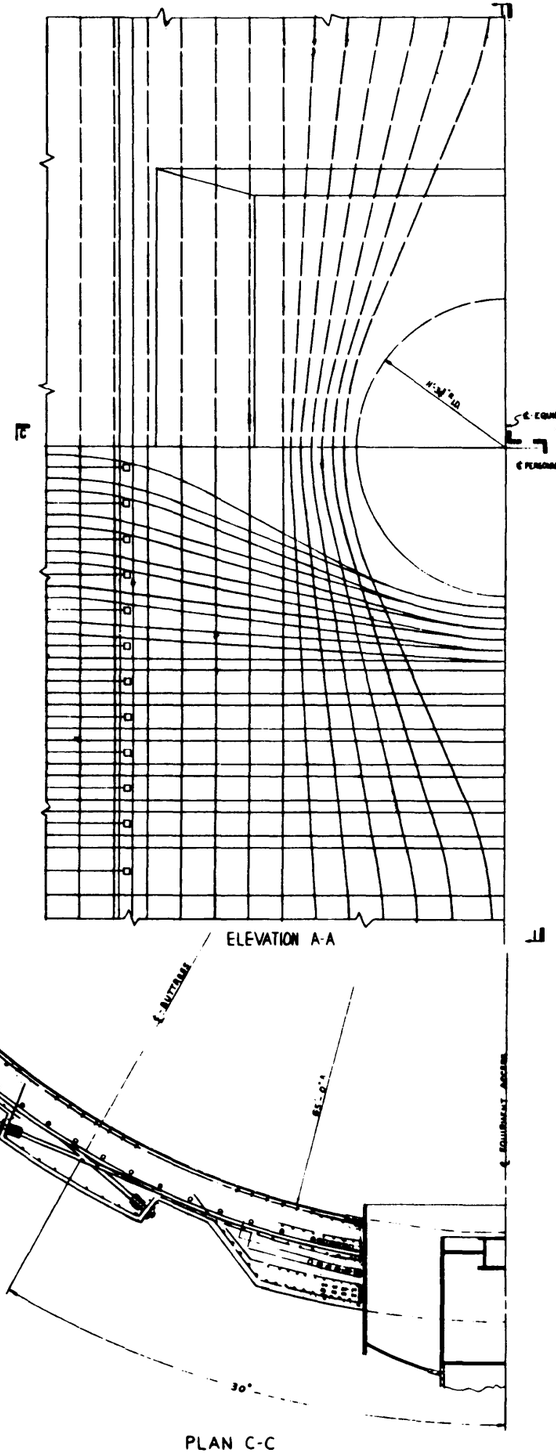
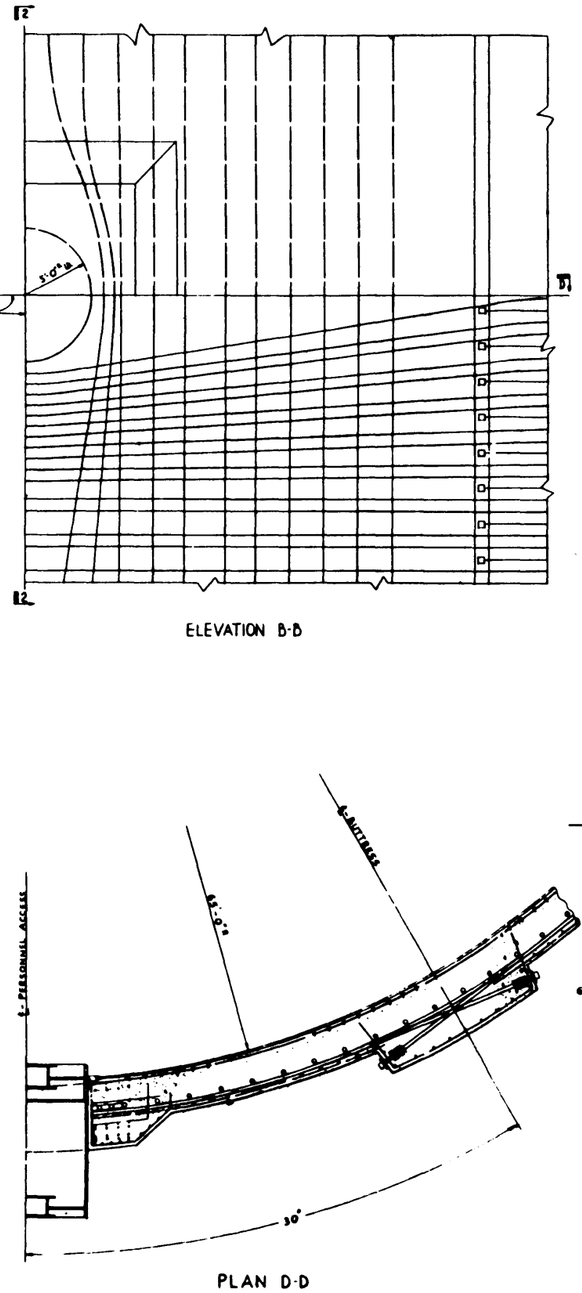
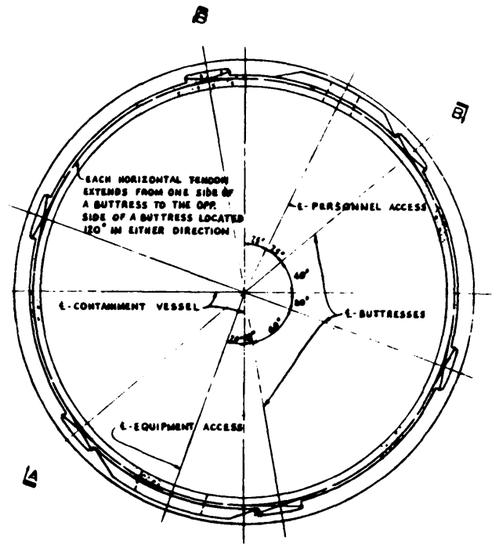
(b) (5)

Figure 5.2-2

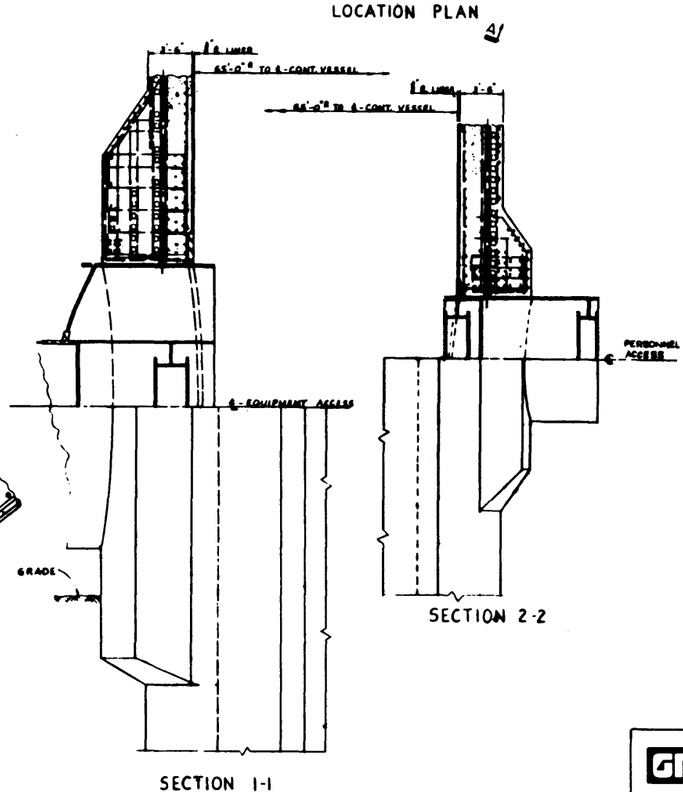
Deleted







LOCATION PLAN

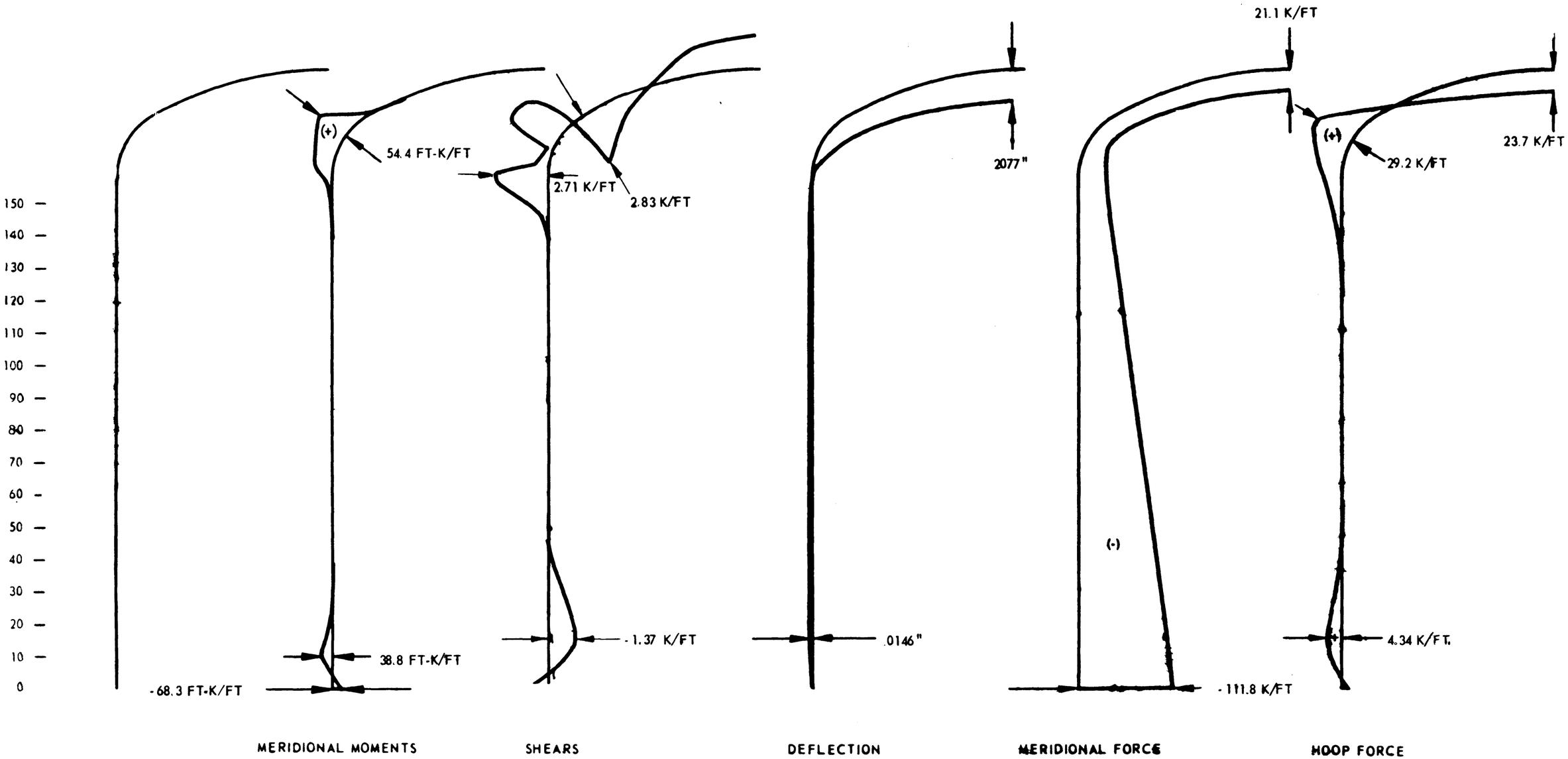


GPU Nuclear — **Update -1**

TMI Unit-1 — **7/82**

Personnel and Equipment Access Opening Details

Fig. 5.2-3

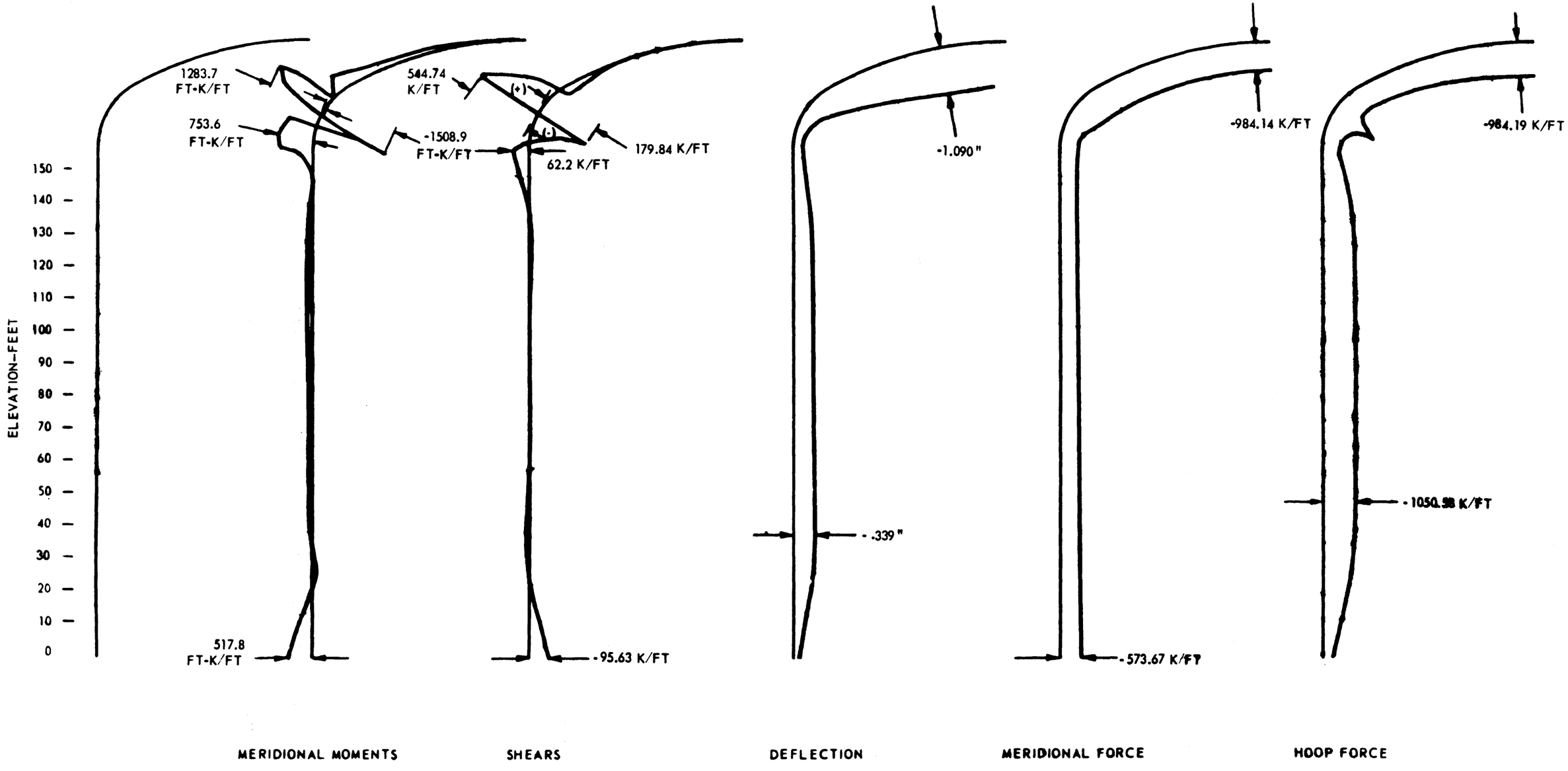


GPU Nuclear
TMI Unit-1

Update -1
7/82

Dead Load

Fig. 5.2-4

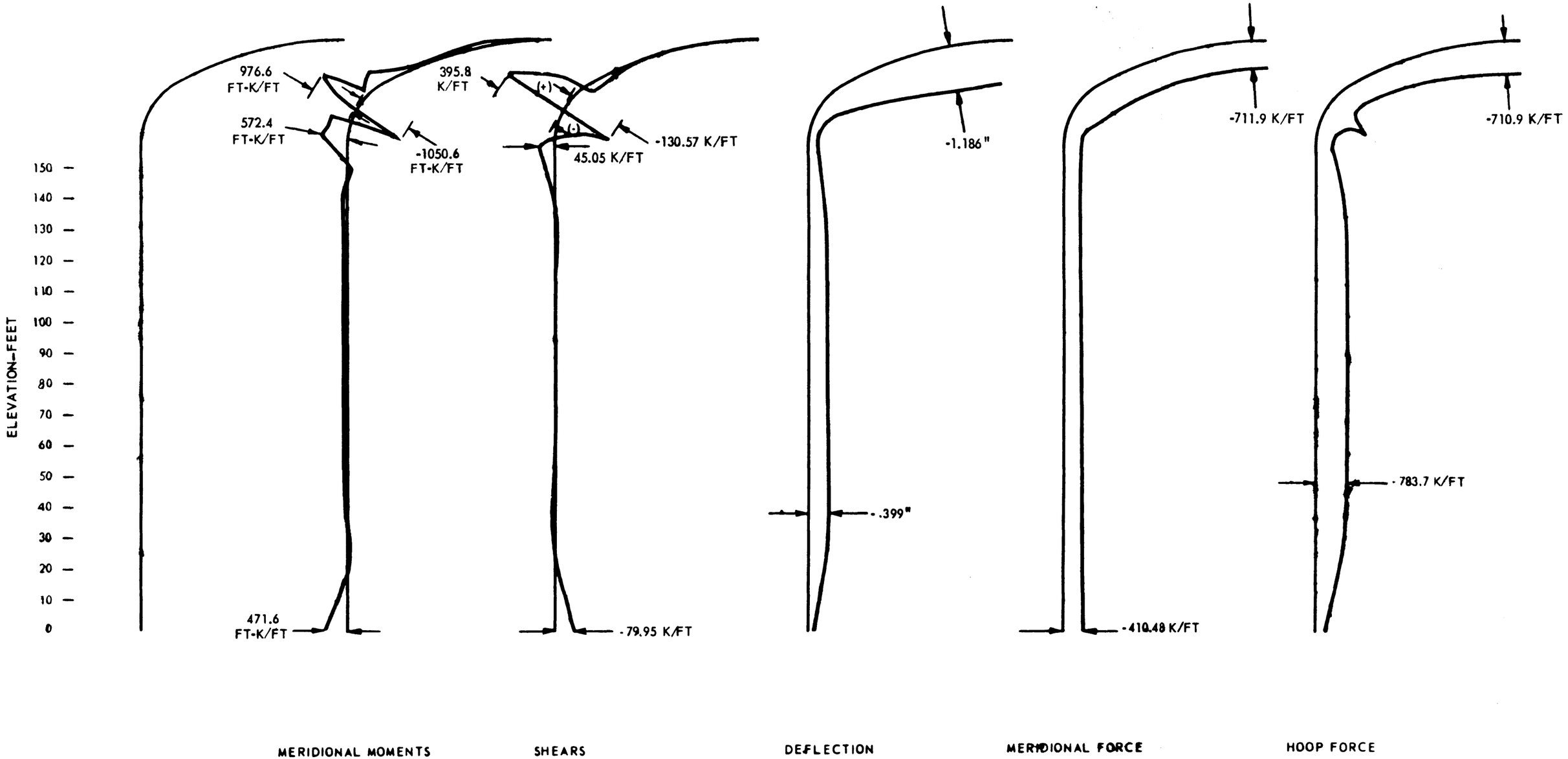


GPU Nuclear
TMI Unit-1

Update -1
7/82

Initial Prestress

Fig. 5.2-5

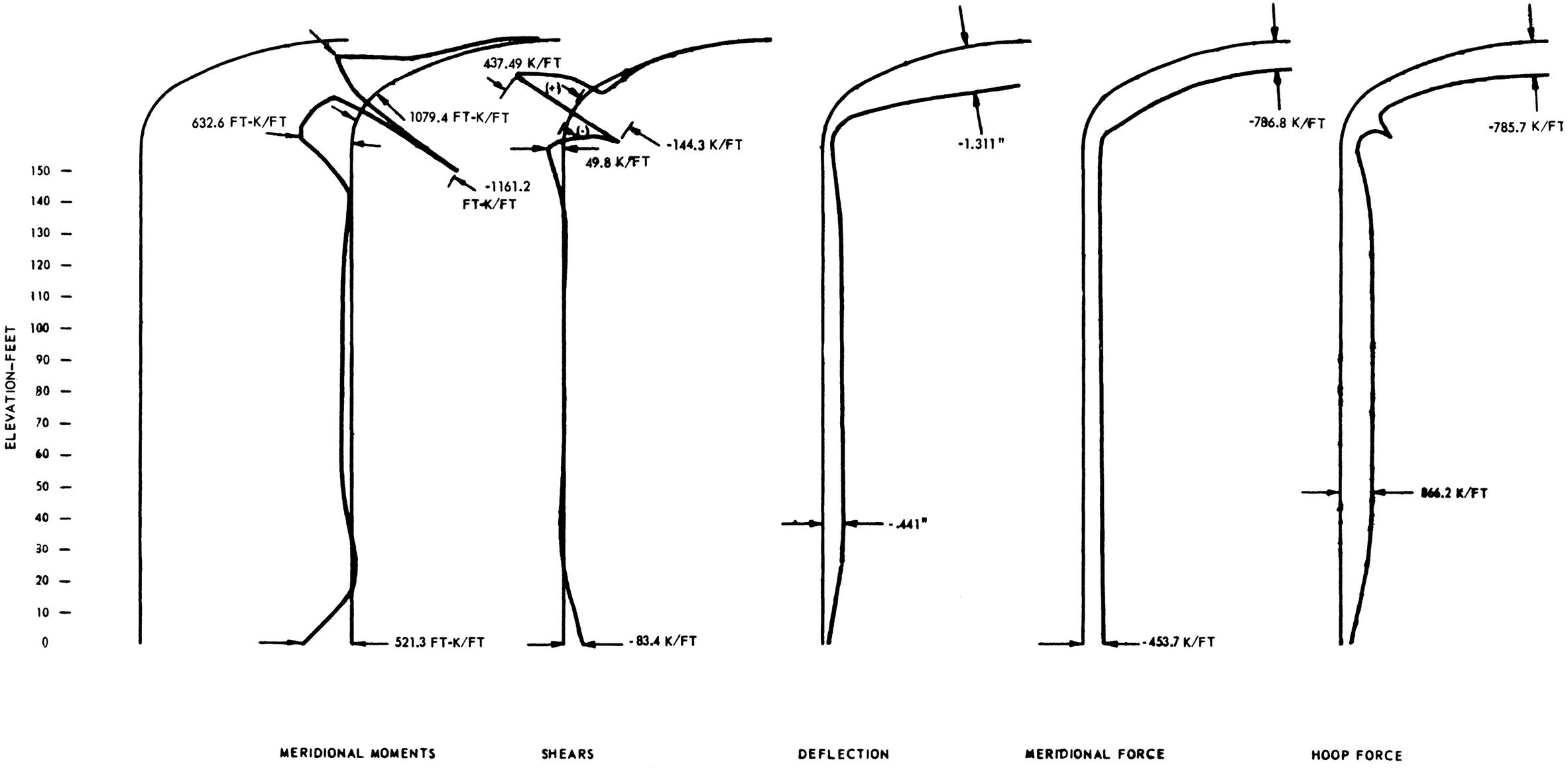


GPU Nuclear
TMI Unit-1

Update -1
7/82

Final Prestress at Operating Condition

Fig. 5.2-6

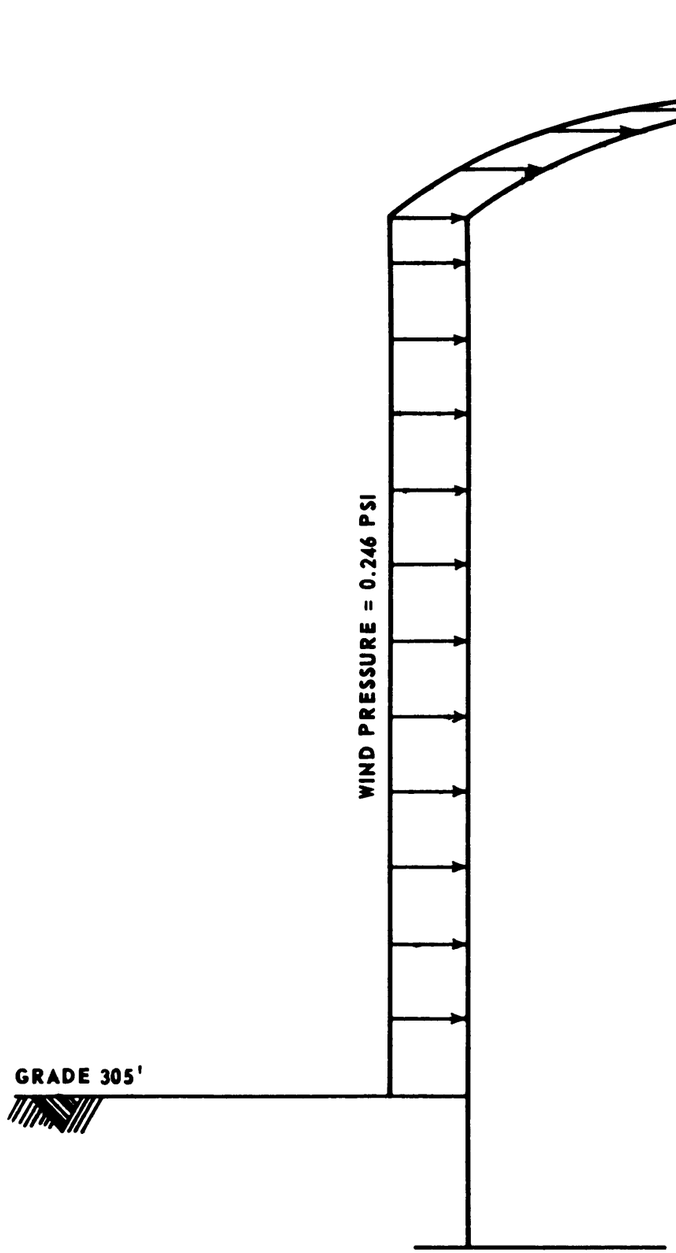


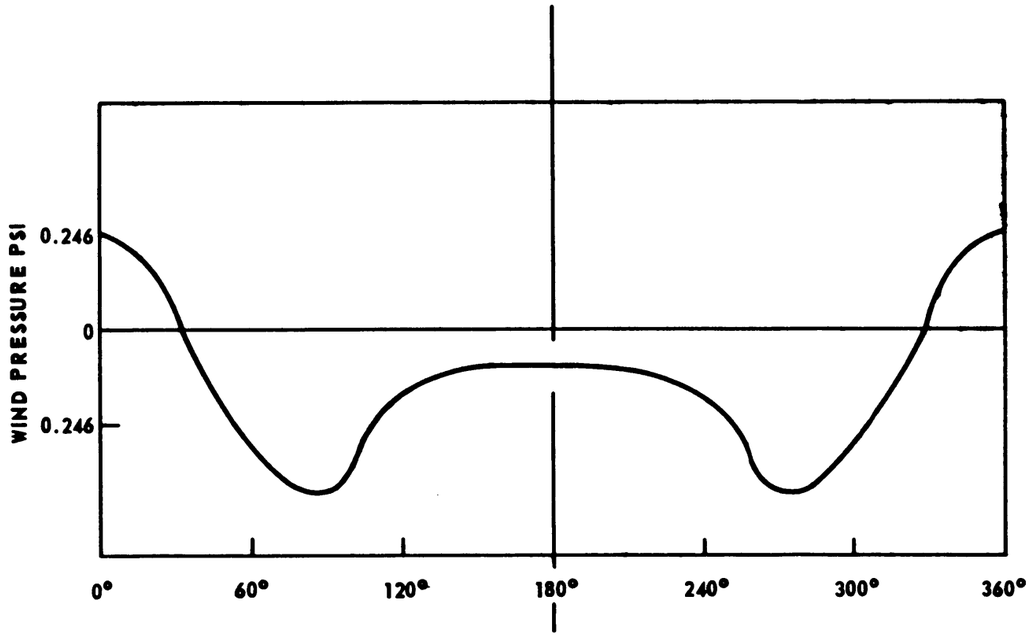
GPU Nuclear
TMI Unit-1

Update -1
7/82

Final Prestress at Accident Pressure

Fig. 5.2-7



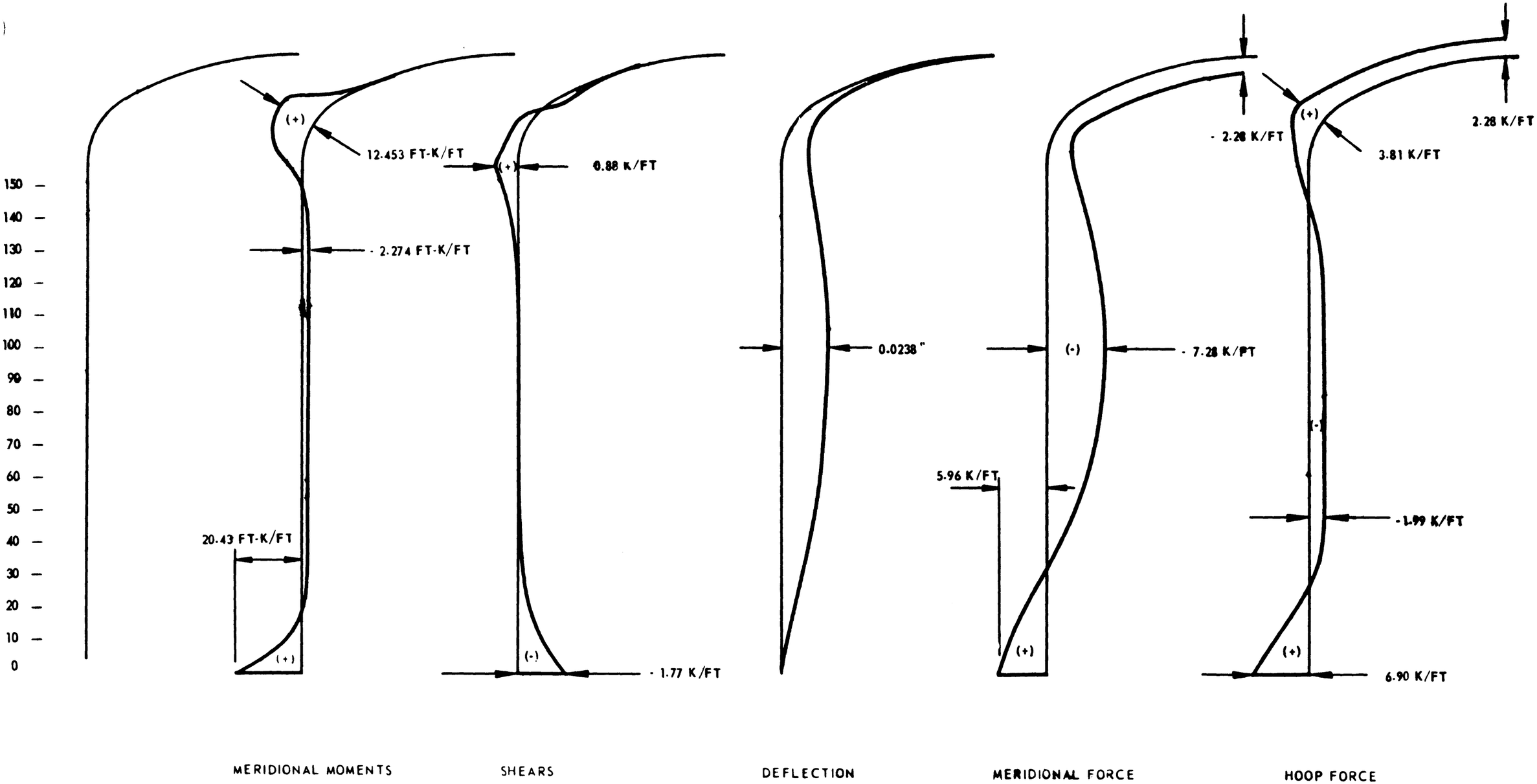


GPU Nuclear — Update -1

TMI Unit-1 — 7/82

Wind Pressure Distribution Around Outside Surface of Reactor Building

Fig. 5.2-8



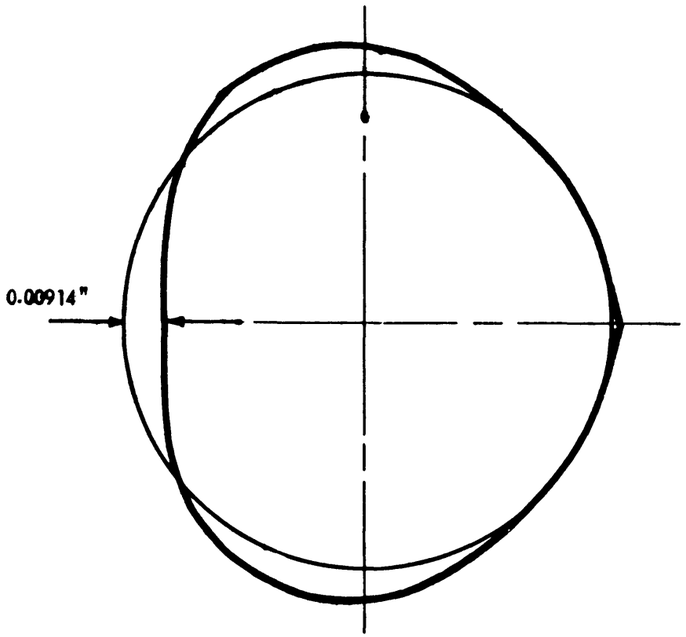
MERIDIONAL MOMENTS | SHEARS | DEFLECTION | MERIDIONAL FORCE | HOOP FORCE

GPU Nuclear
TMI Unit-1

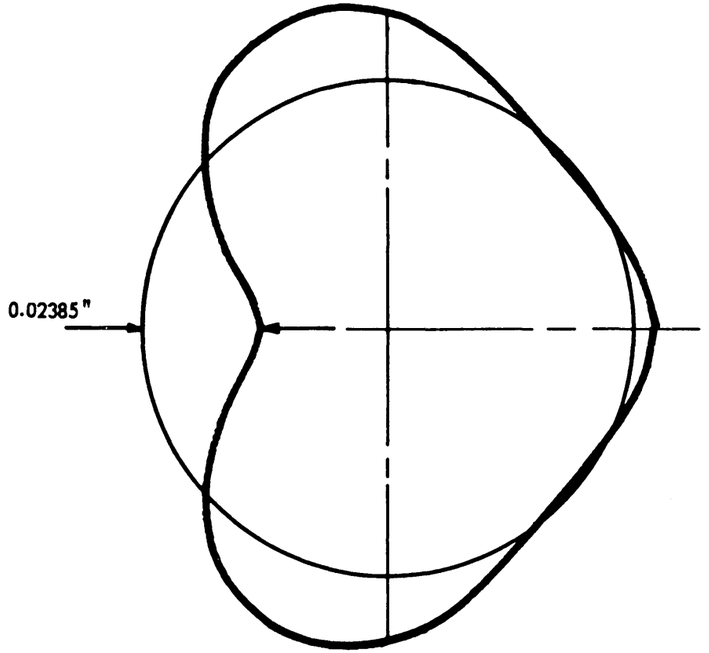
Update -1
7/82

Wind Load

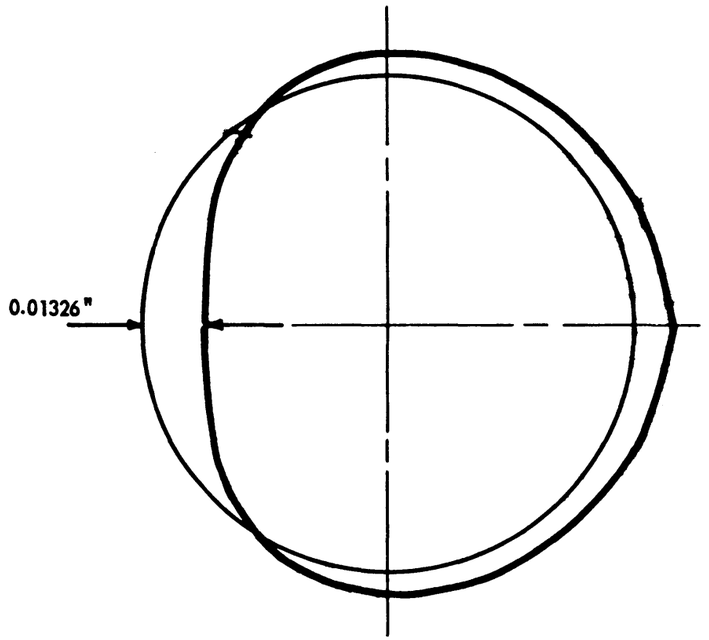
Fig. 5.2-9



ELEV. 25'-0"



ELEV. 97'-6"



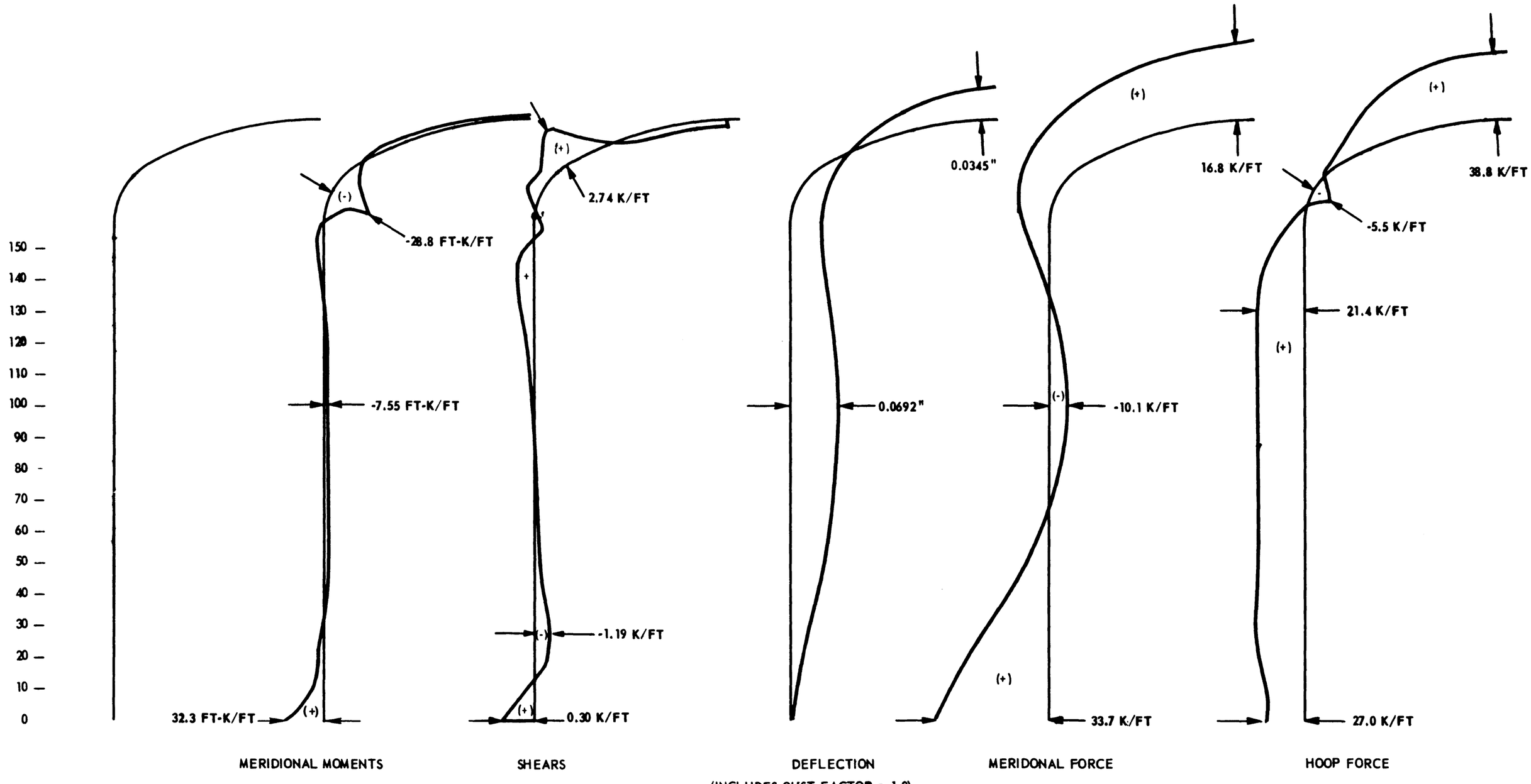
ELEV. 157'-0"

GPU Nuclear
TMI Unit-1

Update -1
7/82

Wind Load - Radial Deflections

Fig. 5.2-10



GPU Nuclear
TMI Unit-1

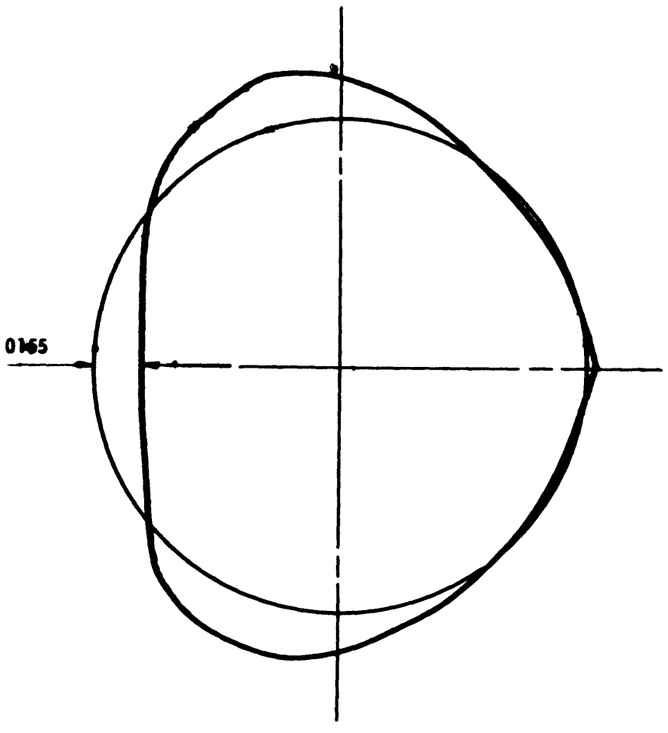
Update -1
7/82

Tornado Loading - 300 MPH
Wind & 3 PSI Vacuum

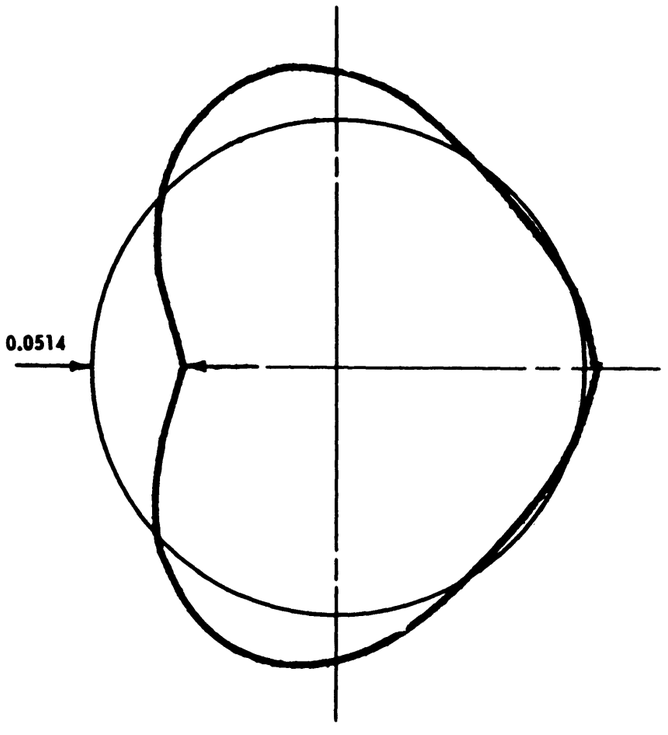
Fig. 5.2-11

TORNADO LOAD - RADIAL DEFLECTIONS

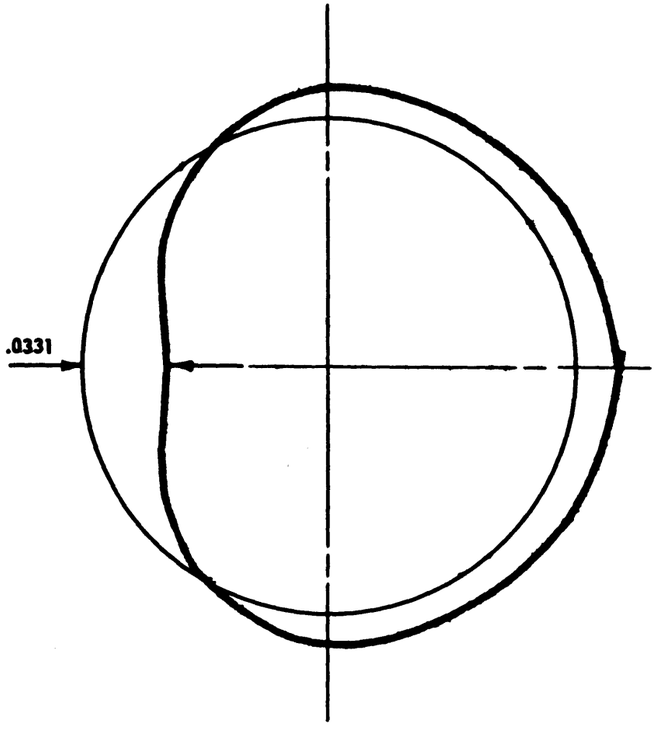
(300 MPH WIND & 3 PSI VACUUM)



ELEV. 25'-0"



ELEV. 97'-6"



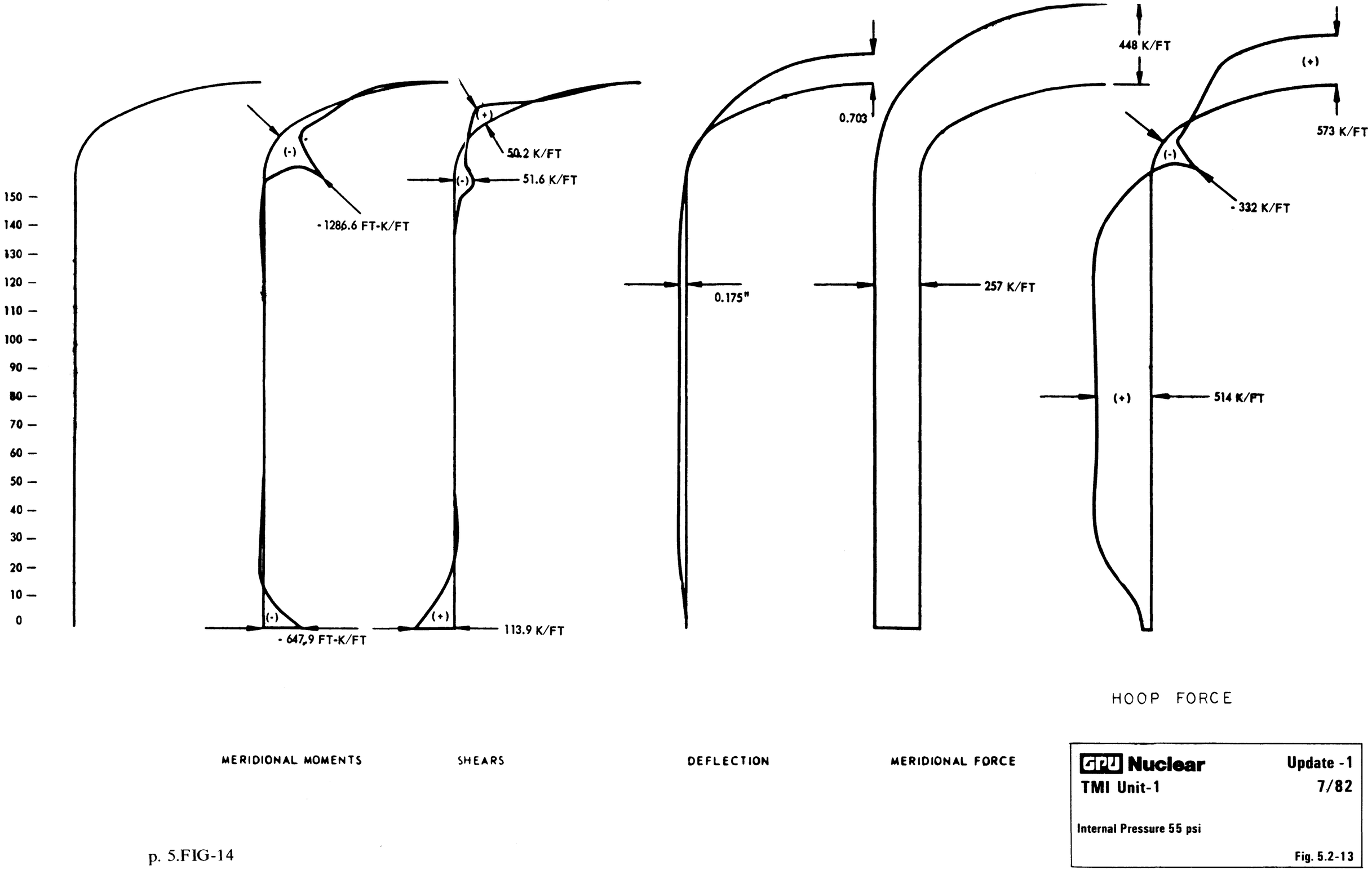
ELEV. 157'-0"

GPU Nuclear
TMI Unit-1

Update -1
7/82

Tornado Load - Radial Deflections

Fig. 5.2-12

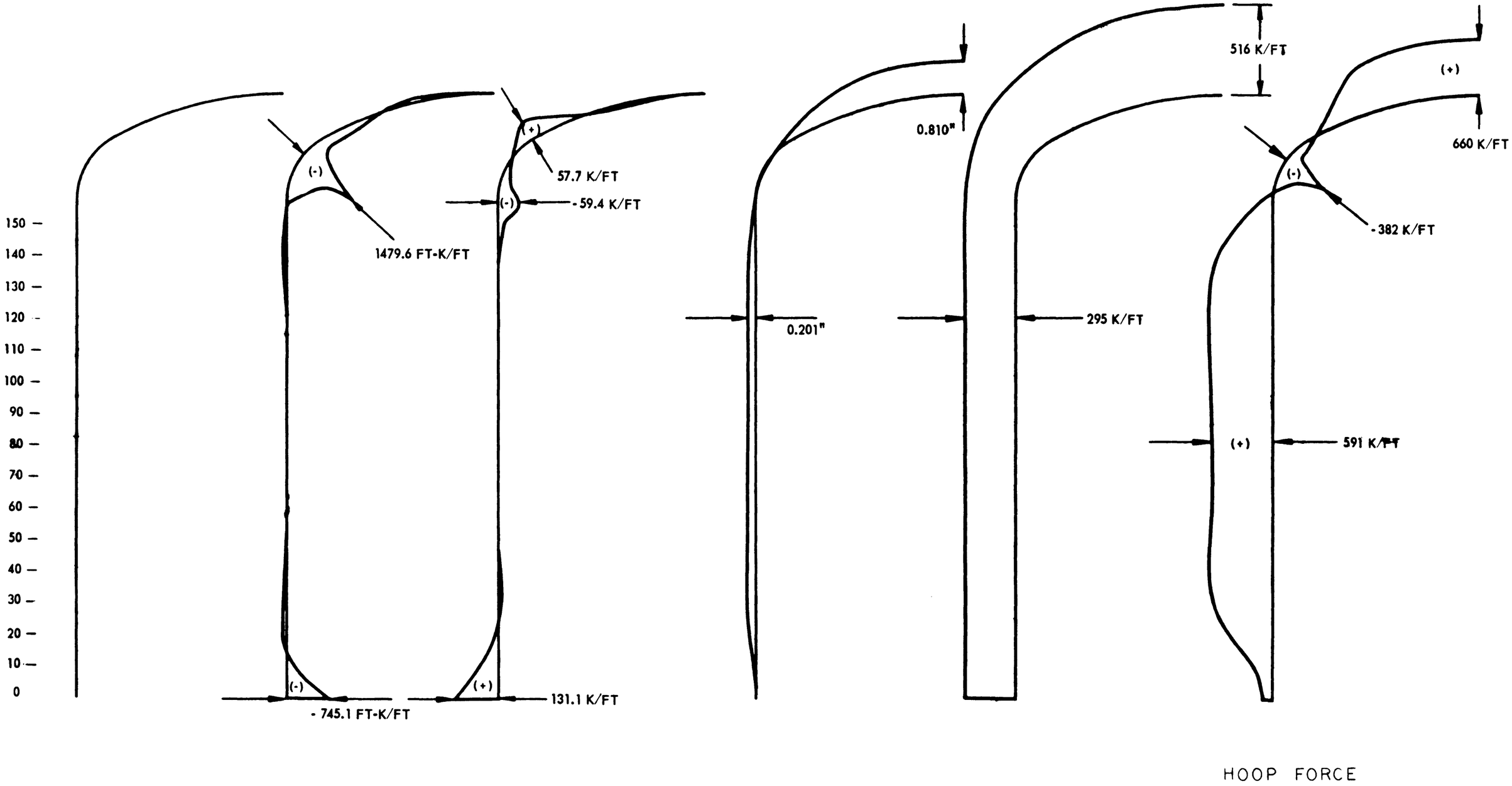


GPU Nuclear
TMI Unit-1

Update -1
7/82

Internal Pressure 55 psi

Fig. 5.2-13

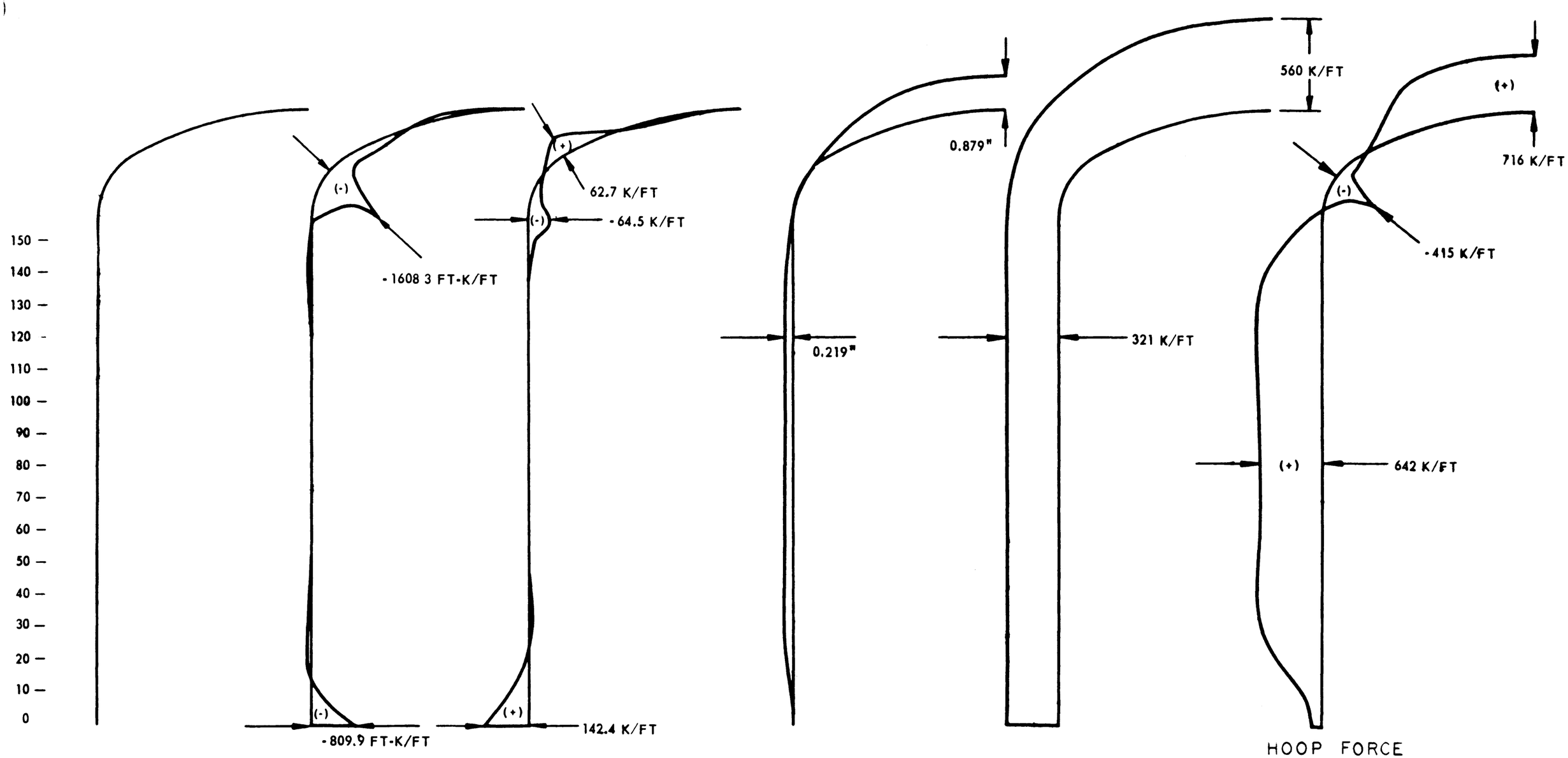


GPU Nuclear
TMI Unit-1

Update -1
7/82

Internal Pressure 63 psi

Fig. 5.2-14

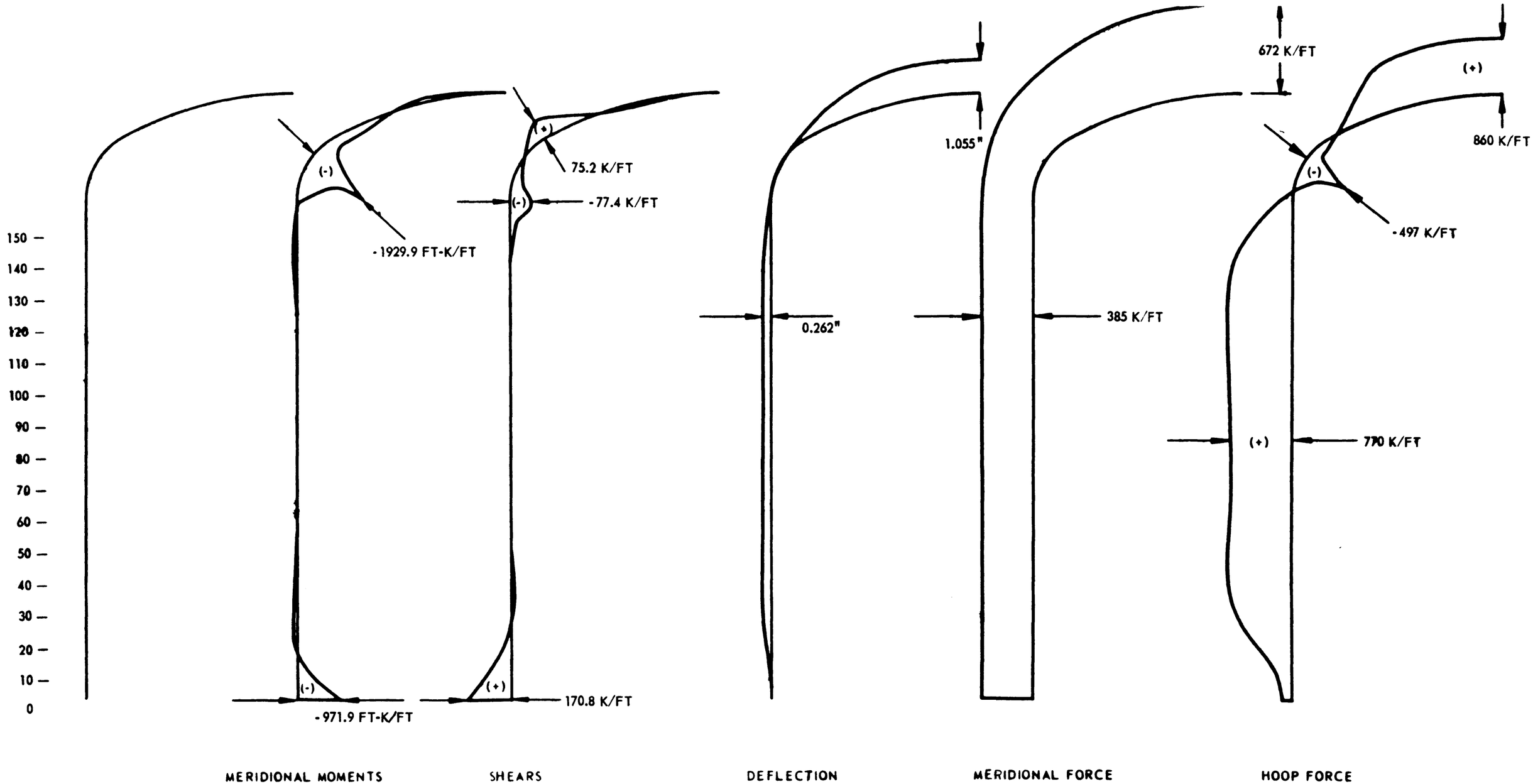


GPU Nuclear
TMI Unit-1

Update -1
7/82

Internal Pressure 68.75 psi

Fig. 5.2-15

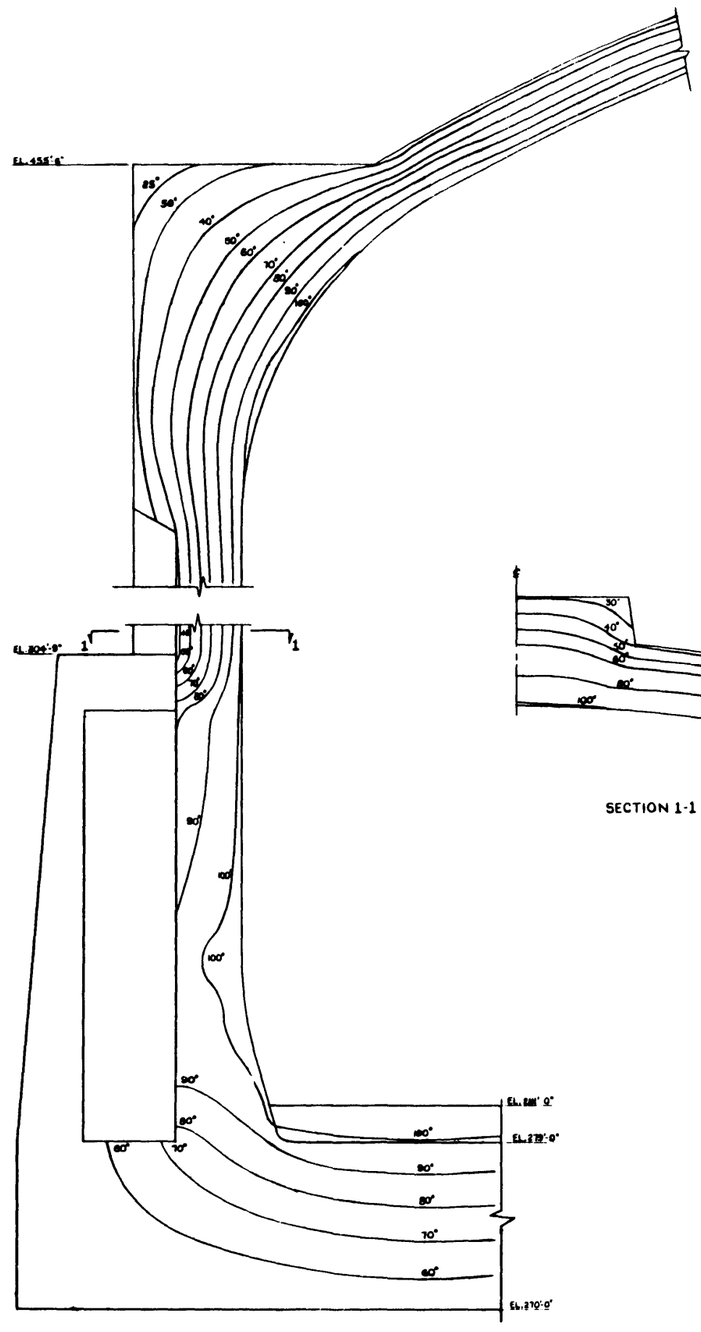


GPU Nuclear
TMI Unit-1

Update -1
7/82

Internal Pressure 82.5 psi

Fig. 5.2-16



SECTION 1-1

GPU Nuclear

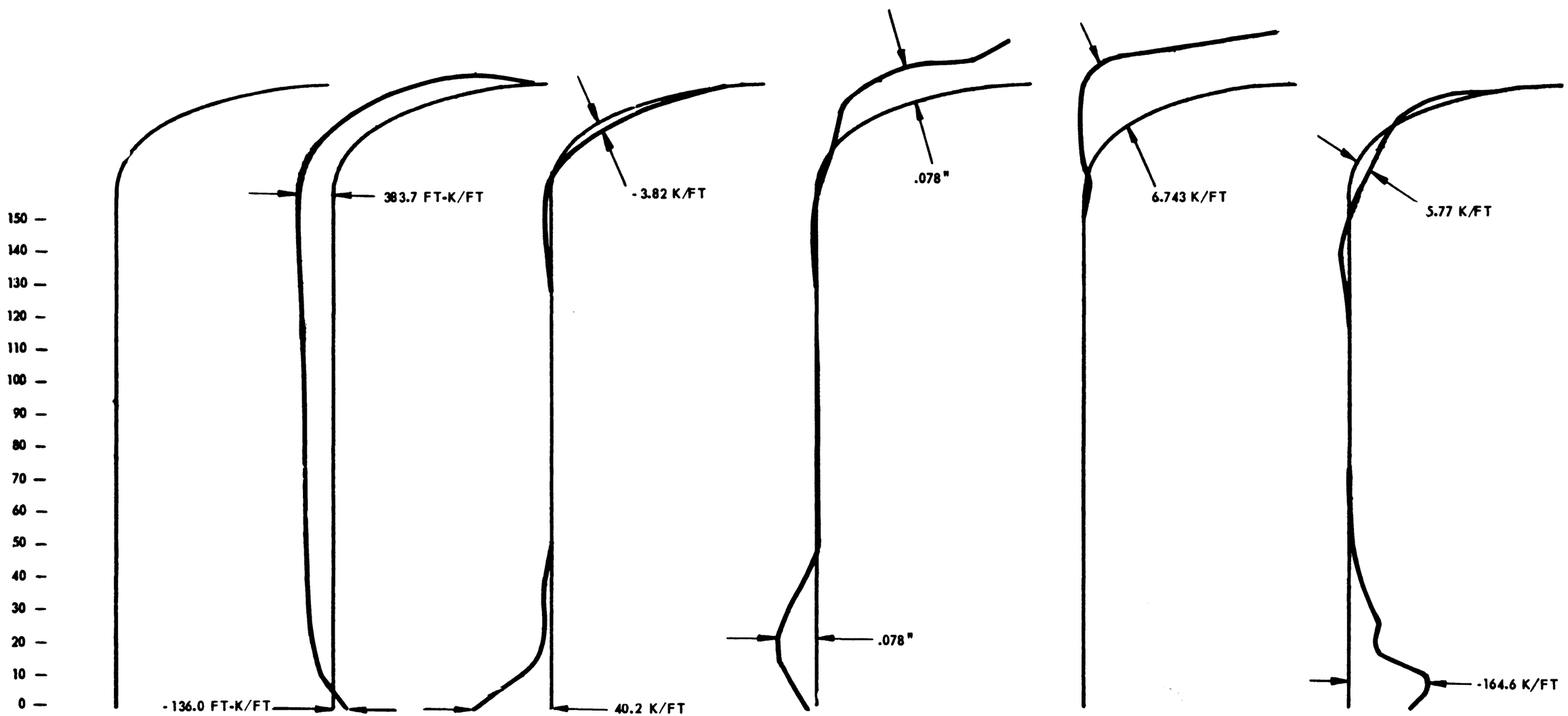
TMI Unit-1

Update -1

7/82

Wall and Buttress - Normal Operation
Temperature Winter

Fig. 5.2-17

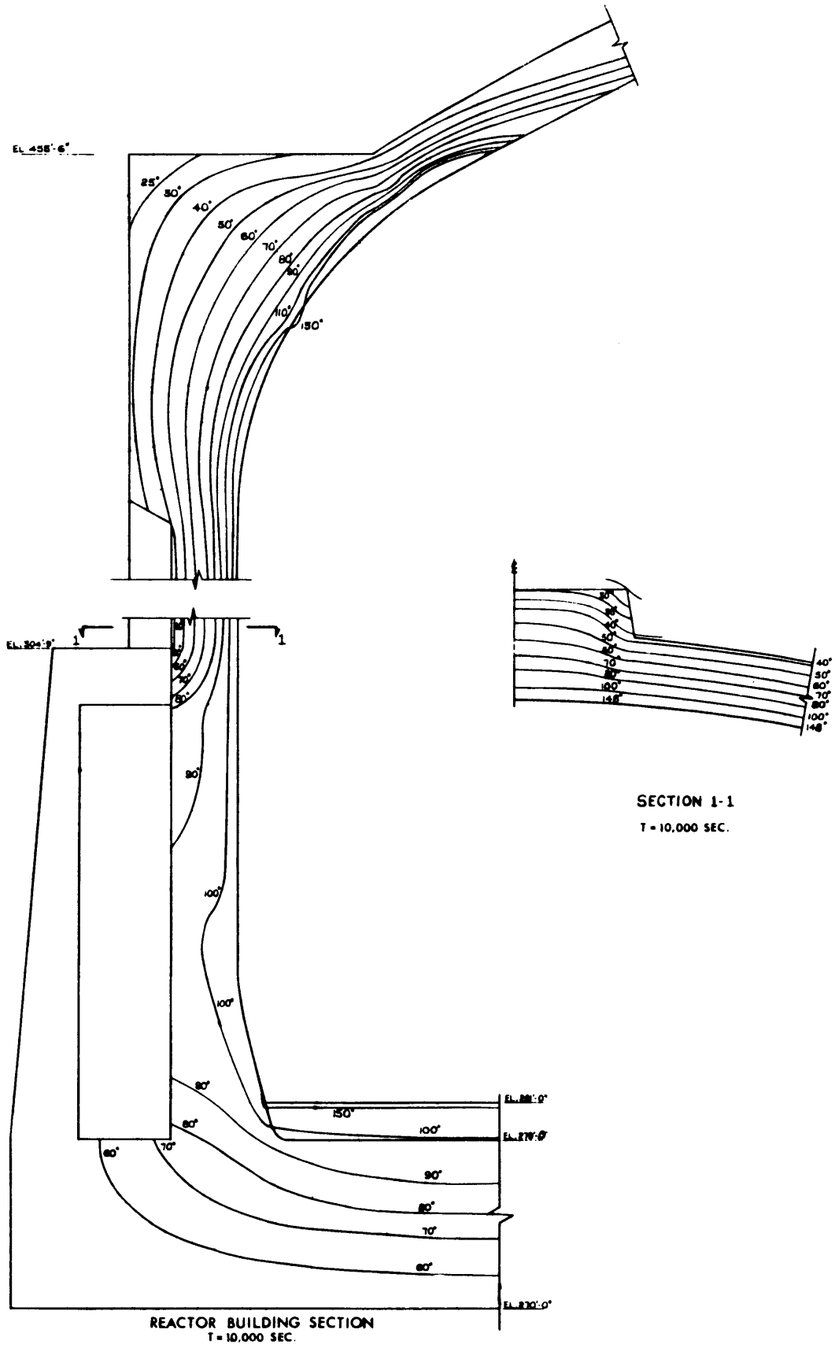


GPU Nuclear
TMI Unit-1

Update -1
7/82

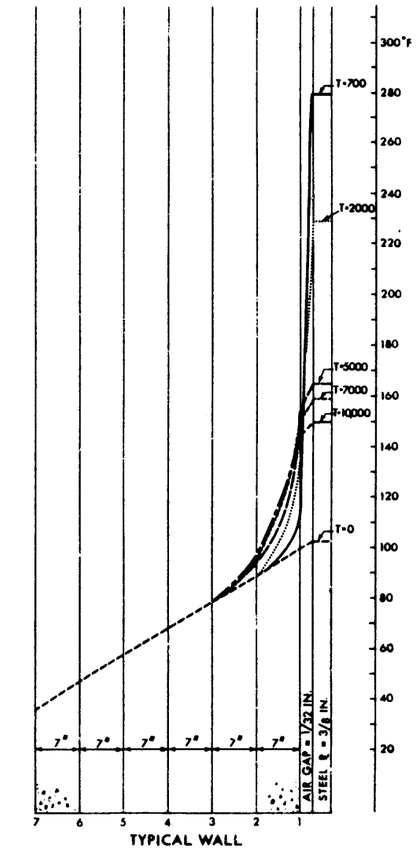
Operating Temperature - Winter

Fig. 5.2-18



REACTOR BUILDING SECTION
T = 10,000 SEC.

SECTION 1-1
T = 10,000 SEC.

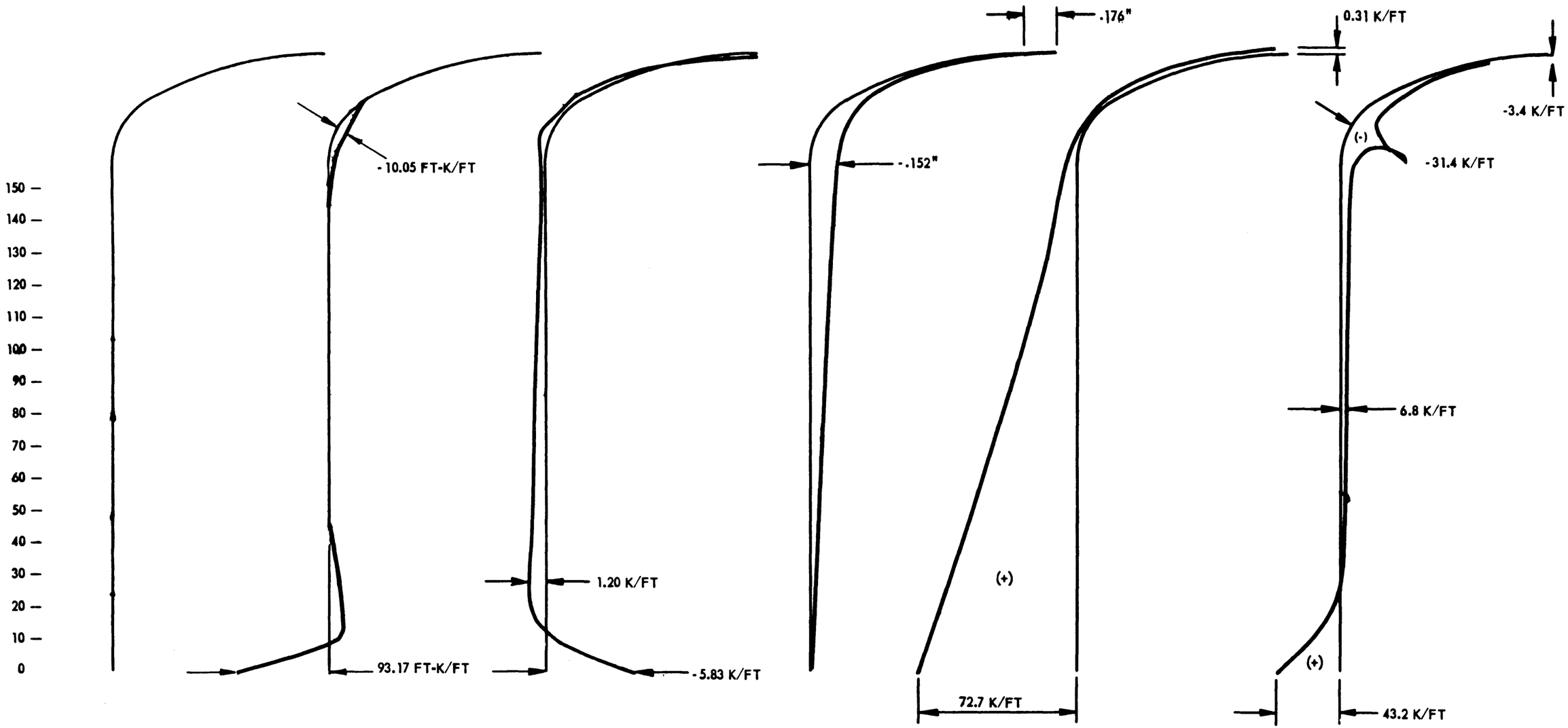


TYPICAL WALL
(VARIATION OF TEMPERATURE WITH TIME, T IN SECONDS)

GPU Nuclear — Update -1
TMI Unit-1 — 7/82

Wall and Buttress - Accident Temperature
T = 10,000 sec

Fig. 5.2-19

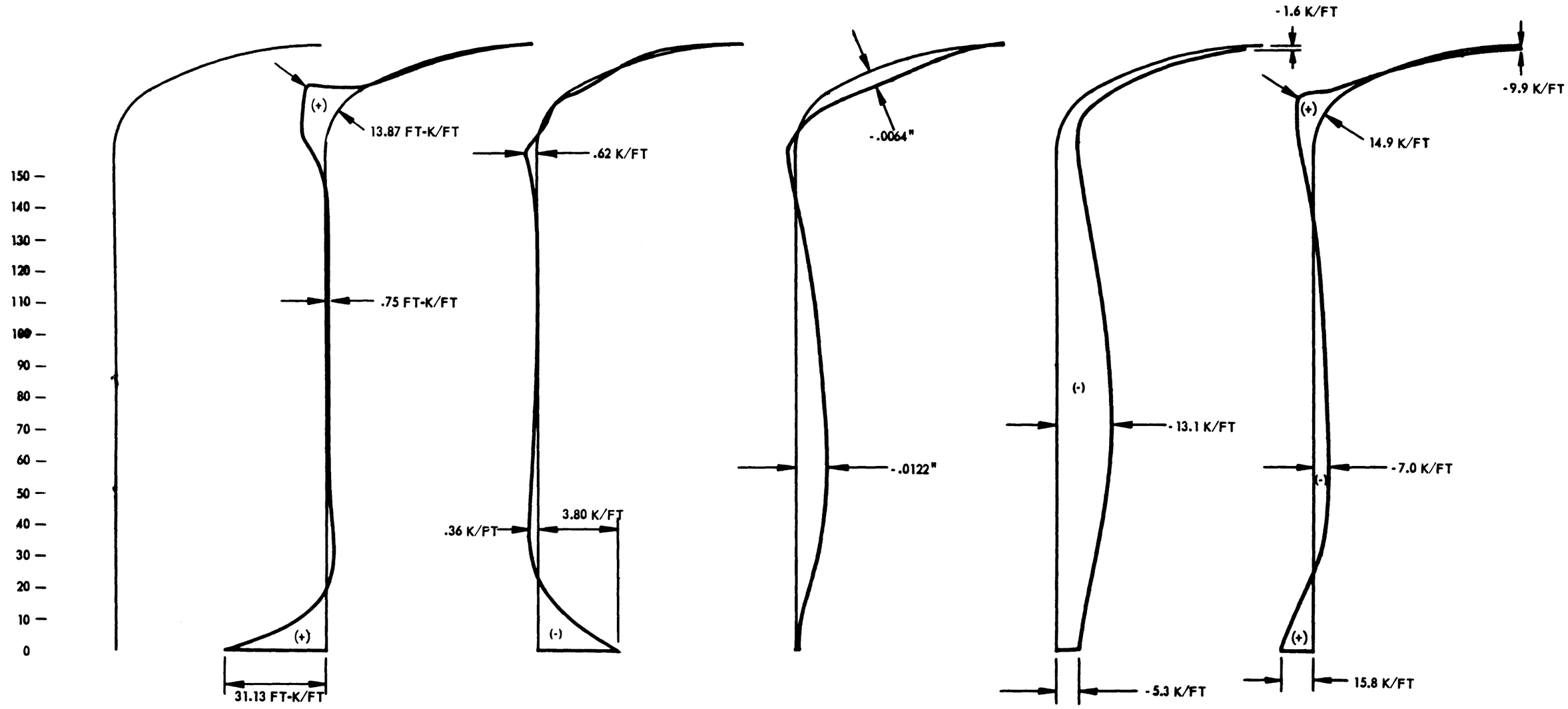


GPU Nuclear
TMI Unit-1

Update -1
7/82

Seismic Load - Horizontal Frequency #1

Fig. 5.2-20



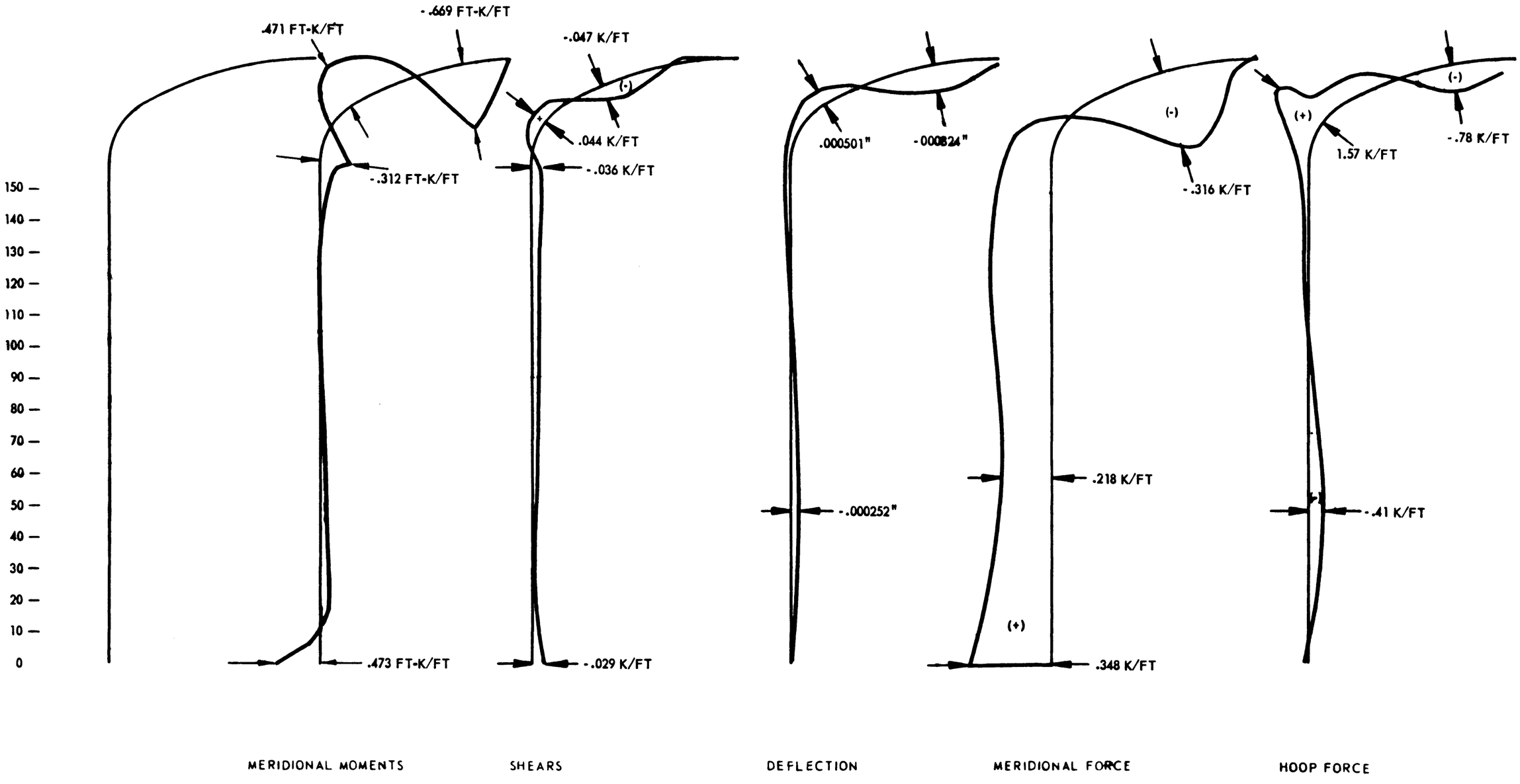
MERIDIONAL MOMENTS | SHEARS | DEFLECTION | MERIDIONAL FORCE | HOOP FORCE

GPU Nuclear
TMI Unit-1

Update -1
7/82

Seismic Load - Horizontal Frequency #2

Fig. 5.2-21



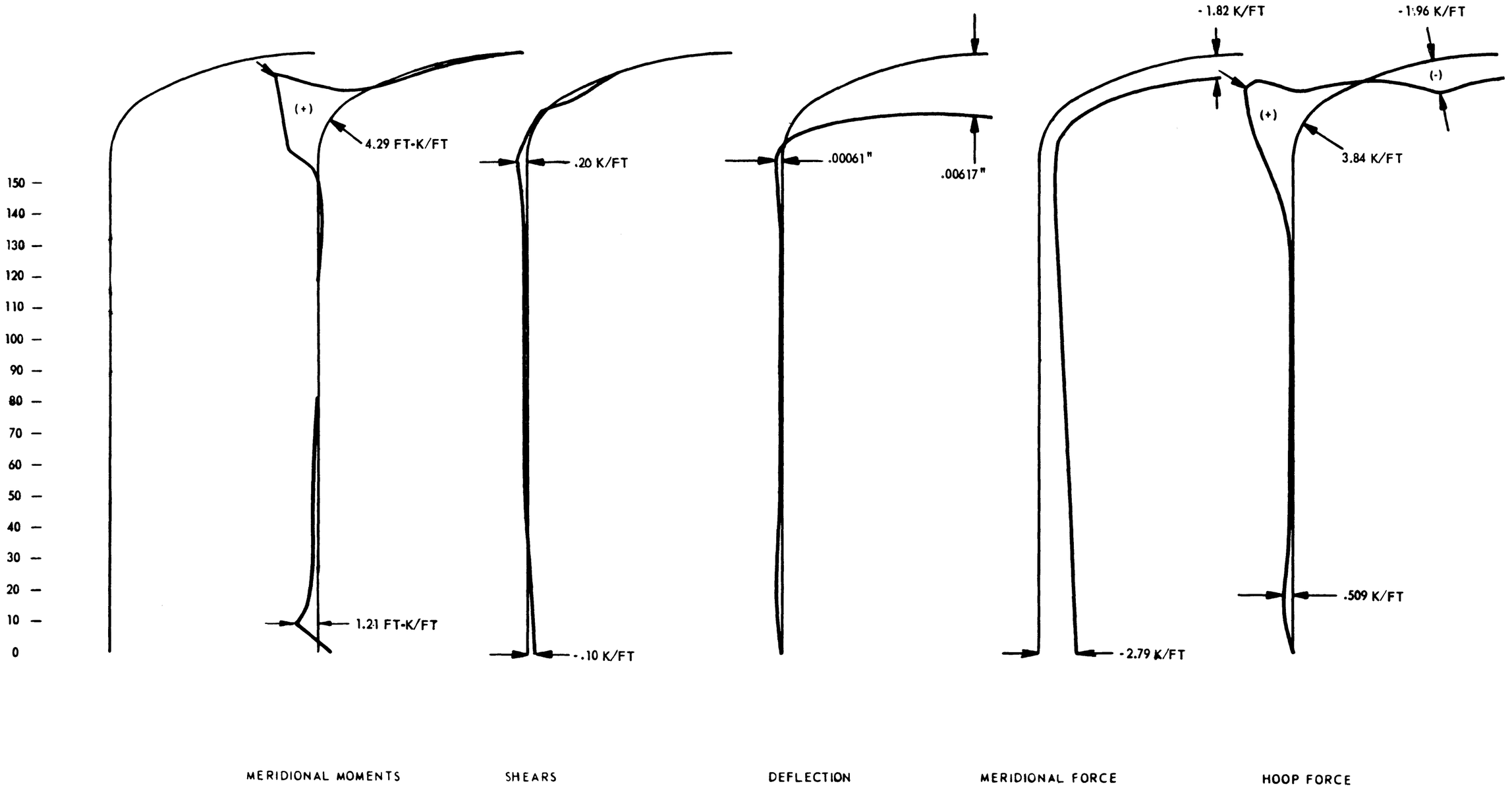
p. 5.FIG-23

GPU Nuclear
TMI Unit-1

Update -1
7/82

Seismic Load - Horizontal Frequency #3

Fig. 5.2-22

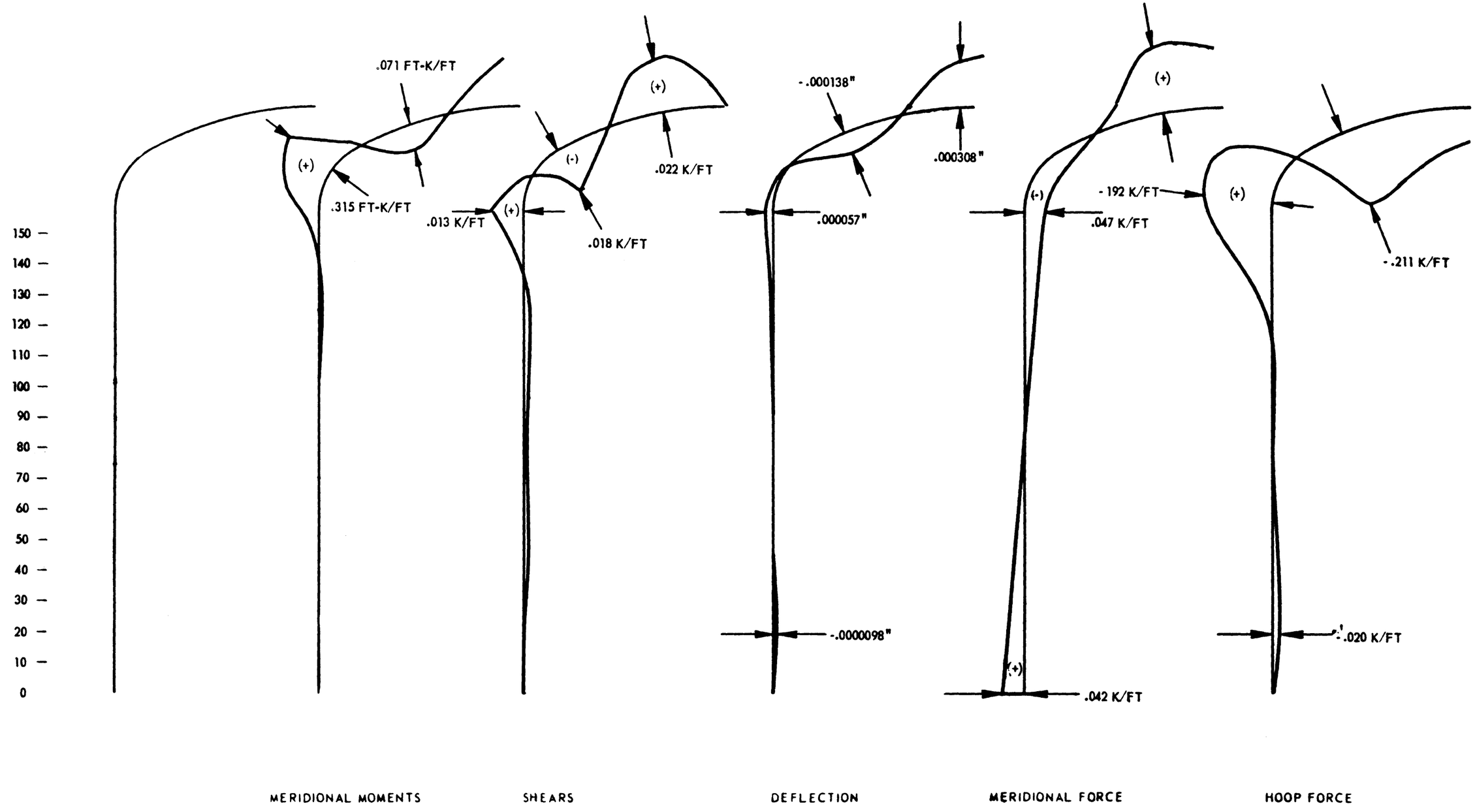


GPU Nuclear
TMI Unit-1

Update -1
7/82

Seismic Load - Vertical Frequency #1

Fig. 5.2-23

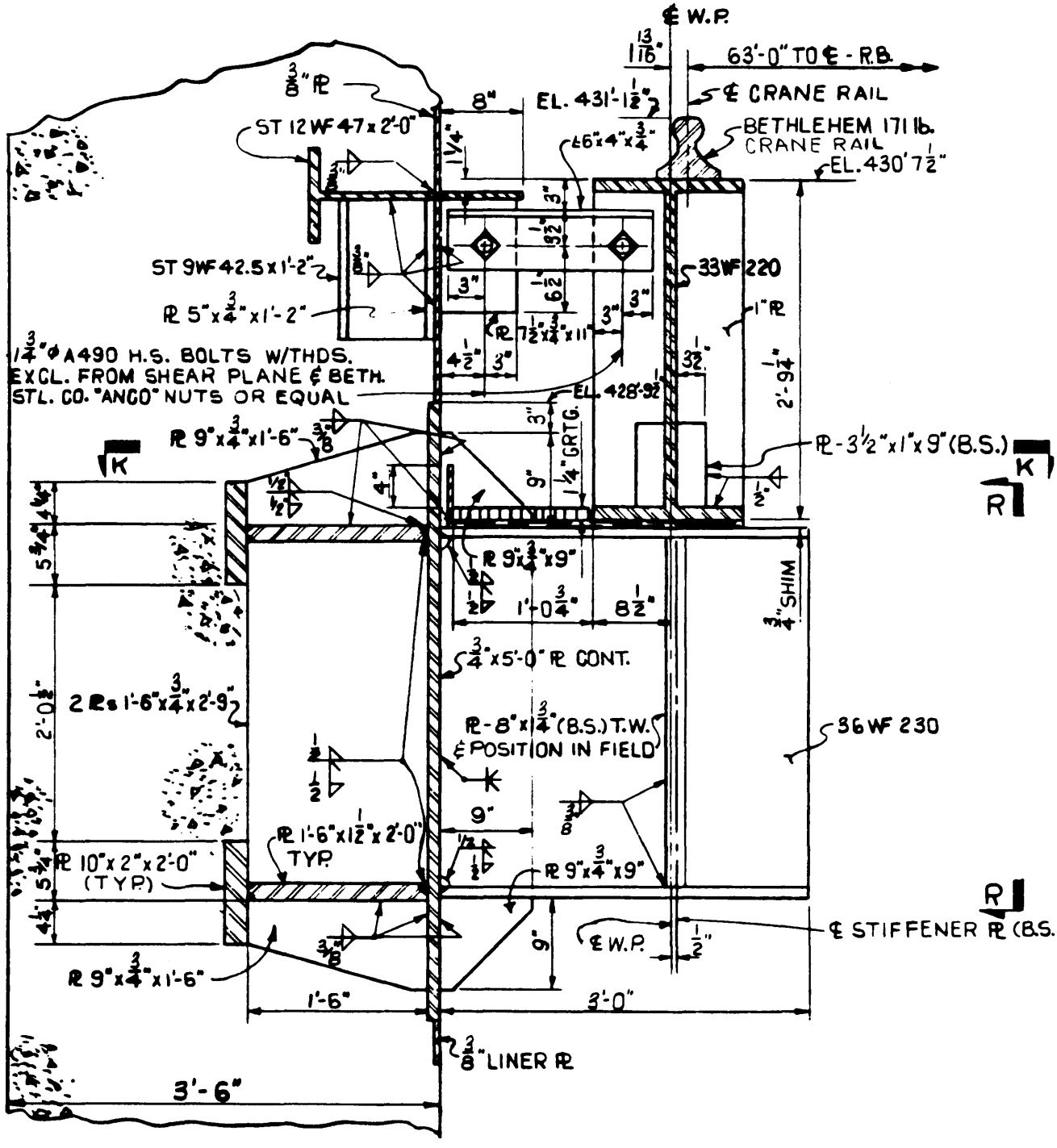


GPU Nuclear
TMI Unit-1

Update -1
7/82

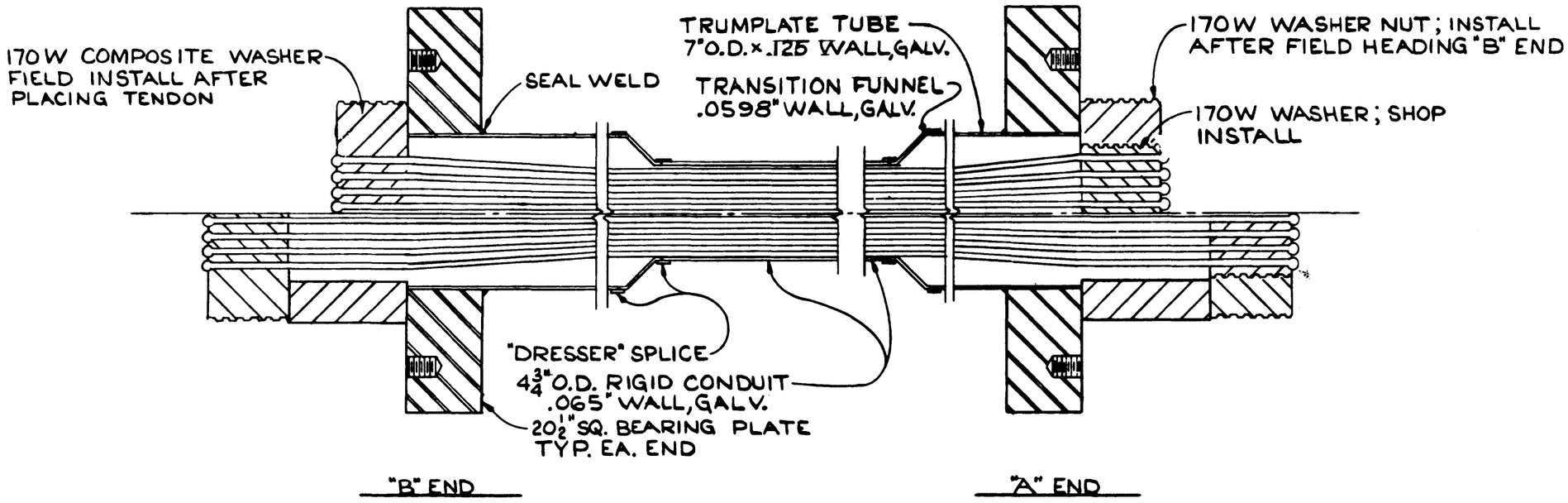
Seismic Load - Vertical Frequency #2

Fig. 5.2-24



CRANE RAIL SUPPORT
(32 REQ'D)

GPU Nuclear	Update -1
TMI Unit-1	7/82
Typical Crane Bracket Detail	
	Fig. 5.2-25

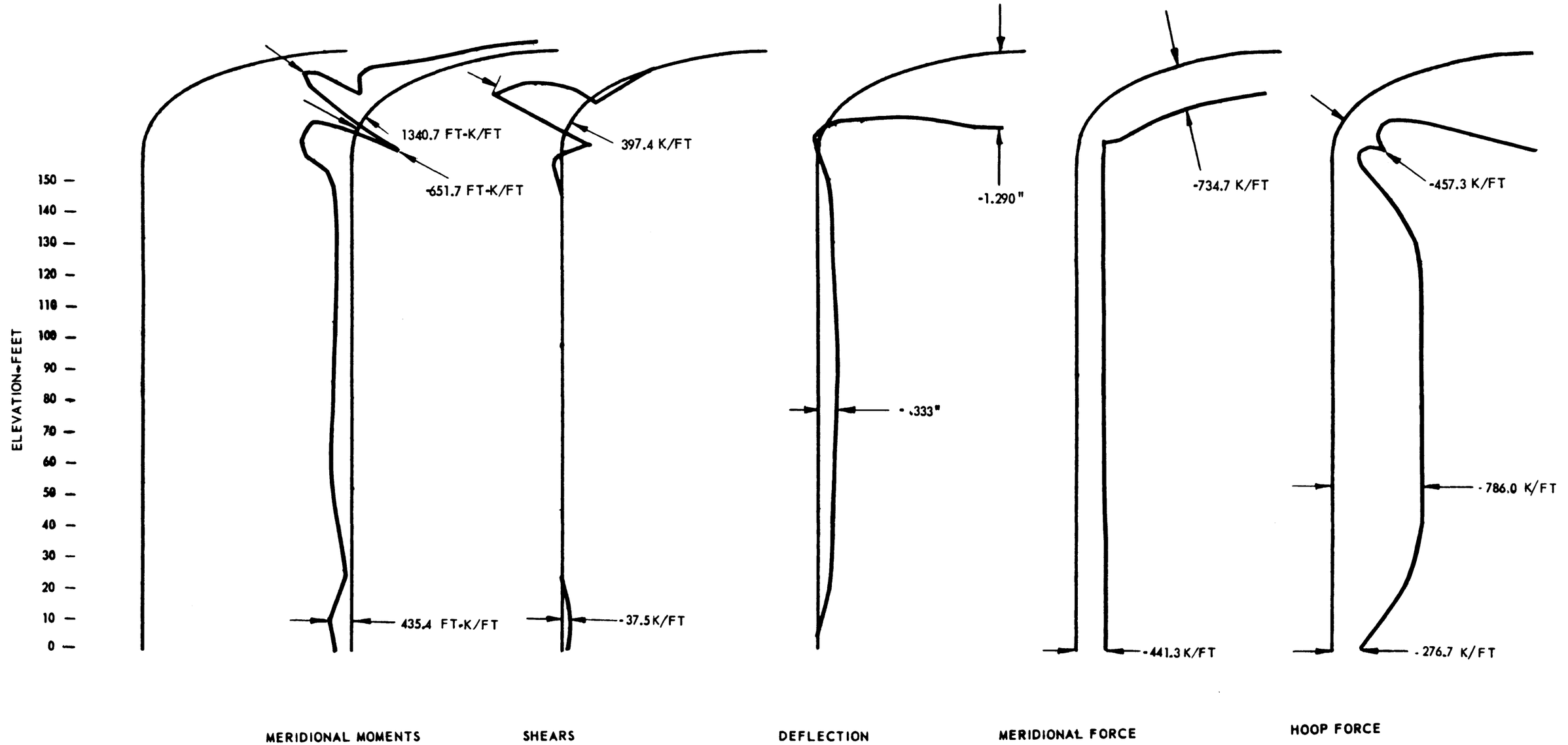


BEFORE STRESSING ABOVE ℄- AFTER STRESSING BELOW ℄

GPU Nuclear — Update -1
TMI Unit-1 — 7/82

Typical Tendon Assembly

Fig. 5.2-26

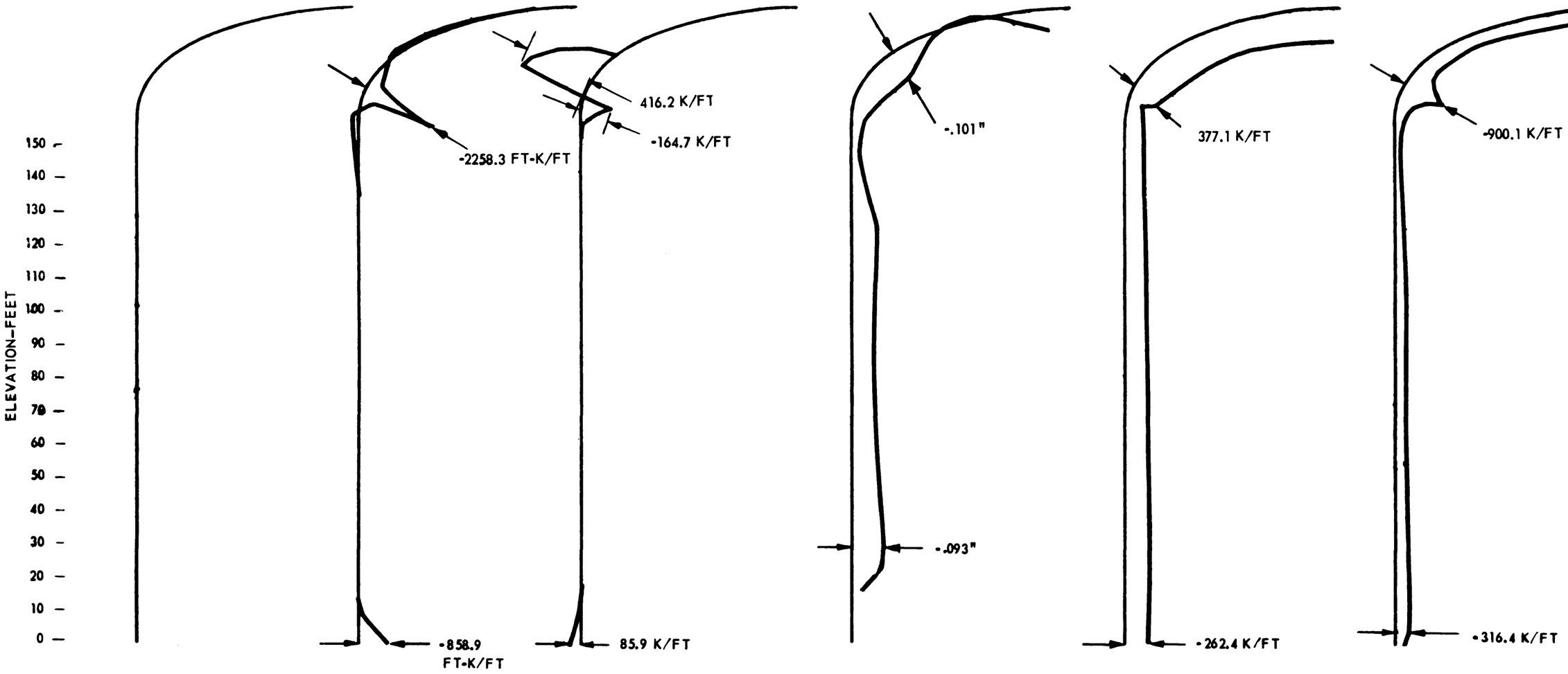


GPU Nuclear — Update -1

TMI Unit-1 — 7/82

Dead Load + Earthquake + Final Prestress At Operation + Operating Temperature

Fig. 5.2-27

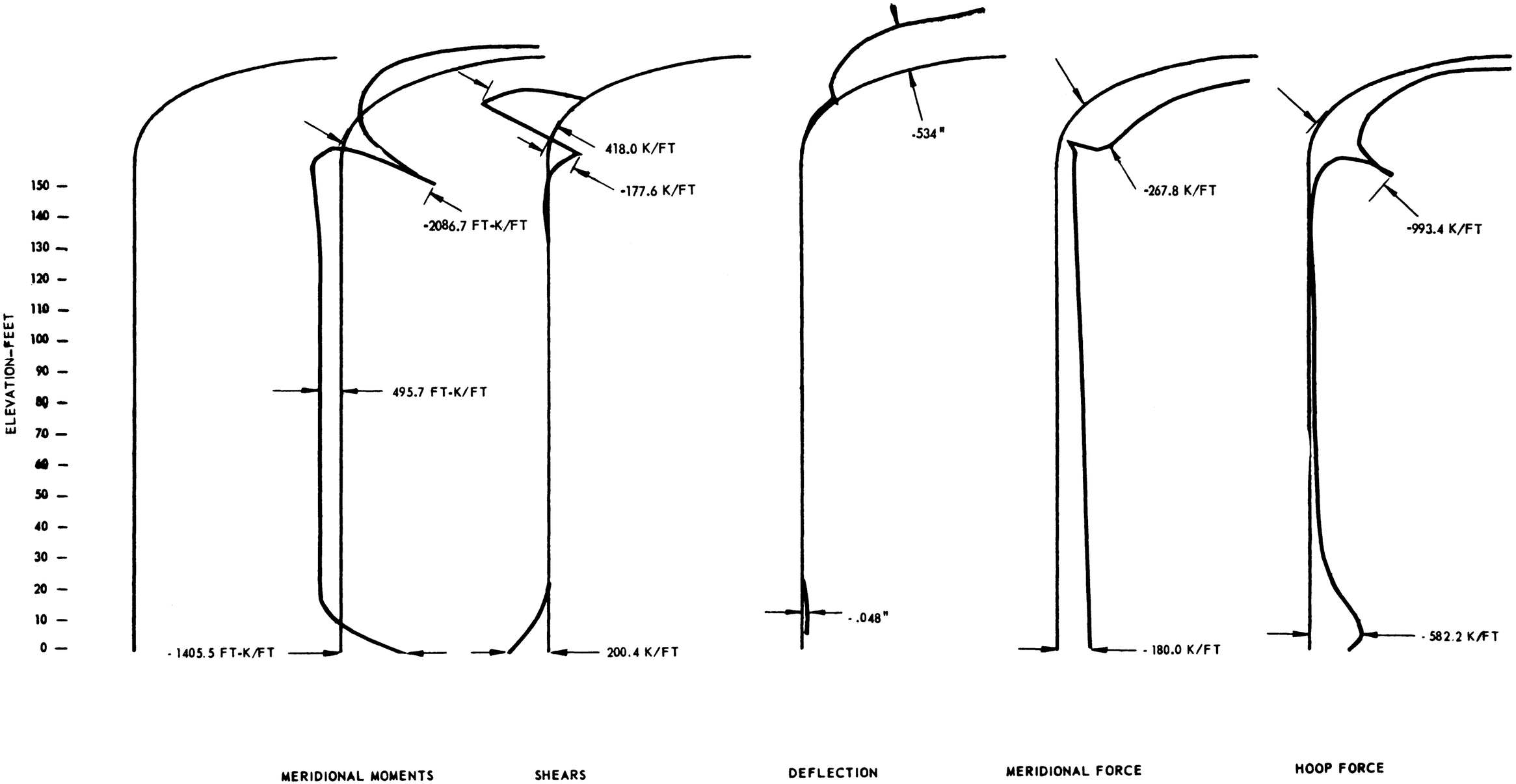


GPU Nuclear
TMI Unit-1

Update -1
7/82

Dead Load + Prestress + 1.15 Accident Pressure

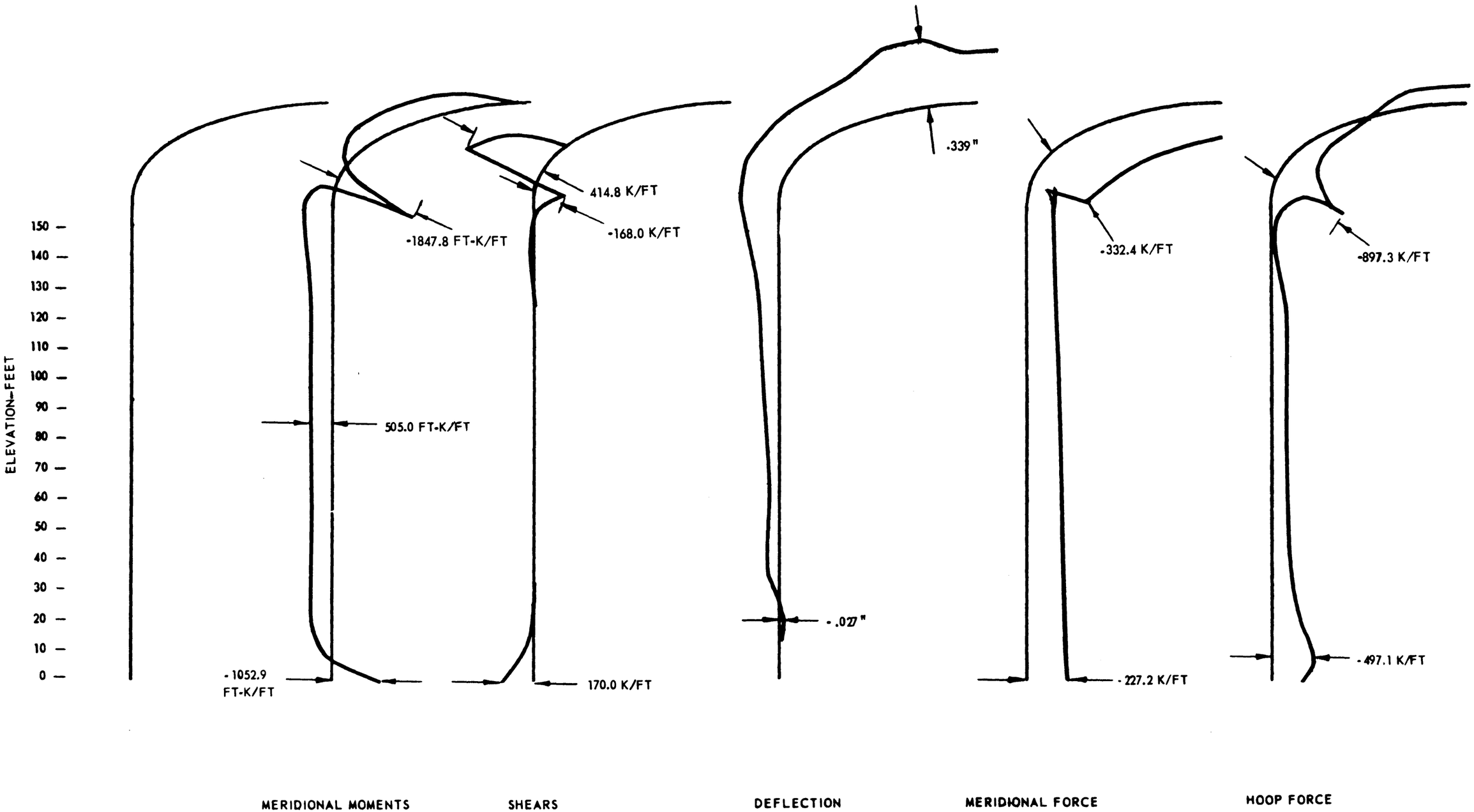
Fig. 5.2-28



GPU Nuclear — Update -1
TMI Unit-1 — 7/82

Dead Load + Prestress + 1.5 Accident Pressure + Accident Temperature

Fig. 5.2-29

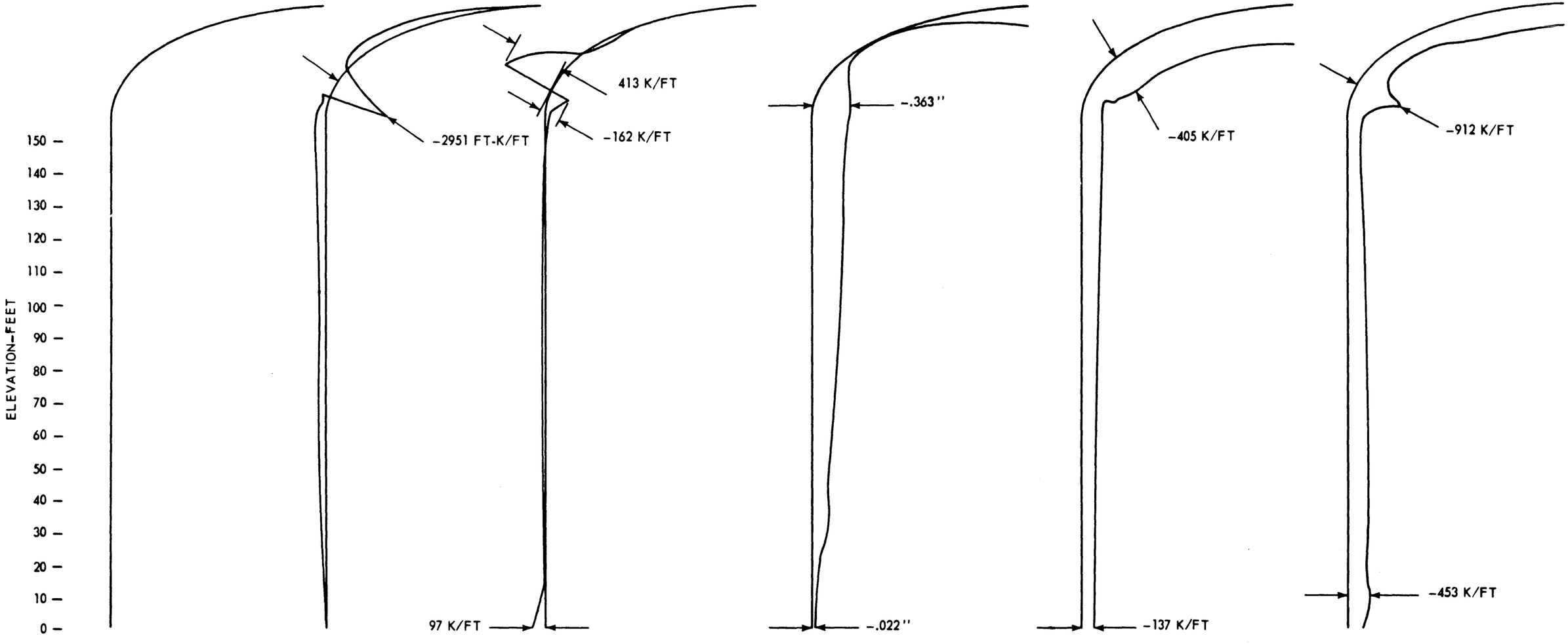


GPU Nuclear — Update -1

TMI Unit-1 — 7/82

Dead Load + Prestress + 1.25 Accident Pressure + Accident Temperature + 1.25 Earthquake

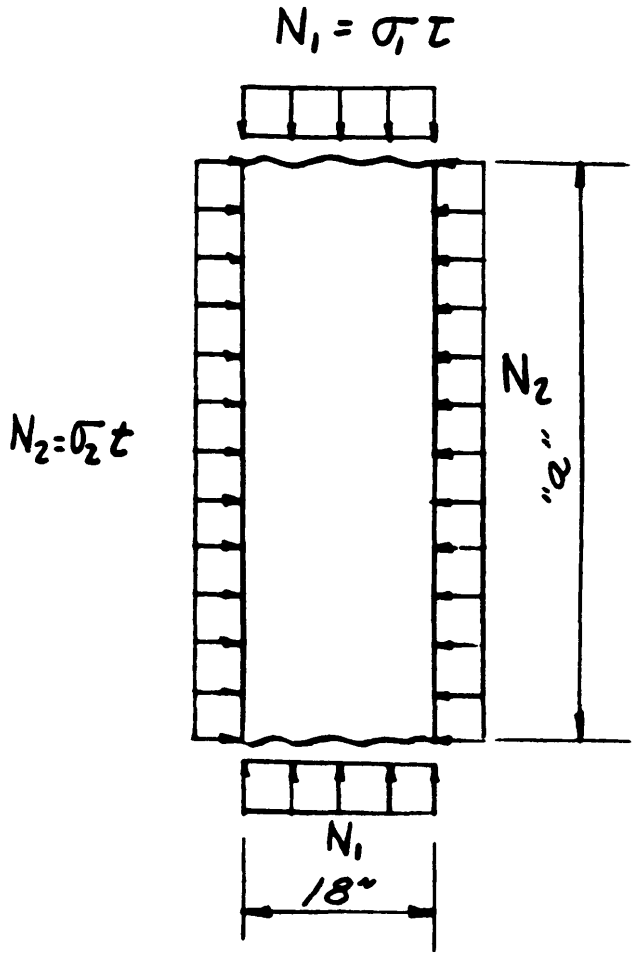
Fig. 5.2-30



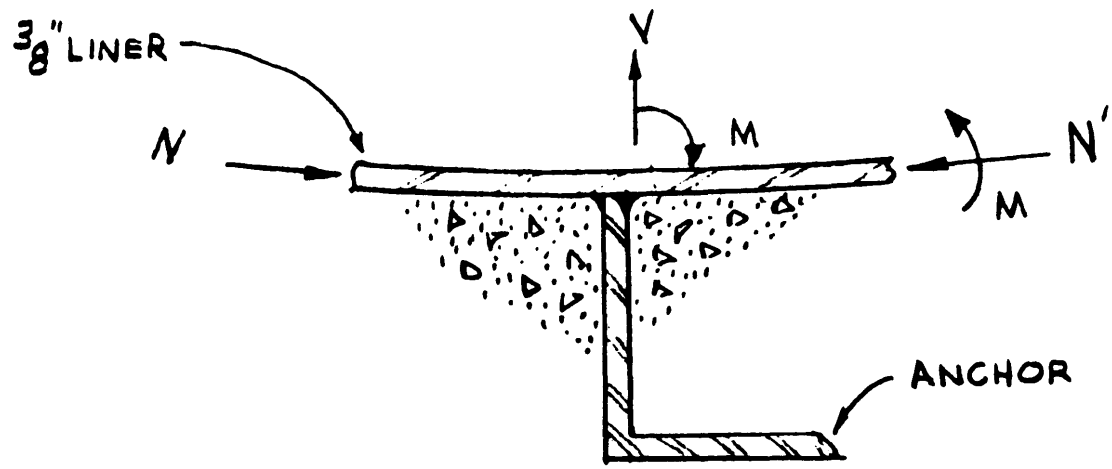
GPU Nuclear — Update -1
TMI Unit-1 — 7/82

Dead Load + Prestress + 1.0 Accident Pressure + 2.0 Earthquake + Accident Temperature

Fig. 5.2-31



GPU Nuclear	Update -1
TMI Unit-1	7/82
Critical Buckling Stresses	
	Fig. 5.2-32



GPU Nuclear	Update -1
TMI Unit-1	7/82
Anchor Loads	
	Fig. 5.2-33

Figure 5.2-34

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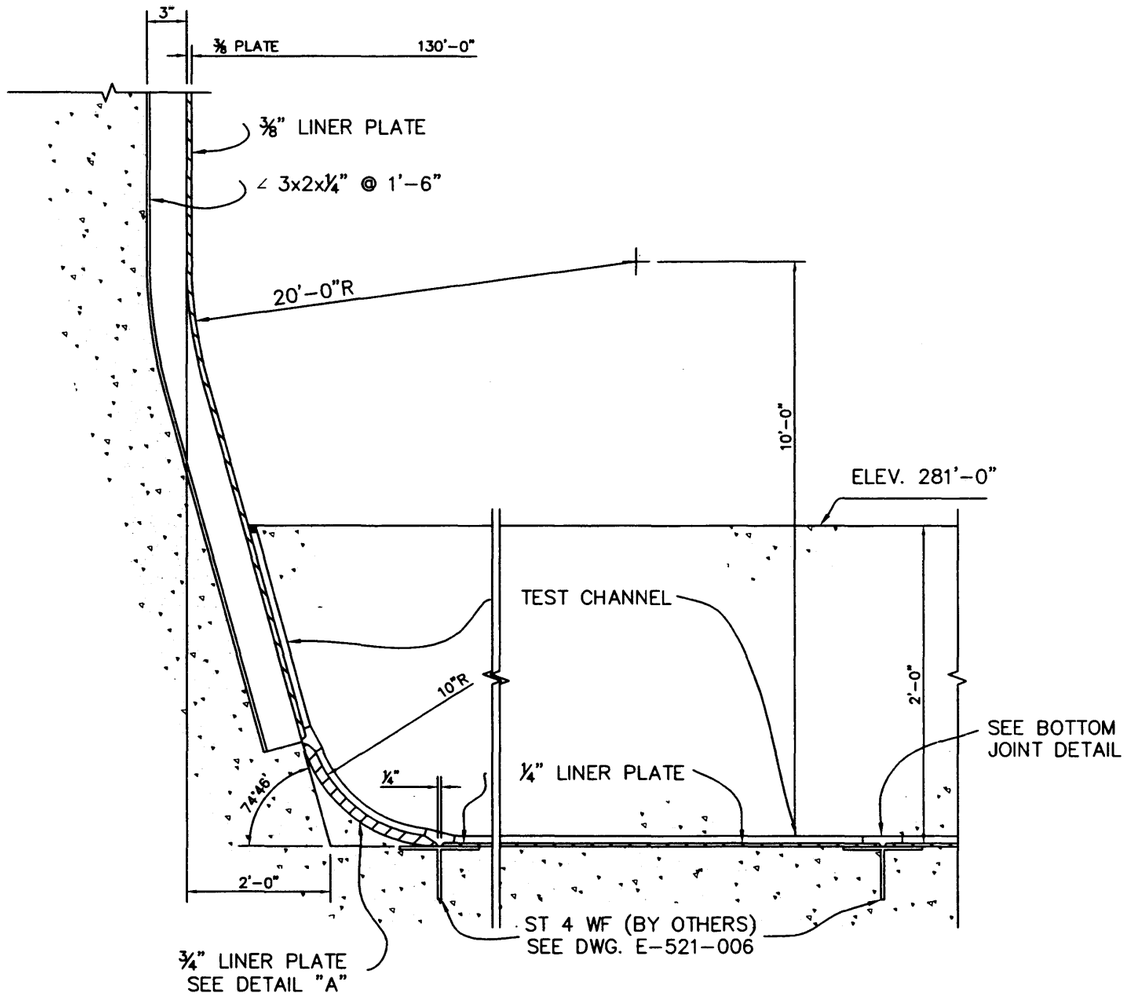
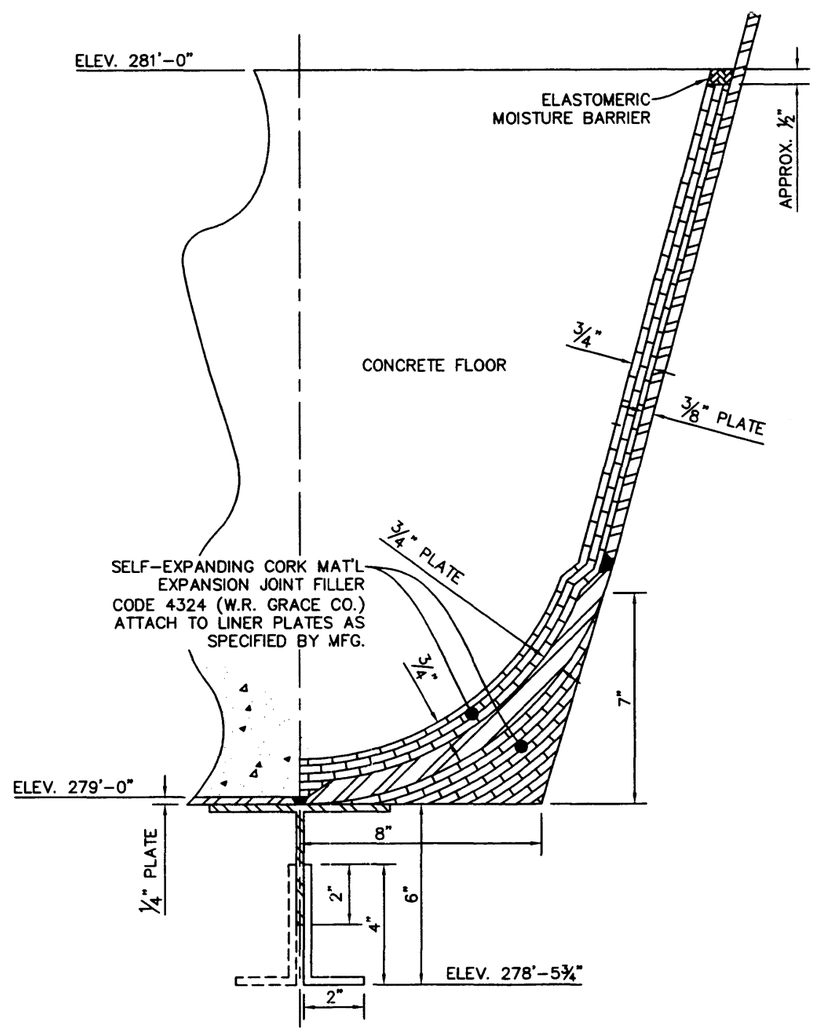


SECTION B–B

(E–521–030)

TRANSITION DETAIL

NOT TO SCALE



DETAIL "A"

AmerGen	UPDATE – 15
TMI – UNIT 1	4/00
BASE–CYLINDER JUCTION LINER DETAIL	
CAD FILE: 6709R15.DWG	Fig. 5.2–35

Figure 5.2-36

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Figures 5.3-1 through 5.3-5

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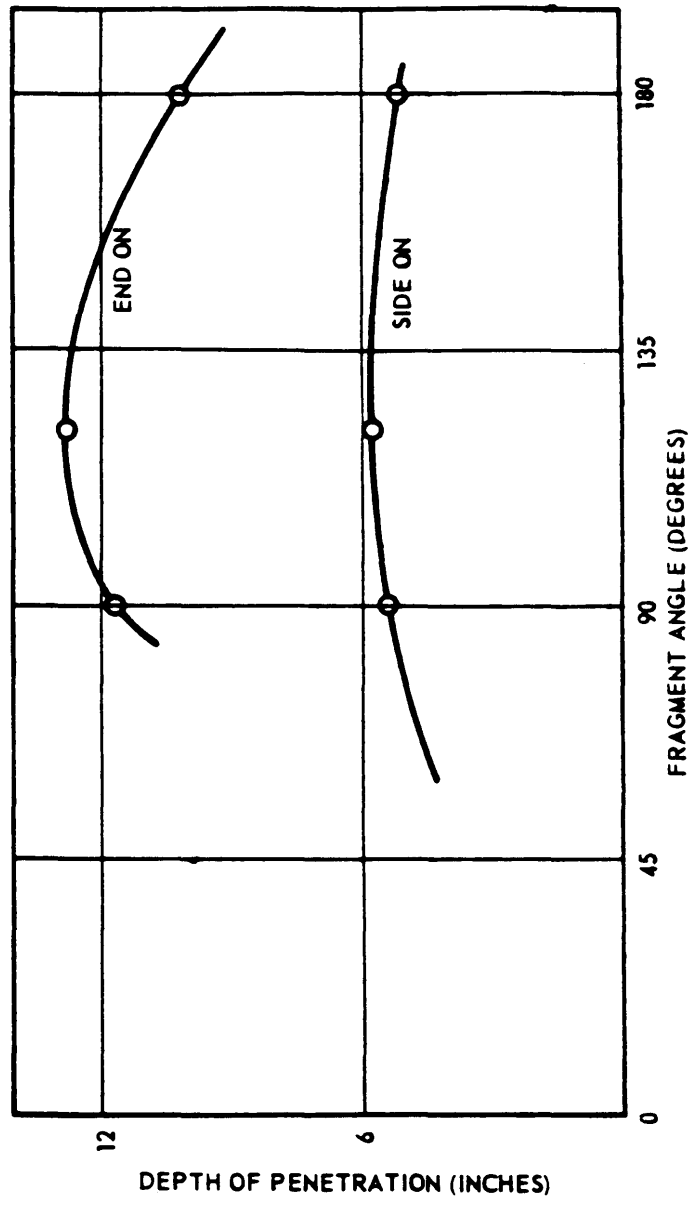
(b) (5)

LAST STAGE WHEEL MISSILES

FRAGMENT ANGLE	WEIGHT (POUNDS)	IMPACT AREA (FT^2)		FINAL ENERGY	FINAL VELOCITY	DEPTH OF PENETRATION	
		SIDE ON	END ON			SIDE ON	END ON
90°	4458	6.83	3.17	15.0×10^6 (FT-#)	464.0	5.45"	11.8"
120°	5944	8.37	3.66	20.5×10^6 (FT-#)	447.3	5.6"	12.8"
180°	8916	9.66	4.83	17.2×10^6 (FT-#)	351.0	5.04"	10.1"



GPU Nuclear
TMI Unit-1

Update -1
7/82

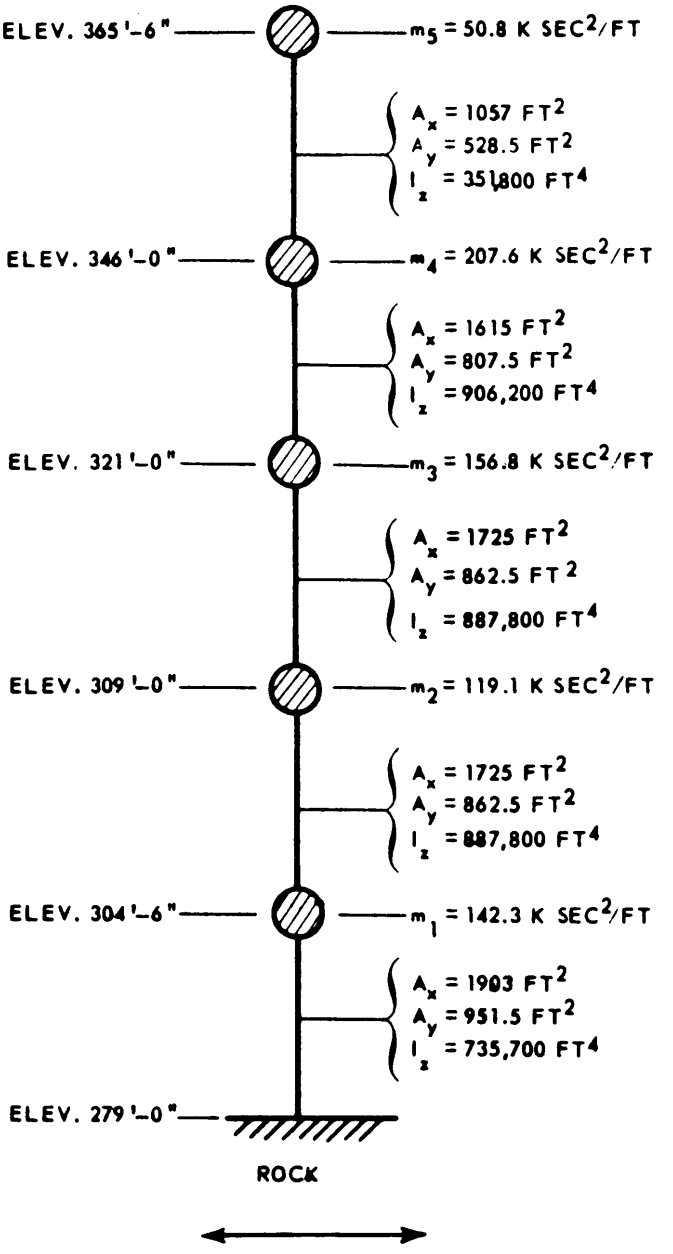
Missile Penetrations

Fig. 5.4-2

REACTOR BUILDING INTERIOR CONCRETE:

2% STRUCTURAL DAMPING
0.5% EQUIPMENT DAMPING

$E = 576{,}000\ K/FT^2$
$\nu = 0.25$

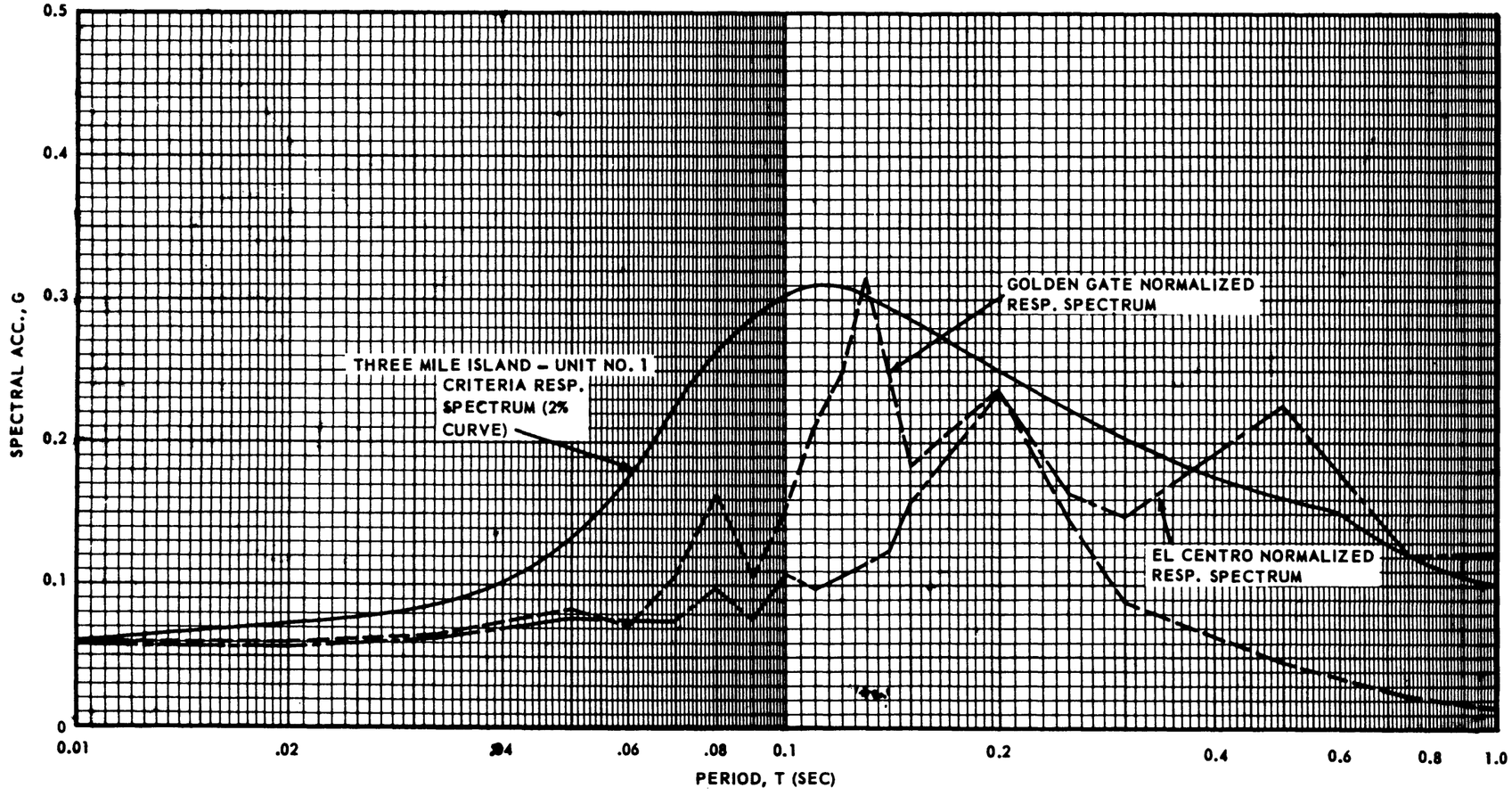


GPU Nuclear
TMI Unit-1

Update -1
7/82

Lumped Mass Model of Reactor Building

Fig. 5.4-3

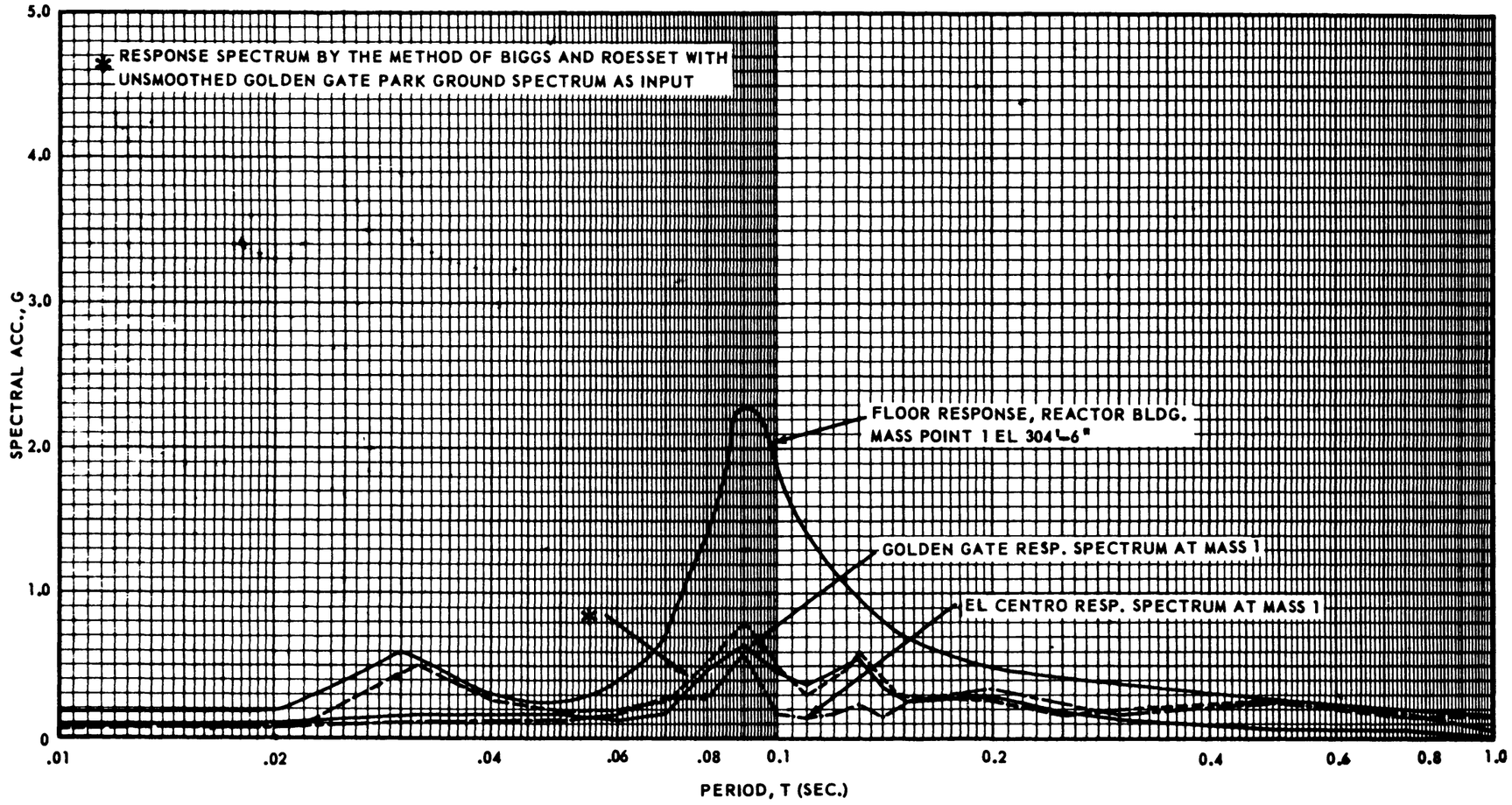


GPU Nuclear
TMI Unit-1

Update -1
7/82

Ground Response Spectra - Comparison

Fig. 5.4-4



GPU Nuclear
TMI Unit-1

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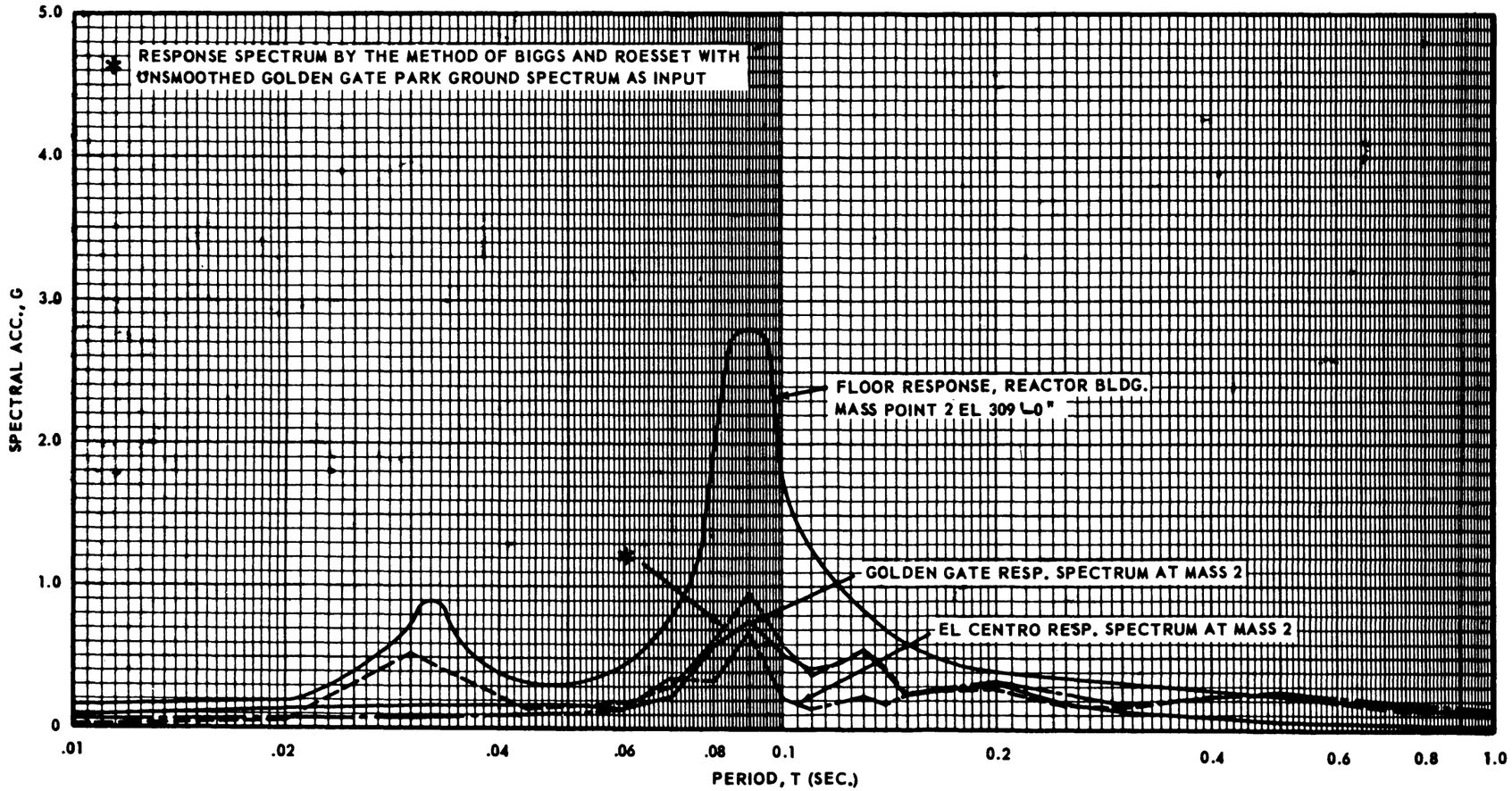
Floor Response of Mass Point 1 - Comparison

Fig. 5.4-5



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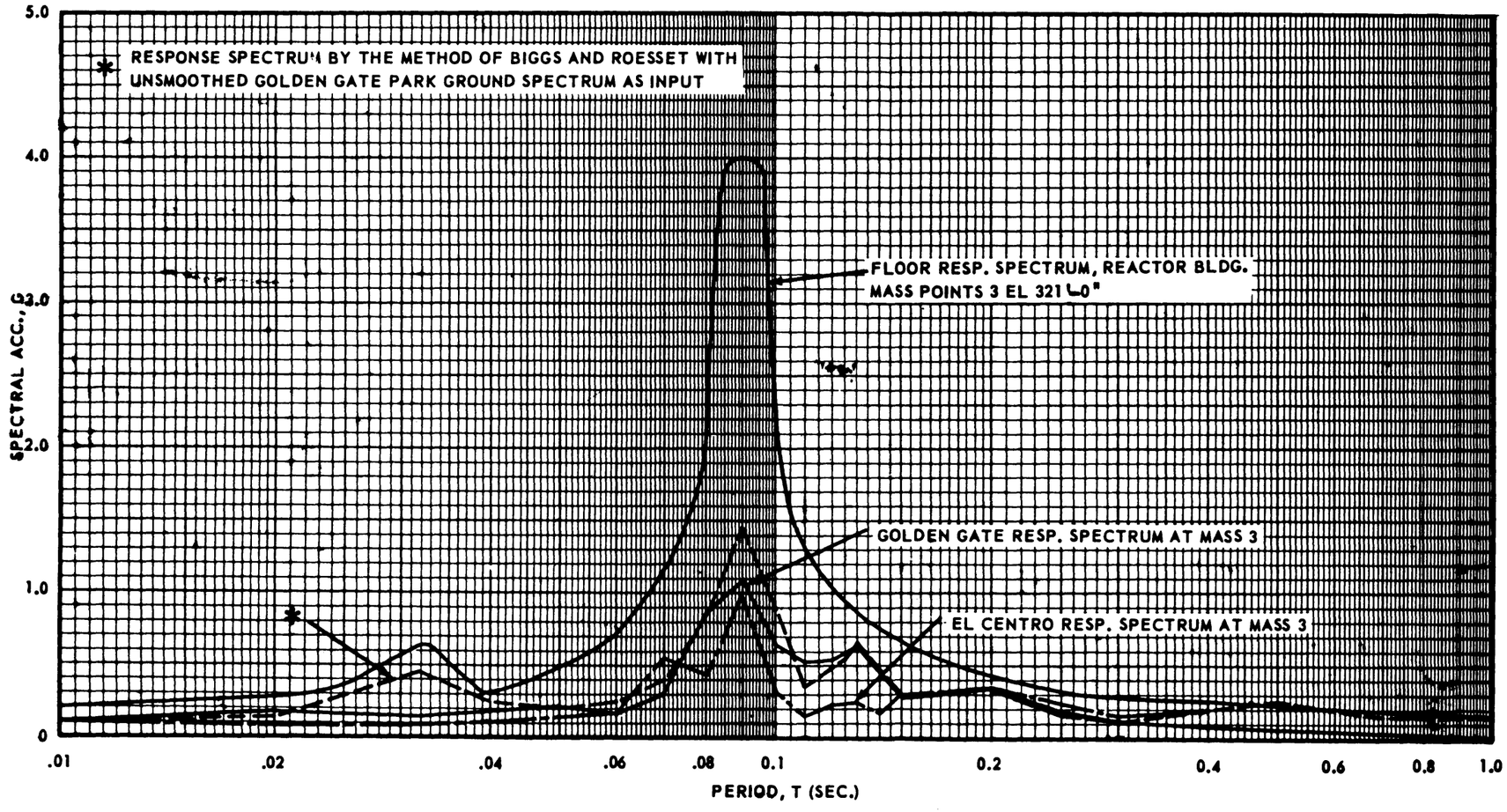
Floor Response of Mass Point 2 - Comparison

Fig. 5.4-6



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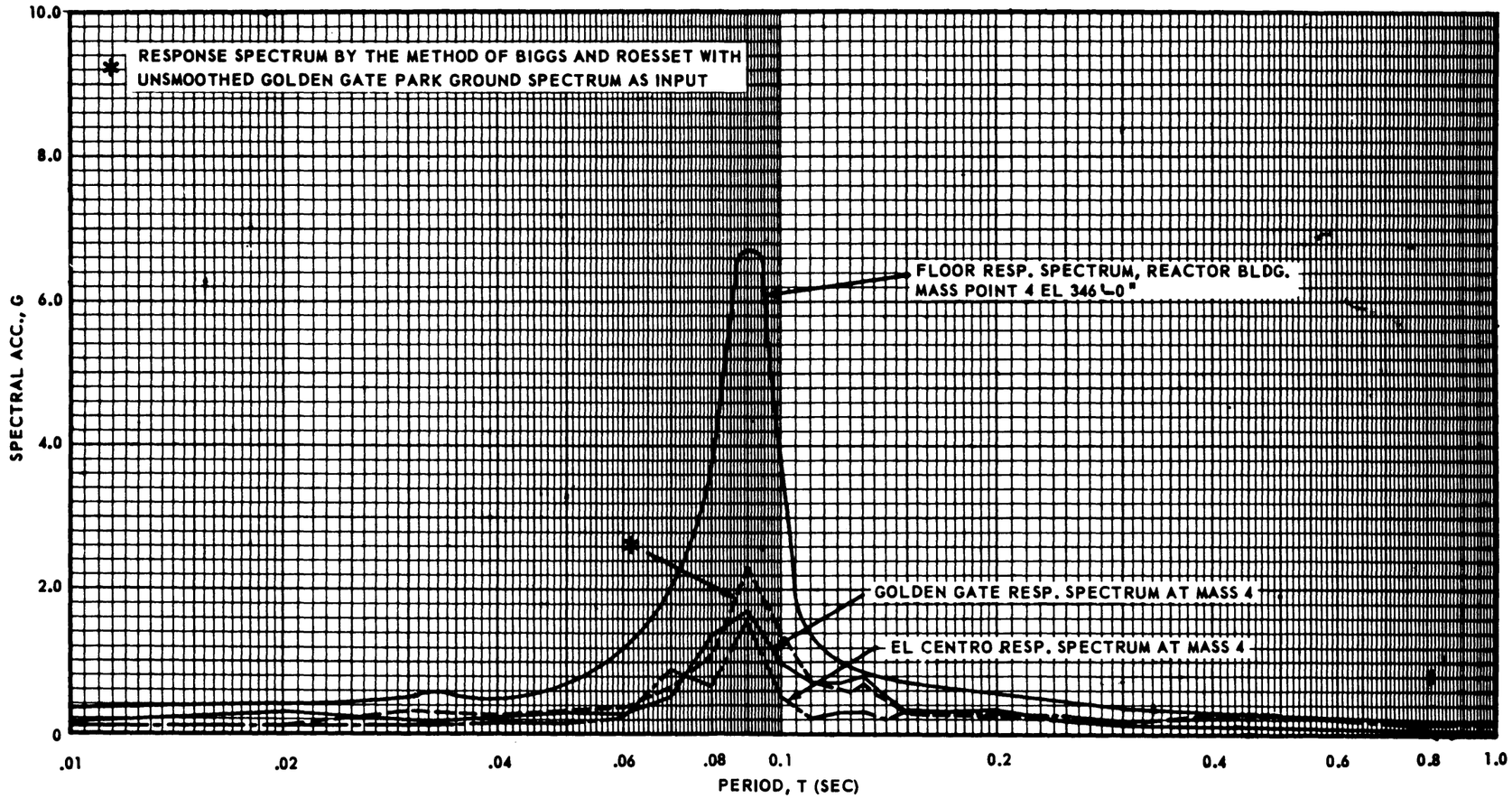
Floor Response of Mass Point 3 - Comparison

Fig. 5.4-7



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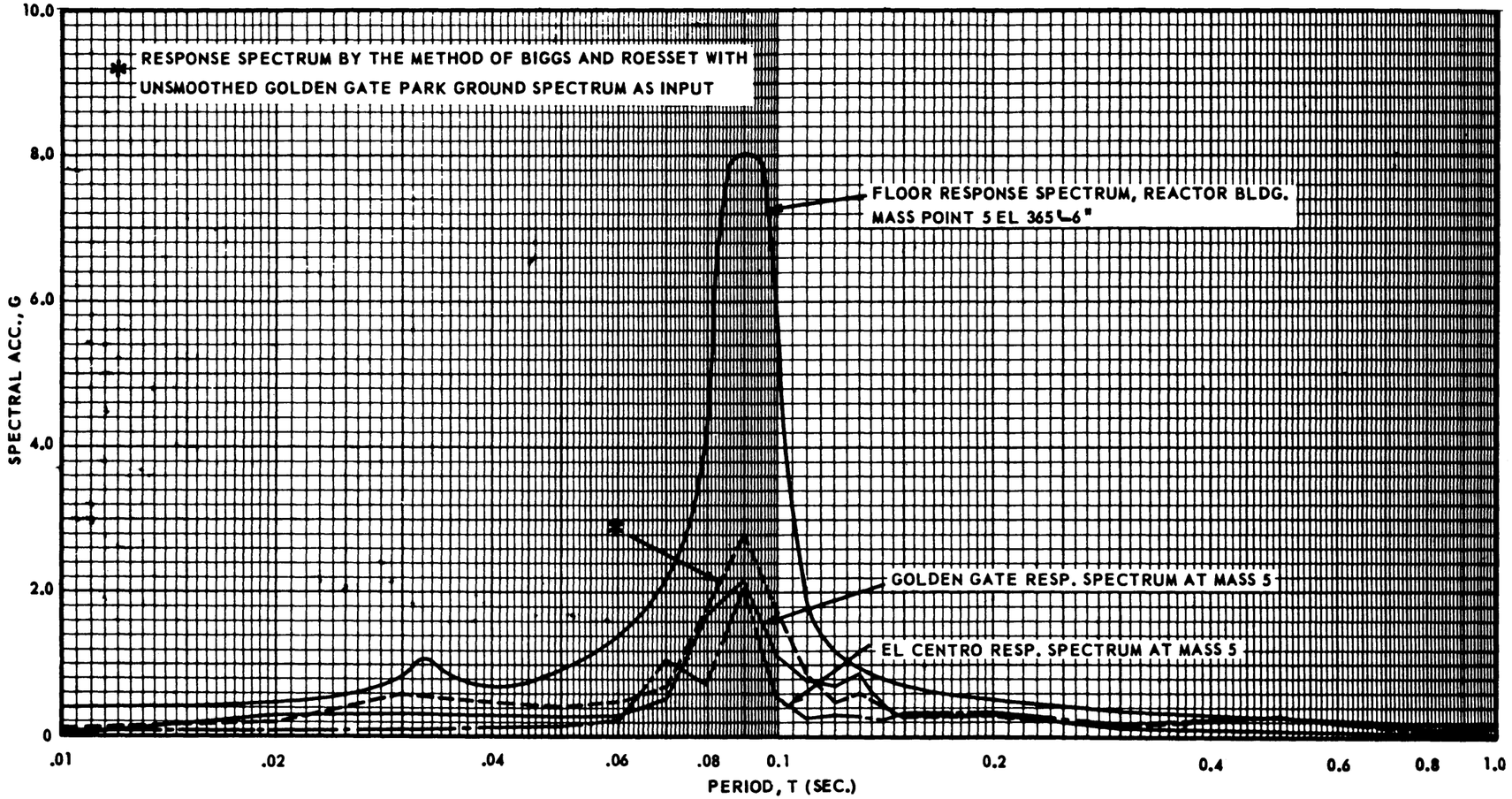
Floor Response of Mass Point 4 - Comparison

Fig. 5.4-8



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Floor Response of Mass Point 5 - Comparison

Fig. 5.4-9

COL 1	COLUMN 2	COL 3	COLUMN 4	COLUMN 5		COLUMN 6	COLUMN 7	COLUMN 8				COLUMN 9				COLUMN 10	COLUMN 11	COLUMN 12		COLUMN 13	COLUMN 14	
PIPE LINE NO	DESCRIPTION OF PIPE LINE	LINE SPEC	PIPE MATERIAL ASTM SPEC.	REFERENCED PIPING DIAGRAM: FOR THERMAL STRESS ANALYSIS	FOR SEISMIC STRESS ANALYSIS	PRESSURE STRESS IN PIPE S_{LP}=F A CODE PARA 102 3 2(1) (PSI)	MAXIMUM STATIC DEADLOAD STRESS (PSI)	SEISMIC STRESS (0.06g EARTHQUAKE) REF. POINT	X - Y DIRECTION (PSI)	REF. POINT	Y - Z DIRECTION (PSI)	SEISMIC STRESS (0.12g EARTHQUAKE) (DOUBLE VALUE OF 0.06g) REF. POINT	X - Y DIRECTION (PSI)	REF. POINT	Y - Z DIRECTION (PSI)	SUMMATION OF PRIMARY STRESSES (BASIS: 0.06g EARTHQUAKE) PRESSURE (COL. 6) + DEADLOAD (COL. 7) + SEISMIC STRESS (COL 8) (PSI)	SUMMATION OF MAXIMUM PRIMARY STRESSES (BASIS: 0.12g EARTHQUAKE) PRESSURE (COL. 6) + DEADLOAD (COL. 7) + SEISMIC STRESS (COL. 8) (PSI)	MAXIMUM THERMAL STRESS REF. POINT	MAXIMUM THERMAL STRESS EXPANSION STRESS (PSI) S_E(4)	ALLOWABLE THERMAL STRESS (PSI) S_A(2)	ALLOWABLE PRIMARY STRESS (PSI) 1.2 S_h	
BE-3	DECAY HEAT PUMPS - DISCHARGE	300-2	A350-65 TYPE 304	SS-302-550	SS-302-550-1	3,116	1,430 (10)	10	3,520	20	824	10	7,000	20	1,040	8,073	11,001	14	2,007	27,175	18,000	
BE-34	MAIN STEAM FROM STEAM GENERATOR-A, TO R.B. WALL	600-1	A106-67 GR. B	B-302-503-1	B-302-503-3	5,725	529 (24)	1	3,591	1	3,703	1	7,102	1	7,590	10,047	13,040	1	11,707	22,500	18,000	
BE-36	MAIN STEAM FROM STEAM GENERATOR-B, TO R.B. WALL	600-1	A106-67 GR. B	B-302-502-2	B-302-502-4	5,725	824 (8)	1	2,250	1	2,204	1	4,010	1	4,400	8,500	10,707	1	10,362	22,500	18,000	
BE-29	DECAY HEAT SERVICE COOLING - BOOSTER WATER	150-1	A53-67 GR. B	NOT APPLICABLE	C-302-600	1,520	3,777 (20)	20	3,041	11	3,102	20	7,002	11	0,304	0,147	12,000		NOT APPLICABLE	NOT APPLICABLE	18,000	
BE-66	DECAY HEAT CLOSED CYCLE CLG. WATER FROM PUMP DC-P1A TO COOLER DH-C1A	150-1	A106-67 GR. B	NOT APPLICABLE	SS-302-650	902	2,406 (31)	25	0,314	30	4,004	25	10,020	30	0,000	0,701	14,105		NOT APPLICABLE	NOT APPLICABLE	18,000	
BE-62	EMERGENCY FEED-WATER PUMP-B, DISCHARGE TO HEADER	600-1	A106-67 GR. B	SS-302-504-1	SS-302-504-2	4,040	2,343 (23)	23	4,003	23	5,503	23	0,300	23	11,120	11,040	17,500	23	235	22,500	18,000	
BE-64	TURBINE DRIVEN EMERG. F.W. PUMP DISCHARGE TO HEADER	600-1	A106-67 GR. B	SS-302-500-1	SS-302-505-2	4,040	3,675 (30)	30	4,035	30	2,301	30	0,270	30	4,722	12,350	10,005	20	002	22,500	18,000	
BE-75	REACTOR BUILDING SPRAY RING #1	300-2	A312-64 TYPE 304	C-302-610	C-302-610	004	1,237 (10)	10	2,370	4	505	10	4,750	4	1,100	4,440	0,707	0	4,152	27,175	18,000	
BE-76	REACTOR BUILDING SPRAY RING #2	300-2	A312-64 TYPE 304	C-302-620	C-302-620	004	1,304 (51)	10	1,520	10	1,350	10	3,040	10	2,700	3,070	5,100	0	4,250	27,175	18,000	
BE-04	NUCLEAR SER. CLG. W. FROM HEAT EXCHANGERS TO PUMPS	350-1	A106-67 GR. B	NOT APPLICABLE	B-302-032	1,730	2,400 (30)	50	0,017	00	4,445	50	13,034	00	0,000	10,004	17,701		NOT APPLICABLE	NOT APPLICABLE	18,000	
BE-07	24" B.F. INJECTION PIPING FROM PENET. #312 TO B.& W. CONN.#17	2500-2	A312-64 TYPE 304	NOT APPLICABLE	B-302-044-2	2,005	2,005 (2)	52	044	52	031	52	1,000	52	1,002	0,004	7,030		NOT APPLICABLE	NOT APPLICABLE	18,000	
	REACTOR COOLANT LOOP PIPING -DATA FROM B.& W. CO.	B & W	A516 GR. 70 & A106 GR. C	B & W	B & W	13,900	1,000		3,700		3,700		7,400		7,400	10,700	22,400		20,000	*	*	* THE TOTAL ACTUAL COMBINED STRESSES ARE 40,500 PSI-ACCORDING TO B31.7 * THE TOTAL ALLOWABLE COMBINED STRESS IS 52,100 PSI - ACCORDING TO B31.7

NOTES:

1. USAS (ANSI) B31.1.0-1967 CODE FOR PRESSURE PIPING.
2. FROM PARA.102.3.2 OF CODE FOR PRESSURE PIPING.
3. FOR VALUES OF S_h SEE TABLES A-1 AND A-2 OF CODE FOR PRESSURE PIPING.
4. SEE PARA. 119.6.4 OF CODE FOR PRESSURE PIPING.

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Summary Tabulation of the Piping Stresses for Seismic Class 1 Piping

Fig. 5.4-10

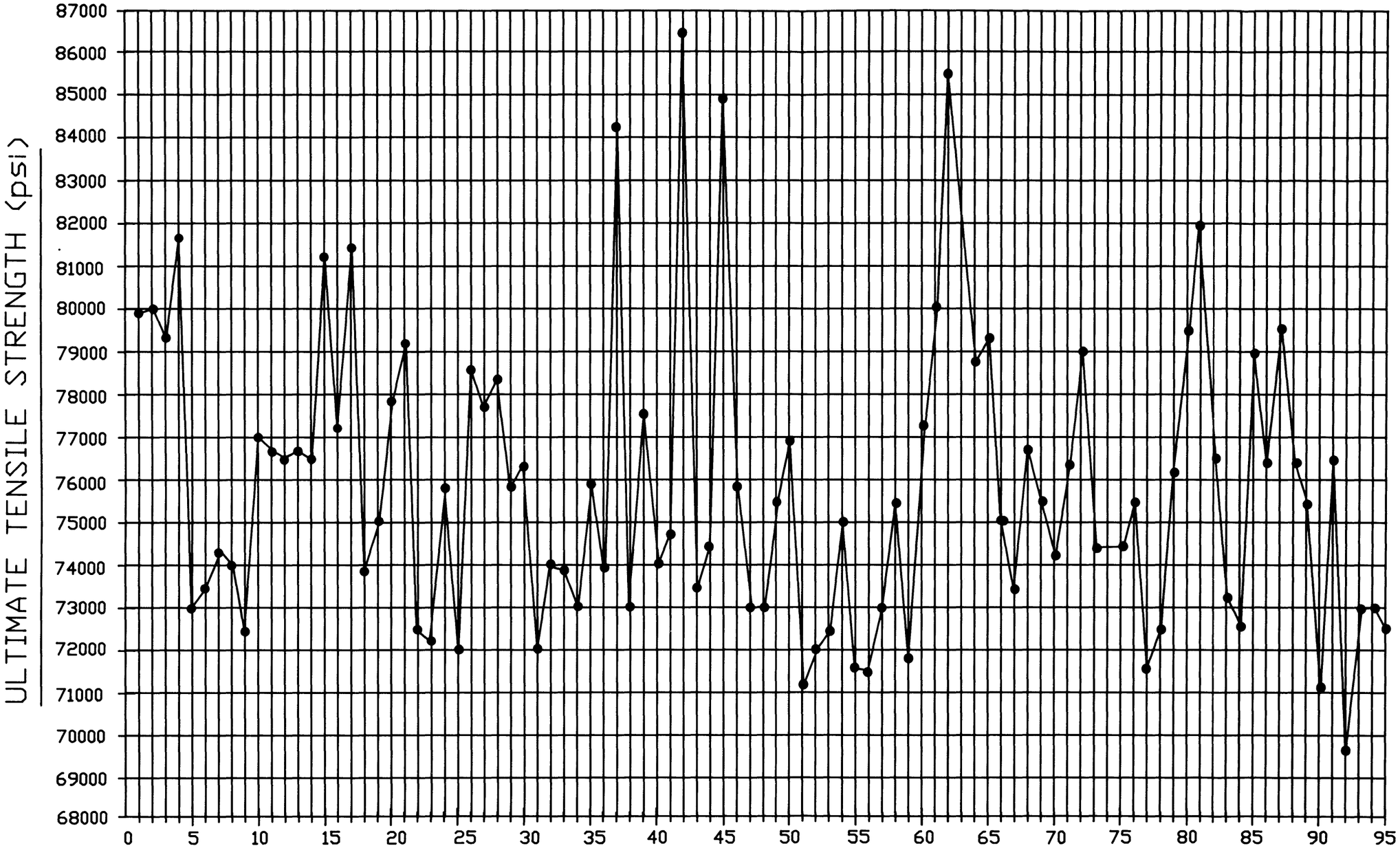

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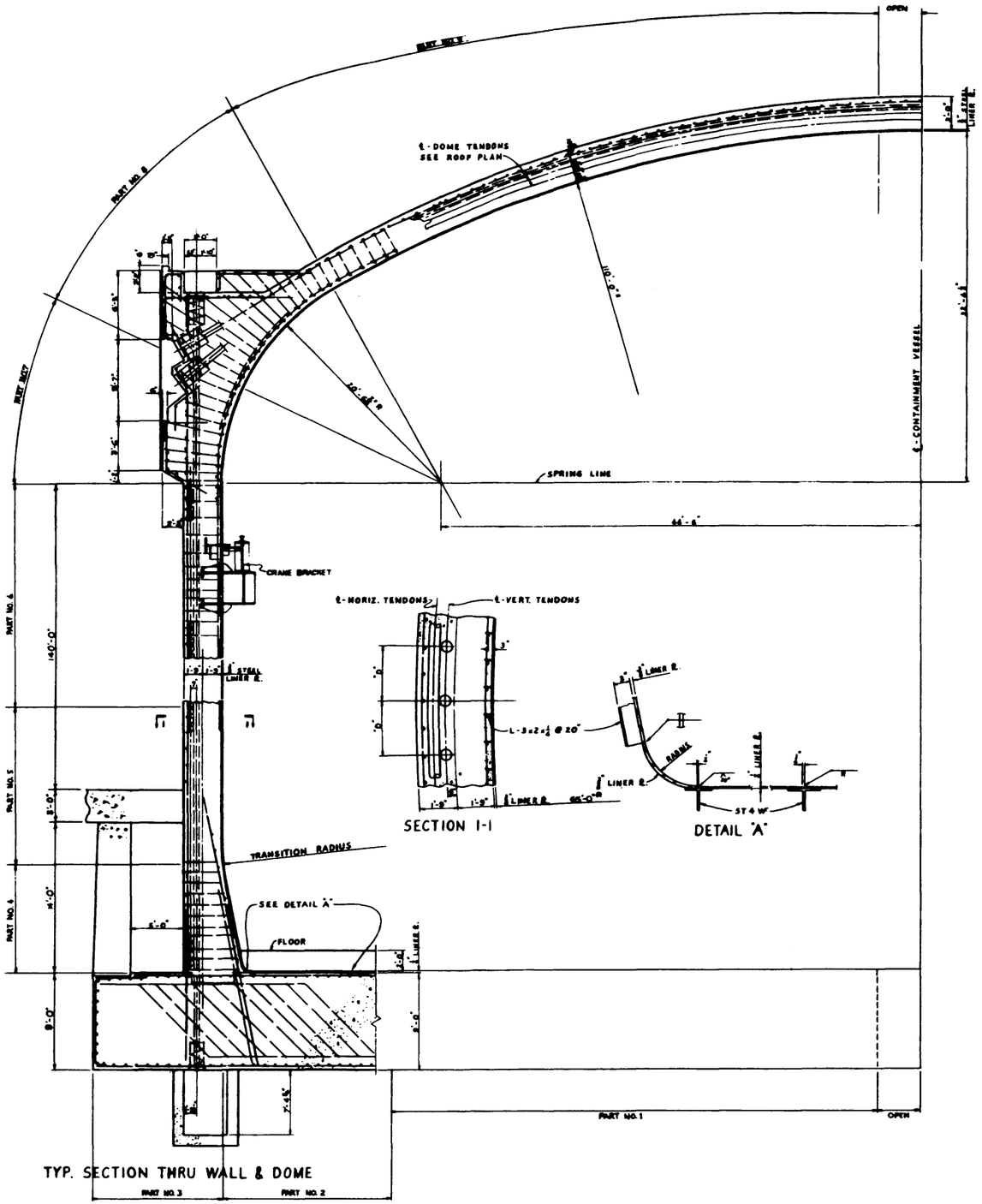
Fig. 5.5-1



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Containment Vessel Details

Fig. 5.6-1

Figure 5.6-2

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