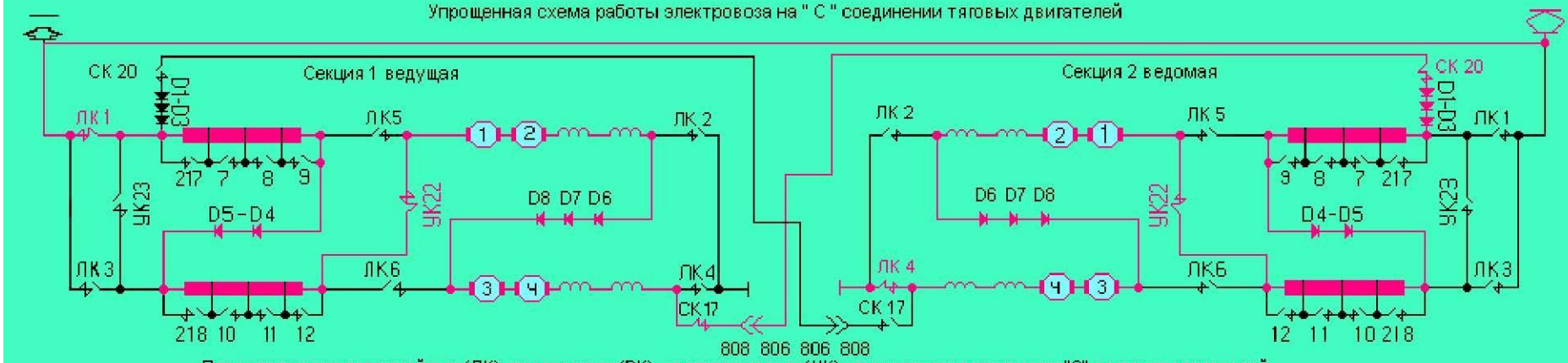
Электровоз ВЛ-10 КРП

Силовые схемы.

Упрощенная схема работы электровоза на «С» соединении тяговых двигателей.

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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Ведомая 2 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)											УК	
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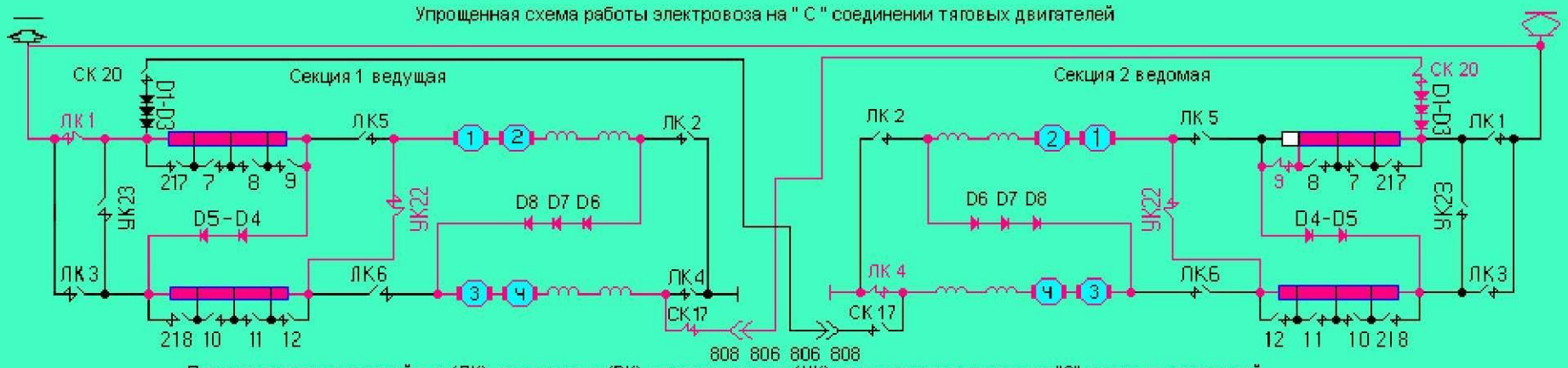
Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
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Ведомая 2 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
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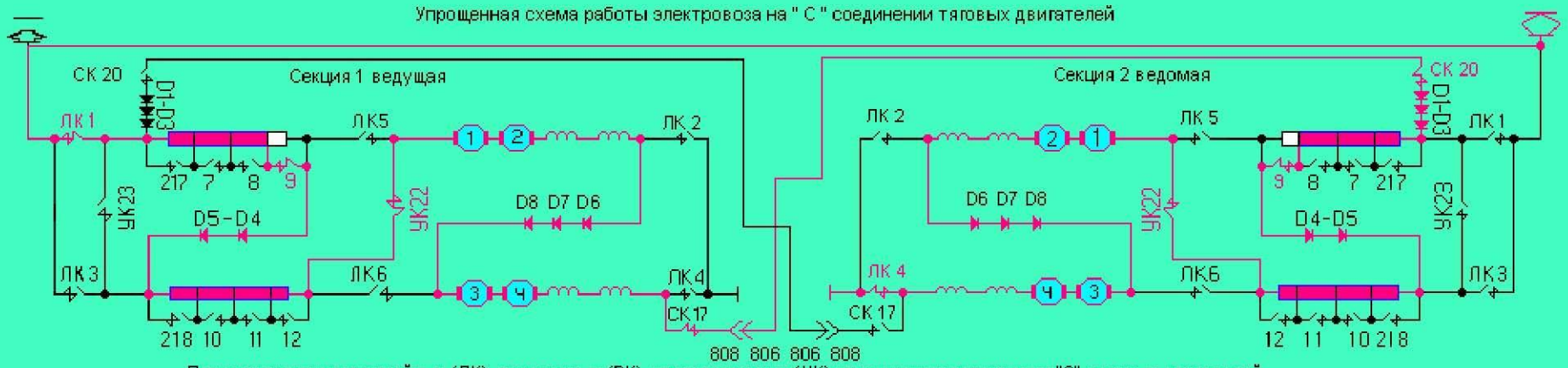
Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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Ведомая 2 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
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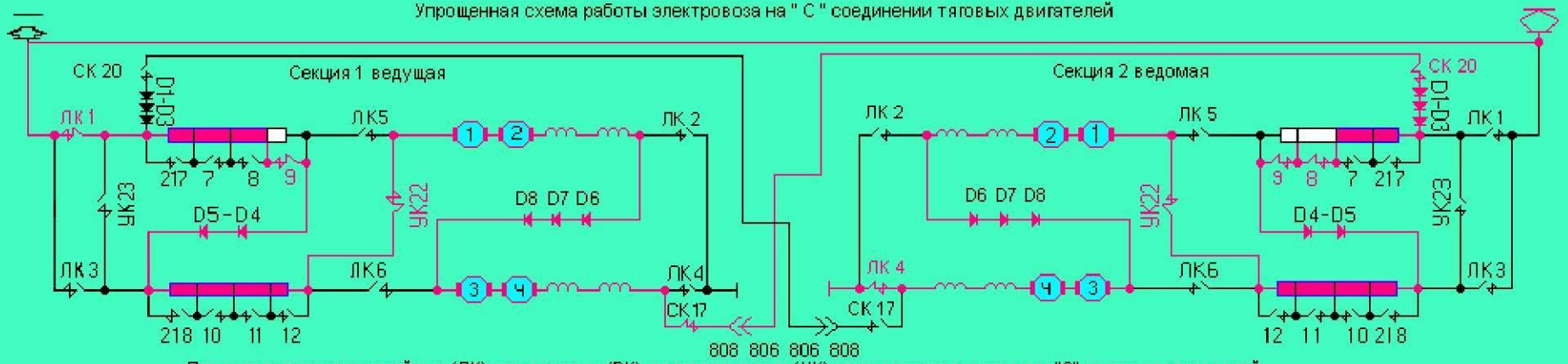
Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

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Ведомая 2 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
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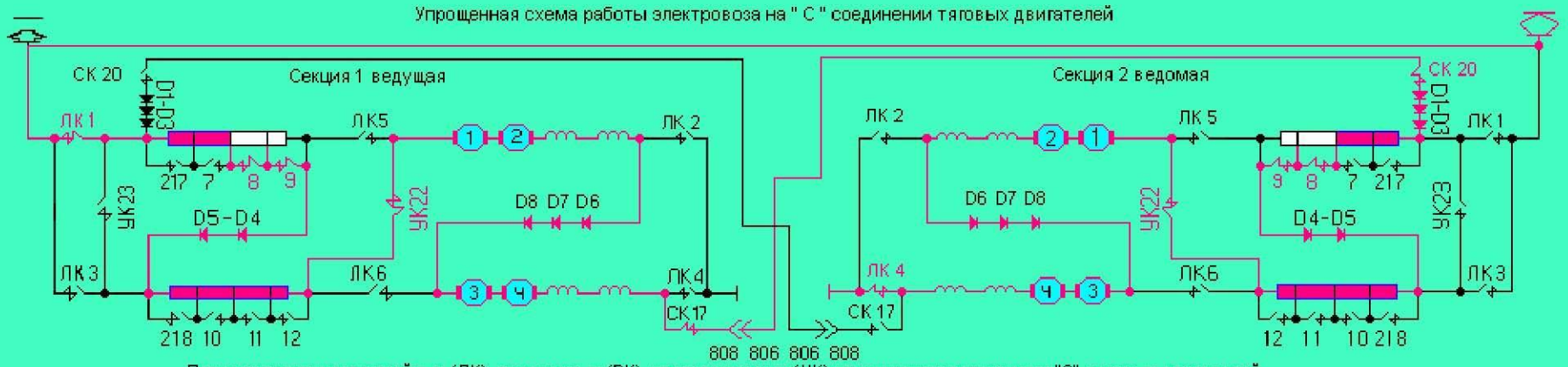
Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
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Ведомая 2 секция

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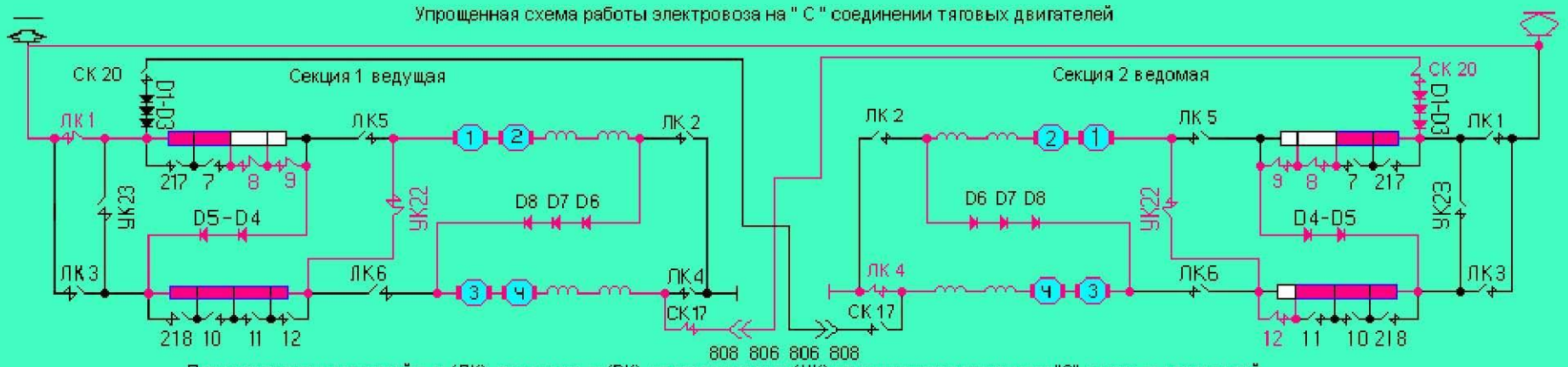
Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



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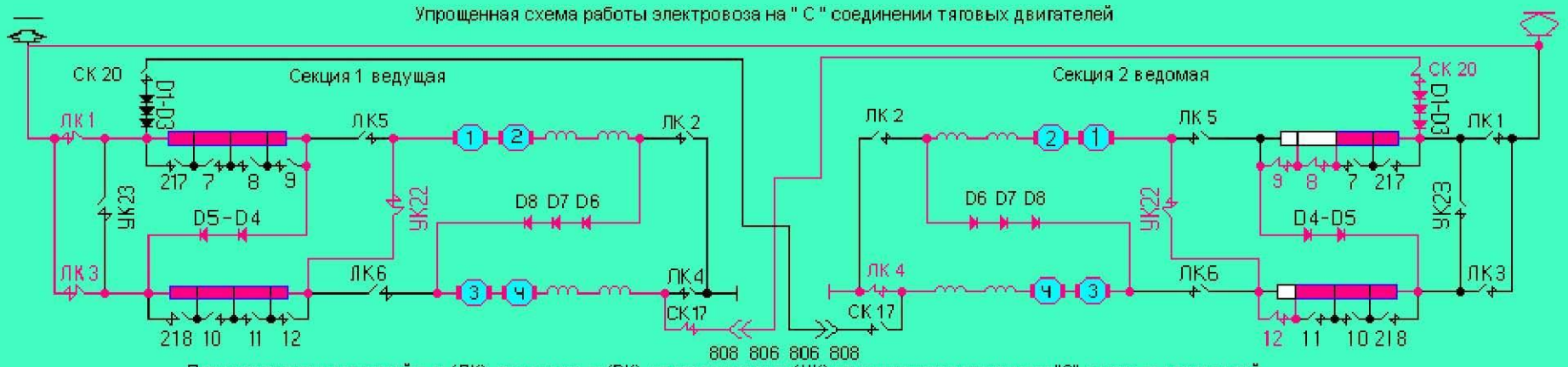
12				●	●				●	●				●	●		●	●	
13				●	●				●	●				●	●		●	●	
14				●	●				●	●				●	●		●	●	
15				●	●				●	●			●	●	●		●	●	
16				●	●				●	●			●	●	●		●	●	
17				●	●			●	●	●			●	●	●		●	●	
18				●	●			●	●	●			●	●	●		●	●	
19				●	●				●	●		●	●	●	●		●	●	
20				●	●				●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
2	●														●	●			
3	●									●					●	●			
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17	●		●		●				●	●			●	●	●	●			
18	●		●		●			●	●	●			●	●	●	●			
19	●		●		●			●	●	●			●	●	●	●			
20	●		●		●			●	●	●		●	●	●	●	●			
21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
2				●						●					●		●		
3				●						●					●		●		
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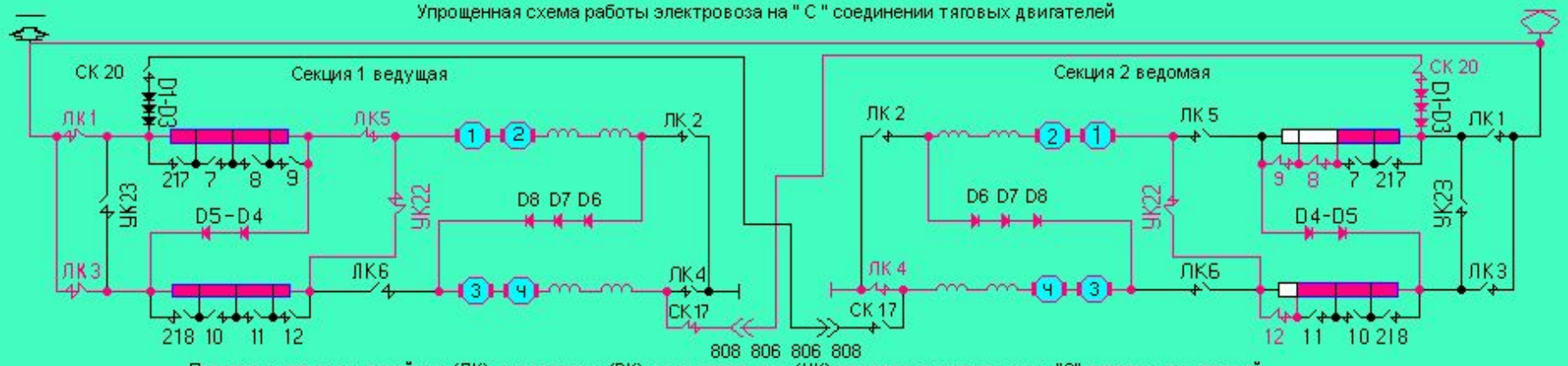
19				●	●			●	●	●		●	●	●	●		●	●	
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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3				●						●					●		●		
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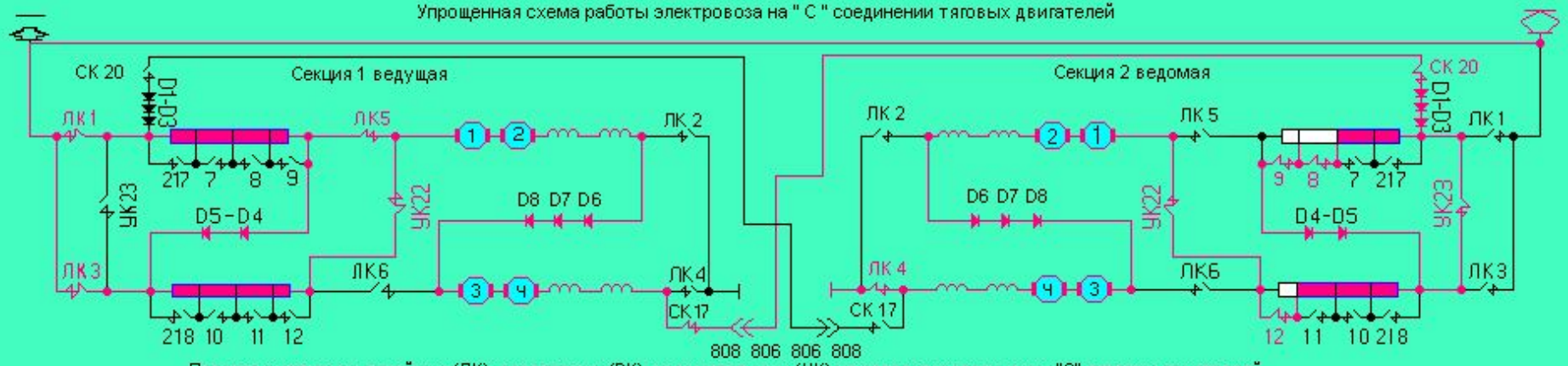
19				●	●				●	●		●	●	●	●		●	●	
20				●	●				●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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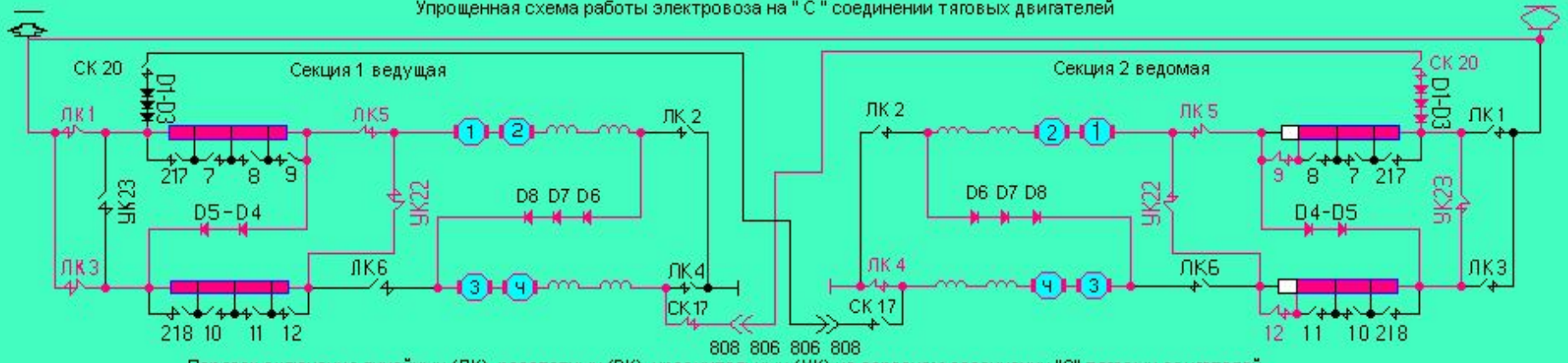
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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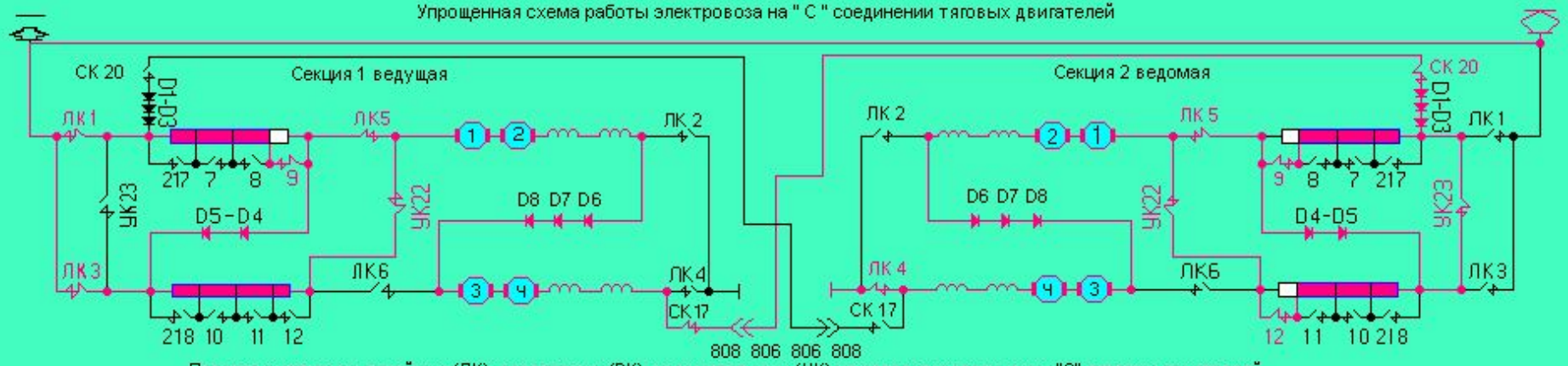
19				●	●			●	●	●		●	●	●	●		●	●	
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
2				●						●					●		●		
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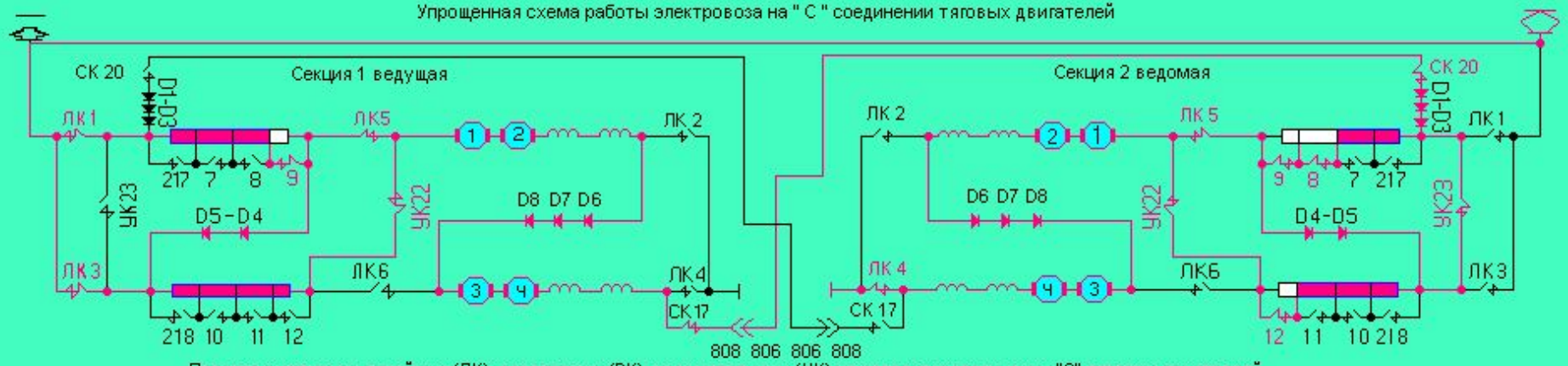
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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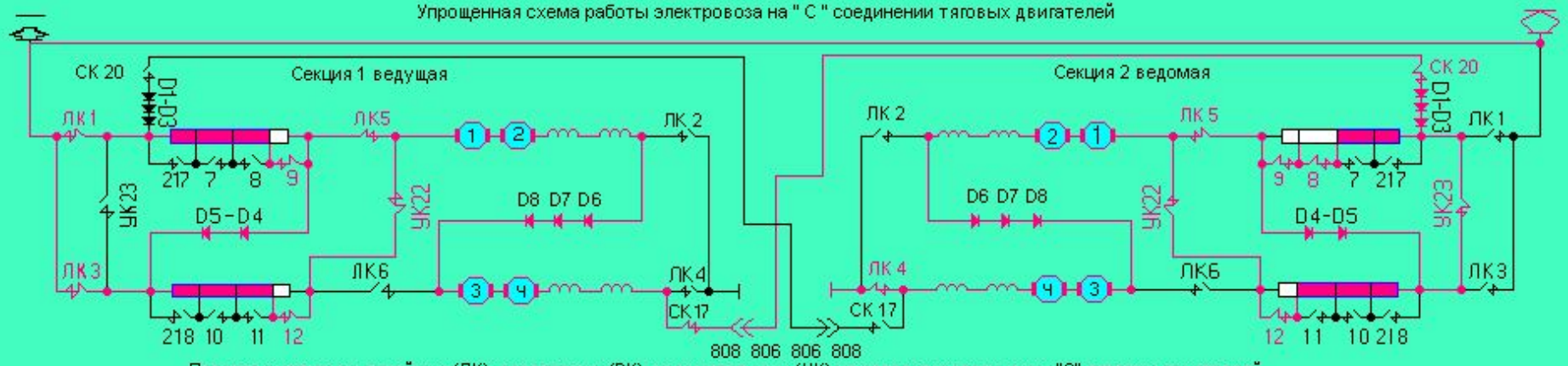
18				●	●			●	●	●			●	●	●		●	●	
19				●	●			●	●	●		●	●	●	●		●	●	
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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20	●		●		●			●	●	●		●	●	●	●	●			
21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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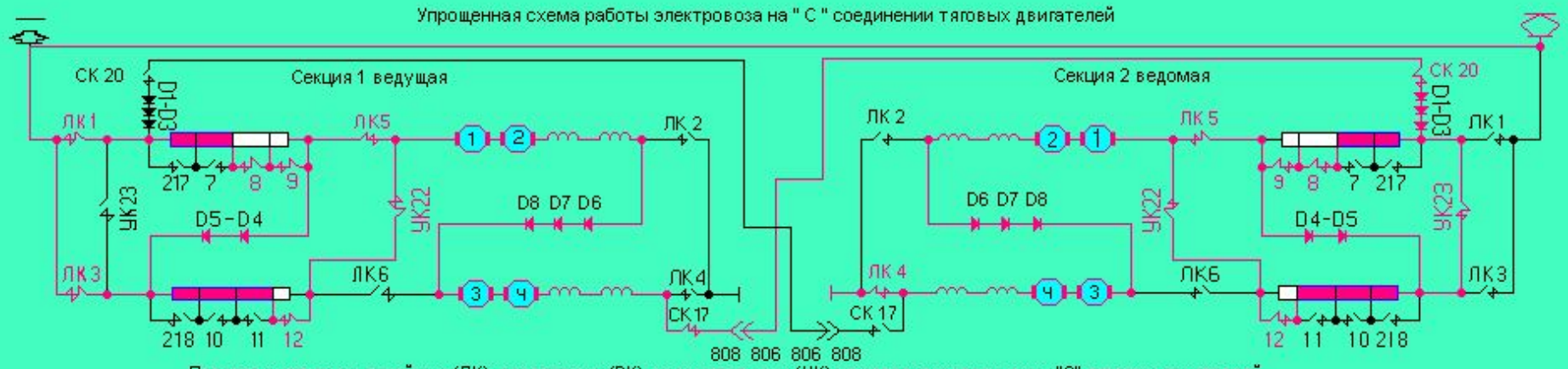
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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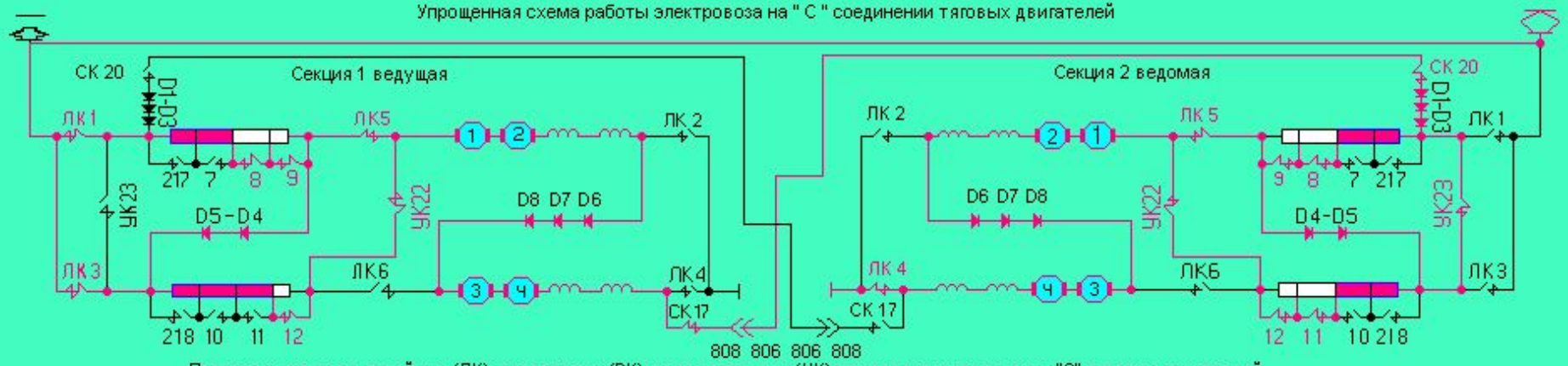
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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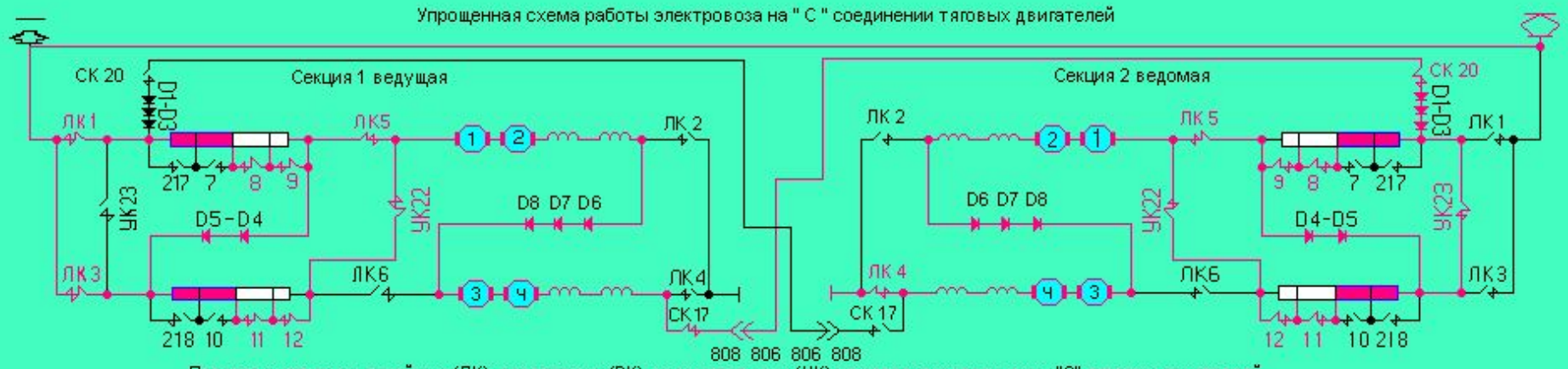
Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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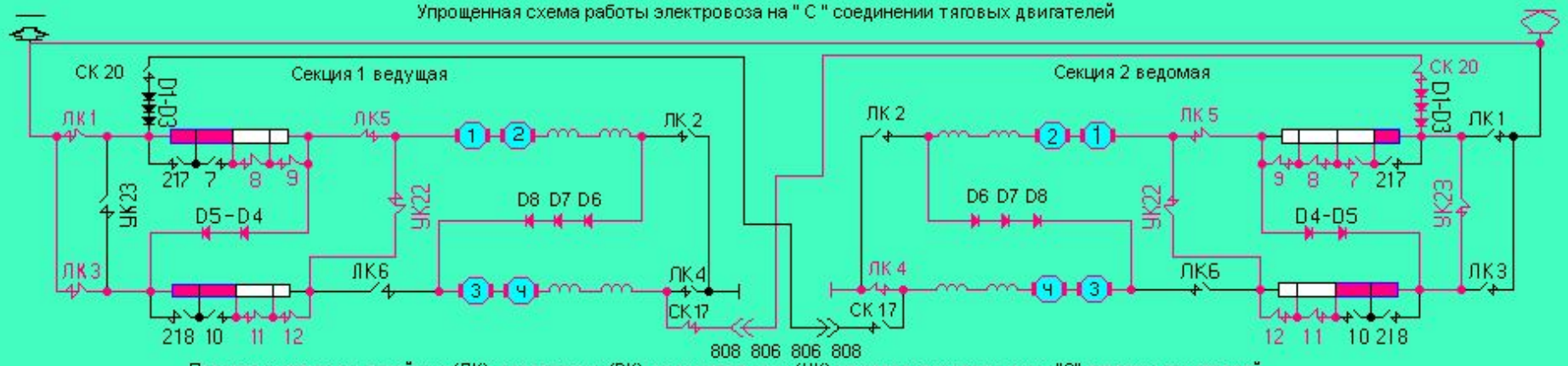
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
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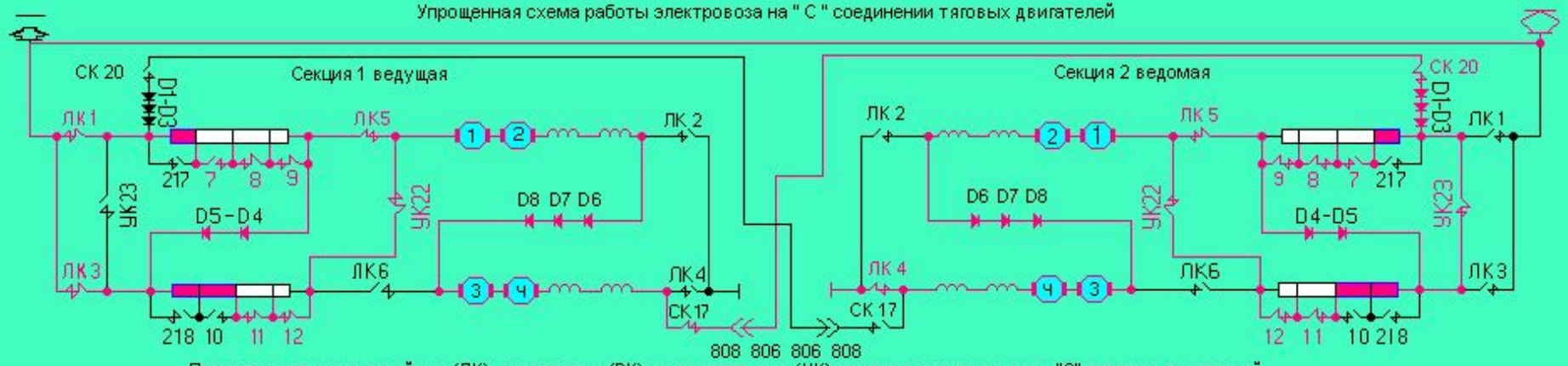
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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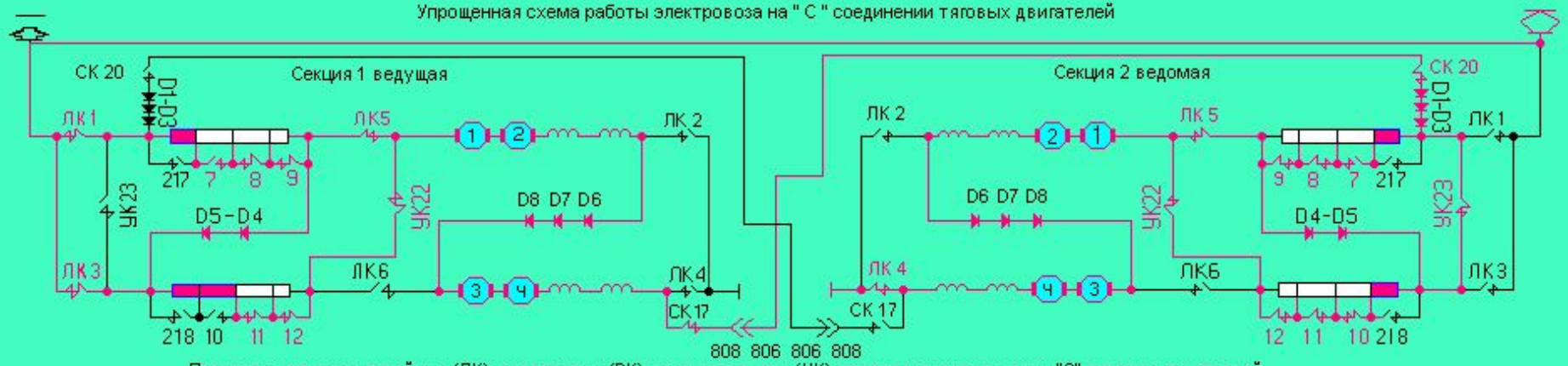
17	●		●		●				●	●			●	●	●	●			
18	●		●		●			●	●	●			●	●	●	●			
19	●		●		●			●	●	●			●	●	●	●			
20	●		●		●			●	●	●		●	●	●	●	●			
21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
2				●						●					●		●		
3				●						●					●		●		
4				●					●	●					●		●		
5				●					●	●					●		●		
6				●					●	●				●	●		●		
7				●					●	●				●	●		●		
8				●					●	●				●	●		●		
9				●					●	●				●	●		●	●	
10				●	●					●				●	●		●	●	
11				●	●					●				●	●		●	●	
12				●	●				●	●				●	●		●	●	
13				●	●				●	●				●	●		●	●	
14				●	●				●	●				●	●		●	●	
15				●	●				●	●			●	●	●		●	●	
16				●	●				●	●			●	●	●		●	●	
17				●	●			●	●	●			●	●	●		●	●	
18				●	●			●	●	●			●	●	●		●	●	
19				●	●			●	●	●		●	●	●	●		●	●	
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
2	●														●	●			
3	●									●					●	●			
4	●									●					●	●			
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18	●		●		●			●	●	●			●	●	●	●			
19	●		●		●			●	●	●			●	●	●	●			
20	●		●		●			●	●	●		●	●	●	●	●			
21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
2				●						●					●		●		
3				●						●					●		●		
4				●					●	●					●		●		
5				●					●	●					●		●		
6				●					●	●				●	●		●		
7				●					●	●				●	●		●		
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10				●	●					●				●	●		●	●	
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12				●	●				●	●				●	●		●	●	
13				●	●				●	●				●	●		●	●	
14				●	●				●	●				●	●		●	●	
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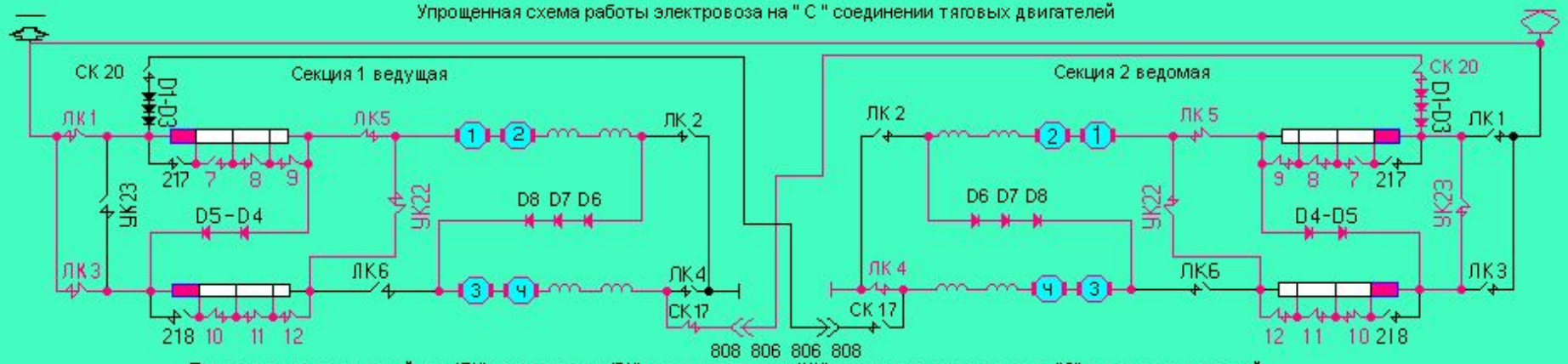
16				●	●				●	●			●	●	●		●	●	
17				●	●			●	●	●			●	●	●		●	●	
18				●	●			●	●	●			●	●	●		●	●	
19				●	●			●	●	●		●	●	●	●		●	●	
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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12	●		●		●					●					●	●			
13	●		●		●					●				●	●	●			
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15	●		●		●				●	●				●	●	●			
16	●		●		●				●	●			●	●	●	●			
17	●		●		●				●	●			●	●	●	●			
18	●		●		●			●	●	●			●	●	●	●			
19	●		●		●			●	●	●			●	●	●	●			
20	●		●		●			●	●	●		●	●	●	●	●			
21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
2				●						●					●		●		
3				●						●					●		●		
4				●					●	●					●		●		
5				●					●	●					●		●		
6				●					●	●				●	●		●		
7				●					●	●				●	●		●		
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10				●	●					●				●	●		●	●	
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12				●	●				●	●				●	●		●	●	
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14				●	●				●	●				●	●		●	●	
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17				●	●			●	●	●			●	●	●		●	●	
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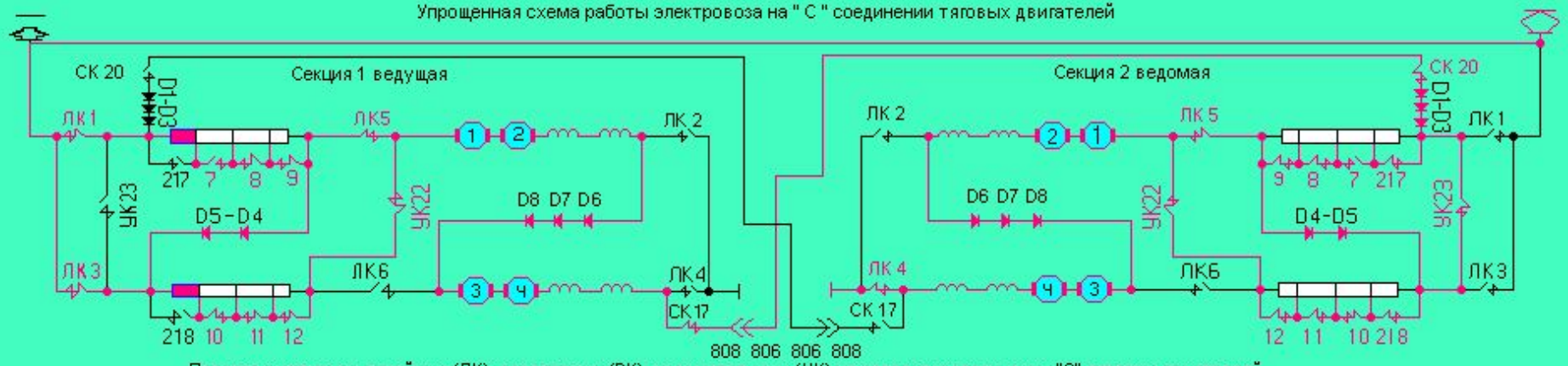
19				●	●				●	●		●	●	●	●		●	●	
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
2	●														●	●			
3	●									●					●	●			
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7	●		●												●	●			
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17	●		●		●				●	●			●	●	●	●			
18	●		●		●			●	●	●			●	●	●	●			
19	●		●		●			●	●	●			●	●	●	●			
20	●		●		●			●	●	●		●	●	●	●	●			
21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
2				●						●					●		●		
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4				●					●	●					●		●		
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7				●					●	●				●	●		●		
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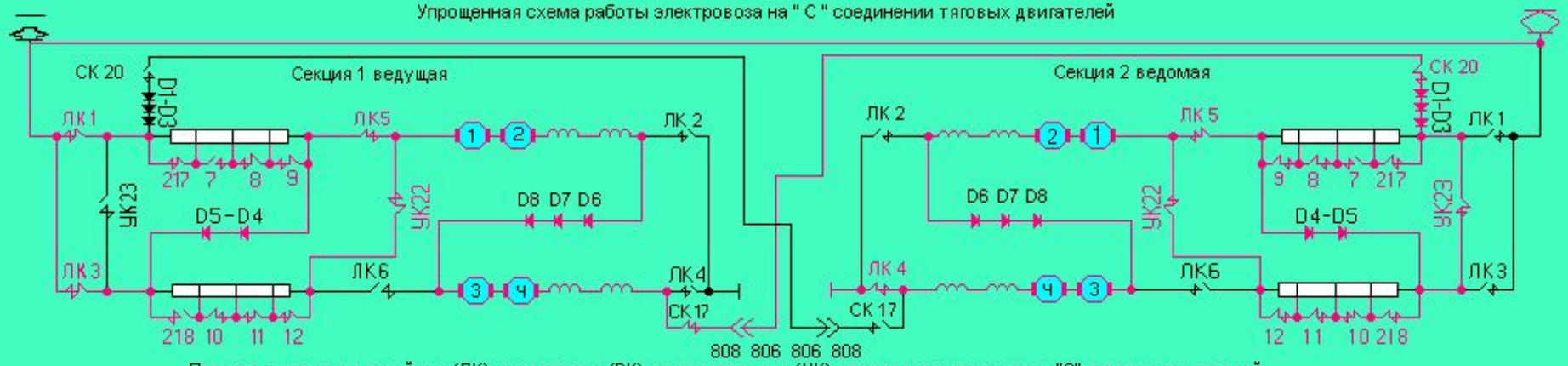
13				●	●				●	●				●	●		●	●	
14				●	●				●	●				●	●		●	●	
15				●	●				●	●			●	●	●		●	●	
16				●	●				●	●			●	●	●		●	●	
17				●	●			●	●	●			●	●	●		●	●	
18				●	●			●	●	●			●	●	●		●	●	
19				●	●			●	●	●		●	●	●	●		●	●	
20				●	●			●	●	●		●	●	●	●		●	●	
21				●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
2	●														●	●			
3	●									●					●	●			
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9	●		●		●										●	●			
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21	●		●		●			●	●	●		●	●	●	●	●			
хп	●		●		●		●	●	●	●	●	●	●	●	●	●			

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●		●		
2				●						●					●		●		
3				●						●					●		●		
4				●					●	●					●		●		
5				●					●	●					●		●		
6				●					●	●				●	●		●		
7				●					●	●				●	●		●		
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11				●	●					●				●	●		●	●	
12				●	●				●	●				●	●		●	●	
13				●	●				●	●				●	●		●	●	
14				●	●				●	●				●	●		●	●	
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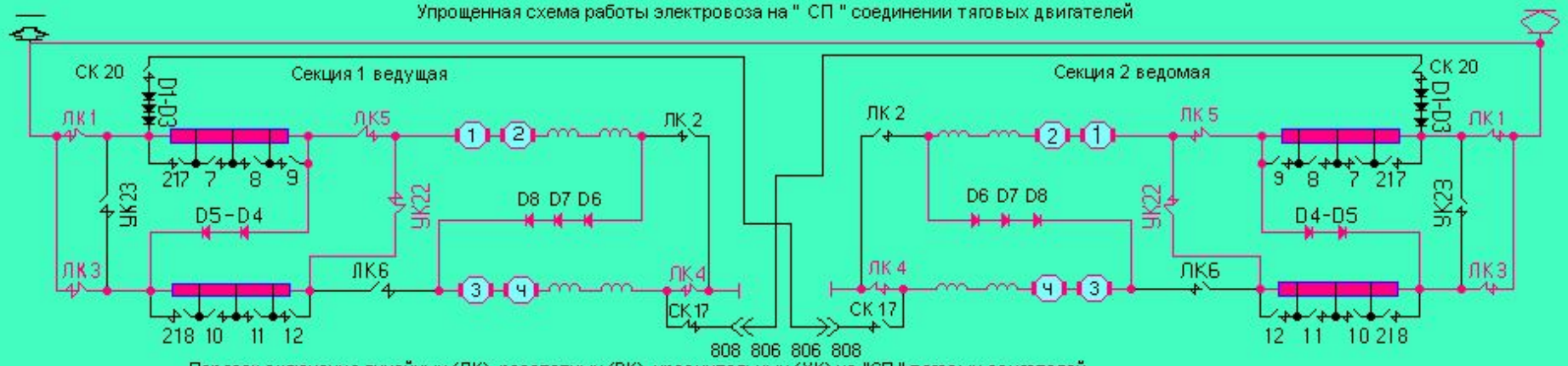
16				●	●				●	●			●	●	●		●	●	
17				●	●			●	●	●			●	●	●		●	●	
18				●	●			●	●	●			●	●	●		●	●	
19				●	●				●	●		●	●	●	●		●	●	
20				●	●				●	●		●	●	●	●		●	●	
21				●	●		●		●	●		●	●	●	●		●	●	
хп				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
2	●		●	●	●					●					●				
3	●		●	●	●					●			●		●				
4	●		●	●	●			●		●			●		●				
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7	●		●	●	●		●	●		●				●	●				
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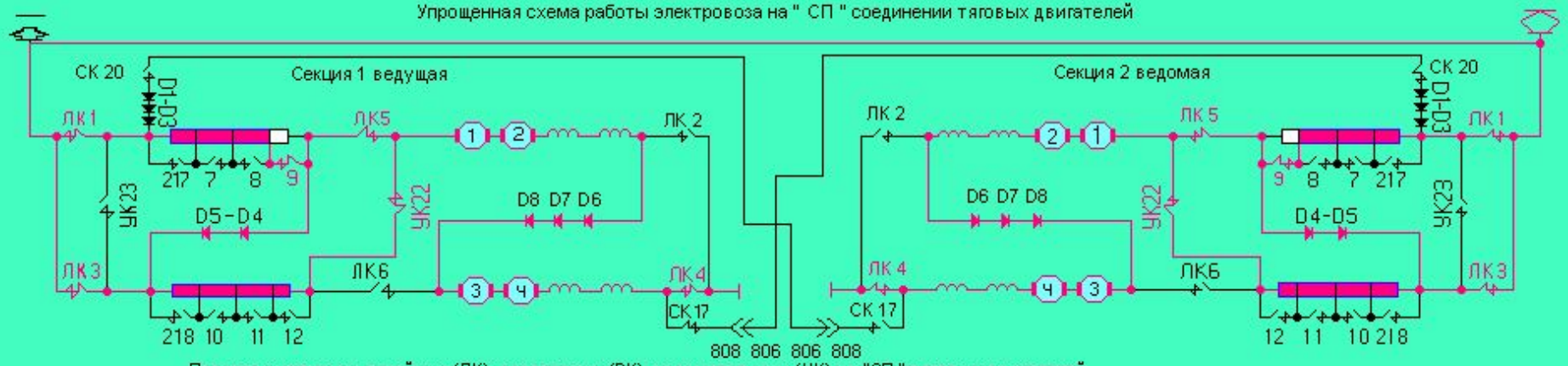
13	●		●	●	●				●	●			●	●	●				
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
2	●		●	●	●					●					●				
3	●		●	●	●					●			●		●				
4	●		●	●	●			●		●			●		●				
5	●		●	●	●		●	●		●			●		●				
6	●		●	●	●		●	●		●		●	●		●				
7	●		●	●	●		●	●		●				●	●				
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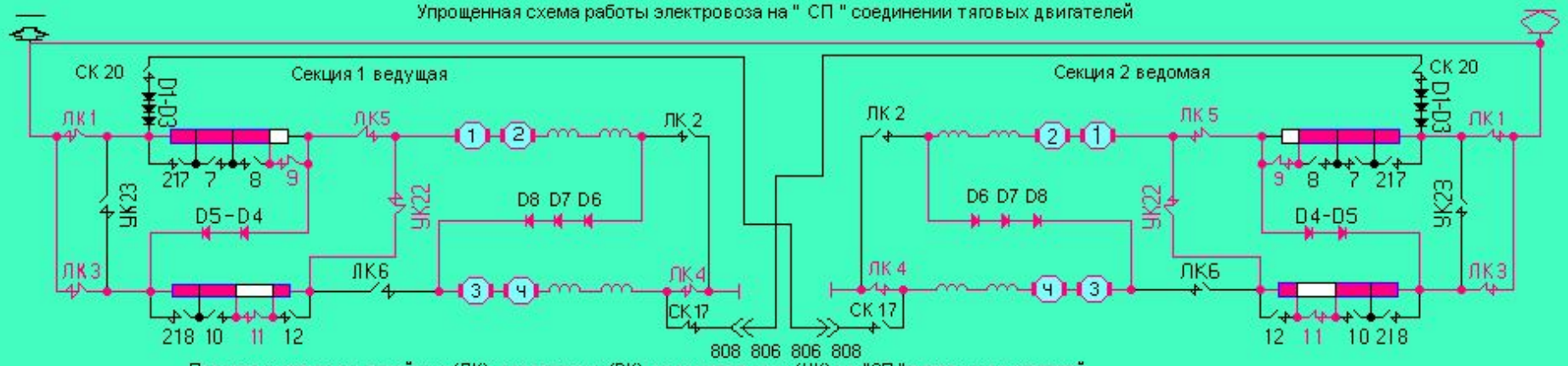
12	●		●	●	●		●		●	●	●	●		●	●				
13	●		●	●	●				●	●			●	●	●				
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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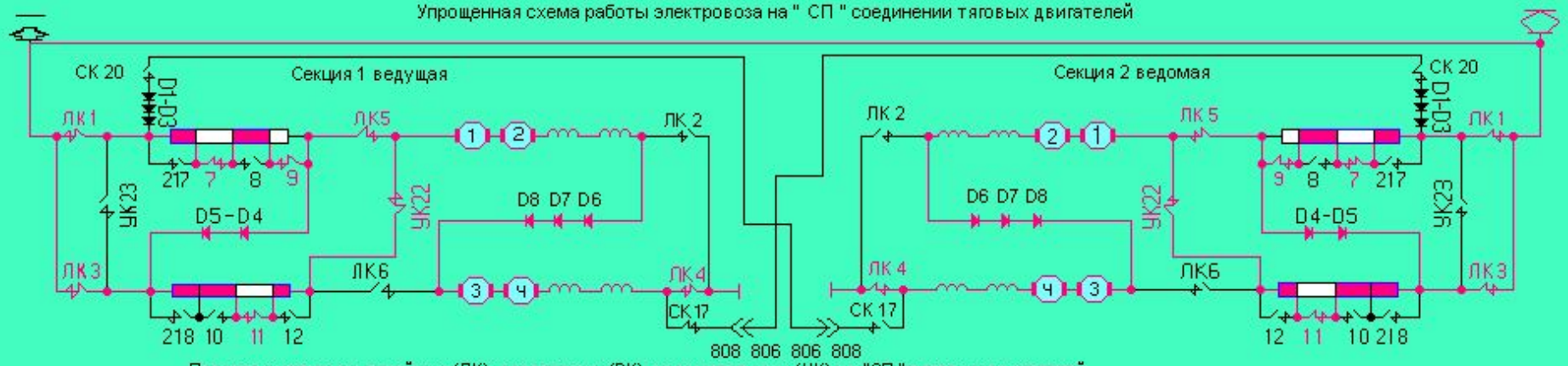
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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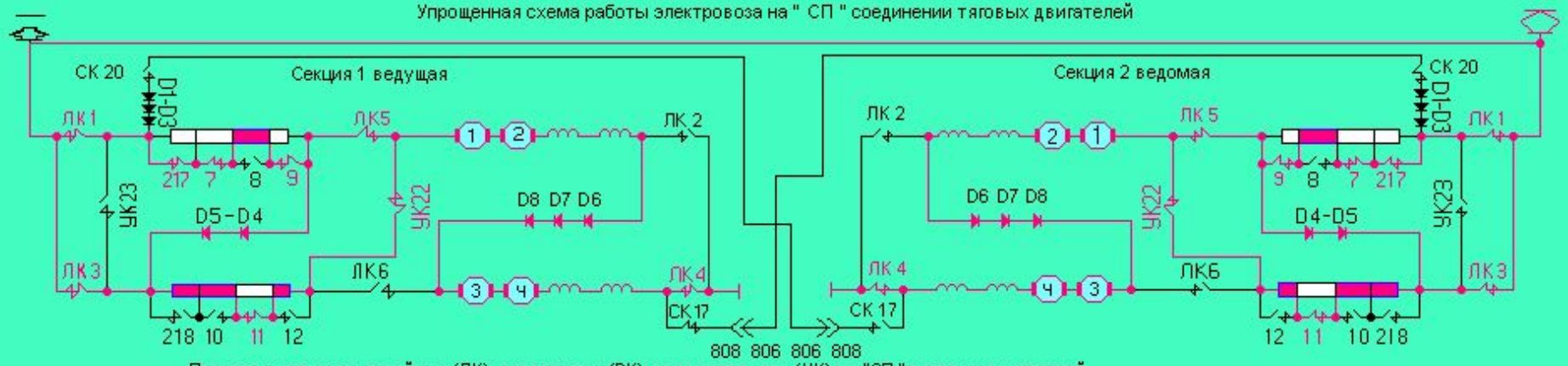
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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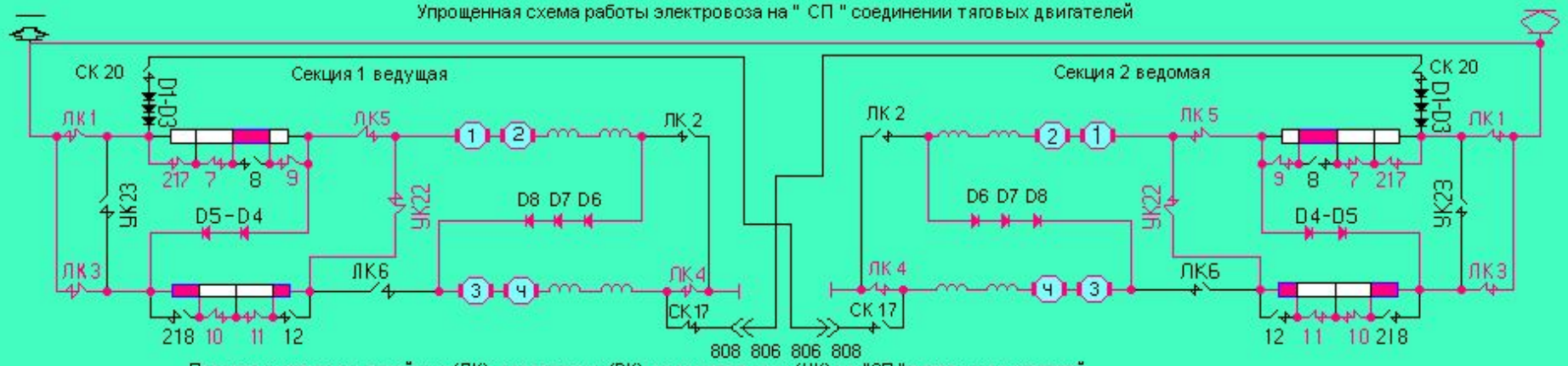
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
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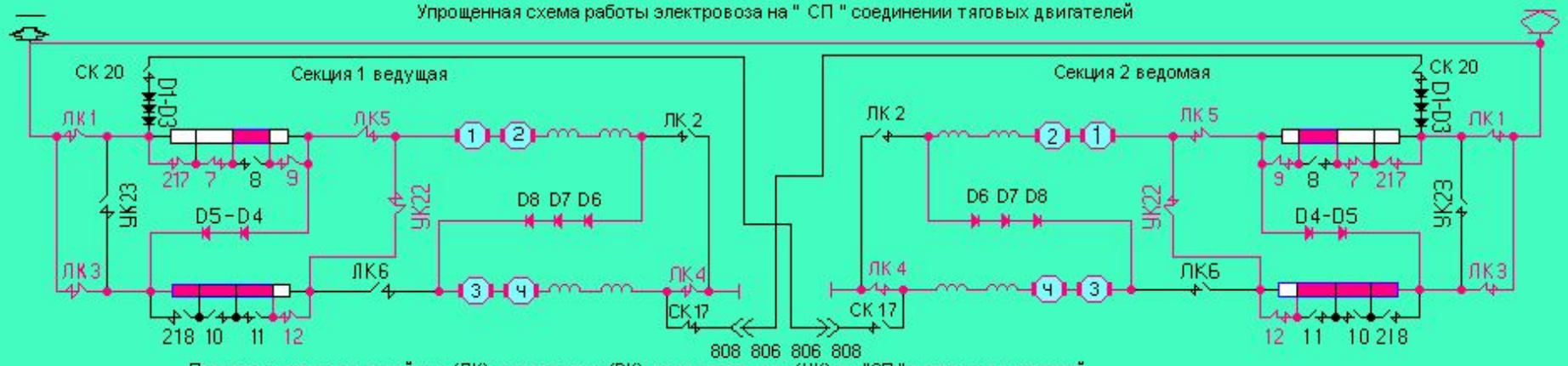
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
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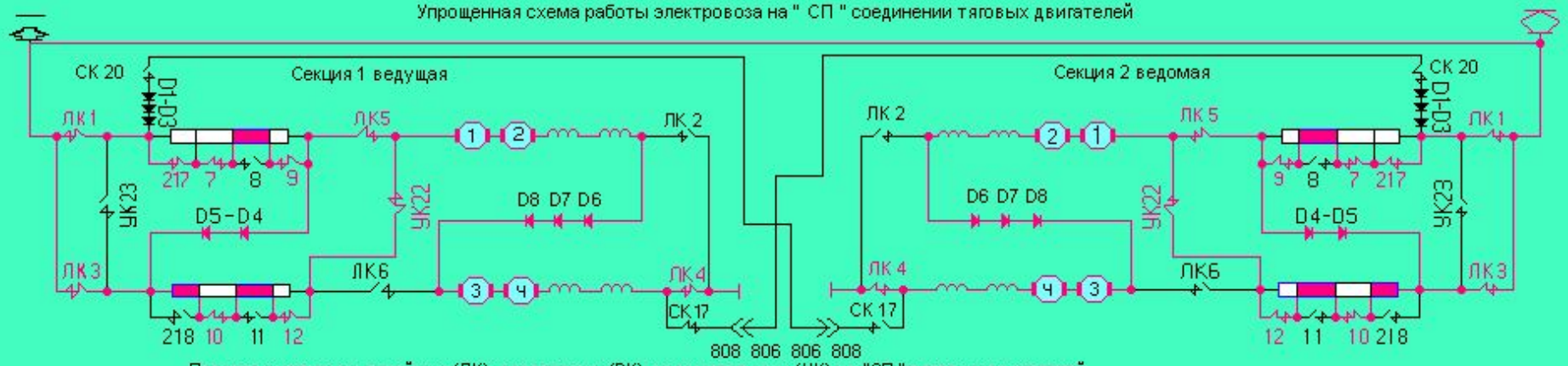
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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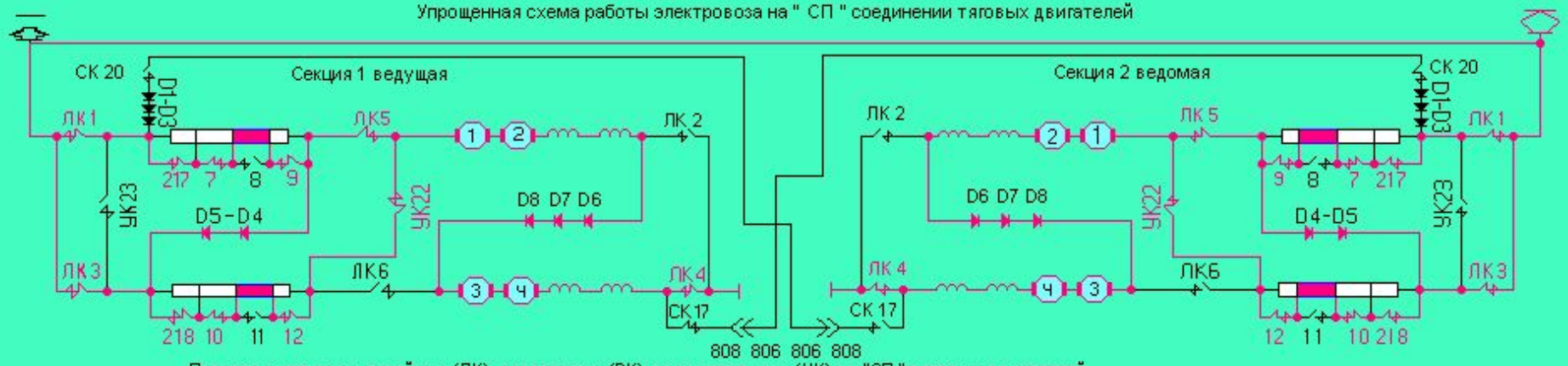
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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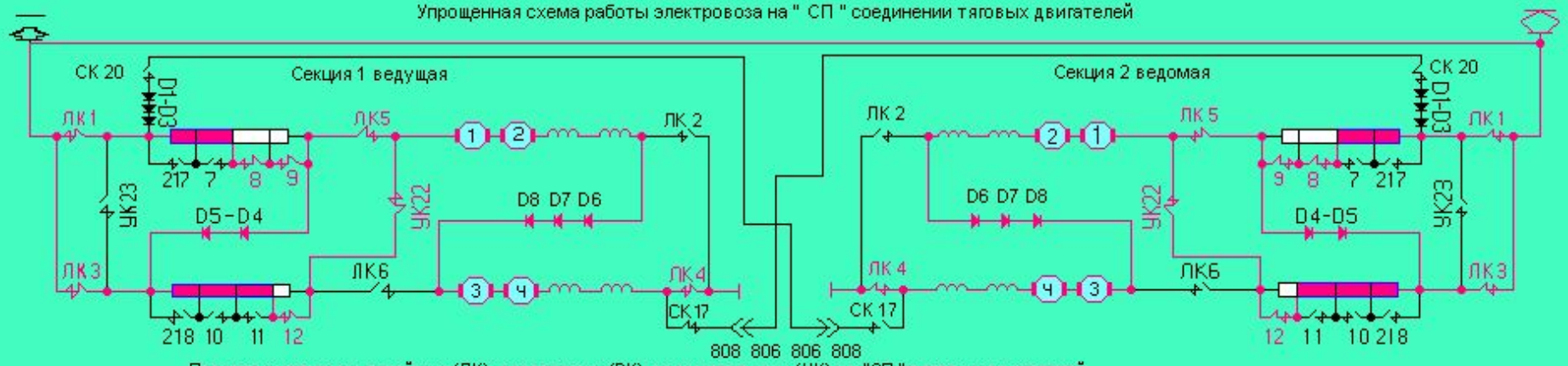
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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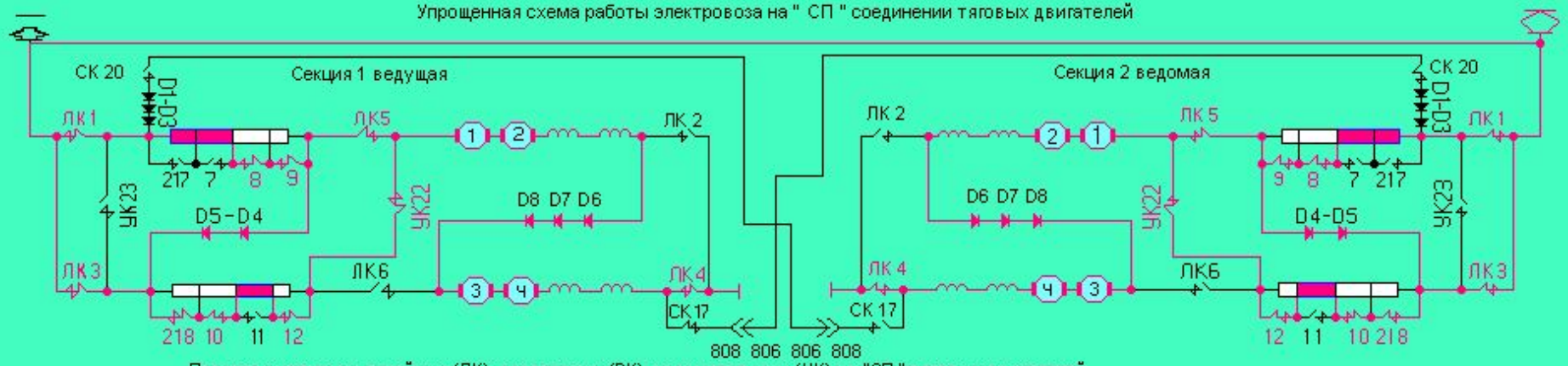
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
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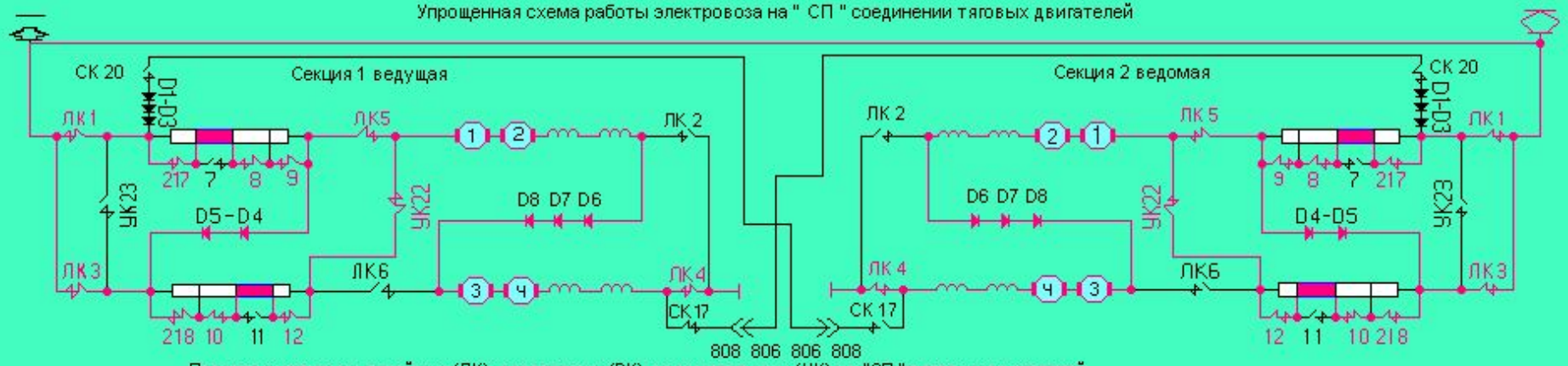
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение	№	Линейные (ЛК)						Реостатные (РК)										УК	
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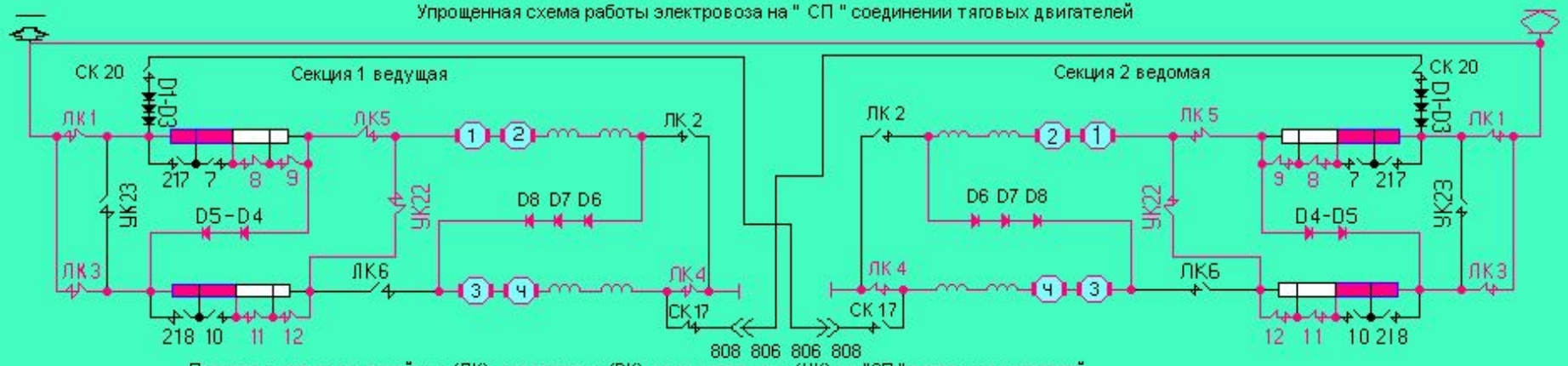
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

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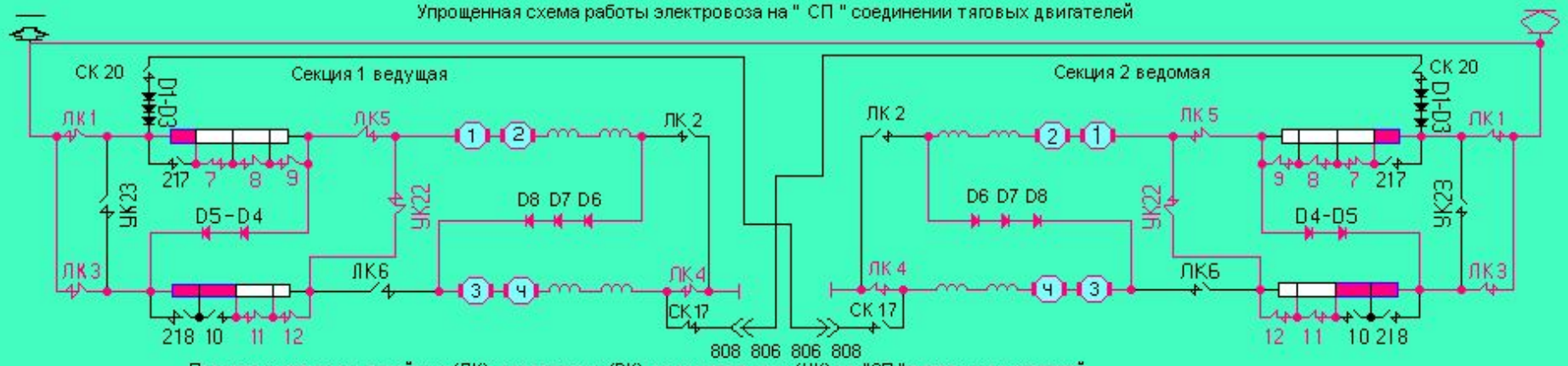
Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



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Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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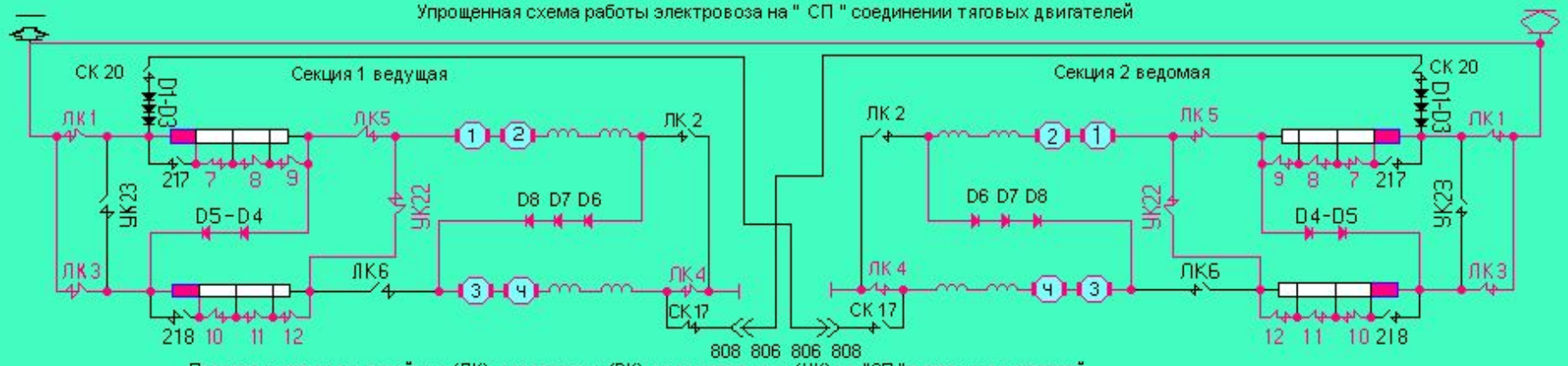
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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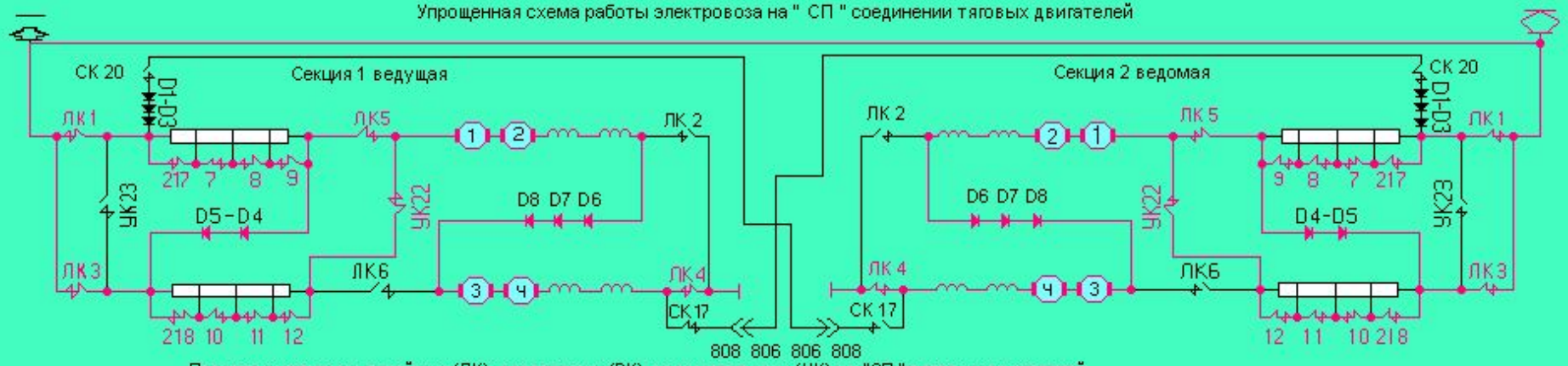
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " СП " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП " тяговых двигателей

"СП" соединение

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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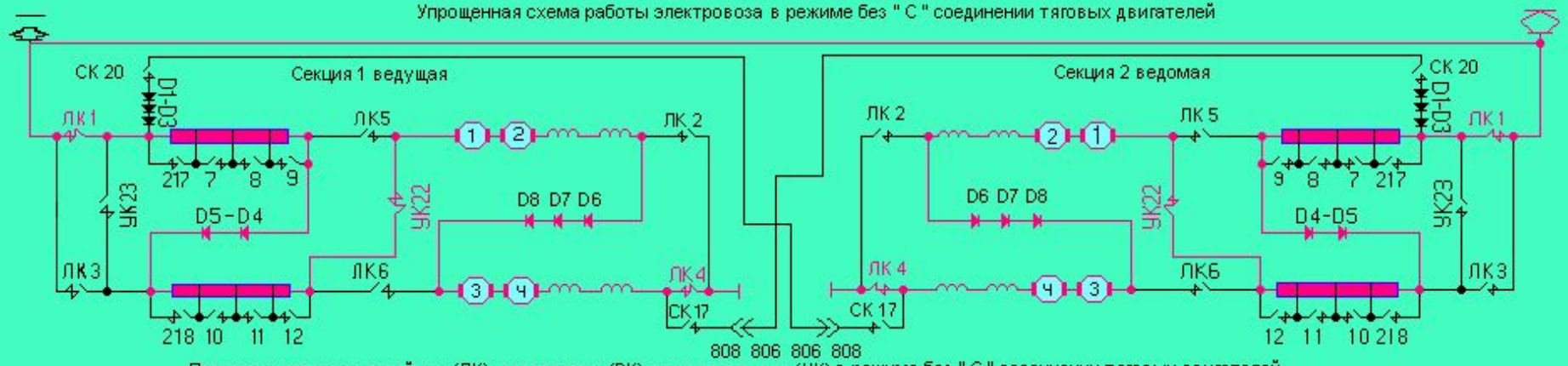
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК	
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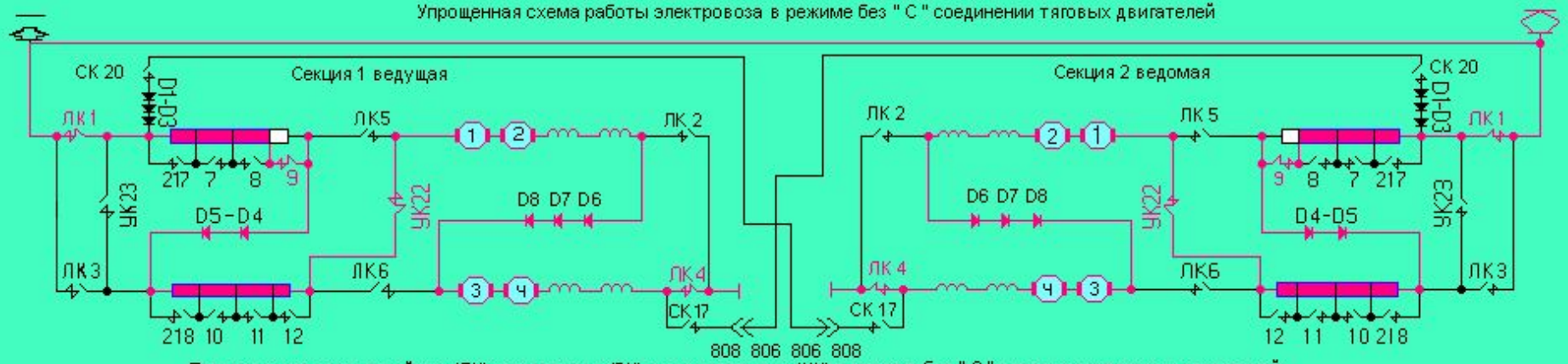
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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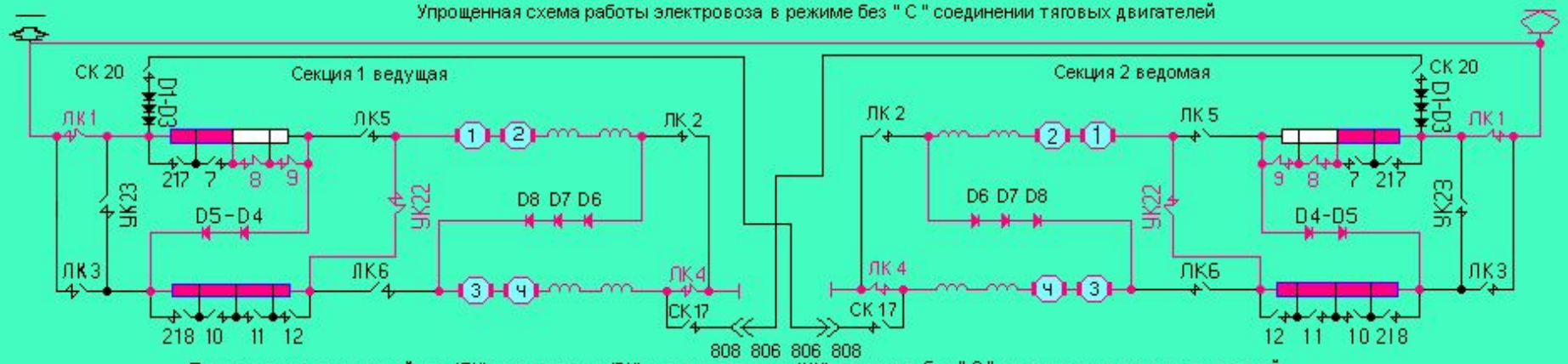
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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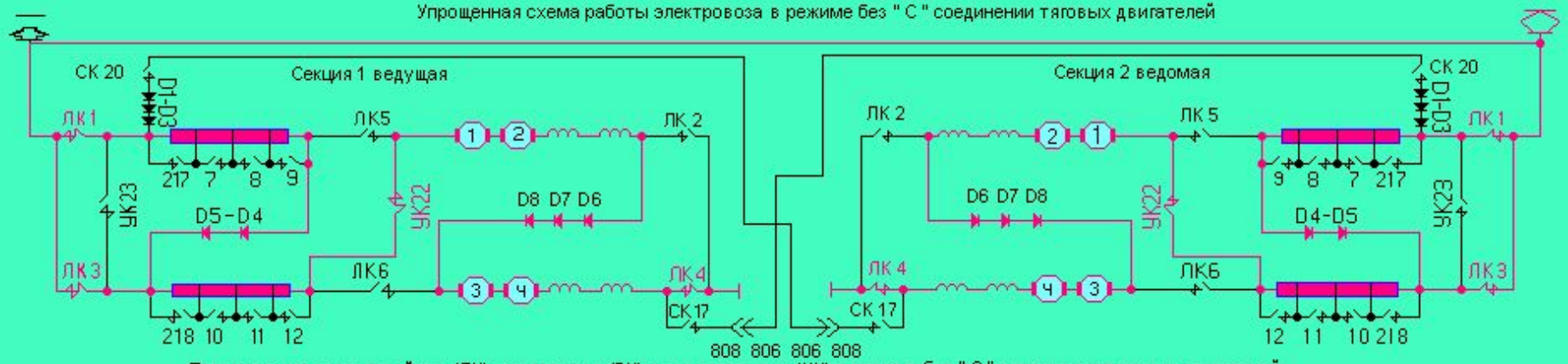
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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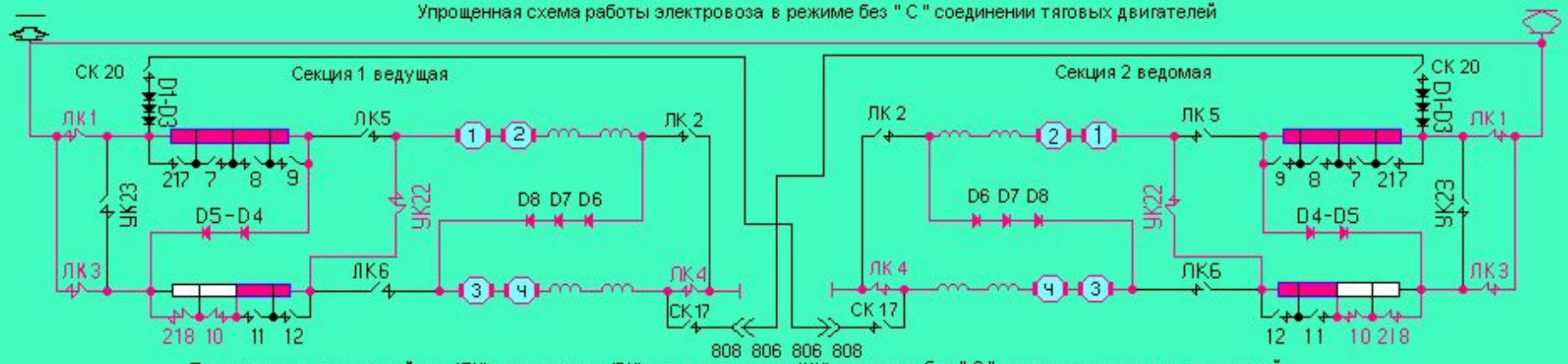
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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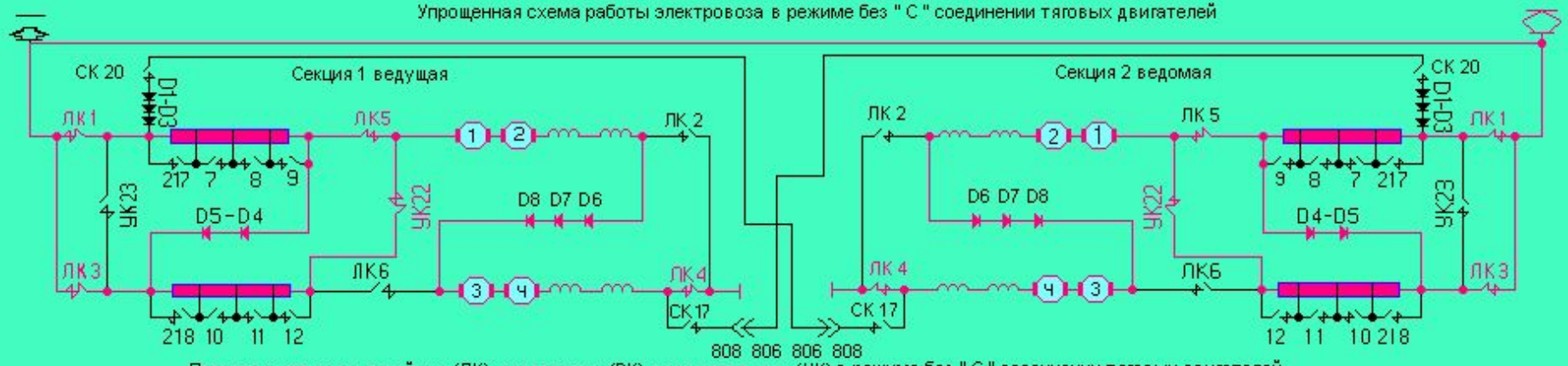
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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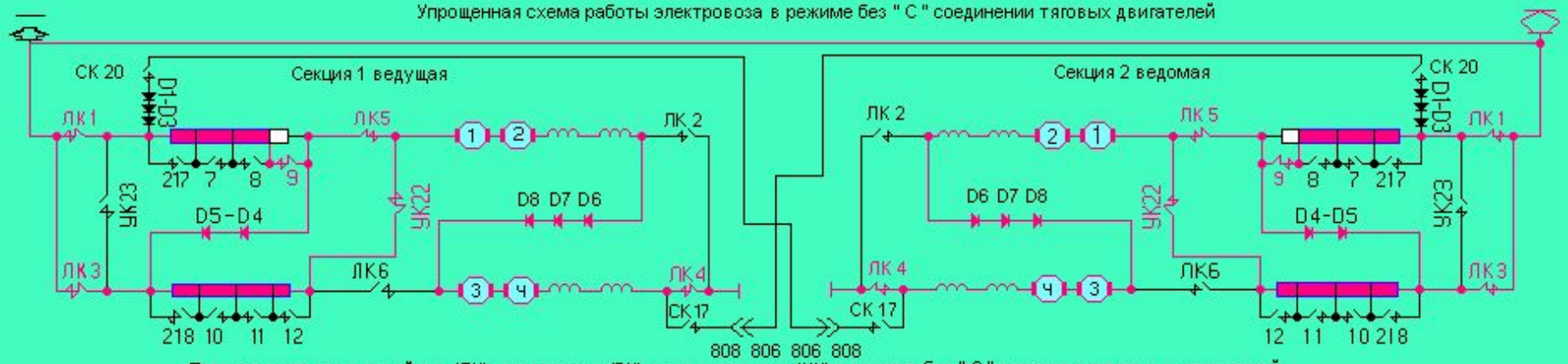
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

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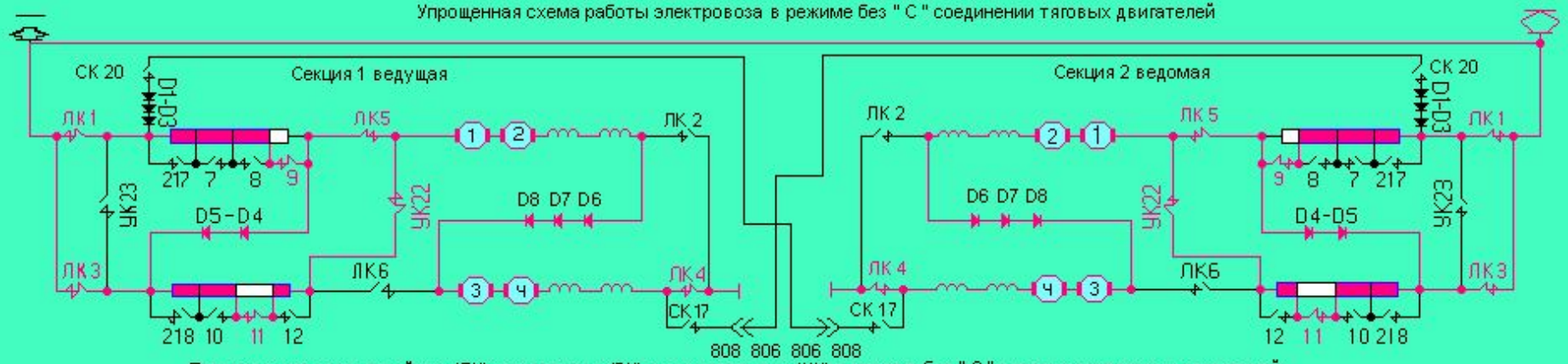
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
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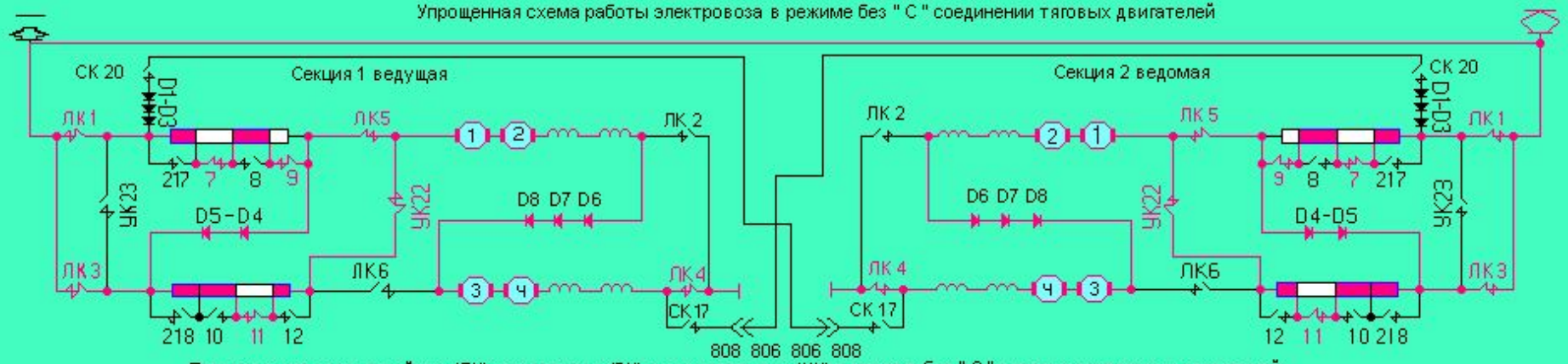
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
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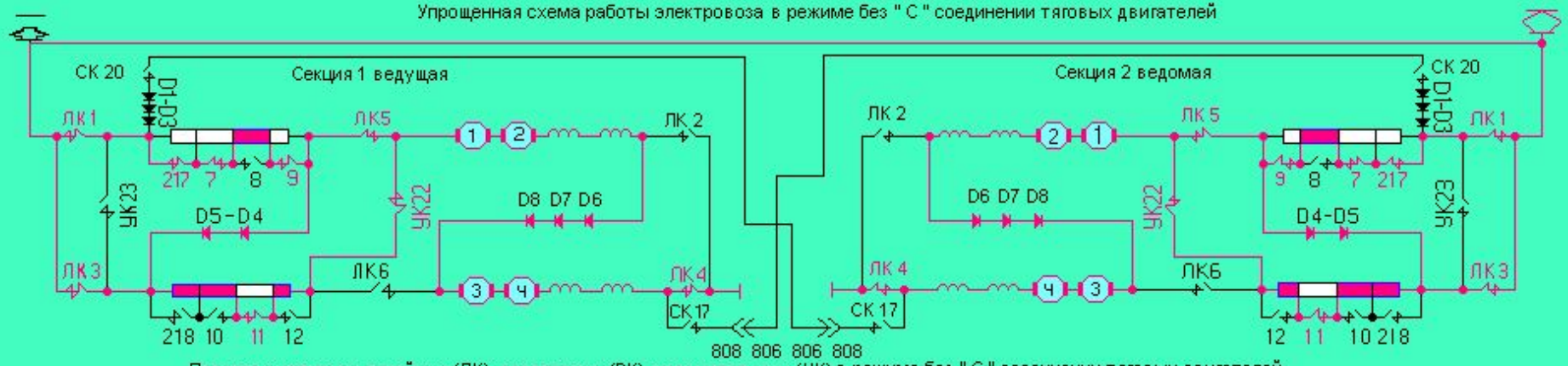
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



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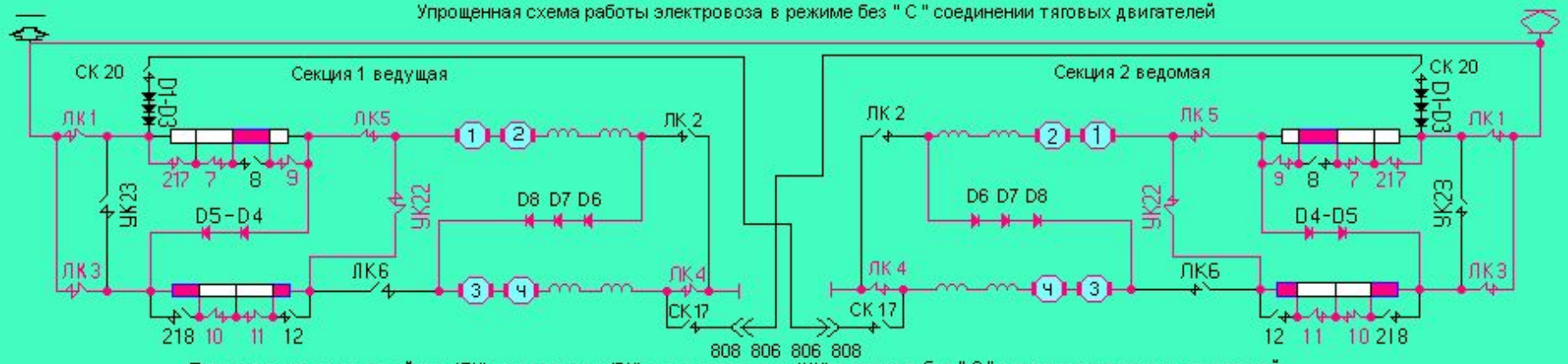
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



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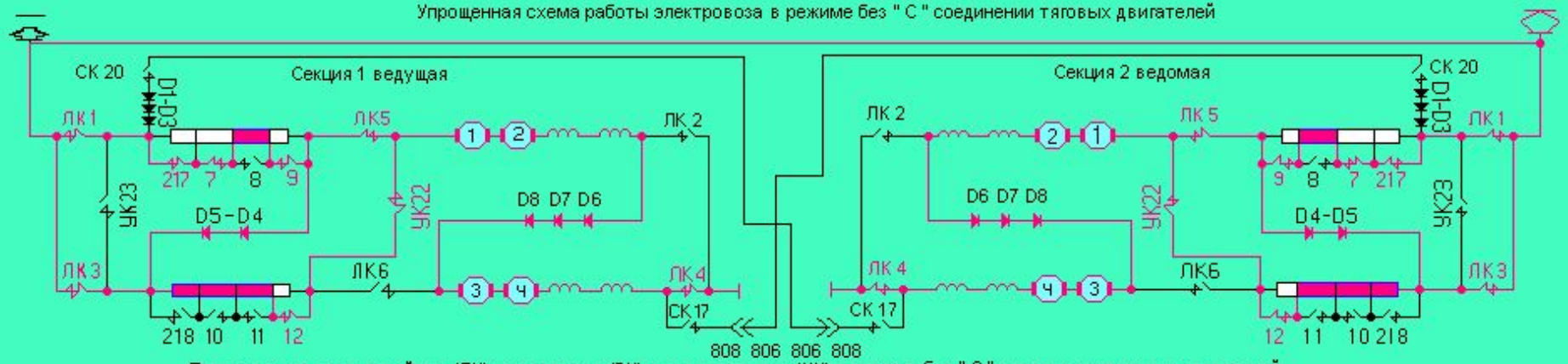
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

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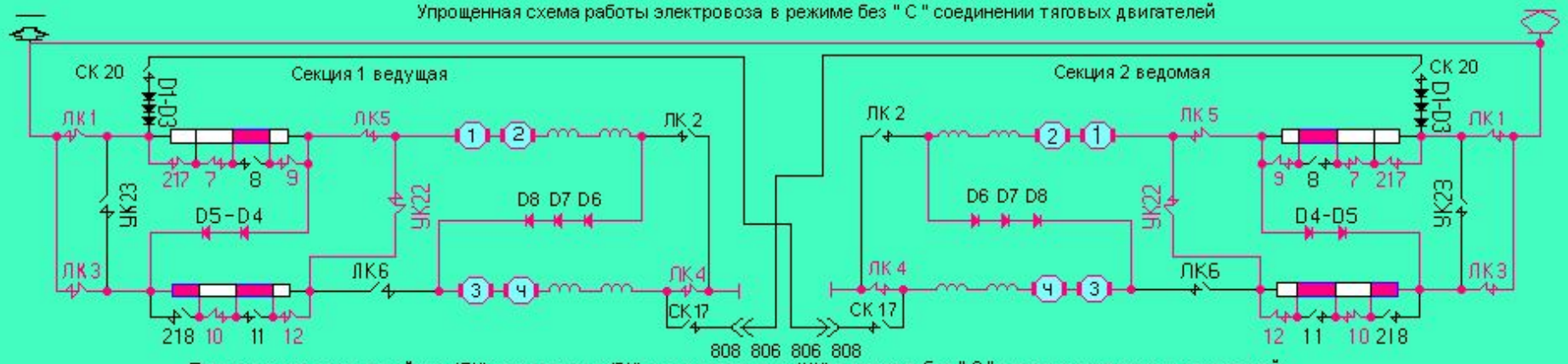
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

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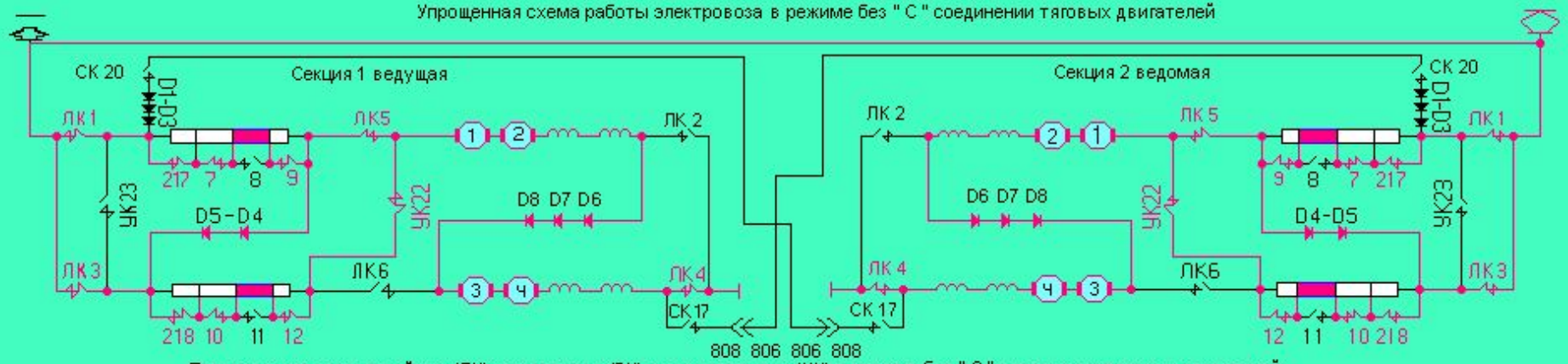
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

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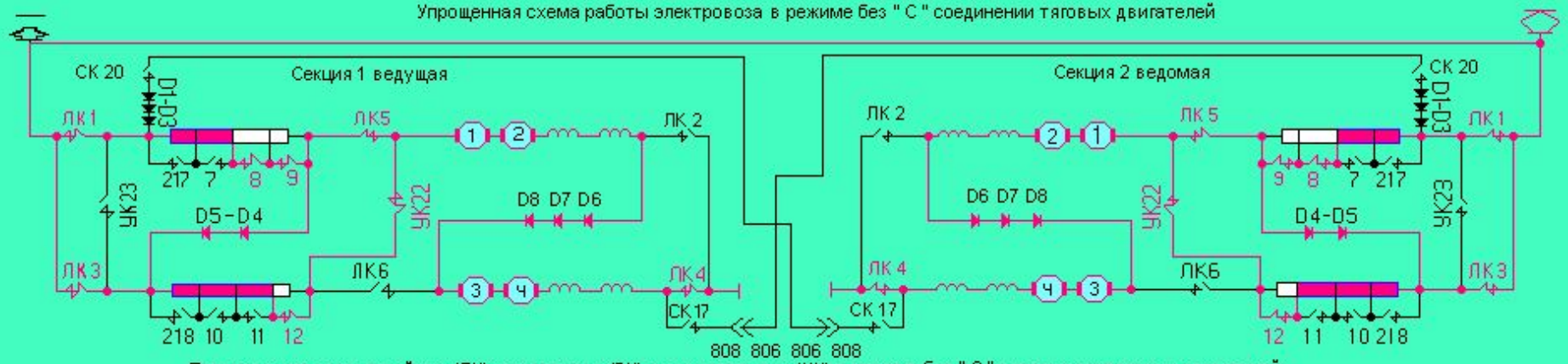
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

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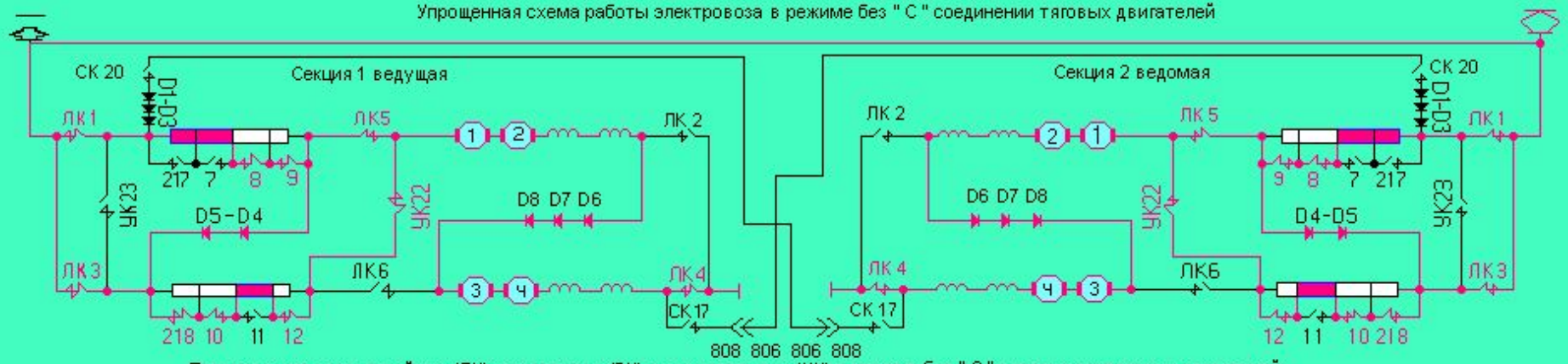
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



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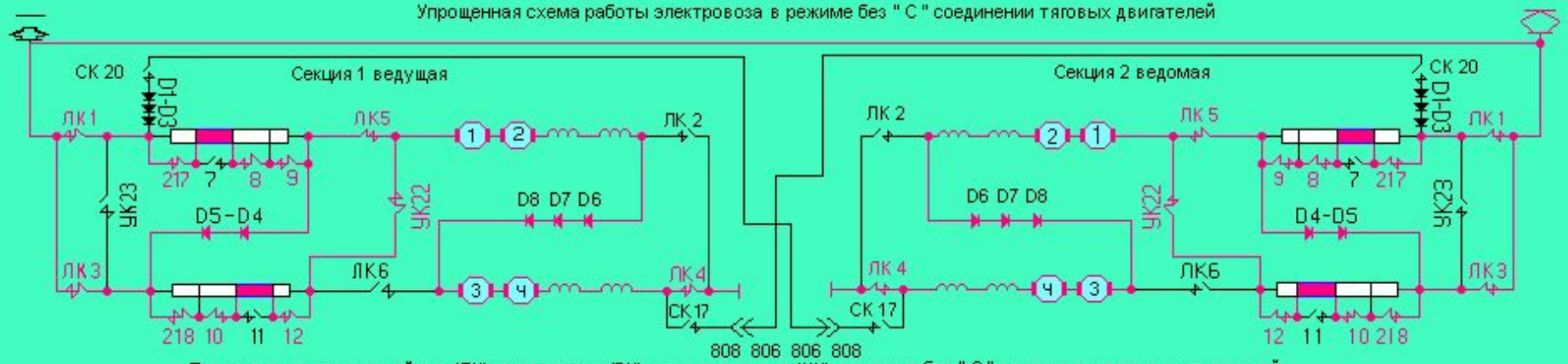
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



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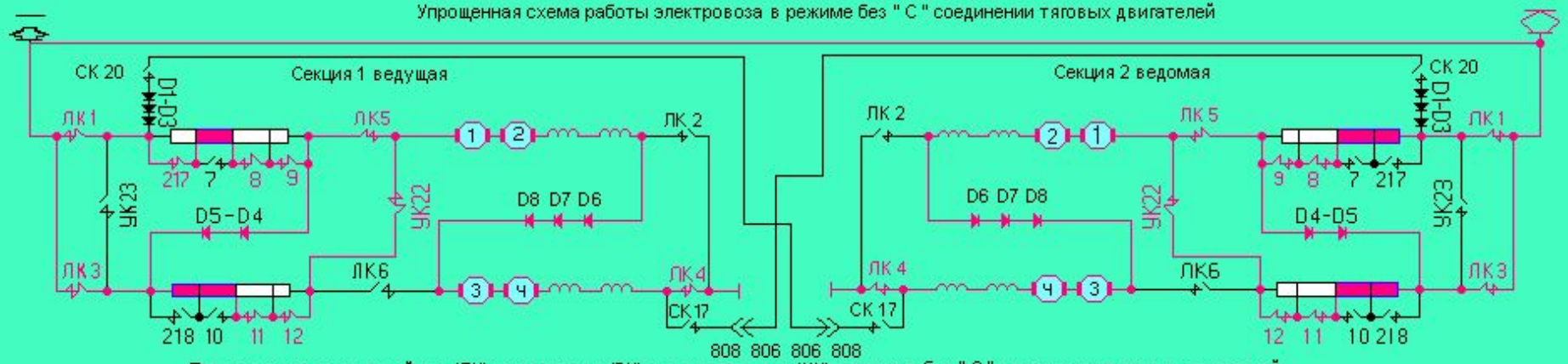
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



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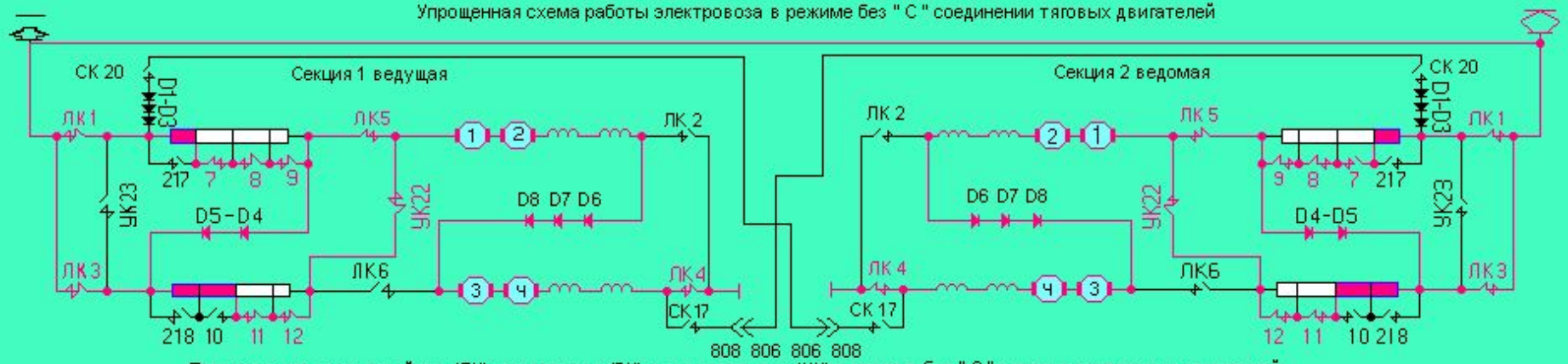
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без " С " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
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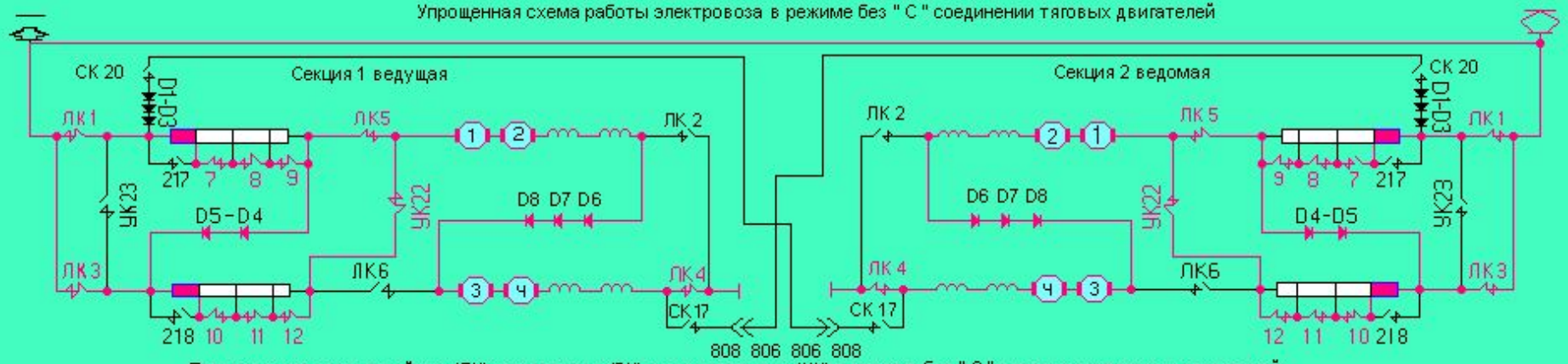
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



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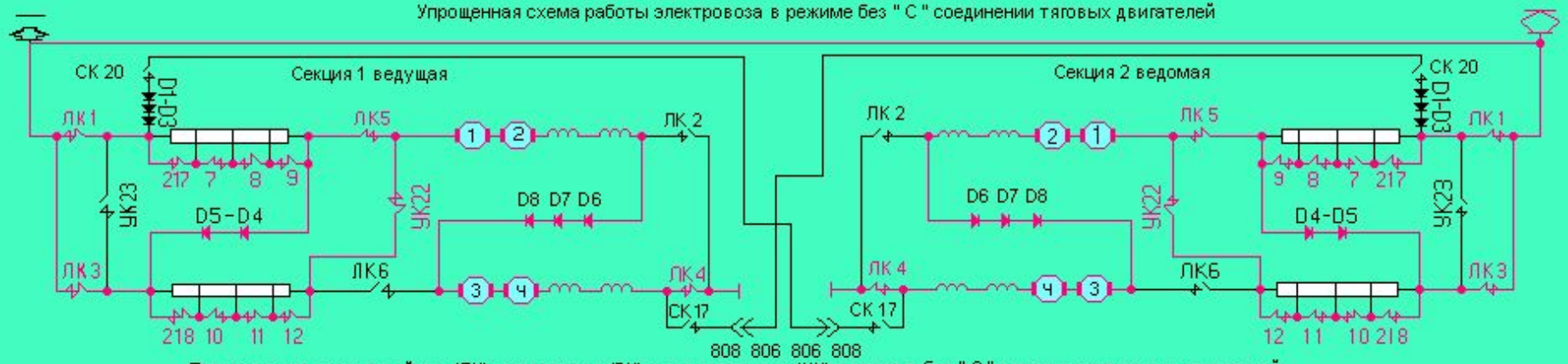
Упрощенная схема работы электровоза в режиме без " С " соединении тяговых двигателей



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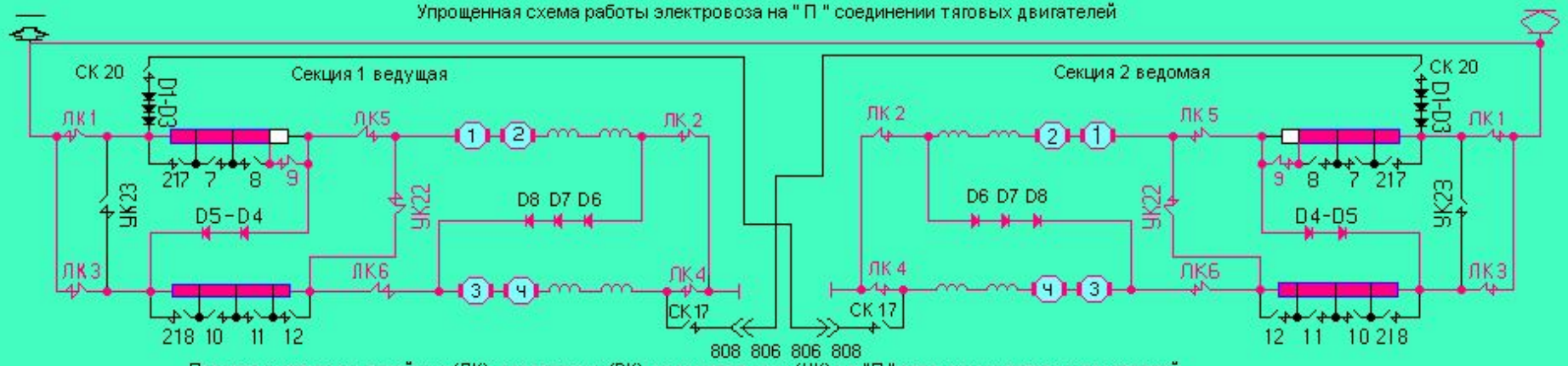
Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



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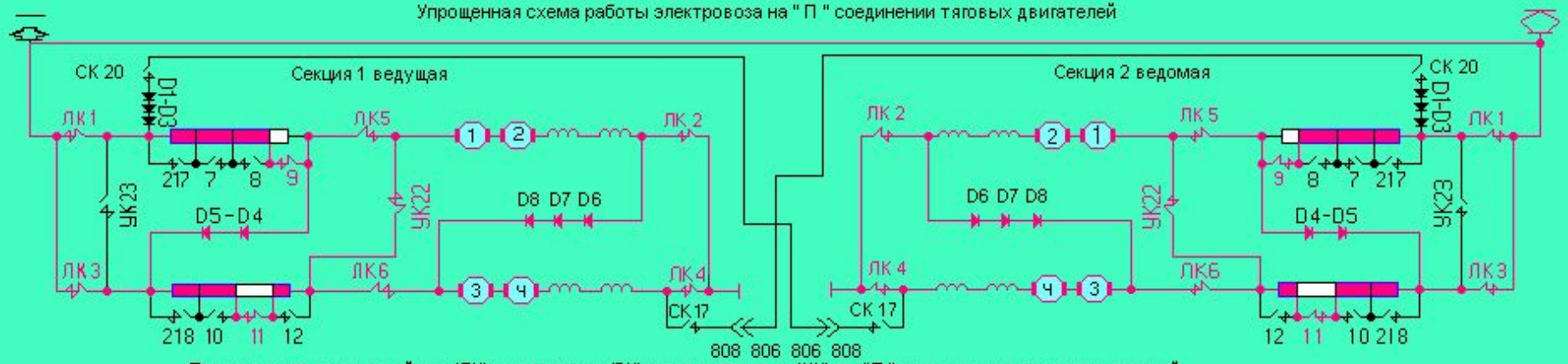
Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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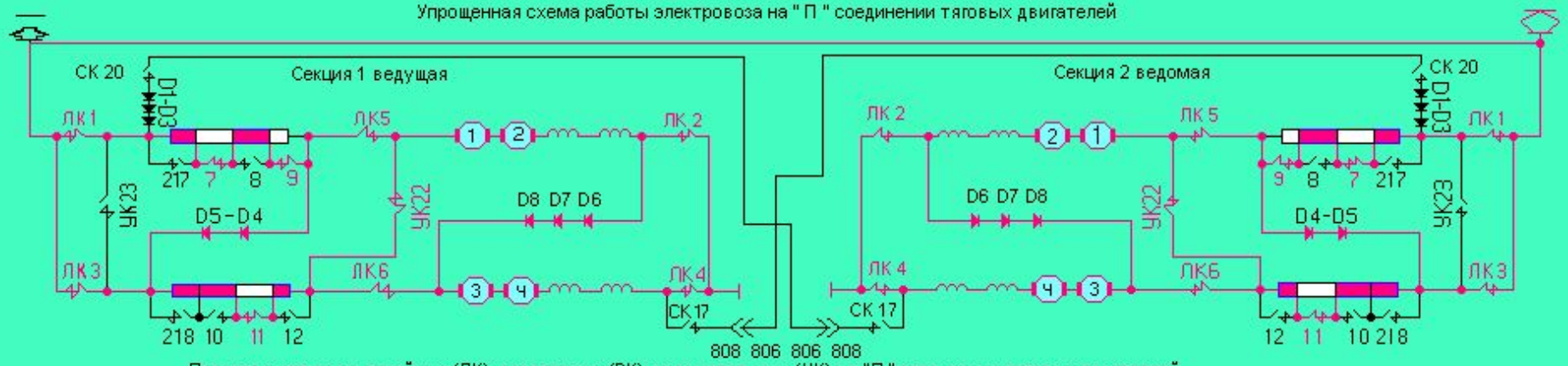
Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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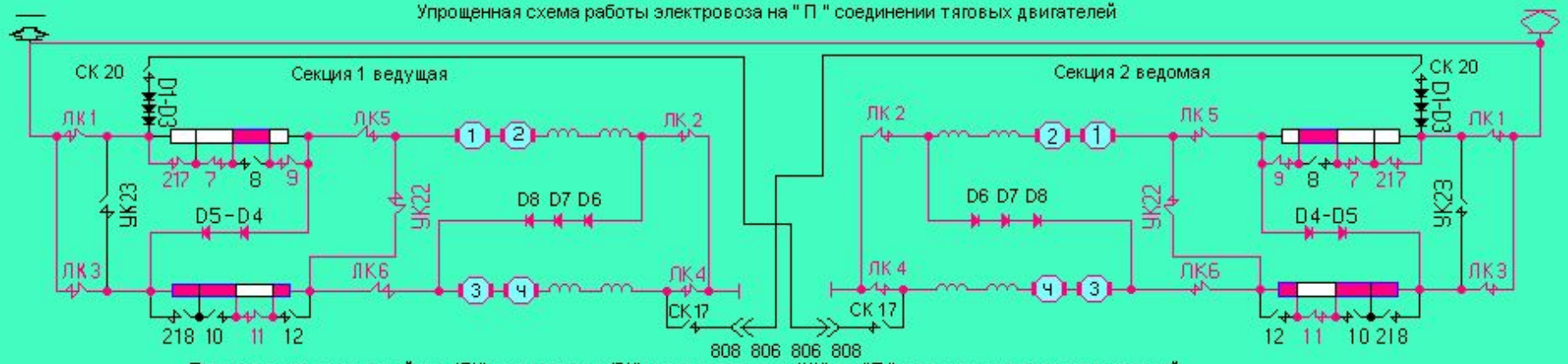
Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

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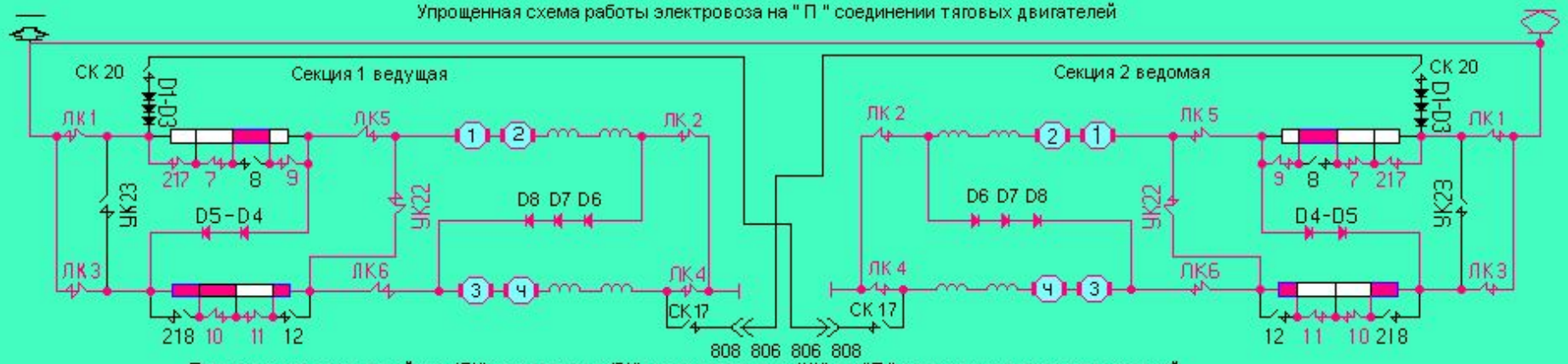
Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



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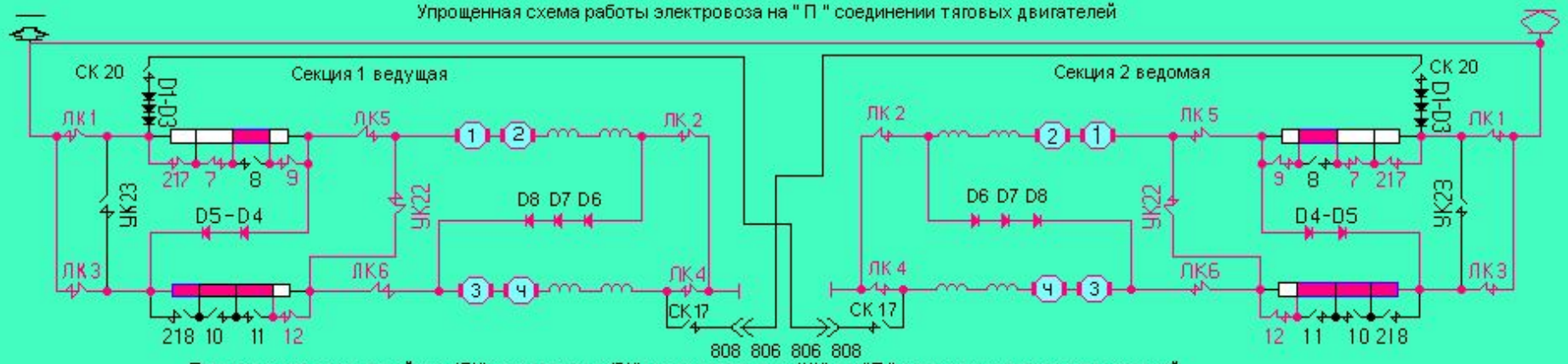
Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



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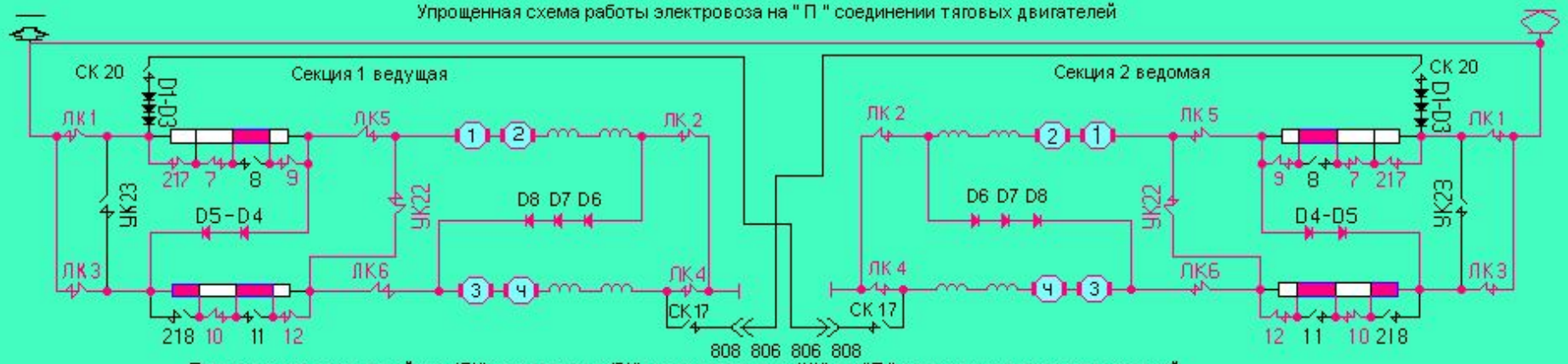

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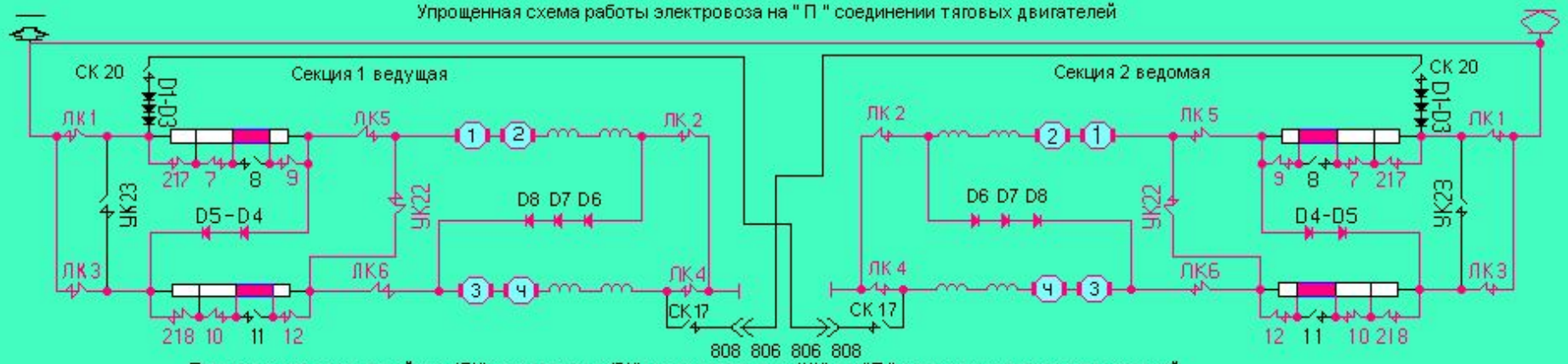
14	●	●	●	●	●	●		●	●	●		●	●	●	●				
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●	●	●	●	●	●				●					●				
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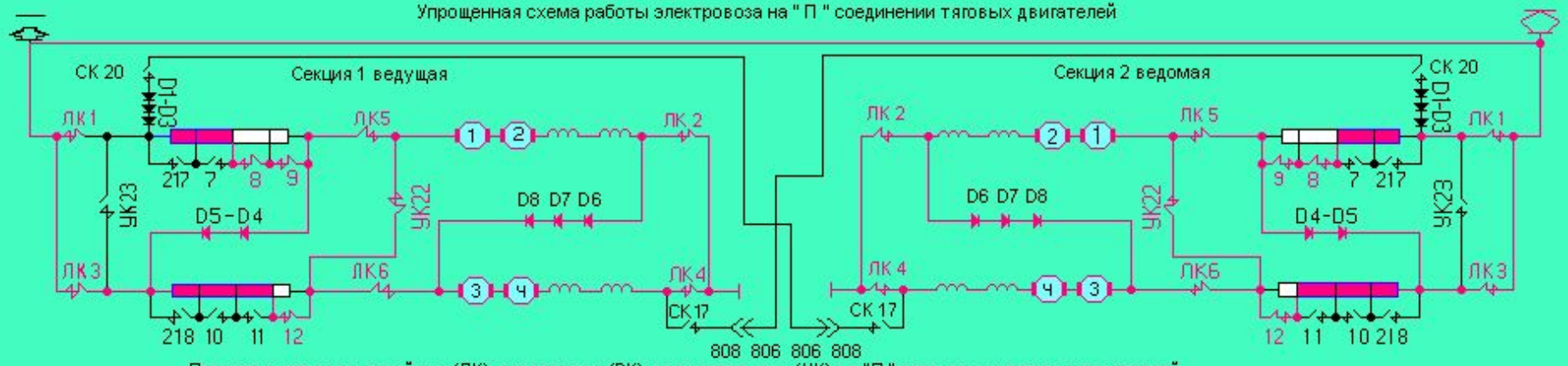
12	●	●	●	●	●	●			●	●			●	●	●				
13	●	●	●	●	●	●		●	●	●			●	●	●				
14	●	●	●	●	●	●		●	●	●		●	●	●	●				
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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13	●	●	●	●	●	●		●	●	●			●	●	●				
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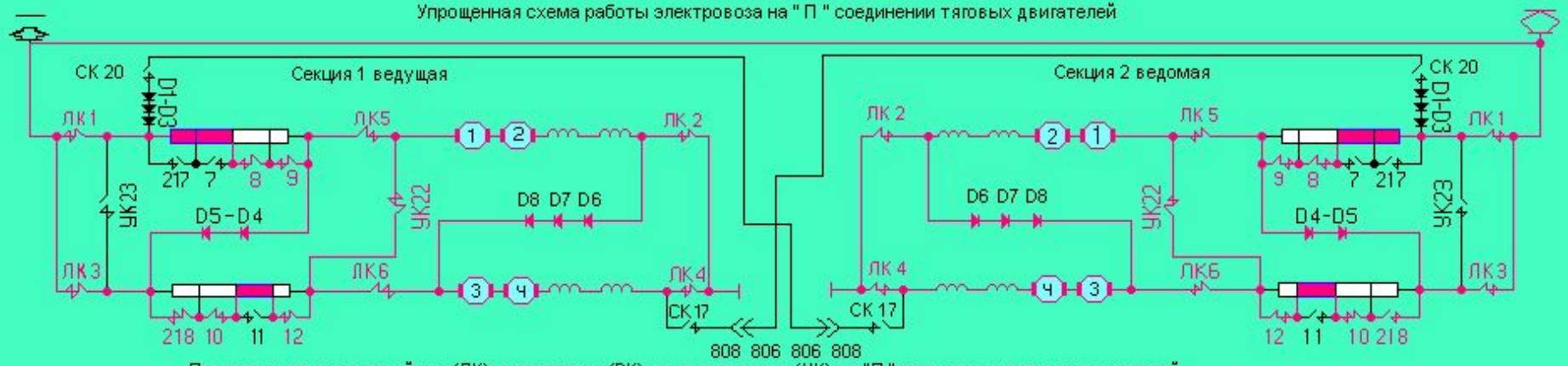
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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13	●	●	●	●	●	●		●	●	●			●	●	●				
14	●	●	●	●	●	●		●	●	●		●	●	●	●				
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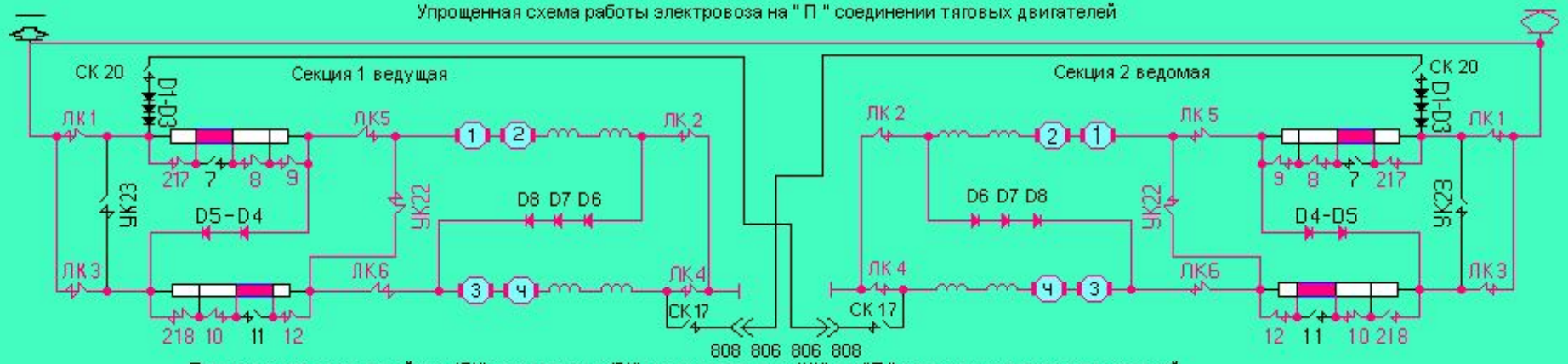
Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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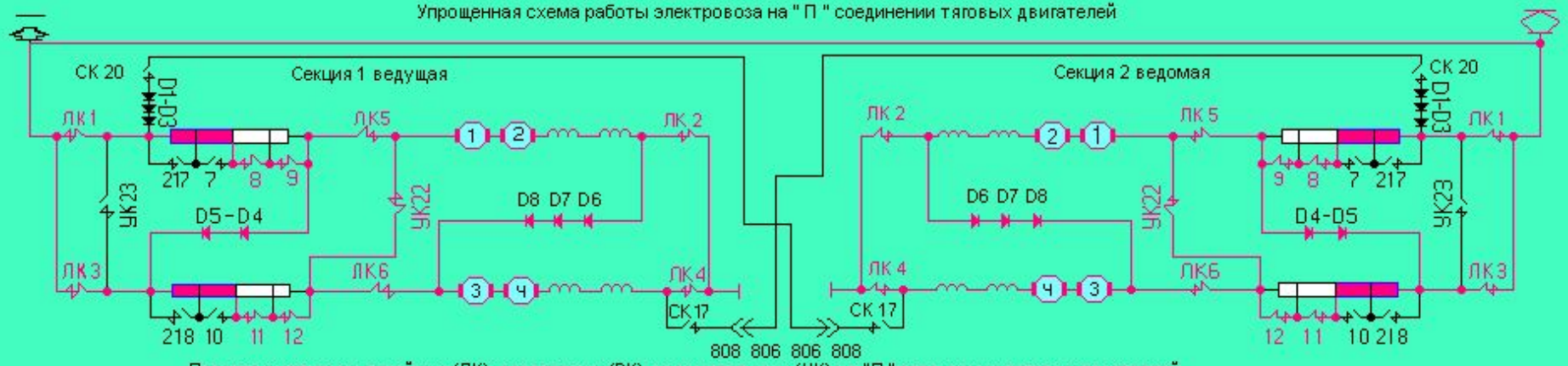
13	●	●	●	●	●	●		●	●	●			●	●	●				
14	●	●	●	●	●	●		●	●	●		●	●	●	●				
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●	●	●	●	●	●				●					●				
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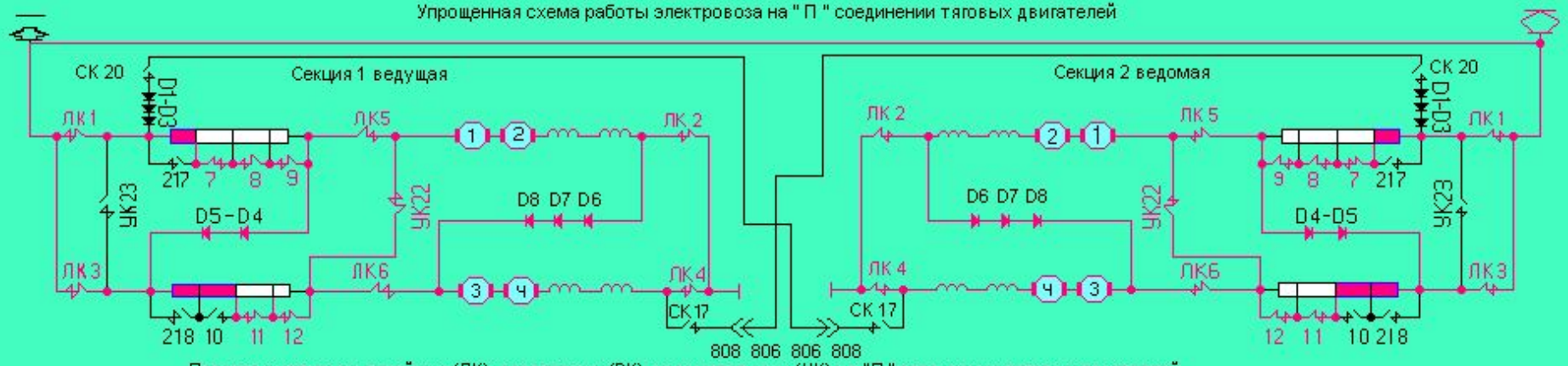
14	●	●	●	●	●	●		●	●	●		●		●	●				
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●	●	●	●	●	●				●					●				
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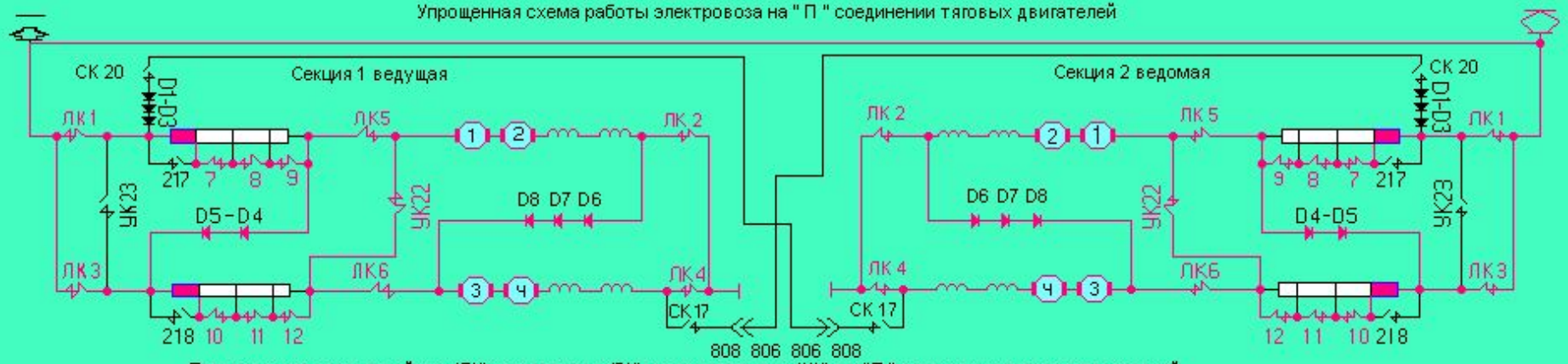
14	●	●	●	●	●	●			●	●		●	●	●	●				
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●	●	●	●	●	●				●					●				
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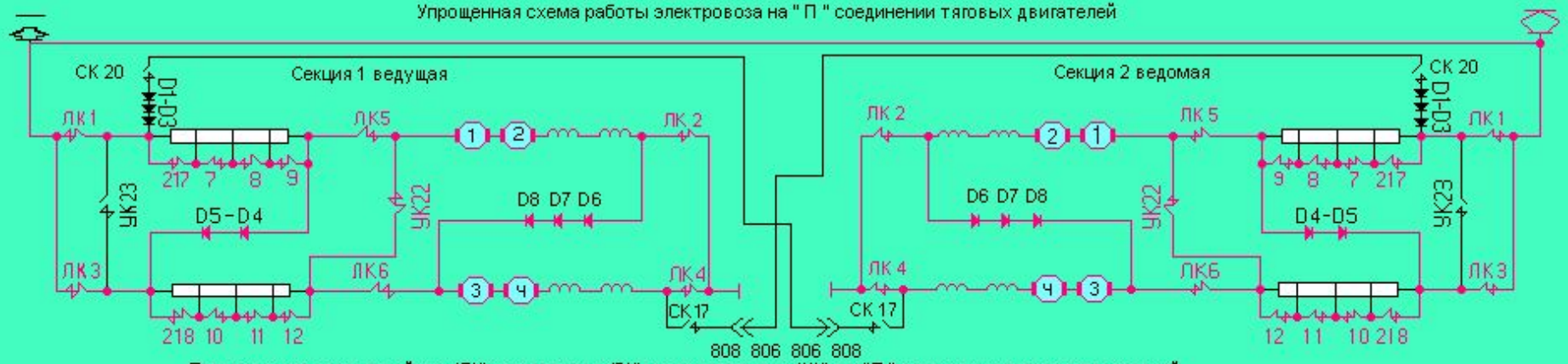
14	●	●	●	●	●	●		●	●	●		●	●	●	●				
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Упрощенная схема работы электровоза на " П " соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П " соединении тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●	●	●	●	●	●				●					●				
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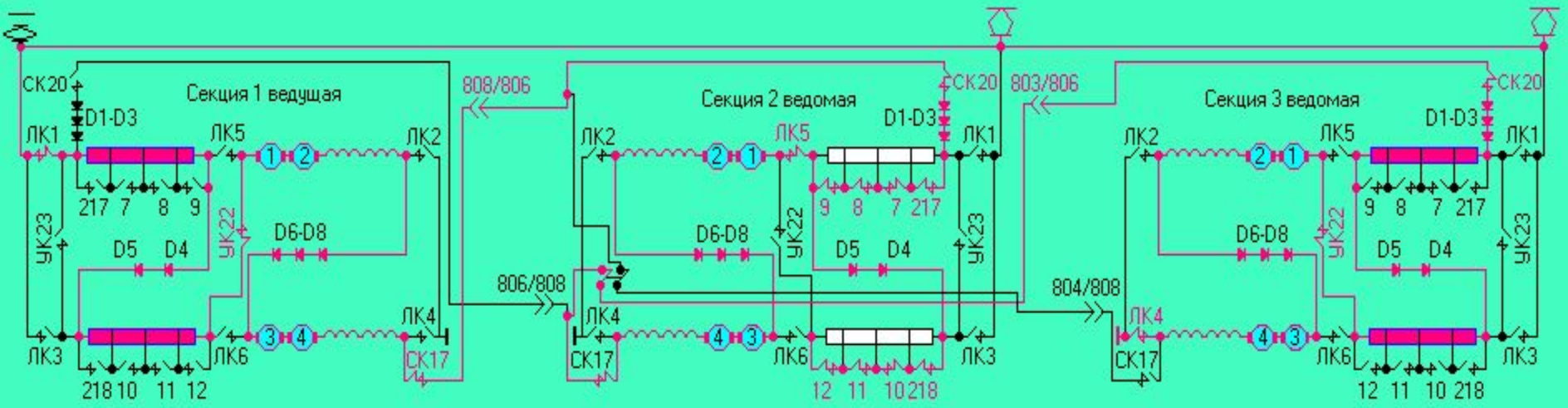
13	●	●	●	●	●	●		●	●	●			●	●	●				
14	●	●	●	●	●	●		●	●	●		●	●	●					
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

Трех секционный вариант

Упрощенная схема работы трех секционного сцепа на "С" соединении тяговых двигателей (12 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (12 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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13	●		●		●					●				●	●	●								●		●	●	●	●	●	●	●	●		●	●							●	●					●	●				●	●	●		
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15	●		●		●				●	●				●	●	●								●		●	●	●	●	●	●	●	●		●	●							●	●					●	●			●	●	●	●		
16	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●		●	●							●	●					●	●			●	●	●	●		
17	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●		●	●							●	●				●	●	●			●	●	●	●		
18	●		●		●			●	●	●			●	●	●	●								●		●	●	●	●	●	●	●	●		●	●							●	●				●	●	●			●	●	●	●		
19	●		●		●			●	●	●			●	●	●	●								●		●	●	●	●	●	●	●	●		●	●							●	●				●	●	●			●	●	●	●		
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21	●		●		●			●	●	●		●	●	●	●	●								●		●	●	●	●	●	●	●	●		●	●							●	●				●	●	●			●	●	●	●		
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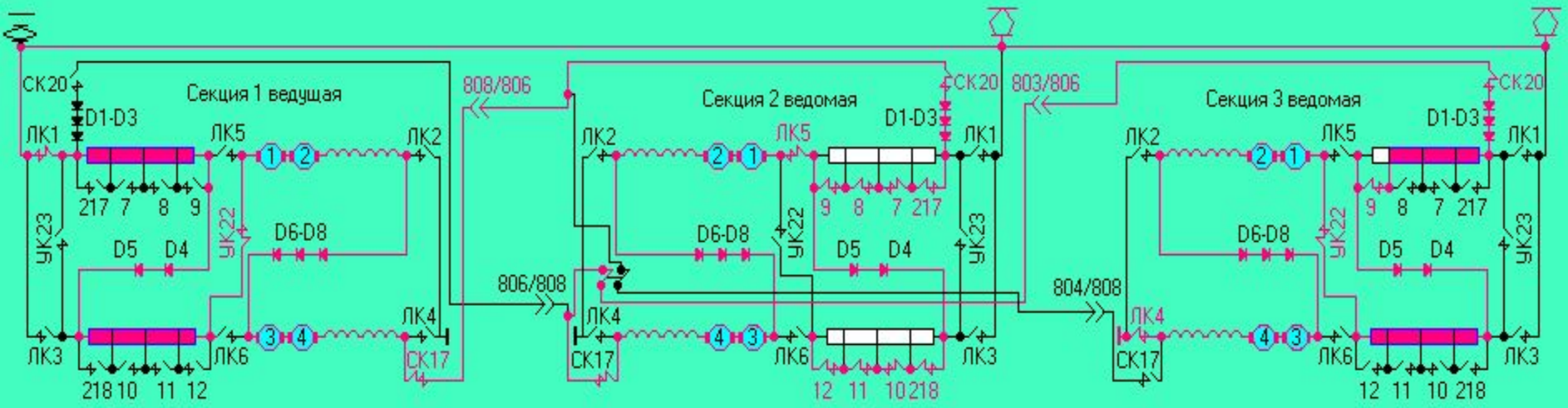

№	Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК	
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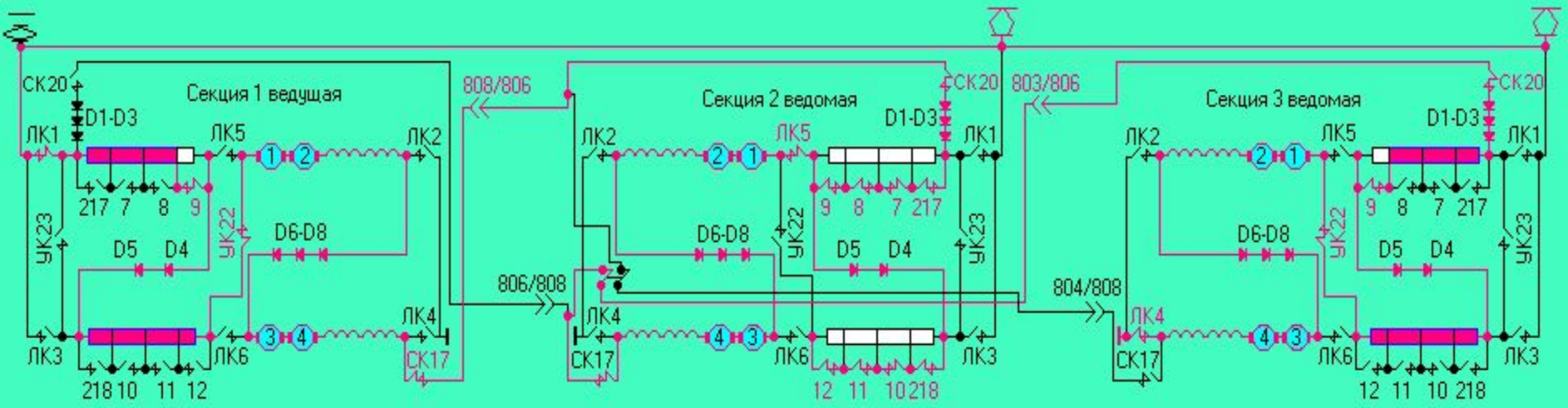

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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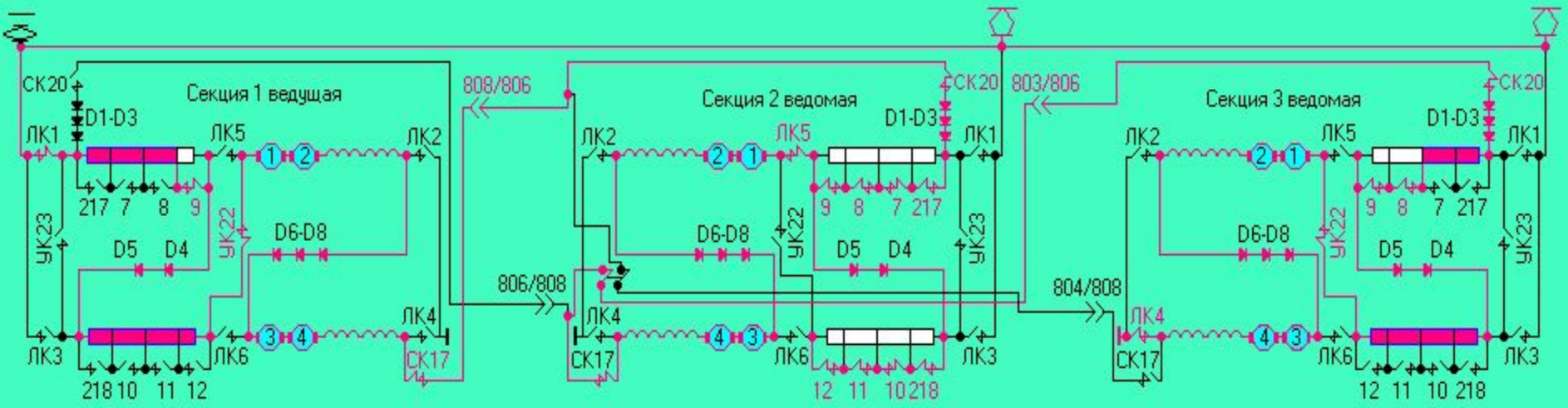

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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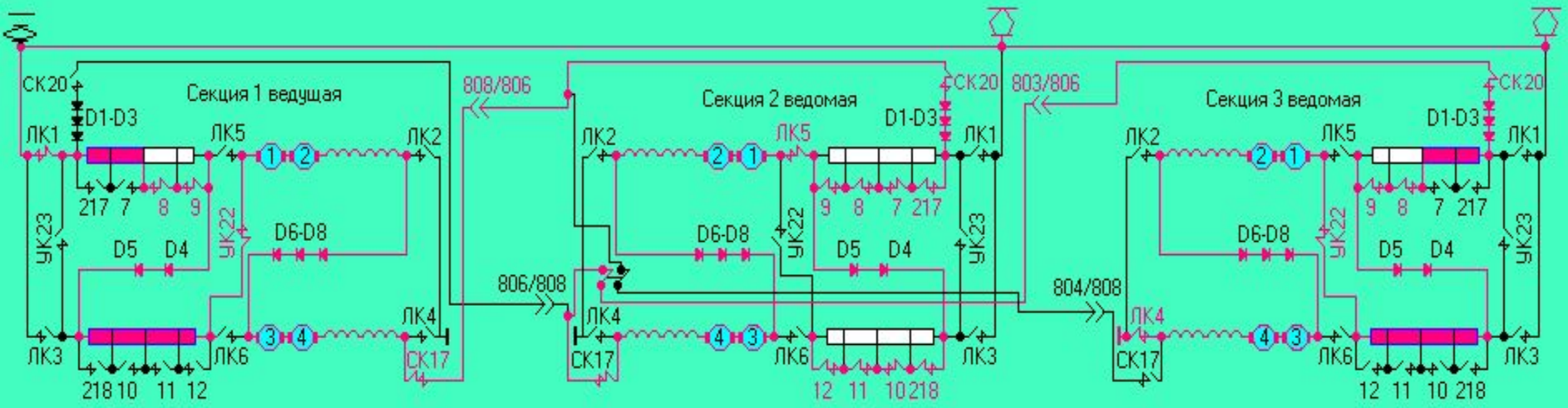

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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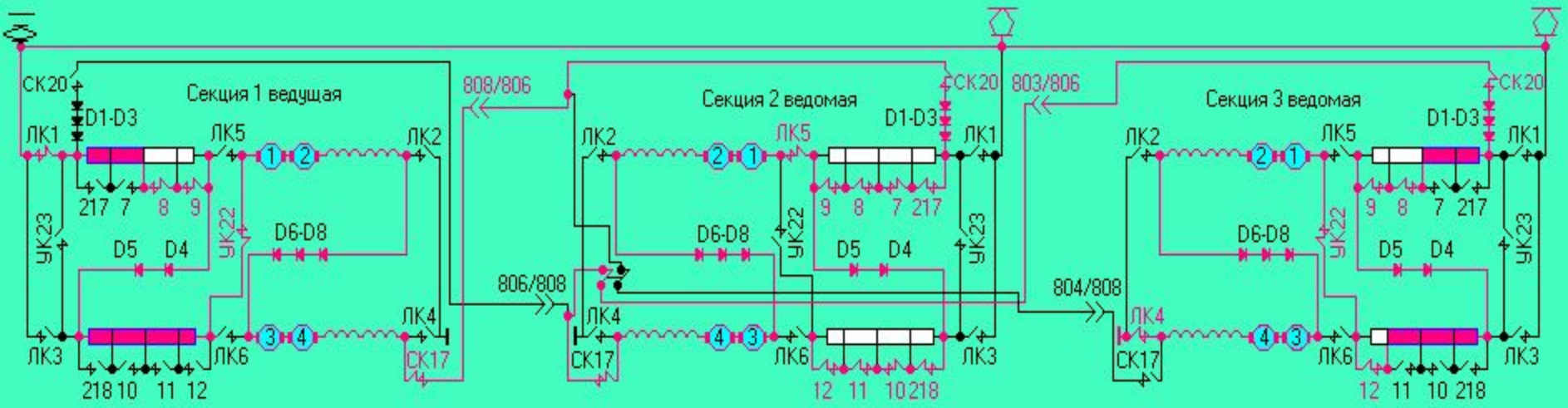

№ Поз	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)											УК	
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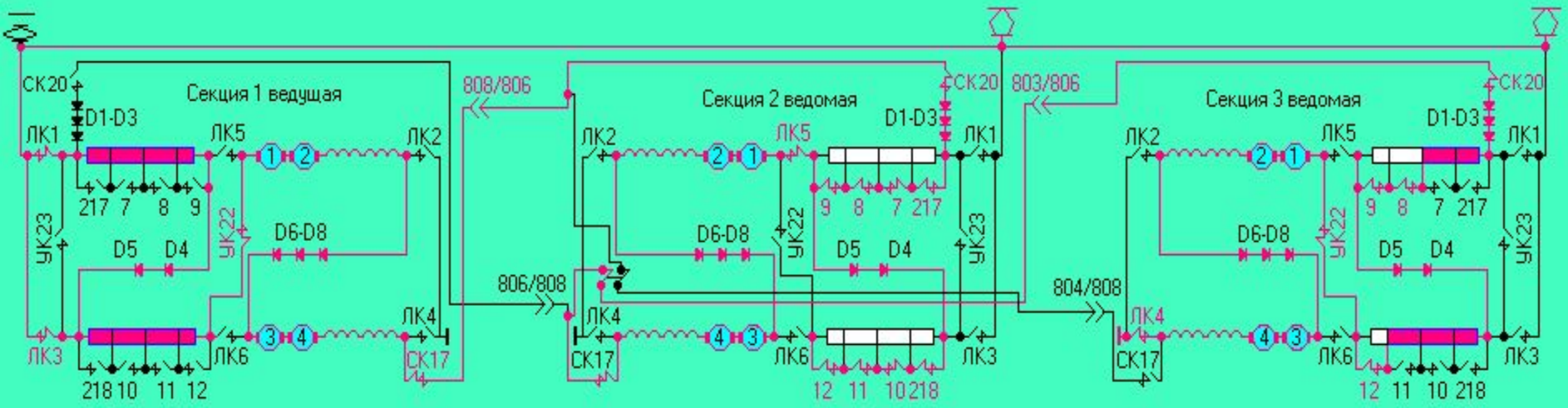
19	●		●		●			●	●	●			●	●	●	●								●		●	●	●	●	●	●	●	●		●	●						●	●			●	●	●		●	●	●	●		●	●	
20	●		●		●			●	●	●		●	●	●	●	●								●		●	●	●	●	●	●	●	●		●	●						●	●			●	●	●		●	●	●	●		●	●	
21	●		●		●			●	●	●		●	●	●	●	●								●		●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●								●		●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	



№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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16	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●			●					●	●			●
17	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●		●	●					●	●			●
18	●		●		●			●	●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●		●	●					●	●			●
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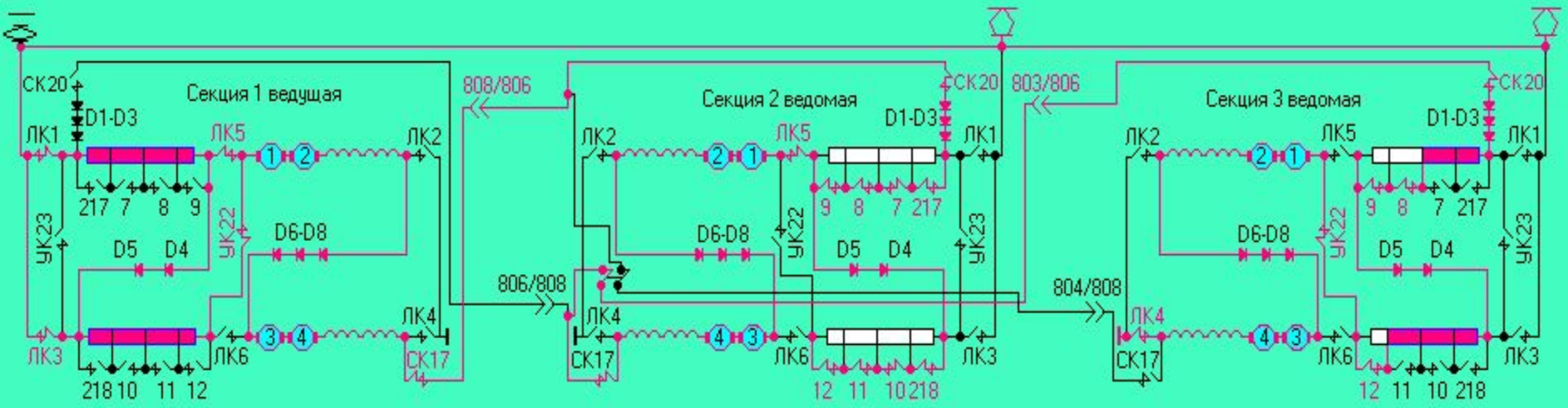
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●		●	●	●	●	●		●	●			●



№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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9	●		●		●										●	●								●		●	●	●	●	●	●	●	●	●	●								●				●				●	●		●	
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16	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●			●				●	●	●		●	
17	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●		●	●				●	●	●		●	
18	●		●		●			●	●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●		●	●				●	●	●		●	
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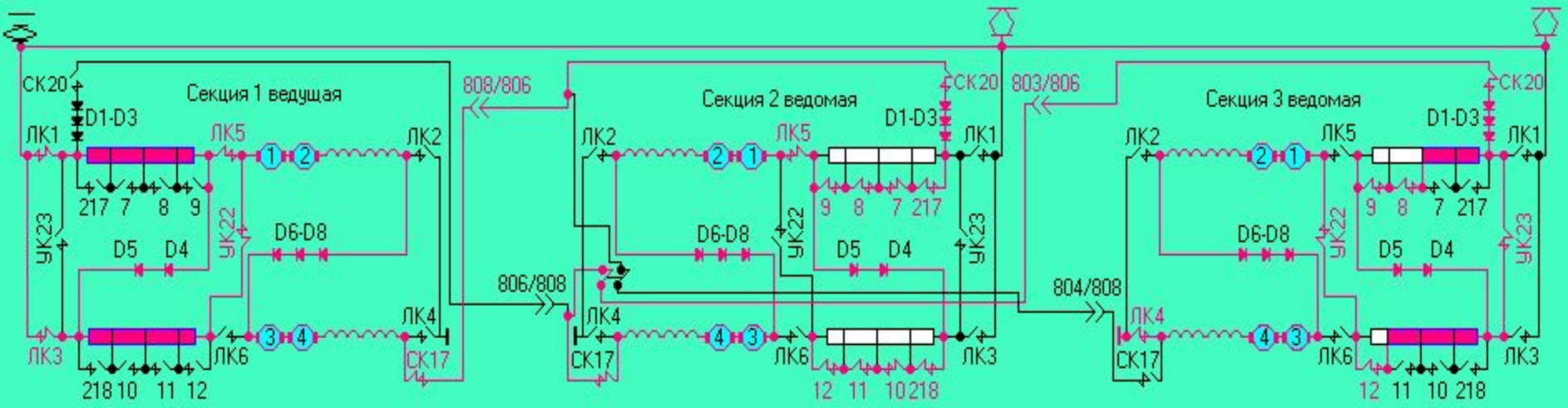

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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15	●		●		●				●	●				●	●	●								●		●	●	●	●	●	●	●	●	●	●								●	●		●					●	●			
16	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●	●		●					●	●			
17	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●	●		●					●	●			
18	●		●		●			●	●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●	●		●					●	●			
19	●		●		●			●	●	●			●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●	●		●					●	●			
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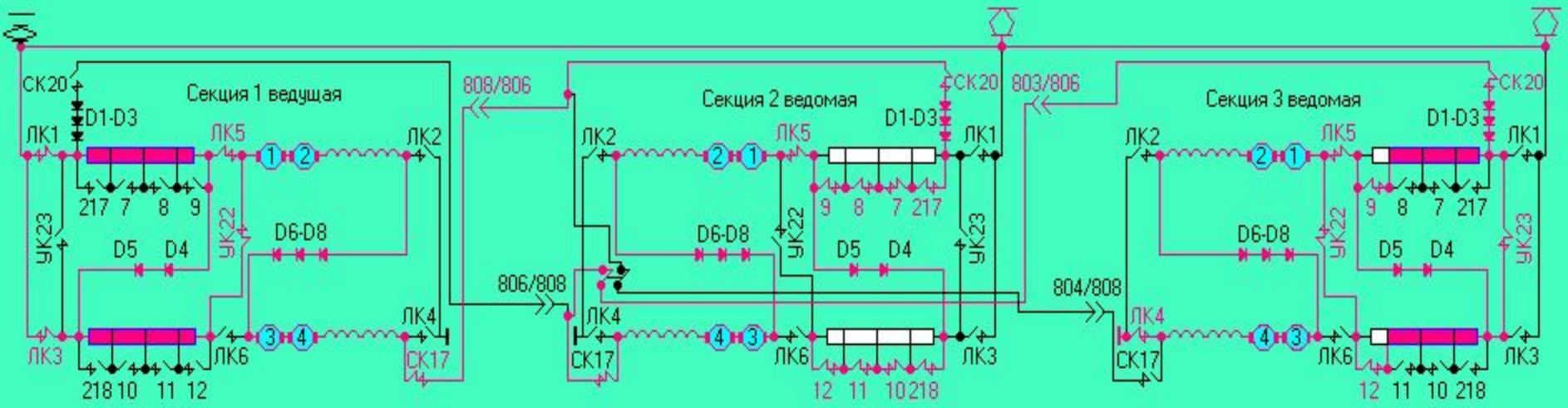
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●								●		●	●	●	●	●	●	●	●	●	●								●	●		●					●	●			



№ Поз	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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7	●		●												●	●								●		●	●	●	●	●	●	●	●		●	●						●					●	●				●	●		●		
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11	●		●		●					●					●	●								●		●	●	●	●	●	●	●	●		●	●						●	●					●				●	●		●	●	
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17	●		●		●				●	●			●	●	●	●								●		●	●	●	●	●	●	●	●		●	●						●	●			●	●	●			●	●	●		●	●	
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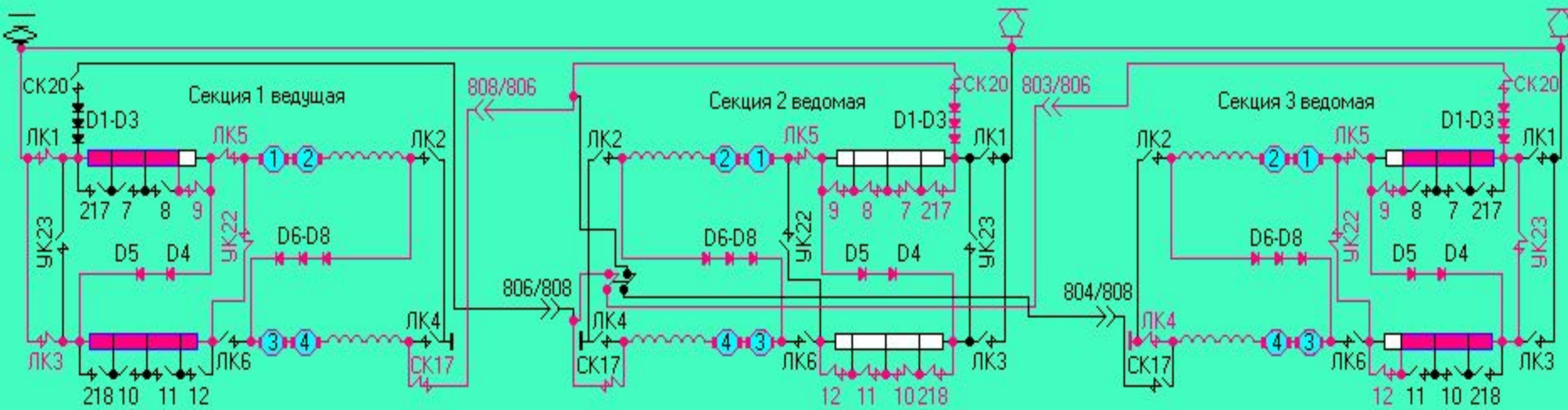
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●								●		●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	



Секция 1 ведущая

№ Поз	Линейные (ЛК) 1	2	3	4	5	6	Реостатные (РК) 217	7	8	9	218	10	11	12	22	17	20	УК 23	24
1	●														●	●			
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3	●									●					●	●			
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15	●		●		●				●	●				●	●	●			
16	●		●		●				●	●			●	●	●	●			
17	●		●		●				●	●			●	●	●	●			
18	●		●		●			●	●	●			●	●	●	●			
19	●		●		●			●	●	●			●	●	●	●			
20	●		●		●			●	●	●		●	●	●	●	●			
21	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

Секция 2 ведомая

№ Поз	Линейные (ЛК) 1	2	3	4	5	6	Реостатные (РК) 217	7	8	9	218	10	11	12	22	17	20	УК 23	24
1					●		●	●	●	●	●	●	●	●		●	●		
2					●		●	●	●	●	●	●	●	●		●	●		
3					●		●	●	●	●	●	●	●	●		●	●		
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Секция 3 ведомая

№ Поз	Линейные (ЛК) 1	2	3	4	5	6	Реостатные (РК) 217	7	8	9	218	10	11	12	22	17	20	УК 23	24
1				●											●		●		
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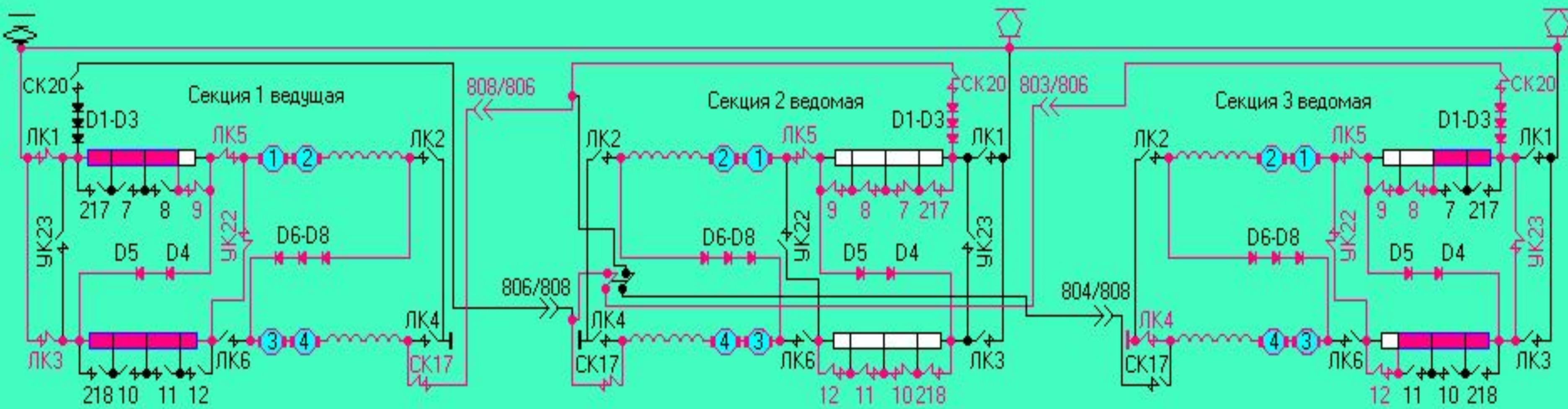

№ Поз	Линейные (ЛК) 1	2	3	4	5	6	Реостатные (РК) 217	7	8	9	218	10	11	12	22	17	20	УК 23	24
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№ Поз	Линейные (ЛК) 1	2	3	4	5	6	Реостатные (РК) 217	7	8	9	218	10	11	12	22	17	20	УК 23	24
1					●		●	●	●	●	●	●	●	●		●	●		
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ХП					●		●	●	●	●	●	●	●	●		●	●		

№ Поз	Линейные (ЛК) 1	2	3	4	5	6	Реостатные (РК) 217	7	8	9	218	10	11	12	22	17	20	УК 23	24
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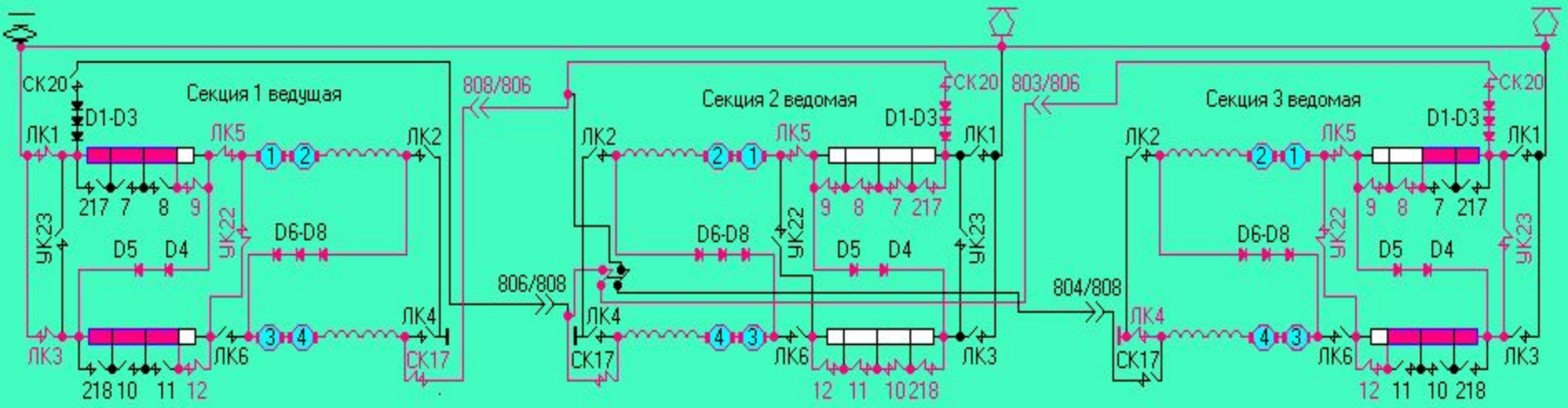
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	



№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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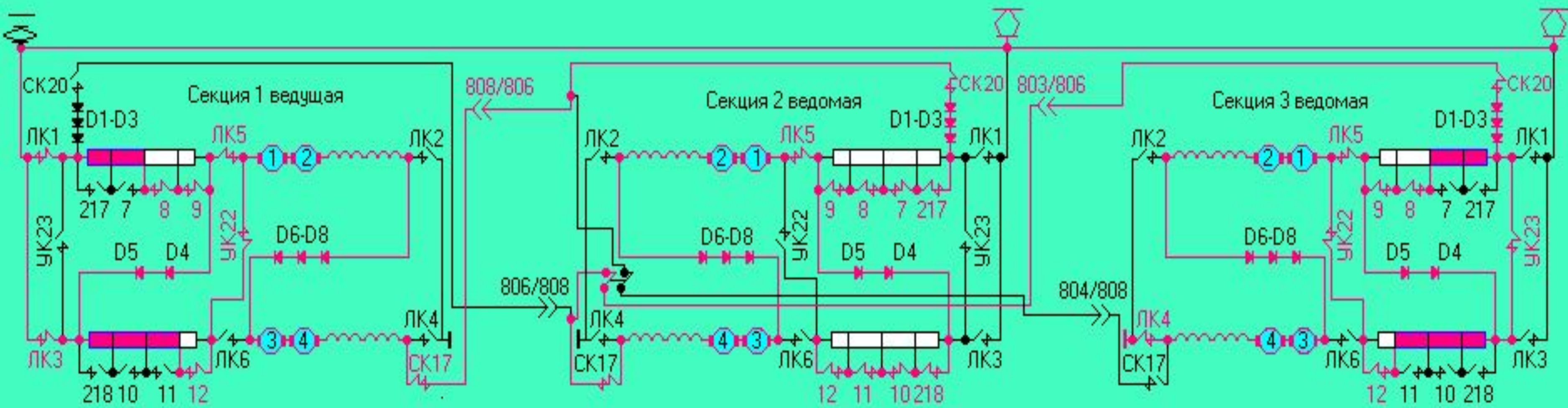

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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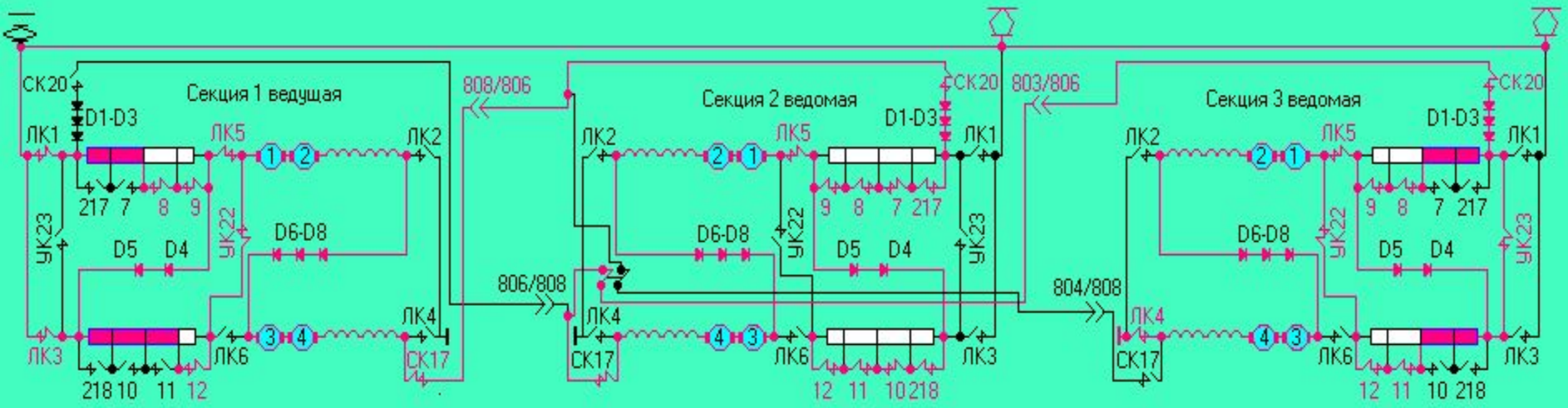

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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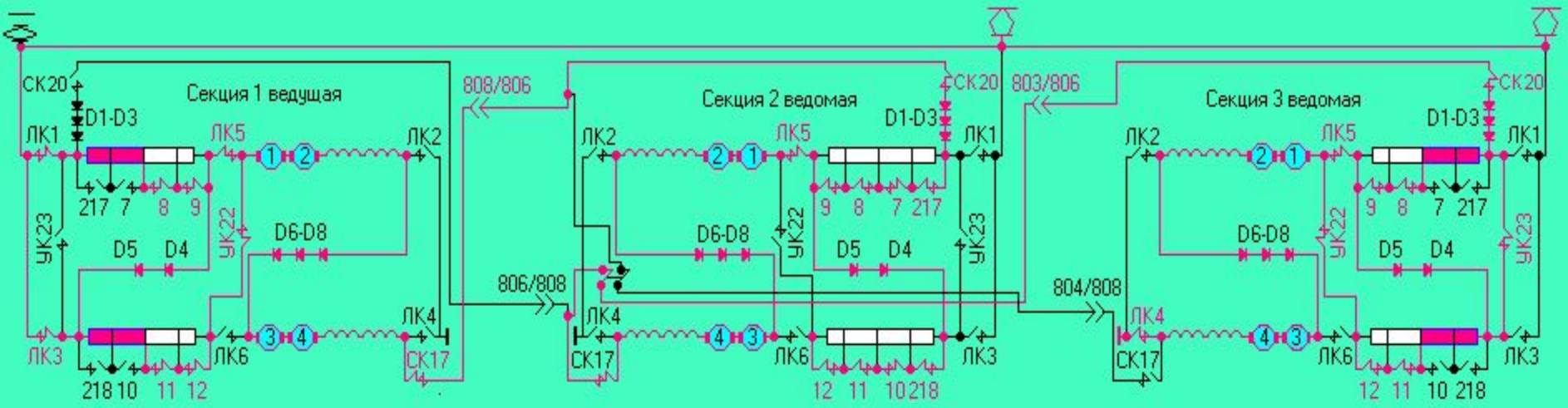

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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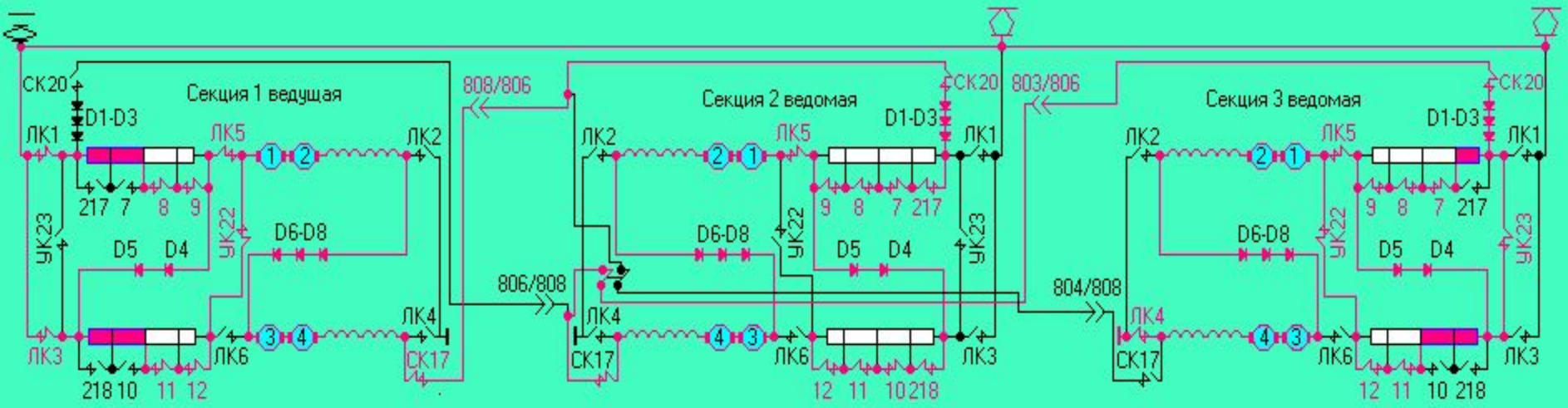

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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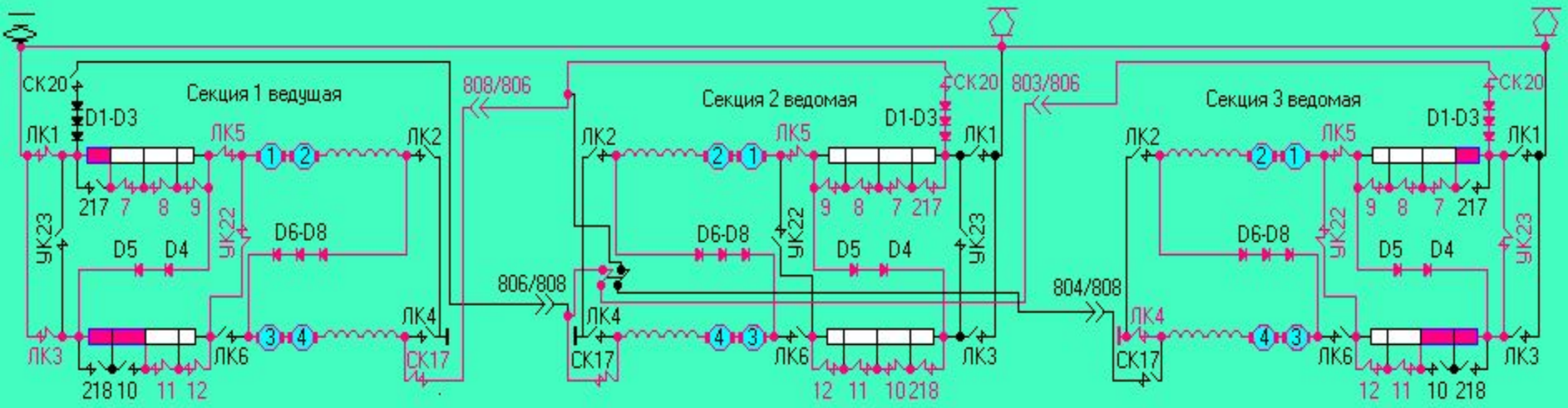

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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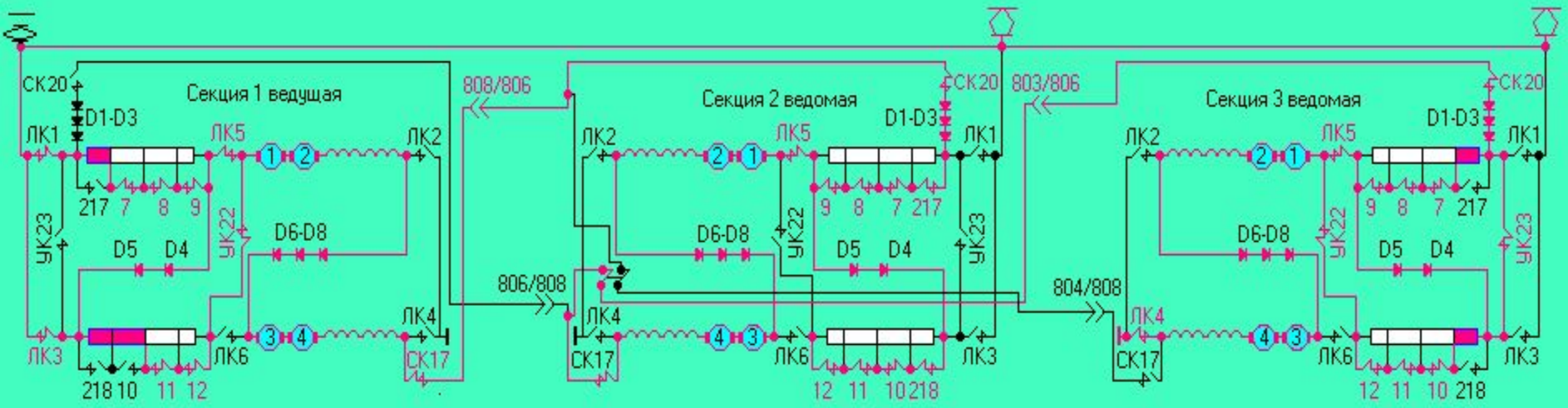

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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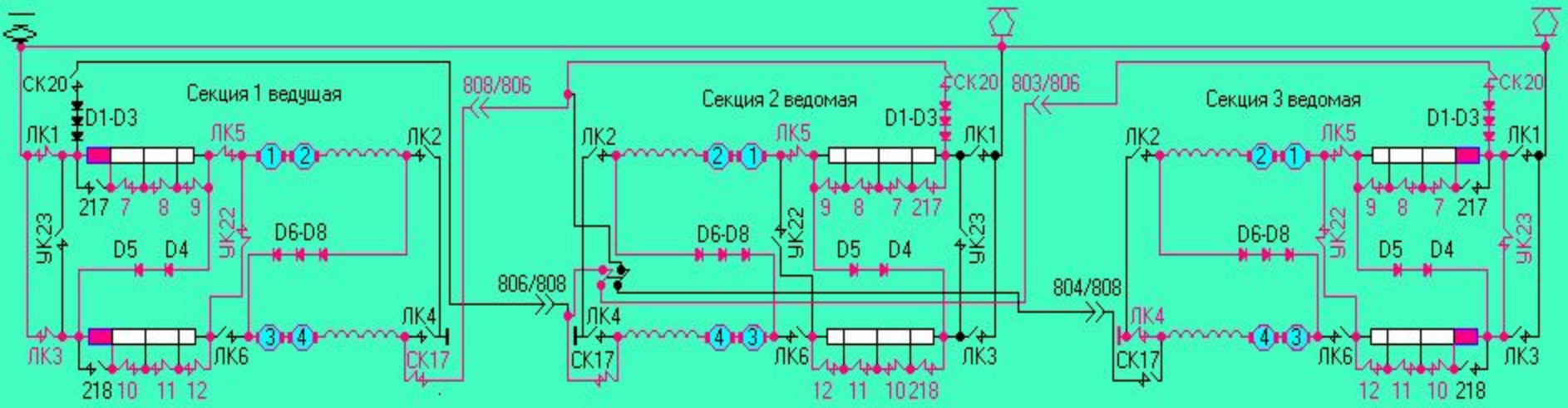

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
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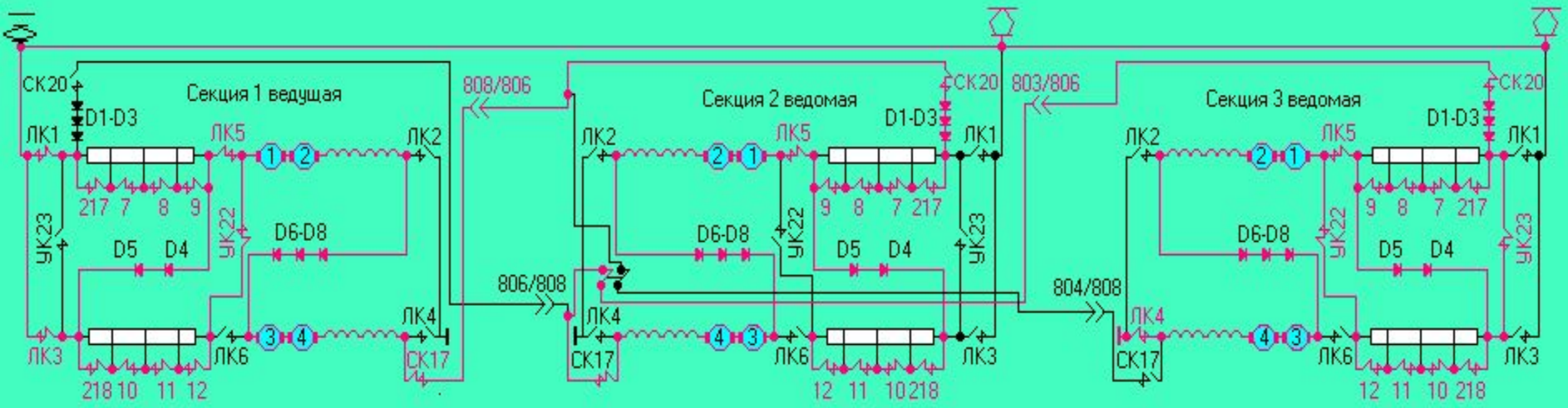

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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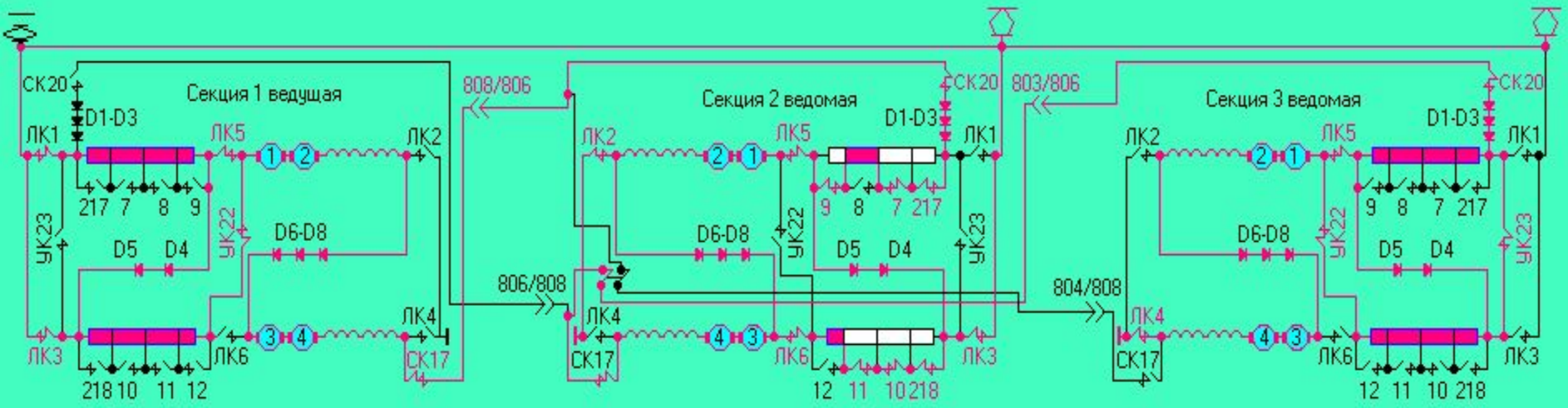
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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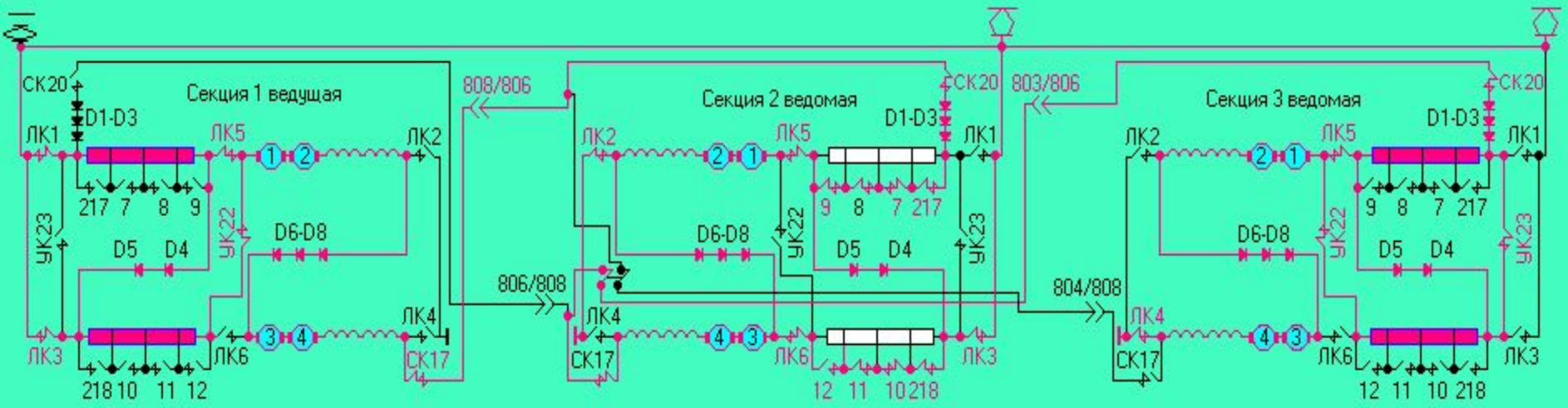
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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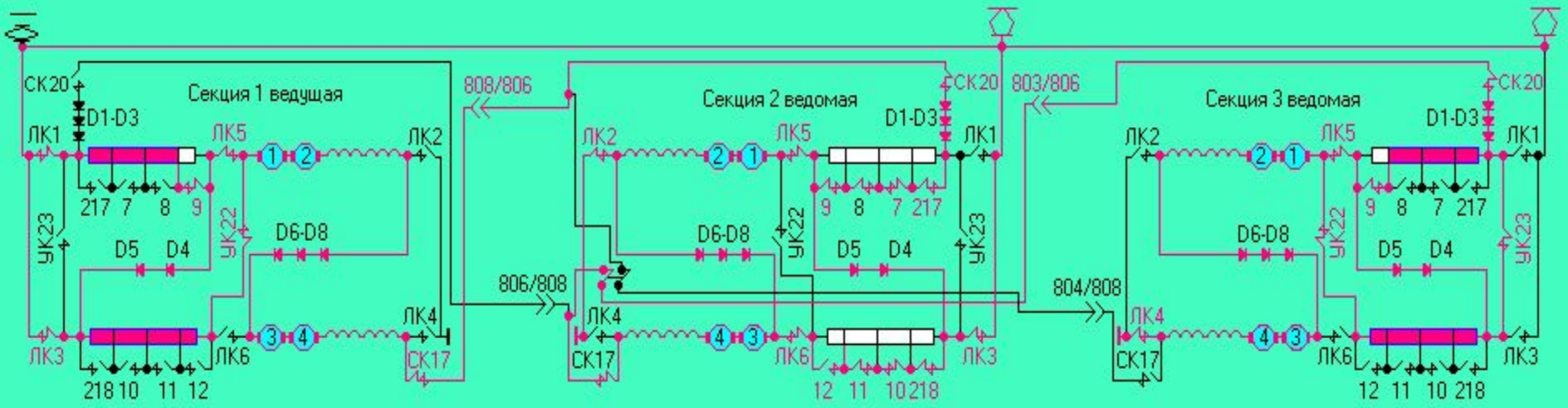
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)											УК	
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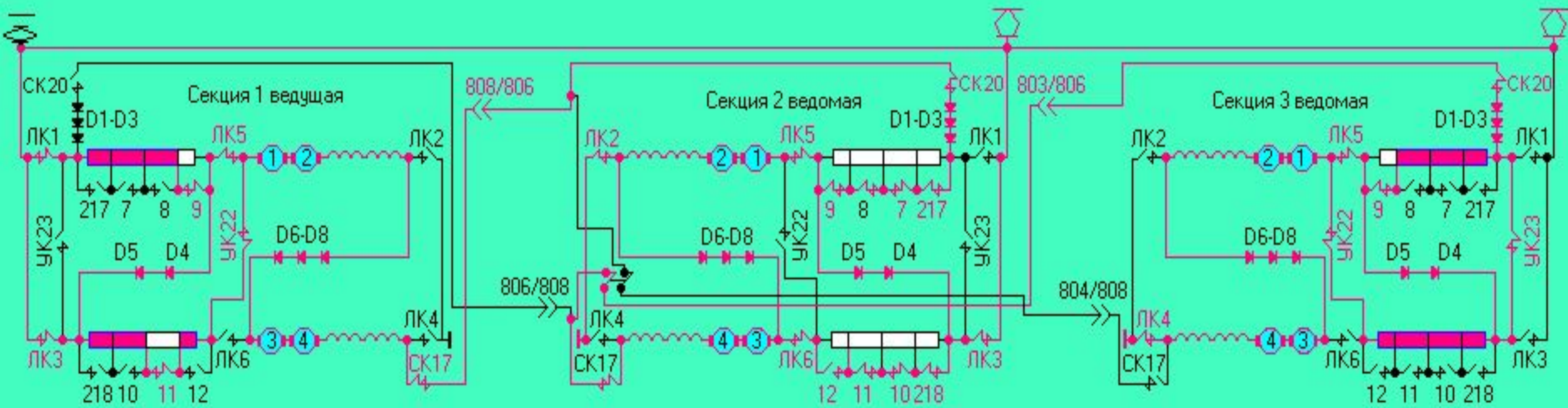
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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13	●		●		●		●		●	●	●	●		●	●	●			
14	●		●		●				●	●			●	●	●	●			
15	●		●		●			●	●	●			●	●	●	●			
16	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1		●	●		●	●	●	●		●	●	●	●			●	●		
2		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
3		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
4		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
5		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
6		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
7		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
8		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
9		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
10		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
11		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
12		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
13		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
14		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
15		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
16		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
ХП		●	●		●	●	●	●	●	●	●	●	●	●		●	●		

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●	●										●		●	●	
2				●	●										●		●	●	
3				●	●					●					●		●	●	
4				●	●					●					●		●	●	
5				●	●			●		●					●		●	●	
6				●	●		●	●		●					●		●	●	
7				●	●		●	●		●		●			●		●	●	
8				●	●		●	●		●				●	●		●	●	
9				●	●		●	●		●		●		●	●		●	●	
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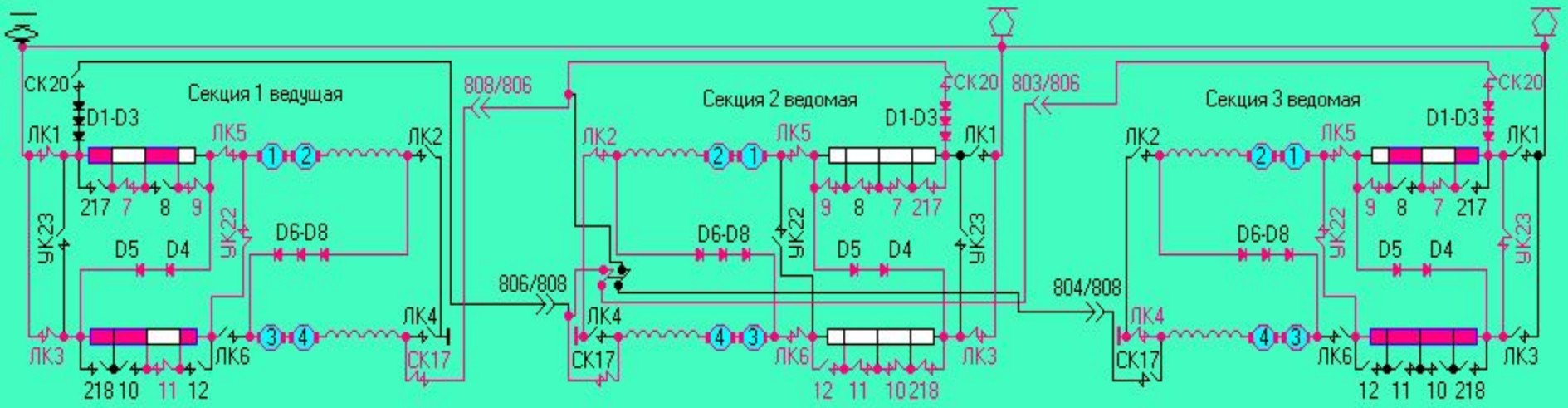
11				●	●				●	●				●	●		●	●	
12				●	●				●	●	●	●		●	●		●	●	
13				●	●		●		●	●	●	●		●	●		●	●	
14				●	●				●	●			●	●	●		●	●	
15				●	●			●	●	●			●	●	●		●	●	
16				●	●			●	●	●		●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

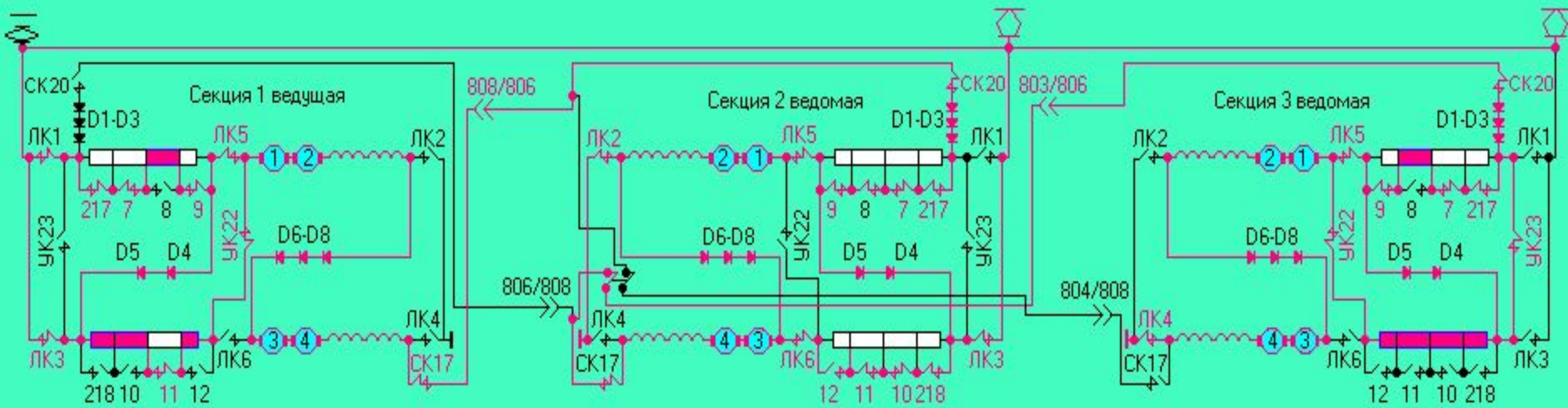
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●			●	●	●	●			●	●					●	●									●		●	●		
2	●		●		●										●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●									●		●	●		
3	●		●		●					●					●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●									●		●	●		
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●									●		●	●		
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●			●			●	●	
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●	●		●		●	●		
7	●		●		●		●	●		●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●	●		●		●	●		
8	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●	●		●		●	●		
9	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●	●		●		●	●		
10	●		●		●		●	●		●	●		●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●	●		●		●	●		
11	●		●		●				●	●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●								●	●		●	●		
12	●		●		●				●	●	●		●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●								●	●		●	●		
13	●		●		●		●		●	●	●		●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●	●		●	●		
14	●		●		●				●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●								●	●		●	●		
15	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●							●	●	●		●	●		
16	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●							●	●	●		●	●		
ХП	●		●		●		●	●	●	●	●		●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●	●	●	●		●	●		

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●			
2	●		●		●										●	●			
3	●		●		●					●					●	●			
4	●		●		●					●			●		●	●			
5	●		●		●			●		●			●		●	●			
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7	●		●		●		●	●		●		●	●		●	●			
8	●		●		●		●	●		●				●	●	●			
9	●		●		●		●	●		●		●		●	●	●			
10	●		●		●		●	●		●	●	●		●	●	●			
11	●		●		●				●	●				●	●	●			
12	●		●		●				●	●	●	●		●	●	●			
13	●		●		●		●		●	●	●	●		●	●	●			
14	●		●		●				●	●			●	●	●	●			
15	●		●		●			●	●	●			●	●	●	●			
16	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1		●	●		●	●	●	●		●	●	●	●			●	●		
2		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
3		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
4		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
5		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
6		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
7		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
8		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
9		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
10		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
11		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
12		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
13		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
14		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
15		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
16		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
ХП		●	●		●	●	●	●	●	●	●	●	●	●		●	●		

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●	●										●		●	●	
2				●	●										●		●	●	
3				●	●					●					●		●	●	
4				●	●					●					●		●	●	
5				●	●			●		●					●		●	●	
6				●	●		●	●		●					●		●	●	
7				●	●		●	●		●		●			●		●	●	
8				●	●		●	●		●				●	●		●	●	
9				●	●		●	●		●		●		●	●		●	●	
10				●	●		●	●		●	●	●		●	●		●	●	
11				●	●				●	●				●	●		●	●	
12				●	●				●	●	●	●		●	●		●	●	
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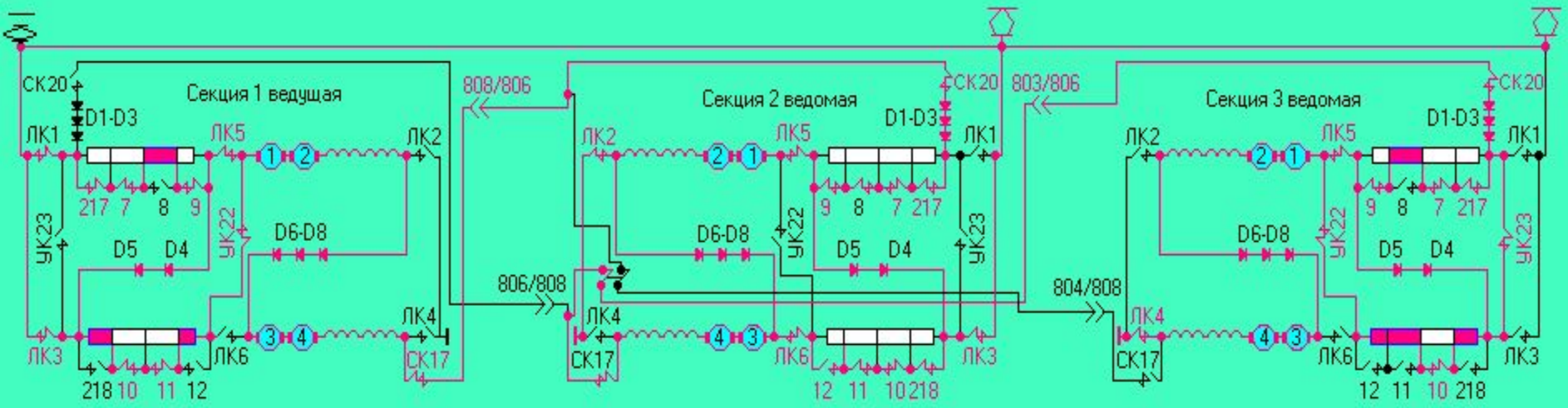
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

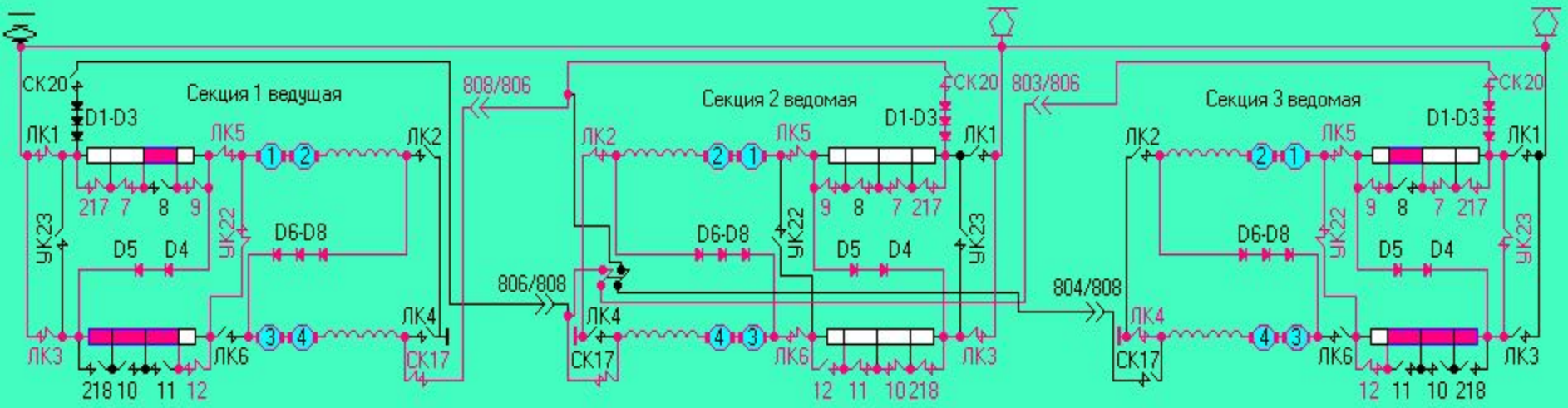
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●		●	●	●	●			●	●						●	●										●		●	●	
2	●		●		●										●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●										●		●	●	
3	●		●		●					●					●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●		●					●		●	●	
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●					●		●	●	
7	●		●		●		●	●		●		●	●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●			●		●	●	
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●				●	●		●	●	
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●		●	●		●	●	
10	●		●		●		●	●		●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●	●	●		●	●		●	●	
11	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●				●	●		●	●	
12	●		●		●				●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●	●	●		●	●		●	●	
13	●		●		●		●		●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●		●	●	●	●		●	●		●	●	
14	●		●		●				●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●			●	●	●		●	●	
15	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●			●	●	●		●	●	
16	●		●		●			●	●	●		●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●		●	●	●	●		●	●	
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	

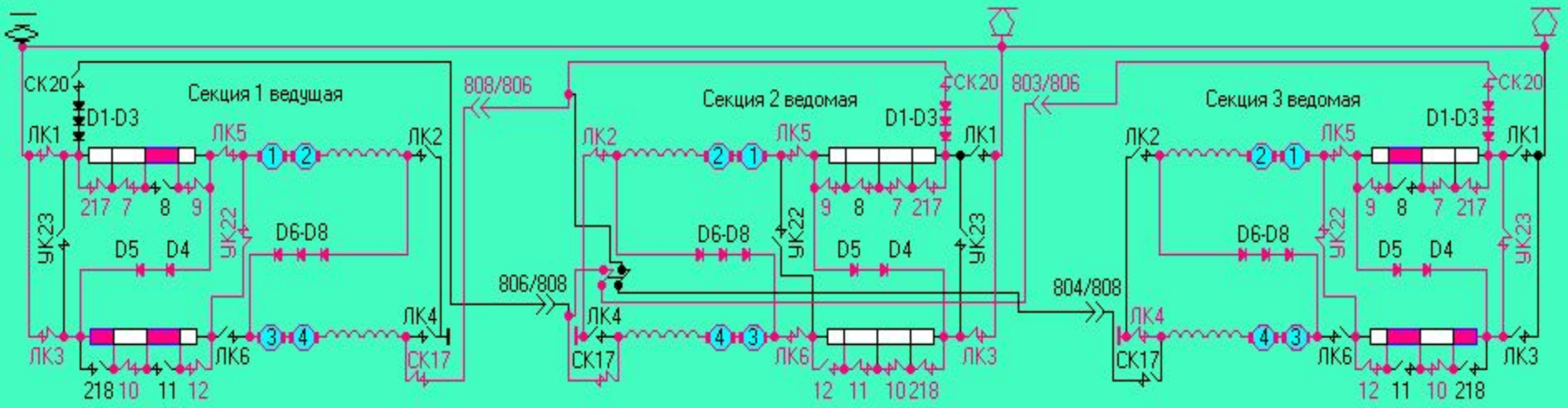
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●			●	●	●	●			●	●					●	●									●		●	●		
2	●		●		●										●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
3	●		●		●					●					●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
7	●		●		●		●	●		●		●	●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
10	●		●		●		●	●		●	●	●		●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
11	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
12	●		●		●				●	●	●	●		●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
13	●		●		●		●		●	●	●	●		●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
14	●		●		●				●	●			●	●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
15	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
16	●		●		●			●	●	●		●	●	●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		

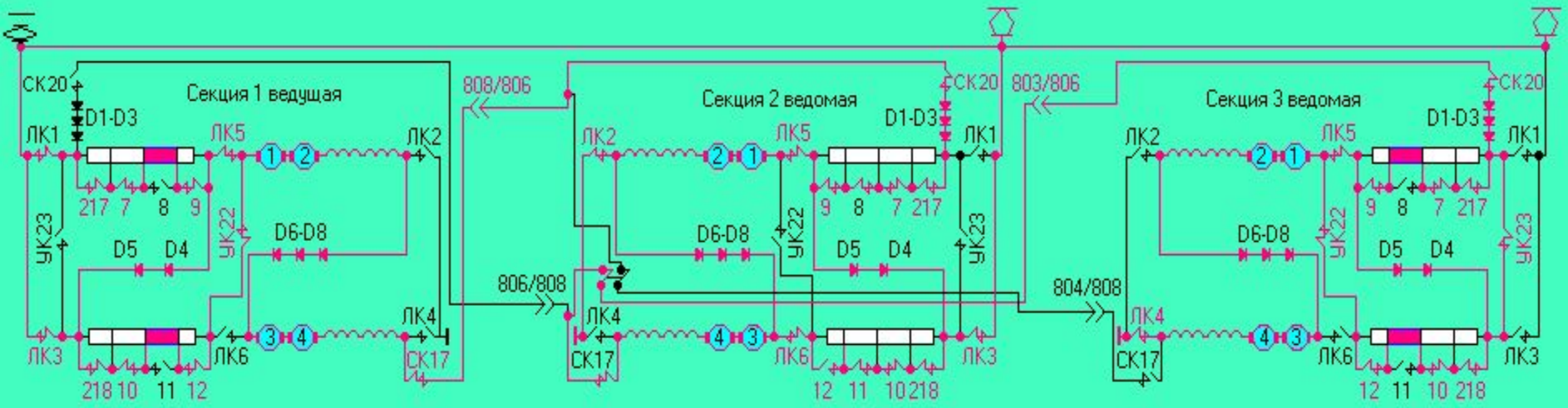
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●			●	●	●	●			●	●					●	●									●		●	●		
2	●		●		●										●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
3	●		●		●					●					●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●									●		●	●		
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●		●					●		●	●		
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●		●					●		●	●		
7	●		●		●		●	●		●		●	●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●		●	●				●		●	●		
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●		●			●	●	●		●	●		
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●		●		●		●	●		●	●		
10	●		●		●		●	●		●	●		●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●		●		●		●	●		●	●		
11	●		●		●				●	●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●			●	●			●	●	●		●	●		
12	●		●		●				●	●	●		●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●			●	●	●		●	●	●		●	●		
13	●		●		●		●		●	●	●		●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●	●	●	●		●	●	●		●	●		
14	●		●		●				●	●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●			●	●			●	●	●		●	●		
15	●		●		●			●	●	●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●	●	●			●	●	●		●	●		
16	●		●		●			●	●	●			●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●	●	●			●	●	●		●	●		
ХП	●		●		●		●	●	●	●	●		●		●	●					●	●		●	●	●	●	●		●	●	●	●			●	●					●	●		●	●	●	●	●	●	●	●		●	●		

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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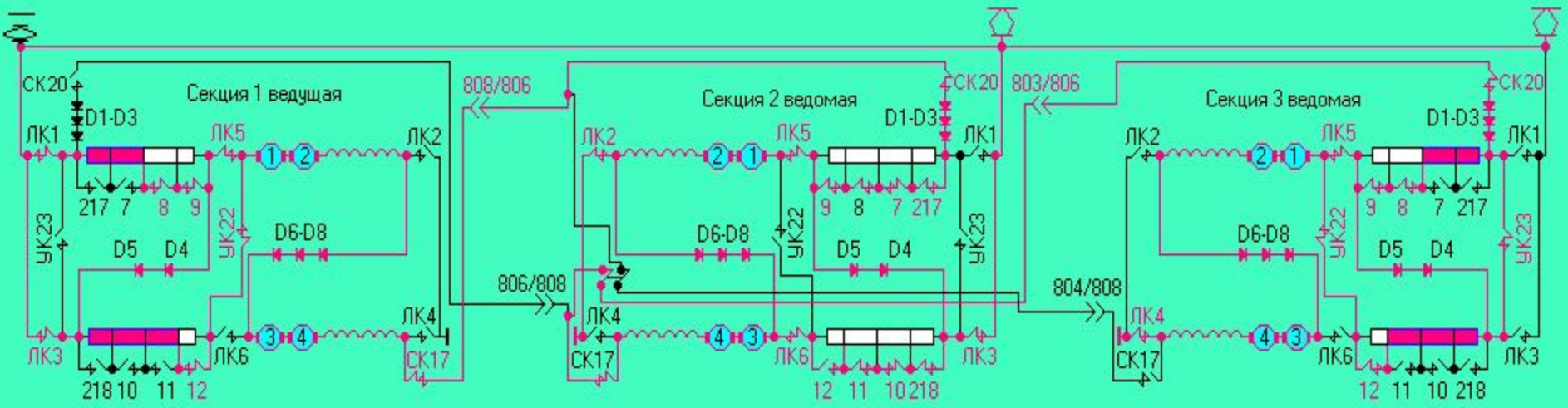
2	●		●		●										●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●										●		●	●	
3	●		●		●					●					●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●		●					●		●	●	
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●					●		●	●	
7	●		●		●		●	●		●		●	●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●			●		●	●	
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●				●	●		●	●	
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●		●	●		●	●	
10	●		●		●		●	●		●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●	●	●		●	●		●	●	
11	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●				●	●		●	●	
12	●		●		●				●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●	●	●		●	●		●	●	
13	●		●		●		●		●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●		●	●	●	●		●	●		●	●	
14	●		●		●				●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●			●	●	●		●	●	
15	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●			●	●	●		●	●	
16	●		●		●			●	●	●		●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●		●	●	●	●		●	●	
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	

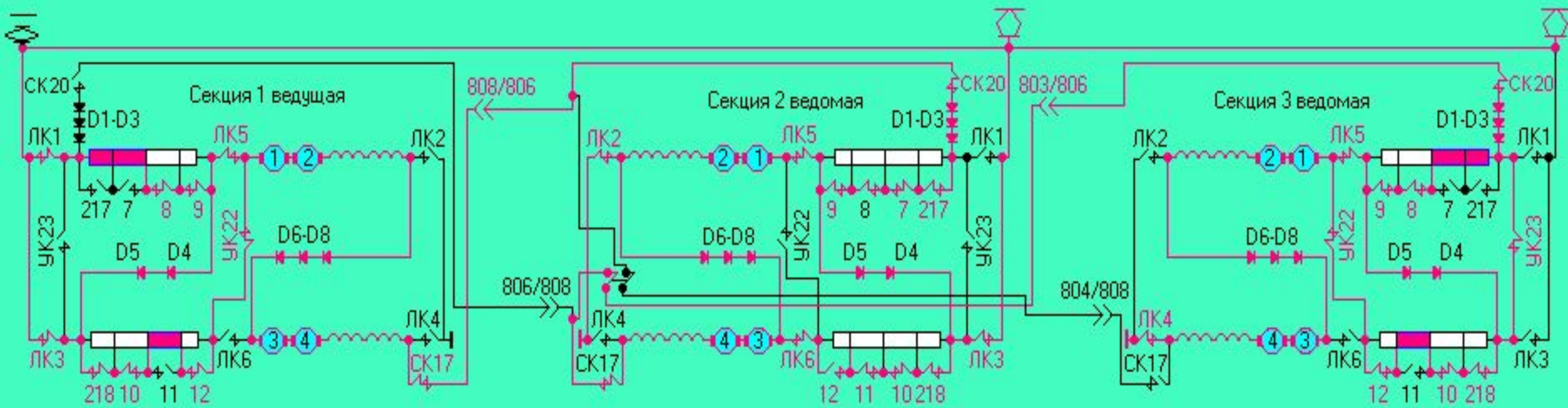
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●		●	●	●	●			●	●						●	●										●		●	●	
2	●		●		●										●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●										●		●	●	
3	●		●		●					●					●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●		●					●		●	●	
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●					●		●	●	
7	●		●		●		●	●		●		●	●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●			●		●	●	
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●				●	●		●	●	
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●		●	●		●	●	
10	●		●		●		●	●		●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●	●	●		●	●		●	●	
11	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●				●	●		●	●	
12	●		●		●				●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●	●	●		●	●		●	●	
13	●		●		●		●		●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●		●	●	●	●		●	●		●	●	
14	●		●		●				●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●			●	●	●		●	●	
15	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●			●	●	●		●	●	
16	●		●		●			●	●	●		●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●		●	●	●	●		●	●	
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

Секция 1:

№ Поз	Линейные (ЛК)						Реостатные (РК)											УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●			
2	●		●		●										●	●			
3	●		●		●					●					●	●			
4	●		●		●					●			●		●	●			
5	●		●		●			●		●			●		●	●			
6	●		●		●		●	●		●			●		●	●			
7	●		●		●		●	●		●		●	●		●	●			
8	●		●		●		●	●		●				●	●	●			
9	●		●		●		●	●		●		●		●	●	●			
10	●		●		●		●	●		●	●	●		●	●	●			
11	●		●		●				●	●				●	●	●			
12	●		●		●				●	●	●	●		●	●	●			
13	●		●		●		●		●	●	●	●		●	●	●			
14	●		●		●				●	●			●	●	●	●			
15	●		●		●			●	●	●			●	●	●	●			
16	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

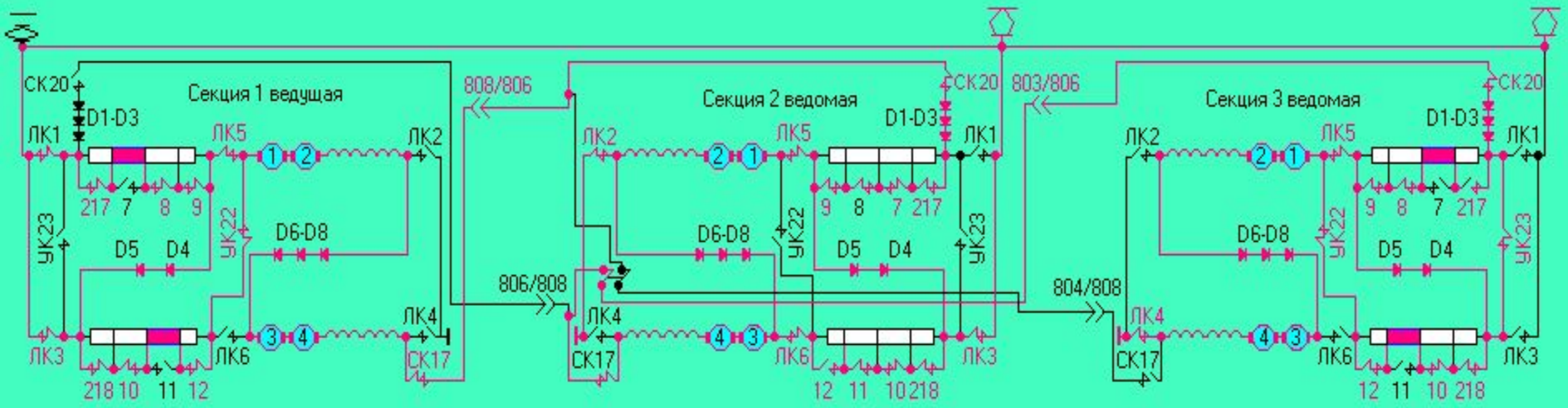
Секция 2:

№ Поз	Линейные (ЛК)						Реостатные (РК)											УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1		●	●		●	●	●	●		●	●	●	●			●	●		
2		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
3		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
4		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
5		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
6		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
7		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
8		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
9		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
10		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
11		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
12		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
13		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
14		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
15		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
16		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
ХП		●	●		●	●	●	●	●	●	●	●	●	●		●	●		

Секция 3:

№ Поз	Линейные (ЛК)						Реостатные (РК)											УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●	●										●		●	●	
2				●	●										●		●	●	
3				●	●					●					●		●	●	
4				●	●					●					●		●	●	
5				●	●			●		●					●		●	●	
6				●	●		●	●		●					●		●	●	
7				●	●		●	●		●		●			●		●	●	
8				●	●		●	●		●				●	●		●	●	
9				●	●		●	●		●		●		●	●		●	●	
10				●	●		●	●		●	●	●		●	●		●	●	
11				●	●				●	●				●	●		●	●	
12				●	●				●	●	●	●		●	●		●	●	
13				●	●		●		●	●	●	●		●	●		●	●	
14				●	●				●	●			●	●	●		●	●	
15				●	●			●	●	●			●	●	●		●	●	
16				●	●			●	●	●		●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

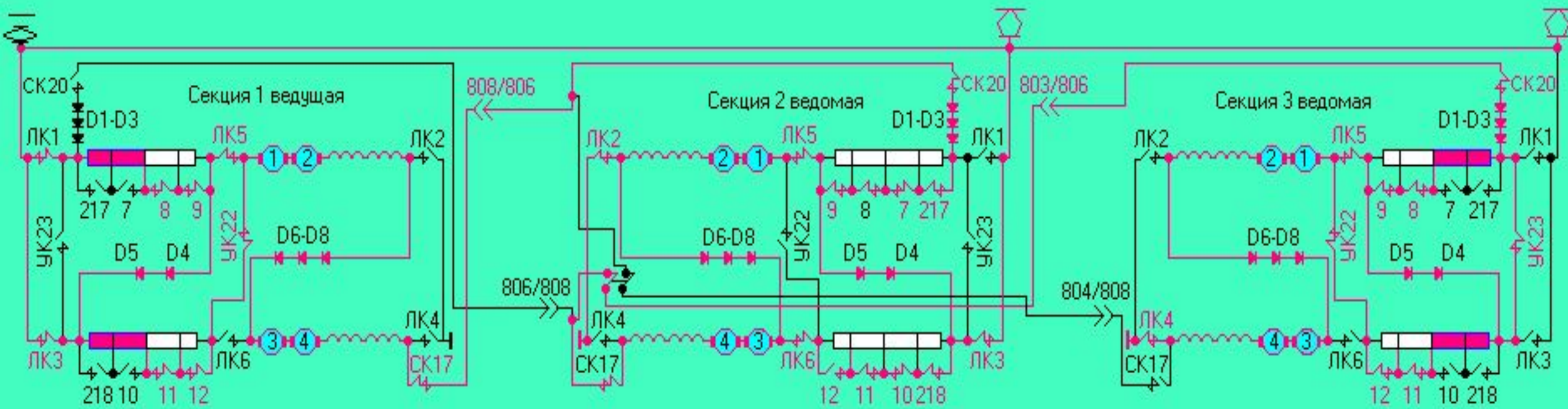
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)												УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●			●	●	●	●			●	●					●	●									●		●	●		
2	●		●		●										●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●									●		●	●		
3	●		●		●					●					●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●			●		●	●		
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●			●		●	●		
5	●		●		●				●				●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●	●		●	●		
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●	●		●	●		
7	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●		●	●	●		
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●		●	●	●		
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●		●	●	●		
10	●		●		●		●	●		●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●	●	●	●	●		
11	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●							●	●			●	●		
12	●		●		●				●	●	●			●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●							●	●			●	●		
13	●		●		●		●		●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●		●	●	●	●	●		
14	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●							●	●			●	●		
15	●		●		●			●	●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●							●	●			●	●		
16	●		●		●			●	●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●							●	●			●	●		
ХП	●		●		●		●	●	●	●	●		●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●			●	●					●	●						●	●	●	●		●	●		

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

Секция 1:

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●			
2	●		●		●										●	●			
3	●		●		●					●					●	●			
4	●		●		●					●			●		●	●			
5	●		●		●			●		●			●		●	●			
6	●		●		●		●	●		●			●		●	●			
7	●		●		●		●	●		●		●	●		●	●			
8	●		●		●		●	●		●				●	●	●			
9	●		●		●		●	●		●		●		●	●	●			
10	●		●		●		●	●		●	●	●		●	●	●			
11	●		●		●				●	●				●	●	●			
12	●		●		●				●	●	●	●		●	●	●			
13	●		●		●		●		●	●	●	●		●	●	●			
14	●		●		●				●	●			●	●	●	●			
15	●		●		●			●	●	●			●	●	●	●			
16	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

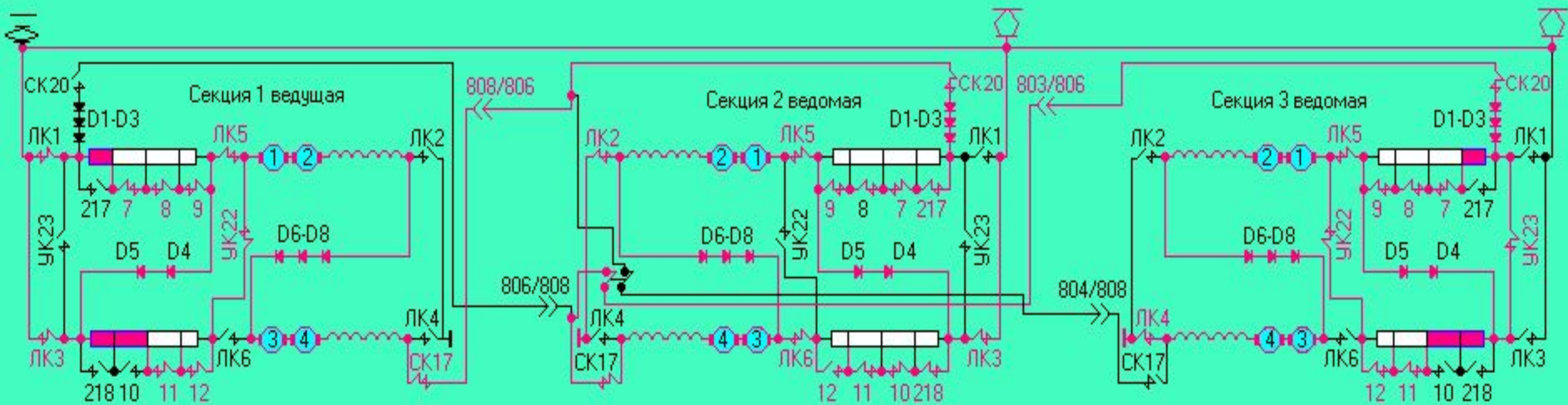
Секция 2:

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1		●	●		●	●	●	●		●	●	●	●			●	●		
2		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
3		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
4		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
5		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
6		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
7		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
8		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
9		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
10		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
11		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
12		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
13		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
14		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
15		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
16		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
ХП		●	●		●	●	●	●	●	●	●	●	●	●		●	●		

Секция 3:

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●	●										●		●	●	
2				●	●										●		●	●	
3				●	●					●					●		●	●	
4				●	●					●					●		●	●	
5				●	●			●		●					●		●	●	
6				●	●		●	●		●					●		●	●	
7				●	●		●	●		●		●			●		●	●	
8				●	●		●	●		●				●	●		●	●	
9				●	●		●	●		●		●		●	●		●	●	
10				●	●		●	●		●	●	●		●	●		●	●	
11				●	●				●	●				●	●		●	●	
12				●	●				●	●	●	●		●	●		●	●	
13				●	●		●		●	●	●	●		●	●		●	●	
14				●	●				●	●			●	●	●		●	●	
15				●	●			●	●	●			●	●	●		●	●	
16				●	●			●	●	●		●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

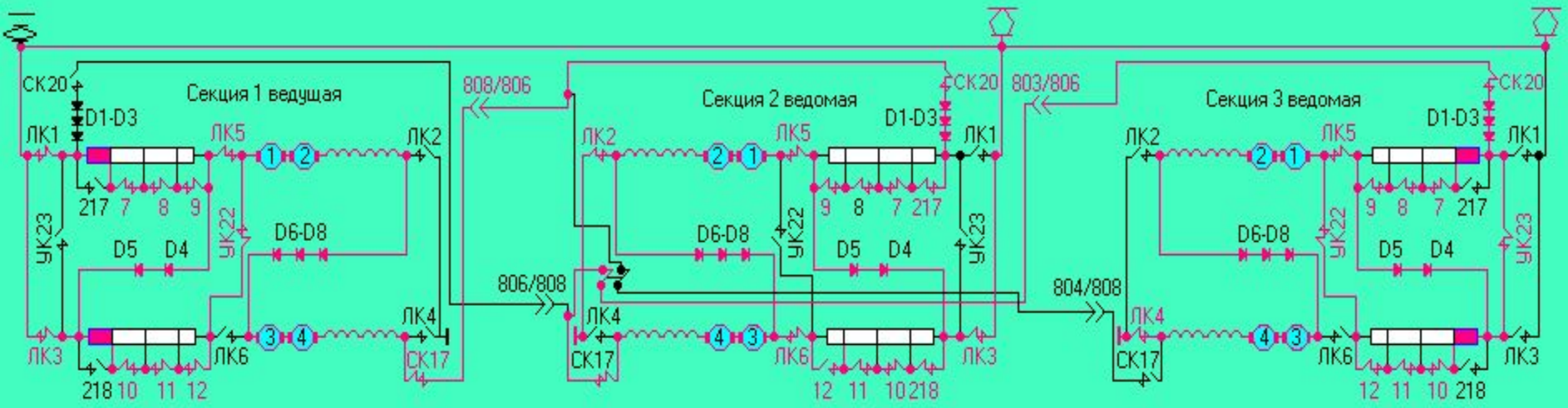
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●		●	●	●	●			●	●						●	●										●		●	●	
2	●		●		●										●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●										●		●	●	
3	●		●		●					●					●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●		●					●		●	●	
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●					●		●	●	
7	●		●		●		●	●		●		●	●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●			●		●	●	
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●				●	●		●	●	
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●		●	●		●	●	
10	●		●		●		●	●		●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●	●	●		●	●		●	●	
11	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●				●	●		●	●	
12	●		●		●				●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●	●	●		●	●		●	●	
13	●		●		●		●		●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●		●	●	●	●		●	●		●	●	
14	●		●		●				●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●			●	●	●		●	●	
15	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●			●	●	●		●	●	
16	●		●		●			●	●	●		●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●		●	●	●	●		●	●	
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	

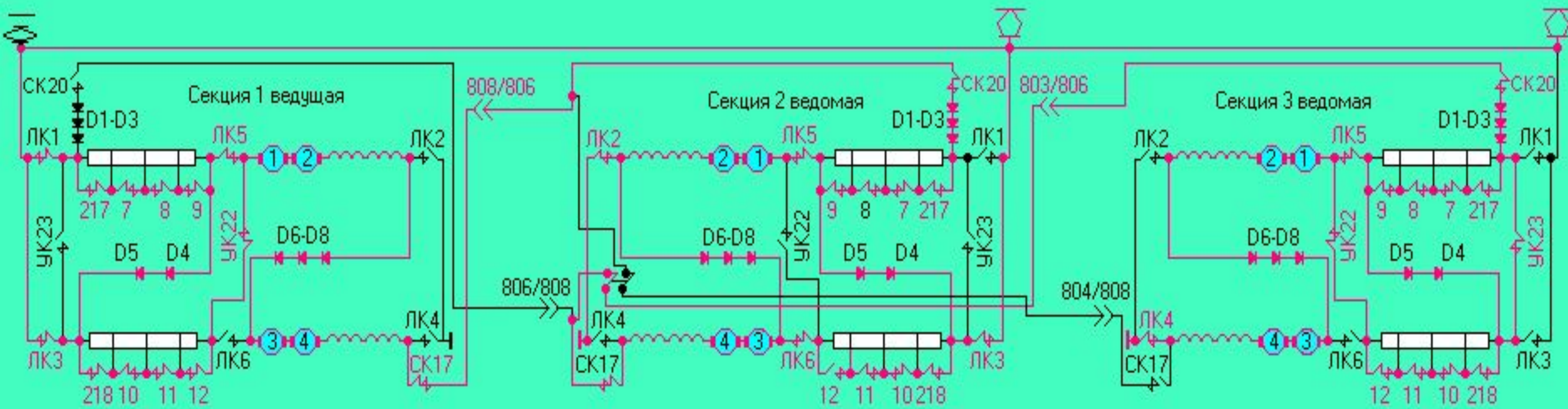
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК		Линейные (ЛК)						Реостатные (РК)												УК		Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●					●	●		●	●	●	●		●	●	●	●			●	●						●	●										●		●	●	
2	●		●		●										●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●										●		●	●	
3	●		●		●					●					●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
4	●		●		●					●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●					●					●		●	●	
5	●		●		●			●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●		●					●		●	●	
6	●		●		●		●	●		●			●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●					●		●	●	
7	●		●		●		●	●		●		●	●		●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●			●		●	●	
8	●		●		●		●	●		●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●				●	●		●	●	
9	●		●		●		●	●		●		●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●		●		●	●		●	●	
10	●		●		●		●	●		●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●		●	●	●		●	●		●	●	
11	●		●		●				●	●				●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●				●	●		●	●	
12	●		●		●				●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●	●	●		●	●		●	●	
13	●		●		●		●		●	●	●	●		●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●		●	●	●	●		●	●		●	●	
14	●		●		●				●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●				●	●			●	●	●		●	●	
15	●		●		●			●	●	●			●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●			●	●	●		●	●	
16	●		●		●			●	●	●		●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●			●	●	●		●	●	●	●		●	●	
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●					●	●		●	●	●	●	●	●	●	●	●	●		●	●						●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (6 двигателей последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "С" соединении трех секционного сцепа (6 тяговых двигателей последовательно)

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●		●										●	●			
2	●		●		●										●	●			
3	●		●		●					●					●	●			
4	●		●		●					●			●		●	●			
5	●		●		●			●		●			●		●	●			
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11	●		●		●				●	●				●	●	●			
12	●		●		●				●	●	●	●		●	●	●			
13	●		●		●		●		●	●	●	●		●	●	●			
14	●		●		●				●	●			●	●	●	●			
15	●		●		●			●	●	●			●	●	●	●			
16	●		●		●			●	●	●		●	●	●	●	●			
ХП	●		●		●		●	●	●	●	●	●	●	●	●	●			

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1		●	●		●	●	●	●		●	●	●	●			●	●		
2		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
3		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
4		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
5		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
6		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
7		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
8		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
9		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
10		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
11		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
12		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
13		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
14		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
15		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
16		●	●		●	●	●	●	●	●	●	●	●	●		●	●		
ХП		●	●		●	●	●	●	●	●	●	●	●	●		●	●		

№	Линейные (ЛК)						Реостатные (РК)											УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●	●										●		●	●	
2				●	●										●		●	●	
3				●	●					●					●		●	●	
4				●	●					●					●		●	●	
5				●	●			●		●					●		●	●	
6				●	●		●	●		●					●		●	●	
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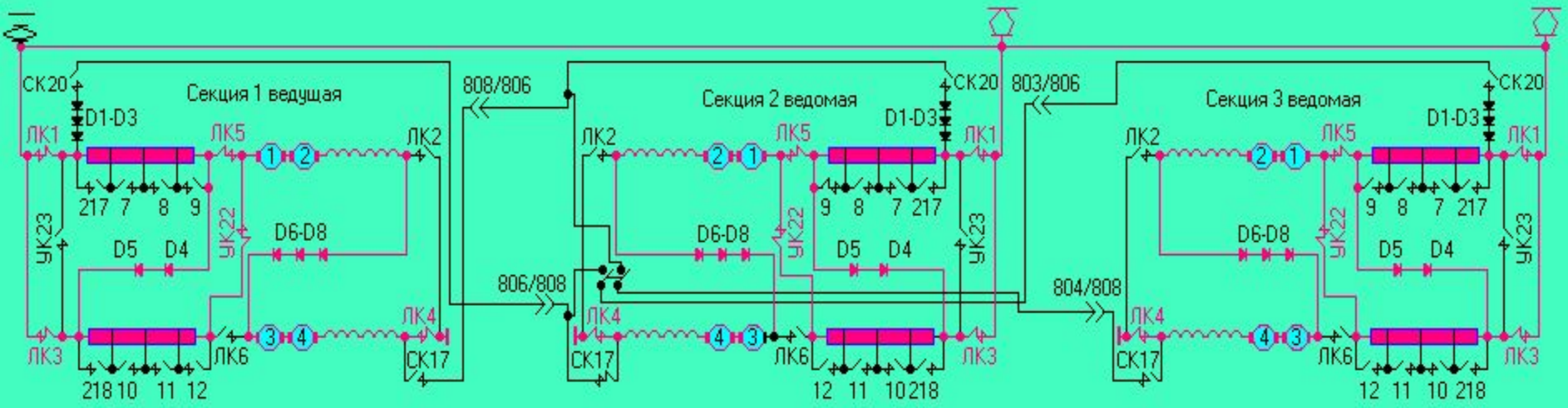
8				●	●		●	●		●				●	●		●	●	
9				●	●		●	●		●		●		●	●		●	●	
10				●	●		●	●		●	●	●		●	●		●	●	
11				●	●				●	●				●	●		●	●	
12				●	●				●	●	●	●		●	●		●	●	
13				●	●		●		●	●	●	●		●	●		●	●	
14				●	●				●	●			●	●	●		●	●	
15				●	●			●	●	●			●	●	●		●	●	
16				●	●			●	●	●		●	●	●	●		●	●	
ХП				●	●		●	●	●	●	●	●	●	●	●		●	●	

Упрощенная схема трех секционного сцепа на «СП» соединении тяговых двигателей (4 двигателя последовательно)

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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3	●		●	●	●					●			●		●				
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13	●		●	●	●				●	●			●	●	●				
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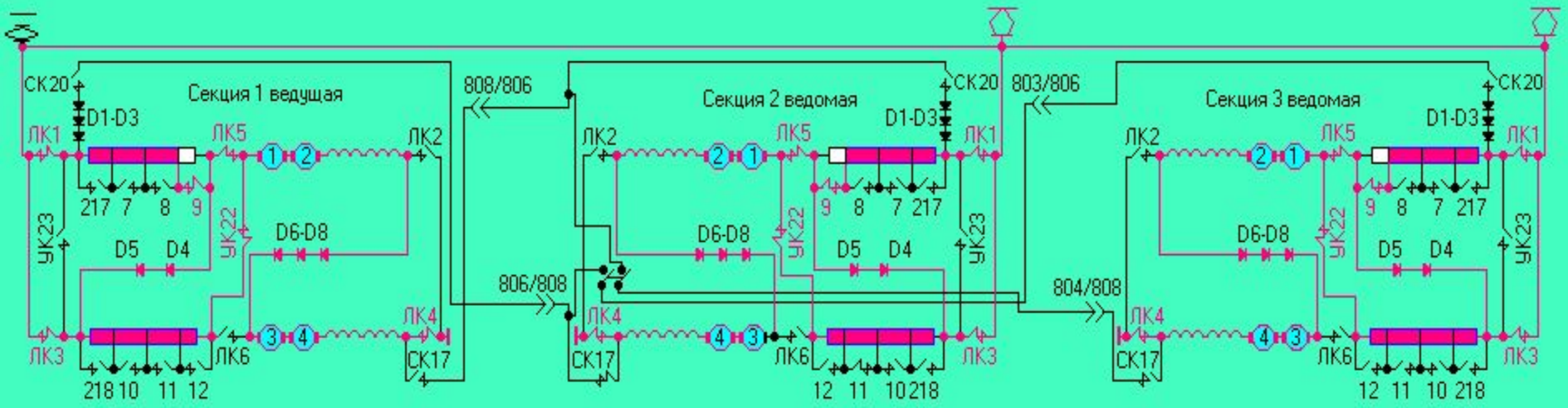
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
2	●		●	●	●					●					●				
3	●		●	●	●					●			●		●				
4	●		●	●	●			●		●			●		●				
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6	●		●	●	●		●	●		●		●	●		●				
7	●		●	●	●		●	●		●				●	●				
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10	●		●	●	●				●	●				●	●				
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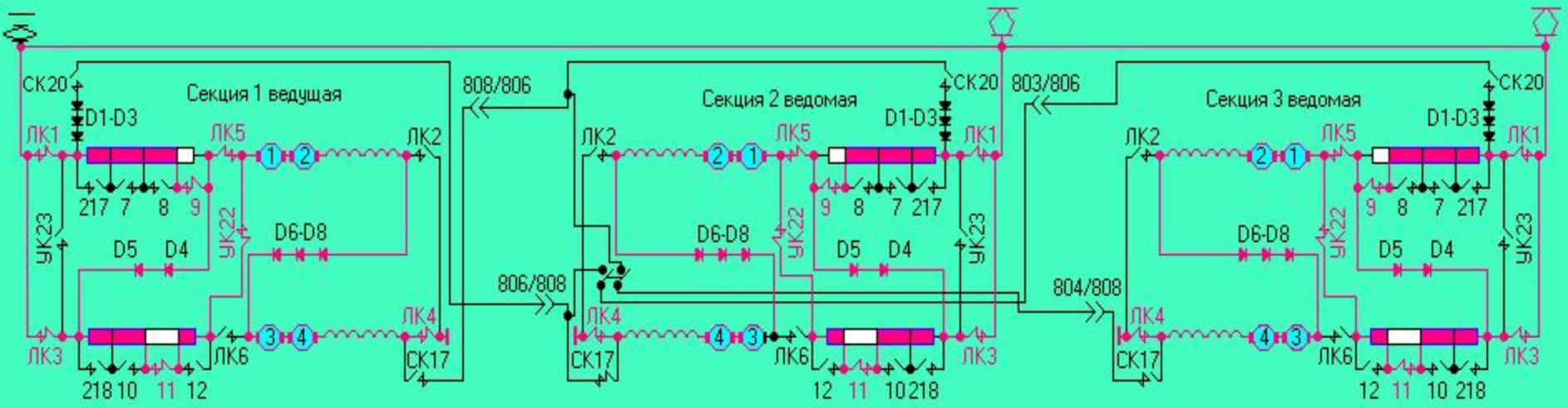
13	●		●	●	●				●	●			●	●	●				
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
2	●		●	●	●					●					●				
3	●		●	●	●					●			●		●				
4	●		●	●	●			●		●			●		●				
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6	●		●	●	●		●	●		●		●	●		●				
7	●		●	●	●		●	●		●				●	●				
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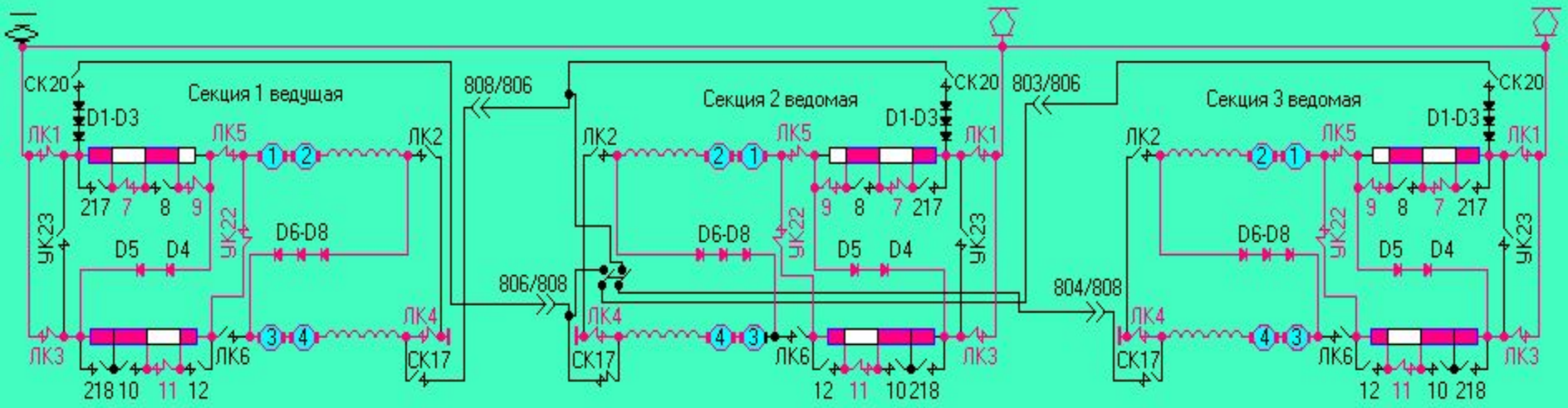
9	●		●	●	●		●	●		●	●	●		●	●				
10	●		●	●	●				●	●				●	●				
11	●		●	●	●				●	●	●	●		●	●				
12	●		●	●	●		●		●	●	●	●		●	●				
13	●		●	●	●				●	●			●	●	●				
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
2	●		●	●	●					●					●				
3	●		●	●	●					●			●		●				
4	●		●	●	●			●		●			●		●				
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7	●		●	●	●		●	●		●				●	●				
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9	●		●	●	●		●	●		●	●	●		●	●				
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11	●		●	●	●				●	●	●	●		●	●				
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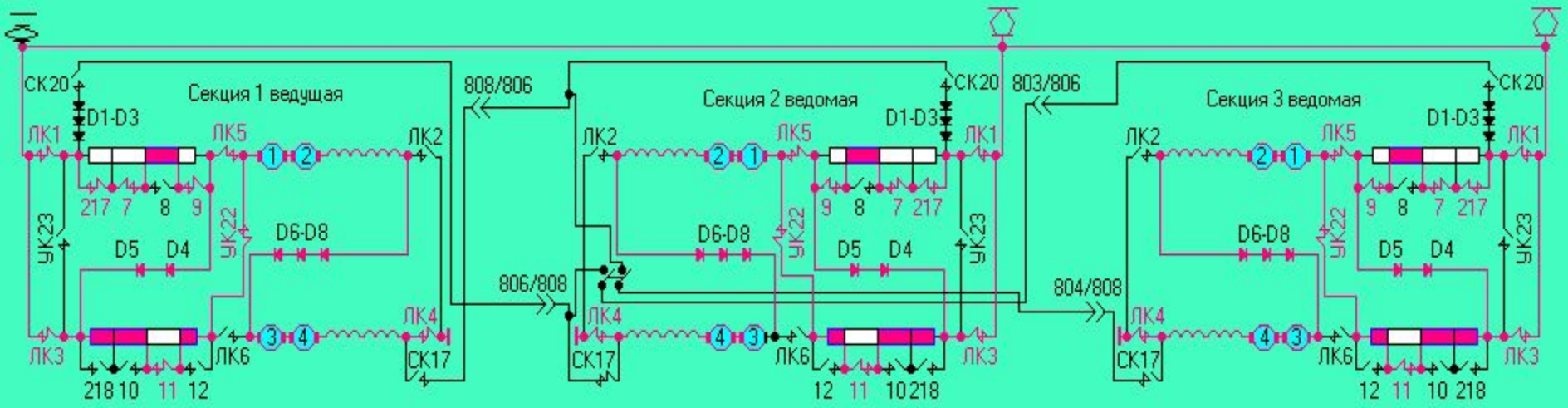
13	●		●	●	●				●	●			●	●	●				
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
2	●		●	●	●					●					●				
3	●		●	●	●					●			●		●				
4	●		●	●	●			●		●			●		●				
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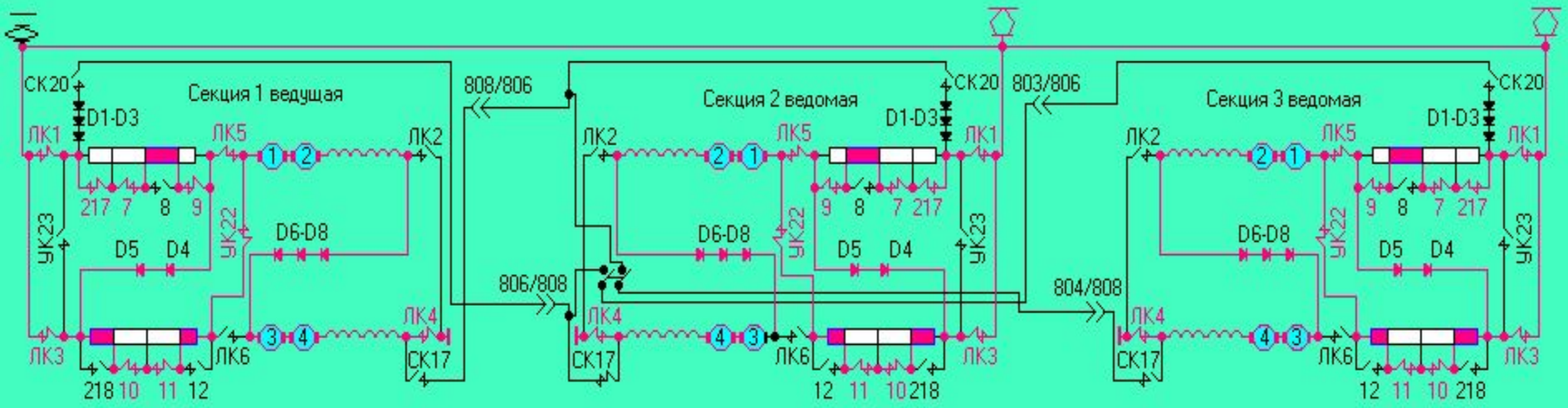
11	●		●	●	●				●	●	●	●		●	●				
12	●		●	●	●		●		●	●	●	●		●	●				
13	●		●	●	●				●	●			●	●	●				
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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3	●		●	●	●					●			●		●				
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11	●		●	●	●				●	●	●	●		●	●				
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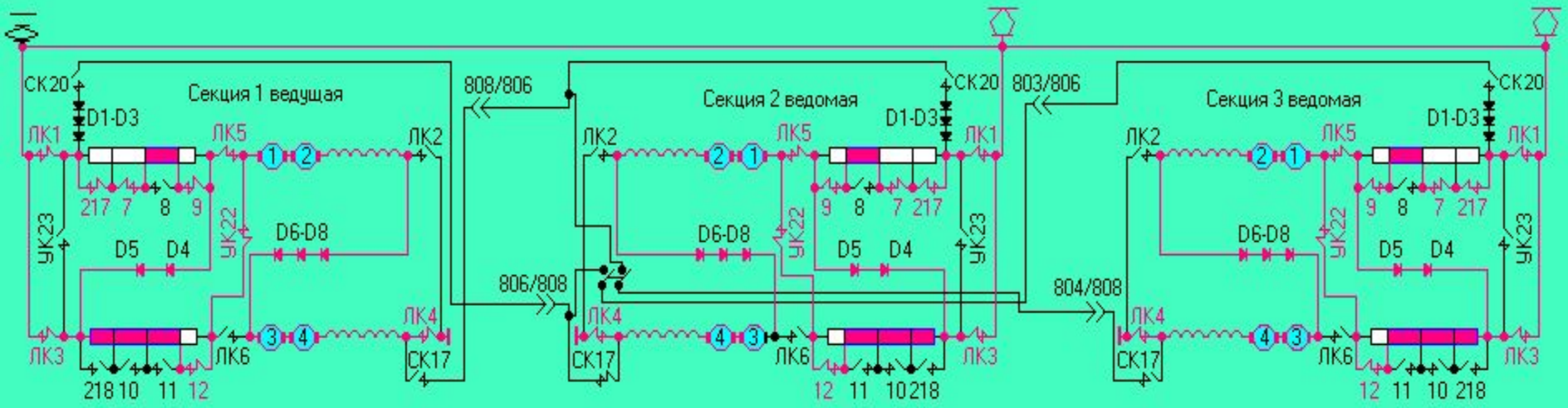
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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3	●		●	●	●					●			●		●				
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11	●		●	●	●				●	●	●	●		●	●				
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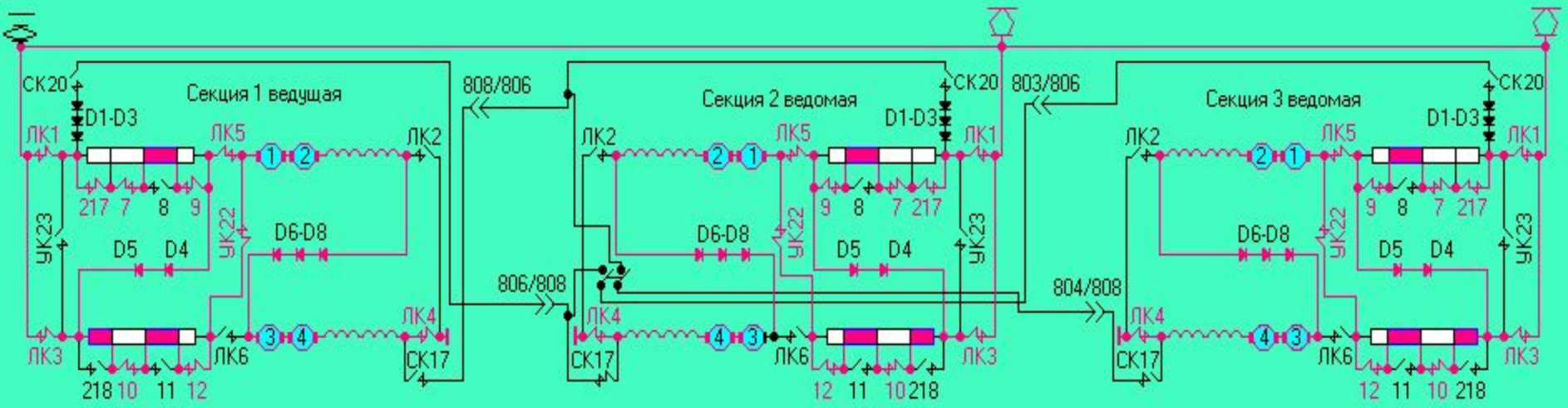
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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3	●		●	●	●					●			●		●				
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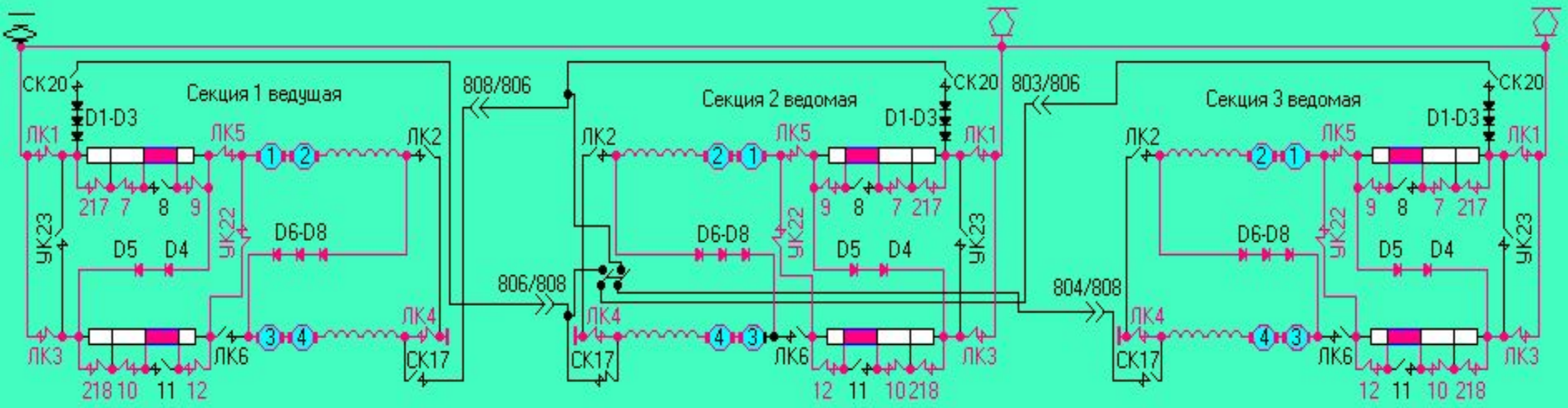
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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3	●		●	●	●					●			●		●				
4	●		●	●	●			●		●			●		●				
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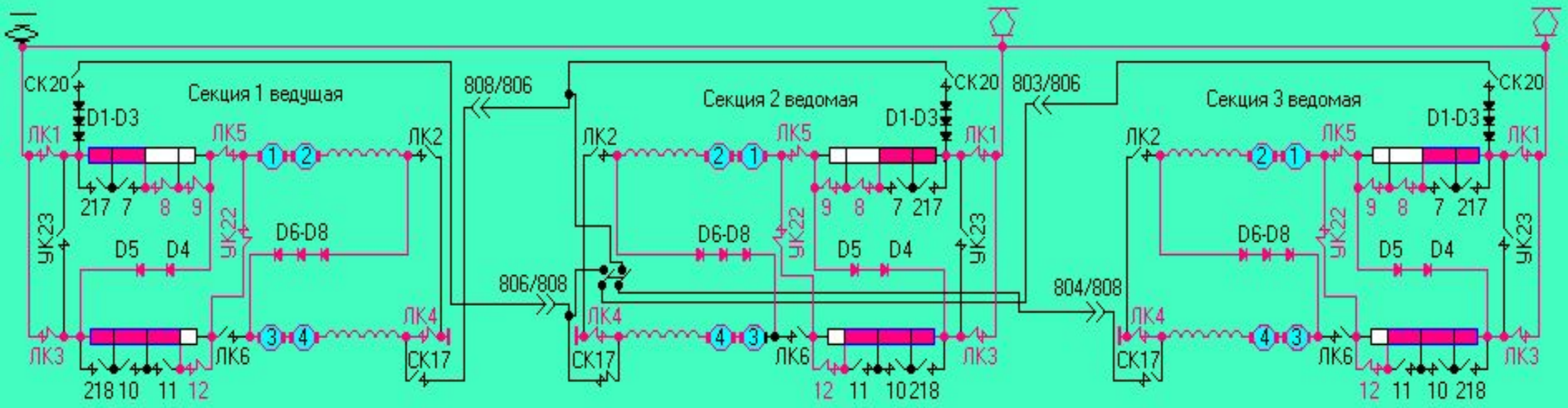
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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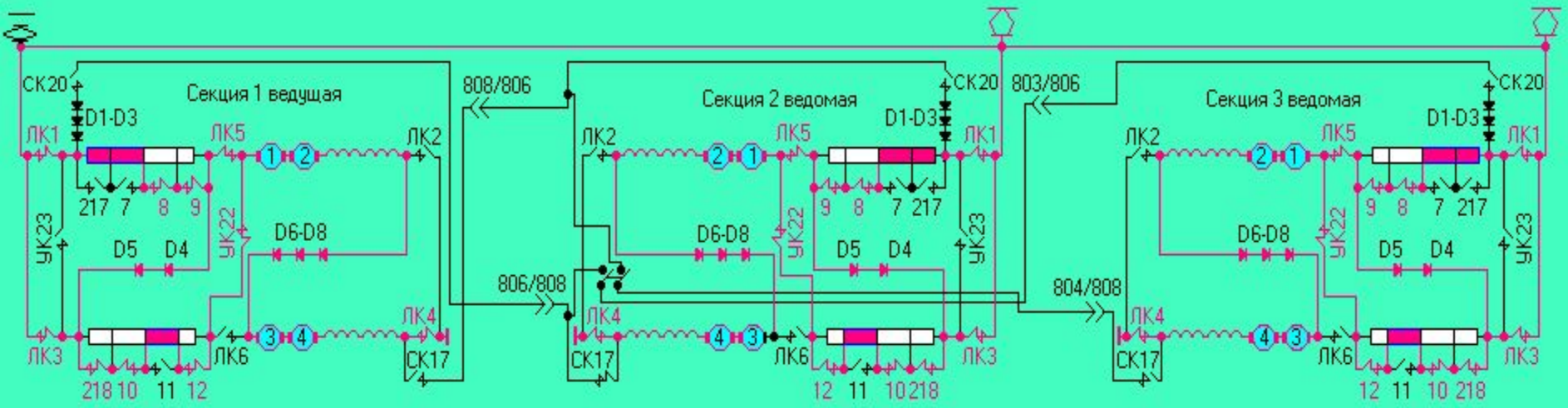
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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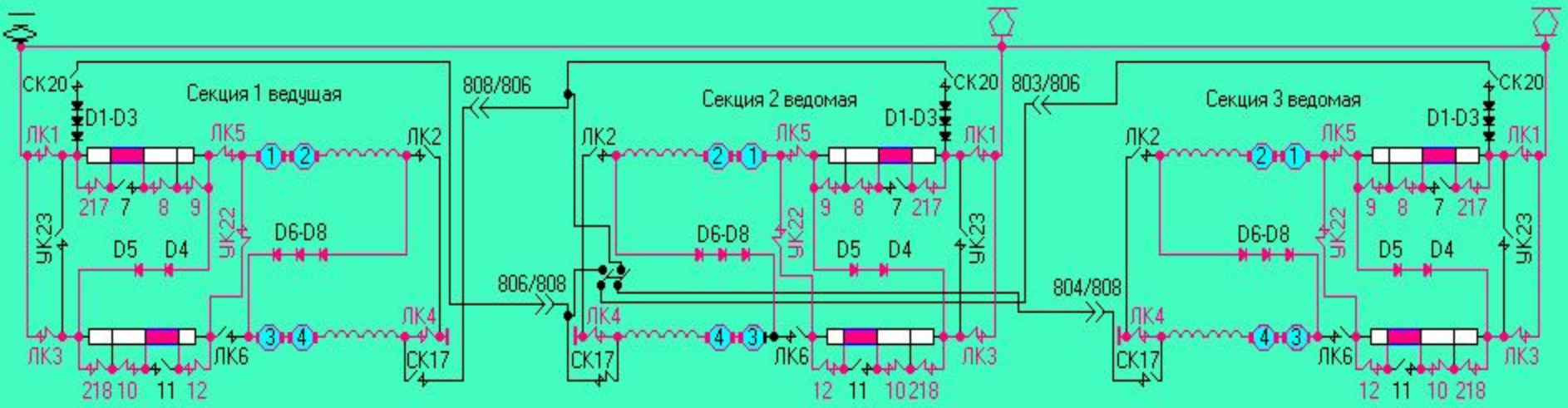
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
2	●		●	●	●					●					●				
3	●		●	●	●					●			●		●				
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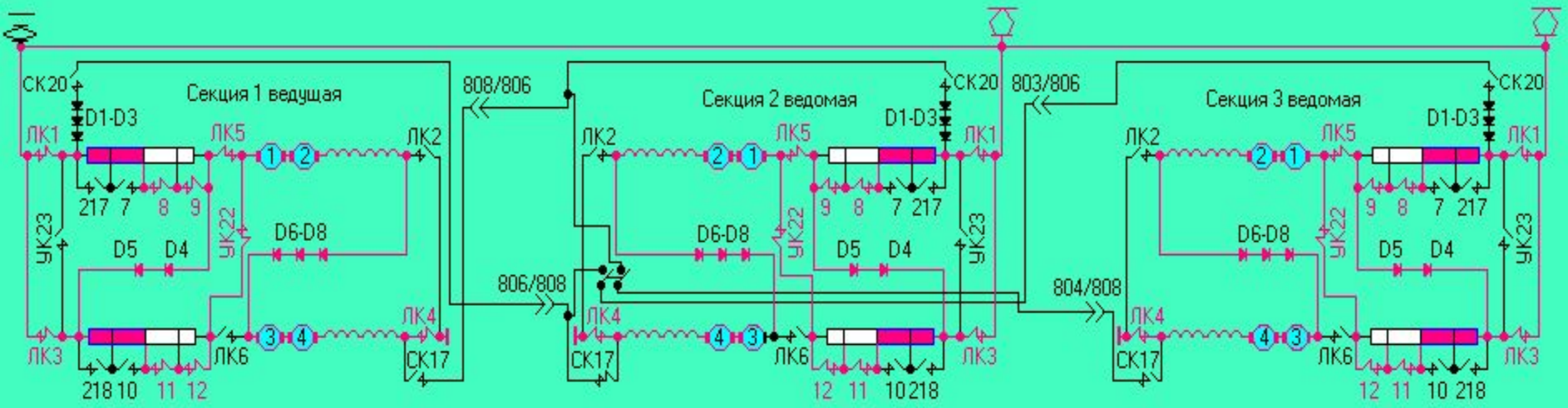
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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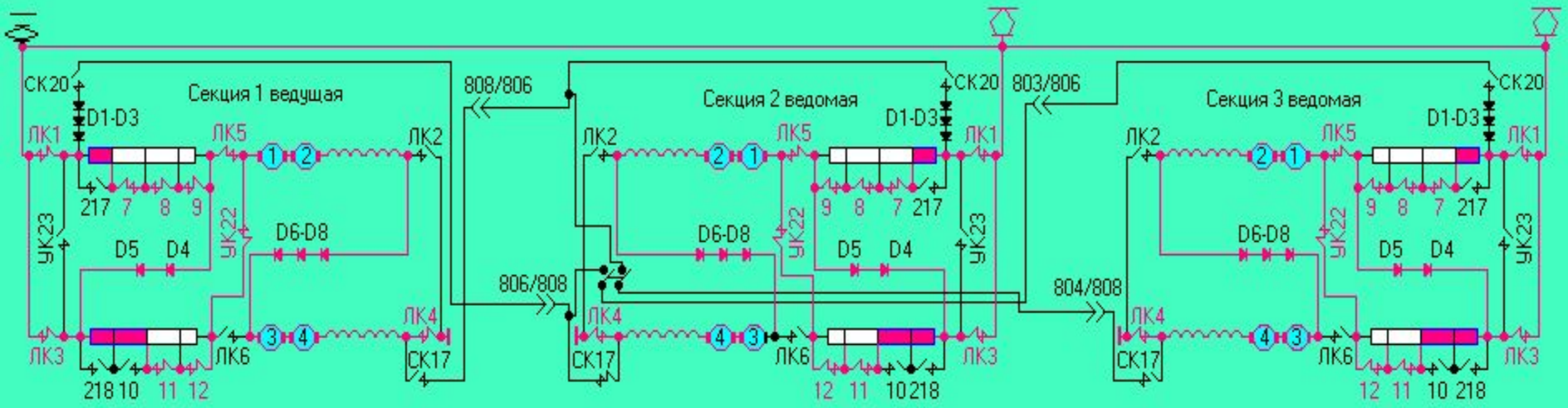
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

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Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●		●	●	●										●				
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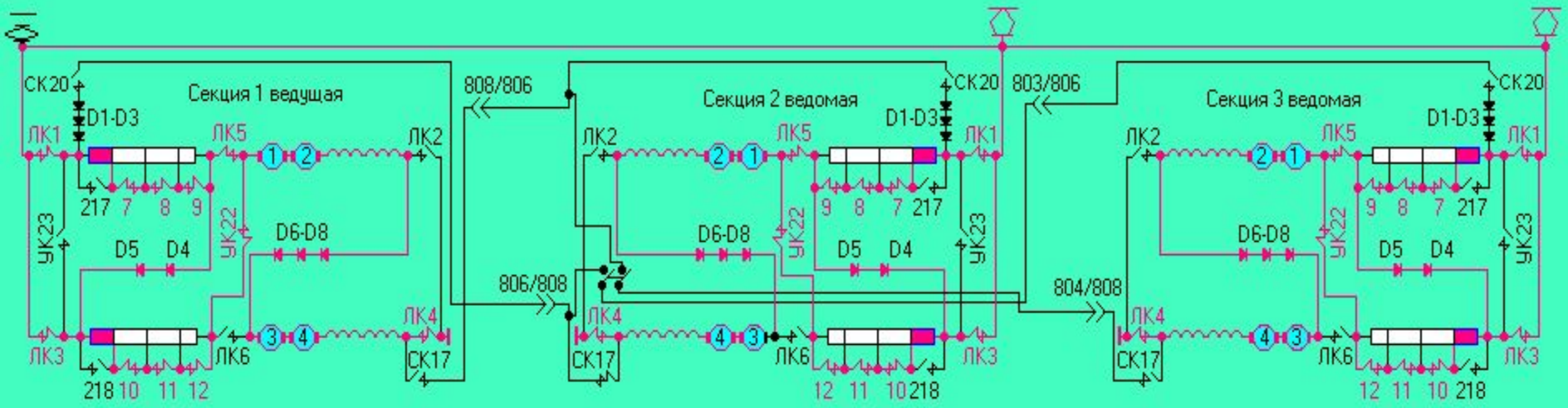
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

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Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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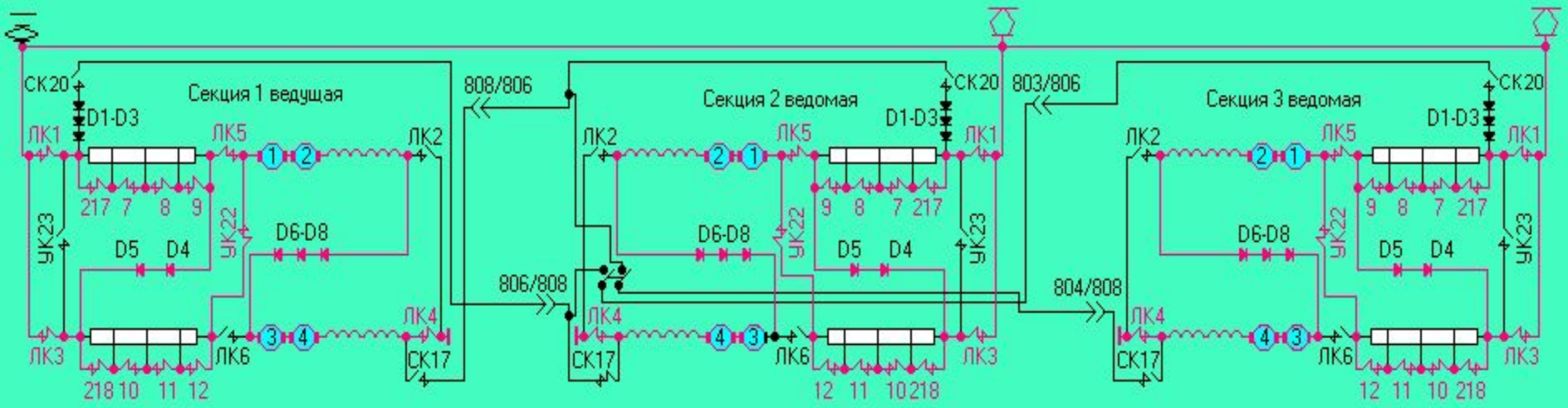
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)										УК	
Поз	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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11	●		●	●	●				●	●	●	●		●	●				
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13	●		●	●	●				●	●			●	●	●				
14	●		●	●	●			●	●	●			●	●	●				
15	●		●	●	●			●	●	●		●	●	●	●				
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●				