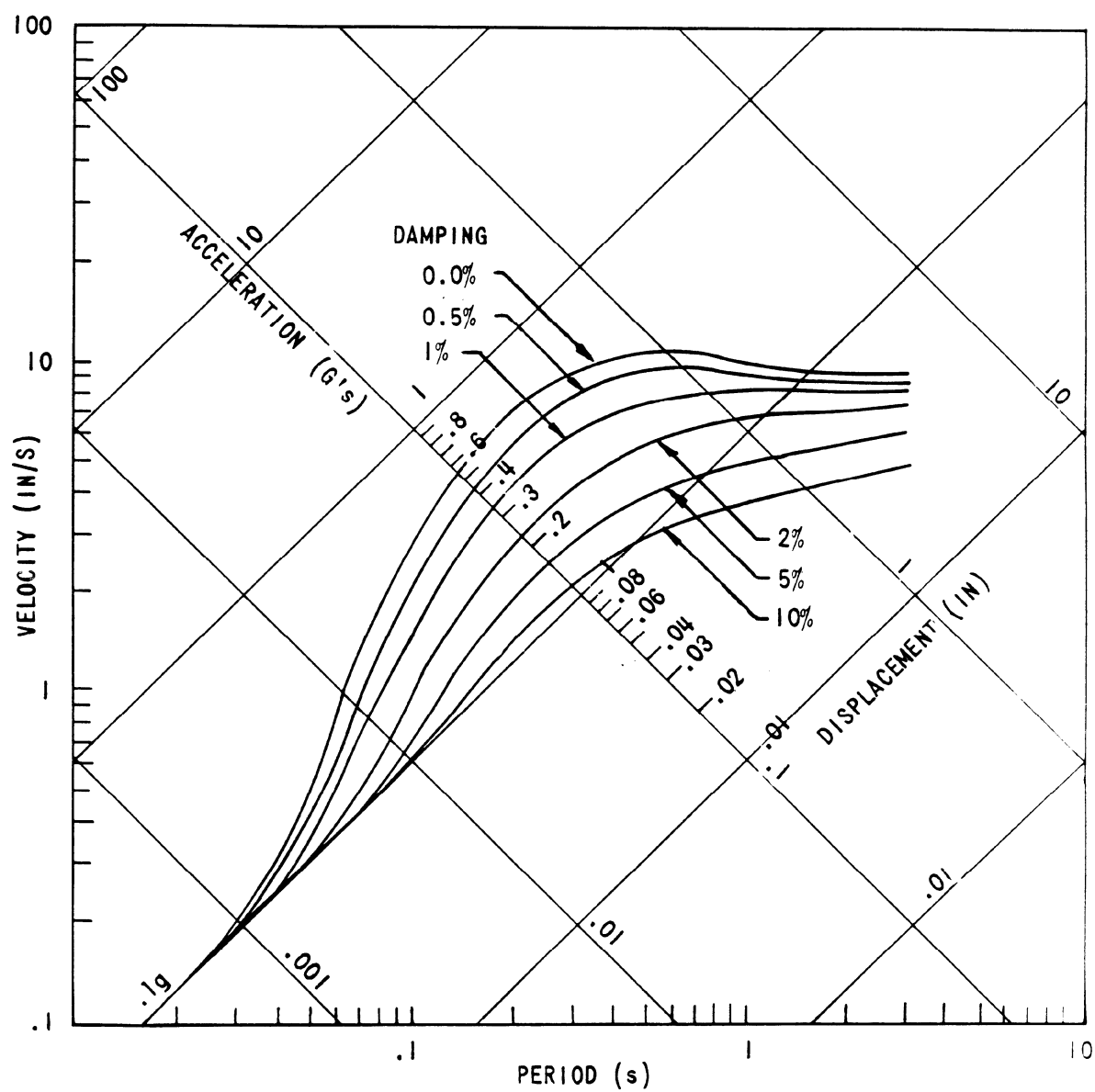
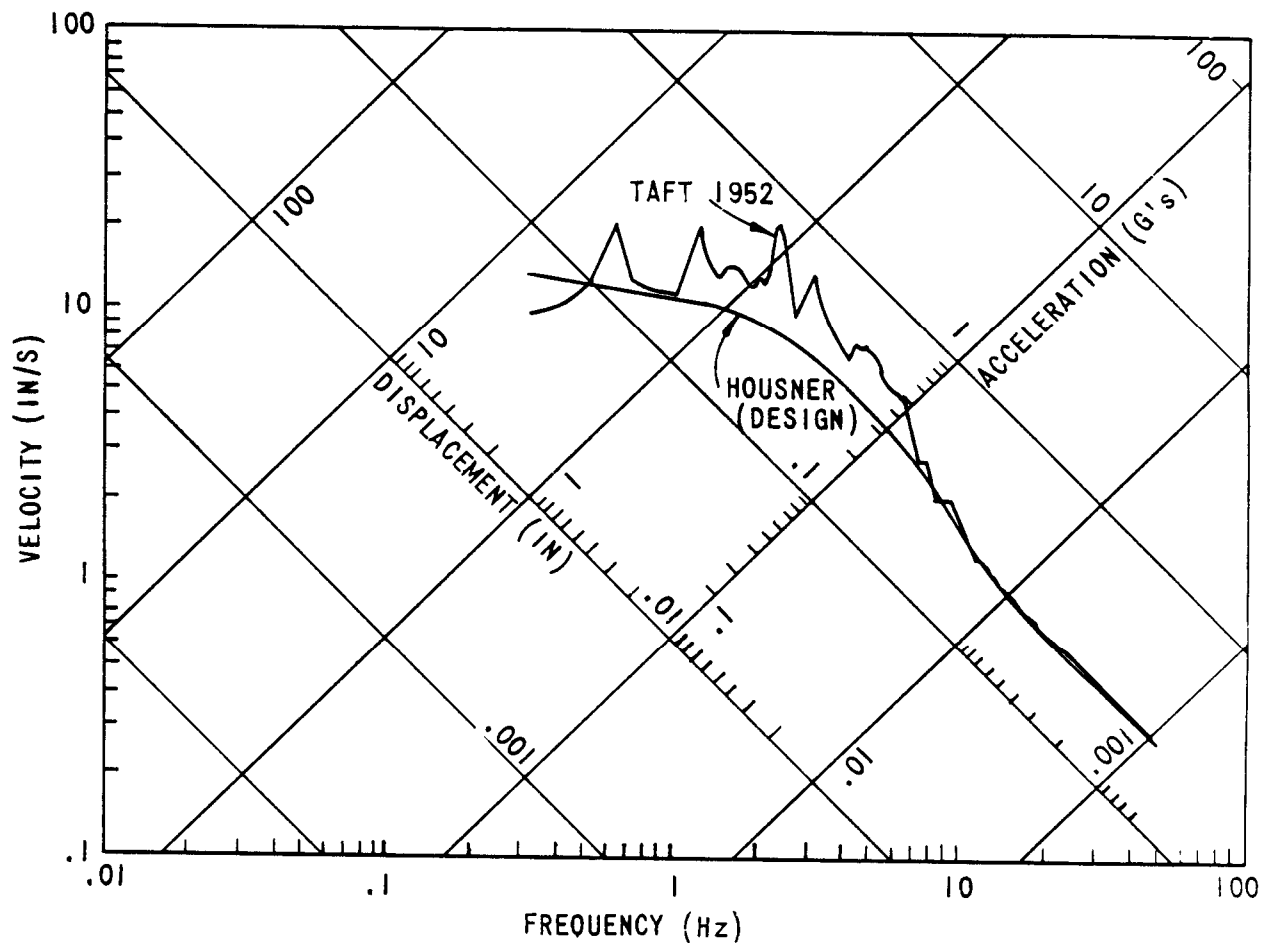
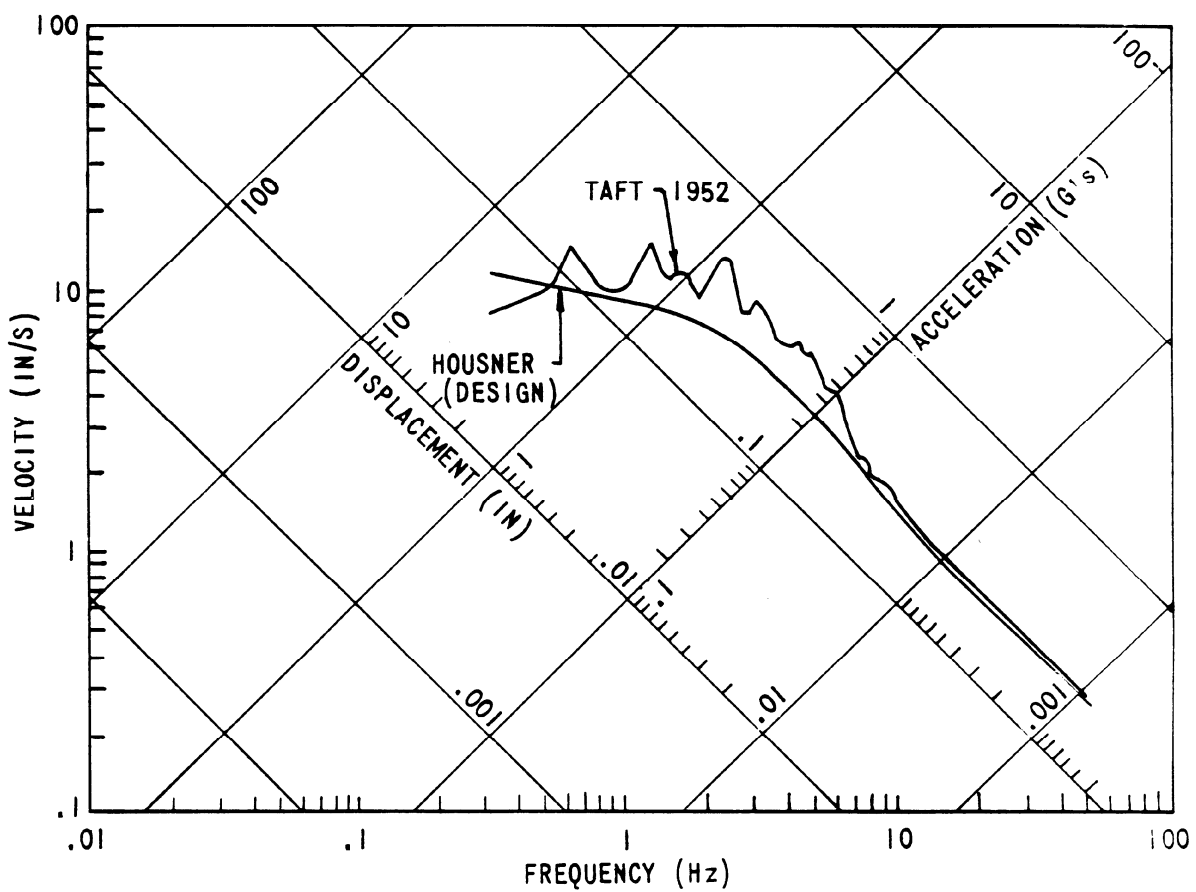


OBE HORIZONTAL DESIGN GROUND RESPONSE SPECTRUM  
(HOUSNER)

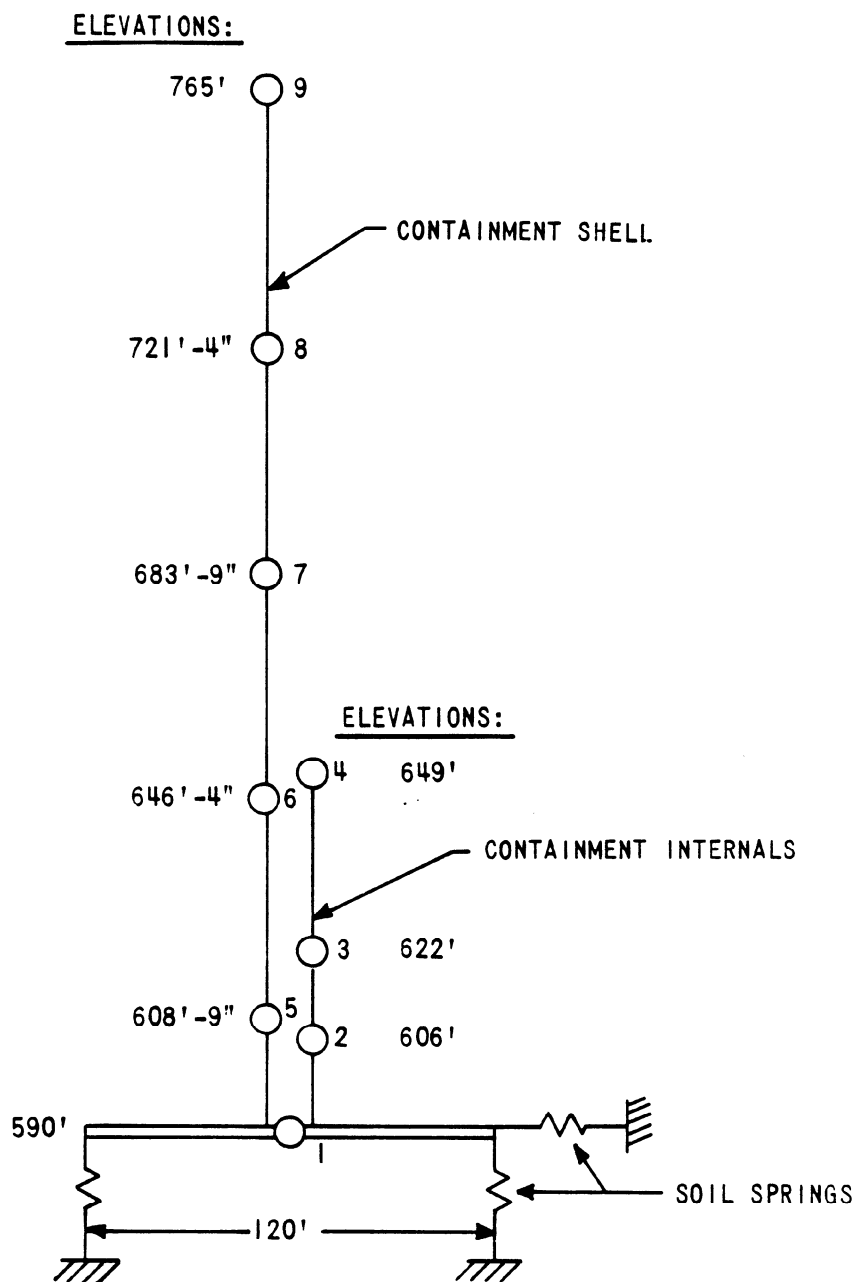
TAFT GROUND RESPONSE SPECTRUM VERSUS HOUSNER GROUND RESPONSE SPECTRUM (SSE)  
4% DAMPING



TAFT GROUND RESPONSE SPECTRUM VERSUS HOUSNER GROUND RESPONSE SPECTRUM (SSE)  
72% DAMPING



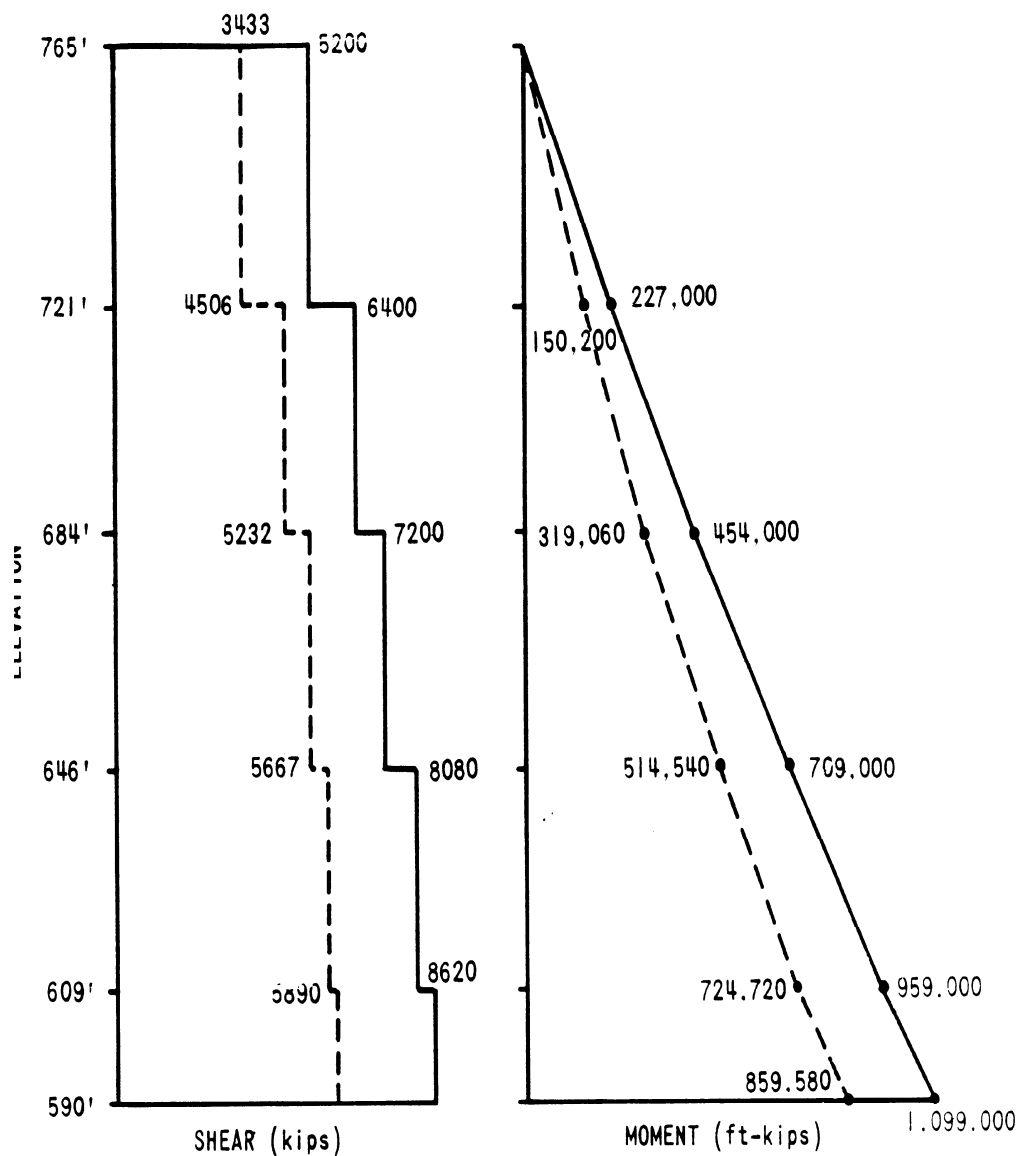
## CONTAINMENT BUILDING DYNAMIC MODEL



## NOTES:

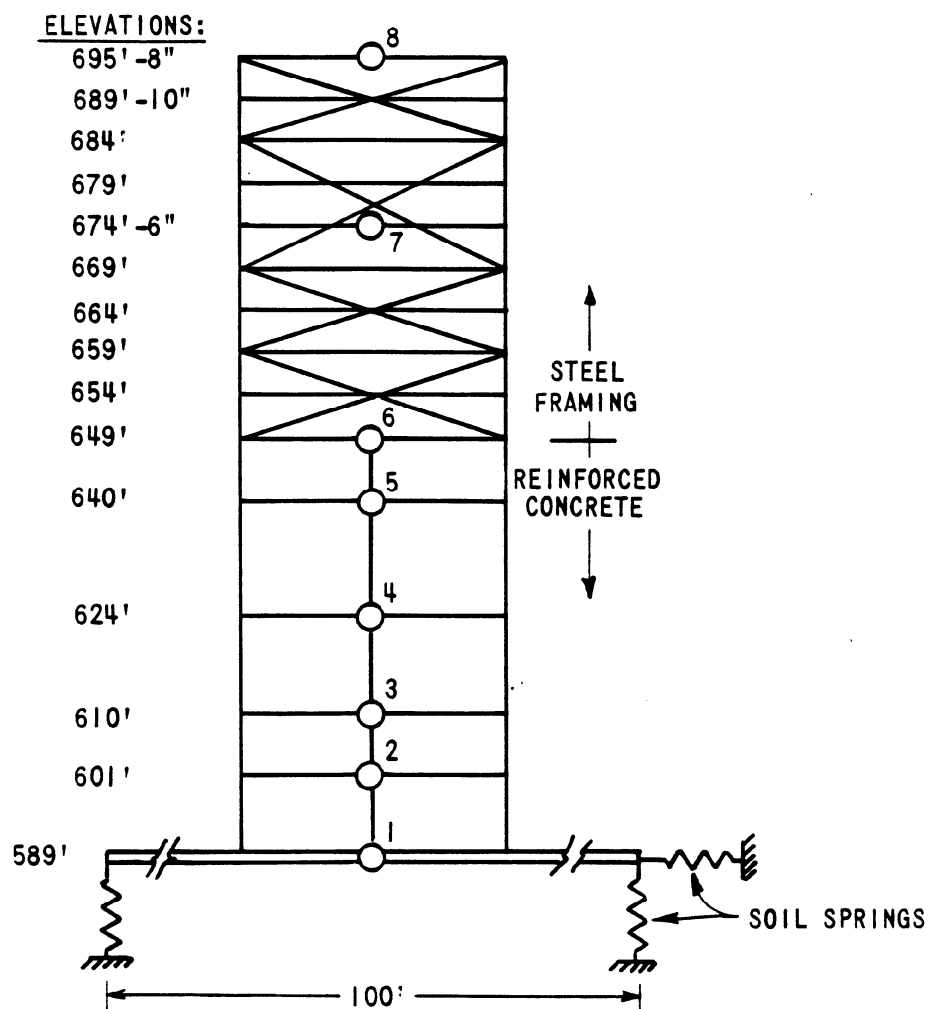
1. CIRCLES REPRESENT LUMPED MASS LOCATIONS

**CONTAINMENT SHELL MAXIMUM SEISMIC RESPONSES (OBE)  
COMPARISON OF RESPONSES FOR FIXED BASE AND COUPLED MODELS**



NOTE: MASS POINT ELEVATIONS  
SHOWN TO NEAREST FOOT

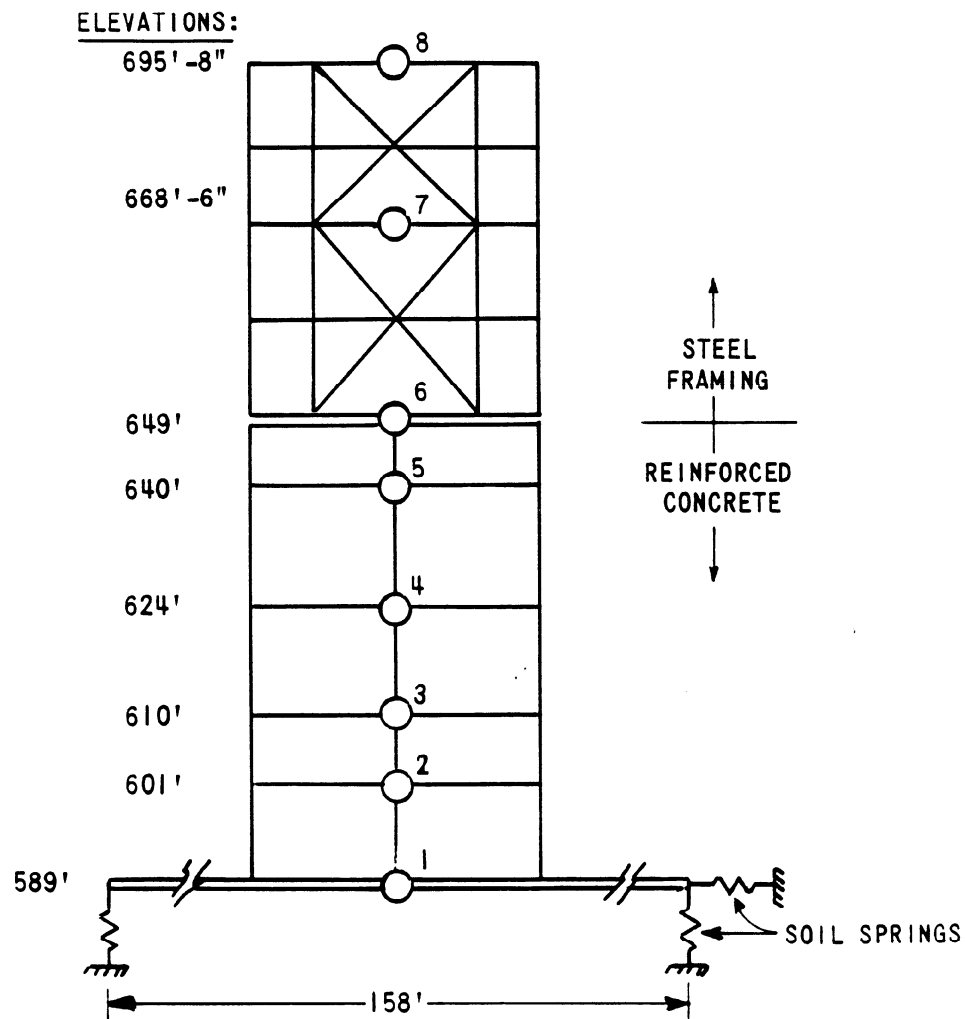
— FIXED BASE MODEL (FIRST MODEL)  
 --- SOIL-SHELL-INTERNAL MODEL  
 (FINAL MODEL)

AUXILIARY BUILDING  
N-S MATHEMATICAL MODEL

## NOTES:

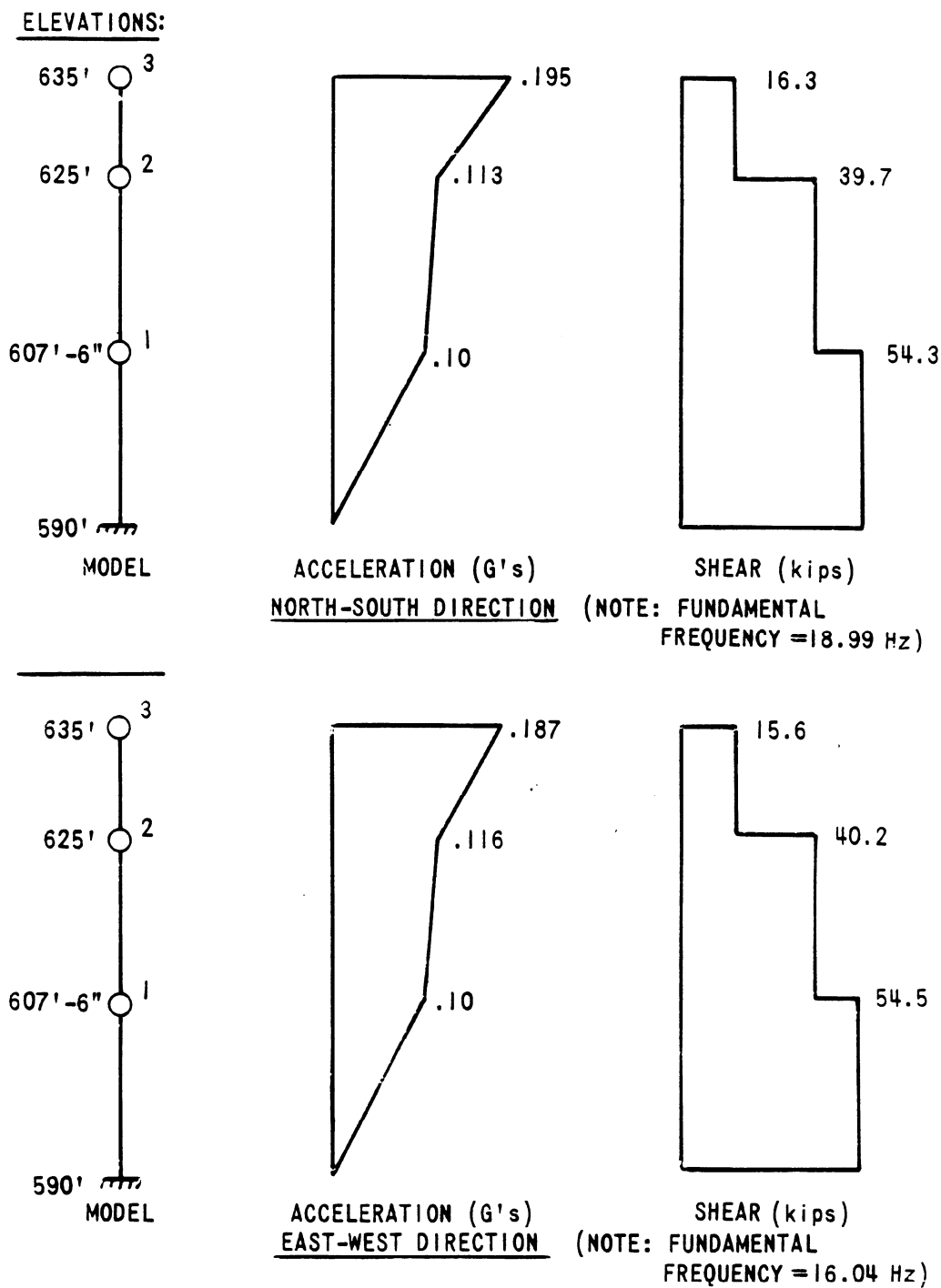
1. CIRCLES REPRESENT LUMPED MASS LOCATIONS.

**AUXILIARY BUILDING  
E-W MATHEMATICAL MODEL**



**NOTES:**

1. CIRCLES REPRESENT LUMPED MASS LOCATIONS.

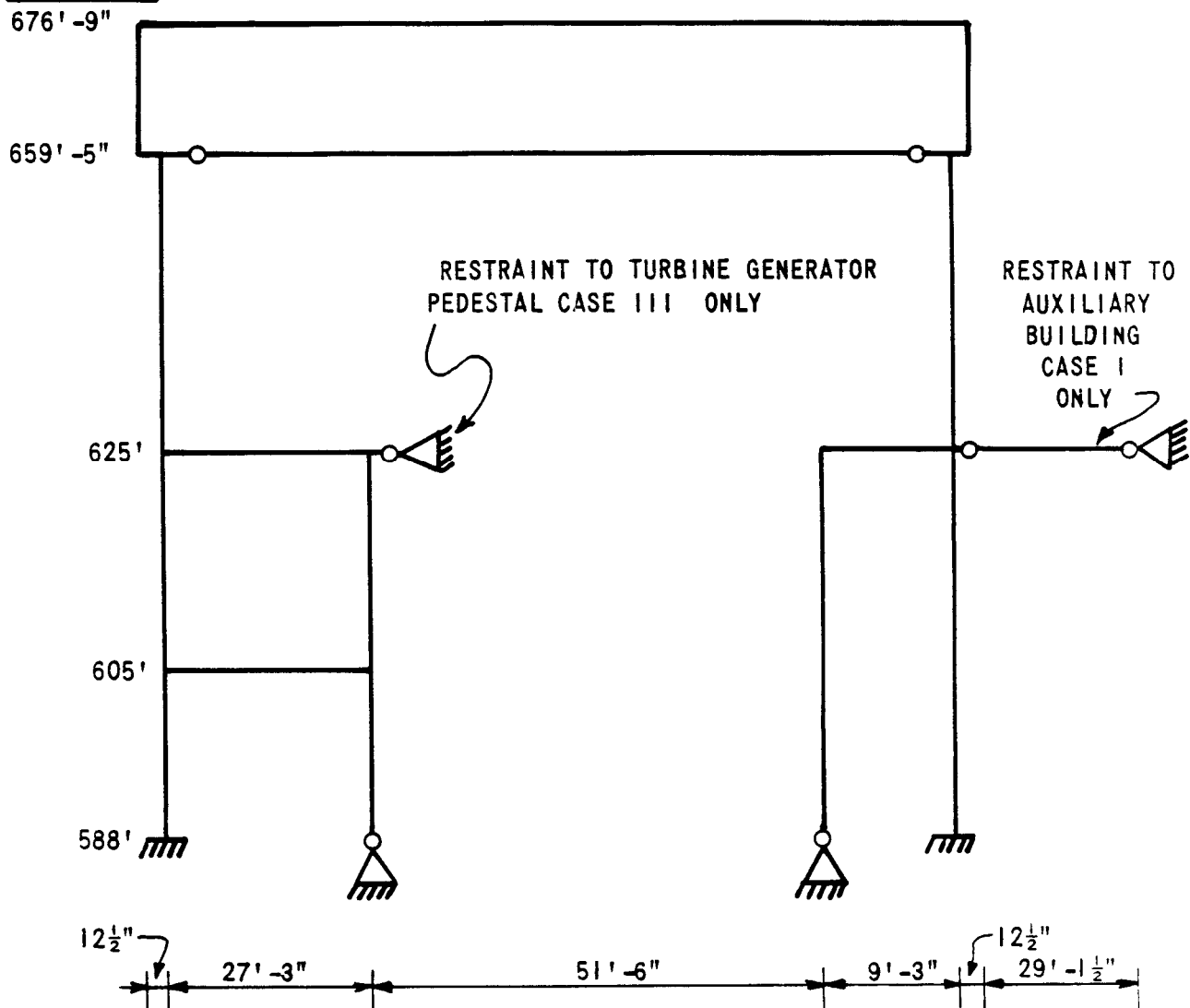
**ELECTRICAL PENETRATION ENCLOSURE  
N-S & E-W DYNAMIC MODELS AND MAXIMUM SEISMIC RESPONSES (OBE)****NOTES:**

1. CIRCLES REPRESENT  
LUMPED MASS LOCATIONS



# TURBINE BUILDING E-W DYNAMIC MODELS

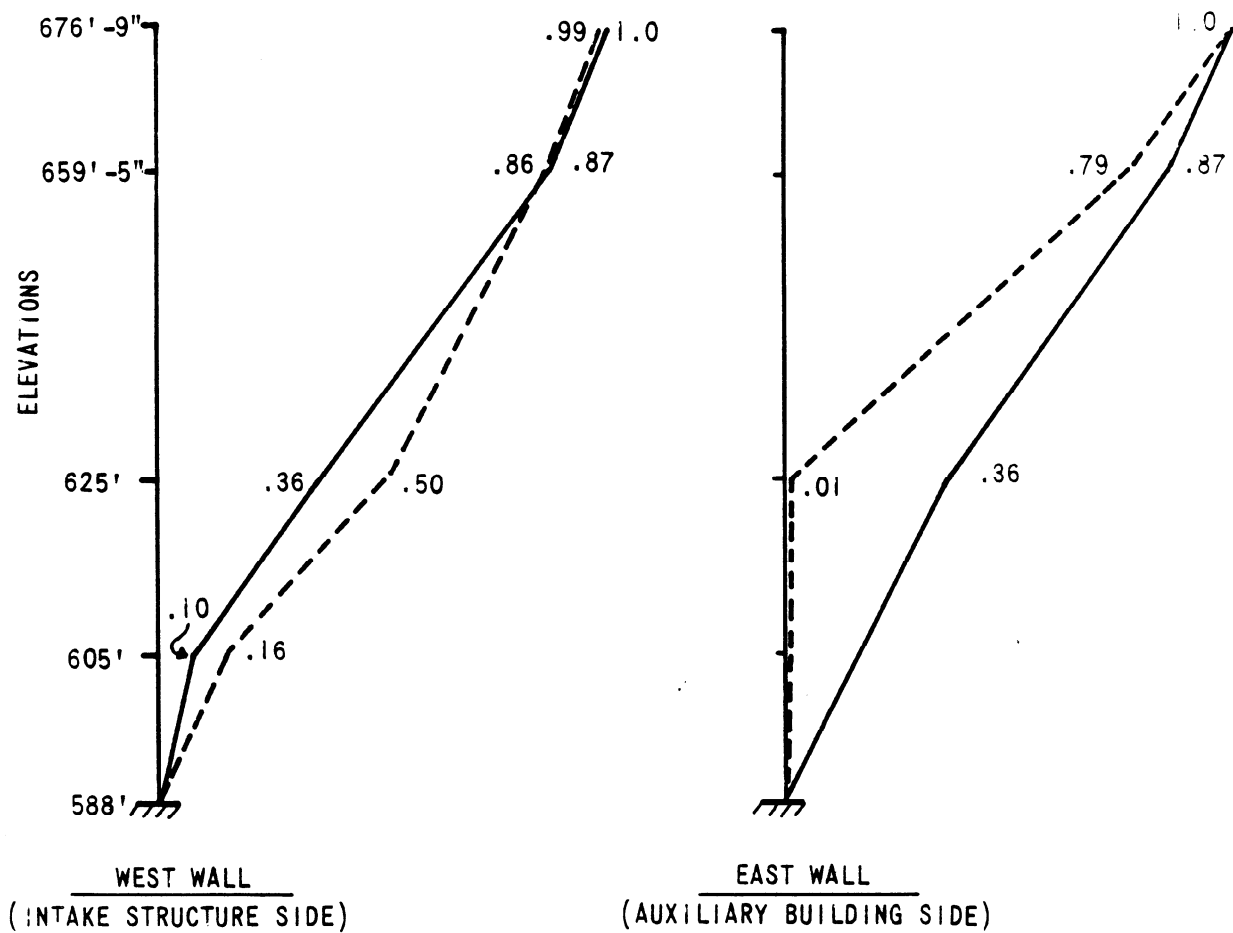
## ELEVATIONS:



## NOTES:

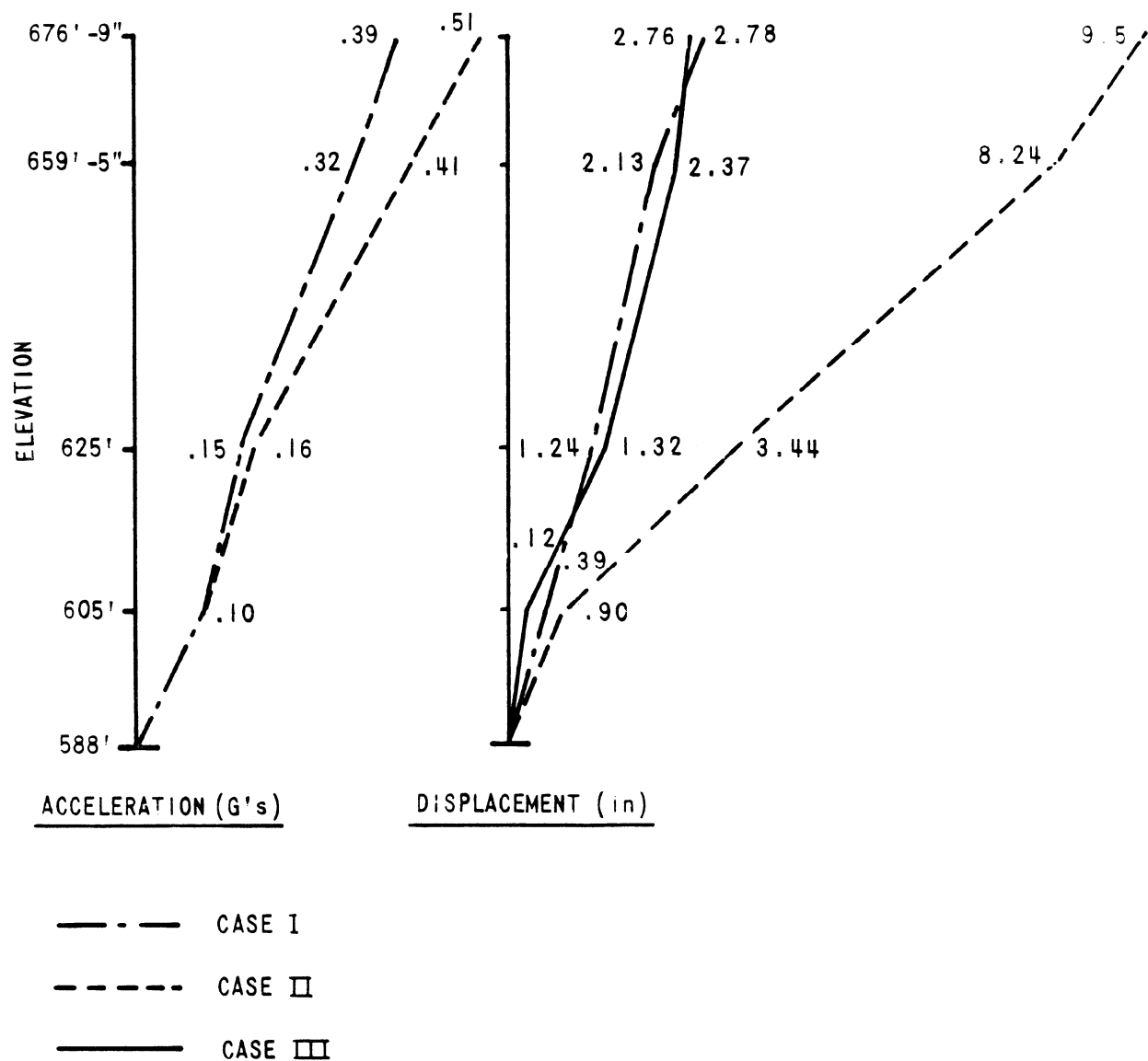
1. SMALL CIRCLES REPRESENT PINNED CONNECTIONS

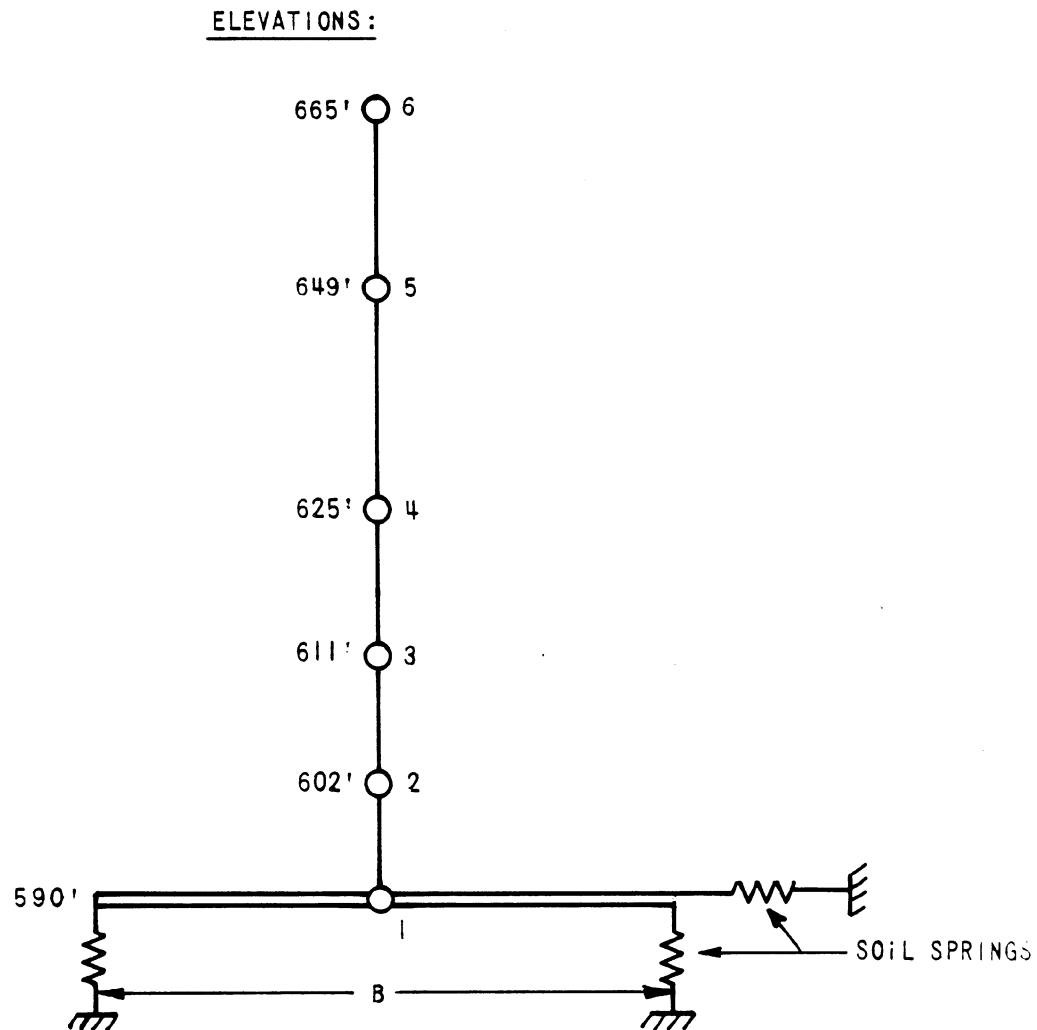
TURBINE BUILDING  
E-W FUNDAMENTAL MODESHAPES, OUTSIDE WALLS



----- CASE I  
———— CASE II

**TURBINE BUILDING  
E-W DIRECTION, MAXIMUM SEISMIC RESPONSES (SSE)**



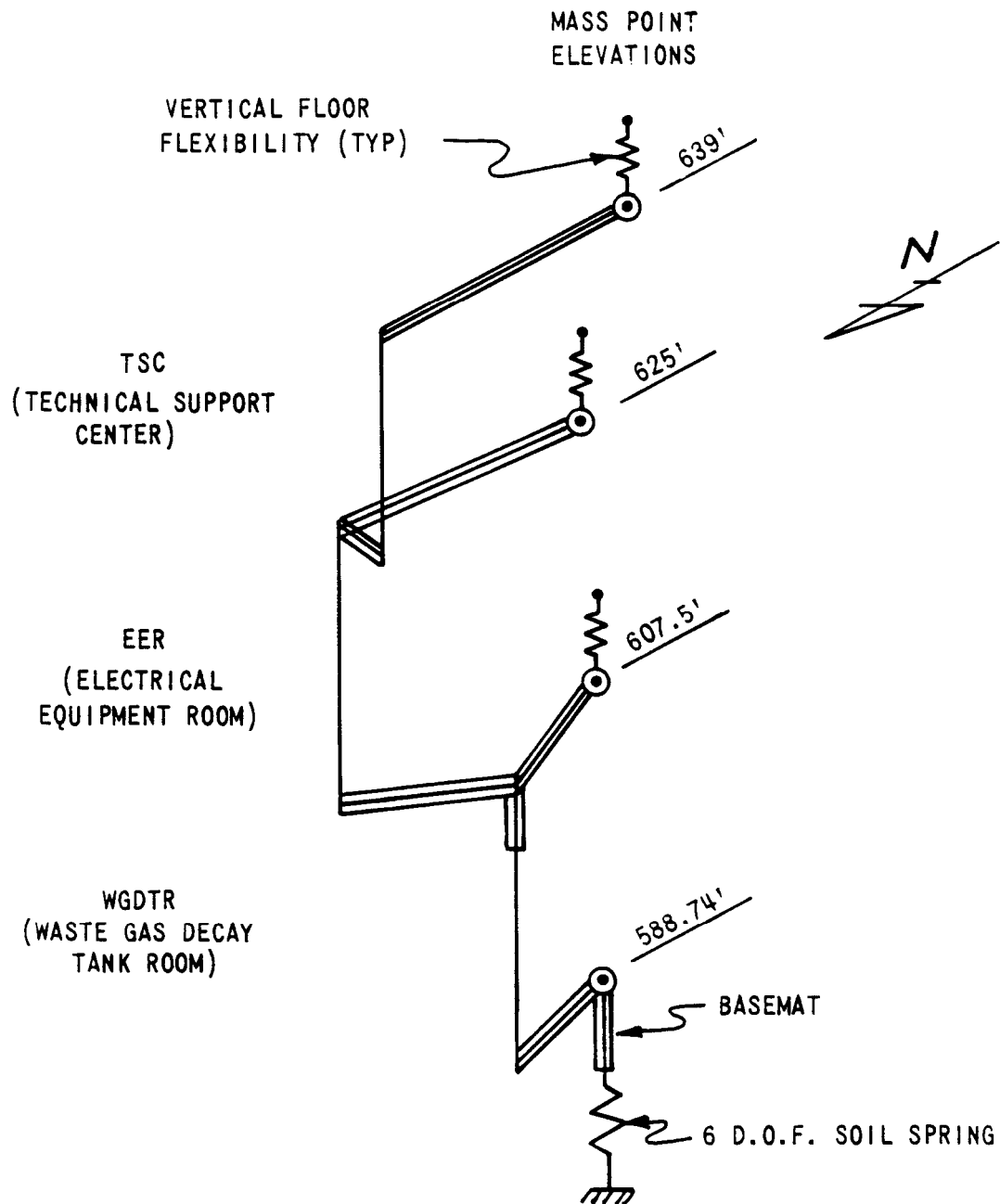
**AUXILIARY BUILDING RADWASTE ADDITION  
DYNAMIC MODELS****NOTES:**

1. B=38' - 6" N-S MODEL

B=125' - 0" E-W MODEL

2. CIRCLES REPRESENT LUMPED  
MASS LOCATIONS

### AUXILIARY BUILDING TSC/EER ADDITION DYNAMIC MODEL

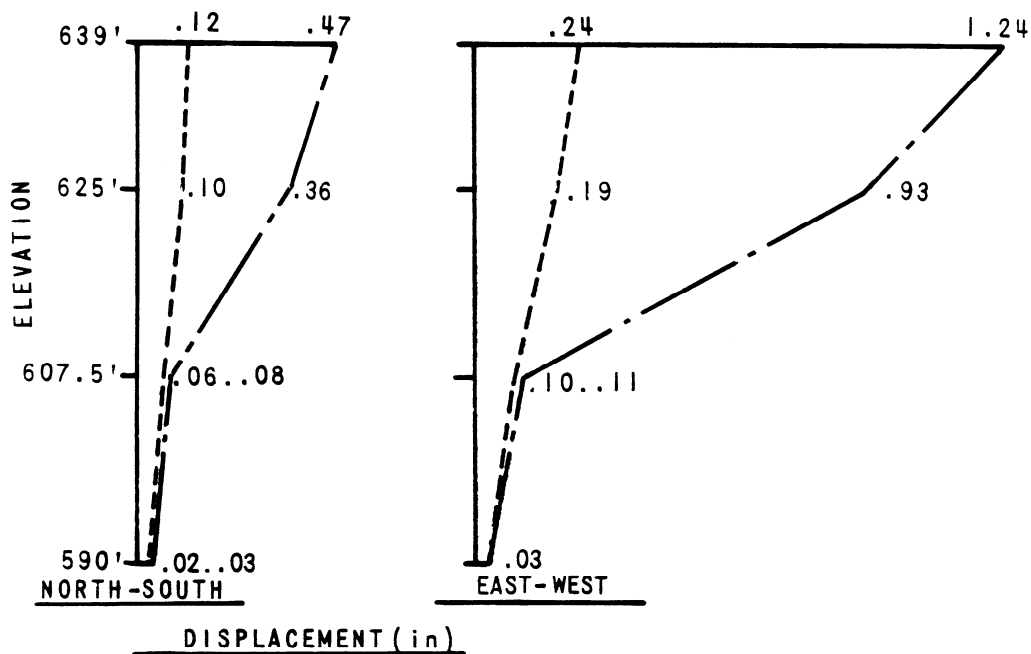
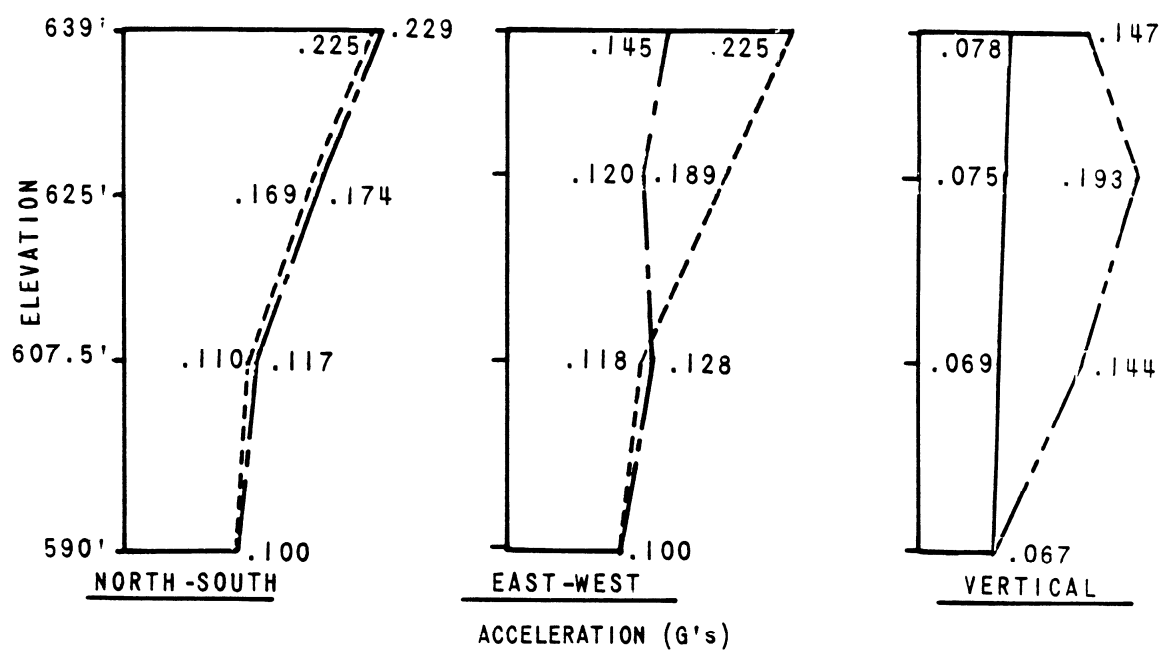


#### NOTES:

1. CORNER MEMBERS NOT SHOWN FOR CLARITY

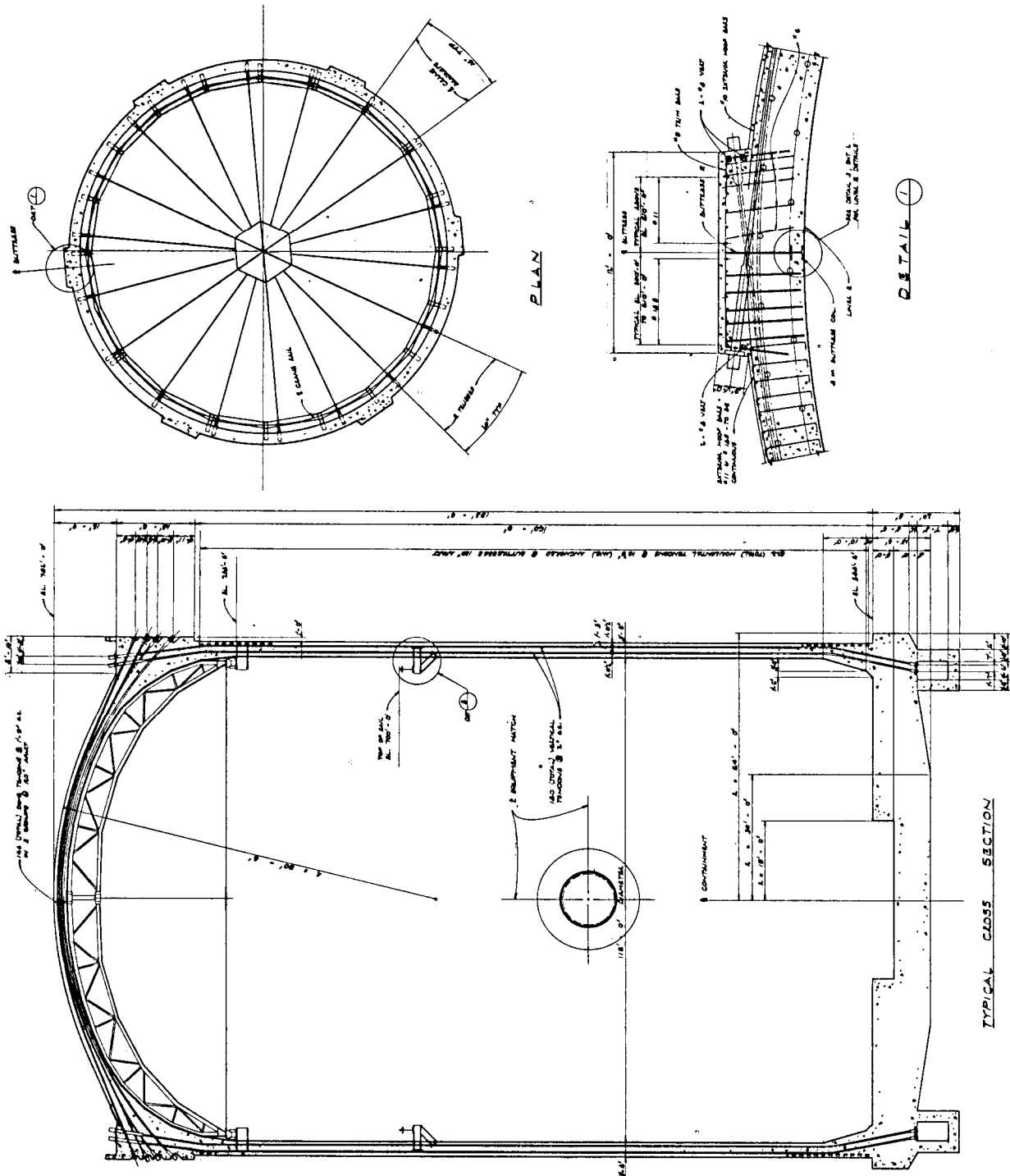
- ===== RIGID MEMBER
- FLEXIBLE MEMBER
- ⊙, • LUMPED MASS

### AUXILIARY BUILDING TSC/EER ADDITION MAXIMUM SEISMIC RESPONSES (OBE)

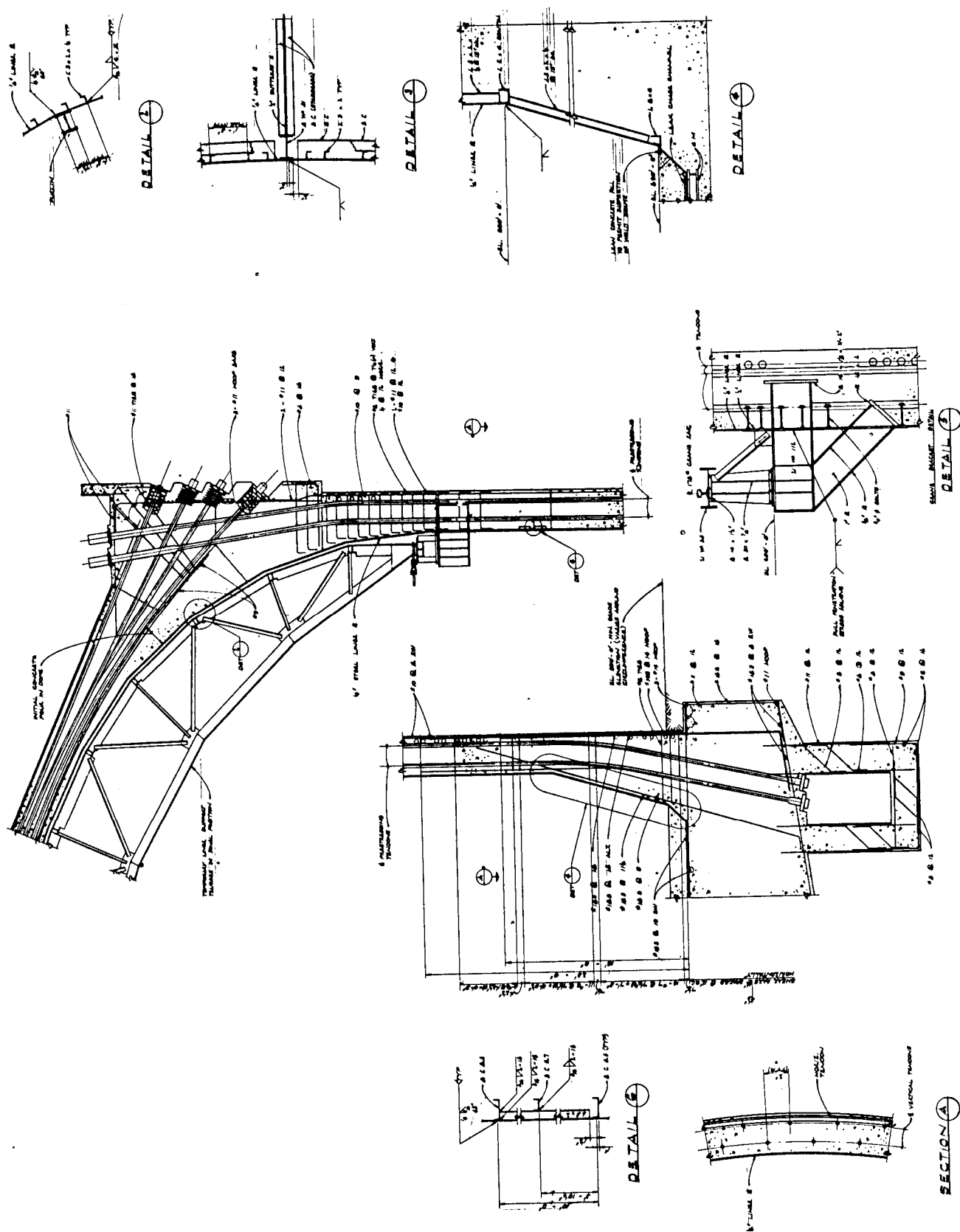


- WALLS ACTING INDIVIDUALLY  
IN TORSION (ANALYSIS 1)
- .... WALLS ACTING TOGETHER  
IN TORSION (ANALYSIS 2)
- RIGID FLOORS
- - - FLEXIBLE FLOORS

## CONTAINMENT STRUCTURE TYPICAL CROSS SECTION



CONTAINMENT STRUCTURE  
TYPICAL CROSS SECTION





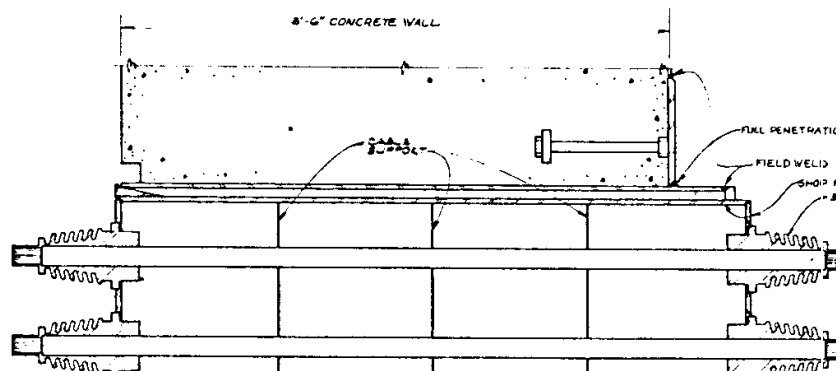
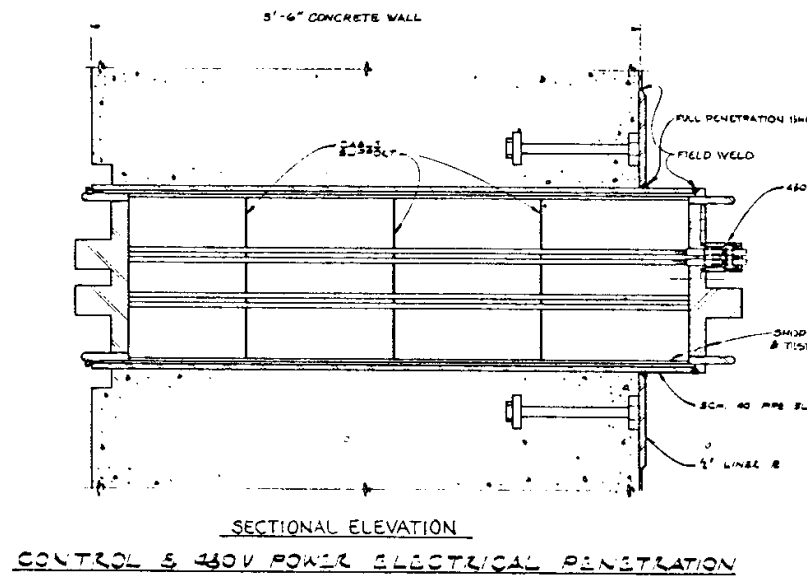
**TYPICAL UNINSULATED PIPE PENETRATION**

**TYPICAL INSULATED PIPE PENETRATION**

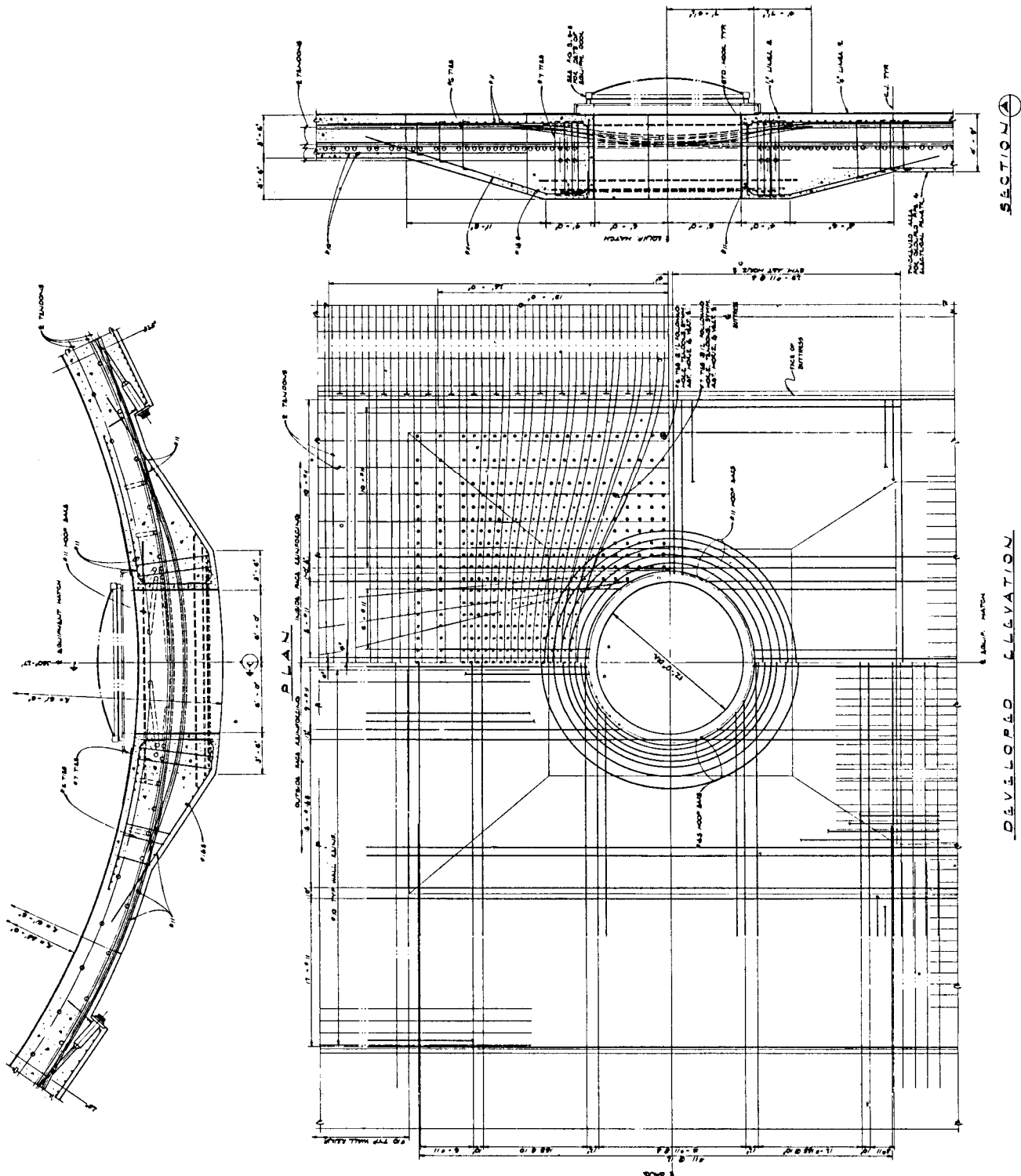
**MAIN STEAM AND FEEDWATER PENETRATIONS**

MAXIMUM THERMAL CONDUCTIVITY OF
0.22 BTU/HR FT <sup>2</sup> °F/IN

**CONTAINMENT STRUCTURE  
TYPICAL ELECTRICAL PENETRATIONS**

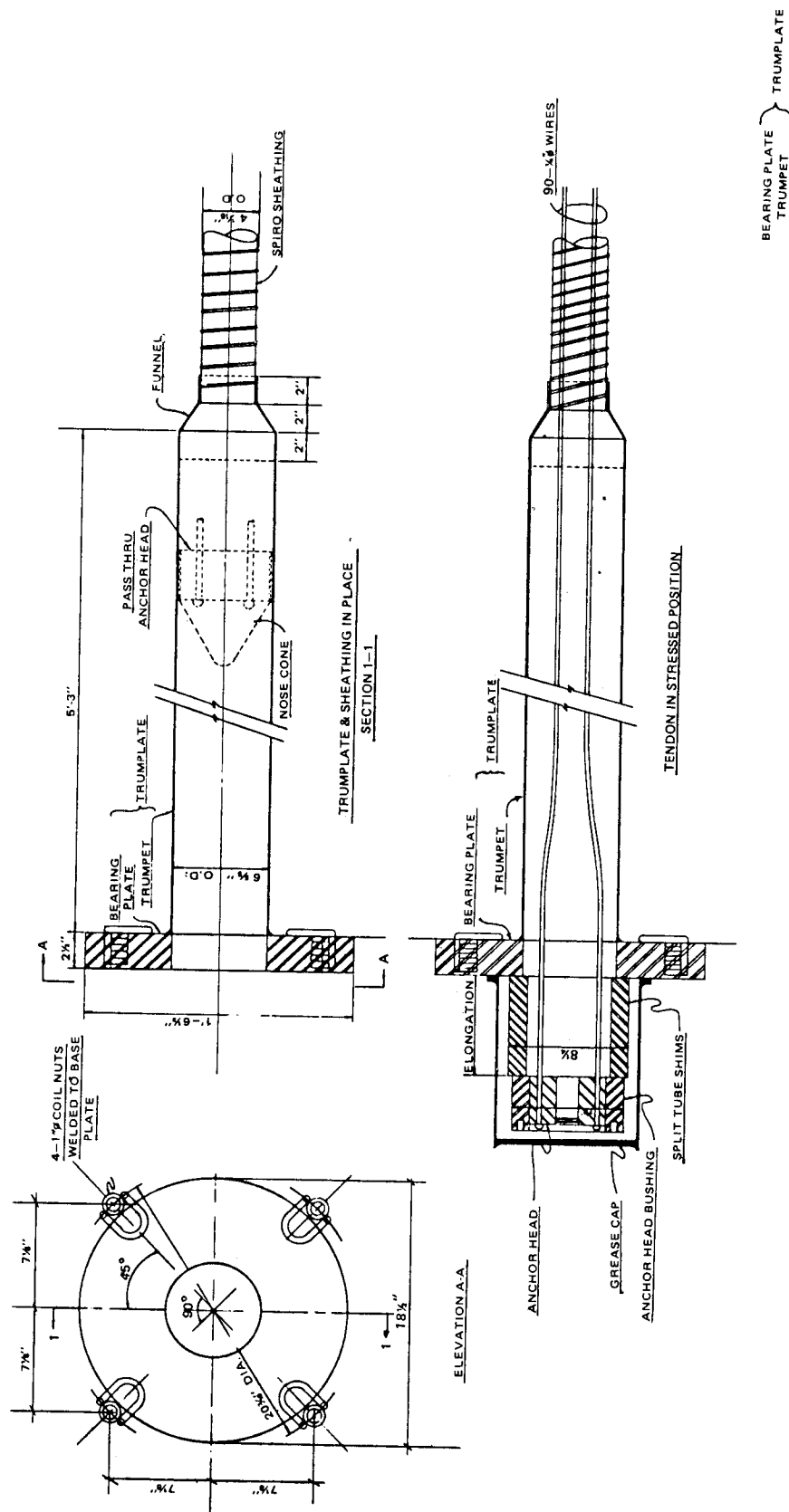


**CONTAINMENT STRUCTURE  
REINFORCING AND TENDON PLAN ADJACENT TO EQUIPMENT HATCH**



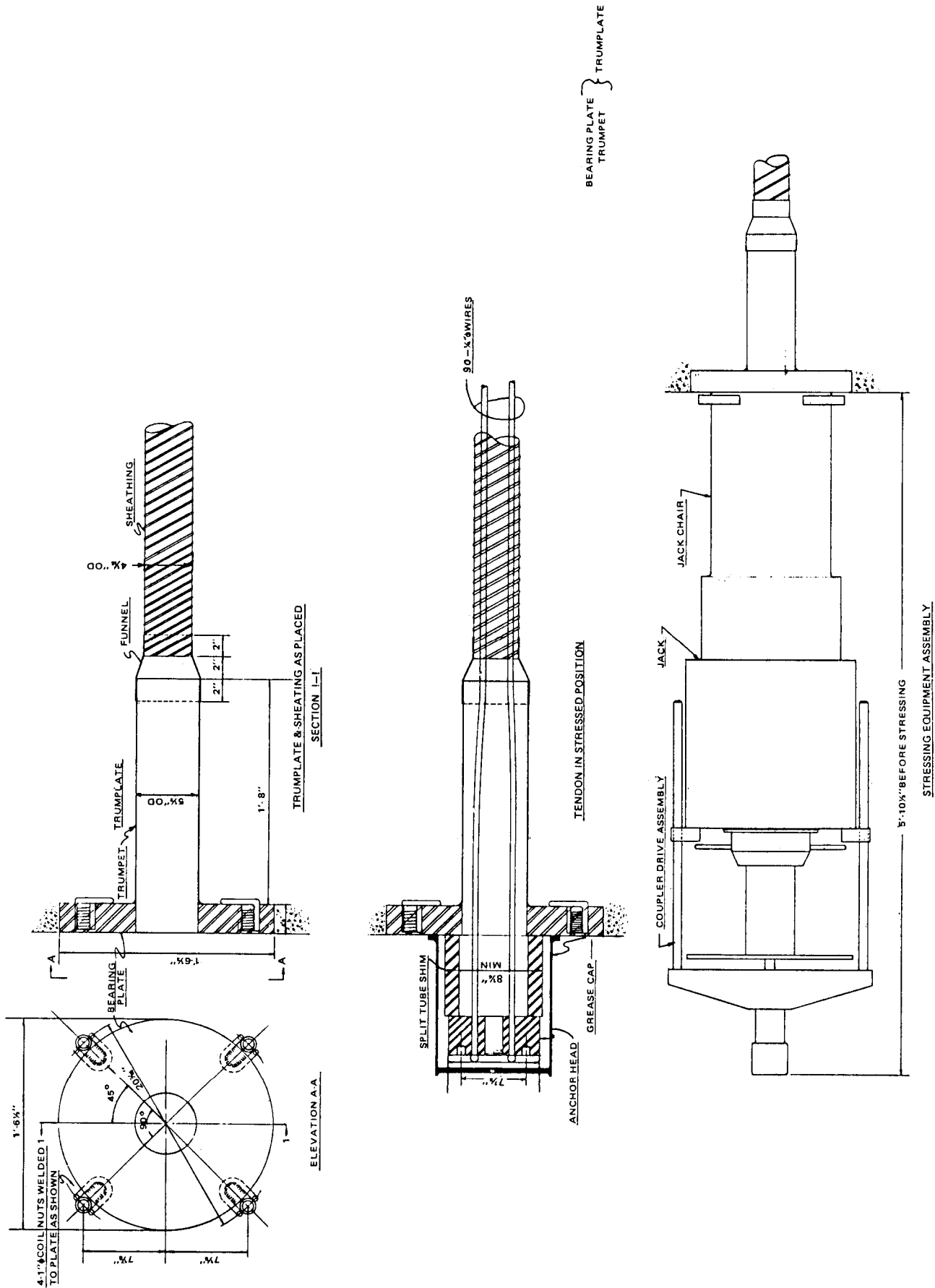
## CONTAINMENT STRUCTURE

**TENDON HARDWARE ASSEMBLY, HORIZONTAL AND DOME TENDONS, SHOP BUTTONHEADED END**



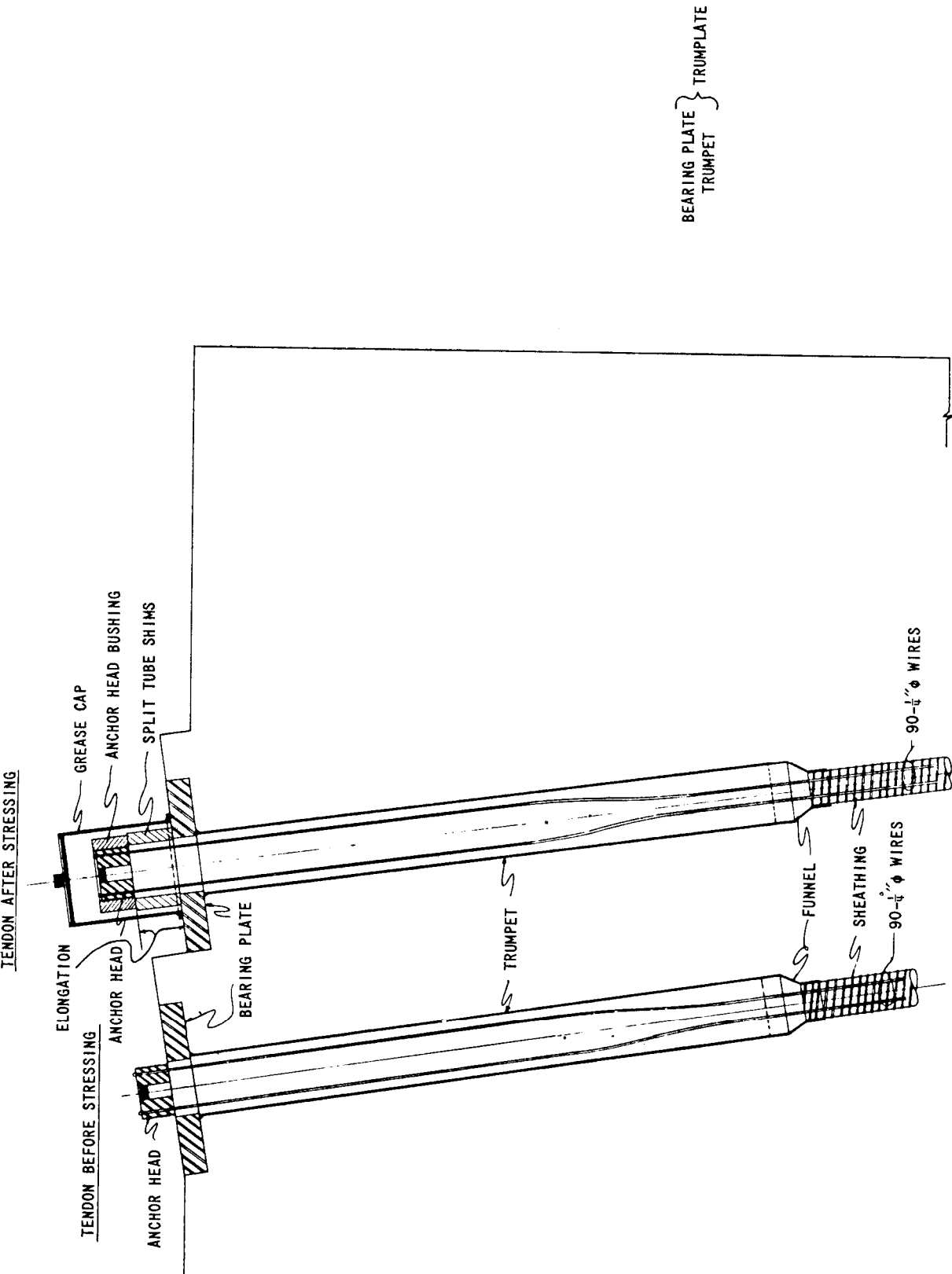
CONTAINMENT STRUCTURE

TENDON HARDWARE ASSEMBLY, HORIZONTAL AND DOME TENDONS, FIELD BUTTONHEADED END



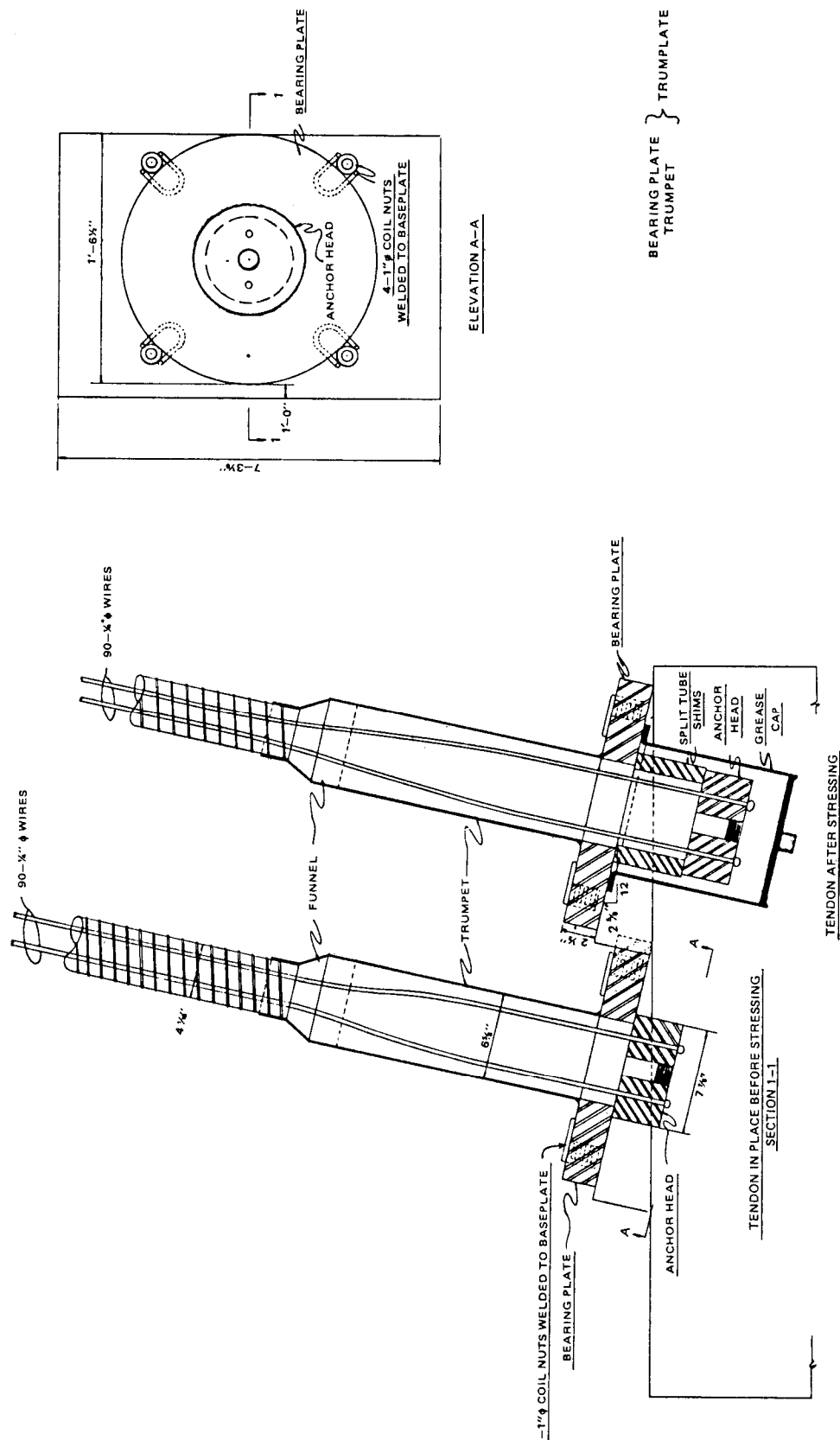
CONTAINMENT STRUCTURE

TENDON HARDWARE ASSEMBLY, VERTICAL TENDONS, SHOP BUTTONHEADED END

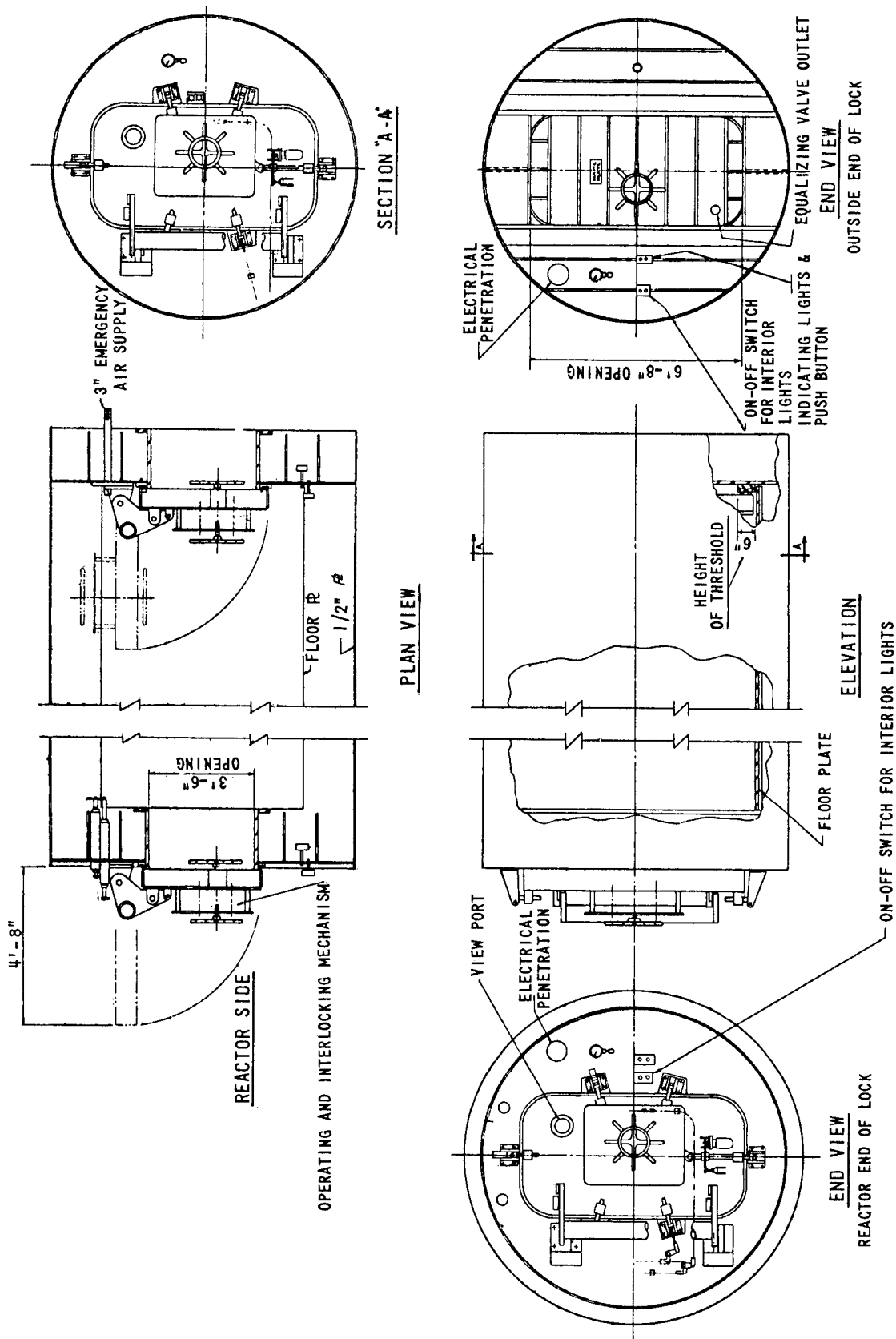


CONTAINMENT STRUCTURE

TENDON HARDWARE ASSEMBLY, VERTICAL TENDONS, FIELD BUTTONHEADED END



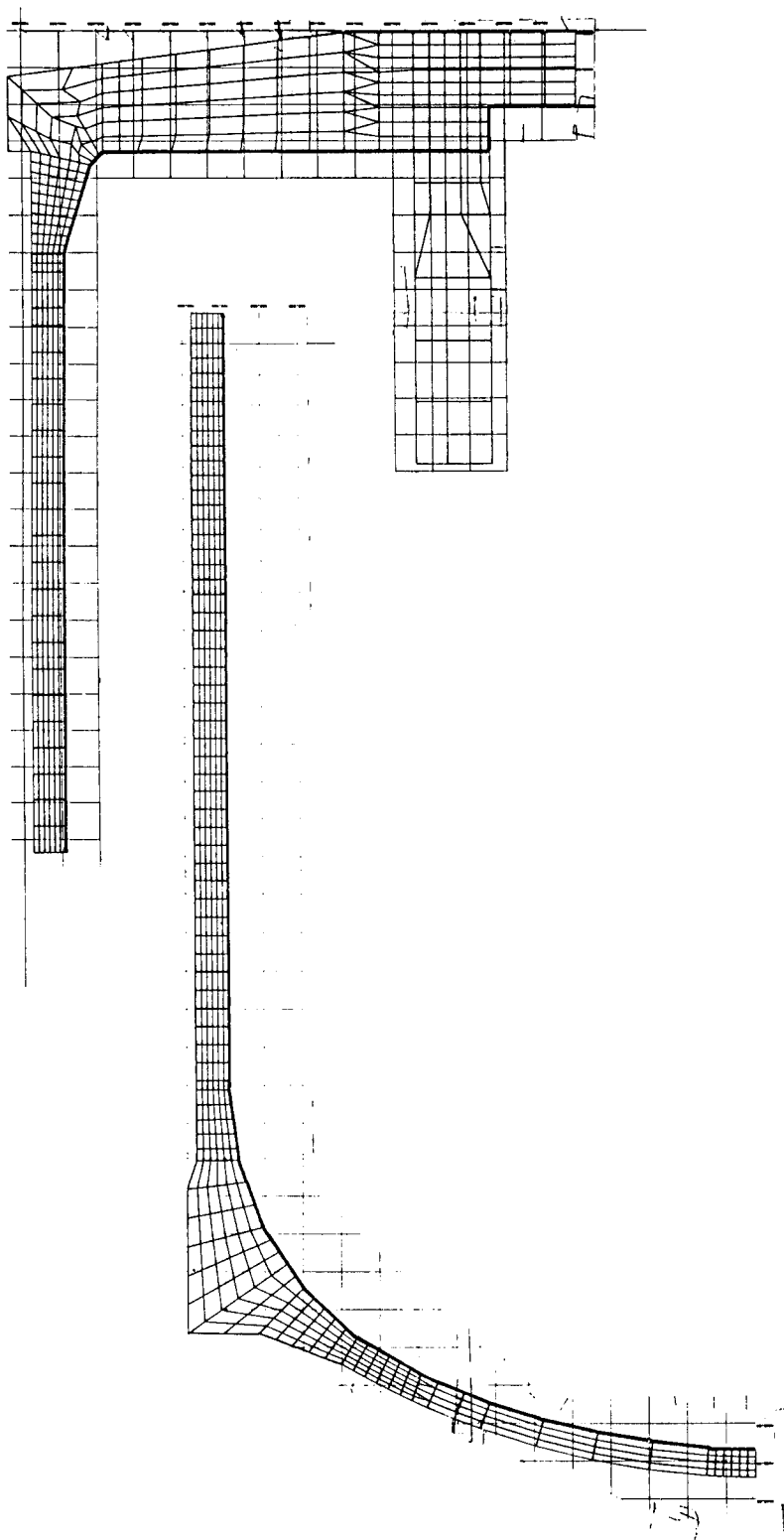
CONTAINMENT STRUCTURE  
PERSONNEL AIR LOCK



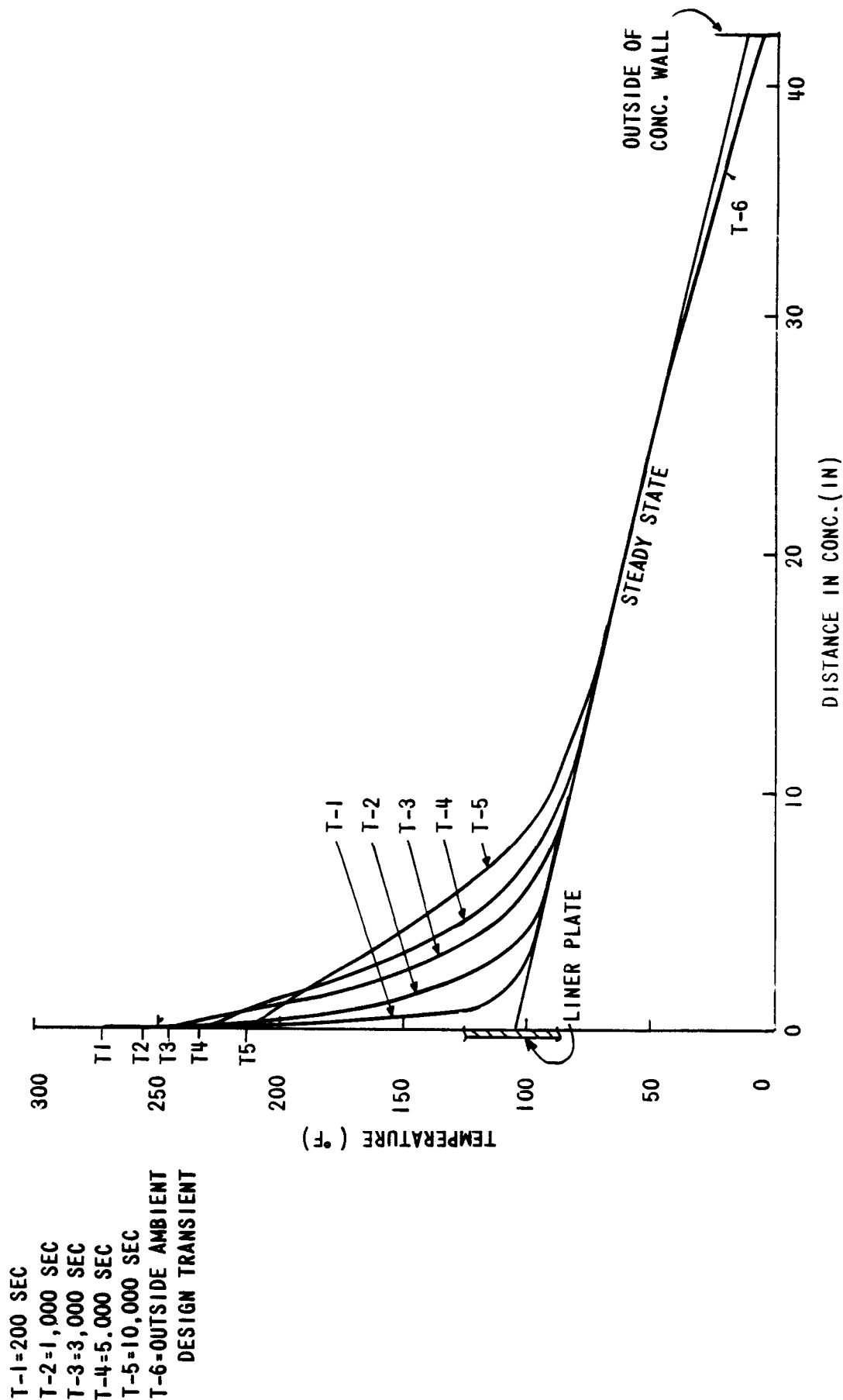


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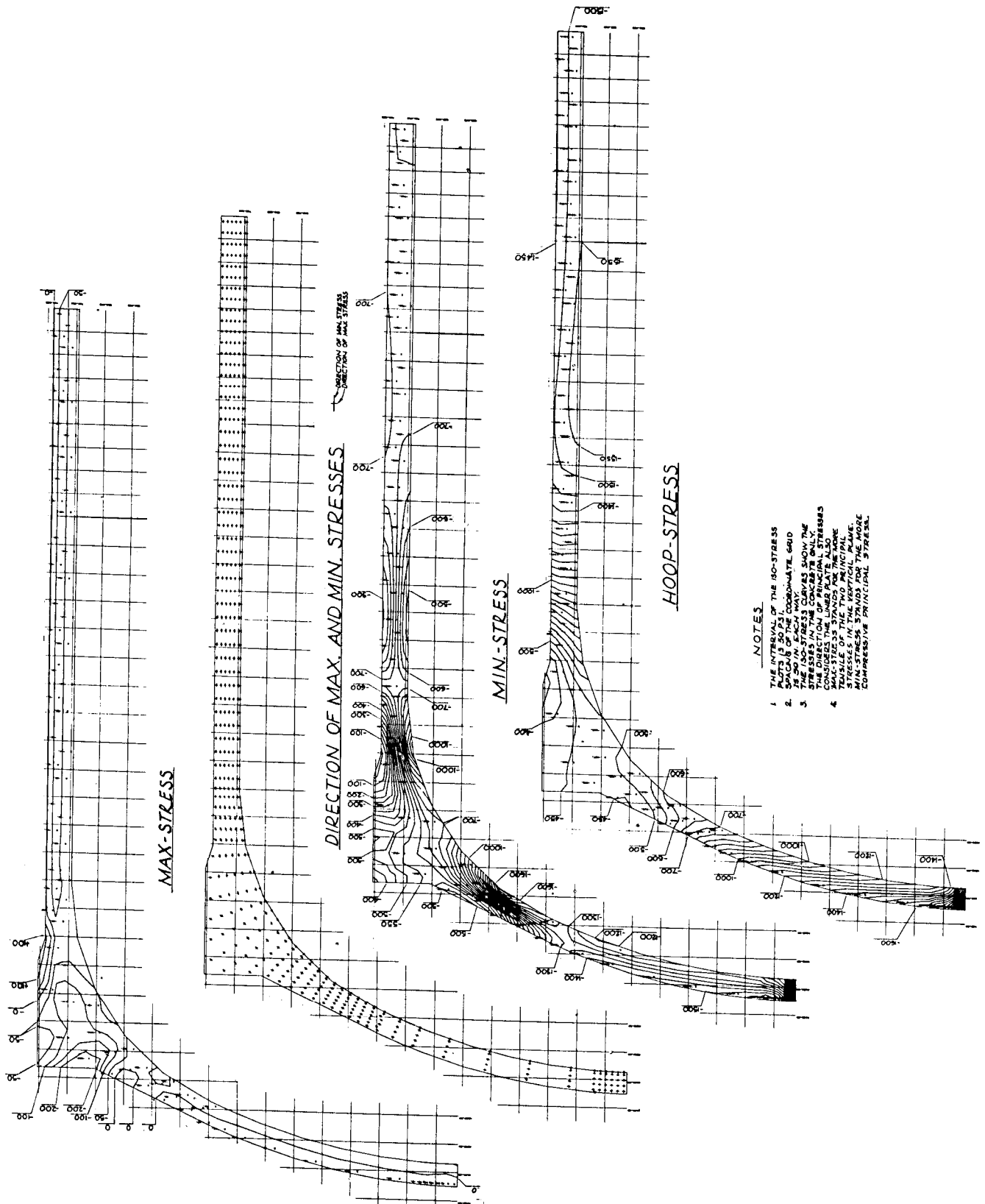
[illegible]

**CONTAINMENT STRUCTURE  
FINITE ELEMENT MESH**

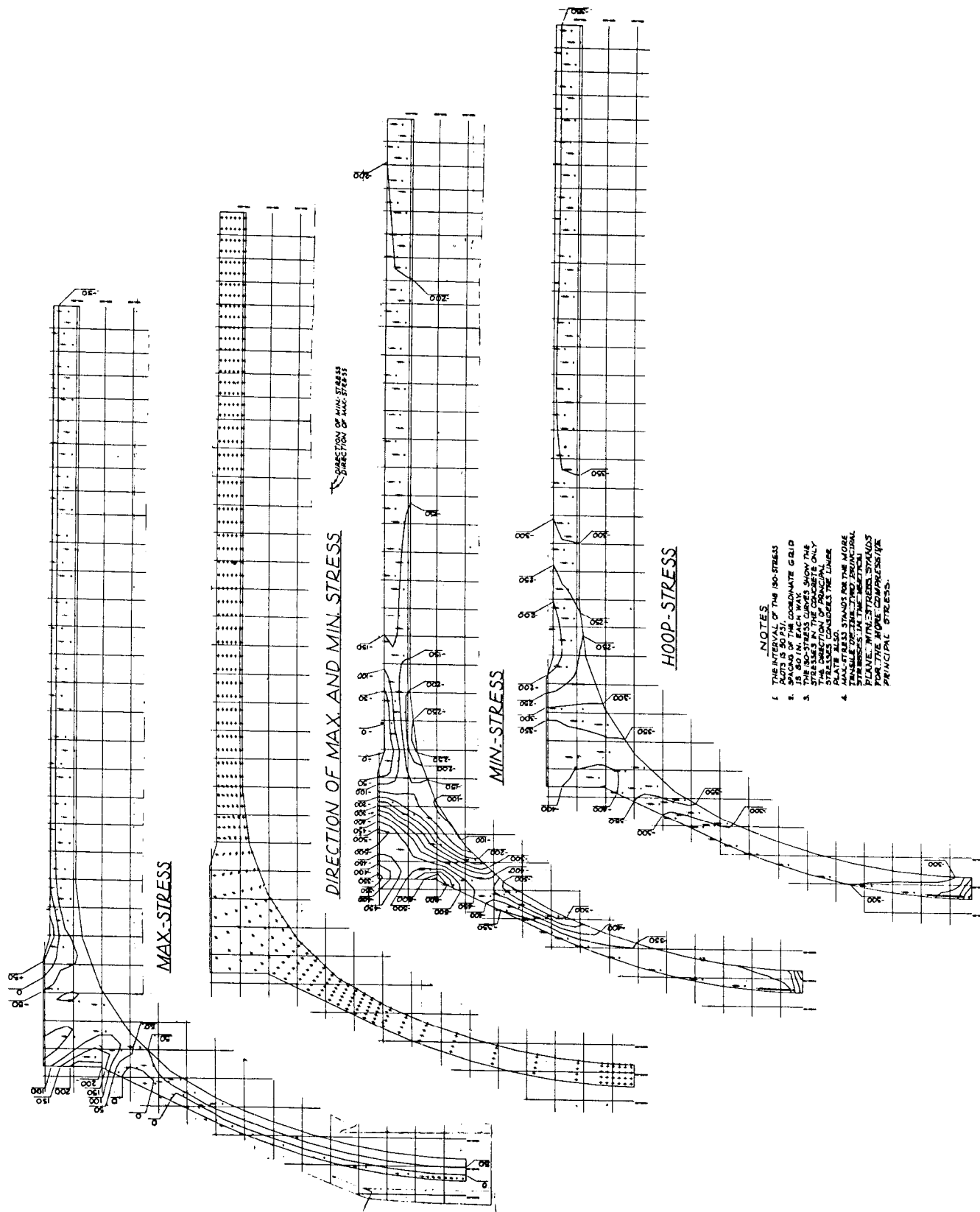
CONTAINMENT STRUCTURE  
DBA THERMAL GRADIENTS ACROSS CONTAINMENT WALL, NO INSULATION



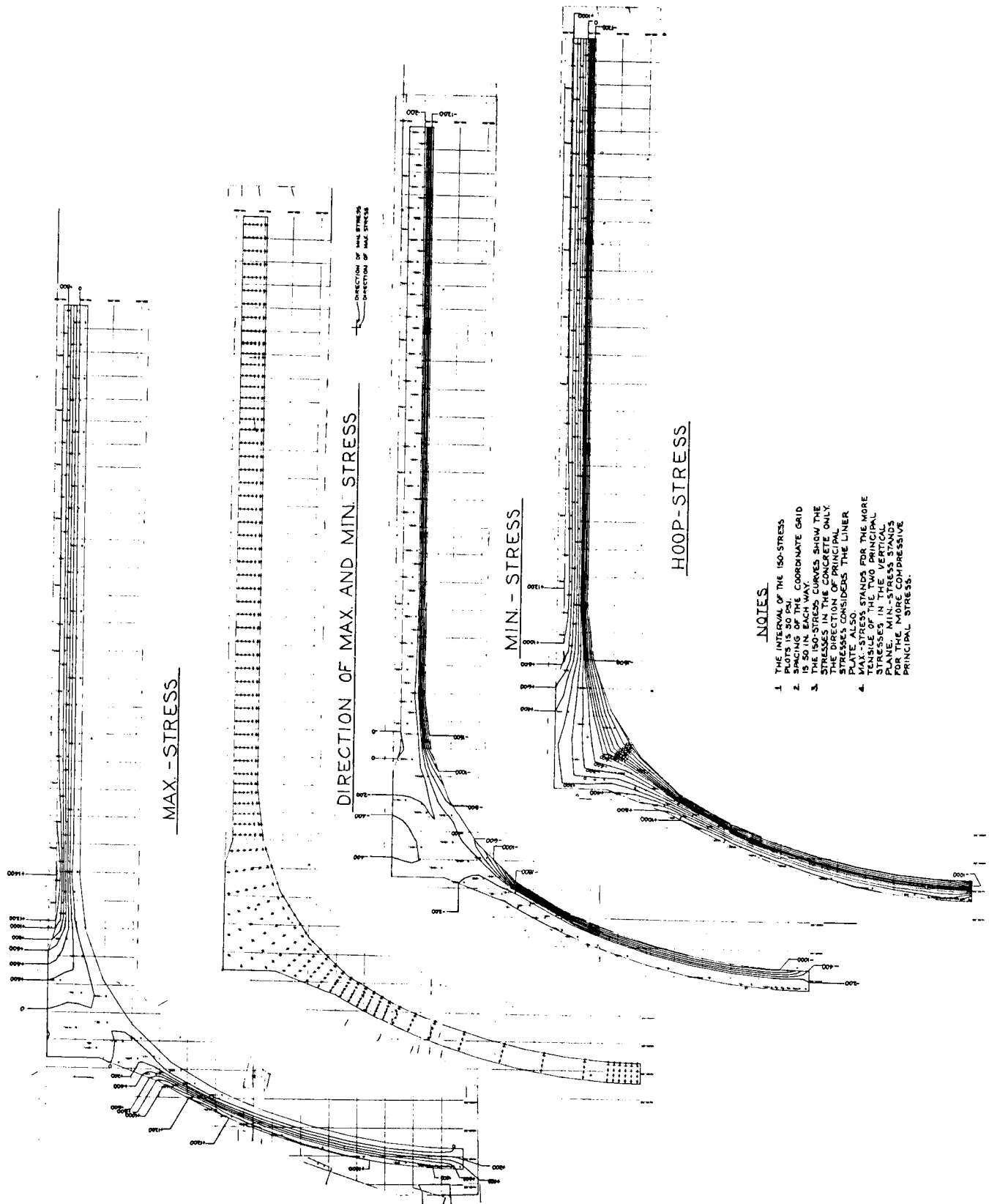
# CONTAINMENT STRUCTURE ISOSTRESS PLOT, DOME AND WALL D + F<sub>i</sub>



# CONTAINMENT STRUCTURE ISOSTRESS PLOT, DOME AND WALL $D + F_f + 1.15P$



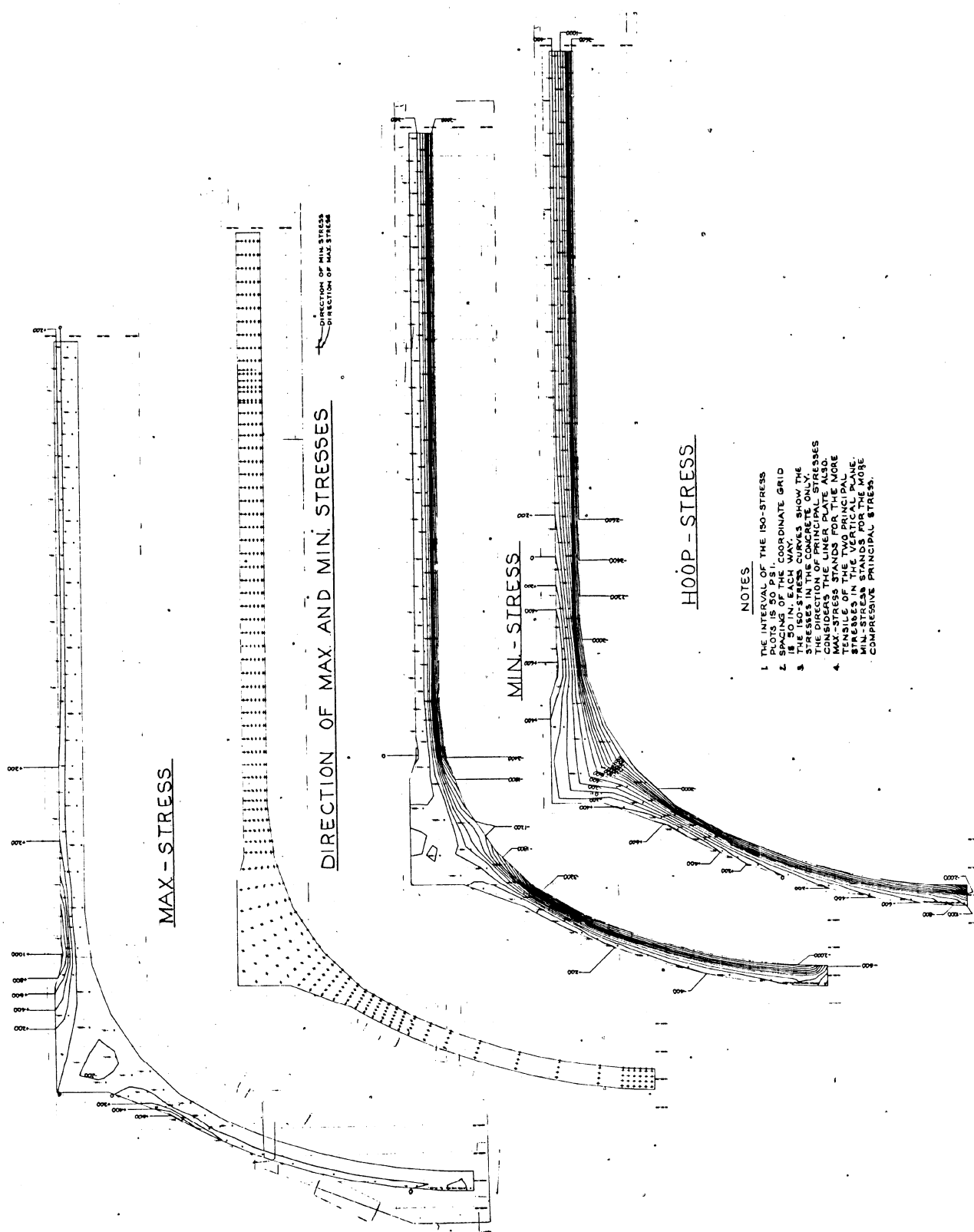
**CONTAINMENT STRUCTURE  
ISOSTRESS PLOT, DOME AND WALL  
 $D + F_f + 1.5P + T_a$**



**NOTES**

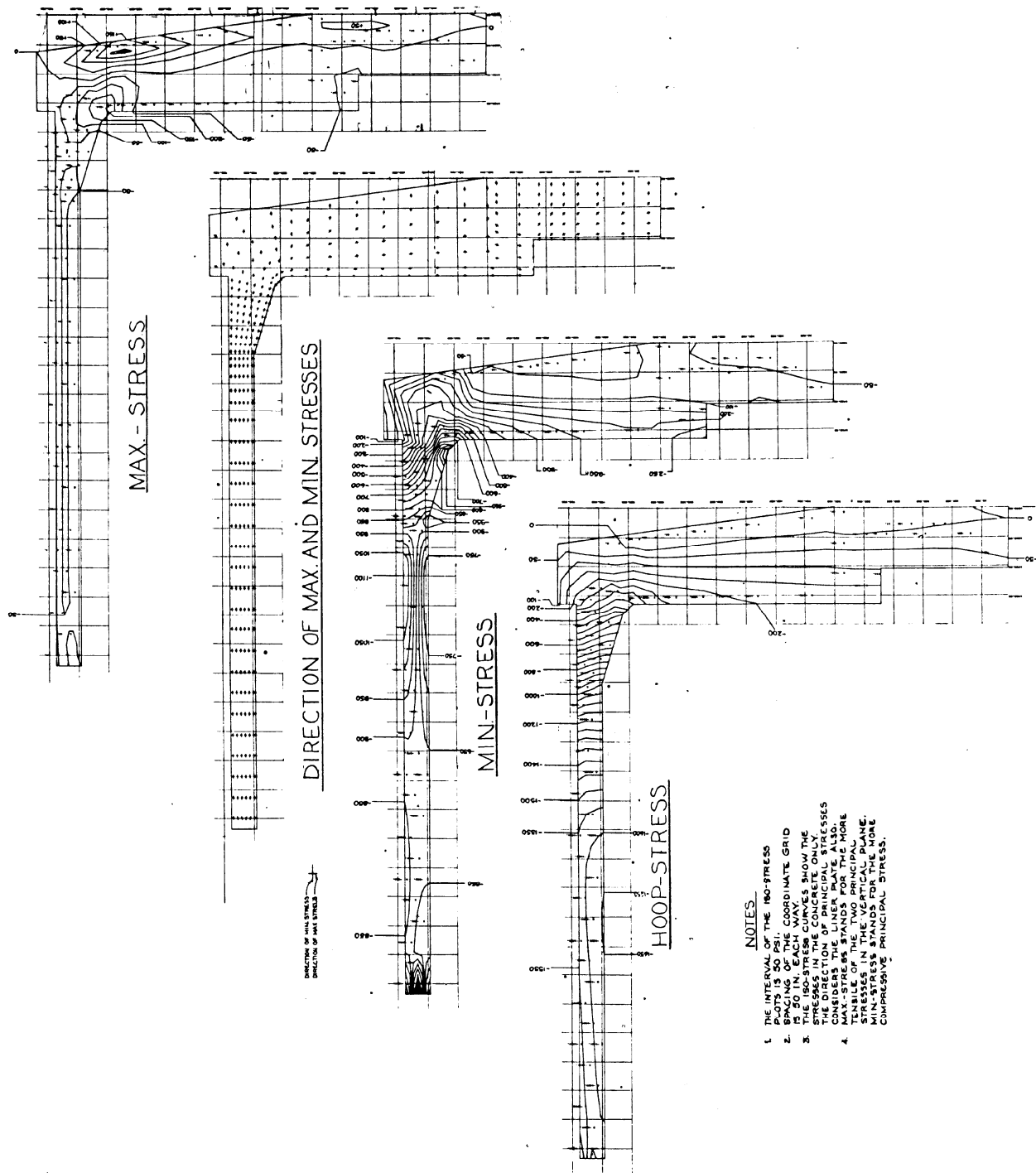
1. THE INTERVAL OF THE ISO-STRESS CURVES IS 50 PSI.
2. THE COORDINATE GRID IS 50 IN. EACH WAY.
3. THE ISO-STRESS CURVES SHOW THE STRESSES IN THE CONCRETE ONLY. THE DIRECTION OF PRINCIPAL STRESSES CONSIDERS THE LINER PLATE ALSO.
4. MAX-STRESS STANDS FOR THE MORE TENSILE OF THE TWO PRINCIPAL STRESSES IN THE SECTION. MIN-STRESS STANDS FOR THE MORE COMPRESSIVE PRINCIPAL STRESS.

**CONTAINMENT STRUCTURE  
ISOSTRESS PLOT, DOME AND WALL  
 $D + F_f + T_a$**

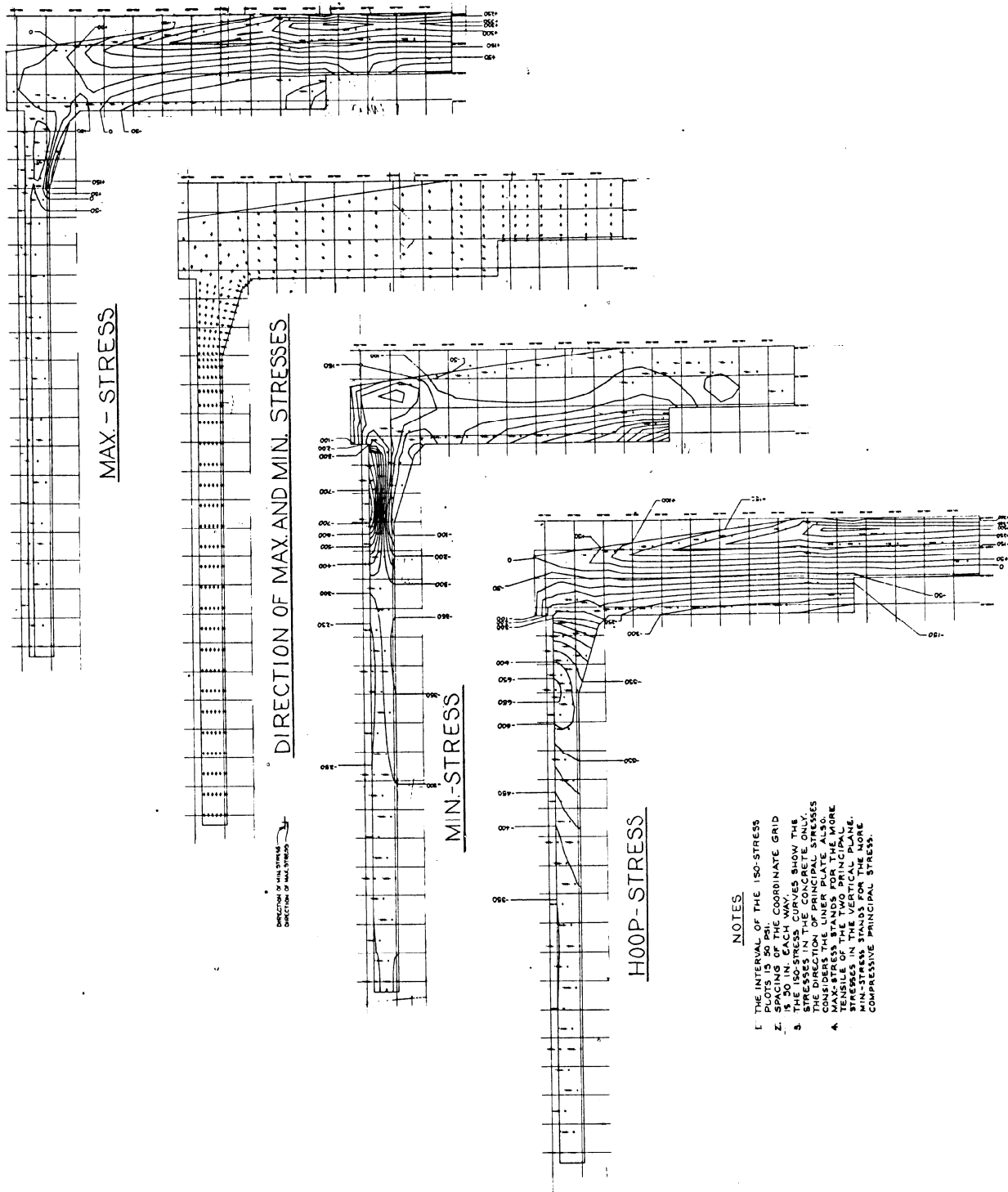




CONTAINMENT STRUCTURE  
ISOSTRESS PLOT, WALL AND BASE SLAB  
D + F<sub>i</sub>

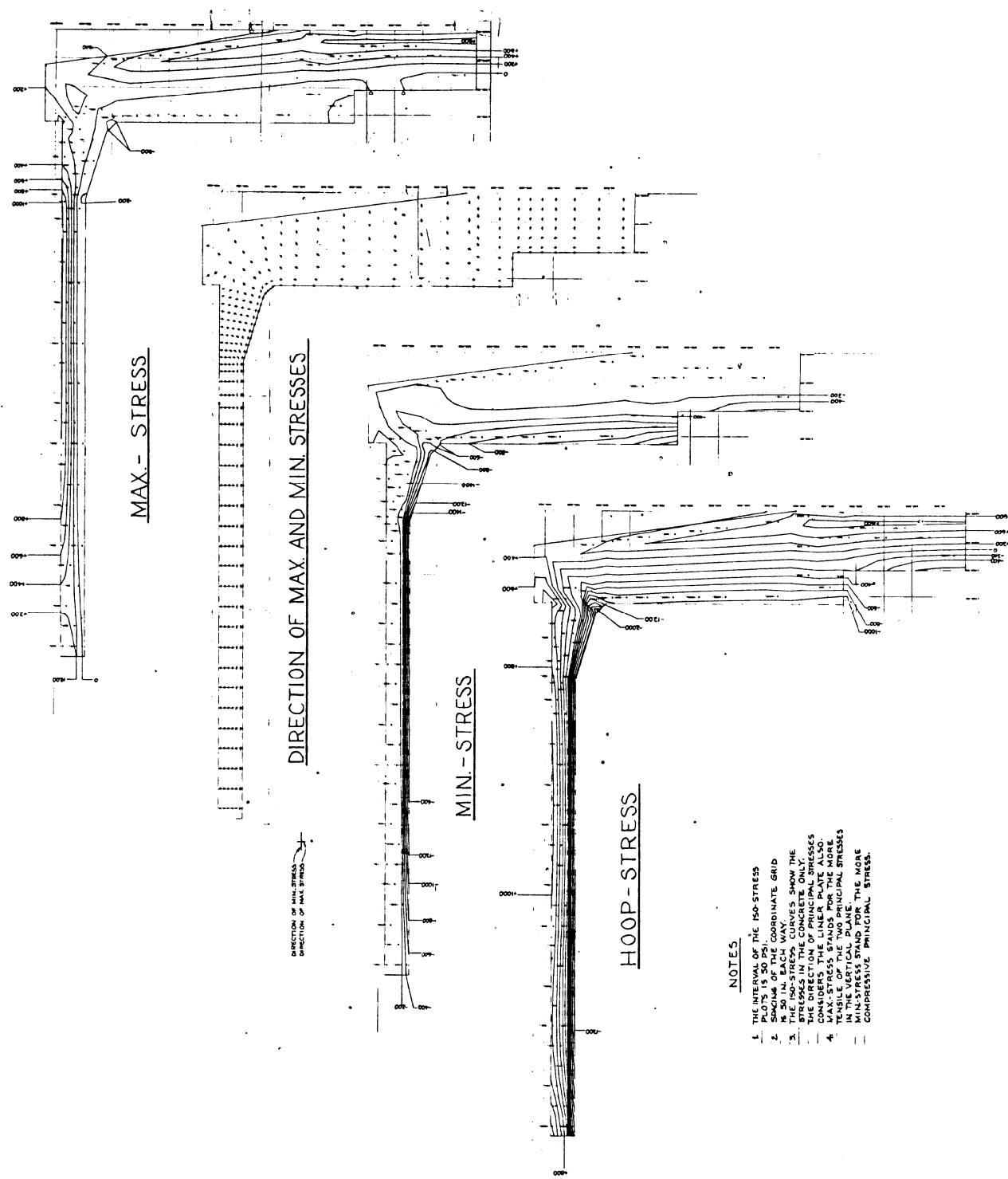


CONTAINMENT STRUCTURE  
ISOSTRESS PLOT, WALL AND BASE SLAB  
D + F<sub>t</sub> + 1.15P

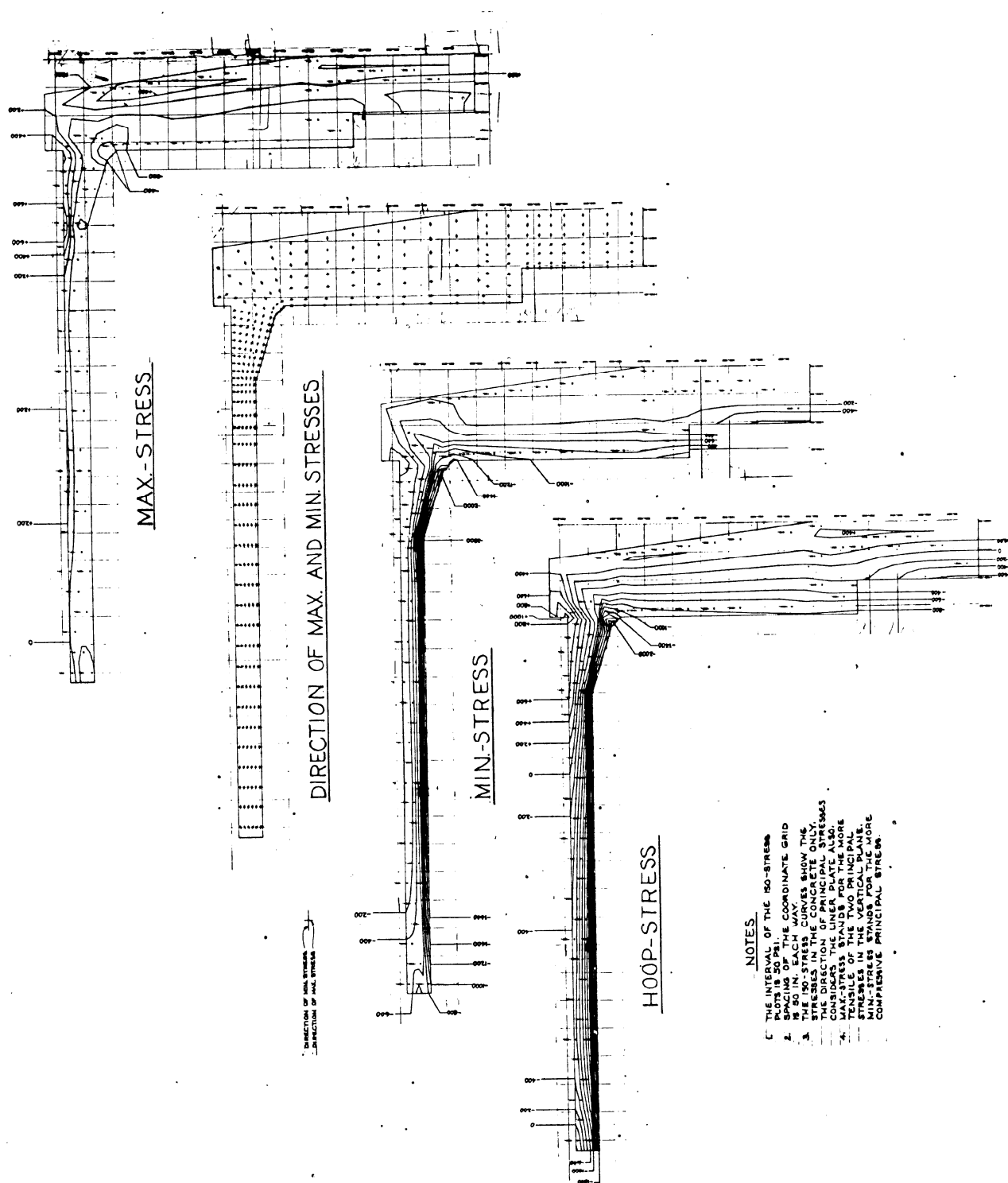


- NOTES
- 1. THE INTERVAL OF THE ISO-STRESS PLATE IS 50 PSI.
  - 2. SPACING OF THE COORDINATE GRID IS 50 IN. EACH WAY.
  - 3. THE STRESS CONTOURS SHOWN ARE THE STRESSES IN THE CONCRETE ONLY. THE DIRECTION OF PRINCIPAL STRESSES CONSIDERS THE LINER PLATE, WALL AND CORE TENSILE OF THE TWO PRINCIPAL STRESSES IN THE VERTICAL PLANE. MINIMUM STRESS IS TENSILE AND MAXIMUM COMPRESSIVE PRINCIPAL STRESS.

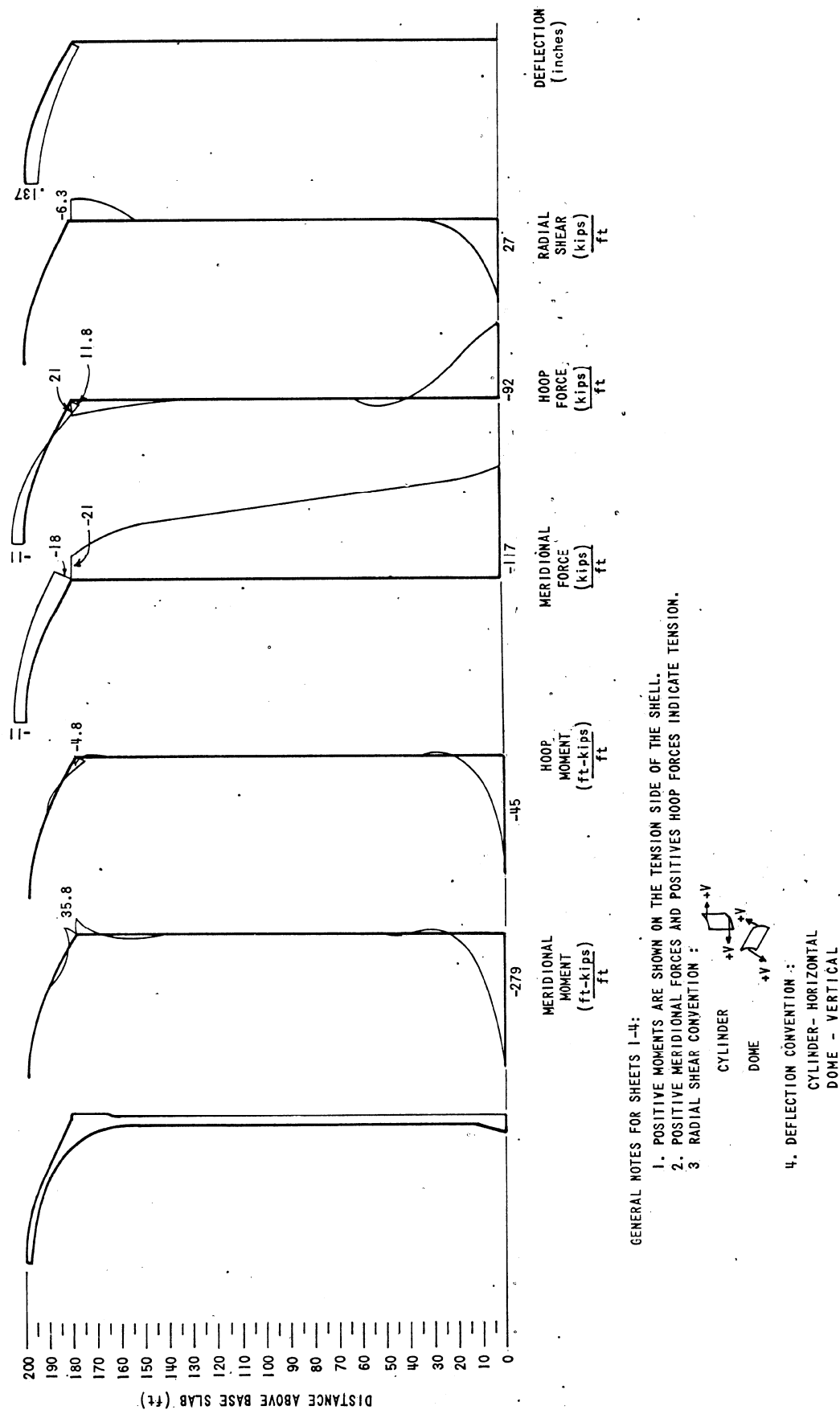
CONTAINMENT STRUCTURE  
ISOSTRESS PLOT, WALL AND BASE SLAB  
 $D + F_i + 1.5 P + T_a$



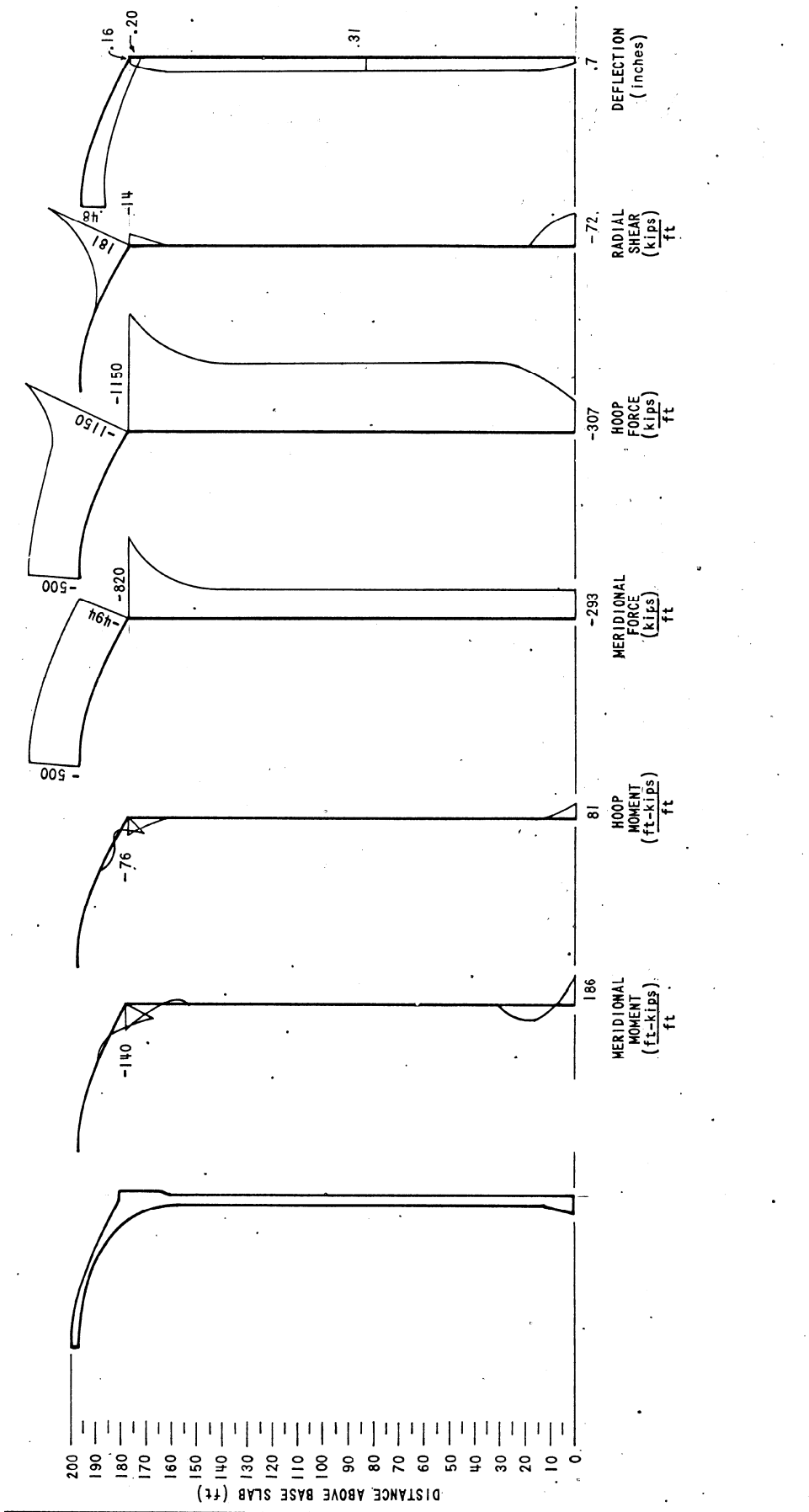
**CONTAINMENT STRUCTURE**  
**ISOSTRESS PLOT, WALL AND BASE SLAB**  
 $D + F_f + T_a$



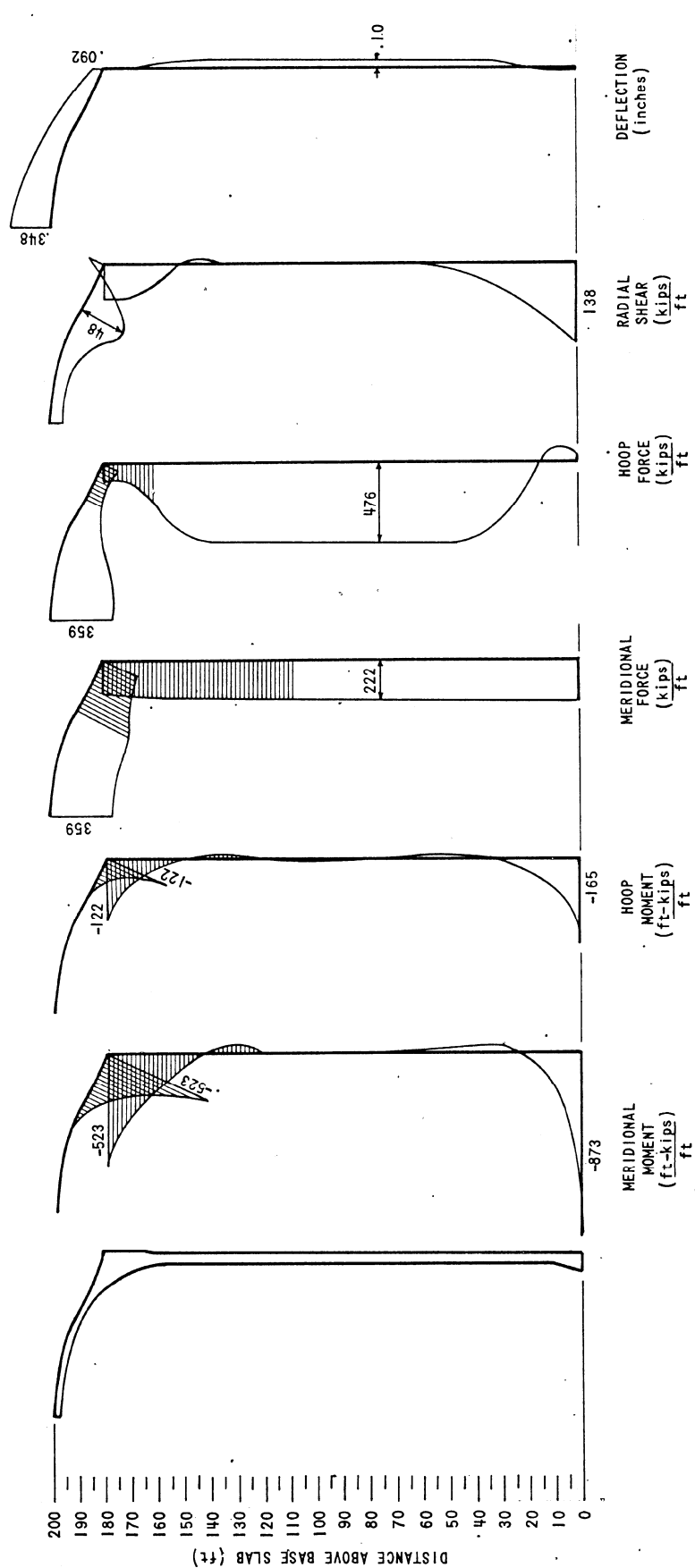
CONTAINMENT STRUCTURE  
STRESS RESULTANTS, DEAD LOAD (D)



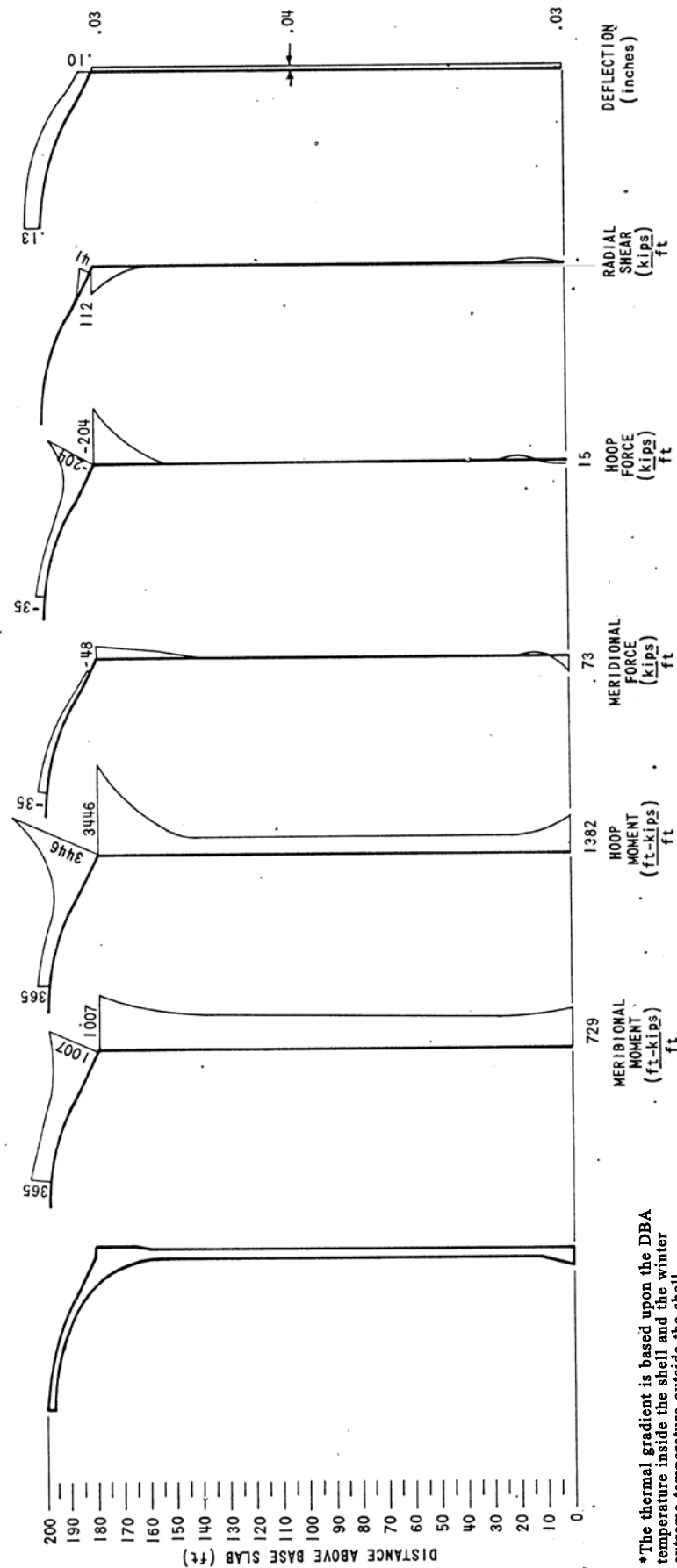
CONTAINMENT STRUCTURE  
STRESS RESULTANTS, FINAL PRESTRESS (F<sub>i</sub>)



CONTAINMENT STRUCTURE  
STRESS RESULTANTS, DBA PRESSURE (P)

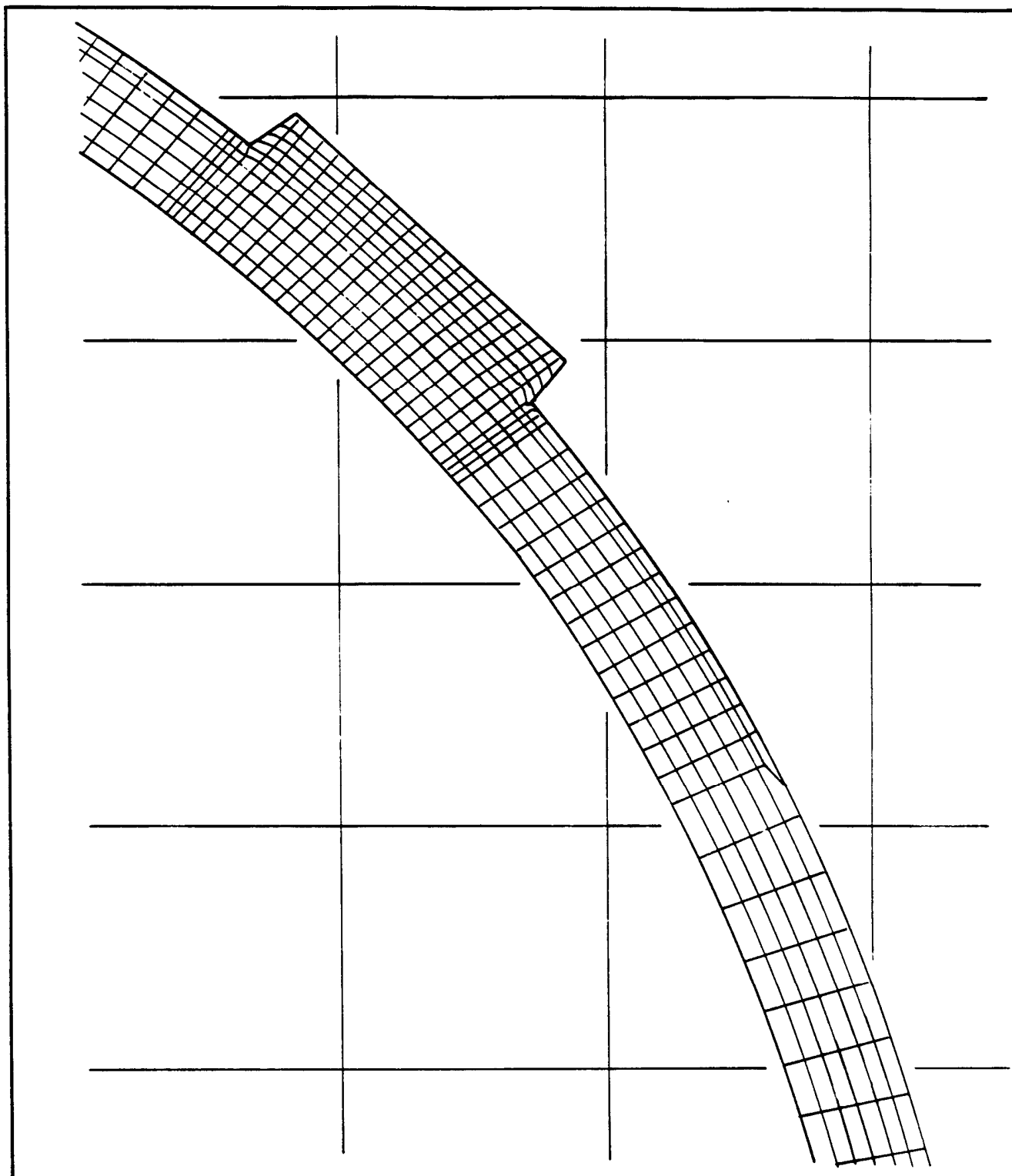


CONTAINMENT STRUCTURE  
STRESS RESULTANTS, DBA TEMPERATURE (T<sub>a</sub>)\*

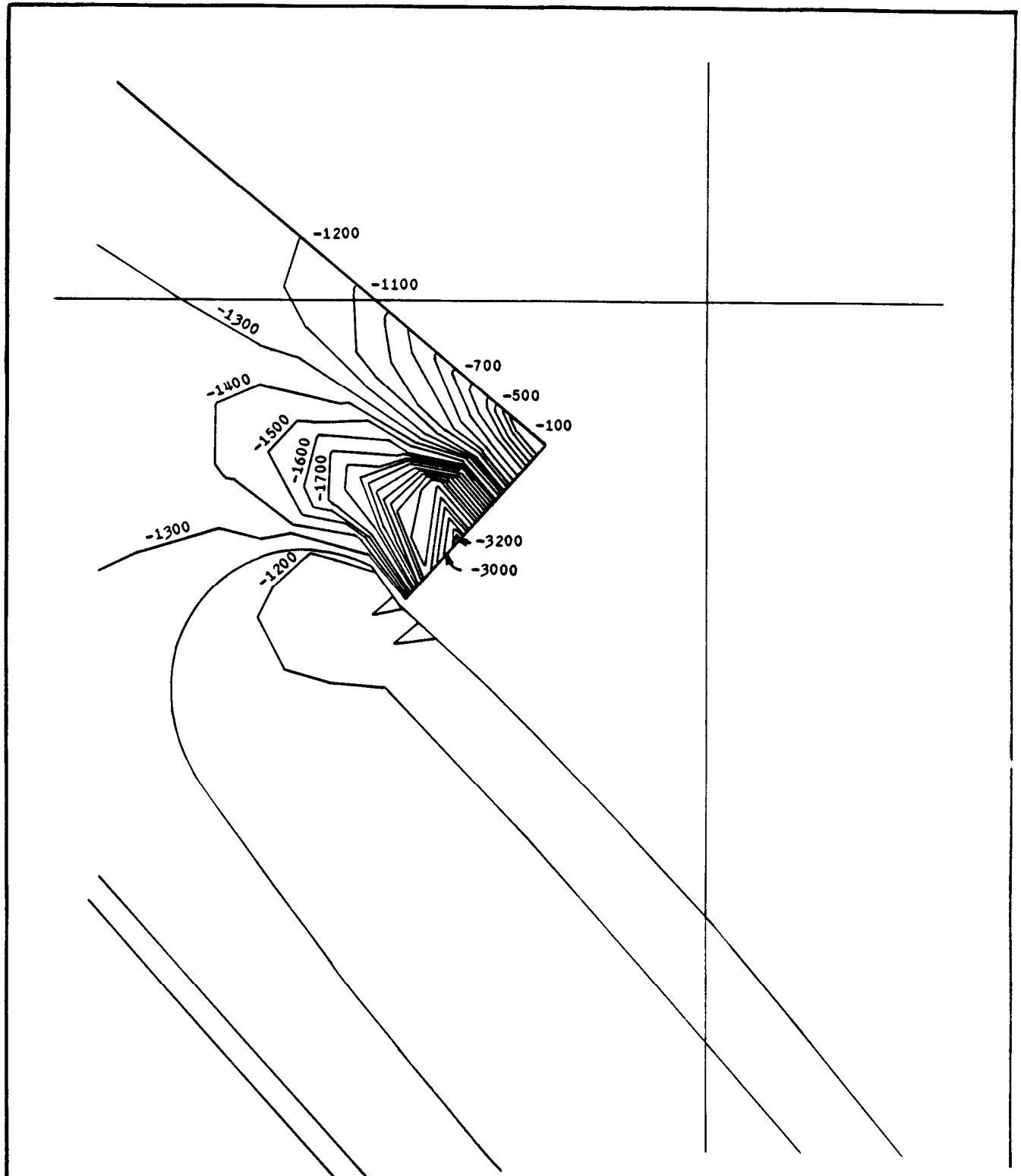




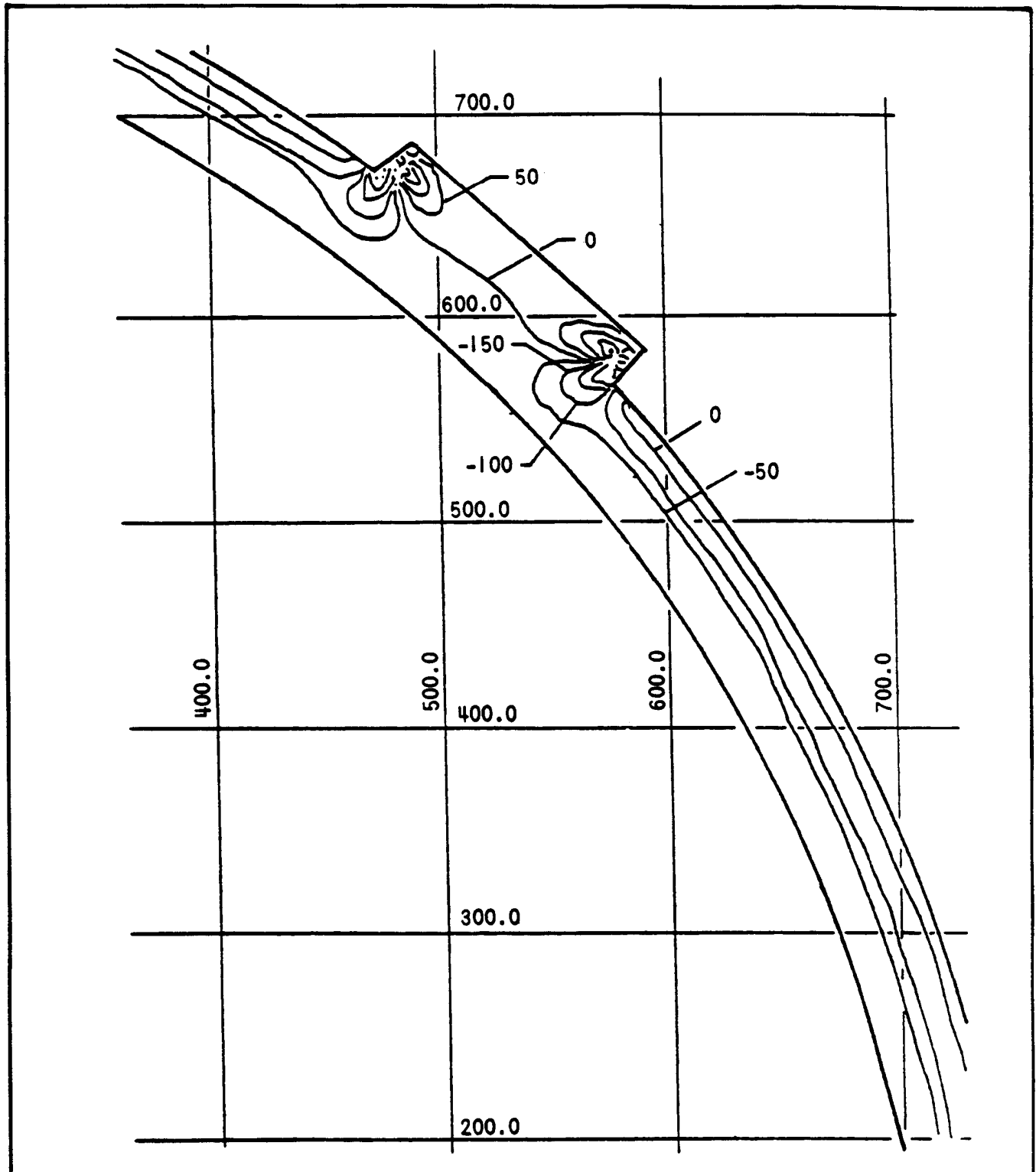
CONTAINMENT STRUCTURE  
FINITE ELEMENT MESH FOR BUTTRESS, PLANE STRAIN ANALYSIS



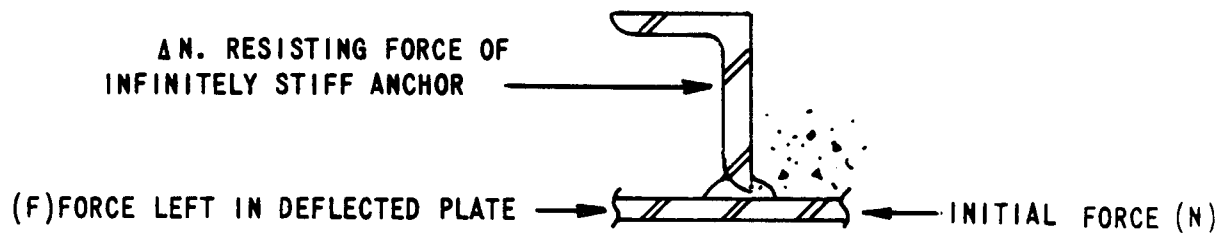
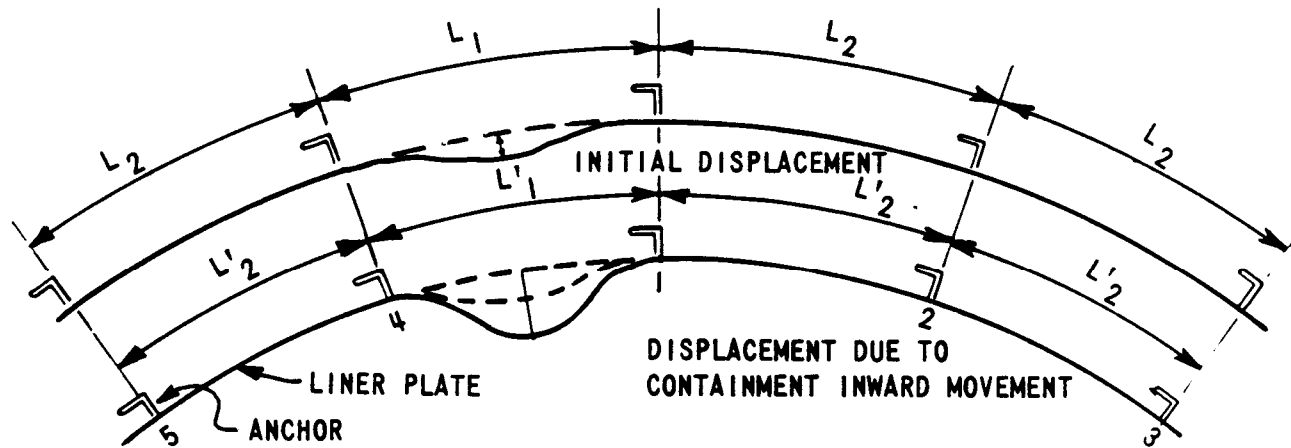
CONTAINMENT STRUCTURE  
BUTTRESS ISOSTRESS PLOT, MAXIMUM COMPRESSIVE STRESSES



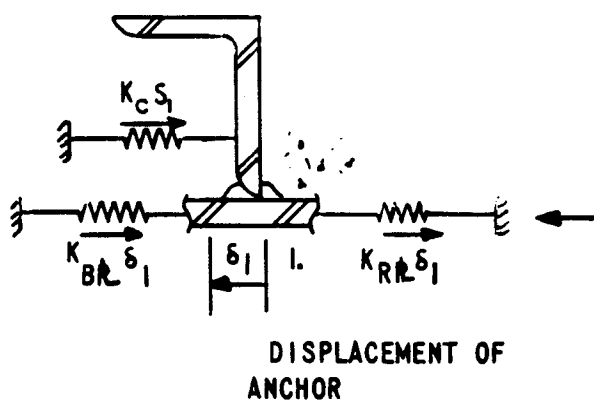
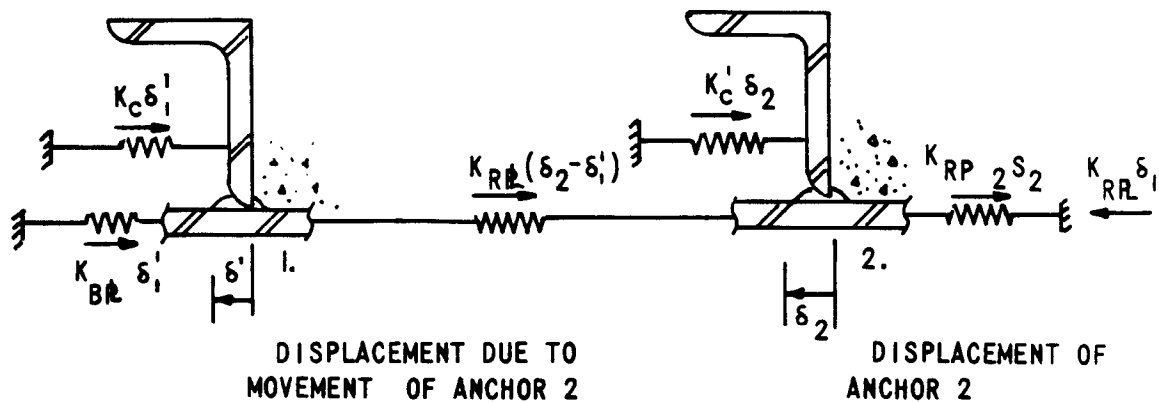
CONTAINMENT STRUCTURE  
BUTTRESS ISOSTRESS PLOT, MINIMUM COMPRESSIVE OR MAXIMUM TENSILE STRESSES



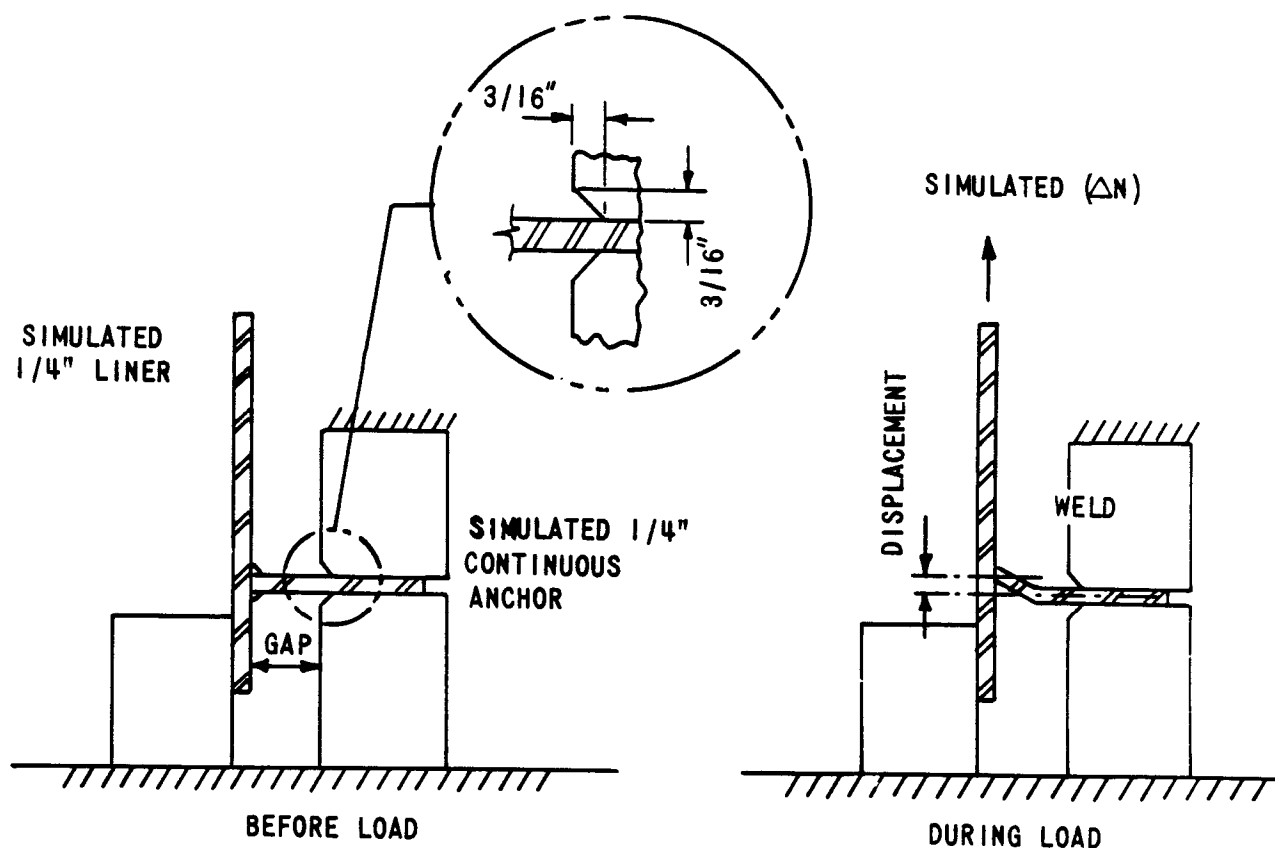
CONTAINMENT STRUCTURE  
MODEL FOR LINER PLATE ANALYSIS



### CONTAINMENT STRUCTURE MODEL FOR LINER PLATE ANALYSIS

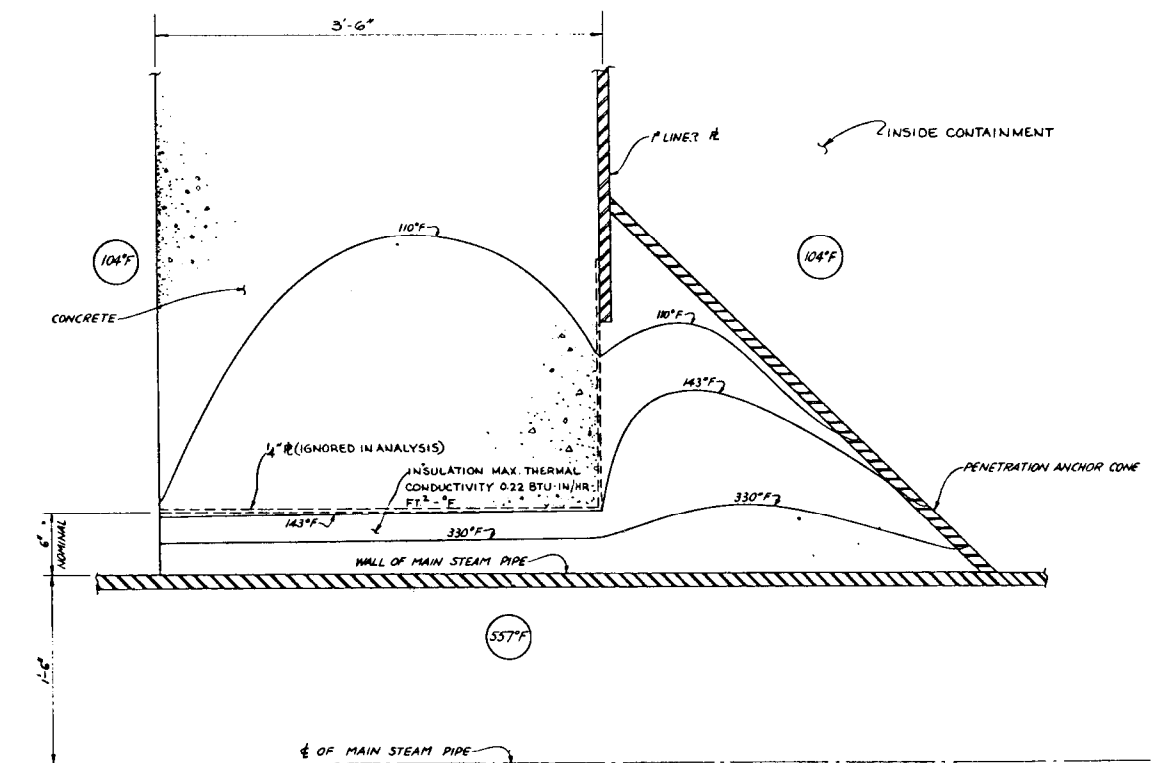


### CONTAINMENT STRUCTURE RESULTS FROM TESTS ON LINER PLATE ANCHORS



WELD CONFIGURATION	GAP (IN)	ULTIMATE LOAD (K/IN)	ULTIMATE DISPLACEMENT (IN)	LOCATION OF FAILURE
3/16	0	14.95	.14	LINER PLATE
3/16	5/8	5.56	.68	ANCHOR WELD
3/16 6-12	0	7.65	.18	ANCHOR WELD
3/16 6-12	5/8	2.93	.60	ANCHOR WELD
3/16 4-12	0	6.67	.18	ANCHOR WELD
3/16 4-12	5/8	2.46	.30	ANCHOR WELD

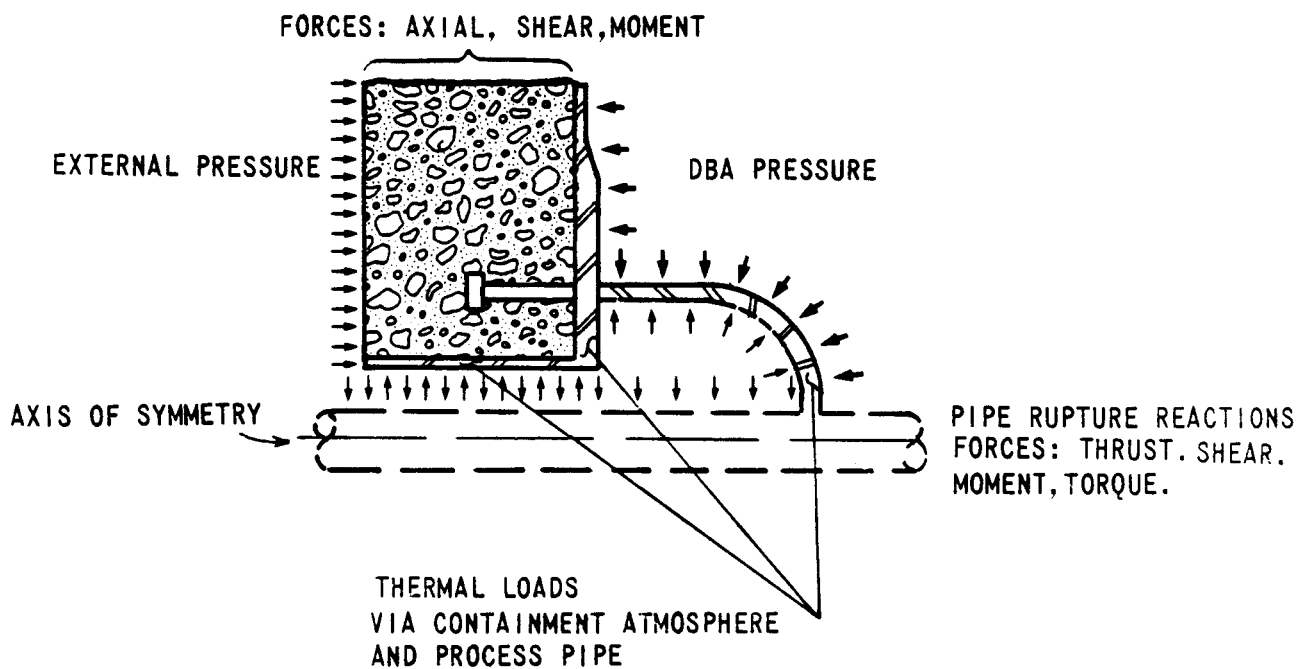
### CONTAINMENT STRUCTURE THERMAL GRADIENT AT MAIN STEAM PENETRATION



### CONTAINMENT STRUCTURE LOADS ON PIPE PENETRATIONS

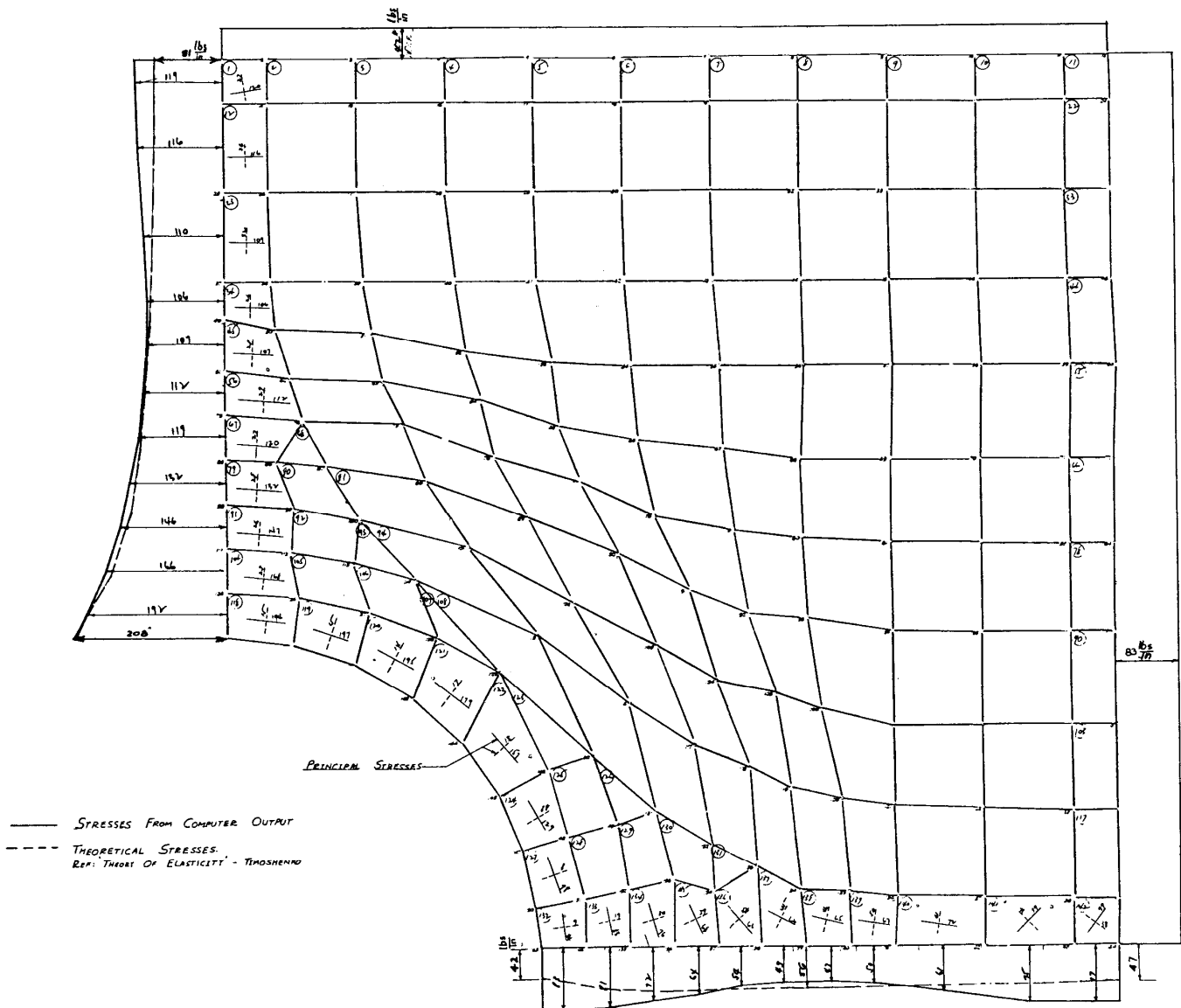
#### LOADS VIA CONCRETE:

DEAD LOAD, PRESTRESS, OPERATING TEMPERATURE,  
DBA PRESSURE, DBA TEMPERATURE, OBE

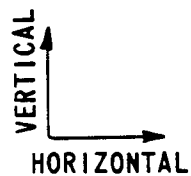
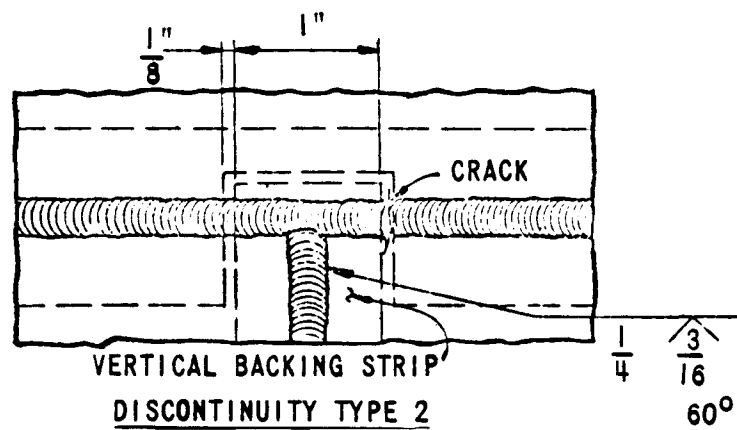
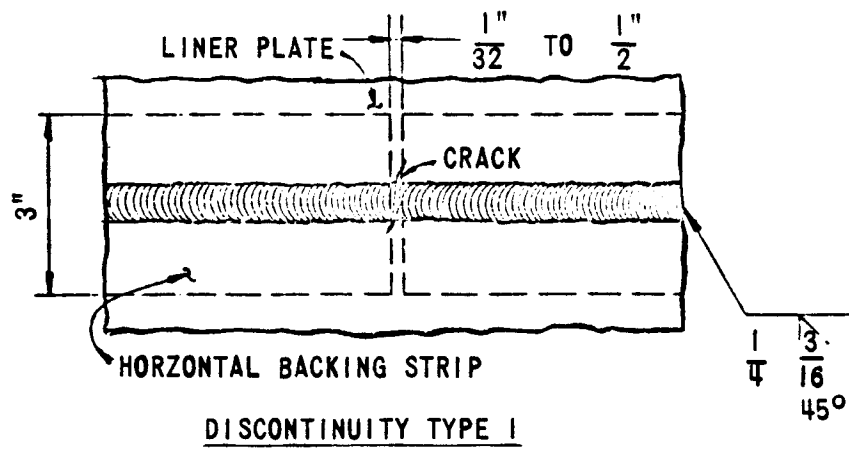




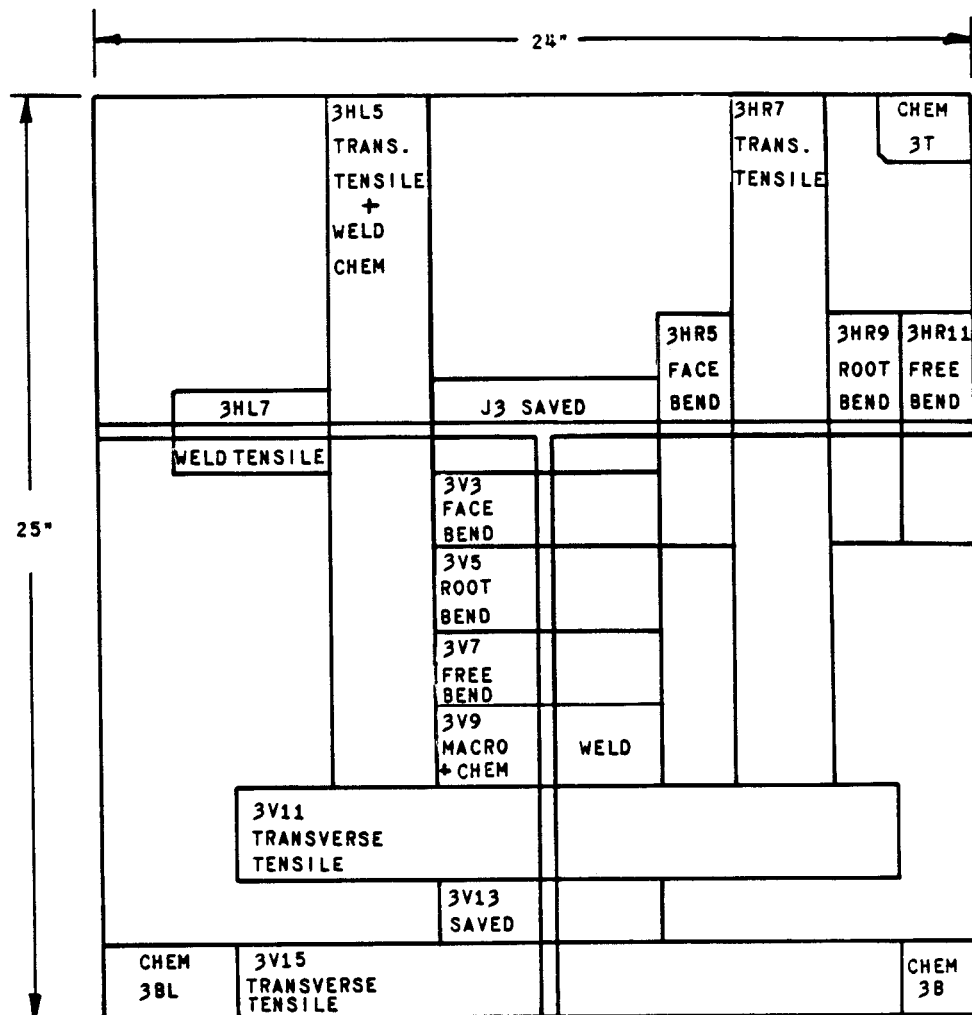
**CONTAINMENT STRUCTURE  
STRESS CONCENTRATIONS AT EQUIPMENT HATCH OPENING**



CONTAINMENT STRUCTURE  
LINER PLATE, WELD CRACKING AT BACKING STRIP DISCONTINUITIES

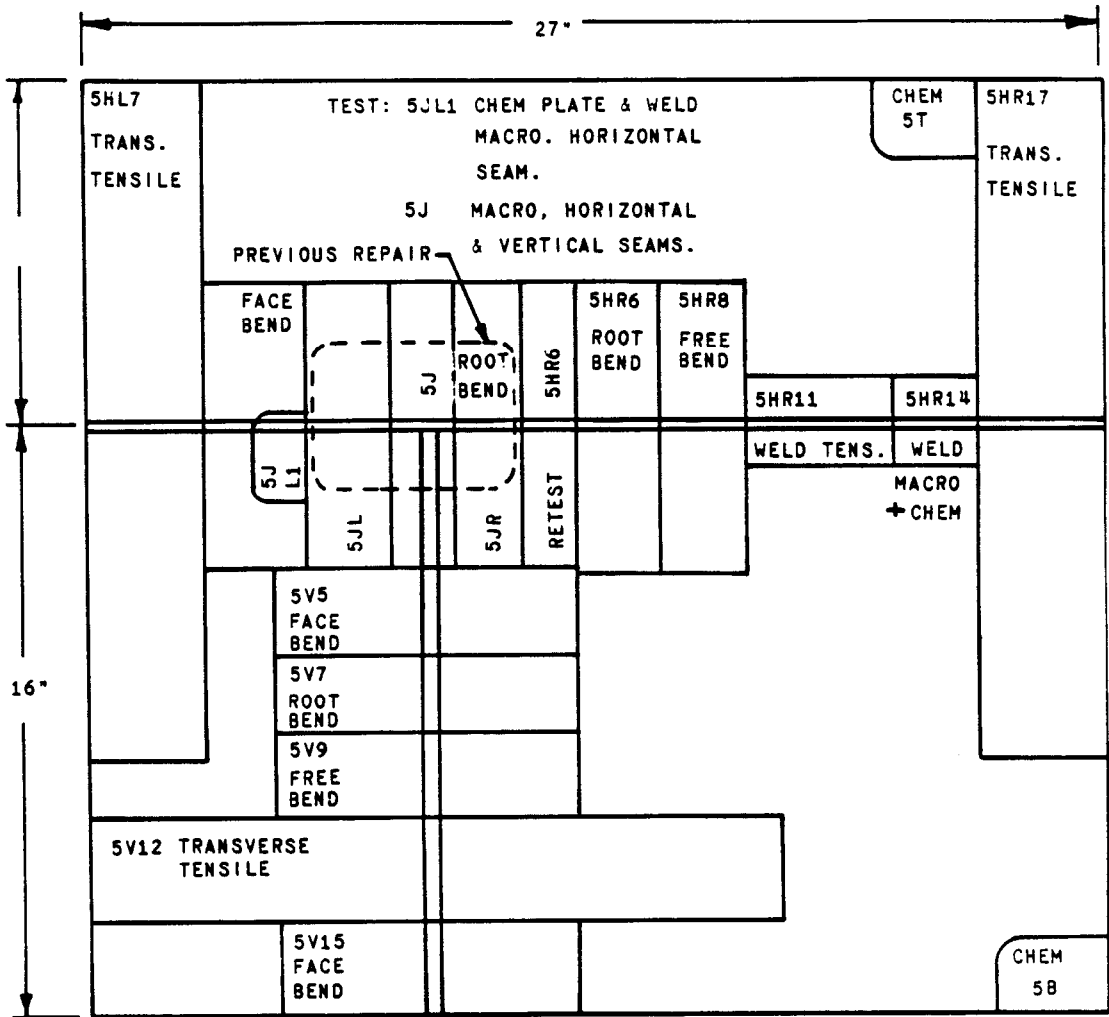


CONTAINMENT STRUCTURE  
LINER PLATE TEST SAMPLE, ELEVATION 600'-0", AZIMUTH 113°



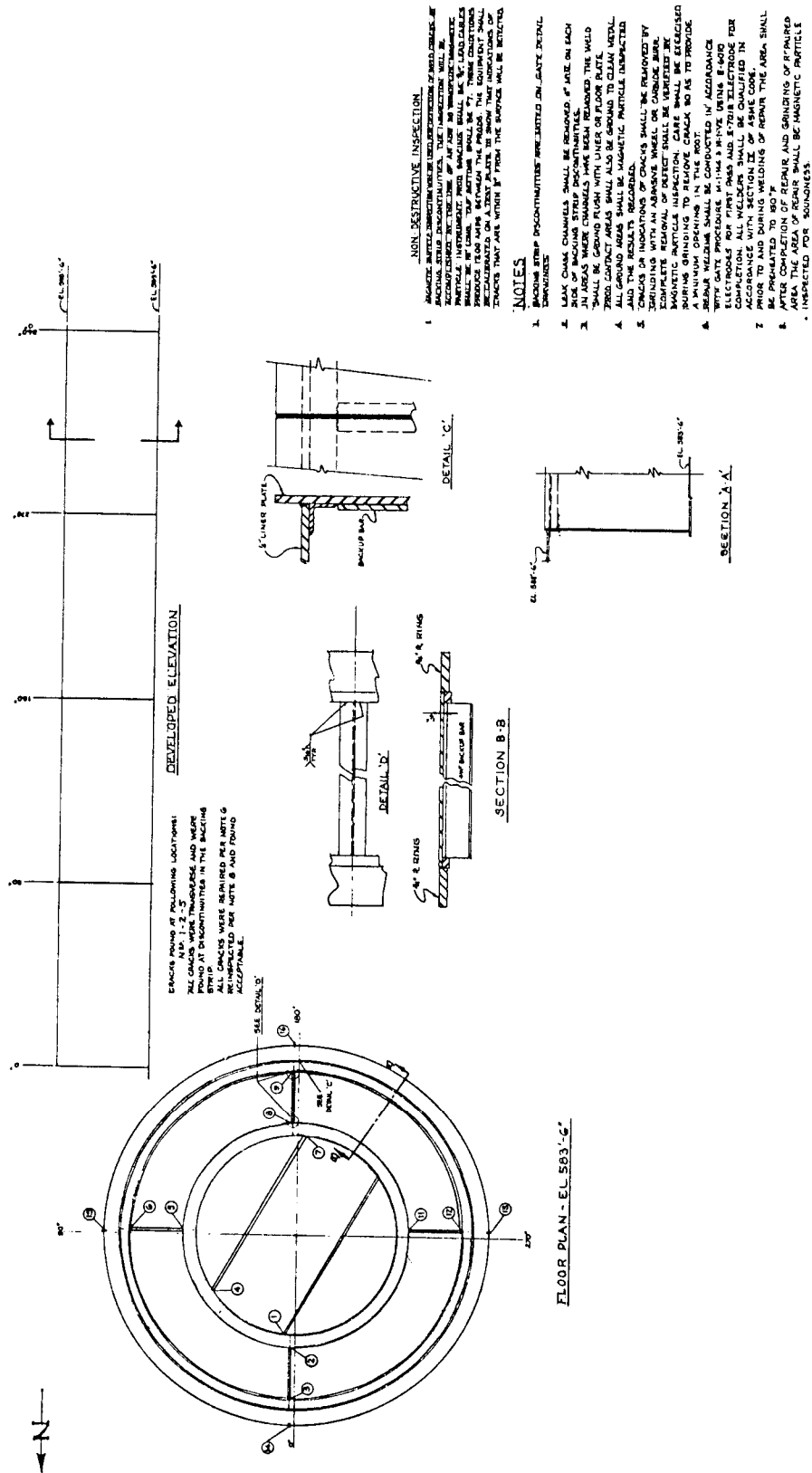
CONTAINMENT STRUCTURE

LINER PLATE TEST SAMPLE, ELEVATION 600'-0", AZIMUTH 275°

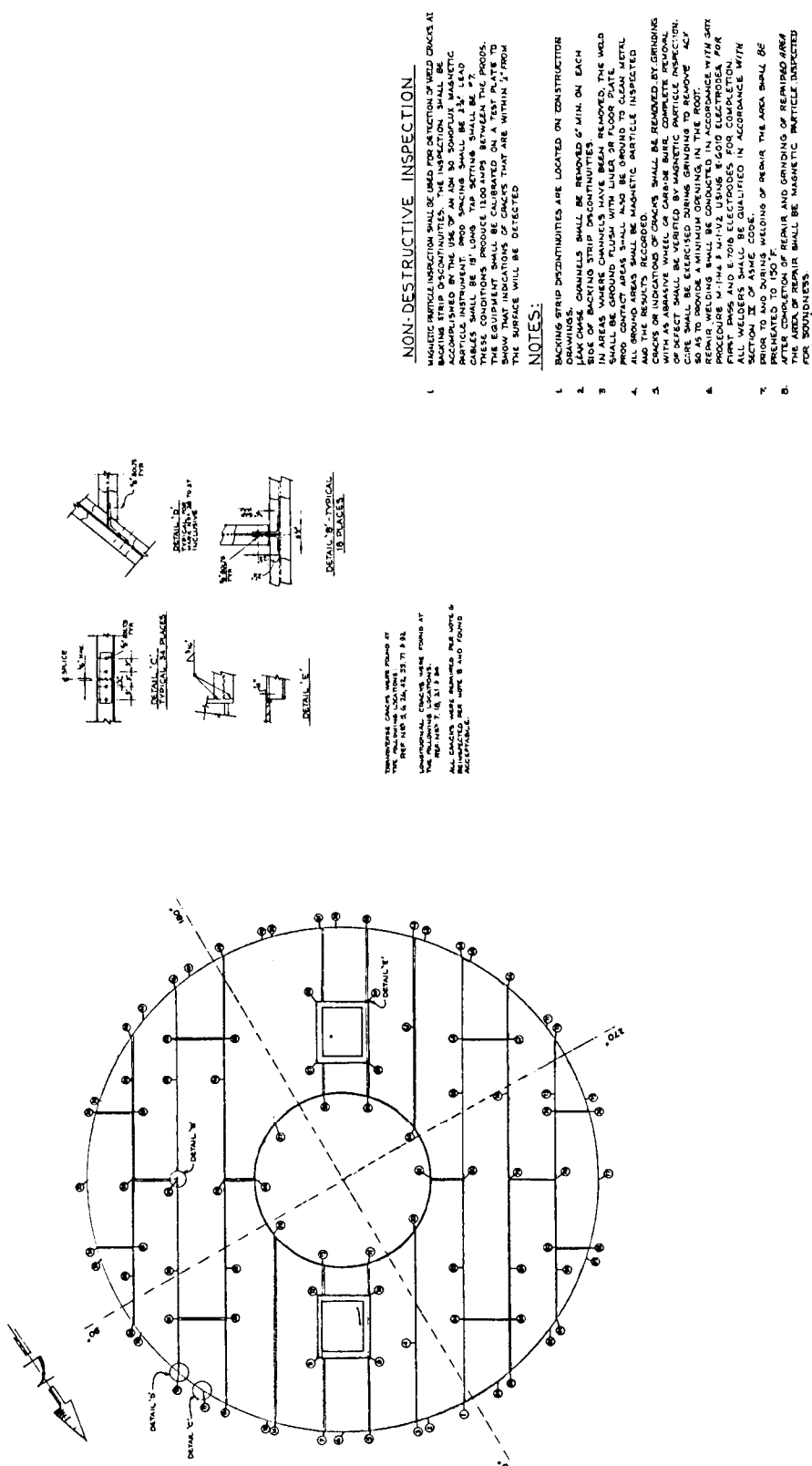


CONTAINMENT STRUCTURE

LINER PLATE, INSPECTION AND METHOD OF REPAIR, ELEVATION 583'-6"



**CONTAINMENT STRUCTURE**  
**LINER PLATE, INSPECTION AND METHOD OF REPAIR, ELEVATION 588'-6"**



**CONTAINMENT STRUCTURE**  
**LINER PLATE, INSPECTION AND METHOD OF REPAIR, ELEVATION 590'-0"**

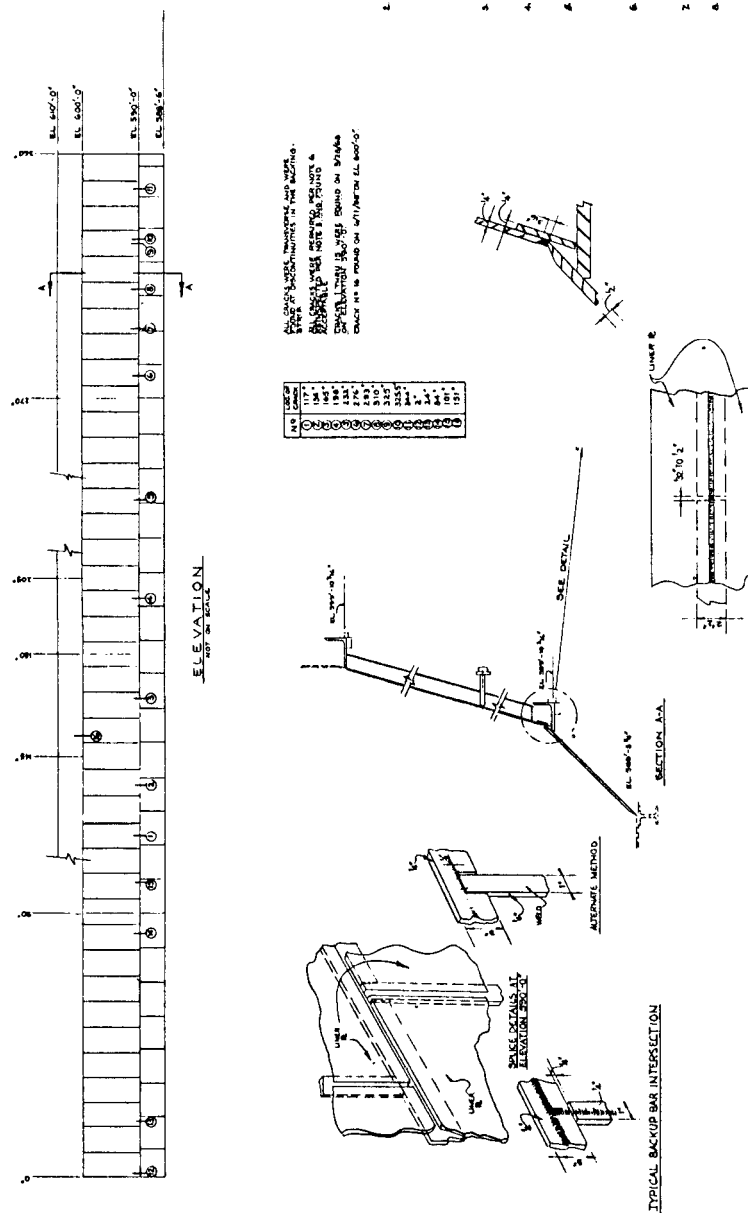
# NON-DESTRUCTIVE INSPECTION

MAGNETIC PARTICLE INSPECTION SHALL BE USED FOR DETECTION OF WELD CRACKS. THE INSPECTION SHALL BE ACCOMPANIED BY THE USE OF AN A30-30 MAGNETIC PARTICLE INSTRUMENT. PROD SIZING SHALL BE "24". LEAD CABLES SHALL BE 1/2" LONG. TAP SETTING SHALL BE 72. THESE CONDITIONS PRODUCE 120 AMPS BETWEEN THE PRODS. THIS EQUIPMENT SHALL BE CALIBRATED ON A TEST PLATE TO SHOW THAT INDICATIONS OF CRACKS THAT ARE WITHIN 1/8" FROM THE SURFACE WILL

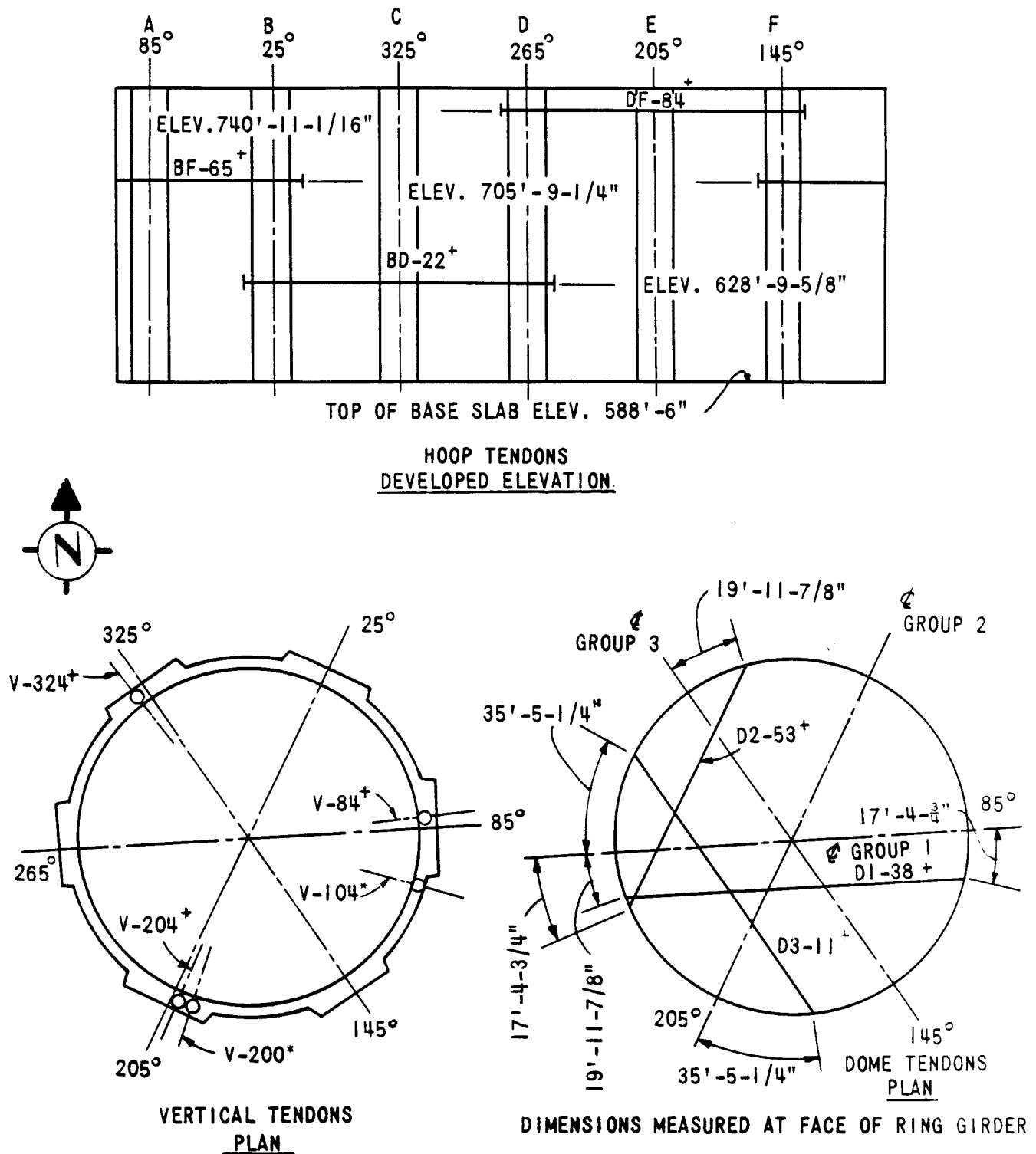
ULTRASONIC INSPECTION SHALL BE CONDUCTED AS REQUIRED TO LOCATE BACKING STRIP DISCONTINUITIES. FOR THIS INSPECTION, EITHER A LONGITUDINAL OR SHEAR WAVE TRANSDUCER SHALL BE USED. THE EQUIPMENT SHALL BE CALIBRATED USING A TEST PATE CONSTRUCTED WITH A SIMULATED BACKING STRIP DISCONTINUITY <sup>1/2</sup> INCH BEHIND THE WELD.

NOTES:

1. THE WELD SEAM SHALL BE GRIND TO THE DIMENSIONS REQUIRED FOR ULTRASONIC INSPECTION. BACKING STRIP DISCONTINUITIES SHALL BE REMOVED BY GRINDING.
2. THE ENTIRE WELD SEAM AT ELEV 990'-0" SHALL BE MAGNETIC PARTICLE INSPECTED. THE WELD SURFACE SHALL BE PROPERLY GROUND FOR THE MAGNETIC PARTICLE INSPECTION.
3. CHECK OF INDICATIONS OF CRACKS SHALL BE REMOVED BY GRINDING WITH AN ABRASE WHEEL OR COARSE BURR. COMPLETE REMOVAL OF CRACKS SHALL BE VERIFIED BY MAGNETIC PARTICLE INSPECTION.
4. PREHEAT, CASE SHALL BE EXERCISING DURING GRINDING TO REMOVE CRACKS SO AS TO PREVENT A MINIMUM GRINDING IN THE ROOT.
5. PREHEAT WELDING SHALL BE CONDUCTED IN ACCORDANCE WITH AWS PROCEDURE. MINIMUM WELDING USING E-6000 ELECTRODES WITH 60% AND E-7008 ELECTRODES FOR COMPLETION. ALL WELDINGS SHALL BE QUALIFIED IN ACCORDANCE WITH SECTION 31 OF THE AISC CODE.
6. PRIOR TO AND DURING WELDING OF REPAIR, THE AREA SHALL BE PREHEATED TO 150°F.
7. AFTER COMPLETION OF REPAIR AND GRINDING OF REPAIRED AREA, THE AREA SHALL BE MAGNETIC PARTICLE INSPECTED FOR DISCONTINUITIES.

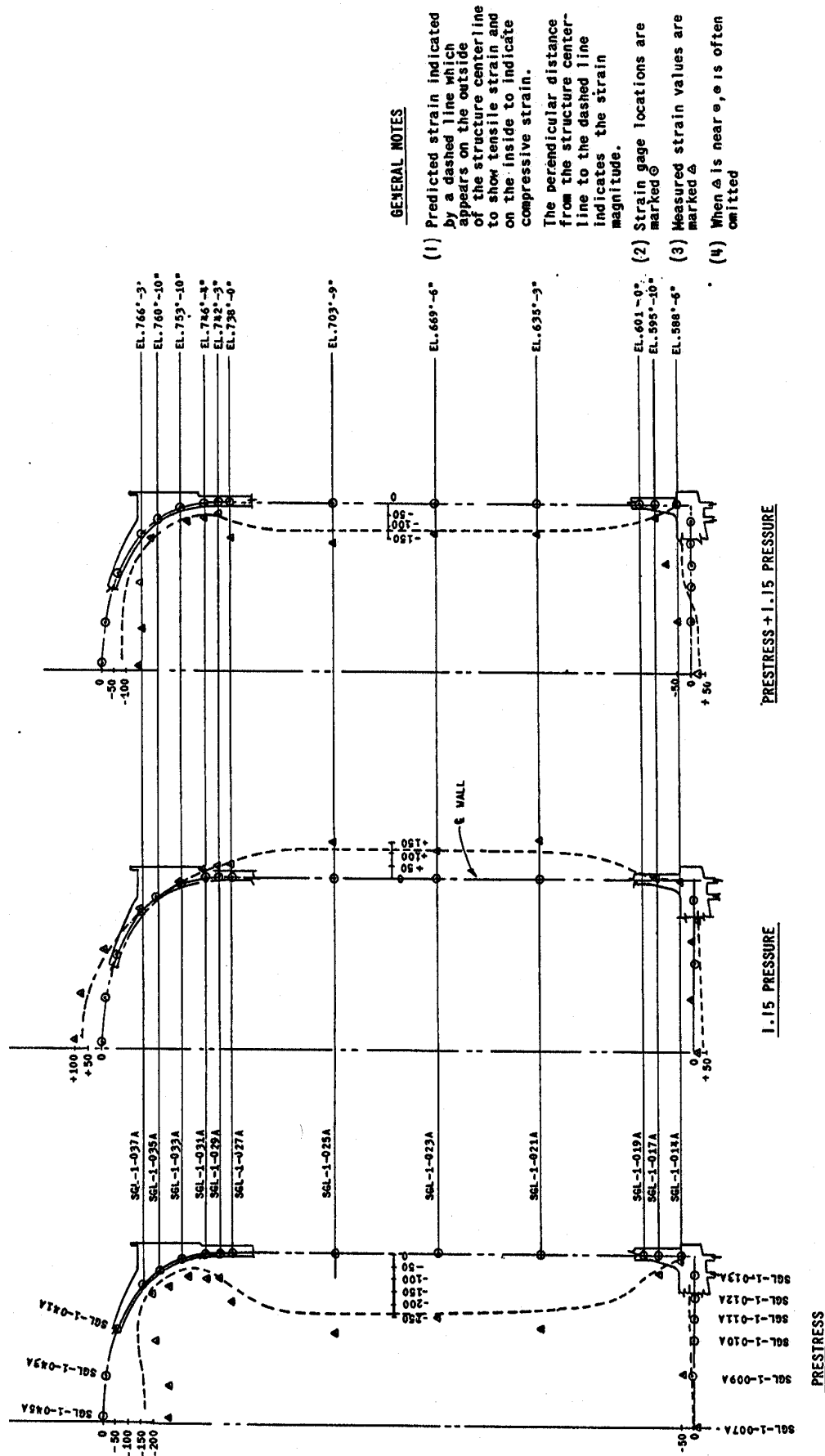


**CONTAINMENT STRUCTURE**  
**LOCATION AND IDENTIFICATION OF ELEVEN SURVEILLANCE TENDONS FOR**  
**ONE- AND THREE-YEAR SURVEILLANCES**

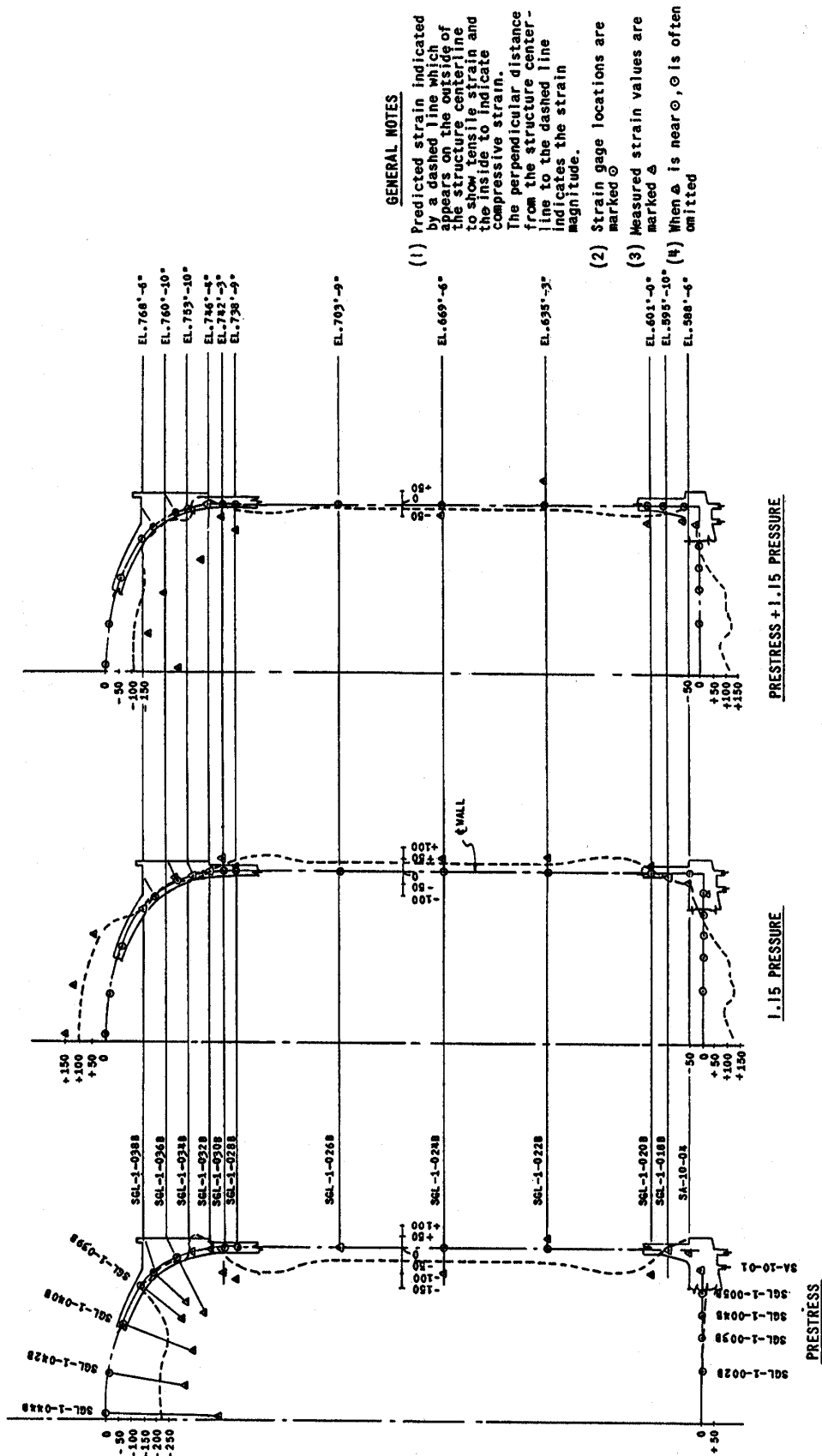




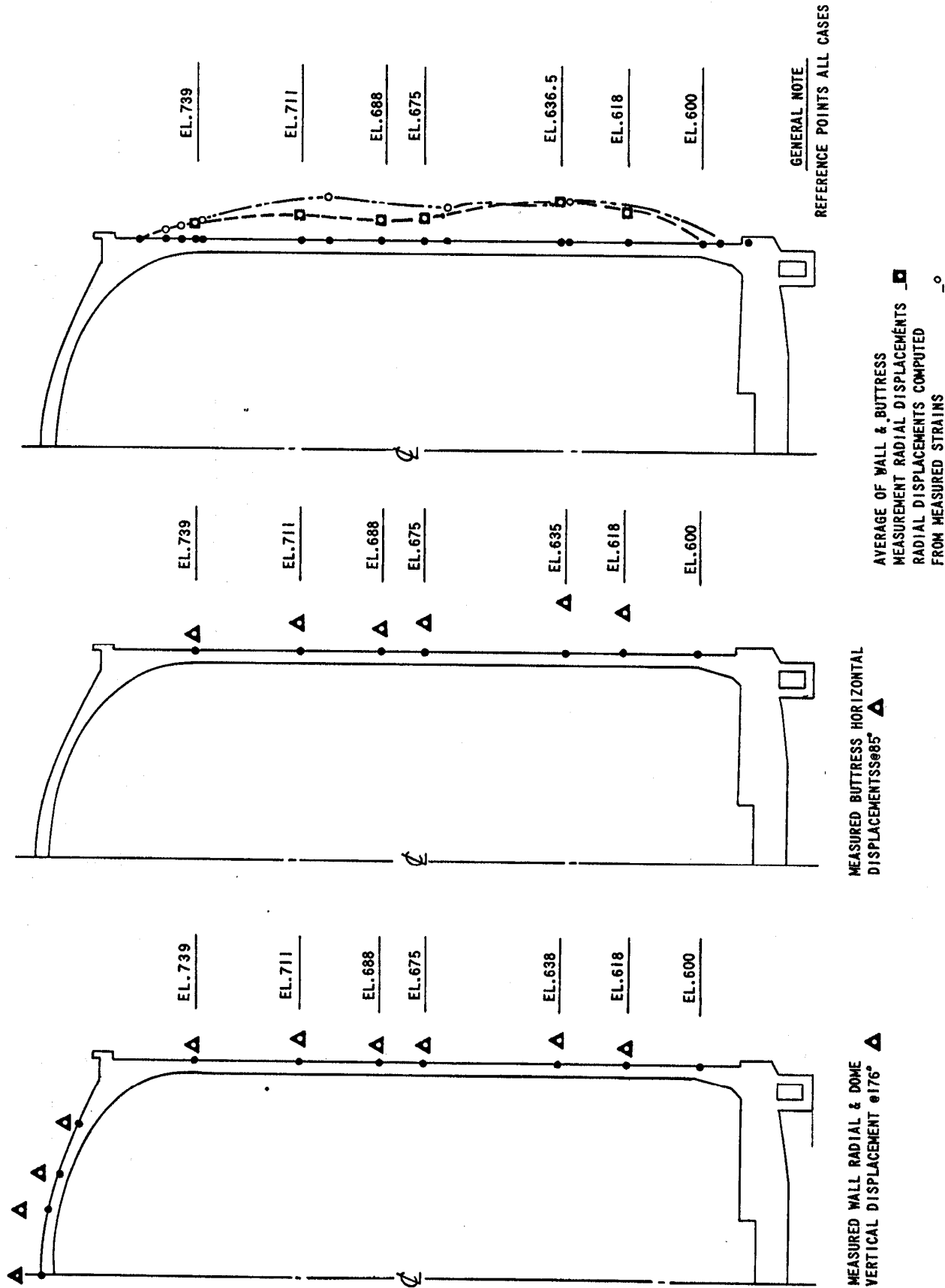
# CONTAINMENT STRUCTURE STRUCTURAL INTEGRITY TEST INSIDE HOOP STRAIN PROFILES TYPICAL SECTION



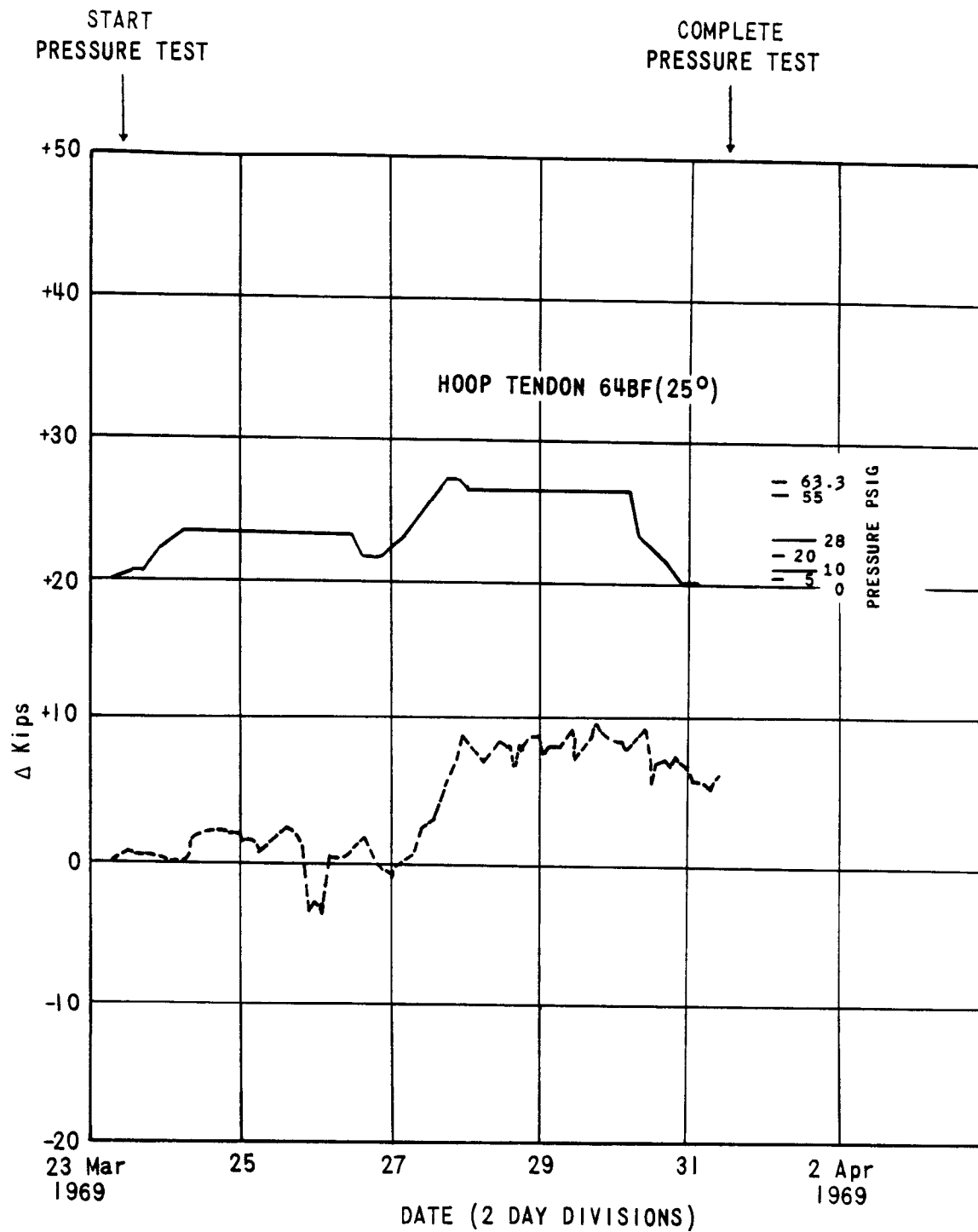
# CONTAINMENT STRUCTURE STRUCTURAL INTEGRITY TEST OUTSIDE MERIDIONAL STRAIN PROFILES TYPICAL SECTION



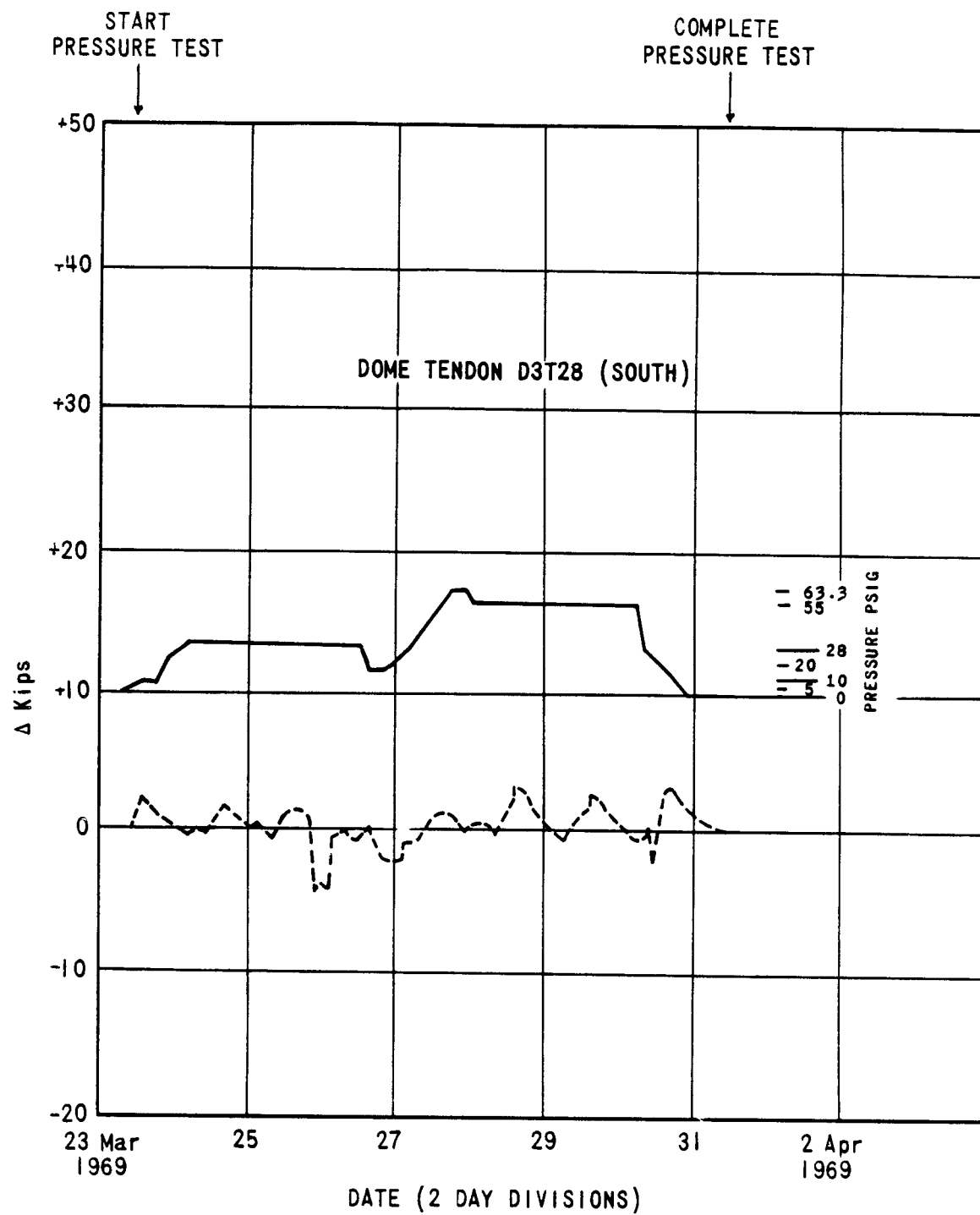
CONTAINMENT STRUCTURE  
PRESSURE TEST DISPLACEMENT PROFILES



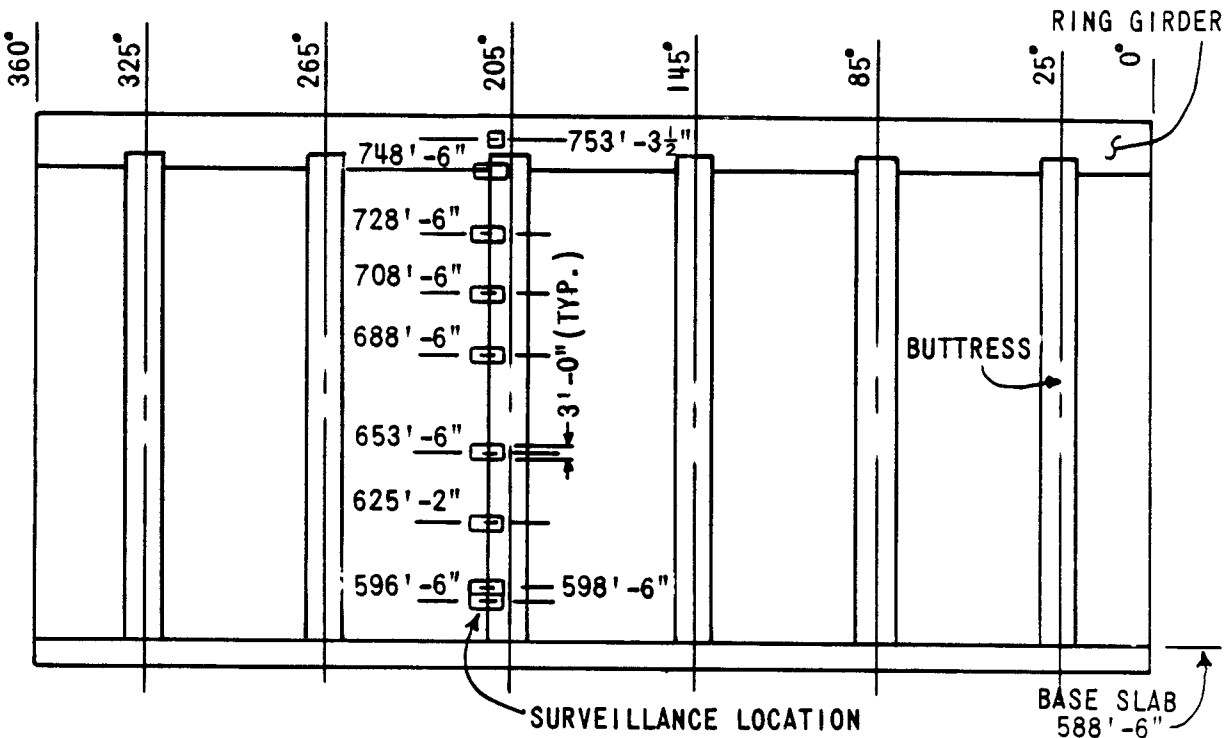
CONTAINMENT STRUCTURE  
PRESSURE TEST TENDON LOAD CHANGE



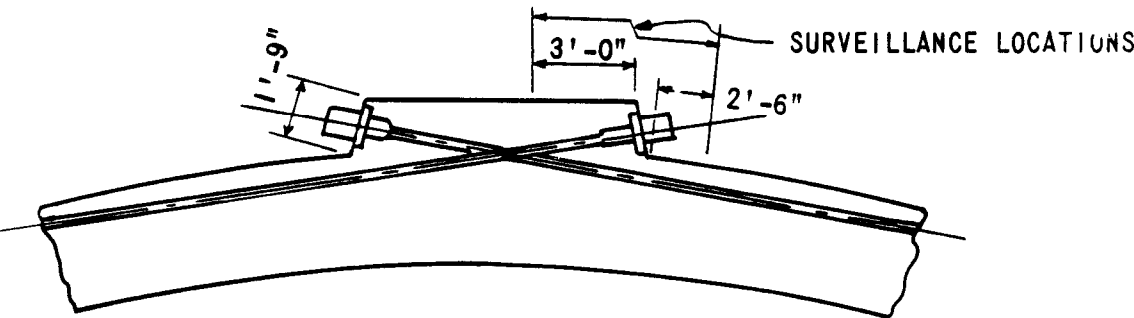
CONTAINMENT STRUCTURE  
PRESSURE TEST TENDON LOAD CHANGE



CONTAINMENT STRUCTURE  
END ANCHORAGE SURVEILLANCE PROGRAM  
CRACK SURVEILLANCE LOCATIONS

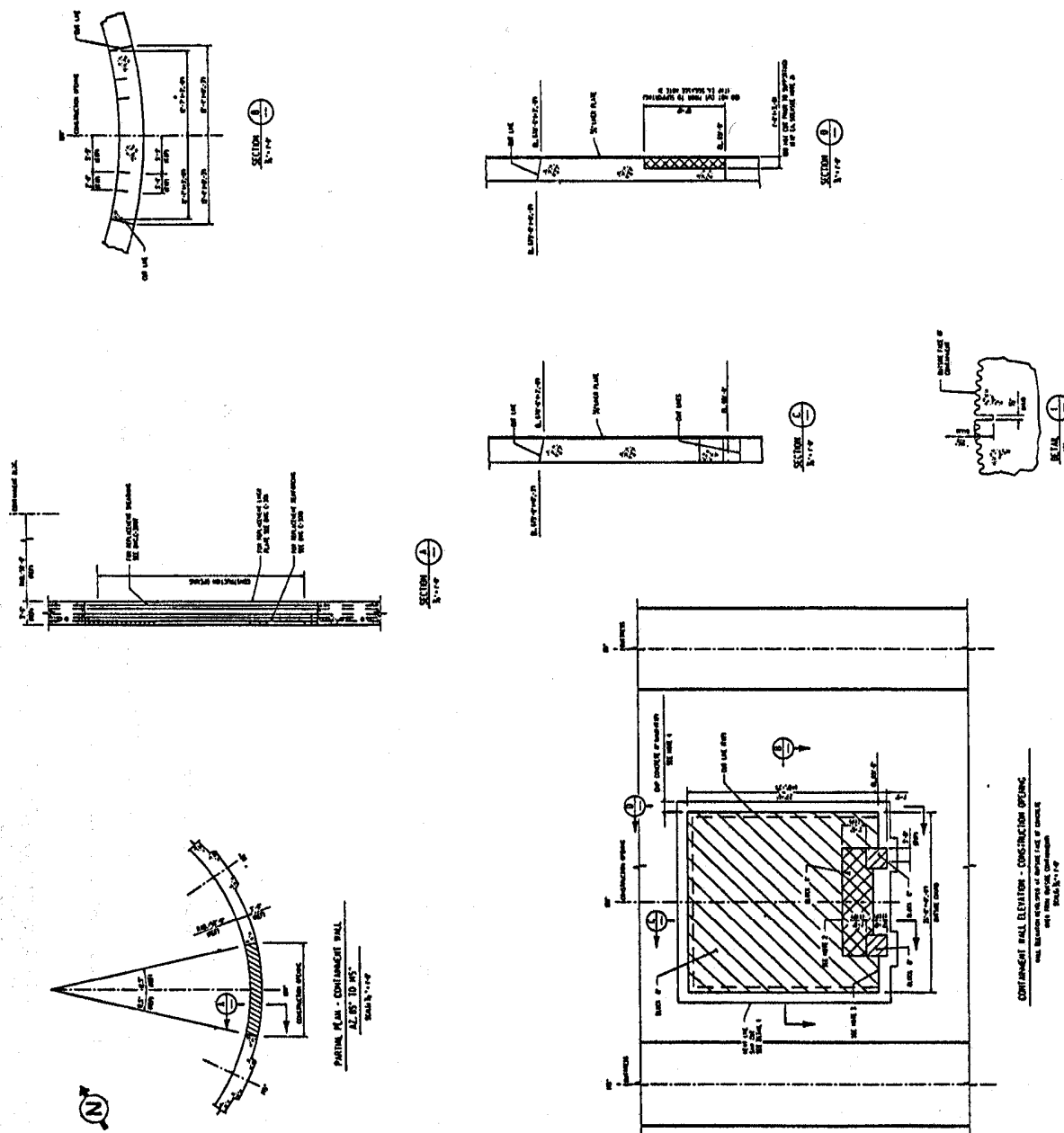
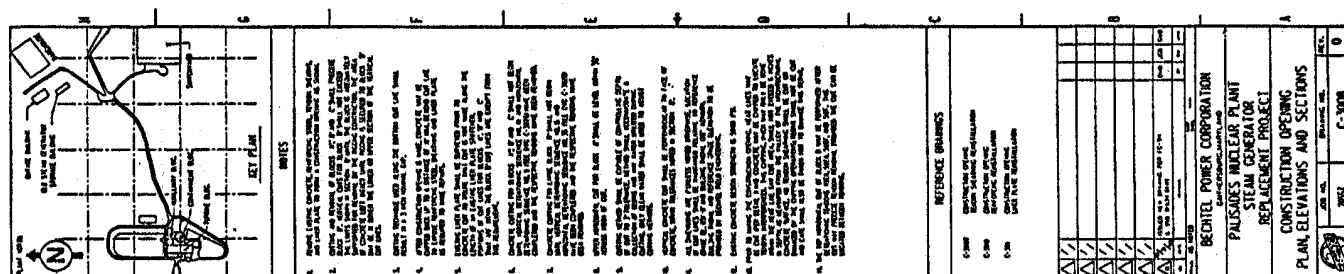


DEVELOPED ELEVATION



TYPICAL BUTTRESS DETAIL

## CONSTRUCTION OPENING PLAN, ELEVATION AND SECTIONS



## CONSTRUCTION OPENING TENDON DETENSIONING AND POST TENSIONING SEQUENCE

[illegible][illegible][illegible]

VERTICAL SCORE REPORT					
TEST NO.	TEST NAME	SCORE	PERCENTILE	STANDARD DEVIATION	GRADE POINT AVERAGE
1					
2					
3					
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98					
99					
100					

No other student at school has  
this record. This is a very good  
record.

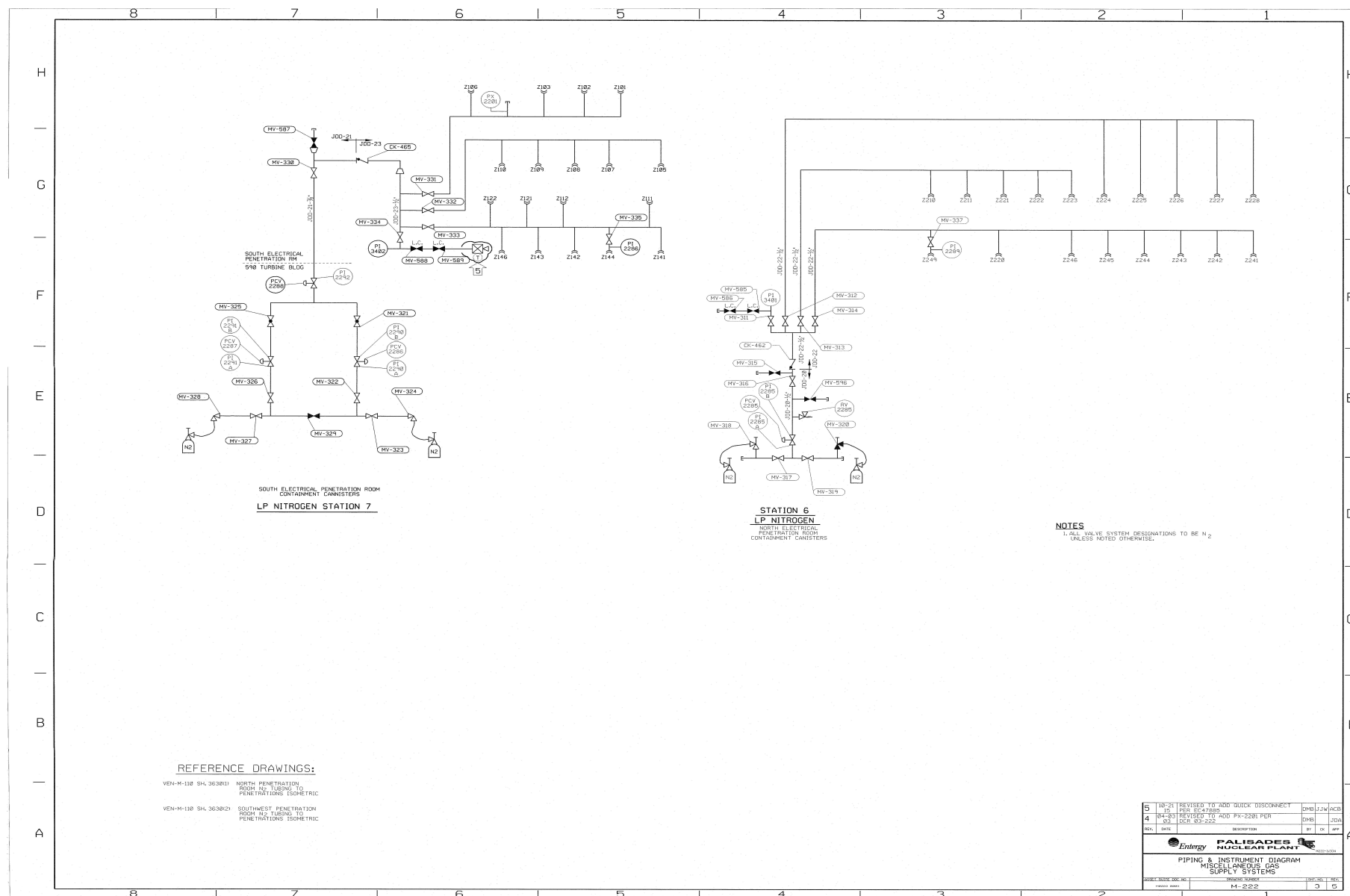
WILLIAM M. WILSON

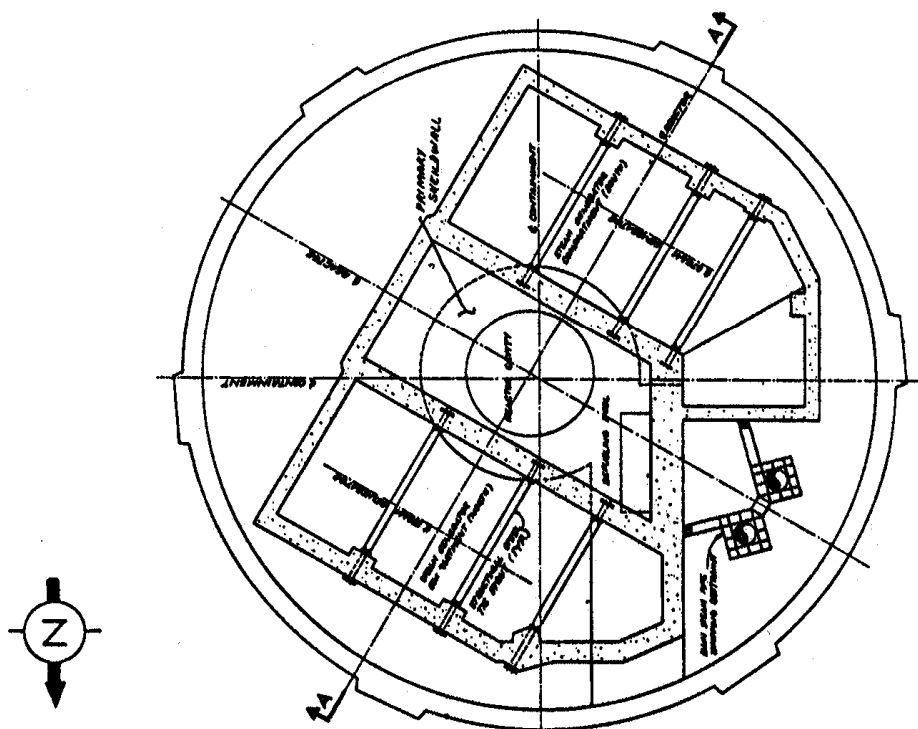
VERTICAL TENDON DETENSORING (FOR REMOVAL)	SERIAL NO.		TENDON NO.	DATE PLACED	LEFT AND RIGHT SIDE	DATE REMOVED
	1	2				
	1	100				
	2	100				
	3	100				
	4	100				
	5	100				
	6	100				
	7	100				
	8	100				
	9	100				
	10	100				
	11	100				
	12	100				
	13	100				
	14	100				
	15	100				
	16	100				
	17	100				
	18	100				
	19	100				
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	29	100				
	30	100				
	31	100				
	32	100				
	33	100				
	34	100				
	35	100				
	36	100				
	37	100				
	38	100				
	39	100				
	40	100				
	41					

[illegible][illegible]



## MISCELLANEOUS GAS SUPPLY SYSTEMS



[illegible]

PLAN @ EL. C2C'-C'