

TRANSFORMERS NO. 3 RATING & CHARACTERISTICS
PENNSYLVANIA TRANSFORMER CO.

Type OISC

Serial Nos. 4616-1, 2 and 3

Normal continuous rating on all taps, Oil-immersed, self-cooled KVA	5,000
Oil-immersed, forced-air-cooled KVA	7,333
Frequency, Hertz	60
Number of phases	Single
High Voltage, rated KV	115Y/66.4
Low Voltage, rated KV	13.8/6.9
High Voltage winding connection	Star
Low Voltage winding connection	Delta
Average impedance at (75°C and 5,000 KVA)	8.2%
Average impedance at (75°C and 7,333 KVA)	12.1%
Taps, low-voltage winding	None
Taps, high-voltage winding at rated KVA	1 @ 5% above normal 1 @ 2½% above normal 1 @ 2½% below normal 1 @ 5% below normal

Guaranteed efficiency at normal rating,
unity power factor and 75° C (not
less than) 99.21%

Cooling Fans. Air blast control equipment for each transformer consists of: a low voltage winding temperature relay, seven fan motors (1/3 hp., 1725 rpm, 1 phase, 60 Hz., 230 Volts for bracket mounting complete with 18-inch diameter fans), automatic starter with control switch and line disconnecting switch. The control switch may be set in "automatic", "manual" or "off" position. This switch is normally set in the automatic position, and when so set, the fans will start operation at a winding (Hot-Spot) temperature of about 70°C and continue in operation until a minimum temperature relay setting of about 68°C is reached. Motor protection is provided by an automatic reset thermal cut-out.

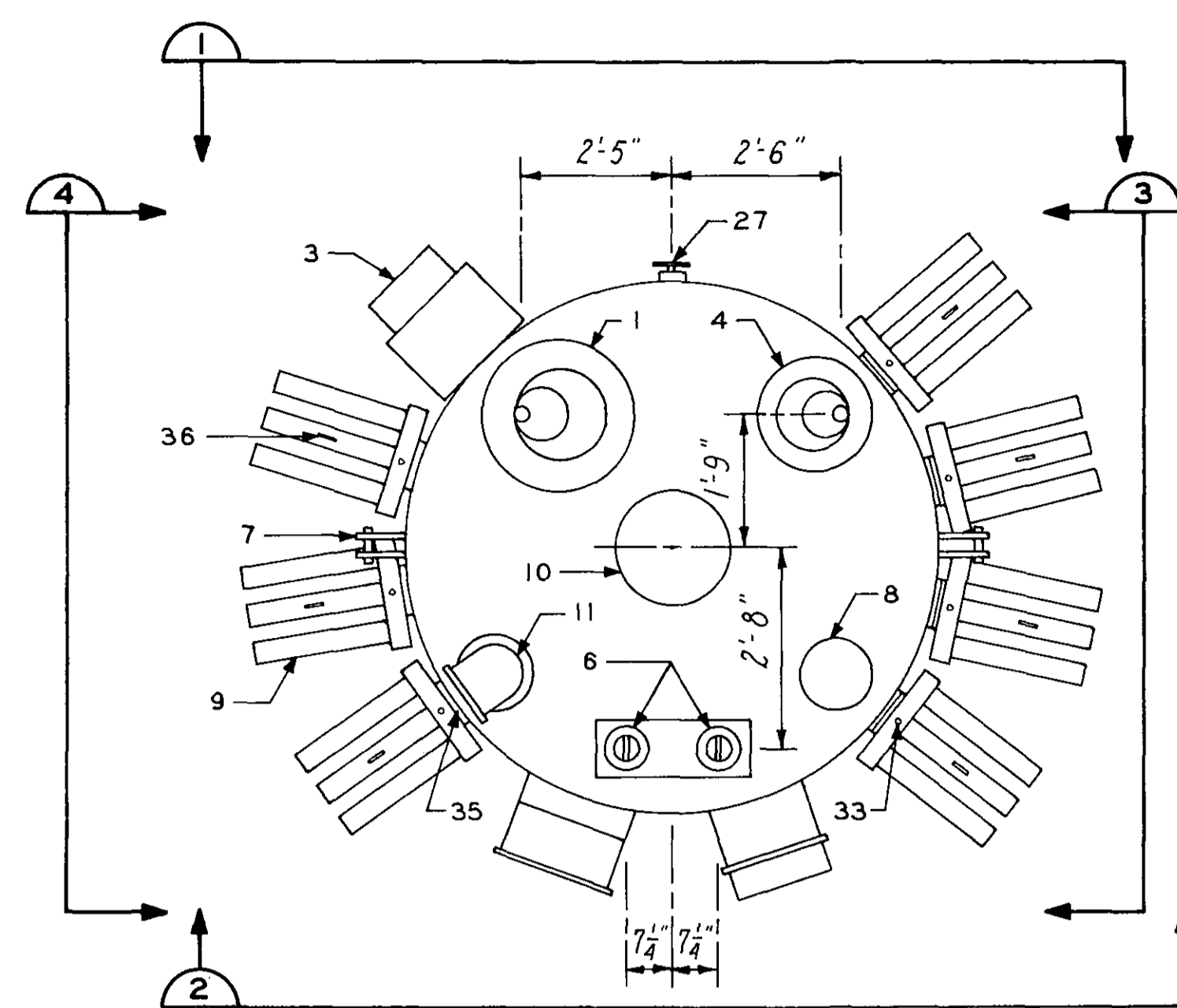
Bushings. The bushings on each transformer consist of one high voltage bushing, one high voltage neutral bushing and two low voltage bushings. The high voltage bushing is a 115-KV, 400 Ampere, Locke Insulator Corp. Type OF, Class HJY115 with General Electric capacitance taps. Bushing type multi-ratio, current transformers are supplied with each high voltage bushing. The high voltage neutral bushing, manufactured by Locke Insulator Co., is type OF, Class HY73A and rated at 73-KV and 400-amperes. General Electric bushing type, multi-ratio, current transformers are supplied with each high voltage neutral bushing. The two low voltage bushings (Locke Insulator Corp.) are type L, Class A15A bushings rated at 15 KV, 1200 amperes. None of the current transformers mentioned in this paragraph are in use at the present time. Protective gaps are provided on all line bushings as back-up surge protection.

LEGEND:

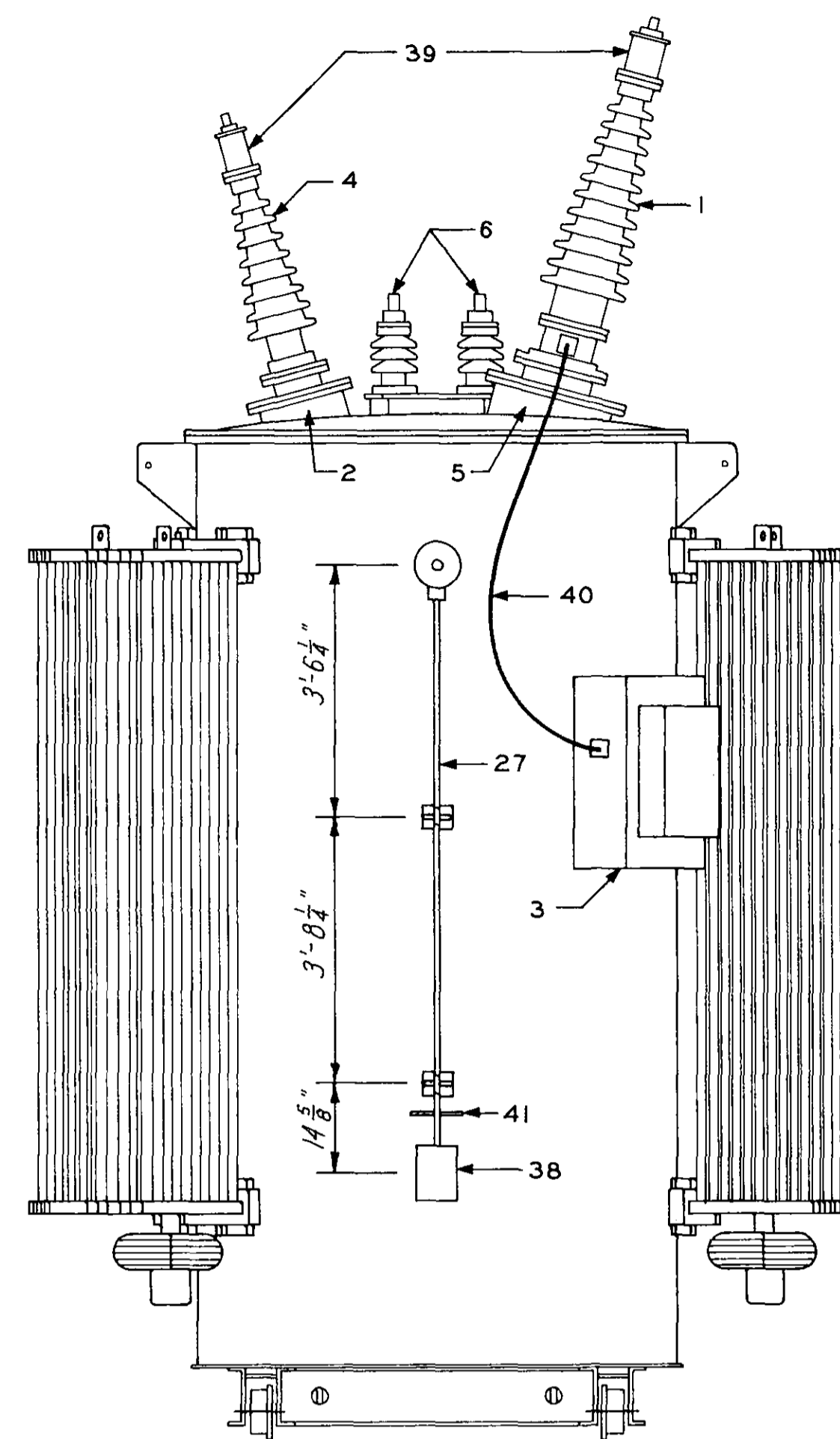
1. High voltage oil filled bushing with capacitance taps, 115 KV, 400 A, Locke Insulator Corp., Type OF, Class HJY 115, Cat. No. 87242G1.
2. Bushing type multi ratio current transformer, General Electric, Type BR.
3. Potential device, Locke Insulator Corp., Type KA-103.
4. High voltage neutral oil filled bushing, 73 KV, 400 A, Locke Insulator Corp., Type OF, Class HY73A, Cat. No. 87314G1.
5. Bushing type multi-ratio current transformer, General Electric, Type BR.
6. Low voltage bushing, 15 KV, 1200 A, Locke Insulator Corp., Type L, Class A15A, Cat. No. 83612G3.
7. Transformer lifting lugs with oil, use lifting beam with slings for lifting entire transformer or untanking.
8. Current transformer terminal box.
9. Radiator, detachable.
10. Manhole, 18" diameter.
11. Safety valve, Type elbow.
12. Nitrogen equipment cabinet.
13. Nitrogen 3/8" copper tubing.
14. Oil temperature gauge, type dial thermometer with alarm contacts, dial inclined at 45 degree angle for visibility from ground level.
15. Hot spot temperature gauge, type dial thermometer with alarm contacts, dial inclined at 45 degree angle for visibility from ground level.
16. Winding Temperature Relay Sensing Bulb for Fan Control.
17. Low oil level alarm, Schaub Magnetrol.
18. Magnetic Oil Gauge.
19. 1/2" Oil Sampling Globe Valve.
20. 1 1/2" Lower Filter Press Connection Globe Valve.
21. 1 1/2" Oil Filling Globe Valve.
22. Top Oil Temperature Relay Sensing Bulb (Not Used).
23. 2" Globe Valve Drain, 3" Tank Flange, 2" reducer.
24. Structural Steel Base.
25. Jack lugs.
26. Single flanged steel wheels with roller bearings.
27. High voltage tap changer, arranged for operation from ground level, padlock in position.
28. Terminal cabinet, for alarm circuits, temperature trip circuits, current transformer and potential secondary leads.
29. 1 1/2", 2-3/4", 2-1" conduit hubs.
30. Control Cabinet - Cooling Fans.
31. Nameplate, stainless steel.
32. Pulling transformer 1-1/2" eye bolts, for pulling.
33. Radiator vent.
34. Drain plug.
35. Radiator Valve.
36. Radiator lifting lugs.
37. Window.
38. Nameplate - Tap Changer Mechanism Instructions
39. Oil Sight Glass.
40. Capacitance Tap Lead.
41. Tap Changer Operator Handle, 9 inches long

NOTES:

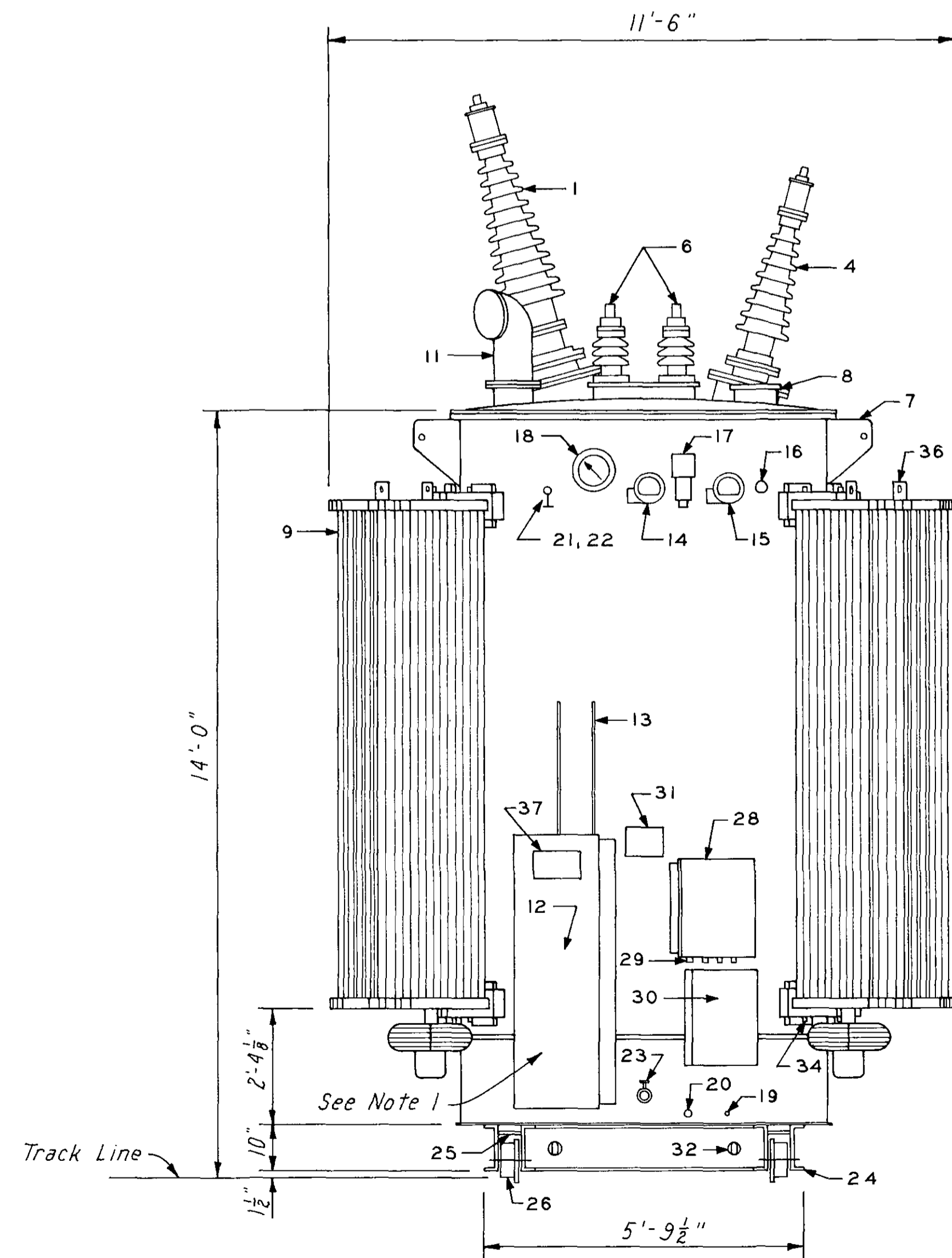
1. Nitrogen Cabinet has been moved out approximately 11 1/2" and down approximately 2'-1" from shown location to facilitate gas cylinder handling. Cabinets are replaced to their original location when transformers are moved to the transformer service room.



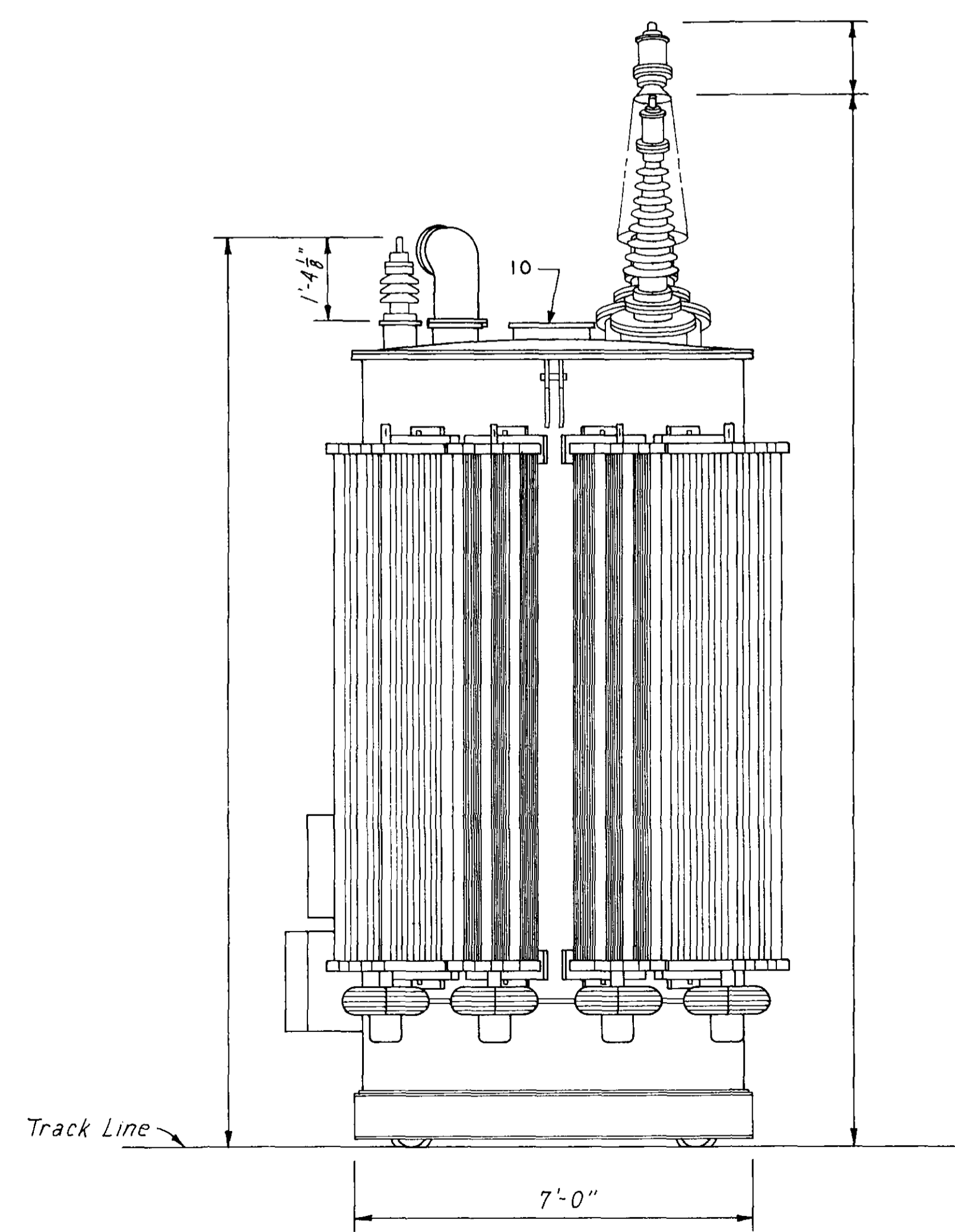
PLAN
 SCALE: 1/2 INCH = 1 FOOT



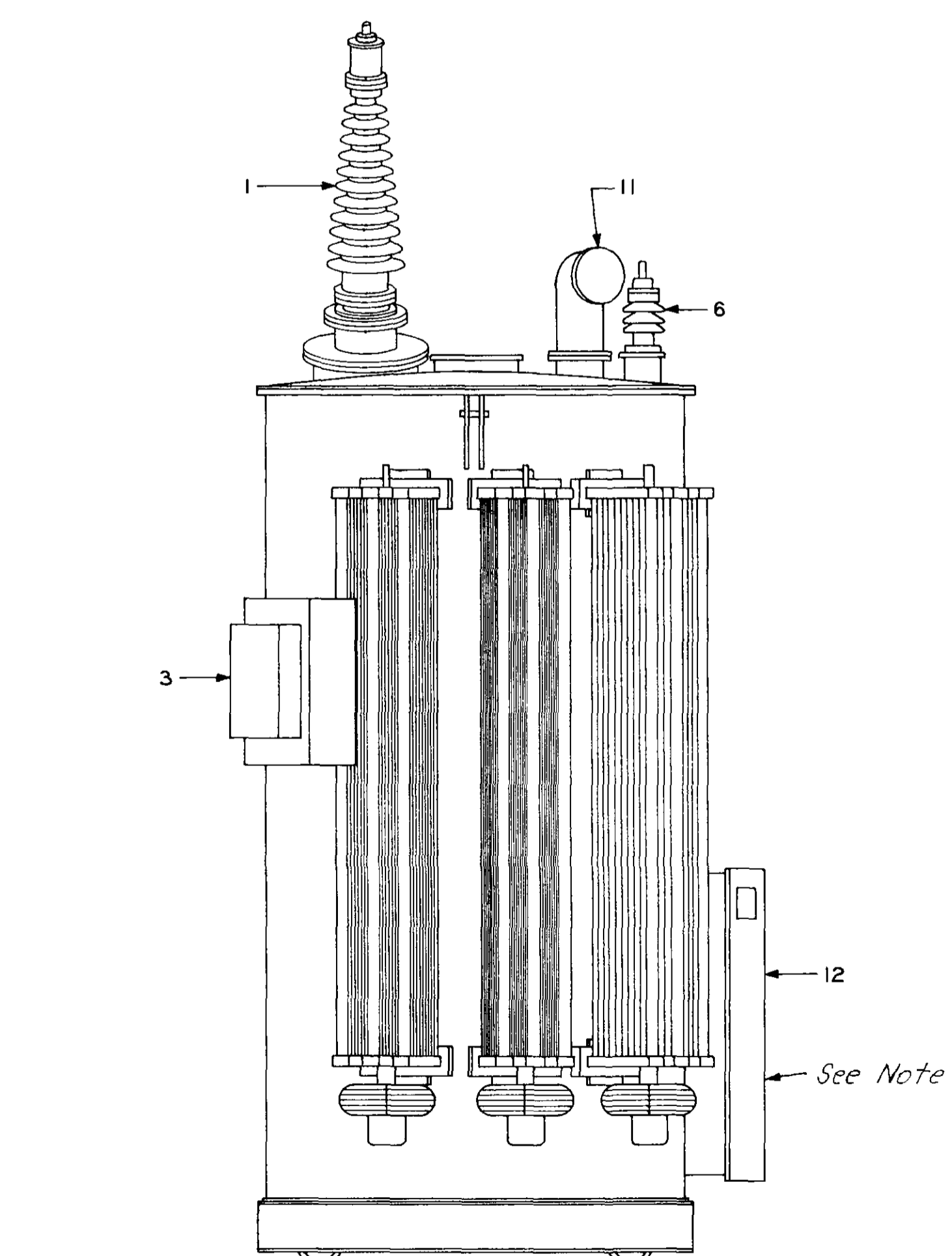
SECTION 1
 SCALE: 1/2 INCH = 1 FOOT



SECTION 2
 SCALE: 1/2 INCH = 1 FOOT



SECTION 3
 SCALE: 1/2 INCH = 1 FOOT



SECTION 4
 SCALE: 1/2 INCH = 1 FOOT

THIS PLAN ACCOMPANIES CONTRACT NO.
 MODIFICATION NO.

DATE	DESCRIPTION	MADE	APPRO
10-30-72	General Revisions	J.H.H.	R.L.B.
REVISIONS			
U. S. ARMY ENGINEER DISTRICT, OMAHA CORPS OF ENGINEERS OMAHA, NEBRASKA			
DESIGNED BY:	MISSOURI RIVER		
DRAWN BY: R.L.J.	FORT PECK LAKE, MONTANA		
CHECKED BY:	SWITCHYARD 1		
SUBMITTED BY:	TRANSFORMER NO. 3		
CHIEF SECTION	PLAN AND SECTIONS		
RECOMMENDED:	APPROVED:	DATE:	JUNE 1972
CHIEF BRANCH	CHIEF ENGINEERING DIVISION	SCALE: AS SHOWN	SPEC. NO.
APPROVED:	DRAWING NUMBER		MFP-OPN93E920.1
COL. D. E., DISTRICT ENGINEER	SHEET		