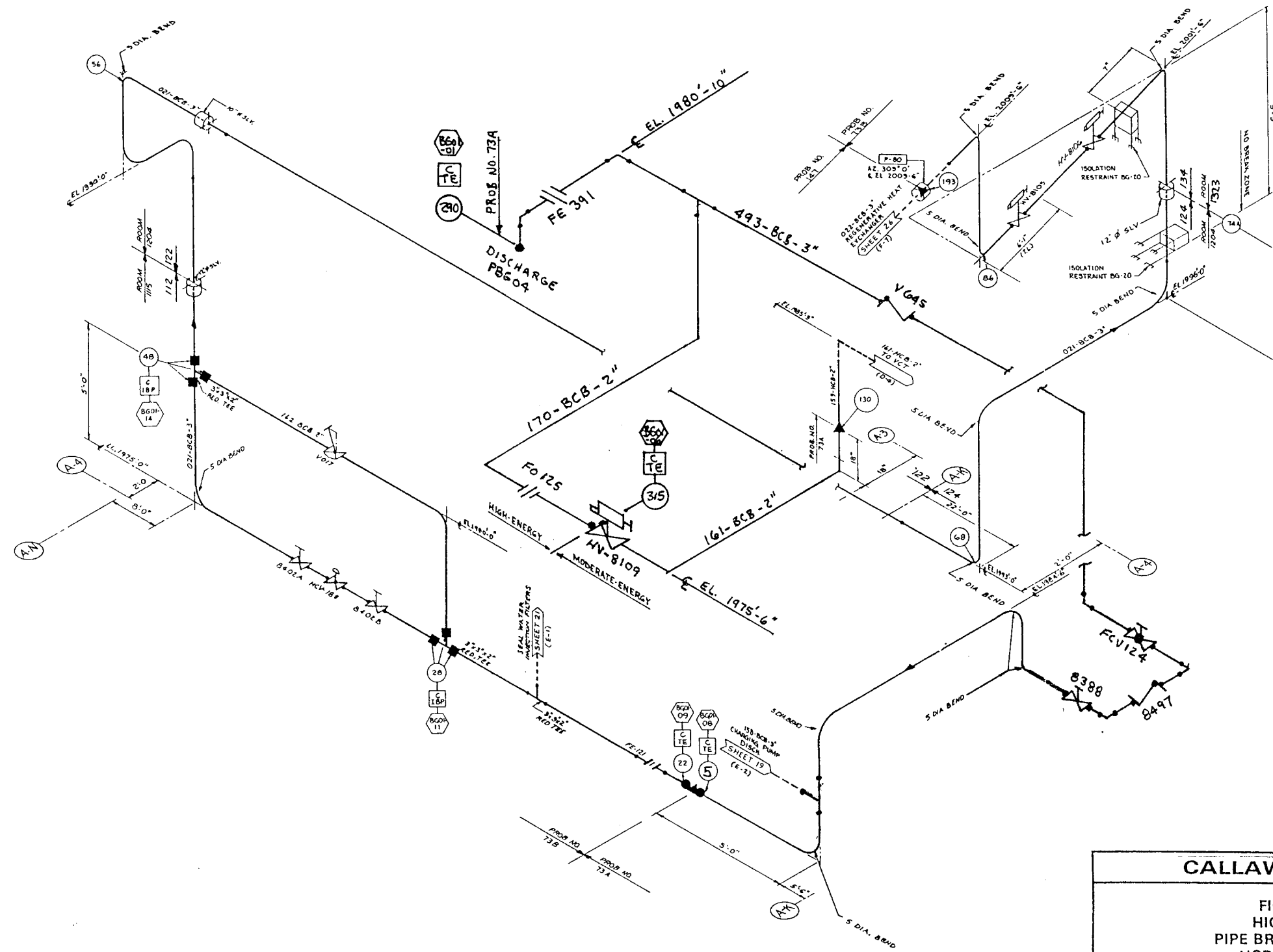


Figure 3.6-1 Sheet 16 has been deleted.

Figure 3.6-1 Sheet 17 has been deleted.



NOTES:

- 1 - INDICATES TERMINAL END BREAK POINT
- 2 - INDICATES INTERMEDIATE BREAK POINT
- 3 - INDICATES STRESS NODE
- 4 - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
- 5 - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
- 6 - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
- 7 - INDICATES BREAK POINT NUMBER
- 8 - INDICATES PIPE BREAK RESTRAINT
- 9 - STRESS RESULTS WHICH ARE GIVEN IN TABLE 3.6.3, SHEETS 15/24 CORRESPOND TO THE NUMERICAL NODE POINTS SHOWN HERE
- 10 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW

BREAK POINT BG01-01	THRUST FORCE LBS
BG01-06	0
BG01-08	33,000
BG01-09	33,000
BG01-11(17)	33,000
BG01-11(27)	14,000
BG01-14(17)	33,000
BG01-14(27)	14,000

RESTRAINT LEGEND

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT

- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
(FOR FURTHER DETAILS OF RESTRAINT TYPES SEE SECTION 3.6.2.3.3)
- ANCHOR

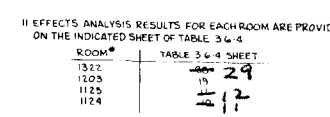
IF EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6.4

ROOM	TABLE 3.6.4 SHEET
1204	20
1323	29
1115	7

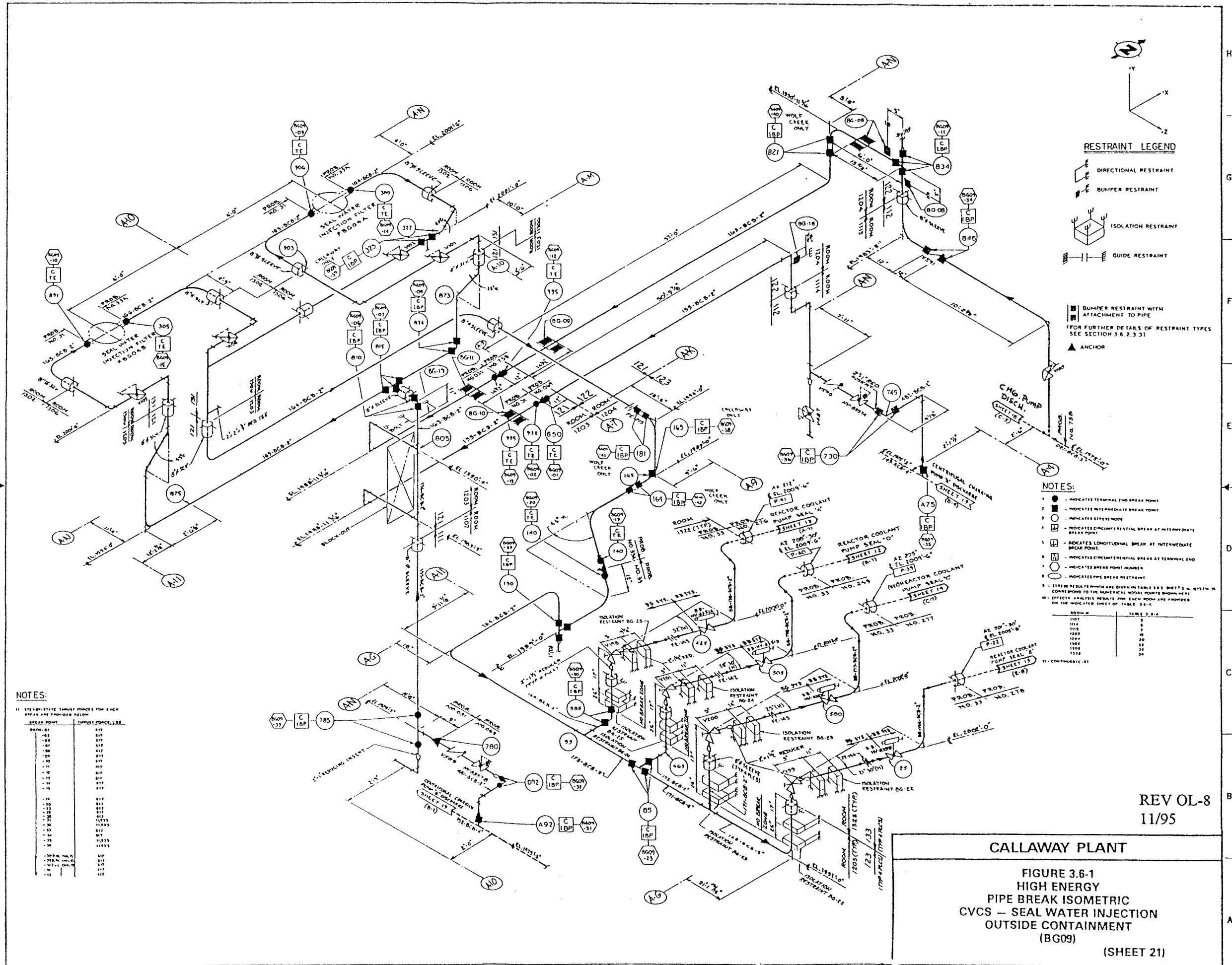
REV OL-8
11/95

CALLAWAY PLANT

**FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
NCP TO REGEN HX
CVCS - OUTSIDE CONTAINMENT
(BG01)**
(SHEET 18)



(SHEET 20)

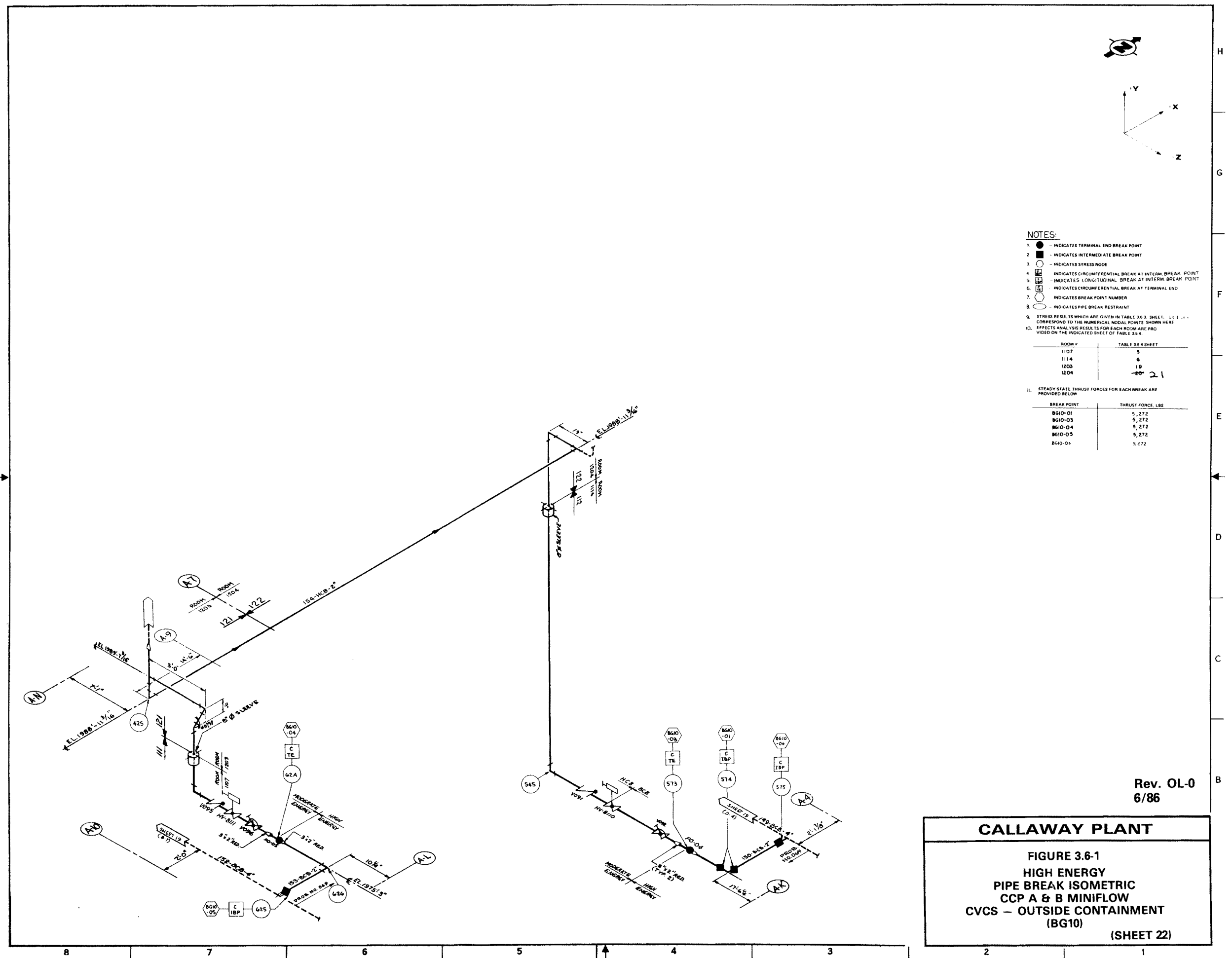


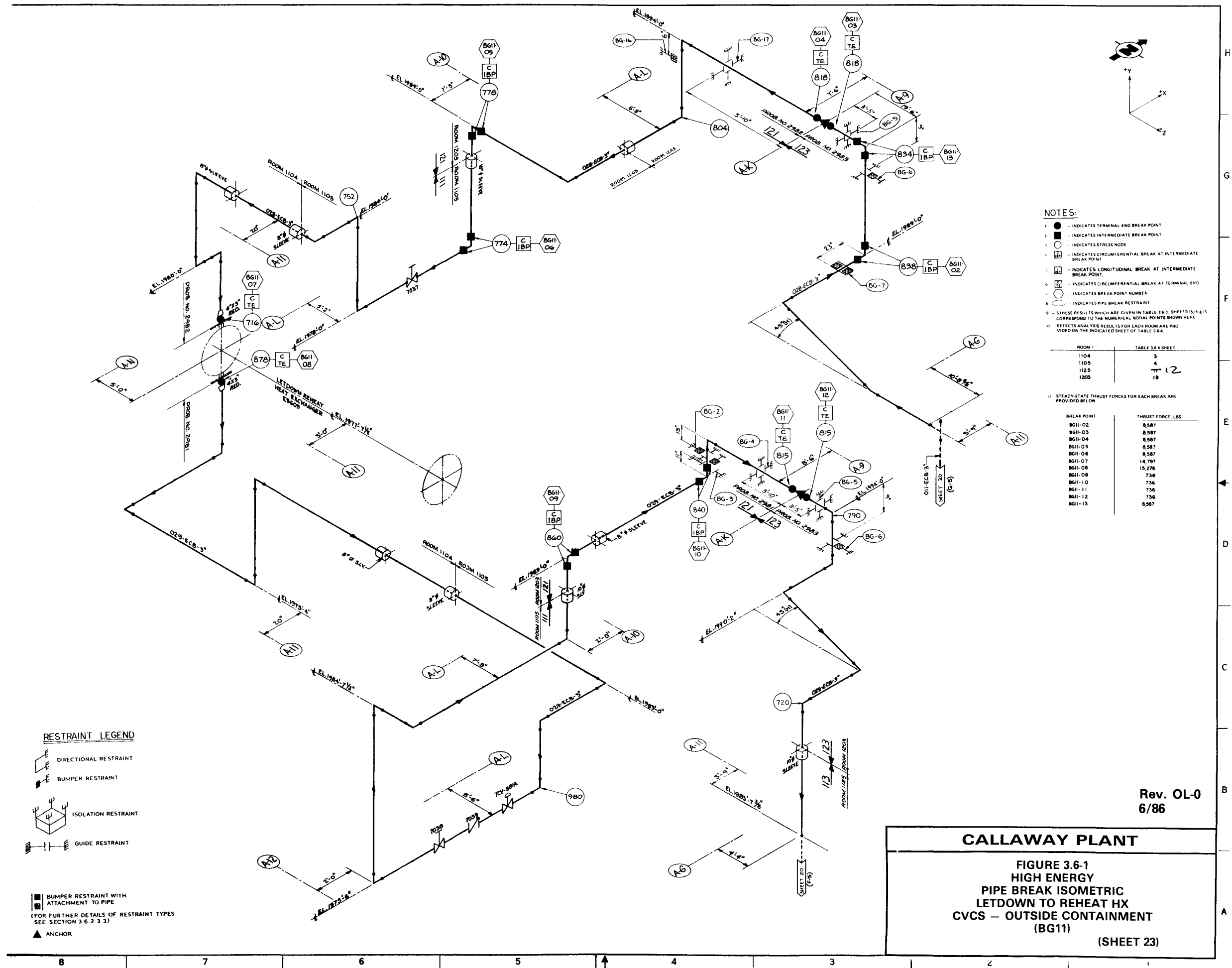
REV OL-8
11/95

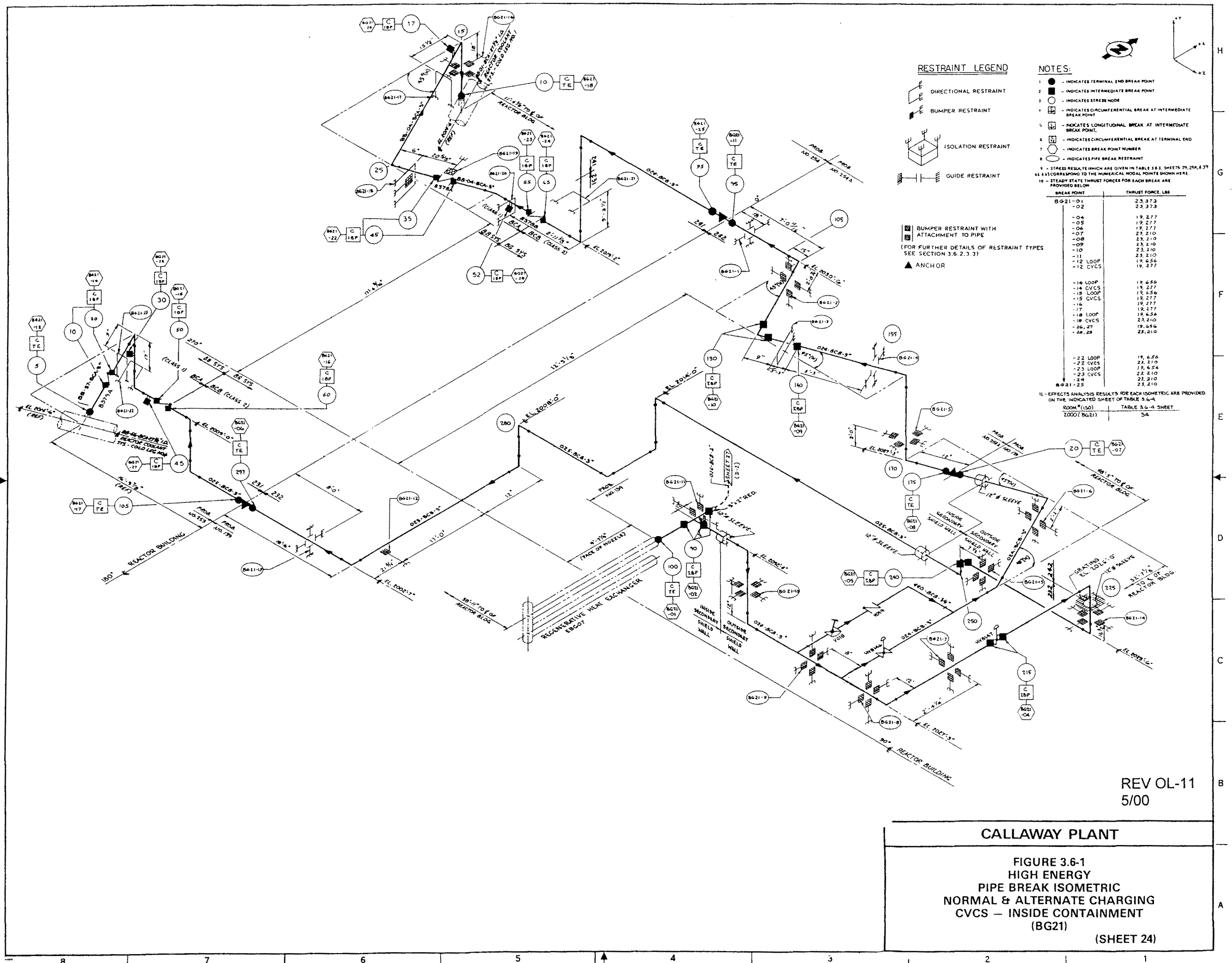
CALLAWAY PLANT

FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
CVCS - SEAL WATER INJECTION
OUTSIDE CONTAINMENT
(BG09)

(SHEET 21)

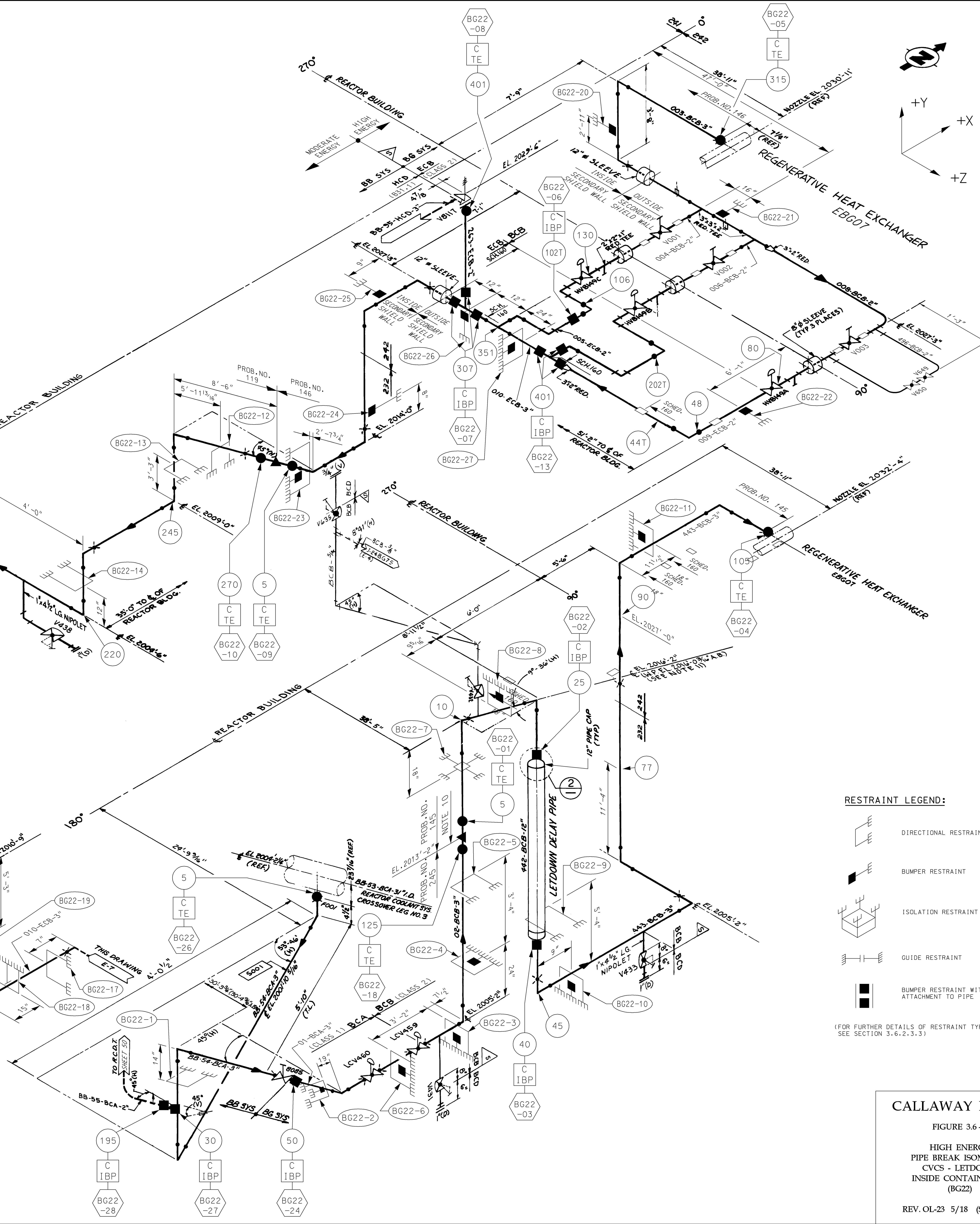
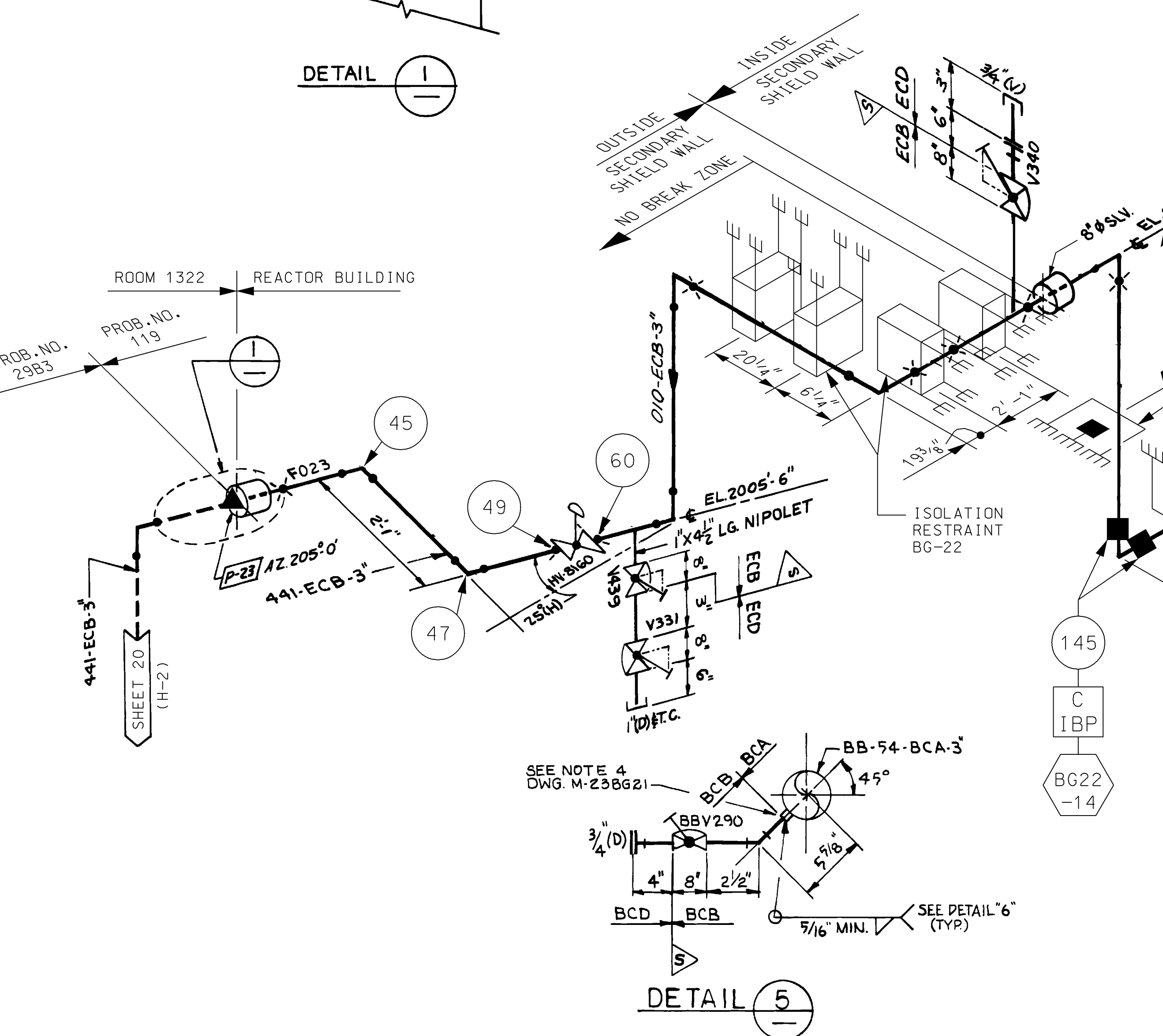
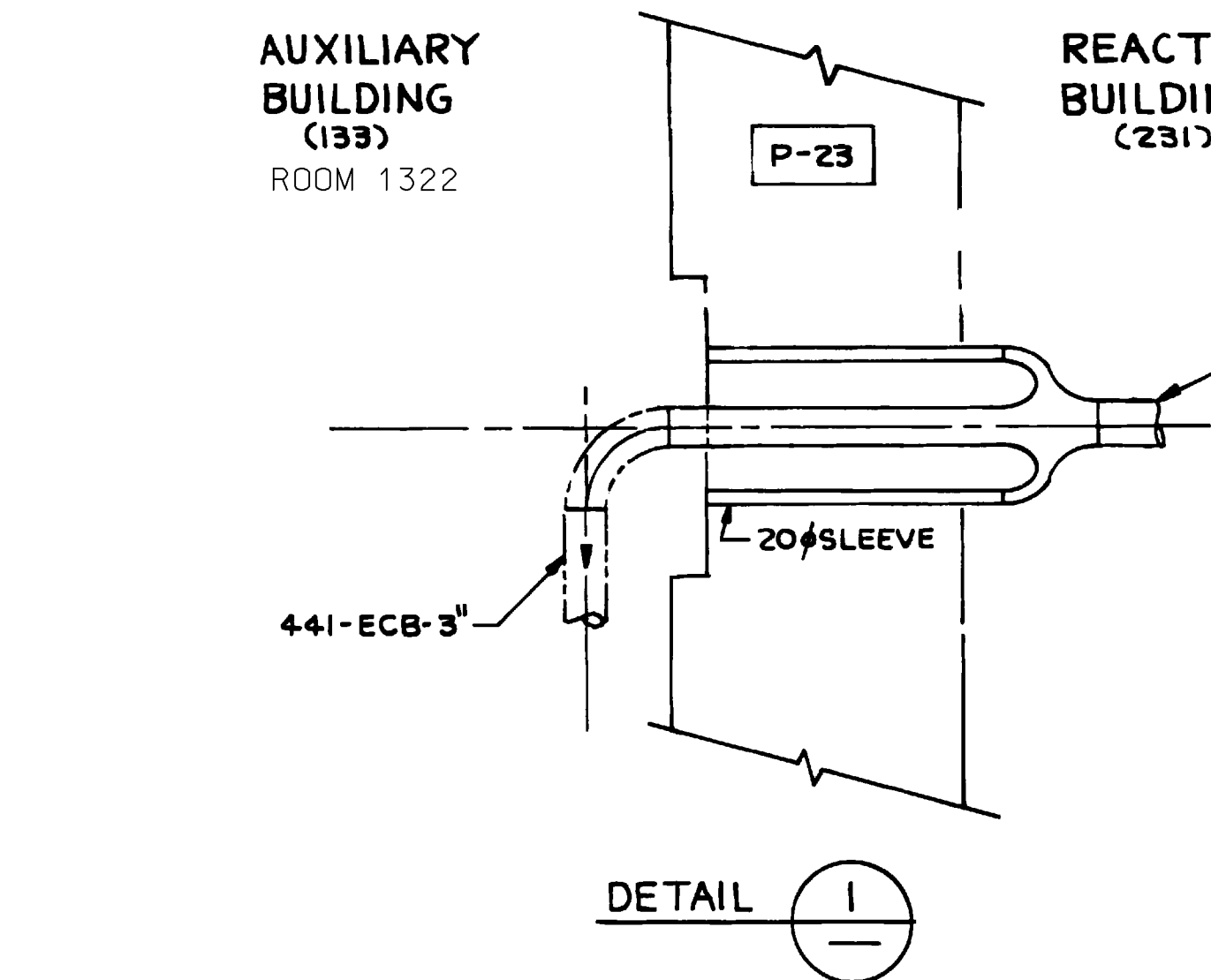






NOTES:

- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - C IBP - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - C TE - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, SHEETS 28, 31, 32 & 54, CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | BREAK POINT | THRUST FORCE LBS. |
|----------------|-----------------------|
| BG22-01 | 21,839 |
| BG22-02 | 21,839 |
| BG22-03 | 21,839 |
| BG22-04 | 21,839 |
| BG22-05 | 26,900 (BOTH SOURCES) |
| BG22-06 | 3,900 (BOTH SOURCES) |
| BG22-07 (2") | 3,900 (BOTH SOURCES) |
| BG22-07 (3") | 8,594 (BOTH SOURCES) |
| BG22-08 | 3,900 (BOTH SOURCES) |
| BG22-09 | 8,594 (BOTH SOURCES) |
| BG22-10 | 8,594 (BOTH SOURCES) |
| BG22-12 | 8,594 (BOTH SOURCES) |
| BG22-13 (2") | 3,900 (BOTH SOURCES) |
| BG22-13 (3") | 8,594 (BOTH SOURCES) |
| BG22-14 | 8,594 (BOTH SOURCES) |
| BG22-18 | 21,839 |
| BG22-24 (CVCS) | 21,839 |
| BG22-24 (LOOP) | 19,115 |
| BG22-26 (CVCS) | 21,839 |
| BG22-26 (LOOP) | 19,115 |
| BG22-27 (CVCS) | 21,839 |
| BG22-27 (LOOP) | 19,115 |
| BG22-28 | 7,921 |
- ▲ - INDICATES ANCHOR POINT.
 - EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
- | ROOM # (ISO) | TABLE 3.6-4 SHEET |
|--------------|-------------------|
| 2000 (BG22) | 65 |



RESTRAINT LEGEND:

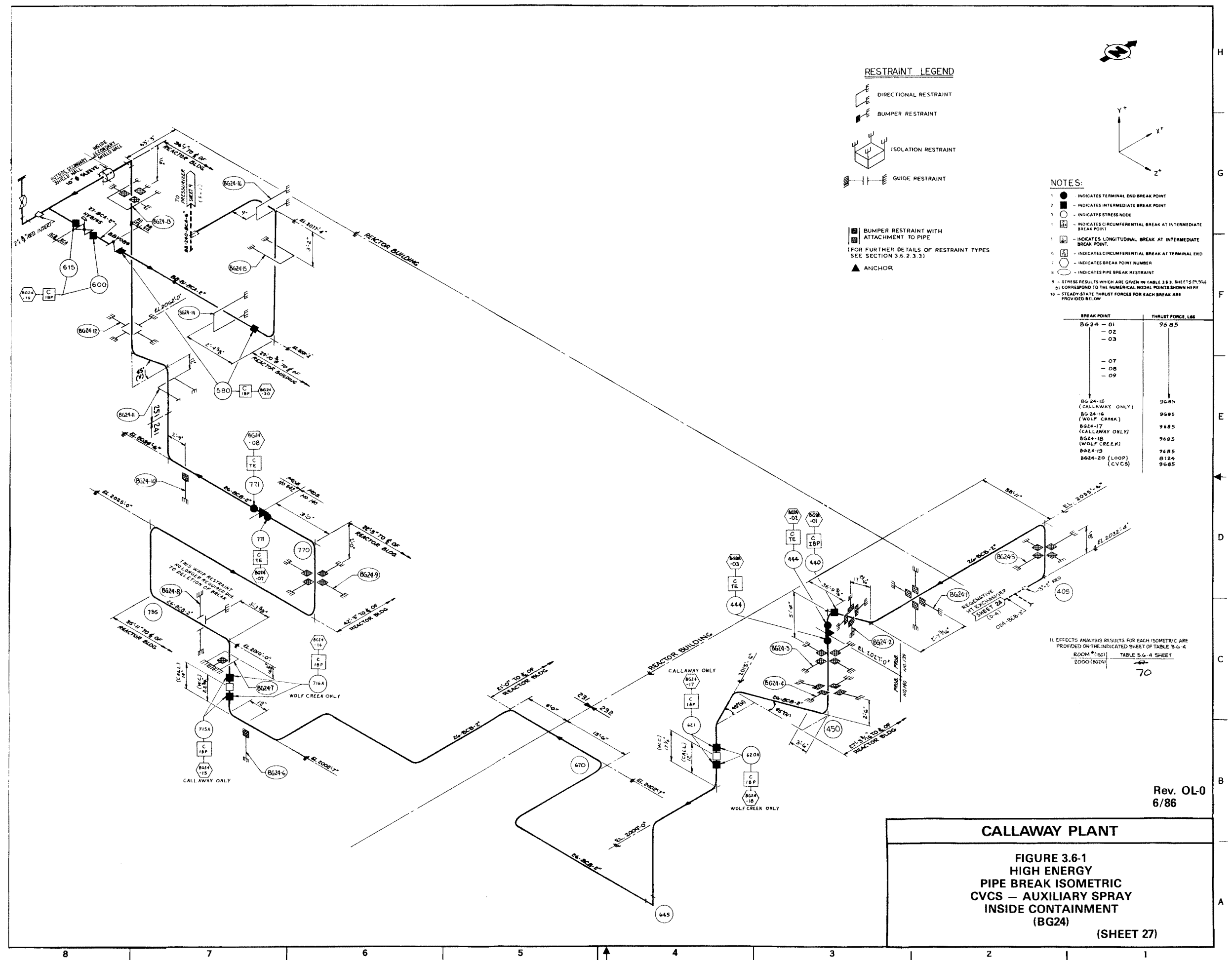
- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE

(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT

FIGURE 3.6-1

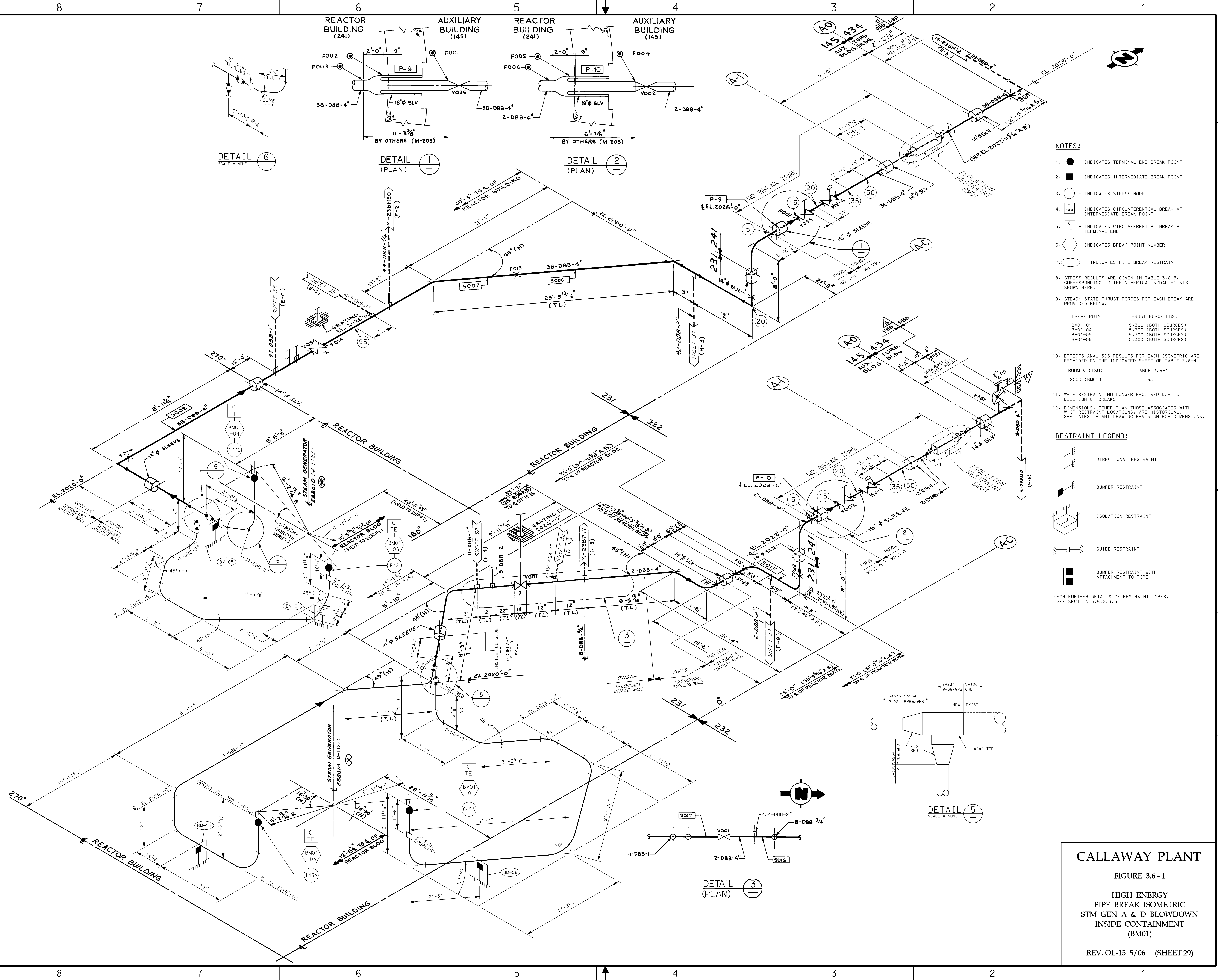
HIGH ENERGY
PIPE BREAK ISOMETRIC
CVCS - LETDOWN
INSIDE CONTAINMENT
(BG22)

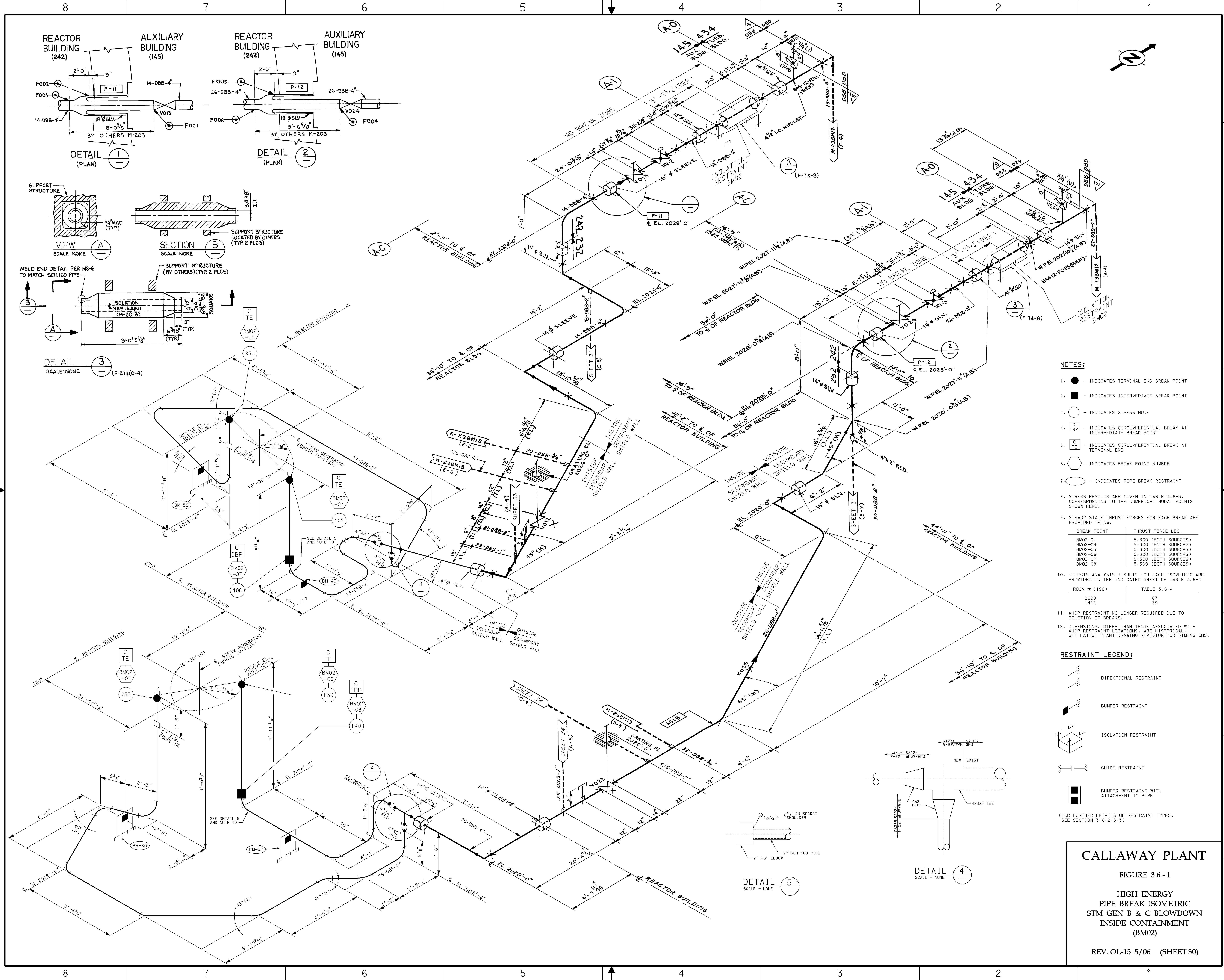


CALLAWAY - SP

FIGURE 3.6-1 (SHEET 28) HAS BEEN DELETED

Rev. OL-8
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- NOTES:**
- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, CORRESPONDING TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
 - EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4.
 - WHIP RESTRAINT NO LONGER REQUIRED DUE TO DELETION OF BREAKS.
 - DIMENSIONS, OTHER THAN THOSE ASSOCIATED WITH WHIP RESTRAINT LOCATIONS, ARE HISTORICAL. SEE LATEST PLANT DRAWING REVISION FOR DIMENSIONS.

RESTRAINT LEGEND:

	DIRECTIONAL RESTRAINT
	BUMPER RESTRAINT
	ISOLATION RESTRAINT
	GUIDE RESTRAINT
	BUMPER RESTRAINT WITH ATTACHMENT TO PIPE

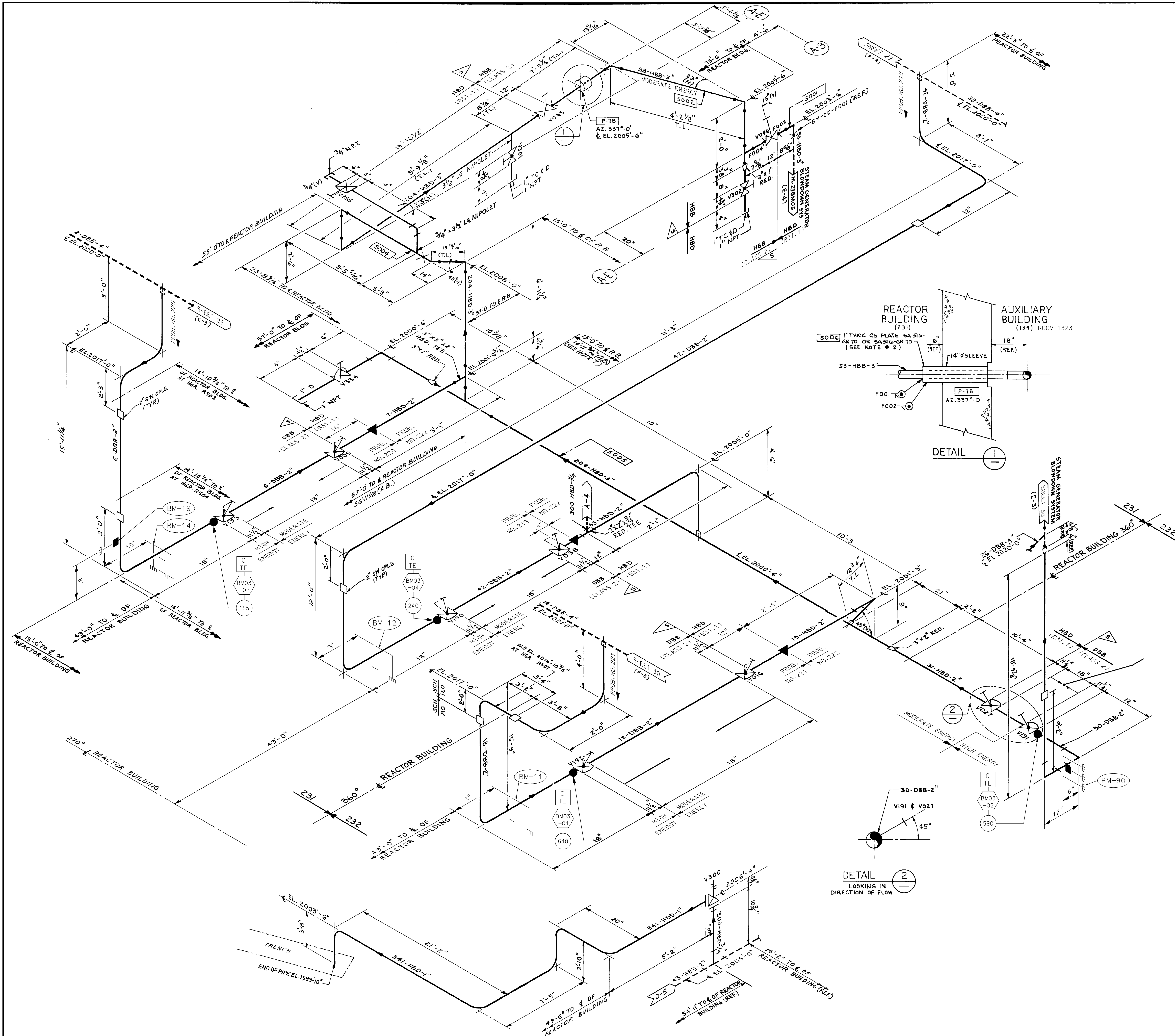
(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT

FIGURE 3.6-1

HIGH ENERGY PIPE BREAK ISOMETRIC STM GEN B & C BLOWDOWN INSIDE CONTAINMENT (BM02)

REV. OL-15 5/06 (SHEET 30)



NOTES:

- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, CORRESPONDING TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | BREAK POINT | THRUST FORCE LBS. |
|-------------|----------------------|
| BM03-01 | 5,300 (BOTH SOURCES) |
| BM03-02 | 5,300 (BOTH SOURCES) |
| BM03-04 | 5,300 (BOTH SOURCES) |
| BM03-07 | 5,300 (BOTH SOURCES) |
- EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
 - WHIP RESTRAINT NO LONGER REQUIRED DUE TO DELETION OF BREAKS.
 - DIMENSIONS, OTHER THAN THOSE ASSOCIATED WITH WHIP RESTRAINT LOCATIONS, ARE HISTORICAL. SEE LATEST PLANT DRAWING REVISION FOR DIMENSIONS.
 - INDICATES ANCHOR POINT.

RESTRAINT LEGEND:

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE

(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)








CALLAWAY PLANT

FIGURE 3.6-1

HIGH ENERGY
PIPE BREAK ISOMETRIC
STM GEN A, B, C, & D BLOWDOWN
INSIDE CONTAINMENT
(BM03)

REV. OL-15 5/06 (SHEET 31)



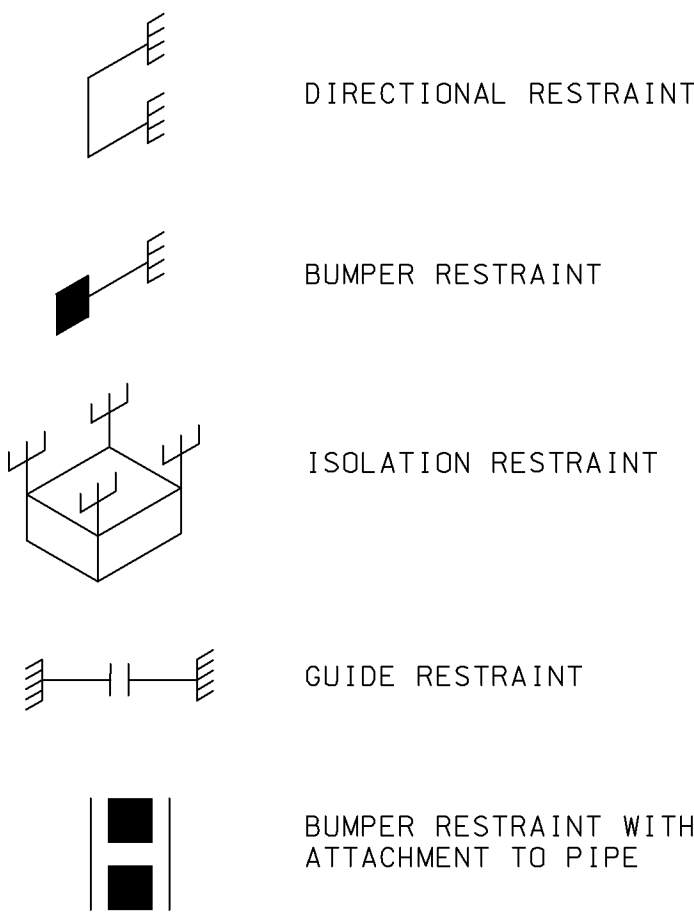
1.  - INDICATES TERMINAL END BREAK POINT
 2.  - INDICATES INTERMEDIATE BREAK POINT
 3.  - INDICATES STRESS NODE
 4.  - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 5.  - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 6.  - INDICATES BREAK POINT NUMBER
 7.  - INDICATES PIPE BREAK RESTRAINT
8. STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, CORRESPONDING TO THE NUMERICAL NODAL POINTS SHOWN HERE
9. STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | BREAK POINT | THRUST FORCE LBS. |
|-------------|-------------------|
| BM17-06 | 5,300 |
0. EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
- | ROOM # (ISO) | TABLE 3.6-4 |
|--------------|-------------|
| 2000 (BM17) | 71 |
1. WHIP RESTRAINT NO LONGER REQUIRED DUE TO DELETION OF BREAKS.
 2. DIMENSIONS, OTHER THAN THOSE ASSOCIATED WITH WHIP RESTRAINT LOCATIONS, ARE HISTORICAL. SEE LATEST PLANT DRAWING REVISION FOR DIMENSIONS.

BREAK POINT	THRUST FORCE LBS.
BM17-06	5,300

ROOM # (ISO)	TABLE 3.6-4
2000 (BM17)	71

1. WHIP RESTRAINT NO LONGER REQUIRED DUE TO DELETION OF BREAKS.
2. DIMENSIONS, OTHER THAN THOSE ASSOCIATED WITH WHIP RESTRAINT LOCATIONS, ARE HISTORICAL. SEE LATEST PLANT DRAWING REVISION FOR DIMENSIONS.

RESTRAINT LEGEND:



(FOR FURTHER DETAILS OF RESTRAINT TYPES,
SEE SECTION 3.6.2.3.3)

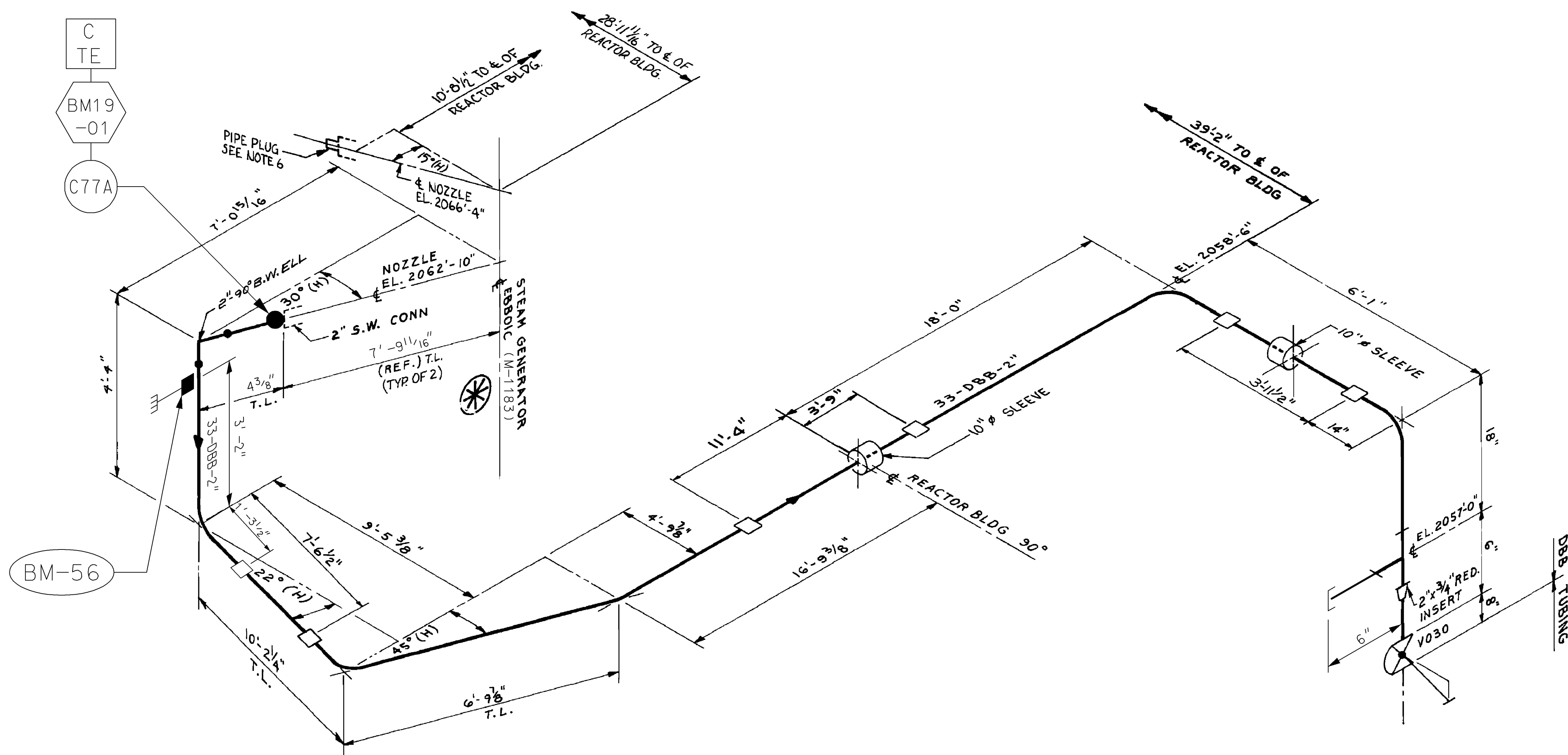
CALLAWAY PLANT

FIGURE 3.6 - 1

HIGH ENERGY
 PIPE BREAK ISOMETRIC
 STM GEN A SAMPLE
 AND TUBE SHEET DRAIN
 INSIDE CONTAINMENT
 (BM17)

REV. OL-15 5/06 (SHEET 32)

REV. OL-15 5/06 (SHEET 33)



NOTES:

- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - | |
|-----|
| C |
| IBP |

 - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - | |
|----|
| C |
| TE |

 - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - ⬡ - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, CORRESPONDING TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | BREAK POINT | THRUST FORCE LBS. |
|-------------|-------------------|
| BM19-01 | 5,300 |
- EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
- | ROOM # (ISO) | TABLE 3.6-4 |
|--------------|-------------|
| 2000 (BM19) | 73 |
- WHIP RESTRAINT NO LONGER REQUIRED DUE TO DELETION OF BREAKS.
 - DIMENSIONS, OTHER THAN THOSE ASSOCIATED WITH WHIP RESTRAINT LOCATIONS, ARE HISTORICAL. SEE LATEST PLANT DRAWING REVISION FOR DIMENSIONS.

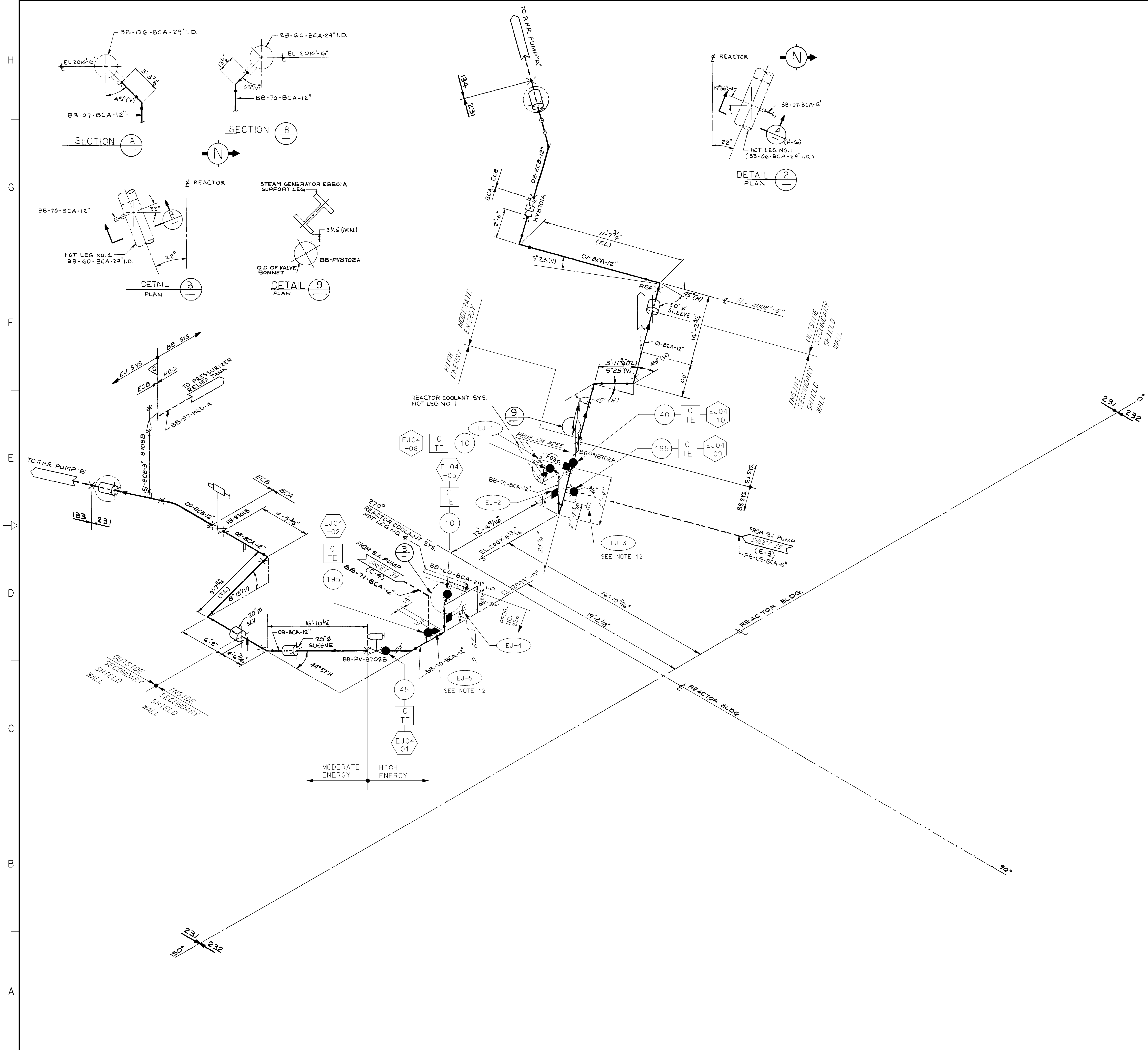
RESTRAINT LEGEND:

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE

(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

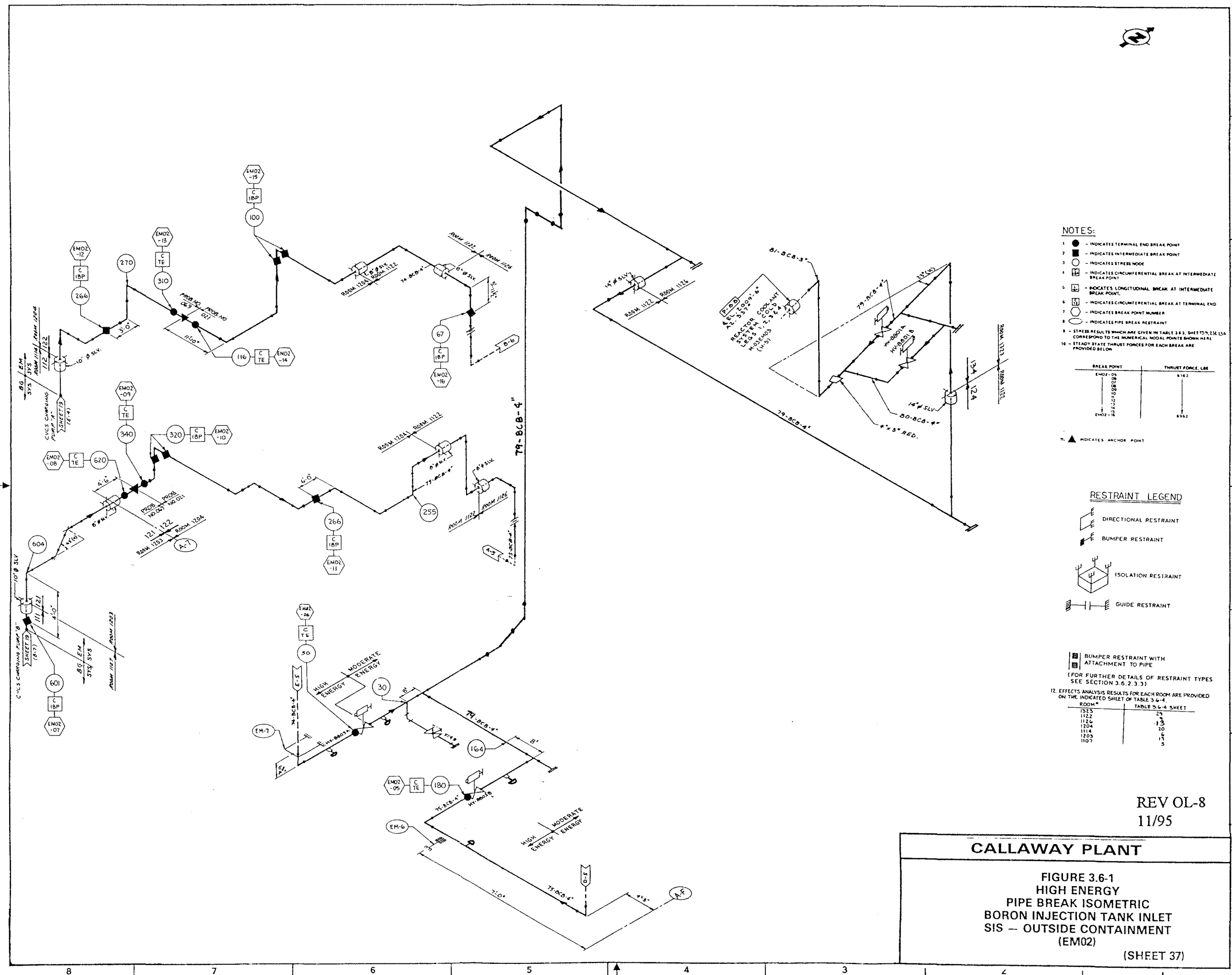
CALLAWAY PLANT
FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
STM GEN C SAMPLE
AND TUBE SHEET DRAIN
INSIDE CONTAINMENT
(BM19)
REV. OL-15 5/06 (SHEET 34)

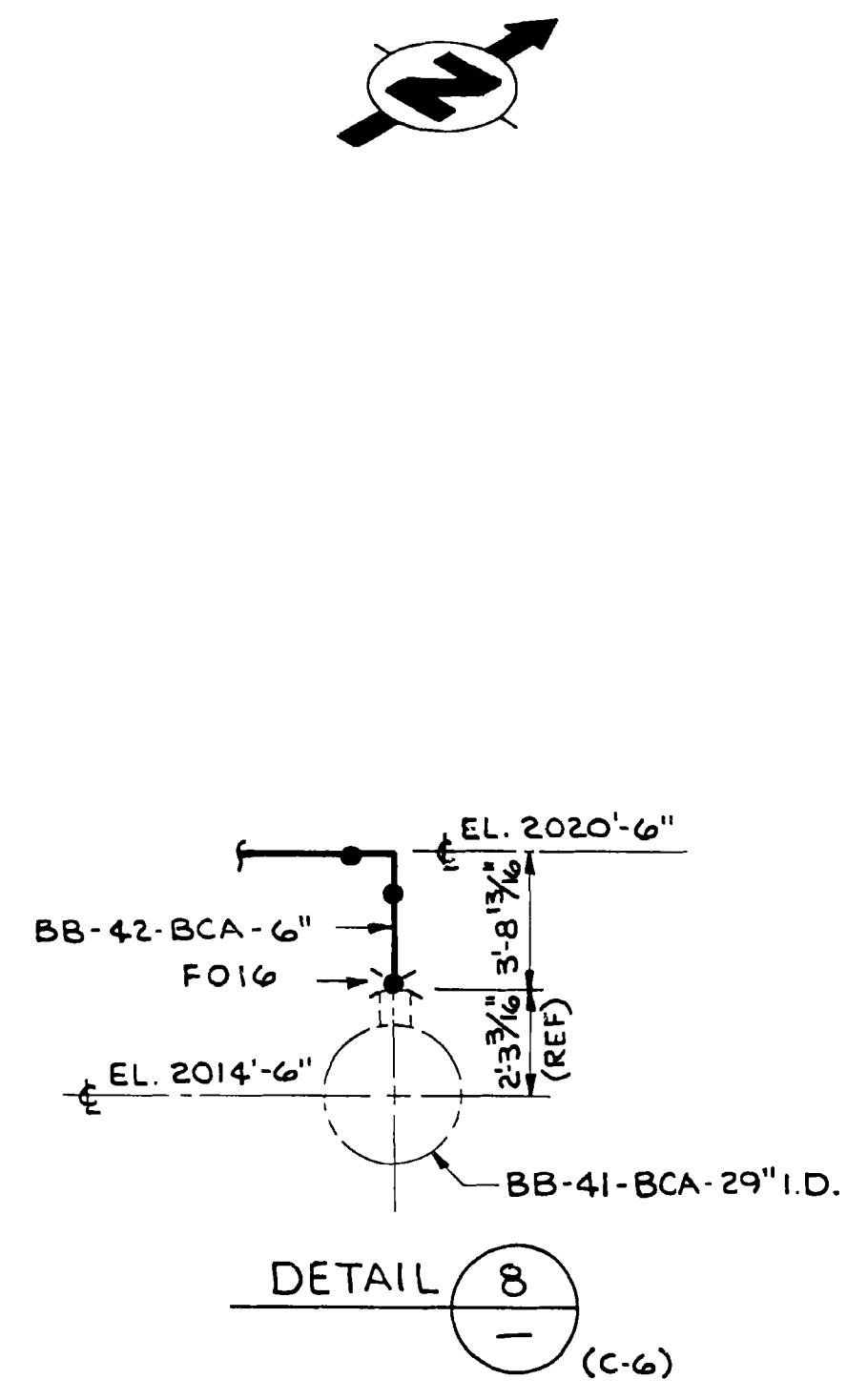
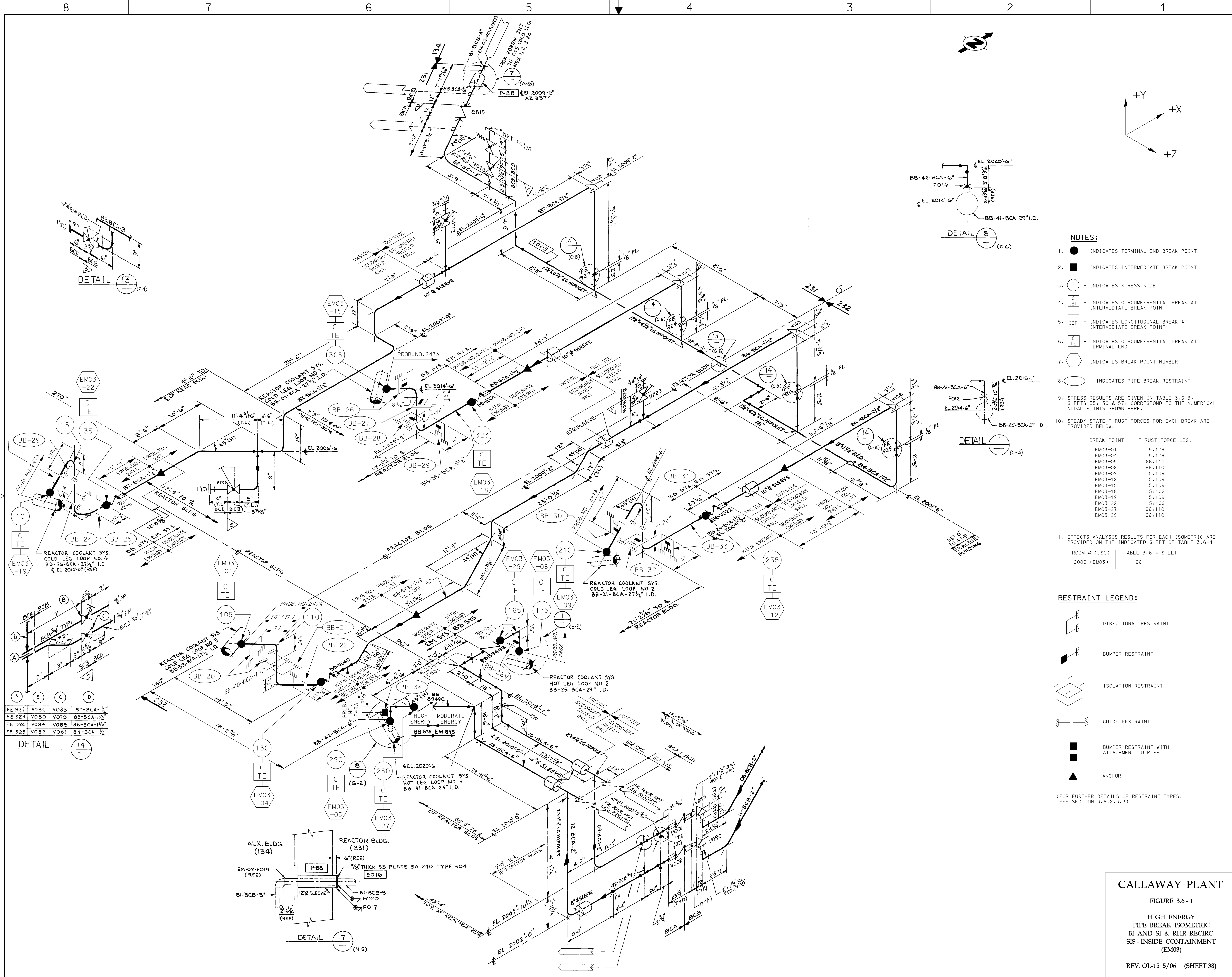
REV. OL-15 5/06 (SHEET 35)



- NOTES:**
- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
 - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
9. STRESS RESULTS WHICH ARE GIVEN IN TABLE 3.6-3, SHEETS 64 & 65, CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
10. STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.
- | BREAK POINT | THRUST FORCE LBS. |
|-------------|-------------------|
| EJ04-01 | 270,690 |
| EJ04-02 | 66,111 |
| EJ04-05 | ↓ |
| EJ04-06 | 66,111 |
| EJ04-09 | 270,690 |
| EJ04-10 | |
11. EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4
- | ROOM # (ISO) | TABLE 3.6-4 |
|--------------|-------------|
| 2000 (EJ04) | 83 |

- RESTRAINT LEGEND:**
- DIRECTIONAL RESTRAINT
 - BUMPER RESTRAINT
 - ISOLATION RESTRAINT
 - GUIDE RESTRAINT
 - BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
 - ANCHOR
- (FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)





- NOTES:**
- - INDICATES TERMINAL END BREAK POINT
 - - INDICATES INTERMEDIATE BREAK POINT
 - - INDICATES STRESS NODE
 - - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
 - - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - - INDICATES BREAK POINT NUMBER
 - - INDICATES PIPE BREAK RESTRAINT
 - STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, SHEETS 55, 56 & 57, CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.

BREAK POINT	THRUST FORCE LBS.
EM03-01	5,109
EM03-04	5,109
EM03-05	66,110
EM03-08	66,110
EM03-09	5,109
EM03-12	5,109
EM03-15	5,109
EM03-18	5,109
EM03-19	5,109
EM03-22	5,109
EM03-27	66,110
EM03-29	66,110

11. EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4

ROOM # (ISO)	TABLE 3.6-4 SHEET
2000 (EM03)	66

- RESTRAINT LEGEND:**
- DIRECTIONAL RESTRAINT
 - BUMPER RESTRAINT
 - ISOLATION RESTRAINT
 - GUIDE RESTRAINT
 - BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
 - ANCHOR
- (FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT

FIGURE 3.6-1

HIGH ENERGY PIPE BREAK ISOMETRIC

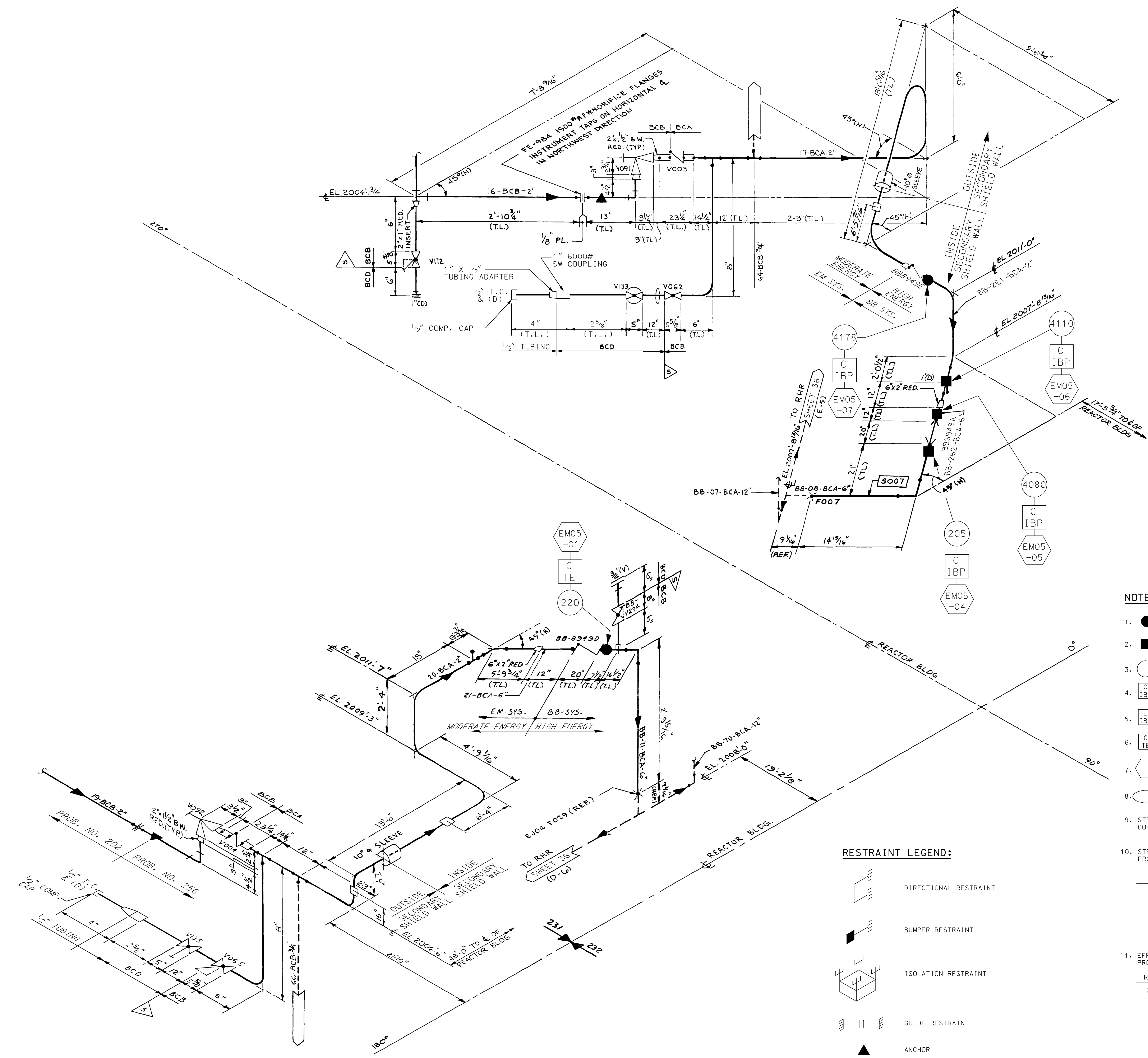
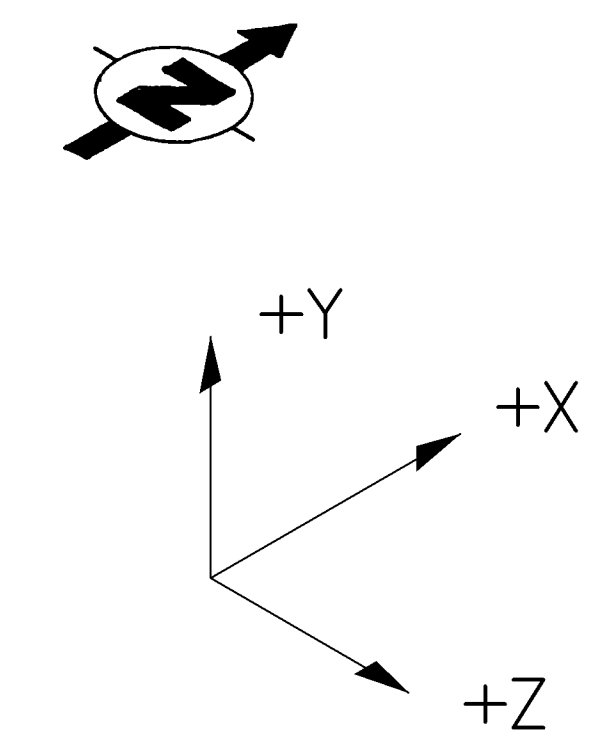
BI AND SI & RHR RECIRC.

SIS - INSIDE CONTAINMENT (EM03)

REV. OL-15 5/06 (SHEET 38)

H
G
F
E
M
D
C
B
A

8 7 6 5 4 3 2 1



NOTES:

- - INDICATES TERMINAL END BREAK POINT
- - INDICATES INTERMEDIATE BREAK POINT
- - INDICATES STRESS NODE
- INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
- INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
- INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
- INDICATES BREAK POINT NUMBER
- INDICATES PIPE BREAK RESTRAINT
- STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, SHEETS 64 & 65 CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
- STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.

BREAK POINT	THRUST FORCE LBS.
EM05-01	66,111
EM05-04	66,111
EM05-05	66,111
EM05-06	7,004
EM05-07	7,004

ROOM # (ISO)	TABLE 3.6-4 SHEET
2000 (EM05)	67

RESTRAINT LEGEND:

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- ANCHOR
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE

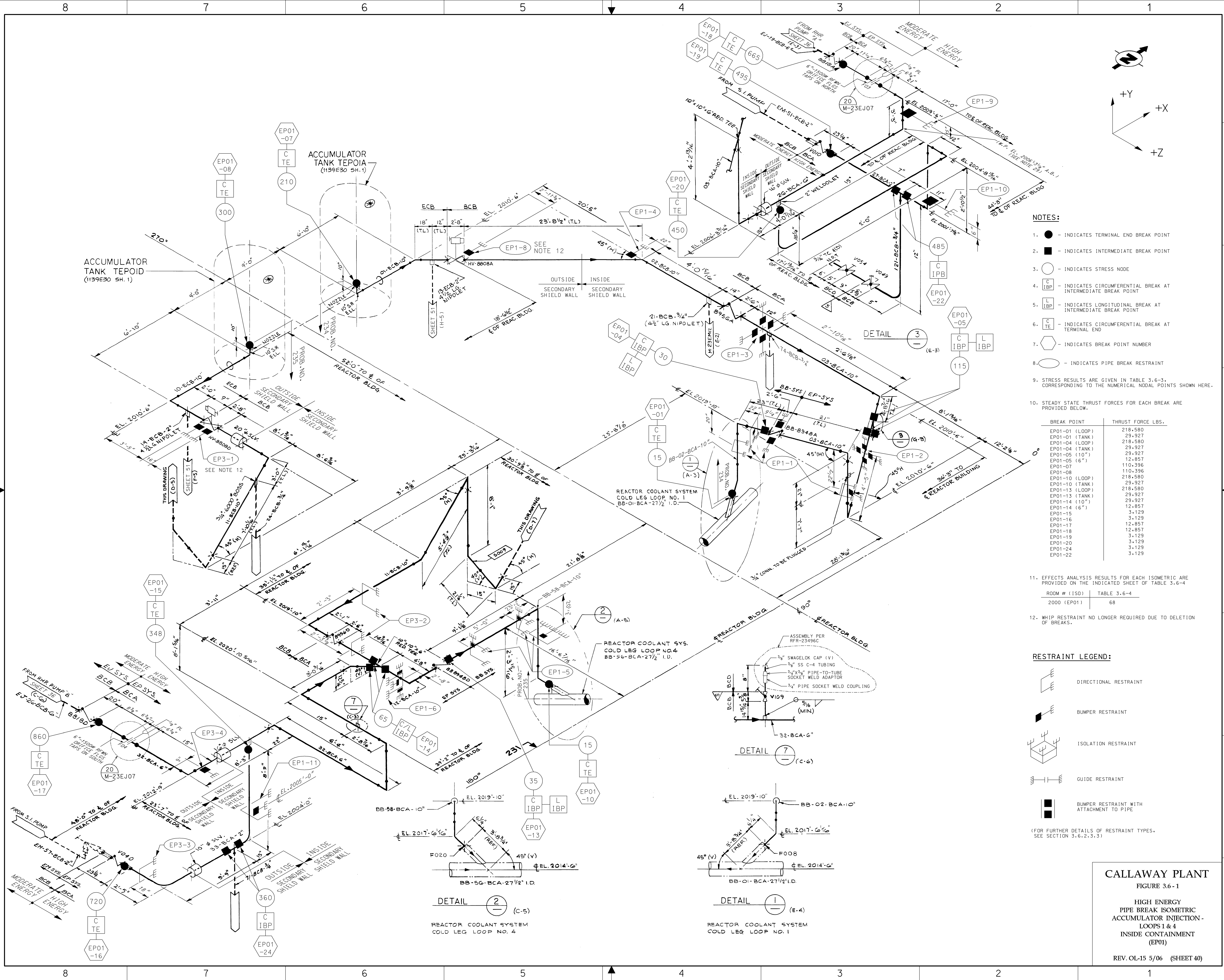
(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT

FIGURE 3.6-1

HIGH ENERGY
PIPE BREAK ISOMETRIC
SI DISCHARGE - LOOPS 1 & 4
SIS - INSIDE CONTAINMENT
(EM05)

8 7 6 5 4 3 2 1



- NOTES:**
- 1. ● - INDICATES TERMINAL END BREAK POINT
 - 2. ■ - INDICATES INTERMEDIATE BREAK POINT
 - 3. ○ - INDICATES STRESS NODE
 - 4. C IBP - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
 - 5. L IBP - INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
 - 6. C TE - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
 - 7. ○ - INDICATES BREAK POINT NUMBER
 - 8. ○ - INDICATES PIPE BREAK RESTRAINT
 - 9. STRESS RESULTS ARE GIVEN IN TABLE 3.6-3, CORRESPONDING TO THE NUMERICAL NODAL POINTS SHOWN HERE.
 - 10. STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.

BREAK POINT	THRUST FORCE LBS.
EP01-01 (LOOP)	218,580
EP01-01 (TANK)	29,927
EP01-04 (LOOP)	218,580
EP01-04 (TANK)	29,927
EP01-05 (10")	29,927
EP01-05 (6")	12,857
EP01-07	110,396
EP01-08	110,396
EP01-10 (LOOP)	218,580
EP01-10 (TANK)	29,927
EP01-13 (LOOP)	218,580
EP01-13 (TANK)	29,927
EP01-14 (10")	29,927
EP01-14 (6")	12,857
EP01-15	3,129
EP01-16	3,129
EP01-17	12,857
EP01-18	12,857
EP01-19	3,129
EP01-20	3,129
EP01-24	3,129
EP01-22	3,129

11. EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4

ROOM # (ISO)	TABLE 3.6-4
2000 (EP01)	68

12. WHIP RESTRAINT NO LONGER REQUIRED DUE TO DELETION OF BREAKS.

RESTRAINT LEGEND:

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE

(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT
FIGURE 3.6-1

HIGH ENERGY
PIPE BREAK ISOMETRIC
ACCUMULATOR INJECTION -
LOOPS 1 & 4
INSIDE CONTAINMENT
(EP01)

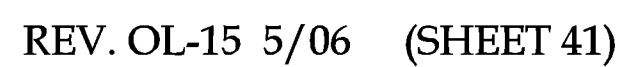
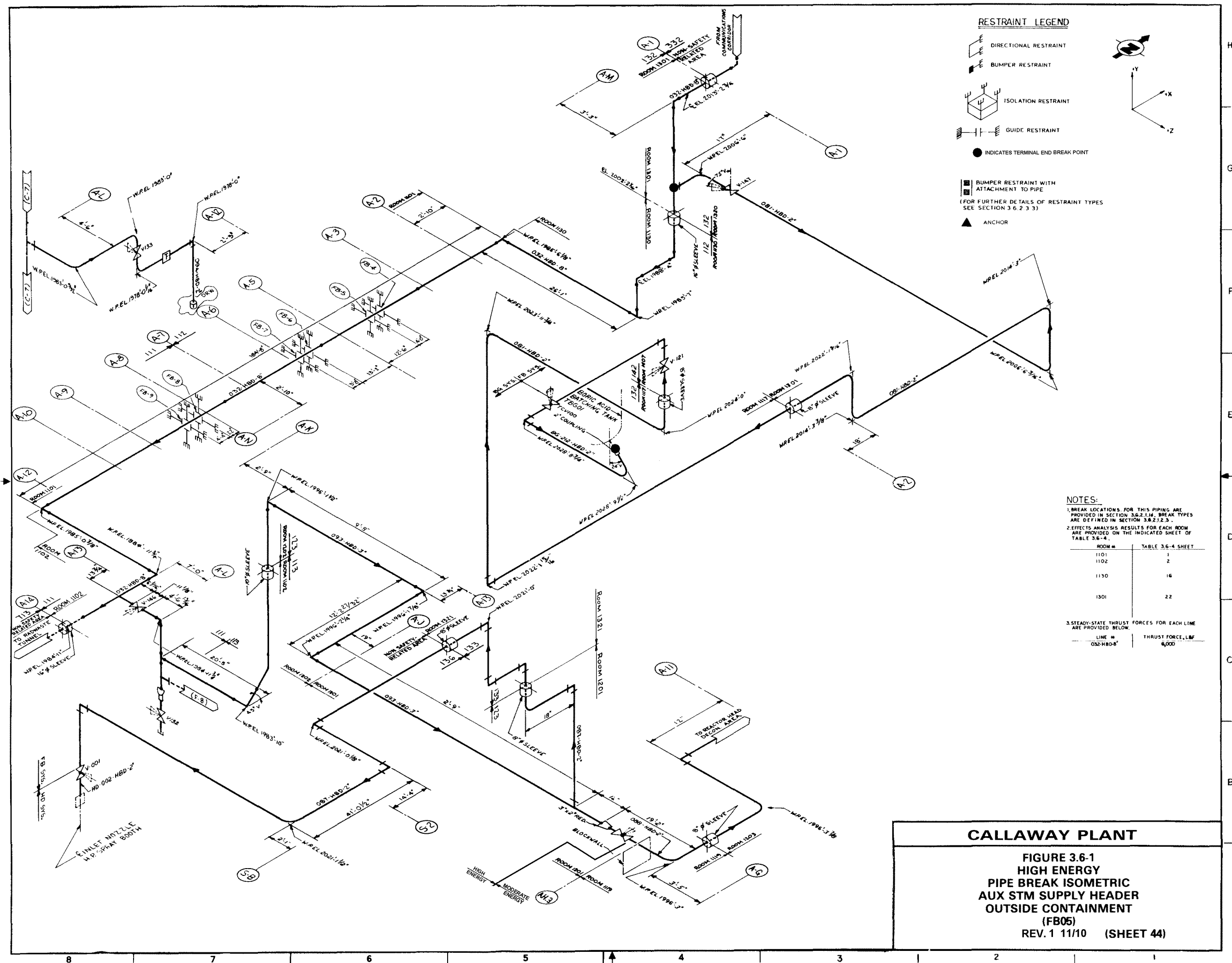
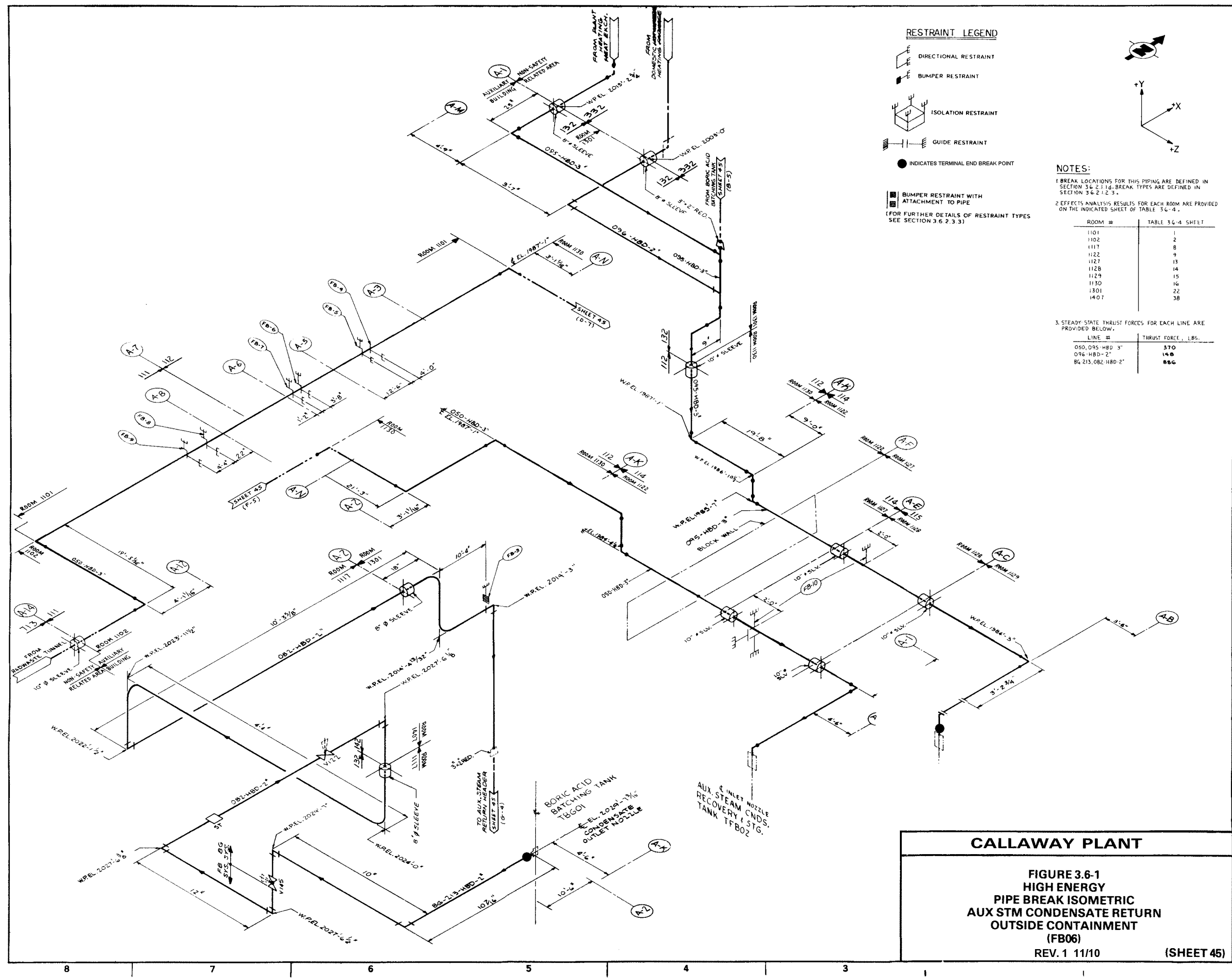


Figure 3.6-1 (Sheet 42)

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RESTRAINT LEGEND

DIRECTIONAL RESTRAINT
 BUMPER RESTRAINT
 ISOLATION RESTRAINT
 GUIDE RESTRAINT
 INDICATES TERMINAL END BREAK POINT

BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
 (FOR FURTHER DETAILS OF RESTRAINT TYPES SEE SECTION 3.6.2.3.3)

NOTES:

1. BREAK LOCATIONS FOR THIS PIPING ARE DEFINED IN SECTION 3.6.2.1.1.6. BREAK TYPES ARE DEFINED IN SECTION 3.6.2.1.2.3.

2. EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4.

ROOM #	TABLE 3.6-4 SHEET
1101	1
1102	2
1117	8
1122	9
1127	13
1128	14
1129	15
1130	16
1301	22
1401	38

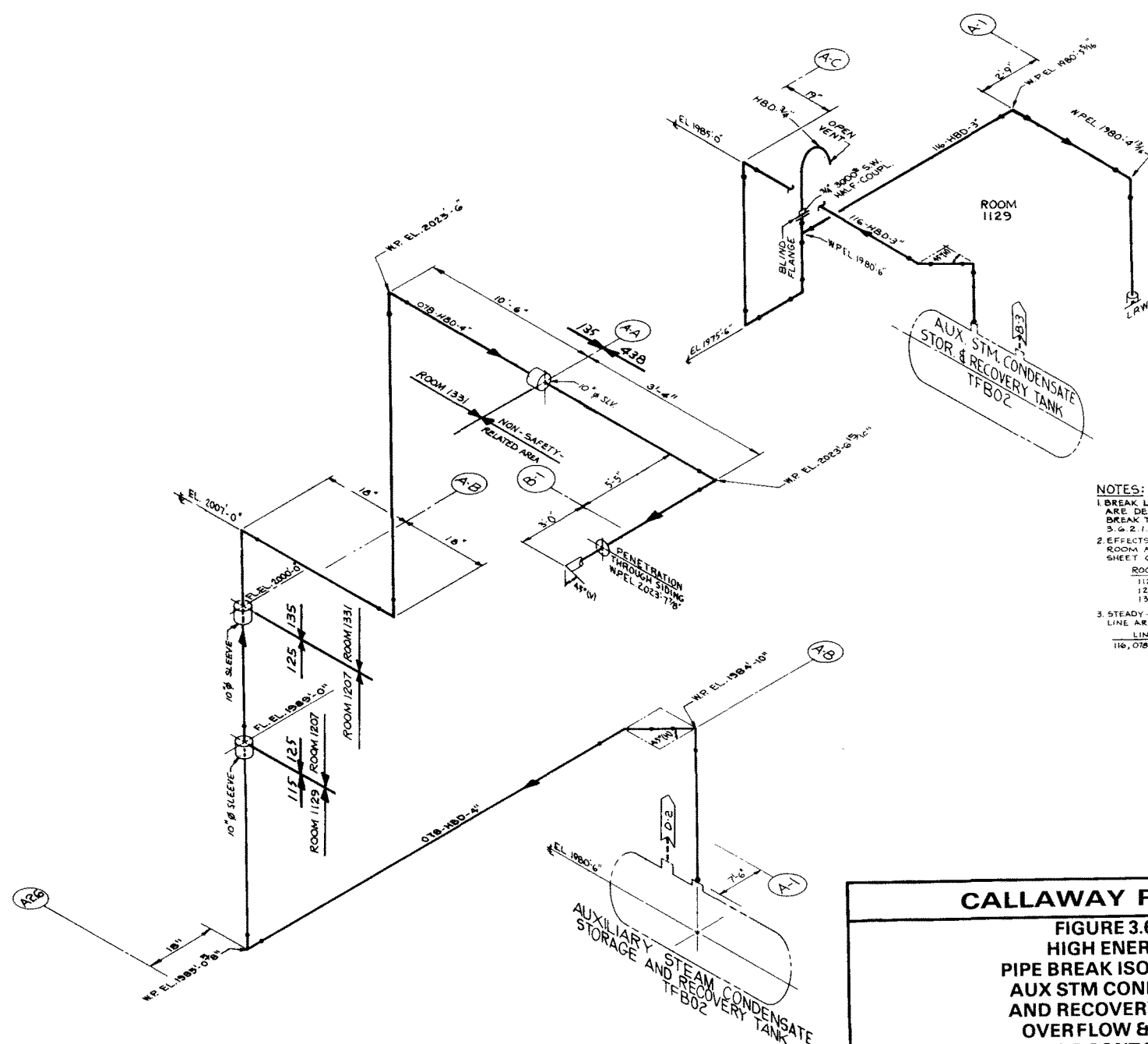
3. STEADY-STATE THRUST FORCES FOR EACH LINE ARE PROVIDED BELOW.

LINE #	THRUST FORCE, LBS.
050, 095-HBD-3"	370
096-HBD-2"	148
BG 213, 082-HBD-2"	886

CALLAWAY PLANT

**FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
AUX STM CONDENSATE RETURN
OUTSIDE CONTAINMENT
(FB06)**

REV. 1 11/10 (SHEET 45)



- RESTRAINT LEGEND**
- DIRECTIONAL RESTRAINT
 - BUMPER RESTRAINT
 - ISOLATION RESTRAINT
 - GUIDE RESTRAINT
 - BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
(FOR FURTHER DETAILS OF RESTRAINT TYPES SEE SECTION 3.6.2.3.3)
 - ANCHOR

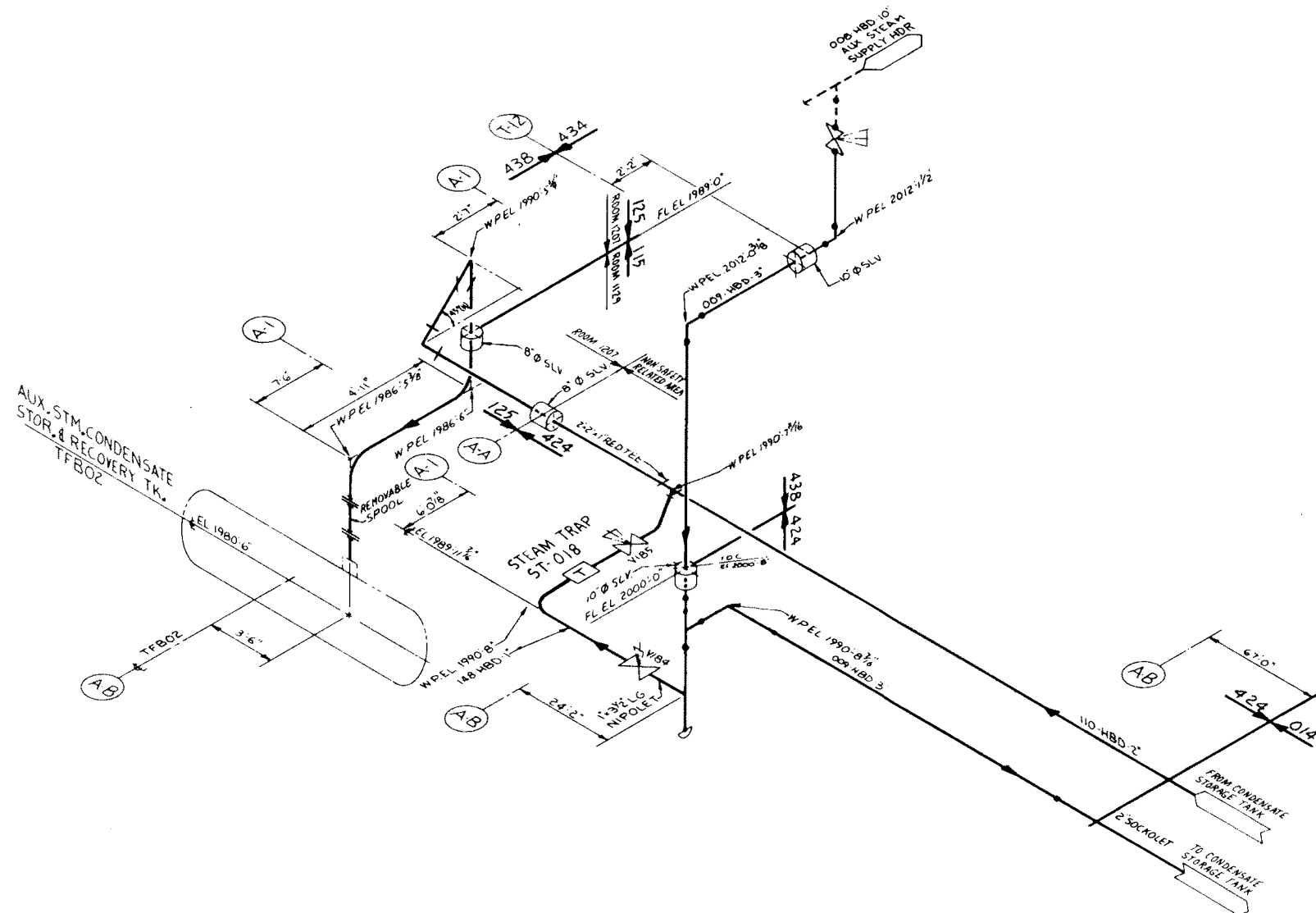
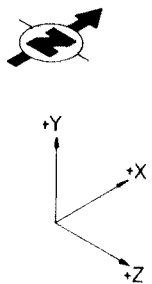
- NOTES:**
1. BREAK LOCATIONS FOR THIS PIPING ARE DEFINED IN SECTION 3.6.2.1.1.d. BREAK TYPES ARE DEFINED IN SECTION 3.6.2.1.2.3.
 2. EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6.4.
 3. STEADY-STATE THRUST FORCES FOR EACH LINE ARE PROVIDED BELOW.
- | ROOM # | TABLE 3.6.4 SHEET |
|--------|-------------------|
| 1129 | 15 |
| 1207 | 22 |
| 1331 | 37 |
- | LINE # | THRUST FORCE, LBF |
|---------------|-------------------|
| 116, 018H80-4 | 0 |

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CALLAWAY PLANT

**FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
AUX STM COND STOR
AND RECOVERY TANK
OVERFLOW & VENT
OUTSIDE CONTAINMENT
(FB09)**

(SHEET 46)



NOTES:

1. BREAK LOCATIONS FOR THIS PIPING ARE DEFINED IN SECTION 3.6.2.1.1.4. BREAK TYPES ARE DEFINED IN SECTION 3.6.2.1.2.3.

2. EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6.4.

ROOM #	TABLE 3.6.4 SHEET
1129	15
1207	22

3. STEADY-STATE THRUST FORCES FOR EACH LINE ARE PROVIDED BELOW.

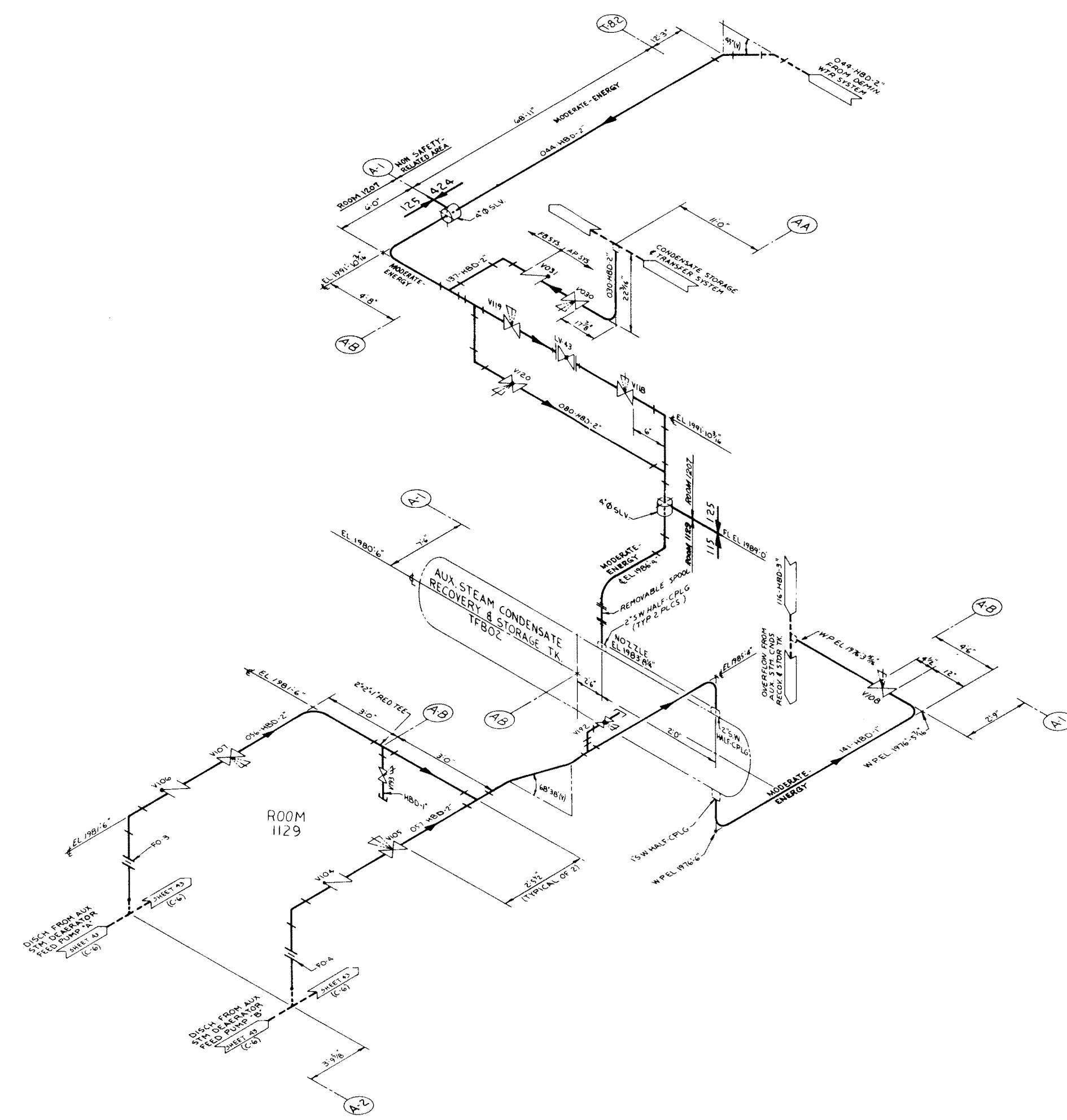
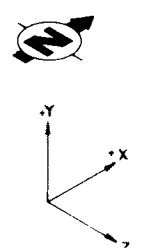
LINE #	THRUST FORCE, LBS.
110 HBD 2"	475

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CALLAWAY PLANT

FIGURE 3.6-1
HIGH ENERGY
PIPE BREAK ISOMETRIC
AUX STM COND TRANSFER PUMP
DISCHARGE
OUTSIDE CONTAINMENT
(FB10)

(SHEET 47)



NOTES:

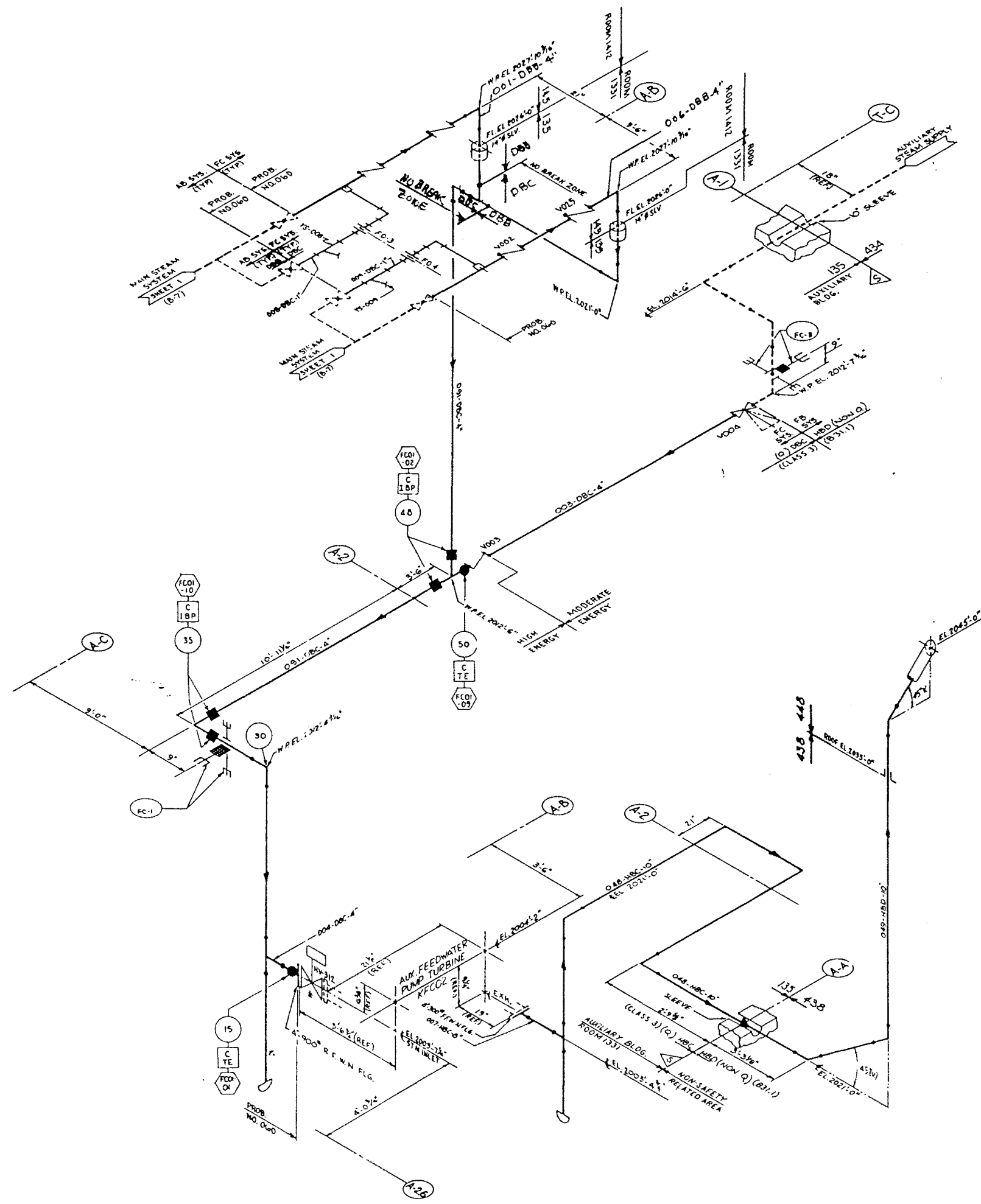
1. BREAK LOCATIONS FOR THIS PIPING ARE DEFINED IN SECTION 3.6.2.1.1. BREAK TYPES ARE DEFINED IN SECTION 3.6.2.1.2.3.

2. EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4

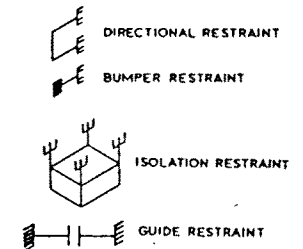
ROOM #	TABLE 3.6-4 SHEET
1129	15

3. STEADY-STATE THRUST FORCES FOR EACH LINE ARE PROVIDED BELOW:

LINE #	THRUST FORCE, LBS
056, 057 HBD-2	475



RESTRAINT LEGEND



■ BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
 (FOR FURTHER DETAILS OF RESTRAINT TYPES SEE SECTION 3.6.2.3.3)
 ▲ ANCHOR

NOTES:

1. - INDICATES TERMINAL END BREAK POINT
2. - INDICATES INTERMEDIATE BREAK POINT
3. - INDICATES STRESS NODE
4. - INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
5. - INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
6. - INDICATES BREAK POINT NUMBER
7. - INDICATES PIPE BREAK RESTRAINT
8. STRESS RESULTS WHICH ARE GIVEN IN TABLE 3.6.3, SHEETS 21 & 22 CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
9. EFFECTS ANALYSIS RESULTS FOR EACH ROOM ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6.4.

ROOM #	TABLE 3.6.4 SHEET
1331	37
1412 (NO BREAK ZONE)	40

BREAK POINT	THRUST FORCE, LBS
FC01-01	221G
FC01-02	
FC01-03	
FC01-10	

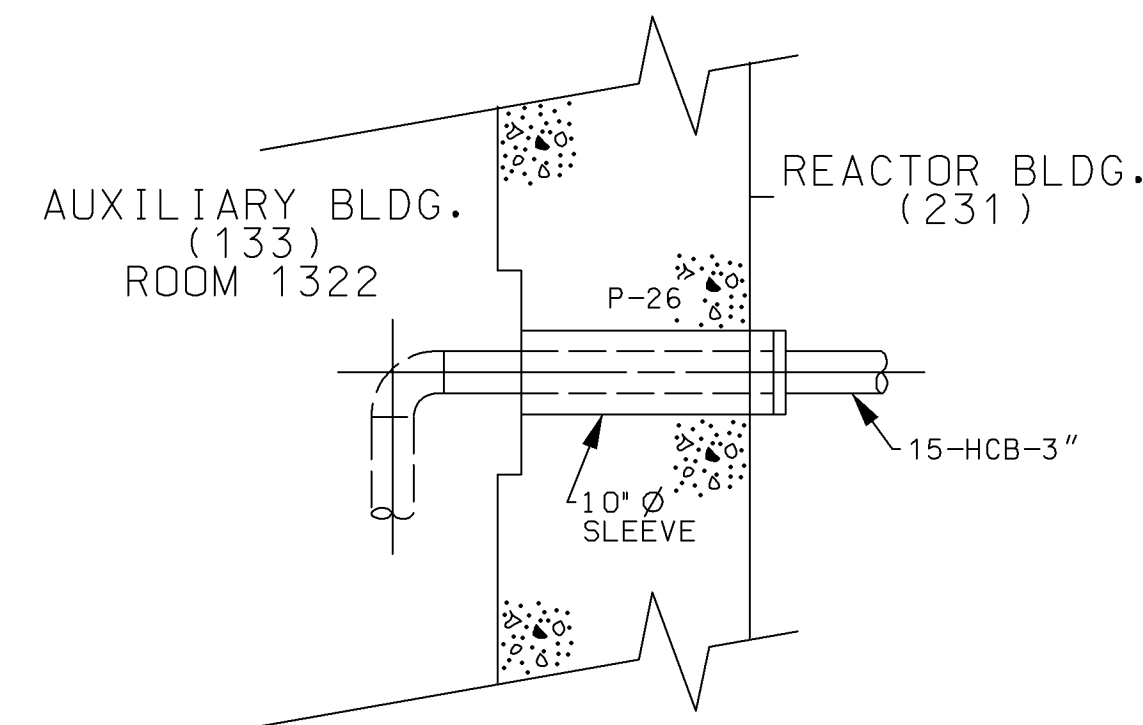
CALLAWAY PLANT

FIGURE 3.6-1
 HIGH ENERGY
 PIPE BREAK ISOMETRIC
 MAIN STM SUPPLY TO TURB AFP
 OUTSIDE CONTAINMENT
 (FC01) (SHEET 49)

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 5/97

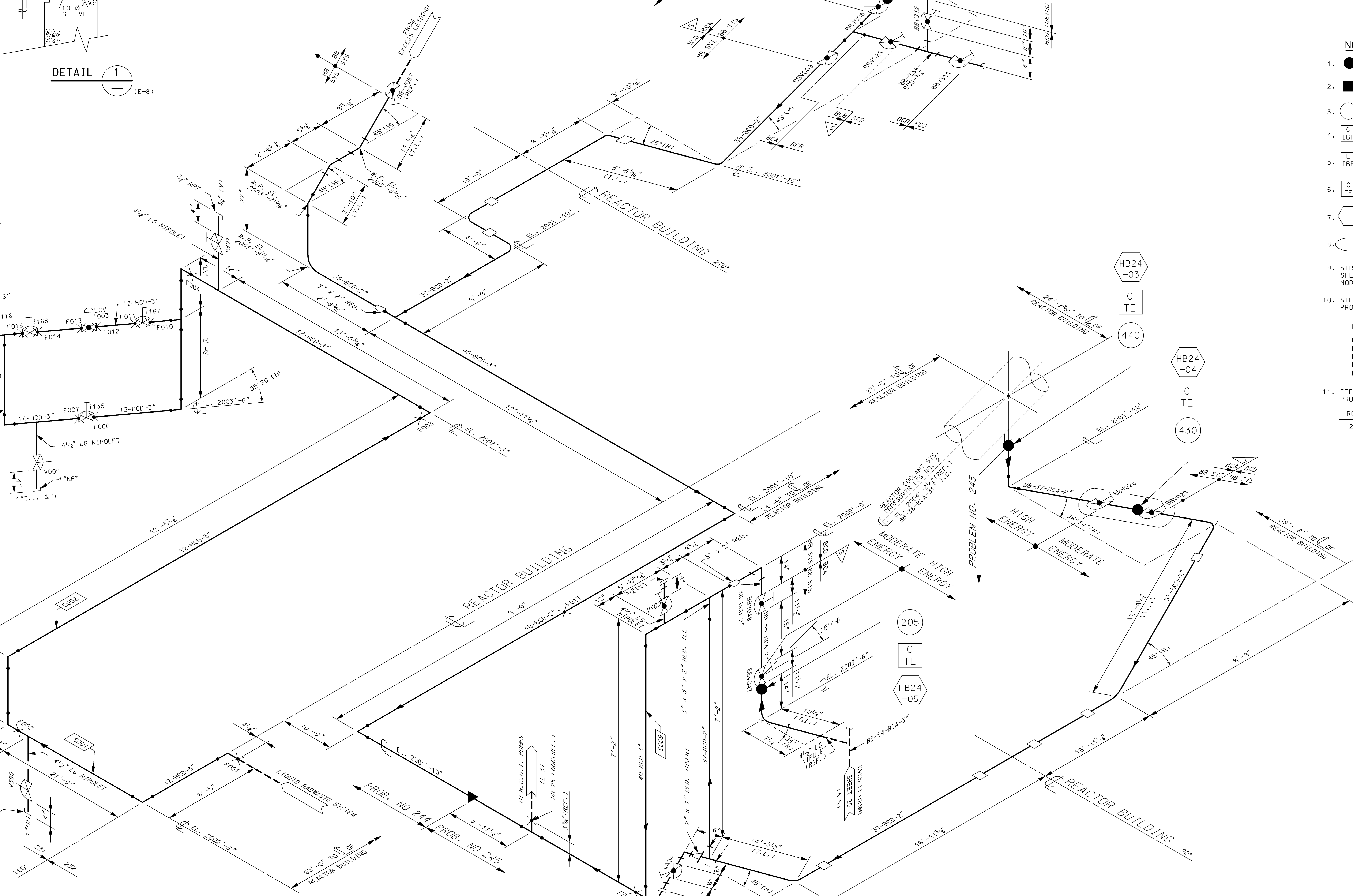
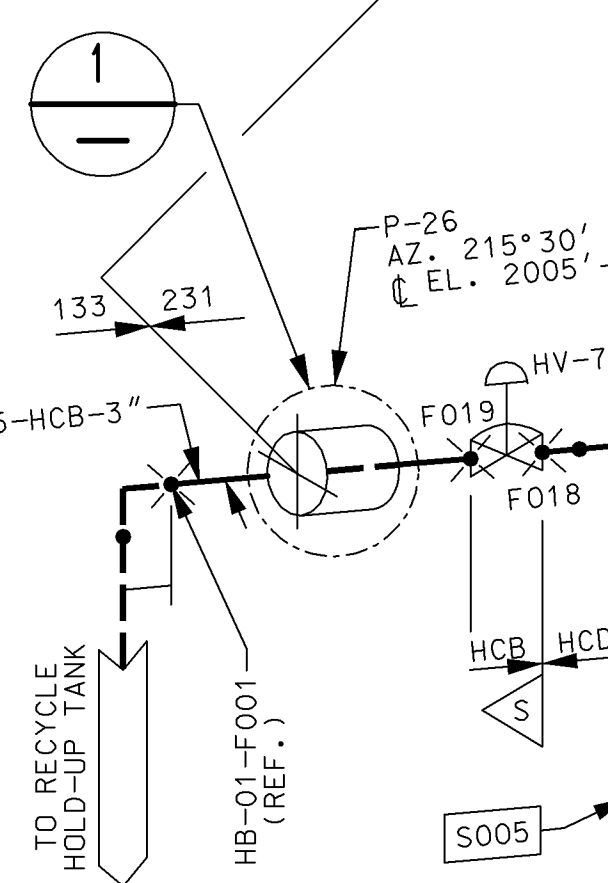
H
G
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D
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A

H
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C
B
A



DETAIL 1
(E-8)

ROOM 1322 REACTOR BLDG.



NOTES:

- - INDICATES TERMINAL END BREAK POINT
- - INDICATES INTERMEDIATE BREAK POINT
- - INDICATES STRESS NODE
- INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
- INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
- INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
- INDICATES BREAK POINT NUMBER
- INDICATES PIPE BREAK RESTRAINT
- STRESS RESULTS WHICH ARE GIVEN IN TABLE 3.6-3, SHEETS 53 & 54, CORRESPOND TO THE NUMERICAL NODAL POINTS SHOWN HERE.
- STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED BELOW.

BREAK POINT	THRUST FORCE LBS.
HB24-01	7,921
HB24-02	7,921
HB24-03	7,921
HB24-04	7,921
HB24-05	7,921

- EFFECTS ANALYSIS RESULTS FOR EACH ISOMETRIC ARE PROVIDED ON THE INDICATED SHEET OF TABLE 3.6-4

ROOM # (ISO)	TABLE 3.6-4
2000 (HB24)	70

RESTRAINT LEGEND:

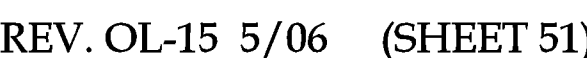
- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT
- BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
- ANCHOR

(FOR FURTHER DETAILS OF RESTRAINT TYPES, SEE SECTION 3.6.2.3.3)

CALLAWAY PLANT
FIGURE 3.6-1

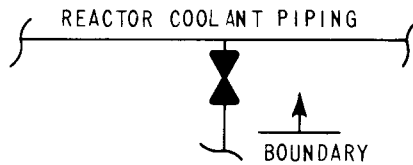
HIGH ENERGY
PIPE BREAK ISOMETRIC
REACTOR COOLANT -
LOOP DRAINS
INSIDE CONTAINMENT
(HB24)

8 7 6 5 4 3 2 1



CASE I

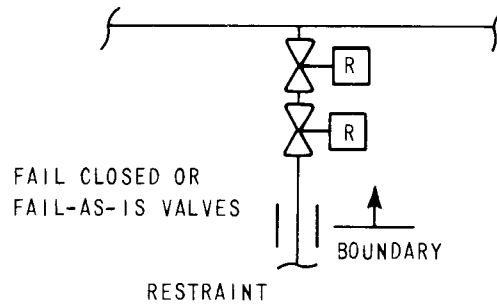
OUTGOING LINES WITH NORMALLY CLOSED VALVE



NOTE: PRESSURIZER SAFETY VALVES ARE INCLUDED UNDER THIS CASE.

CASE II

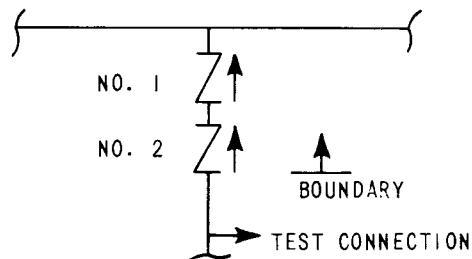
OUTGOING LINES WITH NORMALLY OPEN VALVES



NOTE: THE REACTOR COOLANT PUMP NO. 1 SEAL IS ASSUMED TO BE EQUIVALENT TO FIRST VALVE

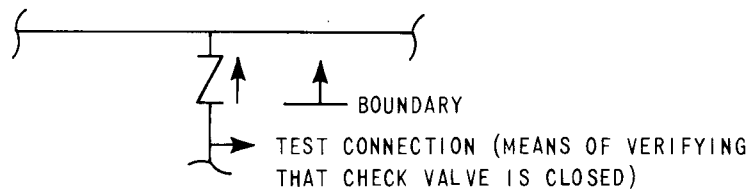
CASE III

INCOMING LINES NORMALLY WITH FLOW



CASE IV

INCOMING LINES NORMALLY WITHOUT FLOW



CASE V

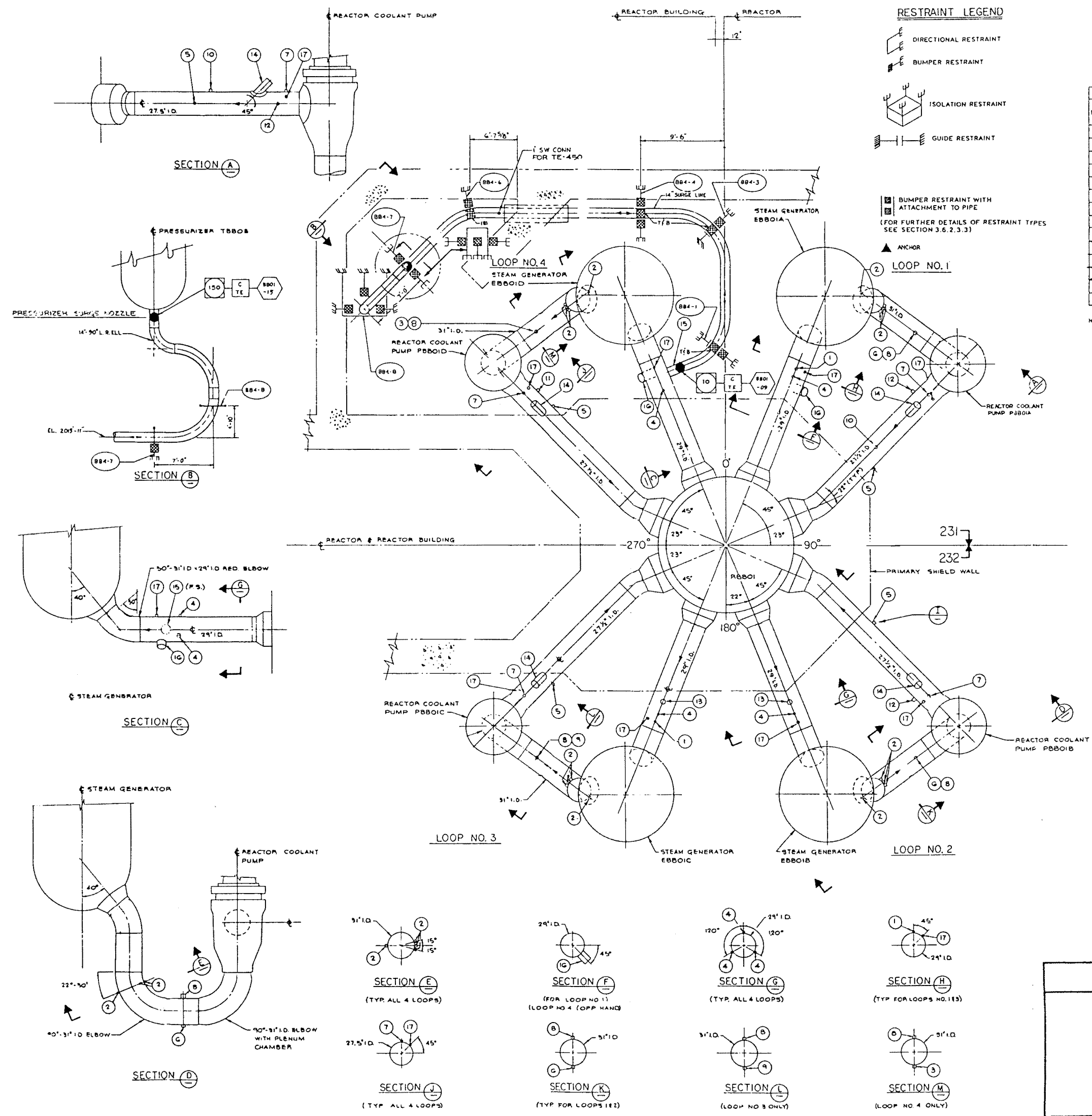
ALL INSTRUMENTATION TUBING AND INSTRUMENTS CONNECTED DIRECTLY TO THE REACTOR COOLANT SYSTEM IS CONSIDERED AS A BOUNDARY. HOWEVER, A BREAK WITHIN THIS BOUNDARY RESULTS IN A RELATIVELY SMALL FLOW WHICH CAN NORMALLY BE MADE UP WITH THE CHARGING SYSTEM.

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CALLAWAY PLANT

FIGURE 3.6-2

LOSS OF REACTOR COOLANT ACCIDENT
BOUNDARY LIMITS



RESTRAINT LEGEND

- DIRECTIONAL RESTRAINT
- BUMPER RESTRAINT
- ISOLATION RESTRAINT
- GUIDE RESTRAINT

BUMPER RESTRAINT WITH ATTACHMENT TO PIPE
(FOR FURTHER DETAILS OF RESTRAINT TYPES SEE SECTION 3.6.2.3.3)

ANCHOR
LOOP NO. 1

REACTOR COOLANT LOOP AND SURGE LINE PIPE BREAKS				
BREAK NO.	DESCRIPTION	TYPE	BREAK OPENING AREA	THRUST FORCE LBS.
BB01-09	PRESSURIZER SURGE (PS) LINE / PRIMARY LOOP CONN.	GUILLOTINE	CROSS SECTIONAL FLOW AREA OF PS LINE	307,330
BB01-15	PRESSURIZER NOZZLE BUTT WELD	GUILLOTINE	CROSS SECTIONAL FLOW AREA OF PS LINE	307,330

NOTE: PS LINE THRUST FORCE SHOWN IS APPLICABLE TO GUILLOTINE AND LONGITUDINAL BREAKS.

BRANCH NOZZLES			SERVICE DESCRIPTION
IDENT NO.	NOZZLE SIZE		
1	3/4"		SAMPLE CONNECTION
2	3/4"		LOOP FLOW INSTRUMENTATION
3	2"		LOOP DRAIN WITH 1" CVCS EXCESS LETDOWN
4	1"		RTD Thermowell-Hot leg
5	1/4"		G/S FROM BORON INJECTION
6	2"		LOOP DRAIN TO REACTOR COOLANT DRAIN TANK-WPS-L
7	2"		RTD Thermowell-cold leg
8	3"		Capped RTD Bypass line
9	3"		TO CVCS LETDOWN
10	3"		FROM CVCS NORMAL CHARGING LINE
11	3"		FROM CVCS ALTERNATE CHARGING LINE
12	4"		TO RCS PRESSURIZER SPRAY HEADER
13	6"		FROM SIS AND RHP PUMP
14	10"		G/S FROM ACCUMULATOR TANK
15	14"		PRESSURIZER SURGE LINE
16	12"		TO RHP PUMP SUCTION
17	~		THERMOWELL

NOTES:

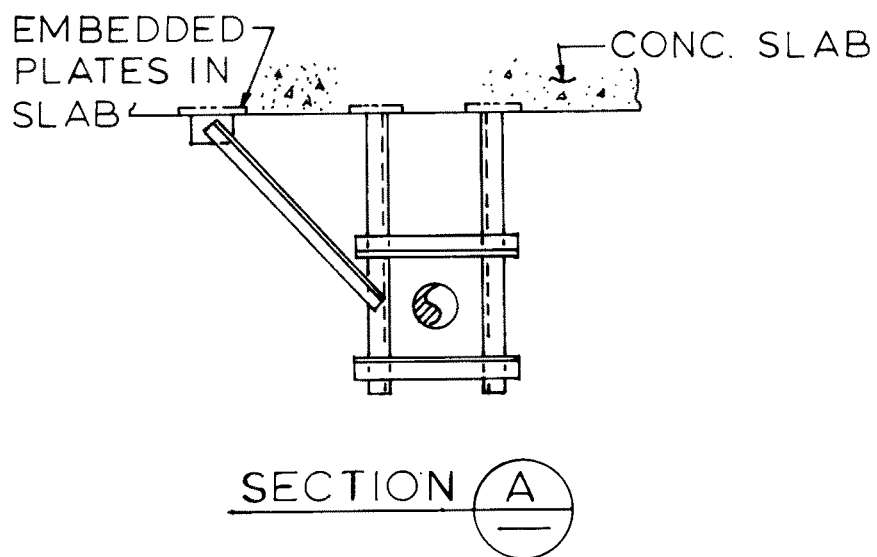
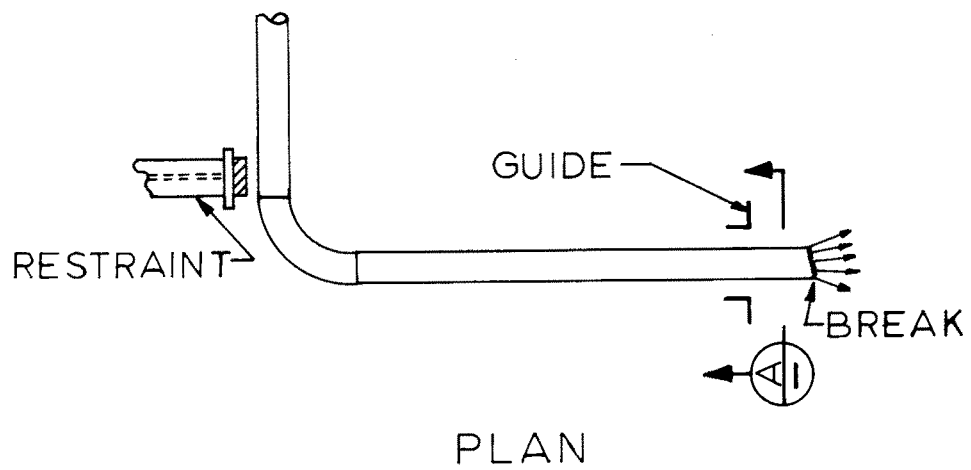
- INDICATES TERMINAL END BREAK POINT
- INDICATES INTERMEDIATE BREAK POINT
- INDICATES STRESS NODE BY WESTINGHOUSE (LATER)
- INDICATES CIRCUMFERENTIAL BREAK AT INTERMEDIATE BREAK POINT
- INDICATES LONGITUDINAL BREAK AT INTERMEDIATE BREAK POINT
- INDICATES CIRCUMFERENTIAL BREAK AT TERMINAL END
- INDICATES BREAK POINT NUMBER
- INDICATES PIPE BREAK RESTRAINT
- STRESS RESULTS WHICH ARE GIVEN IN TABLE 2.8.3, SHEET 66, CORRESPOND TO THE NUMERICAL NOZZLE POINTS SHOWN HERE
- STEADY STATE THRUST FORCES FOR EACH BREAK ARE PROVIDED ABOVE
- DENOTES BRANCH NOZZLE NUMBER, DEFINED IN BRANCH NOZZLE TABLE
- INDICATES TERMINAL END LIMITED AREA CIRCUMFERENTIAL BREAK POINT
- INDICATES INTERMEDIATE LIMITED AREA CIRCUMFERENTIAL BREAK POINT
- EFFECTS ANALYSIS RESULTS FOR REACTOR COOLANT LOOP AND SURGE LINE PIPE BREAKS ARE PROVIDED ON SHEETS 101, 102, 103 AND 104 OF TABLE 3.6-4.

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FIGURE 3.6-3

LOCATION OF POSTULATED BREAKS IN REACTOR COOLANT (INCLUDING PRESSURIZER SURGE LINE)

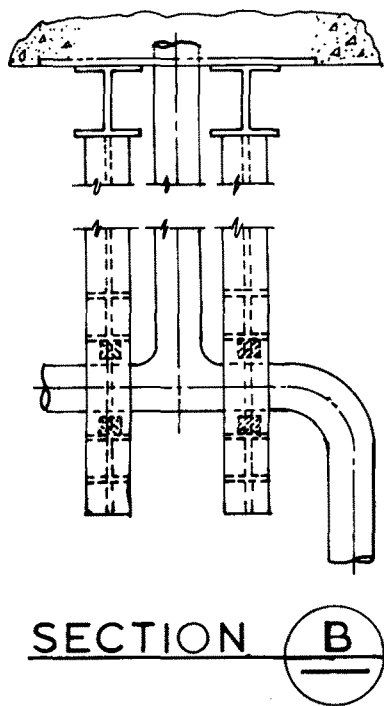
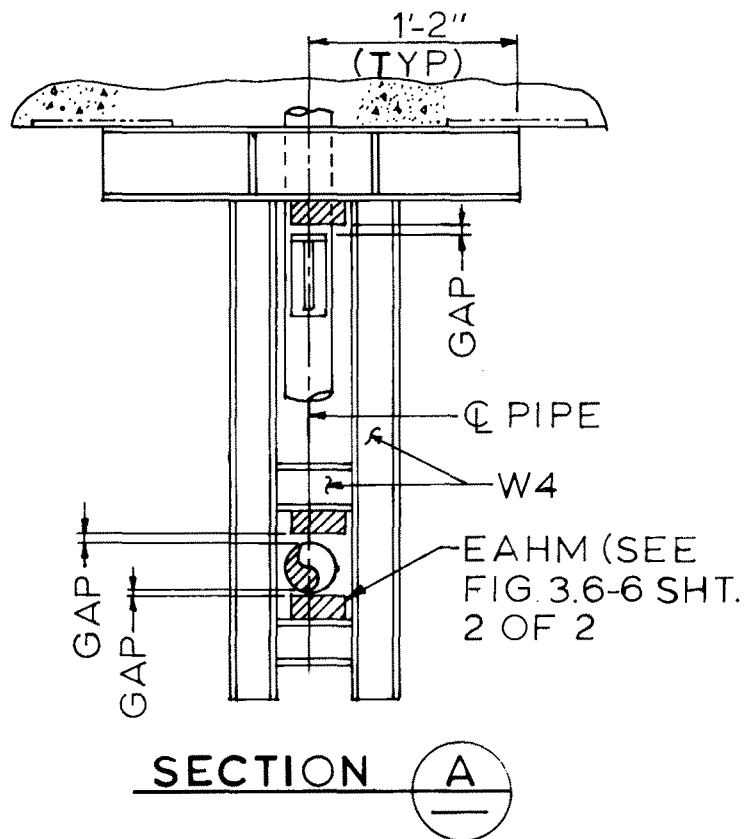
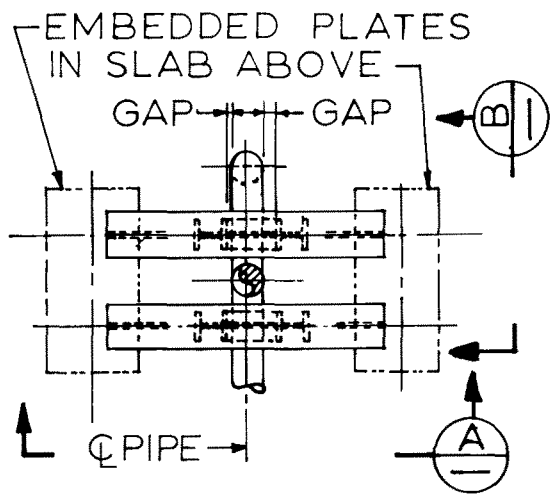


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FIGURE 3.6-4

**TYPICAL PIPING GUIDE
INSTALLATION**

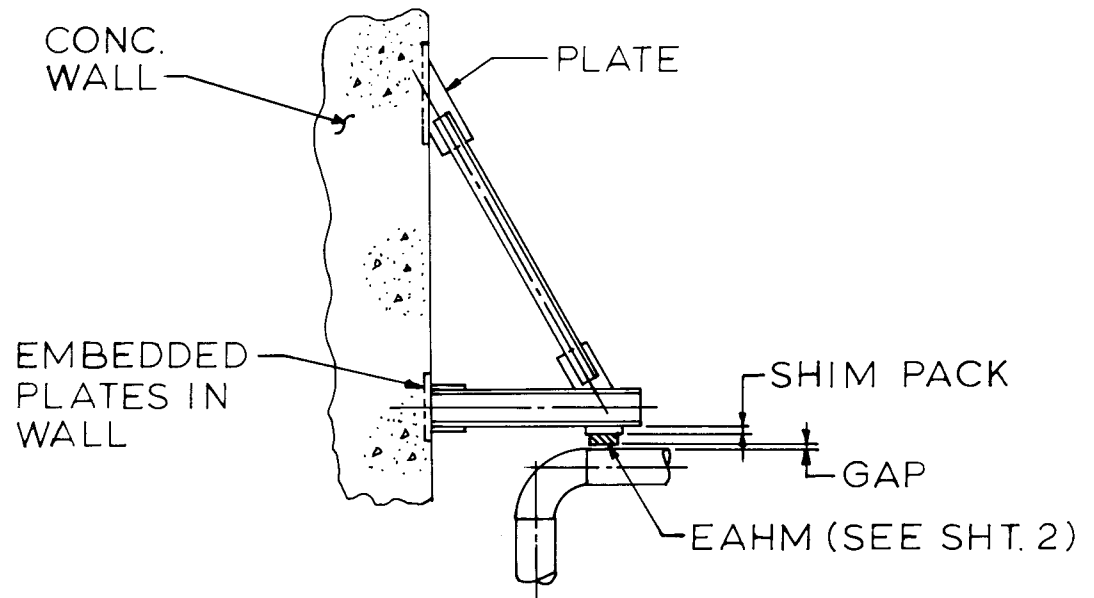


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FIGURE 3.6-5

TYPICAL ISOLATION RESTRAINT

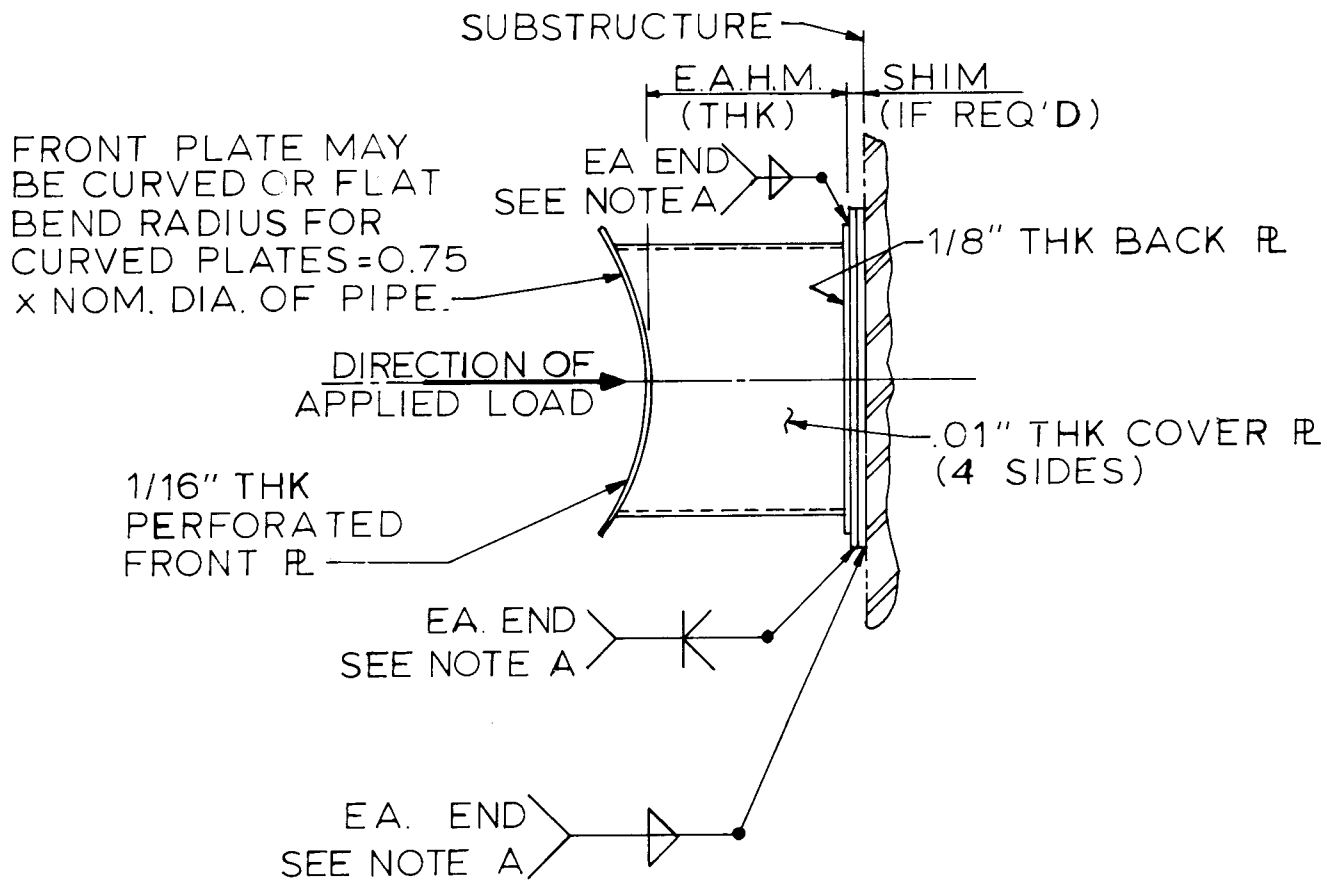
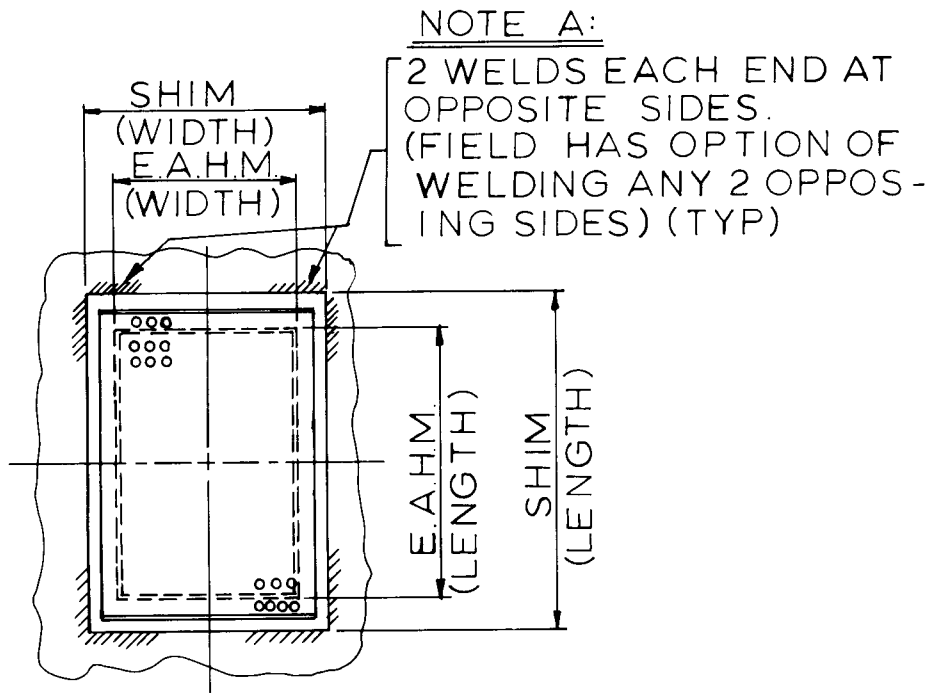


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**FIGURE 3.6-6
SHEET 1**

**ENERGY ABSORBING HONEYCOMB
MATERIAL - LARGE GAP RESTRAINT**

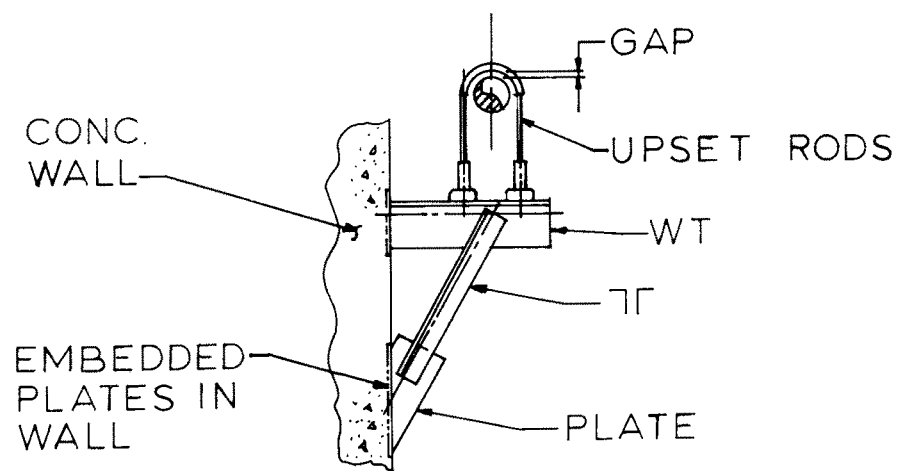


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**FIGURE 3.6-6
 SHEET 2**

**TYPICAL PREFABRICATED ENERGY
 ABSORBING HONEYCOMB
 MATERIAL INSTALLATION**

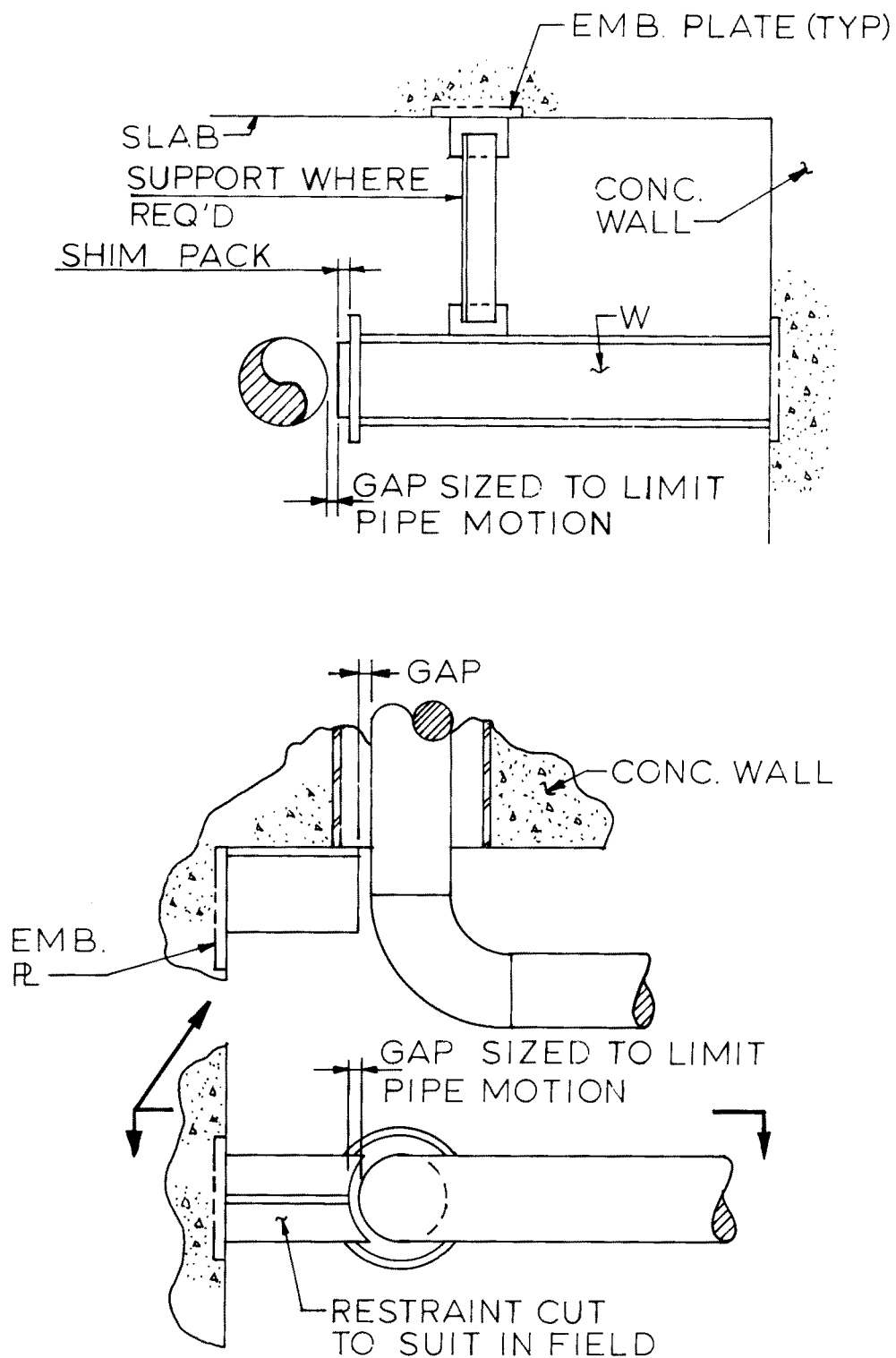


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FIGURE 3.6-7

**TYPICAL UPSET ROD
LARGE GAP RESTRAINT**

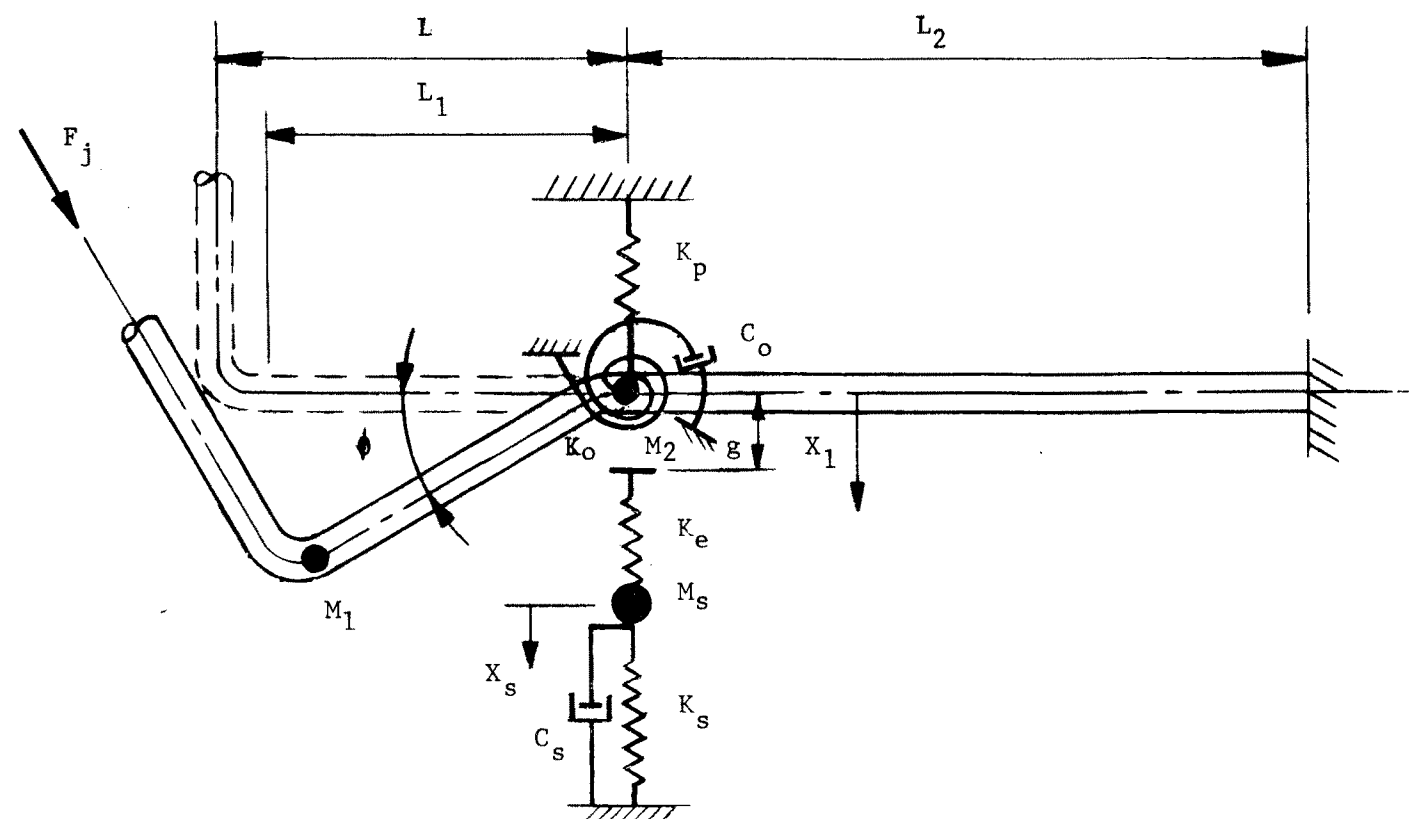


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FIGURE 3.6-8

**TYPICAL CLOSE GAP
RESTRAINT**



F_j = Jet thrust reaction force (See Reference 5)
 M_1 = Effective mass of rotating pipe (between broken end of pipe and restraint)
 M_2 = Effective mass of rotating portion of pipe between fixity and restraint
 M_s = Effective mass of restraint substructure
 K_o = Elastic-plastic clock spring representing stiffness of pipe at a restraint due to deflection/rotation caused by F_j (plastic hinge determined by equations in Section 3.6.2.3.4(a))
 K_p = Elastic spring representing stiffness of pipe between point of fixity and restraint
 K_e = Elastic-plastic spring representing energy dissipating device. (Active only in compression - provides rebound capability.)
 K_s = Elastic-plastic spring representing stiffness of restraint substructure.

C_o = Effective damping of pipe (effective translational damping)
 C_s = Effective damping of substructure
 L = Distance from elbow to restraint
 L_1 = Distance from elbow to restraint to effective mass of rotating pipe
 L_2 = Distance from restraint to point of fixity
 g = Initial gap between pipe and restraint
 ϕ = Degree of freedom representing rotation of the elbow at the restraint
 X_1 = Degree of freedom representing translational motion of pipe at the restraint
 X_s = Degree of freedom representing the motion of the restraint substructure

Note: The coupled second order differential equations developed using Lagrangian dynamics representing the model, are solved by a time step integration procedure via computer to yield the time history acceleration velocities and displacements of the defined masses.

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FIGURE 3.6 -9
LUMPED-PARAMETER MODEL
PIPE-RESTRAINT SYSTEM

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CALLAWAY PLANT
FIGURE 3.8-2 REACTOR BUILDING GROUND FLOOR PLAN – ELEV 2000'-0" AND 2001'-4'

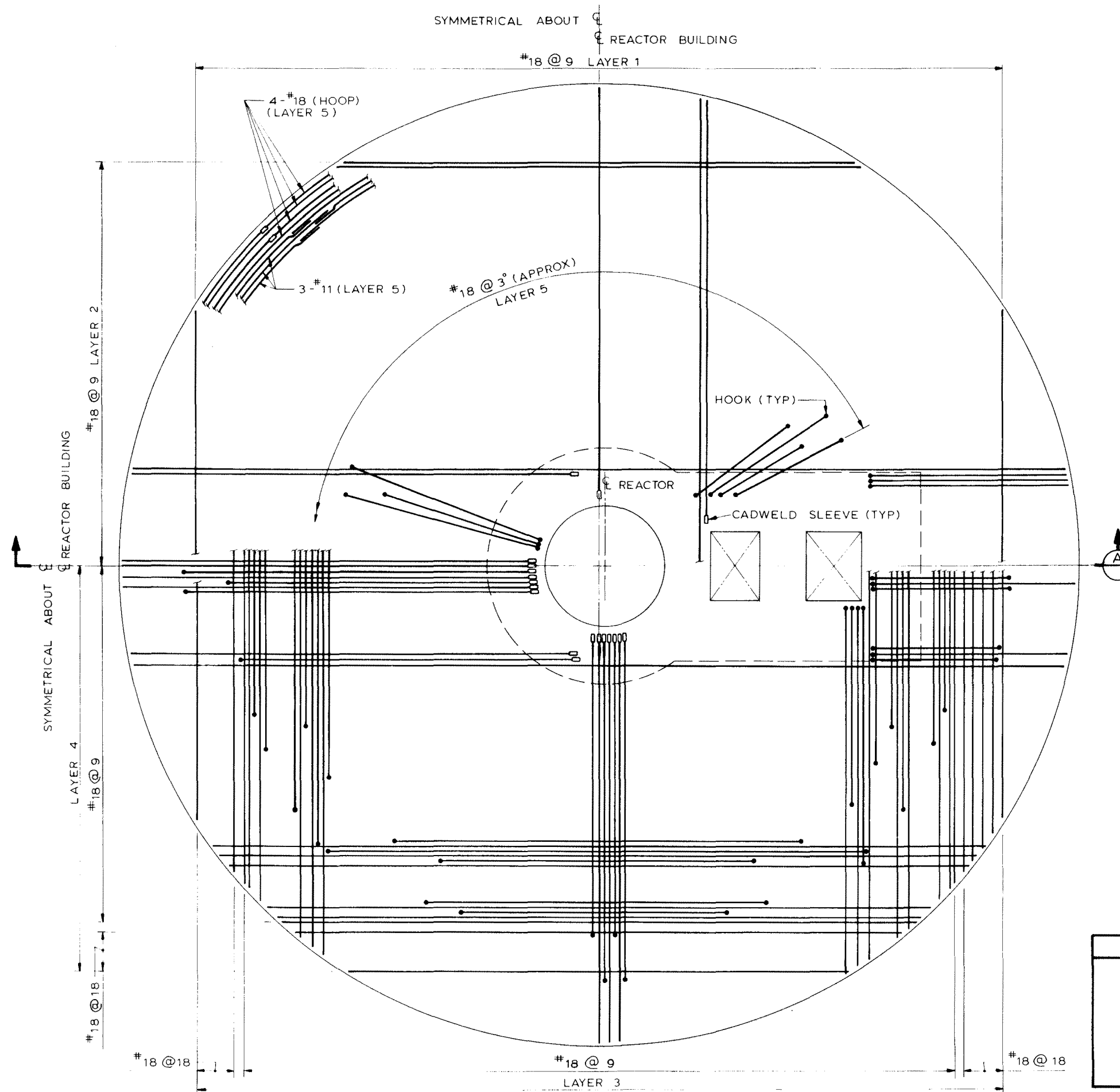
CALLAWAY PLANT
FIGURE 3.8-3 REACTOR BUILDING INTERMEDIATE FLOOR PLAN – ELEV 2026'-0"

CALLAWAY PLANT
FIGURE 3.8-4 REACTOR BUILDING OPERATING FLOOR PLAN – ELEV 2047'-6" AND 2051'-0"

CALLAWAY PLANT
FIGURE 3.8-5 REACTOR BUILDING PLAN — ELEV 2068'-0"

CALLAWAY PLANT
FIGURE 3.8-6 REACTOR BUILDING EAST-WEST CROSS SECTION

CALLAWAY PLANT
FIGURE 3.8-7 REACTOR BUILDING NORTH-SOUTH CROSS SECTION

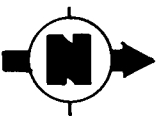


CALLAWAY PLANT

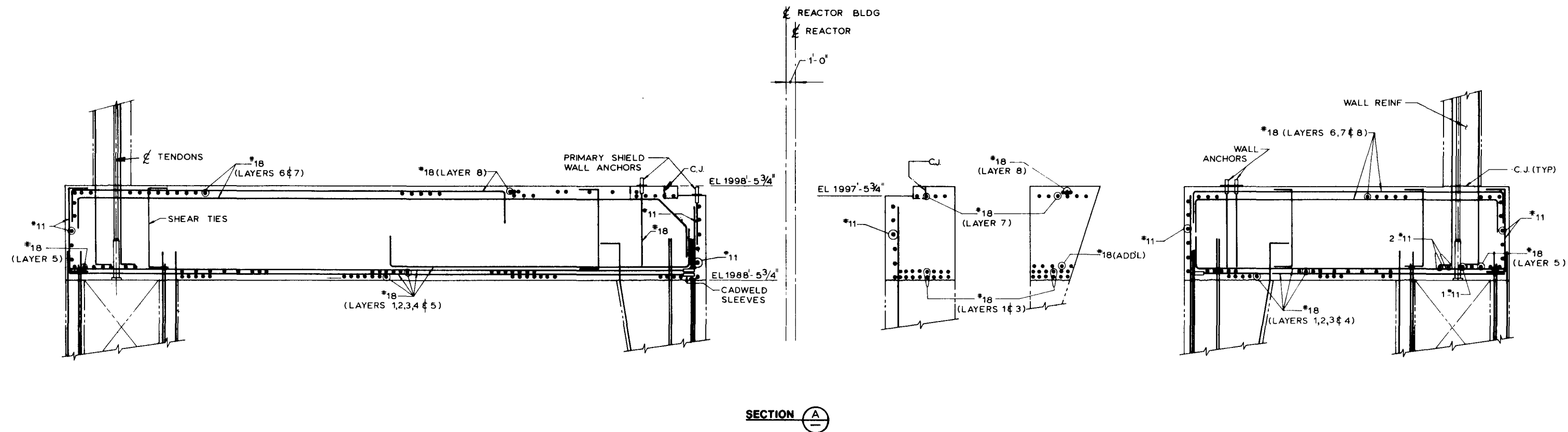
FIGURE 3.8-8

REACTOR BUILDING BASE MAT
REINFORCING - BOTTOM LAYERS

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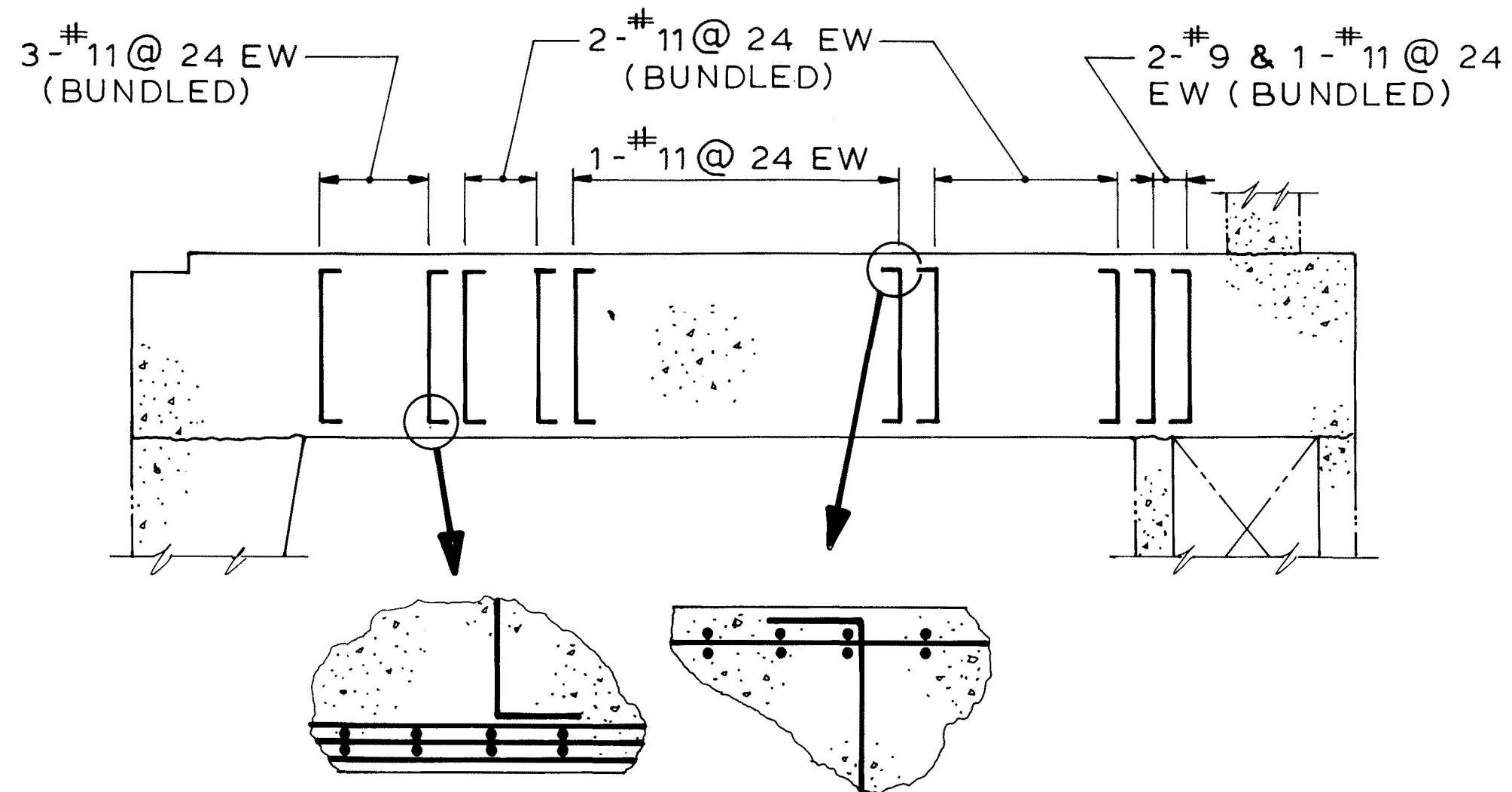
CALLAWAY PLANT
<p>FIGURE 3.8-9</p> <p>REACTOR BUILDING BASE MAT</p> <p>REINFORCING – TOP LAYERS</p>



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CALLAWAY PLANT
FIGURE 3.8-10
REACTOR BUILDING BASE MAT REINFORCING – CROSS SECTION

REACTOR BUILDING



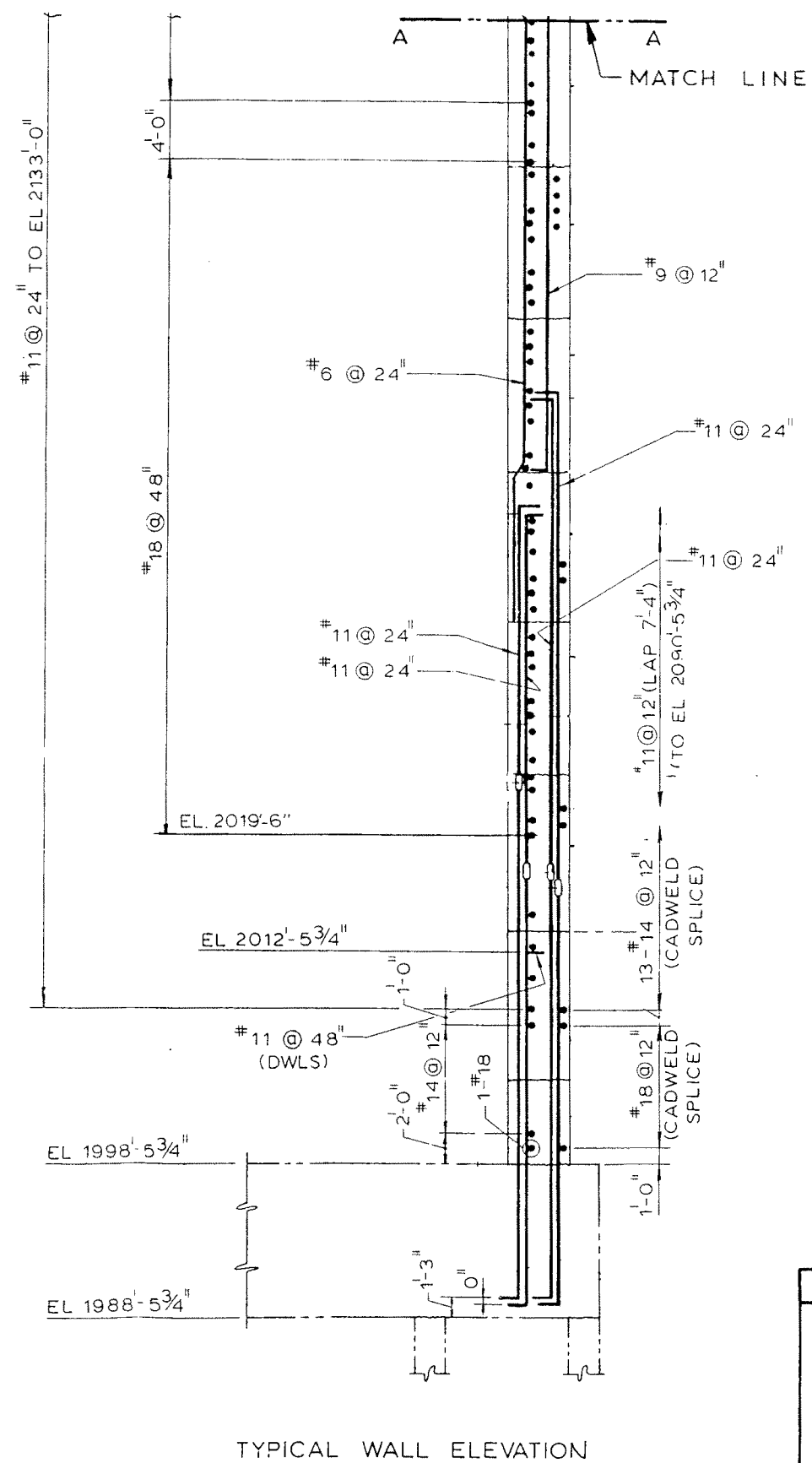
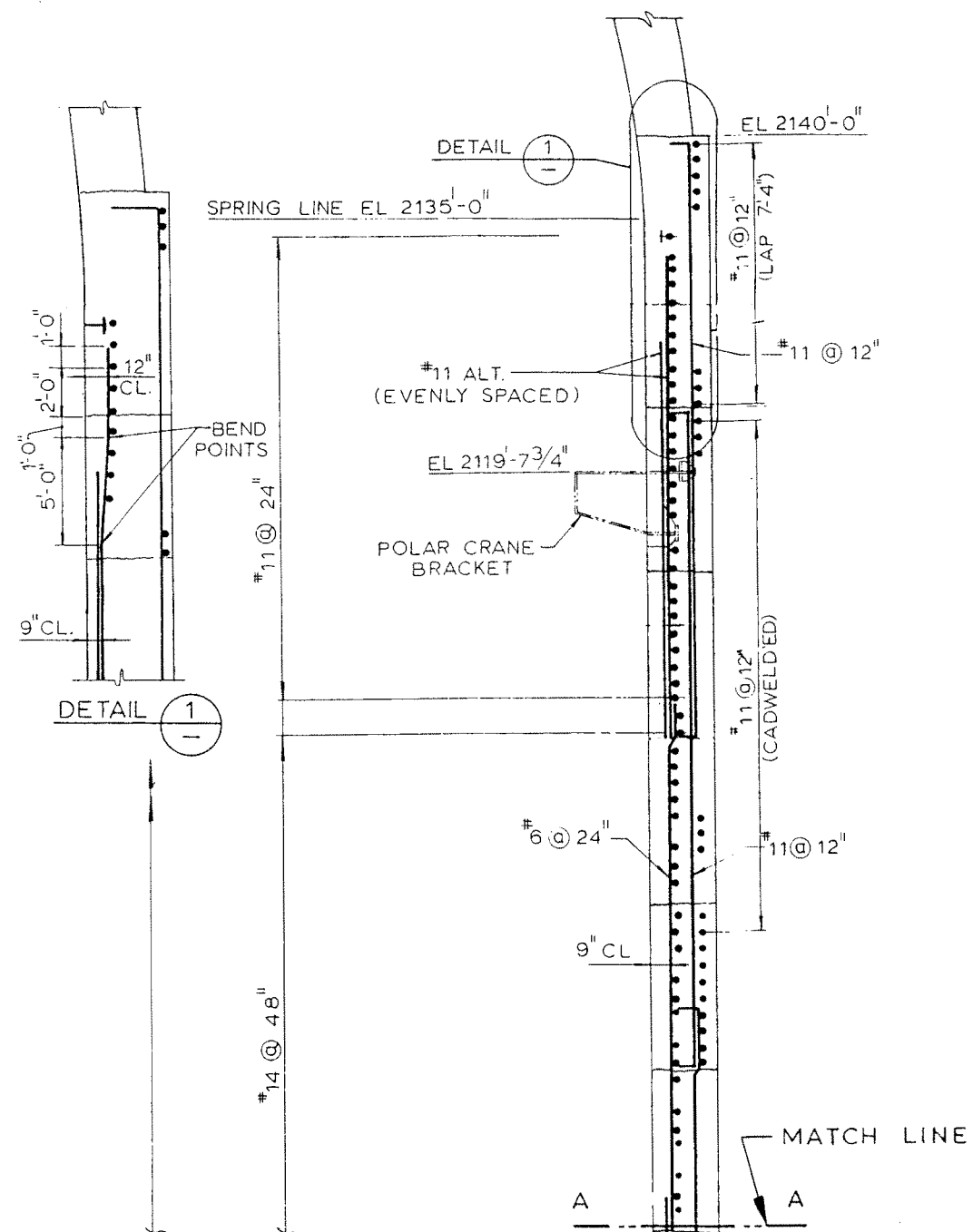
TYPICAL SECTION SHOWING SHEAR REINFORCING

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CALLAWAY PLANT

FIGURE 3.8-11

REACTOR BUILDING BASE MAT
REINFORCING – SHEAR TIE

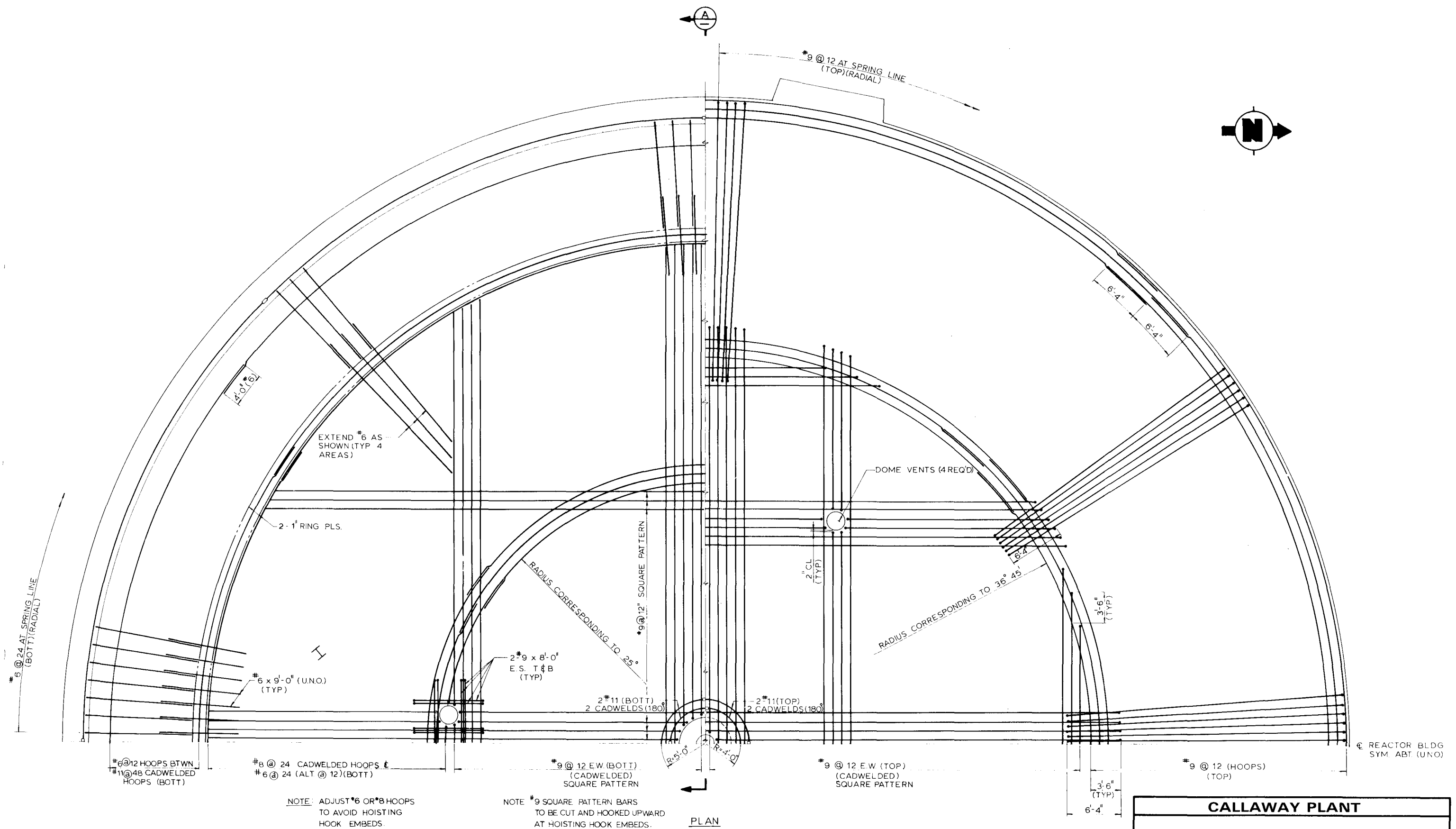


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FIGURE 3.8-12

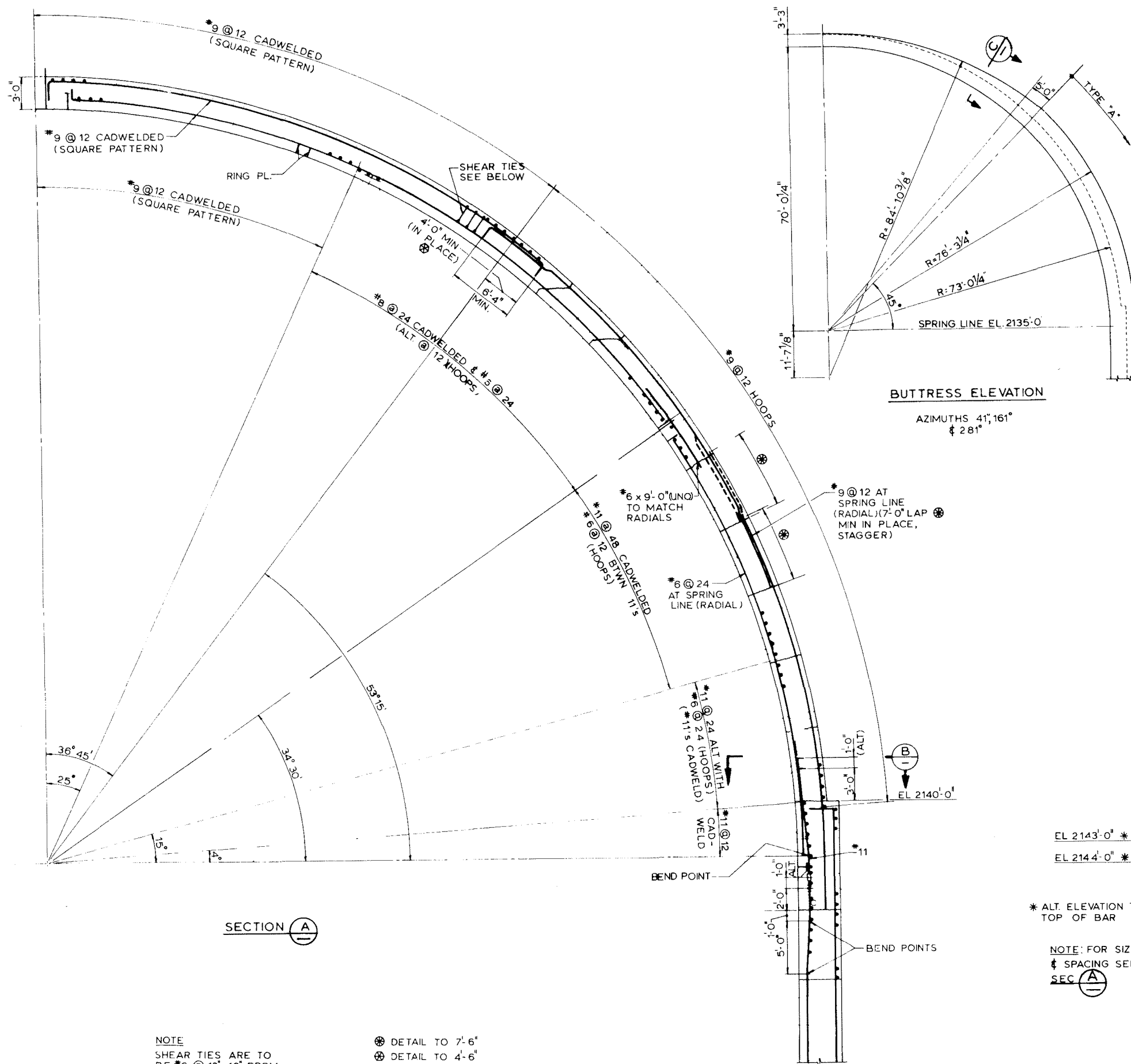
**REACTOR BUILDING
SHELL REINFORCING**



CALLAWAY PLANT

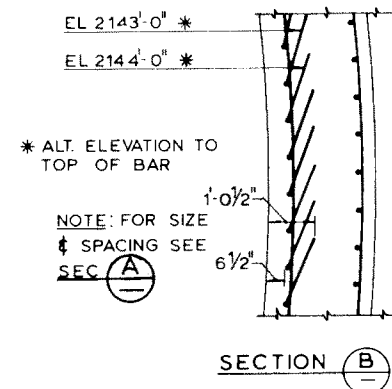
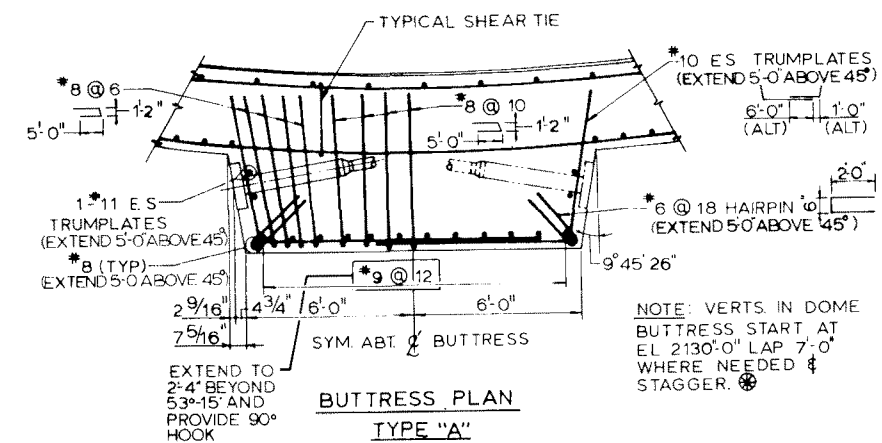
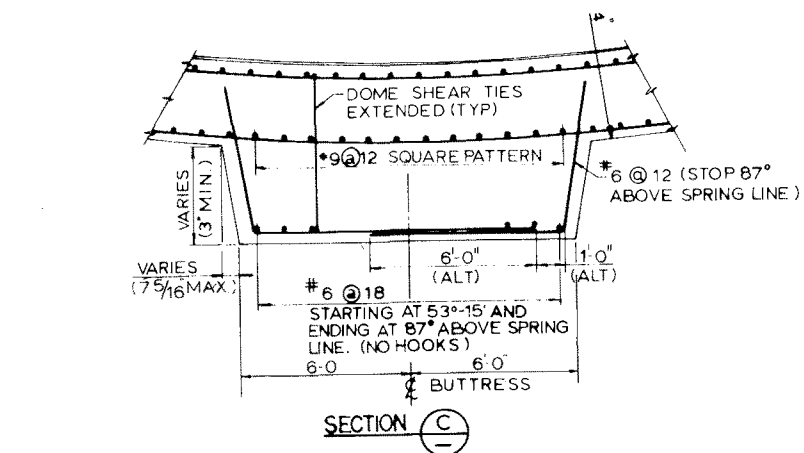
FIGURE 3.8-13

REACTOR BUILDING DOME REINFORCING-PLAN



BUTRESS ELEVATION

AZIMUTHS 41° 161°
281°

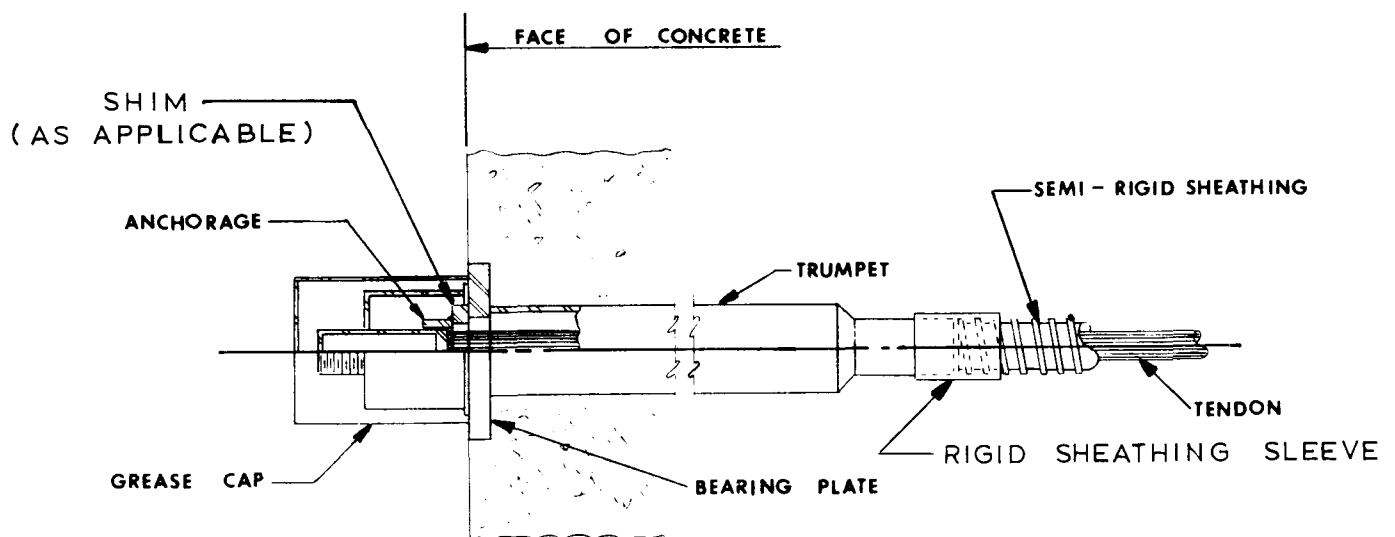


NOTE
SHEAR TIES ARE TO
BE #6 @ 12"x12" FROM
EL 2135'-0"

* DETAIL TO 7'-6"
* DETAIL TO 4'-6"
THE DETAILED LENGTH IS
PROVIDED FOR CONSTRUCTOR
FLEXIBILITY IN RESOLVING
INTERFERENCES WITH THE
REBAR HOOK AND TENDON
SHEATHING

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CALLAWAY PLANT
FIGURE 3.8-14
REACTOR BUILDING DOME REINFORCING-ELEVATION

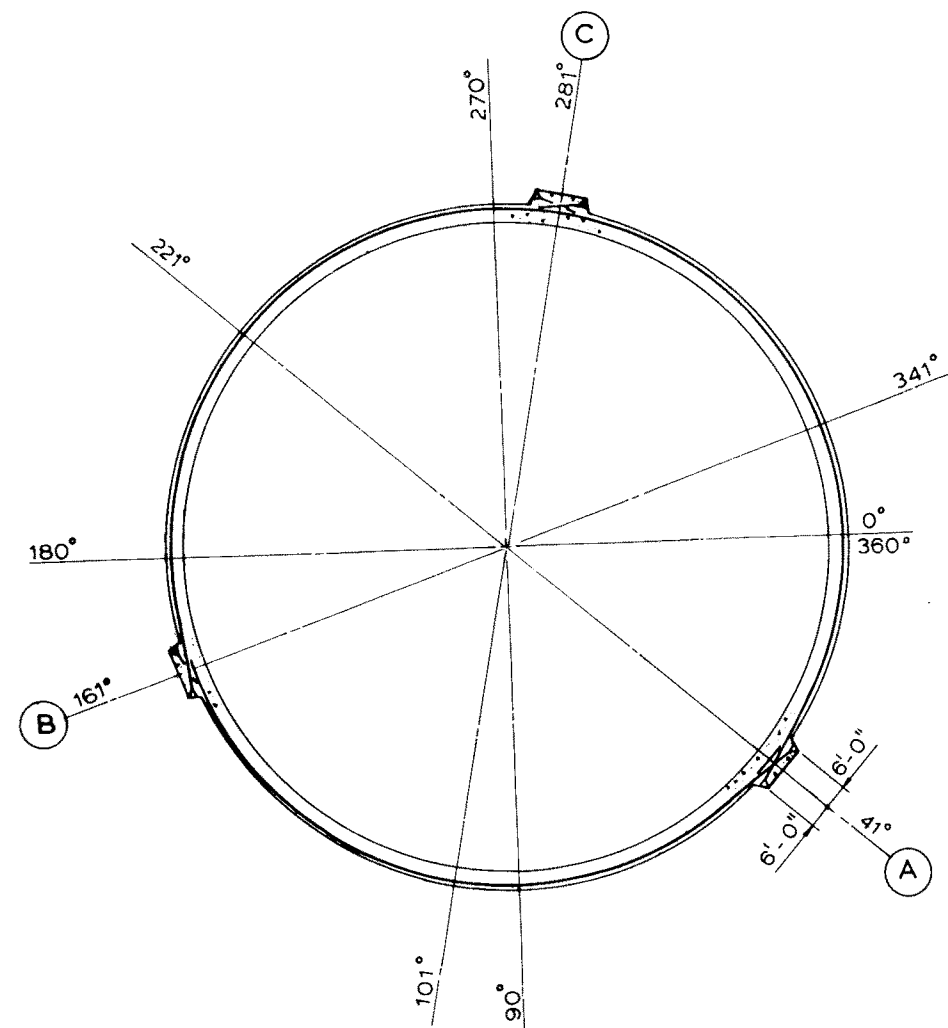


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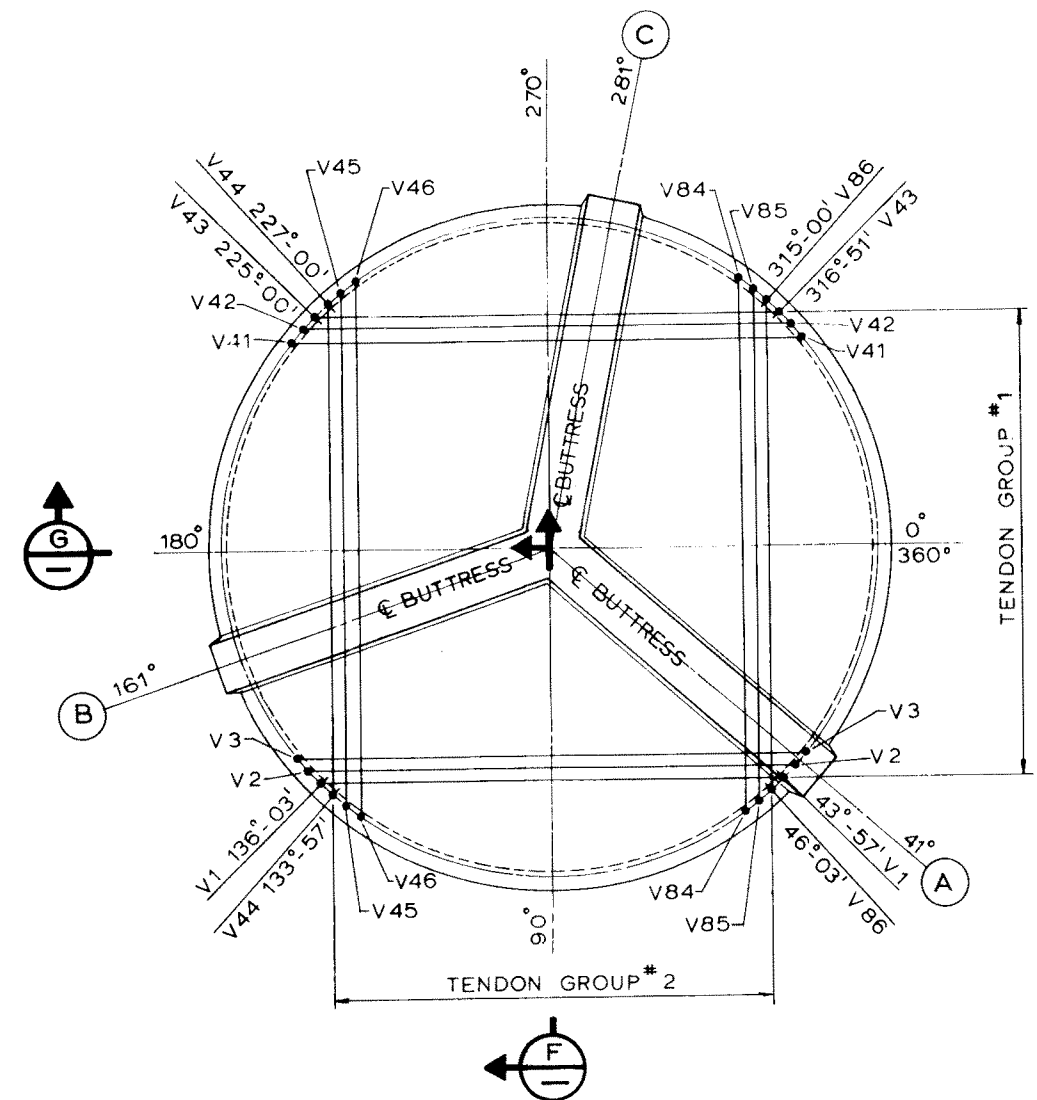
CALLAWAY PLANT

FIGURE 3.8-15

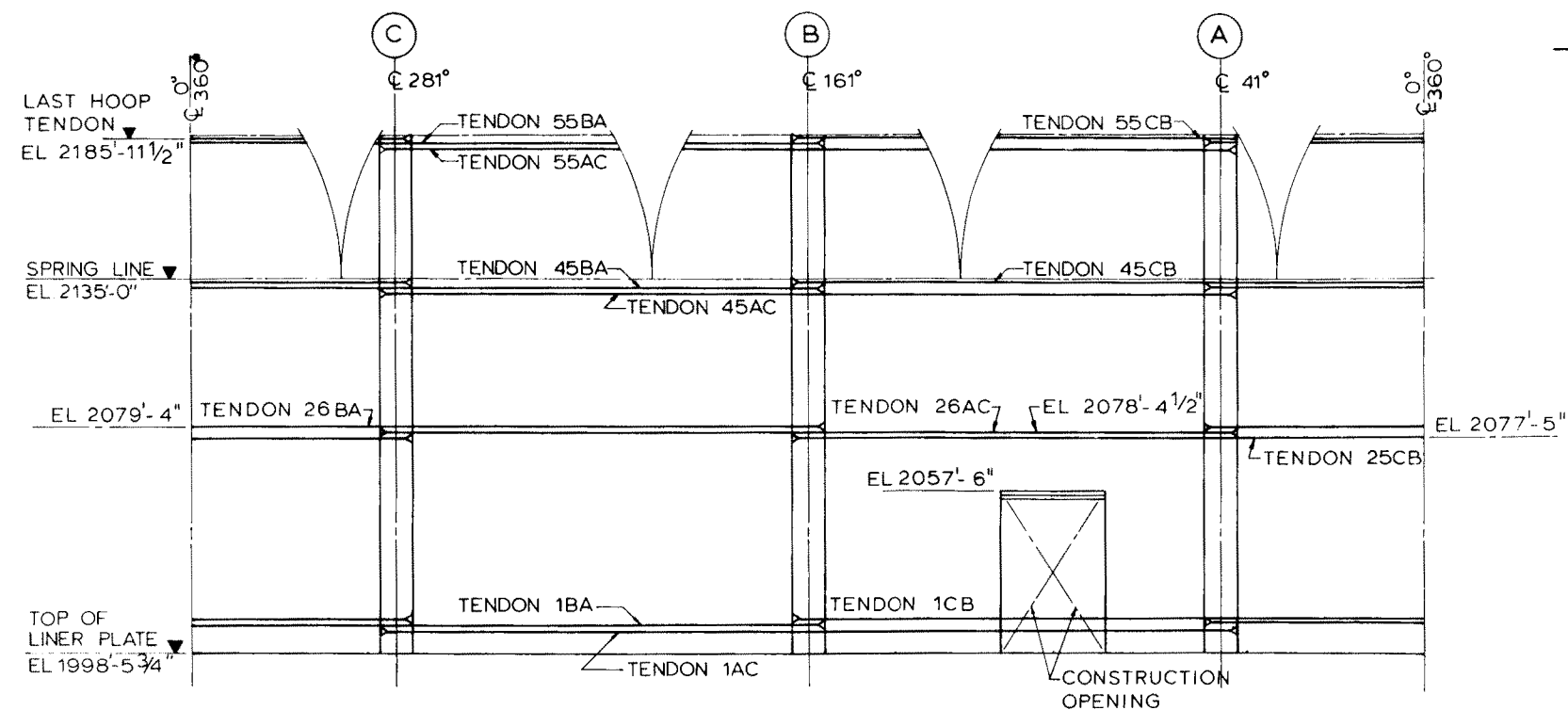
**REACTOR BUILDING
TENDON ANCHORAGE SYSTEM**



WALL PLAN
(HORIZONTALS)



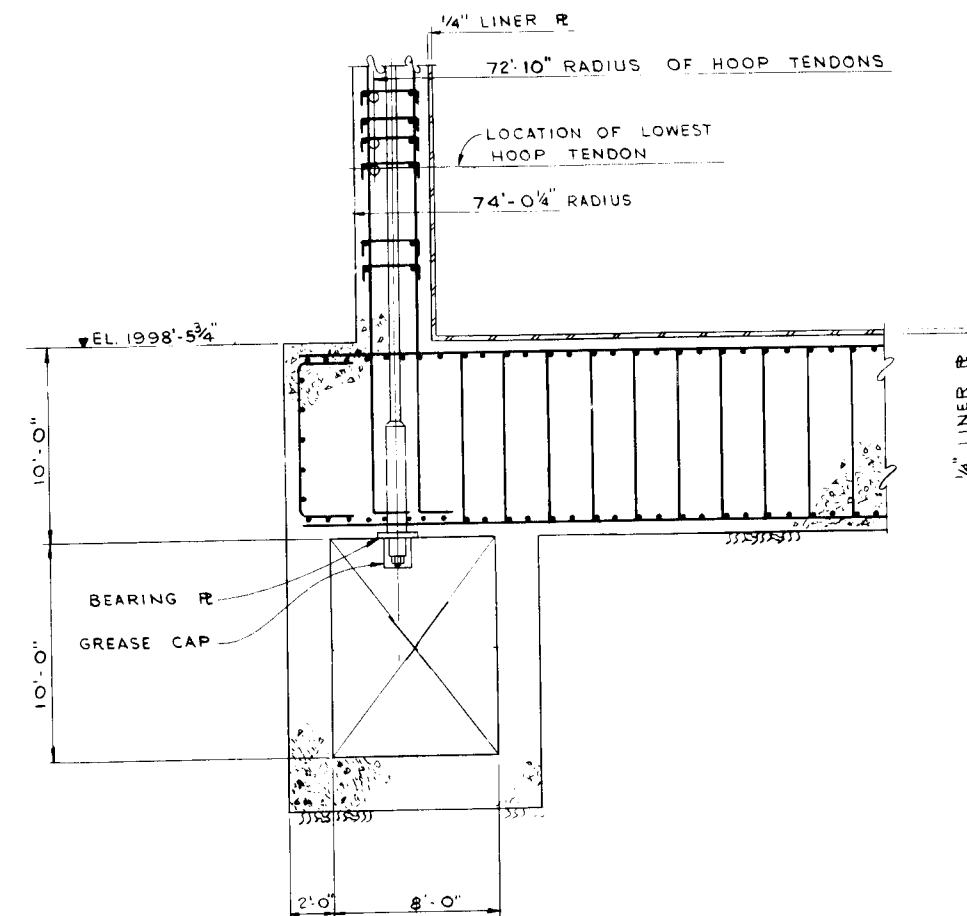
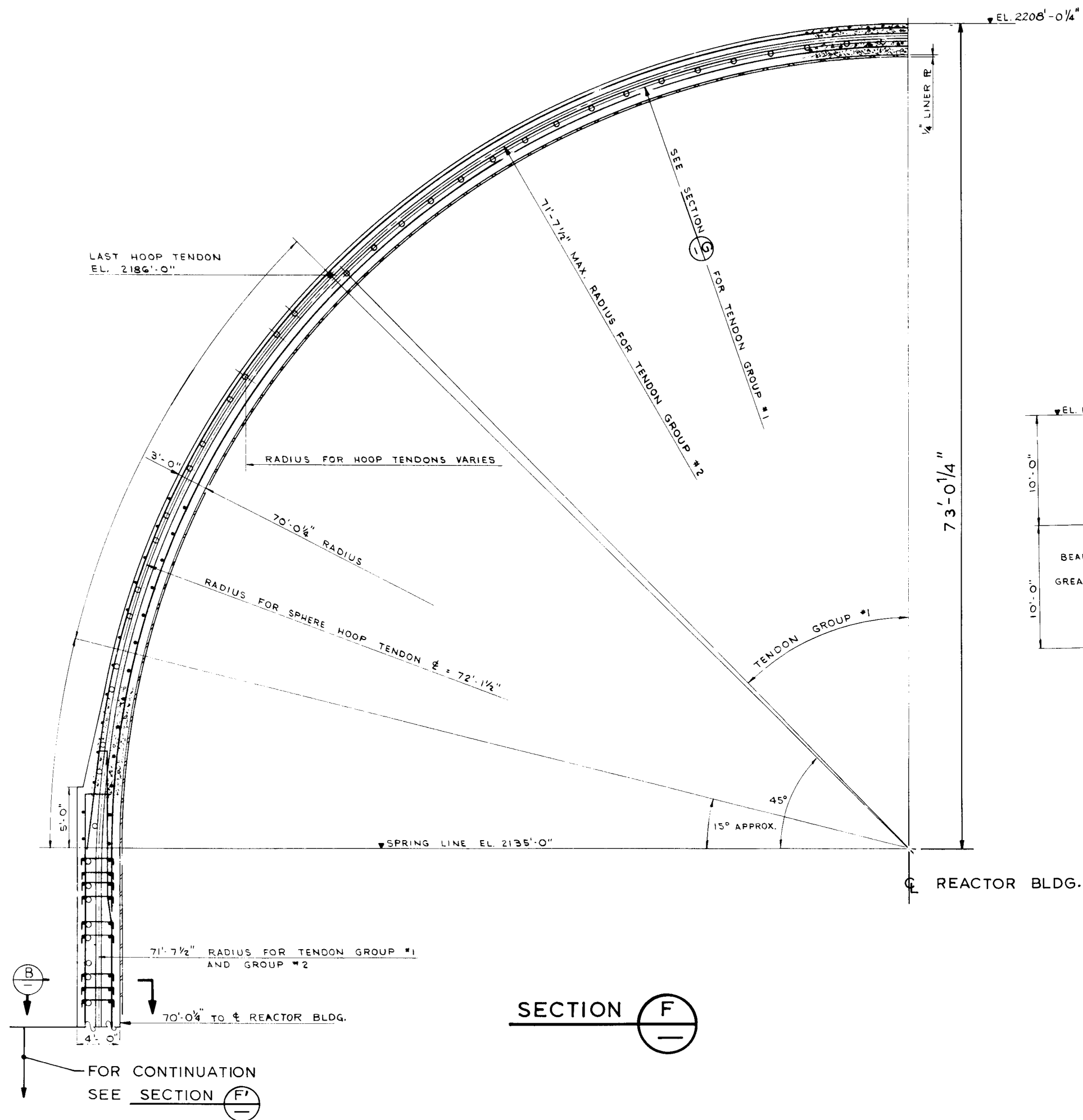
DOME PLAN
(VERTICALS)



WALL ELEVATION
HORIZONTALS

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CALLAWAY PLANT
FIGURE 3.8-16
REACTOR BUILDING TENDON AND BUTTRESS ARRANGEMENT



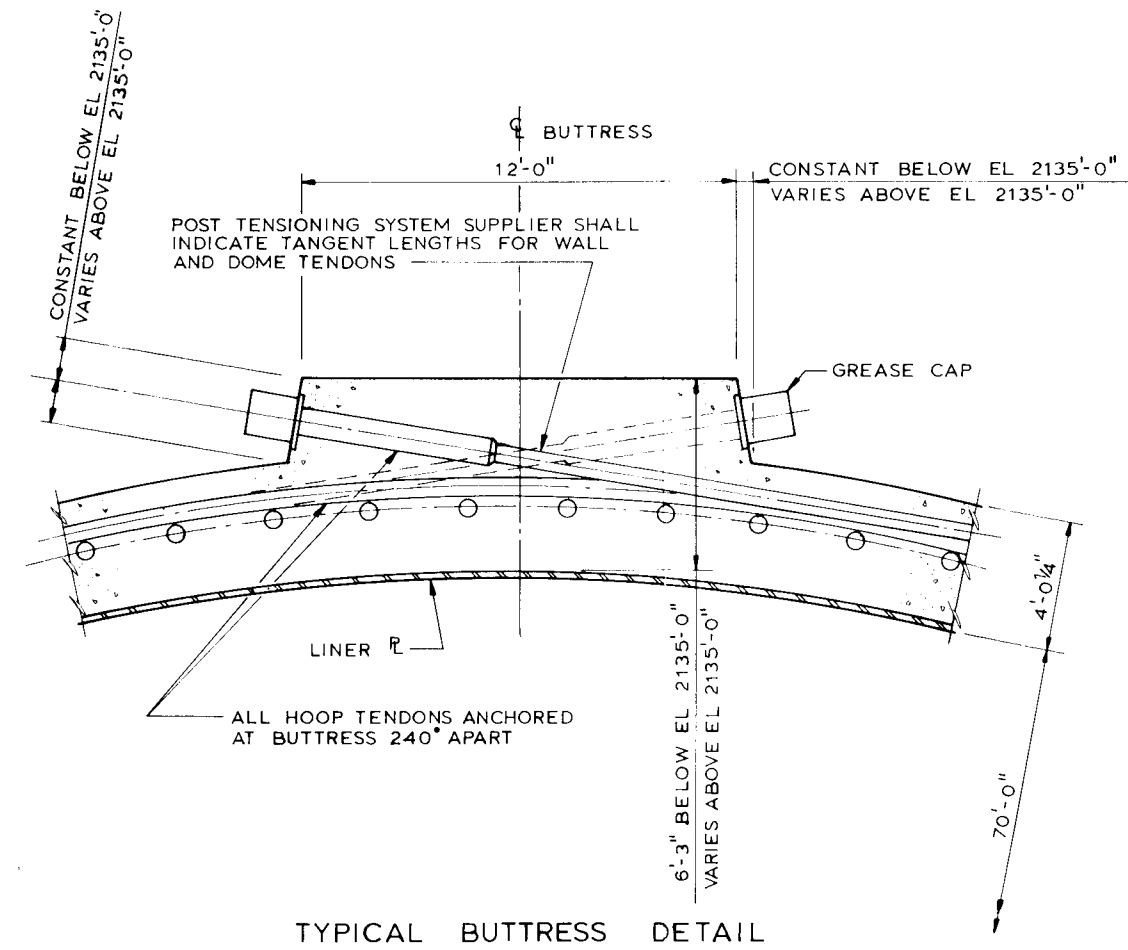
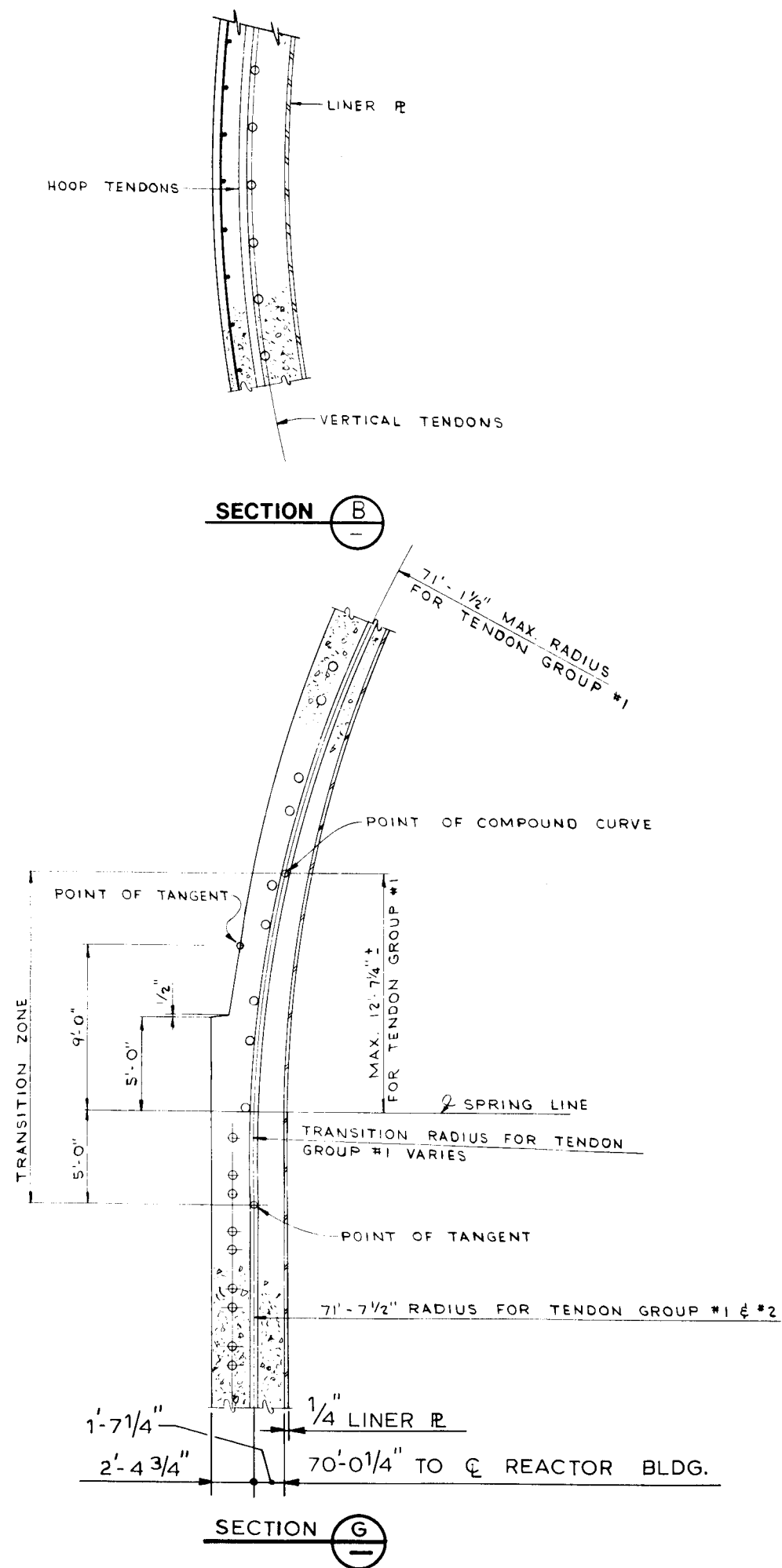
SECTION (F')

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CALLAWAY PLANT

FIGURE 3.8-17

REACTOR BUILDING
TENDONS - SECTIONS

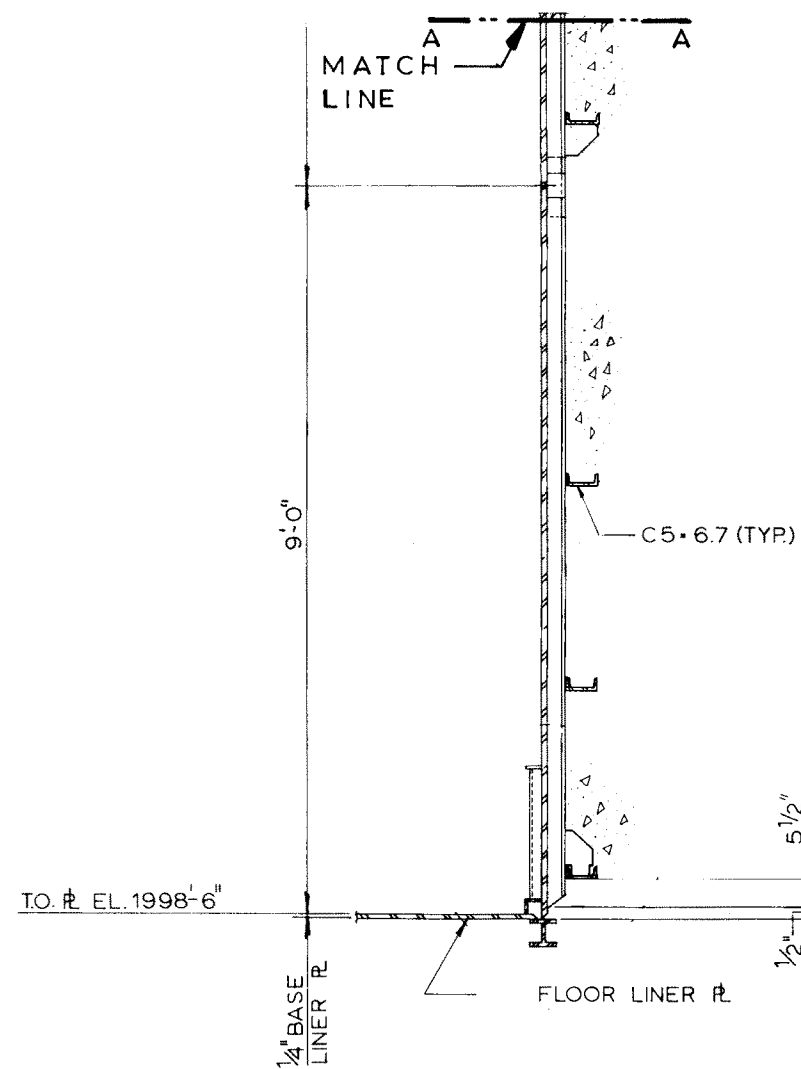


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CALLAWAY PLANT

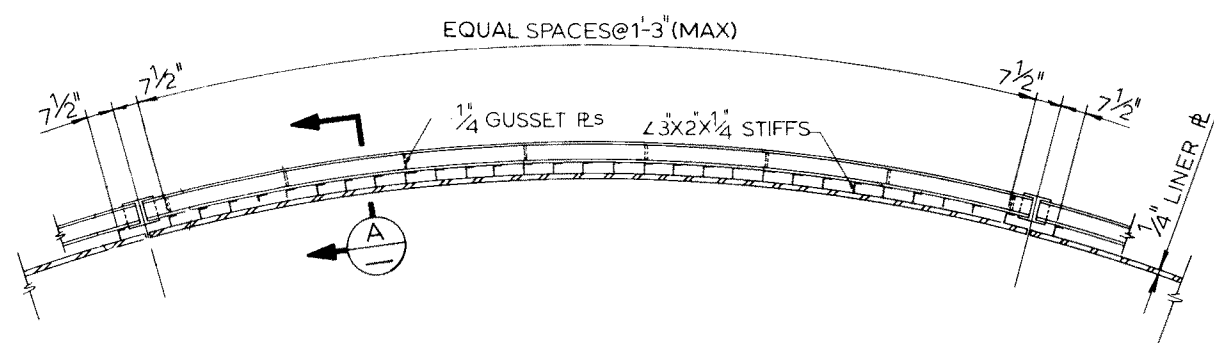
FIGURE 3.8-18

**REACTOR BUILDING
TENDONS – ADDITIONAL SECTIONS**

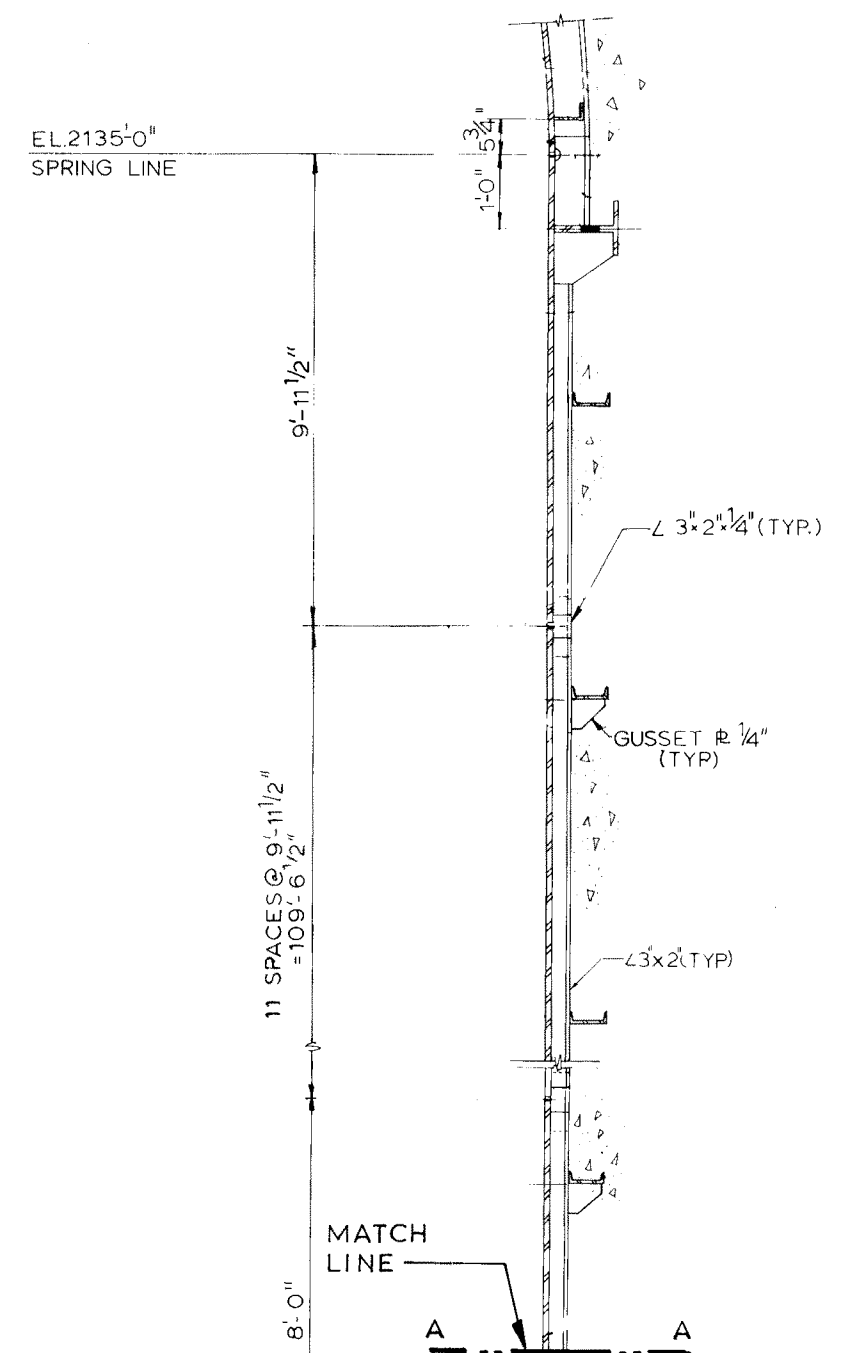


SECTION A

TYPICAL SECTION THRU WALL LINER PLATE



PLAN-TYPICAL SEGMENT OF LINER PLATE

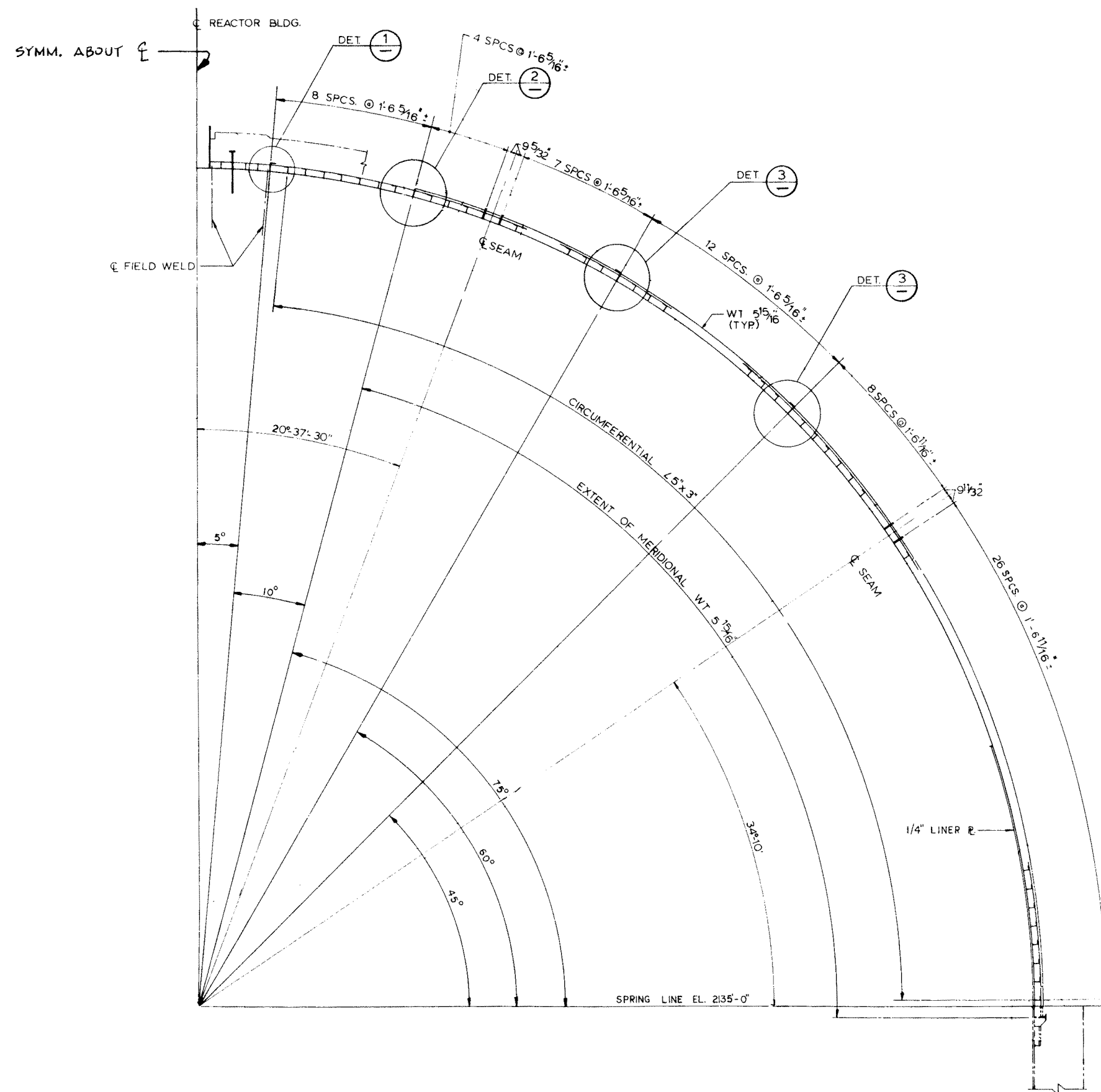


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CALLAWAY PLANT

FIGURE 3.8-19

REACTOR BUILDING LINER PLATE –
TYPICAL WALL SECTIONS

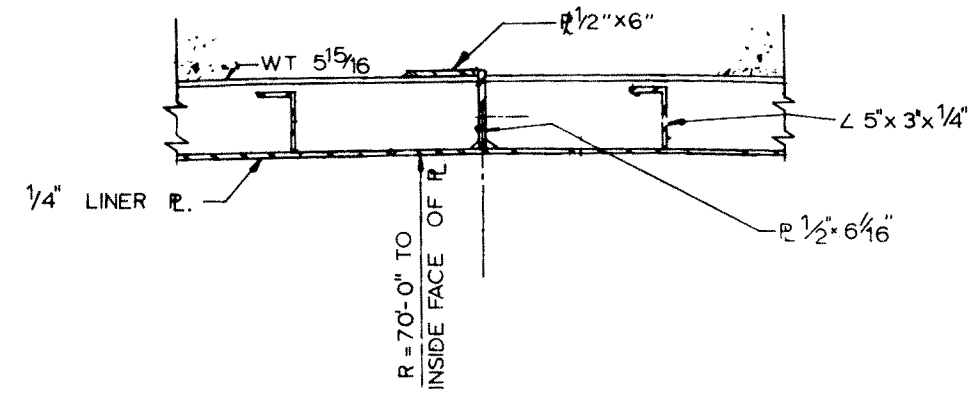


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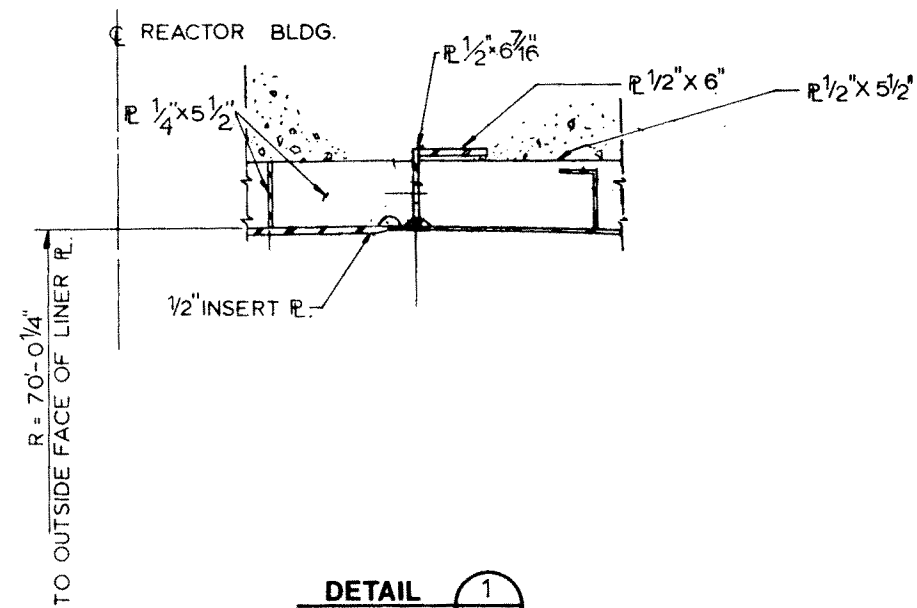
CALLAWAY PLANT

FIGURE 3.8-21

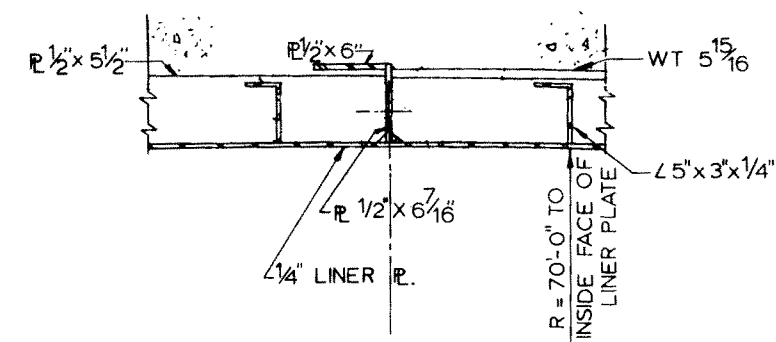
**REACTOR BUILDING LINER PLATE —
TYPICAL DOME SECTION**



DETAIL 3



DETAIL 1



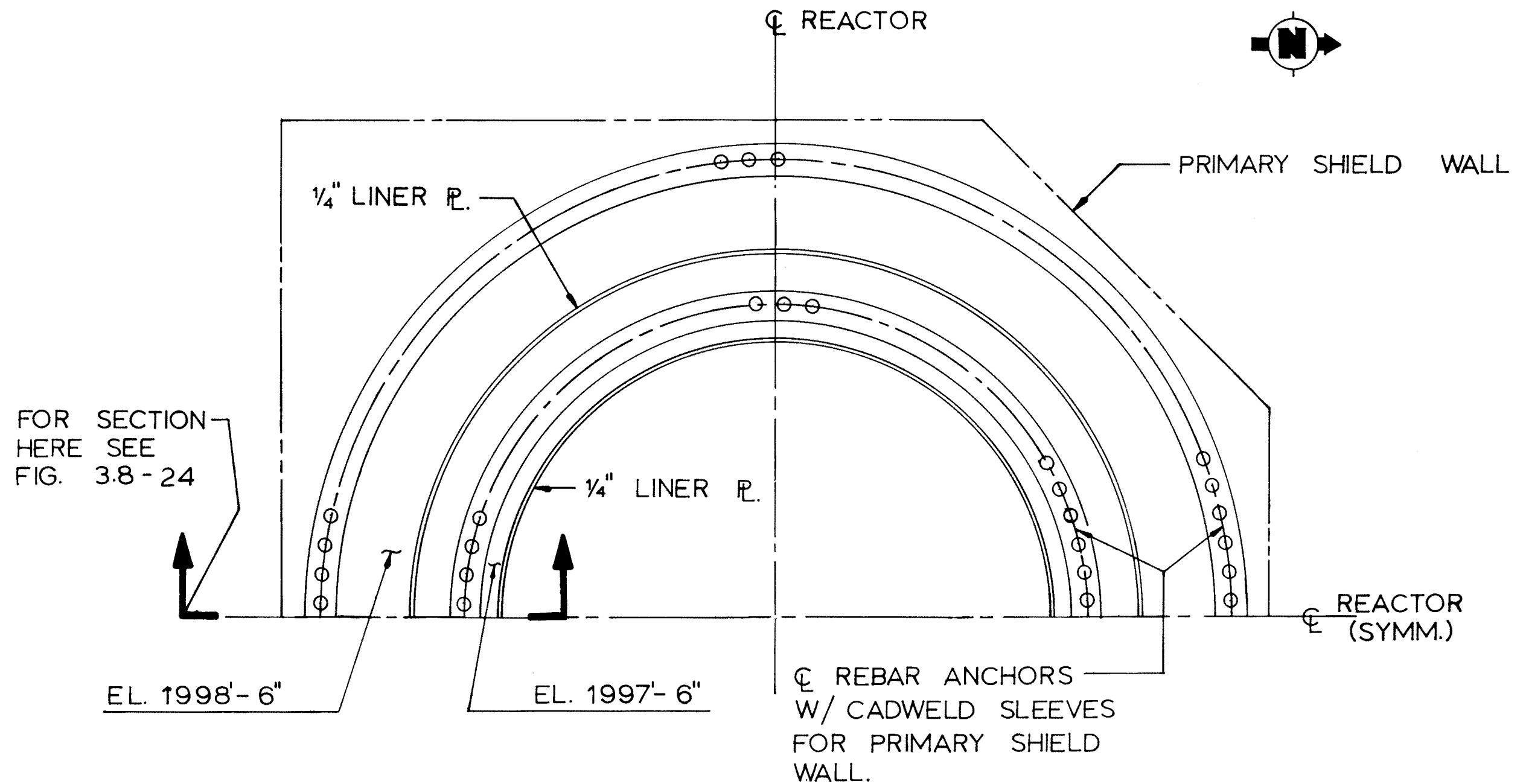
DETAIL 2

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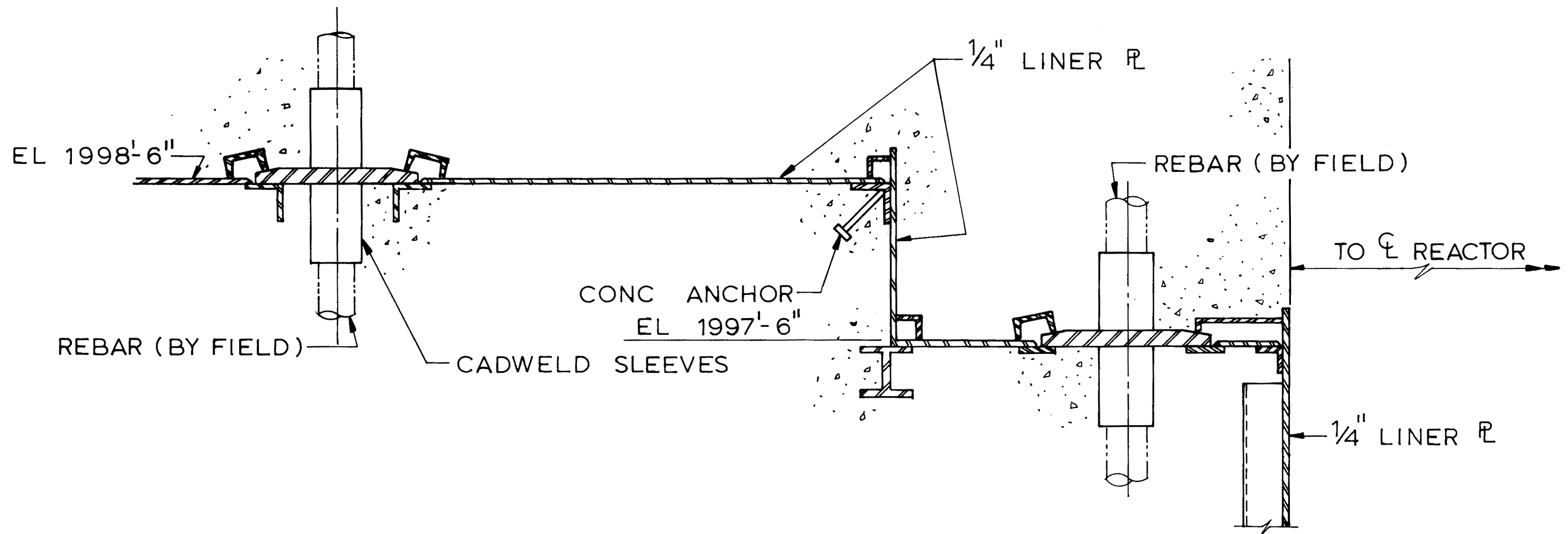
FIGURE 3.8-22

REACTOR BUILDING LINER PLATE --
DOME DETAILS



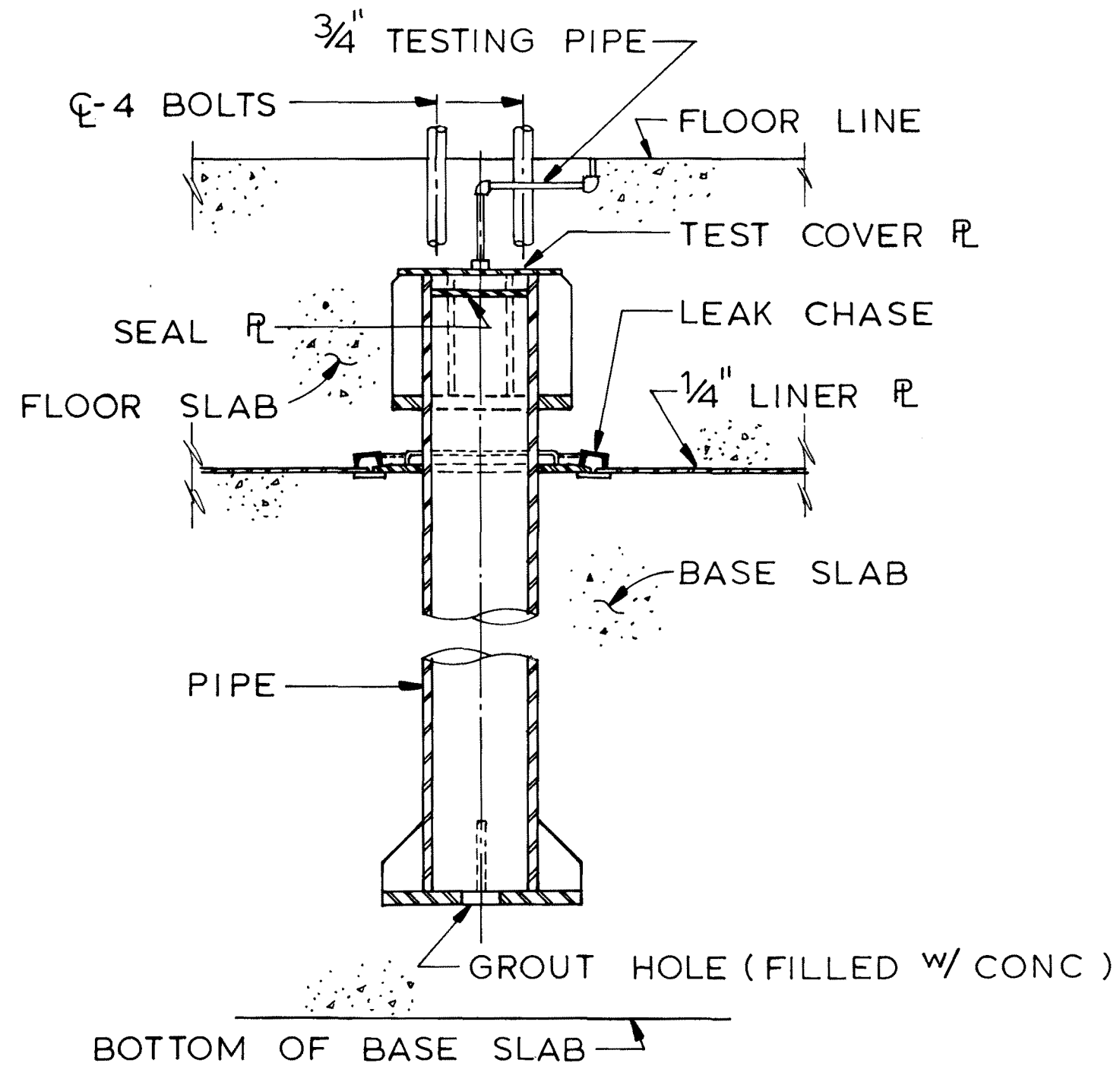
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CALLAWAY PLANT
FIGURE 3.8-23
ANCHORAGE AT REACTOR CAVITY - PLAN VIEW



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CALLAWAY PLANT
FIGURE 3.8-24
ANCHORAGE AT REACTOR CAVITY – TYPICAL SECTION

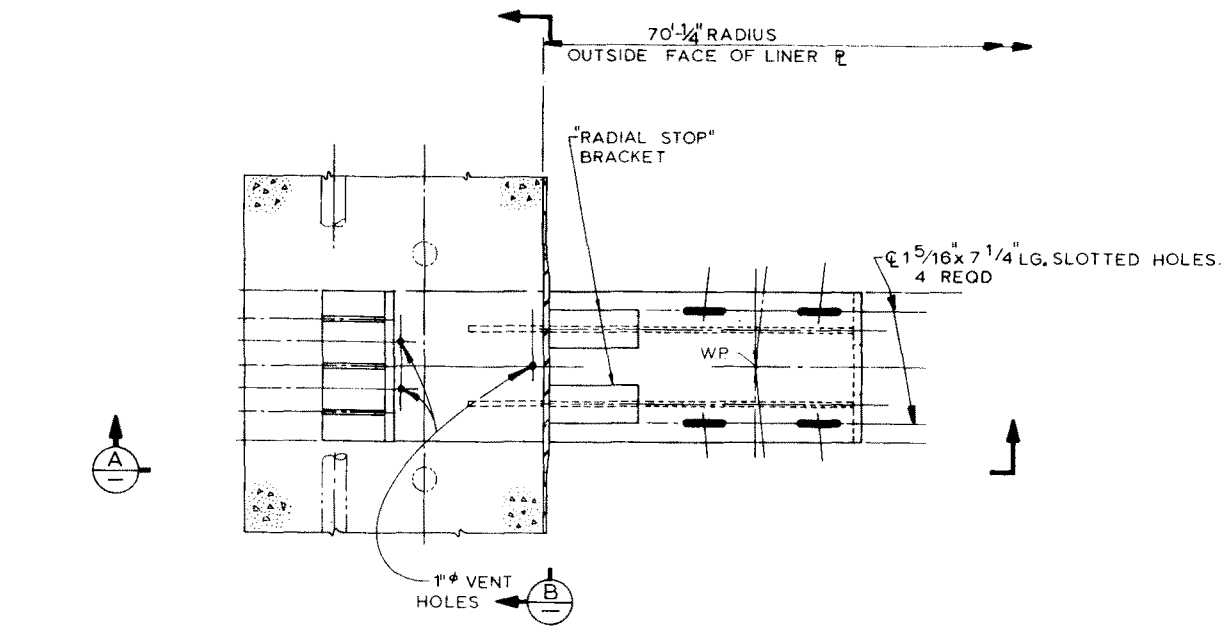


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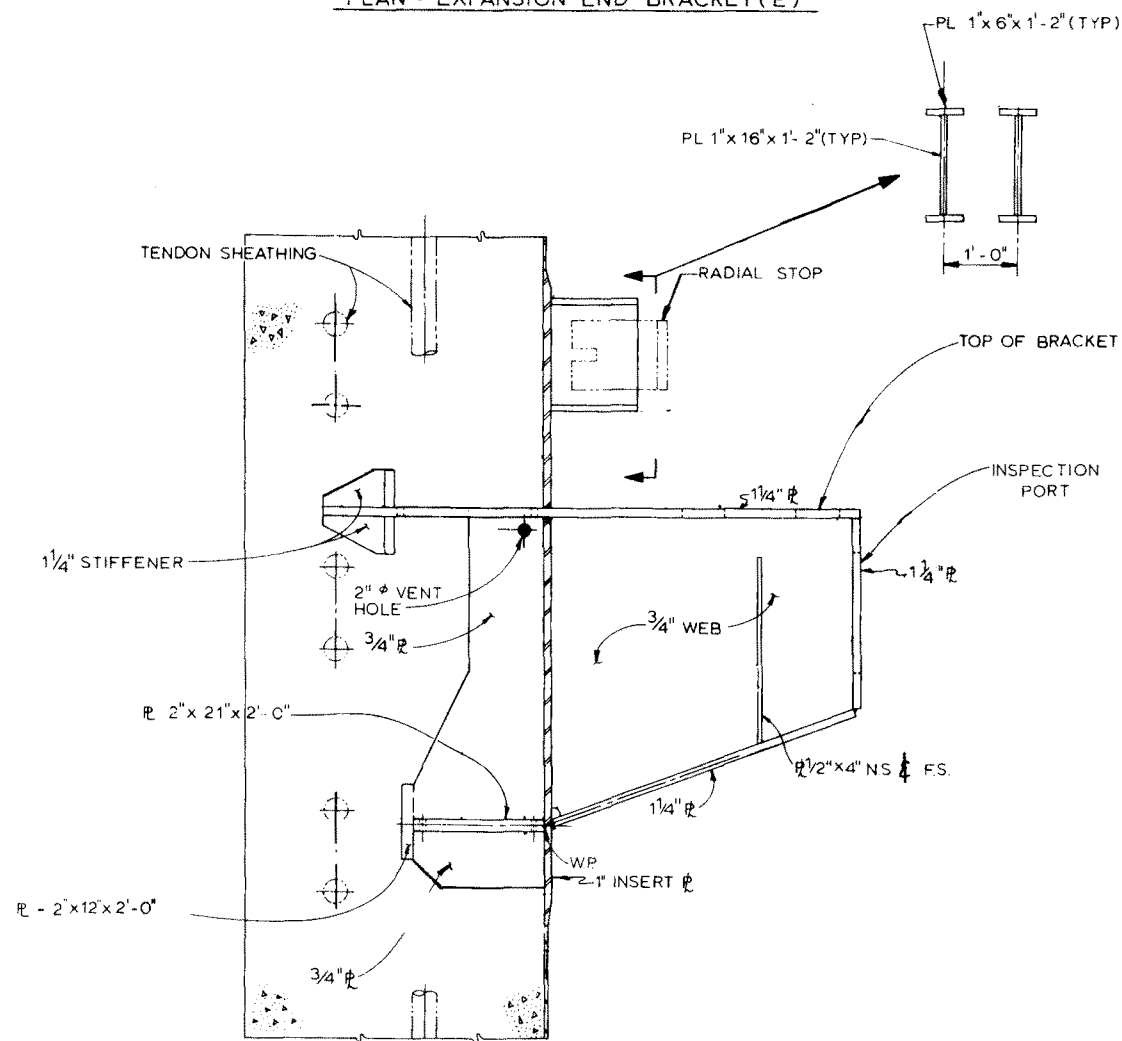
CALLAWAY PLANT

FIGURE 3.8-25

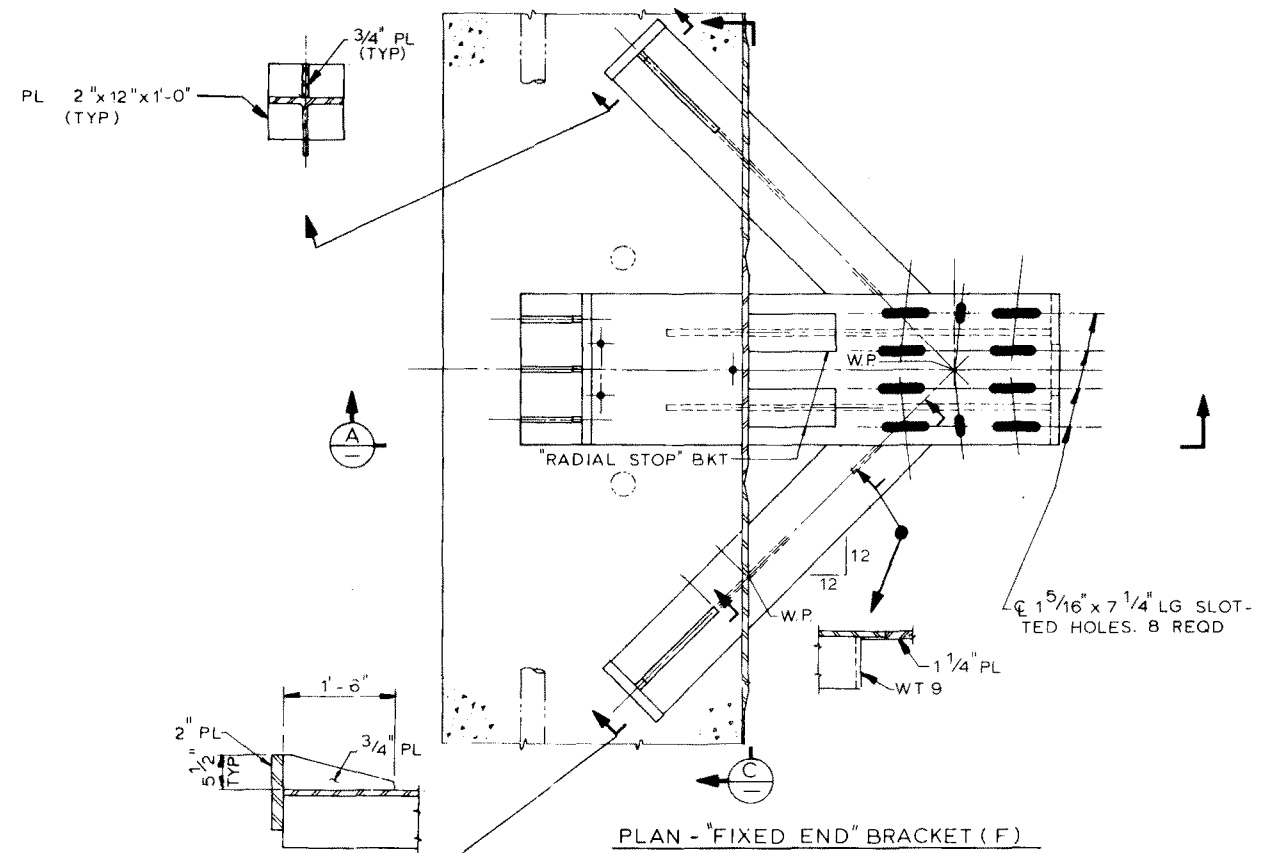
**TYPICAL ANCHORAGE THROUGH BASE
MAT FOR NSSC EQUIPMENT SUPPORTS**



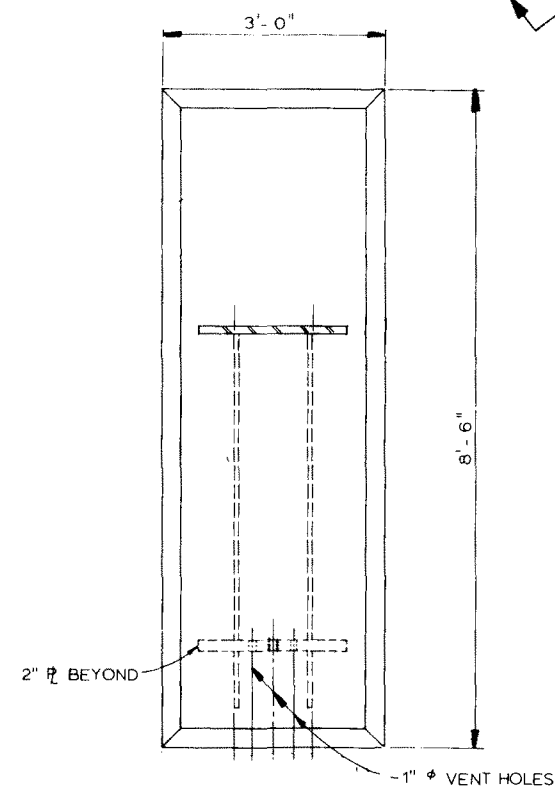
PLAN - "EXPANSION END" BRACKET (E)



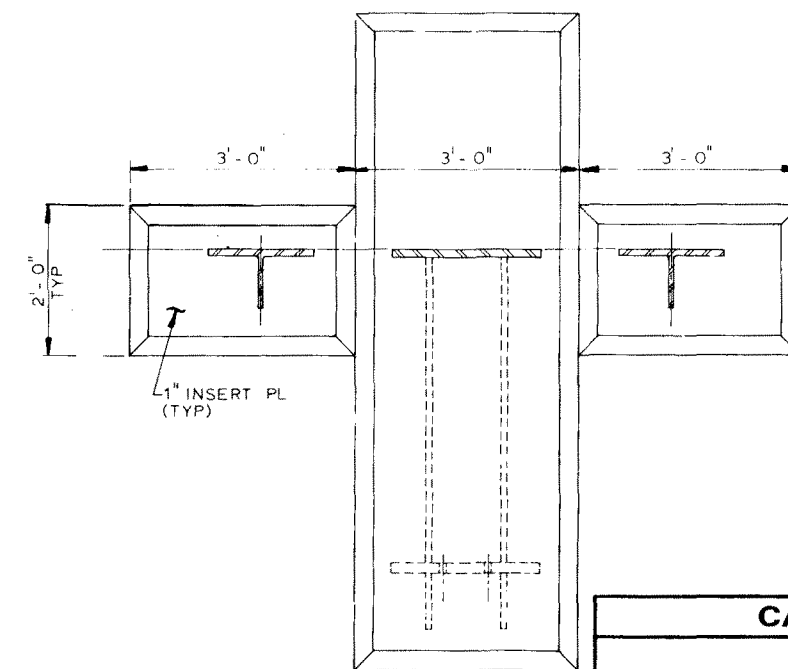
SECTION A



PLAN - "FIXED END" BRACKET (F)



SECTION B

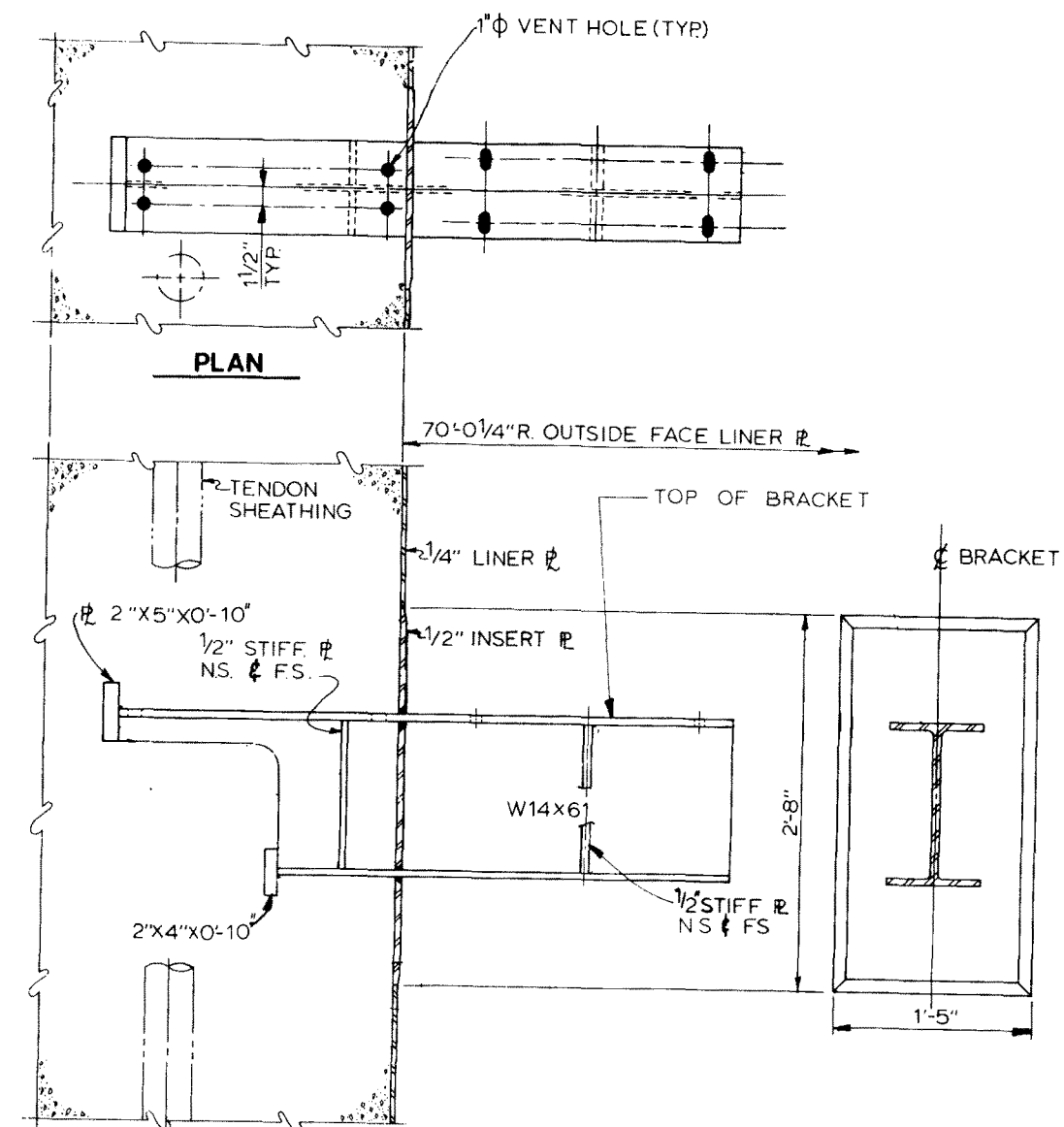
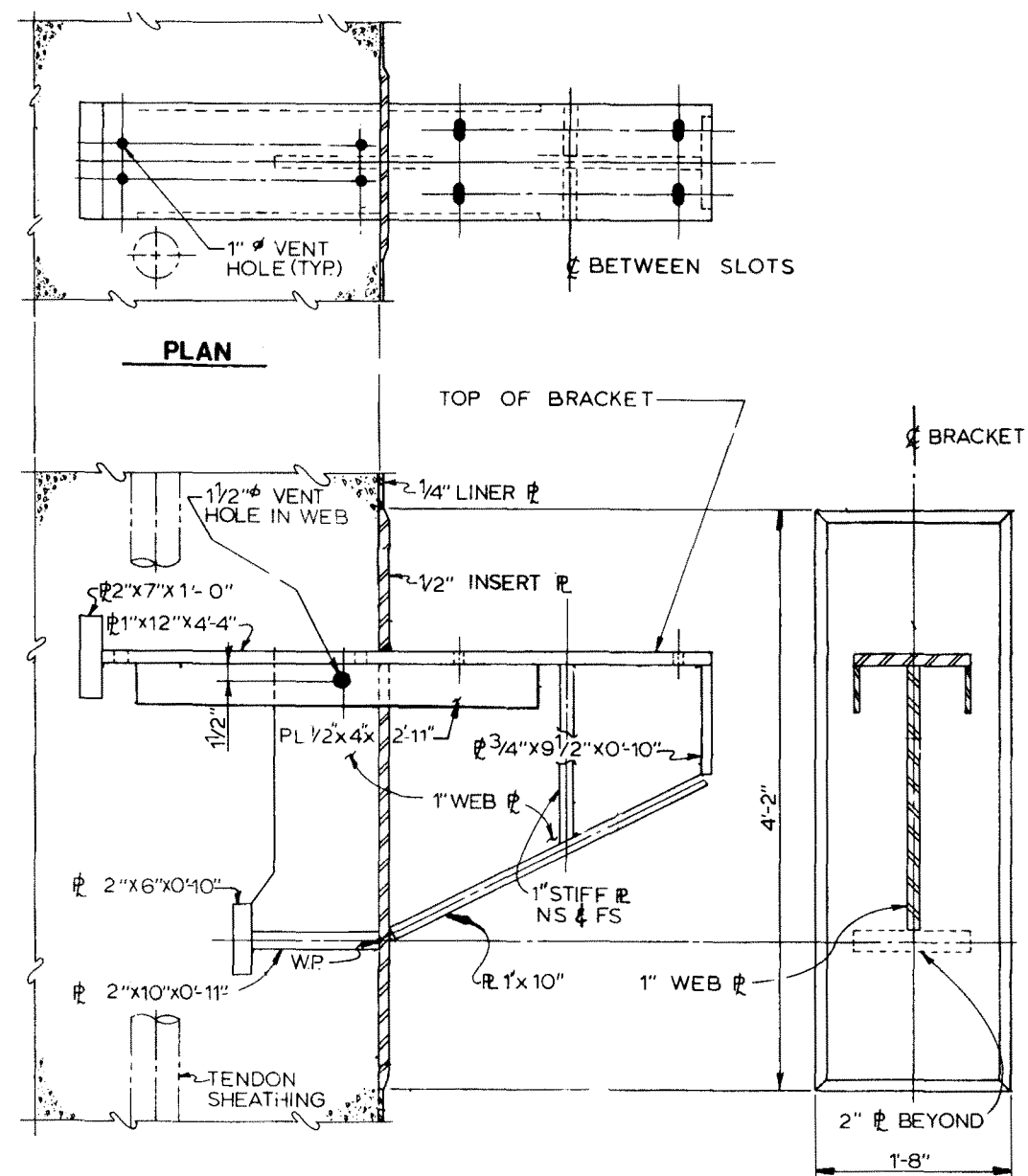


SECTION C

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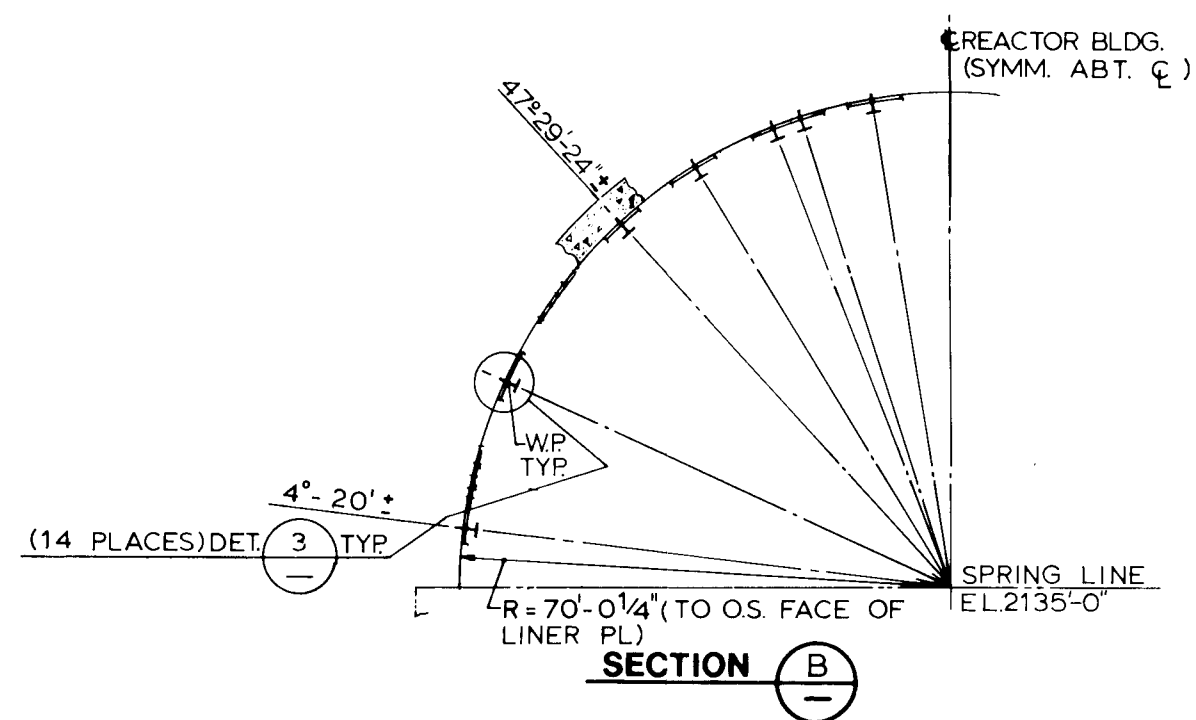
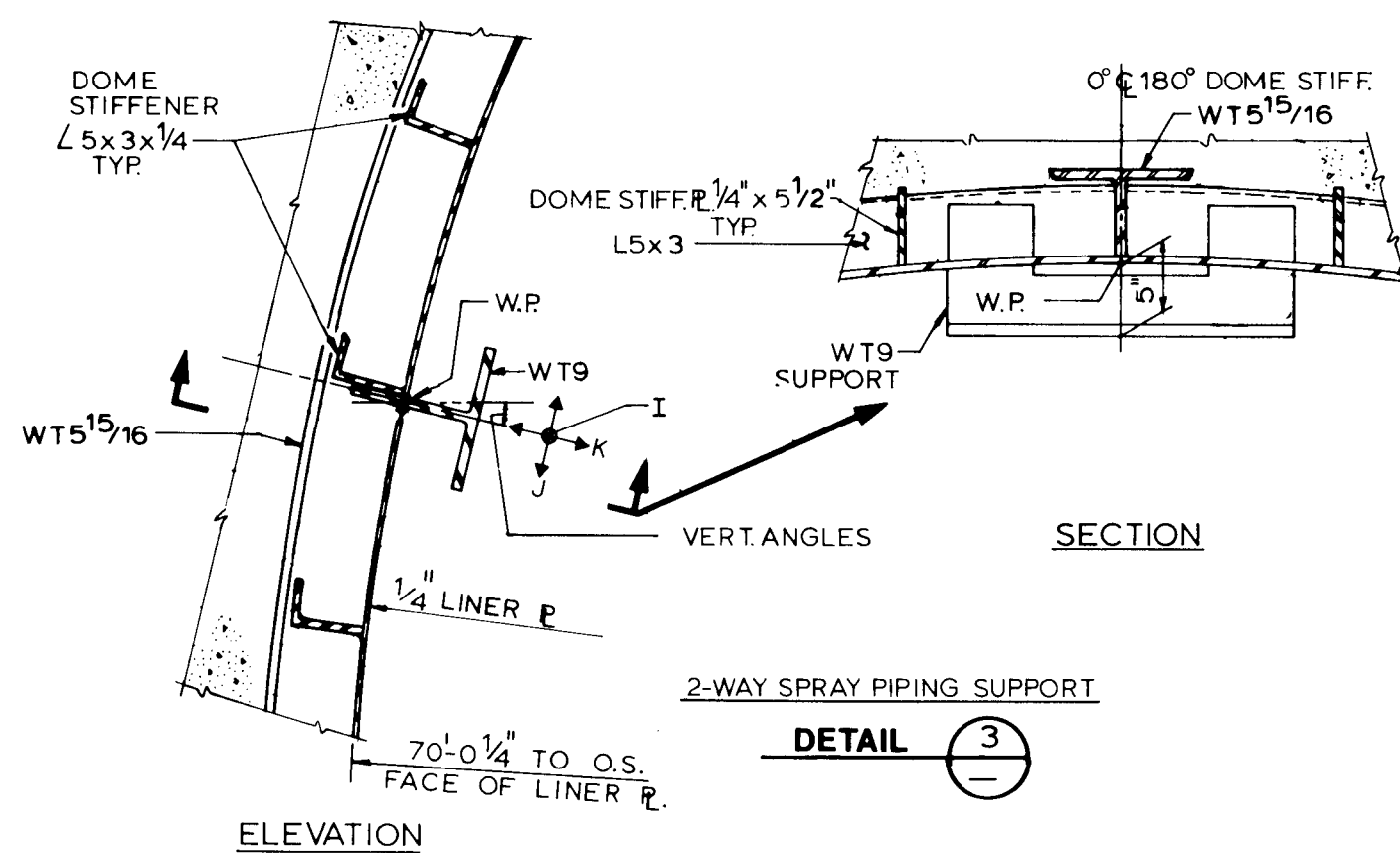
CALLAWAY PLANT

FIGURE 3.8-26
REACTOR BUILDING
POLAR CRANE BRACKETS



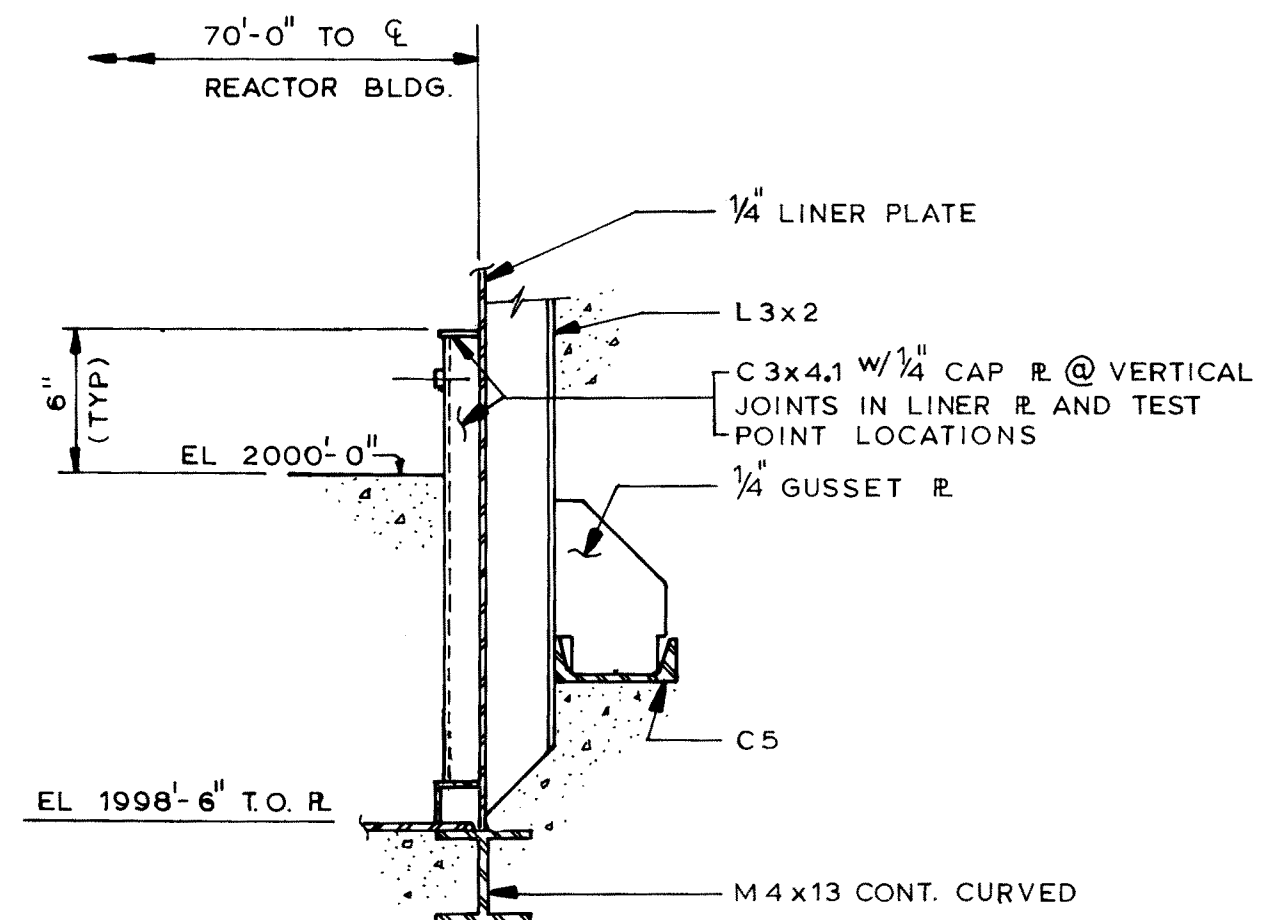
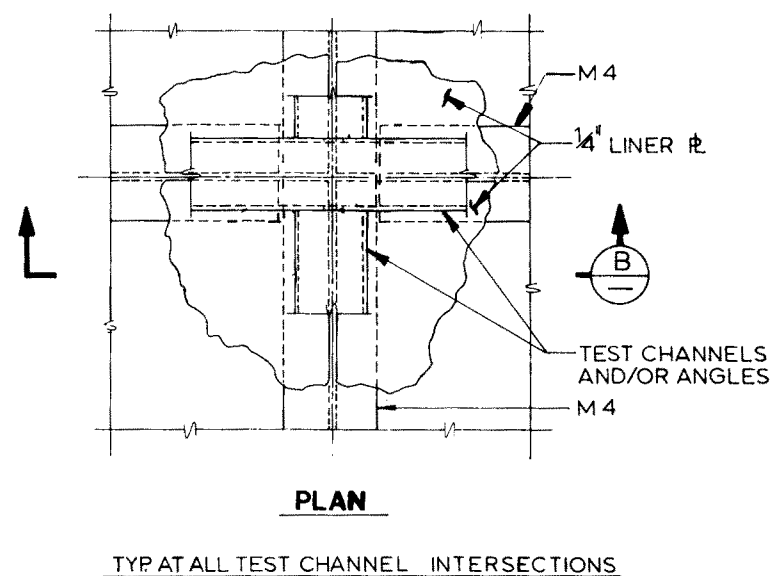
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CALLAWAY PLANT
FIGURE 3.8-27
REACTOR BUILDING SHELL TYPICAL BEAM SUPPORT BRACKETS

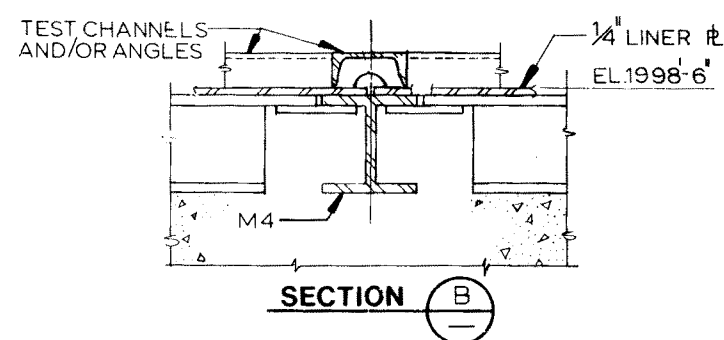


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CALLAWAY PLANT
FIGURE 3.8-28
REACTOR BUILDING – TYPICAL PIPE SUPPORT BRACKETS IN DOME



TYPICAL LEAK CHASE ADJACENT TO WALL

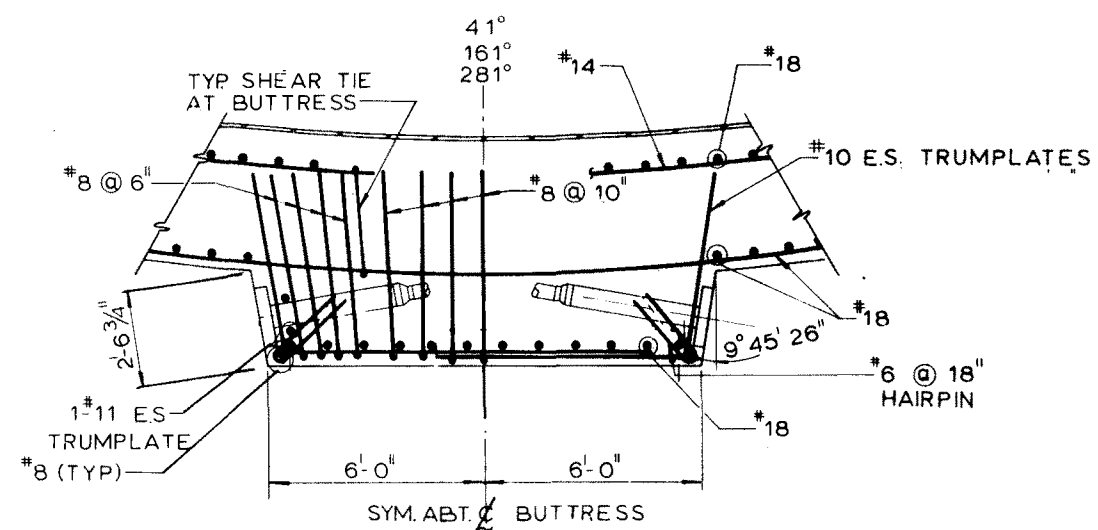


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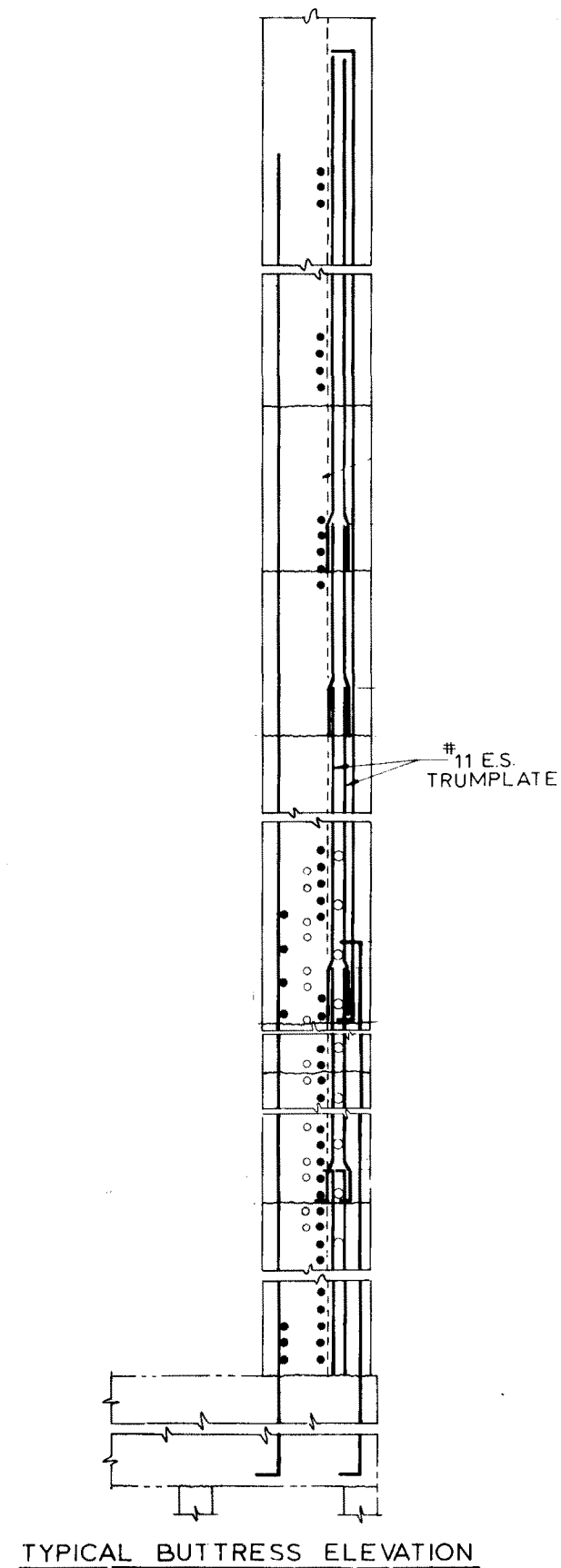
CALLAWAY PLANT

FIGURE 3.8-29

REACTOR BUILDING LINER PLATE
LEAK CHASE - TYPICAL DATA



PLAN OF BUTTRESS @ SHELL WALL

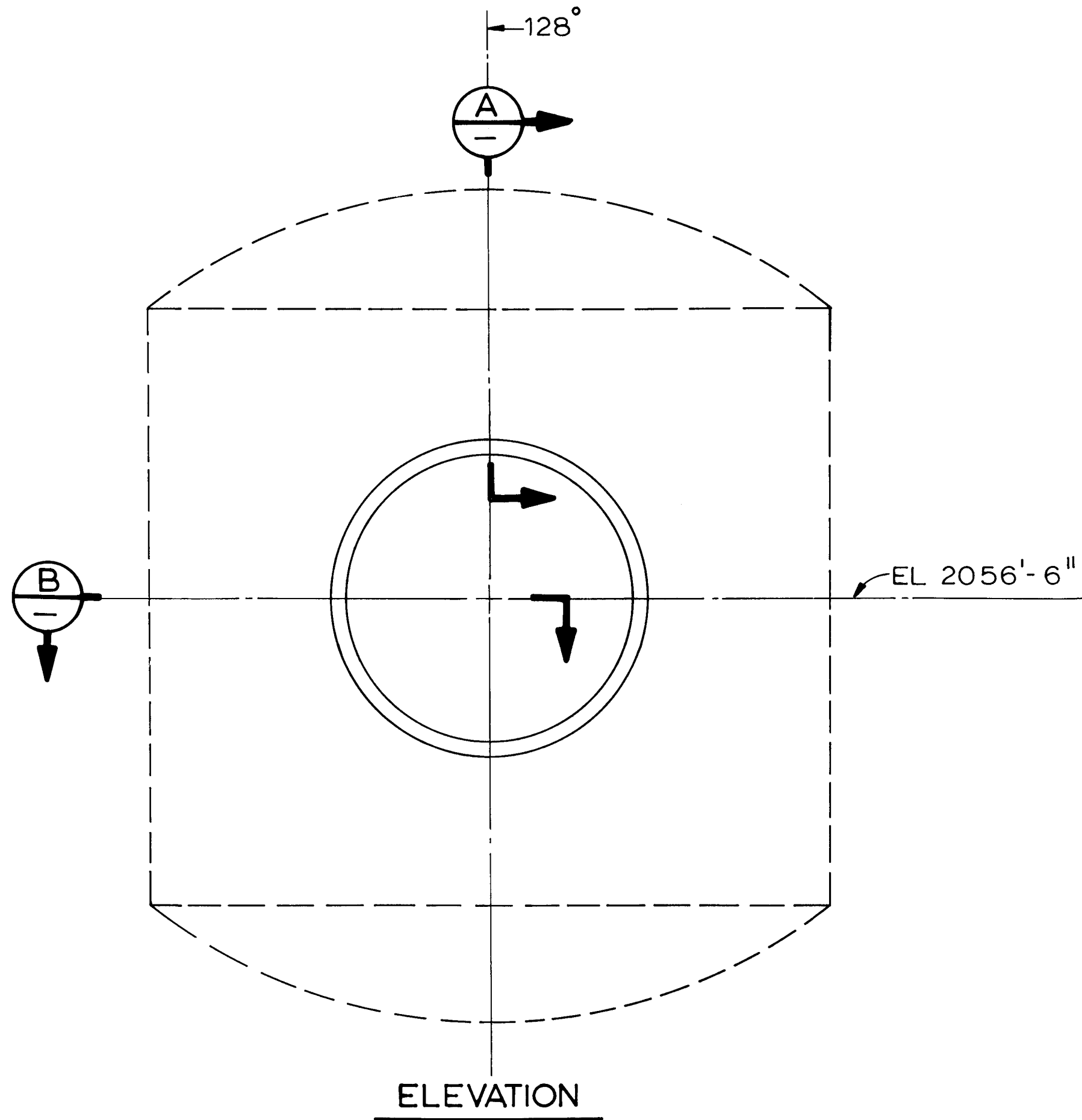


CALLAWAY PLANT

FIGURE 3.8-30

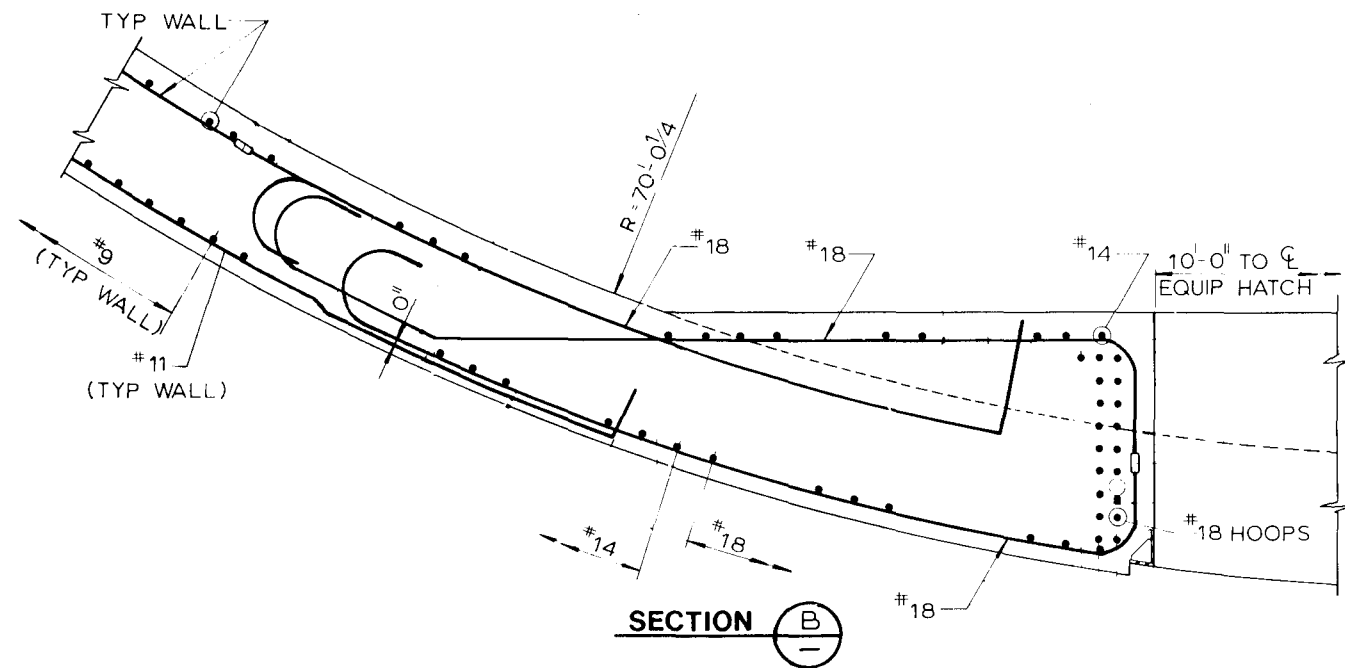
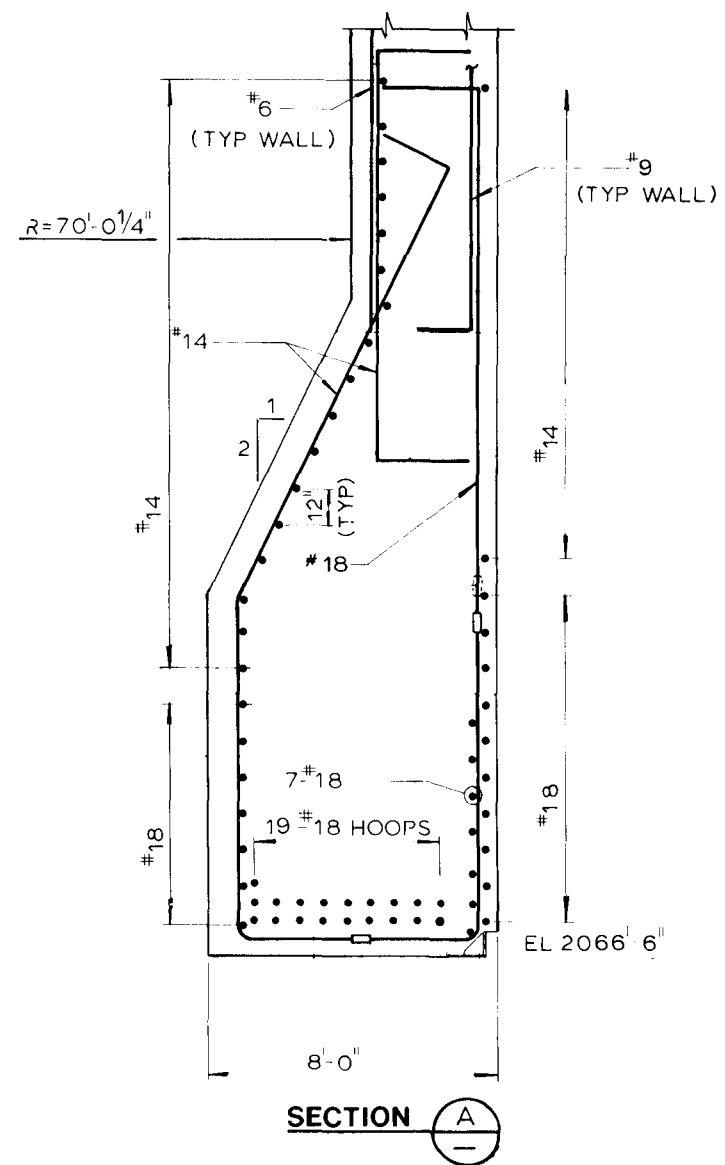
REACTOR BUILDING
BUTTRESS DETAILS

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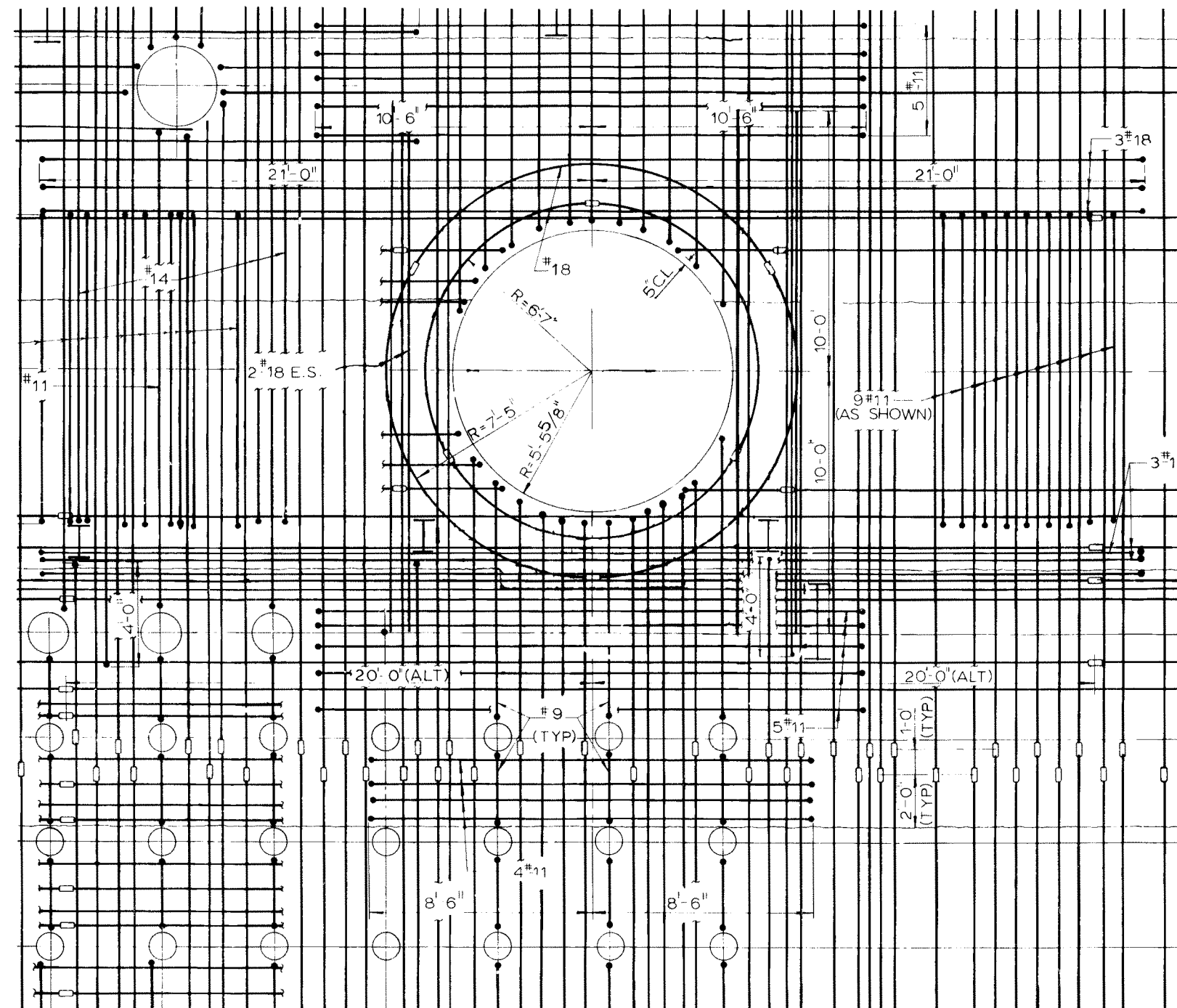
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CALLAWAY PLANT
FIGURE 3.8-31
REACTOR BUILDING EQUIPMENT HATCH OPENING



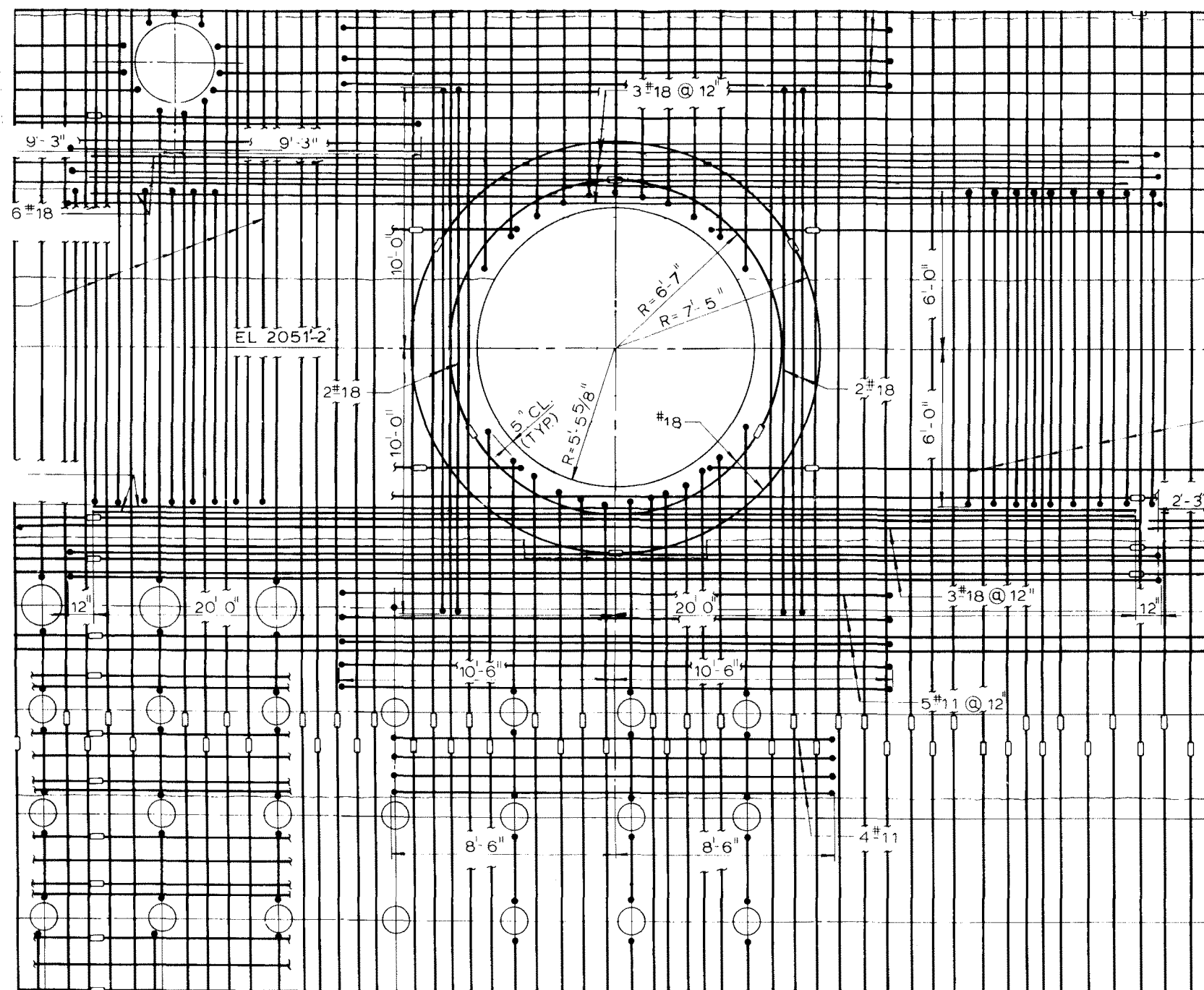
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CALLAWAY PLANT
FIGURE 3.8-32
REACTOR BUILDING EQUIPMENT HATCH OPENING – TYPICAL SECTION



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<p>CALLAWAY PLANT</p> <p>FIGURE 3.8-33</p> <p>REACTOR BUILDING PERSONNEL HATCH OPENING – INSIDE FACE. SHEET 1 OF 2</p>

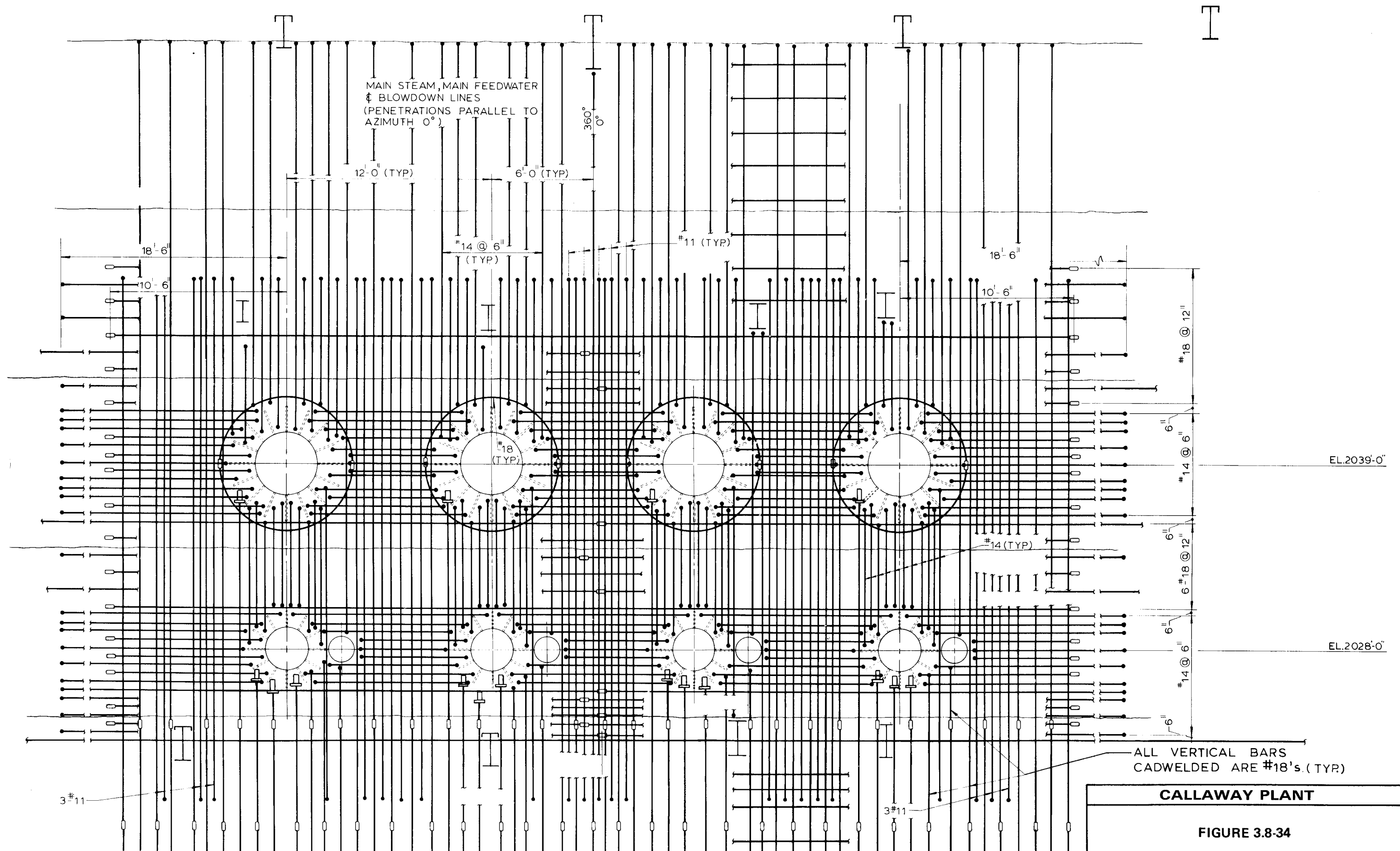


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CALLAWAY PLANT

FIGURE 3.8-33

**REACTOR BUILDING PERSONNEL HATCH
OPENING - OUTSIDE FACE, SHEET 2 OF 2**

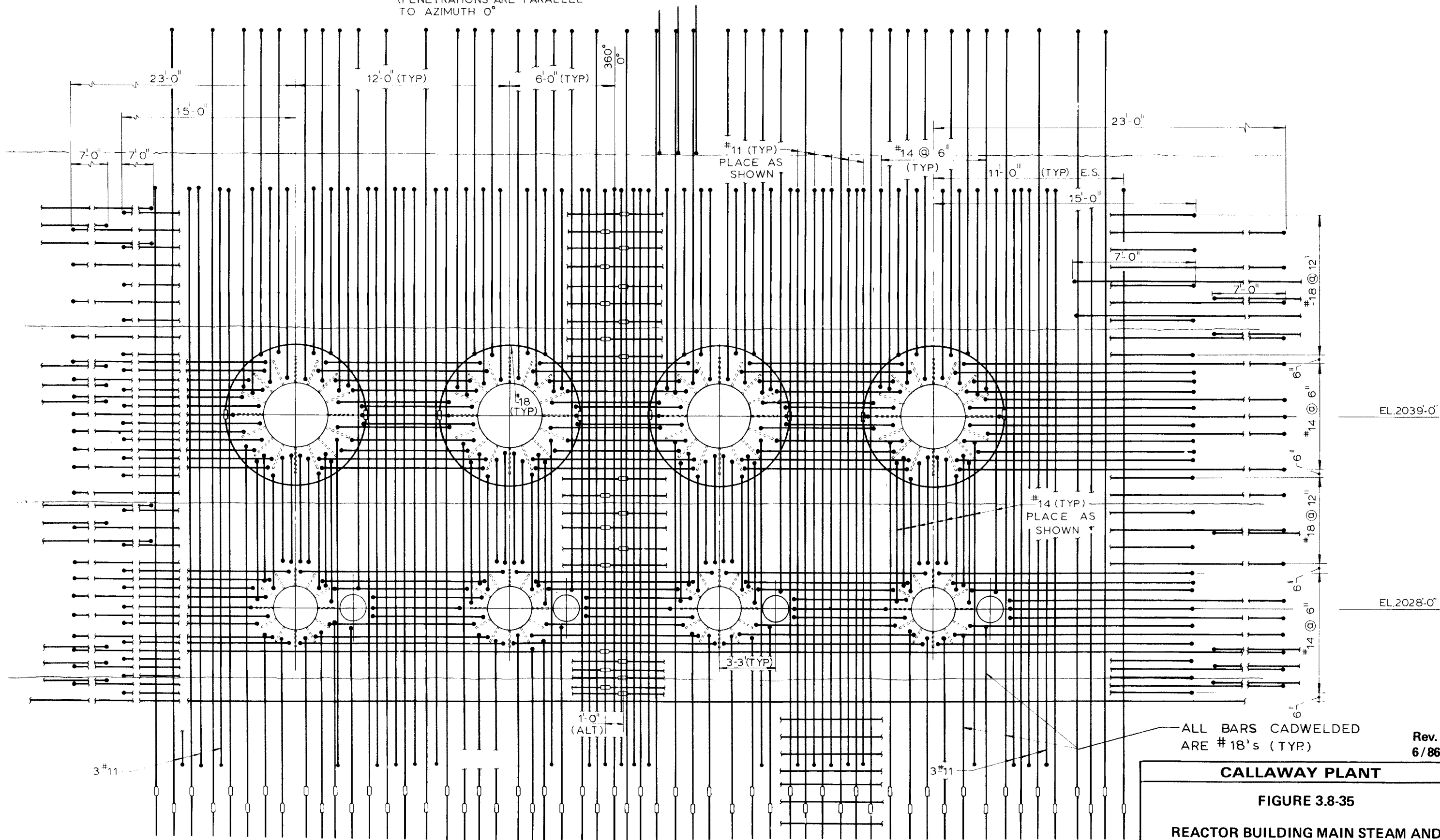


CALLAWAY PLANT

FIGURE 3.8-34

REACTOR BUILDING MAIN STEAM AND
MAIN FEEDWATER OPENINGS — INSIDE
FACE

MAIN STEAM, MAIN FEEDWATER
 & BLOWDOWN LINES
 (PENETRATIONS ARE PARALLEL
 TO AZIMUTH 0°)

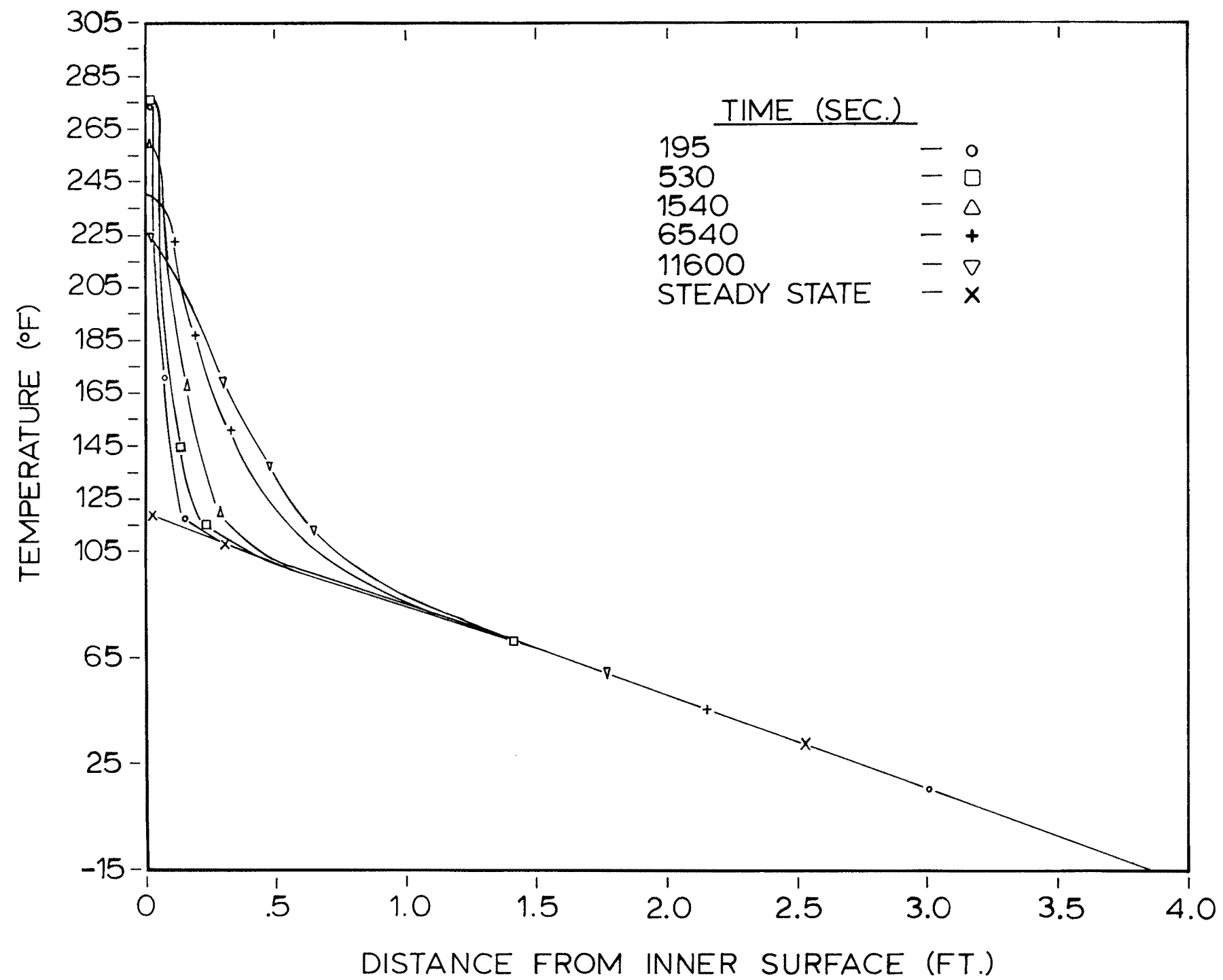


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CALLAWAY PLANT

FIGURE 3.8-35

**REACTOR BUILDING MAIN STEAM AND
 MAIN FEEDWATER OPENINGS – OUTSIDE
 FACE**

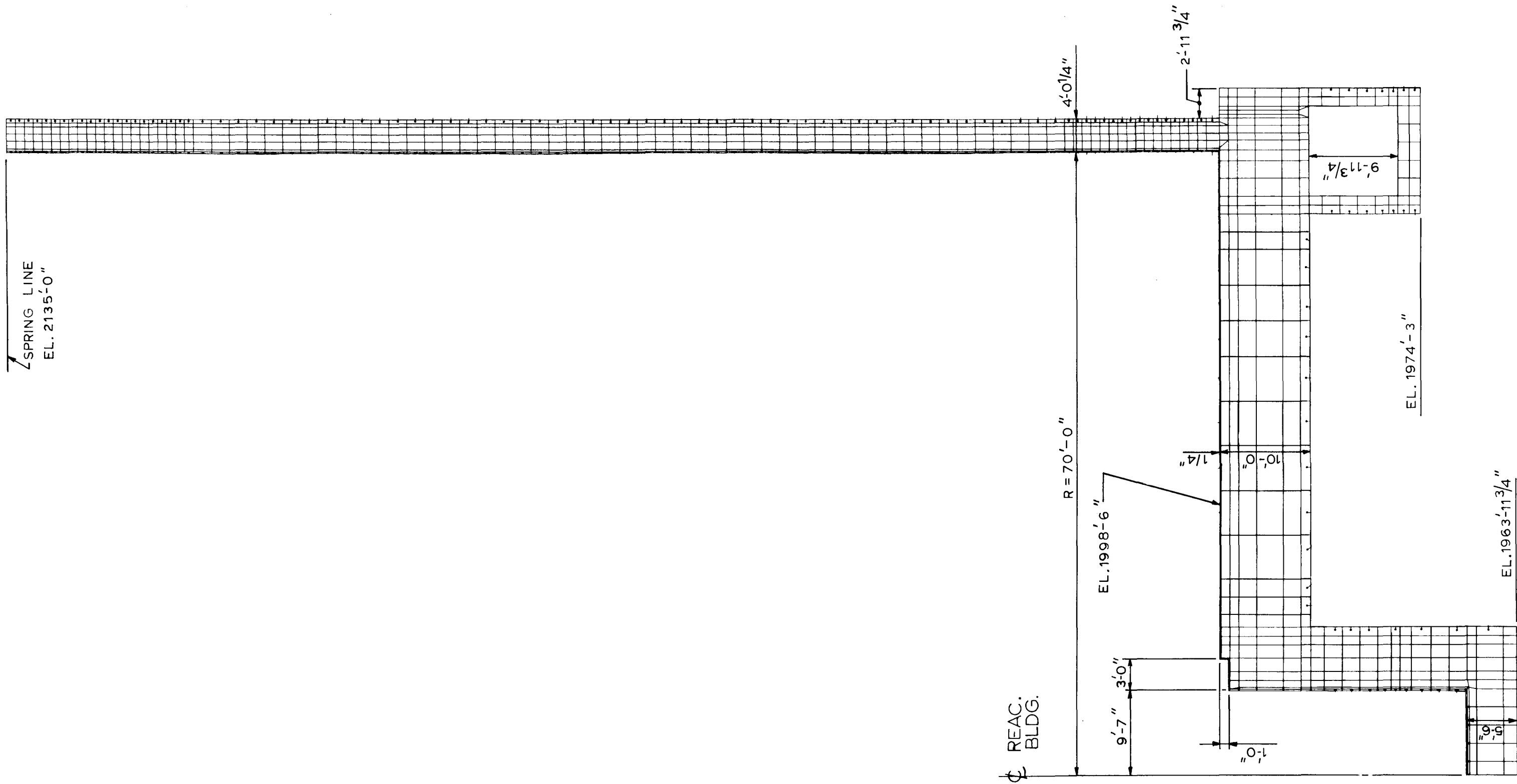


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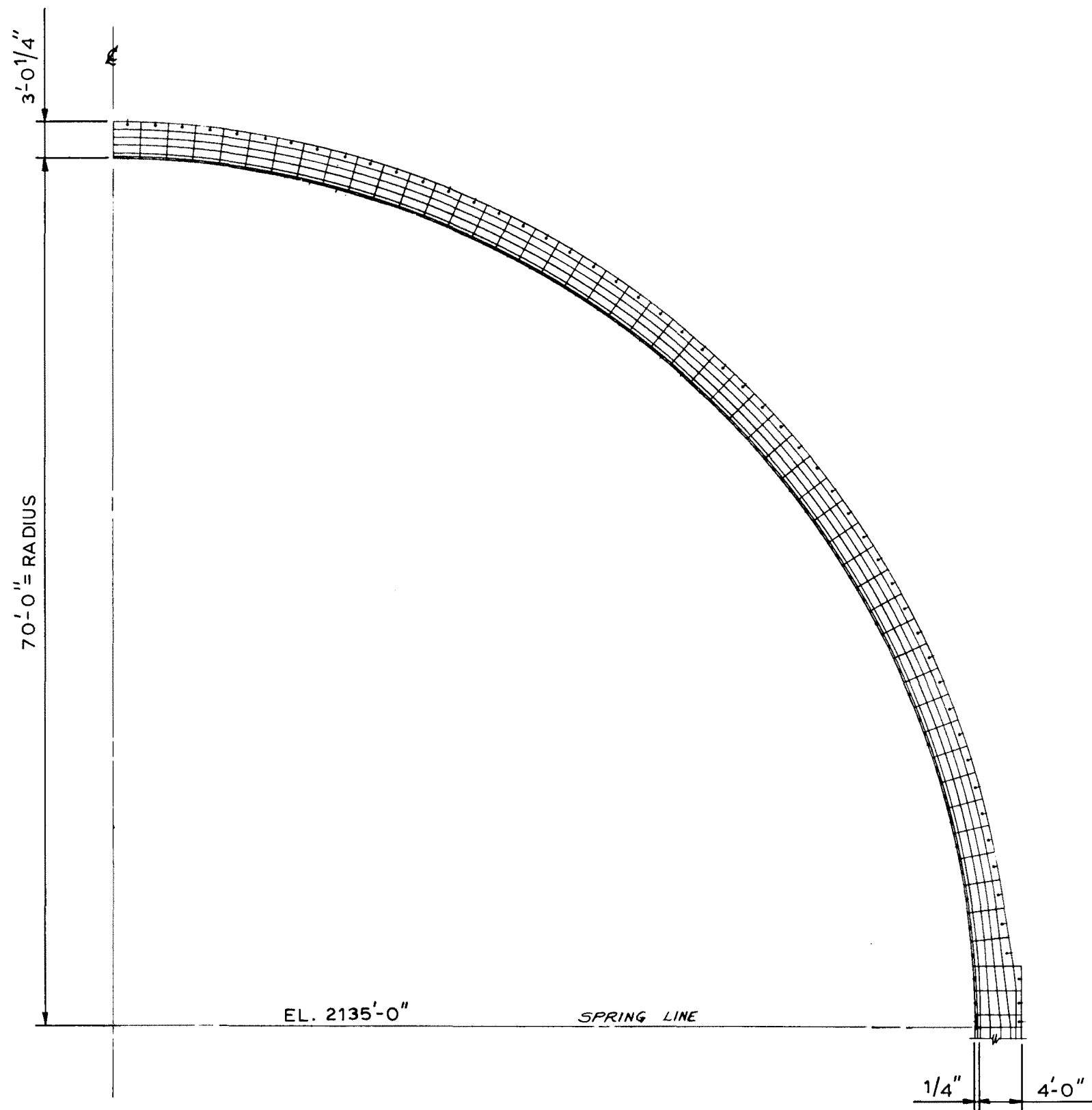
FIGURE 3.8-36

**TEMPERATURE GRADIENTS THROUGH
REACTOR BUILDING WALL FOR DBA
(POSTULATED PRIMARY COOLANT
LOOP BREAK)**



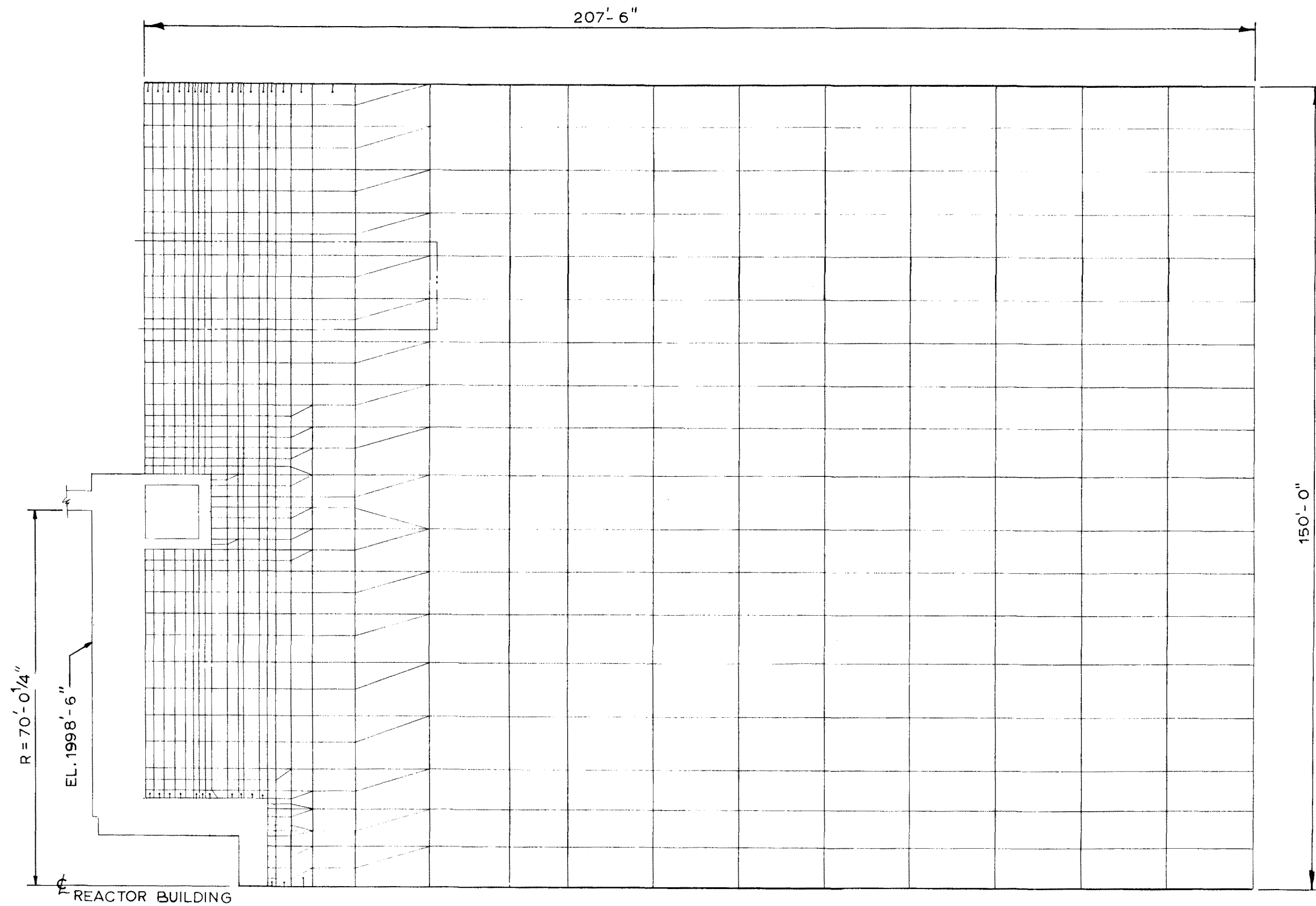
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CALLAWAY PLANT
FIGURE 3.8-37
FINITE ELEMENT MODEL FOR AXISYMMETRIC LOADS – STR.



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CALLAWAY PLANT
FIGURE 3.8-38
FINITE ELEMENT MODEL FOR AXISYMMETRIC LOADS – DESIGN

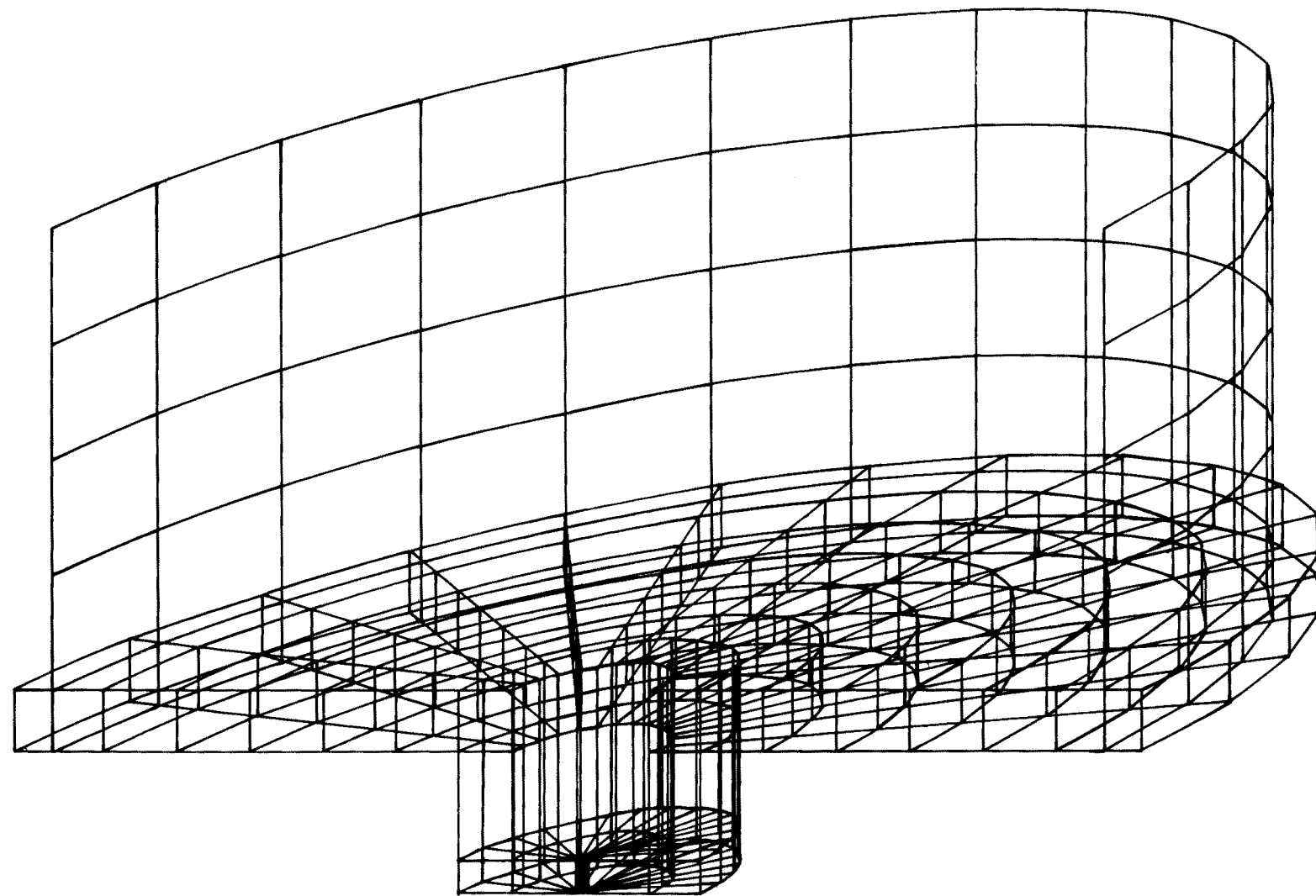


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CALLAWAY PLANT

FIGURE 3.8-39

**FINITE ELEMENT MODEL FOR
AXISYMMETRIC LOADS – FOUNDA.
MEDIUM**

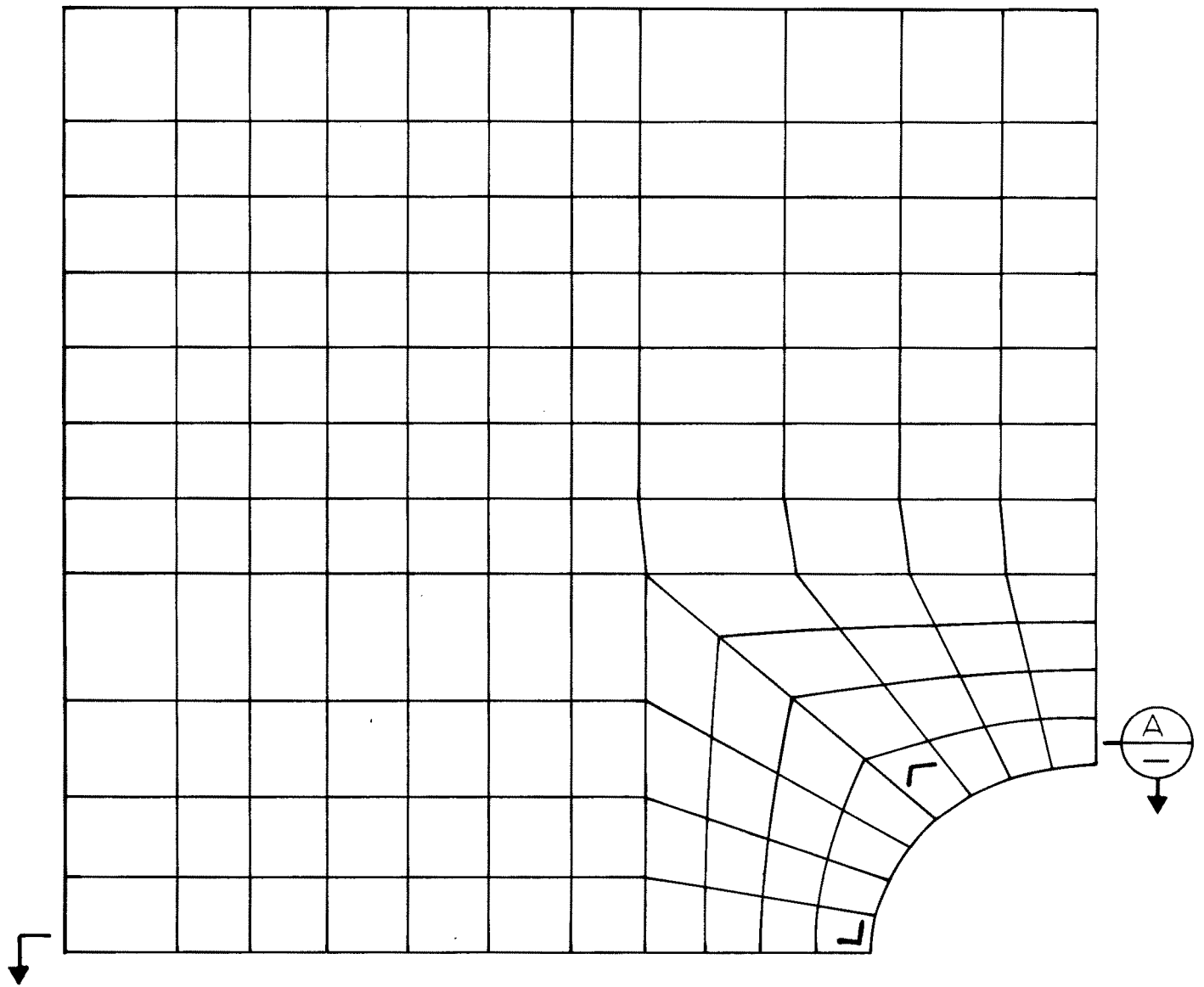


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CALLAWAY PLANT

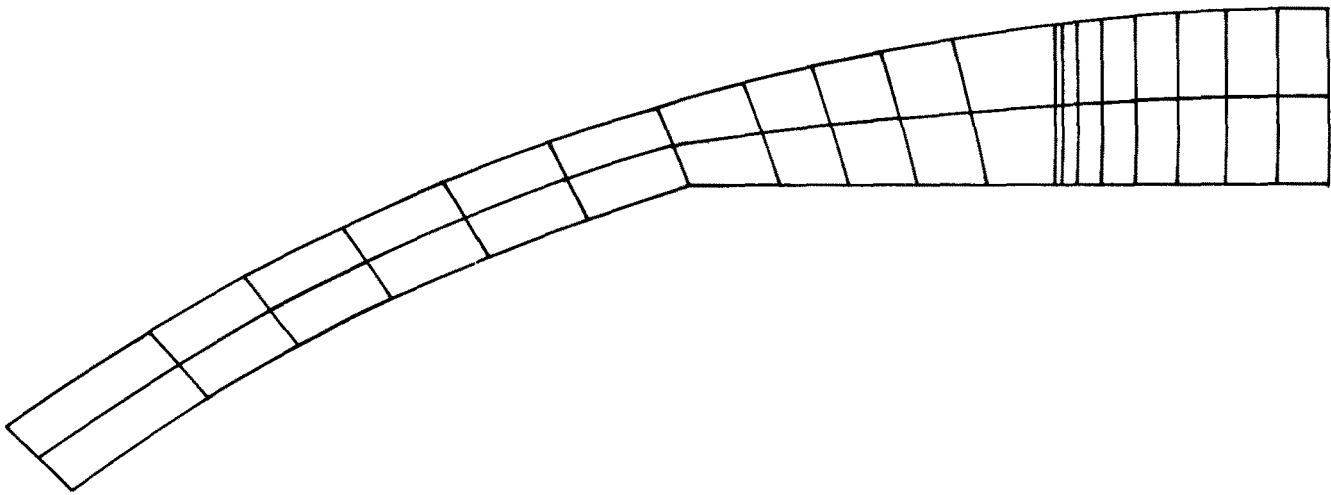
FIGURE 3.8-40

**FINITE ELEMENT MODEL FOR
NONAXISYMMETRIC LOADS**



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CALLAWAY PLANT
FIGURE 3.8-41
FINITE ELEMENT MODEL FOR EQUIPMENT HATCH - ELEVATION



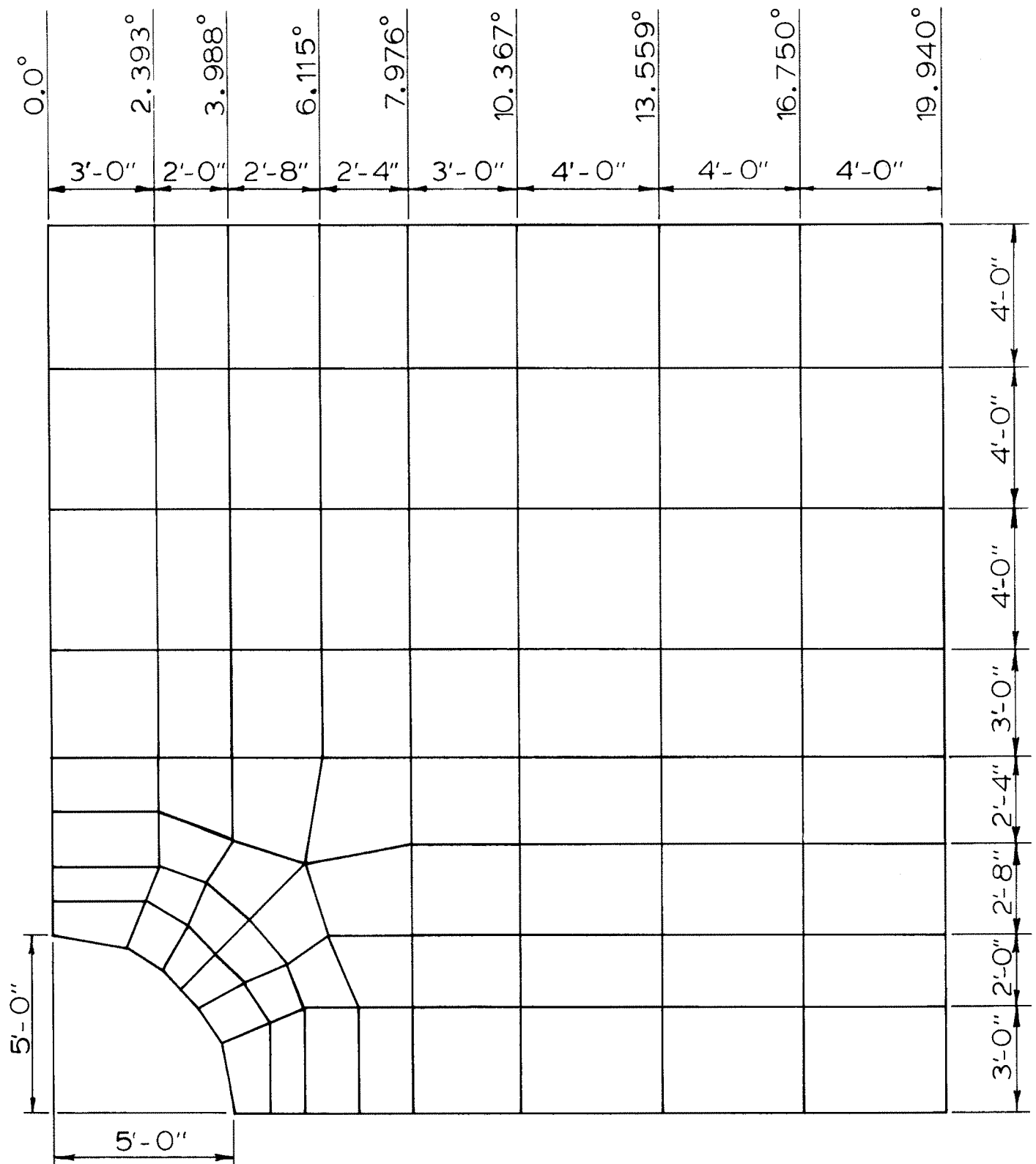
SECTION (A)

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CALLAWAY PLANT

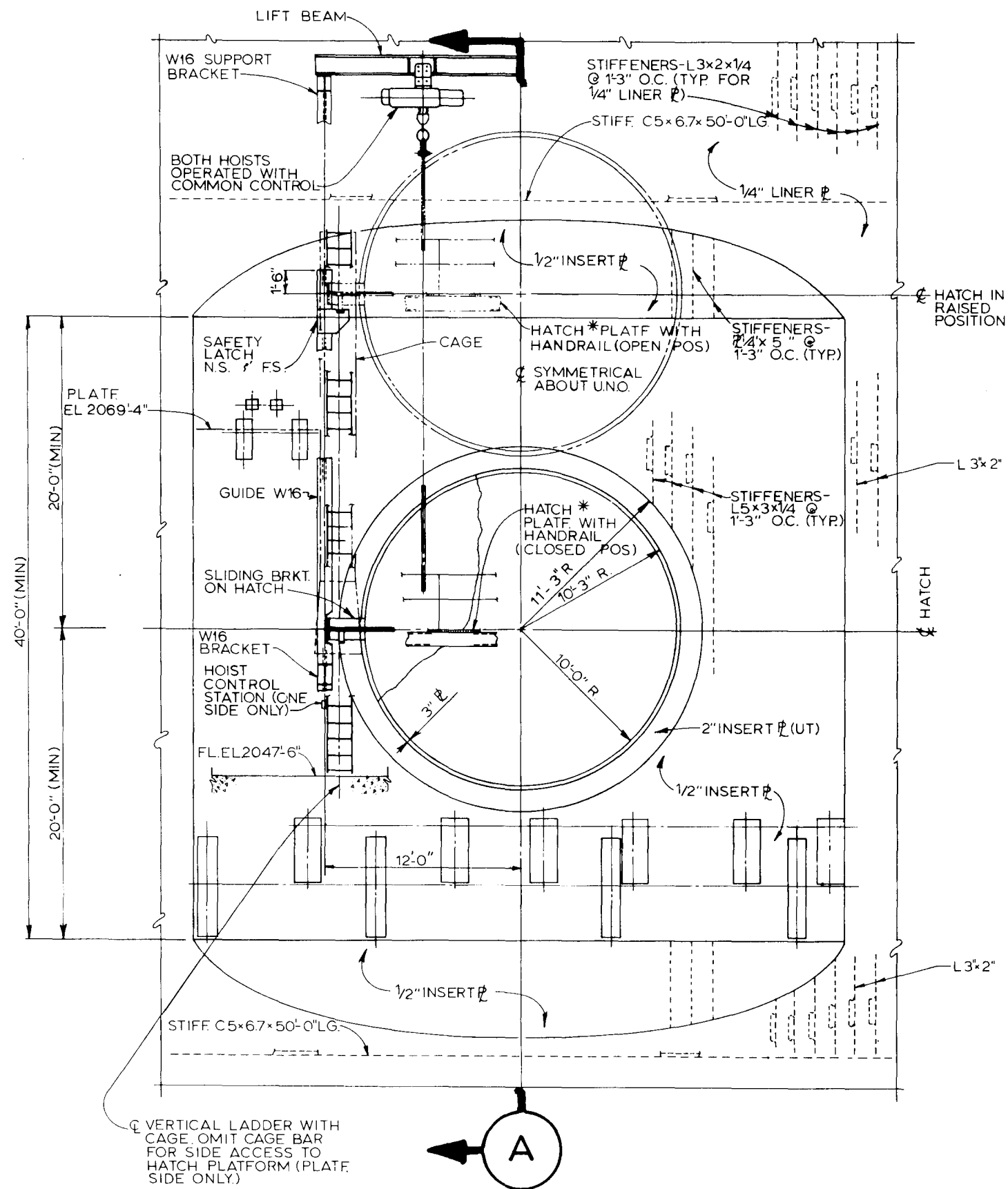
FIGURE 3.8-42

**FINITE ELEMENT MODEL FOR
EQUIPMENT HATCH - PLAN**



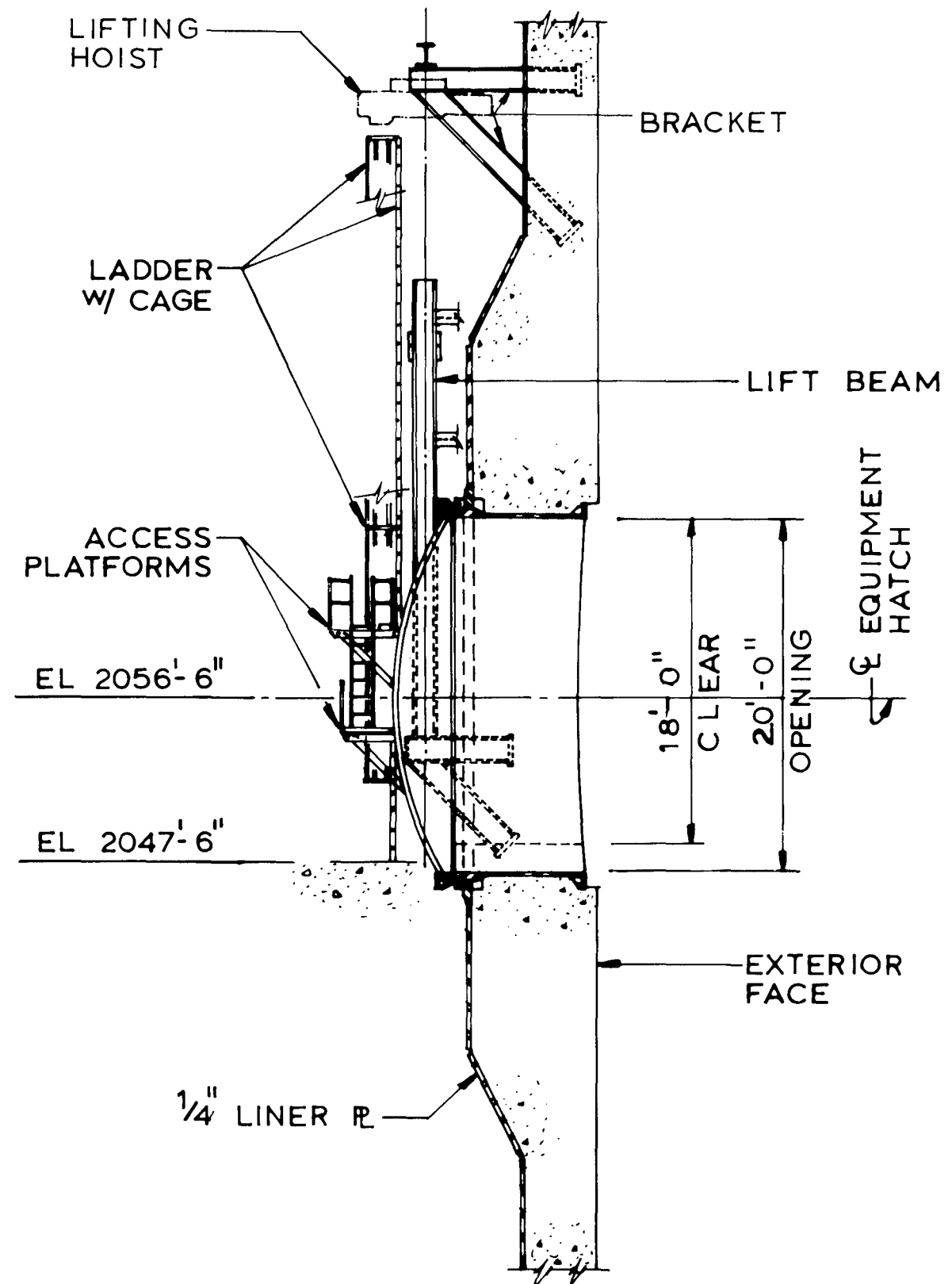
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CALLAWAY PLANT
<p>FIGURE 3.8-43</p> <p>FINITE ELEMENT MODEL FOR PERSONNEL HATCH</p>



ELEVATION

(FROM INSIDE)



SECTION

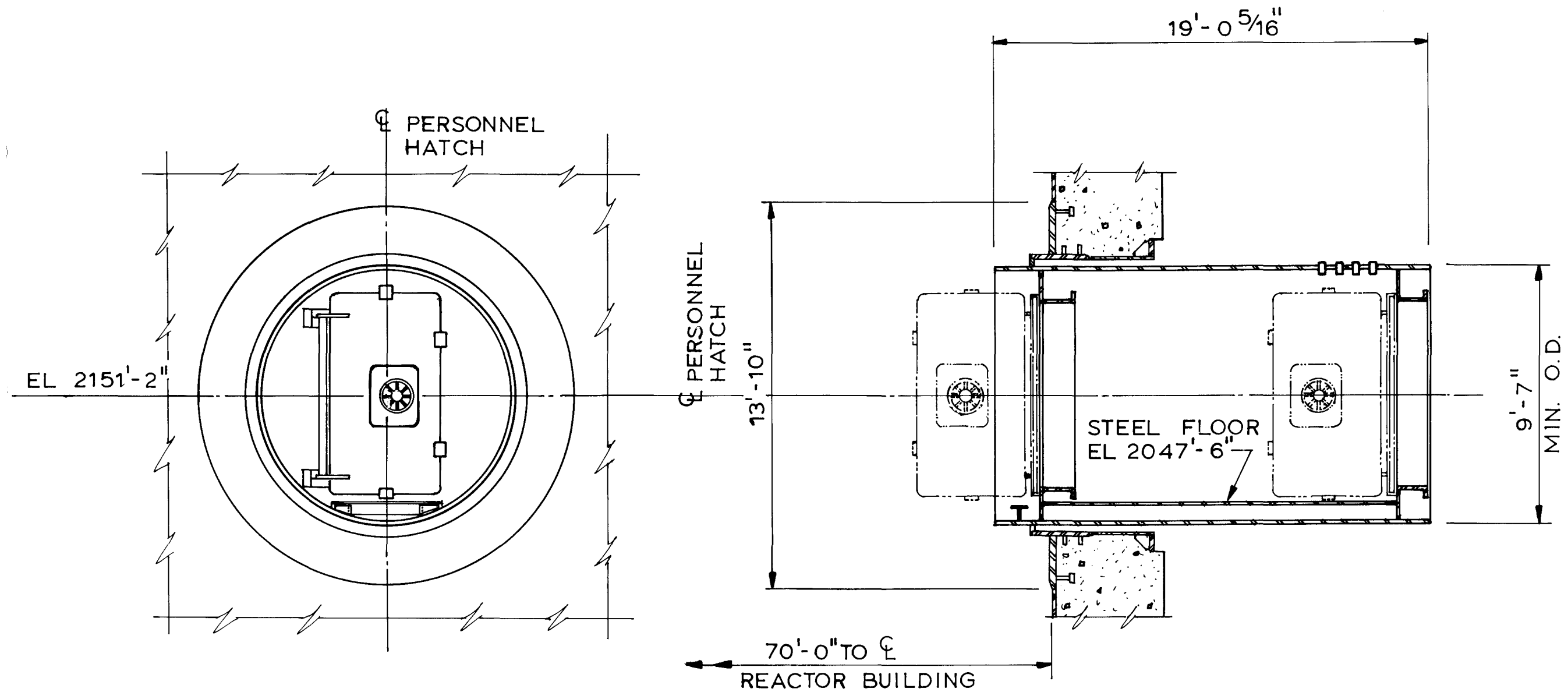
A

CALLAWAY PLANT

FIGURE 3.8-44

REACTOR BUILDING
EQUIPMENT HATCH

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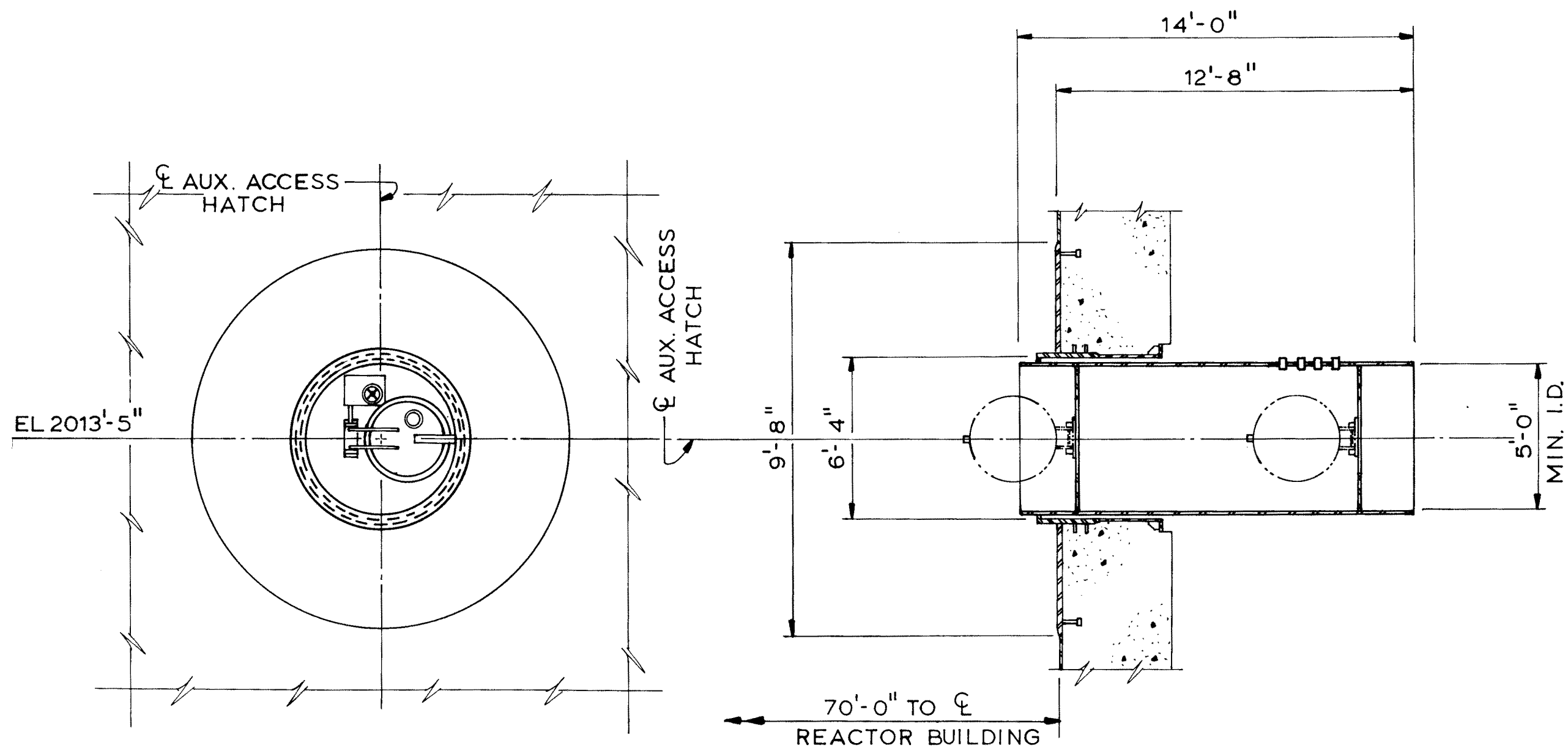


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CALLAWAY PLANT

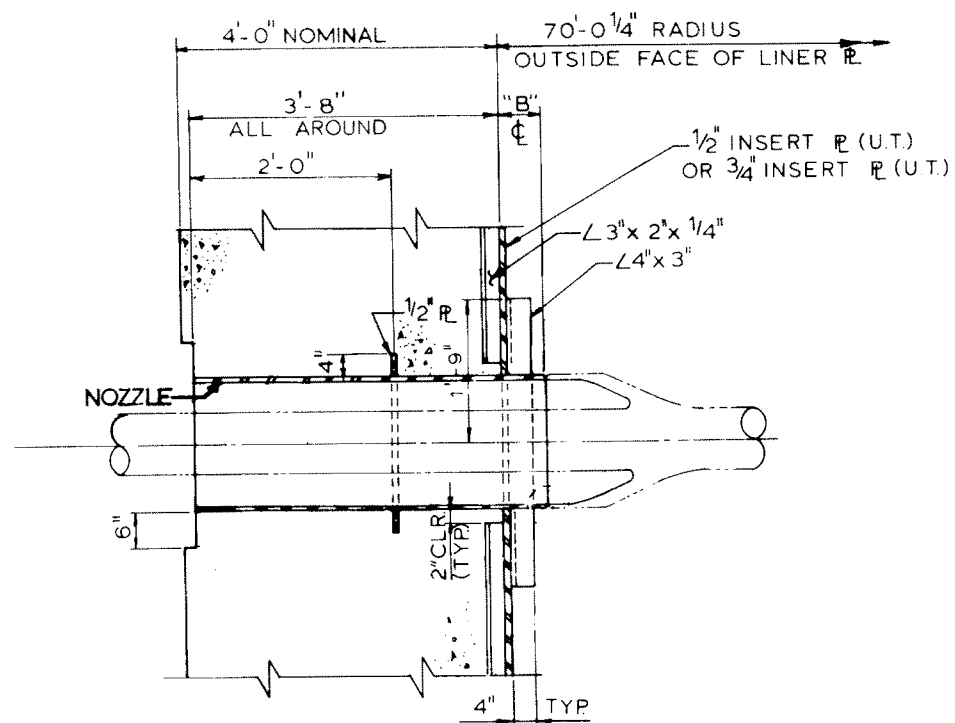
FIGURE 3.8-45

**REACTOR BUILDING
PERSONNEL HATCH**

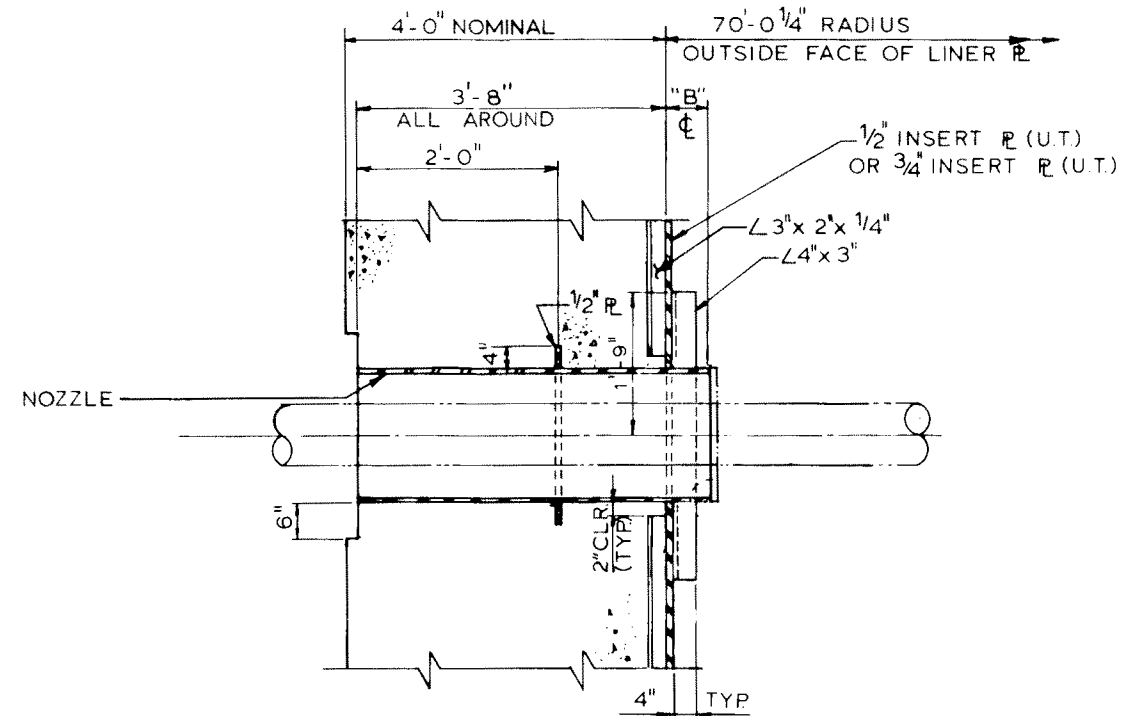


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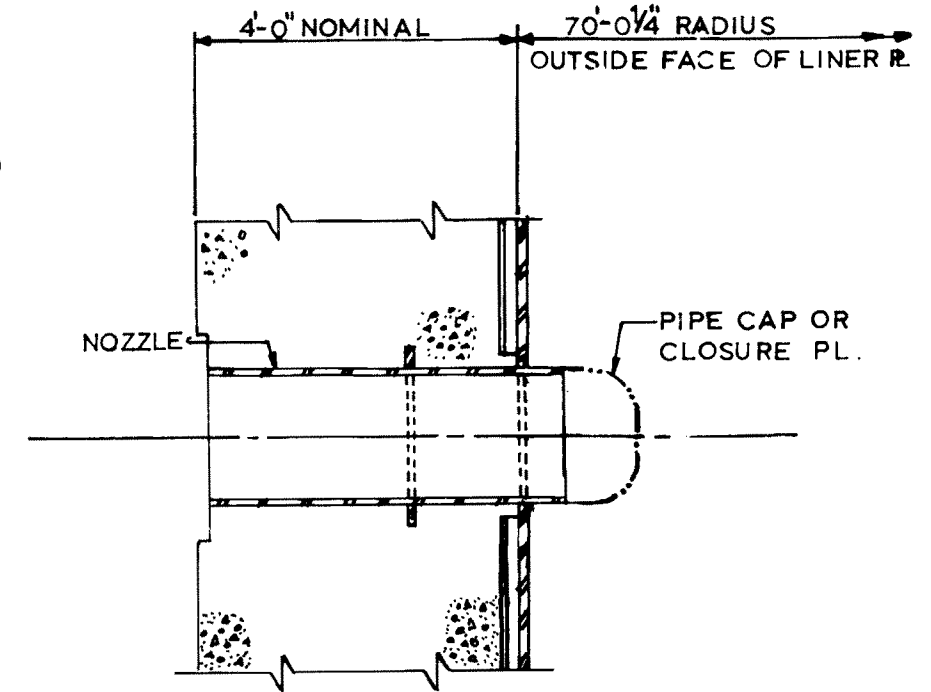
CALLAWAY PLANT
FIGURE 3.8-46
REACTOR BUILDING AUXILIARY ACCESS HATCH



TYPICAL PIPE PENETRATION-TYPE 1
FLUED HEAD PENETRATION



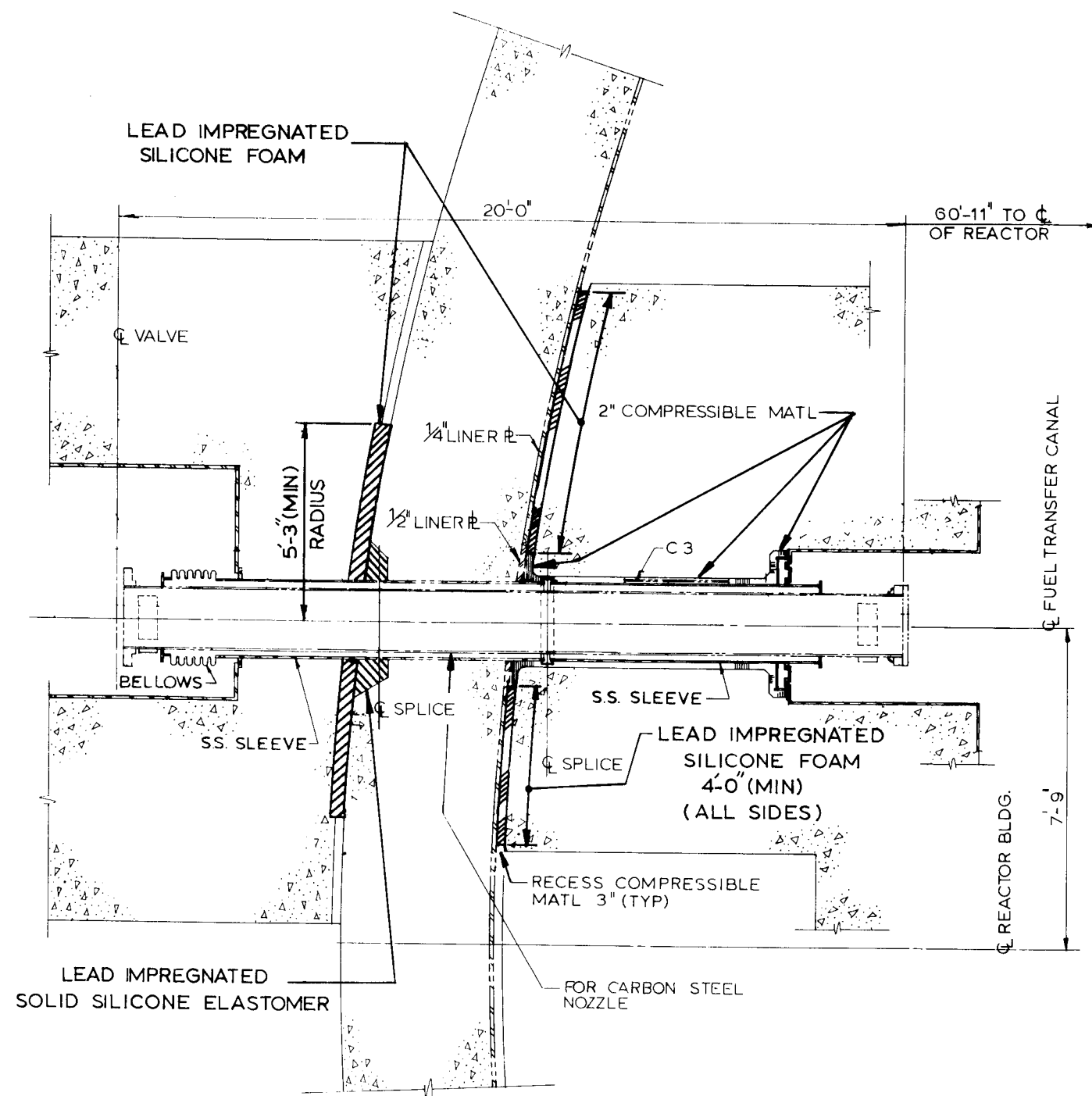
TYPICAL PIPE PENETRATION-TYPE 2
CLOSURE PLATE PENETRATION



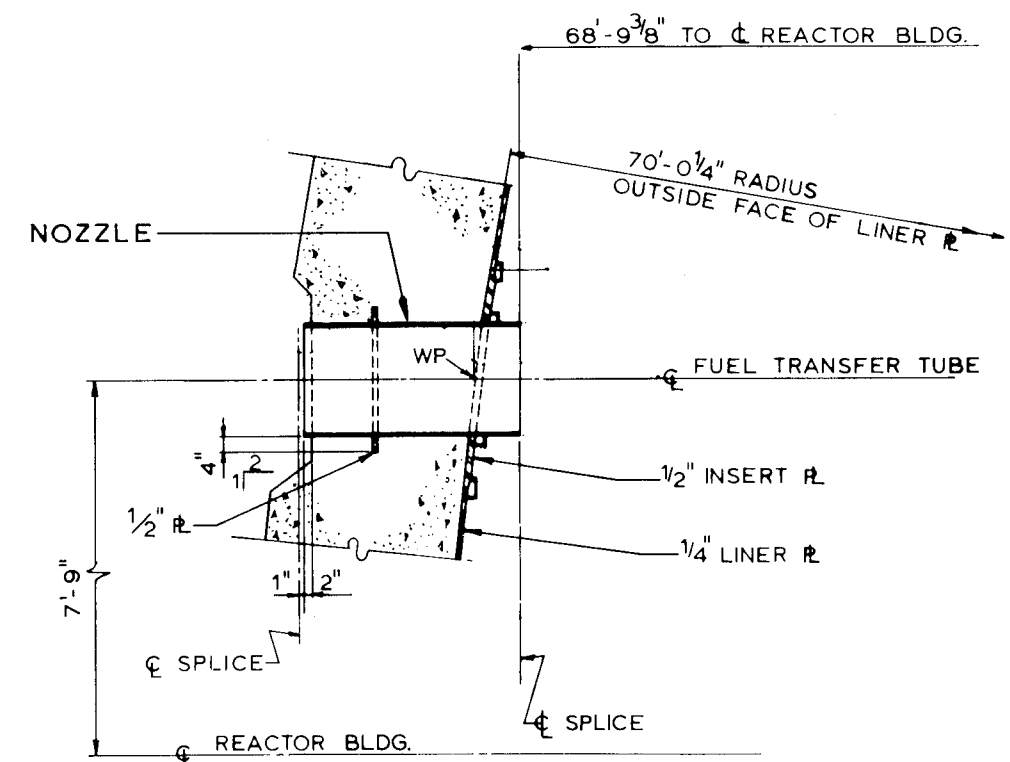
TYP PIPE PENETRATION-TYPE 3
PENETRATION SPARE BLANKING

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CALLAWAY PLANT
FIGURE 3.8-47
REACTOR BUILDING TYPICAL PIPE PENETRATION



FUEL TRANSFER TUBE PLAN



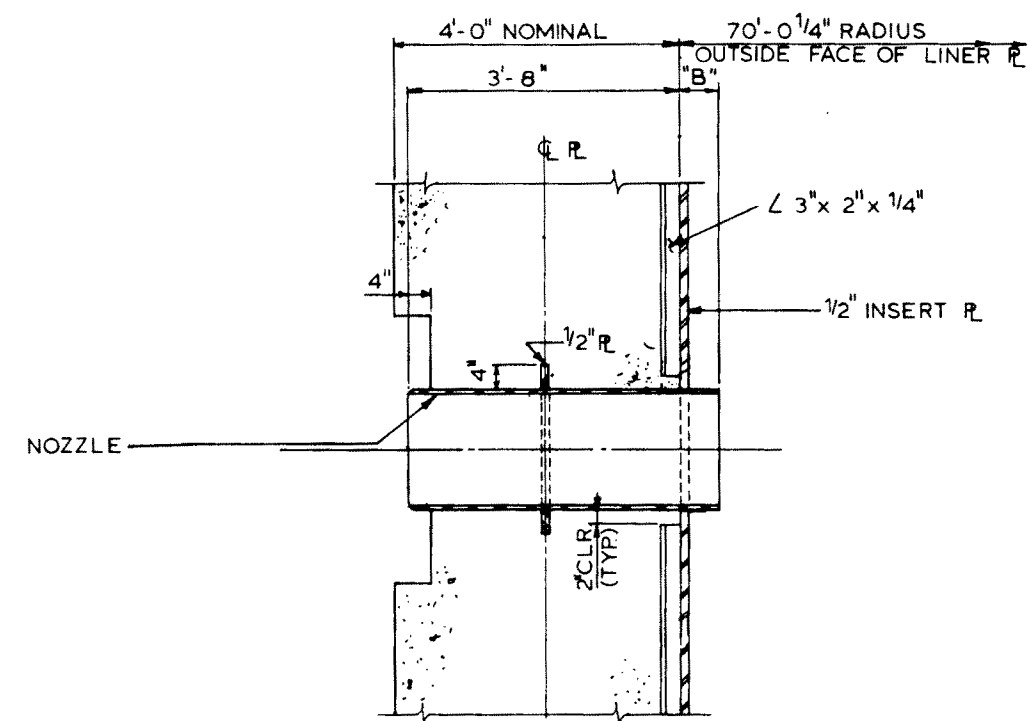
PLAN- NOZZLE FOR FUEL TRANSFER TUBE

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CALLAWAY PLANT

FIGURE 3.8-48

**REACTOR BUILDING
FUEL TRANSFER PENETRATION**



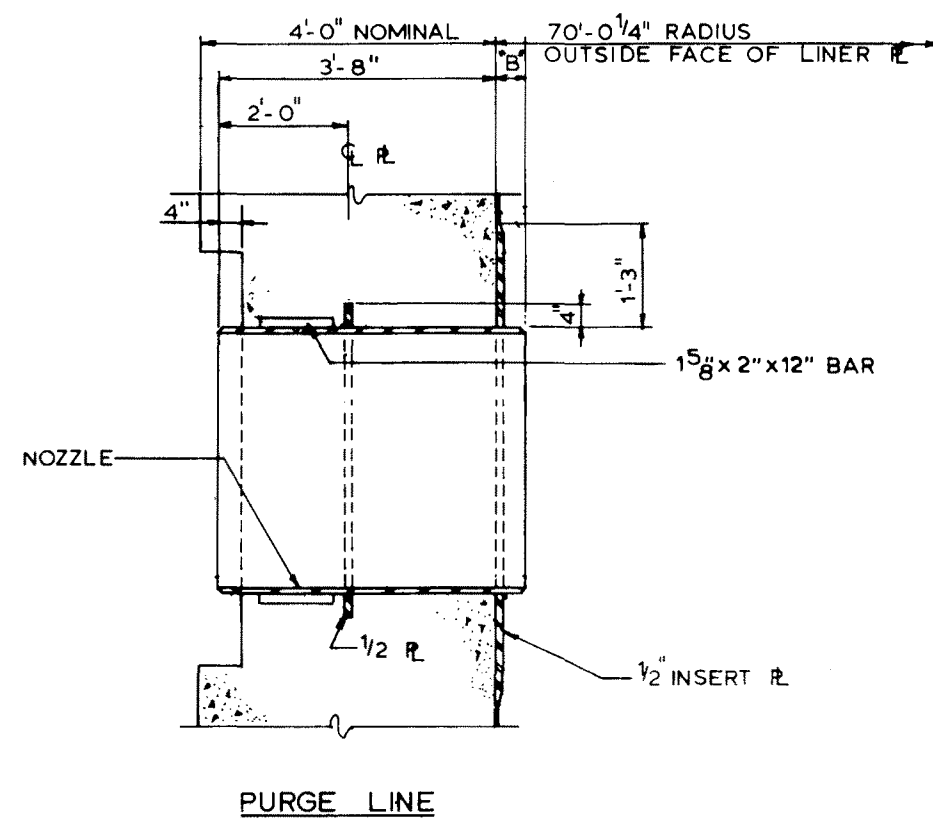
ELECTRICAL PENETRATION

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CALLAWAY PLANT

FIGURE 3.8-49

REACTOR BUILDING
ELECTRICAL PENETRATION

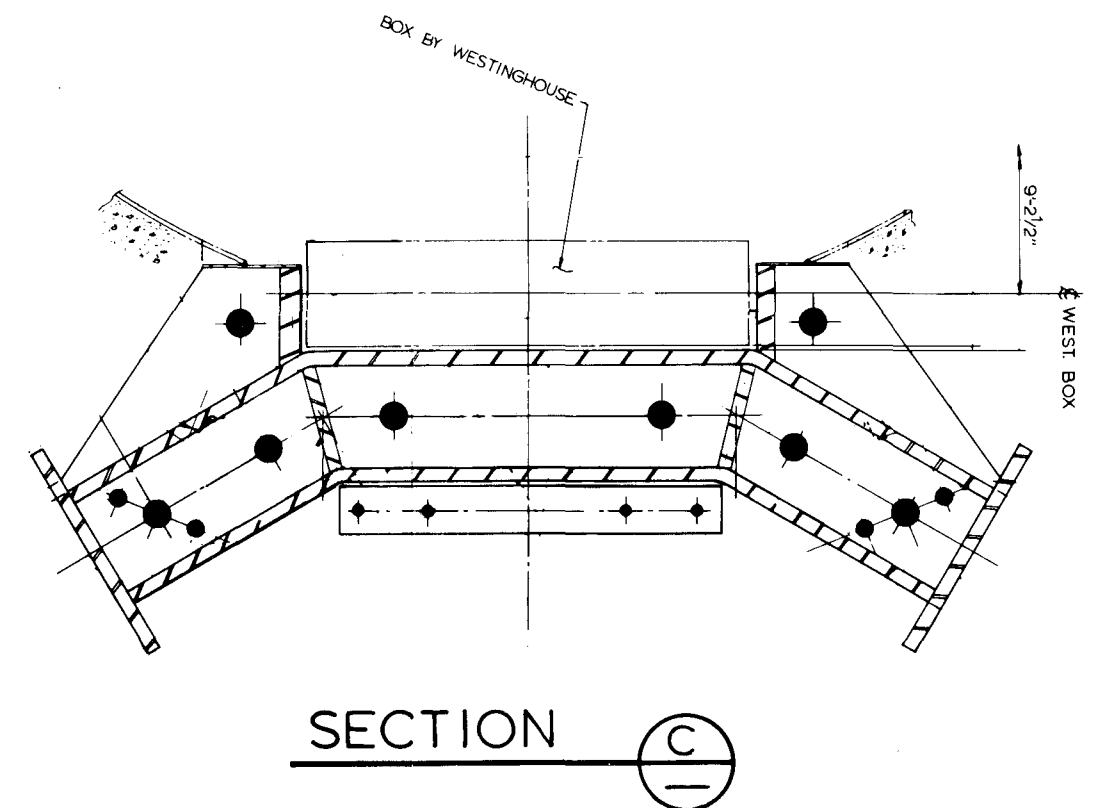
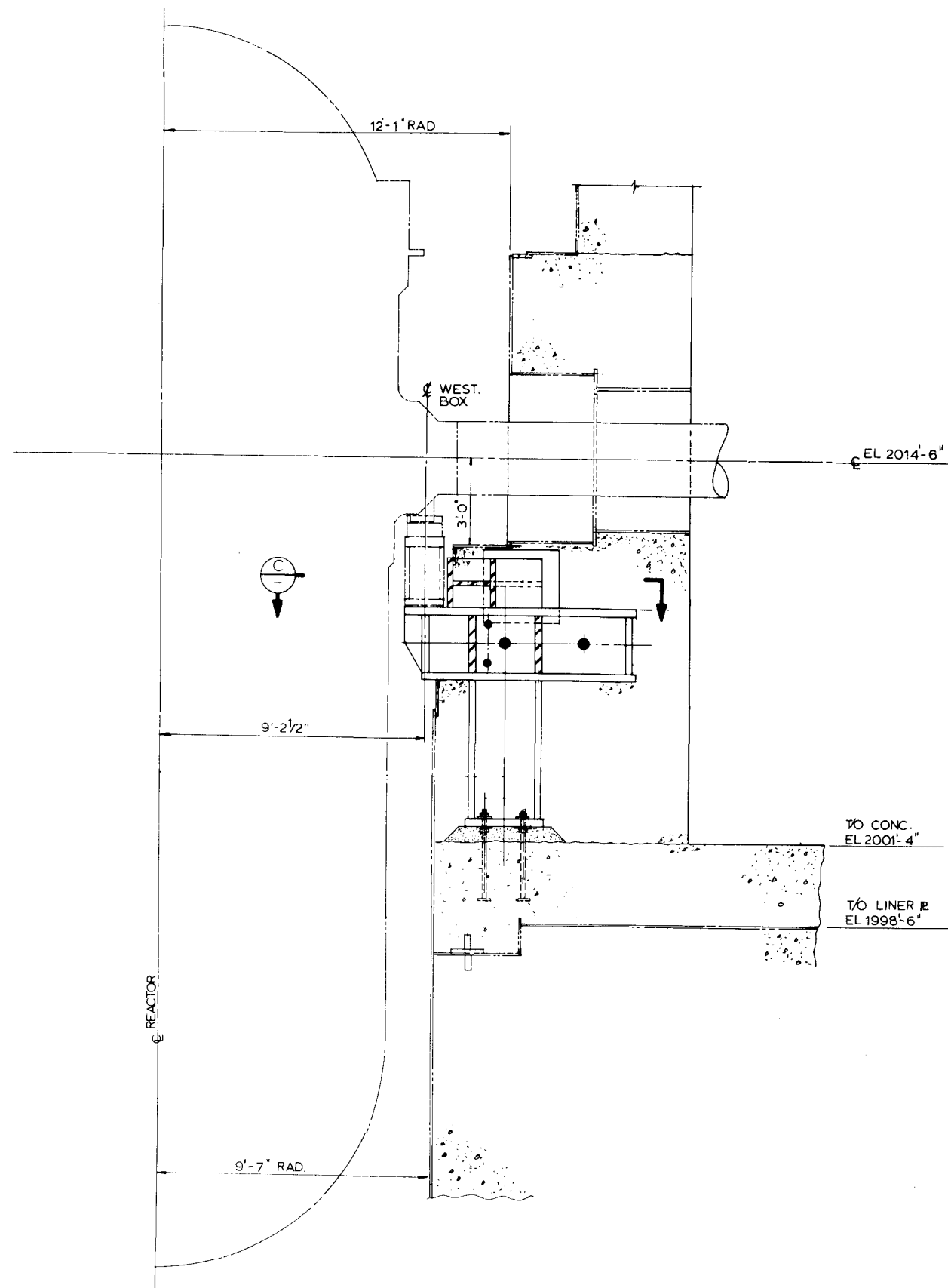


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CALLAWAY PLANT

FIGURE 3.8-50

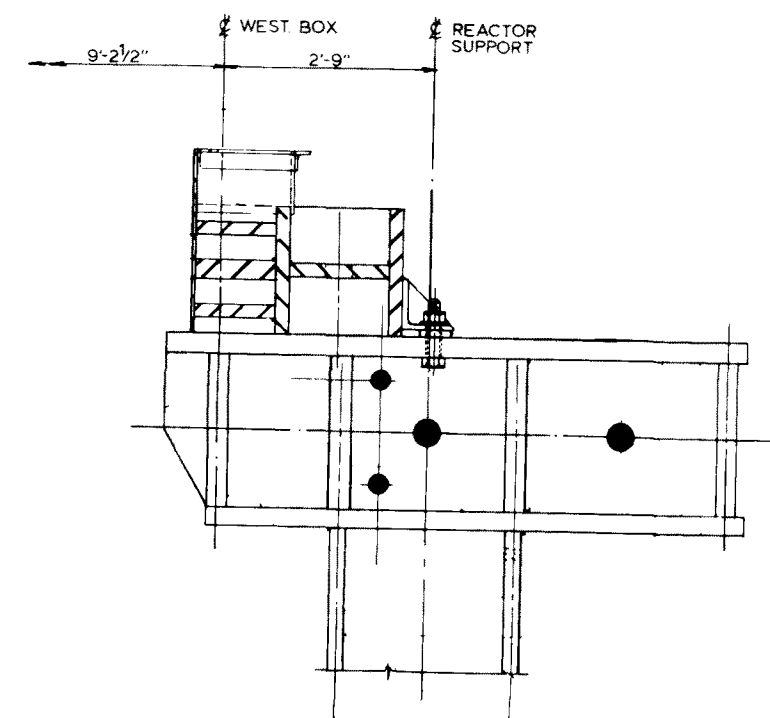
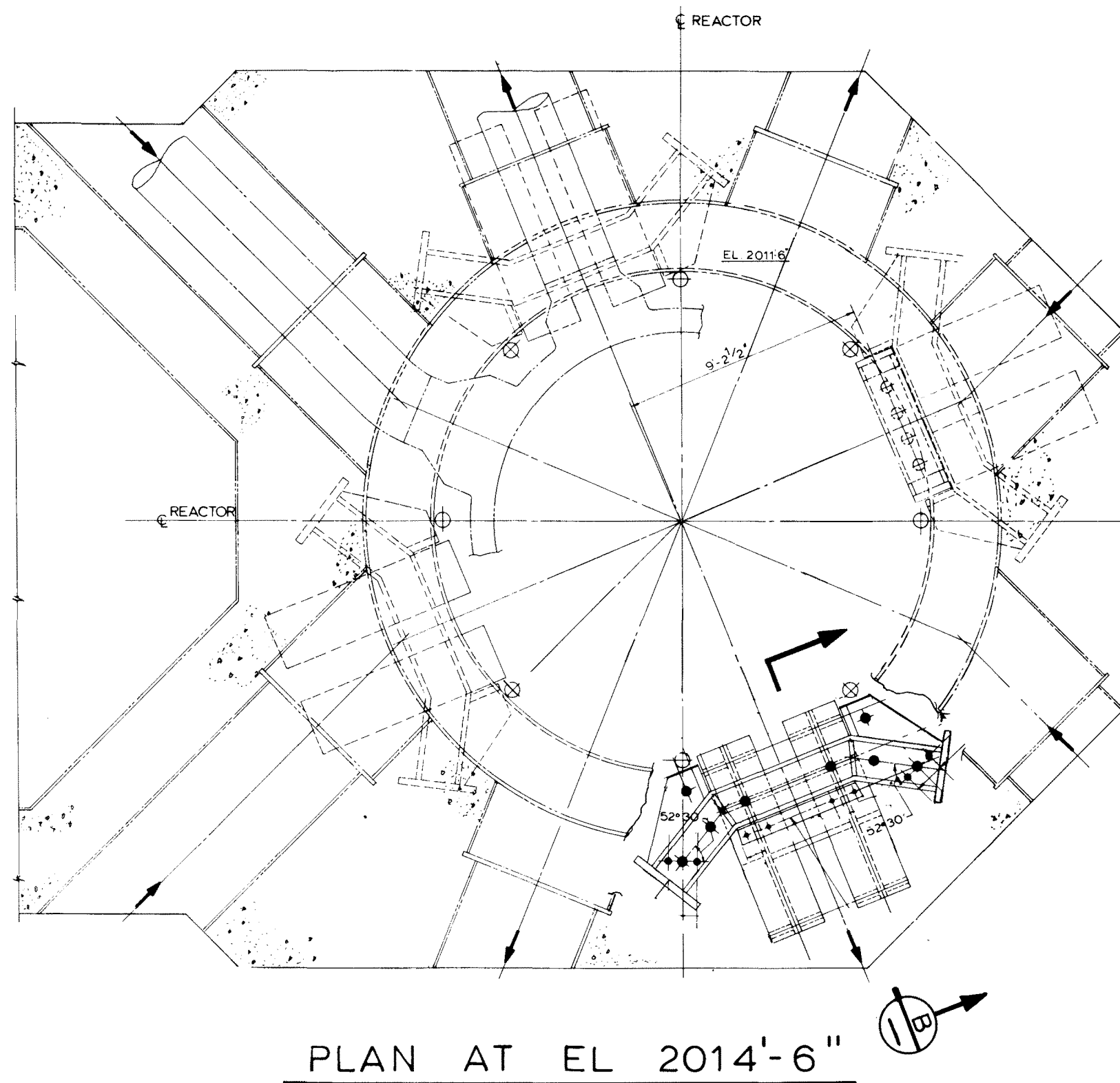
**REACTOR BUILDING
PURGE LINE PENETRATIONS**



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CALLAWAY PLANT

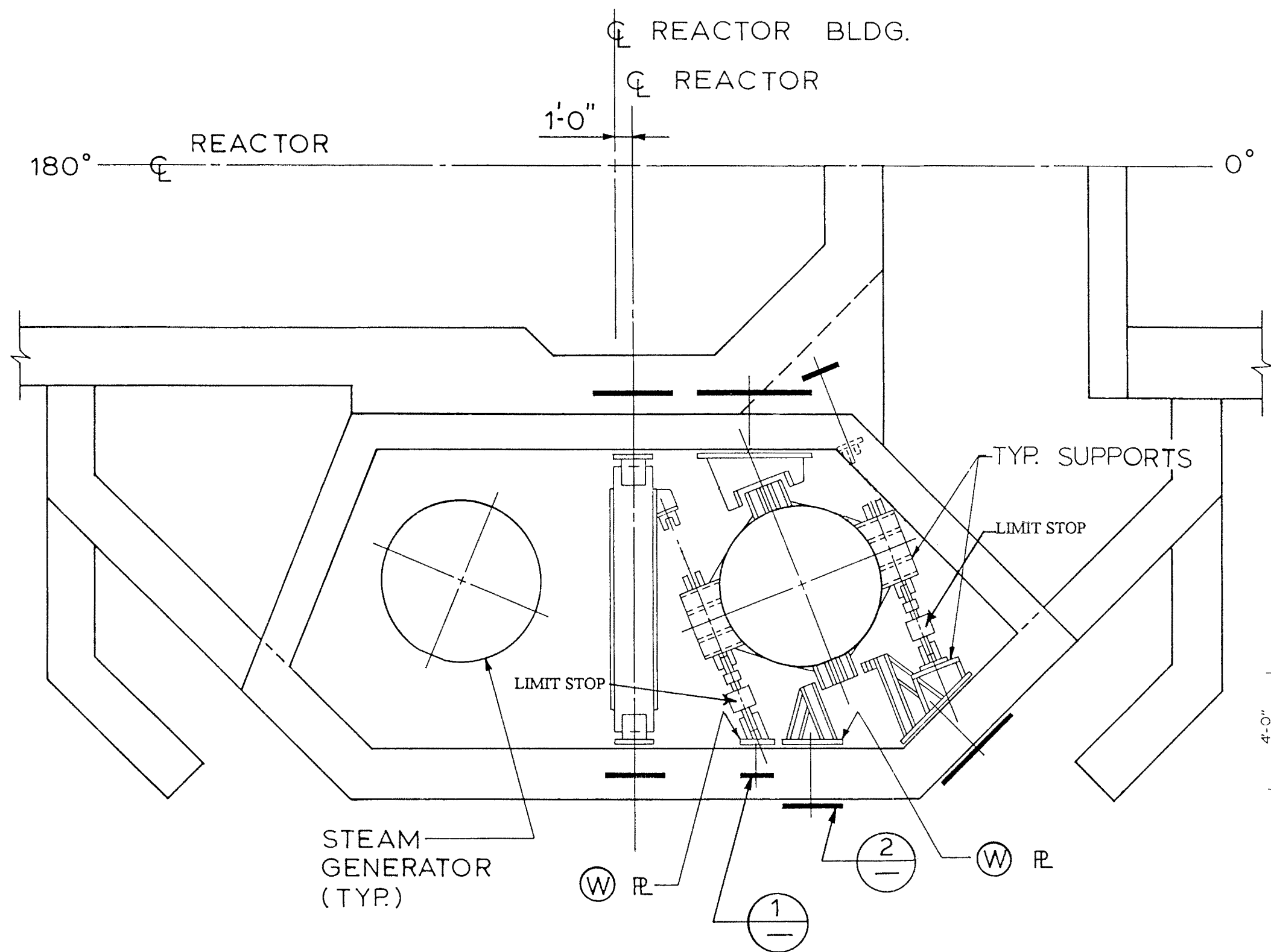
FIGURE 3.8-51
REACTOR VESSEL SUPPORT SYSTEM —
ELEVATION



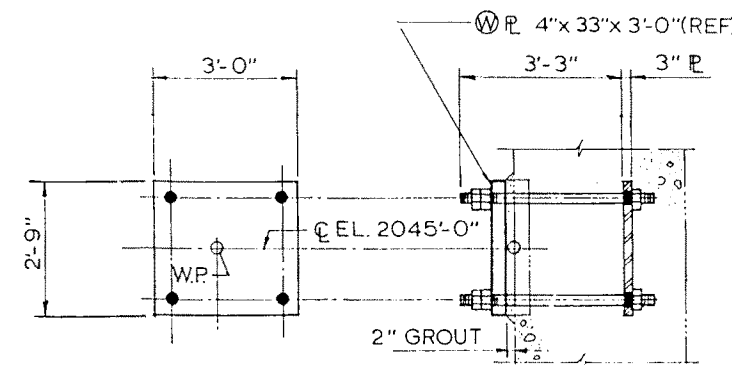
SECTION B

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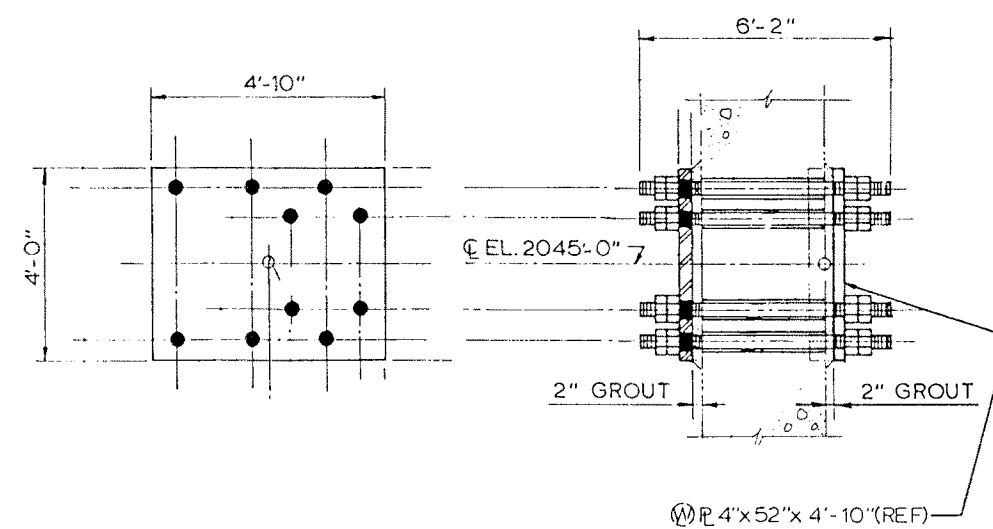
CALLAWAY PLANT
FIGURE 3.8-52
REACTOR VESSEL SUPPORT SYSTEM – PLAN



PLAN-STEAM GENERATOR
UPPER LATERAL SUPPORTS



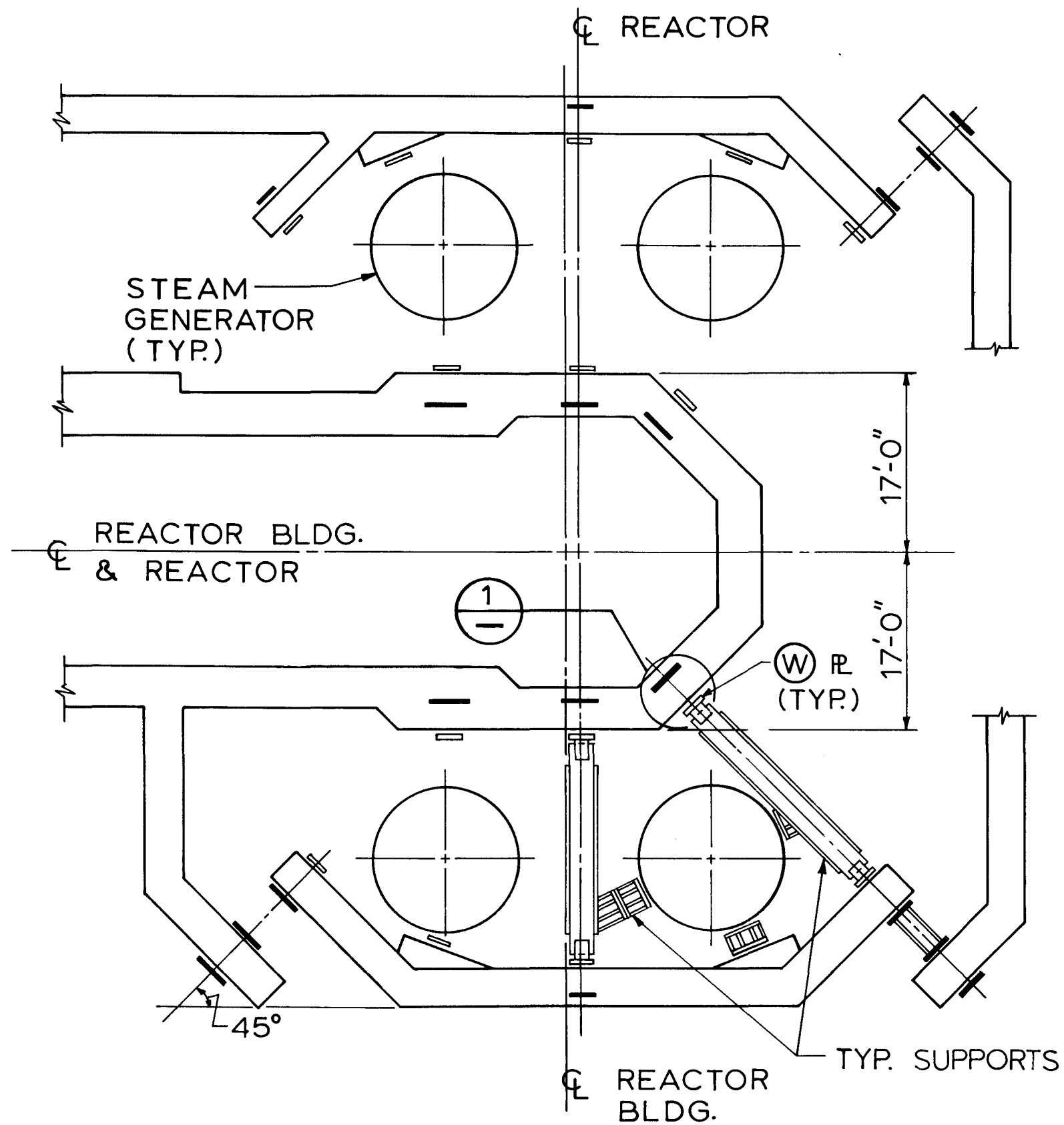
DETAIL (1)



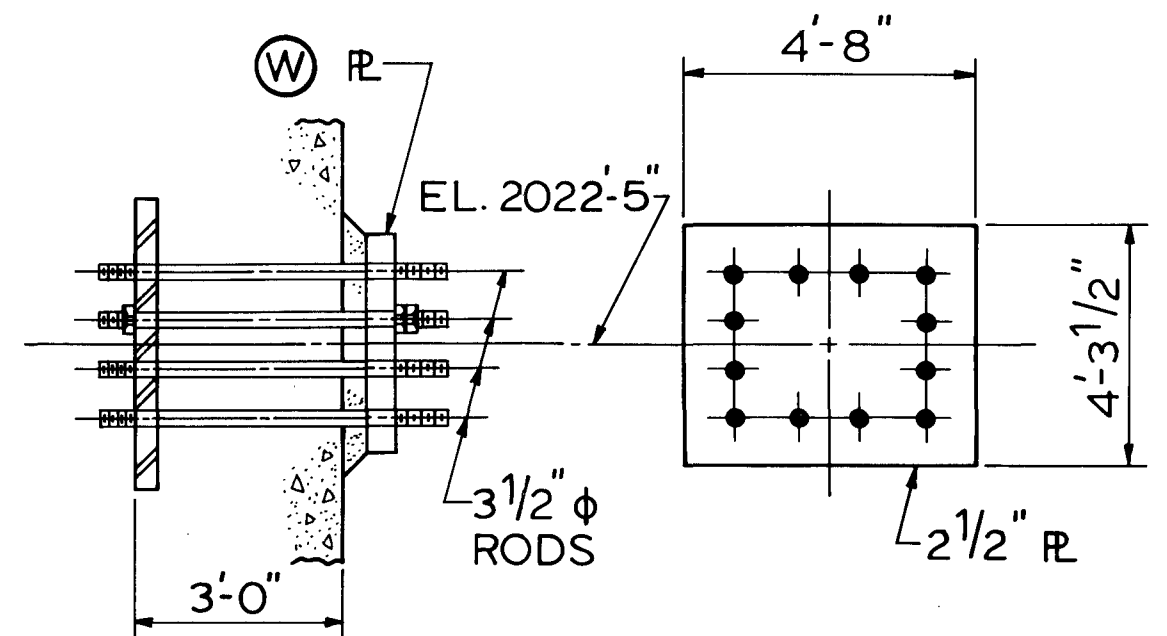
DETAIL (2)

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CALLAWAY PLANT
FIGURE 3.8-53
STEAM GENERATOR SUPPORT SYSTEM — UPPER SUPPORTS



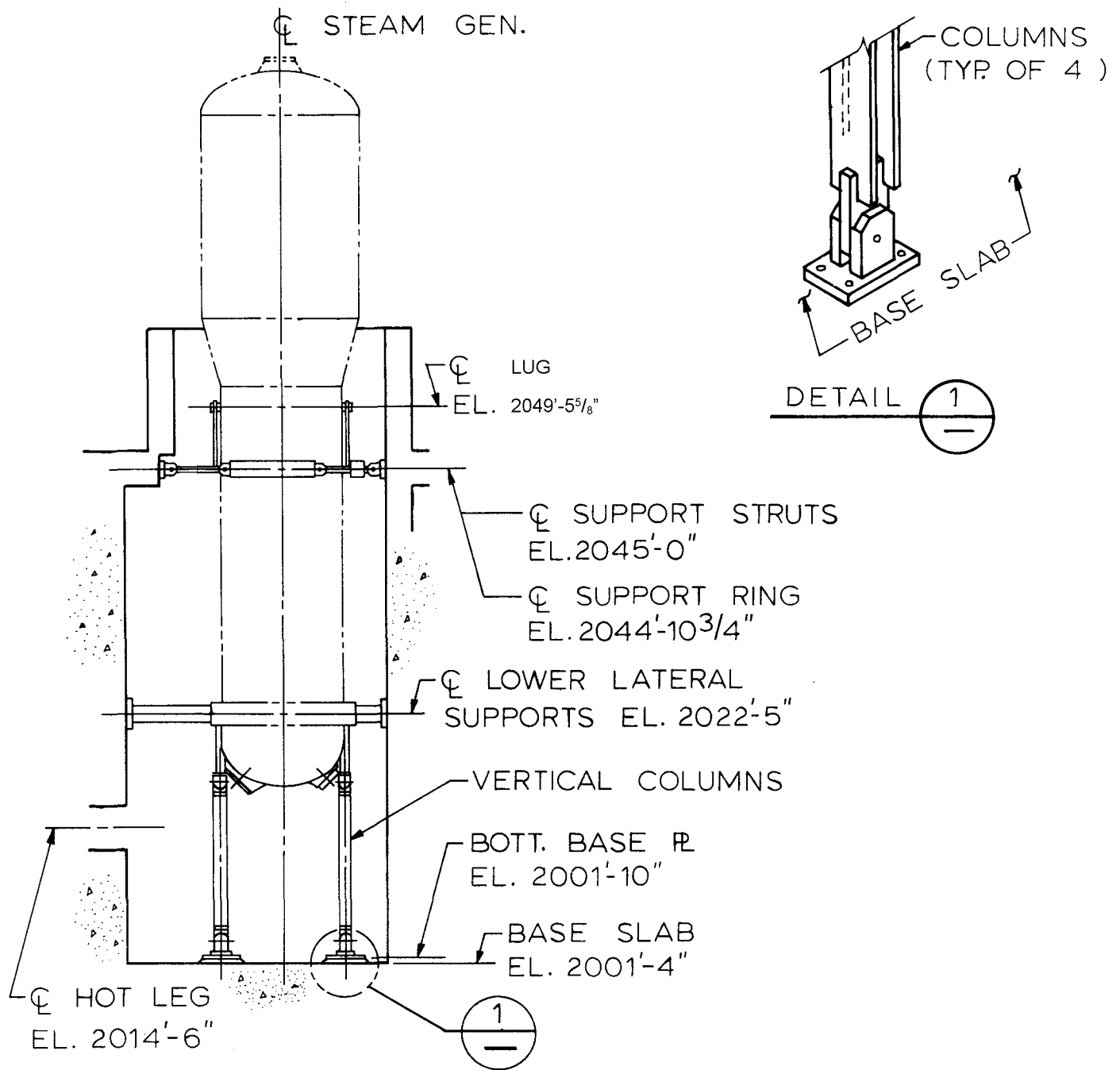
PLAN-STEAM GENERATOR
LOWER LATERAL SUPPORTS



DETAIL 1

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CALLAWAY PLANT
FIGURE 3.8-54
STEAM GENERATOR SUPPORT SYSTEM – LOWER SUPPORTS



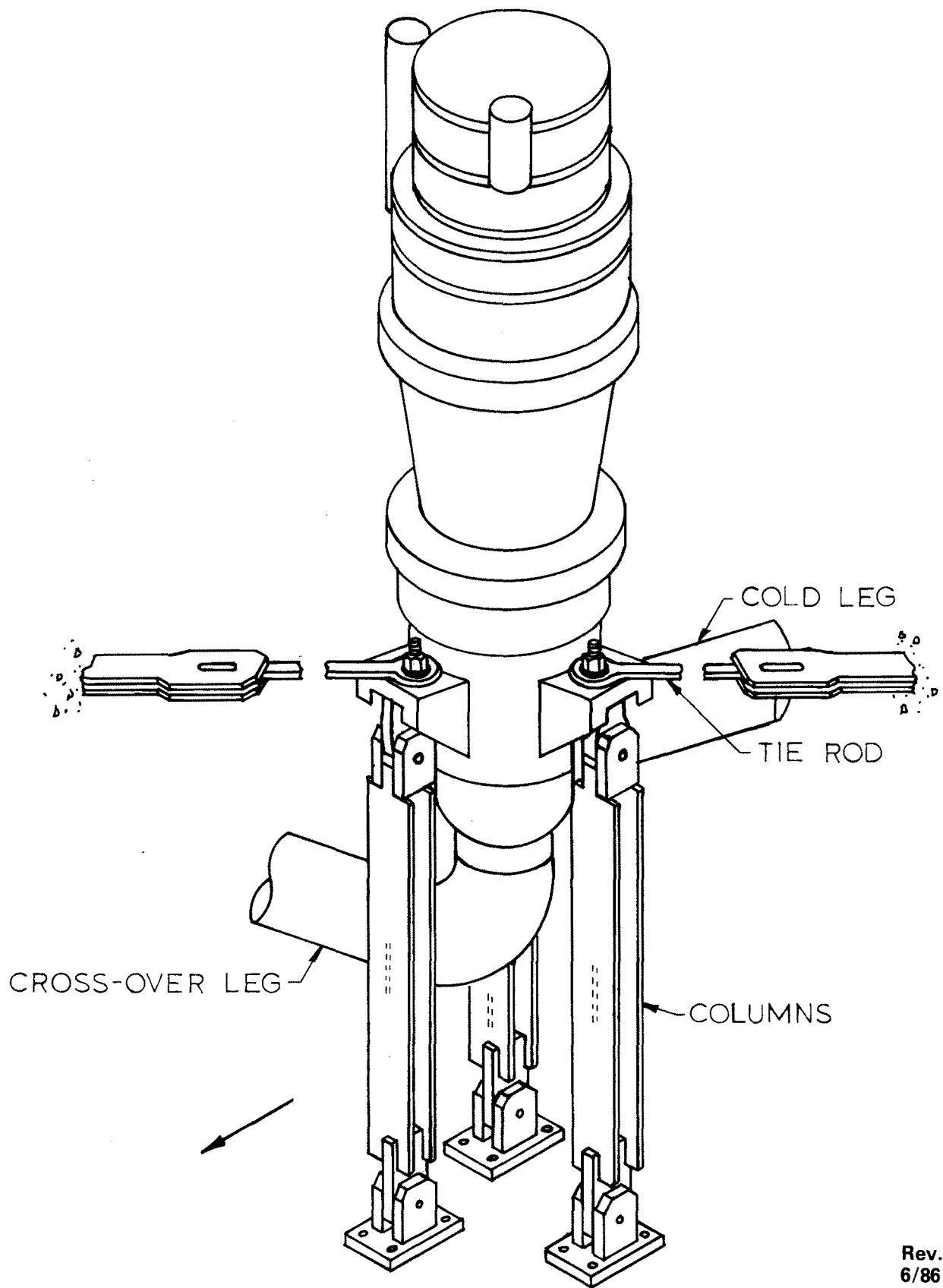
STEAM GENERATOR
ELEVATION VIEW

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CALLAWAY PLANT

FIGURE 3.8-55

**STEAM GENERATOR SUPPORT SYSTEM –
ELEVATION**

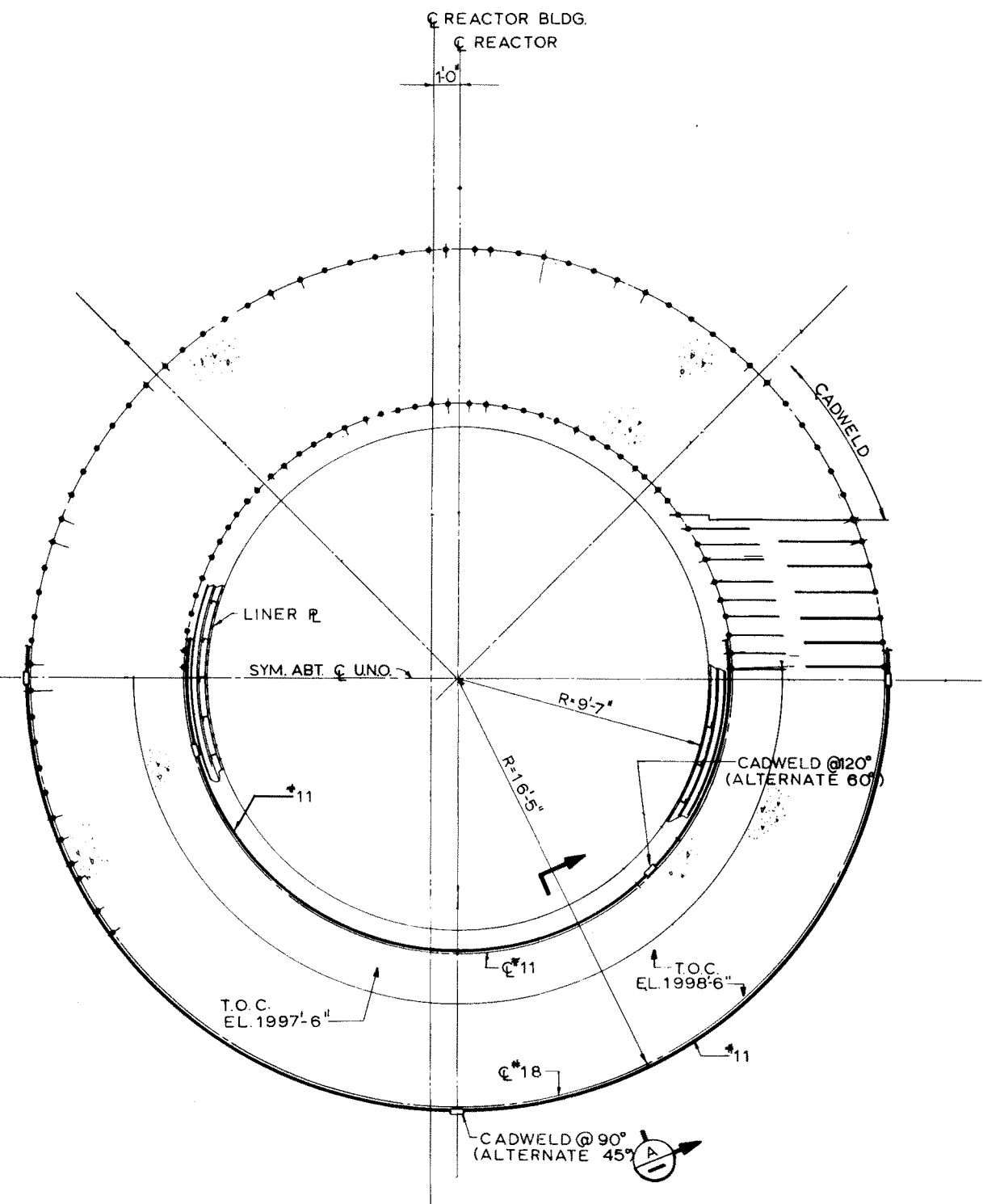
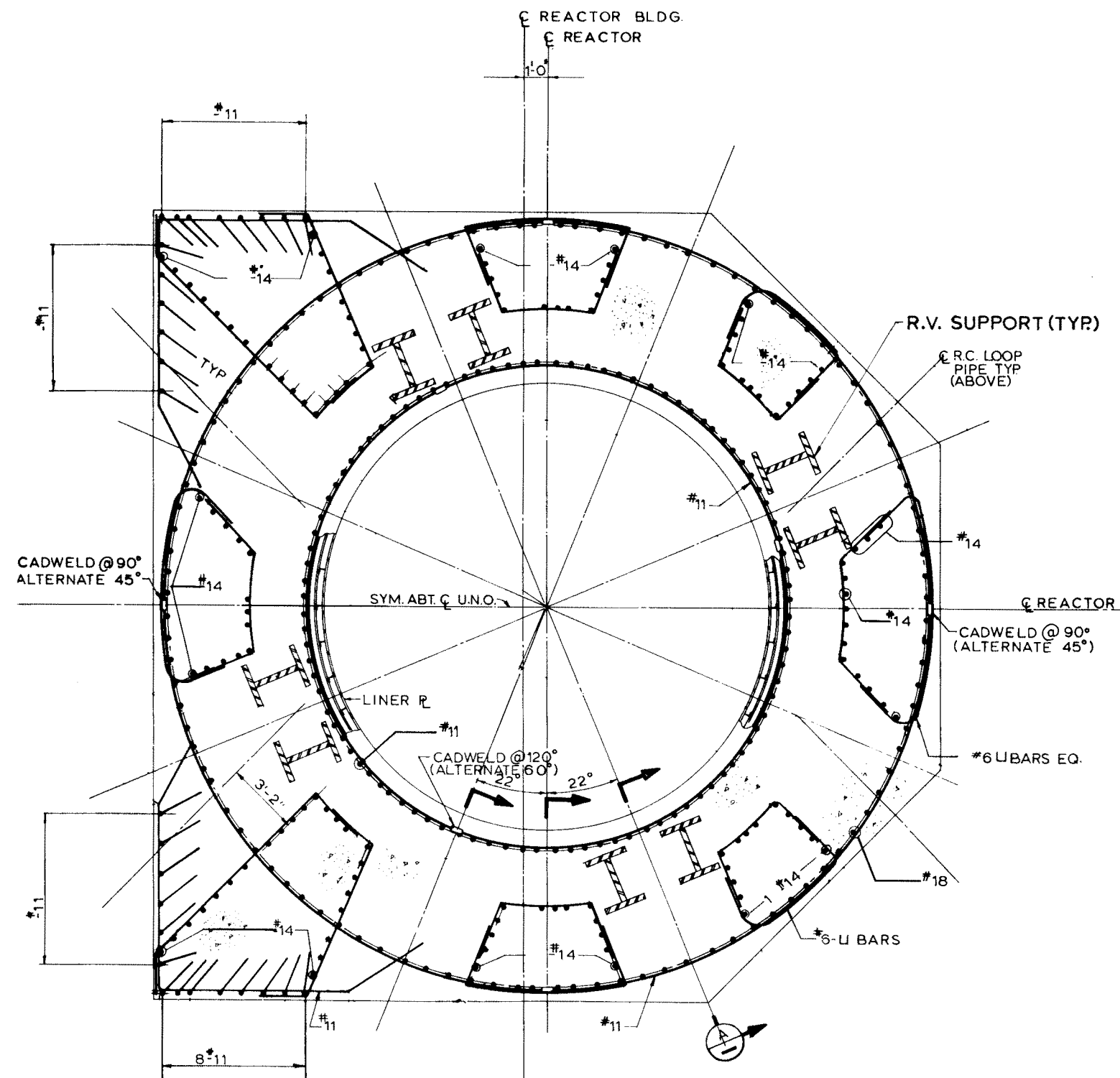


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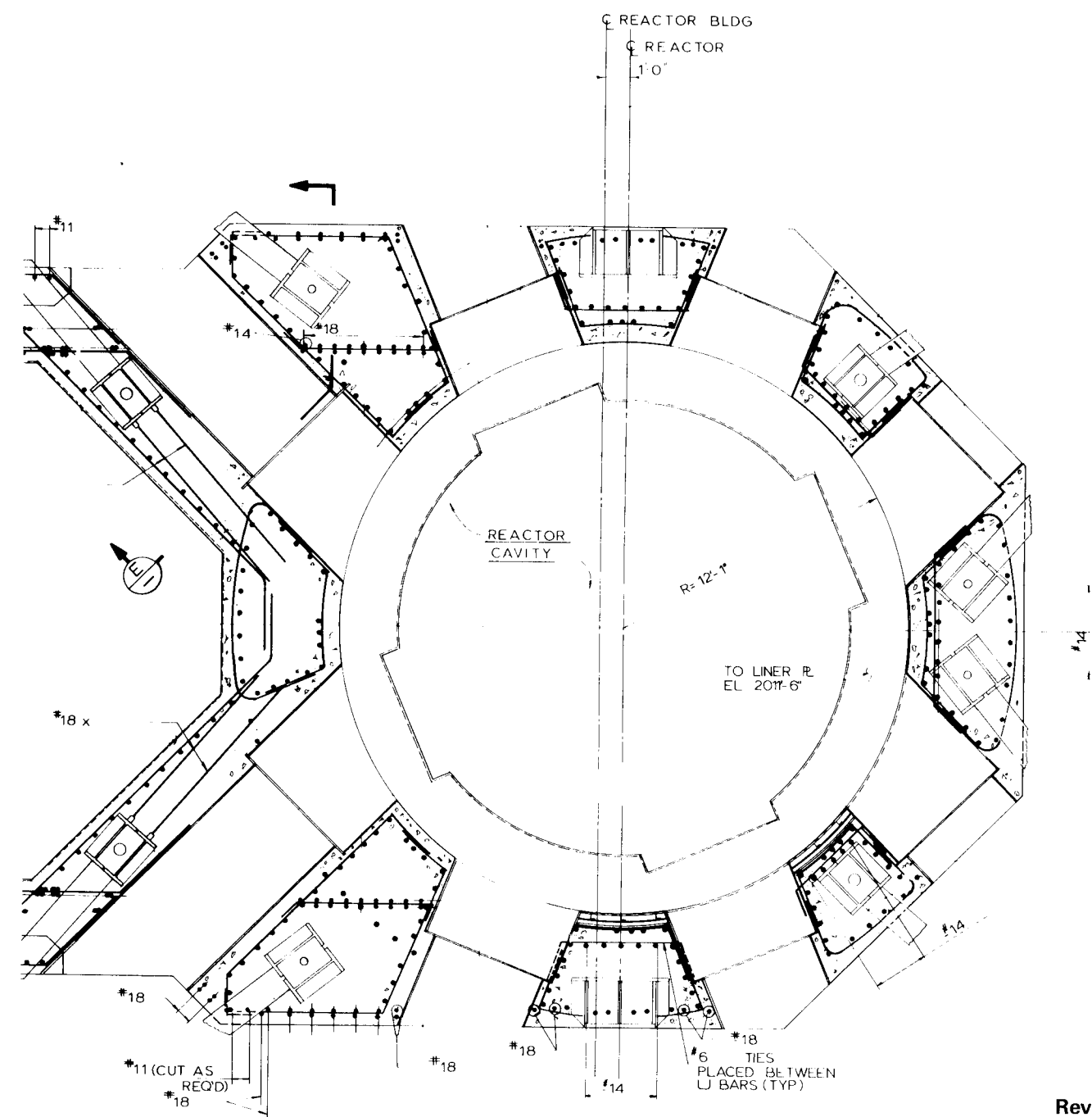
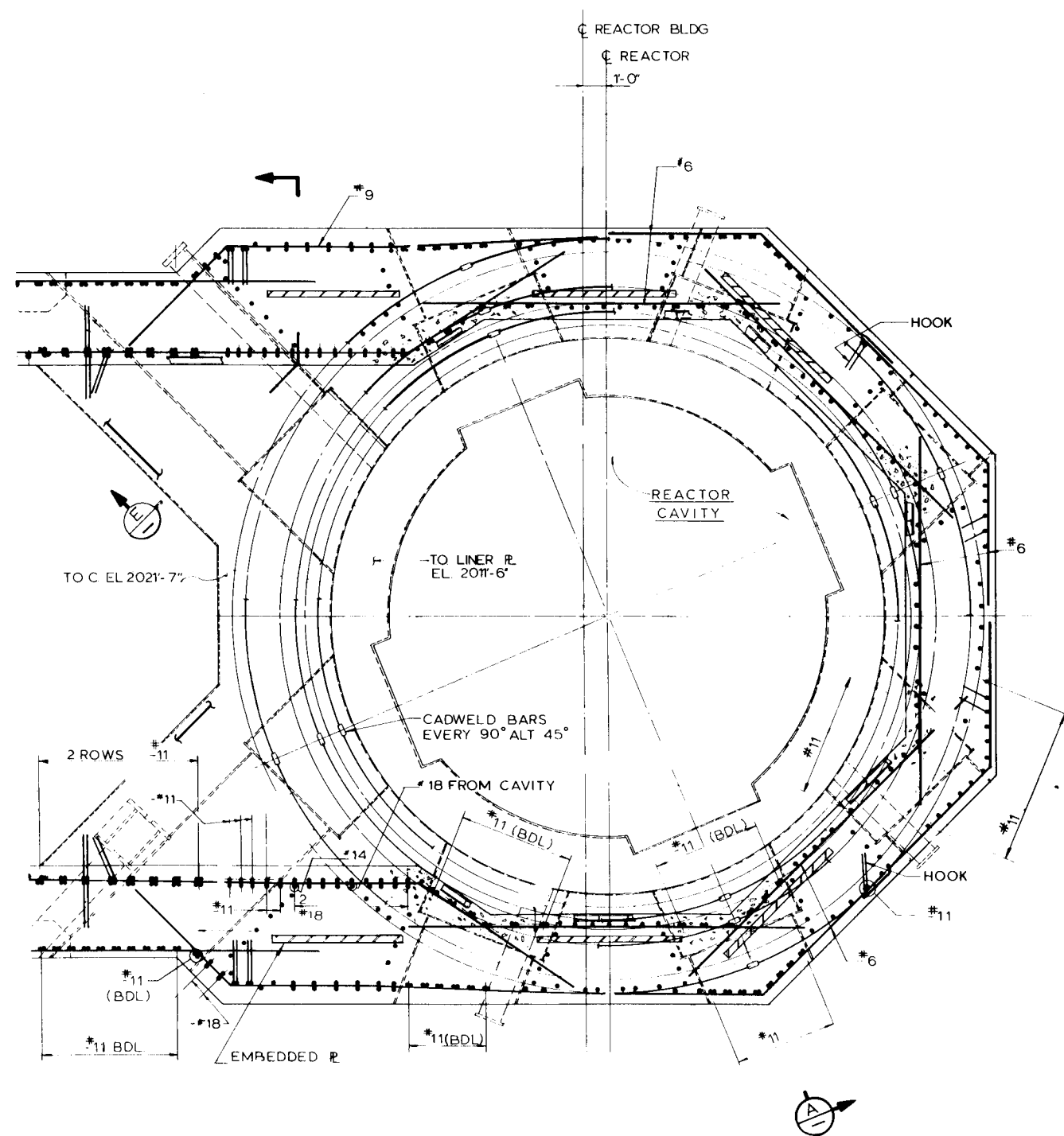
CALLAWAY PLANT

FIGURE 3.8-57

**REACTOR COOLANT PUMP
SUPPORT DETAILS**

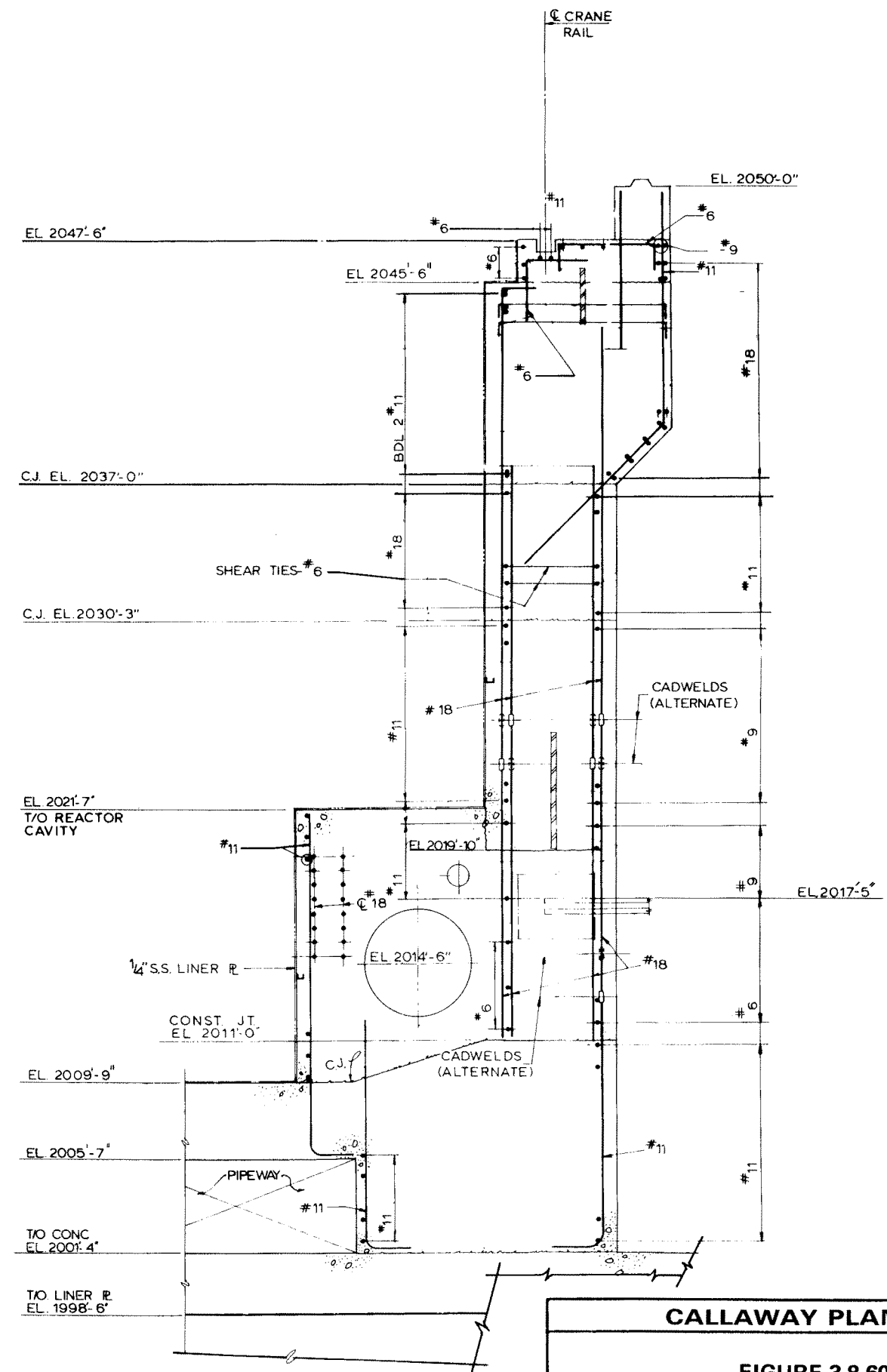
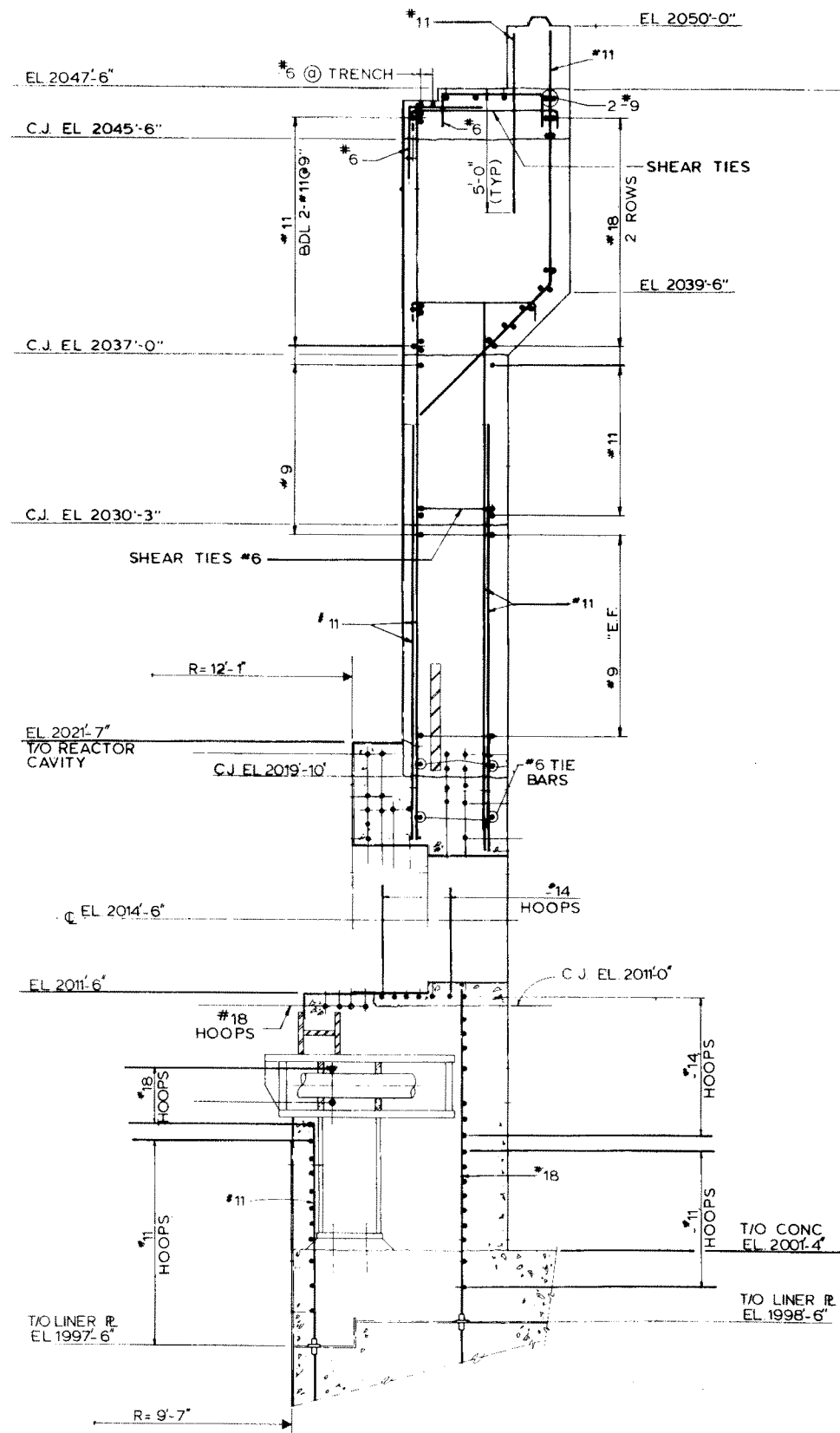


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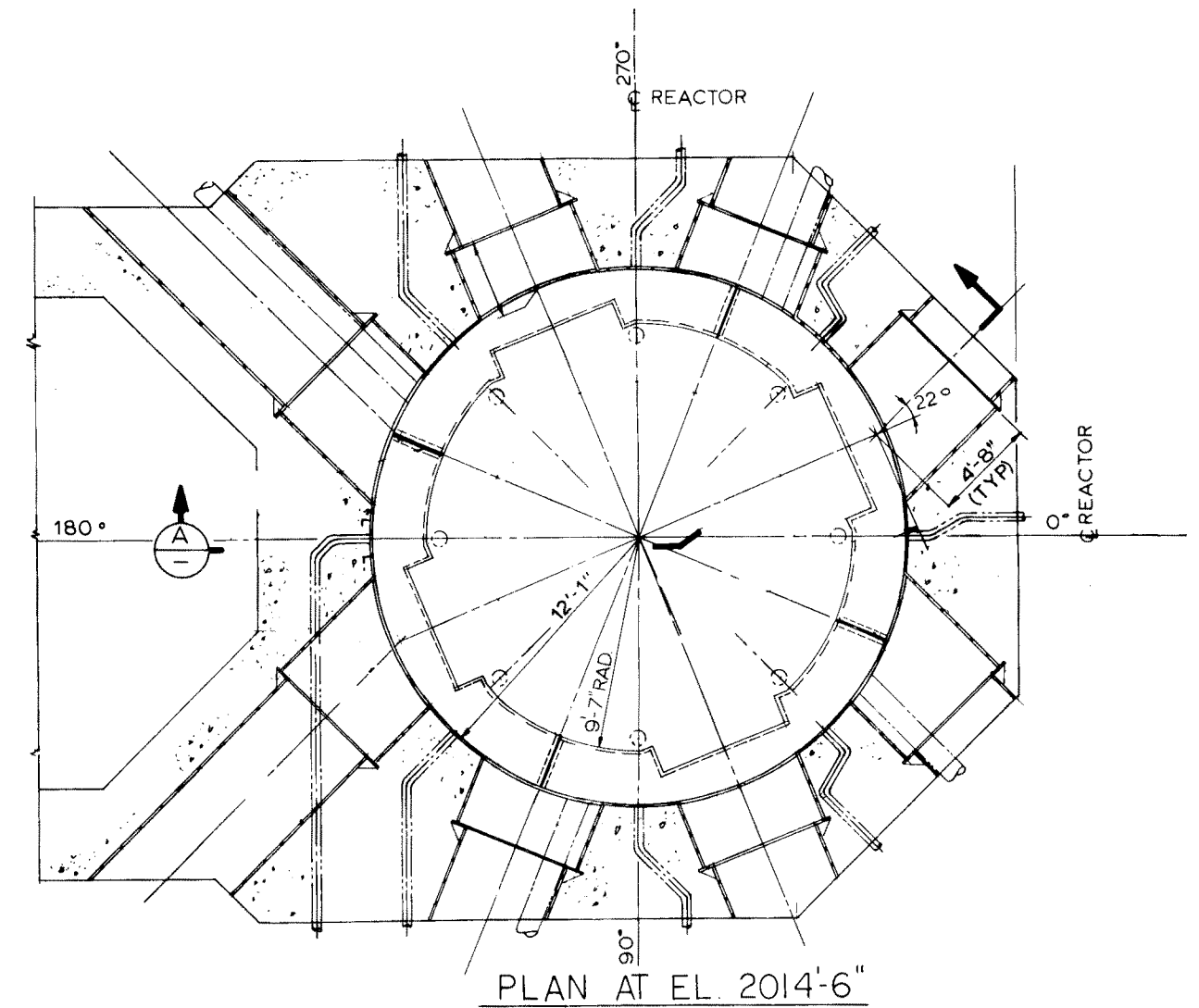
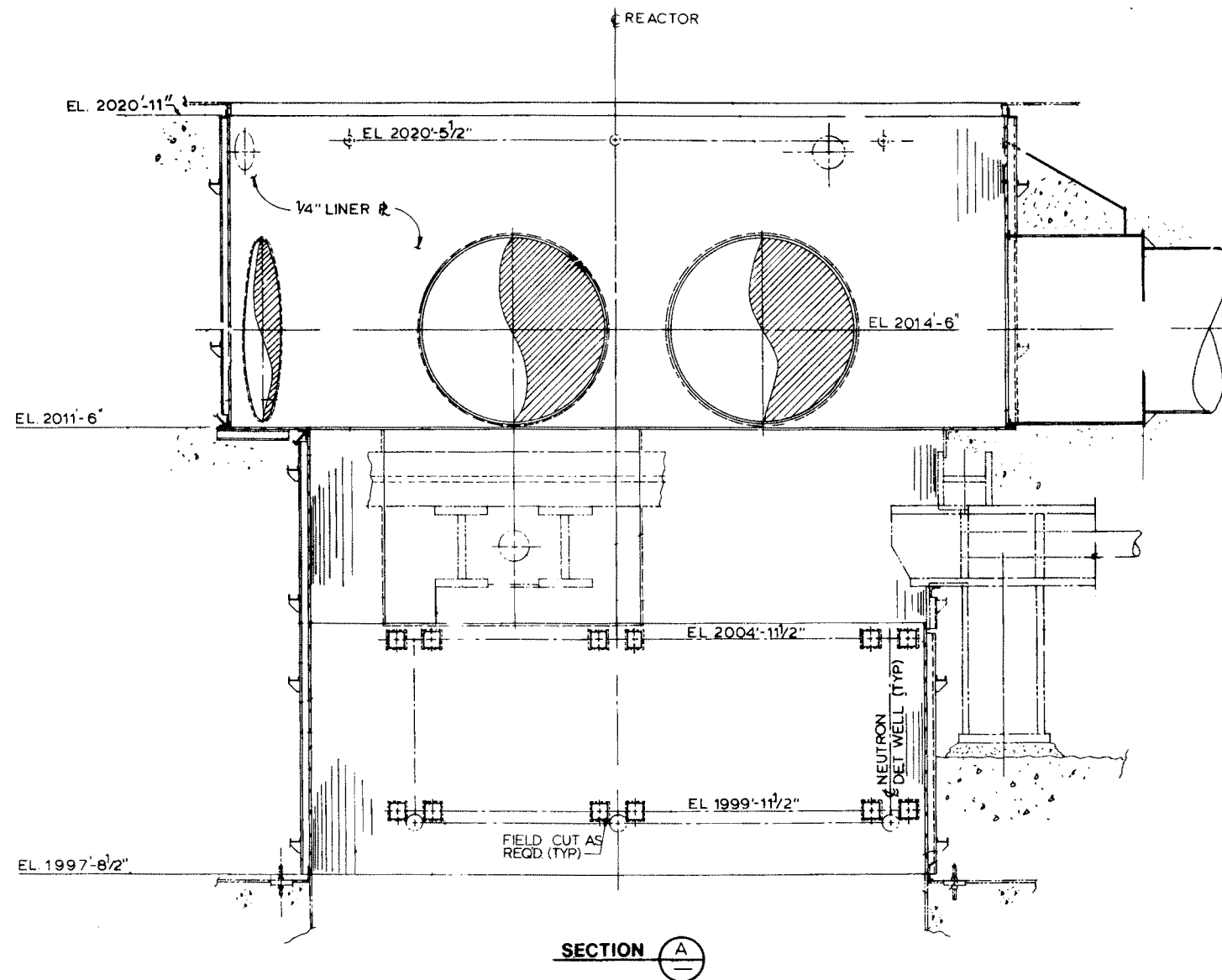
<p>CALLAWAY PLANT</p>
<p>FIGURE 3.8-59</p> <p>REACTOR CAVITY PLAN – ELEVATION 2011'-6" TO 2021'-7"</p>



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CALLAWAY PLANT

FIGURE 3.8-60
REACTOR CAVITY
ELEVATIONS



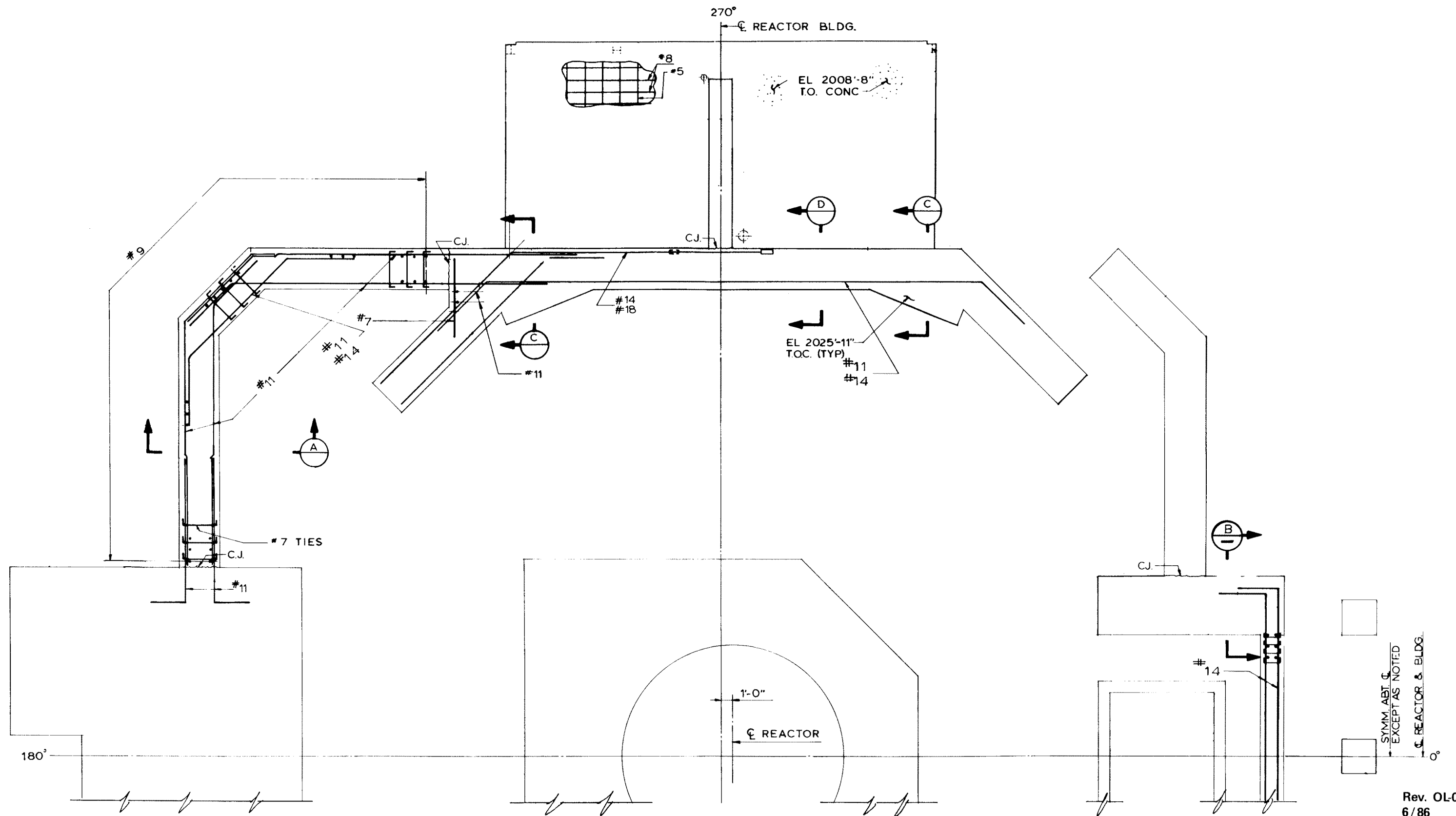
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CALLAWAY PLANT

FIGURE 3.8-61

**REACTOR CAVITY
NEAT LINE**

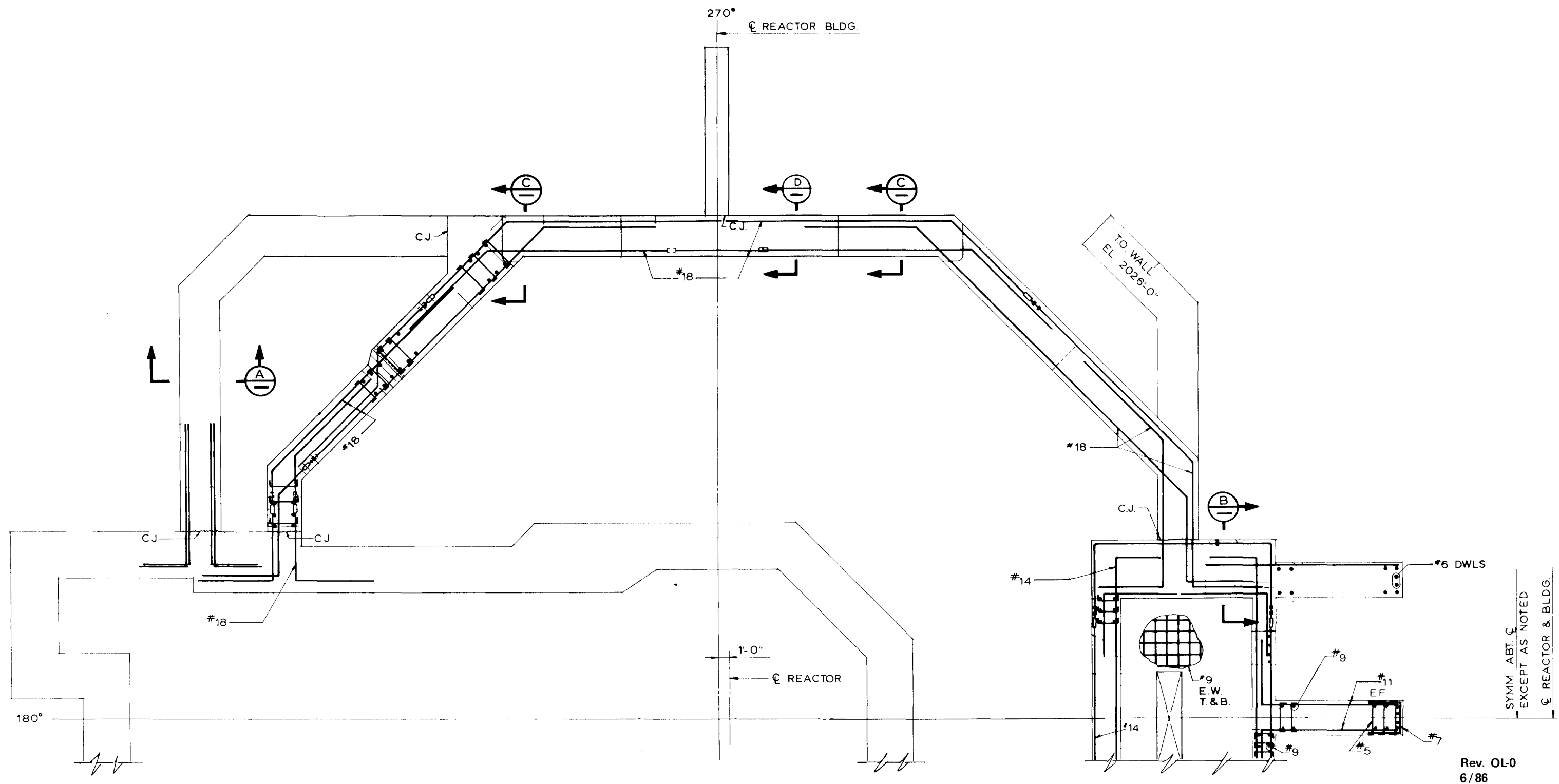
Figure 3.8-61a has been deleted.



CALLAWAY PLANT

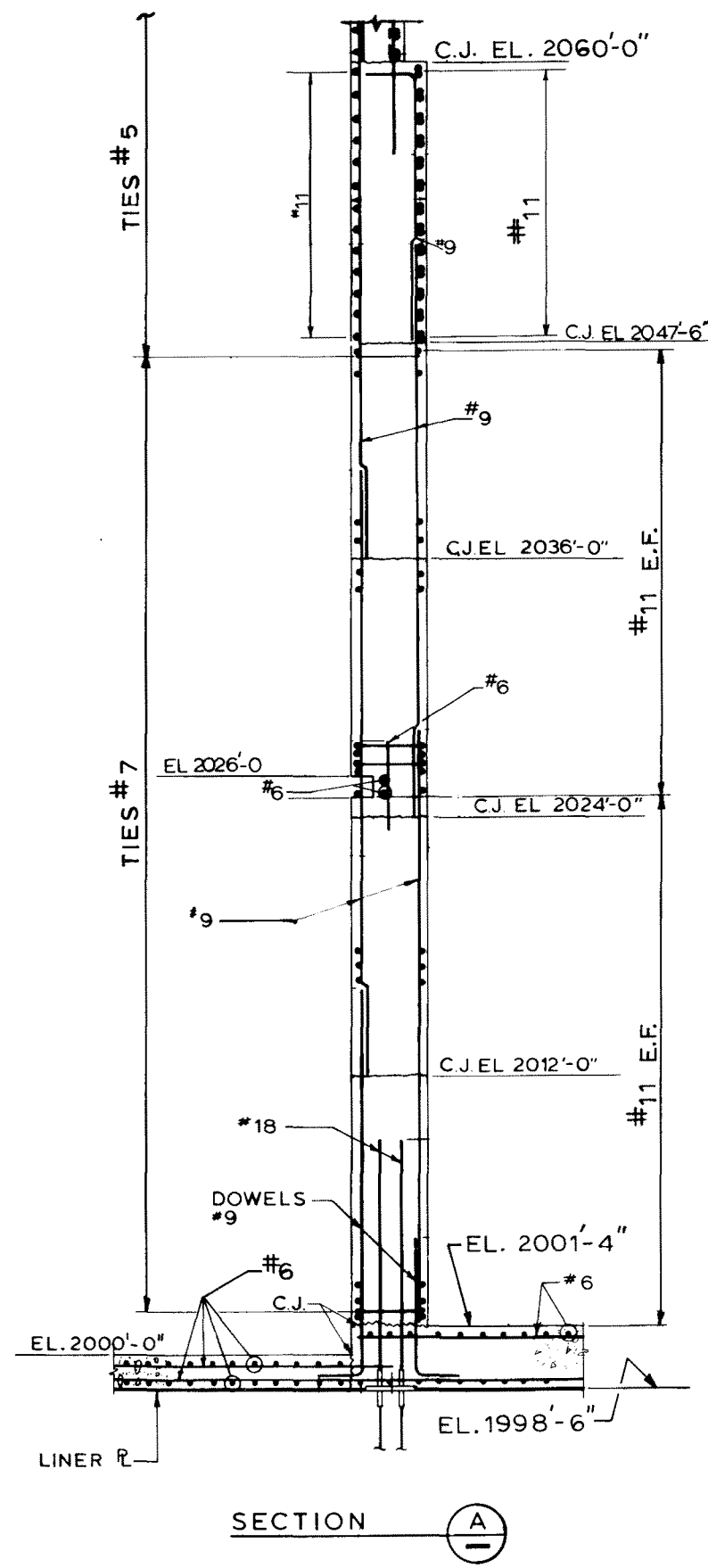
FIGURE 3.8-62

SECONDARY SHIELD WALLS —
ELEVATION 2000'-0" TO 2025'-0"



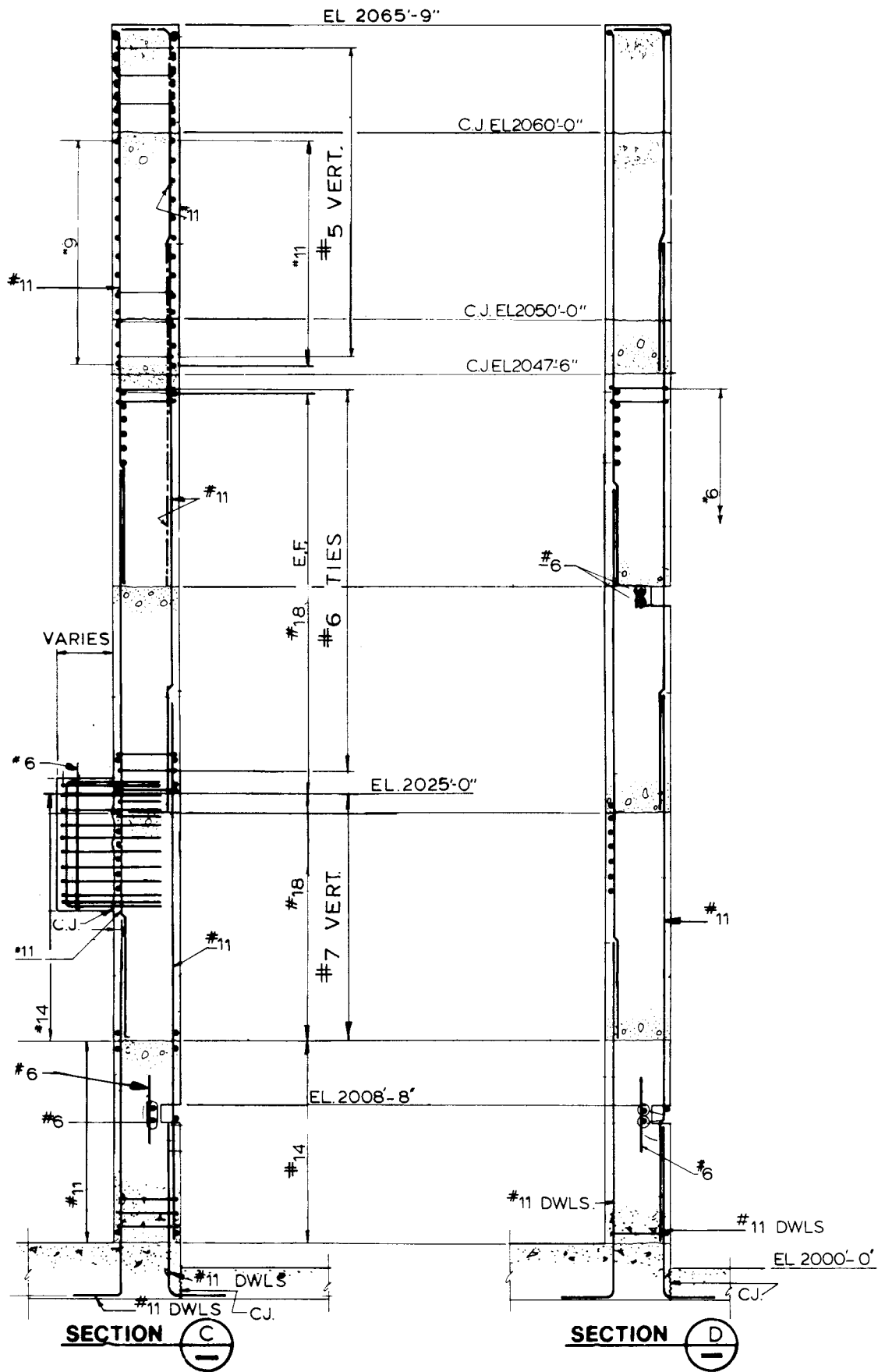
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<p>CALLAWAY PLANT</p> <p>FIGURE 3.8-63</p> <p>SECONDARY SHIELD WALLS — ELEVATION 2025'-0" TO 2047'-0"</p>
--



CALLAWAY PLANT
FIGURE 3.8-64 SECONDARY SHIELD WALLS – SECTIONS

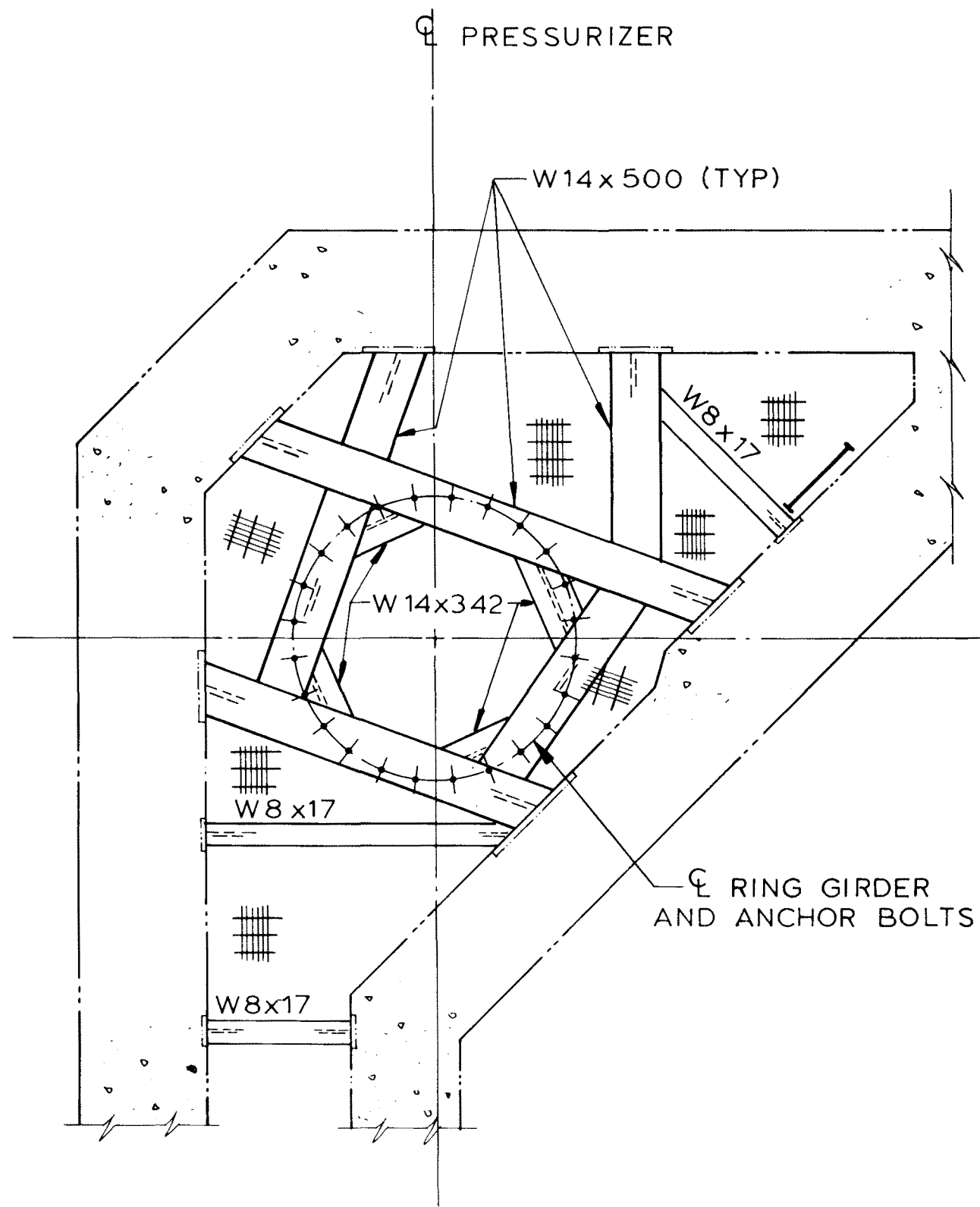
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CALLAWAY PLANT

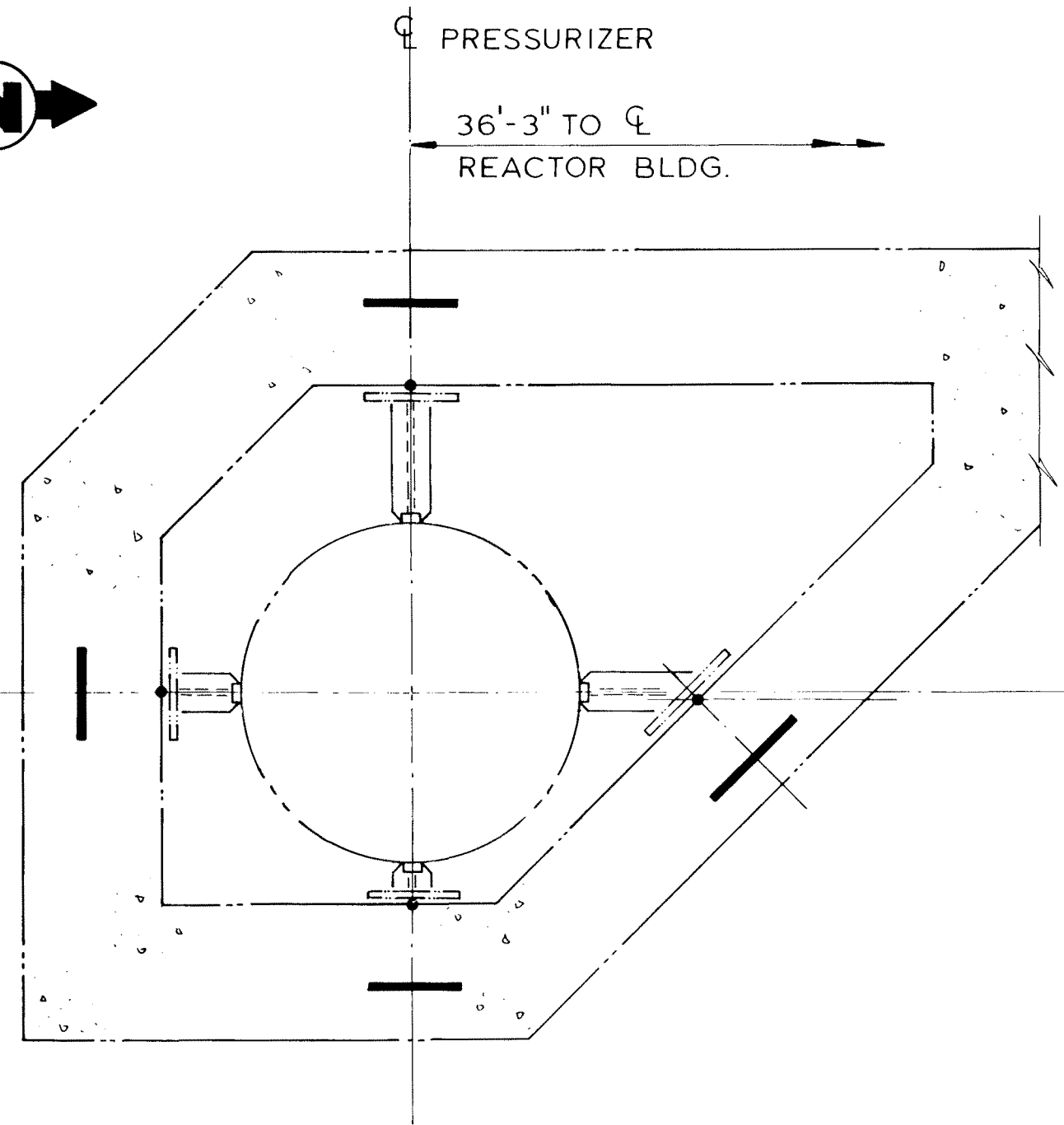
FIGURE 3.8-65

SECONDARY SHIELD WALLS –
ADDITIONAL SECTIONS



PRESSURIZER SUPPORT
AT EL 2029'-6"

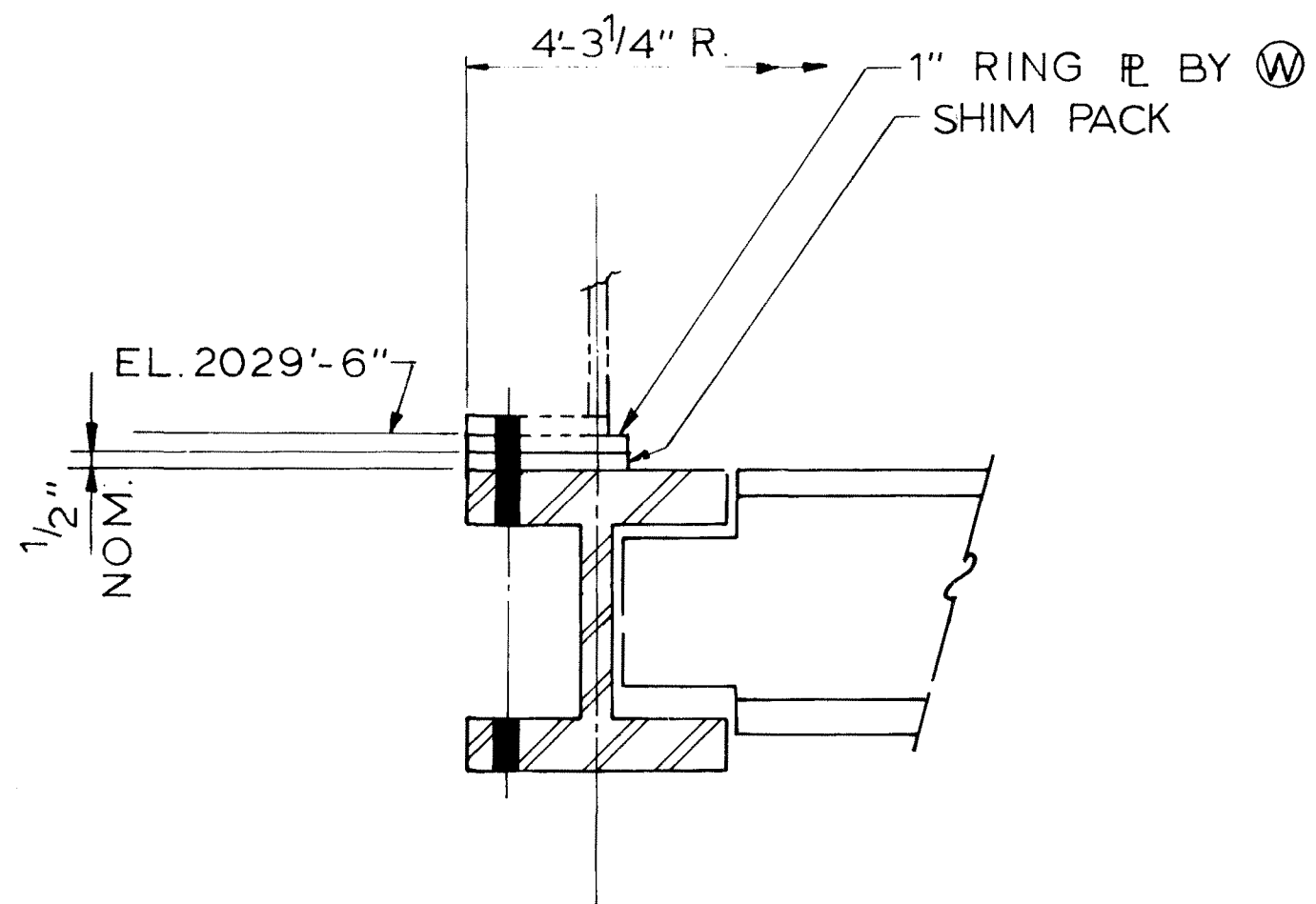
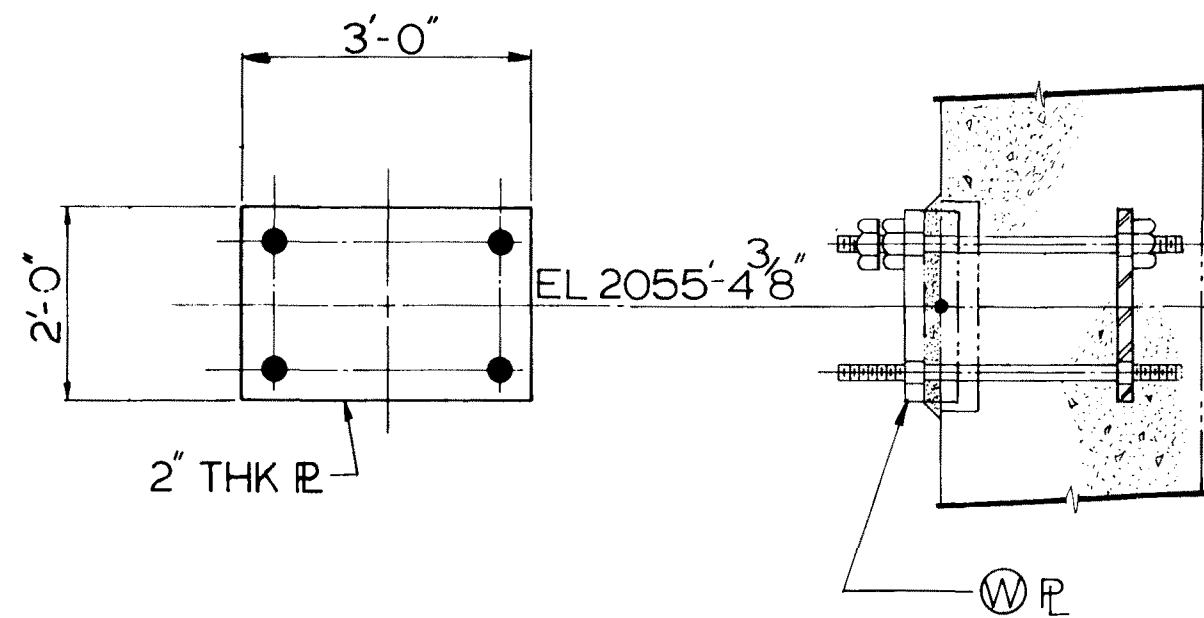
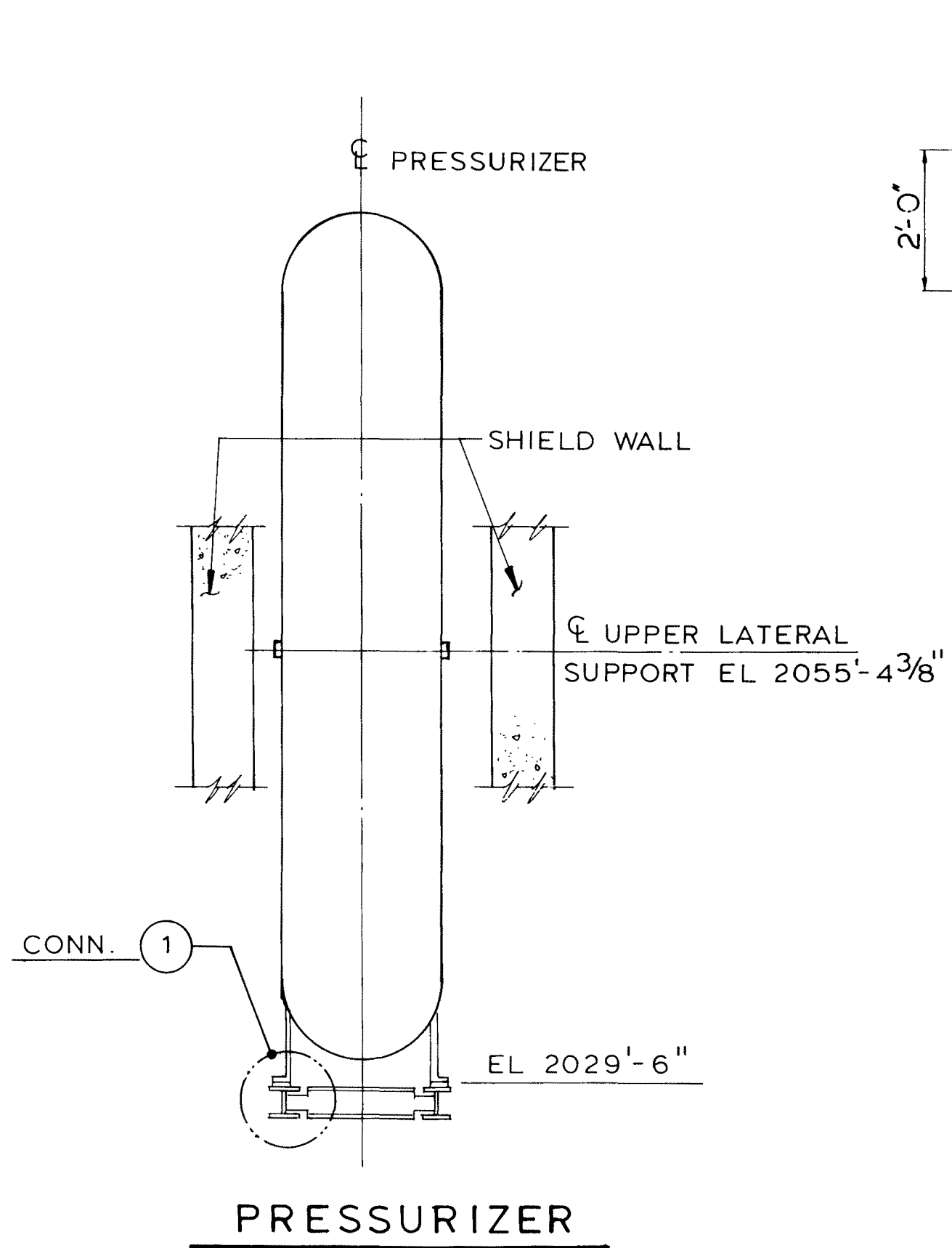
CL PRESSURIZER
32'-3" TO CL
REACTOR BLDG.



PRESSURIZER UPPER
LATERAL SUPPORTS

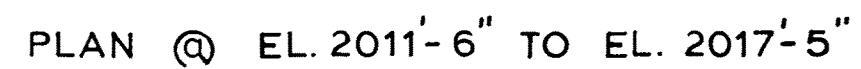
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CALLAWAY PLANT
FIGURE 3.8-66
PRESSURIZER SUPPORTS

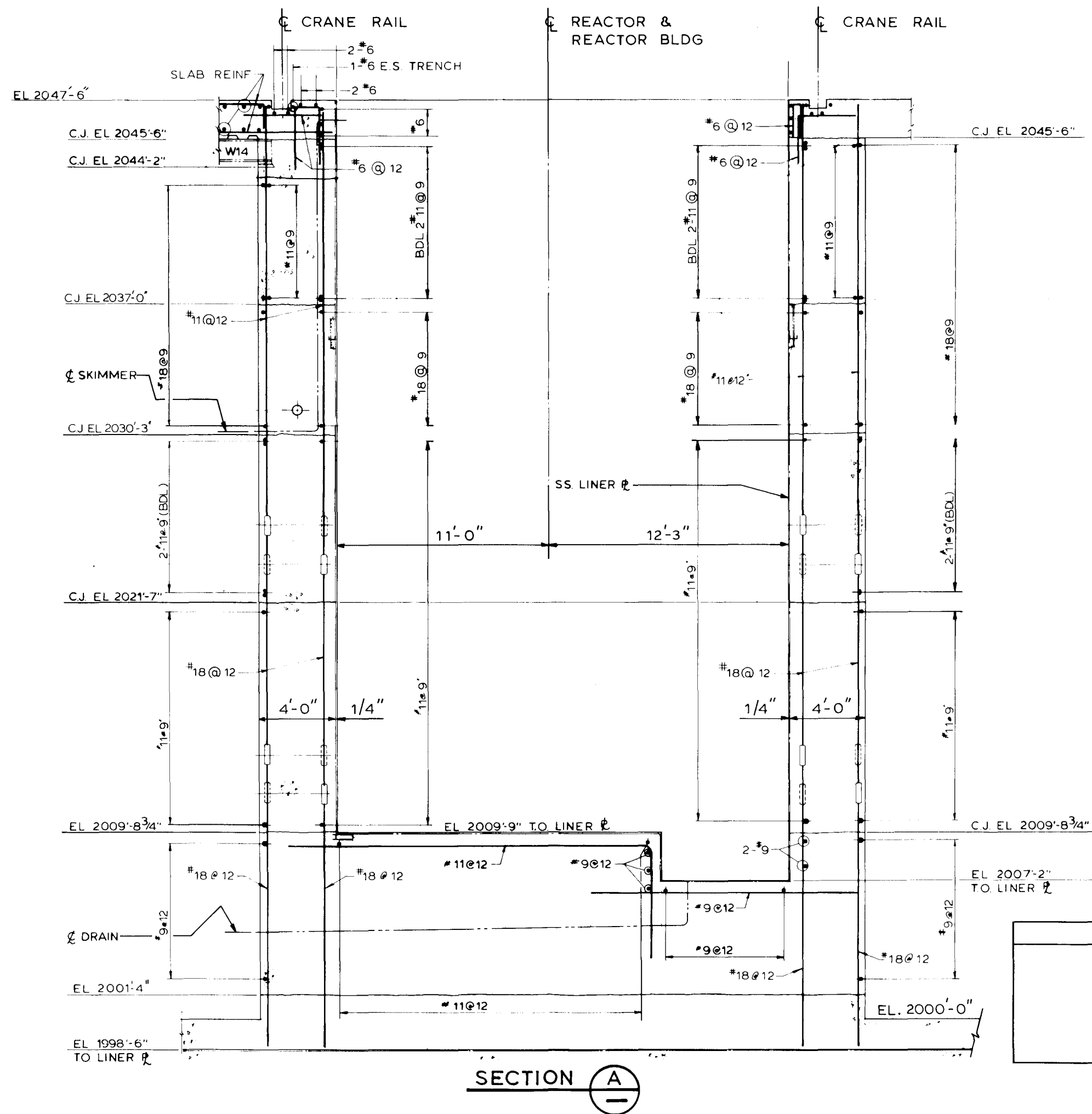


CONNECTION 1
 SCALE: 1" = 1'-0"

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CALLAWAY PLANT
FIGURE 3.8-67
PRESSURIZER SUPPORT DETAILS



REFUELING CANAL — TYPICAL PLAN



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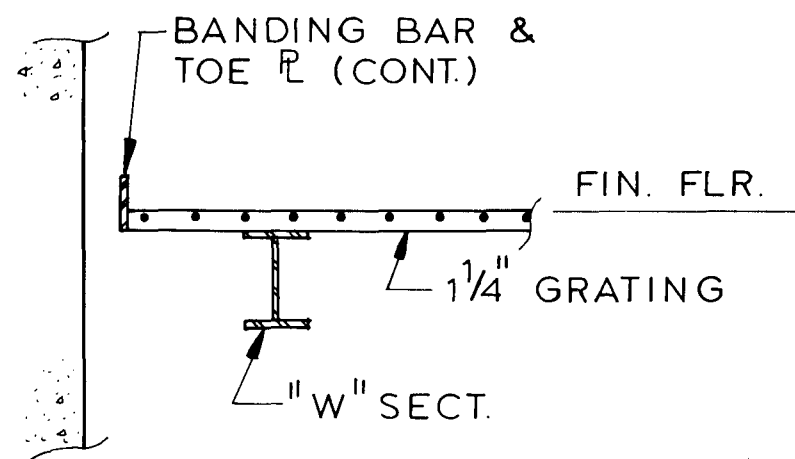
CALLAWAY PLANT
FIGURE 3.8-69
REFUELING POOL
TYPICAL CROSS SECTION

FSAR Figure 3.8-70 is withheld per RIS 2015-17

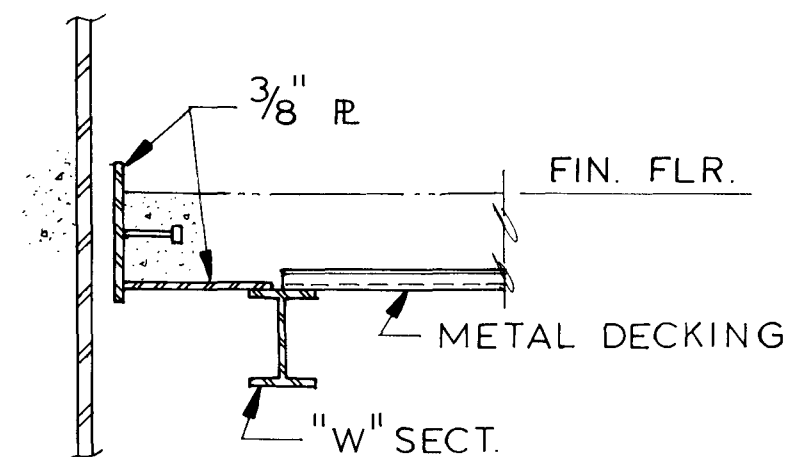
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CALLAWAY PLANT
FIGURE 3.8-70 REACTOR BUILDING OPERATING FLOOR

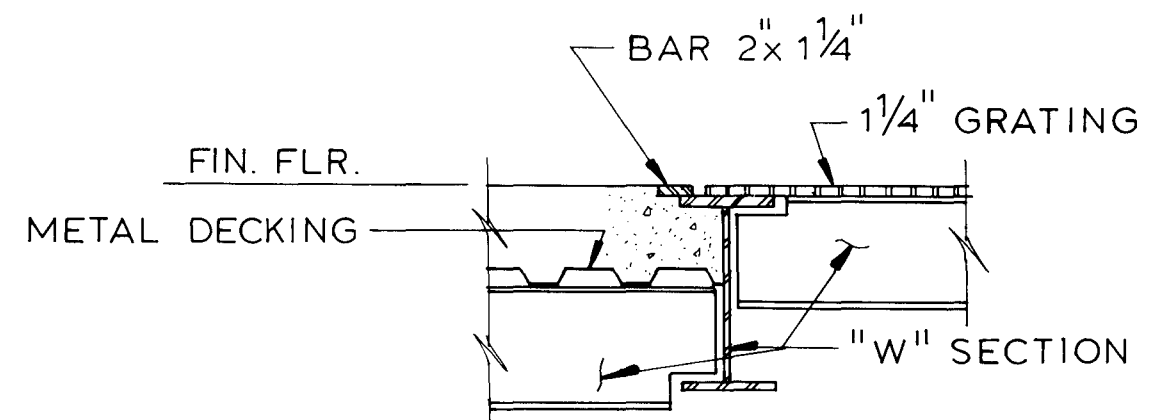
FSAR Figure 3.8-70 is withheld per RIS 2015-17



SECTION B



SECTION A



SECTION C

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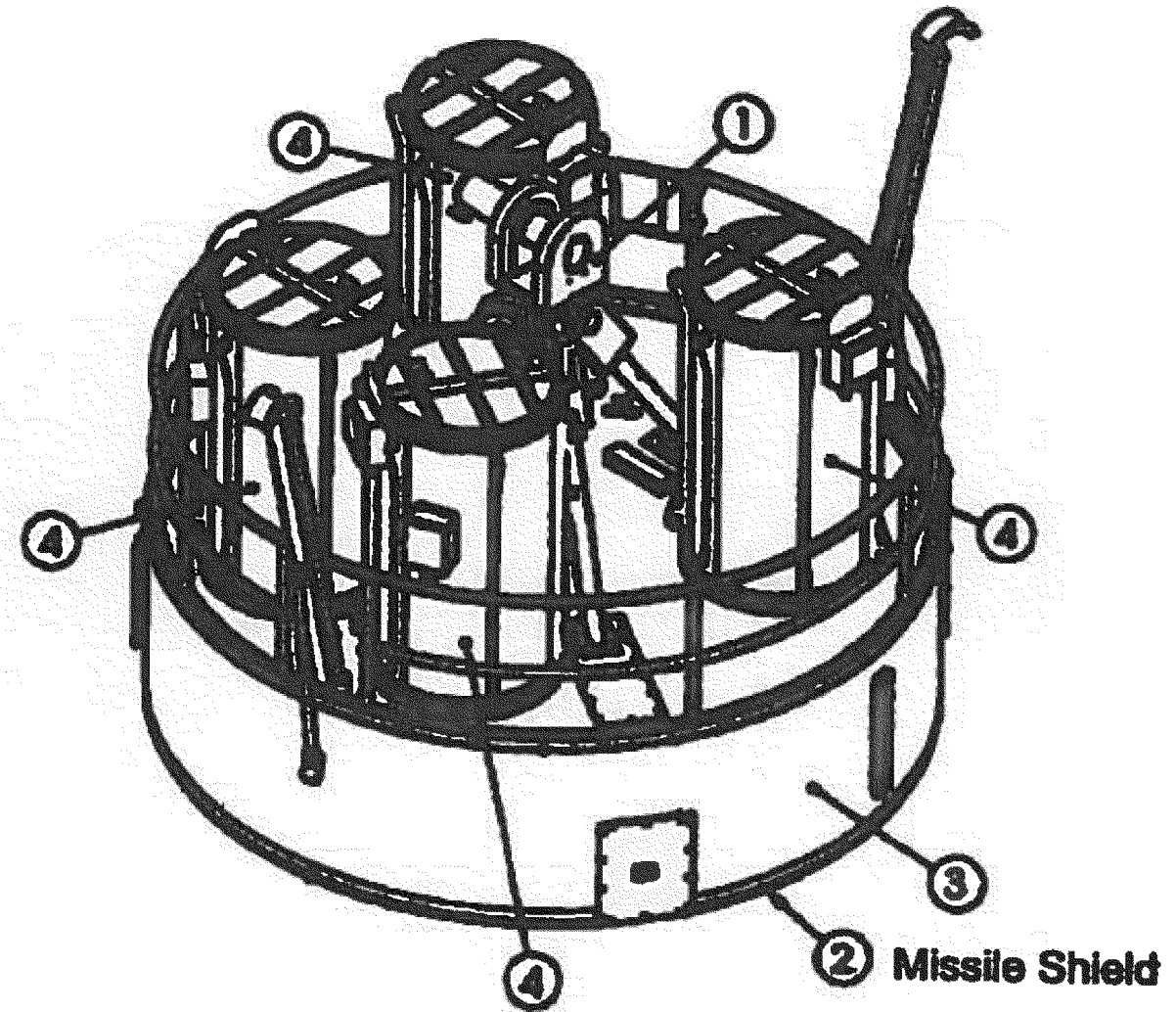
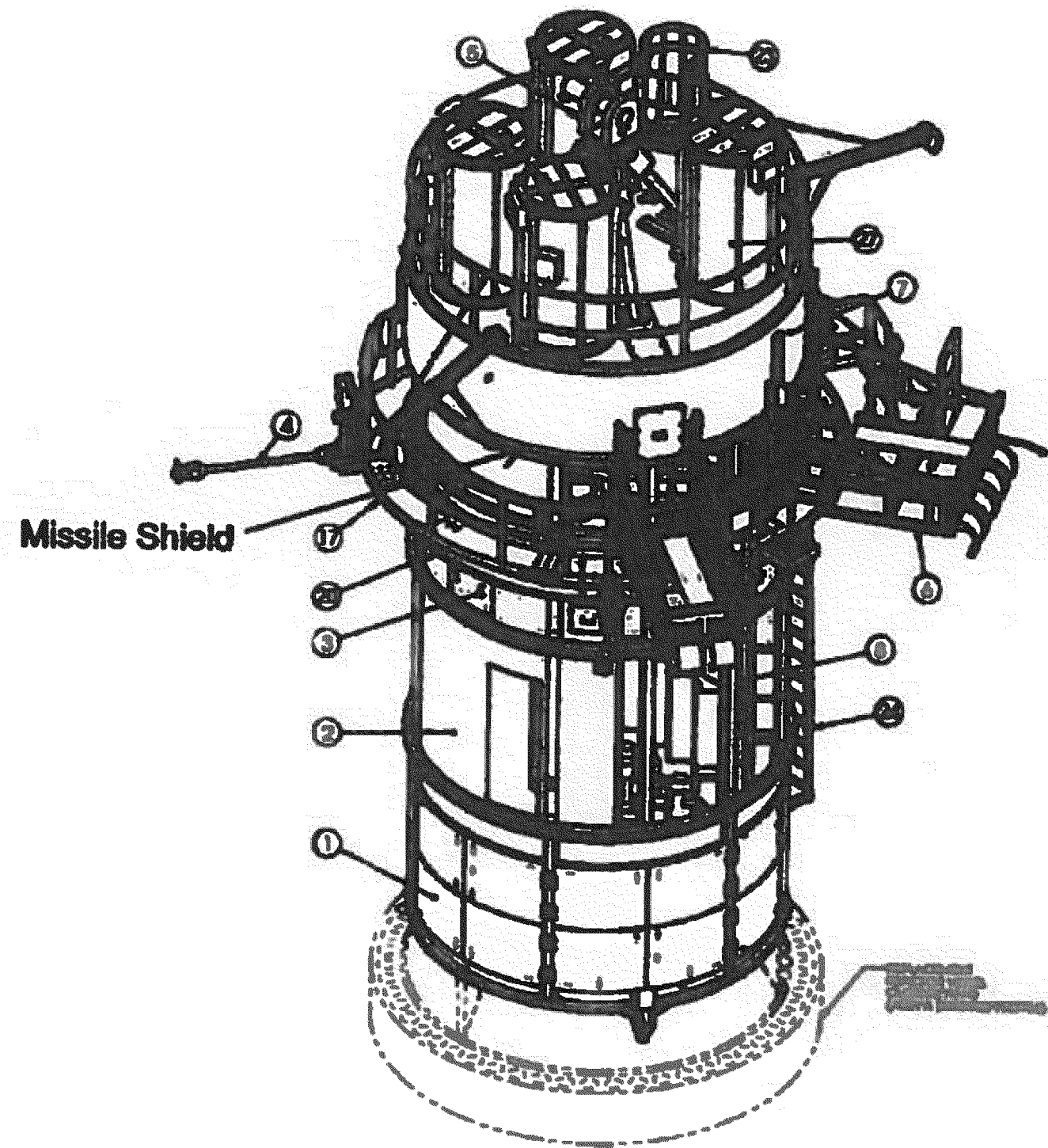
CALLAWAY PLANT
FIGURE 3.8-71
REACTOR BUILDING OPERATING FLOOR SUPPORTS AT SHELL

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CALLAWAY PLANT
FIGURE 3.8-72 REACTOR BUILDING INTERMEDIATE FLOOR AT ELEVATION 2026'-0"

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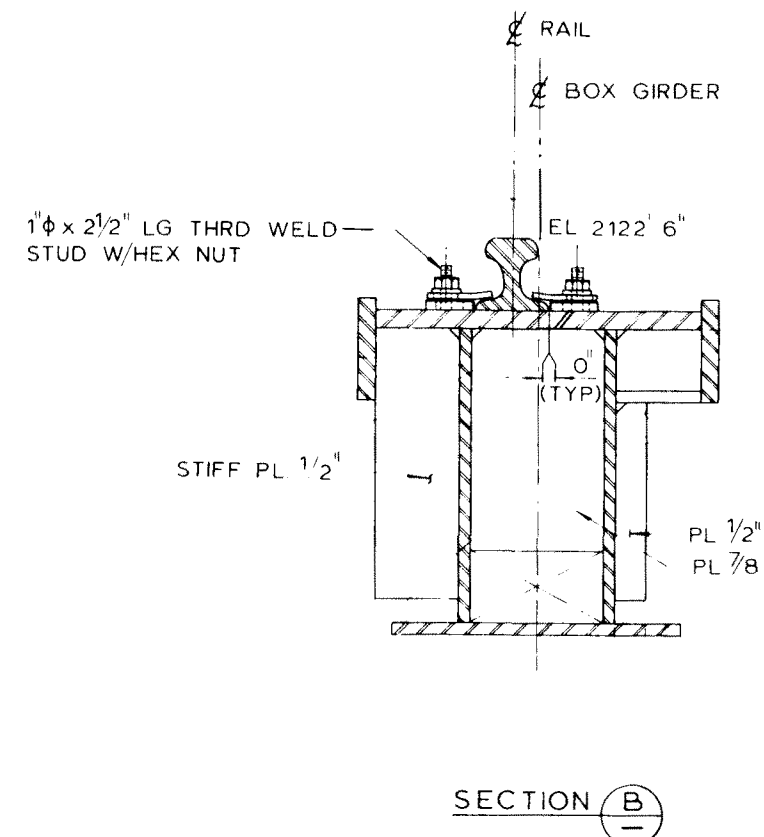
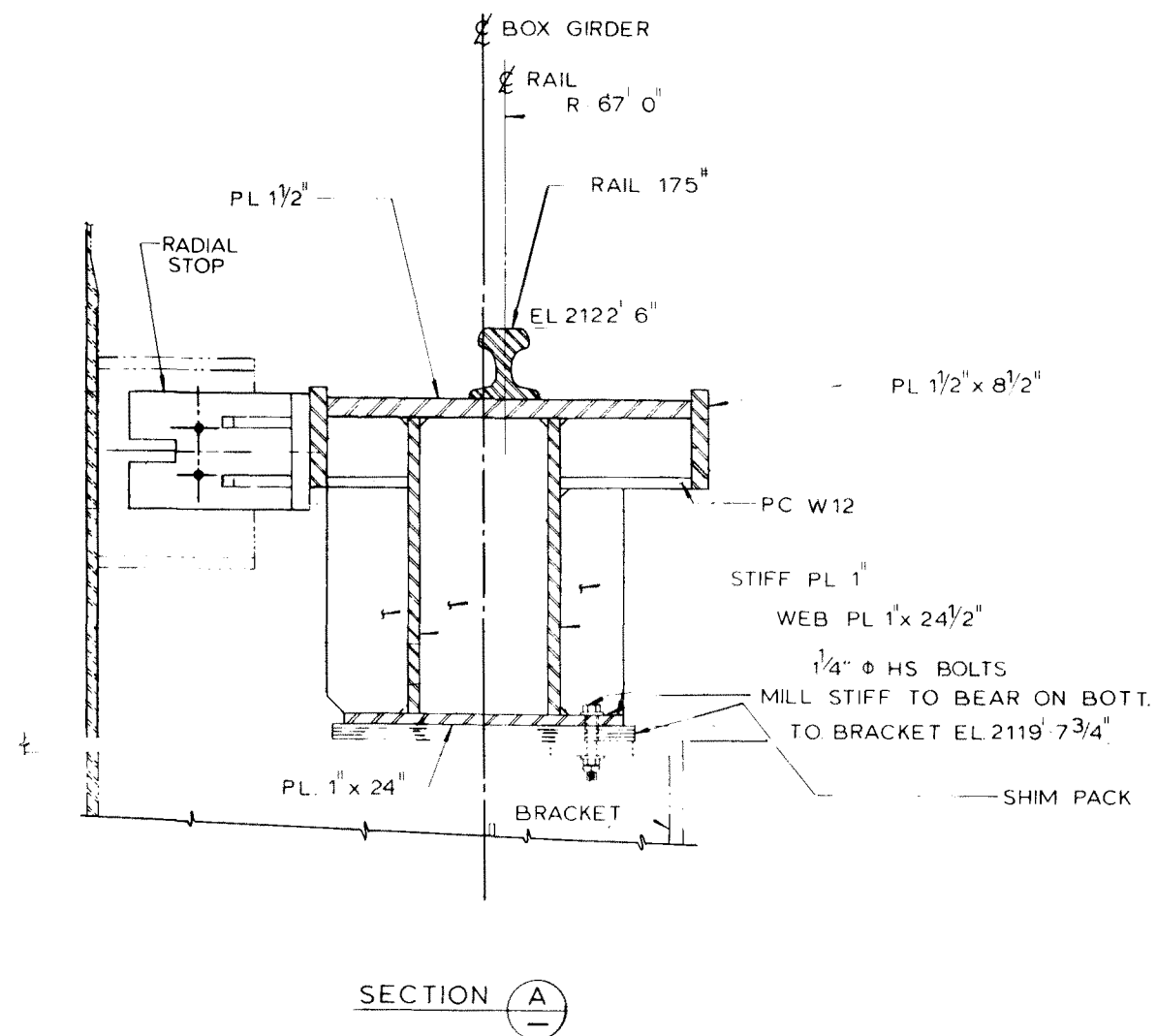
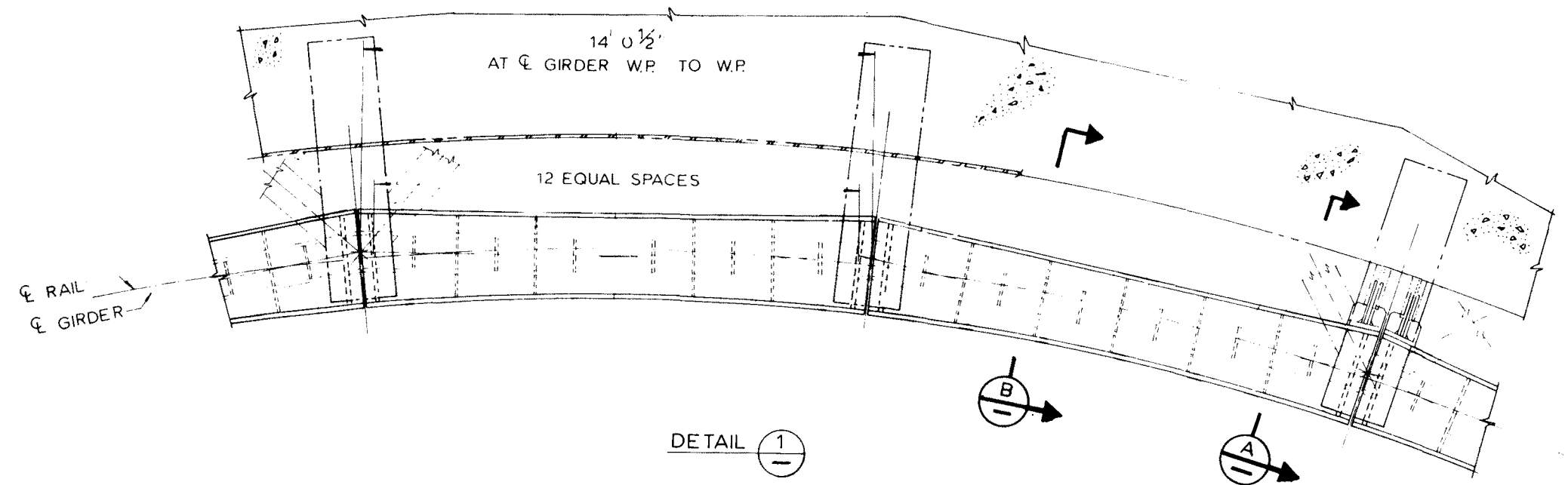
CALLAWAY PLANT
FIGURE 3.8-73 REACTOR BUILDING INTERMEDIATE FLOOR AT ELEVATION 2068'-6"



CALLAWAY PLANT

FIGURE 3.8-74
 REACTOR MISSILE SHIELD
 (INTEGRATED INTO THE INTEGRATED
 HEAD ASSEMBLY)

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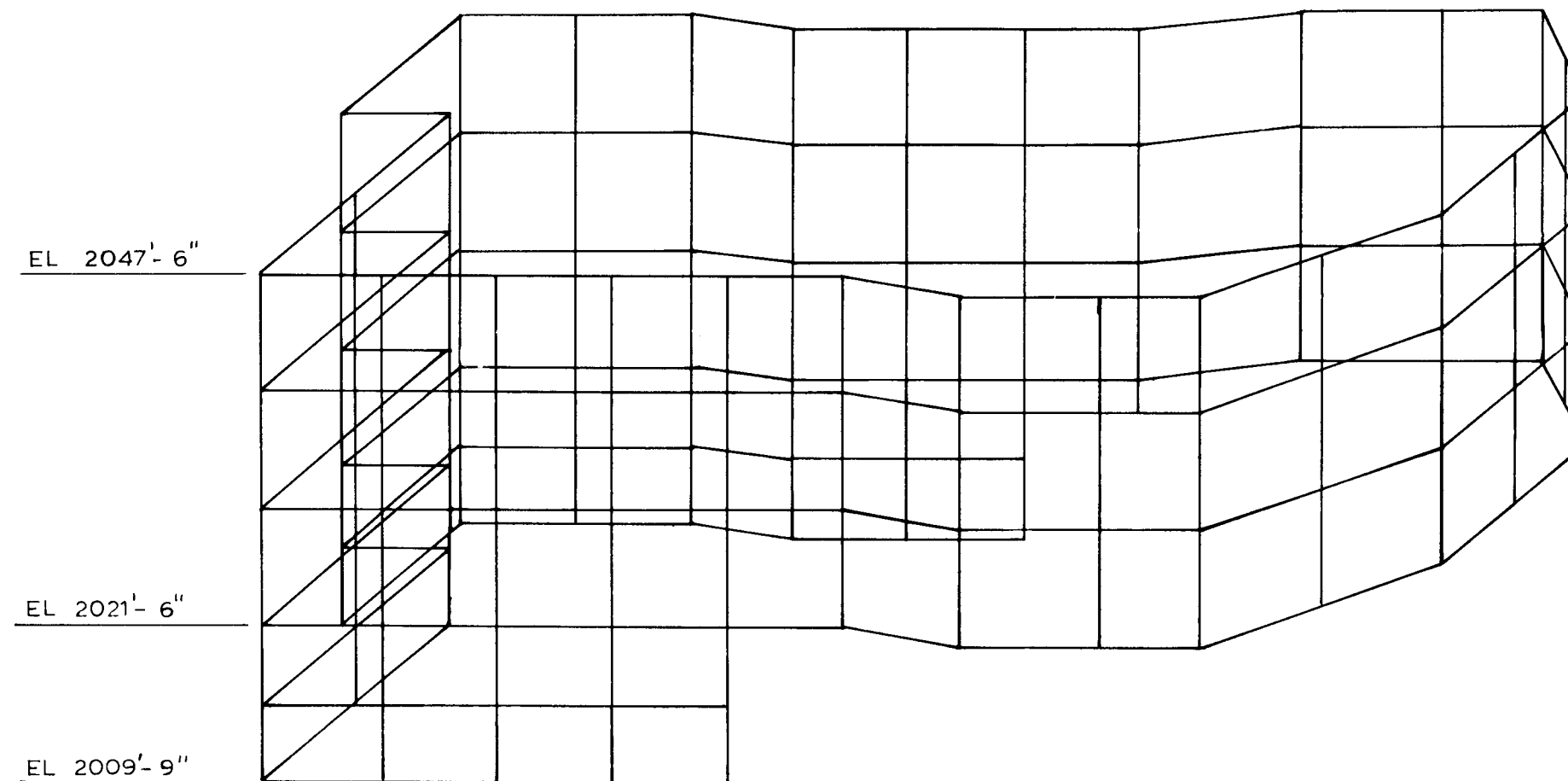
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CALLAWAY PLANT

FIGURE 3.8-75

REACTOR BUILDING
POLAR CRANE SUPPORT SYSTEM

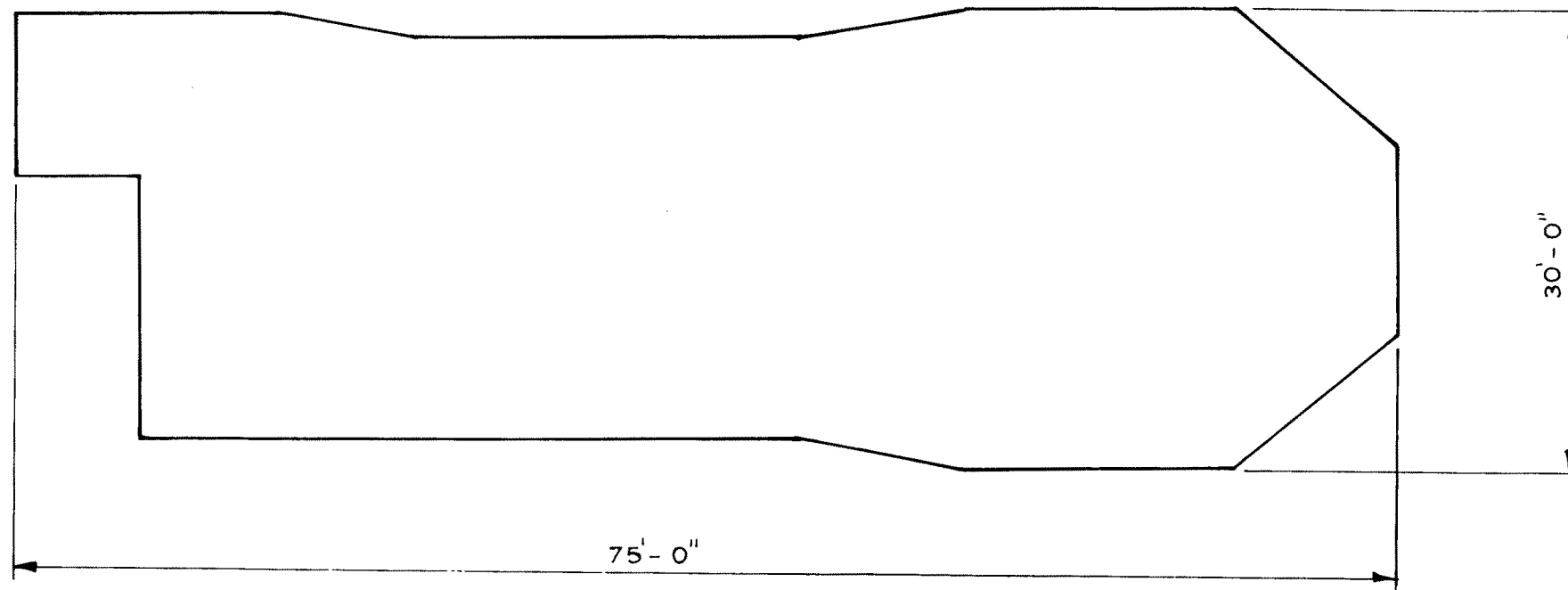
Figure 3.8-76 Deleted



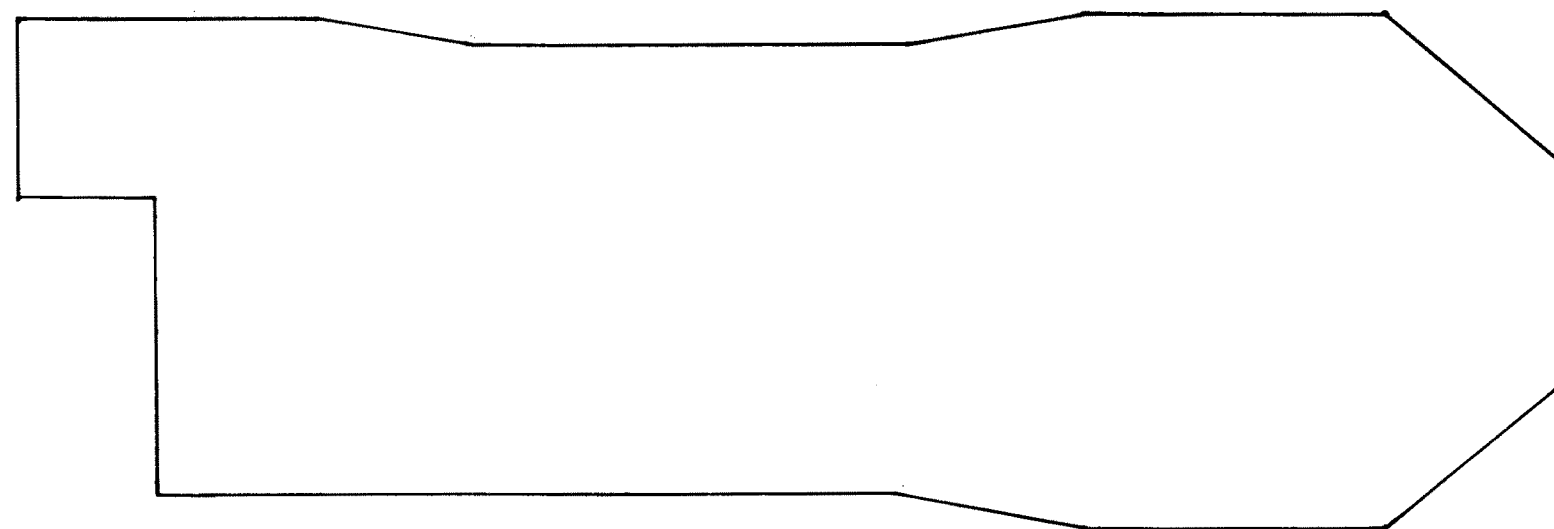
NOTE: BOUNDARY ELEMENTS ARE NOT SHOWN FOR CLARITY.
MODEL IS "FIXED" ALONG ENTIRE BOTTOM EDGE.
TOP EDGE IS "FREE", EXCEPT LATERAL RESTRAINT IS
PROVIDED AT NORTHERN PORTION TO ACCOUNT
FOR THE SEAL TABLE.

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CALLAWAY PLANT
FIGURE 3.8-77
REFUELING POOL FINITE ELEMENT MODEL - ISOMETRIC



PLAN ELEV. 2047'-6"

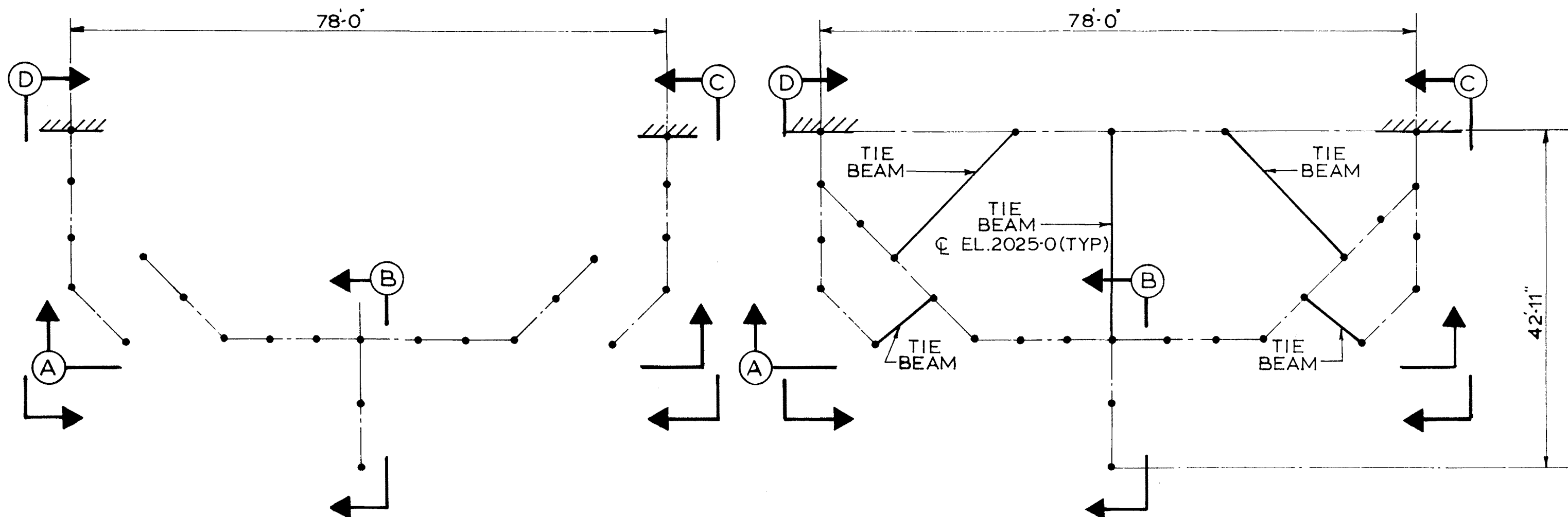


PLAN ELEV. 2021'-6"



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CALLAWAY PLANT
FIGURE 3.8-78
REFUELING POOL FINITE ELEMENT MODEL - PLAN VIEWS

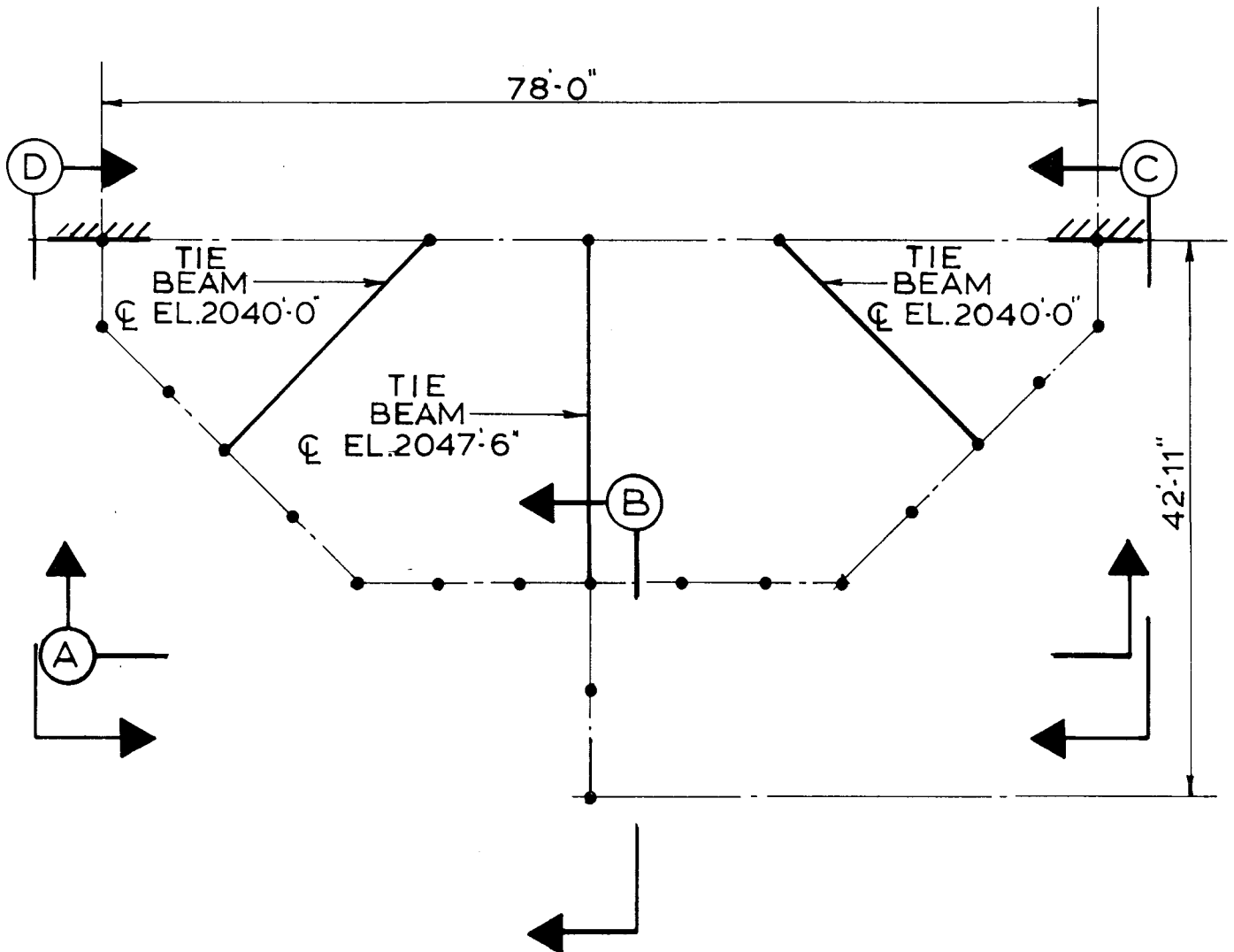


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CALLAWAY PLANT

FIGURE 3.8-79

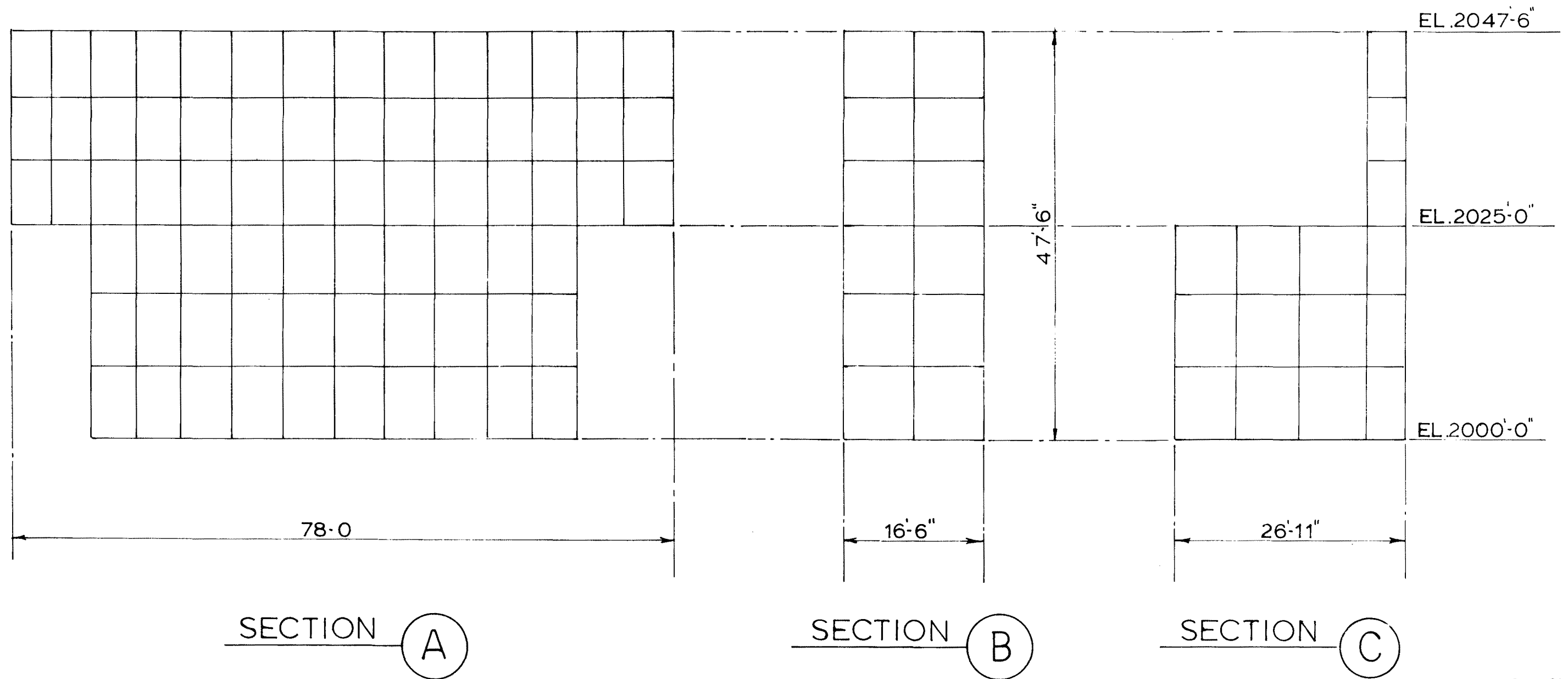
**SECONDARY SHIELD WALL EAST SIDE
FINITE ELEMENT MODEL - PLAN VIEWS**



PLAN FROM EL.2025'-0"
TO EL.2047'-6"

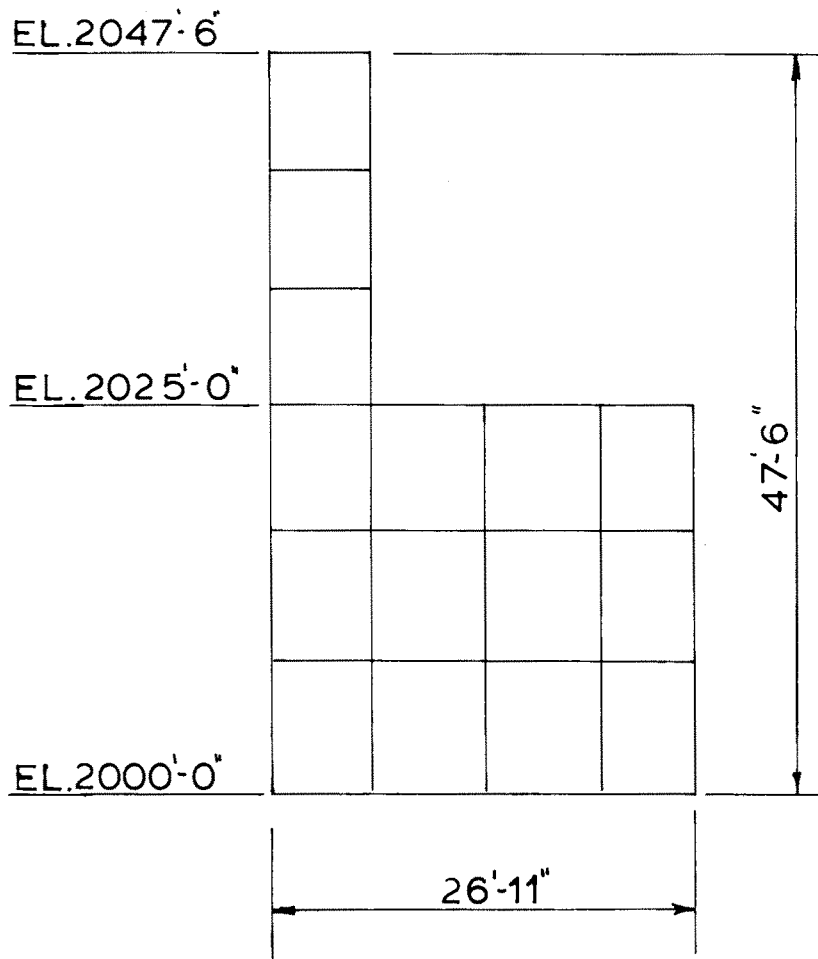
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CALLAWAY PLANT
FIGURE 3.8-80
REACTOR BUILDING SECONDARY SHIELD WALL FINITE ELEMENT MODEL - PLAN VIEW



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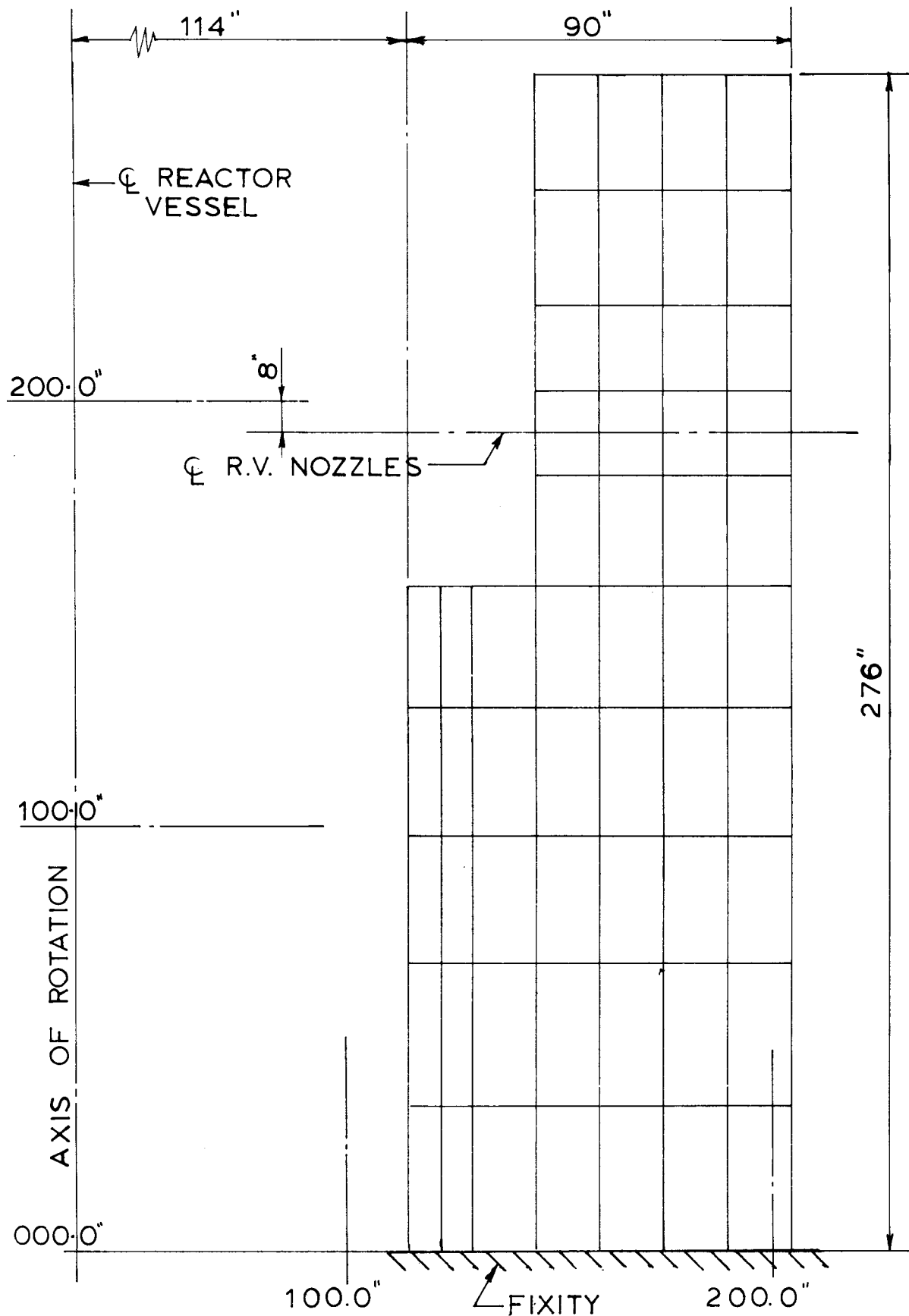
CALLAWAY PLANT
FIGURE 3.8-81
WALL FINITE ELEMENT MODEL - SECTIONS A, B, AND C



SECTION D

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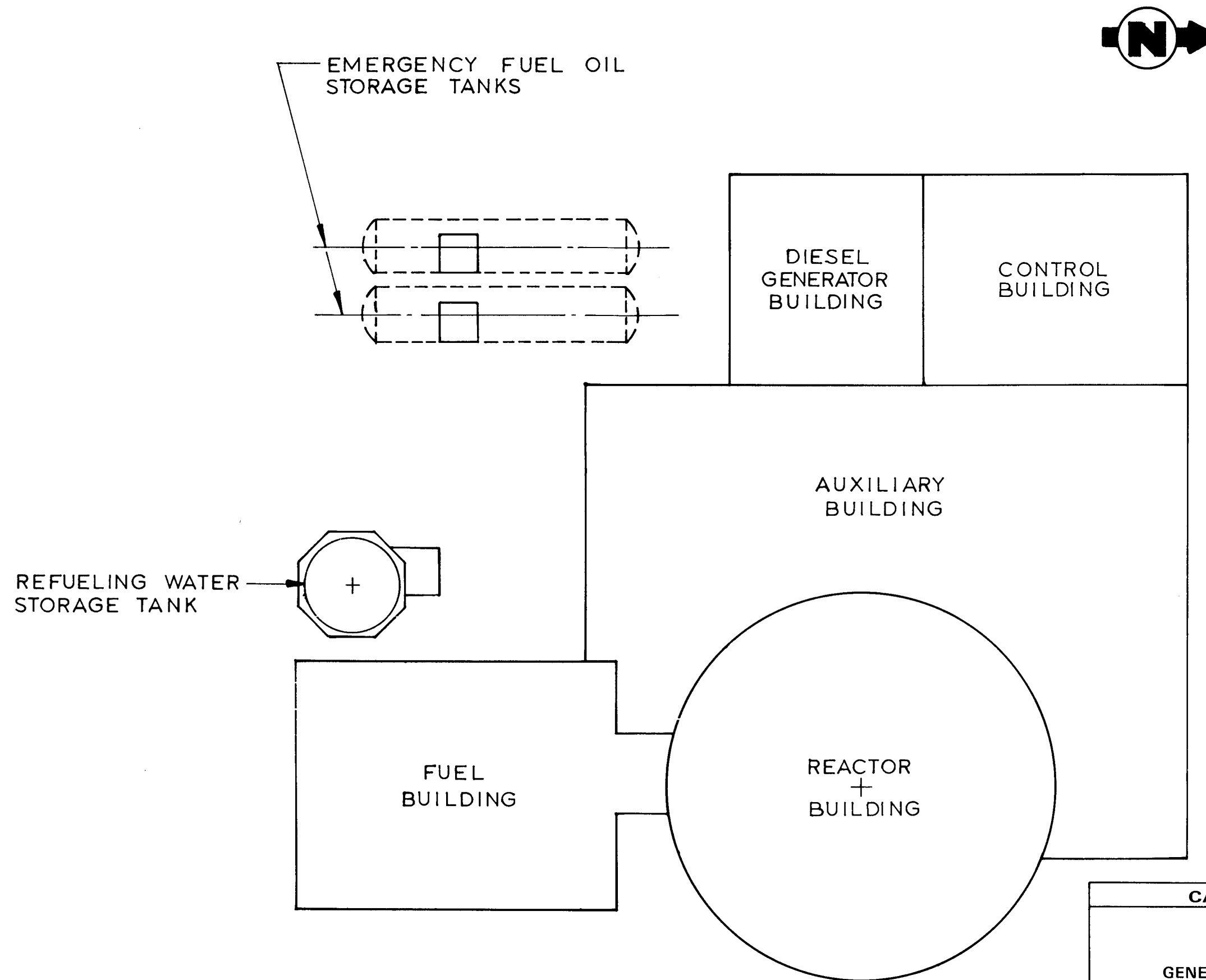
CALLAWAY PLANT
<p>FIGURE 3.8-82</p> <p>REACTOR BUILDING SECONDARY SHIELD WALL FINITE ELEMENT MODEL - SECTION D</p>



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ELEVATION
REACTOR CAVITY

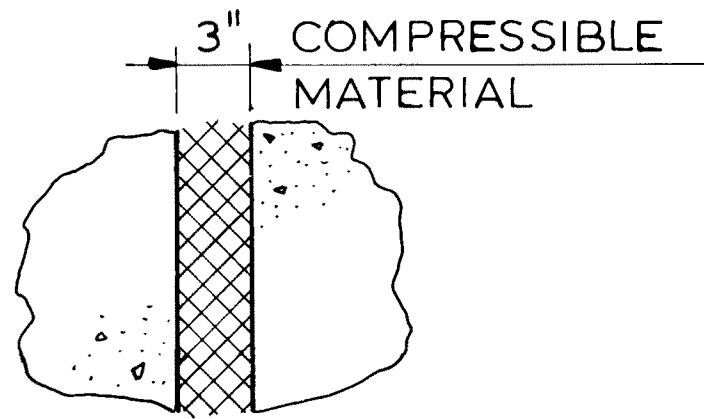
CALLAWAY PLANT
FIGURE 3.8-83
REACTOR CAVITY FINITE ELEMENT MODEL



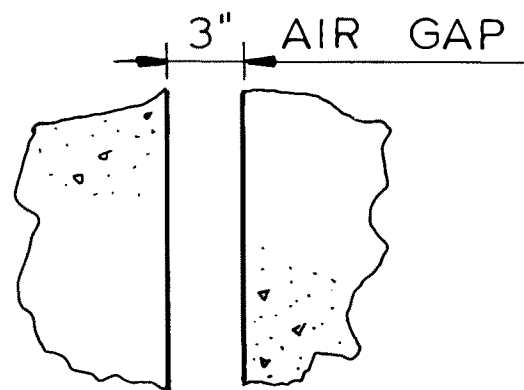
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CALLAWAY PLANT

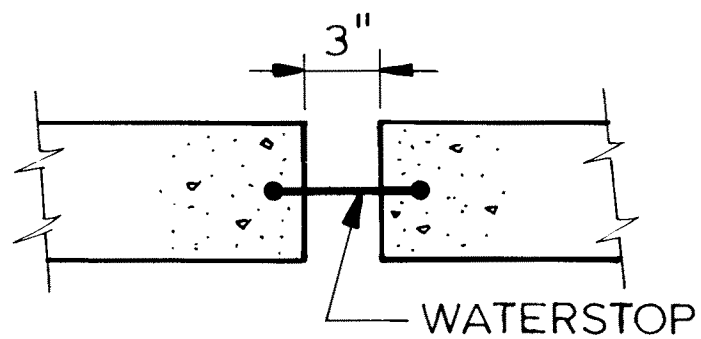
FIGURE 3.8-84
GENERAL ARRANGEMENT OF
STANDARD PLANT
CATEGORY I STRUCTURES



TYPICAL ISOLATION JOINT
BELOW GRADE



TYPICAL ISOLATION JOINT
ABOVE GRADE



TYPICAL ISOLATION JOINT @ ROOF SLAB
AND EXTERIOR WALLS

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CALLAWAY PLANT

FIGURE 3.8-85
TYPICAL ISOLATION JOINTS
BETWEEN BUILDINGS

FSAR Figure 3.8-86 is withheld per RIS 2015-17

FSAR Figure 3.8-86 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-86
AUXILIARY BUILDING PLAN — ELEV. 1974'-0"
REV. 1 10/08

FSAR Figure 3.8-87 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-87 AUXILIARY BUILDING PLAN – ELEV. 1988'-0" AND 1989'-6"

FSAR Figure 3.8-87 is withheld per RIS 2015-17

FSAR Figure 3.8-88 is withheld per RIS 2015-17

FSAR Figure 3.8-88 is withheld per RIS 2015-17

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CALLAWAY PLANT
FIGURE 3.8-88 AUXILIARY BUILDING PLAN – ELEV. 2000'-0"

FSAR Figure 3.8-89 is withheld per RIS 2015-17

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FSAR Figure 3.8-89 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-89 AUXILIARY BUILDING PLAN — ELEV. 2026'-0"

FSAR Figure 3.8-90 is withheld per RIS 2015-17

REV. OL-10
11/98

CALLAWAY PLANT
FIGURE 3.8-90 AUXILIARY BUILDING PLAN — ELEV. 2047'-6"

FSAR Figure 3.8-90 is withheld per RIS 2015-17

FSAR Figure 3.8-91 is withheld per RIS 2015-17

FSAR Figure 3.8-91 is withheld per RIS 2015-17

REV. OL-10 11/98
CALLAWAY PLANT
FIGURE 3.8-91 AUXILIARY BUILDING PLAN — NORTH-SOUTH CROSS SECTION

FSAR Figure 3.8-92 is withheld per RIS 2015-17

REV. OL-10
11/98

CALLAWAY PLANT
FIGURE 3.8-92 AUXILIARY BUILDING PLAN – EAST-WEST CROSS SECTION

FSAR Figure 3.8-92 is withheld per RIS 2015-17

FSAR Figure 3.8-93 is withheld per RIS 2015-17

REV OL-8
11/95

CALLAWAY PLANT
FIGURE 3.8-93 AUXILIARY BUILDING PLAN — EAST-WEST CROSS SECTION

FSAR Figure 3.8-93 is withheld per RIS 2015-17

FSAR Figure 3.8-94 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-94 FUEL BUILDING PLAN – ELEV. 2000'-0" (UN)

FSAR Figure 3.8-95 is withheld per RIS 2015-17

REV OL-11
5/00

FSAR Figure 3.8-95 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-95 FUEL BUILDING PLAN – ELEV. 2026'-0" (UN)

FSAR Figure 3.8-96 is withheld per RIS 2015-17

FSAR Figure 3.8-96 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-96 FUEL BUILDING PLAN – ELEV. 2047'-6"

FSAR Figure 3.8-97 is withheld per RIS 2015-17

REV. OL-1
11/16

CALLAWAY PLANT

FIGURE 3.8-97
FUEL BUILDING-
NORTH-SOUTH CROSS SECTION

FSAR Figure 3.8-97 is withheld per RIS 2015-17

FSAR Figure 3.8-98 is withheld per RIS 2015-17

REV. OL-1
11/16

CALLAWAY PLANT
FIGURE 3.8-98
FUEL BUILDING EAST-WEST CROSS SECTION

FSAR Figure 3.8-98 is withheld per RIS 2015-17

FSAR Figure 3.8-99 is withheld per RIS 2015-17

REV OL-12
11/01

FSAR Figure 3.8-99 is withheld per RIS 2015-17

CALLAWAY PLANT

FIGURE 3.8-99

CONTROL BUILDING PLAN
ELEV. 1974~0" AND 1984~0"

FSAR Figure 3.8-100 is withheld per RIS 2015-17

FSAR Figure 3.8-100 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-100 CONTROL BUILDING PLAN — ELEV. 2000'-0" AND 2016'-0"

FSAR Figure 3.8-101 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-101 CONTROL BUILDING PLAN — ELEV. 2032'-0"

FSAR Figure 3.8-101 is withheld per RIS 2015-17

FSAR Figure 3.8-102 is withheld per RIS 2015-17

FSAR Figure 3.8-102 is withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-102 CONTROL BUILDING PLAN – ELEV. 2047'-6" AND 2073'-6"

FSAR Figure 3.8-103 is withheld per RIS 2015-17

REV OL-12
11/01

CALLAWAY PLANT

FIGURE 3.8-103

CONTROL BUILDING -
NORTH-SOUTH CROSS SECTION

FSAR Figure 3.8-103 is withheld per RIS 2015-17

REV OL-12
11/01

CALLAWAY PLANT

FIGURE 3.8-104

CONTROL BUILDING-
EAST-WEST CROSS SECTION

FSAR Figure 3.8-105 is withheld per RIS 2015-17

FSAR Figure 3.8-105 is withheld per RIS 2015-17

REV. OL-15
5/06

CALLAWAY PLANT
FIGURE 3.8 - 105
DIESEL GENERATOR BUILDING PLAN ELEV. 2000' - 0"

FSAR Figure 3.8-106 is withheld per RIS 2015-17

FSAR Figure 3.8-106 is withheld per RIS 2015-17

REV. OL-15 5/06
CALLAWAY PLANT
FIGURE 3.8 - 106
DIESEL GENERATOR BUILDING PLAN ELEV. 2019' - 3" AND 2032' - 0"

FSAR Figure 3.8-107 is withheld per RIS 2015-17

FSAR Figure 3.8-107 is withheld per RIS 2015-17

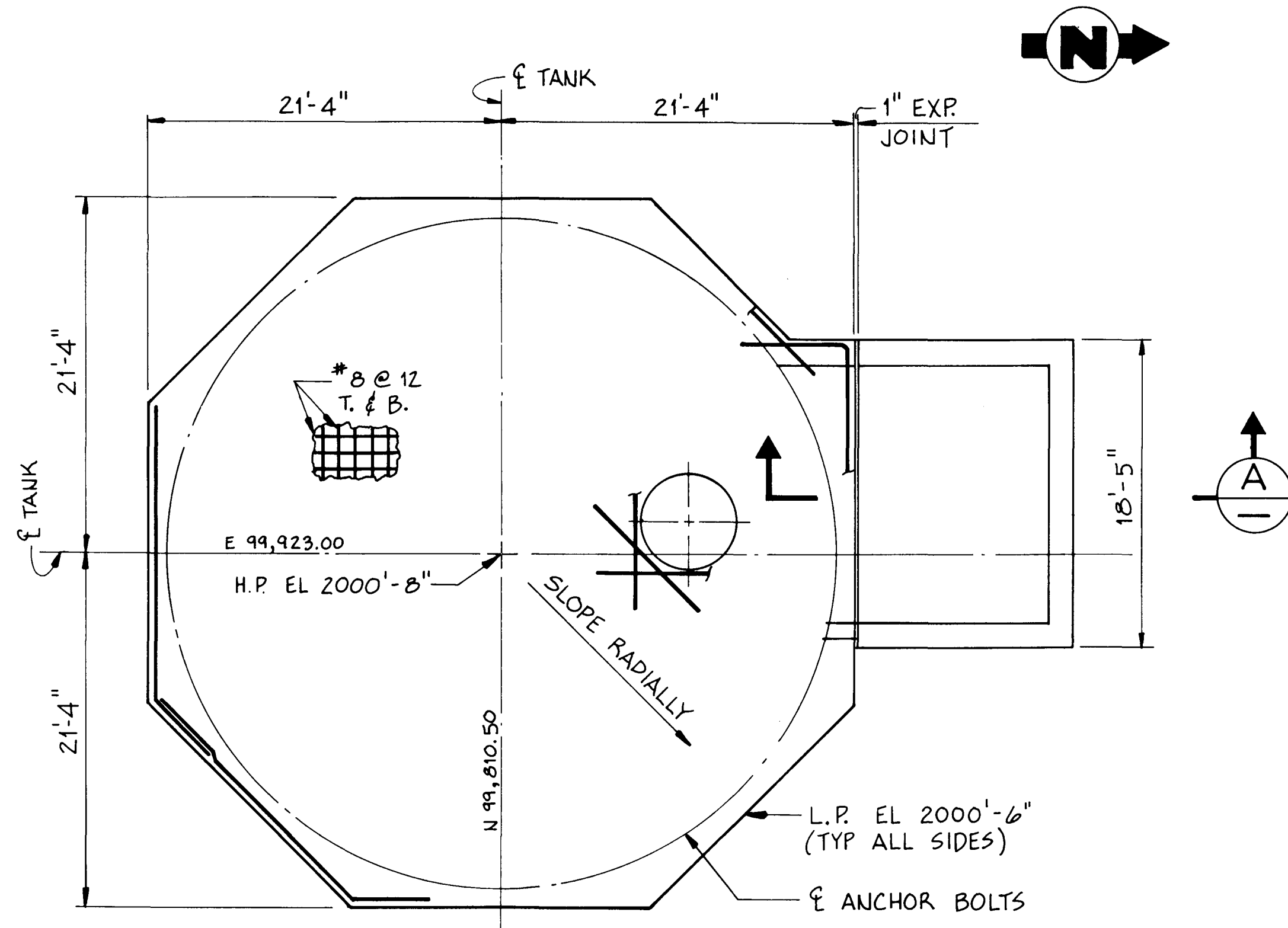
REV. OL-10 11/98
CALLAWAY PLANT
FIGURE 3.8-107 DIESEL-GENERATOR BUILDING PLAN – ELEV. 2047'-2"

REV. OL-15
5/06

CALLAWAY PLANT
FIGURE 3.8 - 108
DIESEL GENERATOR BUILDING EAST - WEST CROSS SECTION

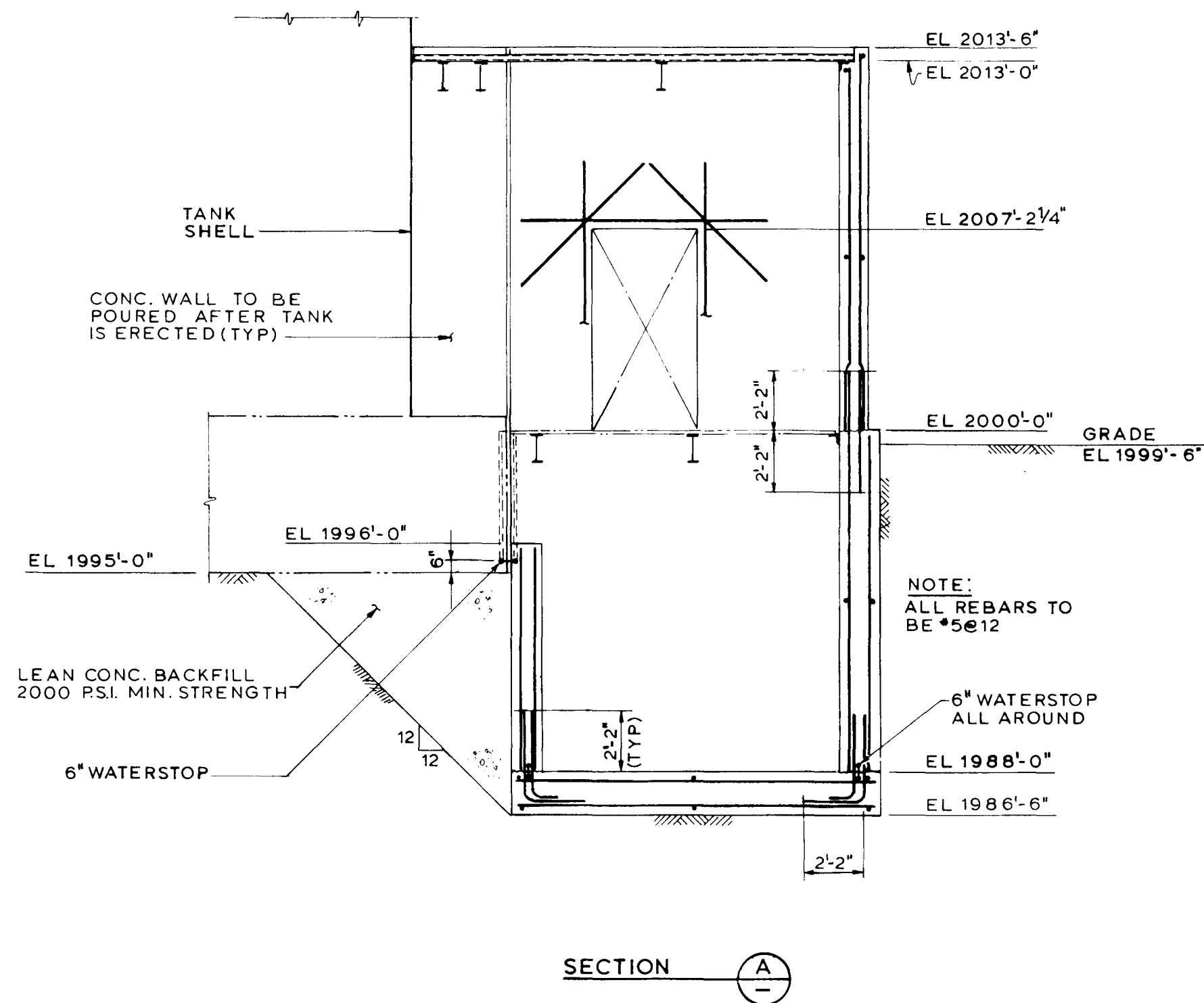
REV. OL-15
5/06

CALLAWAY PLANT
FIGURE 3.8 - 109
DIESEL GENERATOR BUILDING NORTH - SOUTH CROSS SECTION



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CALLAWAY PLANT
FIGURE 3.8-110
REFUELING WATER STORAGE TANK AND VALVE HOUSE – FOUNDATION PLAN

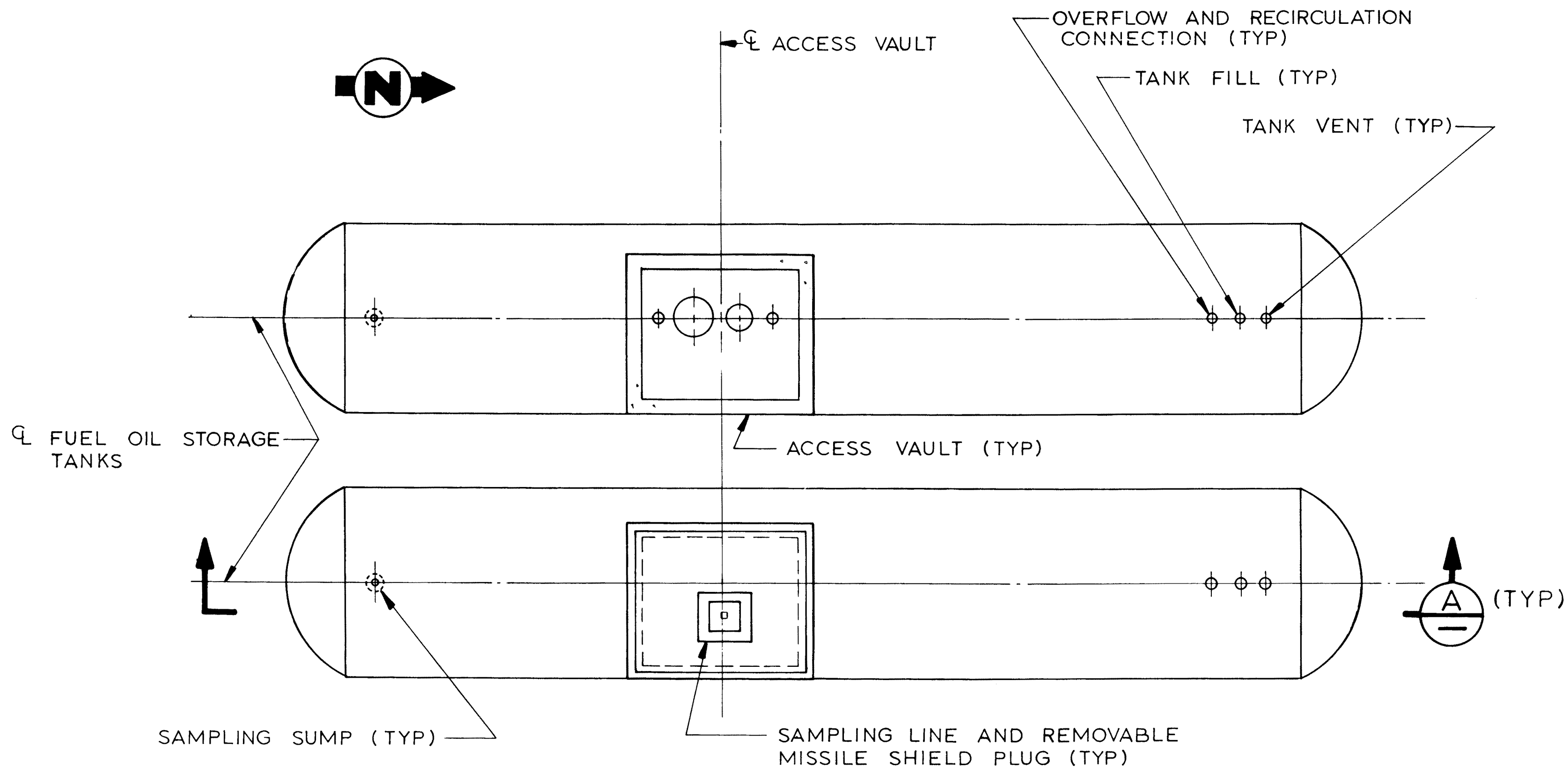


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CALLAWAY PLANT

FIGURE 3.8-111

**REFUELING WATER STORAGE
VALVE HOUSE ELEVATION**



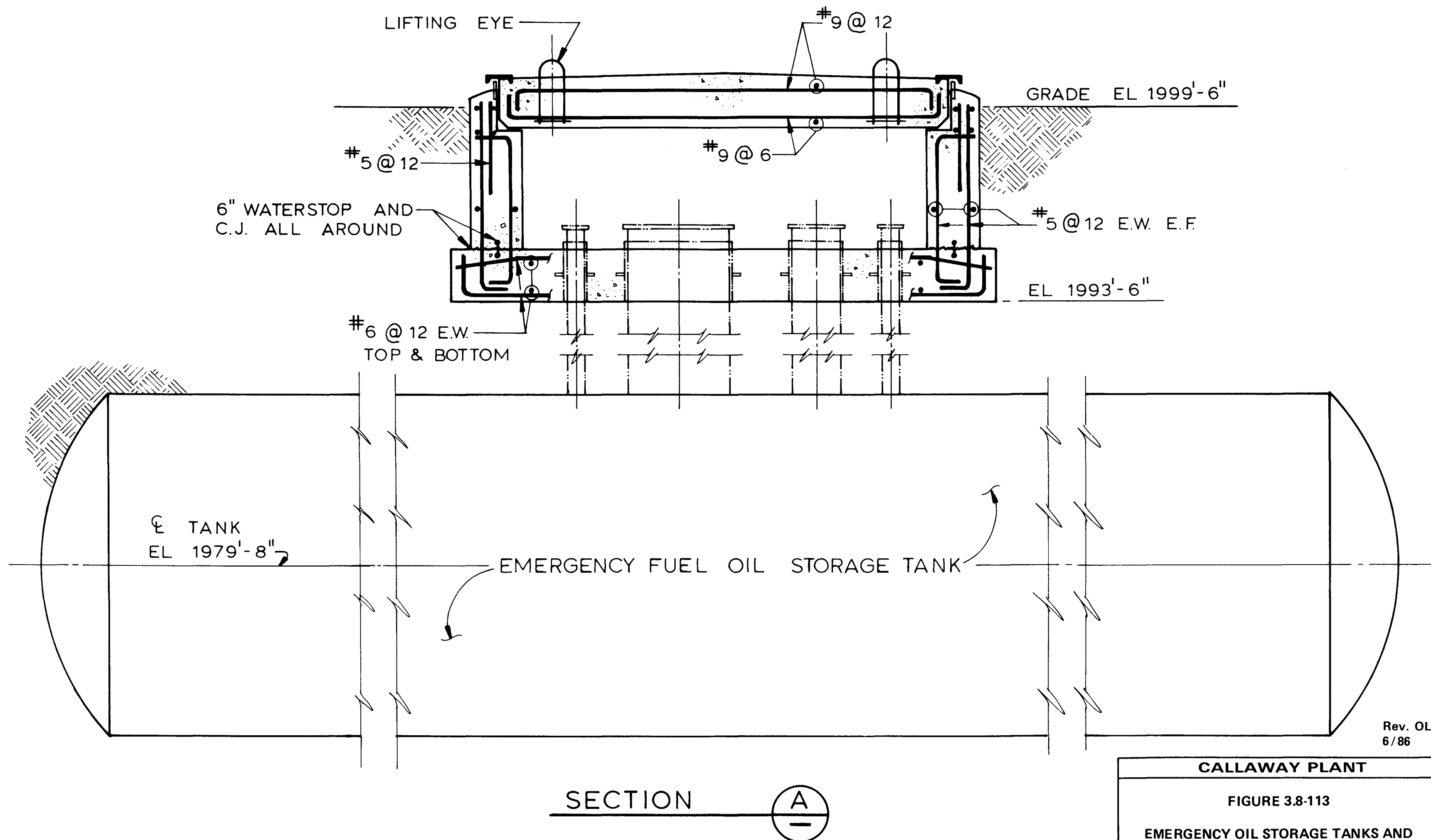
EMERGENCY FUEL OIL STORAGE TANKS

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CALLAWAY PLANT

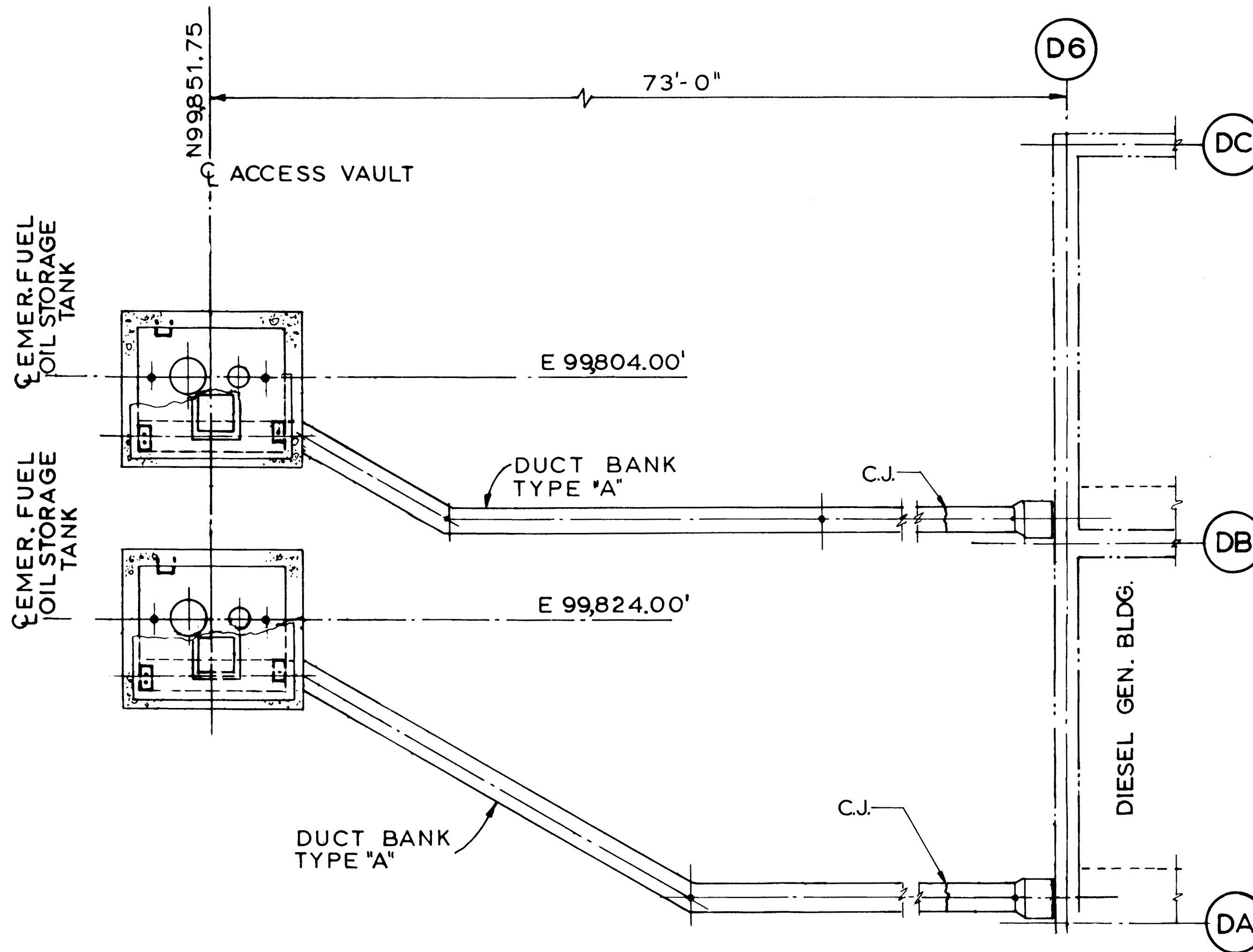
FIGURE 3.8-112

**EMERGENCY OIL STORAGE TANKS AND
ACCESS VAULT PLAN**



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CALLAWAY PLANT
FIGURE 3.8-113
EMERGENCY OIL STORAGE TANKS AND ACCESS VAULT

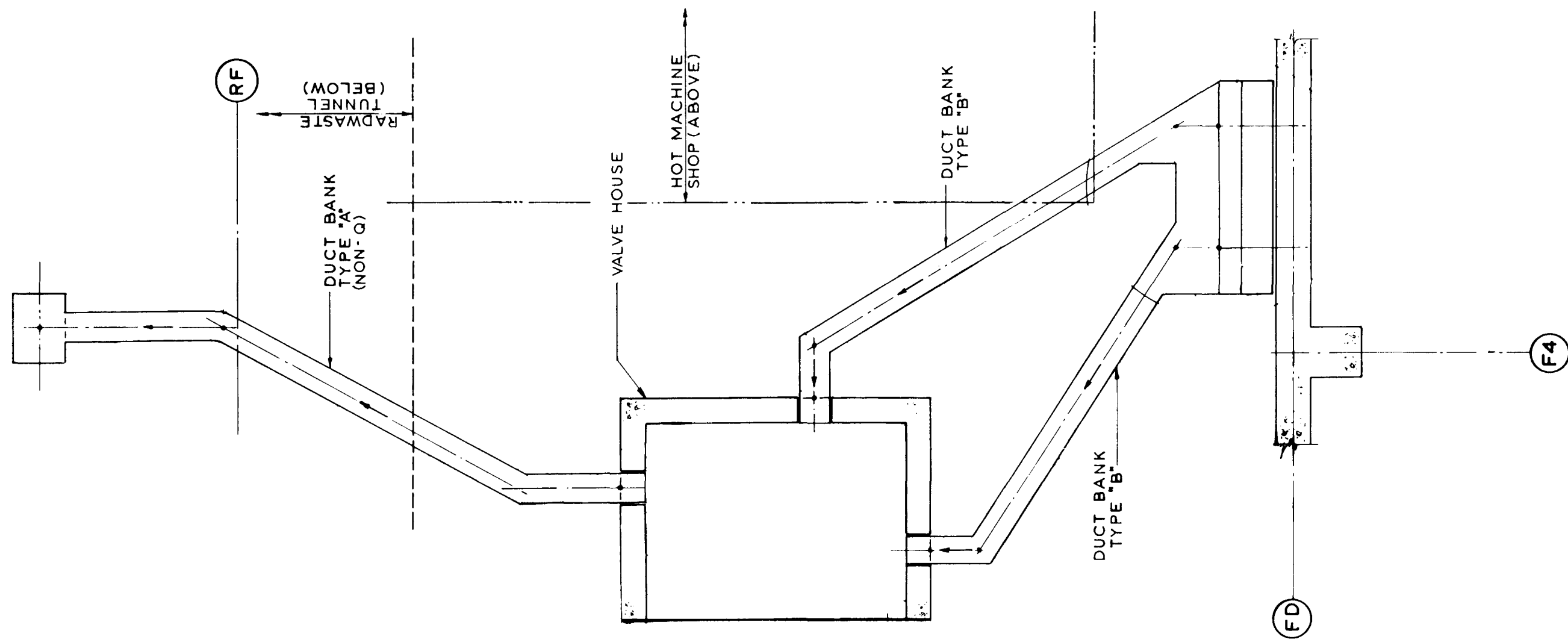


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CALLAWAY PLANT

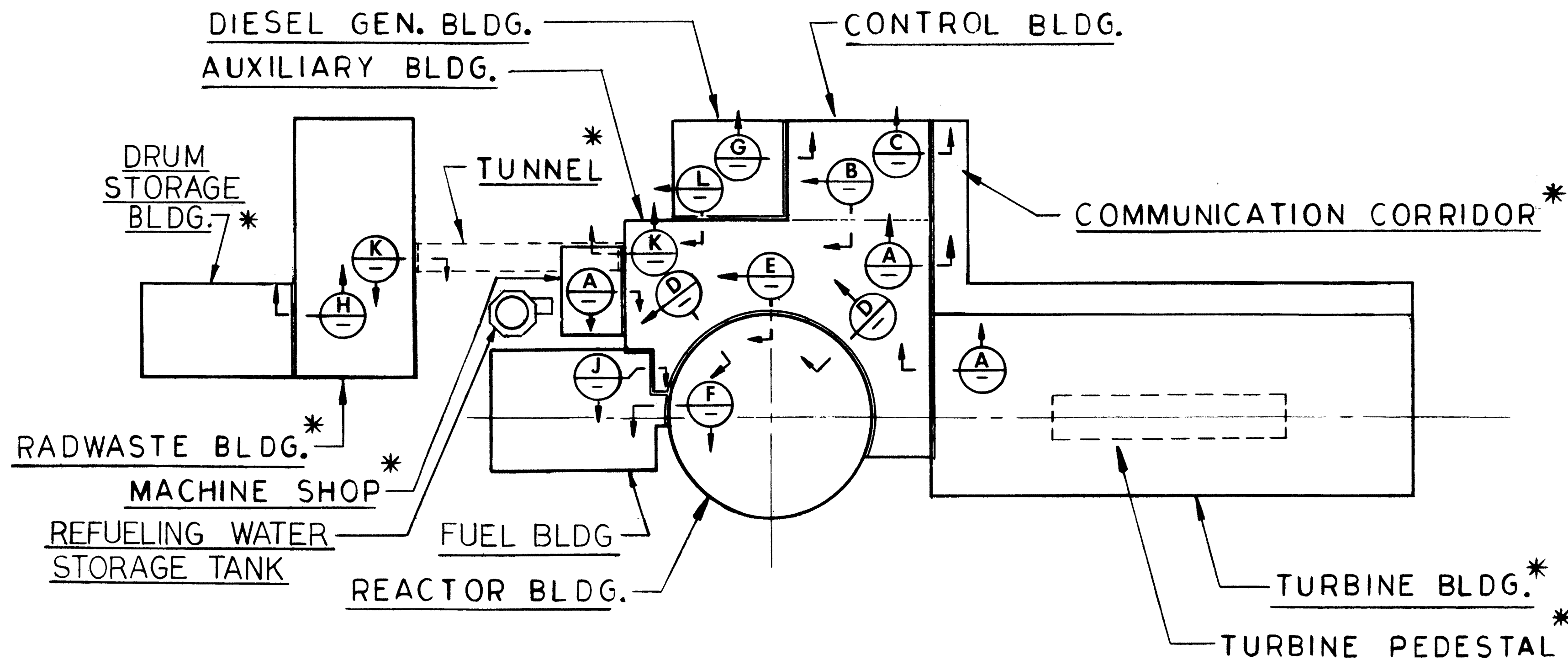
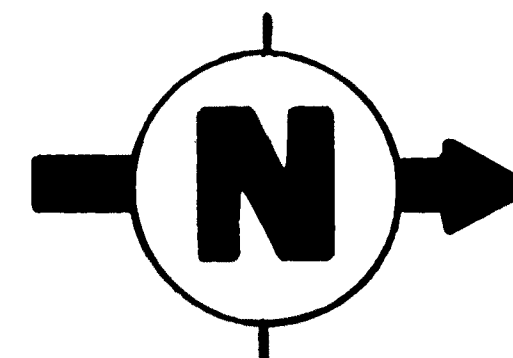
FIGURE 3.8-114

**BURIED DUCT BANKS TO EMER.
FUEL OIL STORAGE TANKS**



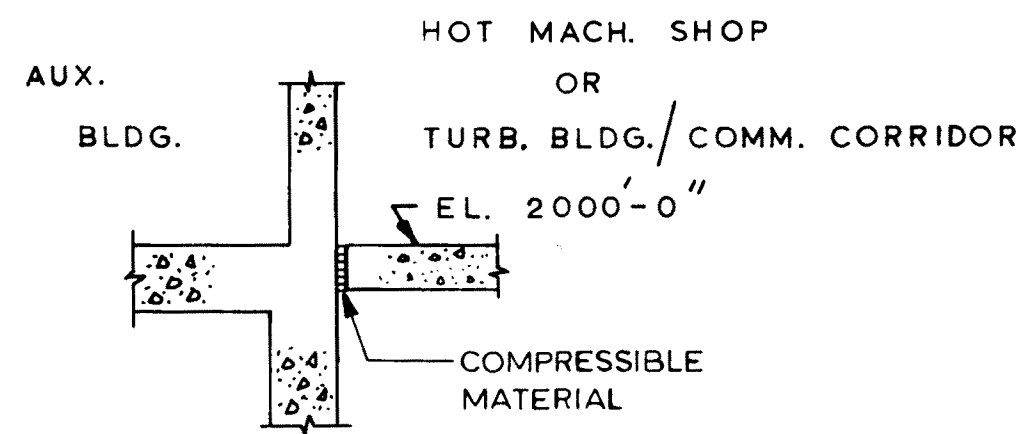
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CALLAWAY PLANT
FIGURE 3.8-115
BURIED DUCT BANKS TO REFUELING STORAGE VALVE HOUSE

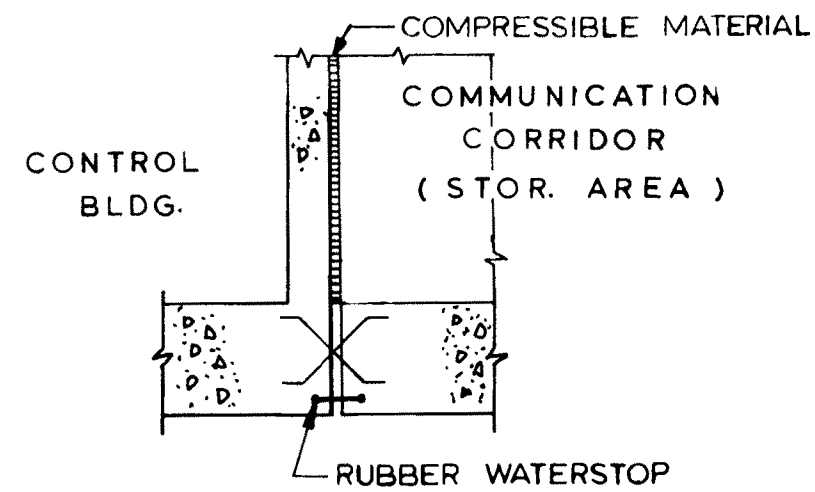


PLAN

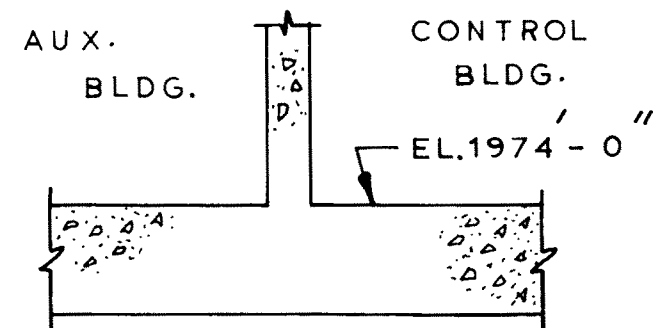
CALLAWAY PLANT
FIGURE 3.8-116
ARRANGEMENT OF FOUNDATION - PLAN



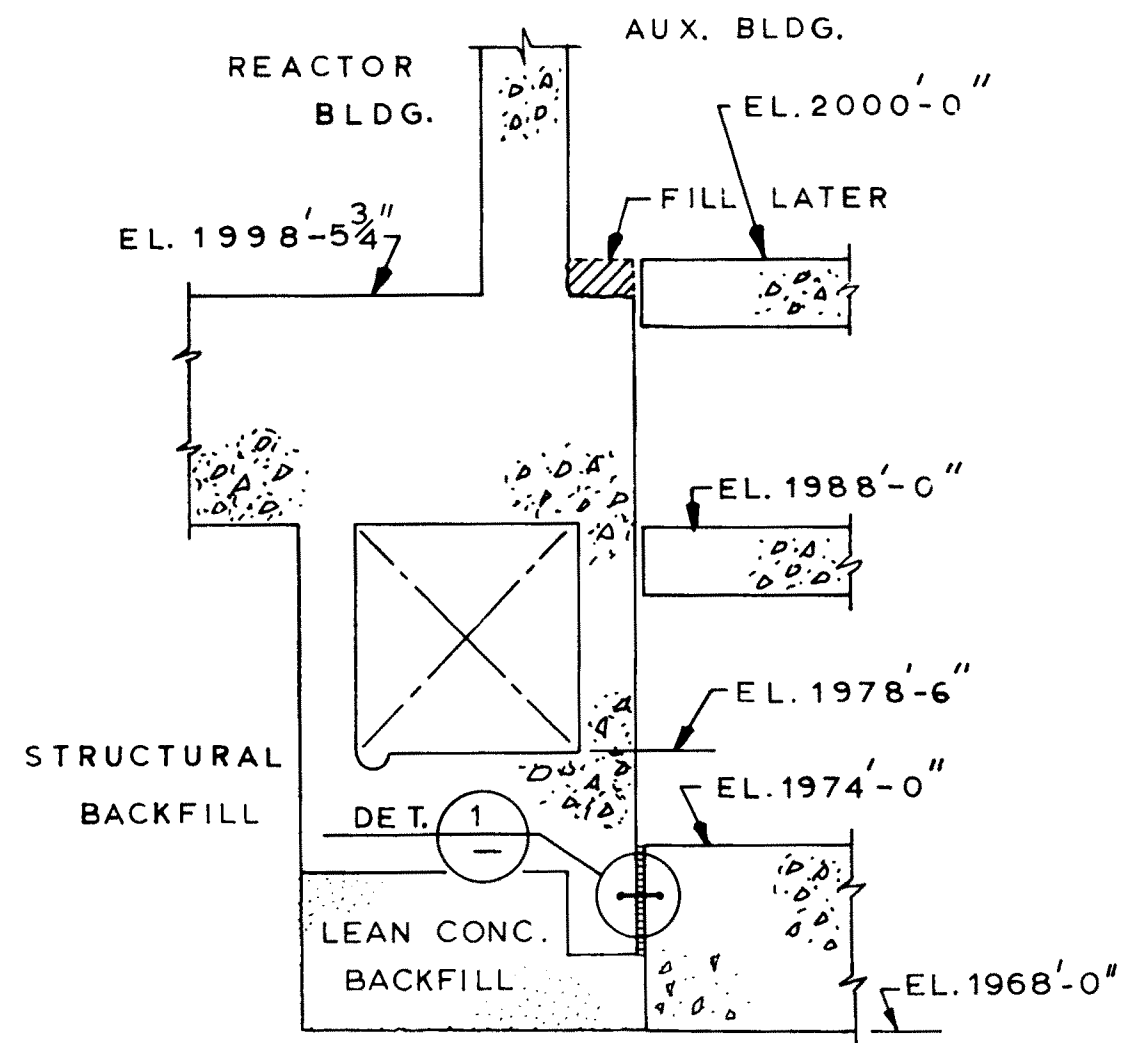
SECTION A



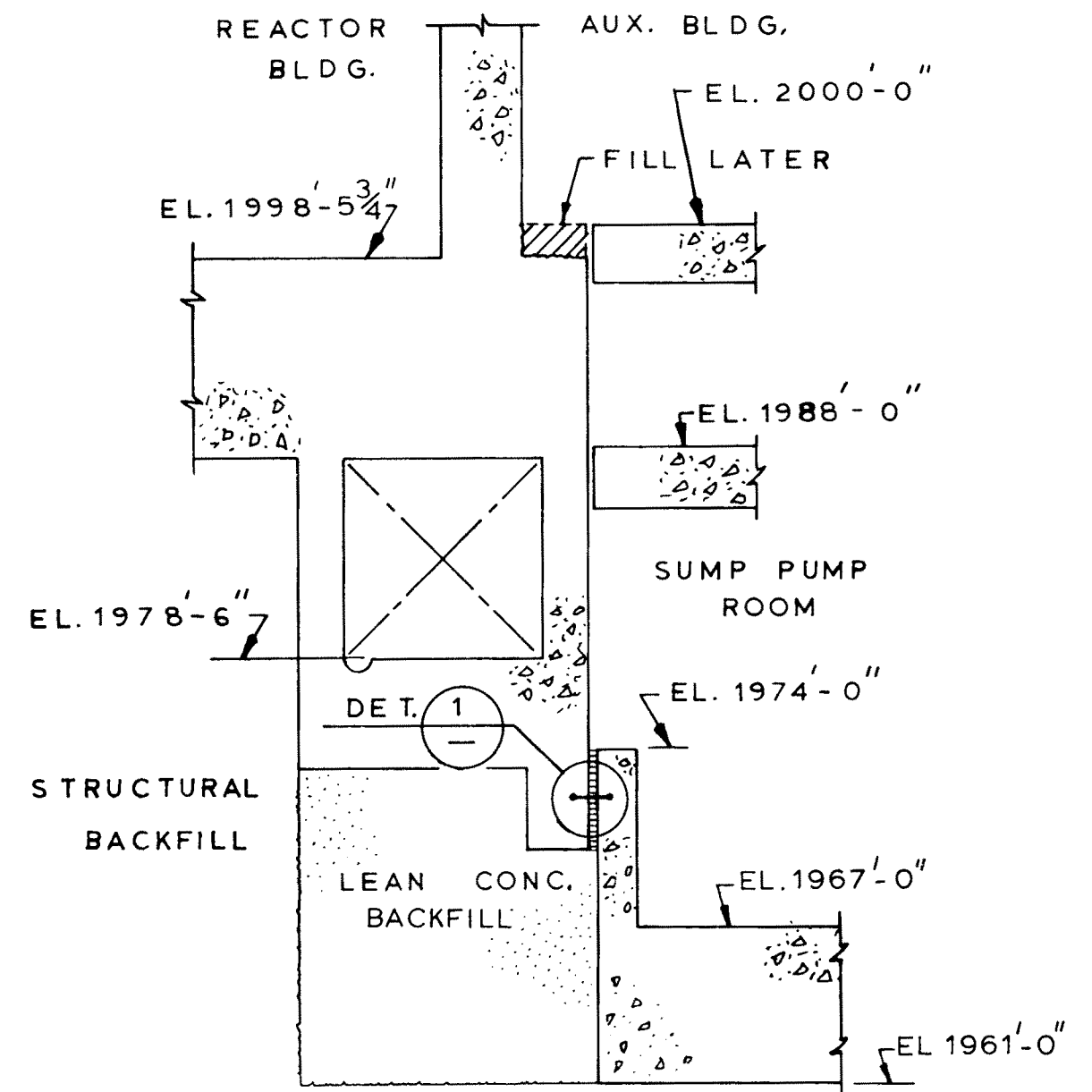
SECTION C



SECTION B



SECTION D



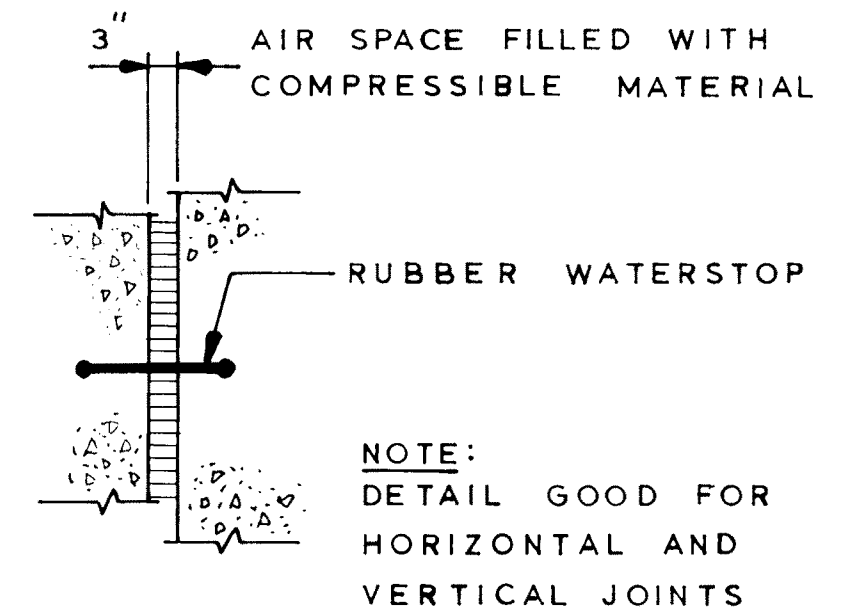
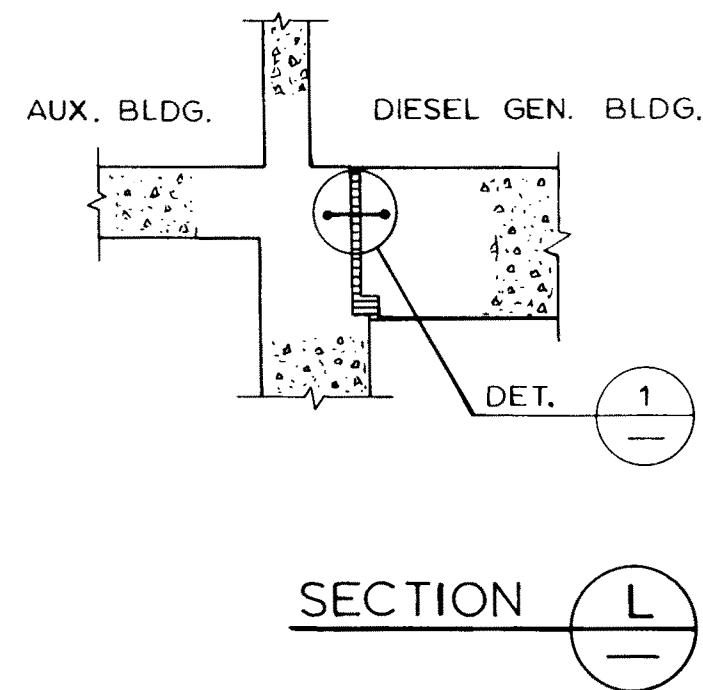
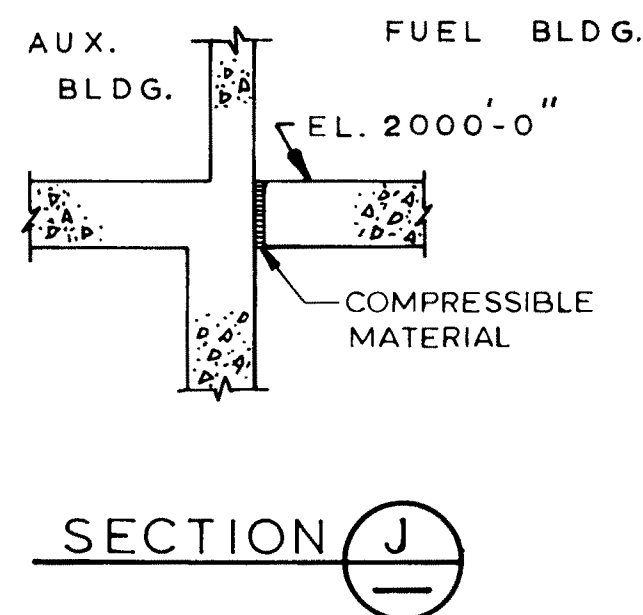
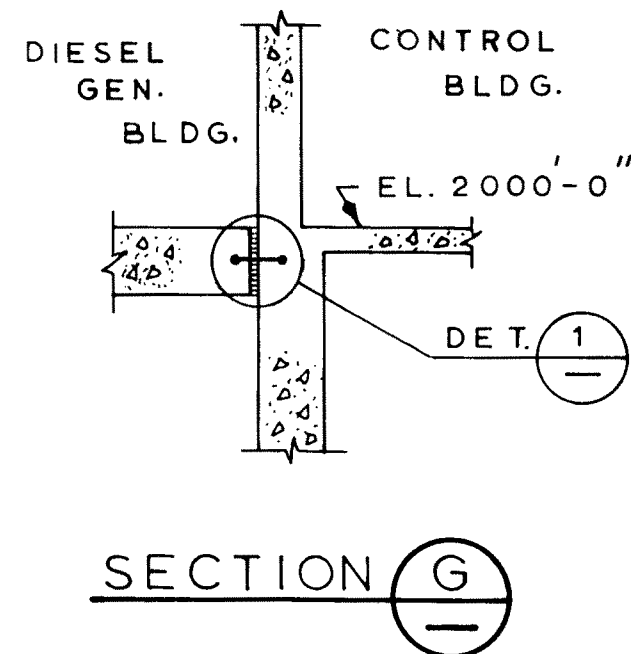
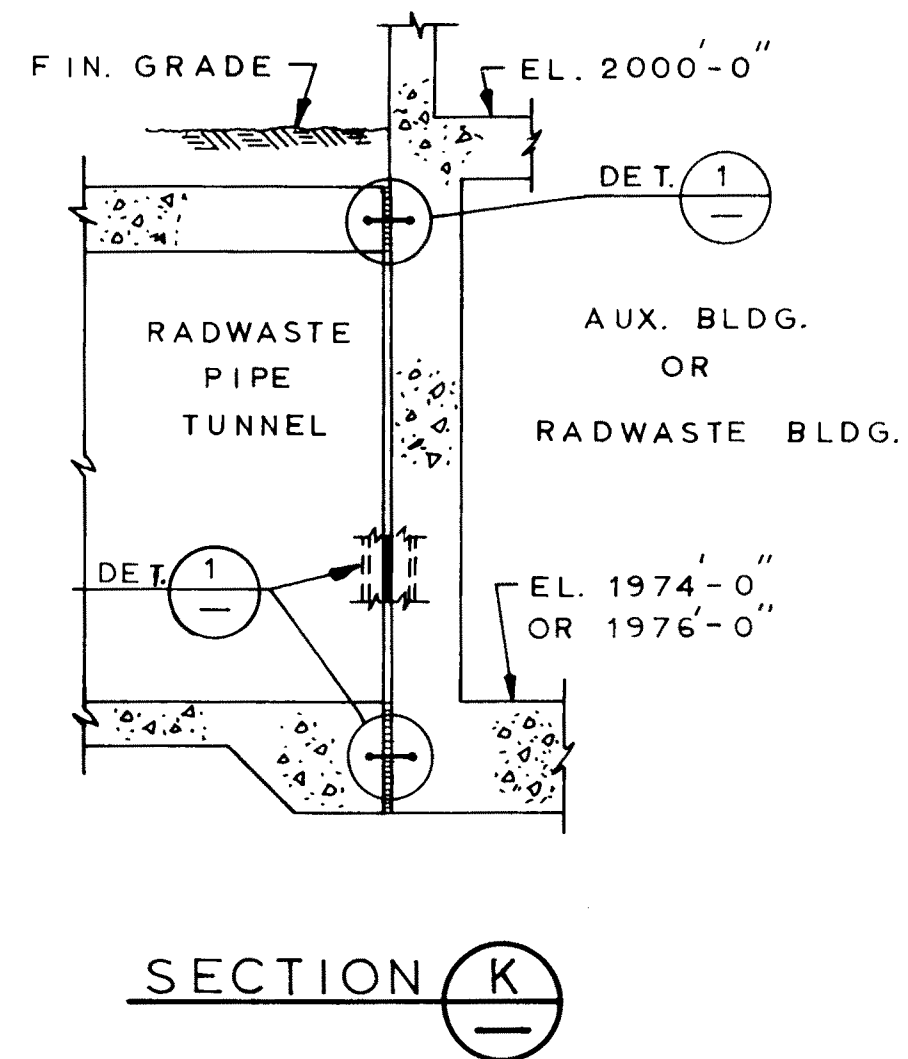
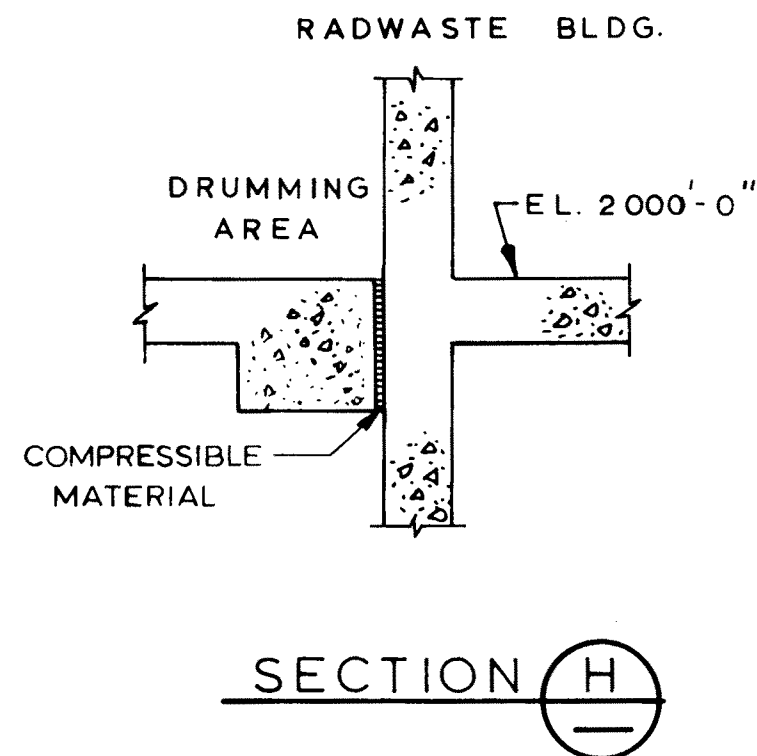
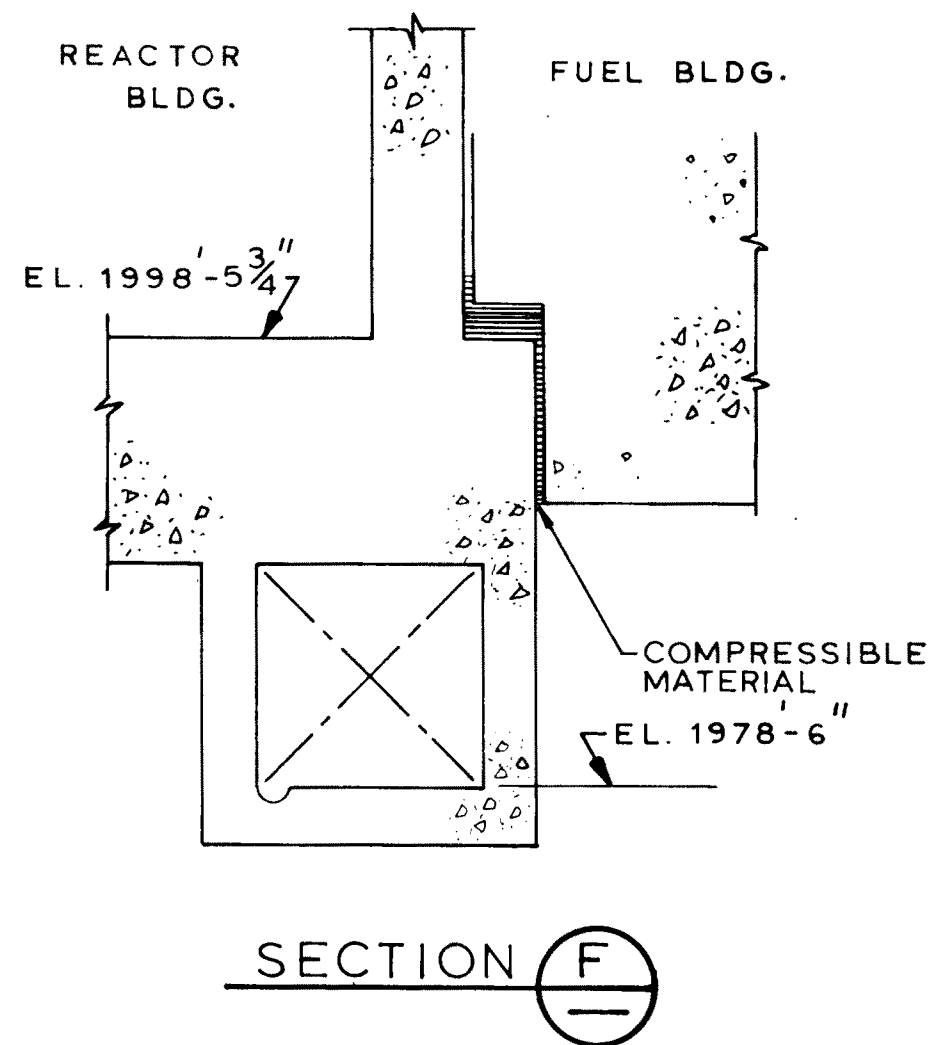
SECTION E

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CALLAWAY PLANT

FIGURE 3.8-117

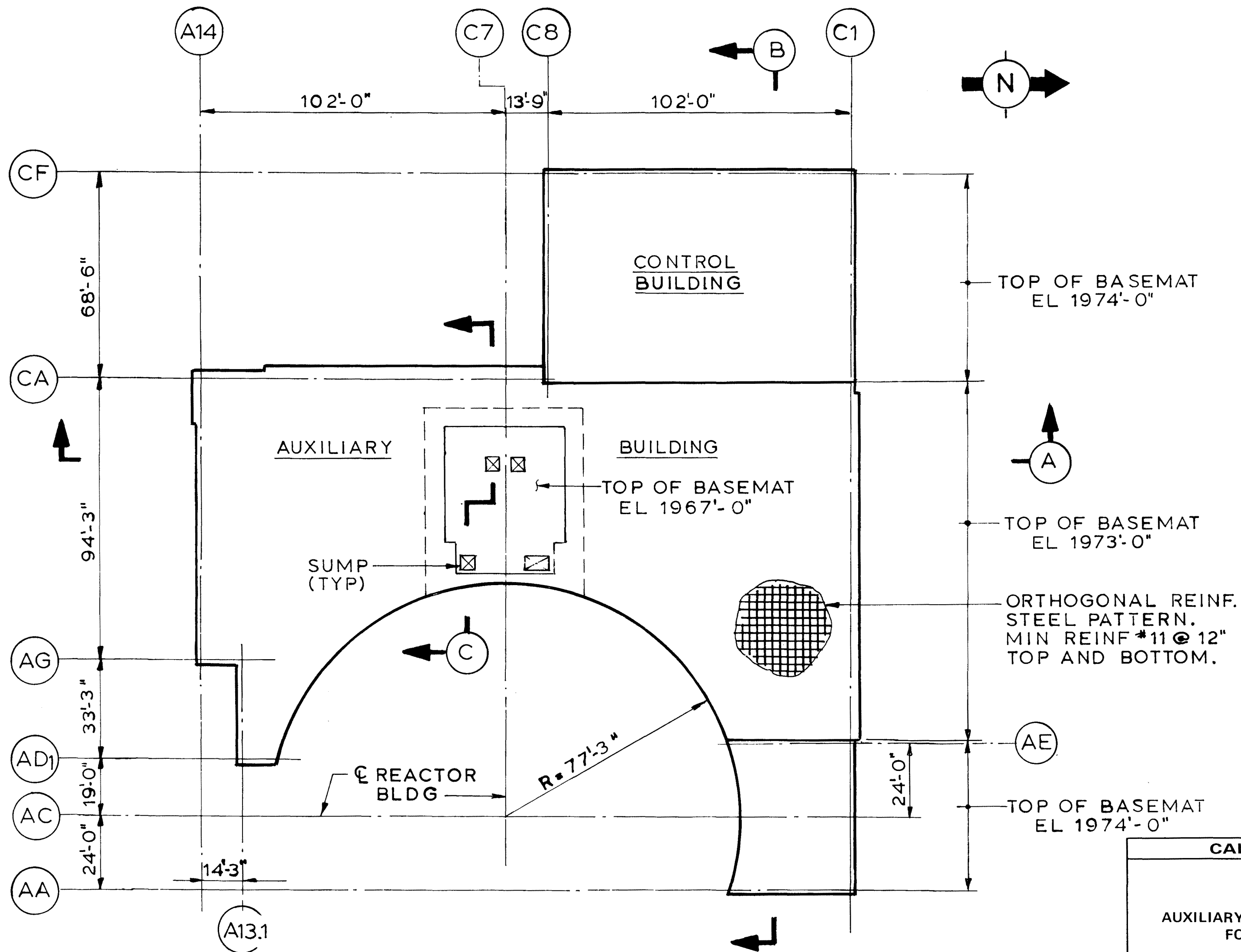
ARRANGEMENT OF FOUNDATION —
DETAILS



DETAIL 1

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CALLAWAY PLANT
FIGURE 3.8-118
ARRANGEMENT OF FOUNDATION – ADDITIONAL DETAILS

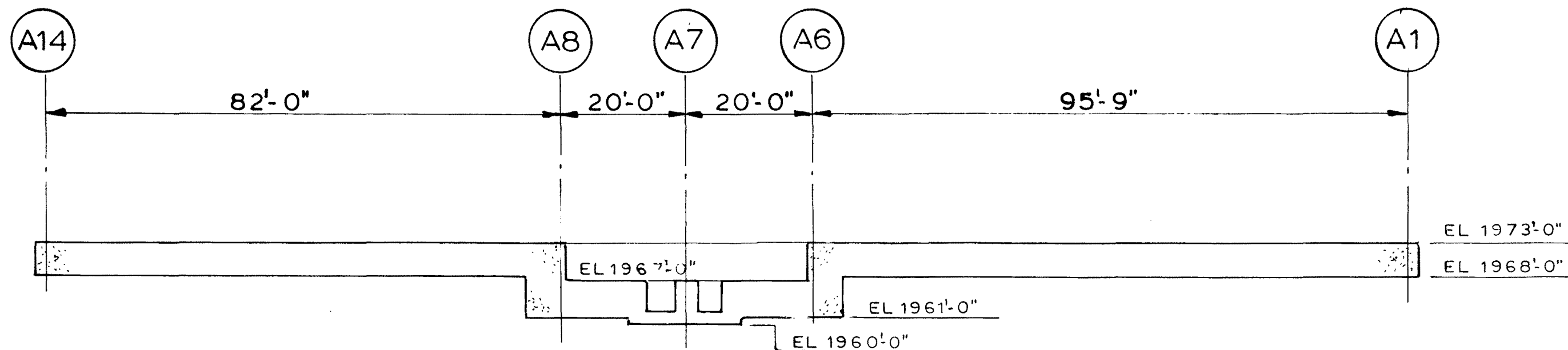


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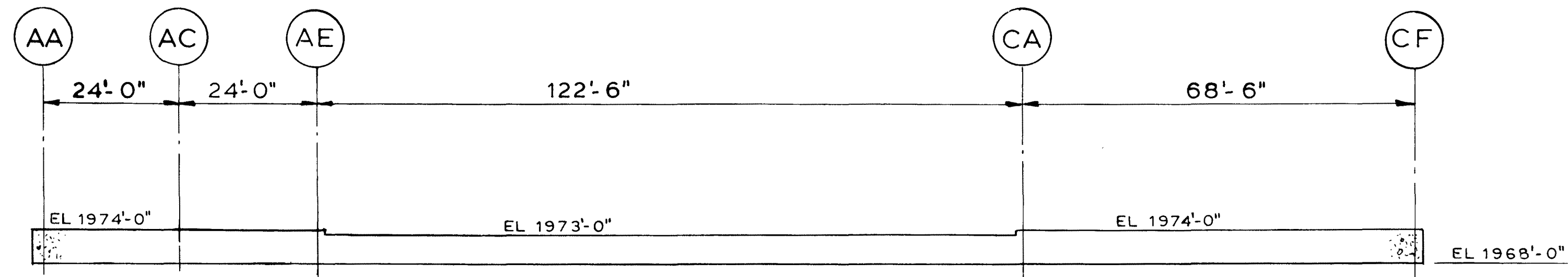
CALLAWAY PLANT

FIGURE 3.8-119

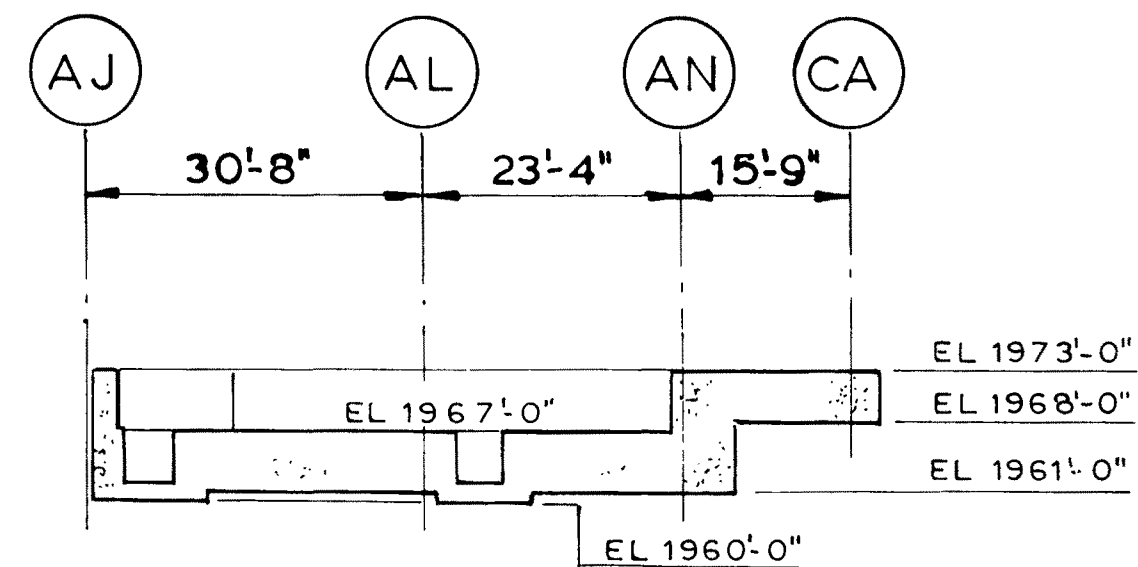
AUXILIARY AND CONTROL BUILDING
FOUNDATION PLAN



SECTION A



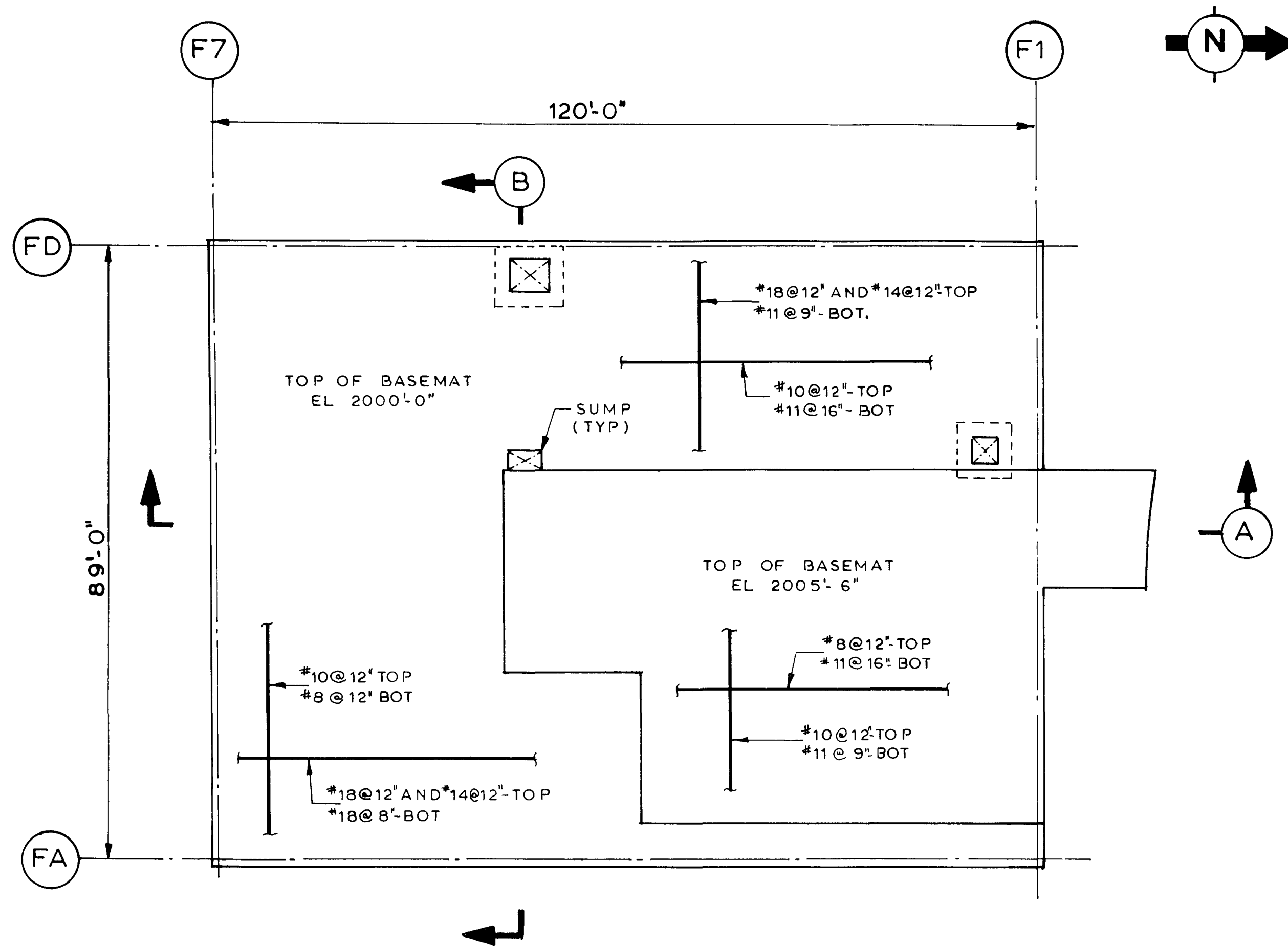
SECTION B



SECTION C

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CALLAWAY PLANT
FIGURE 3.8-120
AUXILIARY AND CONTROL BUILDING FOUNDATION SECTIONS

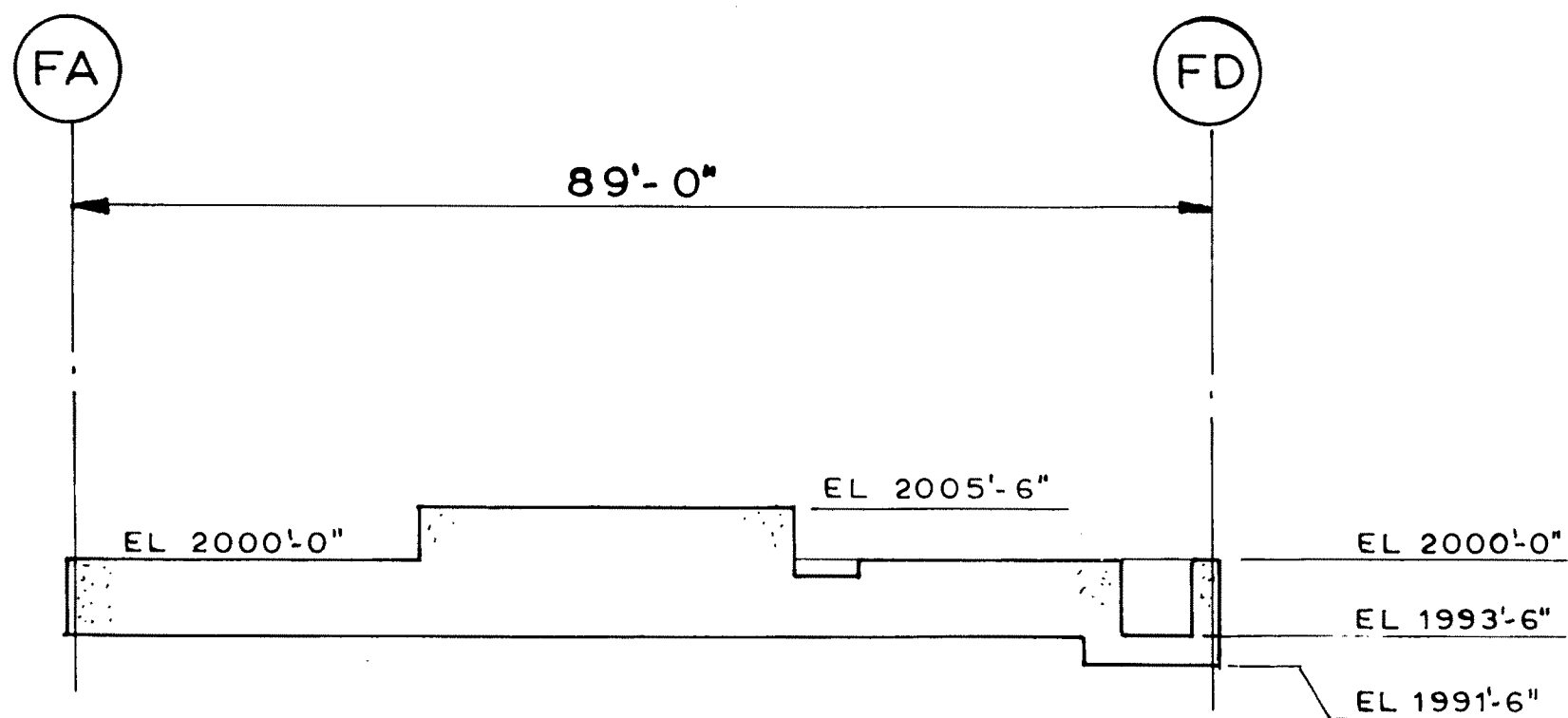
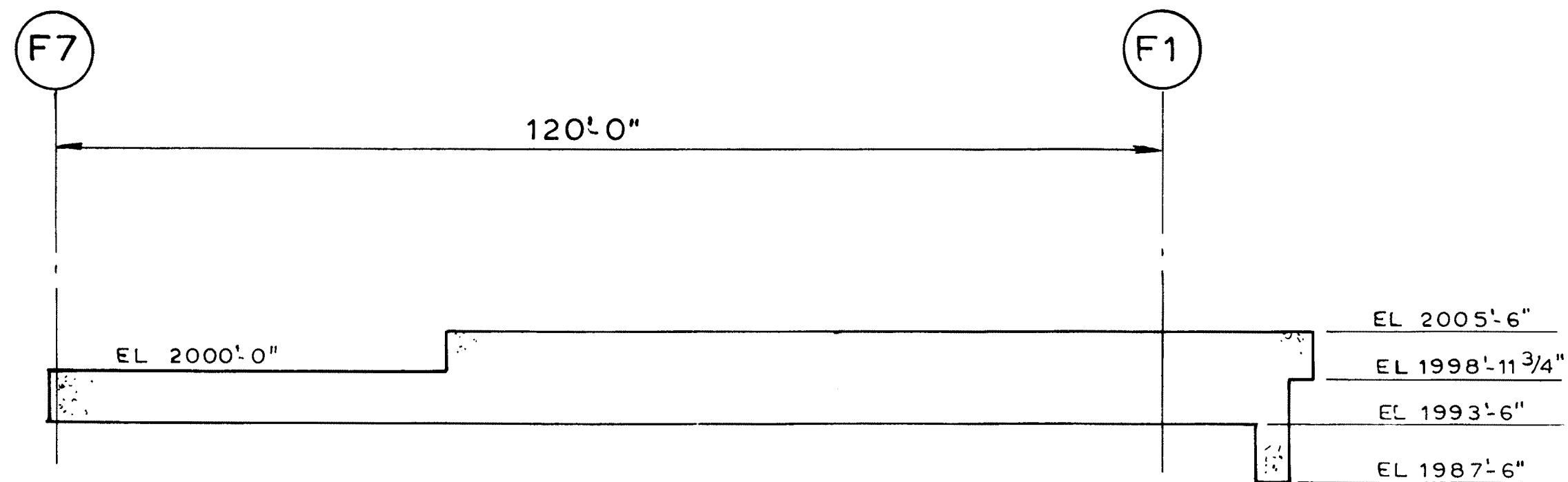


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CALLAWAY PLANT

FIGURE 3.8-121

FUEL BUILDING
FOUNDATION PLAN

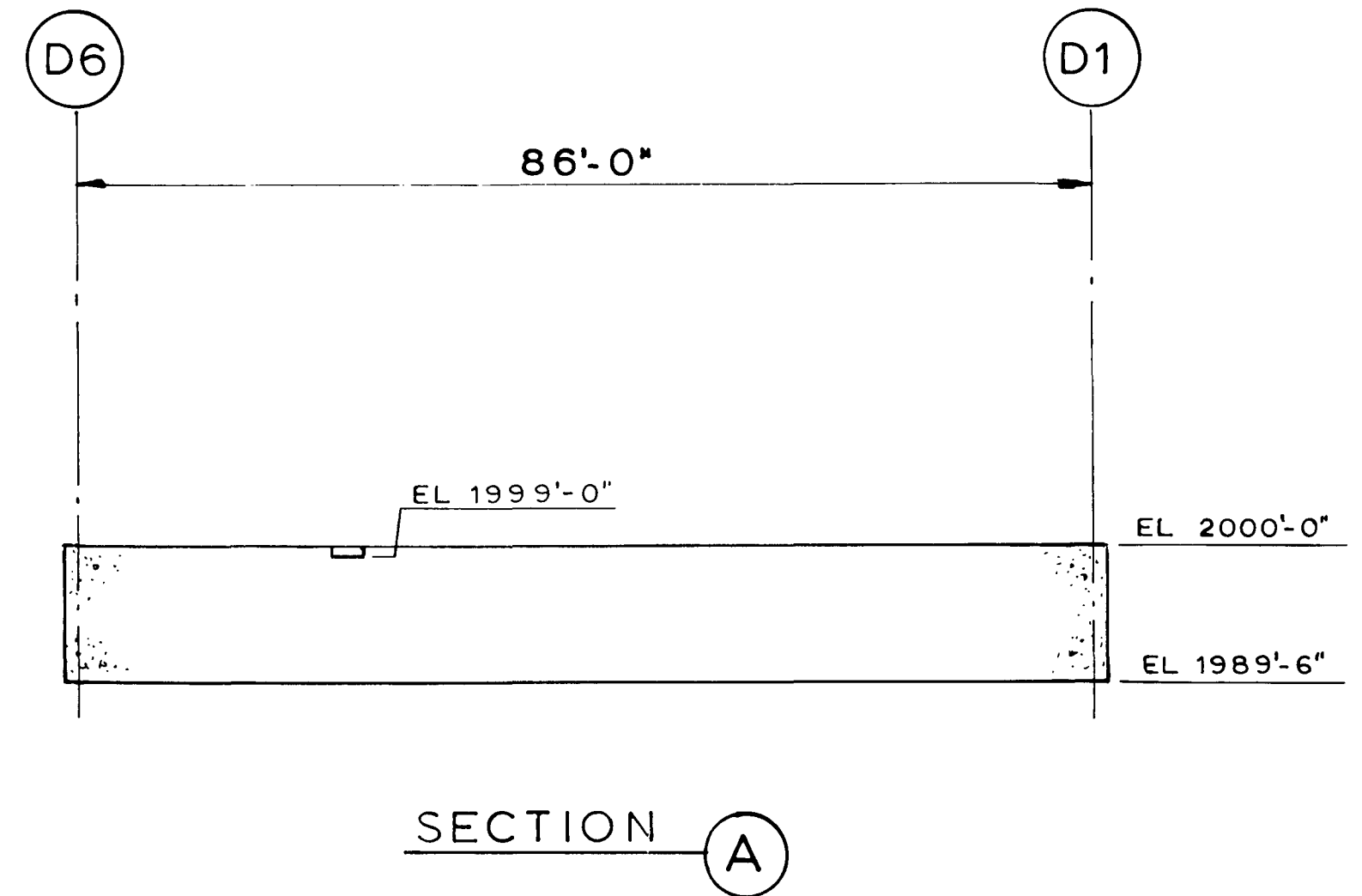
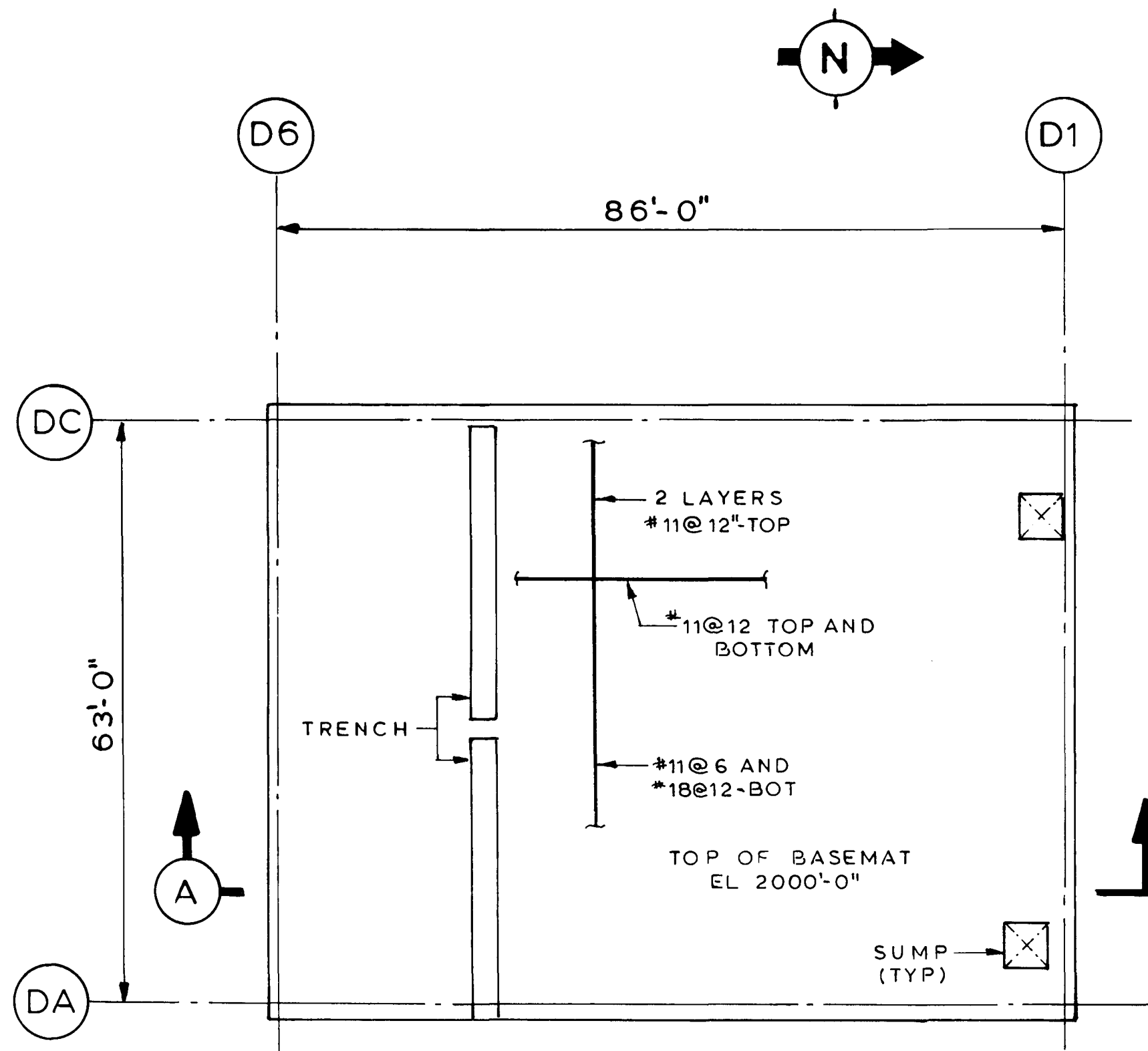


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FIGURE 3.8-122

FUEL BUILDING
FOUNDATION SECTIONS



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CALLAWAY PLANT
FIGURE 3.8-123
DIESEL-GENERATOR BUILDING FOUNDATION PLAN

CALLAWAY PLANT
FIGURE 3.8-124 RADWASTE BUILDING AND TUNNEL – PLAN EL. 1974'-0" & EL. 1976'-0"

CALLAWAY PLANT
FIGURE 3.8-125 RADWASTE BUILDING – PLAN EL. 2000'-0"

CALLAWAY PLANT
FIGURE 3.8-126 RADWASTE BUILDING — PLAN EL. 2022'-0"

FSAR Figure 3.8-127 withheld per RIS 2015-17

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CALLAWAY PLANT
FIGURE 3.8-127 RADWASTE BUILDING – EL. 2031'-6"

FSAR Figure 3.8-127 withheld per RIS 2015-17

FSAR Figure 3.8-128 withheld per RIS 2015-17

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CALLAWAY PLANT
FIGURE 3.8-128 RADWASTE BUILDING — EL. 2040'-6" & EL. 2047'-0"

FSAR Figure 3.8-128 withheld per RIS 2015-17

CALLAWAY PLANT
FIGURE 3.8-129 RADWASTE BUILDING – SECTION

FSAR Figure 3.8-130 withheld per RIS 2015-17

FSAR Figure 3.8-130 withheld per RIS 2015-17