

BOOK No. E.L. O.274



BRITISH RAILWAYS ELECTRIC LOCOMOTIVE DIAGRAMS.

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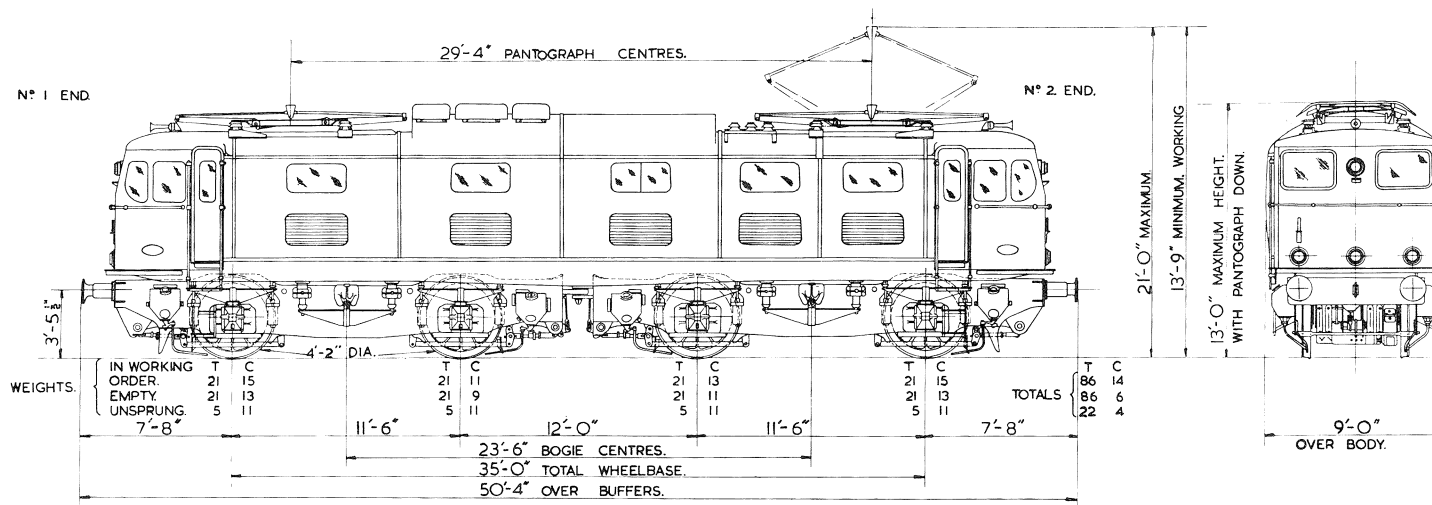
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BRITISH RAILWAYS BOARD
CHIEF MECHANICAL ENGINEER

13 AUG 1965

SWINDON DRAWING OFFICE

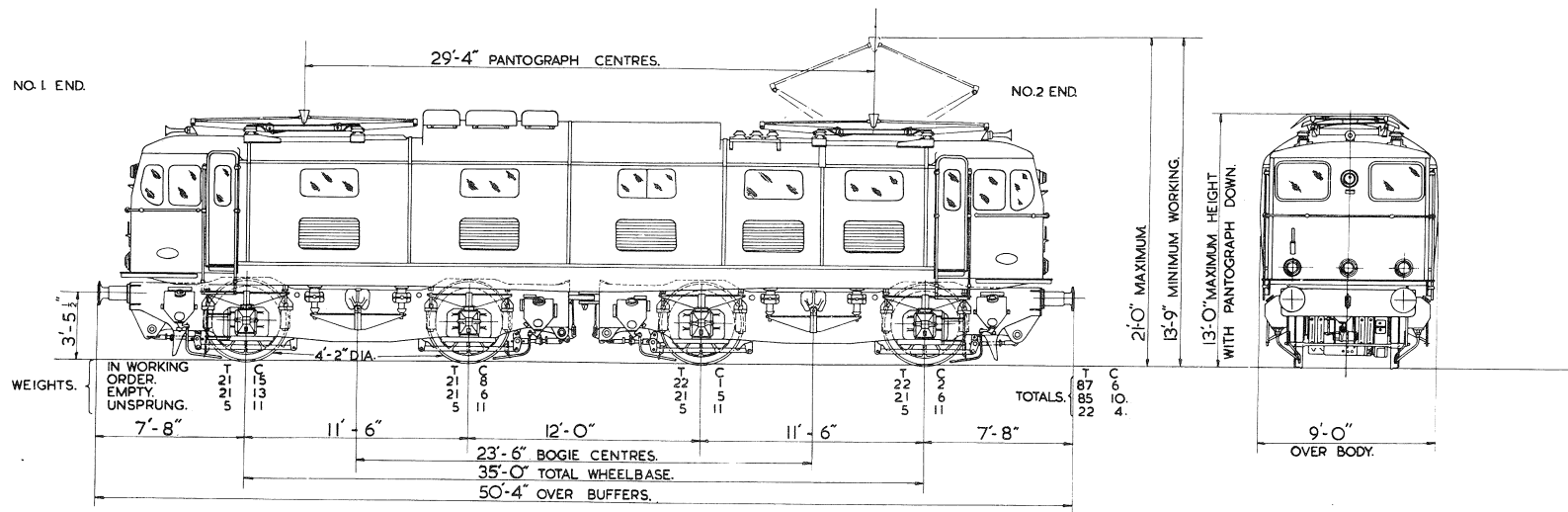
FOR J. F. HARRISON.....



SUPPLY SYSTEM.	TYPE NOMINAL VOLTAGE.	OVERHEAD. 1500 D.C.	BRAKING.	TYPE. BRAKE FORCE.	FOR LOCO. FOR TRAIN. {% OF LOCO WEIGHT IN WORKING ORDER.}	AIR. ELECTRIC REGENERATIVE, & RHEOSTATIC. VACUUM.
TRACTION MOTORS.	MAKE & TYPE. N° TYPE OF SUSPENSION. TYPE OF GEAR DRIVE.	M.V. TYPE. 186. FOUR. NOSE SUSPENDED. DIRECT SPUR.	SPEED.	MAX. PERMITTED SERVICE SPEED.	65 M.P.H.	
CONTROL SYSTEM.	TYPE.	ELECTRO PNEUMATIC.	CURVE.	MIN. RAD CURVE.	{WITHOUT GAUGE WIDENING AT DEAD SLOW SPEED.	6 CHAINS.
PERFORMANCE AT 1400 VOLTS.	MAX. TRACTIVE EFFORT (350 VOLTS PER MOTOR) CONTINUOUS RATING ON WEAKEST FIELD. (700 VOLTS PER MOTOR) MAX. RAIL H.P. ON WEAKEST MOTOR FIELD (700 VOLTS PER MOTOR)	{ 45000 LB. AT 23.2% ADHESION 8,800 LB. TRACTIVE EFFORT. 56 M.P.H. 794 AMPS. TOTAL TRACTION CURRENT. 1300 RAIL H.P. 3300 H.P. AT 27.5 M.P.H.	TRAIN HEATING EQUIPMENT.	BOILER MAKE & TYPE STEAMING CAPACITY.		4 CHAINS. NOT FITTED.
			TANK CAPACITY.	BOILER WATER.		GALLS.

CLASS EM1 BR. B+B. D.C. ELECTRIC LOCOMOTIVE.

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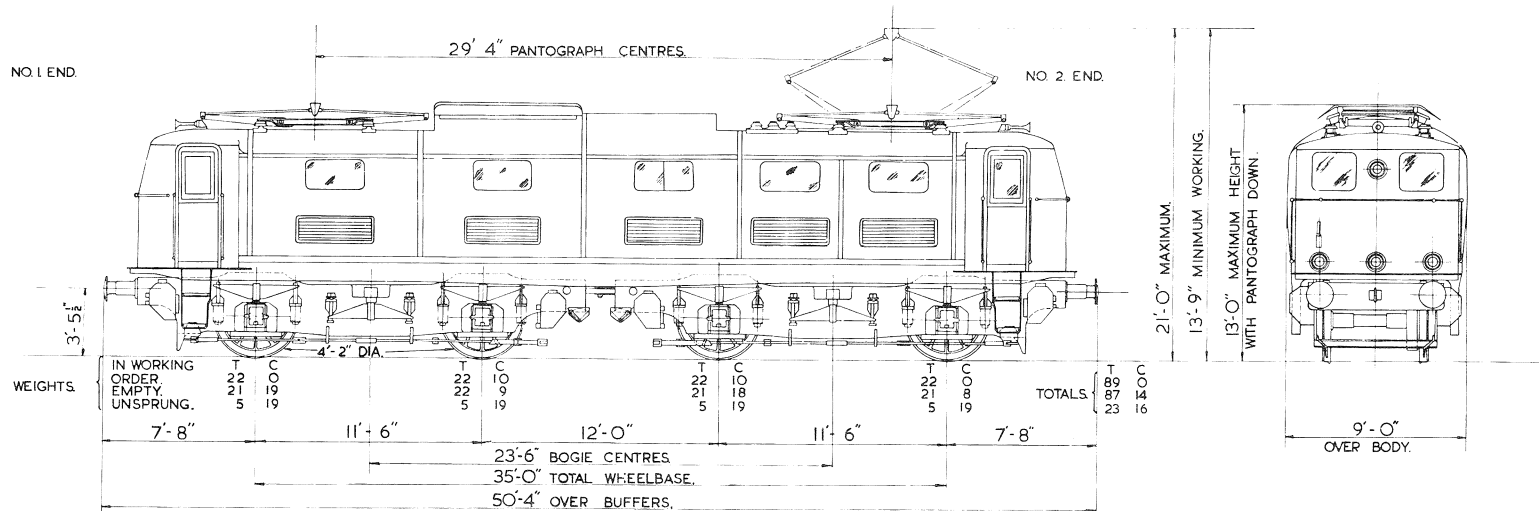


SUPPLY SYSTEM.	{ TYPE. NOMINAL VOLTAGE.	OVERHEAD. 1500 D.C.					AIR ELECTRIC REGENERATIVE & RHEOSTATIC. VACUUM.
TRACTION MOTORS.	{ MAKE & TYPE. Nº TYPE OF SUSPENSION. TYPE OF GEAR DRIVE.	M.V. TYPE 186. FOUR. NOSE SUSPENDED. DIRECT SPUR.	BRAKING.	{ TYPE. BRAKE FORCE.	{ FOR LOCO. FOR TRAIN. % OF LOCO WEIGHT IN WORKING ORDER		82-0
CONTROL SYSTEM.	TYPE.	ELECTRO PNEUMATIC.	SPEED.	MAX. PERMITTED	SERVICE SPEED.		65 M.P.H.
PERFORMANCE AT 1400 VOLTS.	{ MAX. TRACTIVE EFFORT. (350 VOLTS PER MOTOR). CONTINUOUS RATING ON WEAKEST FIELD (700 VOLTS PER MOTOR). MAX. RAIL H.P. ON WEAKEST MOTOR FIELD (700 VOLTS PER MOTOR)	{ 45000 LB. AT 23-0% ADHESION. 8800 LB. TRACTIVE EFFORT. 56 M.P.H.. 794 AMPS. TOTAL TRACTION CURRENT. 1300 RAIL H.P. 3300 H.P. AT 27.5 MPH.	CURVE.	MIN. RAD. CURVE	{ WITHOUT GAUGE WIDENING AT DEAD SLOW SPEED.		6 CHAINS. 4 CHAINS.
			TRAIN HEATING EQUIPMENT.	{ BOILER MAKE & TYPE. STEAMING CAPACITY.			BASTIAN & ALLEN-ELECTRIC. 1000 LB/HR
			TANK CAPACITY.	BOILER WATER			240 GALLS.

CLASS EM.I. BR. B+B D.C. ELECTRIC LOCOMOTIVE.

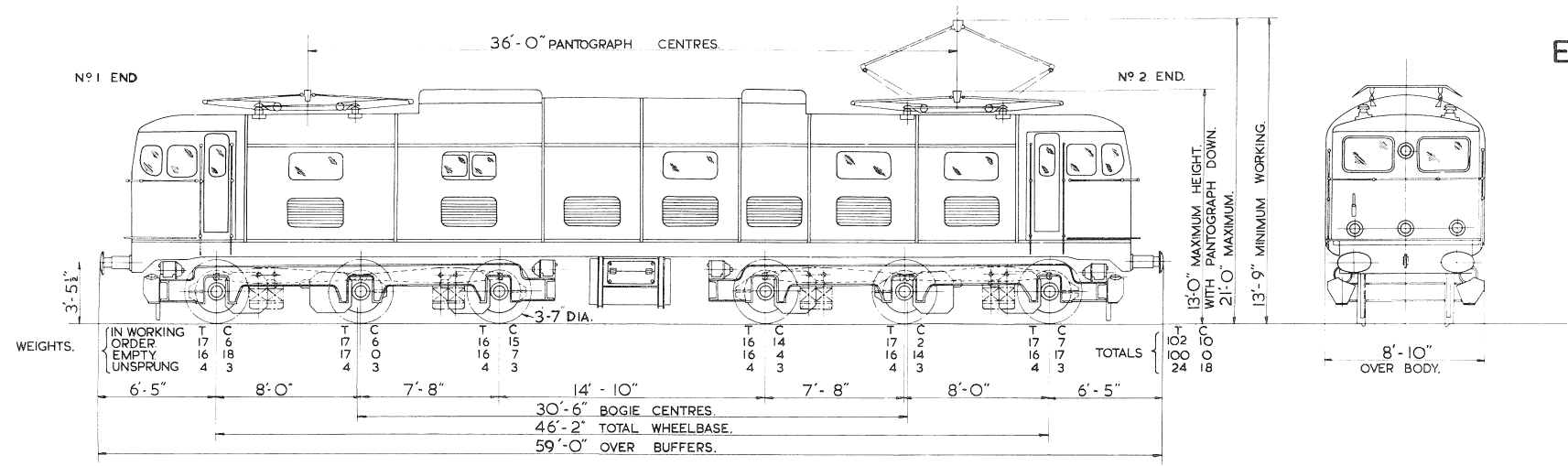
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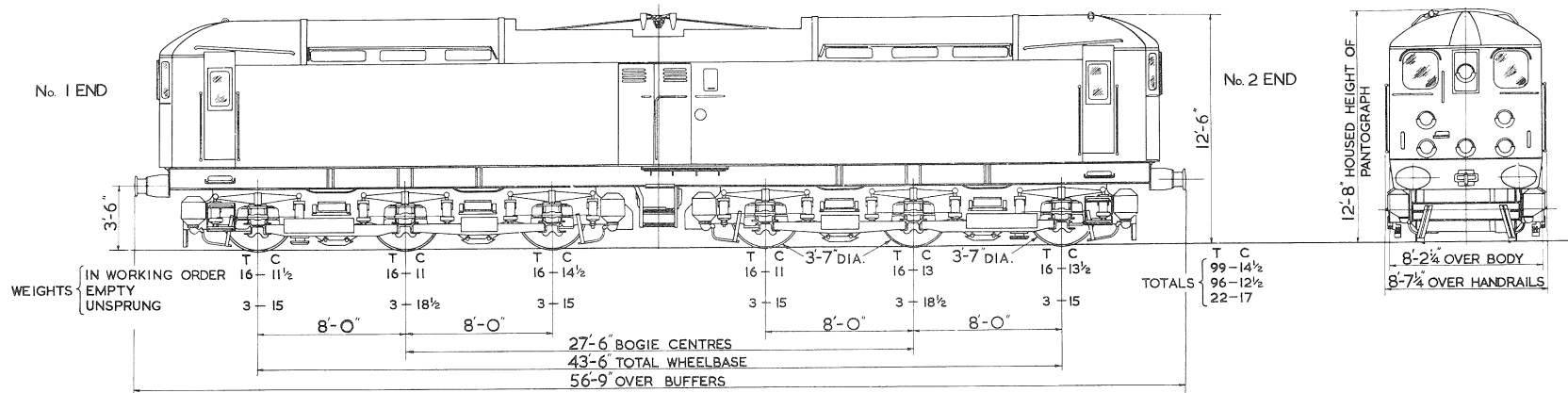
SUPPLY SYSTEM.	TYPE. OVERHEAD.		TYPE.	FOR LOCO	AIR.
	NOMINAL VOLTAGE. 1500. D.C.			FOR TRAIN.	ELECTRO REGENERATIVE
TRACTION MOTORS.	MAKE & TYPE. M.V. TYPE 186.	BRAKING.	TYPE.	% OF LOCO WEIGHT.	VACUUM.
	Nº FOUR.		BRAKE FORCE	IN WORKING ORDER	89 %.
	TYPE OF SUSPENSION. NOSE SUSPENDED.	SPEED		MAX. PERMITTED SERVICE SPEED.	65 M.P.H.
	TYPE OF GEAR DRIVE. DIRECT SPUR.	CURVE.		MIN. RAD. CURVE.	6 CHAINS.
CONTROL SYSTEM.	TYPE. ELECTRO PNEUMATIC.			AT DEAD SLOW SPEED.	4 CHAINS.
	MAX TRACTIVE EFFORT. 45,000 LB. AT 22.6% ADHESION.	TRAIN HEATING.	BOILER MAKE & TYPE		BASTIAN & ALLEN-ELECTRIC.
	(350 VOLTS PER MOTOR) 8800 LB. TRACTIVE EFFORT.	EQUIPMENT	STEAMING CAPACITY.		750 LB/HR.
PERFORMANCE AT 1400 VOLTS.	CONTINUOUS RATING. 56 M.P.H.	TANK CAPACITY.	BOILER WATER.		210 GALLS.
	ON WEAKEST FIELD (700 VOLTS PER MOTOR) 794 AMPS TOTAL TRACTION CURRENT.				
	MAX. RAIL H.P. ON WEAKEST MOTOR FIELD (700 VOLTS PER MOTOR) 3300 H.P. AT 27.5 M.P.H.				

CLASS EM.I.B.R. B+B D.C. ELECTRIC LOCOMOTIVE.



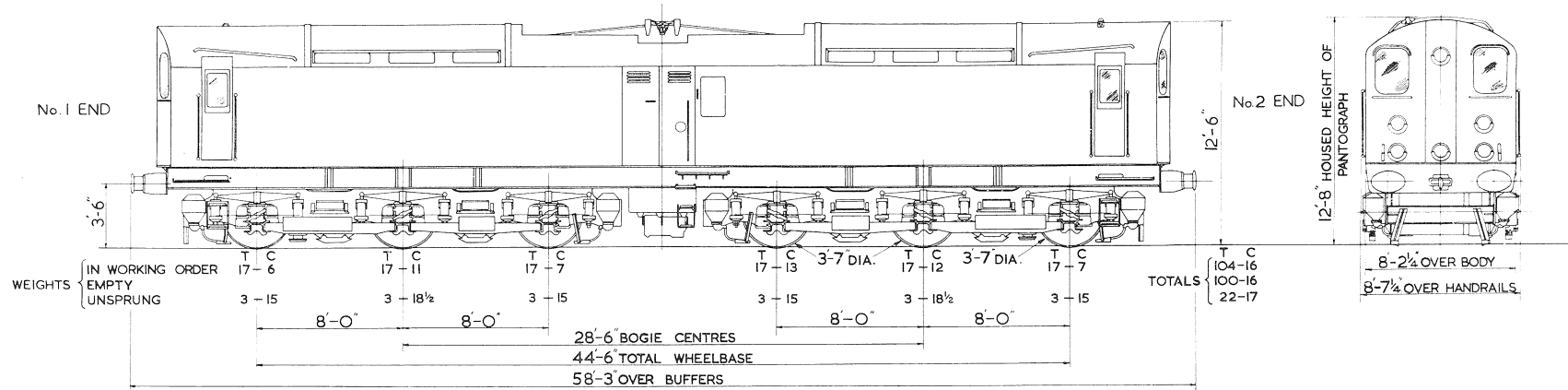
SUPPLY SYSTEM.	TYPE. NOMINAL VOLTAGE.	OVERHEAD 1500 D.C.	BRAKING.	TYPE. BRAKE FORCE.	FOR LOCO. FOR TRAIN. % OF LOCO WEIGHT IN WORKING ORDER.	AIR & ELECTRIC REGENERATIVE. VACUUM.
TRACTION MOTORS.	MAKE & TYPE. Nº	M.V. TYPE 146. SIX.	SPEED.	MAX. PERMITTED SERVICE SPEED.	90 M.P.H.	
CONTROL SYSTEM.	TYPE OF SUSPENSION. TYPE OF GEAR DRIVE.	NOSE SUSPENDED. DIRECT SPUR.	CURVE.	MIN. RAD. CURVE.	{ WITHOUT GAUGE WIDENING AT DEAD SLOW SPEED	6 CHAINS 4 CHAINS
PERFORMANCE AT 1400 VOLTS.	TYPE. MAX. TRACTIVE EFFORT. (233 VOLTS PER MOTOR) CONTINUOUS RATING ON WEAKEST FIELD. (700 VOLTS PER MOTOR) MAX. RAIL H.P. ON WEAKEST MOTOR FIELD. (700 VOLTS PER MOTOR)	ELECTRO-PNEUMATIC. 45,000 LB. AT 19.6% ADHESION. 15,600 LB. TRACTIVE EFFORT. 57.0 M.P.H. 1380 AMPS. TOTAL TRACTION CURRENT. 2300 RAIL H.P. 4600 H.P. AT 38.0 M.P.H.	TRAIN HEATING EQUIPMENT.	BOILER MAKE & TYPE. STEAMING CAPACITY.	BASTIAN & ALLEN - ELECTRIC. 1000 LB./HR.	
			TANK CAPACITY.	BOILER WATER	320 GALLS.	

CLASS E.M.2 B.R. C-C. D.C. ELECTRIC LOCOMOTIVE.



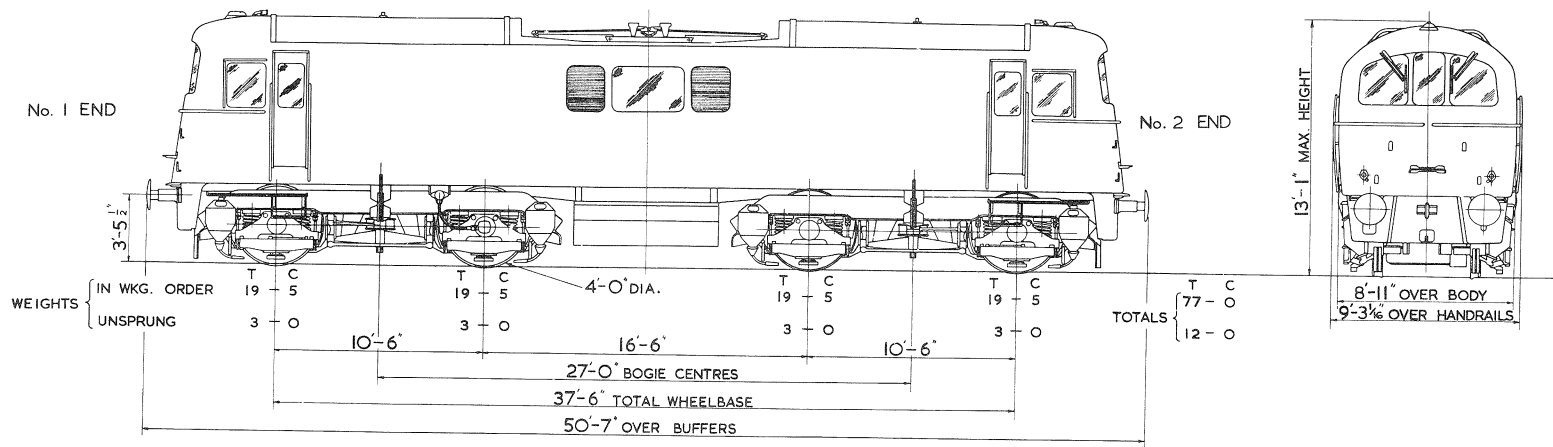
SUPPLY SYSTEM	{	TYPE	THIRD RAIL OR OVERHEAD IN YDS. ETC.	BRKING	{	TYPE {	FOR LOCO.	STRAIGHT AIR & AUTOMATIC AIR	
		NOMINAL VOLTAGE	660-750 VOLTS D.C.			FOR TRAIN	AUTOMATIC VACUUM		
TRACTION MOTORS	{	MAKE & TYPE	ENGLISH ELECTRIC E.E. 519A	SPEED	{	BRAKE FORCE	{	% OF LOCO. WEIGHT	85%
		No	SIX						
CONTROL SYSTEM	{	TYPE OF SUSPENSION	AXLE	CURVE	{	MAX. PERMITTED SERVICE SPEED	75 M.P.H.		
		TYPE OF GEAR DRIVE	SINGLE REDUCTION					MIN. RAD. CURVE WITHOUT GAUGE WIDENING	5½ CHAINS
PERFORMANCE AT 660 VOLTS	{	TYPE	BOOSTER	TRAIN HEATING EQUIPMENT	{	BOILER MAKE & TYPE	BASTIAN & ALLEN		
		MAX. TRACTIVE EFFORT (440 VOLTS PER MOTOR)	45000 LB. AT 20% ADHESION					STEAMING CAPACITY	1000 LB./HR. AT 380 K.W.
		CONT. RATING ON WEAKEST FIELD (440 VOLTS PER MOTOR)	6000 LB. TRACTIVE EFFORT						
			67.5 M.P.H.						
			1630 AMPS. TOTAL TRACTION CURRENT						
1080 RAIL H.P.	TANK CAPACITY	BOILER	WATER	320 GALLS.					
MAX RAIL H.P. ON WEAKEST MOTOR FIELD (440 VOLTS PER MOTOR)					2200 H.P. AT 35.3 M.P.H.				

B.R. C-C D.C. ELECTRIC LOCOMOTIVE.



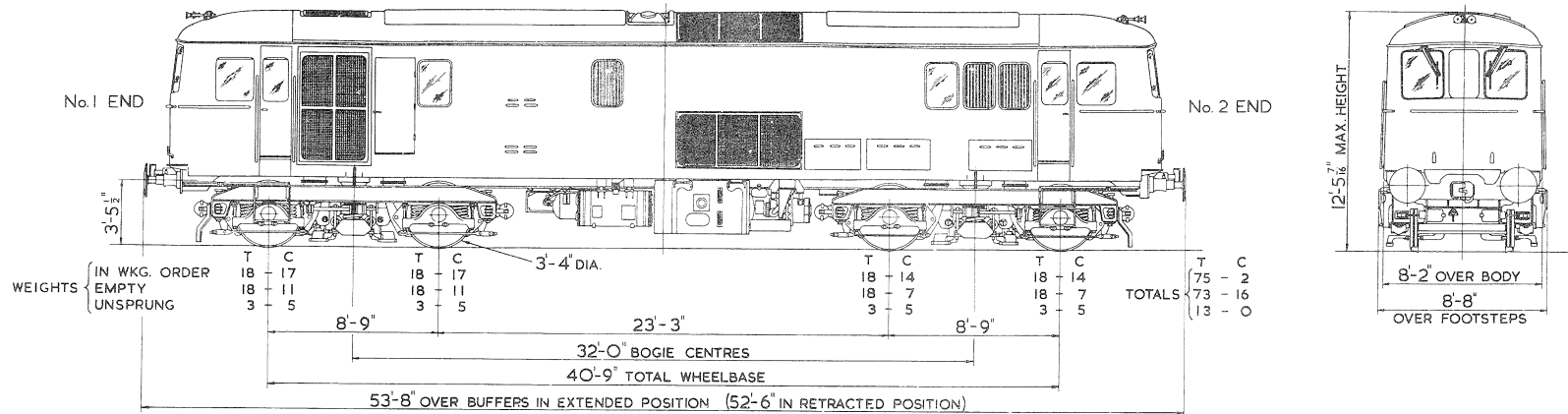
SUPPLY SYSTEM	TYPE NOMINAL VOLTAGE	THIRD RAIL OR OVERHEAD IN YDS ETC 660-750 VOLTS D.C.	BRAKING	TYPE FOR LOCO FOR TRAIN	STRAIGHT AIR & AUTOMATIC AIR AUTOMATIC VACUUM
TRACTION MOTORS	MAKE & TYPE No. TYPE OF SUSPENSION TYPE OF GEAR DRIVE	ENGLISH ELECTRIC E.E. 519/3C SIX AXLE SINGLE REDUCTION	SPEED CURVE	BRAKE FORCE % OF LOCO. WEIGHT IN WORKING ORDER	81%
CONTROL SYSTEM	TYPE MAX. TRACTIVE EFFORT (440 VOLTS PER MOTOR)	BOOSTER 45000 LB AT 19% ADHESION 6000 LB TRACTIVE EFFORT 67.5 M.P.H.	TRAIN HEATING EQUIPMENT	MAX. PERMITTED SERVICE SPEED MIN. RAD. CURVE WITHOUT GAUGE WIDENING	75 M.P.H. 5 1/2 CHAINS
PERFORMANCE AT 660 VOLTS	CONT. RATING ON WEAKEST FIELD (440 VOLTS PER MOTOR) MAX RAIL H.P. ON WEAKEST MOTOR FIELD (440 VOLTS PER MOTOR)	1630 AMPS. TOTAL TRACTION CURRENT 1080 RAIL H.P. 2200 H.P. AT 35.3 M.P.H.	TANK CAPACITY	BOILER MAKE & TYPE STEAMING CAPACITY	BASTIAN & ALLEN 1000 LB./HR. AT 380 K.W.
			BOILER WATER		540 GALLS.

B.R. C-C D.C. ELECTRIC LOCOMOTIVE.

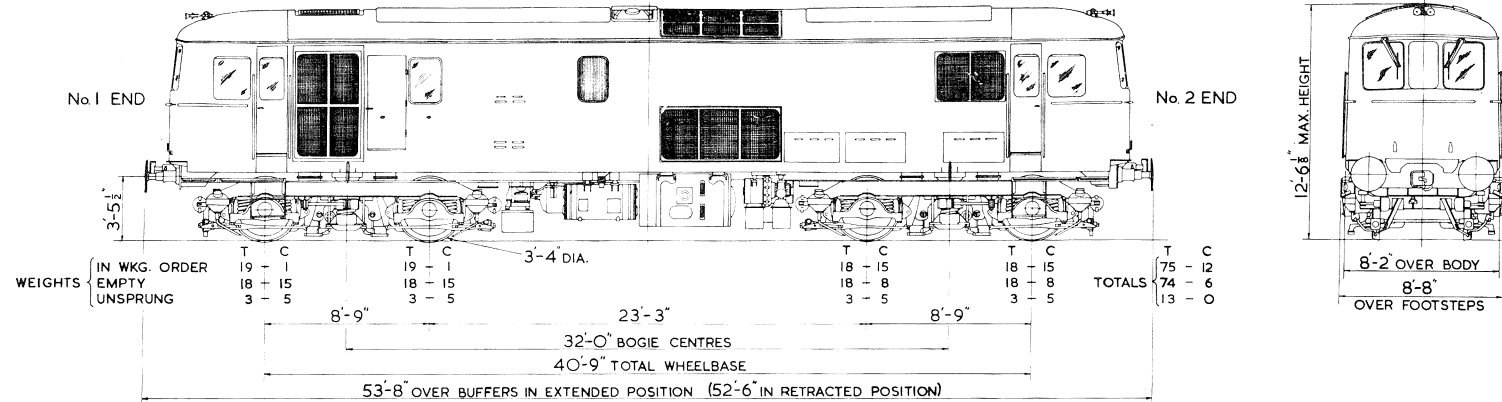


SUPPLY SYSTEM	TYPE NOMINAL VOLTAGE	THIRD RAIL OR OVERHEAD IN YDS. ETC. 660-750 VOLTS D.C.	BRAKING	TYPE { FOR LOCO FOR TRAIN	STRAIGHT AIR & AUTOMATIC AIR AUTOMATIC AIR & AIR CONTROLLED VACUUM
TRACTION MOTORS	MAKE & TYPE No. TYPE OF SUSPENSION TYPE OF GEAR DRIVE	ENGLISH ELECTRIC E.E.532 FOUR FULLY SUSPENDED SINGLE REDUCTION BOOSTER	SPEED CURVE	BRAKE FORCE { % OF LOCO. WEIGHT IN WORKING ORDER	88%
CONTROL SYSTEM	TYPE			MAX. PERMITTED SERVICE SPEED MIN. RAD. CURVE WITHOUT GAUGE WIDENING	90 M.P.H. 4 CHAINS
PERFORMANCE AT 675 VOLTS	MAX. TRACTIVE EFFORT (675 VOLTS PER MOTOR) CONT. RATING ON WEAKEST FIELD (675 VOLTS PER MOTOR) MAX. RAIL H.P. ON WEAKEST MOTOR FIELD (675 VOLTS PER MOTOR)	43000 LB. AT 25% ADHESION 12400 LB. TRACTIVE EFFORT 69.6 M.P.H. 3000 AMPS. TOTAL TRACTION CURRENT 2300 RAIL H.P. 3000 H.P. AT 59.3 M.P.H.	TRAIN HEATING EQUIPMENT	ELECTRIC HEATING CONT. OUTPUT	300 K.W. AT 675 VOLTS

B.R. B-B D.C. ELECTRIC LOCOMOTIVE.



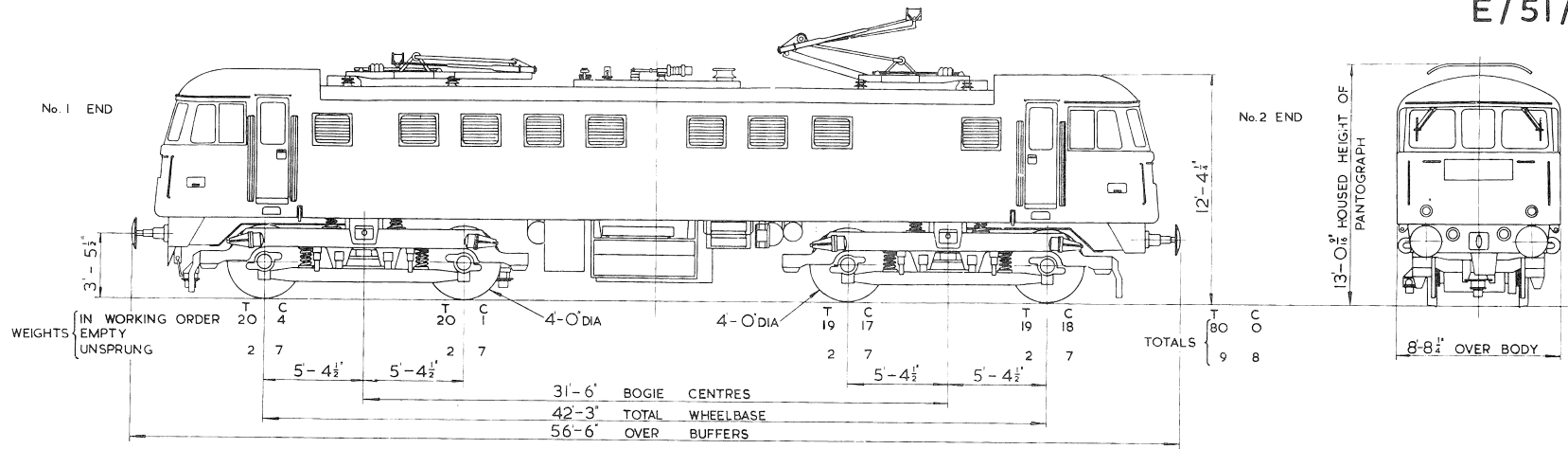
ELECTRIC			DIESEL		
SUPPLY SYSTEM	TYPE	THIRD RAIL	ENGINE	MAKE & TYPE	ENGLISH ELECTRIC 4 SRKT
	NOMINAL VOLTAGE	660-750 VOLTS D.C.		No. OF CYLS. & CYCLE	4 CYLS. 4 STROKE
PERFORMANCE AT 675 VOLTS	MAX. TRACTIVE EFFORT (337.5 VOLTS PER MOTOR)	42,000 LB. AT 25% ADHESION	MAIN GENERATOR	MAX. 1 HOUR RATED OUTPUT	600 H.P. AT 850 R.P.M.
	CONT. RATING ON	9600 LB. TRACTIVE EFFORT		MAKE & TYPE	ENGLISH ELECTRIC E.E. 824/3D
	WEAKEST FIELD (675 VOLTS PER MOTOR)	55.5 M.P.H.	PERFORMANCE	MAX. TRACTIVE EFFORT	34,100 LB. AT 20.3% ADHESION
	MAX RAIL H.P. ON	1,700 AMPS. TOTAL TRACTION CURRENT		CONT. TRACTIVE EFFORT	AT 1,500 AMPS. MAIN GENERATOR
	WEAKEST MOTOR FIELD (675 VOLTS PER MOTOR)	1420 RAIL H.P.		RAIL H.P. AT CONT. RATING	16,100 LB. AT 10 M.P.H.
TRAIN HTG. EQUIP	MAX RAIL H.P. ON	2,450 H.P. AT 37 M.P.H.	TANK CAPACITY	AT 850 AMPS. MAIN GENERATOR	430 H.P.
	WEAKEST MOTOR FIELD (675 VOLTS PER MOTOR)	2,450 H.P. AT 37 M.P.H.		FULL ENGINE OUTPUT	AVAILABLE BETWEEN 3 & 80 M.P.H.
TRAIN HTG. EQUIP	675 VOLTS D.C. SUPPLY	400 AMPS. MAXIMUM	TRAIN HTG. EQUIP	ENGINE FUEL	340 GALLS.
	675 VOLTS D.C. SUPPLY	400 AMPS. MAXIMUM		PREHEATING	ELECTRICAL FROM MAIN GENERATOR
TRACTION MOTORS	MAKE & TYPE	ENGLISH ELECTRIC E.E. 542 A	SPEED	MAX. PERMITTED SERVICE SPEED	80 M.P.H.
	No.	FOUR		TYPE { FOR LOCO.	AIR
	TYPE OF SUSPENSION	AXLE	BRAKING	{ FOR TRAIN	AIR. VACUUM & E.P.
CURVE	TYPE OF GEAR DRIVE	STRAIGHT SPUR SINGLE REDUCTION		BRAKE FORCE { % OF LOCO. WEIGHT	82.7 %
	MIN. RAD. CURVE WITHOUT GAUGE WIDENING	4 CHAINS		{ IN WORKING ORDER	



ELECTRIC			DIESEL			
SUPPLY SYSTEM	TYPE	THIRD RAIL	ENGINE	MAKE & TYPE	ENGLISH ELECTRIC 4 SRKT	
	NOMINAL VOLTAGE	660-750 VOLTS D.C.		No. OF CYLS. & CYCLE	4 CYLS. 4 STROKE	
PERFORMANCE AT 675 VOLTS	MAX. TRACTIVE EFFORT (337.5 VOLTS PER MOTOR) CONT. RATING ON WEAKEST FIELD (675 VOLTS PER MOTOR) MAX. RAIL H.P. ON WEAKEST MOTOR FIELD (675 VOLTS PER MOTOR) 675 VOLTS D.C. SUPPLY	40,000 LB. AT 24% ADHESION	MAIN GENERATOR	MAX. 1 HOUR RATED OUTPUT	600 H.P. AT 850 R.P.M.	
		7800 LB. TRACTIVE EFFORT		MAKE & TYPE	ENGLISH ELECTRIC E.E. 824/5D	
		68 M.P.H.	MAX. TRACTIVE EFFORT	36,000 LB. AT 21.4% ADHESION		
		1700 AMPS. TOTAL TRACTION CURRENT	PERFORMANCE	CONT. TRACTIVE EFFORT	13,600 LB. AT 11.5 M.P.H.	
		1420 RAIL H.P.		AT 850 AMPS. MAIN GENERATOR		
TRAIN HTG. EQUIP.		3150 H.P. AT 42 M.P.H.	RAIL H.P. AT CONT. RATING	420 H.P.		
		400 AMPS. MAXIMUM	FULL ENGINE OUTPUT	AVAILABLE BETWEEN 3 & 90 M.P.H.		
TRACTION MOTORS	MAKE & TYPE No. TYPE OF SUSPENSION TYPE OF GEAR DRIVE HORIZONTAL WITHOUT GAUGE WIDENING HORIZONTAL WITH 3/4 GAUGE WIDENING VERTICAL CONVEX VERTICAL CONCAVE	ENGLISH ELECTRIC E.E.546/1B	TANK CAPACITY	ENGINE FUEL	340 GALLS.	
		FOUR		TRAIN HTG. EQUIP.	NONE	
		AXLE	SPEED	MAX. PERMITTED SERVICE SPEED	90 M.P.H.	
		STRAIGHT SPUR SINGLE REDUCTION		BRAKING	TYPE { FOR LOCO. FOR TRAIN	AIR AIR, VACUUM & E.P.
		4 CHAINS			BRAKE FORCE { % OF LOCO. WEIGHT IN WORKING ORDER	85.9 %
3 1/2 CHAINS						
MINIMUM RADIUS CURVES		11 CHAINS				
		11 CHAINS				
		11 CHAINS				

B.R. B-B 1600/600 H.P. ELECTRO-DIESEL LOCOMOTIVE

E/51/1

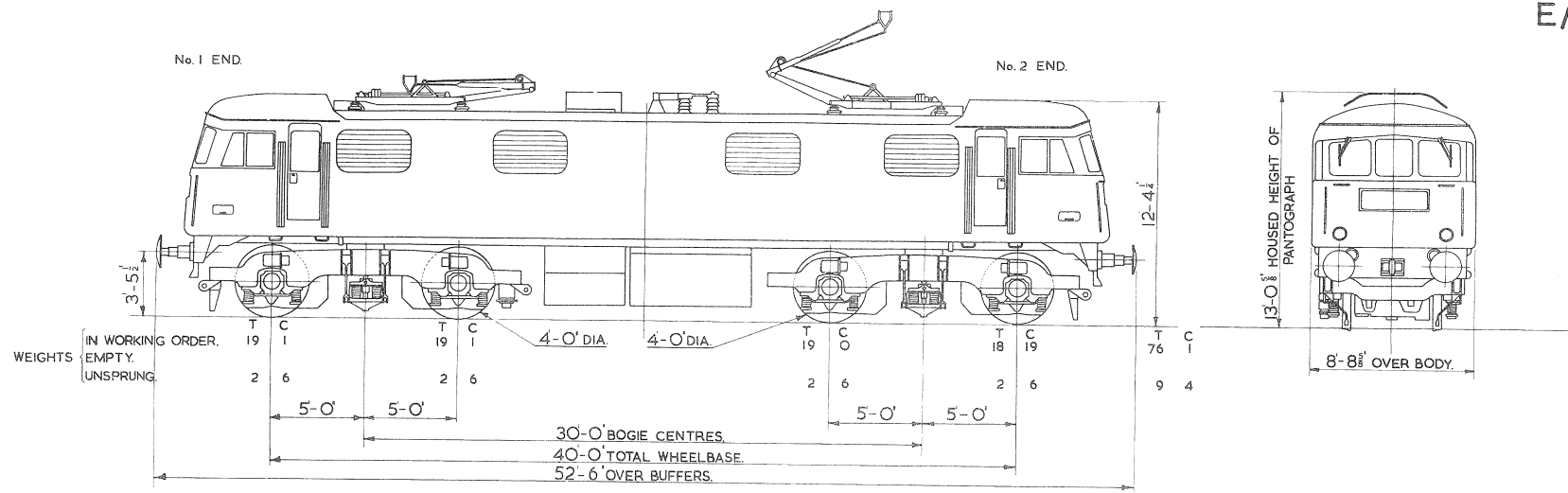


SUPPLY SYSTEM	TYPE	OVERHEAD	BRAKING	TYPE	FOR LOCO	AIR
	NOMINAL VOLTAGE	25 K.V. AC.			FOR TRAIN	VACUUM
TRACTION MOTORS	MAKE & TYPE	A.E.I. TYPE 189 RAILWAY MOTOR		BRAKE FORCE	% OF LOCO. WEIGHT	85%
	No.	FOUR			IN WORKING ORDER	
	TYPE OF SUSPENSION	FULL SUSPENSION IN BOGIE	SPEED		MAX. PERMITTED SERVICE SPEED	100 M.P.H.
	TYPE OF GEAR DRIVE	ALSTHOM FLEXIBLE, SINGLE REDUCTION	CURVE		MIN. RAD. CURVE	4 CHAINS
CONTROL SYSTEM	TYPE	L.T. TAP CHANGING			AT DEAD SLOW SPEED	
PERFORMANCE AT 22.5KV.	MAX. TRACTIVE EFFORT	50,000 LB. AT 28% ADHESION	TRAIN HEATING EQUIPMENT	ELECTRICAL		320 KW. AT 800 VOLTS. A.C.
	CONT. RATING ON WEAKEST FIELD	17,000 LB. TRACTIVE EFFORT				
		71 M.P.H.				
	MAX. RAIL H.P. ON WEAKEST MOTOR FIELD	700 AMPS. PER MOTOR, 3200 RAIL H.P.				
		4800 H.P. AT 44 M.P.H.				

CLASS AL1/1 AE1 (BTH/BRCW) B-B AC ELECTRIC LOCOMOTIVE.

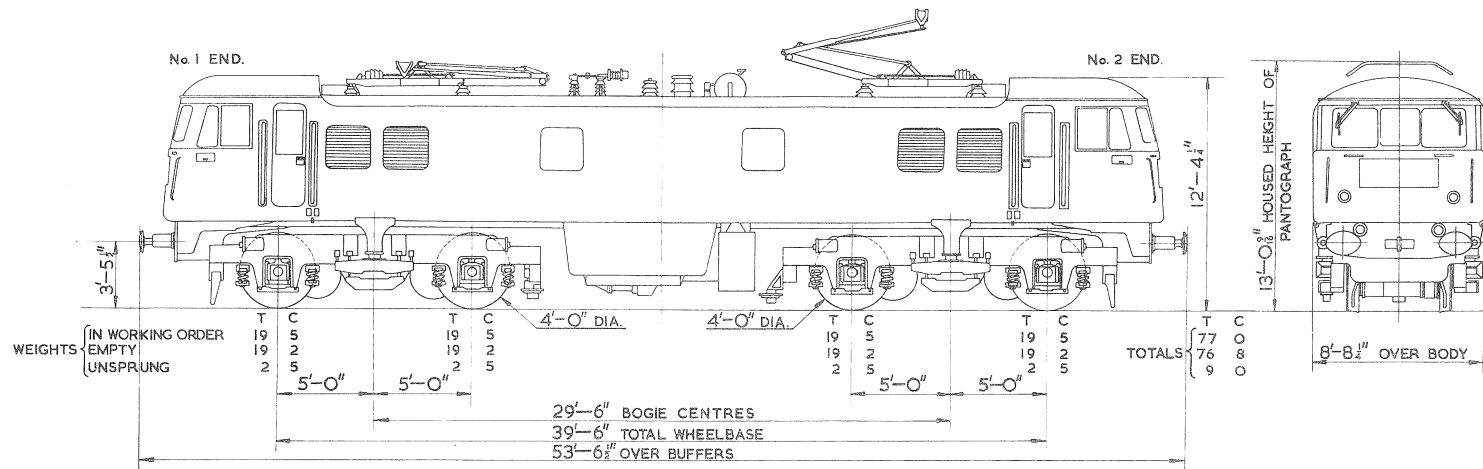
SUPPLY SYSTEM	TYPE	OVERHEAD	BRAKING	TYPE	{ FOR LOCO.	AIR
	NOMINAL VOLTAGE	25KV. A.C.		{ FOR TRAIN	VACUUM	
TRACTION MOTORS	MAKE & TYPE	ENGLISH ELECTRIC E.E. 535 A	SPEED	BRAKE FORCE	{ % OF LOCO. WEIGHT	87%
	No.	FOUR			{ IN WORKING ORDER	
		TYPE OF SUSPENSION	FULL SUSPENSION IN BOGIE			MAX. PERMITTED SERVICE SPEED
CONTROL SYSTEM	TYPE OF GEAR DRIVE	S.L.M. FLEXIBLE SINGLE REDUCTION	CURVE	MIN. RAD. CURVE.	{ WITHOUT GAUGE WIDENING	4 CHAINS
	TYPE	L.T. TAP CHANGING			{ AT DEAD SLOW SPEED " " "	
PERFORMANCE AT 22.5KV	MAX. TRACTIVE EFFORT	38,000 LB. AT 22.8% ADHESION	TRAIN HEATING EQUIPMENT	}	ELECTRICAL	320 KW. AT 800 VOLTS A.C.
		15260 LB. TRACTIVE EFFORT				
	CONT. RATING ON	73 M.P.H.				
	WEAKEST FIELD	710 AMPS. PER MOTOR.				
		2950 RAIL H.P.				
	MAX. RAIL H.P. ON					
	WEAKEST MOTOR FIELD	4400 H.P. AT 50 M.P.H.				

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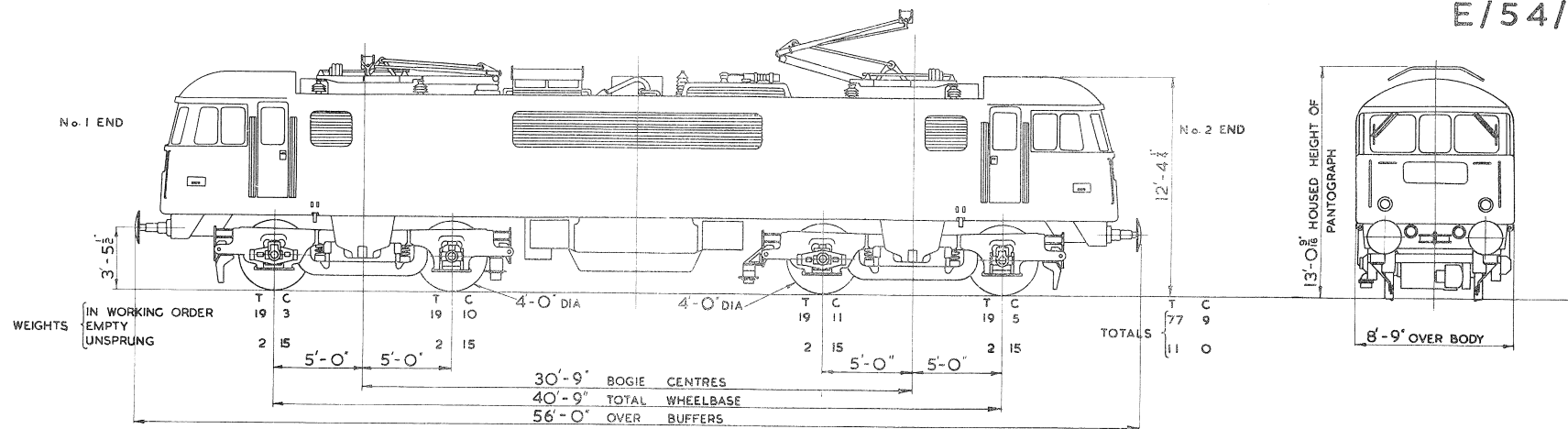
SUPPLY SYSTEM.	TYPE. NOMINAL VOLTAGE.	OVERHEAD. 25 K.V. AC.	BRAKING.	TYPE { <div> FOR LOCO. FOR TRAIN. </div>	AIR & RHEOSTATIC. VACUUM.
TRACTION MOTORS.	MAKE & TYPE. No.	ENGLISH ELECTRIC E.E. 535 A. FOUR.		BRAKE FORCE { <div> % OF LOCO WEIGHT IN WORKING ORDER. </div>	85%.
CONTROL SYSTEM.	TYPE OF SUSPENSION. TYPE OF GEAR DRIVE.	FULL SUSPENSION IN BOGIE. S.L.M. FLEXIBLE SINGLE REDUCTION.	SPEED.	MAX. PERMITTED SERVICE SPEED.	100 M.P.H.
	TYPE.	TRANSDUCTOR CONTROL OF TAP CHANGING.	CURVE.	MIN. RAD. CURVE { <div> WITHOUT GAUGE WIDENING. AT DEAD SLOW SPEED. </div>	4 CHAINS.
PERFORMANCE. AT 22.5 K.V.	MAX. TRACTIVE EFFORT.	38000 LB AT 22.3% ADHESION.	TRAIN HEATING EQUIPMENT.	ELECTRICAL.	320 KW. AT 800 VOLTS. AC.
	CONT. RATING ON WEAKEST FIELD.	15260 LB TRACTIVE EFFORT. 73 MPH. 710 AMPS. PER MOTOR. 2950 RAIL H.P.			
	MAX. RAIL H.P. ON WEAKEST MOTOR FIELD.	4400 H.P. AT 50 MPH.			

CLASS AL3/I E.E. B-B A.C.ELECTRIC LOCOMOTIVE



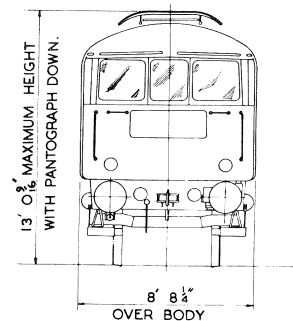
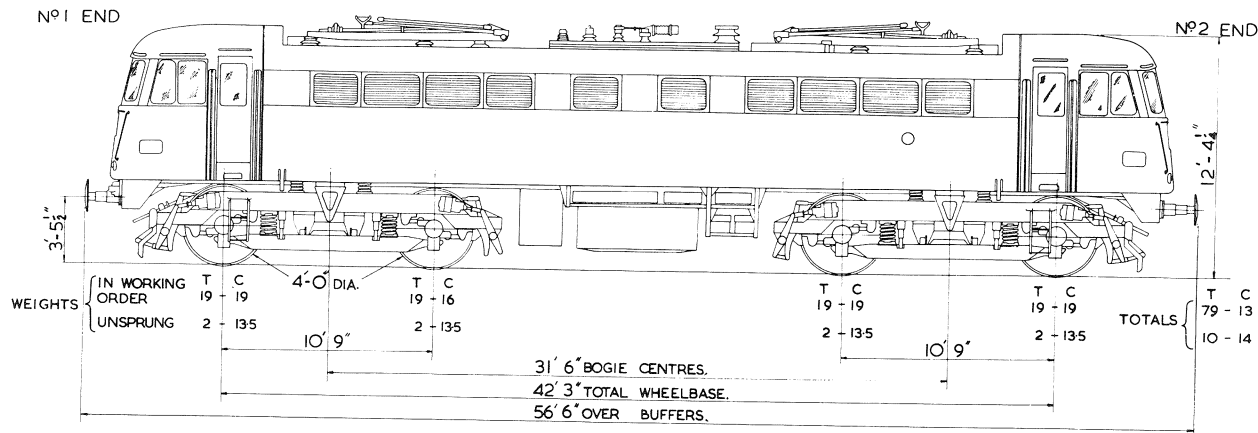
SUPPLY SYSTEM	TYPE NOMINAL VOLTAGE	OVERHEAD 25 KV. AC.	BRAKING	TYPE { FOR LOCO. FOR TRAIN	AIR VACUUM
TRACTION MOTORS	MAKE & TYPE No.	G.E.C. WT. 501 FOUR		BRAKE FORCE { % OF LOCO. WEIGHT IN WORKING ORDER	85%
CONTROL SYSTEM	TYPE OF SUSPENSION TYPE OF GEAR DRIVE	FULL SUSPENSION IN BOGIE BROWN-BOVERI FLEXIBLE. SINGLE REDUCTN.	SPEED	MAX. PERMITTED SERVICE SPEED	100 M.P.H.
	TYPE	H.T. TAP CHANGING	CURVE	MIN. RAD. CURVE { WITHOUT GAUGE WIDENING AT DEAD SLOW SPEED	4 CHAINS
PERFORMANCE AT 22.5 KV.	MAX. TRACTIVE EFFORT CONT. RATING ON WEAKEST FIELD	50000 LB. AT 29.2% ADHESION 17600 LB. TRACTIVE EFFORT 6.6 M.P.H. 760 AMPS. PER MOTOR. 3100 RAIL HP	TRAIN HEATING EQUIPMENT	ELECTRICAL	320 KW. AT 800 VOLTS A.C.
	MAX. RAIL HP. ON WEAKEST MOTOR FIELD	4900 HP AT 44.0 MPH.			

CLASS AL4 GEC. B-B AC. ELECTRIC LOCOMOTIVE.



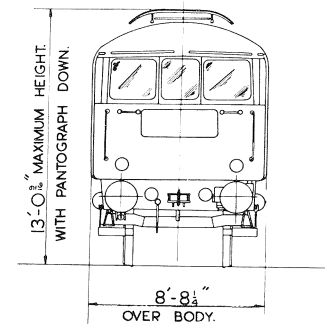
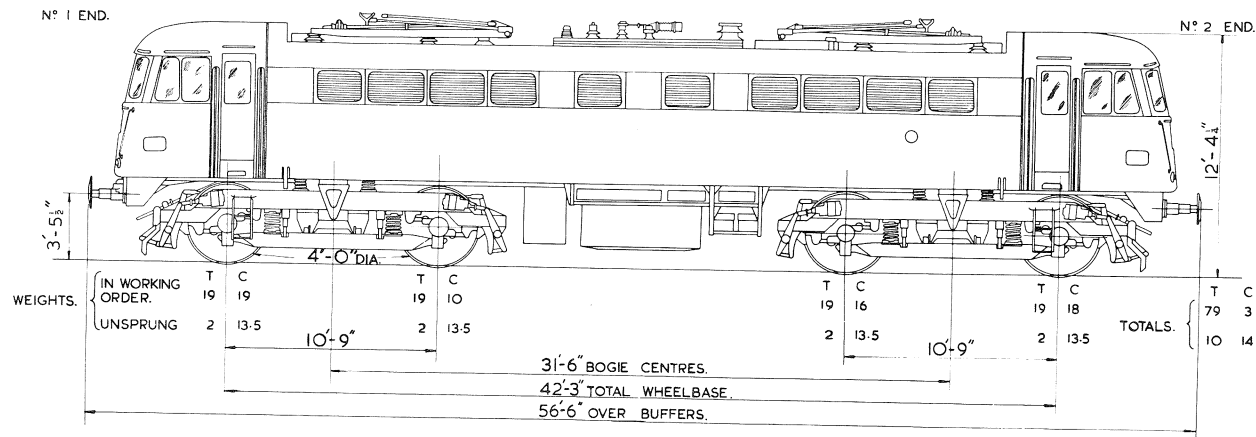
SUPPLY SYSTEM	TYPE NOMINAL VOLTAGE	OVERHEAD 25KV. AC.	BRAKING	TYPE { FOR LOCO FOR TRAIN	AIR VACUUM
TRACTION MOTORS	MAKE & TYPE No. TYPE OF SUSPENSION TYPE OF GEAR DRIVE	AEI. TYPE 189 RAILWAY MOTOR FOUR FULL SUSPENSION IN BOGIE ALSTHOM FLEXIBLE, SINGLE REDUCTION	SPEED	BRAKE FORCE { % OF LOCO. WEIGHT IN WORKING ORDER	82%
CONTROL SYSTEM	TYPE MAX. TRACTIVE EFFORT	H.T. TAP CHANGING 50,000 LB. AT 28% ADHESION	CURVE	MIN. RAD. CURVE { WITHOUT GAUGE WIDENING AT DEAD SLOW SPEED	100 M.P.H. 4 CHAINS
PERFORMANCE AT 22.5 KV.	CONT. RATING ON WEAKEST FIELD MAX. RAIL H.P. ON WEAKEST MOTOR FIELD	{ 17000 LB. TRACTIVE EFFORT 73 M.P.H. 700 AMPS. PER MOTOR. 3300 RAIL HP 5500 H.P. AT 47 M.P.H.	TRAIN HEATING EQUIPMENT	ELECTRICAL	320 KW AT 800 VOLTS AC.

CLASS AL2 AEI (M-V/BR) B-B AC. ELECTRIC LOCOMOTIVE.



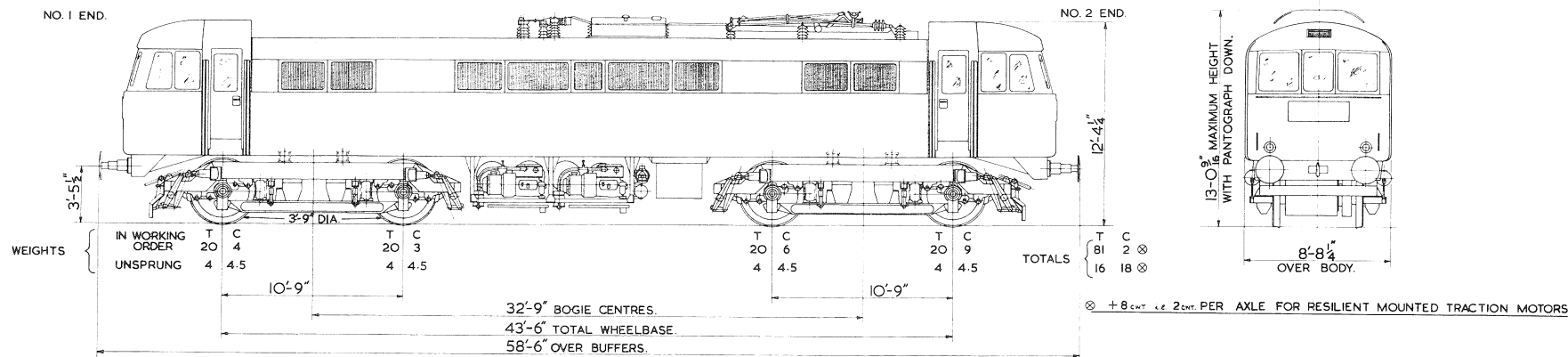
SUPPLY SYSTEM	{ TYPE NOMINAL VOLTAGE	OVERHEAD 25 kV. A.C.					
TRACTION MOTORS	{ MAKE & TYPE Nº	A.E.I. TYPE 189. FOUR.		BRAKING	{ TYPE BRAKE FORCE	{ FOR LOCO. FOR TRAIN { % OF LOCO. WEIGHT } IN WORKING ORDER }	AIR & RHEOSTATIC VACUUM 87.2
	{ TYPE OF SUSPENSION TYPE OF GEAR DRIVE	FULL SUSPENSION IN BOGIE. ALSTHOM FLEXIBLE. SINGLE REDUCTION.		SPEED	MAX. PERMITTED	SERVICE SPEED	100 MPH.
CONTROL SYSTEM	{ TYPE MAX. TRACTIVE EFFORT	LT. TAP CHANGING. 50000LB. AT 28% ADHESION.		CURVE	MIN. RAD. CURVE	{ WITHOUT GAUGE WIDENING AT DEAD SLOW SPEED	6 CHAINS 4 CHAINS
PERFORMANCE AT 22.5 kV.	{ CONTINUOUS RATING ON WEAKEST FIELD	{ 17000LB. TRACTIVE EFFORT. 71 MPH. 700 AMPS. PER MOTOR. 3200 RAIL HP		TRAIN HEATING EQUIPMENT	{ ELECTRICAL		320 KW. AT 800 VOLTS A.C.
	{ MAX. RAIL H.P. ON WEAKEST MOTOR FIELD	{ 5100 HP AT 45 MPH.		RECTIFIERS.		TYPE	GERMANIUM (LOCO. Nº E 3056-3066) E 3068-3085

CLASS AL.5 BR. B-B. AC. ELECTRIC LOCOMOTIVE.



SUPPLY SYSTEM.	TYPE.	OVERHEAD	BRAKING.	TYPE.	FOR LOCO.	AIR & RHEOSTATIC.
	NOMINAL VOLTAGE.	25KV A.C.			FOR TRAIN	VACUUM.
TRACTION MOTORS.	MAKE & TYPE.	AEI TYPE 189		BRAKE FORCE.	% OF LOCO WEIGHT	87.8
	Nº	FOUR.			IN WORKING ORDER	
	TYPE OF SUSPENSION.	FULL SUSPENSION IN BOGIE	SPEED.		MAX. PERMITTED SERVICE SPEED	100 M.P.H.
CONTROL SYSTEM.	TYPE OF GEAR DRIVE.	ALSTHOM FLEXIBLE SINGLE REDUCTION.	CURVE.		WITHOUT GAUGE WIDENING	6 CHAINS.
	TYPE.	L.T. TAP CHANGING.			AT DEAD SLOW SPEED	4 CHAINS.
	MAX. TRACTIVE EFFORT.	50,000LB AT 28% ADHESION.	TRAIN HEATING EQUIPMENT.			
PERFORMANCE AT 22.5 KV.	CONTINUOUS RATING, ON WEAKEST FIELD.	17000LB. TRACTIVE EFFORT		ELECTRICAL		320 KW AT 800 VOLTS AC.
		71 M.P.H.				
	MAX. RAIL HP ON WEAKEST MOTOR FIELD.	700 AMPS PER MOTOR	RECTIFIER.	TYPE.	SILICON	
		3200 RAIL HP			(LOCO. Nº3086-3095)	
		5100 HP AT 45 M.P.H.				

CLASS AL5/1 BR. B-B AC. ELECTRIC LOCOMOTIVE.



SUPPLY SYSTEM.	TYPE. OVERHEAD.		TYPE.	FOR LOCO.	AIR & RHEOSTATIC.
	NOMINAL VOLTAGE. 25 kV. A.C.			FOR TRAIN.	VACUUM OR AIR.
TRACTION MOTORS.	MAKE & TYPE. A.E.I. TYPE 282AZ or 282BZ.		BRAKING.	BRAKE FORCE. % OF LOCO. WEIGHT	82.1
	NO. FOUR.			IN WORKING ORDER.	
	TYPE OF SUSPENSION. NOSE.		SPEED.	MAX. PERMITTED SERVICE SPEED.	100 M.P.H.
	TYPE OF GEAR DRIVE. SINGLE REDUCTION.		CURVE.	MIN. RAD. CURVE. WITHOUT GAUGE WIDENING	6 CHAINS.
CONTROL SYSTEM.	TYPE. H.T. TAP CHANGING.			AT DEAD SLOW SPEED	4 CHAINS.
	MAX. TRACTIVE EFFORT. 58000LB. AT 32% ADHESION.		TRAIN HEATING EQUIPMENT.	ELECTRIC.	320KW. AT 800VOLTS A.C.
PERFORMANCE AT 22.5 kV.	CONTINUOUS RATING	AZ MOTOR. 20000LB. T.E. 67 M.P.H. 700 AMPS PER MOTOR. 3600 RAIL H.P.		RECTIFIER.	TYPE. SILICON.
	ON WEAKEST FIELD.	BZ MOTOR. 24000LB. T.E. 62 M.P.H. 800 AMPS PER MOTOR. 4040 RAIL H.P.			
	MAX. RAIL H.P. ON WEAKEST MOTOR FIELD.	5900 H.P. AT 38 M.P.H. 6100 H.P. AT 39.5 M.P.H.			

CLASS AL6 B.R. B-B A.C. ELECTRIC LOCOMOTIVE.