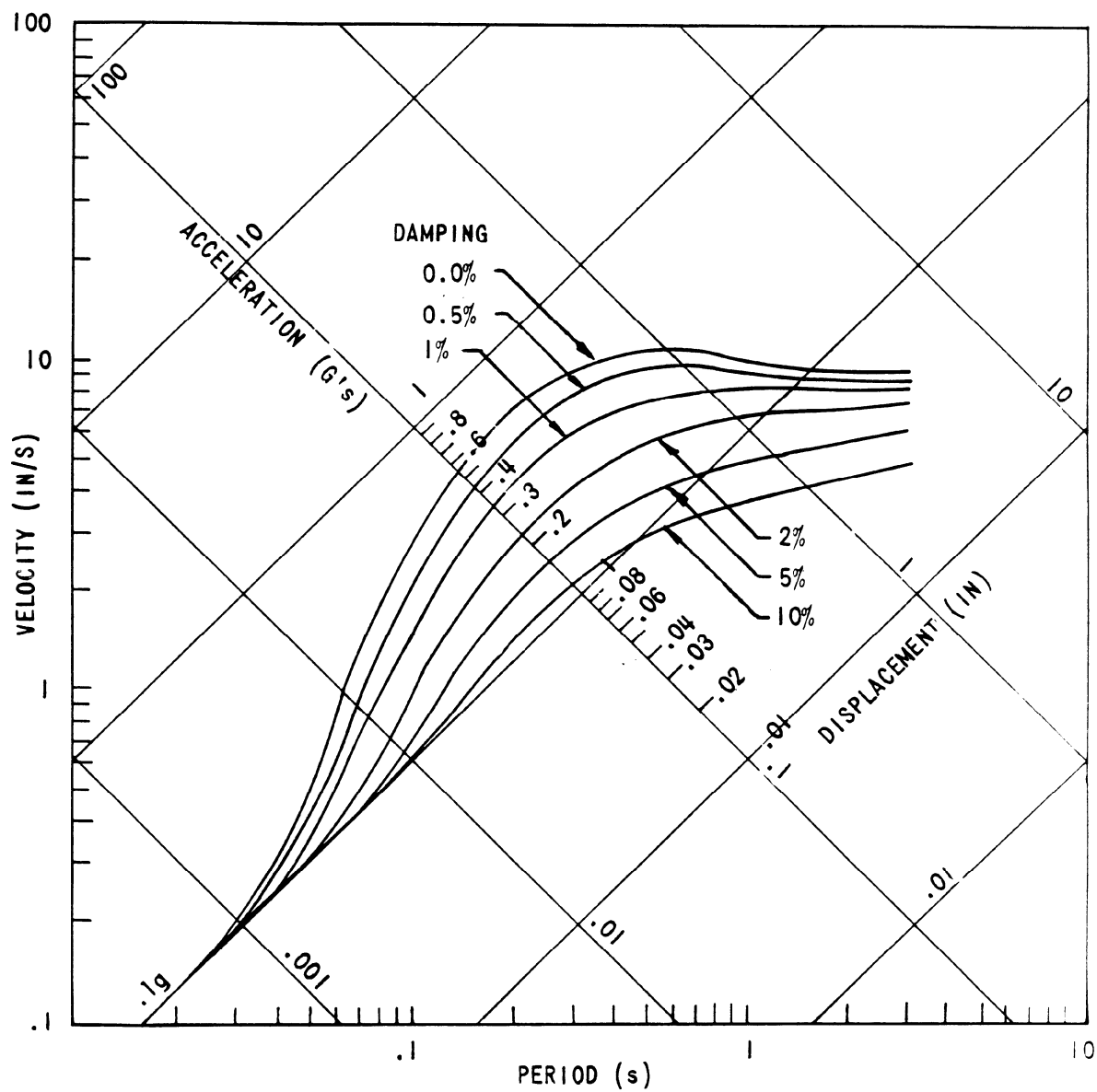
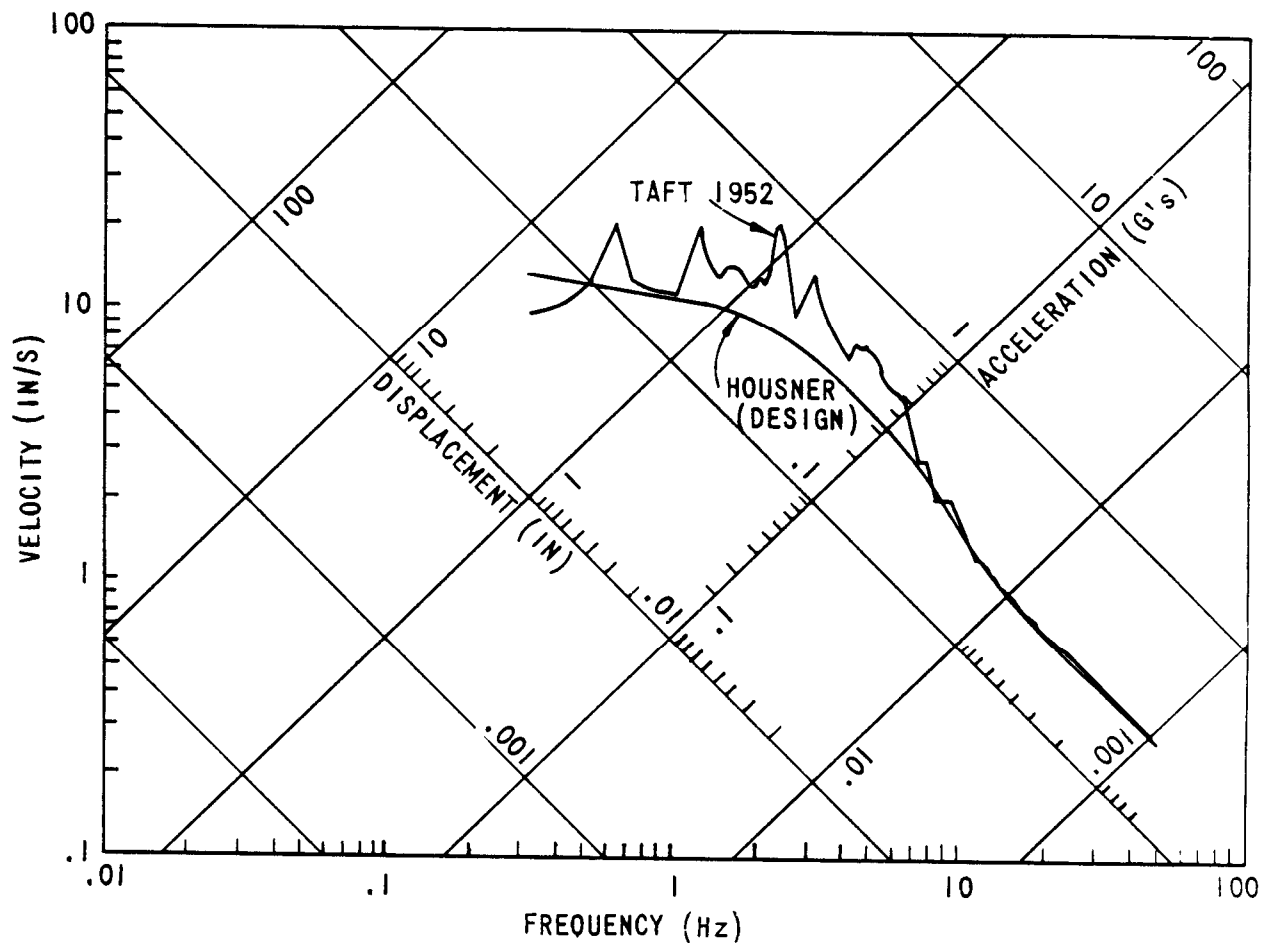


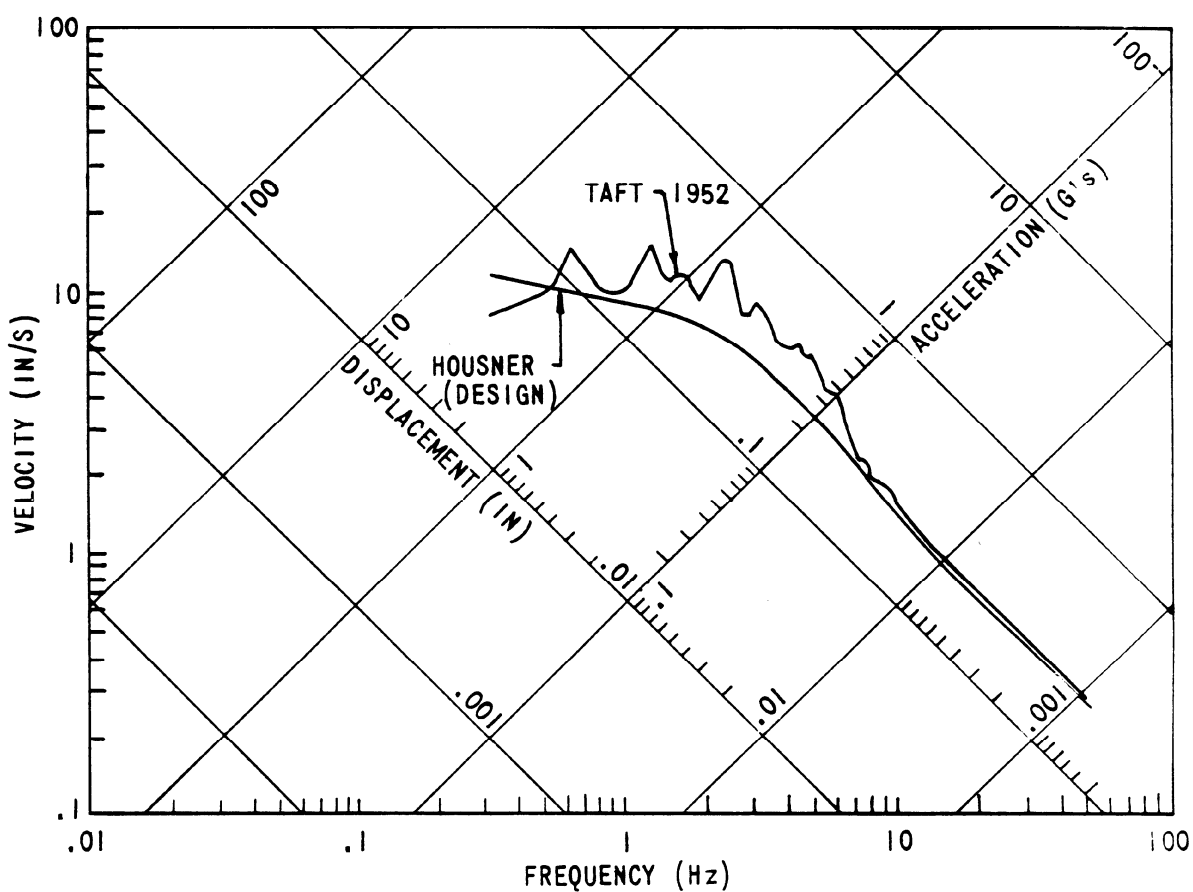
OBE HORIZONTAL DESIGN GROUND RESPONSE SPECTRUM
(HOUSNER)



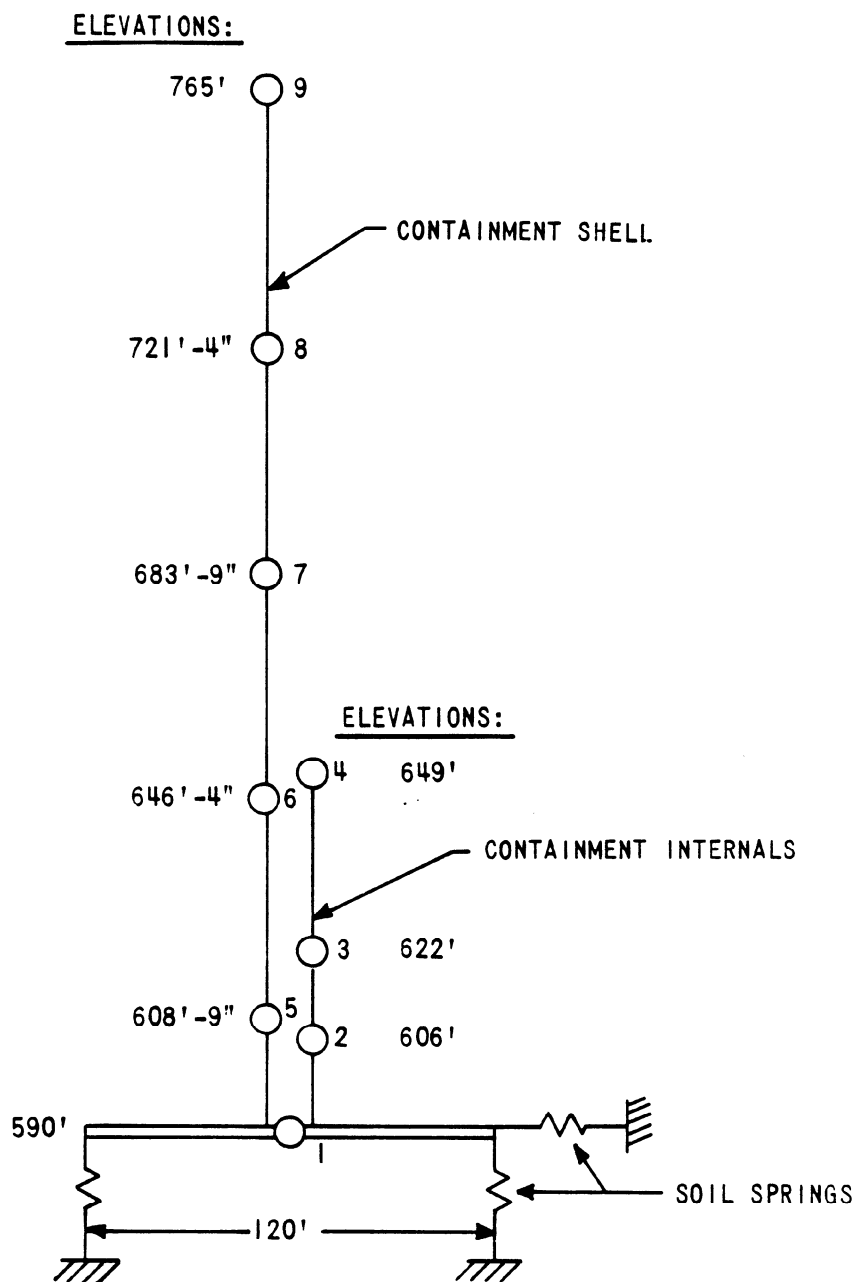
TAFT GROUND RESPONSE SPECTRUM VERSUS HOUSNER GROUND RESPONSE SPECTRUM (SSE)
4% DAMPING



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



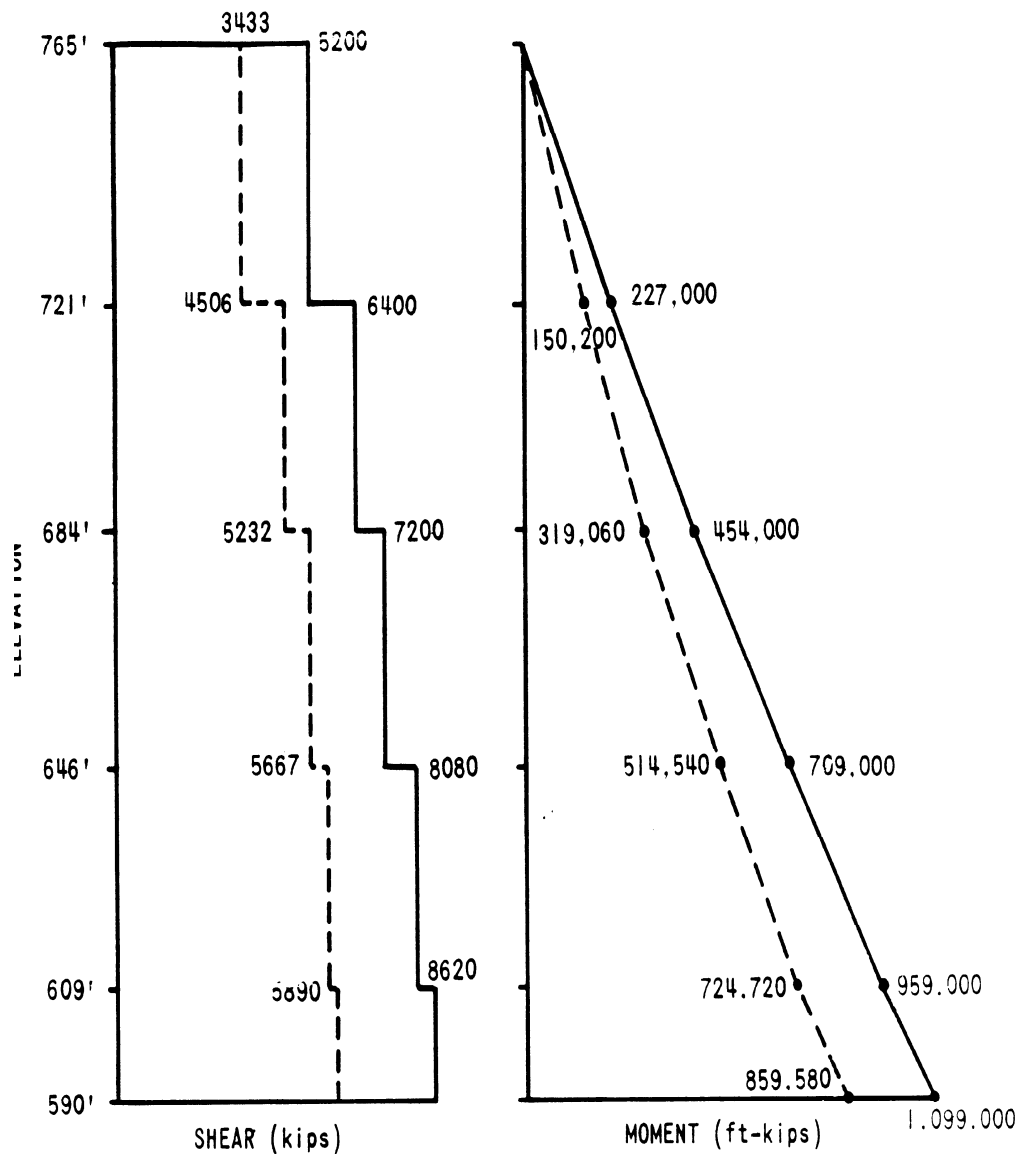
CONTAINMENT BUILDING DYNAMIC MODEL



NOTES:

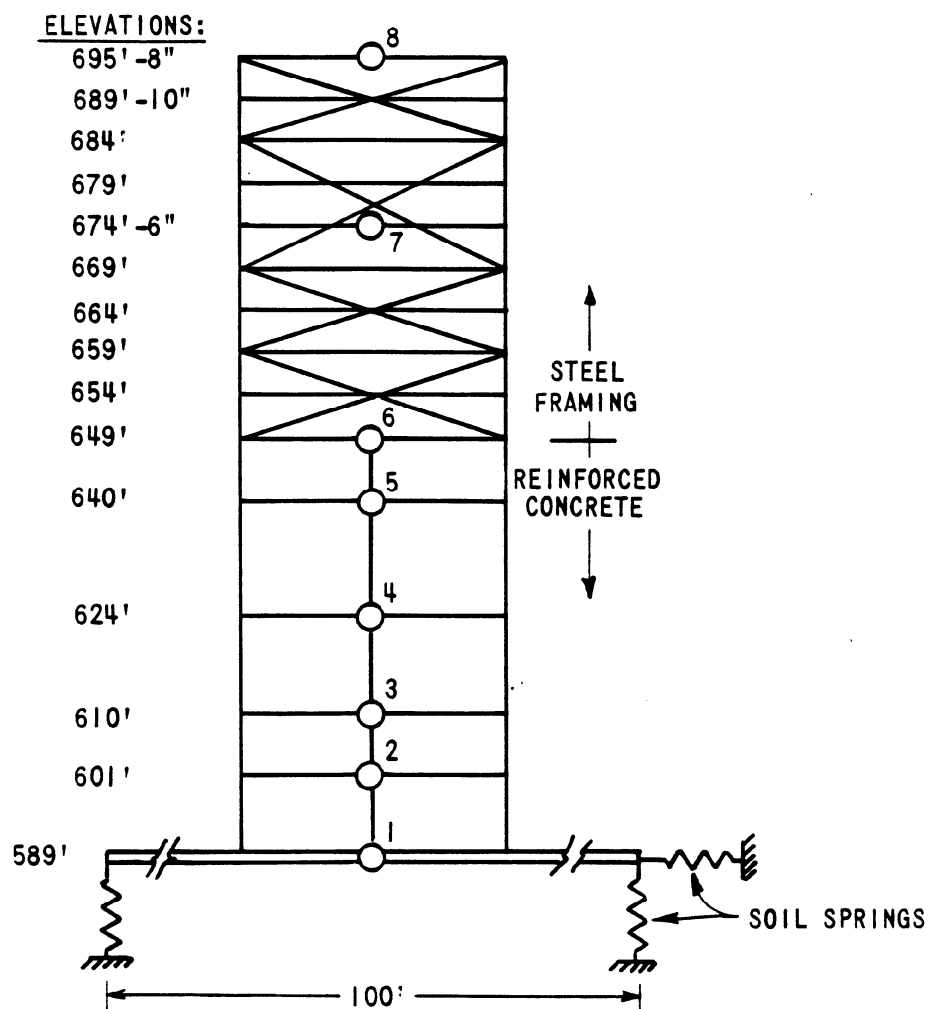
1. CIRCLES REPRESENT LUMPED MASS LOCATIONS

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



NOTE: MASS POINT ELEVATIONS
SHOWN TO NEAREST FOOT

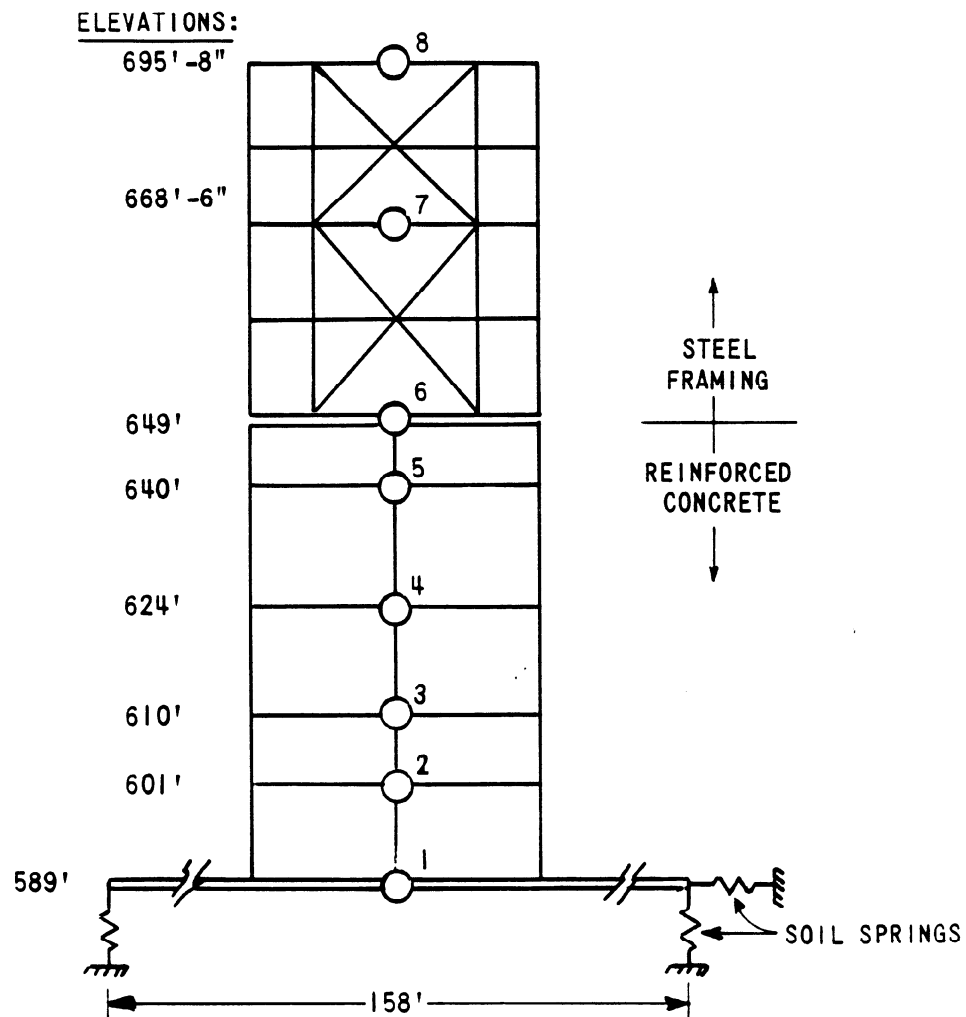
- FIXED BASE MODEL (FIRST MODEL)
- - - SOIL-SHELL-INTERNAL MODEL (FINAL MODEL)

AUXILIARY BUILDING
N-S MATHEMATICAL MODEL

NOTES:

1. CIRCLES REPRESENT LUMPED MASS LOCATIONS.

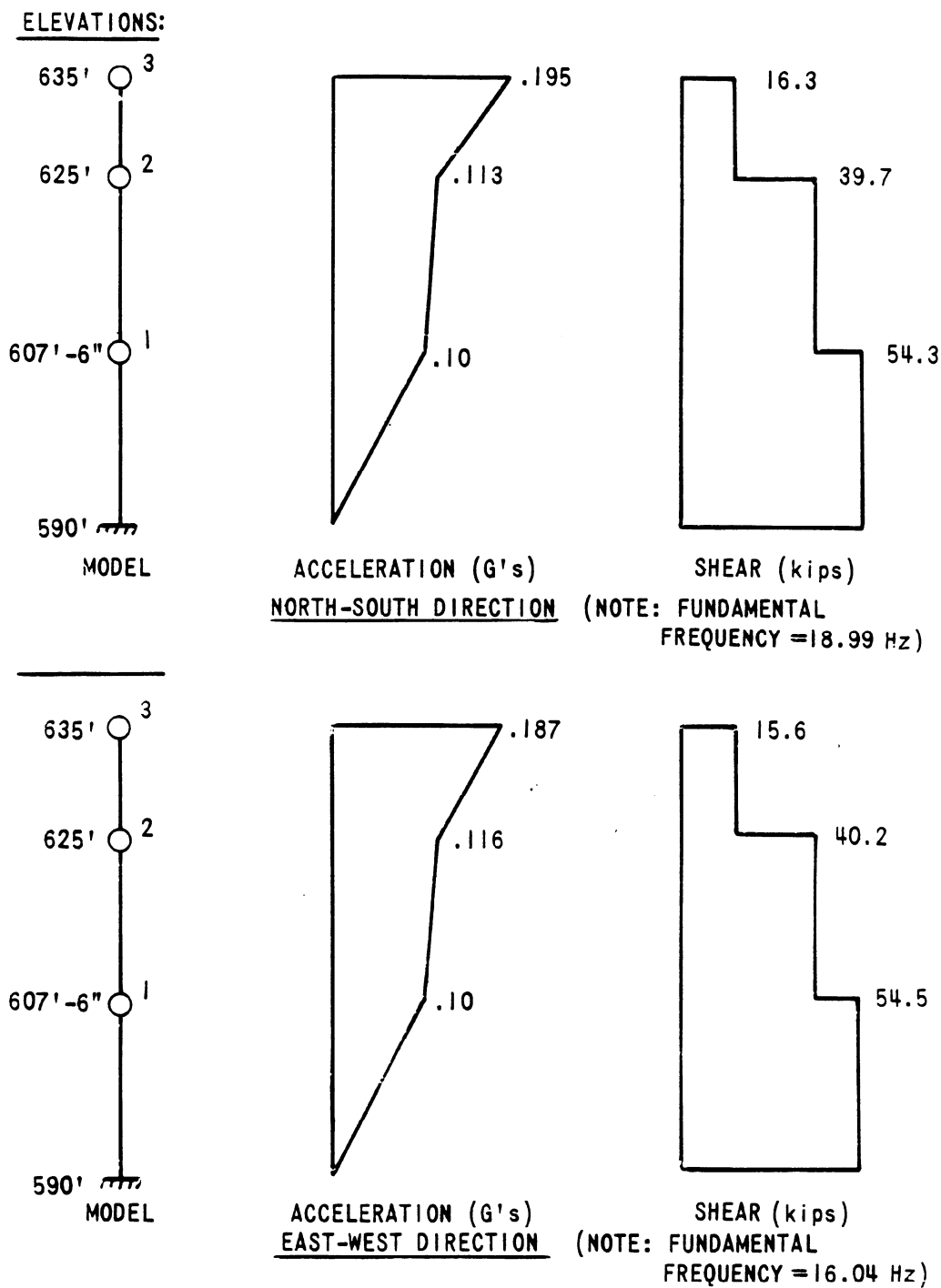
**AUXILIARY BUILDING
E-W MATHEMATICAL MODEL**



NOTES:

1. CIRCLES REPRESENT LUMPED MASS LOCATIONS.

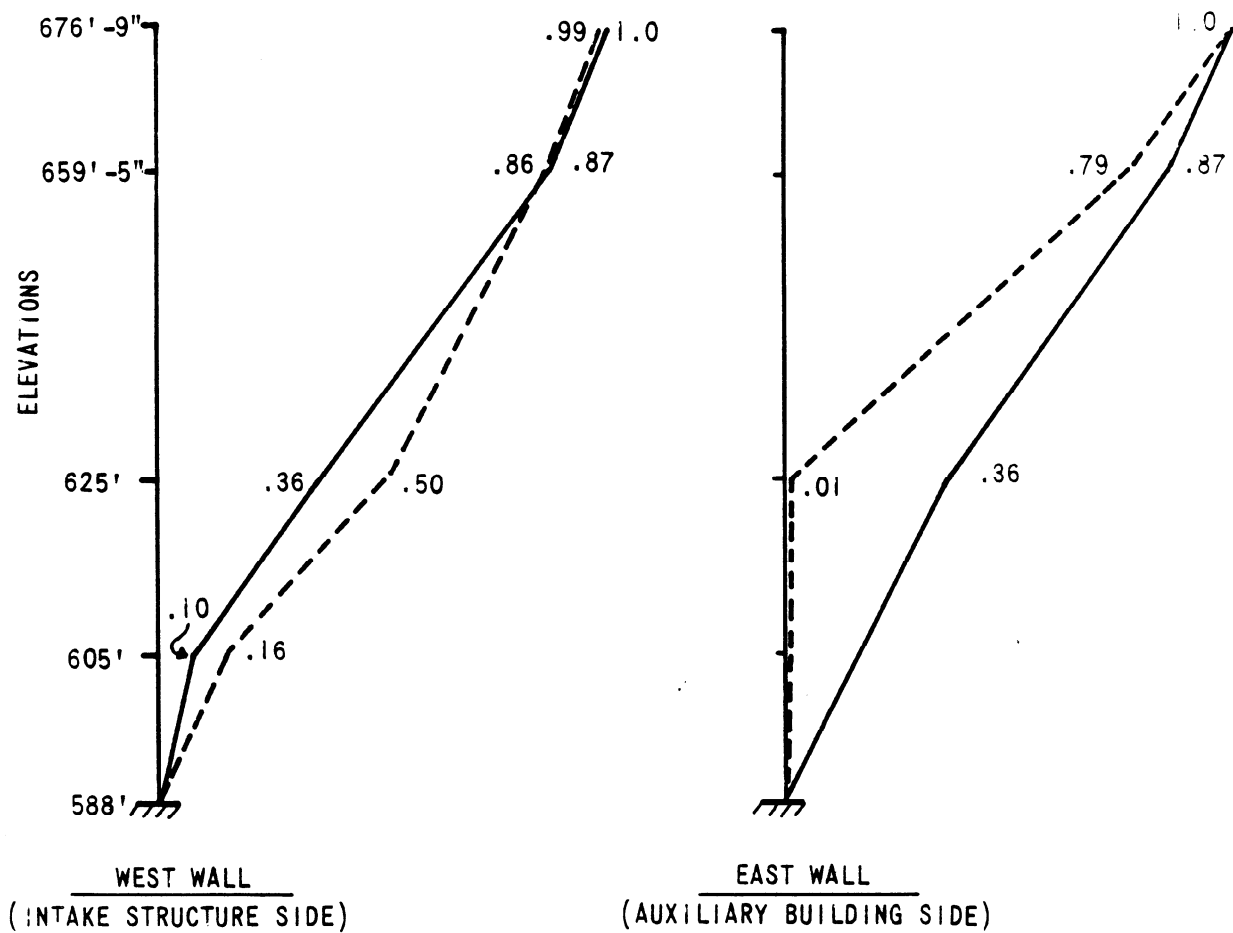
**ELECTRICAL PENETRATION ENCLOSURE
N-S & E-W DYNAMIC MODELS AND MAXIMUM SEISMIC RESPONSES (OBE)**

**NOTES:**

1. CIRCLES REPRESENT
LUMPED MASS LOCATIONS

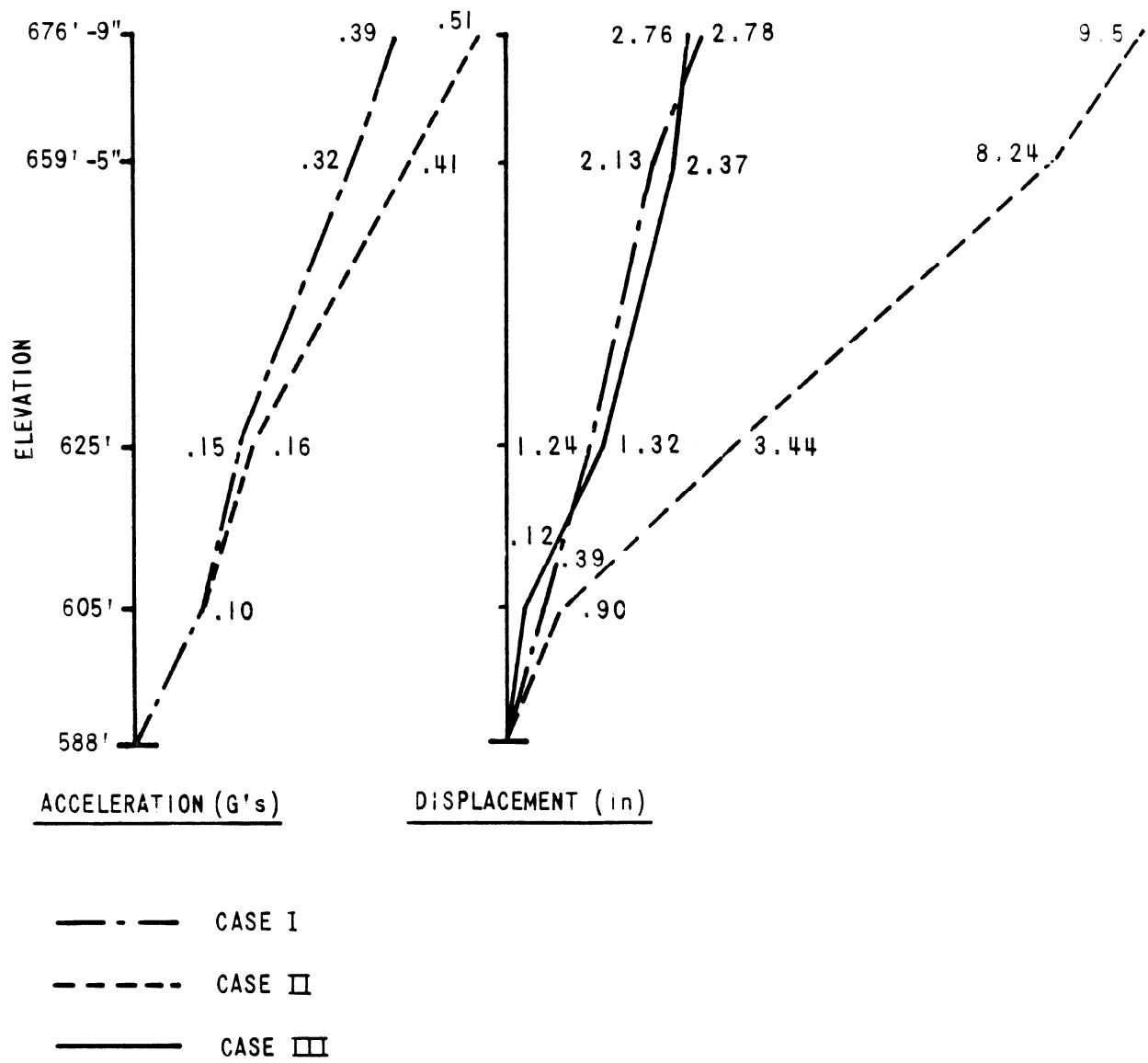
1. SMALL CIRCLES REPRESENT
PINNED CONNECTIONS

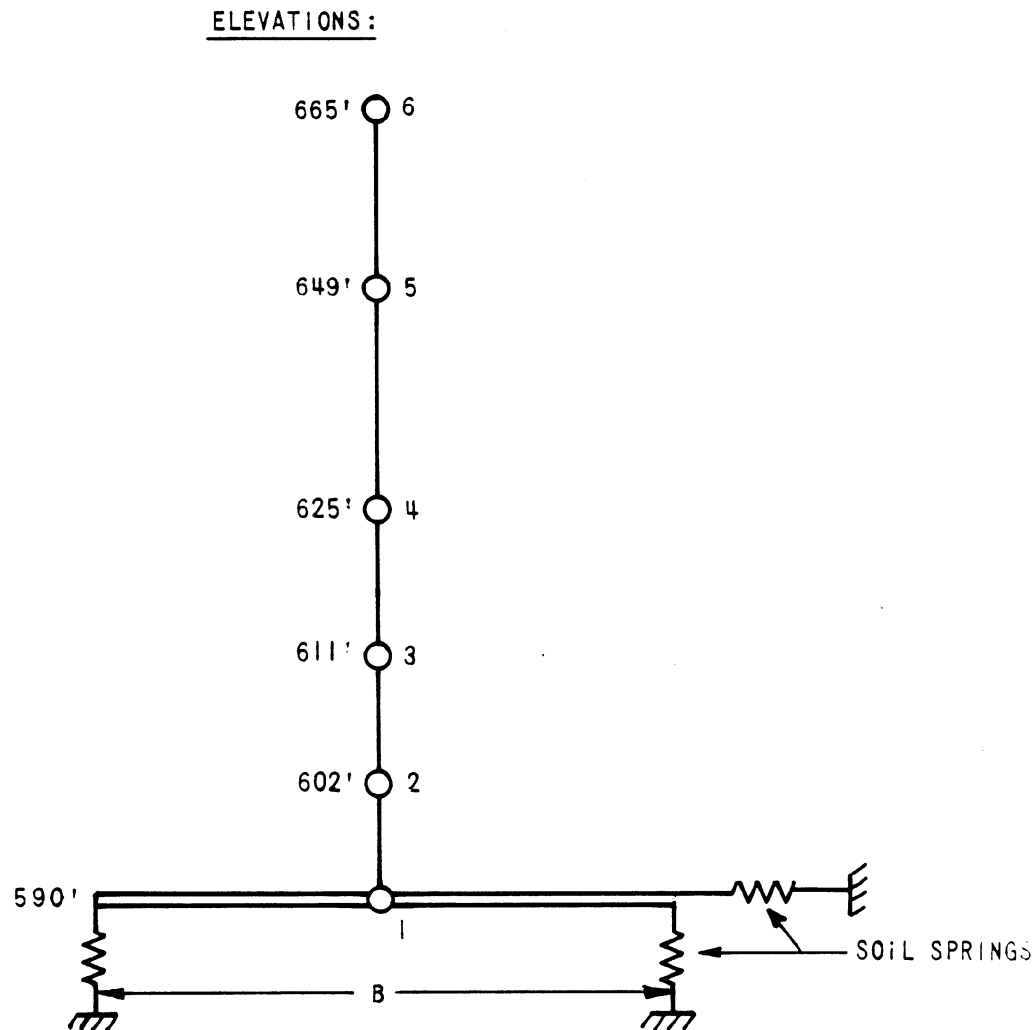
TURBINE BUILDING
E-W FUNDAMENTAL MODESHAPES, OUTSIDE WALLS



----- CASE I
———— CASE II

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



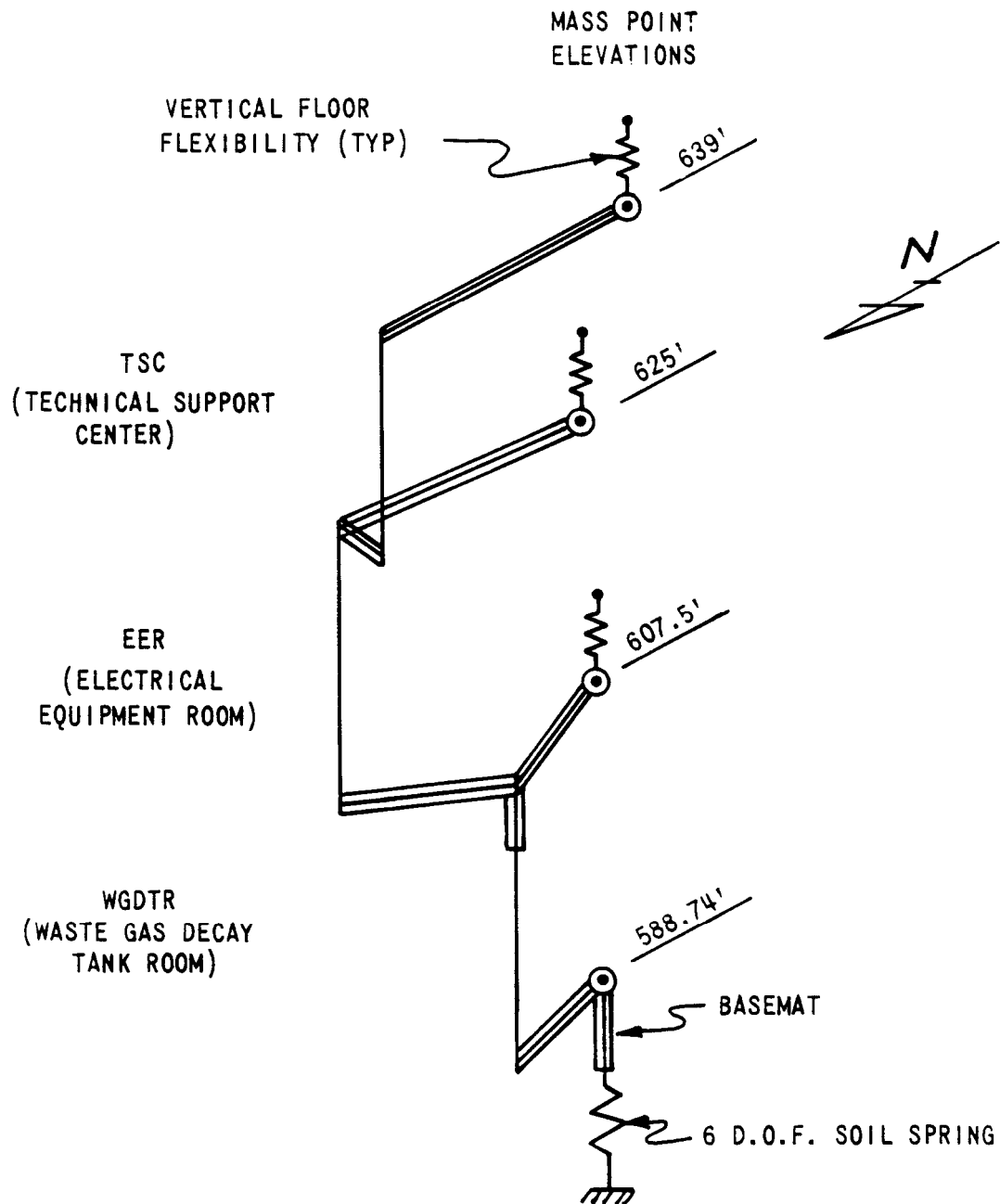
**AUXILIARY BUILDING RADWASTE ADDITION
DYNAMIC MODELS****NOTES:**

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

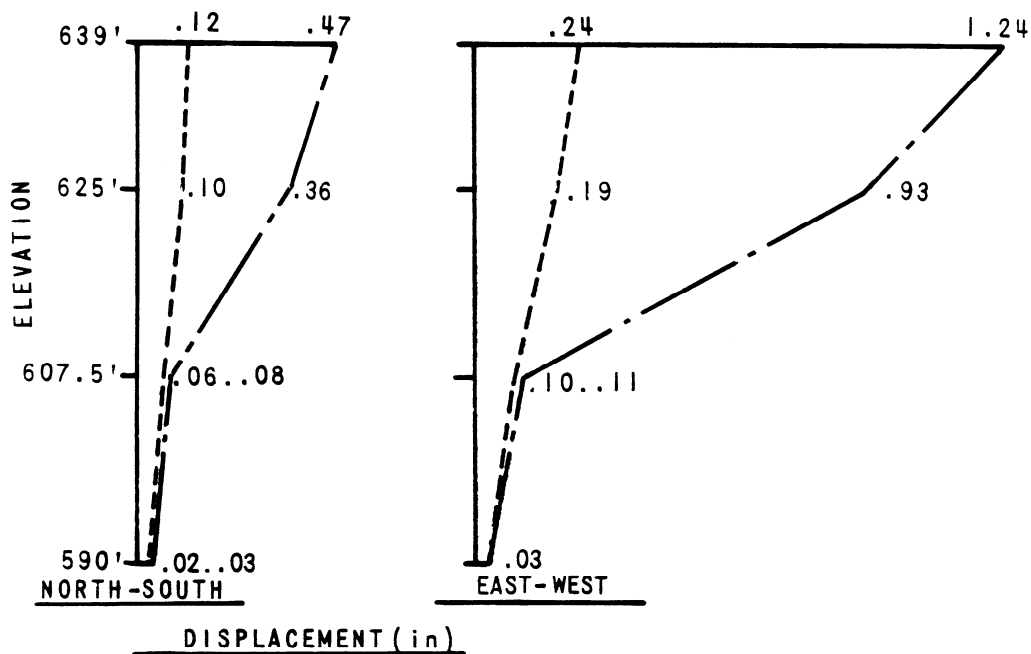
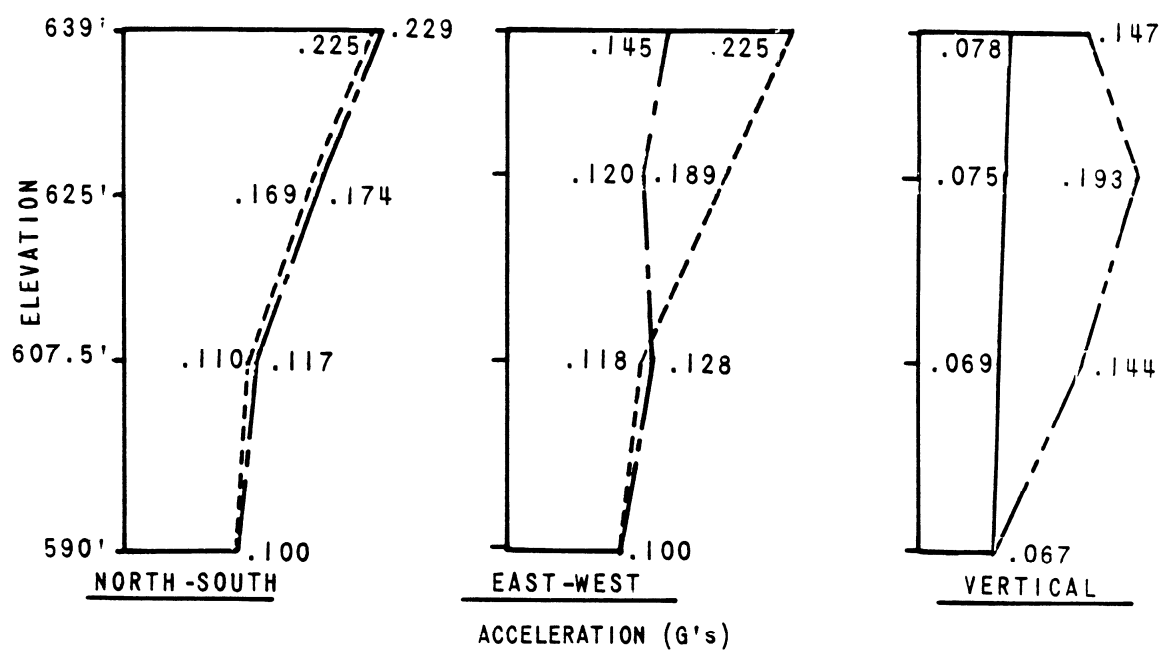


NOTES:

1. CORNER MEMBERS NOT
SHOWN FOR CLARITY

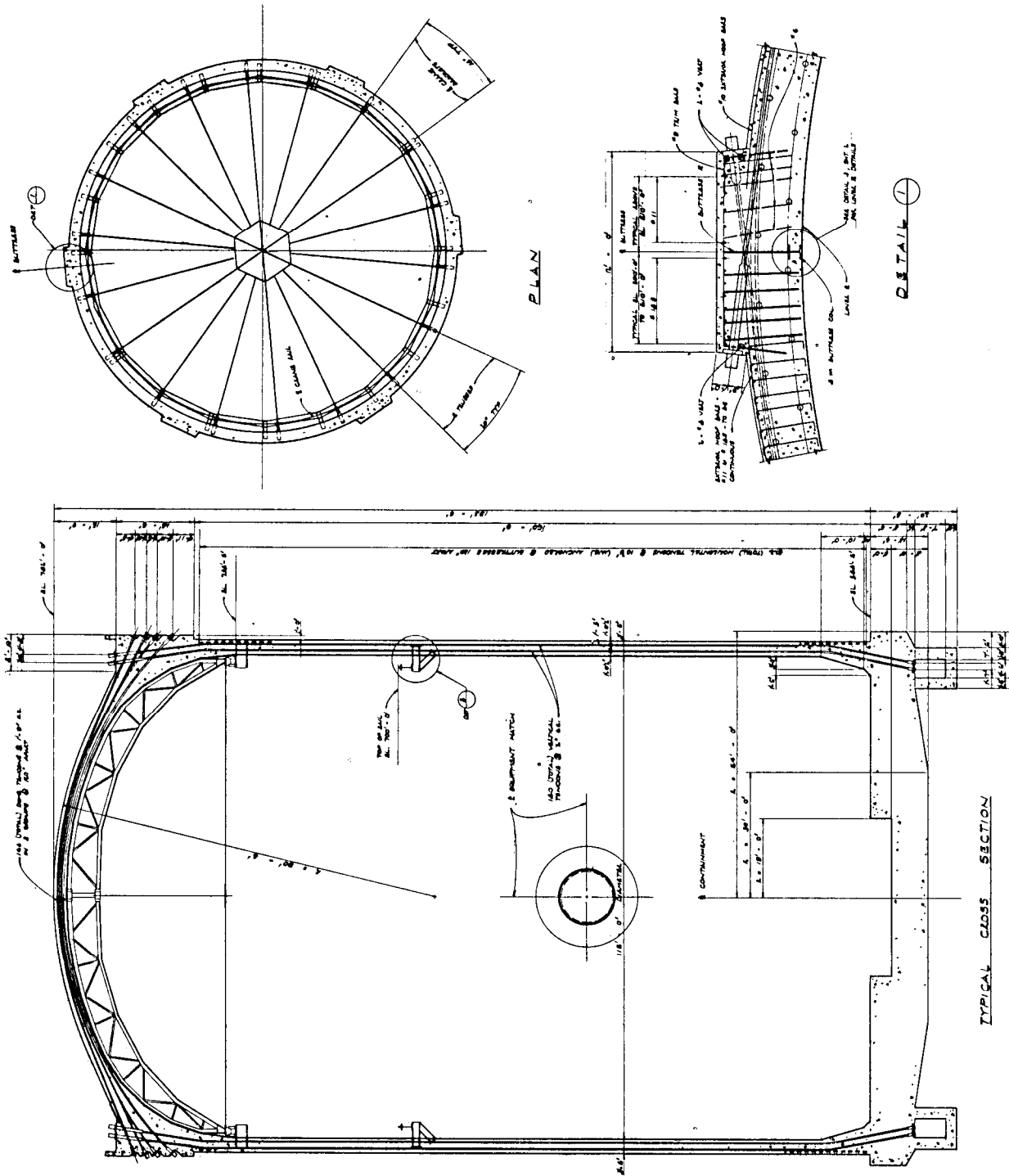
- ==== RIGID MEMBER
- FLEXIBLE MEMBER
- ⊙, • LUMPED MASS

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

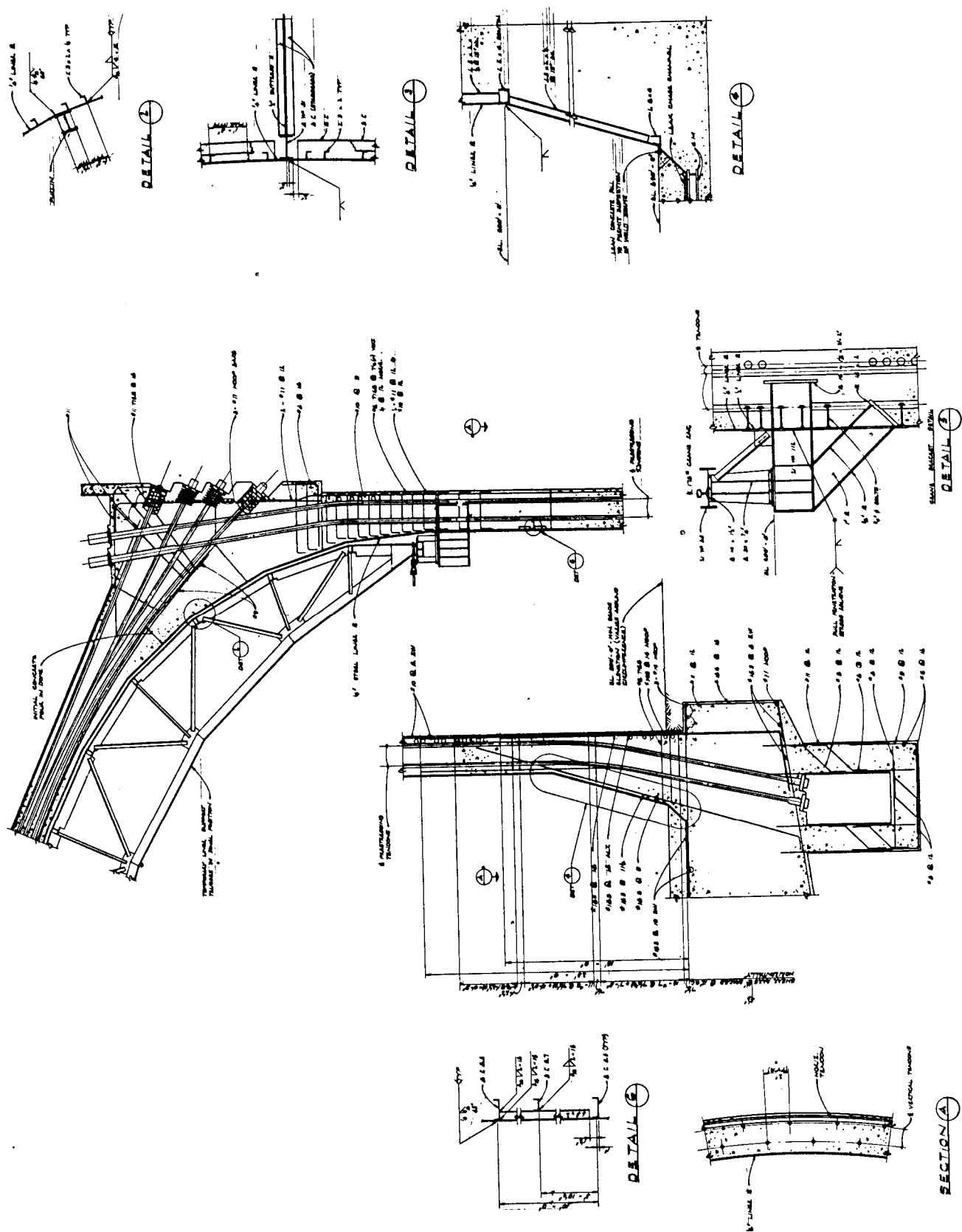


- WALLS ACTING INDIVIDUALLY
IN TORSION (ANALYSIS 1)
- WALLS ACTING TOGETHER
IN TORSION (ANALYSIS 2)
- RIGID FLOORS
- - - FLEXIBLE FLOORS

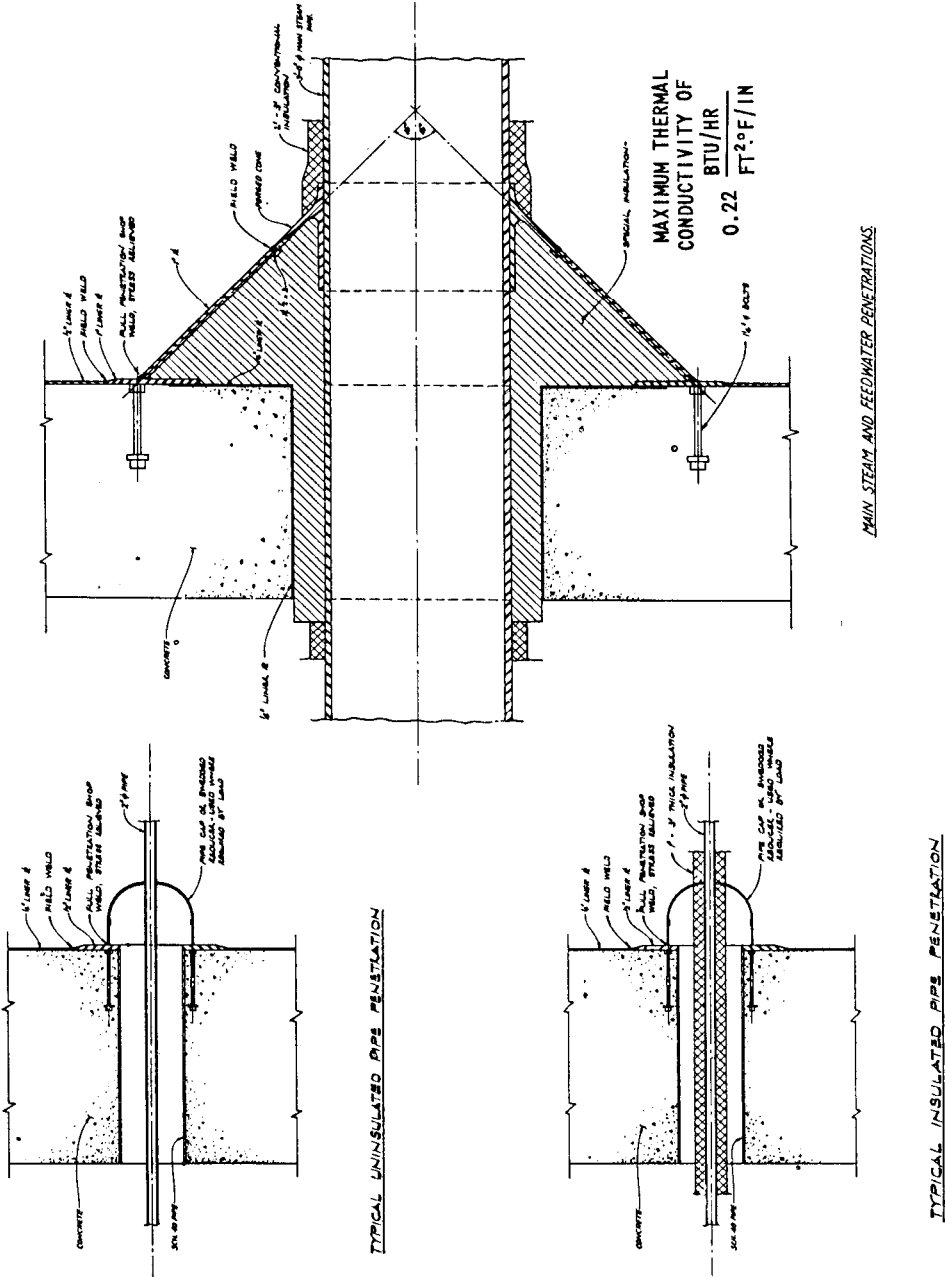
CONTAINMENT STRUCTURE
TYPICAL CROSS SECTION



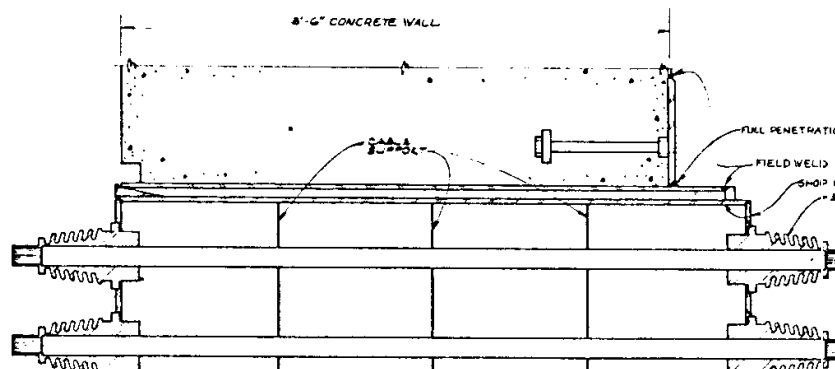
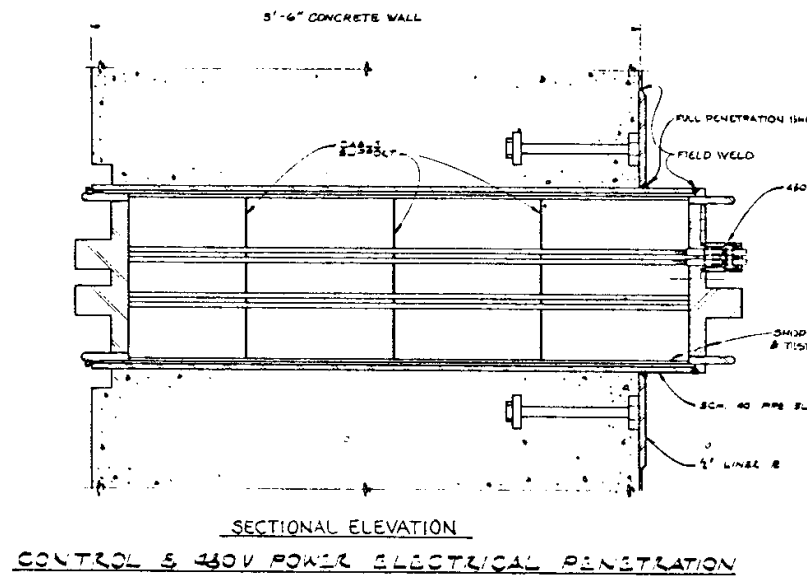
CONTAINMENT STRUCTURE
TYPICAL CROSS SECTION



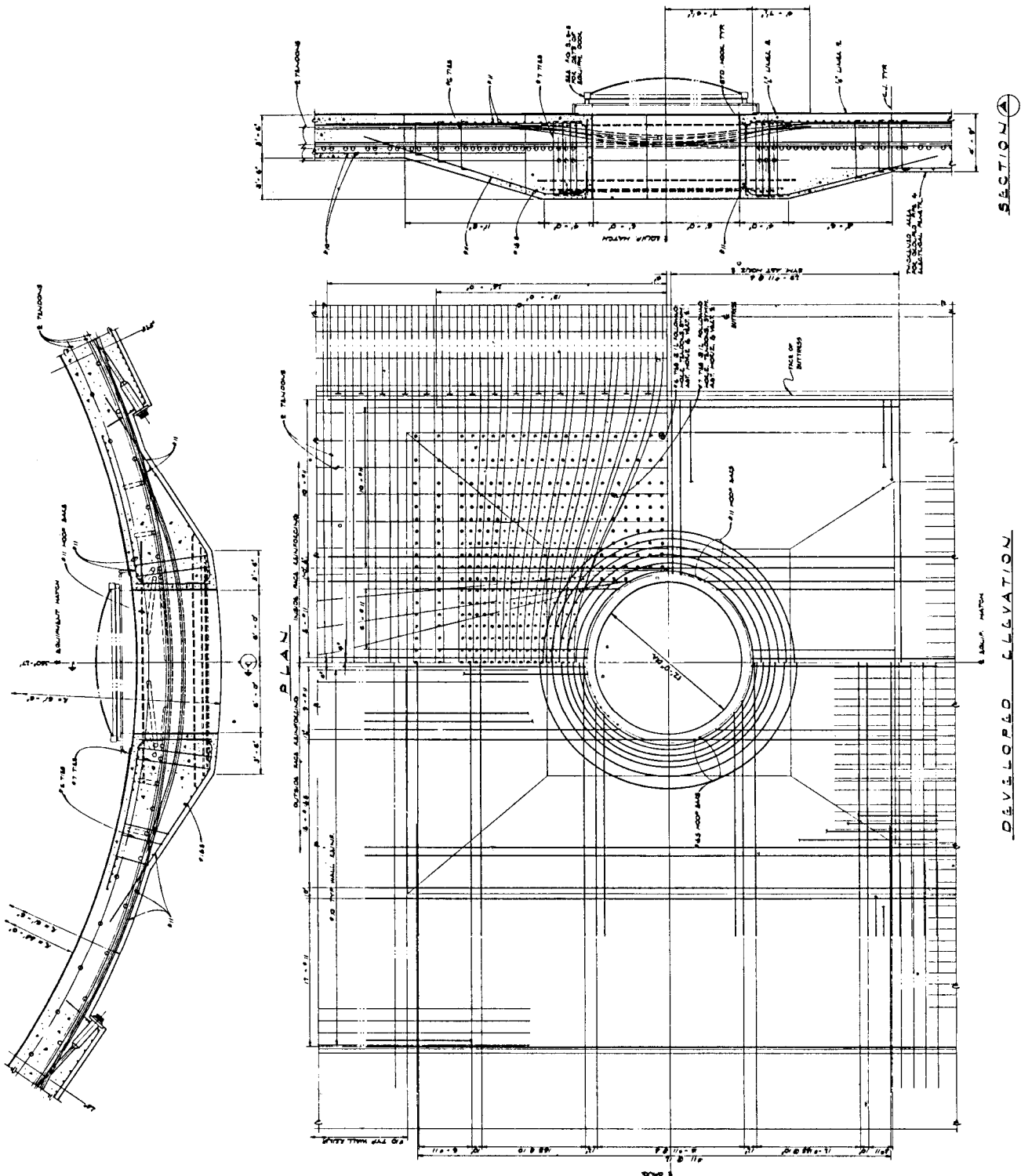
CONTAINMENT STRUCTURE
TYPICAL PIPING PENETRATIONS



CONTAINMENT STRUCTURE TYPICAL ELECTRICAL PENETRATIONS

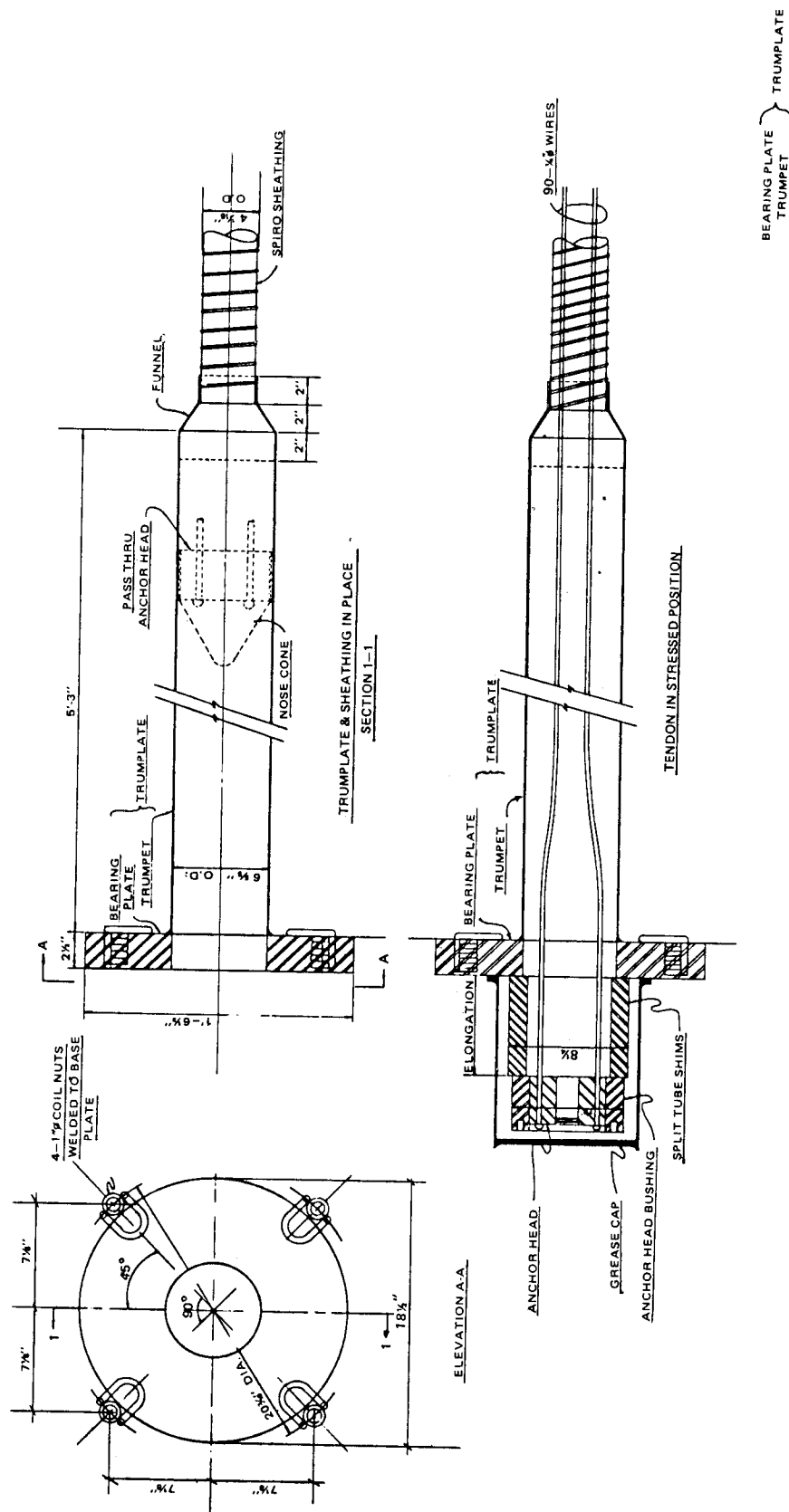


CONTAINMENT STRUCTURE
REINFORCING AND TENDON PLAN ADJACENT TO EQUIPMENT HATCH



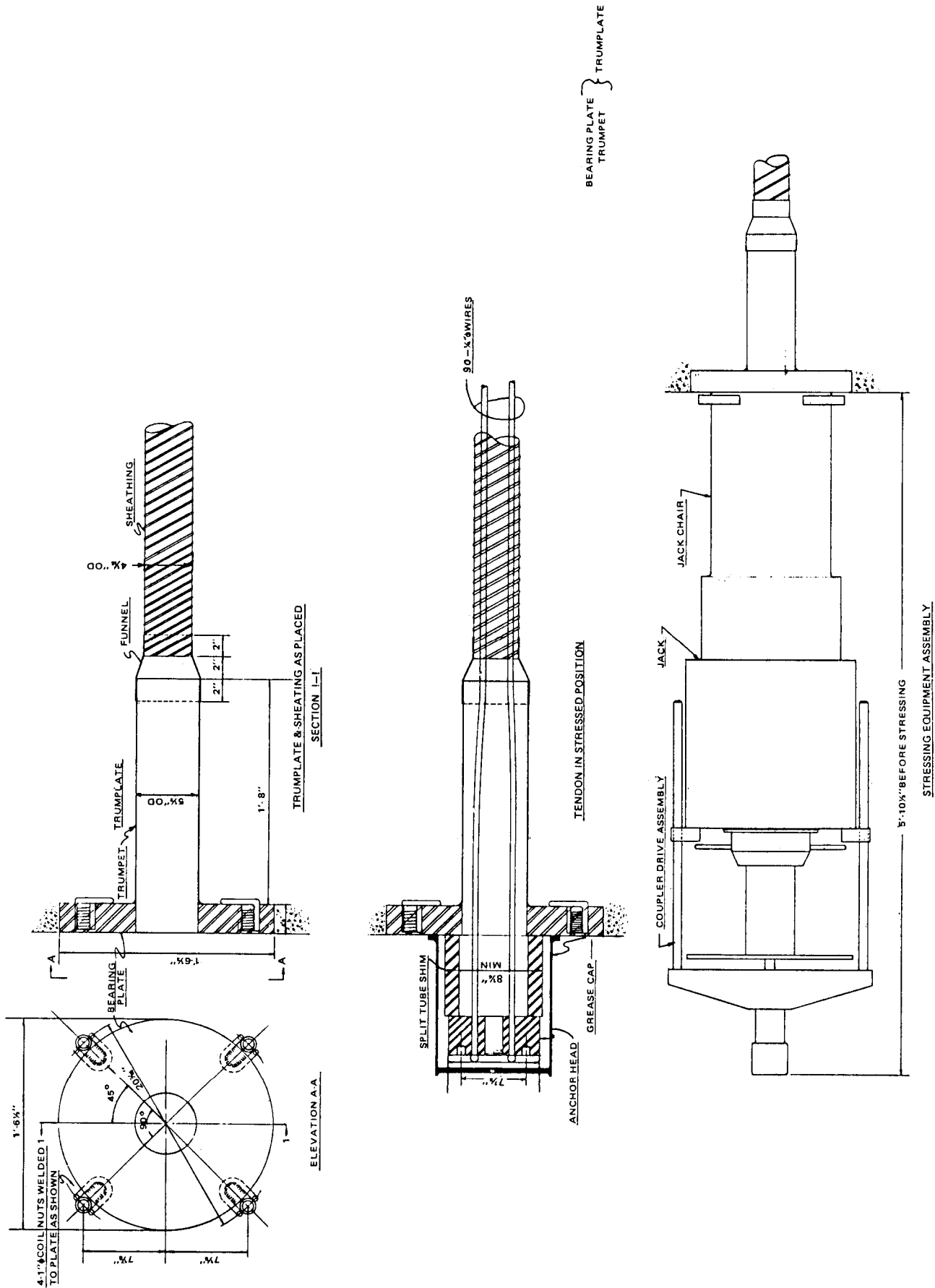
CONTAINMENT STRUCTURE

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

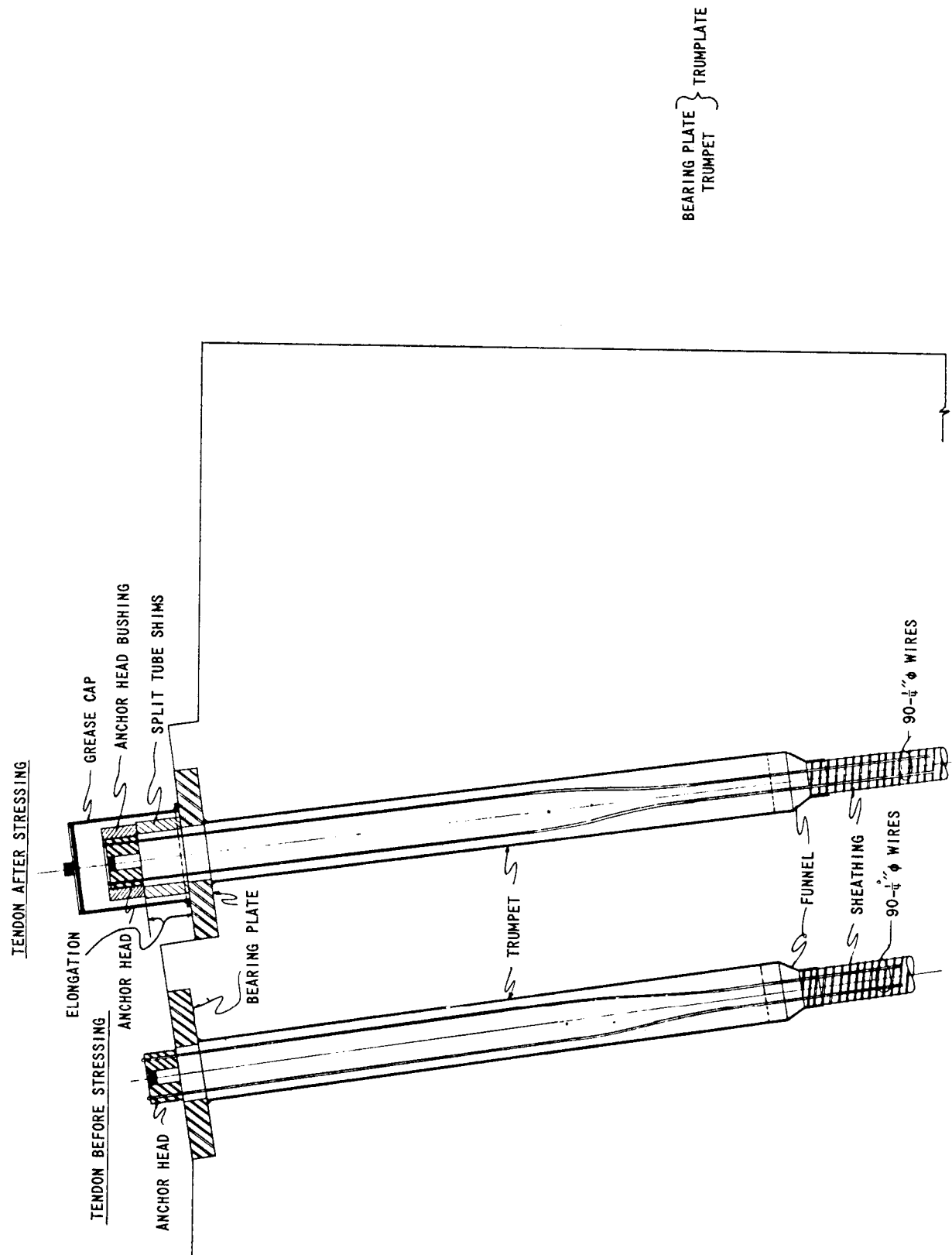


CONTAINMENT STRUCTURE

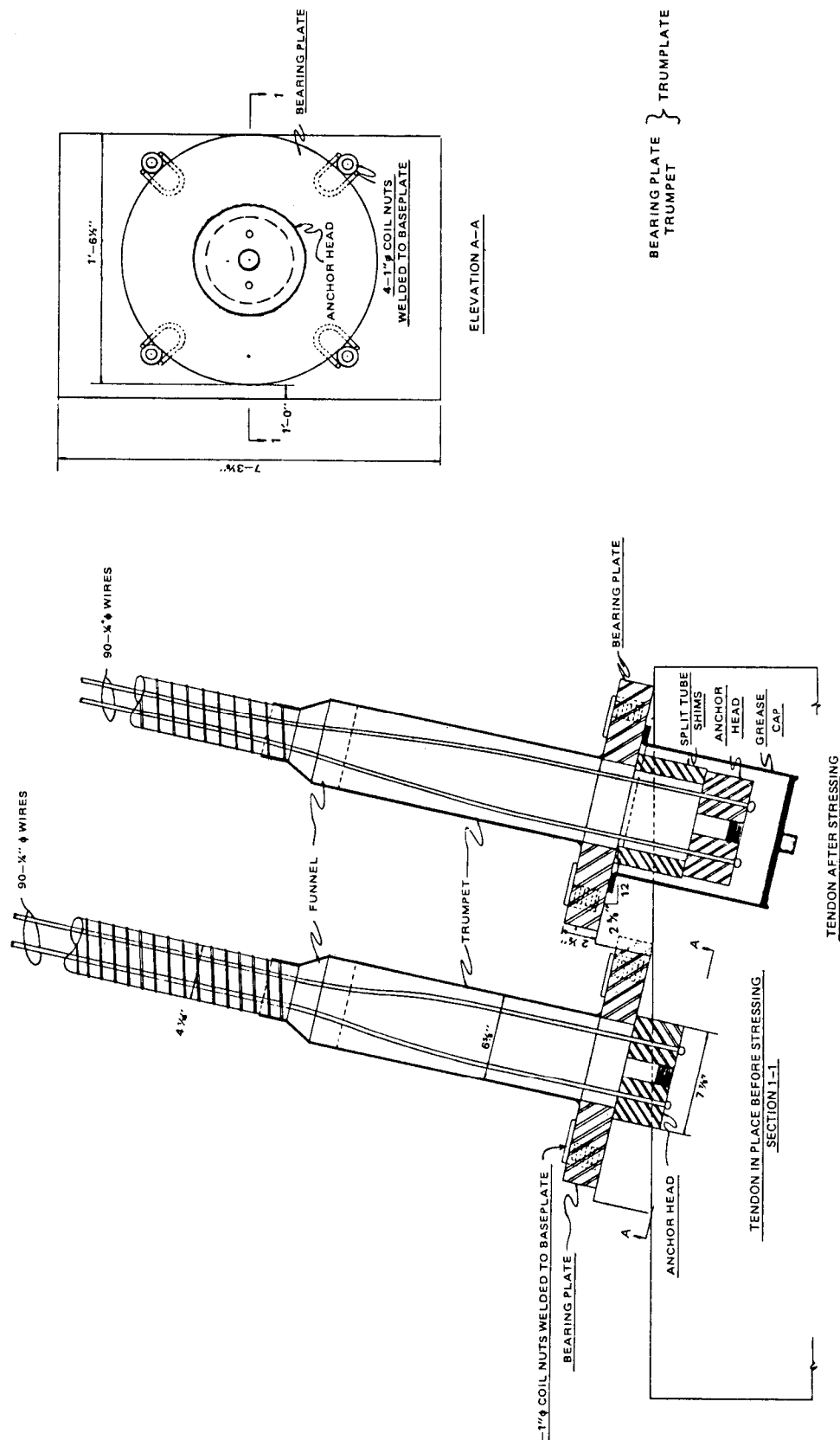
TENDON HARDWARE ASSEMBLY, HORIZONTAL AND DOME TENDONS, FIELD BUTTONHEADED END



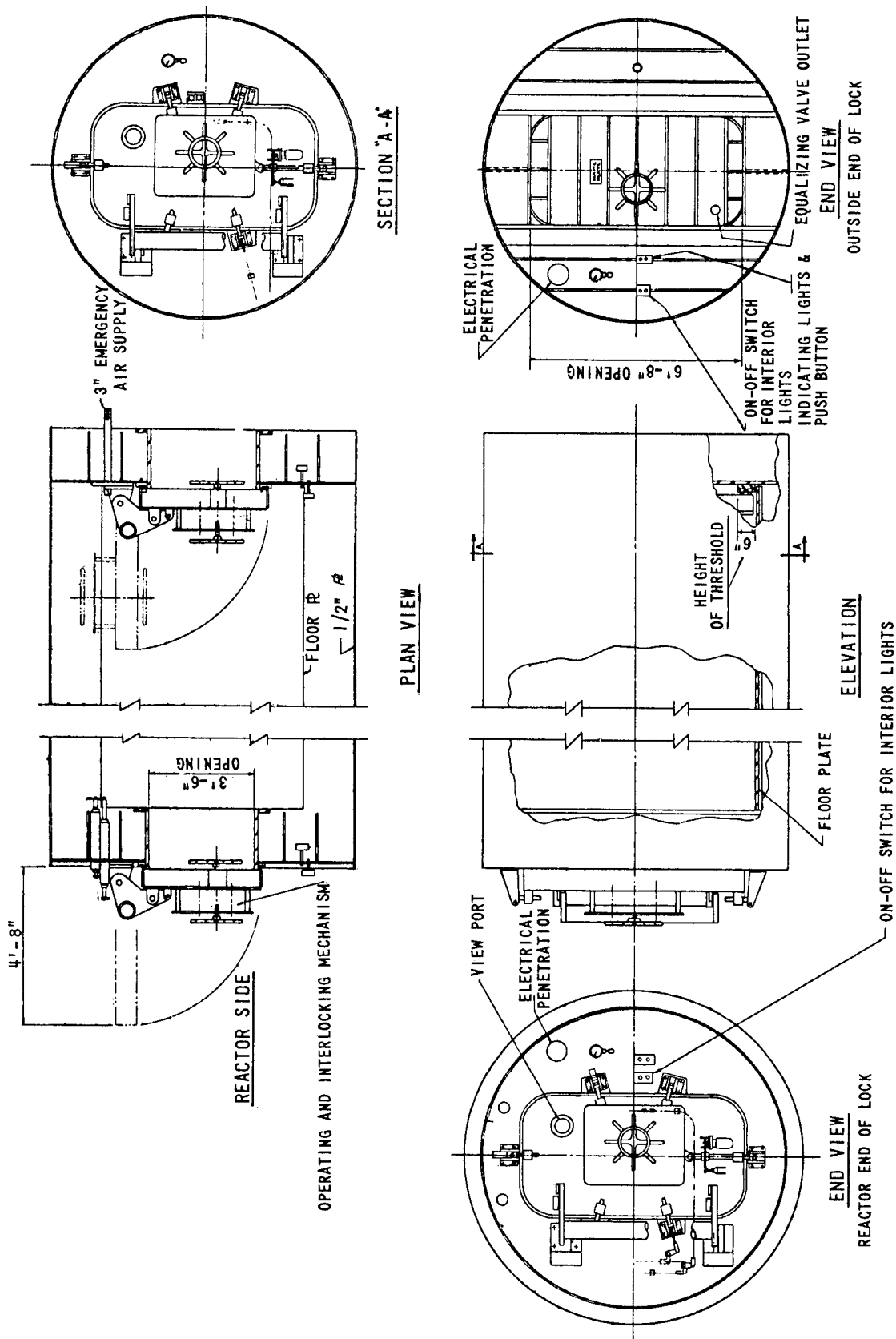
CONTAINMENT STRUCTURE
TENDON HARDWARE ASSEMBLY, VERTICAL TENDONS, SHOP BUTTONHEADED END



CONTAINMENT STRUCTURE
TENDON HARDWARE ASSEMBLY, VERTICAL TENDONS, FIELD BUTTONHEADED END

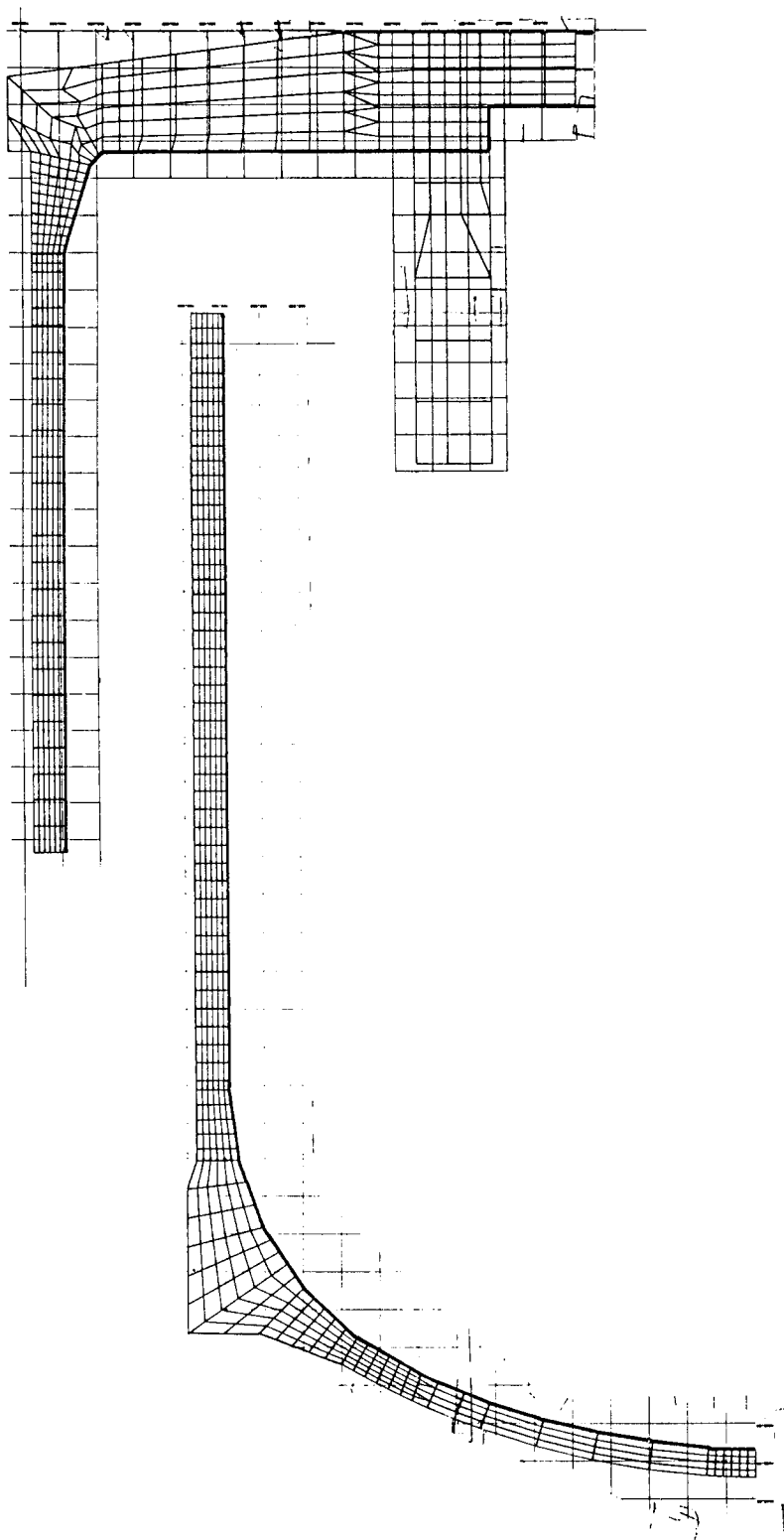


CONTAINMENT STRUCTURE
PERSONNEL AIR LOCK

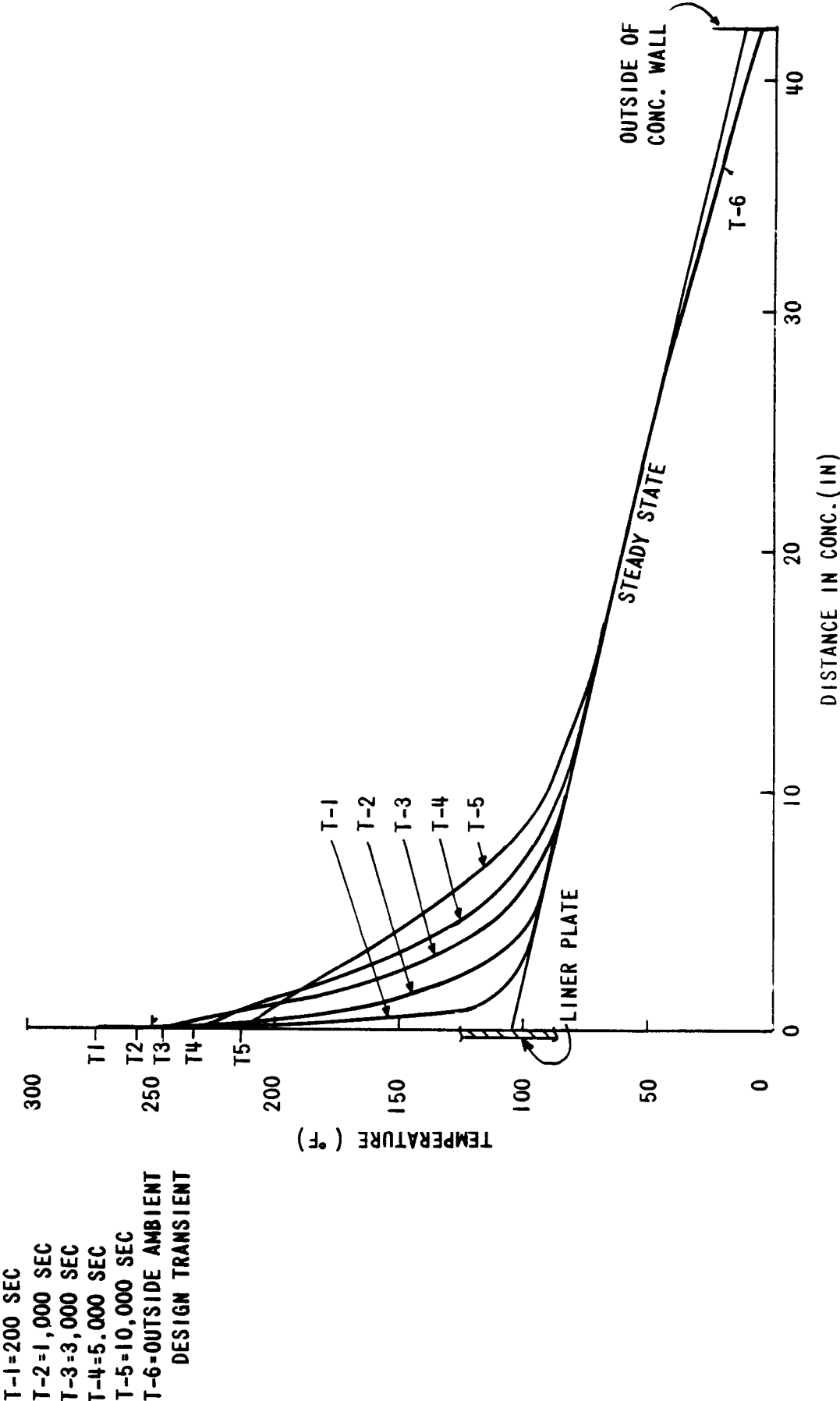


[illegible]

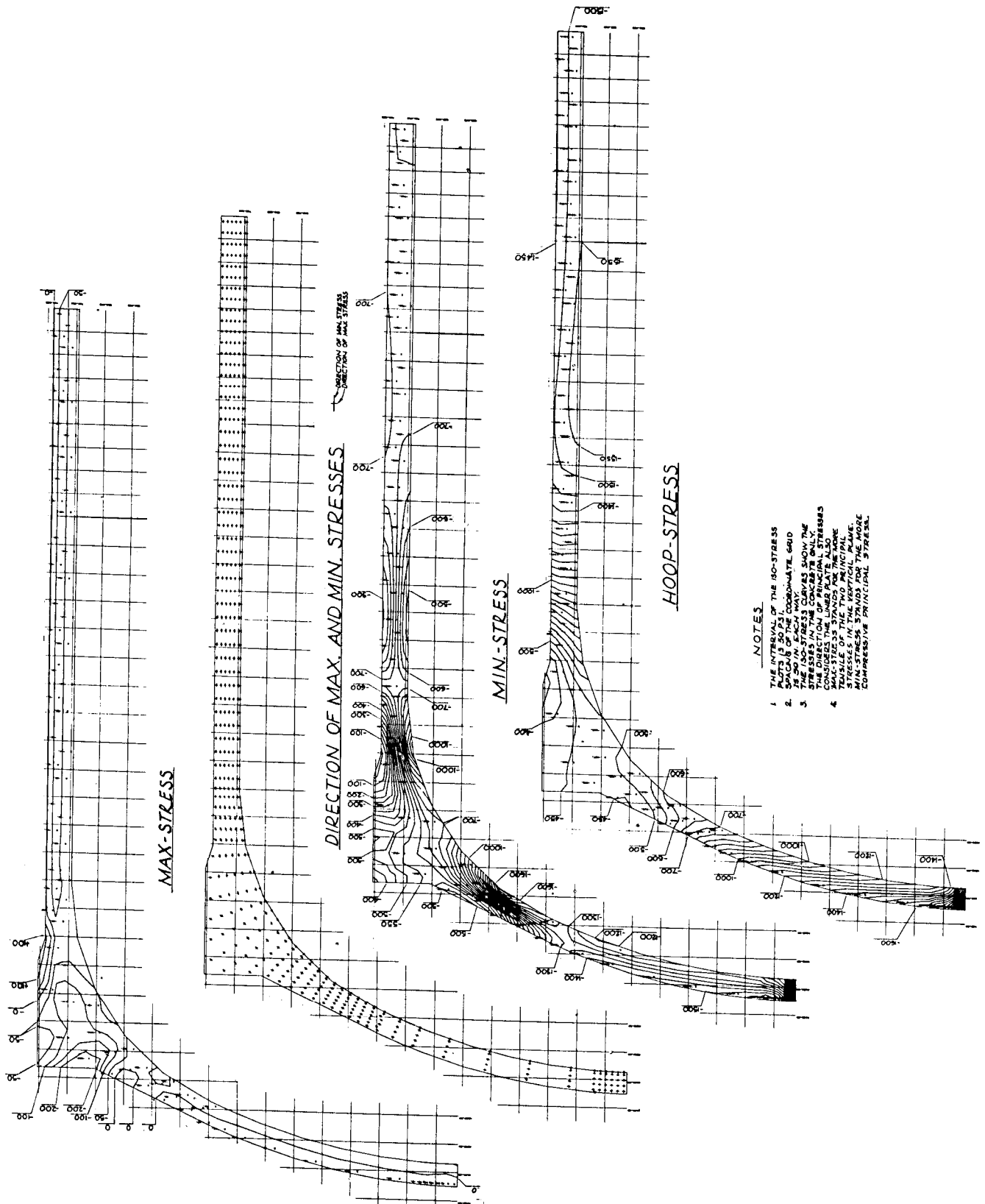
[illegible]

**CONTAINMENT STRUCTURE
FINITE ELEMENT MESH**

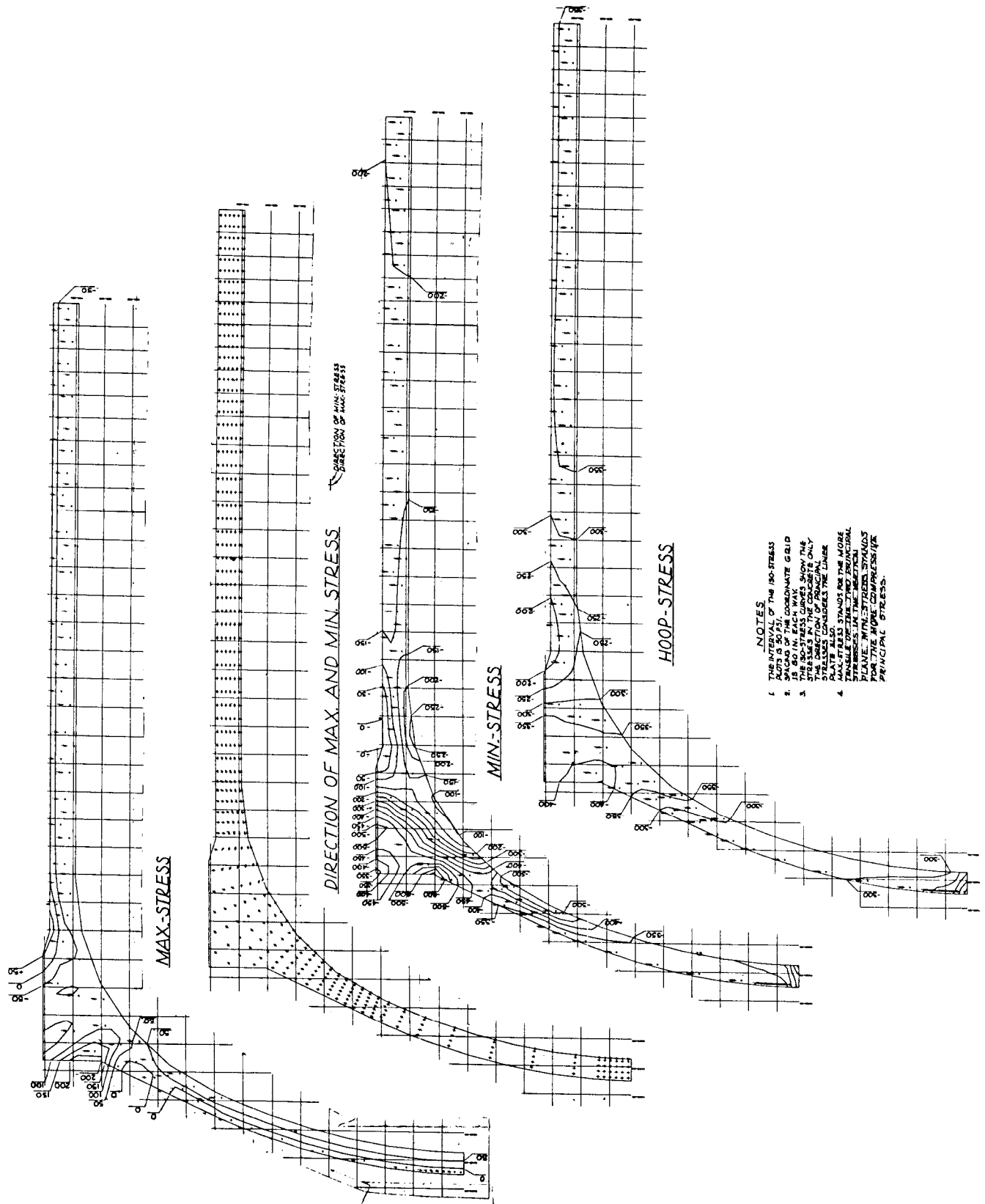
CONTAINMENT STRUCTURE
DBA THERMAL GRADIENTS ACROSS CONTAINMENT WALL, NO INSULATION



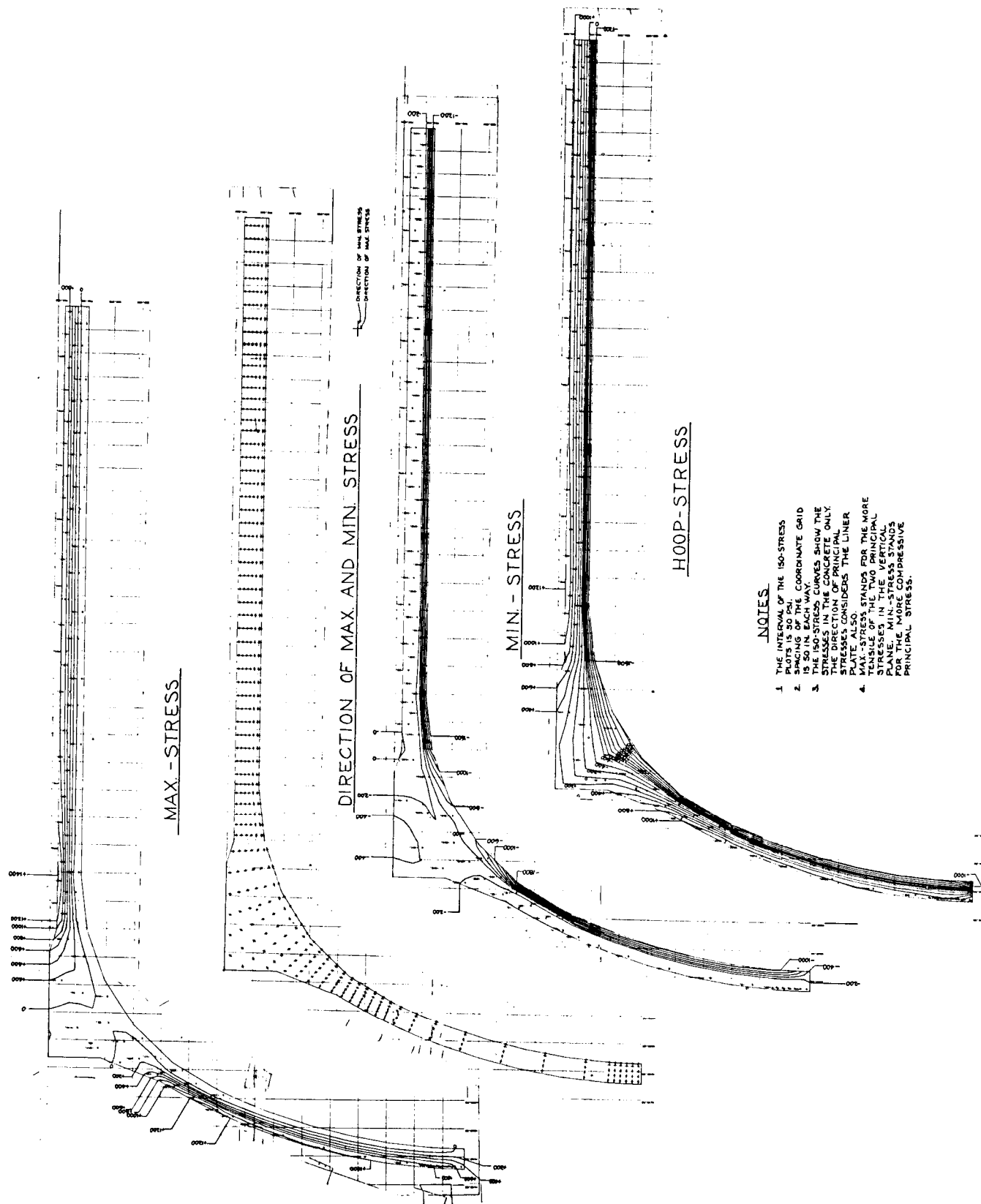
CONTAINMENT STRUCTURE ISOSTRESS PLOT, DOME AND WALL D + F_i



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



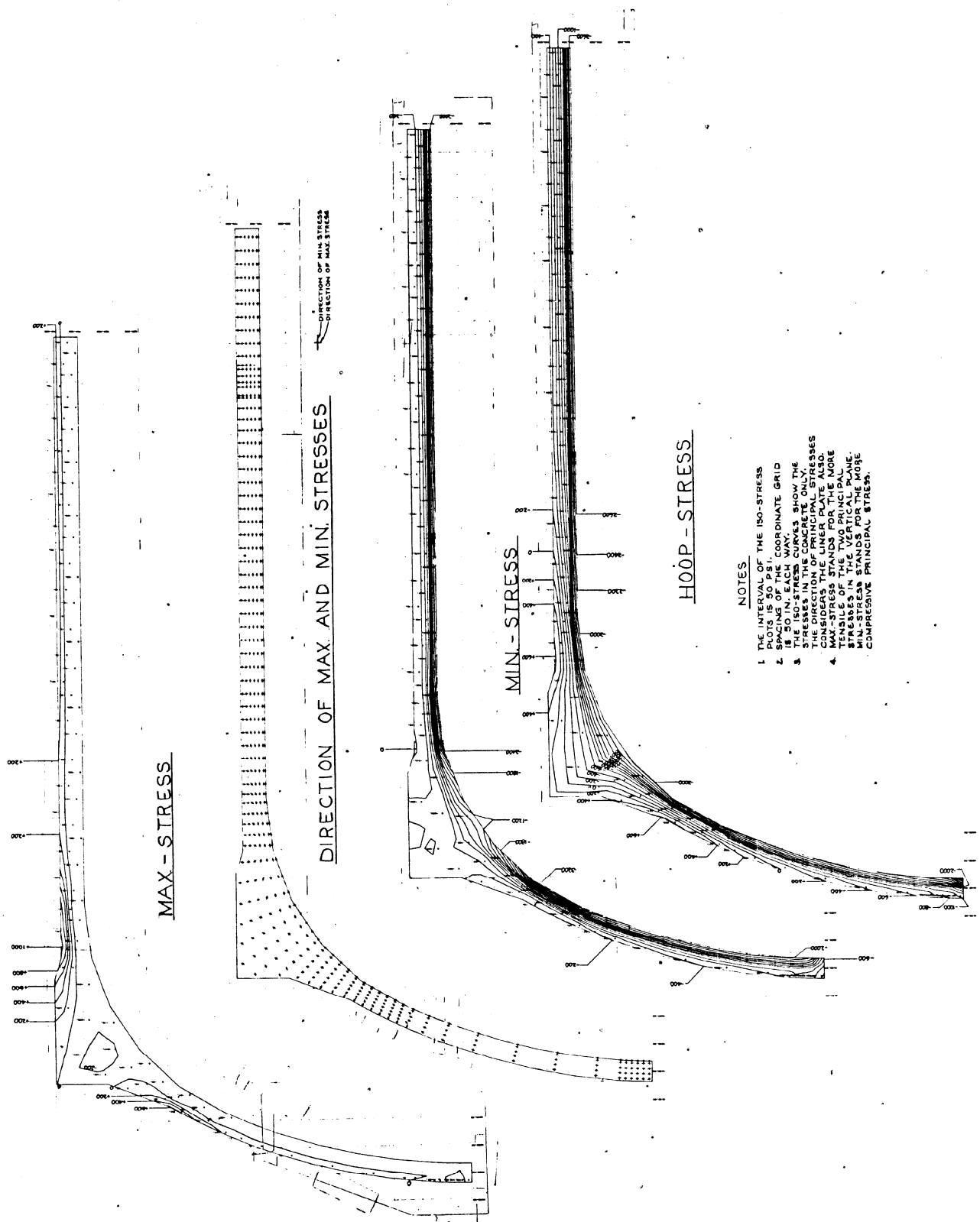
**CONTAINMENT STRUCTURE
ISOSTRESS PLOT, DOME AND WALL
 $D + F_f + 1.5P + T_a$**



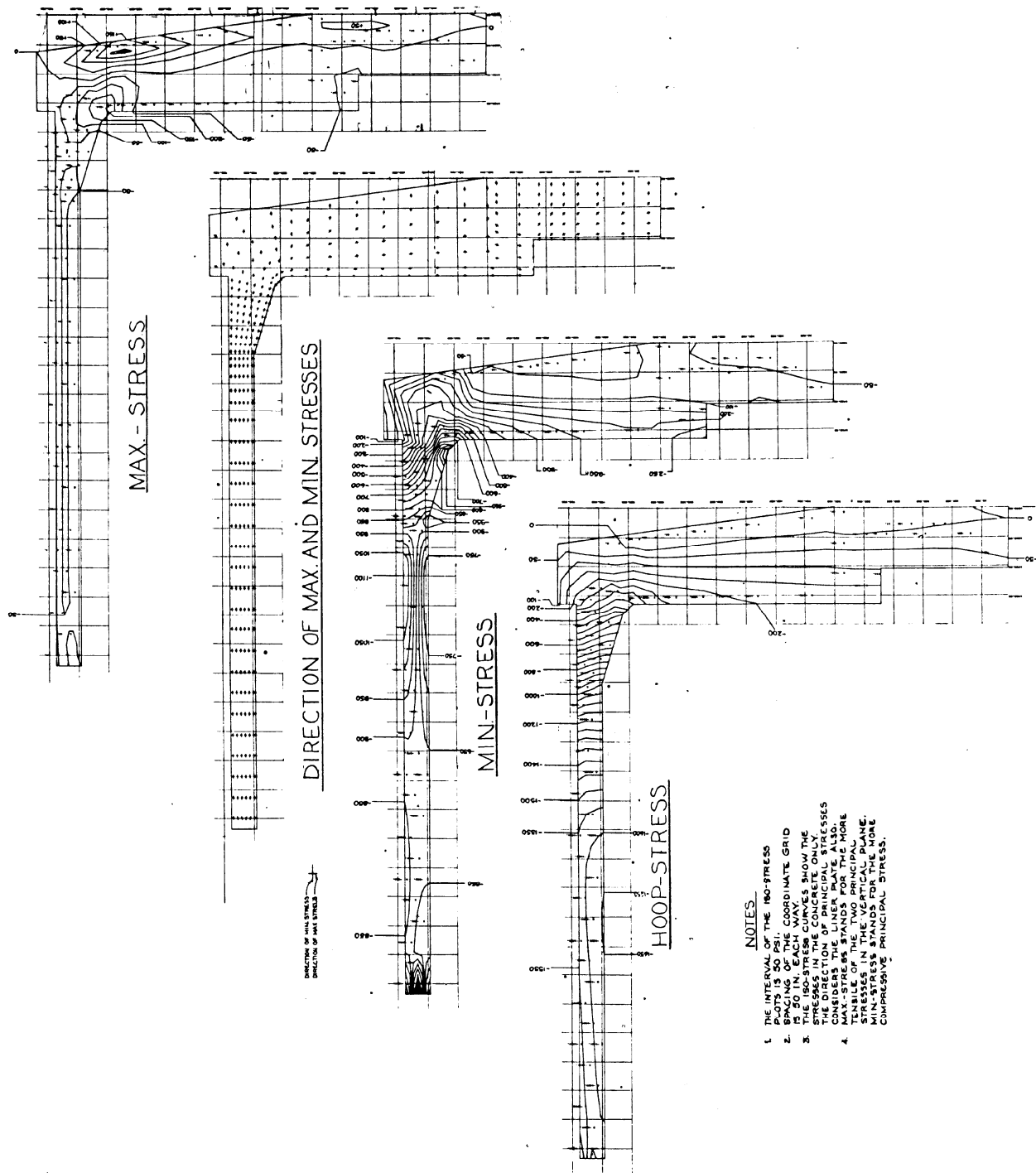
NOTES

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.

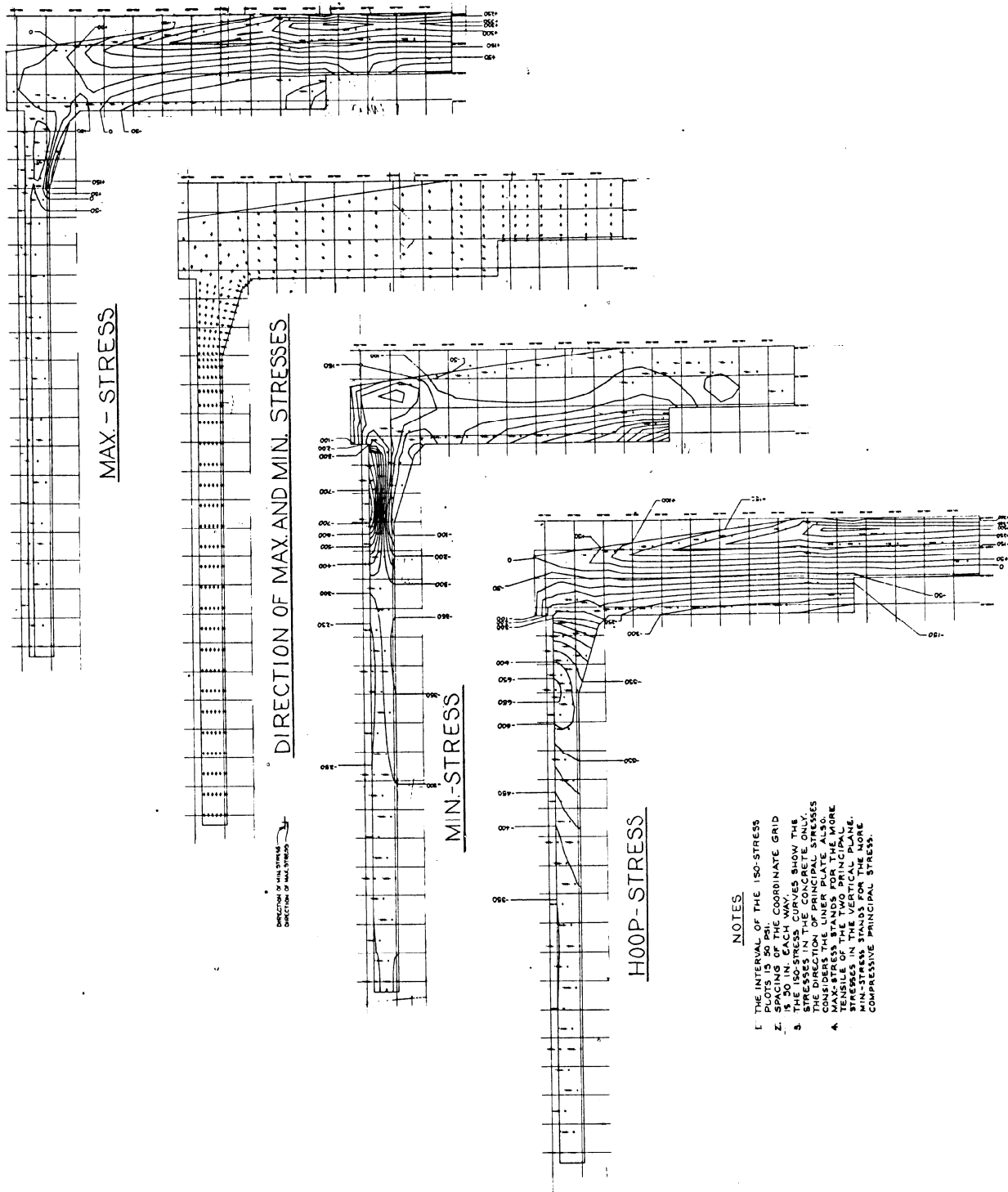
**CONTAINMENT STRUCTURE
ISOSTRESS PLOT, DOME AND WALL
 $D + F_f + T_a$**



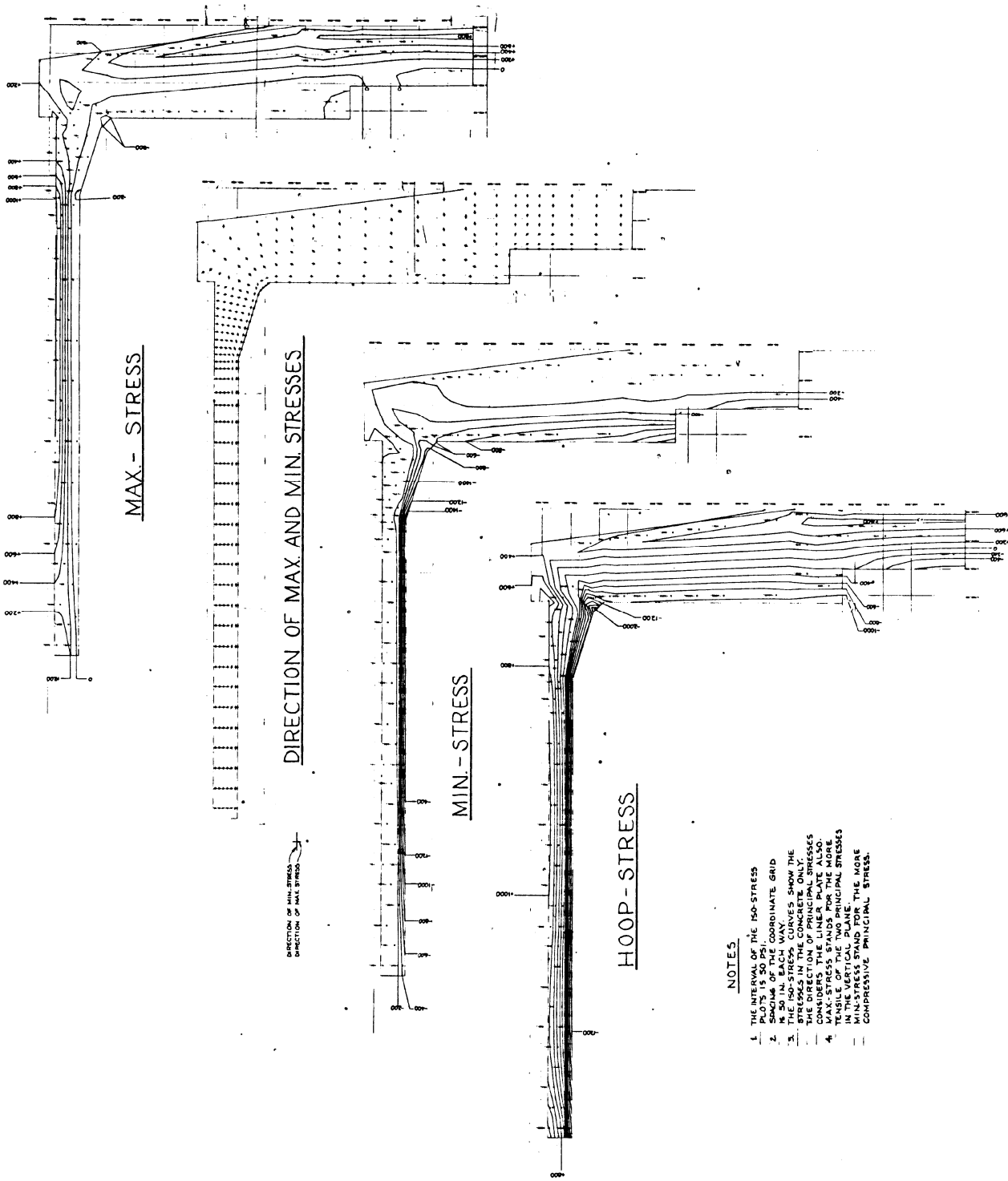
CONTAINMENT STRUCTURE
ISOSTRESS PLOT, WALL AND BASE SLAB
D + F_i



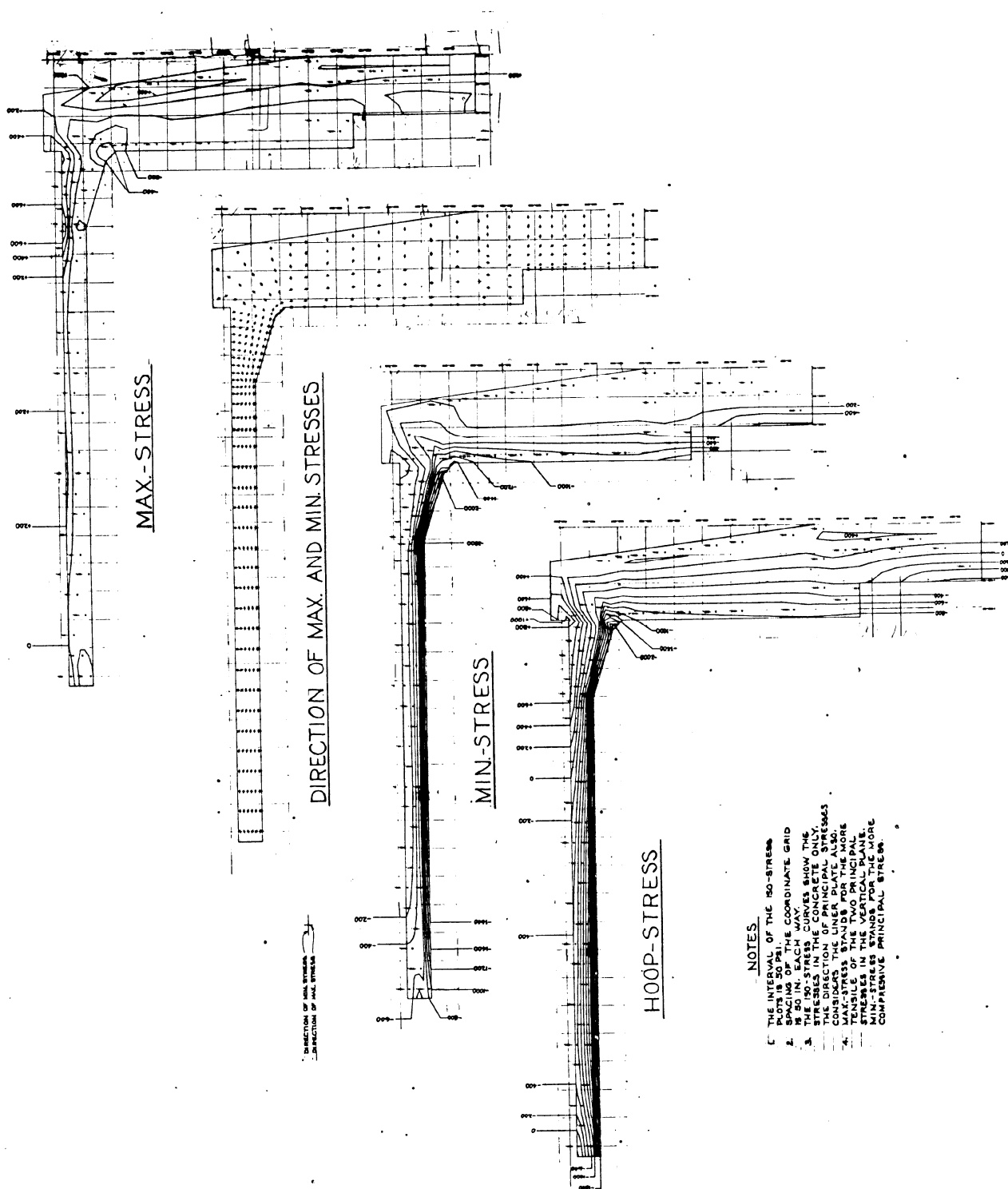
CONTAINMENT STRUCTURE
ISOSTRESS PLOT, WALL AND BASE SLAB
D + F_t + 1.15P



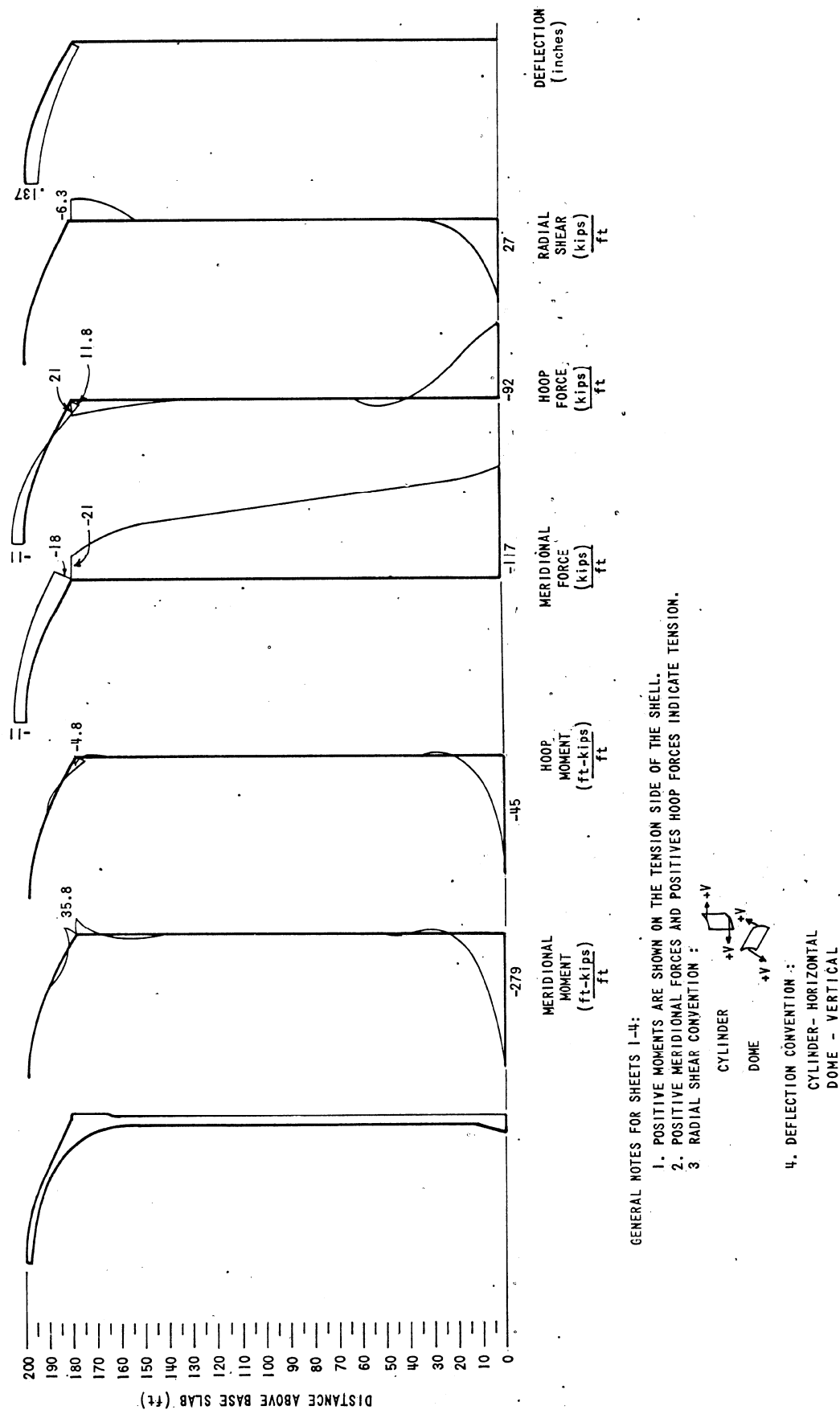
CONTAINMENT STRUCTURE
ISOSTRESS PLOT, WALL AND BASE SLAB
 $D + F_i + 1.5 P + T_a$



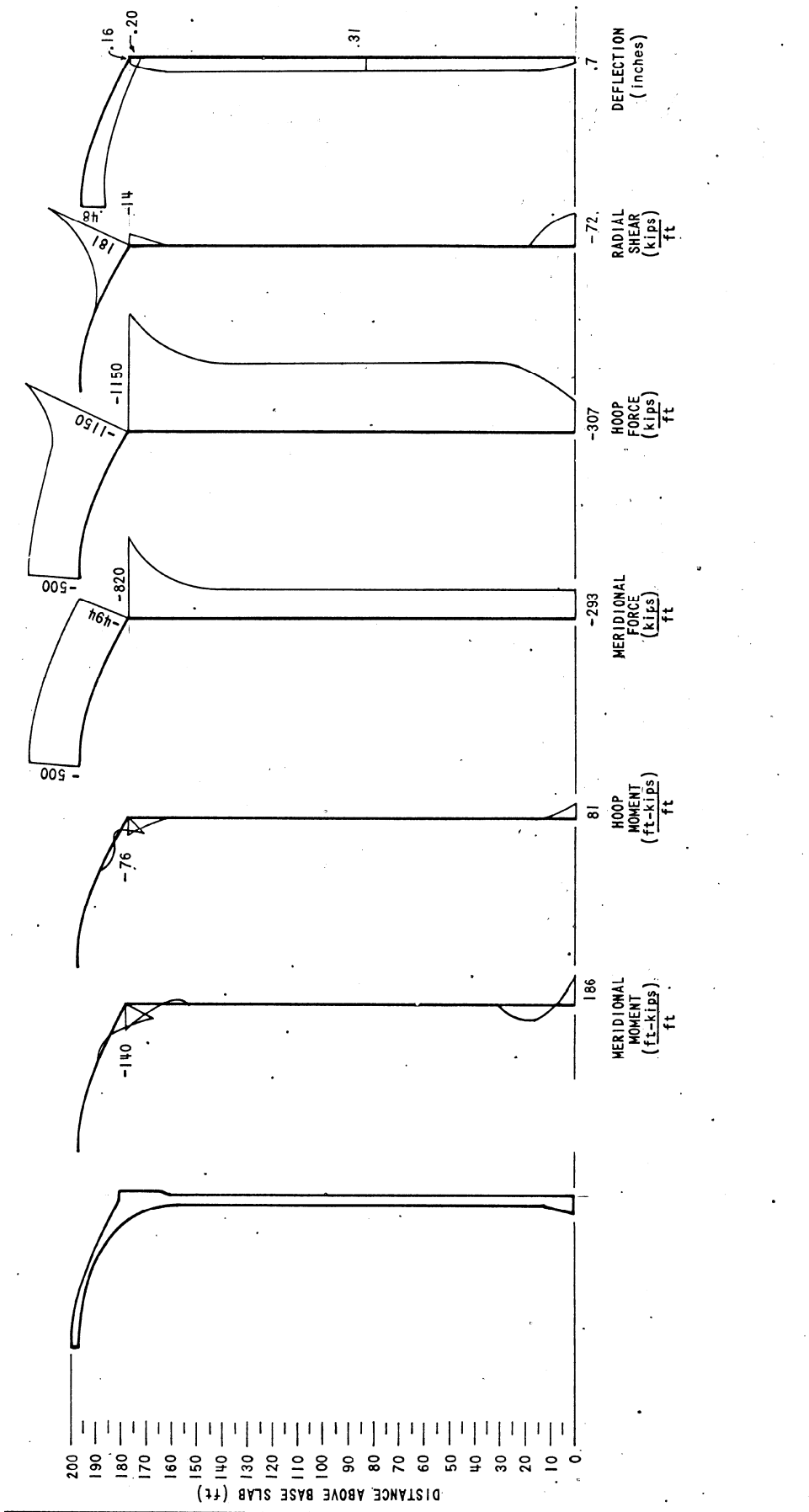
CONTAINMENT STRUCTURE
ISOSTRESS PLOT, WALL AND BASE SLAB
 $D + F_f + T_a$



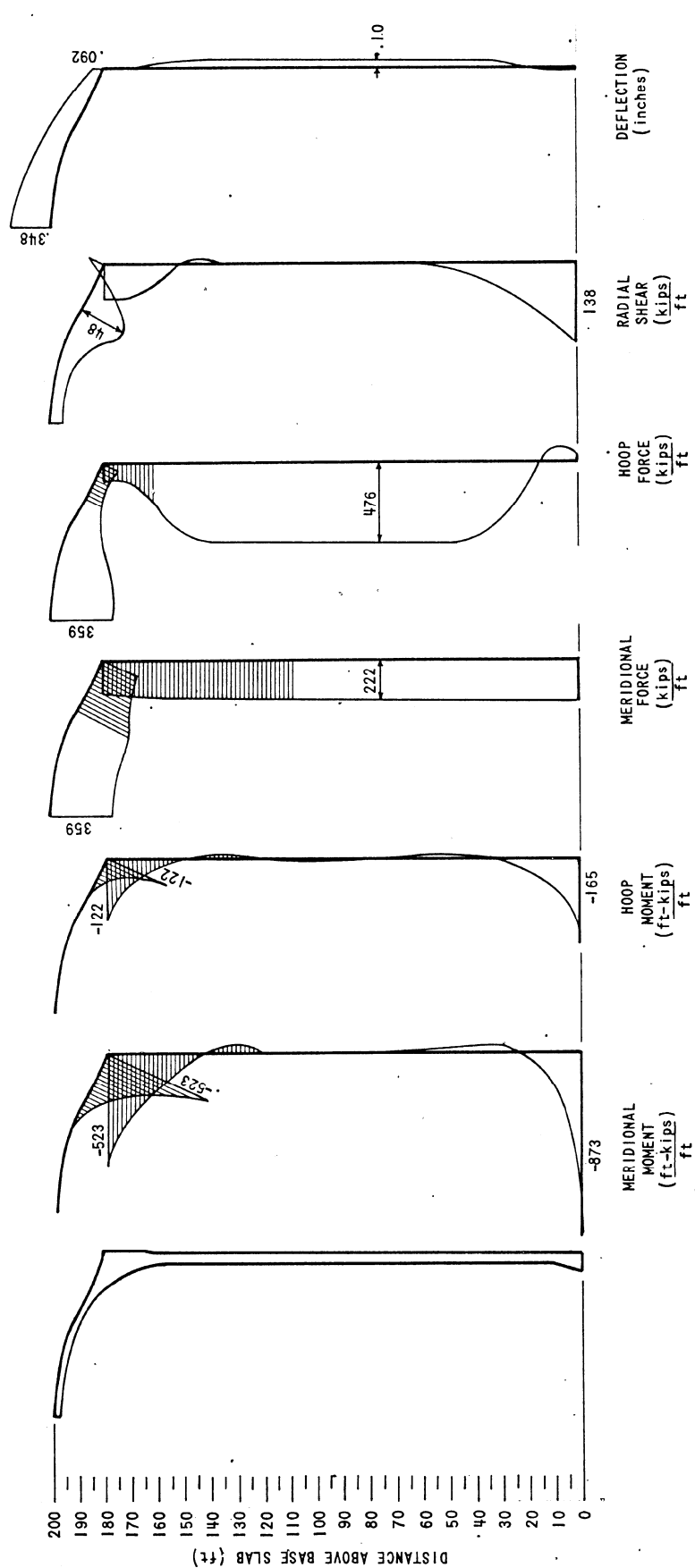
CONTAINMENT STRUCTURE
STRESS RESULTANTS, DEAD LOAD (D)



CONTAINMENT STRUCTURE
STRESS RESULTANTS, FINAL PRESTRESS (F_i)

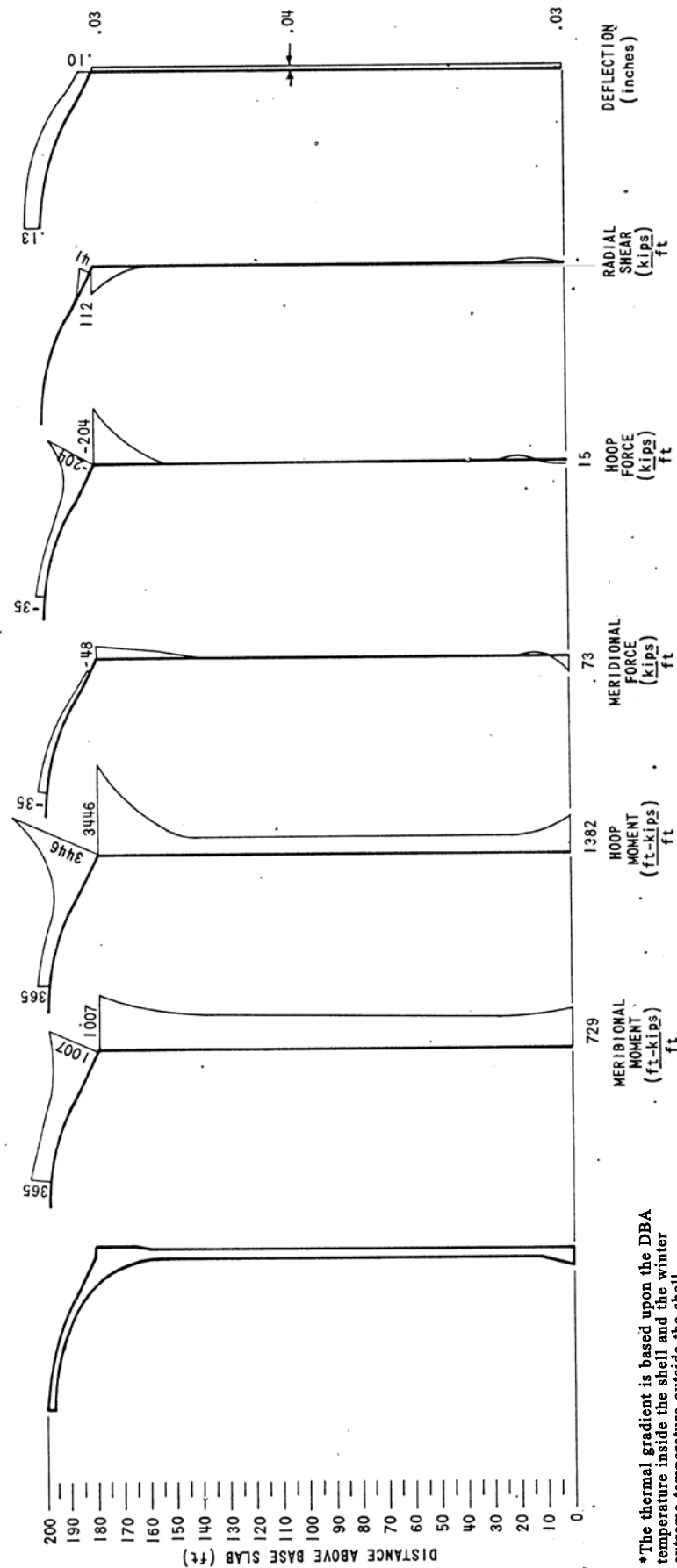


CONTAINMENT STRUCTURE
STRESS RESULTANTS, DBA PRESSURE (P)

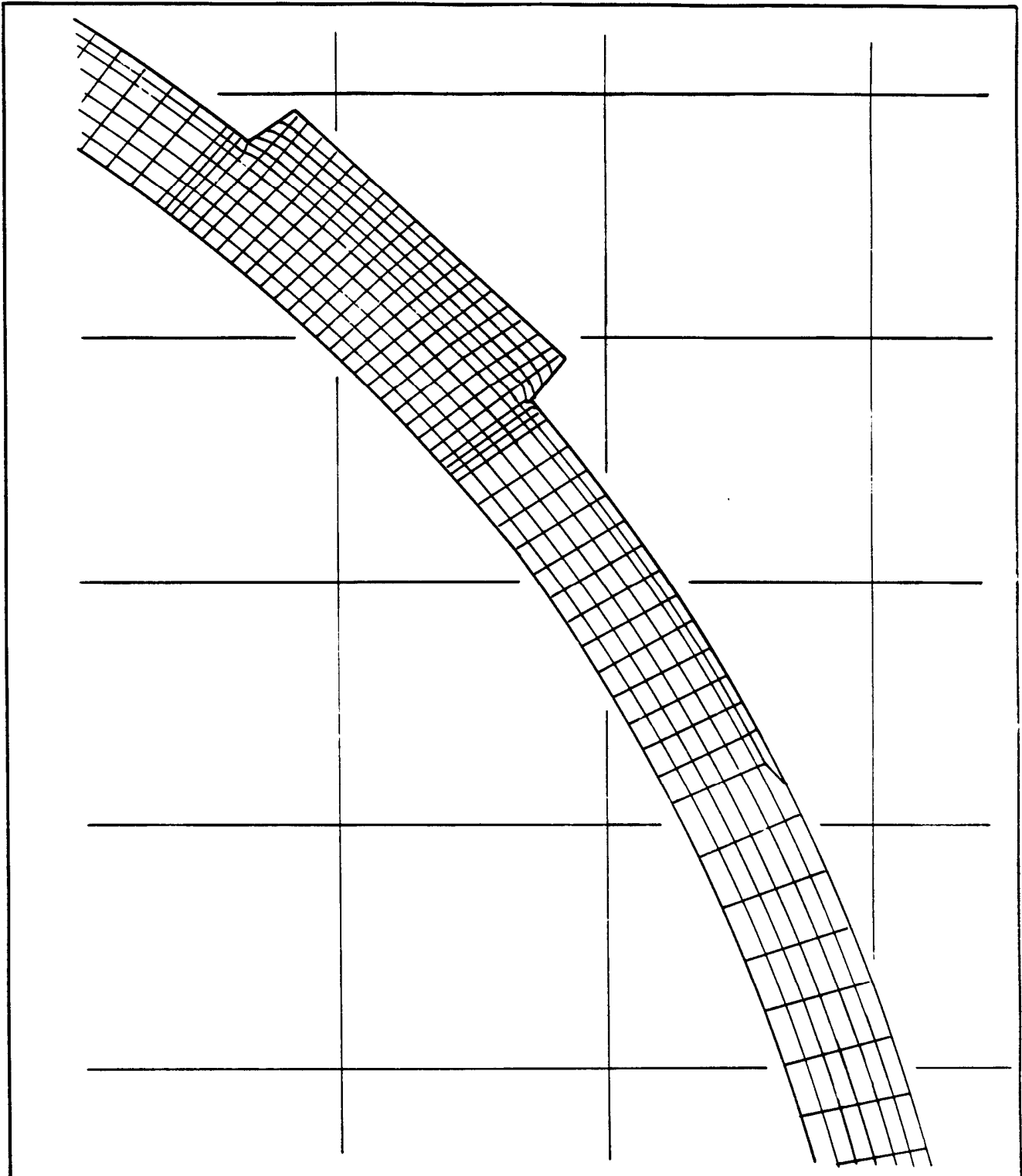


CONTAINMENT STRUCTURE

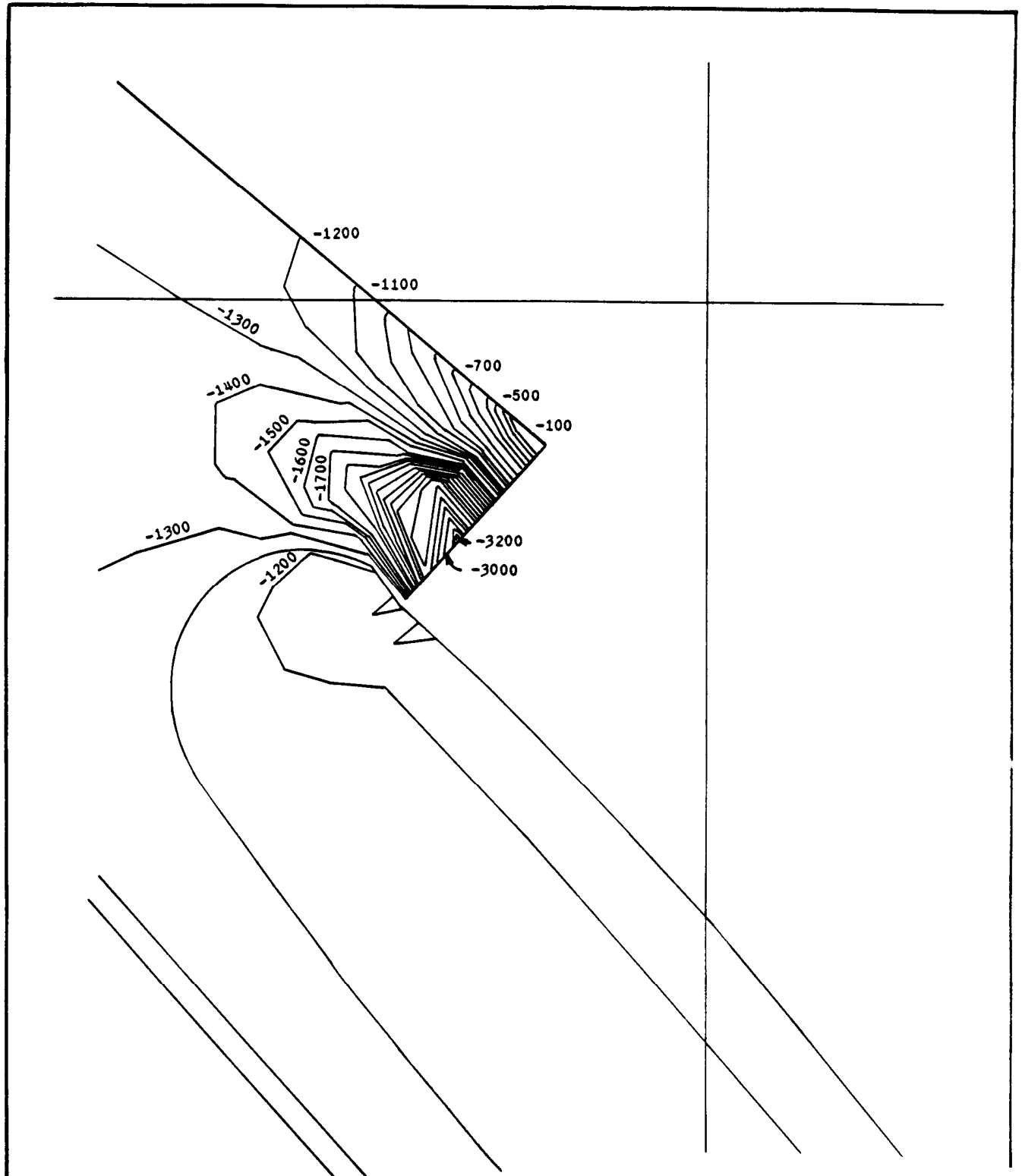
STRESS RESULTANTS, DBA TEMPERATURE (T_a)*



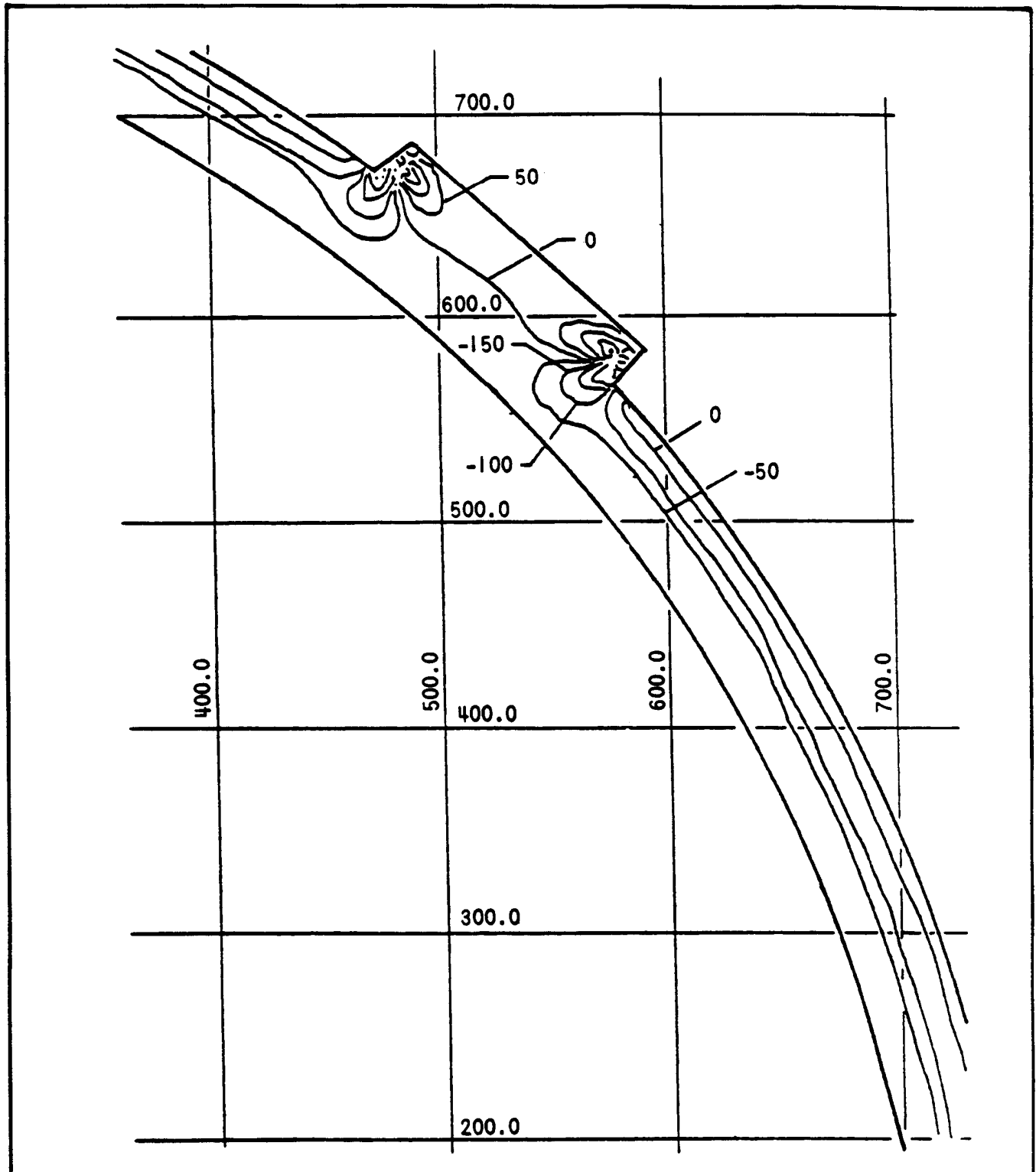
CONTAINMENT STRUCTURE
FINITE ELEMENT MESH FOR BUTTRESS, PLANE STRAIN ANALYSIS



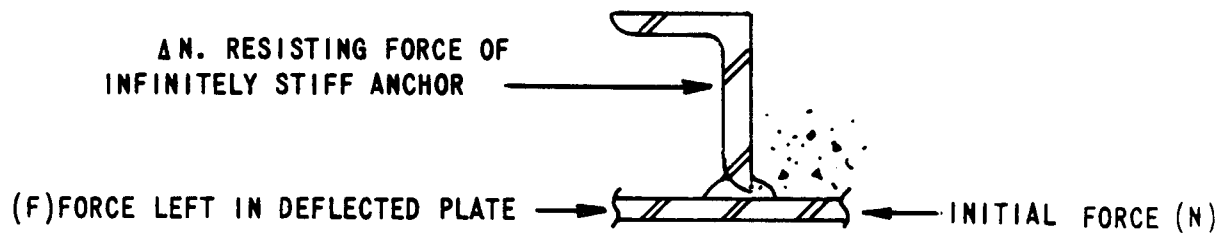
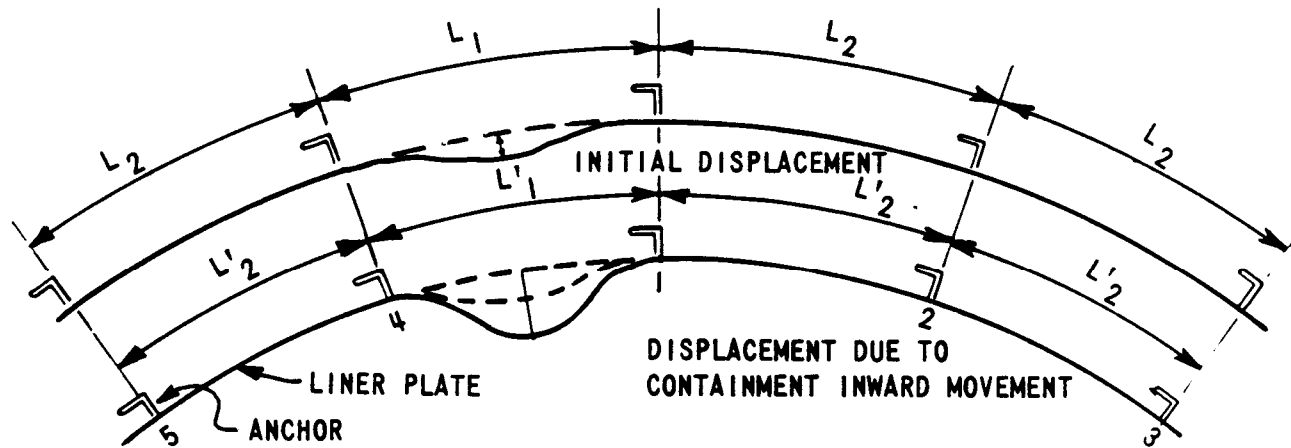
CONTAINMENT STRUCTURE
BUTTRESS ISOSTRESS PLOT, MAXIMUM COMPRESSIVE STRESSES



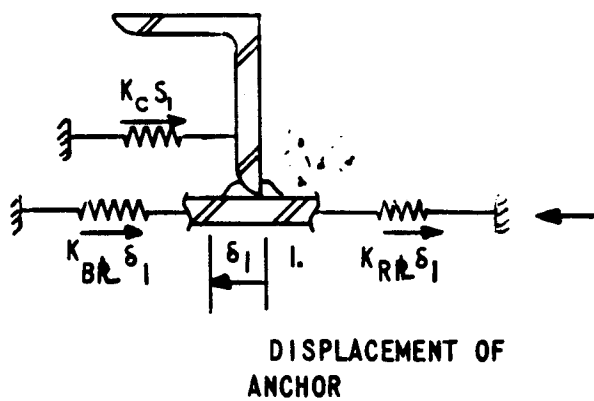
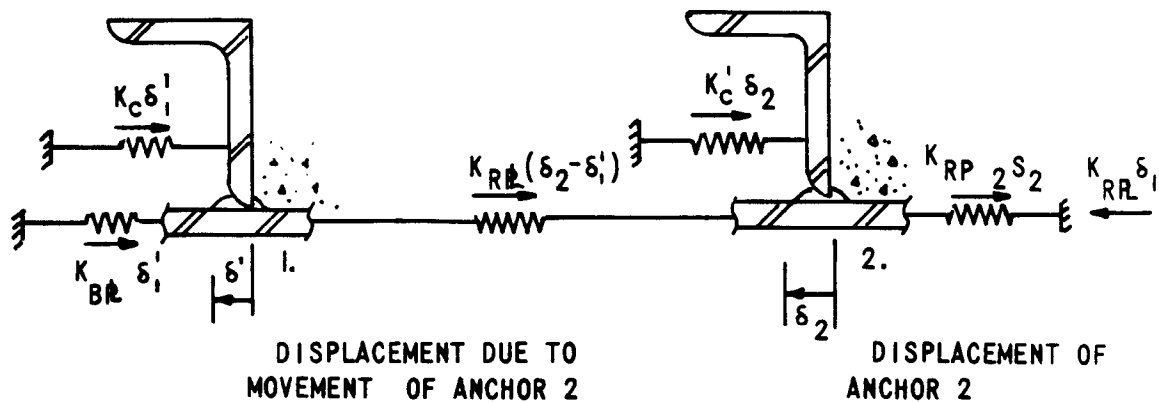
CONTAINMENT STRUCTURE
BUTTRESS ISOSTRESS PLOT, MINIMUM COMPRESSIVE OR MAXIMUM TENSILE STRESSES



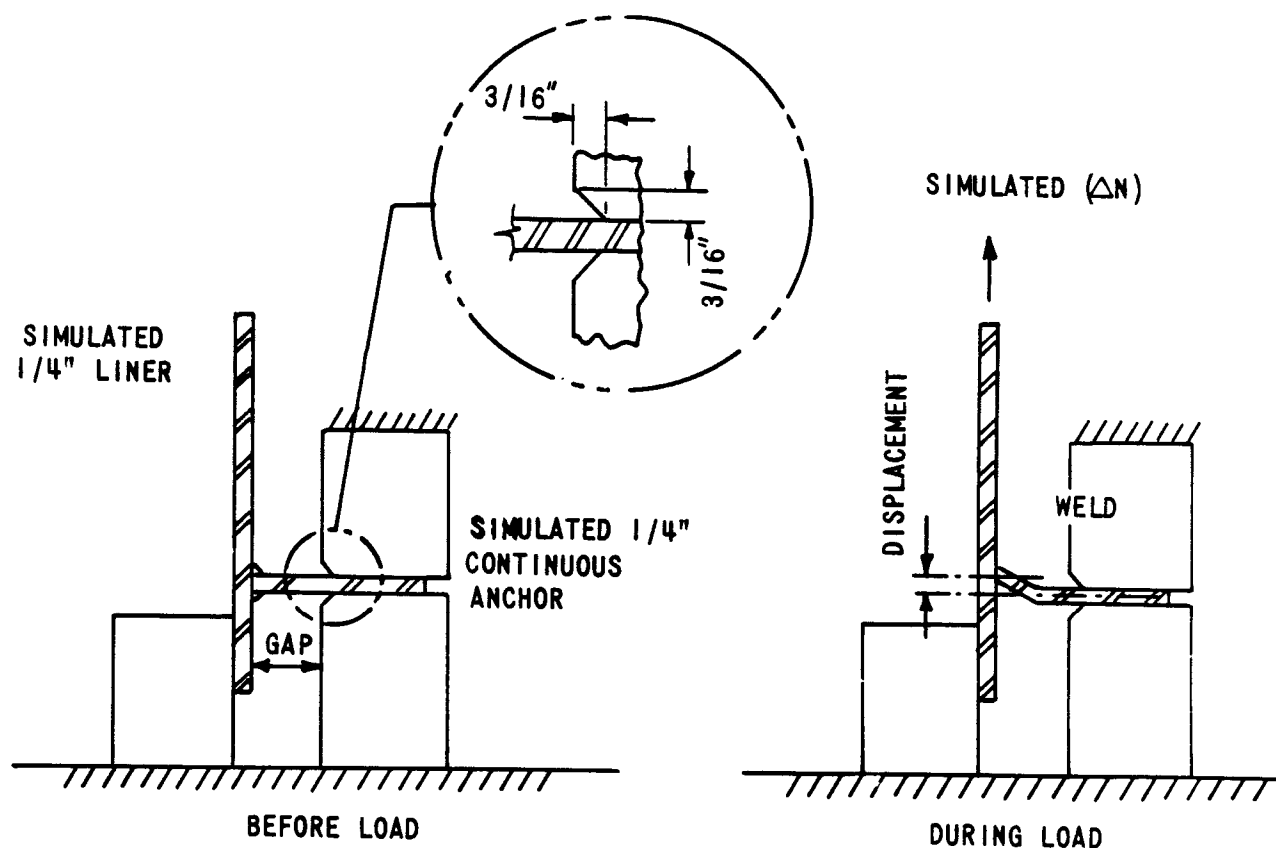
CONTAINMENT STRUCTURE
MODEL FOR LINER PLATE ANALYSIS

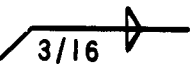
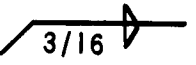
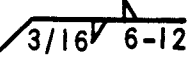
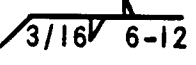
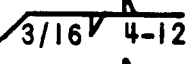
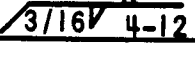


CONTAINMENT STRUCTURE MODEL FOR LINER PLATE ANALYSIS

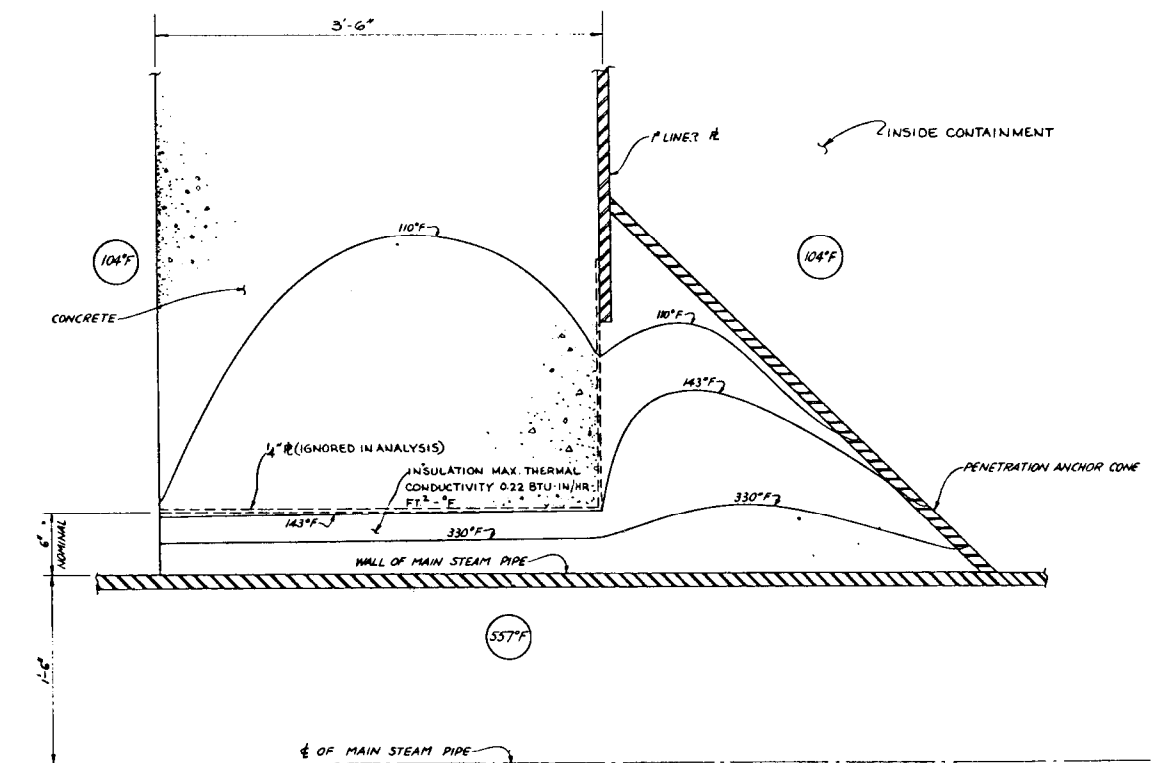


CONTAINMENT STRUCTURE RESULTS FROM TESTS ON LINER PLATE ANCHORS



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

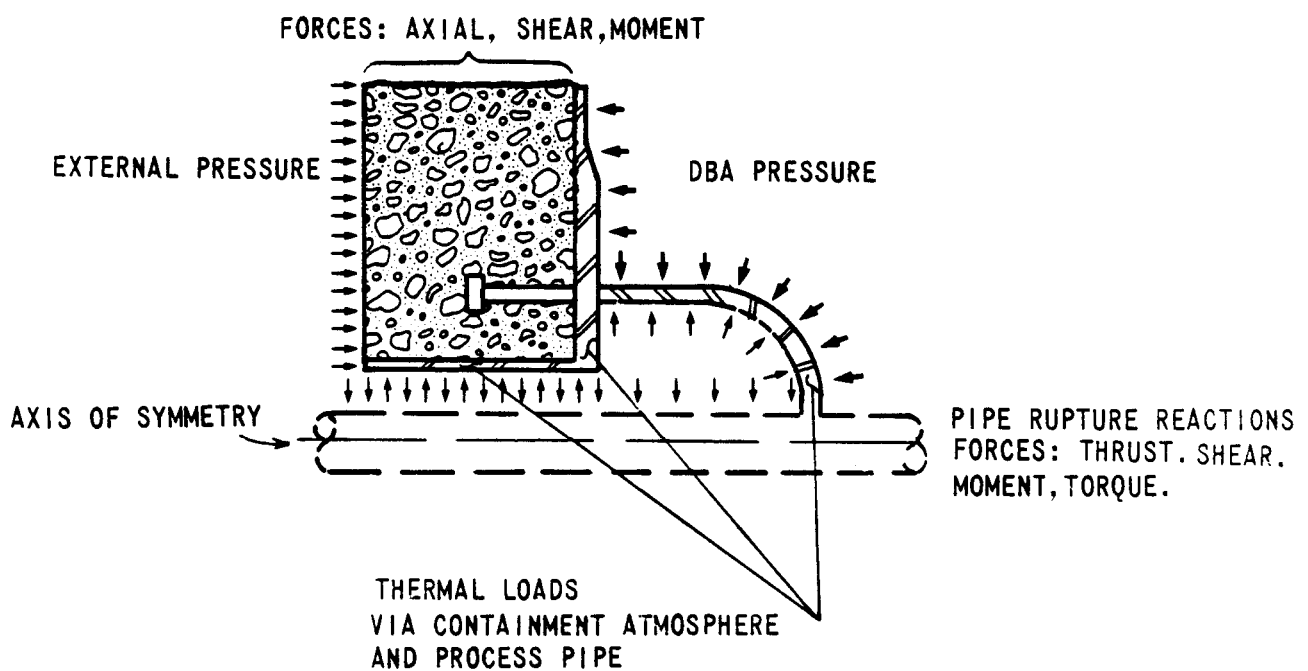
CONTAINMENT STRUCTURE THERMAL GRADIENT AT MAIN STEAM PENETRATION



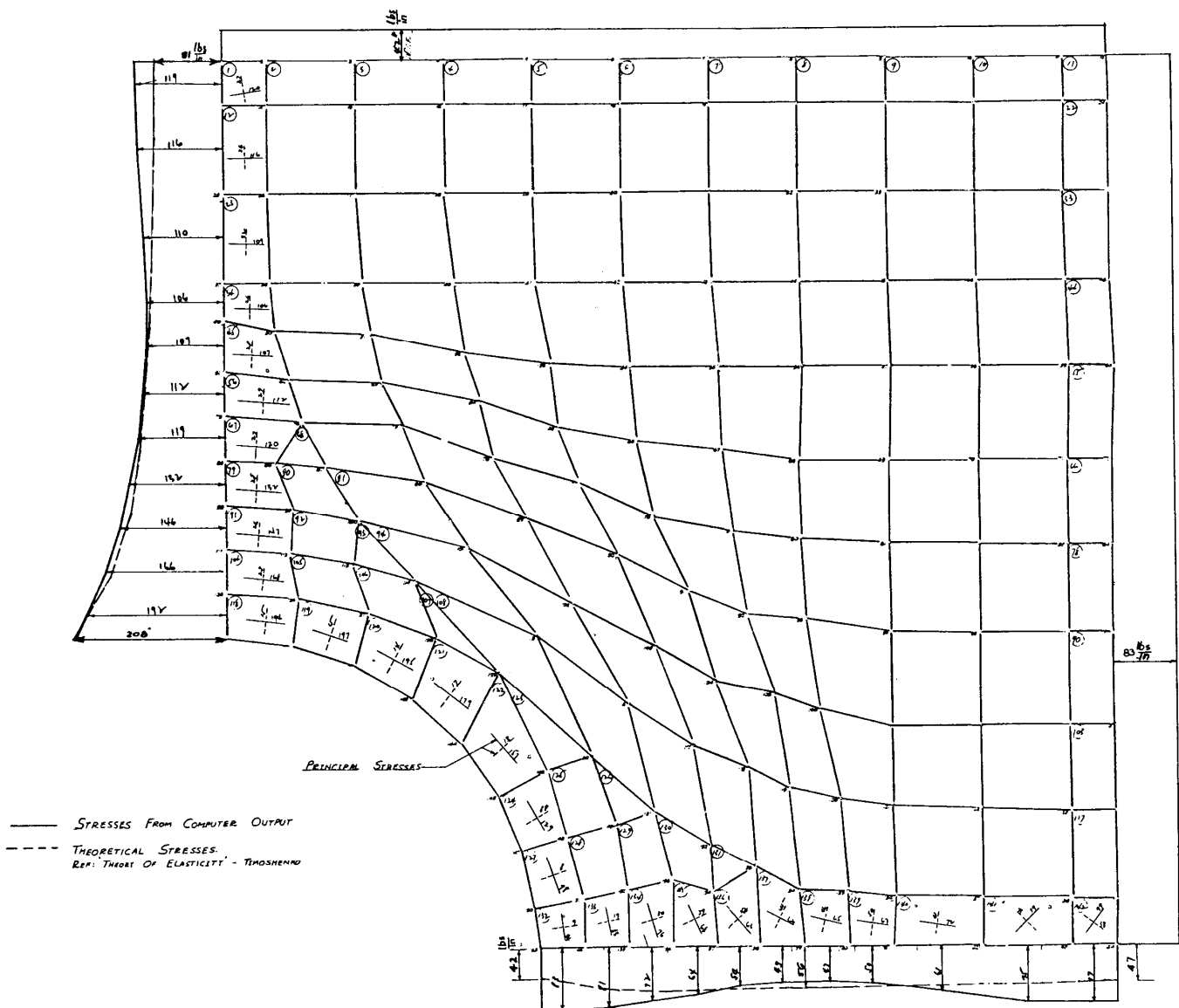
CONTAINMENT STRUCTURE LOADS ON PIPE PENETRATIONS

LOADS VIA CONCRETE:

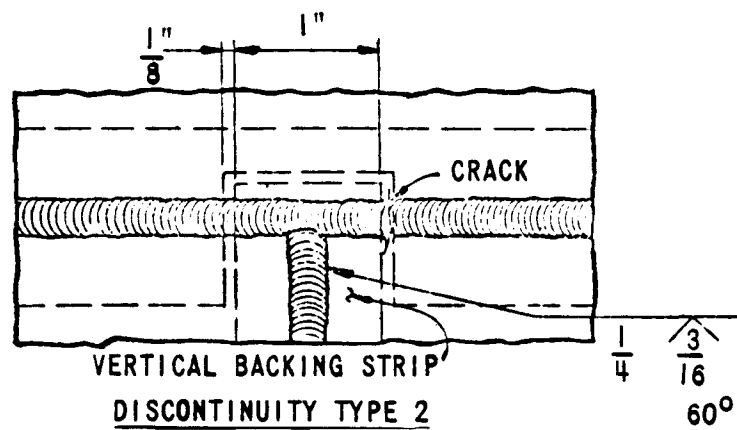
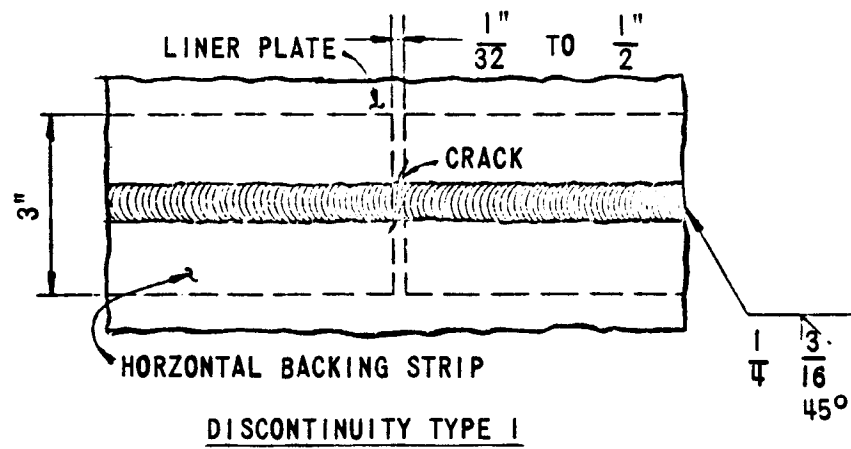
DEAD LOAD, PRESTRESS, OPERATING TEMPERATURE,
DBA PRESSURE, DBA TEMPERATURE, OBE



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

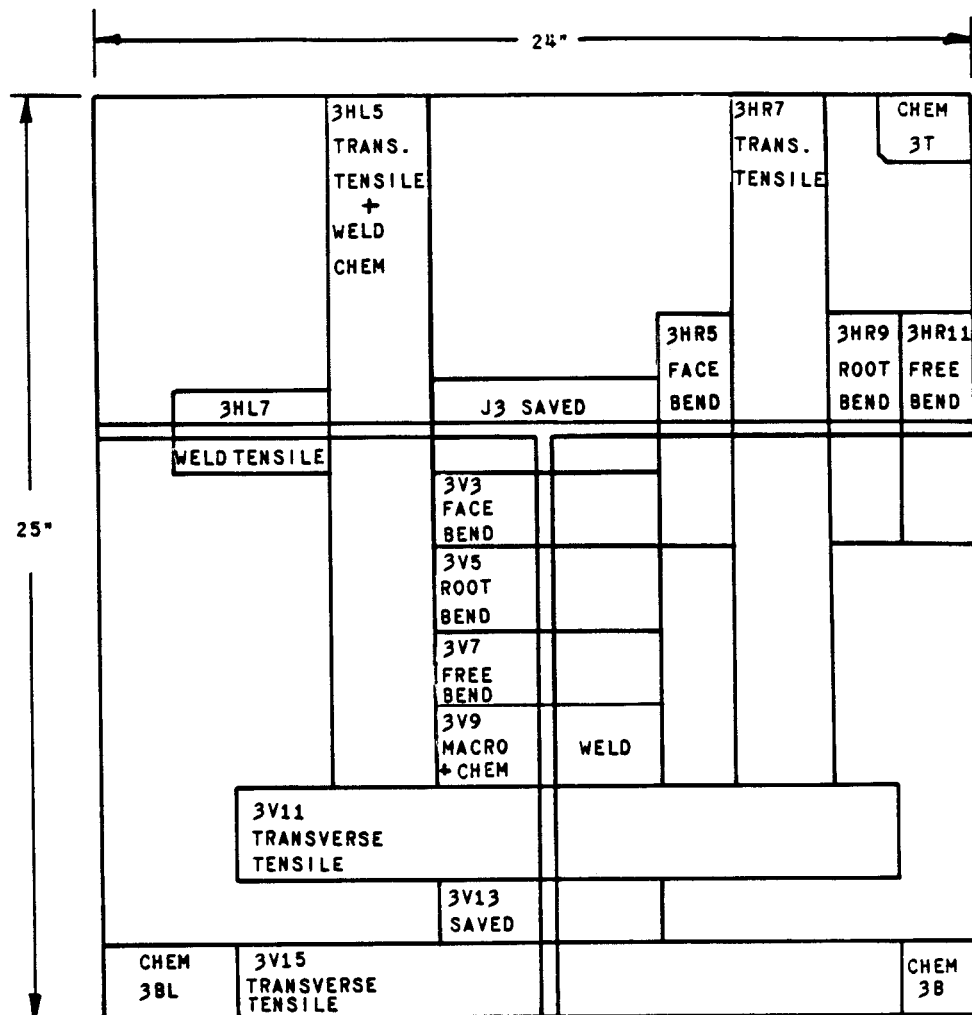


CONTAINMENT STRUCTURE
LINER PLATE, WELD CRACKING AT BACKING STRIP DISCONTINUITIES



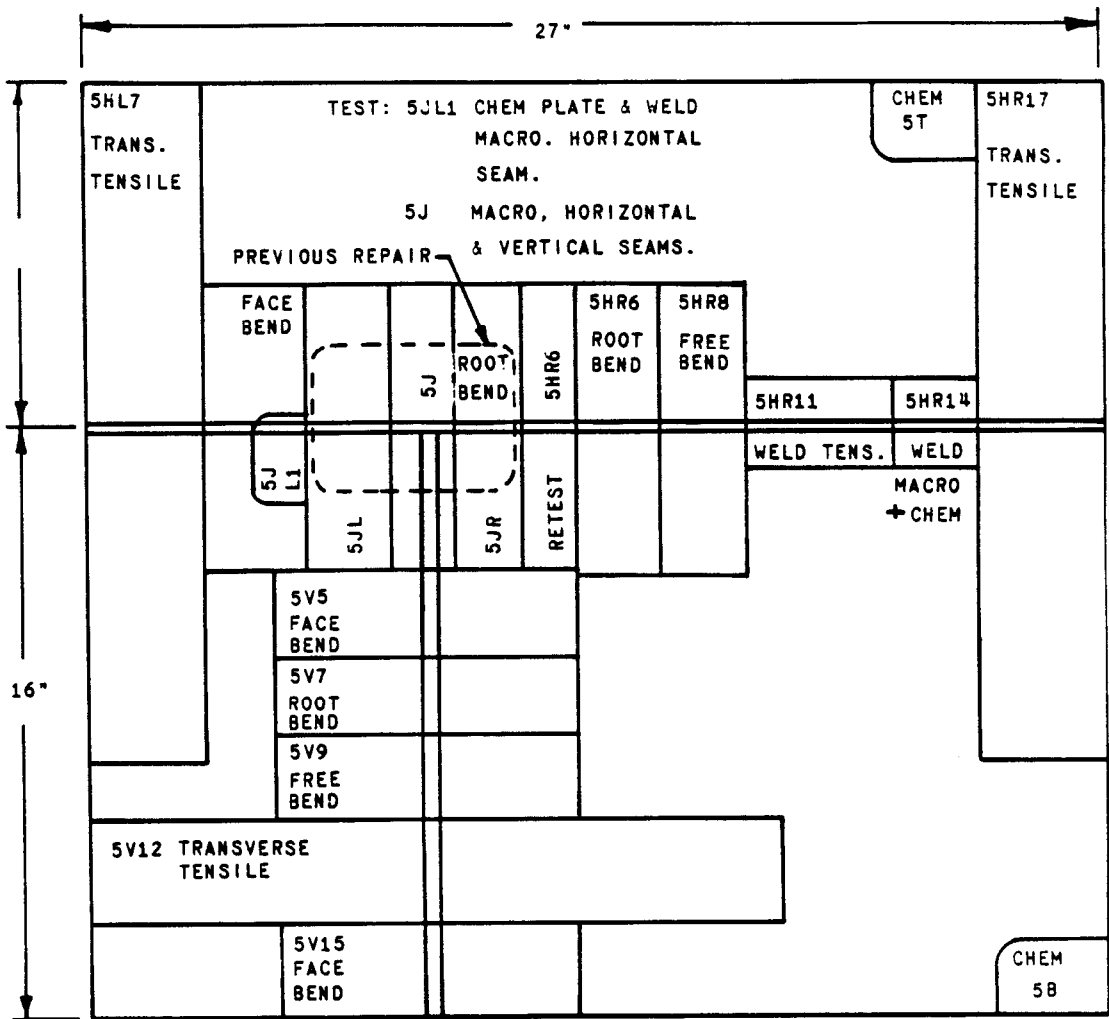
VERTICAL
HORIZONTAL

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



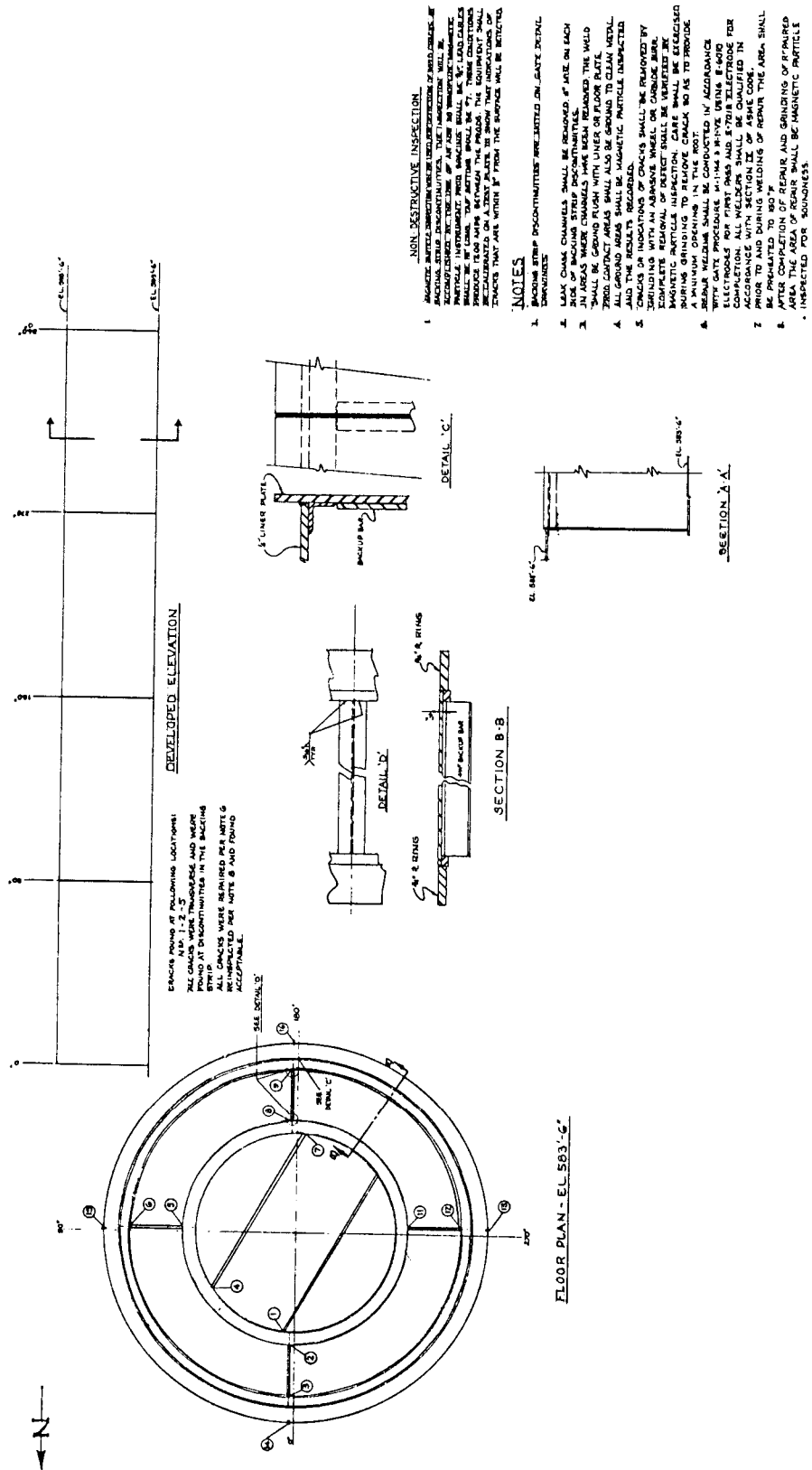
CONTAINMENT STRUCTURE

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

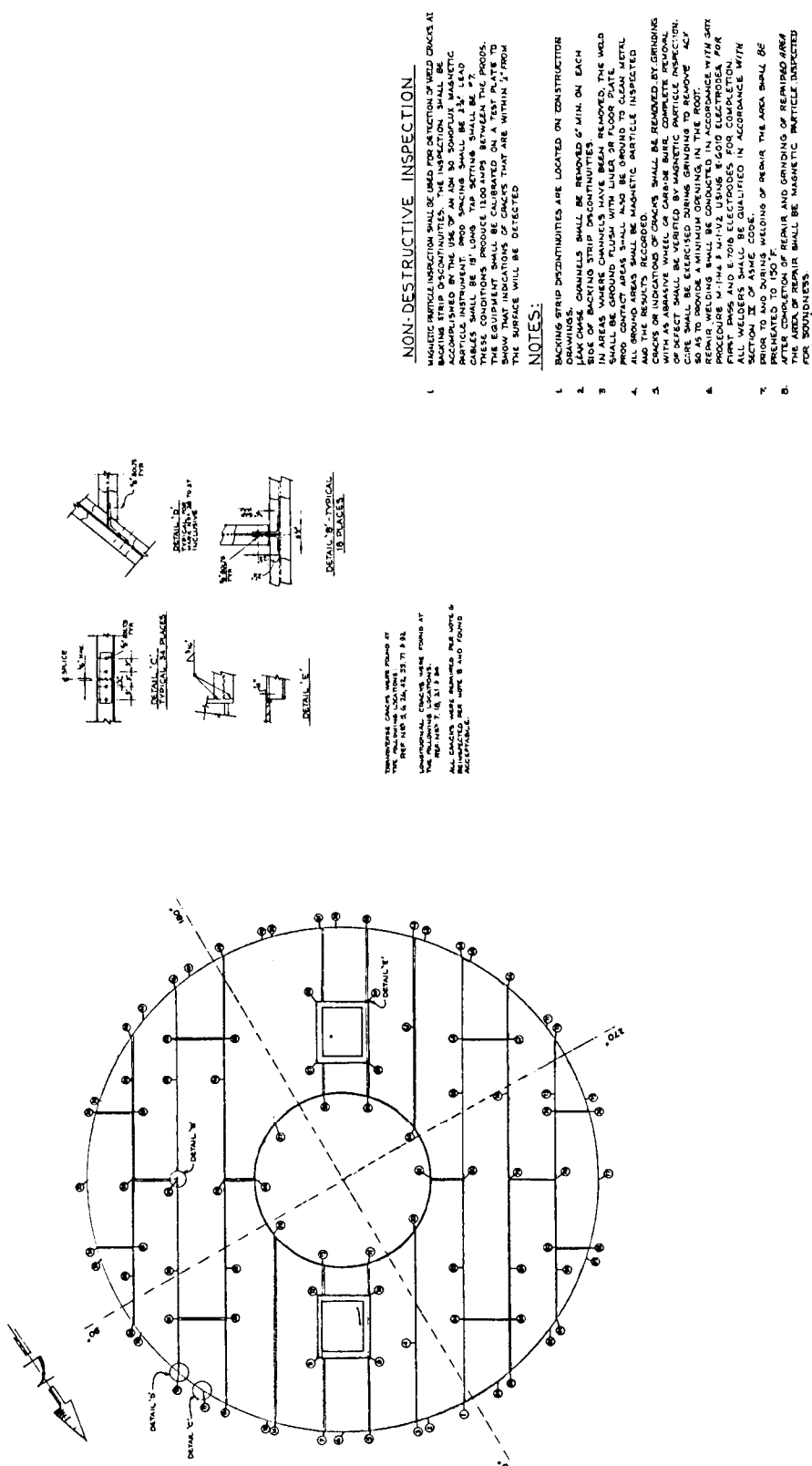


CONTAINMENT STRUCTURE

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"

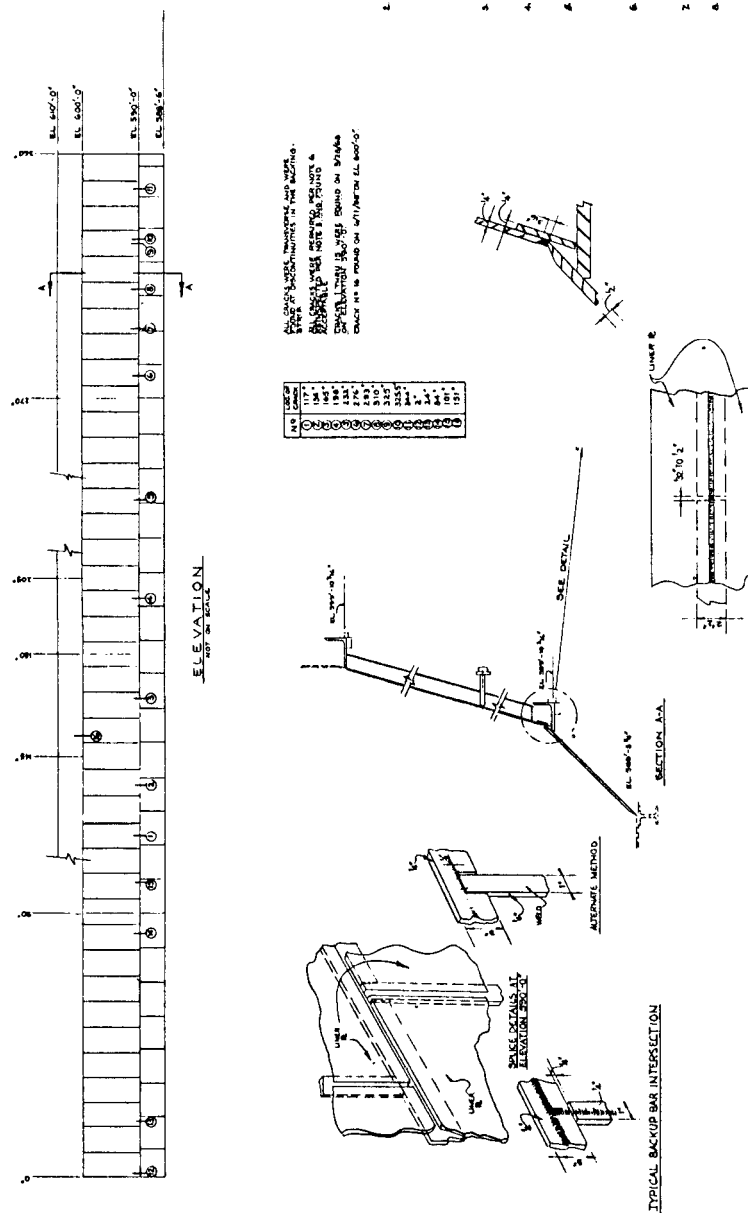
NON-DESTRUCTIVE INSPECTION

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

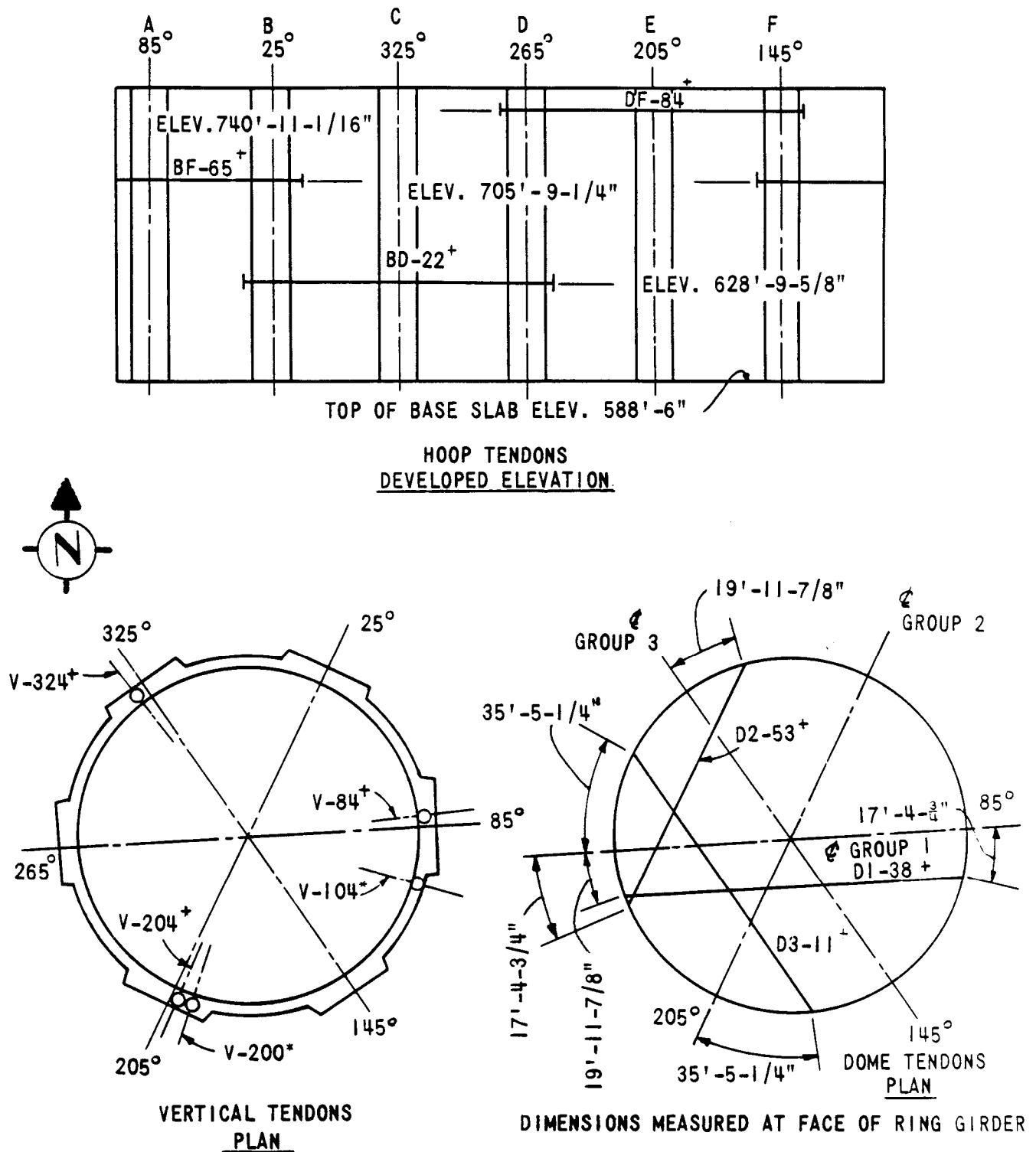
ULTRASONIC INSPECTION SHALL BE CONDUCTED AS REQUIRED TO LOCATE BACKING STRIP DISCONTINUITIES. FOR THIS INSPECTION, EITHER A LONGITUDINAL OR SHEAR WAVE TRANSDUCER SHALL BE USED. THE EQUIPMENT SHALL BE CALIBRATED USING A TEST PATE CONSTRUCTED WITH A SIMULATED BACKING STRIP DISCONTINUITY ^{1/2}" BEHIND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

NOTES:

1. THE WELD SEAM SHALL BE GRIND TO THE DEGREE REQUIRED FOR ULTRASONIC INSPECTION. BACKING STRIP DISCONTINUITIES SHALL BE REMOVED BY GRINDING.
2. THE ENTIRE WELD SEAM AT LEV 90-0-0 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 FOR FIRST PASS AND E-7018 ELECTRODES FOR COMPLETION. ALL WELDINGS SHALL BE QUALIFIED IN ACCORDANCE WITH SECTION 31 OF THE AWS 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 SOUNDNESS.



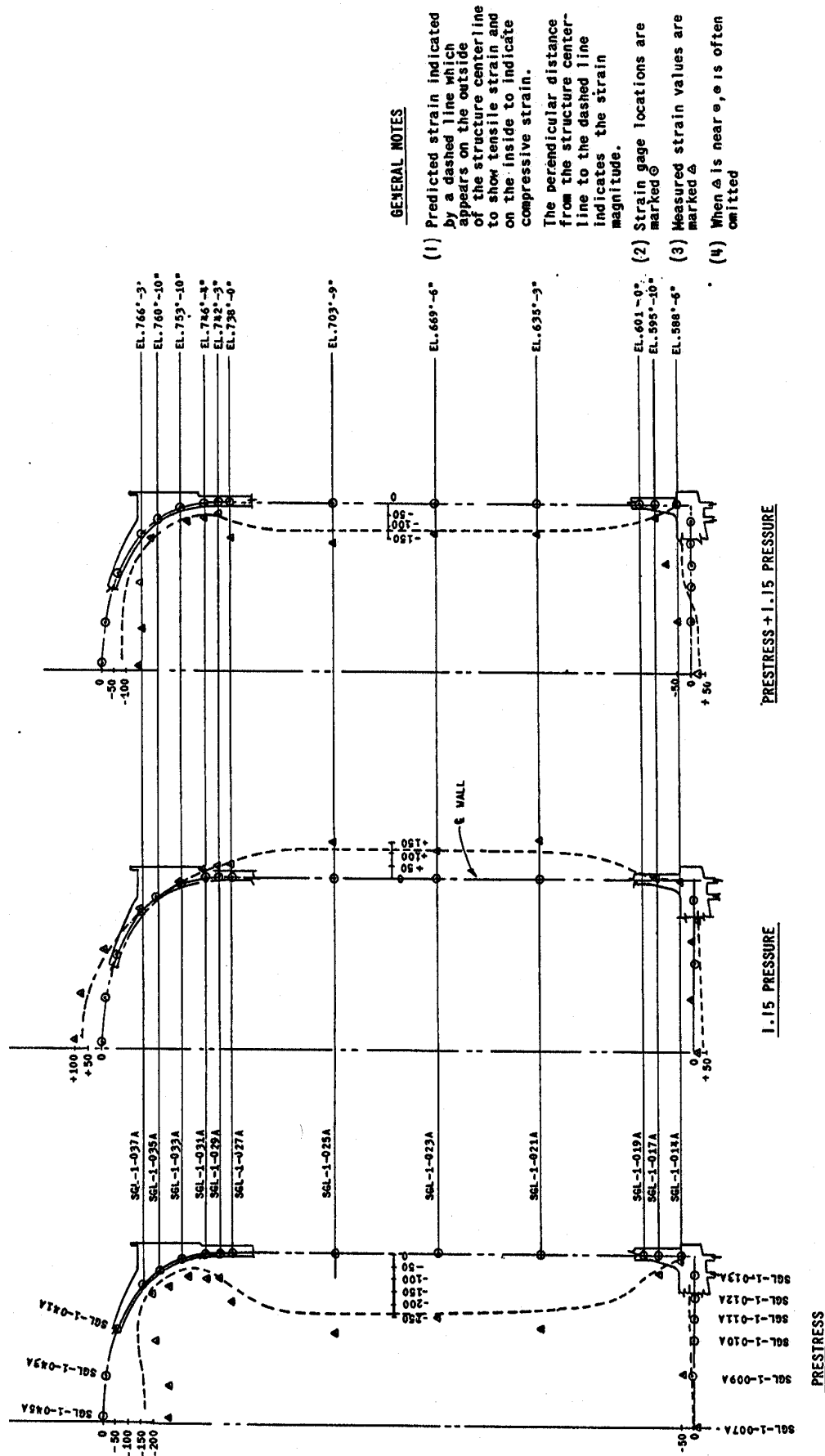
CONTAINMENT STRUCTURE
LOCATION AND IDENTIFICATION OF ELEVEN SURVEILLANCE TENDONS FOR
ONE- AND THREE-YEAR SURVEILLANCES



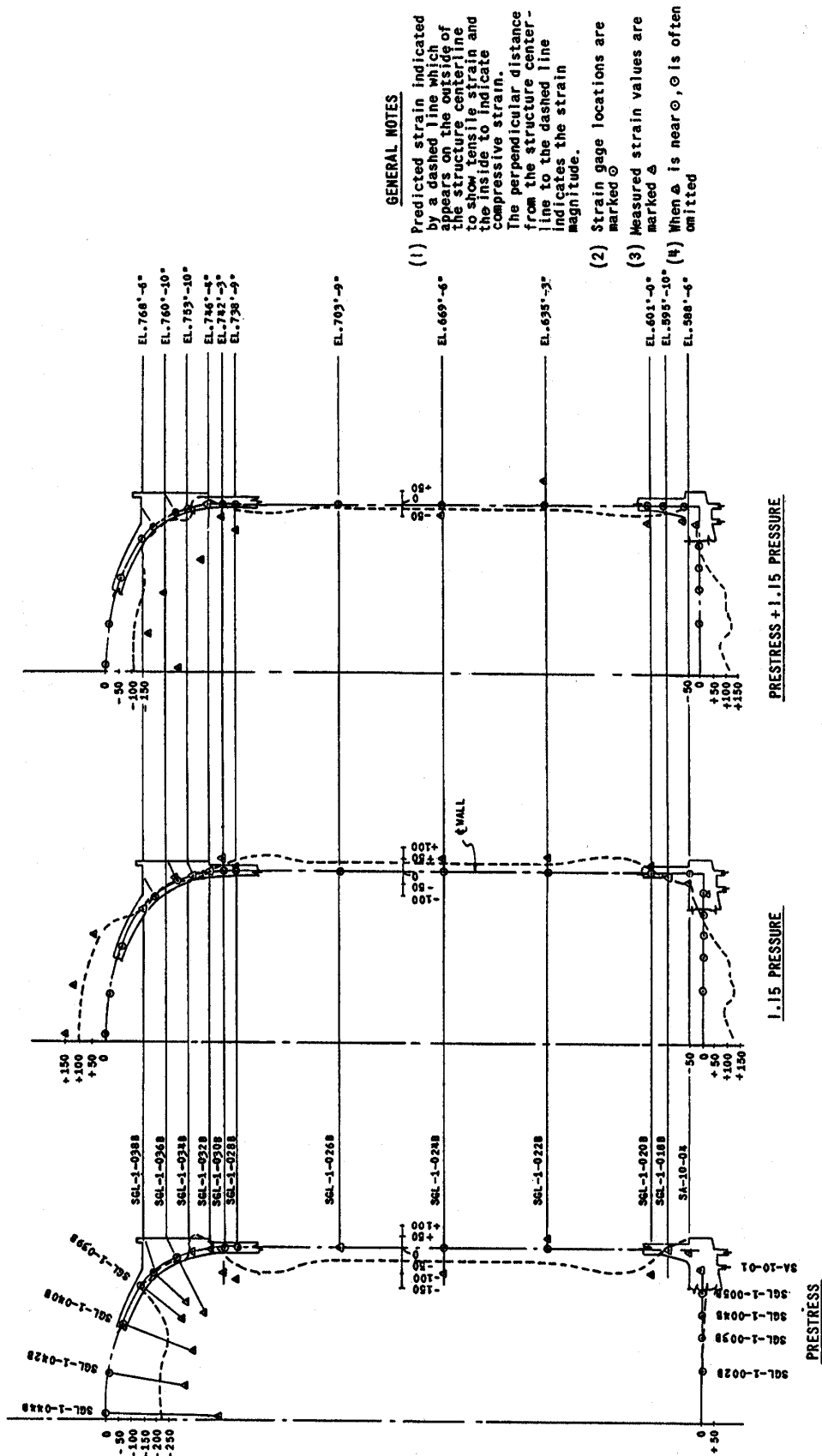
+ NINE PRESELECTED SURVEILLANCE TENDONS

* TWO ADDITIONAL SURVEILLANCE TENDONS
 ADDED AT THE ONE YEAR SURVEILLANCE

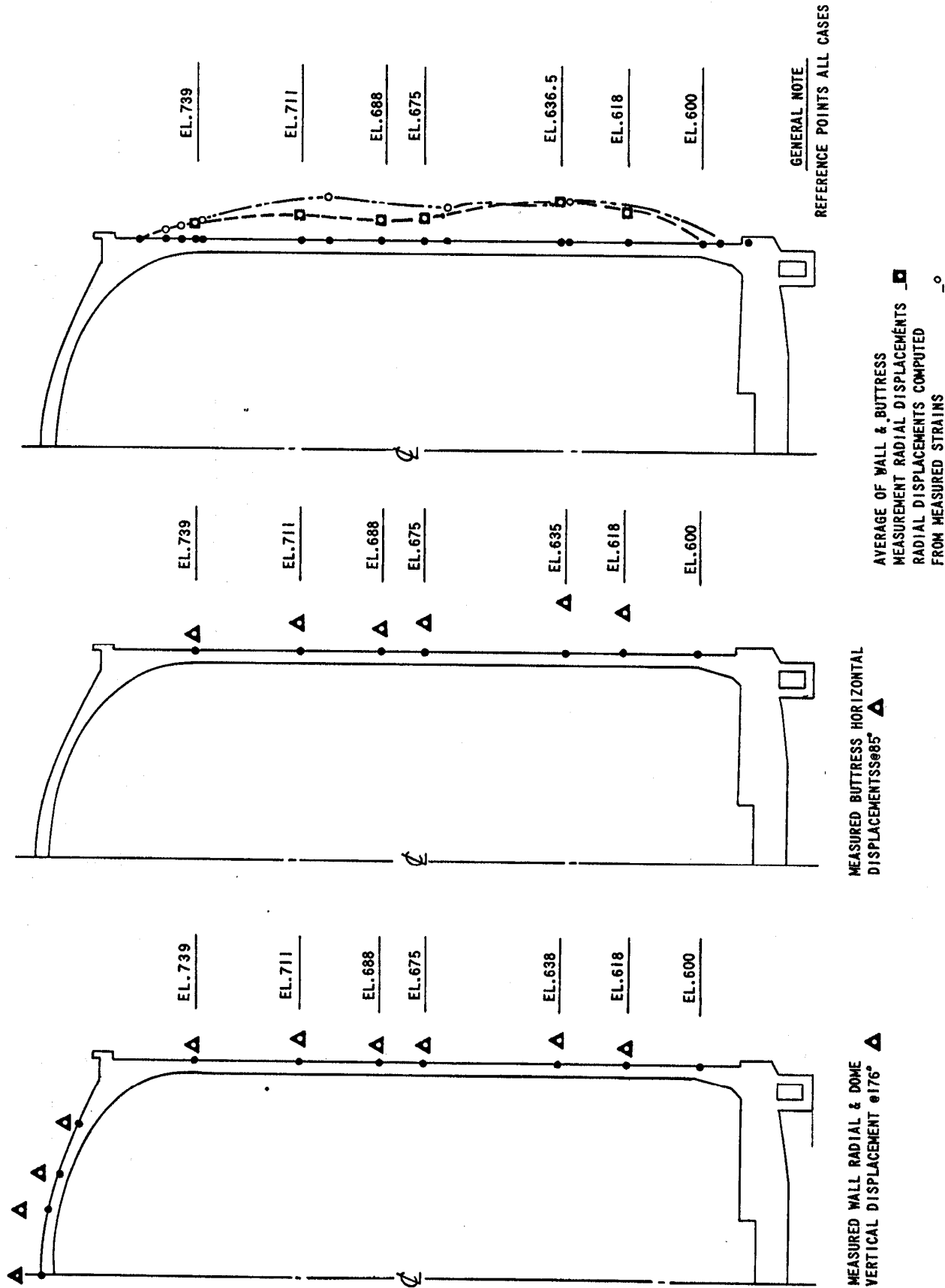
CONTAINMENT STRUCTURE STRUCTURAL INTEGRITY TEST INSIDE HOOP STRAIN PROFILES TYPICAL SECTION



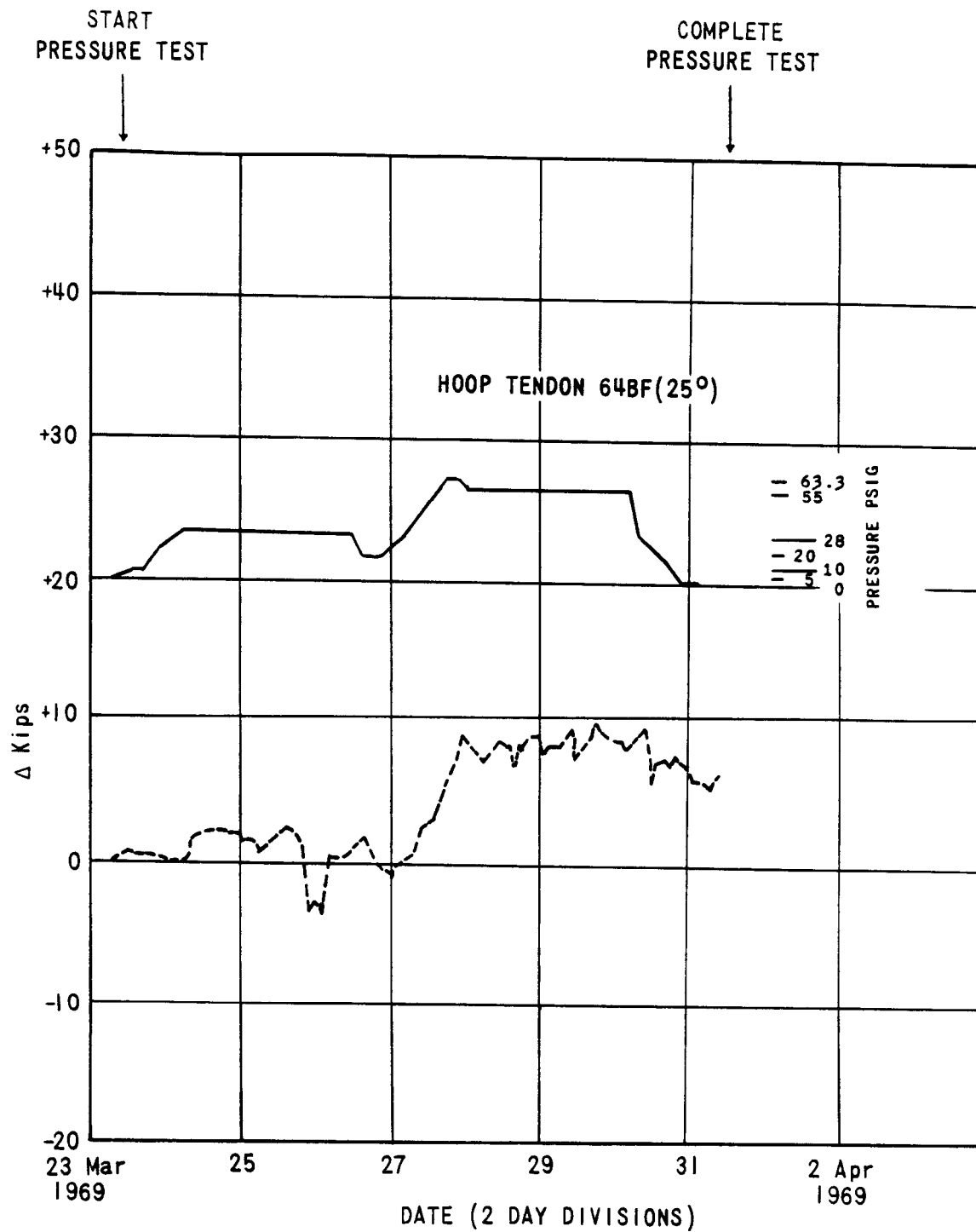
CONTAINMENT STRUCTURE STRUCTURAL INTEGRITY TEST OUTSIDE MERIDIONAL STRAIN PROFILES TYPICAL SECTION



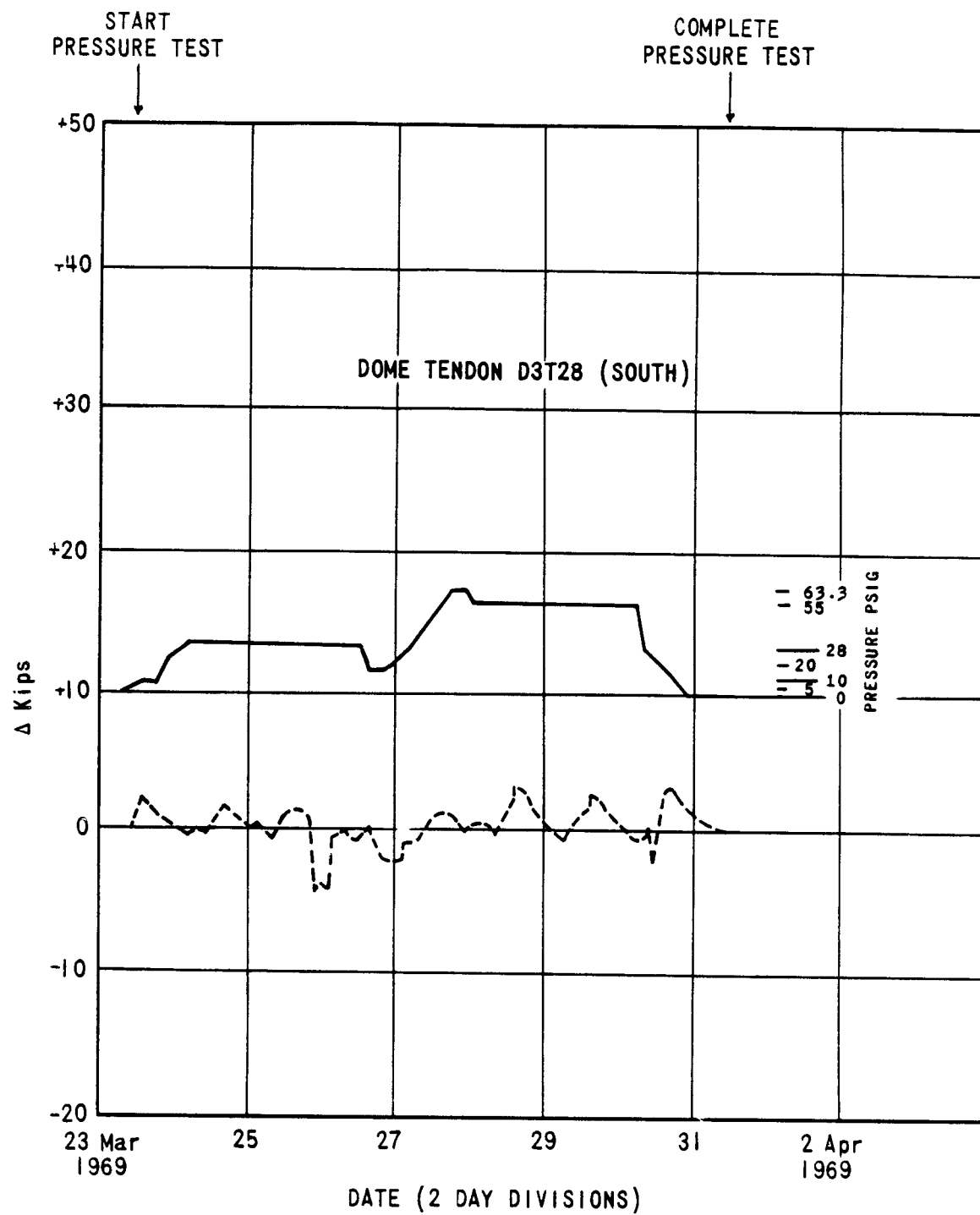
CONTAINMENT STRUCTURE
PRESSURE TEST DISPLACEMENT PROFILES



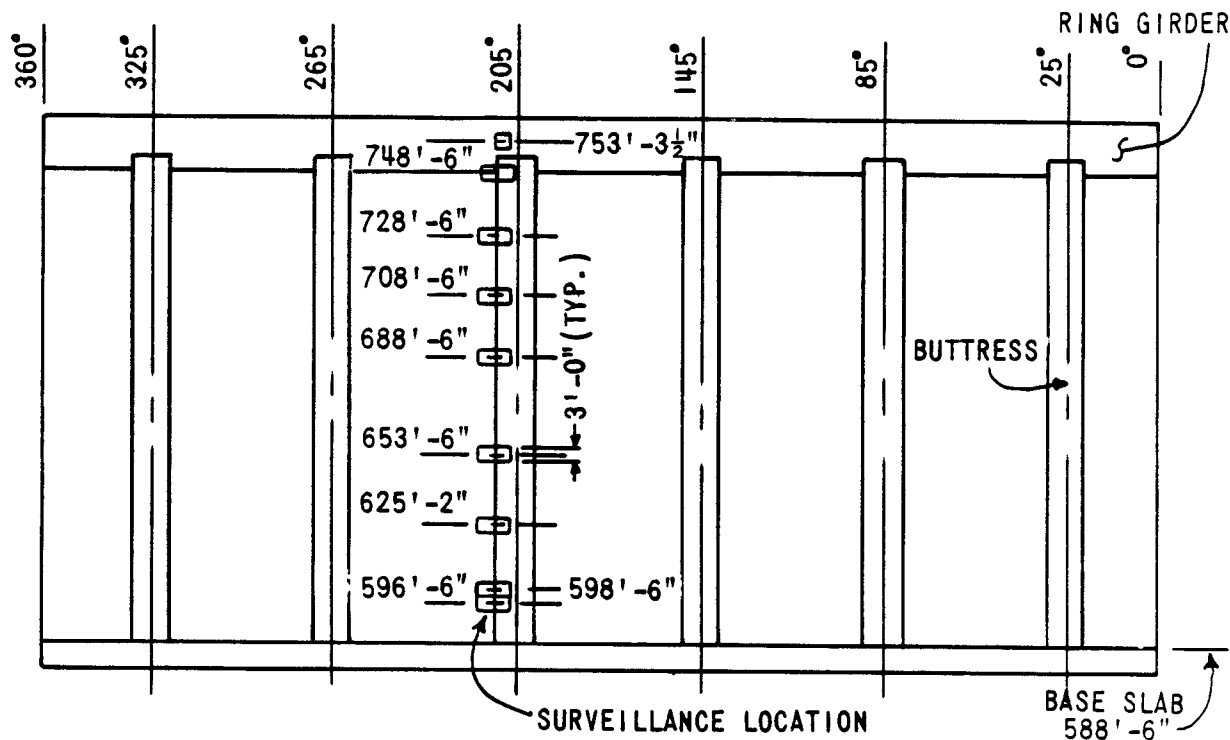
CONTAINMENT STRUCTURE
PRESSURE TEST TENDON LOAD CHANGE



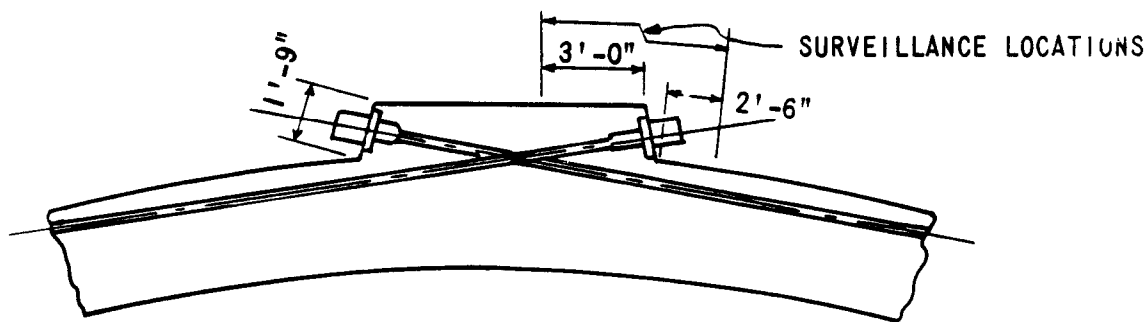
CONTAINMENT STRUCTURE
PRESSURE TEST TENDON LOAD CHANGE



CONTAINMENT STRUCTURE
END ANCHORAGE SURVEILLANCE PROGRAM
CRACK SURVEILLANCE LOCATIONS

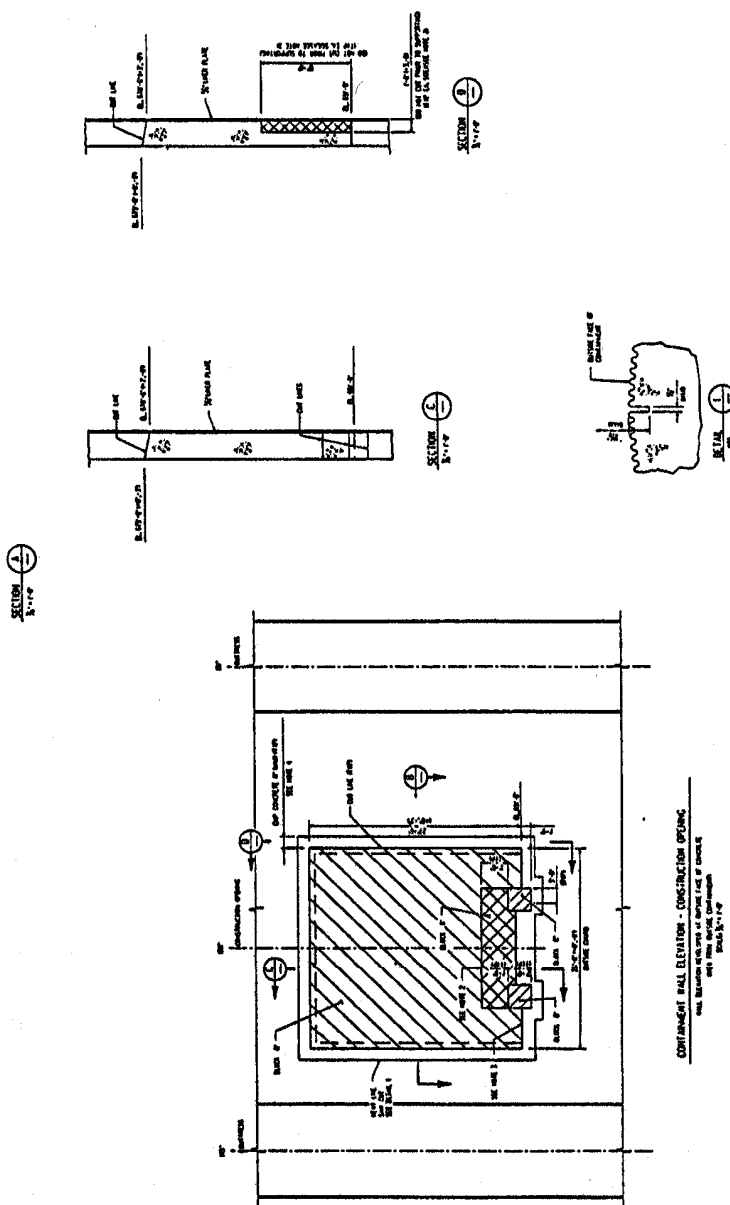
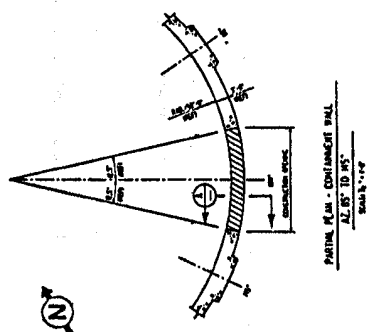
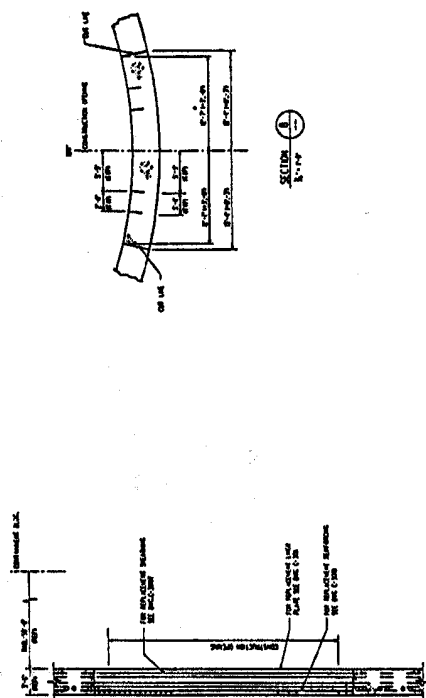
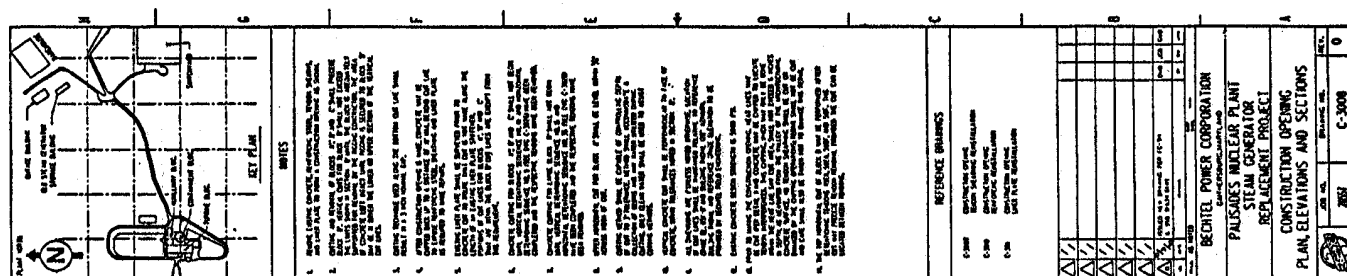


DEVELOPED ELEVATION



TYPICAL BUTTRESS DETAIL

CONSTRUCTION OPENING PLAN, ELEVATION AND SECTIONS



CONSTRUCTION OPENING TENDON DETENSIONING AND POST TENSIONING SEQUENCE

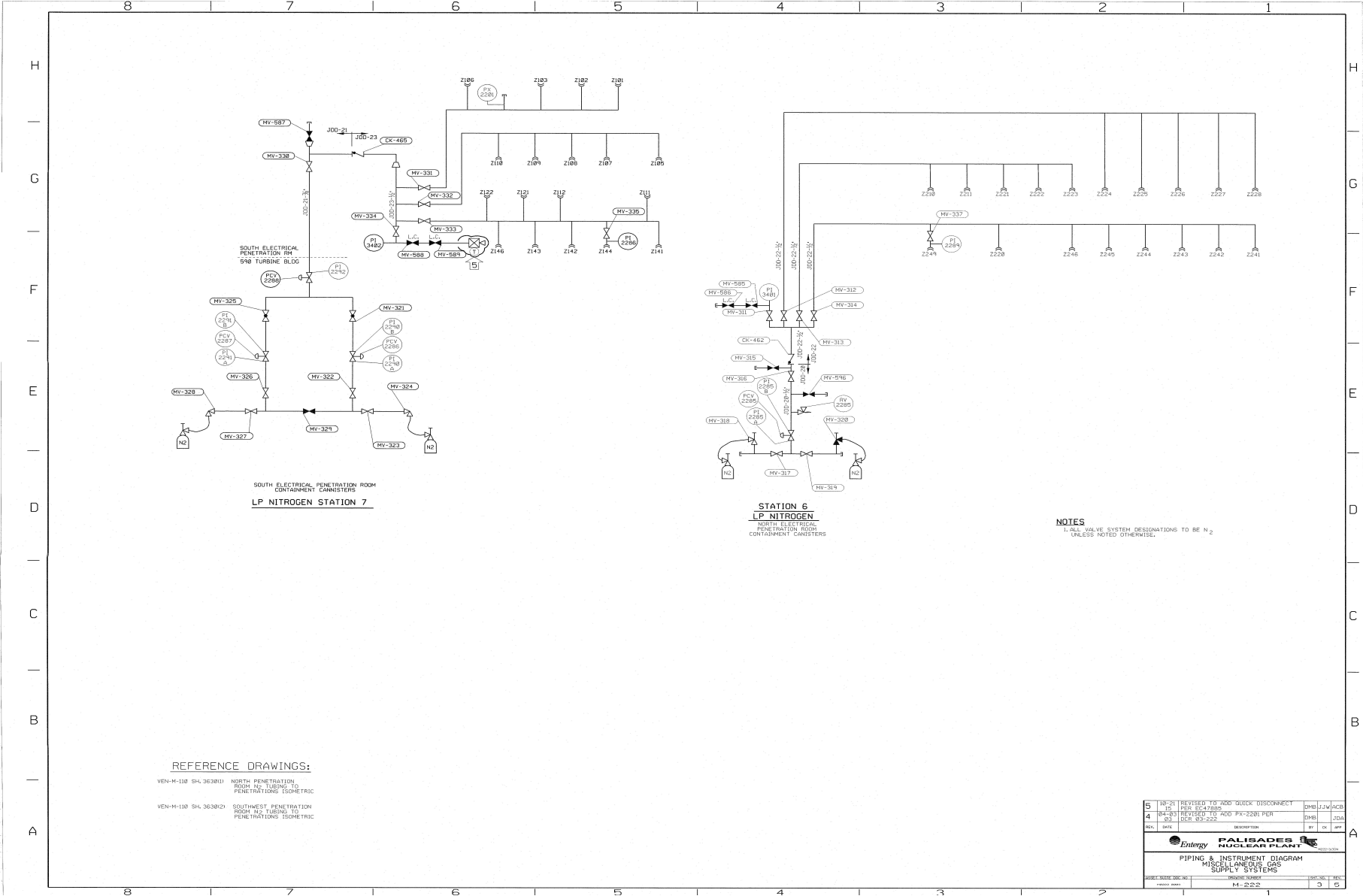
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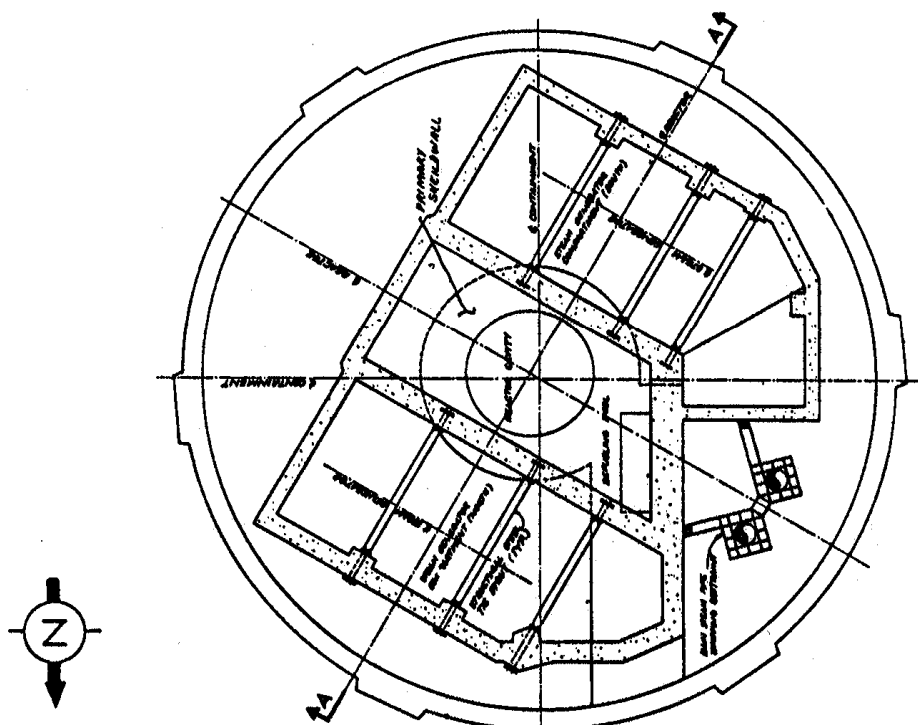
THEY WERE IN THE HOUSE FOR THE FIRST TIME IN 1964. THE HOUSE WAS IN THE HOUSE FOR THE FIRST TIME IN 1964. THE HOUSE WAS IN THE HOUSE FOR THE FIRST TIME IN 1964.

VERTICAL TENDON DETENSORING (FOR REMOVAL)	Tendon		Left and Right Side
	SEN	REL	
	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	
	20	100	
	21	100	
	22	100	
	23	100	
	24	100	
	25	100	
	26	100	
	27	100	
	28	100	
	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	100	
	42	100	
	43	100	
	44	100	
	45	100	
	46	100	
	47	100	
	48	100	
	49	100	
	50	100	
	51	100	
	52	100	
	53	100	
	54	100	
	55	100	
	56	100	
	57	100	
	58	100	
	59	100	
	60	100	
	61	100	
	62	100	
	63	100	
	64	100	
	65	100	
	66	100	
	67	100	
	68	100	
	69	100	
	70	100	
	71	100	
	72	100	
	73	100	
	74	100	
	75	100	
	76	100	
	77	100	
	78	100	
	79	100	
	80	100	
	81	100	
	82	100	
	83	100	
	84	100	
	85	100	
	86	100	
	87	100	
	88	100	
	89	100	
	90	100	
	91	100	
	92	100	
	93	100	
	94	100	
	95	100	
	96	100	
	97	100	
	98	100	
	99	100	
	100	100	

[illegible][illegible]

MISCELLANEOUS GAS SUPPLY SYSTEMS



[illegible]

PLAN @ EL. C2C'-C'