

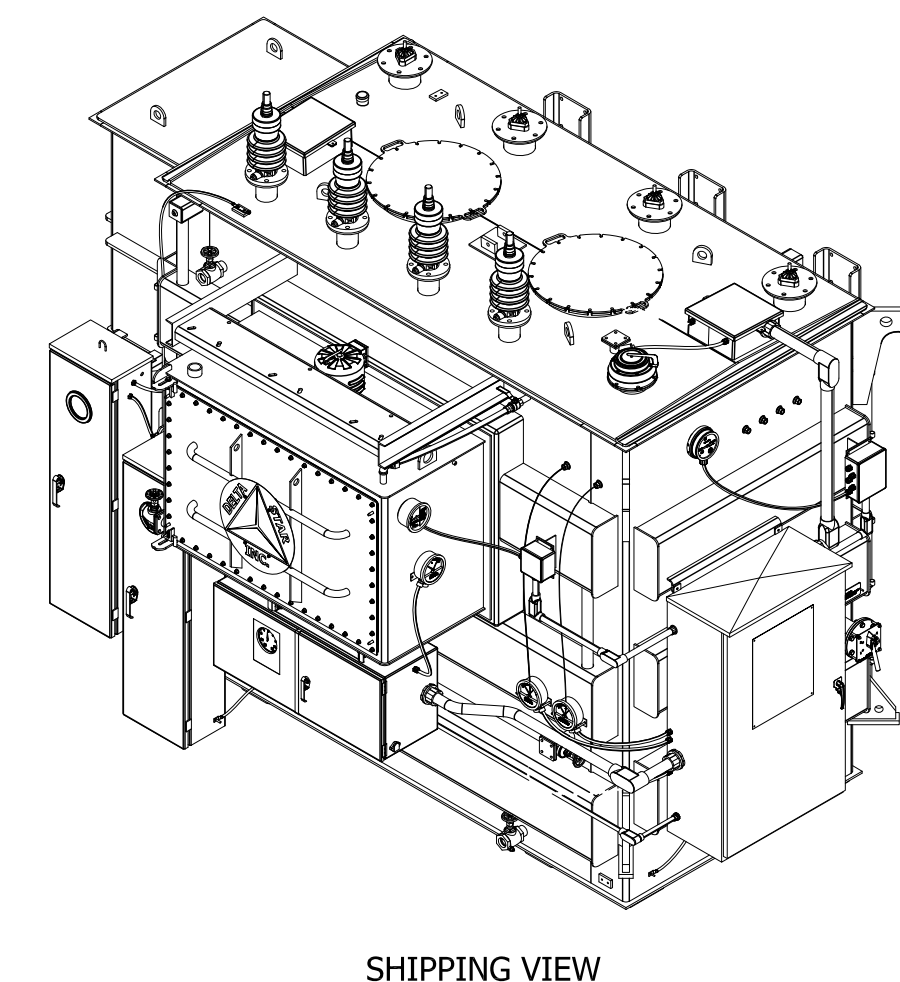
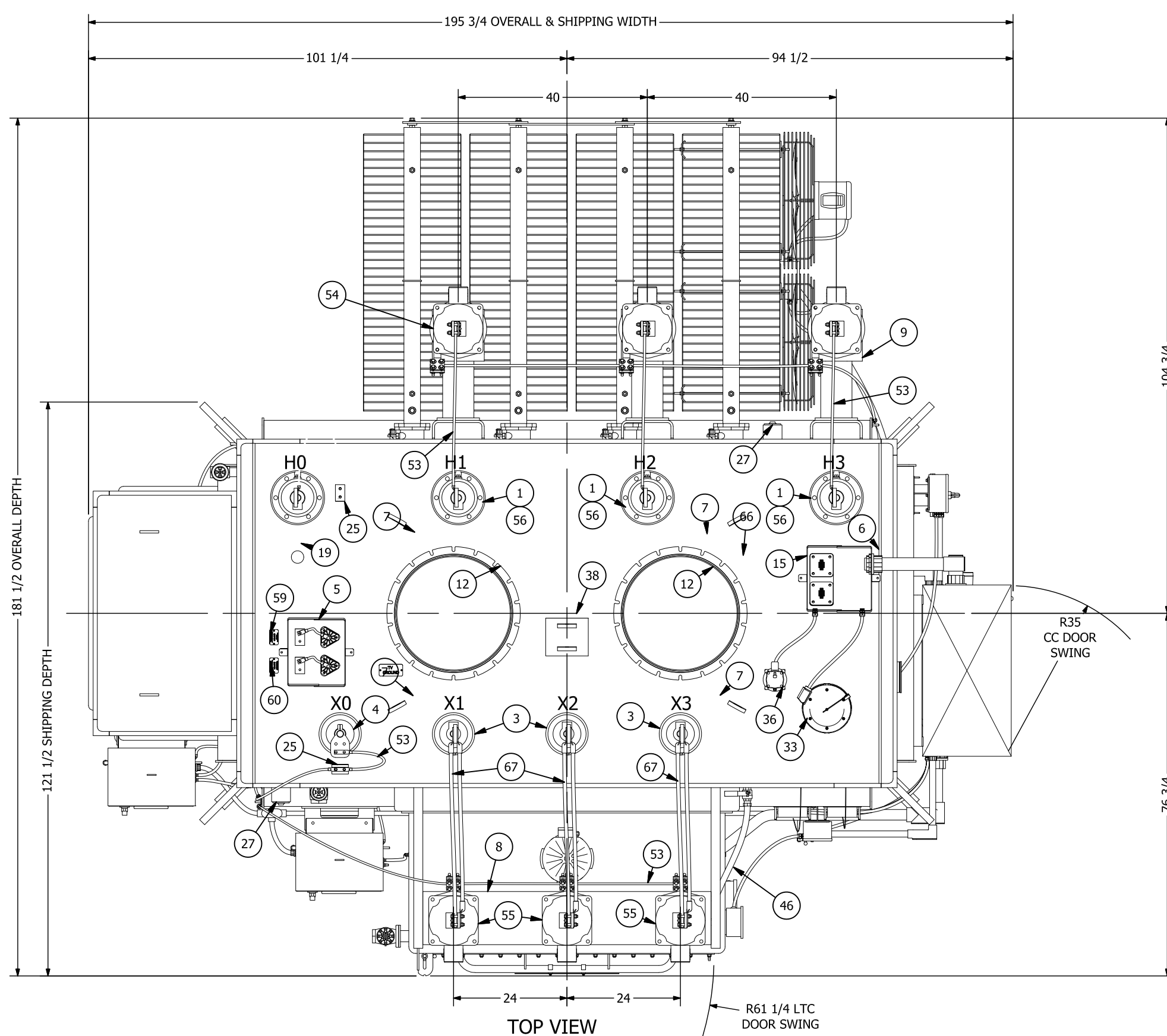
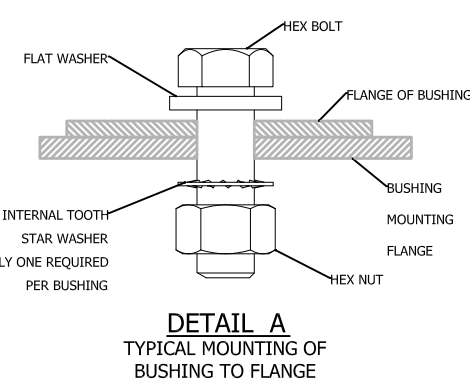
- NOTES:
- * ITEMS REMOVED FOR SHIPMENT
 - TANK DESIGNED FOR FULL VACUUM
 - MANUFACTURED IN ACCORDANCE WITH ANSI & NEMA
 - PAINT FINISH: ANSI #70 SKY GRAY EXTERIOR, WHITE INTERIOR
 - ALL DIMENSIONS IN INCHES
 - DESIGNED FOR -20° C
 - UNIT DESIGNED FOR RAIL SHIPMENT
 - MATCH-MARKED RADIATORS FOR PROPER REINSTALLATION
 - (1) EA SPARE HV, LV BUSHINGS
 - (1) SET SPARE GASKETS REQUIRED
 - UNDERCOAT BASE
 - UNIT TO BE FILLED WITH FR3 OIL

○ OPERATING CENTER OF GRAVITY
 ⊕ SHIPPING CENTER OF GRAVITY

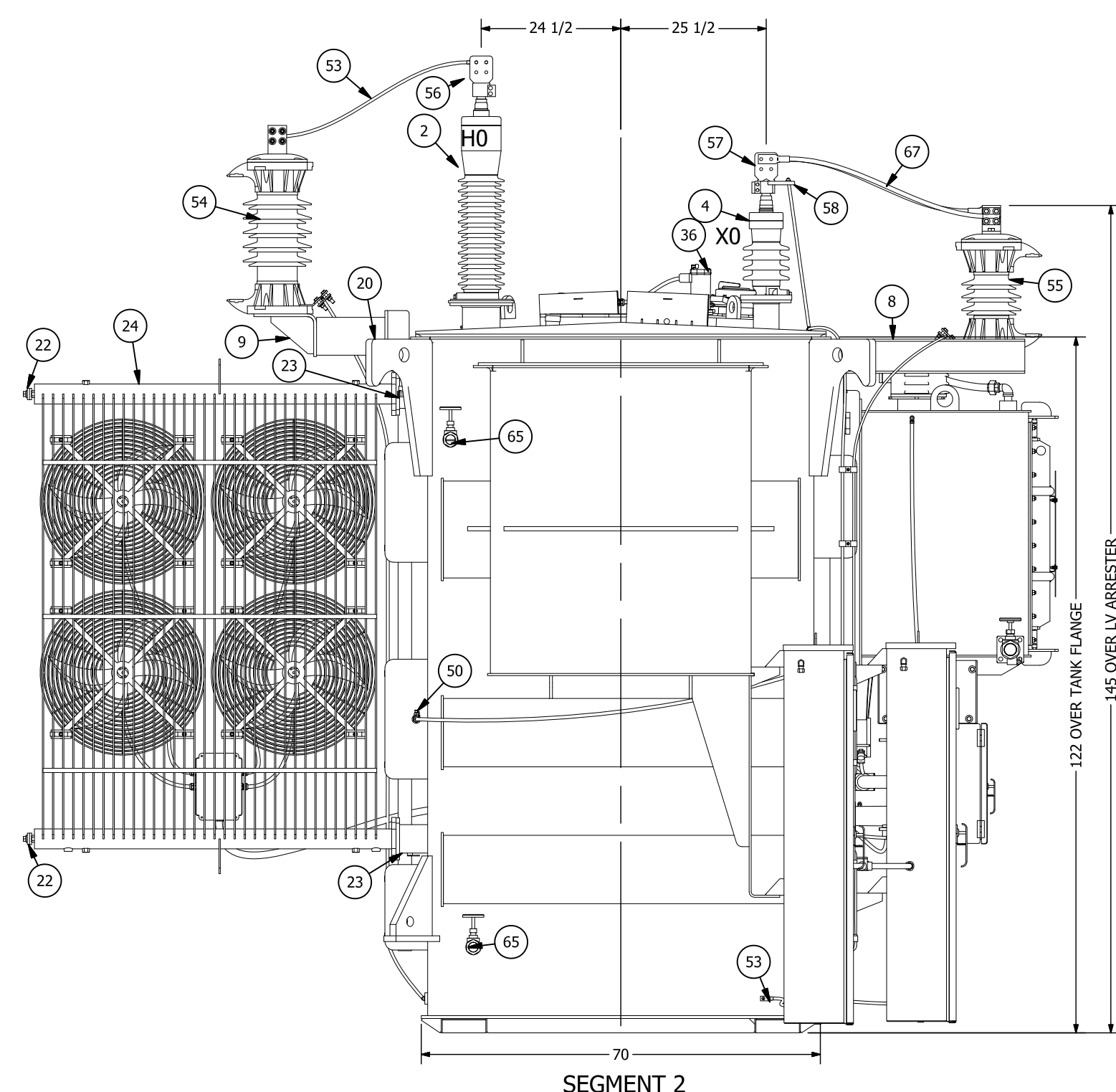
SHIPPING WEIGHT WITHOUT OIL = 71,000 LBS

APPROXIMATE WEIGHTS (POUNDS)	
UNTANKING (CORE & COIL) *	43,850
TANK & FITTINGS	30,100
OIL (@25°C)	
MAIN TANK (GAL.)	3,720
RADIATORS (GAL.)	340
LTC (GAL.)	280
TOTAL (GAL.)	4,340
TOTAL	106,500

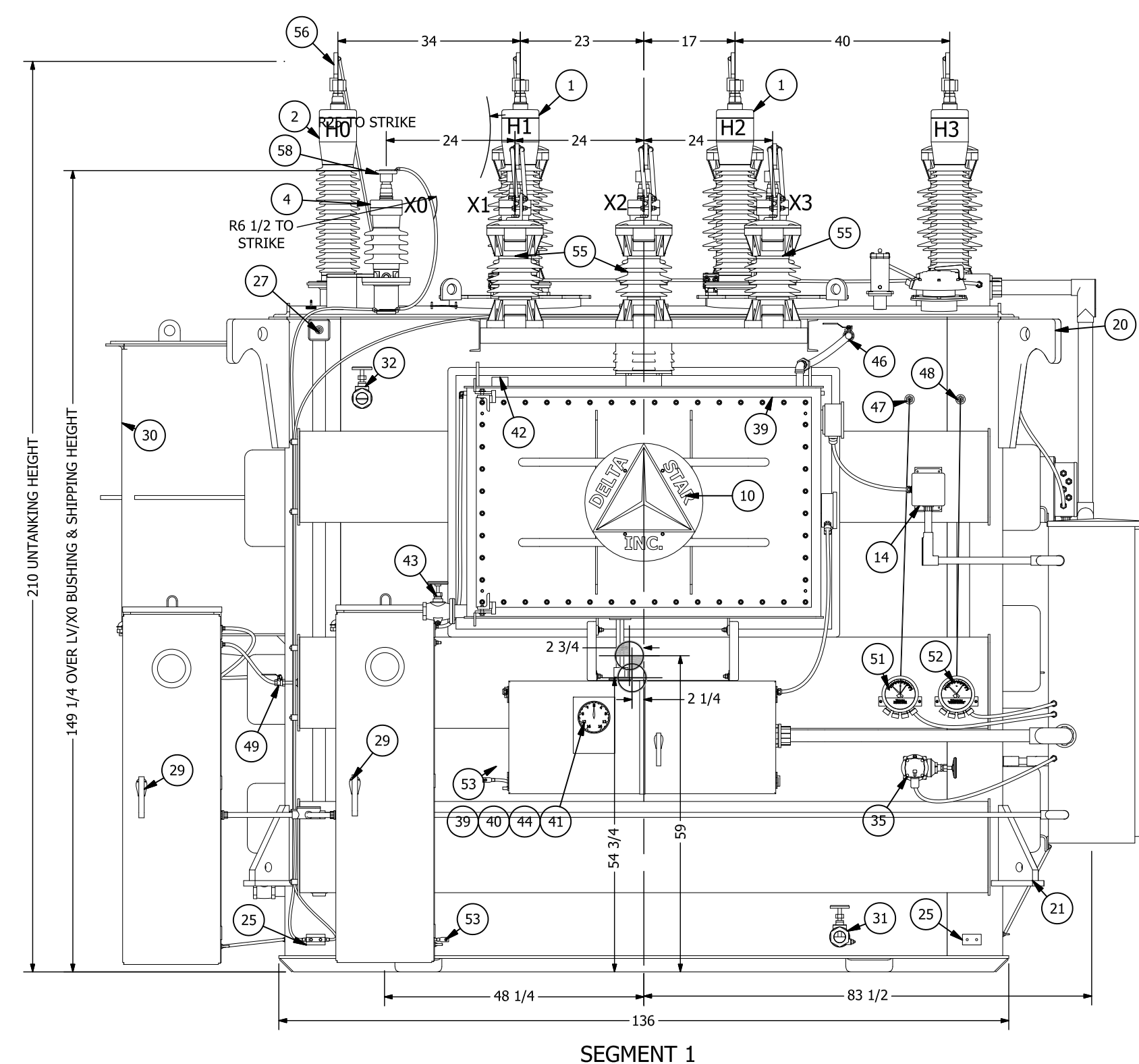
* INCLUDES 1,700 LBS FOR PREVENTIVE AUTO



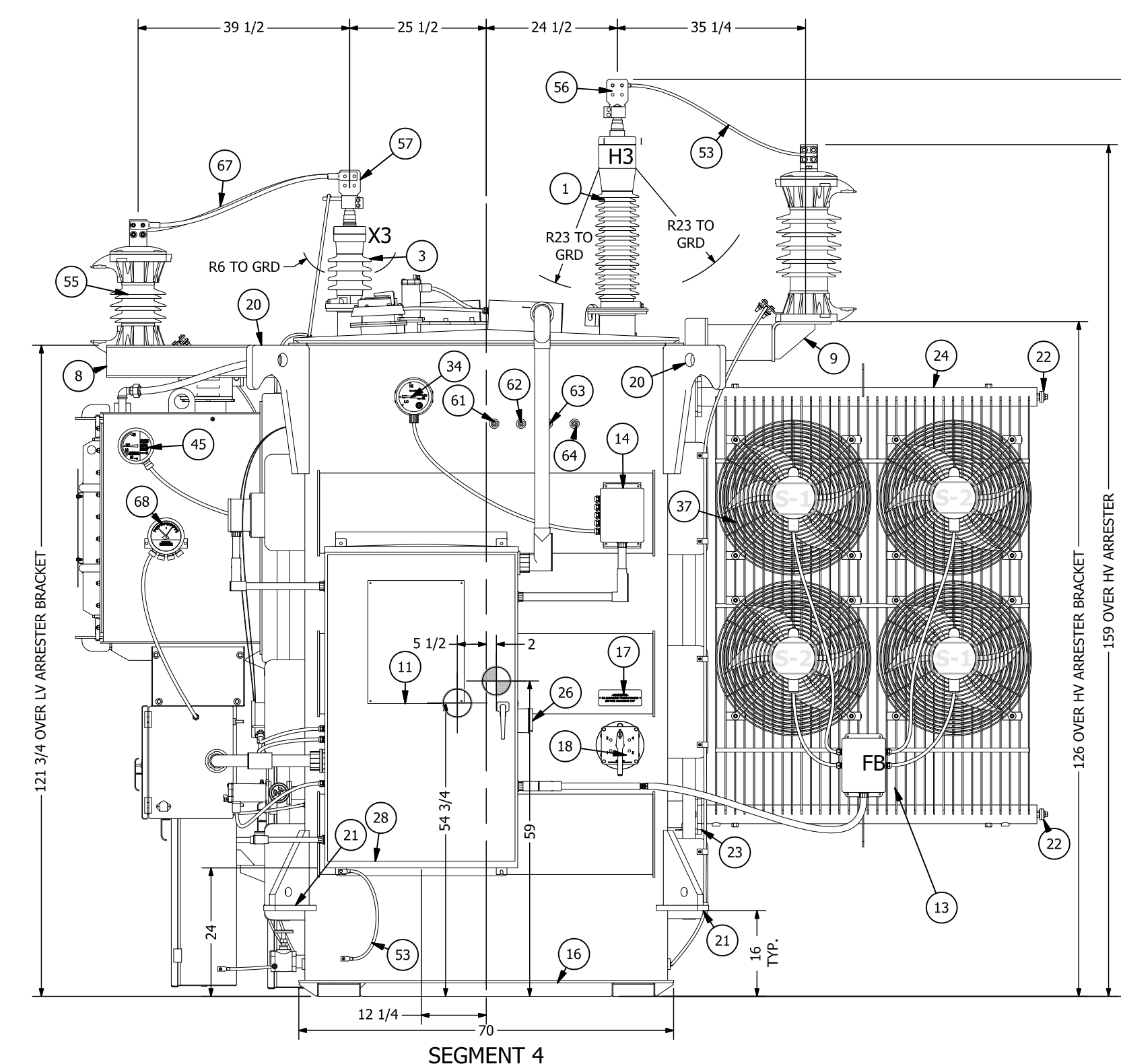
SHIPPING VIEW



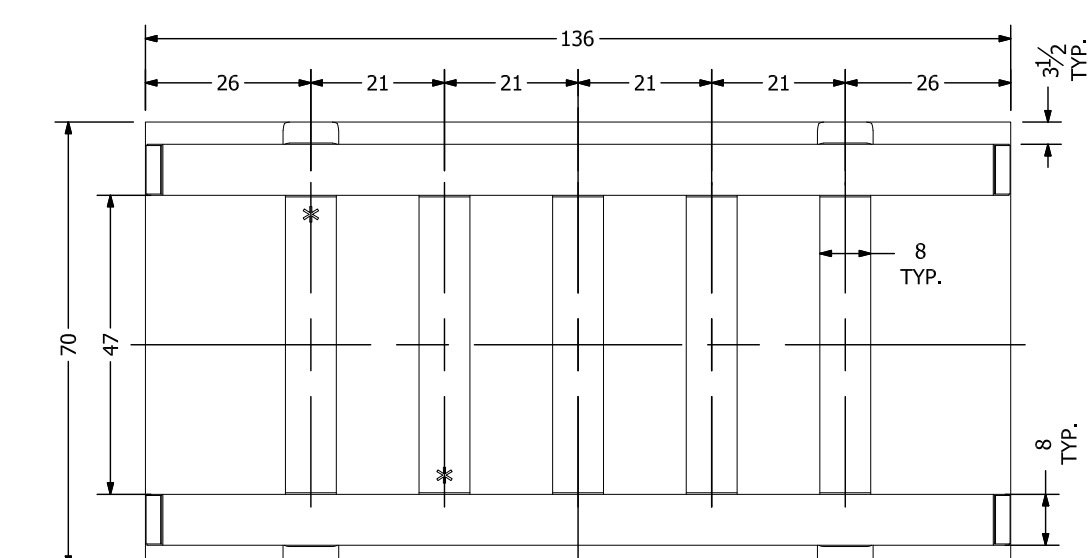
SEGMENT 2



SEGMENT 1



SEGMENT 4



BASE DETAIL - BOTTOM VIEW

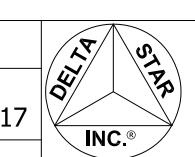
REV	DESCRIPTION	BY	DATE	APR
2	UPDATED SHIPPING VIEW, MARKED ITEM 58 TO SHIP LOOSE	JFF	3/16/2018	
1	REVISED PER FINAL DESIGN	JFF	2/27/2018	
0	RELEASED FOR APPROVAL	EAN	12/21/2017	

REVISION HISTORY

TRAVERSE CITY LIGHT & POWER
 S.O.# E4887/8
 P.O.# P-2017-1482
 BARLOW SUBSTATION

MVA	12/16/20/22.4
PHASE	3
HERTZ	60
CLASS	KNAN/KNAF/KNAF
RISE	55/65°C
PRIMARY VOLTAGE (kV)	69Y/39.84
SECONDARY VOLTAGE (kV)	13.8Y/7.97

SCALE: NTS	
DFT BY/DATE:	JFF 12/20/2017
EAN 12/20/2017	
CHK BY/DATE:	JFF 12/20/2017
TAH 12/20/2017	



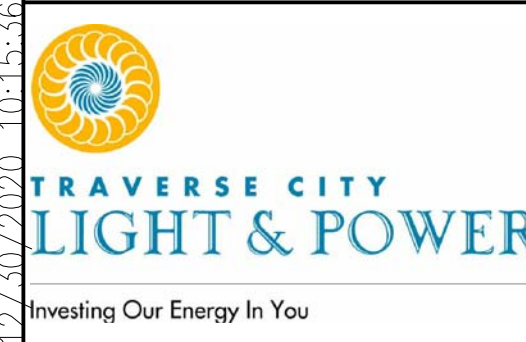
DELTA STAR, INC.
 LYNCHBURG OPERATION (434) 845-0921
 3550 MAYFLOWER DR. LYNCHBURG, VA 24501

TITLE:	TRANSFORMER OUTLINE
D E488730	
SIZE	

2	1 of 1
REV.	SHEET

FILE LOCATION = C:\Vault\Workspace\Projects\DSE Jobs\E4887\RELEASE\MEVE488730.dwg 1/18/2016

P:\19-1025.01.TCL&P.BARLOW SWITCHING STATION\PD\BWB-860 (WIRING DIAGRAM T1 OUTLINE).DWG ##### 12/20/2017 10:15:36 AM



ENG.	NMA		
DR	JPB		
CK	NMA	12-30-2020	RECORD DRAWINGS
APP	MPM	02-21-2020	CONSTRUCTION
DATE			ISSUED FOR

GRP
 Engineering, Inc.
 PETOSKEY, MICHIGAN, 231-439-9683
 GRAND RAPIDS, MICHIGAN, 616-942-7183

TRAVERSE CITY LIGHT & POWER
 BARLOW SUBSTATION - 69kV SWITCH STATION
 TRANSFORMER NO.1 - OUTLINE DIAGRAM

PROJECT NUMBER
 19-1025.01

DRAWING NUMBER
 860

Copyright © 2019 GRP ENGINEERING, INC.