EX L.M.S. LOCOMOTIVES

EX. L.M.S. STANDARD LOCOMOTIVES.

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INDEX No.1 STEAM LOCOMOTIVES

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2	ED 261 D	4-6-2	8P	4	DUCHESS	"
3	ED 175 J	4-6-2	8P	4	PRINCESS	"
4	ED 270 E	4-6-0	7P	3	CONV. R. SCOT	"
5	ED 250 F	4-6-0	7P	3	ENG. No. 46170	"
6	ED 269 D	4-6-0	7P	3	CONV. JUBILEE	"
7	ED 272 B	4-6-0	7P	3	CONV. PATRIOT	"
8	ED 176 P	4-6-0	6P	3	JUBILEE	"
9	ED 173 C	4-6-0	6P	3	PATRIOT	PAR
10	ED 73 B	4-4-0	4P	3	COMPOUND	"
11	ED 69 C	4-4-0	2P	2		"
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20	ED 180 A	2-6-0	5MT	2		PAR
21	ED 274 B	2-6-0	4MT	2		TAPER
22	ED 273 A	2-6-0	2MT	2	16" DIA. CYLINDERS	"
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25	ED 222 G	2-8-0	8F	2		TAPER
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PAGE	DIAGRAM	TYPE	CLASS	CYLS	DESCRIPTION	BOILER
			PASSENGER TANK			
28	ED 212 B	0-4-4	2P	2		PAR
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29	ED 271 A	2-6-4	4MT	2	37'1" WHEEL BASE	TAPER
30	ED 287 A	2-6-4	4MT	2	" 1875 GALLS.	"
31	ED 251 E	2-6-4	4MT	2	38'5" WHEEL BASE	"
32	ED 182 D	2-6-4	4MT	3	" " "	"
33	ED 172 C	2-6-4	4MT	2	" " "	"
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36	ED 84 A	2-6-2	3MT	2		PAR
	ED 85 A	2-6-2	3MT	2	CONDENSER	"
37	ED 275 A	2-6-2	2MT	2	15" DIA. CYLINDERS	TAPER
38	ED 290	2-6-2	2MT	2	15½ DIA. CYLINDERS	"
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INDEX No. 2 : DIESEL LOCOMOTIVES

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45	ED 286	B B	ELECTRIC	10800

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			SHUNTING	
46	ED 293	0-6-0	ELECTRIC	12,000 - 12,001
47	ED 262 A	0-6-0	"	12,003 - 12,022
48	ED 263A	0-6-0	" (JACKSHAFT)	12,023 - 12,032
49	ED 268	0-6-0	"	12,033 - 12,138

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40071-40209	2-6-2 TAPER BLR.	3MT		
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41900-41909	0-4-4	2P	ED 212 B	28
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42700-42944	2-6-0 PARALLEL BLR	5MT	ED 180 A	20
42945-42948	2-6-0 TAPER BLR.	5MT	ED 181 D	19
43000-43161	2-6-0	4MT	ED 274 B	21
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90000-90732	2-8-0 WD	8F	ED 282 B	24

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4-6-0 MIXED TRAFFIC ENGINES CLASS 5

ENGINE NO:	VALVE GEAR	TYPE OF AXLE BEARINGS	ENGINE WHEELBASE	TYPICAL DIAGRAM	PAGE NO:
44658 - 44667	WALSCHAERT	PLAIN	27'- 6"	E.D 291	13
44668 - 44677	"	SKEFKO ROLLER DRIVING AXLE	"	E.D 284A	18
44678 - 44685	"	" " ALL AXLES	"	E.D 276B	14
44686 - 44687	CAPROTTI	" " " "	"	E.D 277B	16
44688 - 44697	WALSCHAERT	TIMKEN ROLLER DRIVING AXLE	"	E.D 284A	18
44698 - 44737	"	PLAIN	"	E.D 291	13
44738 - 44747	CAPROTTI	"	"	E.D 280A	15
44748 - 44757	"	TIMKEN ROLLER ALL AXLES	"	E.D 277B	16
44758 - 44766	WALSCHAERT	" " " "	"	E.D 276B	14
44767	STEPHENSON	" " " "	"	E.D 283A	17
44768 - 45499	WALSCHAERT	PLAIN	27'- 2"	E.D 178Q	12

2-6-4 MIXED TRAFFIC TANK CLASS 4

ENGINE NO:	CYLS:	BOILER	WHEELBASE	TYPICAL DIAGRAM	PAGE NO:
42050 - 42146	2	TAPER	37'- 1"	E.D 271A	29
42147 - 42299	2	TAPER	37'- 1"	E.D 287A	30
42300 - 42424	2	PARALLEL	38'- 6"	E.D 172C	33
42425 - 42494	2	TAPER	"	E.D 251E	31
42500 - 42536	3	"	"	E.D 182D	32
42537 - 42672	2	"	"	E.D 251E	31
42673 - 42699	2	"	37'- 1"	E.D 287A	30

2-6-2 MIXED TRAFFIC TANK CLASS 3

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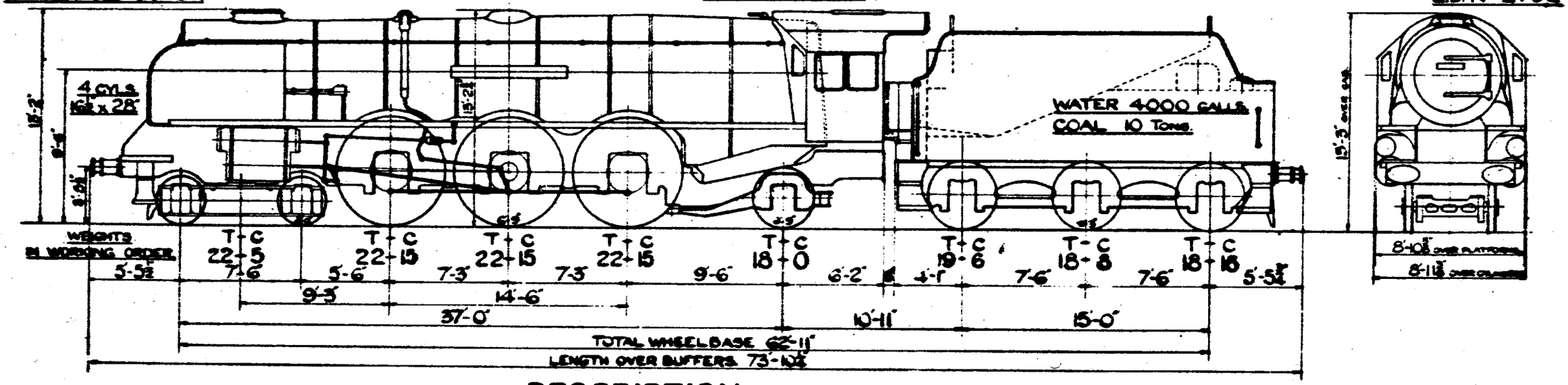
40001 - 40020	PARALLEL	E.D 84A	36
40021 - 40040	"	E.D 85A	36
40041 - 40070	"	E.D 84A	36
40071 - 40209	TAPER 6A	E.D 254E	35
EXCEPT			
40148, 40163, 40169, 40203	TAPER 6B	E.D 264B	34

POWER CLASS^ns 8P. 250 LBS. PER SQ. INCH. E.D. No. 278



DESCRIPTION

BOILER BARREL 20'-3 1/16". DIA. OUTS. 5'-8 5/8" INCREASING TO 6'-5 1/2"

FIREBOX OUTSIDE FIREBOX 8'-6" x 7'-6 5/8" to 7'-0 1/2".

TUBES. SUPERHEATER ELEMENTS 40 TRIPLE 1" DIA. OUTS. 10 S.W.G.
LARGE TUBES 40-5 1/8" DIA. OUTS. x 7 S.W.G.
SMALL TUBES 129-2 1/8" DIA. OUTS. x 11 S.W.G. } 19'-3" BETWEEN TUBEPLATES.

HEATING SURFACE

TUBES	2577	SQ. FT.
FIREBOX	230	"
SUPERHEATER	822	"

} TOTAL 2807 SQ. FT.

GRATE AREA 50 SQ. FT.

TRACTIVE EFFORT AT 85% B.P. 40,000 LBS.

ADHESION FACTOR 3·82

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	98-15-0	28-13-0	127-8-0
LOADED	108-10-0	56-10-0	165-0-0

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER = 50·03

— M. S.
DRAWING OFFICE.
DERBY.

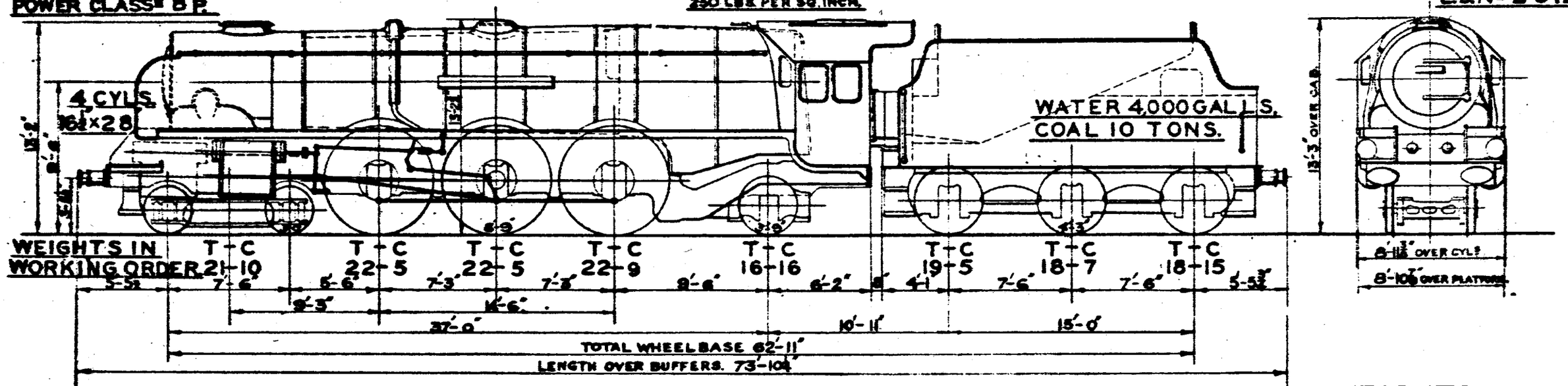
4-6-2 PASSENGER ENGINE. (ROLLER BEARINGS) NOS. 46256-7

1

POWER CLASS^ll B.P.

250 LBS. PER SQ. INCH.

E.D. Nº 2610



DESCRIPTION

BOILER. BARREL 20'-3⅛". DIA. OUTS. 5'-8⅛" INCREASING TO 6'-5⅛"

FIREBOX. OUTSIDE FIREBOX 8'-6" x 7'-6⅝" to 7'-0¼".

TUBES.
- SUPERHEATER ELEMENTS 40 (smoke) 1" DIA. OUTS. x 10 SWG.
- LARGE TUBES 40 - 5⅛" DIA. OUTS. x 7 SWG.
- SMALL TUBES 129 - 2⅛" DIA. OUTS. x 11 SWG.

} 19'-3" BETWEEN TUBEPLATES.

HEATING SURFACE

TUBES	2,577	SQ. FT.
FIREBOX	230	"
SUPERHEATER	822	"

} TOTAL 2807 SQ. FT.

GRATE AREA. 50 SQ. FT.

TRACTIVE EFFORT AT 85% B.P. 40,000 LBS.

ADHESION FACTOR 3·73.

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	95-10-0	28-10-0	124-0-0
LOADED	105-5-0	56-7-0	161-12-0

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % ENGINE & TENDER-51.

L. M. S. DRAWING OFFICE. DERBY.

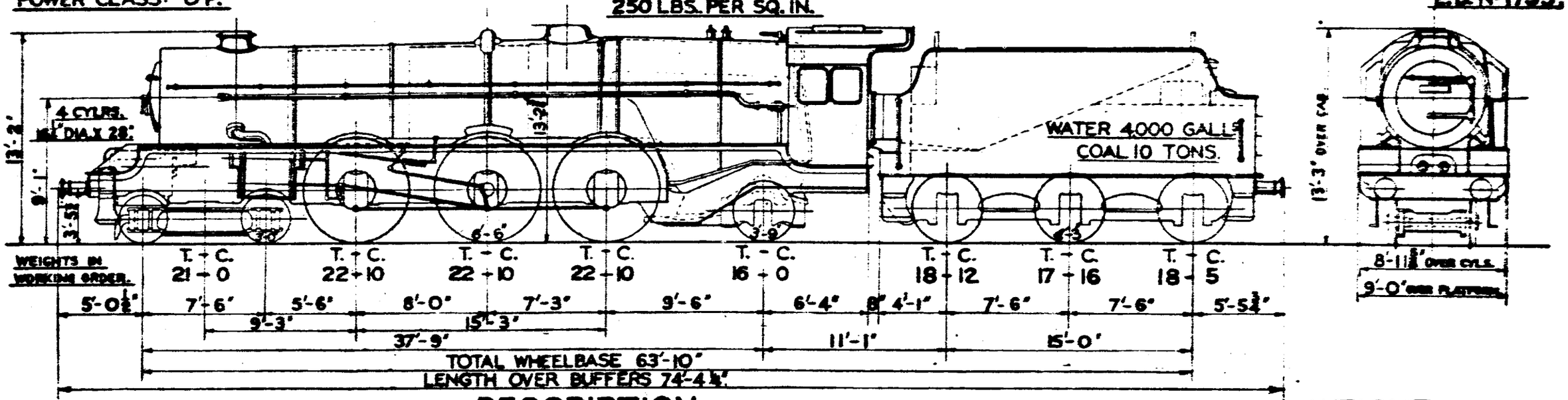
4-6-2 PASSENGER ENGINE. NOS. 46220 - 46255

2

POWER CLASS" 8P.

250 LBS. PER SQ. IN.

E.D. Nº 175.J.



DESCRIPTION.

BOILER. BARREL 20'-3 1/8". DIA. OUTS. 5'-8 5/8". INCREASING TO 6'-3".

FIREBOX. OUTS. 8'-6" X 6'-10 1/4" & 6'-2 7/8"

TUBES.
- SUPERHEATER ELEMENTS 32 - 1½ DIA. OUTS. X 9 S.W.G.
- LARGE TUBES 32 - 5 1/8" DIA. OUTS. X 7 S.W.G.
- SMALL TUBES 123 - 2 3/8" DIA. OUTS. X 11 S.W.G.

} 19'-3" BET. TUBEPLATES.

HEATING SURFACE.

TUBES	2299·0 SQ. FT.	TOTAL 2,516 SQ. FT.
FIREBOX	217·0 " "	
SUPERHEATER	586·0 " "	

GRATE AREA. 45·0 " "

TRACTIVE EFFORT AT 85% B.P. 40,300 LBS.

ADHESION FACTOR 3·75.

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	94-7-2	26-16-0	121-3-2
LOADED	104-10-0	54-13-0 WELDED TANK.	159-3-0

RADIUS OF MINIMUM CURVE. 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER

4-6-2 PASSENGER ENGINE Nos. 46200-46212 EXCEPT 46202.

·17C

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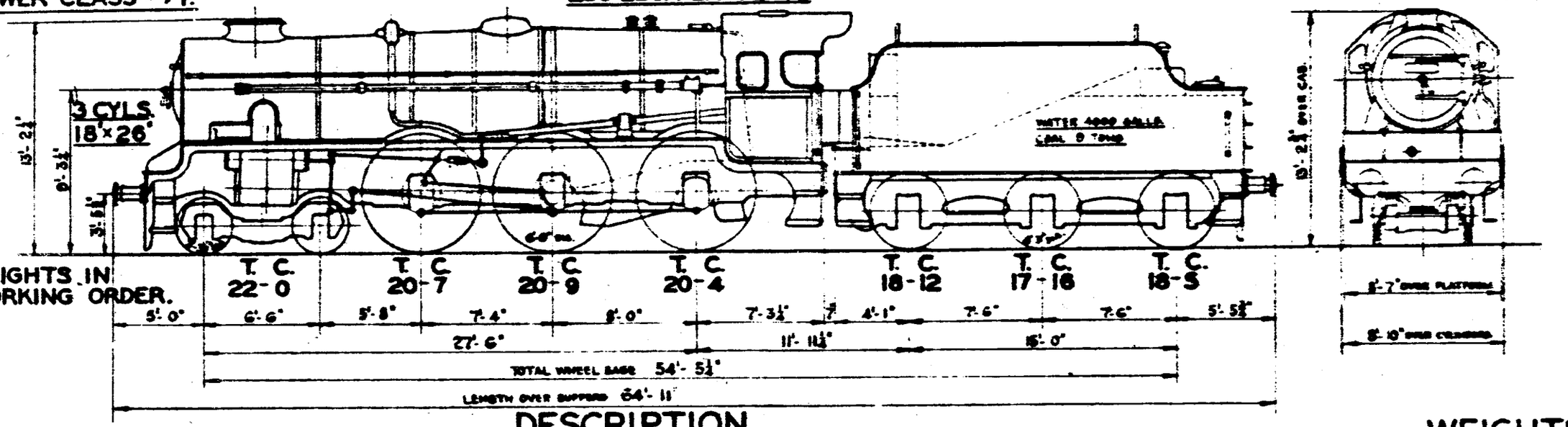
3

POWER CLASSN. 7P. 250 LBS. PER SQ. IN. E.D. No 270E.



DESCRIPTION.

BOILER	BARREL 12'-1 1/16". DIA. OUTS. 5'-5" INCREASING TO 5'-10 1/2"
FIREBOX	OUTSIDE FIREBOX 10'-3" x 4'-0 1/2"
TUBES	SUPERHEATER ELEMENTS 28-1 3/8 DIA. OUTS. x 9 S.W.G LARGE TUBES 28-5 1/8" DIA. OUTS. x 7 S.W.G. SMALL TUBES 198-1 3/4" DIA. OUTS x 12 S.W.G. 13'-0" BETWEEN TUBEPLATES.
HEATING SURFACE	TUBES 1656 SQ. FT. FIREBOX 195 " " SUPERHEATER 367 " " TOTAL 1.851 SQ. FT.
GRATE AREA	31·25 "
TRACTIVE EFFORT AT 85% B.P	33150 LBS.
ADHESION FACTOR	4·13.

WEIGHTS.

		ENGINE. T. C. Q.	TENDER. T. C. Q.	TOTAL. T. C. Q.
ESTIMATED WEIGHTS	LIGHT	77-8-0	27-16-0	105-4-0
	LOADED	83-0-0	34-13-0	137-13-0

RADIUS OF MINIMUM CURVE. 8 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE : ENGINE & TENDER 57·4.

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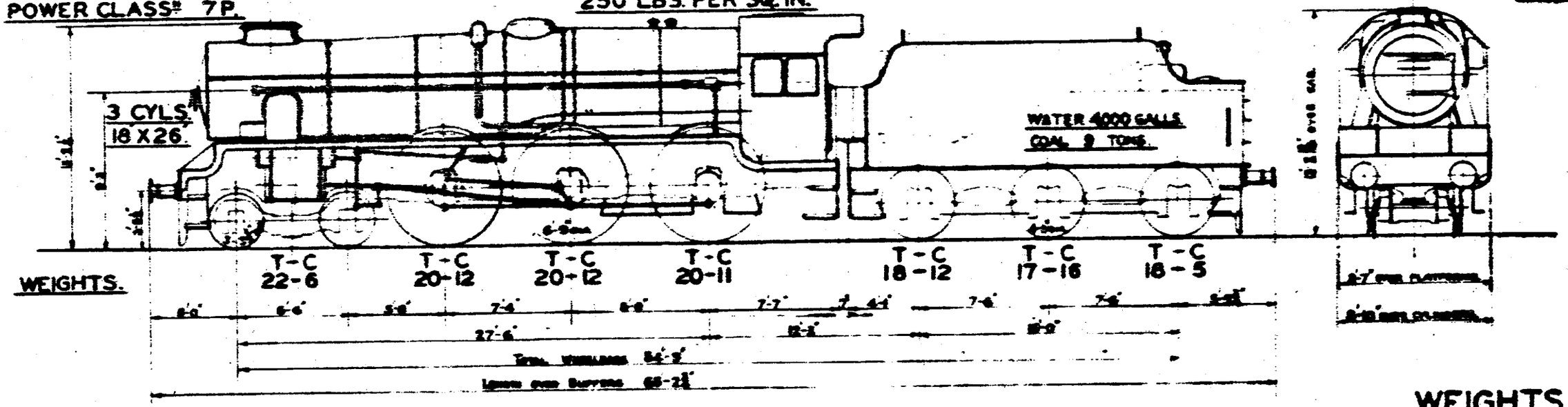
4-6-0 PASSENGER ENGINE (2A BOILERS) BETWEEN NOS. 4600-4669

ED Nº 250 F.

POWER CLASS" 7P. 250 LBS. PER SQ. IN.



—DESCRIPTION.—

BOILER.	BARREL 14'-2⅛". DIA. OUTS. 5'-4½" INCREASING TO 5'-10½"
FIREBOX.	OUTSIDE FIREBOX 10'-3" X 4'-0¼".
TUBES.	SUPERHEATER ELEMENTS 28-1⅜ DIA. OUTS. X 9 S.W.G. LARGE TUBES 28-5⅛" DIA. OUTS. X 7 S.W.G. SMALL TUBES 180-1⅞" DIA. OUTS. X 11 S.W.G. } 14'-3" BETWEEN TUBEPLATES.
HEATING SURFACE	TUBES 1,793·0 SQ.FT. FIREBOX 195·0 " " SUPERHEATER 367·0 " " } TOTAL 1988·0 SQ.FT.
GRATE AREA.	31·25 " "
RADIUS OF MINIMUM CURVE	6 CHAINS (OR 4½ CHAINS DEAD SLOW)
TRACTIVE EFFORT AT 85% B.P.	33,150 LBS. ADHESION FACTOR 4·17.
BRAKE % ENGINE & TENDER	52·9.

WEIGHTS.

	ENGINE. T. C. Q.	TENDER. T. C. Q.	TOTAL. T. C. Q.
LIGHT	77-14-0	27-16-0	105-10-0
LOADED	84-1-0	54-13-0	138-14-0

4-6-0 PASSENGER ENGINE (Nº 46170)

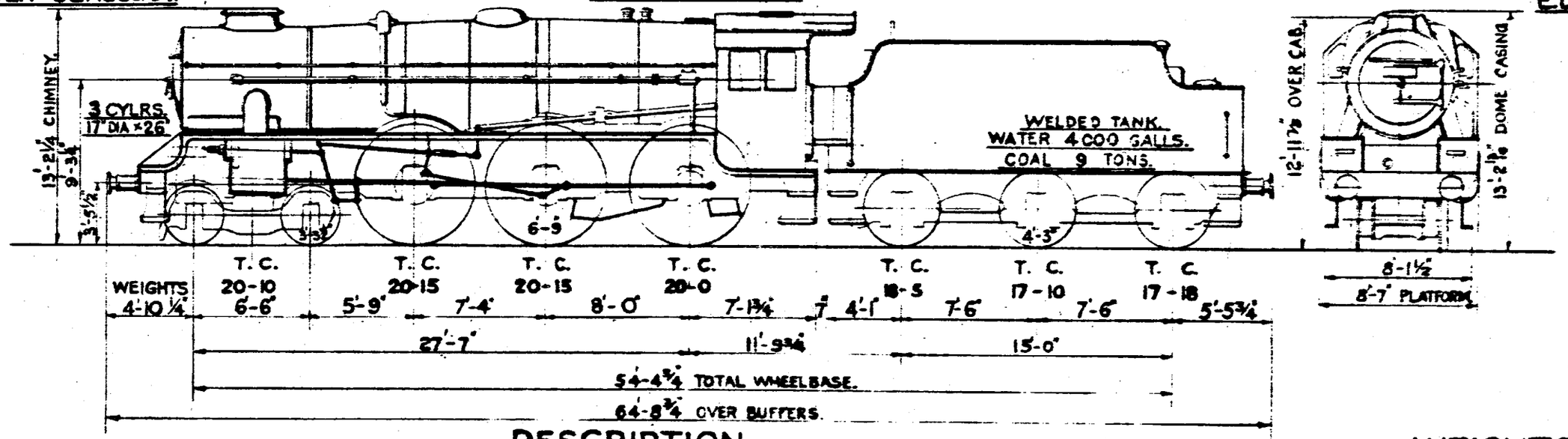
L. M. S.
DRAWING OFFICE.
CREWE.

5

POWER CLASSN. 7P

250 LBS. PER SQ. INCH.

E.D.Nº 2690



DESCRIPTION.

BOILER. BARREL 12'-11 1/16". DIA. OUTS. 5'-5" INCREASING TO 5'-10½".

FIREBOX. OUTSIDE FIREBOX 10'-3" × 4'-0¼".

TUBES. SUPERHEATER ELEMENTS 28 - 1⅜ DIA. OUTS. X 9 S.W.G.
LARGE TUBES 28-5⅛ DIA. OUTS. X 7 S.W.G.
SMALL TUBES 198 - 1¾ DIA. OUTS. X 12 S.W.G.
} 13'-0" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1656	SQ.FT.
FIREBOX	195	" "
SUPERHEATER	367	" "

} TOTAL 1851 SQ.FT.

GRATE AREA. 31·25 " "

TRACTIVE EFFORT AT 85 % BP. 29,590 LBS.

ADHESION FACTOR 4·65.

WEIGHTS.

	ENGINE. T.C.Q.	TENDER. T. C.Q.	TOTAL. T.C.Q.
LIGHT.	75-18-0	26-16-0	102-14-0.
LOADED.	82-0-0	53-13-0	135-13-0

RADIUS OF MINIMUM CURVE. 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % ENGINE & TENDER 52·7.

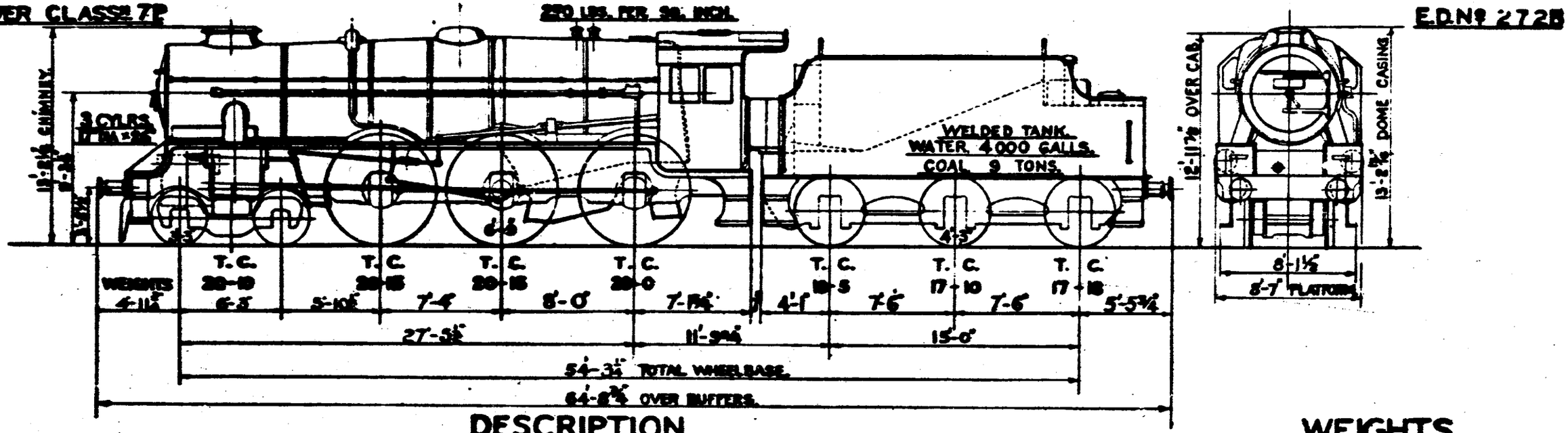
4-6-0 PASSENGER ENGINE 2A BOILER) Nos 45735 & 45736

L. M. S.
DRAWING OFFICE.
DERBY.

POWER CLASS 7P

250 LBS. PER SQ. INCH.

E.D.No 2725



DESCRIPTION.

BOILER. BARREL 12'-11⅛". DIA. OUTS. 5'-5" INCREASING TO 5'-10½".

FIREBOX. OUTSIDE FIREBOX 10'-3" × 4'-0¼".

TUBES.
- SUPERHEATER ELEMENTS 21 - 1⅜" DIA. OUTS. X 9 SWG.
- LARGE TUBES 28-5⅛" DIA. OUTS. X 7 SWG.
- SMALL TUBES 196-1¾" DIA. OUTS. X 12 SWG.

} 13'-0" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1656 SQ.FT.
FIREBOX	195 " "
SUPERHEATER	367 " "

} TOTAL 1851 SQ.FT.

GRATE AREA. 31·25 " "

TRACTIVE EFFORT AT 85% B.P. 29,590 LBS.

ADHESION FACTOR 4·65.

WEIGHTS.

	ENGINE. T.C.Q.	TENDER. T.C.Q.	TOTAL T.C.Q.
LIGHT.	75-18-0	26-16-0	102-14-0
LOADED.	82-0-0	53-13-0	135-13-0

RADIUS OF MINIMUM CURVE. 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

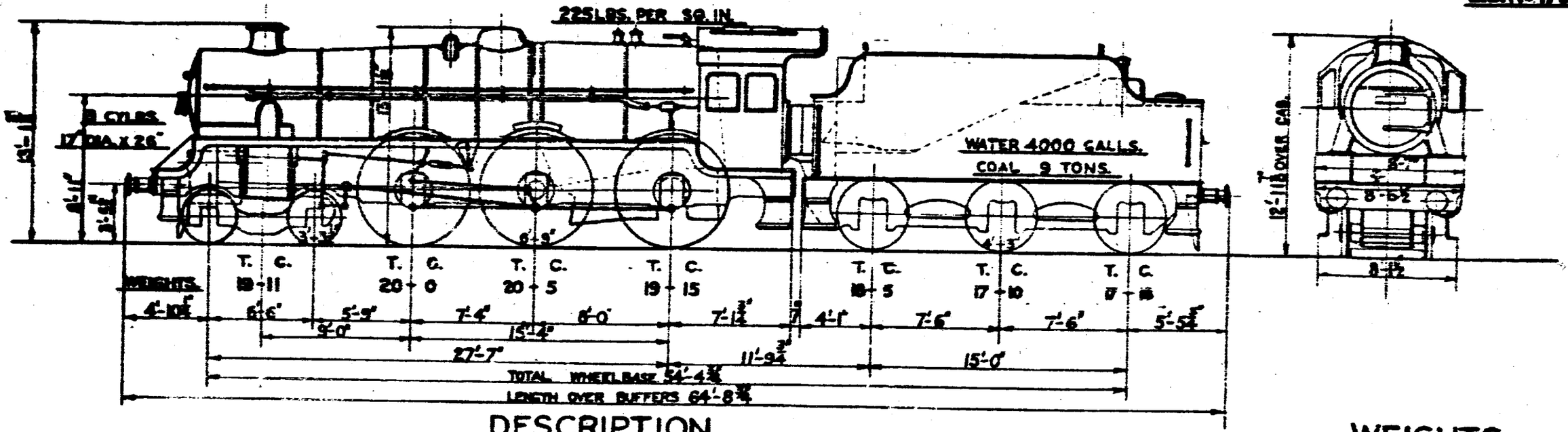
BRAKE % ENGINE & TENDER 52·7.

4-6-0 PASSENGER ENGINE. (2A BOILER) Nos. BETWEEN 45512 & 45545

L. M. S.
DRAWING OFFICE.
DERBY.

POWER CLASS. 6P.

E.D. No. 176 P.



DESCRIPTION.

BOILER BARREL 13'-2⅝". DIA. OUTS. 5'-0" INCREASING TO 5'-8⅜".

FIREBOX OUTS. 10'-0" x 4'-0".

TUBES. SUPERHEATER ELEMENTS 24-1⅜" DIA. OUTS. x 9 SW.G.
LARGE TUBES 24-5⅛". DIA. OUTS. x 7 S.W.G.
SMALL TUBES 159-1⅞" DIA. OUTS. x 11 S.W.G.
} 13'-2⅞" BET. TUBEPLATES.

HEATING SURFACE

TUBES	1460·0	SQ. FT.
FIREBOX	181·0	" "
SUPERHEATER	313·0	" "
TOTAL	1641·0	SQ. FT.

GRATE AREA 31·0 " "

TRACTIVE EFFORT AT 85% B.P. 26,610 LBS.

ADHESION FACTOR 5·05.

WEIGHTS.

	ENGINE. T. C. Q.	TENDER. T. C. Q.	TOTAL. T. C. Q.
WELDED TANK. LIGHT.	73-5-2	26-16-0	100-1-2
WELDED TANK. LOADED.	79-11-0	53-13-0	133-4-0

RADIUS OF MINIMUM CURVE. 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % ENGINE & TENDER 57·94.

4-6-0 PASSENGER ENGINE.

Nos. 45552 - 45742
EXCEPT 45735 & 45736

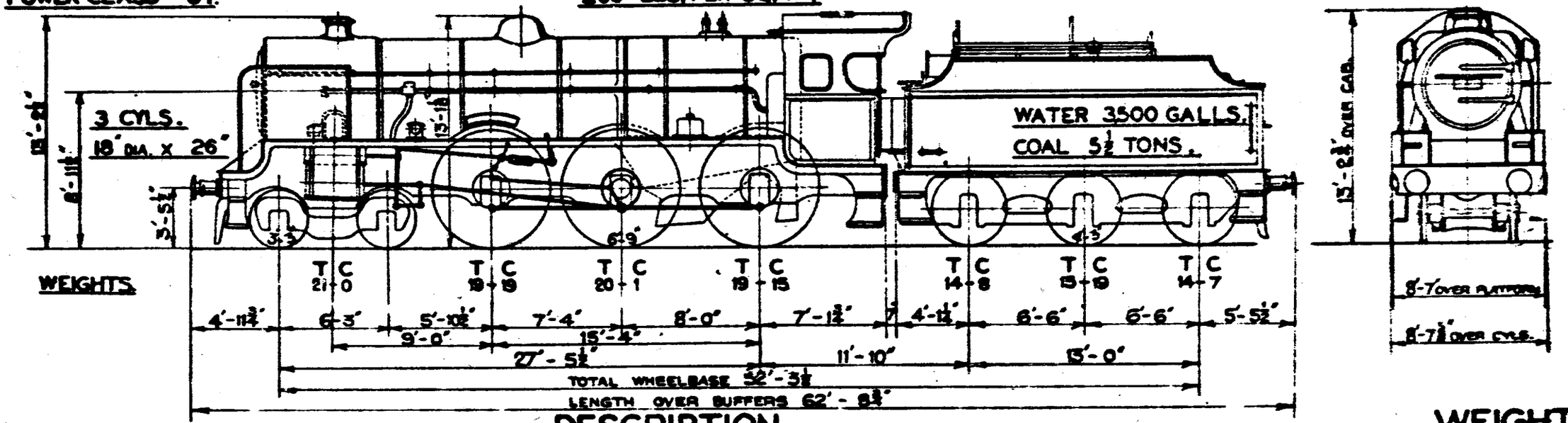
L. M. S.
DRAWING OFFICE.
DERBY.

8

E.D. No. 173 C

POWER CLASS^d 6P

200 LBS. PER SQ. IN.



DESCRIPTION.

BOILER. BARREL 13'-3¾". DIA. OUTS. 5'-3 11/16" INCREASING TO 5'-5⅛"

FIREBOX. OUTSIDE FIREBOX 9'-6" x 4'-0 7/8".

TUBES. SUPERHEATER ELEMENTS 24 - 1½" DIA. OUTS. X 9 SWG.
LARGE TUBES 24 - 5¼" DIA. OUTS. X 7 SWG. } 14'-0" BETWEEN TUBEPLATES.
SMALL TUBES 140 - 2¼" DIA. OUTS. X 11 SWG.

HEATING SURFACE.

TUBES	1,552·0	SQ. FT.
FIREBOX	183·0	" "
SUPERHEATER	365·0	" "

TOTAL 1735·0 SQ. FT.

GRATE AREA. 30·5 " "

TRACTIVE EFFORT AT 85% B.P. 26,520 LBS.

ADHESION FACTOR 5·05.

WEIGHTS.

	ENGINE	TENDER	TOTAL
	T. C. Q.	T. C. Q.	T. C. Q.
LIGHT	75-7-1	21-11-2	96-18-3
LOADED	80-15-0	42-14-0	123-9-0

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % ENGINE & TENDER 62·3.

H.T.

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DERBY.

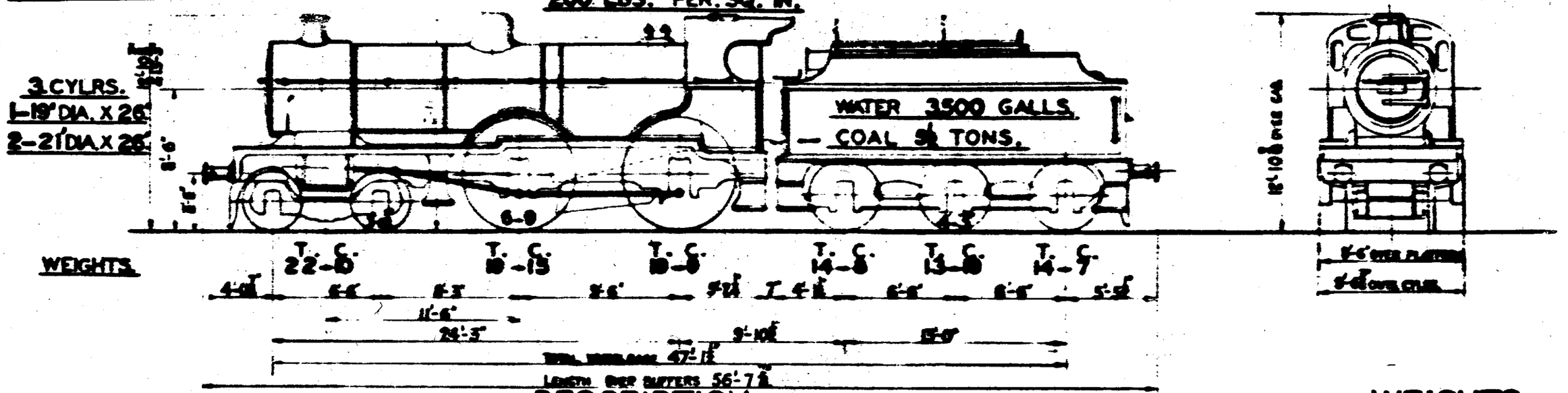
—4—6—0 PASSENGER ENGINE.— BETWEEN Nos. 45500-45551.

9

POWER CLASS 4P.

200 LBS. PER SQ. IN.

E.D.Nº 73 B.



DESCRIPTION.

BOILER.	BARREL 11'–9½". DIA. OUTS. 4–7⅞" INCREASING TO 4–9⅝".
FIREBOX.	OUTSIDE FIREBOX 9'–0" X 4'–0½".
TUBES.	SUPERHEATER ELEMENTS 21'–1½" DIA. OUTS. X 9 SWG. LARGE TUBES 21–5⅛" DIA. OUTS. X 7 SWG. SMALL TUBES 146–1¾" DIA. OUTS. X 12 SWG. } 12'–3⅜" BETWEEN TUBEPLATES.
HEATING SURFACE.	TUBES 1170·0 SQ. FT. FIREBOX 147·0 " " SUPERHEATER 272·0 " " } TOTAL 1317·0 SQ. FT.
GRATE AREA.	28·4 " "
TRACTIVE EFFORT AT 85% BP.	22649 LBS.
ADHESION FACTOR	3·87.
RADIUS OF MINIMUM CURVE.	6 CHAINS (OR 4½ CHAINS DEAD SLOW).
BRAKE % ENGINE & TENDER	58·0.

WEIGHTS.

	ENGINE.	TENDER.	TOTAL.
	T. C. Q	T. C. Q	T. C. Q
LIGHT.	57–9–1	21–11–2	79–0–3
LOADED	61–14–0	42–14–0	104–8–0

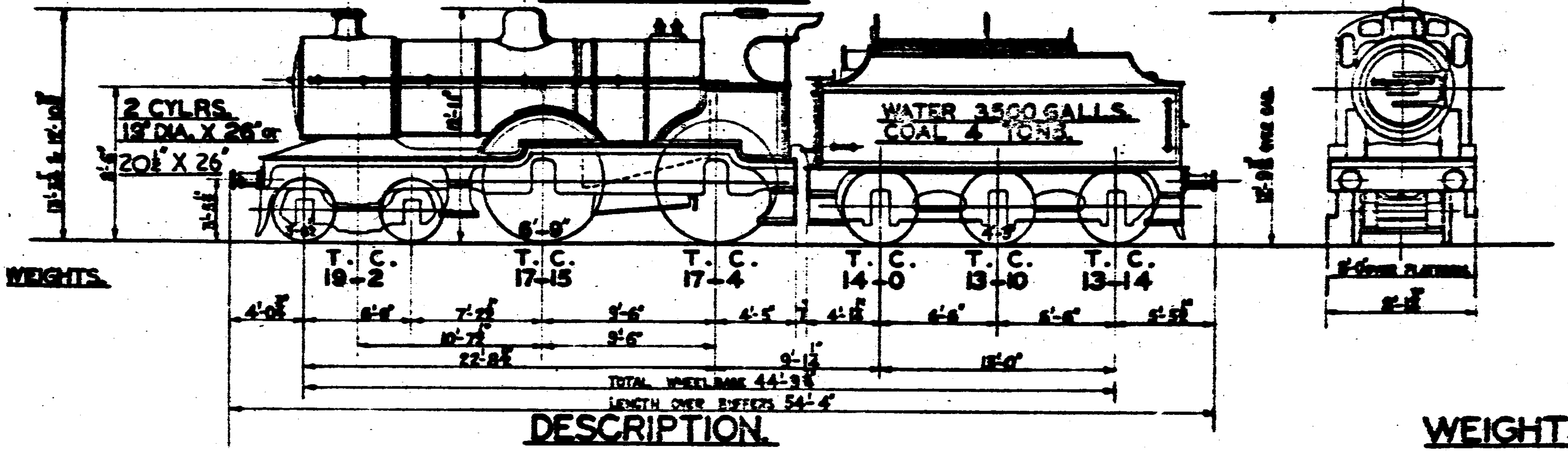
4–4–0 PASSENGER ENGINE. (COMPOUND.)

NOS 40903–41199

L. M. S. DRAWING OFFICE. DERBY

10

POWER CLASS 2P. 180 LBS. PER. SQ. IN. E.D. No 69C.



DESCRIPTION.

BOILER. BARREL 10'-4⅞". DIA. OUTS. 4'-8" INCREASING TO 4'-9⅛".

FIREBOX. OUTSIDE FIREBOX 7'-0" X 4'-0½".

TUBES.
- SUPERHEATER ELEMENTS 21 - 1½" DIA. OUTS. X 9 SWG.
- LARGE TUBES 21 - 5⅛" DIA. OUTS. X 7 SWG.
- SMALL TUBES 146 - 1¾" DIA. OUTS. X 12 SWG.

10'-10½" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1034·0	SQ. FT.	TOTAL 1158·0 SQ.FT.
FIREBOX	124·0	"	
SUPERHEATER	246·0	"	

GRATE AREA. 21·1 "

TRACTIVE EFFORT AT 85% B.P. 17729 LBS. OR 17585 LBS.

ADHESION FACTOR 4·42. OR 4·4.

WEIGHTS.

	ENGINE. T. C. Q.	TENDER. T. C. Q.	TOTAL. T. C. Q.
LIGHT.	50-6-2	21-11-2	71-18-0
LOADED.	54-1-0	41-4-0	95-5-0

RADIUS OF MINIMUM CURVE. 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % ENGINE & TENDER 80-7.

4-4-0 PASS. ENGINE

NOS. 40332-40559	7'-0" WHEELS	20½" CYLS.	17585 LBS. T.E.	4·4 AD. FACTOR.
NOS. 40563-40700	6'-9" "	19" "	17729 " "	4·42 " "

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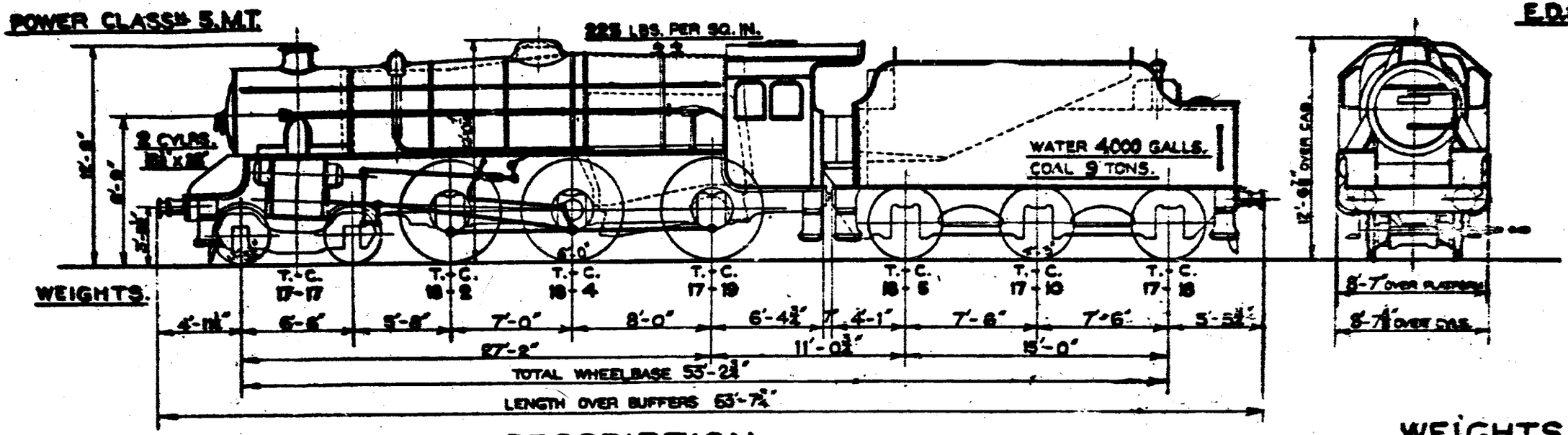
DERBY

POWER CLASS^ds 5.MT

E.D.№ 178 Q



— DESCRIPTION —

BOILER BARREL 13'-3⅜" DIA. OUTS. 4'-11 11/16" INCREASING TO 5'-8½"

FIREBOX OUTSIDE FIREBOX 9'-2 13/16" x 3'-11¾"

TUBES SUPERHEATER ELEMENTS 28, 1⅜" DIA. OUTS. X 9 S.W.G.
LARGE TUBES 28, 5⅛" DIA. OUTS. X 7 S.W.G.
SMALL TUBES 151, 1⅜" DIA. OUTS. x 11 S.W.G.
} 13'-2⅜" BETWEEN TUBEPLATES

HEATING SURFACE

TUBES	1,479·0	SQ. FT.
FIREBOX	171·0	" "
SUPERHEATER	365·0	" "
TOTAL	1,650·0	SQ. FT.

GRATE AREA 28·65 SQ. FT.

TRACTIVE EFFORT AT 85% B.P. 25,455 LBS. **ADHESION FACTOR** 4·77

WEIGHTS

		ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
WELDED TANK	LIGHT	65-13-0	26-16-0	92-9-0
	LOADED	72-2-0	53-13-0	125-15-0

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

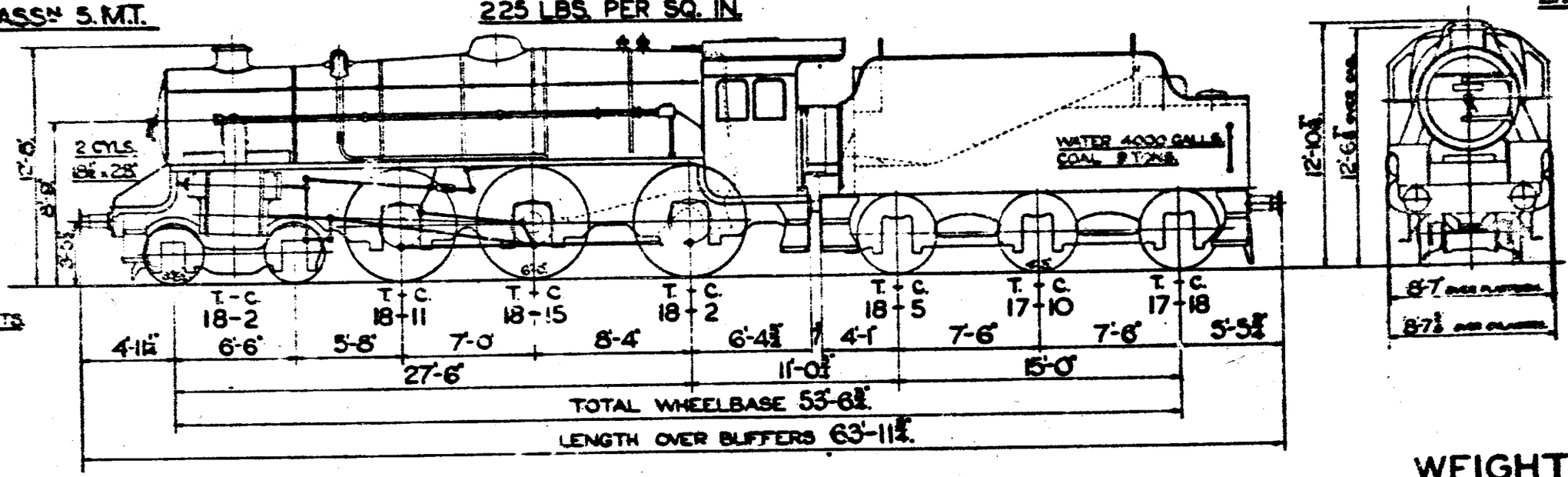
BRAKE % ENGINE & TENDER 64·3

L. M. S.
DRAWING OFFICE
CREWE

4-6-0 MIXED TRAFFIC ENGINE NOS 44768-45499

12

POWER CLASSN 5.MT. 225 LBS. PER SQ. IN. E.D.Nº 291



DESCRIPTION.

BOILER. BARREL 13'-3⅜". DIA. OUTS. 4'-11⅛" INCREASING TO 5'-8½"

FIREBOX. OUTSIDE FIREBOX. 9'-2¹³⁄₁₆" × 3'-11⅞"

TUBES. SUPERHEATER ELEMENTS 28, 1⅝" DIA. OUTS. × 9 S.W.G.
LARGE TUBES 28, 5⅛" DIA. OUTS. × 7 S.W.G.
SMALL TUBES 151, 1⅜" DIA. OUTS. × 11 S.W.G.
} 13'-2⅞" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1479·0 SQ. FT.
FIREBOX	171·0 " "
SUPERHEATER	365·0 " "
	28·65 " "

} TOTAL 1650·0 SQ. FT.

GRATE AREA

TRACTIVE EFFORT AT 85% B.P. 25455 LBS.

ADHESION FACTOR. 4·86

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 62-97

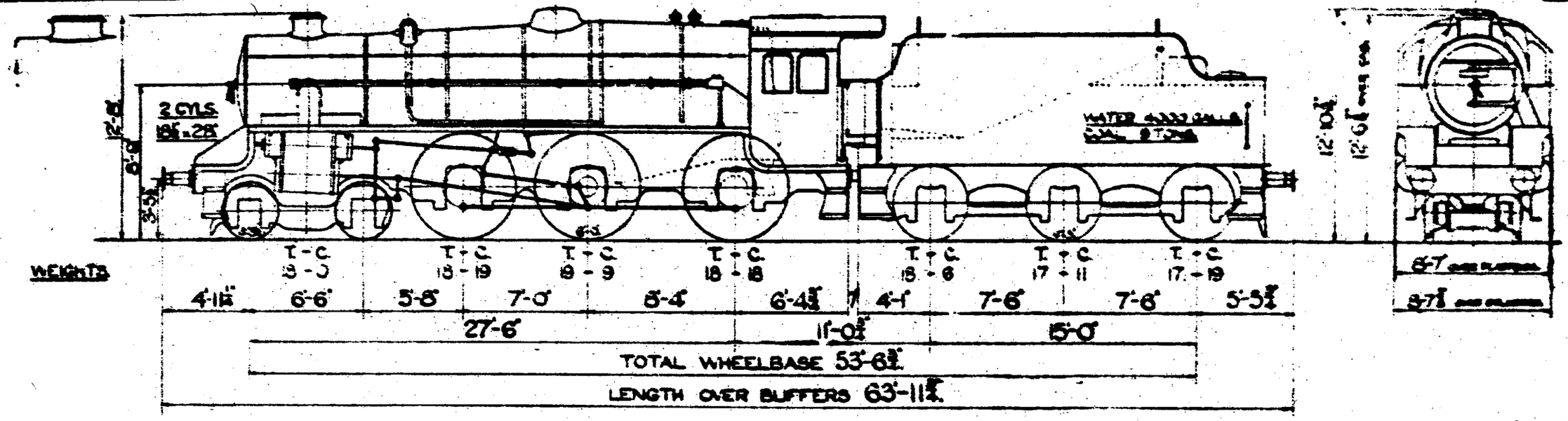
WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	67-3-0	26-16-0	93-19-0
LOADED	73-10-0	53-13-0	127-3-0

4-6-0 MIXED TRAFFIC ENGINE NOS. 44658—44667 44698—44737.

L. M. S.
DRAWING OFFICE,
DERBY.

POWER CLASS^ns 5 MT | 225 LBS. PER SQ. IN. | E.D. N^o 276B



DESCRIPTION

BOILER. BARREL 13'-3⅜" DIA. OUTS. 4'-11⅛" INCREASING TO 5'-8½"

FIREBOX. OUTSIDE FIREBOX. 9'-2 13/16" x 3'-11⅛"

TUBES.
- SUPERHEATER ELEMENTS 28, 1⅜" DIA. OUTS. x 9 S.W.G.
- LARGE TUBES 28, 5⅛" DIA. OUTS. x 7 S.W.G.
- SMALL TUBES 151, 1⅜" DIA. OUTS. x 11 S.W.G.

} 13'-2⅞" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1479·0 SQ. FT.
FIREBOX	171·0 · ·
SUPERHEATER	365·0 · ·
	28·65 · ·

} TOTAL 1650·0 SQ. FT.

GRATE AREA

TRACTIVE EFFORT AT 85% B.P. 25,455 LBS.

ADHESION FACTOR 5·02

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	68-19-0	26-19-0	95-8-0
LOADED	75-6-0	53-16-0	129-2-0

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 60·9

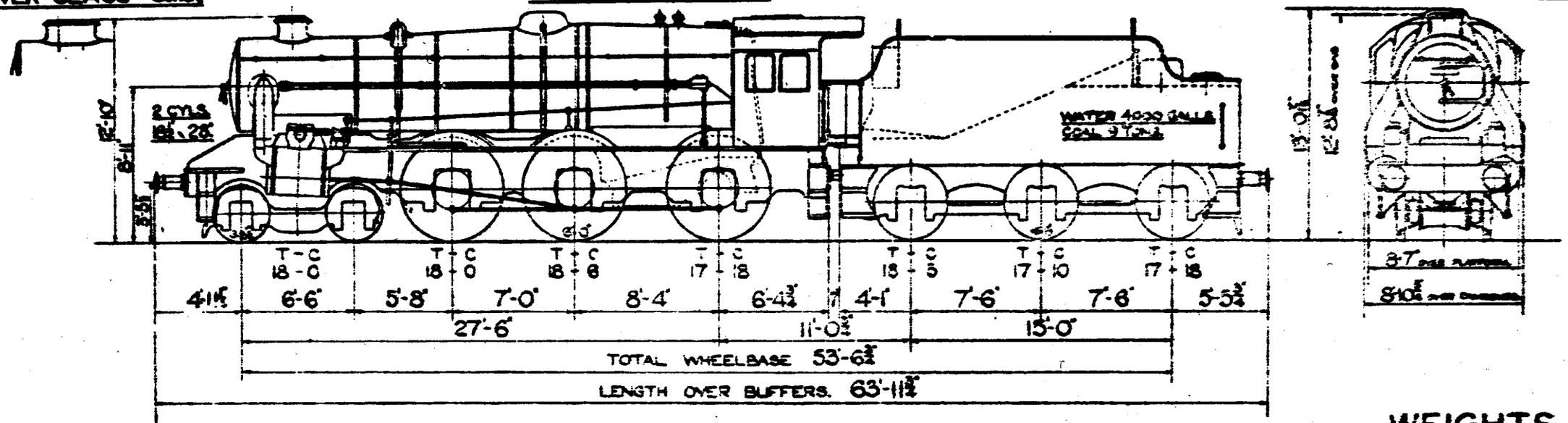
L. M. S.
DRAWING OFFICE
DERBY.

4-6-0 MIXED TRAFFIC ENGINE NOS. 44679–44685 44758–44766.

POWER CLASS[4] 5 MT

225 LBS. PER SQ. IN.

E.D. Nº 2804



DESCRIPTION.

BOILER. BARREL. 13'-3⅜". DIA. OUTS. 4'-11 11/16" INCREASING TO 5'-8½".

FIREBOX. OUTSIDE FIREBOX. 9'-2 13/16" × 3'-11⅞".

TUBES. SUPERHEATER ELEMENTS 28. 1⅝" DIA OUTS. × 9 S.W.G.
LARGE TUBES 28, 5⅛" DIA. OUTS. × 7 S.W.G.
SMALL TUBES 151. 1⅞" DIA OUTS. × 11 S.W.G.
} 13'-2⅞" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1,479·0 SQ. FT.
FIREBOX	171·0 " "
SUPERHEATER	365·0 " "
TOTAL	1,650·0 SQ. FT.

GRATE AREA. 28·65 " "

TRACTIVE EFFORT AT 85% B.P. 25,455 LBS.

ADHESION FACTOR. 4·75

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	65-17-0	26-16-0	92-13-0
LOADED	72-4-0	53-13-0	125-17-0

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 64-36

H.C.

L. M. S.
DRAWING OFFICE,
DERBY.

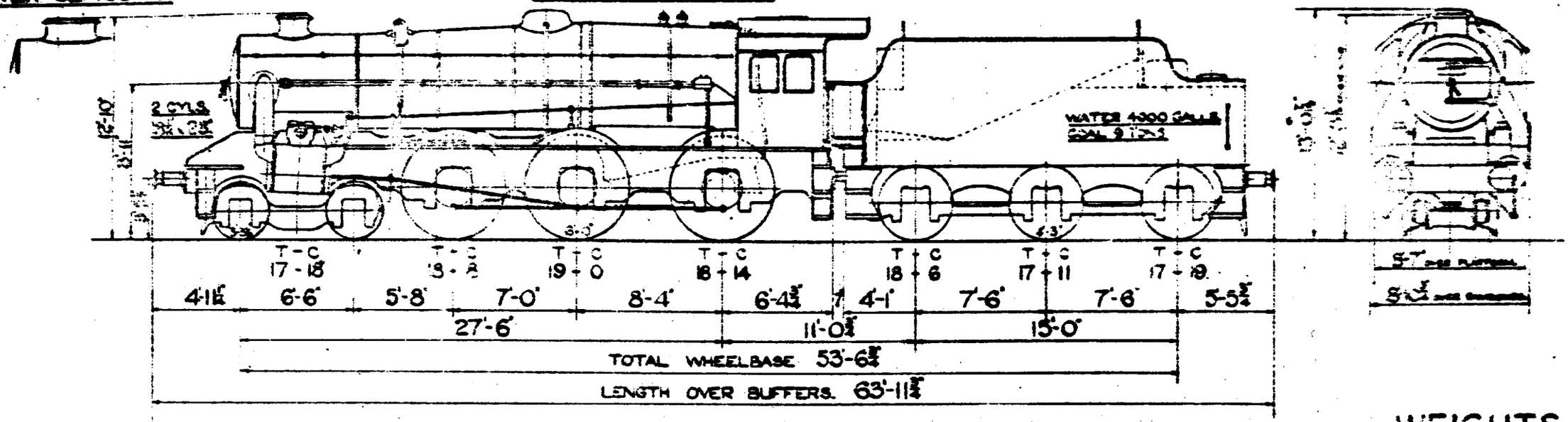
4-6-0 MIXED TRAFFIC ENGINE Nos 44738–44747

15

POWER CLASS^ns 5 M.T

225 LBS. PER SQ. IN.

E.D. No 2772



DESCRIPTION.

BOILER. BARREL. 13'-3⅜" DIA. OUTS. 4'-11⅛" INCREASING TO 5'-8½".

FIREBOX. OUTSIDE FIREBOX. 9'-2¹³⁄₁₆" x 3'-11⅞".

TUBES. SUPERHEATER ELEMENTS 28. 1⅜" DIA OUTS. x 9 S.W.G.
LARGE TUBES 28. 5⅜" DIA. OUTS. x 7 S.W.G.
SMALL TUBES 151. 1¾" DIA OUTS. x 11 S.W.G.
} 13'-2⅞" BETWEEN TUBEPLATES.

HEATING SURFACE. TUBES 1479·0 SQ. FT.
FIREBOX 171·0 " "
SUPERHEATER 350 " "
} TOTAL 1650·0 SQ. FT.

GRATE AREA 25·65

TRACTIVE EFFORT AT 85% B.P. 25,433 LBS.

ADHESION FACTOR. 4·82

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	67-13-0	26-19-0	94-12-0
LOADED	74-0-0	53-16-0	127-16-0

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 62·2

L. M. S.

DRAWING OFFICE DERBY.

16

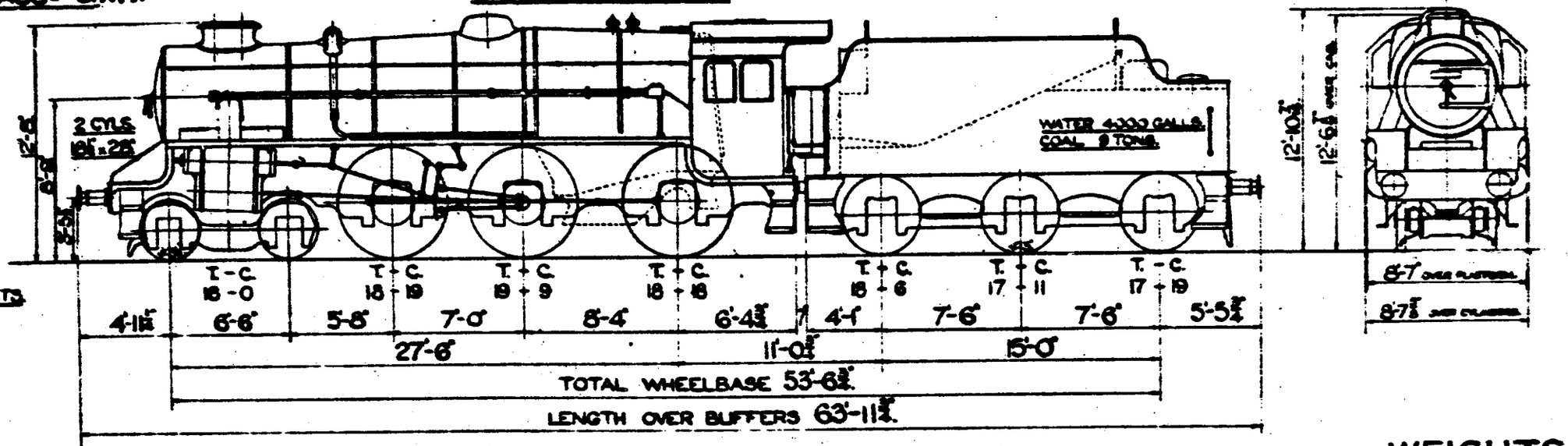
4-6-0 MIXED TRAFFIC ENGINE NOS. 44748-44757

44666-44687

POWER CLASS^ns 5.M.T

225 LBS. PER SQ. IN.

E.D.No 283A.



DESCRIPTION.

BOILER. BARREL 13'-3⅜" DIA. OUTS. 4'-11⅛" INCREASING TO 5'-8½"

FIREBOX. OUTSIDE FIREBOX. 9'-2⅝" x 3'-11⅝"

TUBES. SUPERHEATER ELEMENTS 28, 1⅜" DIA. OUTS. x 9 S.W.G.
LARGE TUBES 28, 5⅛" DIA. OUTS. x 7 S.W.G.
SMALL TUBES 151, 1⅜" DIA. OUTS. x 11 S.W.G.
} 13'-2⅞" BETWEEN TUBEPLATES.

HEATING SURFACE

TUBES	1479·0 SQ. FT.
FIREBOX	171·0 · ·
SUPERHEATER	365·0 · ·
	28·65 · ·

TOTAL 1650·0 SQ. FT.

GRATE AREA

TRACTIVE EFFORT AT 85% B.P. 25455 LBS.

ADHESION FACTOR. 5·02

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 60·9.

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	68-19-0	26-19-0	95-18-0
LOADED	75-6-0	53-16-0	129-2-0

L. M. S.
DRAWING OFFICE,
DERBY.

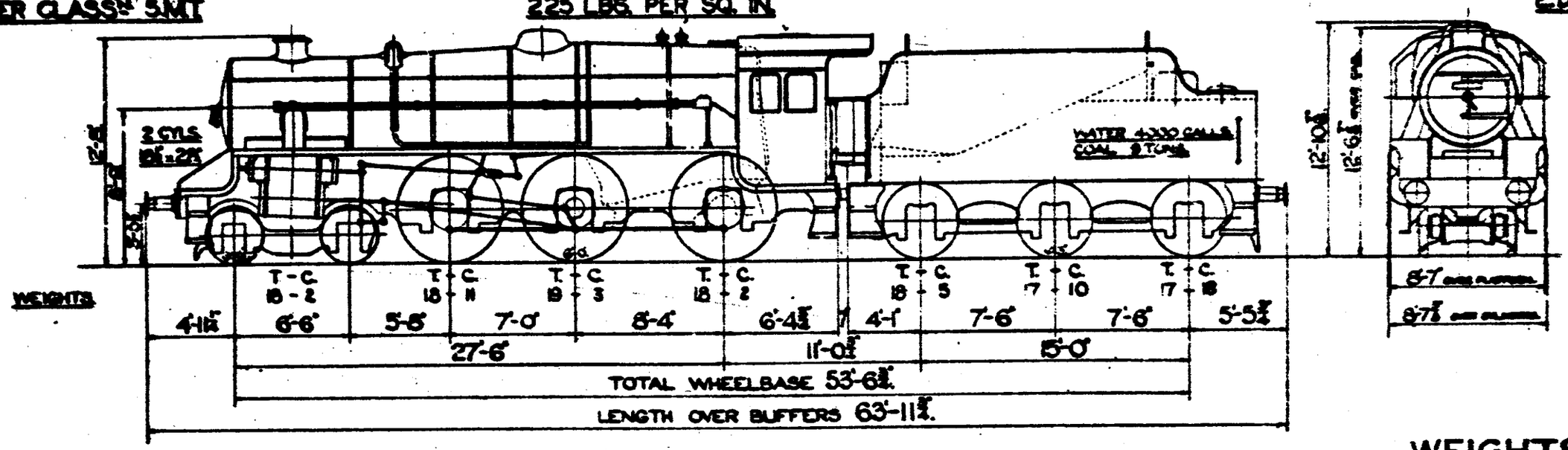
4-6-0 MIXED TRAFFIC ENGINE No. 44767.

17

POWER CLASS^ns 5MT

225 LBS. PER SQ. IN.

E.D.No 284A.



DESCRIPTION.

BOILER. BARREL 13'-3⅝" DIA. OUTS. 4'-11⅛" INCREASING TO 5'-8½"

FIREBOX. OUTSIDE FIREBOX. 9'-2⅝" × 3'-11⅞"

TUBES. SUPERHEATER ELEMENTS 28, 1⅝" DIA. OUTS. × 9 S.W.G.
LARGE TUBES 28, 5⅛" DIA. OUTS. × 7 S.W.G.
SMALL TUBES 151, 1⅜" DIA. OUTS. × 11 S.W.G.
} 13'-2⅞" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1479·0 SQ. FT.	TOTAL 1850·0 SQ. FT.
FIREBOX	171·0 · ·	
SUPERHEATER	365·0 · ·	

GRATE AREA 28·65 · ·

TRACTIVE EFFORT AT 85% B.P. 25,455 LBS.

ADHESION FACTOR 4·91

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 62·78

WEIGHTS.

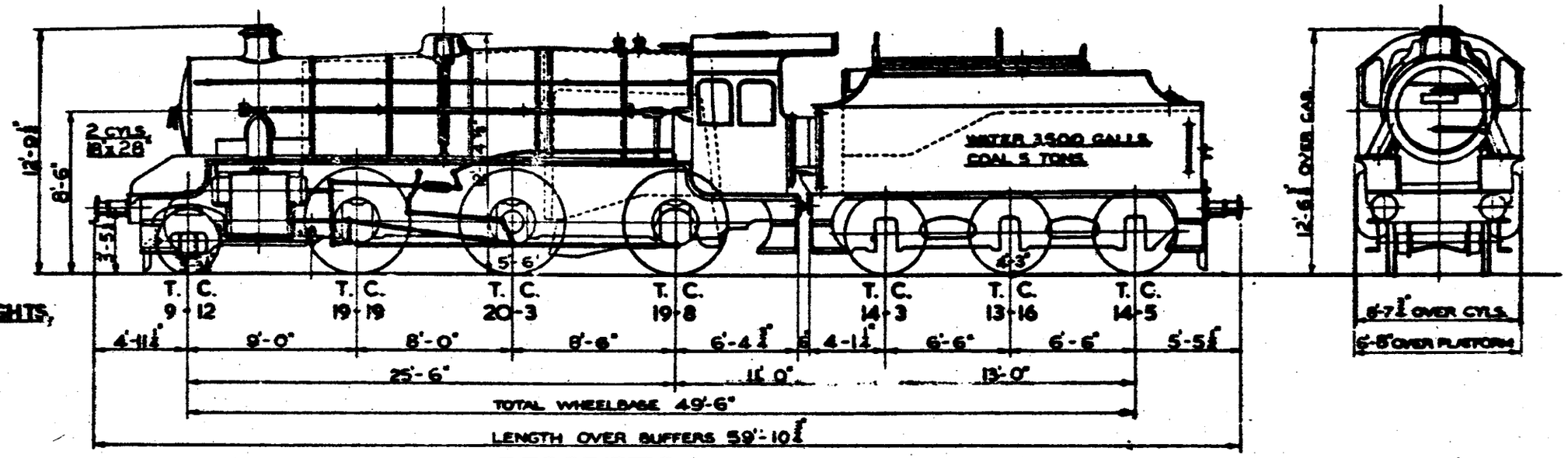
	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	67 11 0	26 16 0	94 7 0
LOADED	73 18 0	53 13 0	127 11 0

4-6-0 MIXED TRAFFIC ENGINE Nos 44668-44677 44688-44697

L. M. S.
DRAWING OFFICE
DERBY.

18

POWER CLASS[B] 5 MT | 225 LBS. PER SQ. IN. | E.D. No. 181 D.



DESCRIPTION

BOILER BARREL 12'-3⅛" DIA. OUTS. 5'-0" INCREASING TO 5'-8⅛".

FIREBOX OUTSIDE FIREBOX 9'-3" X 4'-0".

TUBES SUPERHEATER ELEMENTS 21, 1⅛" DIA. OUTS. X 9 S.W.G.
LARGE TUBES 21, 5⅛" DIA. OUTS. X 7 S.W.G.
SMALL TUBES 202, 1¾" DIA. OUTS. X 12 S.W.G.
} 12'-2⅛" BETWEEN TUBEPLATES.

HEATING SURFACE

TUBES	1478·0	SQ. FT.
FIREBOX	155·0	SQ. FT.
SUPERHEATER	24[4]·0	SQ. FT.

TOTAL 1633·0 SQ. FT.

GRATE AREA 27·8 SQ FT.

TRACTIVE EFFORT AT 85% B.P. 26,288 LBS.

ADHESION FACTOR 5·07

WEIGHTS

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	63-5-0	21-11-2	84-16-2
LOADED	69-2-0	42-4-0	111-6-0

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

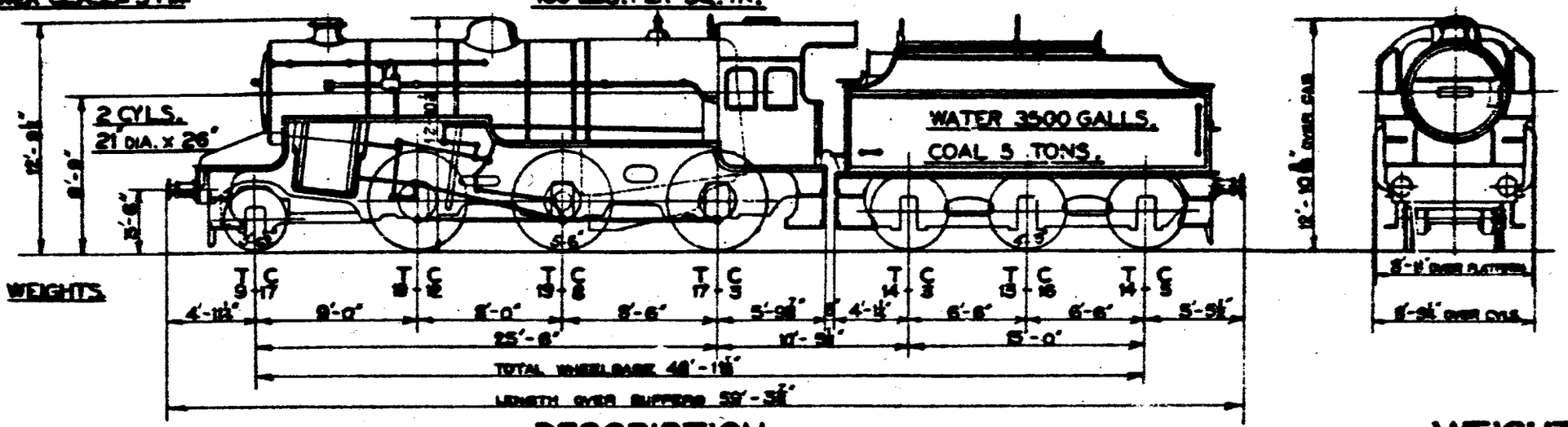
BRAKE %, ENGINE & TENDER 74·33

2-6-0 MIXED TRAFFIC ENGINE Nos. 42945-42984

POWER CLASS^D 5 MT

180 LBS. PER SQ. IN.

E.D. Nº 180A.



DESCRIPTION.

BOILER. BARREL 12'-0⅛". DIA. OUTS. 5'-3¾" INCREASING TO 5'-5".

FIREBOX. OUTSIDE FIREBOX 9'-0" x 4'-0½".

TUBES. SUPERHEATER ELEMENTS 24-1½" DIA. OUTS. x 9 SWG.
LARGE TUBES 24-5⅛" DIA. OUTS. x 7 SWG. } 12'-2" BETWEEN TUBEPLATES.
SMALL TUBES 151 - 1⅝" DIA. OUTS. x 11 SWG.

HEATING SURFACE.

TUBES	1345·0	SQ. FT.
FIREBOX	160·0	" "
SUPERHEATER	307·0	" "

} TOTAL 1505·0 SQ. FT.

GRATE AREA. 27·5 " "

TRACTIVE EFFORT AT 85% B.P. 26,580 LBS.

ADHESION FACTOR 4·74.

RADIUS OF MINIMUM CURVE. } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 71·7.

42818. 42822. 42824. 42825. 42849 FITTED WITH REIDINGER VALVE GEAR 1946

WEIGHTS.

	ENGINE T C Q	TENDER T C Q	TOTAL T C Q
LIGHT	59-19-0	21-11-2	81-10-2
LOADED	66-0-0	42-4-0	108-4-0

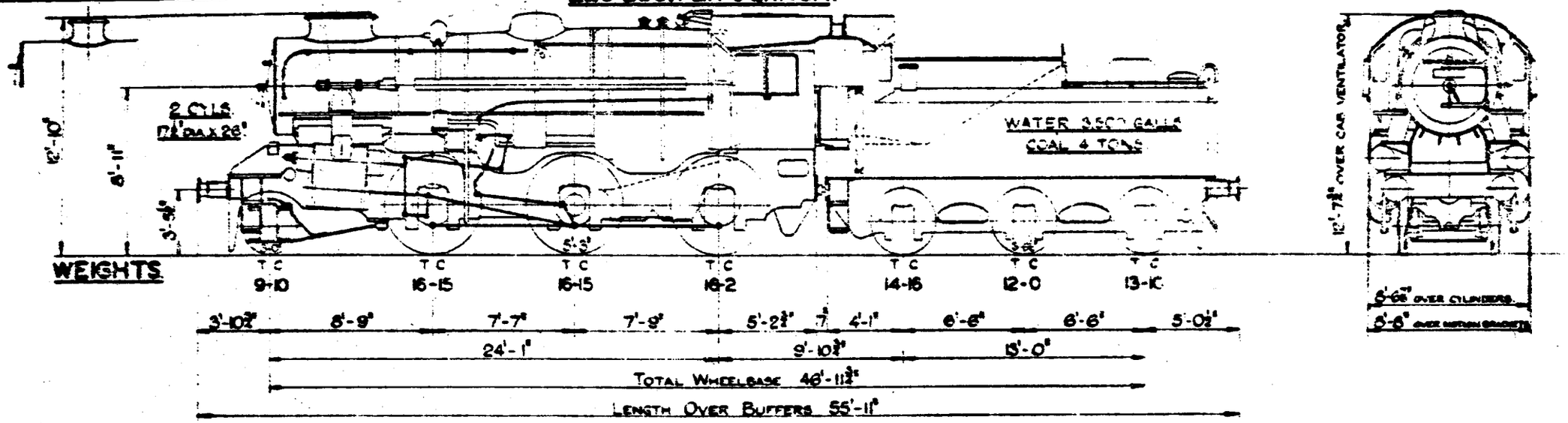
2-6-0 MIXED TRAFFIC ENGINE. Nos. 42700-42944

L. M. S.
DRAWING OFFICE
DERBY

POWER CLASS^D 4 MT

225 LBS. PER SQ. INCH.

E.D.N° 274.B.



DESCRIPTION.

BOILER. BARREL 10-10⅜". DIA. OUTS. 4'-9⅛" INCREASING TO 5'-3".

FIREBOX. OUTSIDE FIREBOX 7'-6" × 4'-0½".

TUBES.
- SUPERHEATER ELEMENTS 24 - 1⅜" DIA. OUTS. × 9 S.W.G.
- LARGE TUBES 24 - 5½" DIA. OUTS. × 7 S.W.G.
- SMALL TUBES 160 - 1⅝" DIA. OUTS. × 12 S.W.G.

10'-10½" BETWEEN TUBEPLATES.

HEATING SURFACE

TUBES	1081 SQ.FT.
FIREBOX	131 SQ.FT.
SUPERHEATER	247 SQ.FT.

TOTAL 1212 SQ.FT.

GRATE AREA. 23 SQ.FT.

TRACTIVE EFFORT AT 85% B.P. 24172 LBS.

ADHESION FACTOR 4·6

WEIGHTS.

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT.	55-5-2	20-13-2	75-19-0
LOADED.	59-2-0	40-6-0	99-8-0

RADIUS OF MINIMUM CURVE 5 CHAINS OR 4½ CHAINS DEAD SLOW

BRAKE % ENGINE & TENDER 60·2.

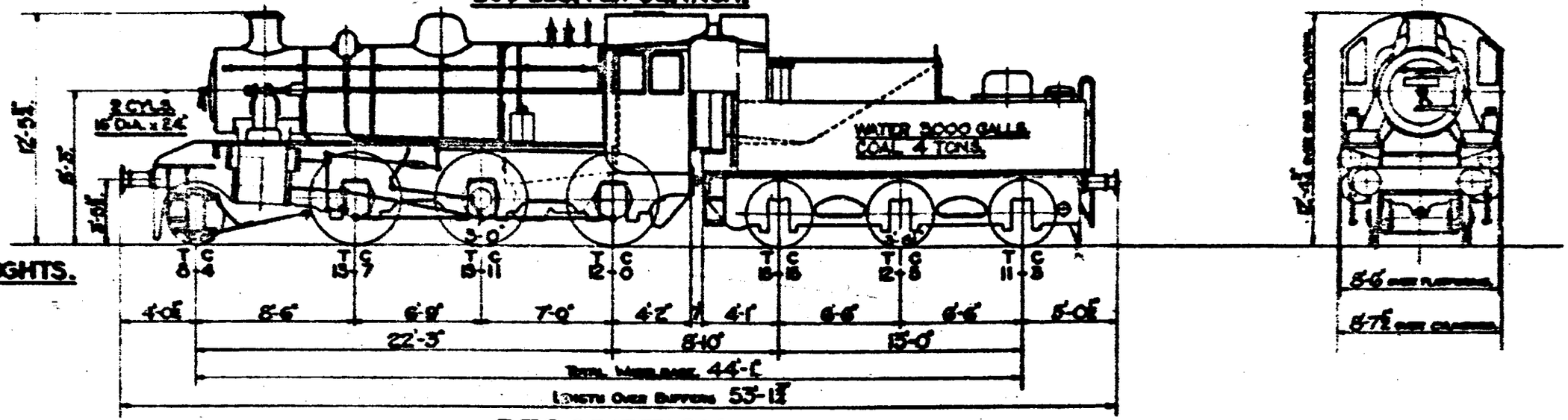
L. M. S.
DRAWING OFFICE.
DERBY.

2-6-0 MIXED TRAFFIC ENGINE. Nos 43000 - 43161.

POWER CLASS 2M.T

E.D. № 273A.

200 LBS. PER SQ. INCH.



DESCRIPTION.

BOILER. BARREL. 10'-9⅝". DIA. OUTS. 4'-3" INCREASING TO 4'-8".

FIREBOX. OUTSIDE FIREBOX 5'-11" × 4'-0⅞".

TUBES. SUPERHEATER ELEMENTS 12 - 1⅝" DIA. OUTS. × 9 S.W.G.
LARGE TUBES 12 - 5⅛" DIA. OUTS. × 7 S.W.G.
SMALL TUBES 182 - 1⅝" DIA. OUTS. × 12 S.W.G.
10'-10½" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	924 SQ. FT.	TOTAL 1025 SQ. FT.
FIREBOX	101 . .	
SUPERHEATER	124 . .	

GRATE AREA. 17·5 . .

TRACTIVE EFFORT AT 85% B.P. 17,400 LBS.

ADHESION FACTOR. 5·05.

WEIGHTS.

	ENGINE. T C Q	TENDER. T C Q	TOTAL. T C Q
LIGHT.	43-5-0	19-15-0	63-0-0
LOADED.	47-2-0	37-3-0	84-5-0

RADIUS OF MINIMUM CURVE. 4 CHAINS.

BRAKE % ENGINE & TENDER 63·5.

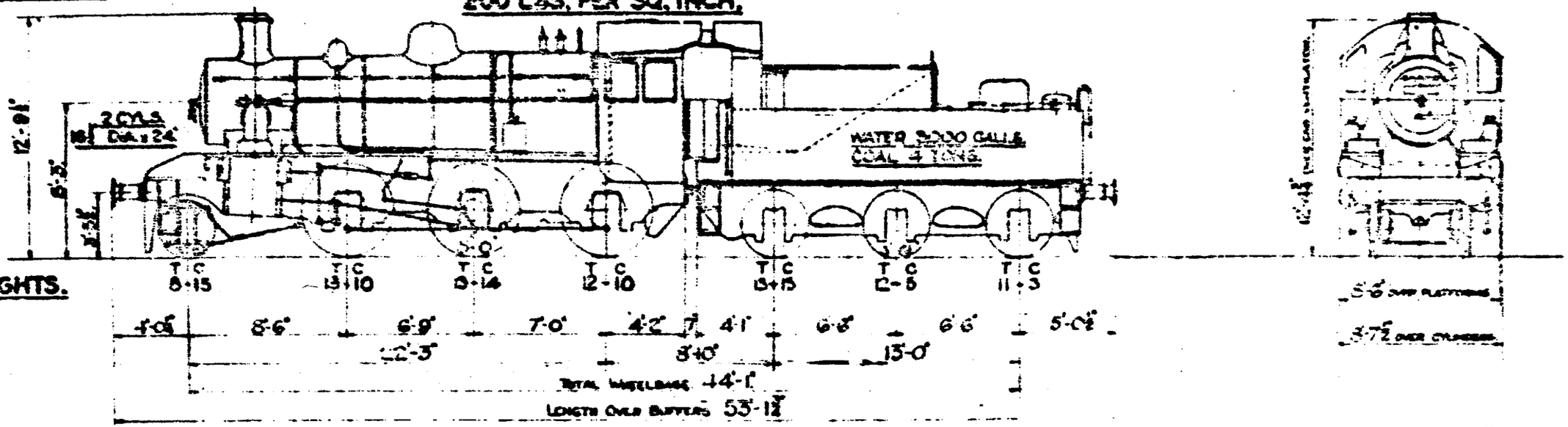
L.M.S. DRAWING OFFICE. DERBY.

2-6-0 MIXED TRAFFIC ENGINE. (№ 46400-46464)

POWER CLASS 2 M.T

200 LBS. PER SQ. INCH.

E.D. № 289.



DESCRIPTION.

BOILER.	BARREL. 10'-9⅞". DIA. OUTS. 4'-3" INCREASING TO 4'-8".
FIREBOX.	OUTSIDE FIREBOX 5'-11" × 4'-0⅞".
TUBES.	SUPERHEATER ELEMENTS 12 – 1⅜" DIA. OUTS. × 9 S.W.G. LARGE TUBES 12 – 5⅛" DIA. OUTS. × 7 S.W.G. SMALL TUBES 182 – 1⅜" DIA. OUTS. × 12 S.W.G. } 10'-10½" BETWEEN TUBEPLATES.
HEATING SURFACE.	TUBES 924 SQ. FT. FIREBOX 101 " " SUPERHEATER 124 " " } TOTAL 1025 SQ. FT.
GRATE AREA.	17·5 " "
TRACTIVE EFFORT AT 85% B.P.	18510 LBS.
ADHESION FACTOR.	4·8

WEIGHTS

	ENGINE. T C Q	TENDER. T C Q	TOTAL. T C Q
LIGHT,	44-12-0	19-15-0	64-7-0
LOADED.	48-9-0	37-3-0	85-12-0

RADIUS OF MINIMUM CURVE. 4 CHAINS.

BRAKE % ENGINE & TENDER 62·4.

BRITISH RAILWAYS.
DRAWING OFFICE.
DERBY

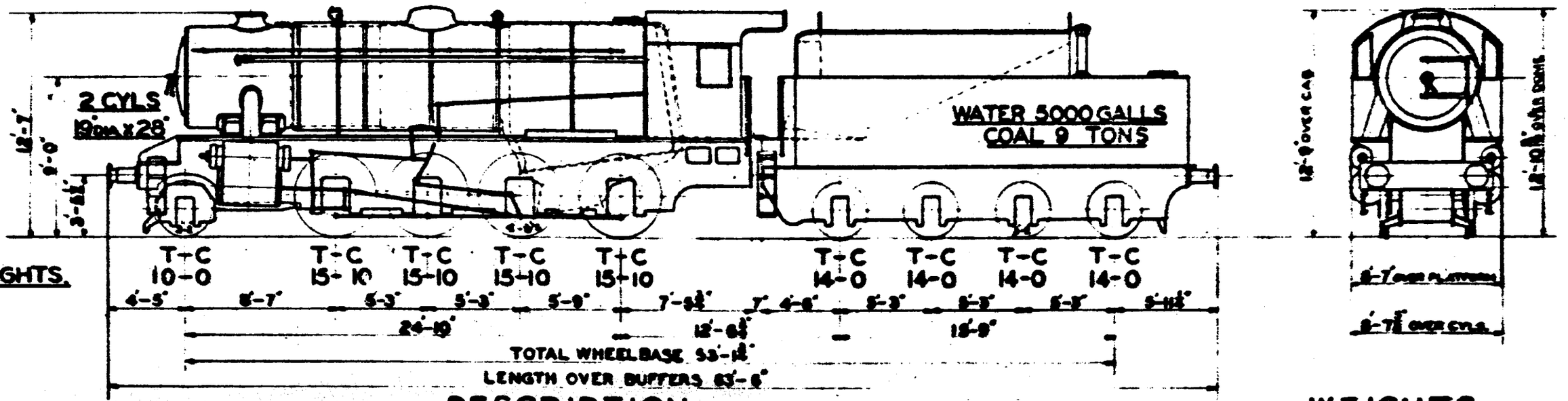
2-6-0 MIXED TRAFFIC ENGINE (№s 46465-46527)

23

POWER CLASS^ds 8F

225 LBS. PER SQ. IN.

ED. Nº 282



WEIGHTS.

DESCRIPTION.

BOILER. OUTSIDE DIA. 5'-7⅛" INCREASING TO 5'-8⅛"

FIREBOX. OUTSIDE 9'-4" x 4'-0" (ON INCLINE AT GRATE)

TUBES. SUPERHEATER ELEMENTS 28. 1⅛" DIA. OUTS. x 9 S.W.G.
LARGE TUBES 28. 5⅛" DIA. OUTS. x 7 S.W.G.
SMALL TUBES 193. 1¾" DIA. OUTS. x 12 S.W.G.
} 12'-0" BETWEEN TUBEPLATES.

HEATING SURFACE

TUBES	1512	SQ. FT.
FIREBOX	168	
SUPERHEATER	298	

} TOTAL 1,680 SQ. FT.

GRATE AREA. 28·6

TRACTIVE EFFORT AT 85% BP 34,215 LBS

ADHESION FACTOR 4·05

WEIGHTS.

	ENGINE T.C.Q.	TENDER. T.C.Q.	TOTAL. T.C.Q.
LIGHT	65-0-0	24-0-0	89-0-0
LOADED	72-0-0	56-0-0	128-0-0

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % ENGINE & TENDER 51·7

L.M.& S.R. DRAWING OFFICE, DERBY.

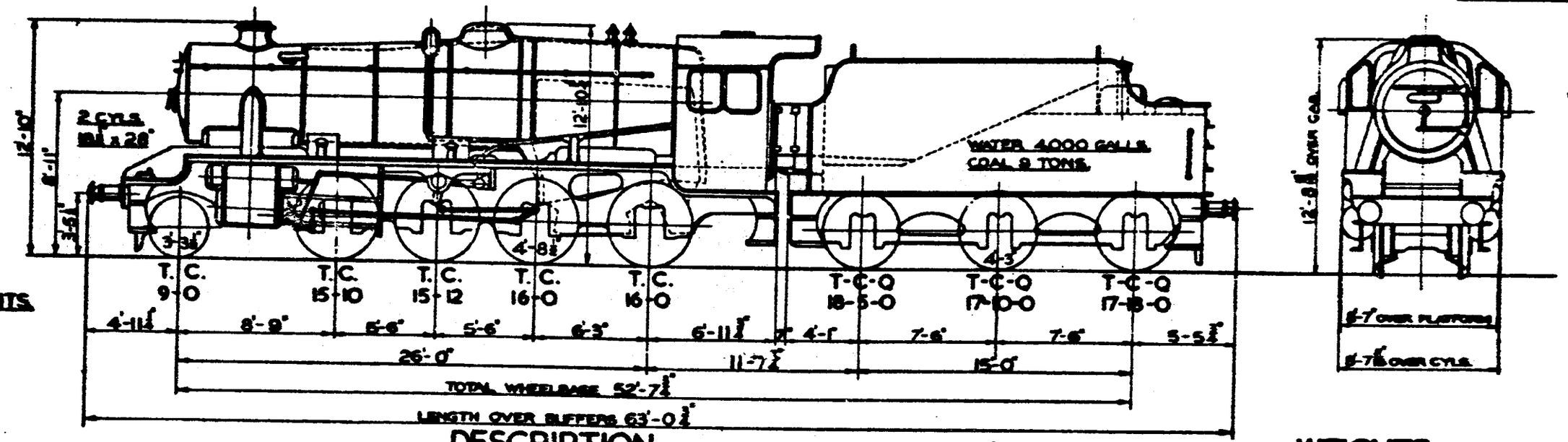
2-8-0 FREIGHT ENGINE. W.D. Nos. 90101-90731

24

POWER CLASS^ns 8F.

225 LBS. PER SQ. IN.

E.D. No. 222 G.



WEIGHTS.

DESCRIPTION

BOILER BARREL 12'-3⅜" DIA. OUTS. 5'-0" INCREASING TO 5'-8½".

FIREBOX OUTSIDE FIREBOX 9'-3" X 4'-0".

TUBES
- SUPERHEATER ELEMENTS 21, 1⅛" DIA. OUTS. X 9 S.W.G.
- LARGE TUBES 21, 5⅛" DIA. OUTS. X 7 S.W.G.
- SMALL TUBES 202, 1⅜" DIA. OUTS. X 12 S.W.G.

} 12'-2⅝" BETWEEN TUBEPLATES

HEATING SURFACE

TUBES	1478·0	SQ. FT.
FIREBOX	171·0	SQ. FT.
SUPERHEATER	241·0	SQ. FT.

} TOTAL 1,649·0 SQ. FT.

GRATE AREA 28·65 SQ. FT.

TRACTIVE EFFORT AT 85% B.P. 32438 LBS.

ADHESION FACTOR 4·35.

WEIGHTS

	ENGINE T. C. Q.	TENDER T. C. Q.	TOTAL T. C. Q.
LIGHT	65-18-0	26-16-0	92-14-0
LOADED	72-2-0	53-13-0	125-15-0

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

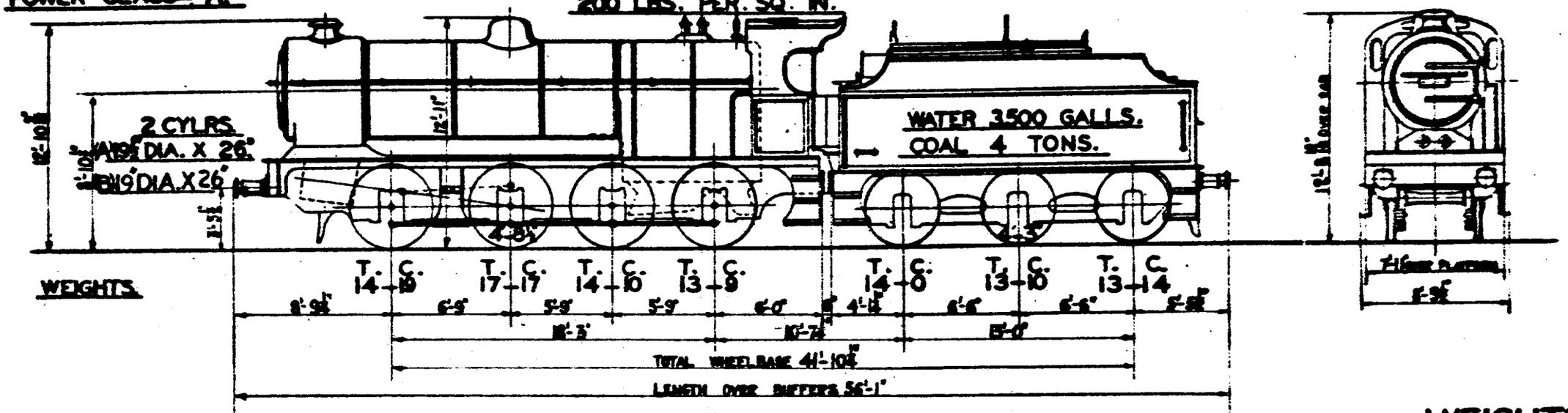
BRAKE ENGINE & TENDER 65·8.

2-8-0 FREIGHT ENGINE Nos. 48000-48772

POWER CLASSN. 7F

200 LBS. PER. SQ. IN.

E.D. No 8866



DESCRIPTION.

BOILER. BARREL 14'-3⅜". DIA. OUTS. 4'-1¼" INCREASING TO 5'-0⅜".

FIREBOX. OUTSIDE FIREBOX 7'-10" X 4'-0⅞".

TUBES. SUPERHEATER ELEMENTS 24-1⅜". DIA. OUTS. X 9 SWG.
LARGE TUBES 24-5" DIA. OUTS. X 7 SWG. } 14'-10½" BETWEEN TUBEPLATES.
SMALL TUBES 120-2" DIA. OUTS. X 11 SWG.

HEATING SURFACE.

TUBES	1402·0	SQ. FT.
FIREBOX	150·0	" "
SUPERHEATER	338·0	" "

TOTAL 1552·0 SQ. FT.

GRATE AREA. 23·6 " "

TRACTIVE EFFORT AT 85% BP. 29,747 LBS. (A) NOS. 49624-49674
28241 LBS. (B) NOS 49505-49618

ADHESION FACTOR 4·57. (A)
4·85. (B)

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % ENGINE & TENDER 78·5

WEIGHTS.

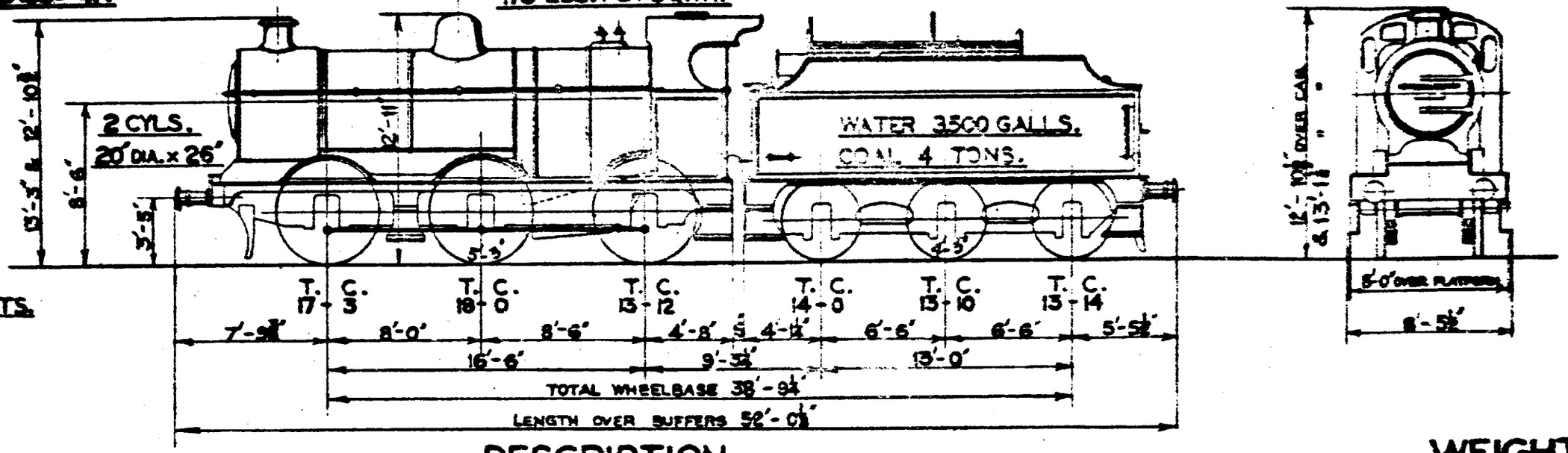
	ENGINE.	TENDER.	TOTAL.
	T C Q	T C Q	T C Q
LIGHT	55-10-0	21-11-2	77-1-2
LOADED	60-15-0	41-4-0	101-19-0

L. M. S.
DRAWING OFFICE.
DERBY.

0-8-0 FREIGHT ENGINE Nos. 49505-49674

26.

POWER CLASS[D] 4F. 175 LBS. PER SQ. IN. E.D. No. 167 B.



WEIGHTS.

DESCRIPTION.

BOILER.	BARREL 10'-4 7/16". DIA. OUTS. 4'-8" INCREASING TO 4'-9⅛".
FIREBOX.	OUTSIDE FIREBOX 7'-0" x 4'-0½".
TUBES.	SUPERHEATER ELEMENTS 21-1½" DIA. OUTS. X 9 SWG. LARGE TUBES 21-5⅛" DIA. OUTS. X 7 SWG. SMALL TUBES 146-1¾" DIA. OUTS. X 12 SWG. } 10'-10½" BETWEEN TUBEPLATES.
HEATING SURFACE	TUBES 1034-0 SQ. FT. FIREBOX 124-0 " " SUPERHEATER 246-0 " " } TOTAL 1158-0 SQ. FT.
GRATE AREA.	21-1 " "
TRACTIVE EFFORT AT 85% BP.	24555 LBS.
ADHESION FACTOR	4·46.

WEIGHTS.

	ENGINE.	TENDER.	TOTAL.
	T. C. Q.	T. C. Q.	T. C. Q.
LIGHT.	45-0-0	21-11-2	66-11-2
LOADED.	48-15-0	41-4-0	89-19-0

RADIUS OF MINIMUM CURVE. 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % ENGINE & TENDER 64·7.

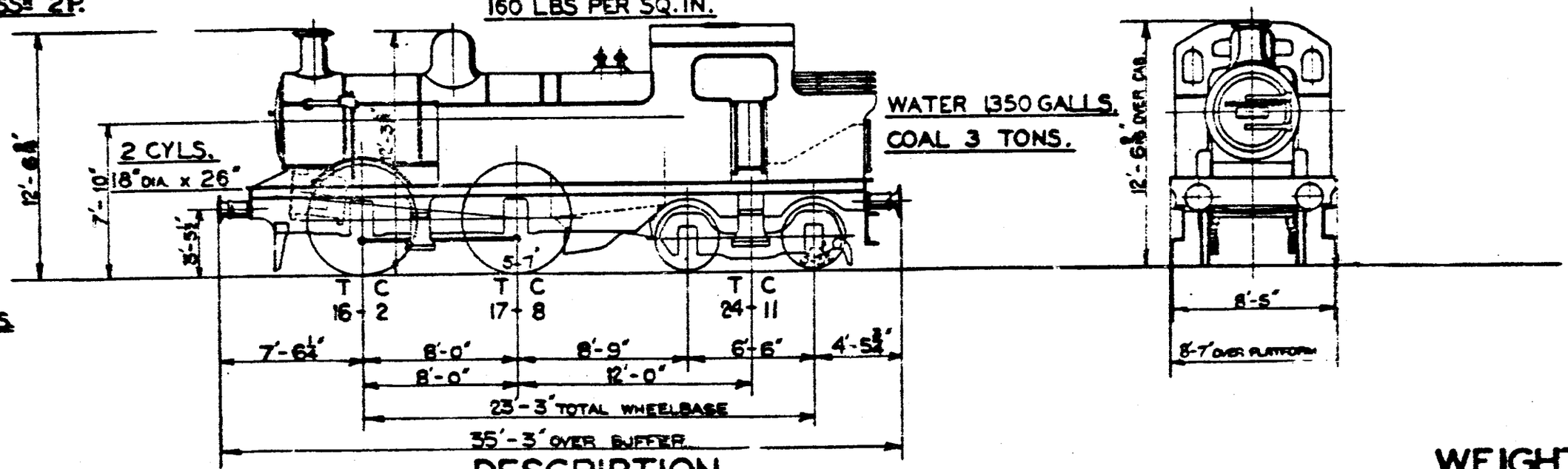
0-6-0 FREIGHT ENGINE NOS. 43835-44606.

L. M. S. DRAWING OFFICE DERBY. 27

E.D.No 212

POWER CLASS^ds 2P.

160 LBS PER SQ. IN.



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 10'-4 3/16". DIA. OUTS. 4'-1" INCREASING TO 4'-2".

FIREBOX. OUTSIDE FIREBOX 5'-10 5/16" x 4'-0½".

TUBES.
- SUPERHEATER ELEMENTS — DIA. OUTS. X — SWG.
- LARGE TUBES — DIA. OUTS. X — SWG.
- SMALL TUBES 194 — 1¾" DIA. OUTS. X 12 SWG.

} 10'-10⅛" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	967·0	SQ. FT.
FIREBOX	104·0	" "
SUPERHEATER	—	" "
GRATE AREA.	17·5	" "

} TOTAL 1071·0 SQ. FT.

TRACTIVE EFFORT AT 85% BP. 17,099 LBS.

ADHESION FACTOR 4·39.

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % 44·14.

WEIGHTS.

	T	C	Q
LIGHT	45	17	1
LOADED	58	1	0

O-4-4 PASSENGER ENGINE.— Nos. 41906-41909

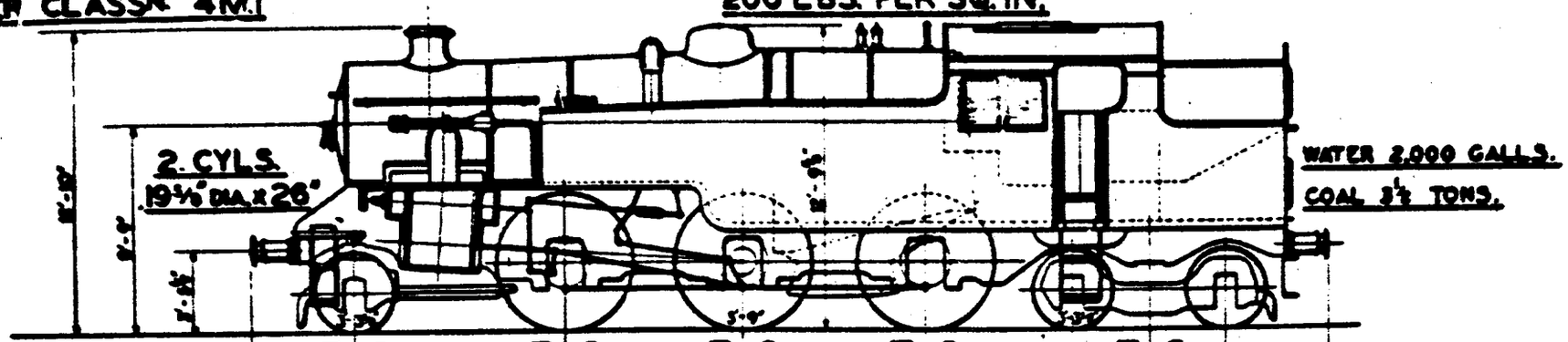
L. M. S.
DRAWING OFFICE
DERBY

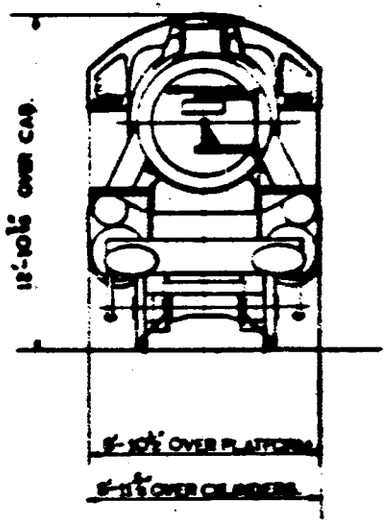
28

POWER CLASS^N 4MT

200 LBS. PER SQ. IN.

ED.N^o 27! A





WEIGHTS.

DESCRIPTION.

BOILER.	OUTSIDE DIA. 4'-9" INCREASING TO 5'-3"
FIREBOX.	OUTSIDE 8'-6" X 4'-0½"
TUBES.	SUPERHEATER ELEMENTS 21. 1⅜" DIA. OUTS. X 9 S.W.G. LARGE TUBES 21. 5⅛" DIA. OUTS. X 7 S.W.G. SMALL TUBES 157. 1¾" DIA. OUTS. X 12 S.W.G. 12'-3" BETWEEN TUBEPLATES.
HEATING SURFACE	TUBES 1226·0 SQ.FT. FIREBOX 143·0 " " SUPERHEATER 240·0 " " TOTAL 1,369·0 SQ.FT.
GRATE AREA.	26·7 " "
TRACTIVE EFFORT AT 85% B.P.	24,670 LBS.
ADHESION FACTOR.	4·59

WEIGHTS.

	T-C-Q
LIGHT.	66-18-0
LOADED.	85-5-0

RADIUS OF MINIMUM CURVE. 5 CHAINS. OR 4½ CHAINS DEAD SLOW

BRAKE % 45·15

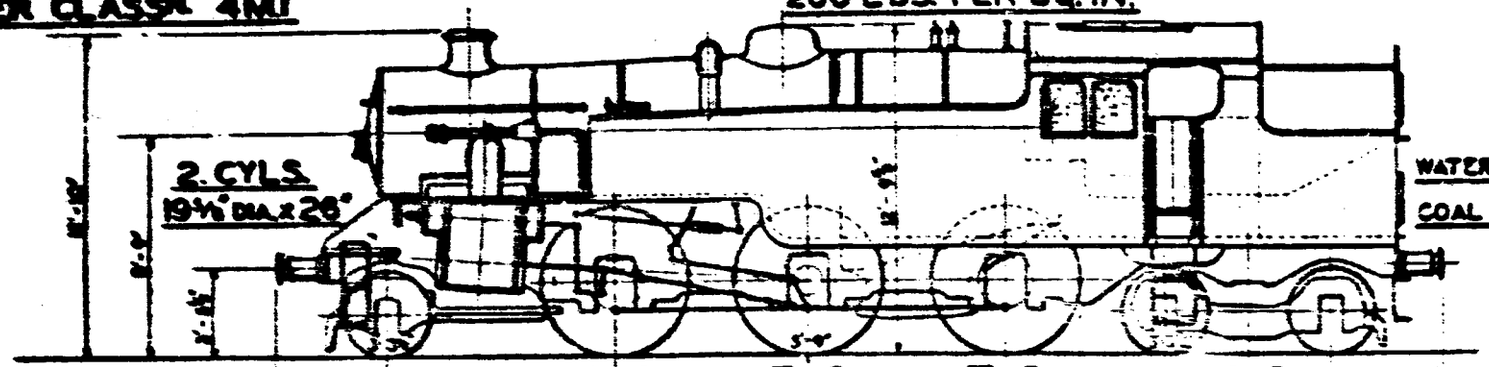
L.M. & S.R.
DRAWING OFFICE.
DERBY.

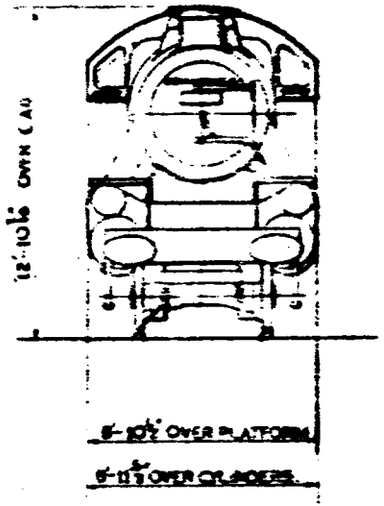
—2-6-4 MIXED TRAFFIC ENGINE Nos. 42050-42146

POWER CLASS[N] 4MT

200 LBS. PER SQ. IN.

E.D.Nº 287A





WEIGHTS.

DESCRIPTION.

BOILER.	OUTSIDE DIA. 4'-9" INCREASING TO 5'-3"
FIREBOX.	OUTSIDE 8'-6" X 4'-0½"
TUBES.	SUPERHEATER ELEMENTS 21. 1⅜" DIA. OUTS. X 9 S.W.G. LARGE TUBES 21. 5⅛" DIA. OUTS. X 7 S.W.G. SMALL TUBES 157. 1¾" DIA. OUTS. X 12 S.W.G. } 12'-3" BETWEEN TUBEPLATES.
HEATING SURFACE	TUBES 1226·0 SQ.FT. FIREBOX 143·0 " " SUPERHEATER 240·0 " " } TOTAL 1,369·0 SQ. FT.
GRATE AREA.	26·7 " "
TRACTIVE EFFORT AT 85% B.P.	24,670 LBS.
ADHESION FACTOR.	4·57

WEIGHTS.

	T-C-Q
LIGHT.	68-18-0
LOADED.	84-14-0

RADIUS OF MINIMUM CURVE. } 5 CHAINS. OR 4½ CHAINS DEAD SLOW

BRAKE % 45·37

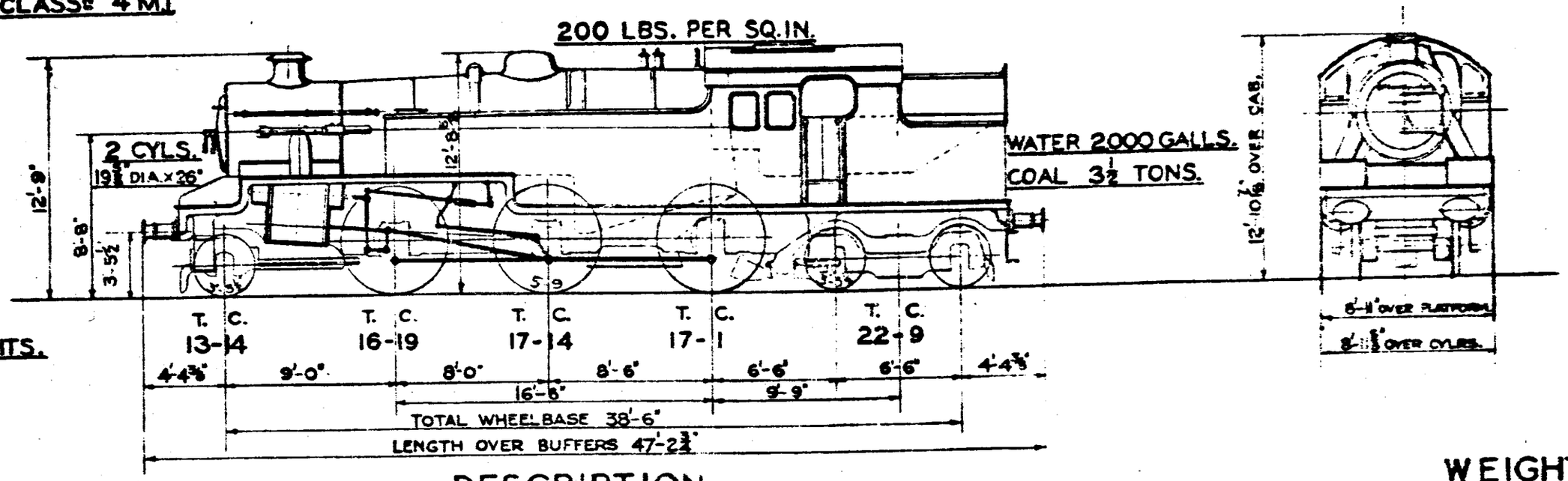
L.M. & S.R.
DRAWING OFFICE.
DERBY.

2-6-4 MIXED TRAFFIC ENGINE.

NOS. [42147-42299
42673-42699

30

POWER CLASS[1] 4 MT



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 12'-2½" DIA. OUTS. 4'-9", INCREASING TO 5'-3".

FIREBOX. OUTS. 8'-6" × 4'-0½"

TUBES. SUPERHEATER ELEMENTS 21, 1⅜" DIA. OUTS. × 9 S.W.G.
LARGE TUBES 21, 5⅛" DIA. OUTS. × 7 S.W.G.
SMALL TUBES 157, 1¾" DIA. OUTS. × 12 S.W.G.
} 12'-3" BET. TUBEPLATES.

HEATING SURFACE.

TUBES	1226·0 SQ.FT.	TOTAL 1369·0 SQ.FT.
FIREBOX	143·0 " "	
SUPERHEATER	240·0 " "	

GRATE AREA. 26·7 " "

TRACTIVE EFFORT AT 85% B.P. 24,670 LBS.

ADHESION FACTOR 4·99.

WEIGHTS.

	T. C. Q.
LIGHT	72-6-0
LOADED	87-17-0

RADIUS OF MINIMUM CURVE. 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % 47·4.

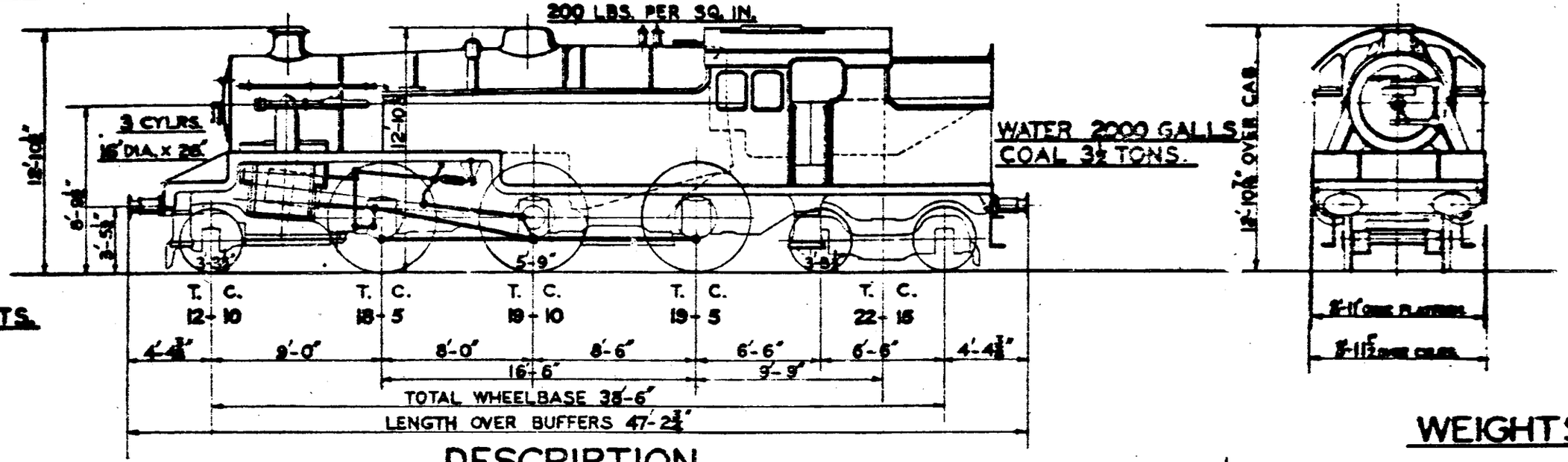
42537-42672

2—6—4. MIXED TRAFFIC ENGINE Nos 42425-42494

L. M. S.
DRAWING OFFICE.
DERBY.

POWER CLASS. 4MT

E.D. No. 182 D.



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 12'-2½". DIA. OUTS. 4'-9". INCREASING TO 5'-3".

FIREBOX. OUTS. 8'-6" x 4'-0½".

TUBES.
- SUPERHEATER ELEMENTS 18 - 1⅛" DIA. OUTS. x 9 S.W.G.
- LARGE TUBES 18 - 5⅛" DIA. OUTS. x 7 S.W.G.
- SMALL TUBES 143 - 1¾" DIA. OUTS. x 12 S.W.G.

} 12'-3" BET. TUBEPLATES.

HEATING SURFACE.

TUBES	1029.0 SQ. FT.	TOTAL 1172.0 SQ. FT.
FIREBOX	143.0 " "	
SUPERHEATER	209.0 " "	

GRATE AREA. 26.7 " "

TRACTIVE EFFORT AT 85% B.P. 24600 LBS.

ADHESION FACTOR 5.19.

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % 45.05.

WEIGHTS.

	T.	C.	Q.
LIGHT.	74	2	0
LOADED.	92	5	0

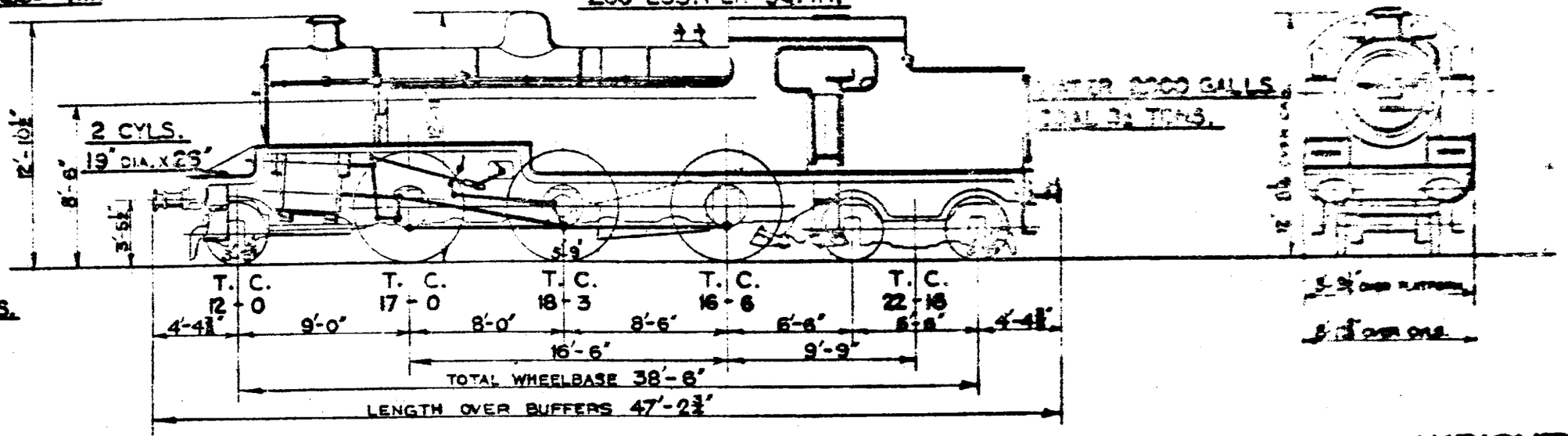
2-6-4. MIXED TRAFFIC ENGINE Nos. 42500-42536.

L.M.S.
DRAWING OFFICE.
DERBY.

32

POWER CLASS[5] 4MP

200 LBS. PER SQ. IN.



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 10'-10½". DIA. OUTS. 4'-8" INCREASING TO 4'-9⅛".

FIREBOX. OUTSIDE FIREBOX 8'-0" × 4'-0½".

TUBES.
- SUPERHEATER ELEMENTS 21 - 1½" DIA. OUTS. X 9 SWG.
- LARGE TUBES 21 5⅛" DIA. OUTS. X 7 SWG.
- SMALL TUBES 146 1¾" DIA. OUTS. X 12 SWG.

} 11'-4⅛" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	1082·0	SQ. FT.
FIREBOX	138·0	" "
SUPERHEATER	246·0	" "

} TOTAL 1220 SQ. FT.

GRATE AREA. 25·0 " "

TRACTIVE EFFORT AT 85% BP. 23,125 LBS.

ADHESION FACTOR 4·98.

WEIGHTS.

	T	C	Q
LIGHT	69	8	0.
LOADED	86	5	0.

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % 41·5.

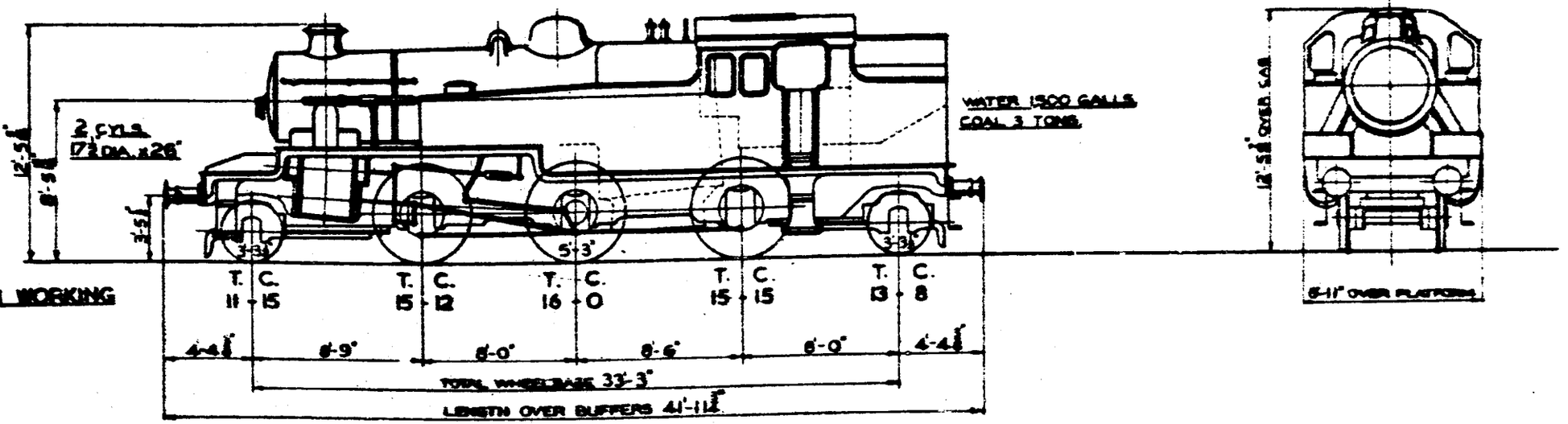
L. M. S.
DRAWING OFFICE
DERBY

2-6-4 MIXED TRAFFIC ENGINE Nos. 42300-42424.

POWER CLASS 3MT

200 LBS. PER SQ. INCH.

E.D. No. 264 B.



WEIGHTS IN WORKING ORDER.

DESCRIPTION

BOILER. BARREL 10'-10" DIA. OUTS. 4'-6" INCREASING TO 4'-9".

FIREBOX. OUTSIDE FIREBOX 6'-5" X 4'-0½".

TUBES.
- SUPERHEATER ELEMENTS 14, 1⅛" DIA. OUTS. X 9 S.W.G.
- LARGE TUBES 14'-5⅛" DIA. OUTS. X 7 S.W.G.
- SMALL TUBES 171'-1⅜" DIA. OUTS. X 12 S.W.G.

} 10'-10½" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	995·0	SQ. FT.
FIREBOX	111·0	SQ. FT.
SUPERHEATER	147·0	SQ. FT.

} TOTAL 1106·0 SQ. FT.

GRATE AREA. 19·2 SQ. FT.

TRACTIVE EFFORT AT 85% B.P. 21486 LBS.

ADHESION FACTOR 4·93.

WEIGHTS

	T.	C.	Q.
LIGHT	58	15	0
LOADED	72	10	0

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW)

BRAKE % 47·3

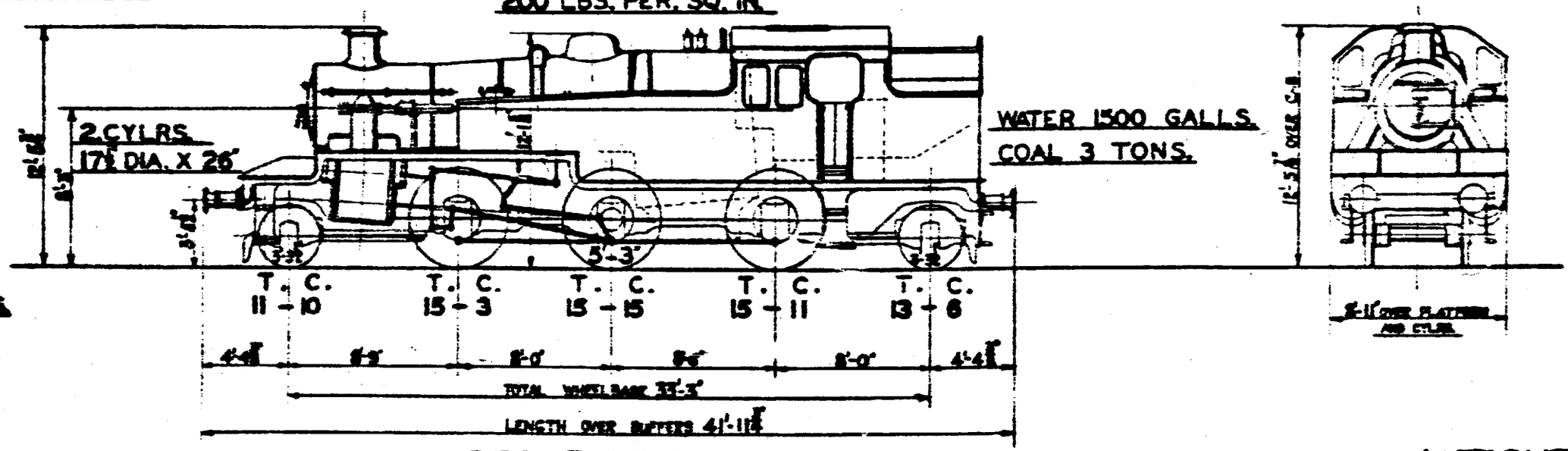
40148.40203
NOS. 40163 & 40169

2-6-2 MIXED TRAFFIC ENGINE WITH LARGE BOILER (6B)

POWER CLASS. 3MT

200 LBS. PER. SQ. IN.

E.D. No. 254E.



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 10'–10". DIA. OUTS. 4'–2" INCREASING TO 4'–9".

FIREBOX. OUTSIDE FIREBOX 6'–5" X 4'–0½".

TUBES.
- SUPERHEATER ELEMENTS 7 – 1⅜ DIA. OUTS. X 9 SWG.
- LARGE TUBES 7 – 5⅛. DIA. OUTS. X 7 SWG.
- SMALL TUBES 181 – 1⅜" DIA. OUTS. X 12 SWG.

} 10'–10½" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	939·0 SQ. FT.	TOTAL 1046·0 SQ. FT.
FIREBOX	107·0 " "	
SUPERHEATER	74·0 " "	

GRATE AREA 19·2 " "

TRACTIVE EFFORT AT 85% BP. 21,486 LBS.

ADHESION FACTOR 4·84.

WEIGHTS.

	T. C. Q.
LIGHT	57. 11. 0
LOADED	71. 5. 0

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % 48·13.

2-6-2 MIXED TRAFFIC ENGINE Nos 40071-40209

EXCEPT 6B BOILERED ENGINES.

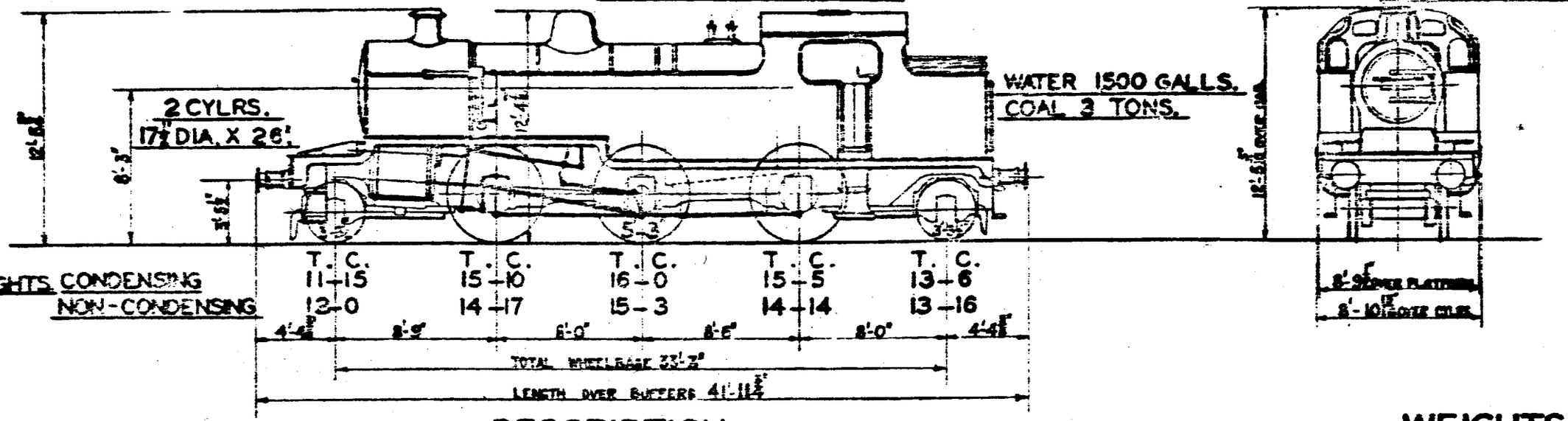
L. M. S.
DRAWING OFFICE.
DERBY.

35

POWER CLASSN 3 M.T.

200 LBS. PER. SQ. IN.

E.D. { 84A NON-CONDENSING. / 85A CONDENSING.



WEIGHTS	T. C.	T. C.	T. C.	T. C.	T. C.
CONDENSING	11–15	15–10	16–0	15–5	13–6
NON-CONDENSING	12–0	14–17	15–3	14–14	13–16

4'-4½" 8'-9" 6'-0" 8'-6" 8'-0" 4'-4½"

TOTAL WHEELBASE 35'-2"

LENGTH OVER BUFFERS 41'-11½"

DESCRIPTION.

BOILER. BARREL 10'–4⅝". DIA. OUTS. 4'–1" INCREASING TO 4'–2"

FIREBOX. OUTSIDE FIREBOX 5'–10⅝" X 4'–0½".

TUBES. SUPERHEATER ELEMENTS 16–1½" DIA. OUTS. X 9 SWG.
LARGE TUBES 16–5⅛" DIA. OUTS. X 7 S.WG.
SMALL TUBES 92–1¾" DIA. OUTS. X 12 S.WG.
} 10'-10⅝" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	691·0	SQ. FT.
FIREBOX	104·0	" "
SUPERHEATER	186·0	" "

} TOTAL 795·0 SQ. FT.

GRATE AREA. 17·5 " "

TRACTIVE EFFORT AT 85% BP. 21486 LBS.

ADHESION FACTOR COND. 4·87.
NON-COND. 4·66.

RADIUS OF MINIMUM CURVE } 6 CHAINS (OR 4½ CHAINS DEAD SLOW).

BRAKE % { COND. 47·8. / NON-COND. 48·7.

WEIGHTS.

	LIGHT. T. C. Q	LOADED. T. C. Q
CONDENSING.	58–5–0	71–16–0
NON-CONDENSING.	57–15–1	70–10–0

2-6-2 MIXED TRAFFIC ENGINE.

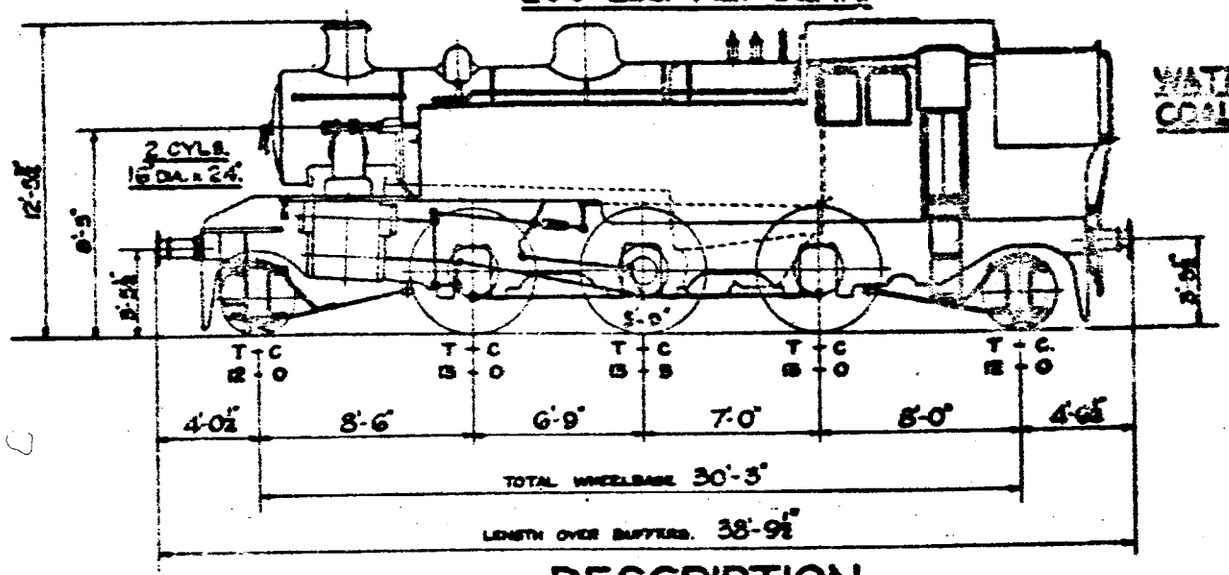
Nos. 40001–40020 40041–40070 (E.D. 84A)
Nos. 40021–40040 (E.D. 85A)

L. M. S.
DRAWING OFFICE
DERBY.

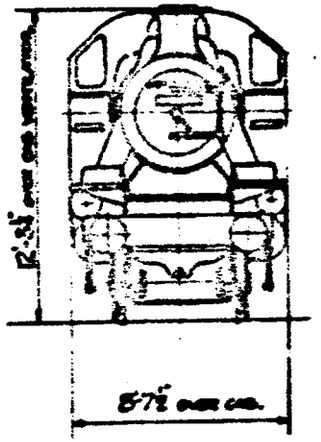
36

POWER CLASS. 2 M.T.

200 LBS. PER SQ. IN.



WATER 1350 GALLS.
COAL 3 TONS.



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 10'-9 7/8". DIA. OUTS. 4'-3" INCREASING TO 4'-8"

FIREBOX. OUTSIDE FIREBOX 5'-11" × 4'-0 7/8".

TUBES. SUPERHEATER ELEMENTS 12. 1 3/8" DIA. OUTS. × 9 S.W.G.
LARGE TUBES 12. 5 3/8" DIA. OUTS. × 7 S.W.G.
SMALL TUBES 162. 1 5/8" DIA. OUTS. × 12 S.W.G.
} 10'-10½" BETWEEN TUBEPLATES.

HEATING SURFACE. TUBES 924 SQ. FT.
FIREBOX 101 " "
SUPERHEATER 124 " "
} TOTAL 1025 SQ. FT.

GRATE AREA 17·5 " "

TRACTIVE EFFORT AT 85% B.P. 17,400 LBS.

ADHESION FACTOR FULLY LOADED. 5·09

RADIUS OF MINIMUM CURVE. } 4 CHAINS.

BRAKE % 49.

WEIGHTS.

	T. C. Q.
LIGHT.	50-8-0.
LOADED.	63-5-0.

L.M.S.
DRAWING OFFICE,
DERBY.

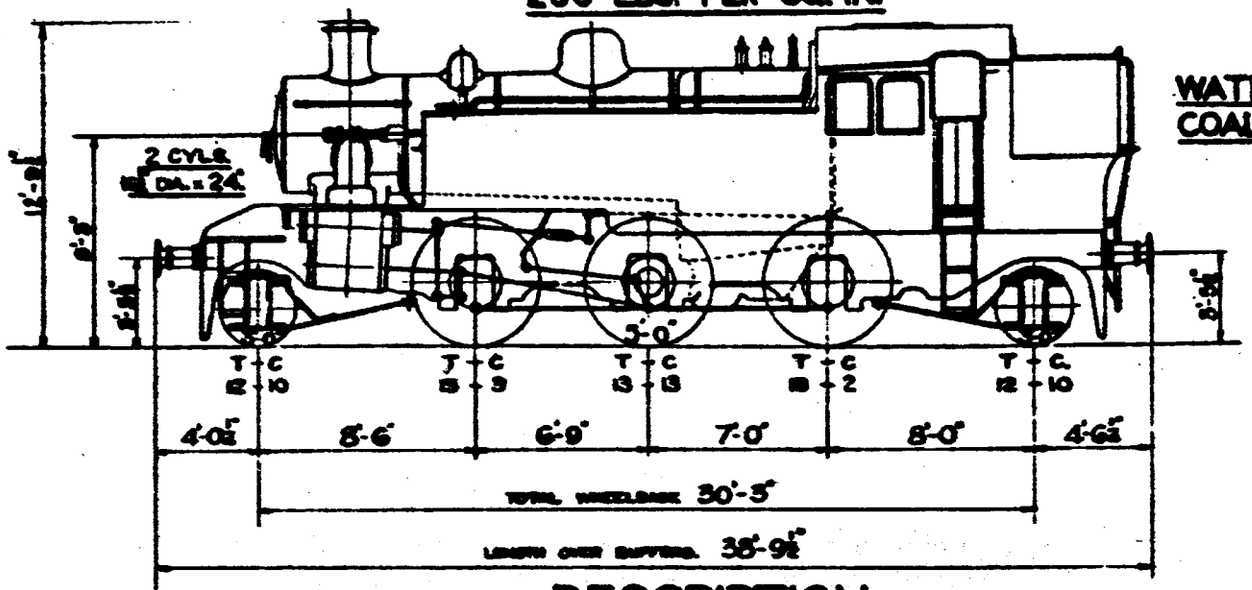
2-6-2 MIXED TRAFFIC ENGINE. (Nos 41200-41289)

37

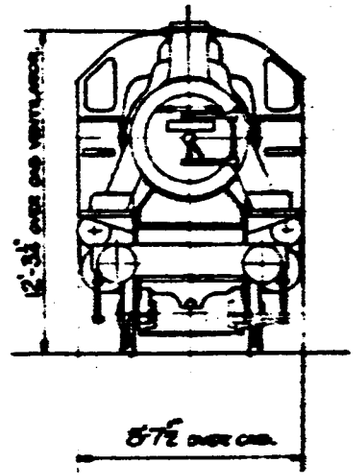
POWER CLASS 2 MT.

E.D. № 290.

200 LBS. PER SQ. IN.



WATER 1350 GALLS.
COAL 3 TONS.



WEIGHTS.

DESCRIPTION.

BOILER BARREL 10'-9⅞". DIA. OUTS. 4'-3" INCREASING TO 4'-8".

FIREBOX OUTSIDE FIREBOX 5'-11" × 4'-0⅞".

TUBES.
- SUPERHEATER ELEMENTS 12. 1⅜" DIA. OUTS. × 9 S.W.G.
- LARGE TUBES 12. 5⅛" DIA. OUTS. × 7 S.W.G.
- SMALL TUBES 162. 1⅜" DIA. OUTS. × 12 S.W.G.

} 10'-10½" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	924 SQ. FT.
FIREBOX	101 . .
SUPERHEATER	124 . .

} TOTAL 1025 SQ. FT.

GRATE AREA. 17·5 . . .

TRACTIVE EFFORT AT 85% B.P. 18,510 LBS.

ADHESION FACTOR. 4·98

WEIGHTS.

	T	C	Q
LIGHT.	52	7	0.
LOADED.	65	4	0.

RADIUS OF MINIMUM CURVE. } 4 CHAINS.

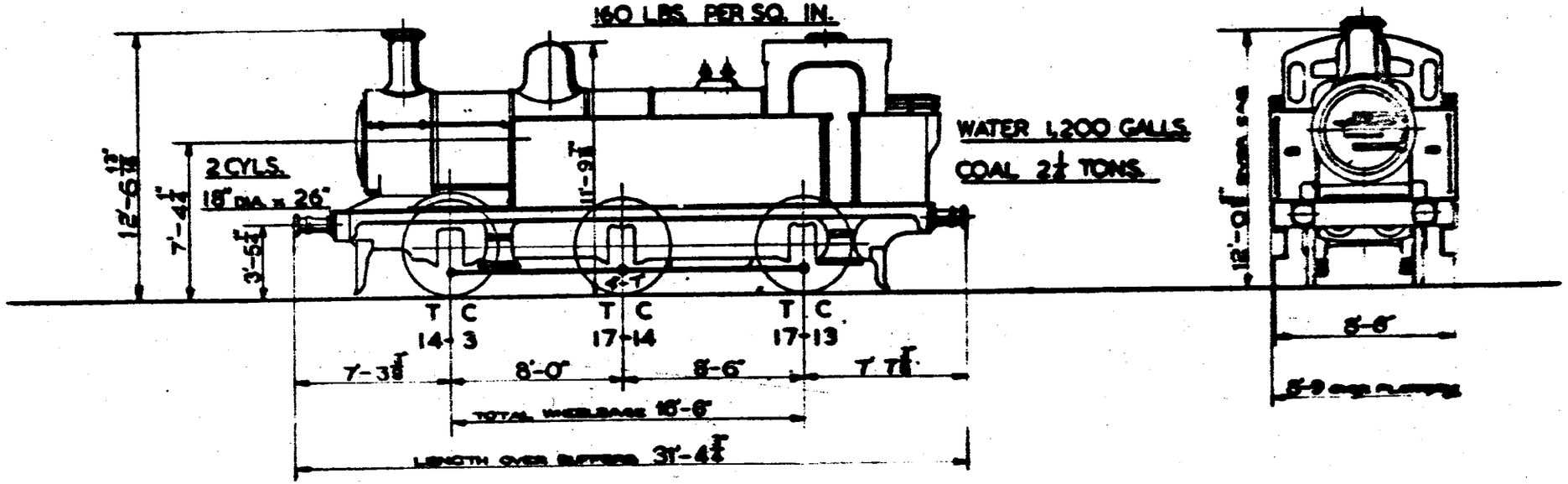
BRAKE % 47·5

L.M.S.
DRAWING OFFICE,
DERBY.

2-6-2. MIXED TRAFFIC ENGINE. (№ 41290- ONWARDS)

E.D. No. 107

POWER CLASS. 3F



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 10'-4 5/16" DIA. OUTS. 4'-1" INCREASING TO 4'-2".

FIREBOX OUTSIDE FIREBOX 5'-5 13/16" × 4'-0 3/8"

TUBES
SUPERHEATER ELEMENTS — DIA. OUTS. — SWG.
LARGE TUBES — DIA. OUTS. — SWG. } 10'-10 3/8" BETWEEN TUBEPLATES.
SMALL TUBES 194 – 1 3/4" DIA. OUTS. × 12 SWG.

HEATING SURFACE

TUBES	967·5	SQ. FT.
FIREBOX	97·0	" "
SUPERHEATER	—	" "

TOTAL 1064·5 SQ FT

GRATE AREA. 16·0 SQ. FT.

TRACTIVE EFFORT. AT 85 % B.P. 20,830 LBS.

ADHESION FACTOR 5·32

RADIUS OF MINIMUM CURVE 6 CHAINS (OR 4 CHAINS DEAD SLOW).

BRAKE % 63·7.

WEIGHTS.

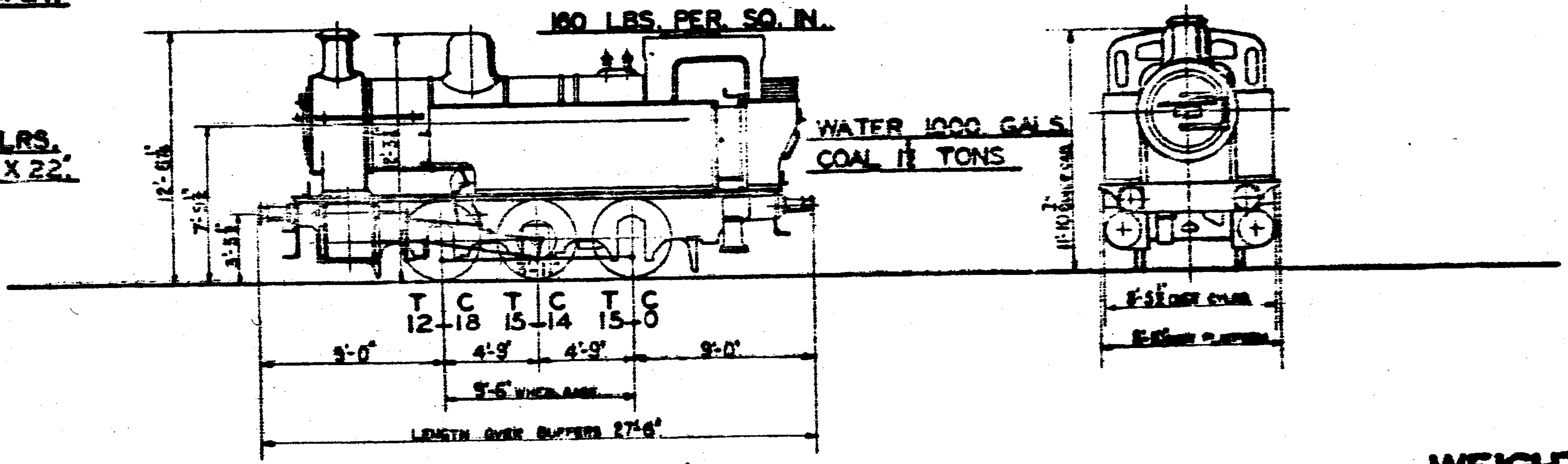
	T. C. Q.
LIGHT	38 – 6 – 0
LOADED	49 – 10 – 0

L. M. S.
DRAWING OFFICE.
DERBY.

0-6-0 FREIGHT ENGINE Nos. 47200-47681

POWER CLASS[N] 2 F. E.D.No 112...

2 CYLRS.
17" DIA X 22".



WEIGHTS.

DESCRIPTION.

BOILER. BARREL 9'–10 3/16". DIA. OUTS. 4'–1" INCREASING TO 4'–2".

FIREBOX. OUTSIDE FIREBOX 4'–11 15/16" X 4'–0 1/2"

TUBES. {SUPERHEATER ELEMENTS — DIA. OUTS. X — SWG.
{LARGE TUBES — DIA. OUTS. X — SWG. } 10'–4 1/8" BETWEEN TUBEPLATES.
{SMALL TUBES 194–1 3/4" DIA. OUTS. X 12 SWG. }

HEATING SURFACE. {TUBES 923·0 SQ. FT. } TOTAL 1008·0 SQ. FT.
{FIREBOX 85·0 " " }
{SUPERHEATER — " "

GRATE AREA. 14·5 " "

TRACTIVE EFFORT AT 85% BP. 18400 LBS.

ADHESION FACTOR 5·31

WEIGHTS.

	T. C. Q.
LIGHT	36-10-0
LOADED	43-12-0

RADIUS OF MINIMUM CURVE – 2½ CHAINS.

BRAKE % 69·5.

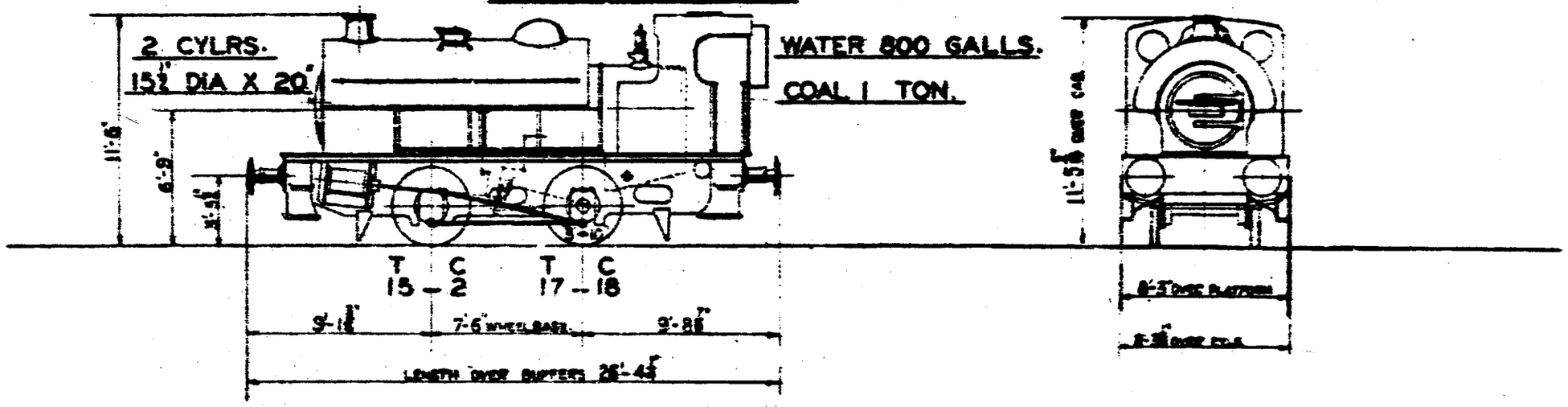
L. M. S.
DRAWING OFFICE
DERBY

0–6–0 FREIGHT ENGINE NOS. 47160–47169.

POWER CLASSN OF

E.D.Nº 89R

160 LBS. PER SQ. IN.



WEIGHTS

DESCRIPTION

BOILER. BARREL 11'–0½" DIA. OUTS. 3'–11⅛" INCREASING TO 4'–0".

FIREBOX. OUTSIDE FIREBOX 4'–0" X 4'–0⅞".

TUBES.
- SUPERHEATER ELEMENTS — DIA. OUTS. X — SWG.
- LARGE TUBES — DIA. OUTS. X — SWG.
- SMALL TUBES 123–1¾" DIA. OUTS. X 12 SWG.

} 10'–8½" BETWEEN TUBEPLATES.

HEATING SURFACE.

TUBES	603·0	SQ. FT.
FIREBOX	57·0	" "
SUPERHEATER	—	" "

} TOTAL 660·0 SQ. FT.

GRATE AREA. 11·75 " "

TRACTIVE EFFORT AT 85% BP. 14,200 LBS.

ADHESION FACTOR 5·21.

WEIGHTS.

	T C Q
LIGHT	25-14-0
LOADED	33-0-0

RADIUS OF MINIMUM CURVE – 5 CHAINS.

BRAKE % 52·8.

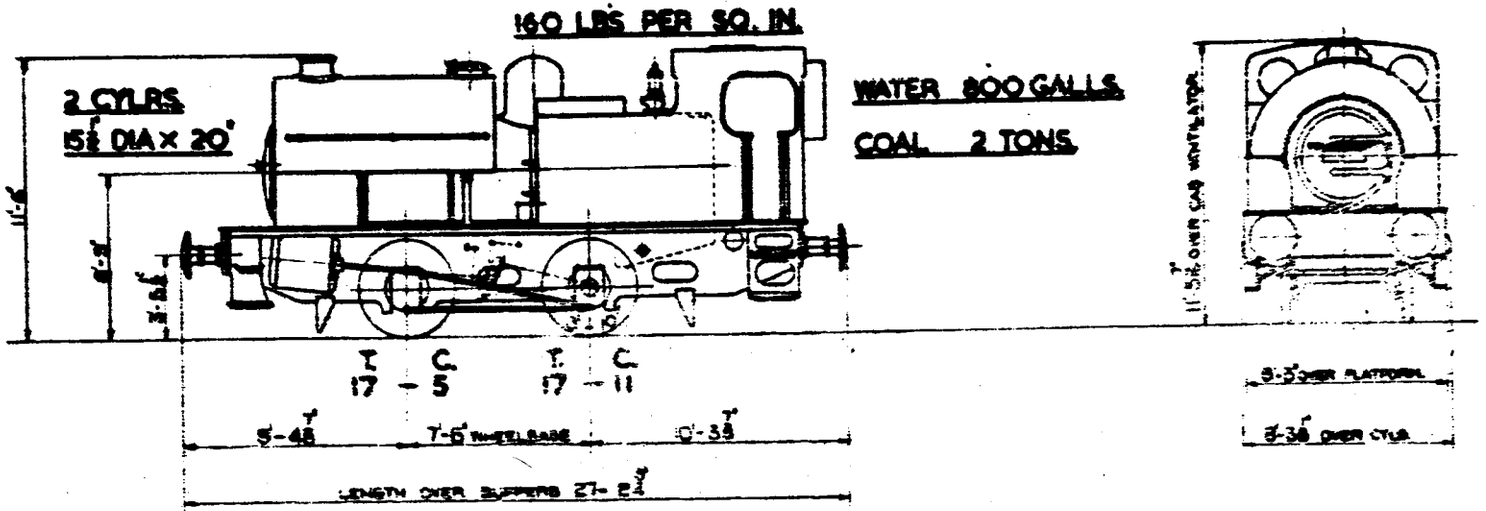
0–4–0 FREIGHT ENGINE NOS. 47000–47004.

L. M. S.
DRAWING OFFICE
DERBY

41

POWER CLASS[1] OF

E.D. № 292



WEIGHTS

DESCRIPTION

BOILER BARREL 11'-0½" DIA. OUTS. 3'-11⅛" INCREASING TO 4'-0"

FIREBOX OUTSIDE FIREBOX 4'-0" × 4'-0⅜"

TUBES

SUPERHEATER ELEMENTS	—	DIA. OUTS. × — S.W.G.	
LARGE TUBES	—	DIA. OUTS. × — S.W.G.	10-8½" BETWEEN TUBEPLATES.
SMALL TUBES	123 – 1¾"	DIA. OUTS. × 12 S.W.G.	

HEATING SURFACE

TUBES	603·0	SQ. FT.	TOTAL 660·0 SQ. FT.
FIREBOX	57·0	" "	
SUPERHEATER	—	" "	

GRATE AREA 11·75 " "

TRACTIVE EFFORT AT 85% B.P. 14,200 LBS.

ADHESION FACTOR 5·49.

WEIGHTS

	T. C. Q.
LIGHT	26-10-0
LOADED	34-16-0

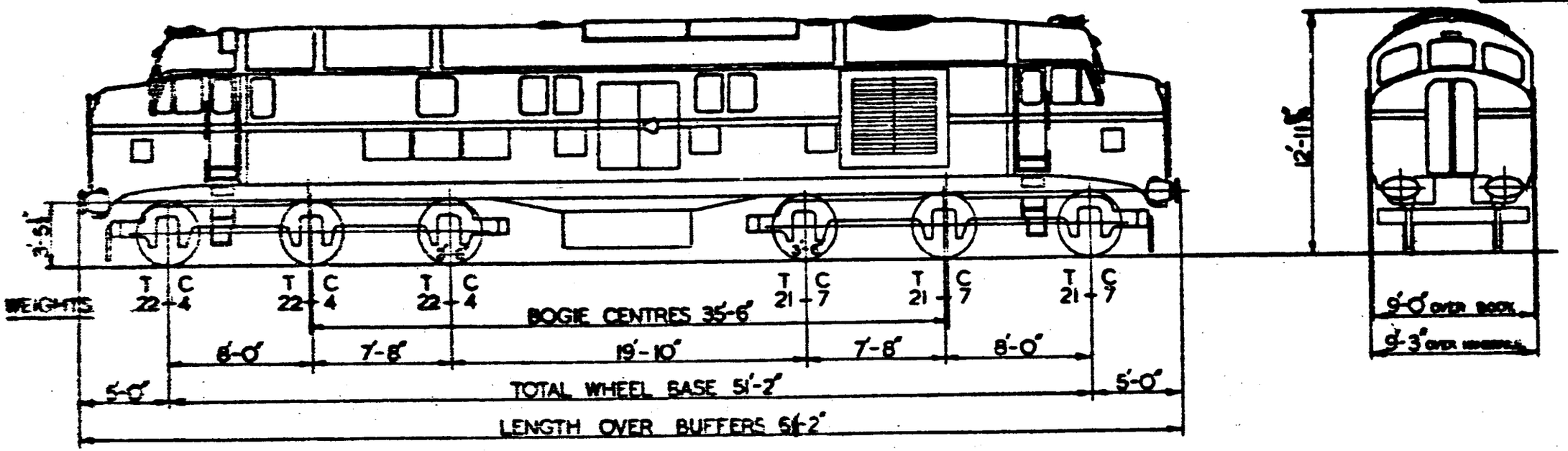
RADIUS OF MINIMUM CURVE – 1½ CHAINS

BRAKE % 51-0.

0-4-0 FREIGHT ENGINE. (Nos 47005–47009)

BRITISH RAILWAYS
L.M.R.
DRAWING OFFICE
DERBY 42

E.D. Nº 278 B.



ENGINE. ENGLISH ELECTRIC TYPE 16 S.V.T.
16 CYL. 4 STROKE VEE TYPE DIESEL ENGINE
WITH TURBO-SUPERCHARGERS.
1600 H.P. AT 750 R.P.M. 10" BORE x 12" STROKE.

GENERATOR. ENGLISH ELECTRIC TYPE E.E. 823A.

TRACTION MOTORS. (6) ENGLISH ELECTRIC TYPE E.E. 519/1B.

GEAR RATIO. 55/18.

TRACTIVE EFFORT. 41,400 LBS.

ADHESION FACTOR. 7·03

TANK CAPACITIES.

ENGINE FUEL MAIN.	815 GALLS.
ENGINE FUEL SERVICE.	85 GALLS.
RADIATOR HEADER.	40 GALLS.
HEATING BOILER FEED WATER.	900 GALLS.
HEATING BOILER FUEL OIL.	FROM MAIN FUEL.

WEIGHT IN WORKING ORDER. 130 TONS - 13 CWTS.

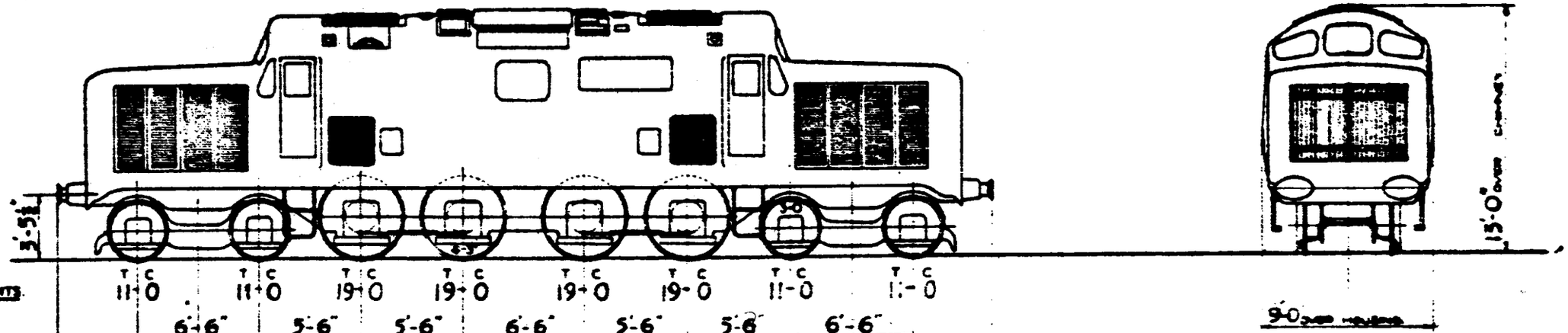
RADIUS OF MINIMUM CURVE. 4½ CHAINS.

BRAKE % OF ENGINE WEIGHT. VACUUM 68·1%.
HAND 33·9%.

LOCOMOTIVE DRAWING OFFICE DERBY.

DIESEL ELECTRIC LOCOMOTIVE Nos. 10000–10001.

E.D. Nº 285A



ENGINE { FOUR DAVEY PAXMAN 12 R.P.H. ENGINES
12 CYLINDERS 7" BORE x 7½" STROKE PER ENGINE
EACH ENGINE 510 H.P. MAXIMUM 1500 REVS.

GEAR RATIO 3·07/1 WITH FOUR ENGINES.

TRACTIVE EFFORT MAXIMUM 33500 LBS.

ADHESION FACTOR 5·14

TANK CAPACITIES

ENGINE FUEL MAIN.	720 GALLS.
ENGINE FUEL SERVICE.	150 GALLS.
HEADER (WATER)	60 GALLS.
HEATING BOILER FEED WATER.	500 GALLS.
HEATING BOILER FUEL OIL.	FROM MAIN FUEL.

WEIGHT IN WORKING ORDER. 120 TONS.

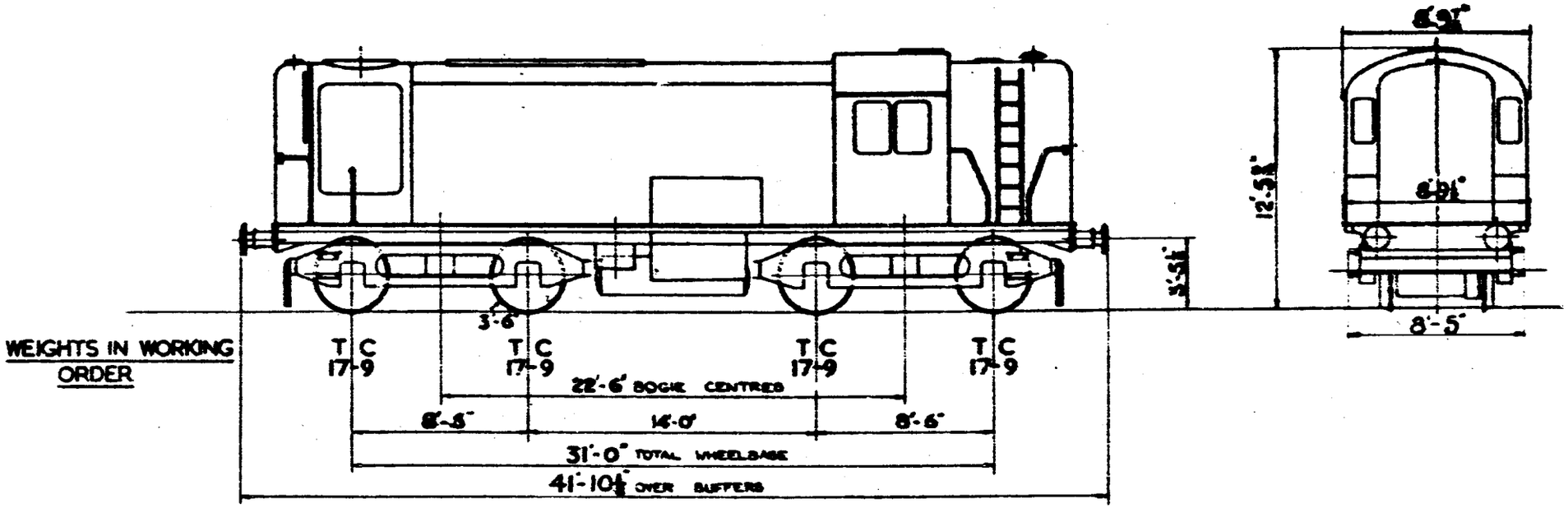
RADIUS OF MINIMUM CURVE. 5 CHAINS.

BRAKE % OF ENGINE WEIGHT { VACUUM 42·8%.
HAND 13·5% (MAXᵐ)

DIESEL MECHANICAL LOCOMOTIVE Nº 10100.

BRITISH RAILWAYS
LOCOMOTIVE DRAWING OFFICE
DERBY. 44.

E.D.№286A



WEIGHTS IN WORKING ORDER

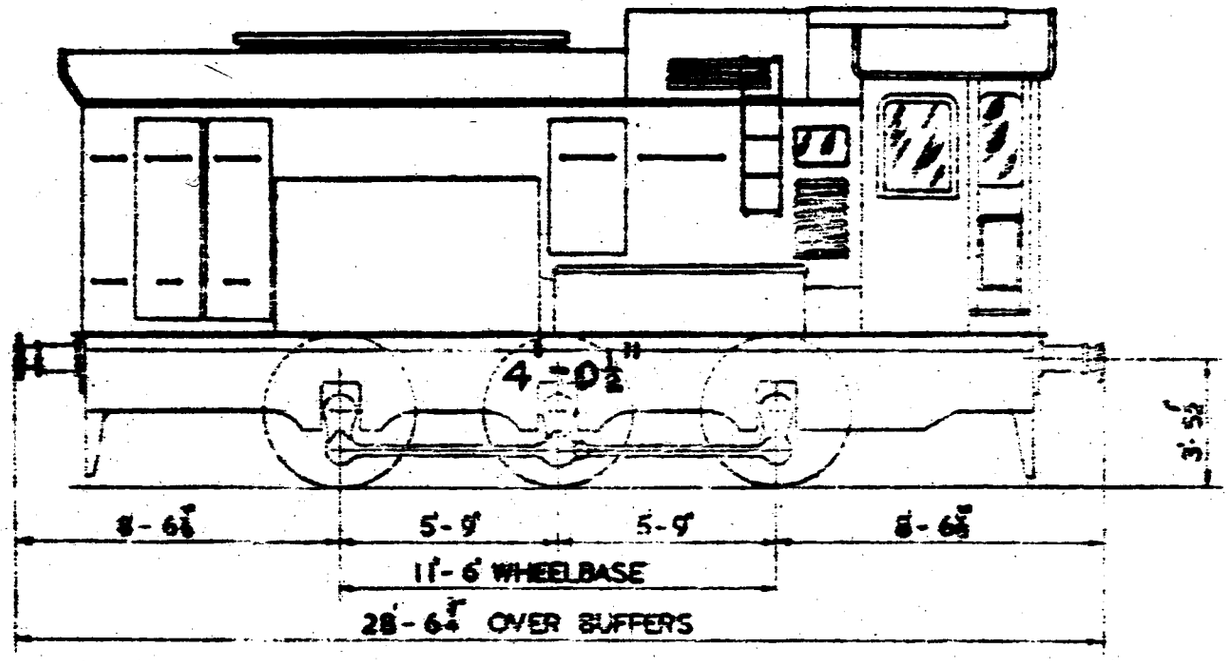
ENGINE	DAVEY PAXMAN TYPE 16 R.P.H. 16 CYLINDER 4 STROKE VEE TYPE DIESEL ENGINE WITH TURBO SUPERCHARGERS. 827 H.P. AT 1250 R.P.M. 7" BORE X 7¼" STROKE
GENERATOR	B.T.H.
TRACTION MOTORS	FOUR B.T.H. TYPE 159
GEAR RATIO	66 / 15
TRACTIVE EFFORT	34500 LBS.
ADHESION FACTOR	4·53

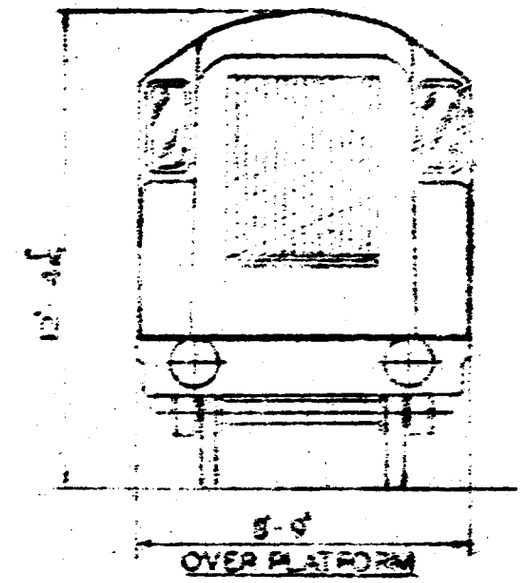
TANK CAPACITIES	ENGINE FUEL - MAIN 255 GALLS. ENGINE FUEL - SERVICE 75 GALLS. RADIATOR HEADER ETC. 85 GALLS. HEATING BOILER FEED WATER 400 GALLS. HEATING BOILER FUEL OIL 90 GALLS.
WEIGHT IN WORKING ORDER	69 TONS. 16 CWTS
RADIUS OF MINIMUM CURVE	3¾ CHAINS
BRAKE % OF ENGINE WEIGHT	VACUUM 66% HAND 29%

DIESEL ELECTRIC LOCOMOTIVE No. 10800.

BRITISH RAILWAYS
L.M.R.
DRAWING OFFICE
DERBY

E.D. Nº 293





WEIGHTS	T-C-Q	T-C-Q	T-C-Q
	17-9-0	17-0-0	16-13-0

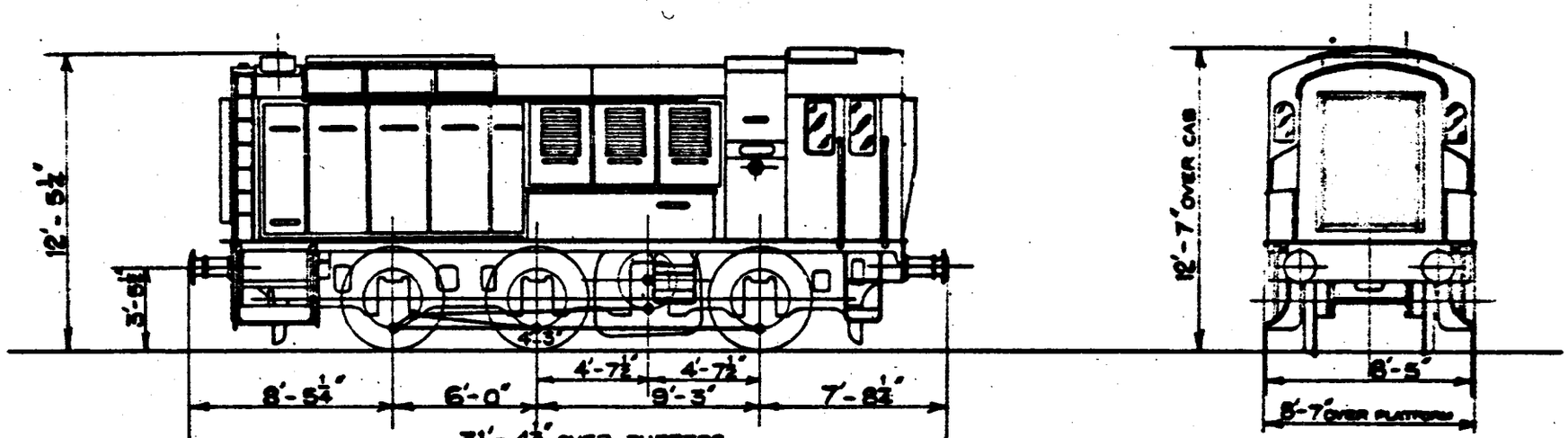
	12000-1	12002
6 CYLINDER DIESEL ENGINE	350 B.H.P.	
CAPACITY FUEL OIL TANK MAIN	400	360
" " " " SERVICE	100	90
" " " " TOTAL	500	450
" RADIATOR	90	90
TRACTIVE EFFORT	30,000 lbs.	

	LIGHT	LOADED
	T. C. Q.	T. C. Q.
TOTAL WEIGHT	48-12-0	51-2-0

DIESEL-ELECTRIC SHUNTING ENGINE Nºs 12000-12001

BRITISH RAILWAYS
LOCOMOTIVE
DRAWING OFFICE
DERBY

E.D. Nº 262A



WEIGHTS

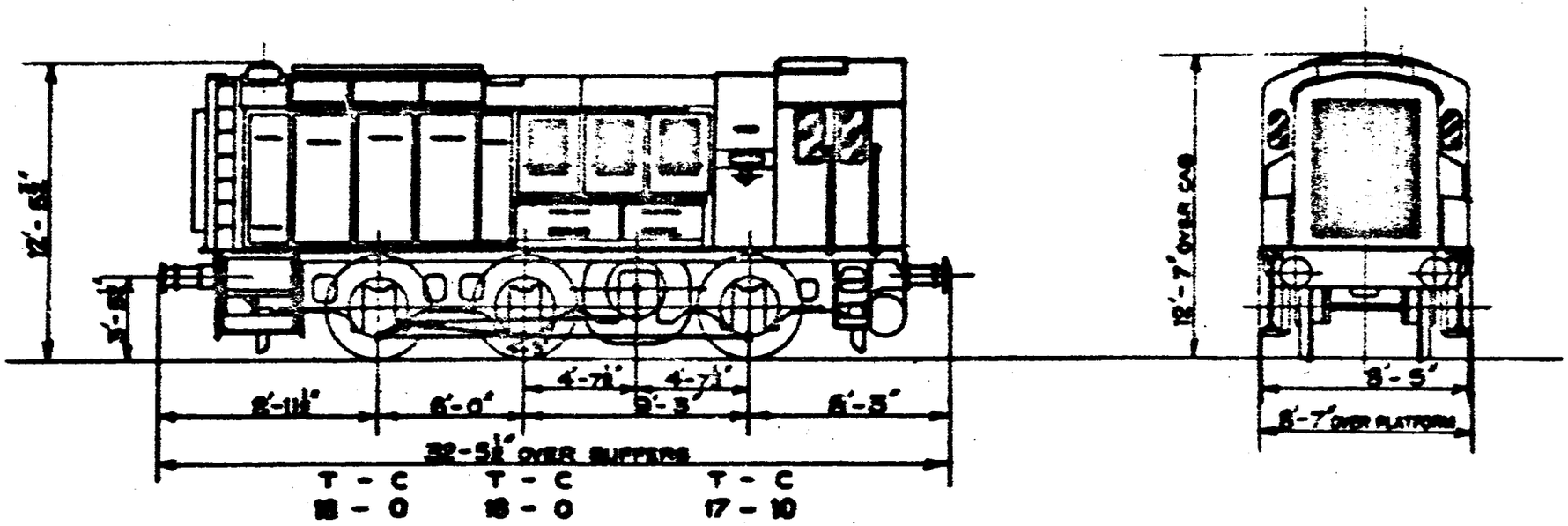
6 CYLINDER DIESEL ENGINE - 350 B.H.P.	
CAPACITY FUEL OIL TANK MAIN 586 GALLONS	
" " " " SERVICE 75 "	
TOTAL 661 "	
CAPACITY OF RADIATOR 89 "	
TRACTIVE EFFORT 33500 LBS.	

	LIGHT	LOADED
TOTAL WEIGHT	T-C-Q 51-14-0	T-C-Q 55-5-0

DIESEL — ELECTRIC SHUNTING ENGINE. Nos.12003-12022.

L.M.S.
DRAWING OFFICE
DERBY.

4-7

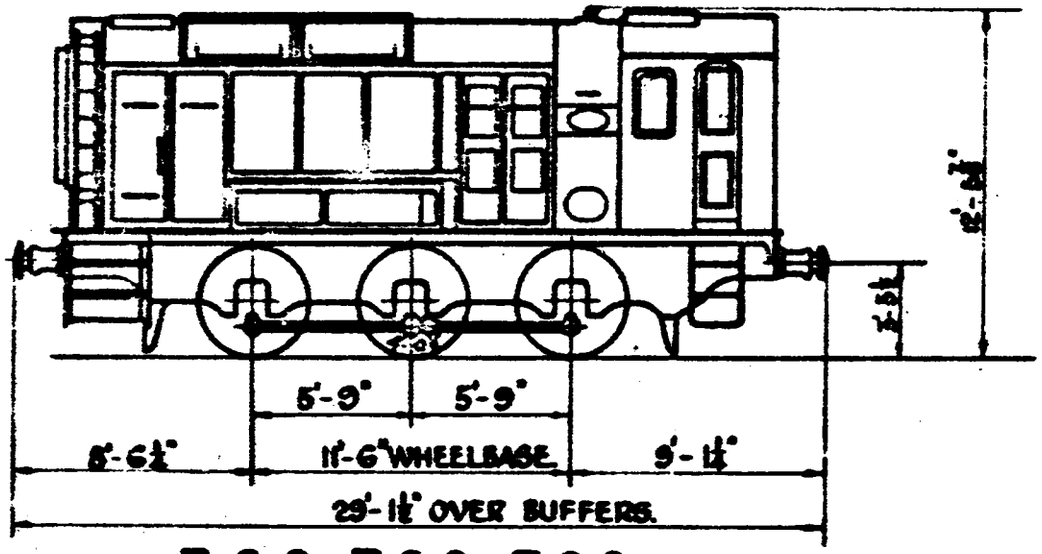


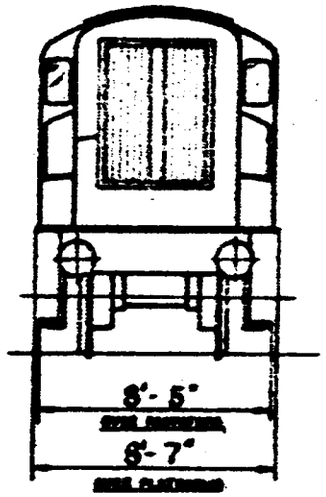
WEIGHTS.

6 CYLINDER DIESEL ENGINE - 350 B.H.P.	
CAPACITY FUEL OIL TANK. MAIN 586 GALLONS	
" " " " SERVICE 75 "	
TOTAL 661 "	
CAPACITY OF RADIATOR 90 "	
TRACTIVE EFFORT 33,500 LBS.	

	LIGHT	LOADED
TOTAL WEIGHT	T-C-Q 49-18-0	T-C-Q 55-10-0

DIESEL - ELECTRIC SHUNTING ENGINE. Nos 12023-12032





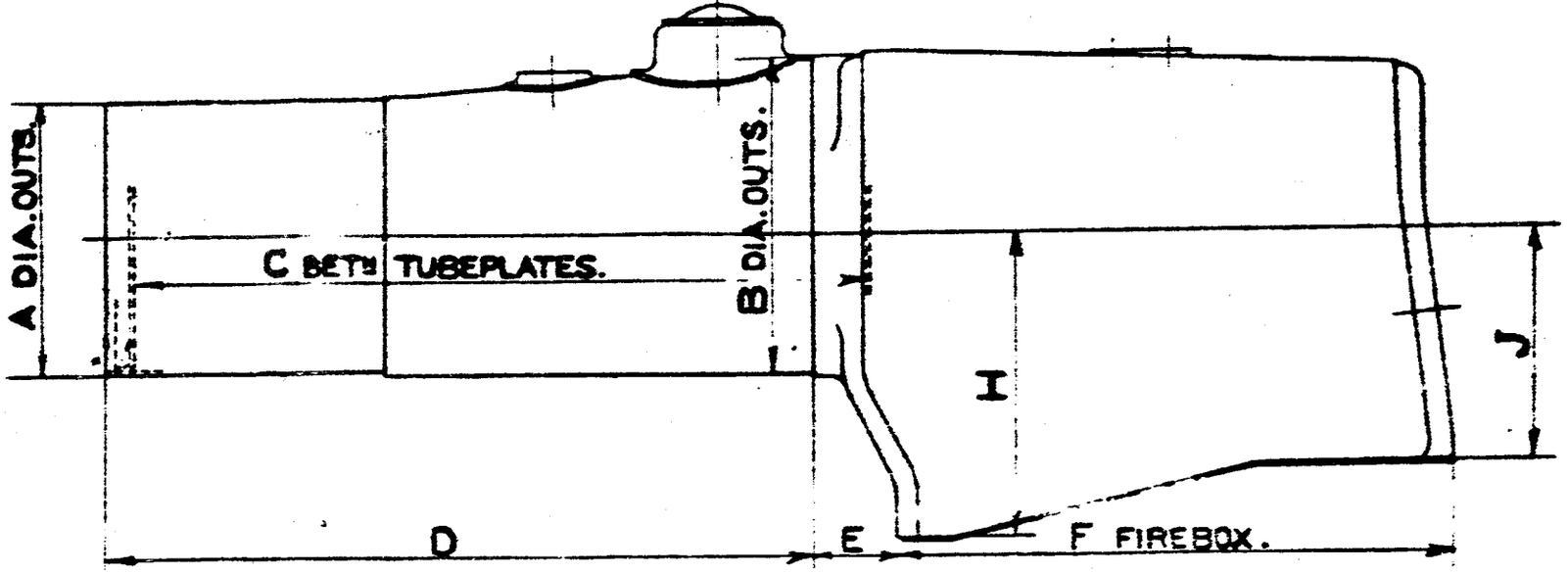
WEIGHTS.

T. C. Q.	T. C. Q.	T. C. Q.
16-0-0	15-10-0	15-15-0

6 CYLINDER DIESEL ENGINE.	350	B H.P.	
CAPACITY FUEL OIL TANK, MAIN	585	GALLS.	
" " " " , SERVICE	75	"	
" " " " TOTAL	660	"	
" RADIATOR.	89	"	
TRACTIVE EFFORT.	35000	LBS.	

	LIGHT. T. C. Q.	LOADED. T. C. Q.
TOTAL WEIGHT.	43-11-2	47-5-0
MIN: RADIUS CURVE		3 CHAINS

DIESEL-ELECTRIC SHUNTING ENGINE. Nos 12033-12138



ENGINE TYPE	BOILER CLASS	A	B	C	D	E	F	H	J	NOTES
4-6-2 COR.	1X	5'-8 5/8"	6'-5 1/2"	19'-3"	19'-10 11/16"	3'-3 11/16"	8'-6"	5'-8 7/8"	4'-4 7/8"	2 RINGS IN BARREL 3 RINGS IN FIREBOX
4-6-2 PRINC	1	5'-8 5/8"	6'-3"	19'-3"	19'-10 11/16"	3'-3 1/2"	8'-6"	5'-6 7/8"	4'-2 7/8"	3 RINGS IN BARREL 3 RINGS IN FIREBOX
4-6-0 RSC. 4&17D	2	5'-4 1/2"	5'-10 1/2"	14'-3"	13'-9 11/16"	1'-9 5/8"	10'-3"	5'-7 3/8"	4'-3 3/8"	SLOPING THROATPLATE
4-6-0 RSC. & C&CON	2A	5'-5"	5'-10 1/2"	13'-0"	12'-6 11/16"	1'-9 5/8"	10'-3"	5'-7 3/8"	4'-3 3/8"	DO
4-6-0 CL6.	3A	5'-0"	5'-8 3/8"	13'-2 7/8"	12'-9 15/16"	1'-6 3/8"	10'-0"	5'-6 7/8"	4'-2 7/8"	DO
4-6-0 CL5.	3B	4'-11 11/16"	5'-8 1/2"	13'-2 7/8"	12'-11"	1'-6 7/16"	9'-2 13/16"	5'-6 7/16"	4'-2 7/16"	DO
2-8-0 CL8	3C	5'-0"	5'-8 3/8"	12'-2 7/8"	11'-11 3/16"	1'-6 3/8"	9'-3"	5'-6 7/8"	4'-2 7/8"	DO
2-6-0 CL5	3D	5'-0"	5'-8 3/8"	12'-2 7/8"	11'-11 3/16"	6 3/8"	9'-3"	5'-6 7/8"	4'-2 7/8"	VERTICAL THROATPLATE
2-6-4 CL4T.	4C	4'-9"	5'-3"	12'-3"	11'-10 13/16"	6 3/8"	8'-6"	5'-5 7/8"	3'-8 7/8"	DO
2-6-0 CL4	4D	4'-9 1/8"	5'-3"	10'-10 1/2"	10'-6"	6 3/8"	7'-6"	5'-6"	3'-11"	DO
2-6-2 CL3T.	6A	4'-2"	4'-9"	10'-10 1/2"	10'-5 7/8"	6 1/8"	6'-5"	5'-1 1/2"	4'-6 1/2"	DO
2-6-2 RED CL3T.	6B	4'-6"	4'-9"	10'-10 1/2"	10'-5 7/8"	6 1/8"	6'-5"	5'-4 7/16"	4'-9 7/16"	DO
2-6-0 CL2 / 2-6-2 CL2T.	7	4'-3"	4'-8"	10'-10 1/2"	10'-5 5/8"	6 3/8"	5'-11"	4'-10 1/2"	4'-3 3/8"	DO

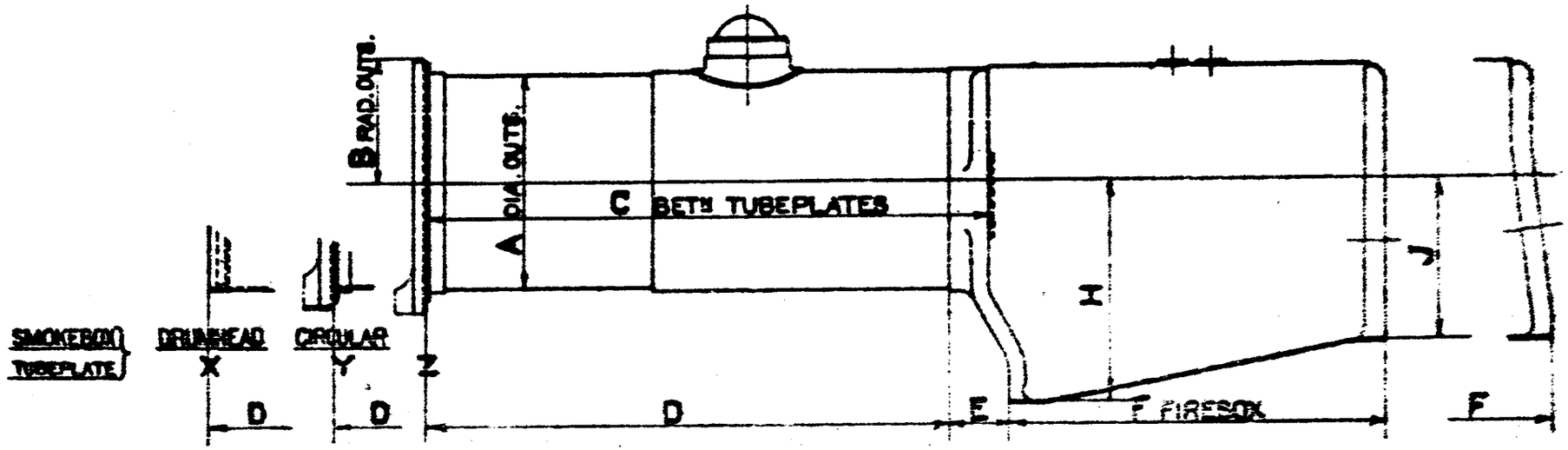
CLASSIFICATION OF TAPER BOILERS.

APPENDIX A.

BOILER RATIOS. TAPER BOILER ENGINES.

CLASS OF BOILER	CLASS OF ENGINE	NUMBER & SIZES OF TUBES			DISTANCE BETWEEN TUBEPLATES	TUBEPLATE DRAWING NUMBER	GRATE AREA SQ. FT.	FIREBOX HEATING SURFACE SQ FT	TOTAL EVAPORATIVE HEATING SURFACE SQ FT	SUPER HEATING SURFACE SQ FT	HEATING SURFACE RATIOS			FREE AREA.			FREE AREA RATIOS		SMALL TUBE LENGTH	A/S	G/S	ESTIMATED AVERAGE STEAM TEMP. DEGS FAH
											FIREBOX HEATING SURFACE AREA	TOTAL EVAPORATIVE HEATING SURFACE AREA	SUPERHEATING SURFACE TOTAL %	SMALL TUBES SQ FT.	LARGE TUBES SQ FT	TOTAL SQ FT	TOTAL GRATE AREA	SUPERHEATING TOTAL %	BORE	LARGE TUBES	SMALL TUBES	
1	4-6-2 CL 8P PRINCESS ROYAL	123 – 2 1/8"	32 – 5 1/8"	32 – 1 5/8" ELEMENTS	19'-3"	D.37-15008	45	217	2516	586	4.82	55.9	23.30	3.08	2.41	5.49	12.2	43.90	138.8	1/540	1/436	572
1X	4-6-2 CL 8P CORONATION	129 – 2 1/8"	40 – 5 1/8"	40 – 1" TRIPLE ELEMENTS	19'-3"	D.36-14647	50	230	2807	822	4.6	56.1	29.30	3.23	3.66	6.89	13.78	53.10	108.8	1/553	1/436	610
2	4-6-0 CL 7P ROYAL SCOT Nº 46170	180 – 1 1/8"	28 – 5 1/8"	28 – 1 5/8" ELEMENTS	14'-3"	C-34127	31.25	195	1988	367	6.24	63.6	18.44	2.65	2.32	4.97	15.92	46.70	105.4	1/382	1/423	583
2A	4-6-0 CL 7P ROYAL SCOT CONVERSION CLASS 5A CONVERSION	196 – 1 1/4"	28 – 5 1/8"	28 – 1 5/8" ELEMENTS	13'-0"	D.44-16795	31.25	195	1851	367	6.24	59.2	19.81	2.54	2.32	4.86	15.57	47.70	102.6	1/379	1/411	587
3A	4-6-0 CL 6P JUBILEE	159 – 1 1/8"	24 – 5 1/8"	24 – 1 5/8" ELEMENTS	13'-2 7/8"	D.36-14384	31	181	1641	313	5.84	52.9	19.05	2.34	1.99	4.33	13.97	45.56	98	1/378	1/392	589
3B	4-6-0 CL 5 MIXED TRAFFIC	151 – 1 1/8"	28 – 5 1/8"	28 – 1 5/8" ELEMENTS	13'-2 7/8"	C-33479	28.65	171	1650	365	5.97	57.6	22.11	2.22	2.32	4.54	15.87	51.10	98	1/378	1/392	603
3C	2-8-0 CL 8 FREIGHT	202 – 1 1/4"	21 – 5 1/8"	21 – 1 5/8" ELEMENTS	12'-2 7/8"	C-32573	28.65	171	1649	241	5.97	57.5	14.60	2.62	1.74	4.36	15.23	39.95	98.6	1/335	1/387	555
3D	2-6-0 CL 5 MIXED TRAFFIC	202 – 1 1/4"	21 – 5 1/8"	21 – 1 5/8" ELEMENTS	12'-2 7/8"	C-33322	27.8	155	1633	244	5.58	58.8	14.92	2.62	1.74	4.36	15.69	39.95	98.6	1/333	1/387	555
4C	2-6-4 CL 4 TANK 3 CYLINDER M.T	122 – 1 1/8"	18 – 5 1/8"	18 – 1 5/8" ELEMENTS	12'-3"	D.35-13972	26.7	143	1172	209	5.36	43.9	17.94	1.80	1.50	3.30	12.36	45.42	90.8	1/333	1/363	578
4C	2-6-4 CL 4 TANK 2 CYLINDER M.T	157 – 1 1/4"	21 – 5 1/8"	21 – 1 5/8" ELEMENTS	12'-3"	D.37-15033	26.7	143	1369	240	5.36	51.3	17.54	2.04	1.74	3.78	14.16	46.13	96.7	1/334	1/357	580
4D	2-6-0 CL 4 MIXED TRAFFIC	158 – 1 1/8"	24 – 5 1/8"	24 – 1 5/8" ELEMENTS	10'-10 1/2"	D.46-17217	23.0	131	1212	247	5.70	52.7	20.38	1.73	1.99	3.72	16.18	53.52	93.6	1/301	1/374	610
6A	2-6-2 CL 3 TANK M.T.	181 – 1 1/8"	7 – 5 1/8"	7 – 1 5/8" ELEMENTS	10'-10 1/2"	D.36-14591	19.2	107	1046	74	5.57	54.5	7.10	1.98	.58	2.56	13.4	22.7	93.6	1/305	1/374	484
6B	2-6-2 CL 3 TANK M.T	171 – 1 1/8"	14 – 5 1/8"	14 – 1 5/8" ELEMENTS	10'-10 1/2"	D.38-15455	19.2	111	1106	147	5.78	57.6	13.31	1.87	1.16	3.03	15.81	38.31	93.6	1/306	1/374	547
7	2-6-0 CL 2 MIXED TRAFFIC 2-6-2 CL 2 TANK M.T	162 – 1 1/8"	12 – 5 1/8"	12 – 1 5/8" ELEMENTS	10'-10 1/2"	D.2/P22/9	17.5	101	1025	124	5.78	58.6	12.13	1.77	1.00	2.77	15.83	36.12	93.6	1/305	1/374	540

APPENDIX B



ENGINE TYPE	BOILER CLASS	A	B	C	D	E	F	H	J	TUBE PLATE	NOTES
4-6-0 3 CYL.	G9½S	5'-3 11/16"	3'-0 5/8"	14'-0"	12'-11 3/8"	1'-6"	9'-6"	5'-6 3/8"	4'-0 3/8"	Z	VERTICAL . .
2-6-0	G9HS	5'-3 3/4"	——	12'-2"	11'-7 1/4"	DEPTH THROUGH 7 5/8"	9'-0"	5'-3"	4'-6"	X	SLOPING .
4-4-0 COMPOUND	G9AS	4'-7 7/8"	2'-9 1/4"	12'-3 3/8"	11'-5 3/8"	. 5 5/8"	9'-0"	5'-6 1/2"	3'-9"	Y	. .
2-6-4T	G8AS	4'-8"	2'-9 1/4"	11'-4 5/8"	10'-6 3/4"	. 5 1/4"	8'-0"	5'-6 1/2"	3'-9"	Y	VERTICAL .
0-8-0	G7½S	4'-11 1/4"	2'-11"	14'-10 1/2"	13'-10 1/2"	. 7 1/8"	7'-10"	5'-2"	5'-2"	Z	. .
4-4-0 & 0-6-0	G7S	4'-8"	2'-9 1/4"	10'-10 1/2"	10'-0 1/8"	. 5 1/2"	7'-0"	5'-6"	3'-10 1/2"	Z	. .
2-6-2T	G6S	4'-1"	2'-5 1/4"	10'-10 3/8"	10'-2 1/8"	. 4"	5'-10 3/8"	5'-1 1/2"	4'-8 1/2"	Z	. .
0-4-4T	G6	4'-1"	2'-5 1/4"	10'-10 3/8"	10'-2 1/8"	. 4"	5'-10 3/8"	5'-1 1/2"	4'-8 1/2"	Z	. .
0-6-0T	G5½	4'-1"	2'-5 1/4"	10'-10 3/8"	10'-2 1/8"	. 4"	5'-5 3/8"	5'-1 1/2"	4'-8 1/2"	Z	. .
0-6-0T	G5	4'-1"	2'-5 1/4"	10'-4 3/8"	9'-8 1/8"	. 4"	4'-11 3/8"	4'-0 1/2"	4'-2 1/2"	Z	. .
0-4-0T	J3	3'-11 1/16"	2'-3 5/8"	10'-8 1/2"	10'-0"	. 4"	4'-0"	4'-0"	3'-2"	Z	. .
2-8-0 W.D.	BR10	5'-7 1/8"	—	12'-0"	11'-7"	1'-5 1/4"	9'-2 3/8"	5'-4"	4'-0"	X	

CLASSIFICATION OF PARALLEL BOILERS.

APPENDIX C

BOILER RATIOS. PARALLEL BOILER ENGINES.

CLASS OF BOILER	CLASS OF ENGINE	NUMBER & SIZES OF TUBES			DISTANCE BETWEEN TUBEPLATES	TUBEPLATE DRAWING NUMBER	GRATE AREA SQ. FT.	FIRE-BOX HEATING SURFACE SQ. FT.	TOTAL EVAPORATIVE HEATING SURFACE SQ. FT.	SUPER HEATING SURFACE SQ. FT.	HEATING SURFACE RATIOS			FIRE AREA			FIRE AREA RATIOS		SMALL TUBE LENGTH BORE	A/S	E/S	EVAPORATIVE AREA PER CU. FT. STEAM SPACE
											FIRE-BOX HEATING SURFACE / GRATE AREA	SUPER HEATING SURFACE / GRATE AREA	SUPER HEATING SURFACE / TOTAL %	SMALL TUBES SQ. FT.	LARGE TUBES SQ. FT.	TOTAL SQ. FT.	FIRE AREA / GRATE AREA	LARGE TUBES / SMALL TUBES				
69[illegible]S	4-6-0 CL 6P 3 CYLINDER	24 - 5⅛"	140 - 2⅝"	24 - 1⅜" ELEMENTS	14'-0"	C-25517	30·5	193	1735	365	6·00	56·9	21	2·74	1·96	4·7	15·4	41·7	90			563
69AS	4-4-2 CL 4P 3 CYLINDER	21 - 5⅛"	146 - 1¾"	21 - 1⅜" ELEMENTS	12'-3⅝"	D.09-7956	28·4	147	1317	272	5·18	46·4	20·7	1·89	1·58	3·47	12·2	45·5	97·2			573
69HS	2-6-0 CL 4 MIXED TRAFFIC	24 - 5⅛"	181 - 1⅝"	24 - 1⅜" ELEMENTS	12'-2"	H-17534	27·5	180	1505	307	5·82	54·7	20·4	2·37	1·8	4·17	15·2	43·2	90·2			563
68AS	2-6-4 CL 4 TANK MIXED TRAFFIC	21 - 5⅛"	146 - 1¾"	21 - 1⅜" ELEMENTS	11'-4⅝"	D.12-8410	25	138	1220	246	5·52	48·3	20·2	1·89	1·58	3·47	13·9	45·5	90			573
5 74S	0-3-0 CL 7 FREIGHT	24 - 5"	120 - 2"	24 - 1⅜" ELEMENTS	14'-10⅜"	D.41-16222	23·6	150	1552	338	6·36	65·8	21·8	2·05	1·84	3·89	16·5	47·3	102·2			555
67S	4-4-0 CL 2P 0-6-0 CL 4F	21 - 5⅛"	146 - 1¾"	21 - 1⅜" ELEMENTS	10'-10⅜"	D.38-15544	21·1	124	1158	246	5·88	54·9	21·2	1·88	1·59	3·47	16·4	45·5	86			578
66S	2-6-2 CL 3 TANK MIXED TRAFFIC	16 - 5⅛"	92 - 1¾"	18 - 1⅜" ELEMENTS	10'-10⅜"	D.29-11111	17·5	104	795	188	5·94	45·5	23·4	1·19	1·2	2·39	13·6	50·2	86			597
66	0-4-4 CL 2P TANK	—	194 - 1¾"	—	10'-10⅜"	D.16-8774	17·5	104	1071	—	5·94	61·2	—	2·52	—	2·52	14·4	—	86			
65[illegible]	0-6-0 CL 3 TANK FREIGHT	—	194 - 1¾"	—	10'-10⅜"	D.16-9774	16	97	1064	—	6·06	66·5	—	2·52	—	2·52	15·7	—	86			
65	0-6-0 CL 2 TANK FREIGHT	—	194 - 1¾"	—	10'-4⅝"	D.16-9774	14·5	85	1008	—	5·86	69·5	—	2·52	—	2·52	17·4	—	82			
J3	0-4-0 CL 3 SADDLE TANK FREIGHT	—	123 - 1¾"	—	10'-8⅜"	D.32-12442 D.32-12449	11·75	57	660	—	4·86	56·2	—	1·8	—	1·8	13·6	—	54·8			
BR 10	2-6-0 CL 8 FREIGHT W.D.	28 - 5⅛"	193 - 1¾"	28 - 1⅜" ELEMENTS	12'-0"	C-35945	28·6	155	1680	302	5·87	58·7	17·98	2·50	2·33	4·83	15·9	48·2	34·8·6			590

APPENDIX Q