

RAND WATER ZUIKERBOSCH PUMPING STATION CONTRACT 2319

ENGINE ROOM No. 4B PUMPSETS 29 & 30

LOOP WIRING DIAGRAMS

COVER SHEET

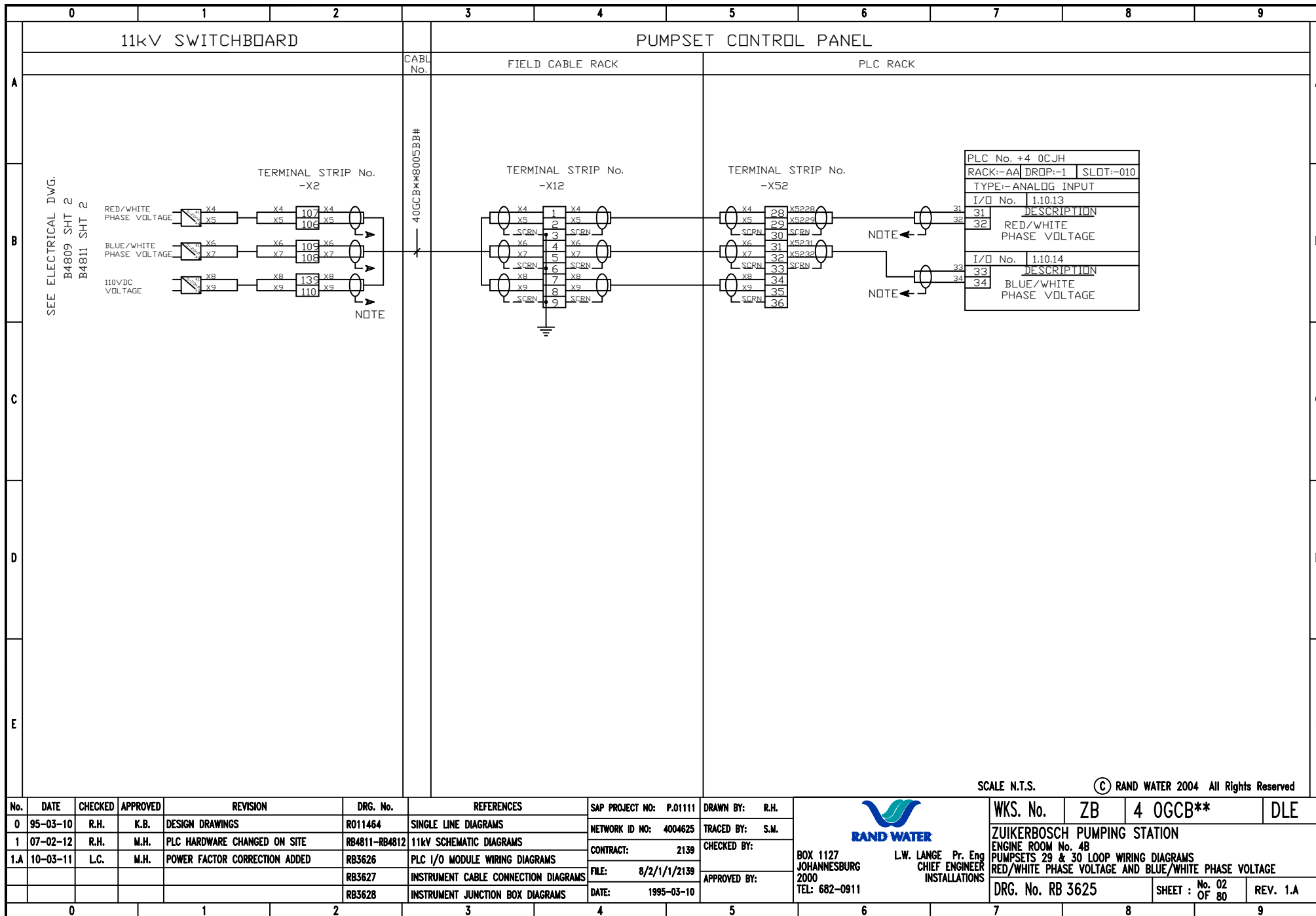
SCALE N.T.S.

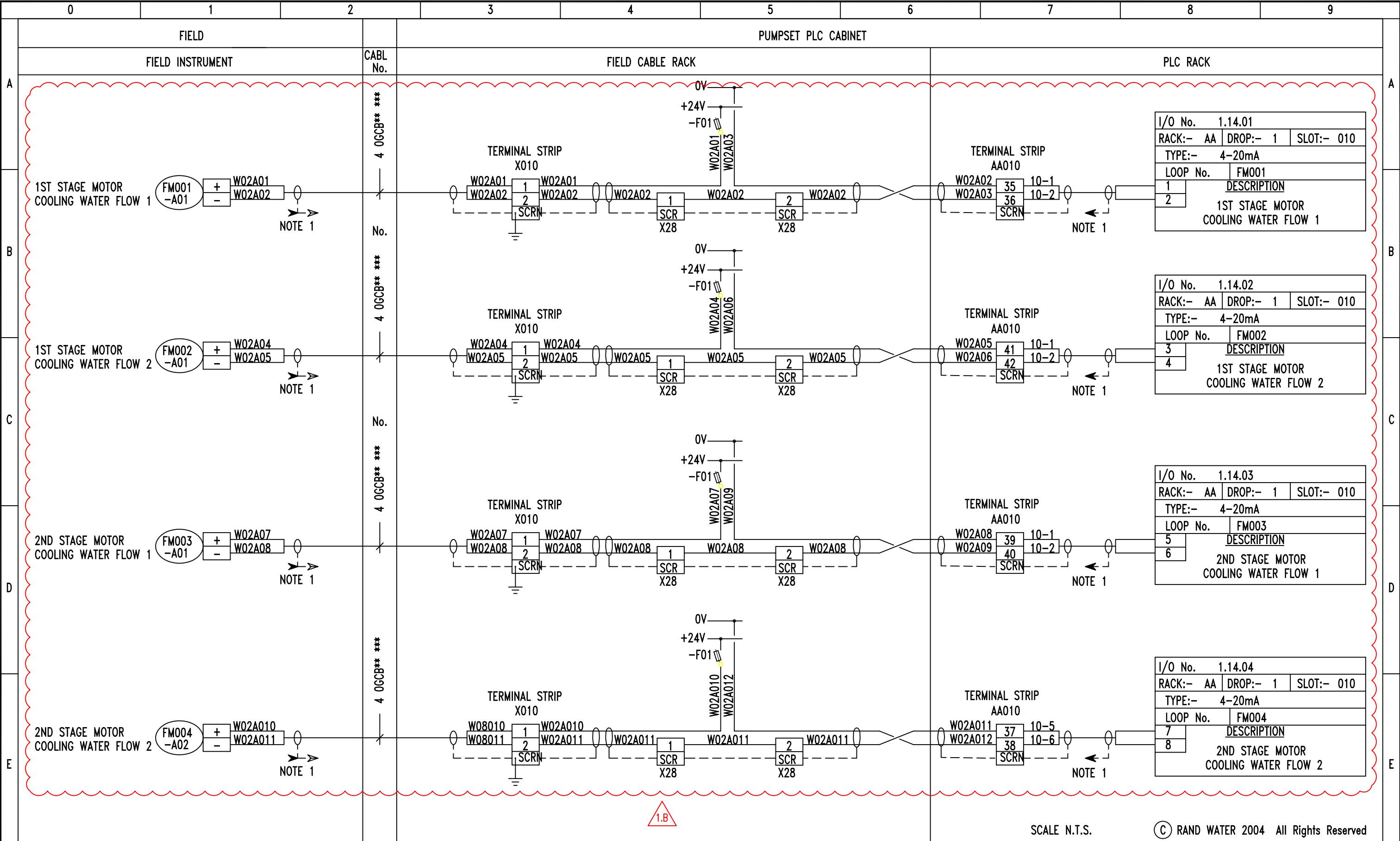
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No.	DATE	CHECKED	APPROVED	REVISION	DRG. No.	REFERENCES	SAP PROJECT NO: P.01111	DRAWN BY: R.H.	 L.W. LANGE Pr. Eng CHIEF ENGINEER INSTALLATIONS	WKS. No.	ZB	4 OGCB**	DLX
0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.		ZUIKERBOSCH PUMPING STATION ENGINE ROOM No. 4B PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS COVER SHEET DRG. No. RB 3625			
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:					
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:					
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10						
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS				SHEET : No. 00 OF 80			
										REV. 1.A			

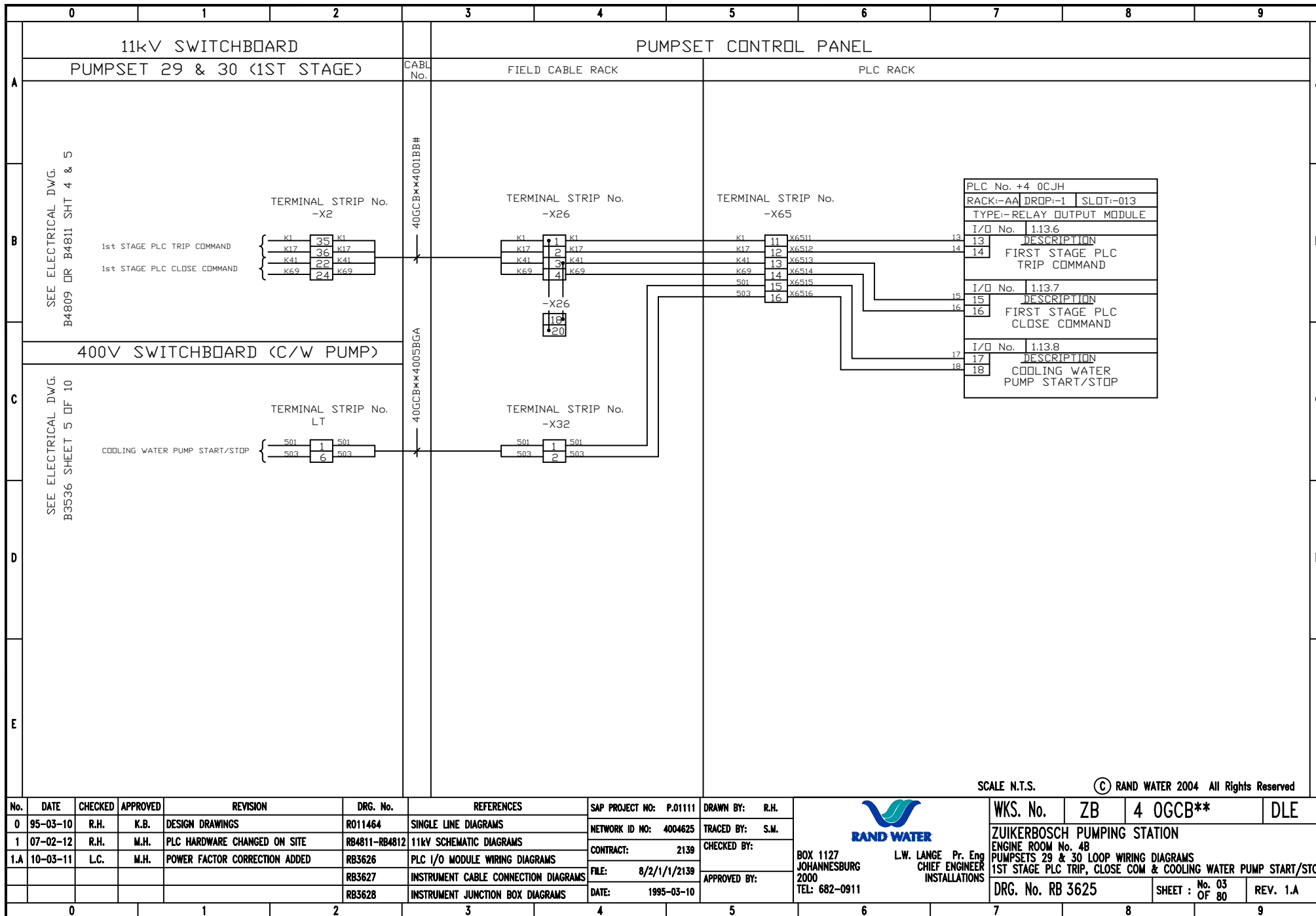
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A	INDEX					LEGEND					A			
	00.	COVER SHEET												
	01.	INDEX SHEET												
	01A.	INDEX SHEET CONTINUED												
	02.	RED/WHITE PHASE VOLTAGE AND BLUE/WHITE PHASE VOLTAGE												
	02A.	1ST AND 2ND STAGE MOTOR COOLING WATER FLOW 1.B NEW INSTALLATION												
	03.	FIRST STAGE PLC TRIP, CLOSE COMMAND AND COOLING WATER PUMP START/STOP												
	04.	PUMPSETS FIRST STAGE ELECTRICAL LOOPS												
	05.	PUMPSETS ELECTRICAL LOOPS												
	06.	PUMPSETS ELECTRICAL LOOPS												
	07.	PUMPSETS SECOND STAGE ELECTRICAL LOOPS												
	08.	PUMPSETS ELECTRICAL LOOPS												
	09.	PUMPSETS ELECTRICAL LOOPS												
	10.	PUMPSETS ELECTRICAL LOOPS												
	11.	PUMPSETS ELECTRICAL LOOPS												
	12.	PUMPSETS ELECTRICAL LOOPS												
	13.	PUMPSETS ELECTRICAL LOOPS												
	14.	SECOND STAGE PLC TRIP, CLOSE COMMAND AND FEEDBACK TRANSFORMER PLC TRIP, CLOSE COMMAND												
	15.	PUMPSETS COOLING WATER PUMP ELECTRICAL LOOPS												
	16.	PUMPSETS ELECTRICAL LOOPS 1.B EXISTING INSTALLATION												
	16A.	P.F.C UNIT DOOR INTERLOCK 1.B NEW INSTALLATION												
B											B			
	17.	PUMPSETS EMERGENCY STOP												
	18.	SUCTION VALVE POSITION INDICATION, OPEN AND CLOSE COMMAND												
	19.	LOOPS AA001-S01 TO AA001-S08 MONITORING OF SUCTION VALVE												
	20.	DELIVERY VALVE POSITION INDICATION, OPEN AND CLOSE COMMAND												
	21.	LOOPS AA001-S01 TO AA001-S08 MONITORING OF DELIVERY VALVE												
	22.	PUMPSETS DELIVERY MI/d FLOW AND PUMPSETS TOTALIZED FLOW PULSES												
	23.	LOOP CF311 FIRST STAGE PUMP T/BEAR C/W F/SW												
	24.	LOOP CF312 FIRST STAGE MOTOR C/W F/SW												
	25.	LOOP CF321 SECOND STAGE PUMP T/BEAR C/W F/SW												
	26.	LOOP CF322 SECOND STAGE MOTOR PRI C/W F/SW												
	27.	LOOP CF323 SECOND STAGE MOTOR SEC C/W F/SW												
	28.	LOOP CF324 SECOND STAGE MOTOR DE BRG C/W F/SW												
	29.	LOOP CF325 SECOND STAGE MOTOR NDE BRG C/W F/SW												
	30.	LOOP CG311 FIRST STAGE CASE BLEED VALVE												
	31.	LOOP CG321 SECOND STAGE CASE BLEED VALVE												
	32.	LOOP CL310 FIRST STAGE GLAND LEAK L/SW												
	33.	LOOP CL320 SECOND STAGE GLAND LEAK L/SW												
	34.	LOOP CP001 PUMPSET SUCTION WATER PRESSURE												
	35.	LOOP CP002 PUMPSET INTERMEDIATE WATER PRESSURE												
	36.	LOOP CP003 PUMPSET WATER PRESSURE												
	37.	LOOP CT001 FIRST STAGE PUMP NDE THRUST BEARING TEMPERATURE												
	38.	LOOP CT002 FIRST STAGE PUMP NDE BEARING TEMPERATURE												
	39.	LOOP CT003 FIRST STAGE NDE GLAND SEAL TEMPERATURE												
	40.	LOOP CT004 FIRST STAGE PUMP VOLUTE TEMPERATURE												
C											C			
	NOTES:													
	1. ASTERISKS (*) WITHIN NUMBERS ARE TO BE REPLACED WITH 29 OR 30.													
	2. (#) IN CABLE NUMBERS ARE TO BE REPLACED WITH 'C' FOR PUMPSET 29 AND 'D' FOR PUMPSET 30.													
	3. POST COMMISSIONING MODIFICATIONS REV 2.A IS: 1.B POWER FACTOR /MOTOR COOLING WATER FLOW / 2ND STAGE MV CIRCUIT BREAKER /NEW INSTALLATIONS													
D											D			
	REVISION STATUS													
	A+ - PRELIMINARY DESIGN													
	0 - DESIGN DRAWINGS													
	0.A+ - DESIGN CHANGES DURING MANUFACTURE													
	1 - AS BUILD IN FACTORY													
	1.A+ - MODIFICATION ON SITE													
	2 - AS COMMISSIONED ON SITE													
	2.A+ - POST COMMISSIONING MODIFICATIONS													
E											E			
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No.	DATE	CHECKED	APPROVED	REVISION	DRG. No.	REFERENCES	SAP PROJECT NO: P.01111	DRAWN BY: R.H.	 BOX 1127 JOHANNESBURG 2000 TEL: 682-0911 L.W. LANGE Pr. Eng CHIEF ENGINEER INSTALLATIONS	WKS. No.	ZB	4 OGCB**	DLX	
0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.		ZUIKERBOSCH PUMPING STATION ENGINE ROOM No. 4B PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS INDEX SHEET				
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1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:						
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10			DRG. No. RB 3625		SHEET : No. 01 OF 80	REV. 1.A	
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS								
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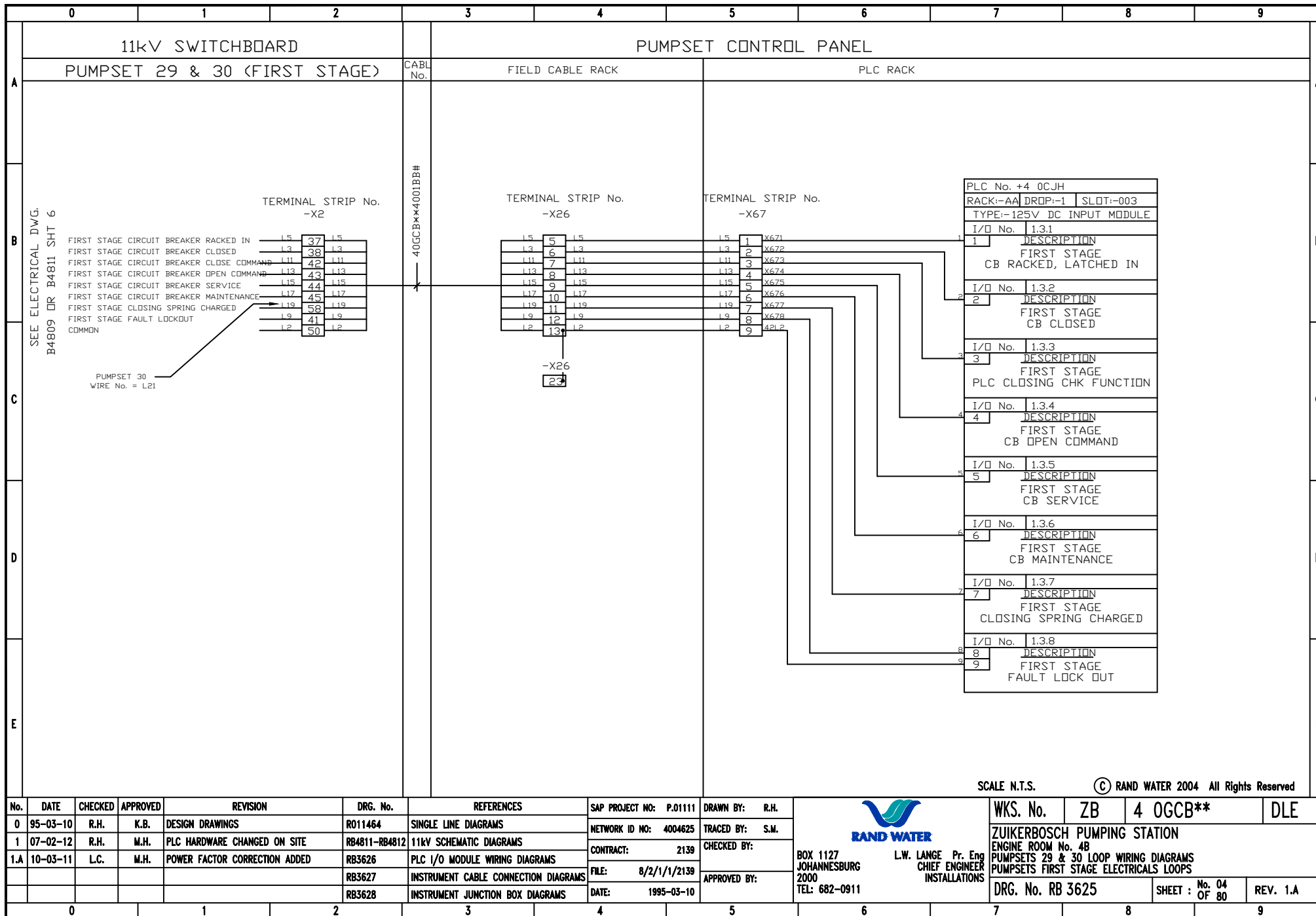
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A	INDEX					LEGEND					A				
	41. LOOP CT005 FIRST STAGE PUMP DE GLAND SEAL TEMPERATURE					X - XXXX									
	42. LOOP CT006 FIRST STAGE PUMP DE BEARING TEMPERATURE					X - XXXX									
	43. LOOP CT007 FIRST STAGE MOTOR DE TEMPERATURE					X - XXXX									
	44. LOOP CT008 FIRST STAGE MOTOR RED PHASE WINDING TEMPERATURE					X - XXXX									
	45. LOOP CT009 FIRST STAGE MOTOR RED PHASE WINDING TEMPERATURE														
	46. LOOP CT010 FIRST STAGE MOTOR WHITE PHASE WINDING TEMPERATURE														
	47. LOOP CT011 FIRST STAGE MOTOR WHITE PHASE WINDING TEMPERATURE														
	48. LOOP CT012 FIRST STAGE MOTOR BLUE PHASE WINDING TEMPERATURE														
	49. LOOP CT013 FIRST STAGE MOTOR BLUE PHASE WINDING TEMPERATURE														
	50. LOOP CT014 FIRST STAGE MOTOR AMBIENT TEMPERATURE														
B	51. LOOP CT015 FIRST STAGE MOTOR NDE BEARING TEMPERATURE										B				
	52. LOOP CT016 FIRST STAGE MOTOR WATER COOLER AIR OUTLET TEMPERATURE														
	53. LOOP CT021 SECOND STAGE PUMP NDE THRUST BEARING TEMPERATURE														
	54. LOOP CT022 SECOND STAGE PUMP NDE BEARING TEMPERATURE														
	55. LOOP CT023 SECOND STAGE NDE GLAND SEAL TEMPERARURE														
	56. LOOP CT024 SECOND STAGE PUMP VOLUTE TEMPERATURE														
	57. LOOP CT025 SECOND STAGE PUMP DE GLAND SEAL TEMPERATURE														
	58. LOOP CT026 SECOND STAGE PUMP DE BEARING TEMPERATURE														
	59. LOOP CT027 SECOND STAGE MOTOR DE BEARING TEMPERATURE														
	60. LOOP CT029 SECOND STAGE MOTOR NDE BEARING TEMPERATURE														
C	61. LOOP CT030 SECOND STAGE MOTOR WATER COOLER AIR OUTLET TEMPERATURE										C				
	62. LOOP CT031 SECOND STAGE MOTOR AMBIENT TEMPERATURE														
	63. LOOP CT032 SECOND STAGE MOTOR RED PHASE WINDING TEMPERATURE														
	64. LOOP CT034 SECOND STAGE MOTOR WHITE PHASE WINDING TEMPERATURE														
	65. LOOP CT036 SECOND STAGE MOTOR BLUE PHASE WINDING TEMPERATURE														
	66. LOOP CY011 FIRST STAGE PUMP NDE VIBRATION TRANSDUCER														
	67. LOOP CY012 FIRST STAGE PUMP DE VIBRATION TRANSDUCER														
	68. LOOP CY013 FIRST STAGE MOTOR DE VIBRATION TRANSDUCER														
	69. LOOP CY021 SECOND STAGE PUMP NDE VIBRATION TRANSDUCER														
	70. LOOP CY022 SECOND STAGE PUMP DE VIBRATION TRANSDUCER														
	71. LOOP CY023 SECOND STAGE MOTOR DE VIBRATION TRANSDUCER														
D	72. LOOP FOR PUMPSET FAULT TRIP FLASHING LIGHT ON DESK CONTROL COMMAND					NOTES:					D				
	73. LOOP XXXXX 1ST AND 2ND STAGE SURGE PROTECTION ALARM 1.B NEW INSTALLATION					1. ASTERISKS (*) WITHIN NUMBERS ARE TO BE REPLACED WITH 29 OR 30.									
	74. BLANK SHEET					2. (#) IN CABLE NUMBERS ARE TO BE REPLACED WITH 'C' FOR PUMPSET 29 AND 'D' FOR PUMPSET 30.									
	75. BLANK SHEET														
	76. BLANK SHEET														
	77. BLANK SHEET														
	78. BLANK SHEET														
	79. BLANK SHEET														
E	80. BLANK SHEET					REVISION STATUS					E				
						A+ - PRELIMINARY DESIGN									
						0 - DESIGN DRAWINGS									
						0.A+ - DESIGN CHANGES DURING MANUFACTURE									
						1 - AS BUILD IN FACTORY									
						1.A+ - MODIFICATION ON SITE									
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						2.A+ - POST COMMISSIONING MODIFICATIONS									
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No.	DATE	CHECKED	APPROVED	REVISION	DRG. No.	REFERENCES	SAP PROJECT NO: P.01111	DRAWN BY: R.H.	 RAND WATER BOX 1127 JOHANNESBURG 2000 TEL: 682-0911 L.W. LANGE Pr. Eng CHIEF ENGINEER INSTALLATIONS		WKS. No.	ZB	4 OGCB**	DLX	
0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.			ZUIKERBOSCH PUMPING STATION				
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:			ENGINE ROOM No. 4B				
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:			PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS				
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10				INDEX SHEET				
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS			DRG. No. RB 3625		SHEET : No. 01A OF 80		REV. 1.A		
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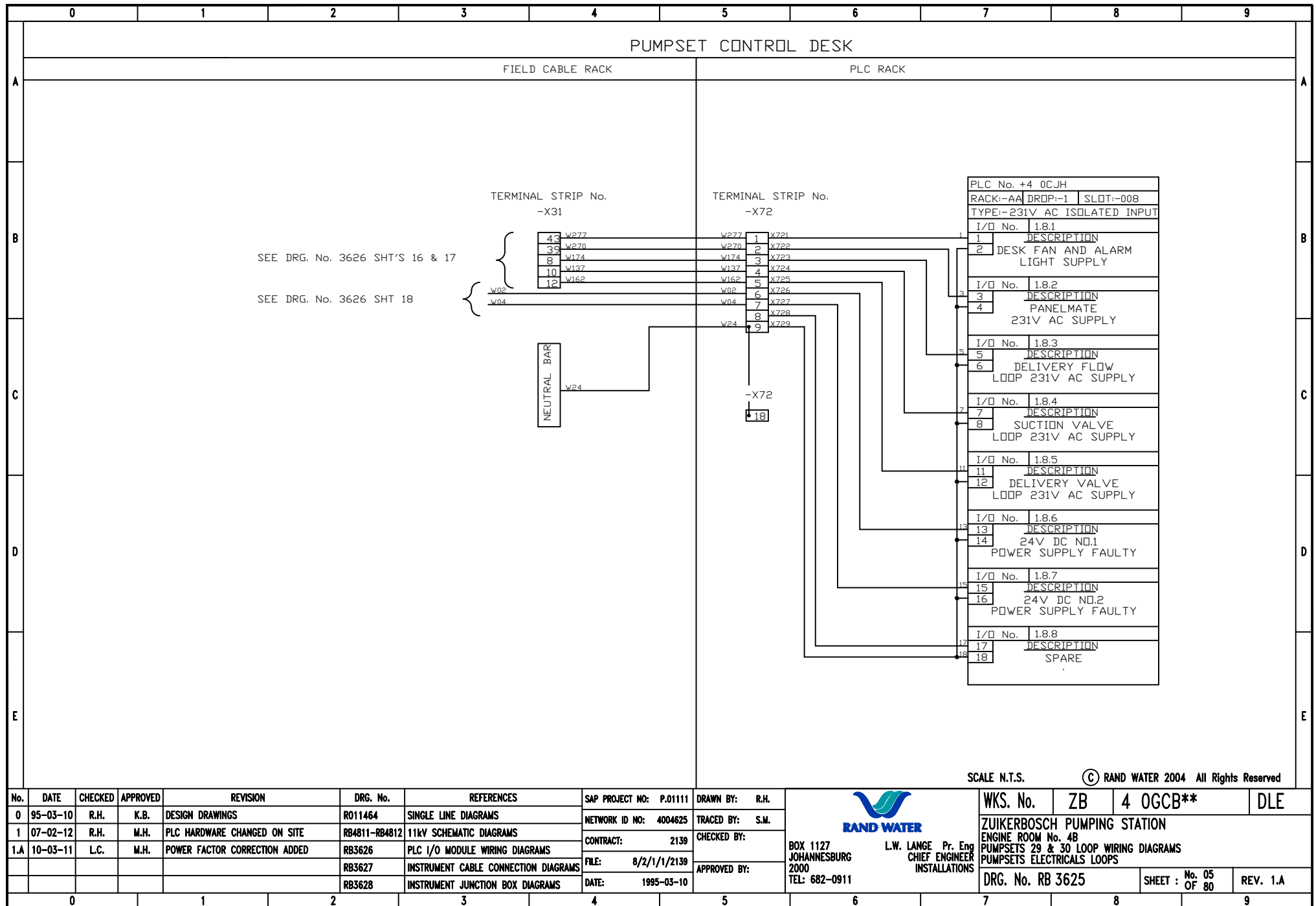


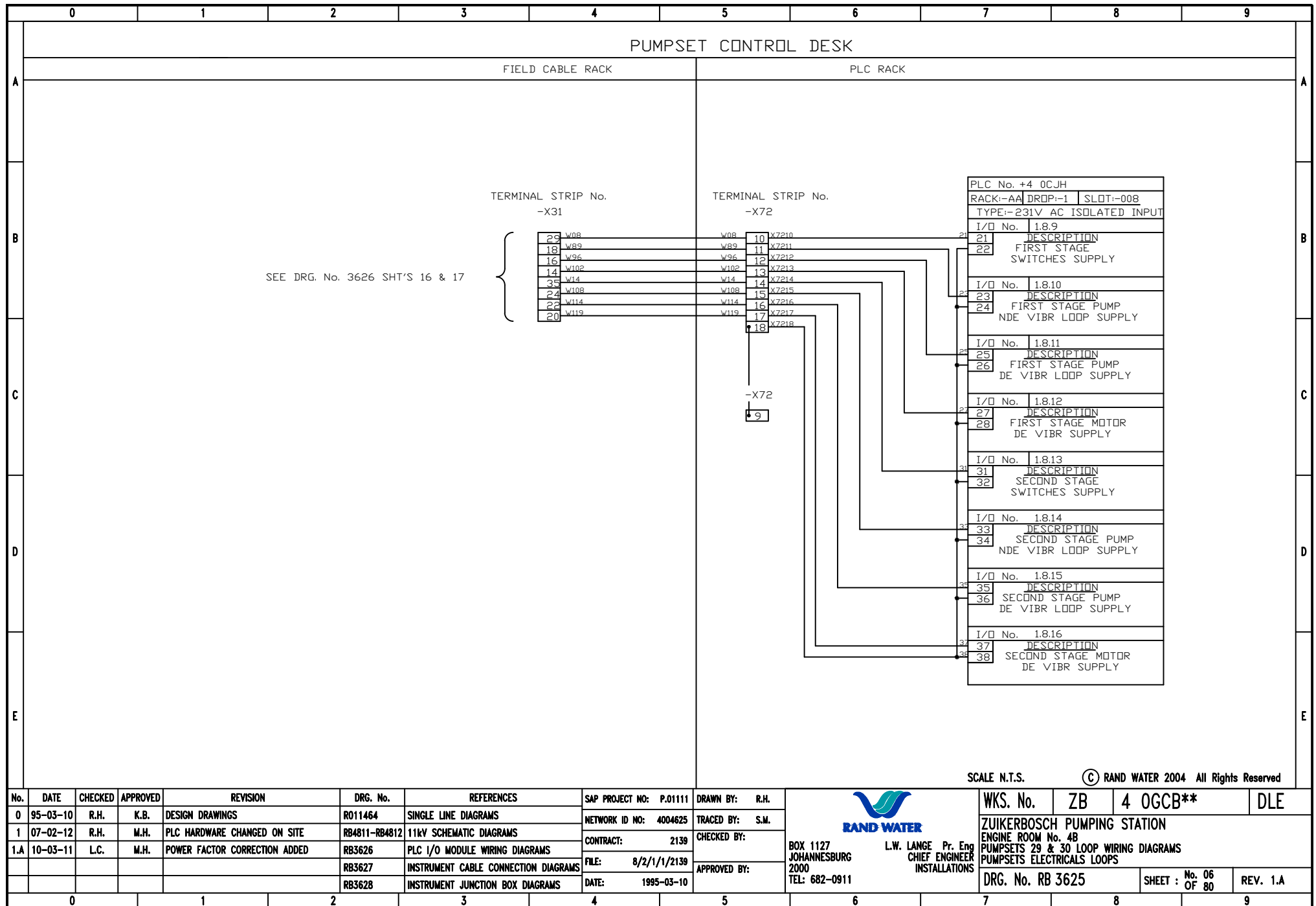


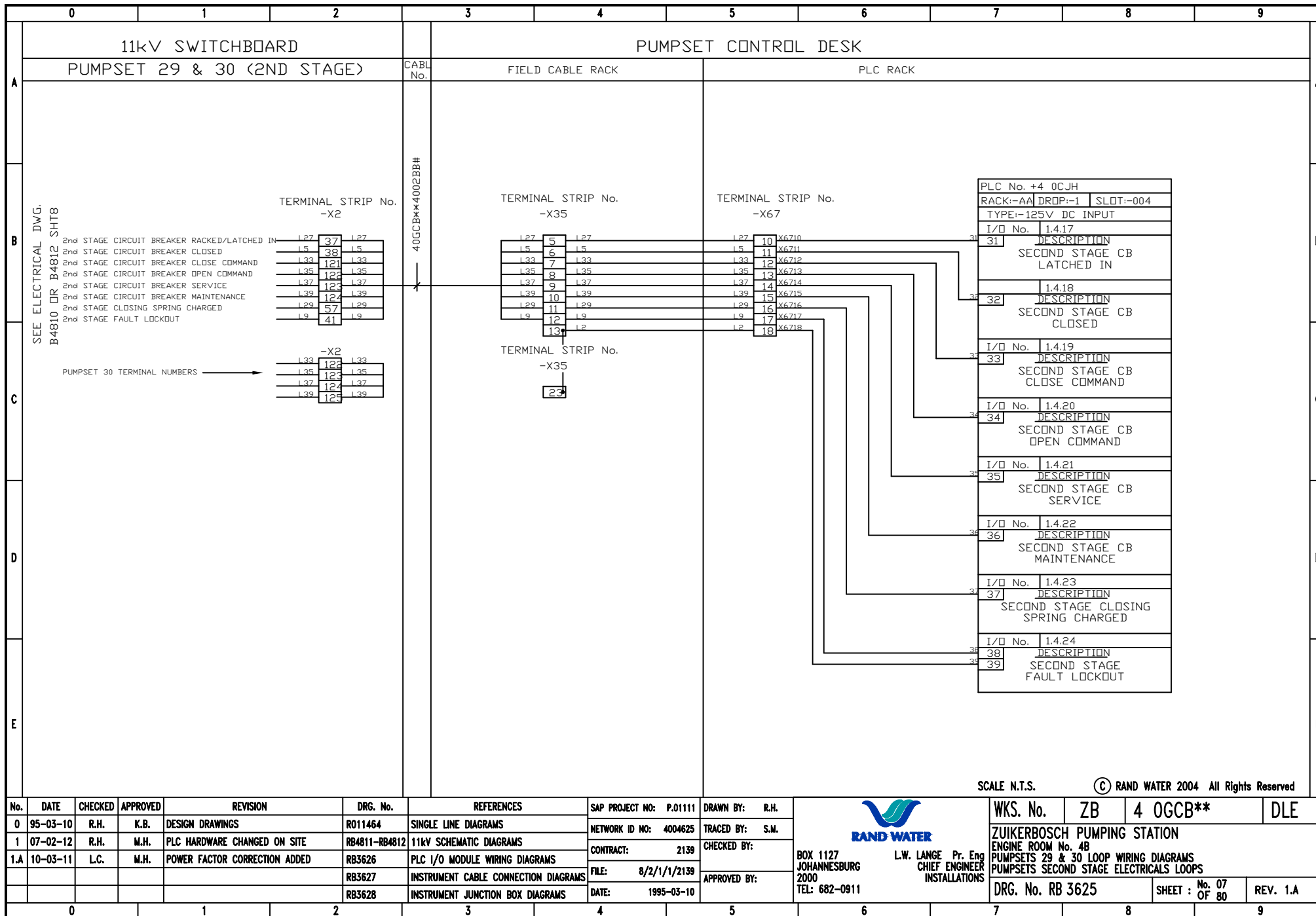
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0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R010464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.		ZUIKERBOSCH PUMPING STATION			
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:		ENGINE ROOM No. 4B			
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:		PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS			
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10			1ST AND 2ND STAGE MOTOR COOLING WATER FLOW			
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS				DRG. No. RB 3625	SHEET : No. 02A OF 80	REV. 1.A	

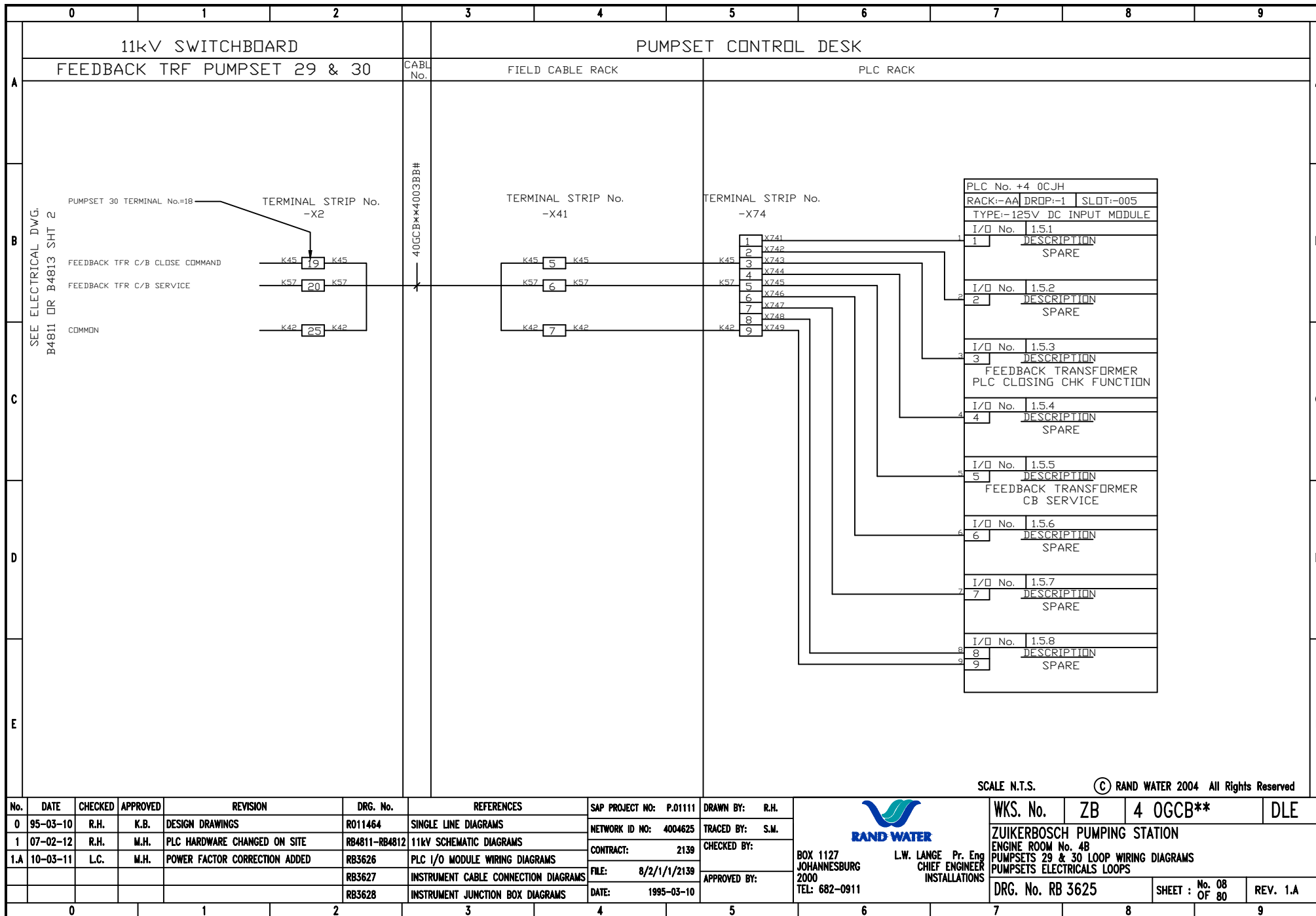


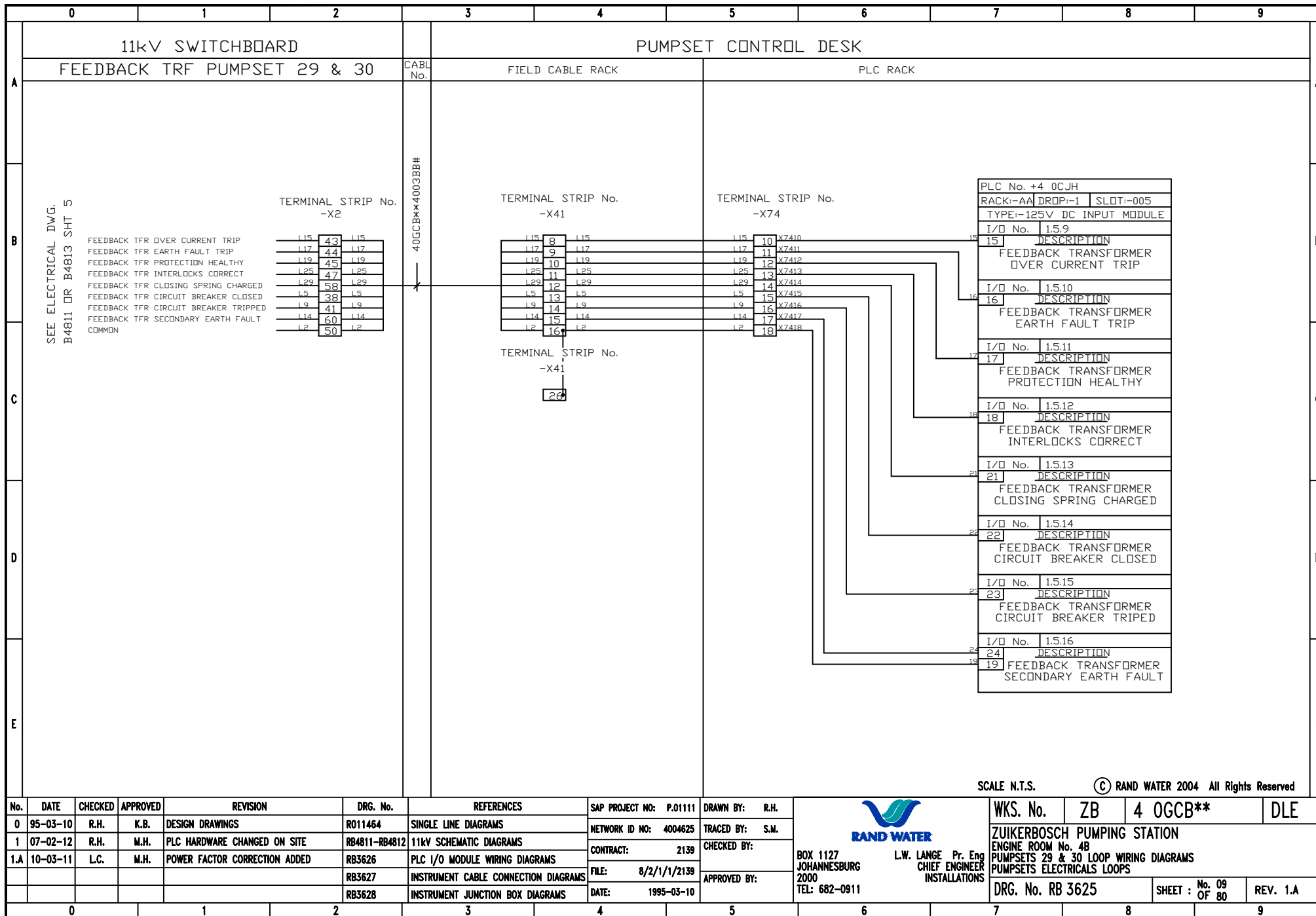


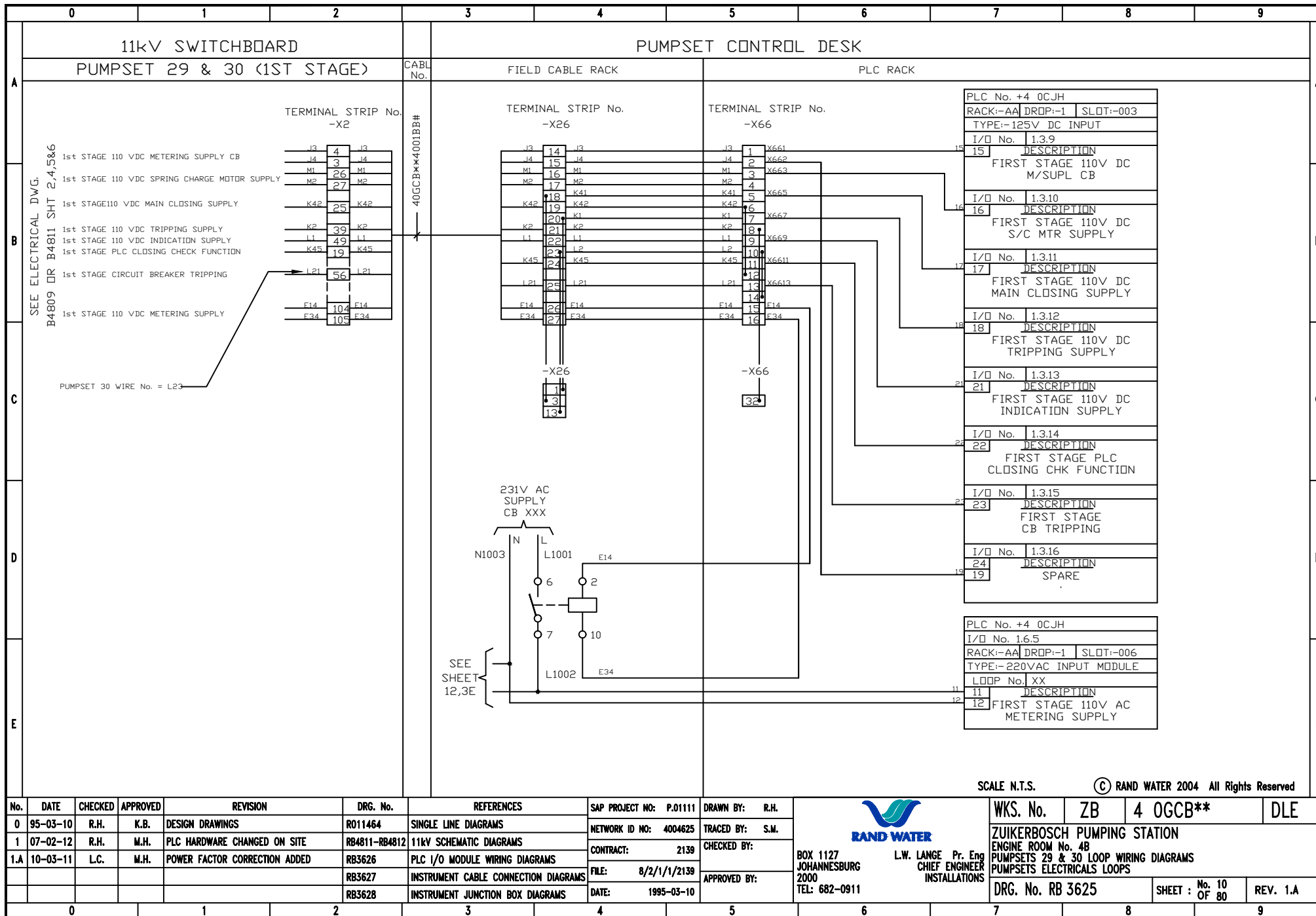




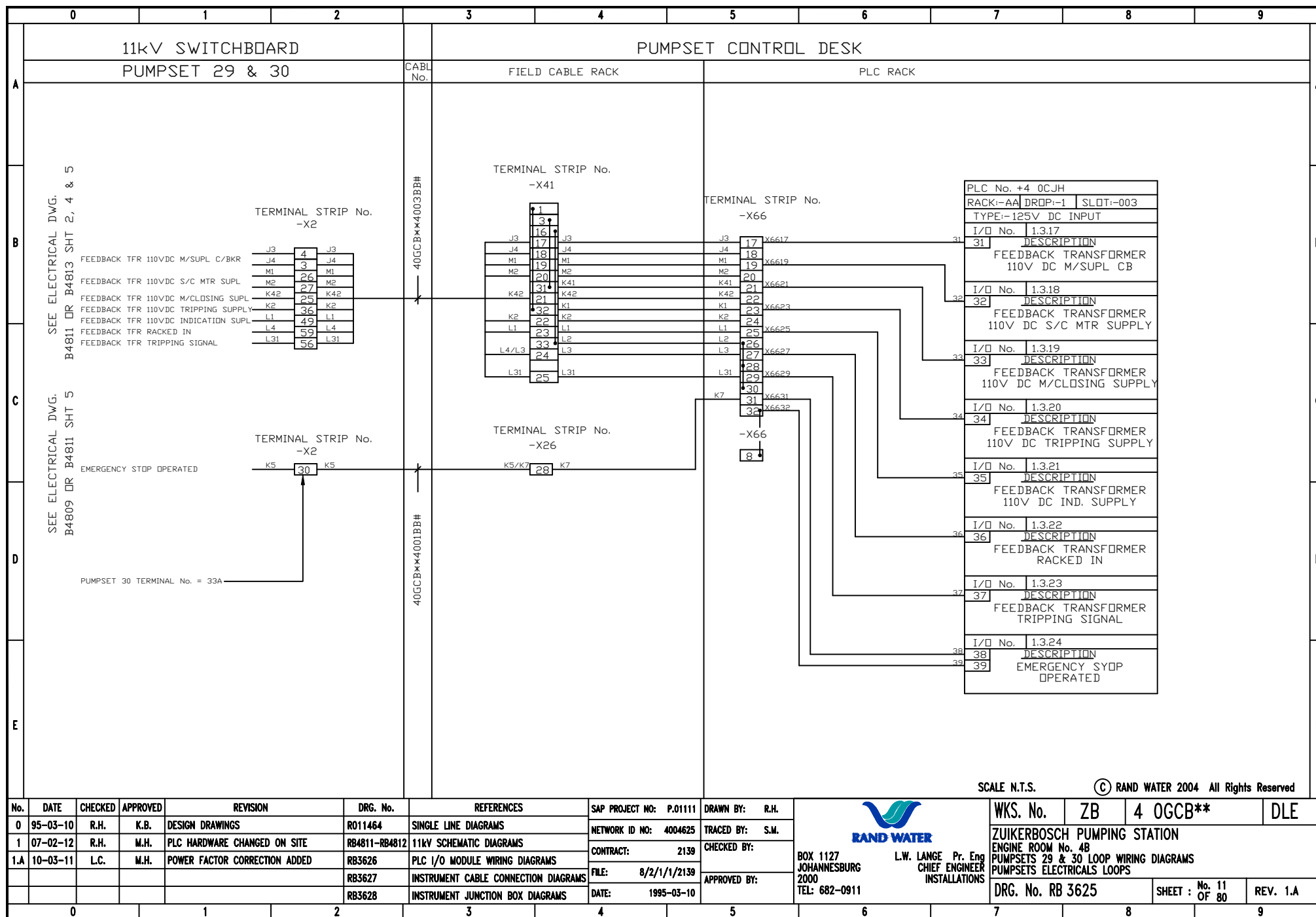


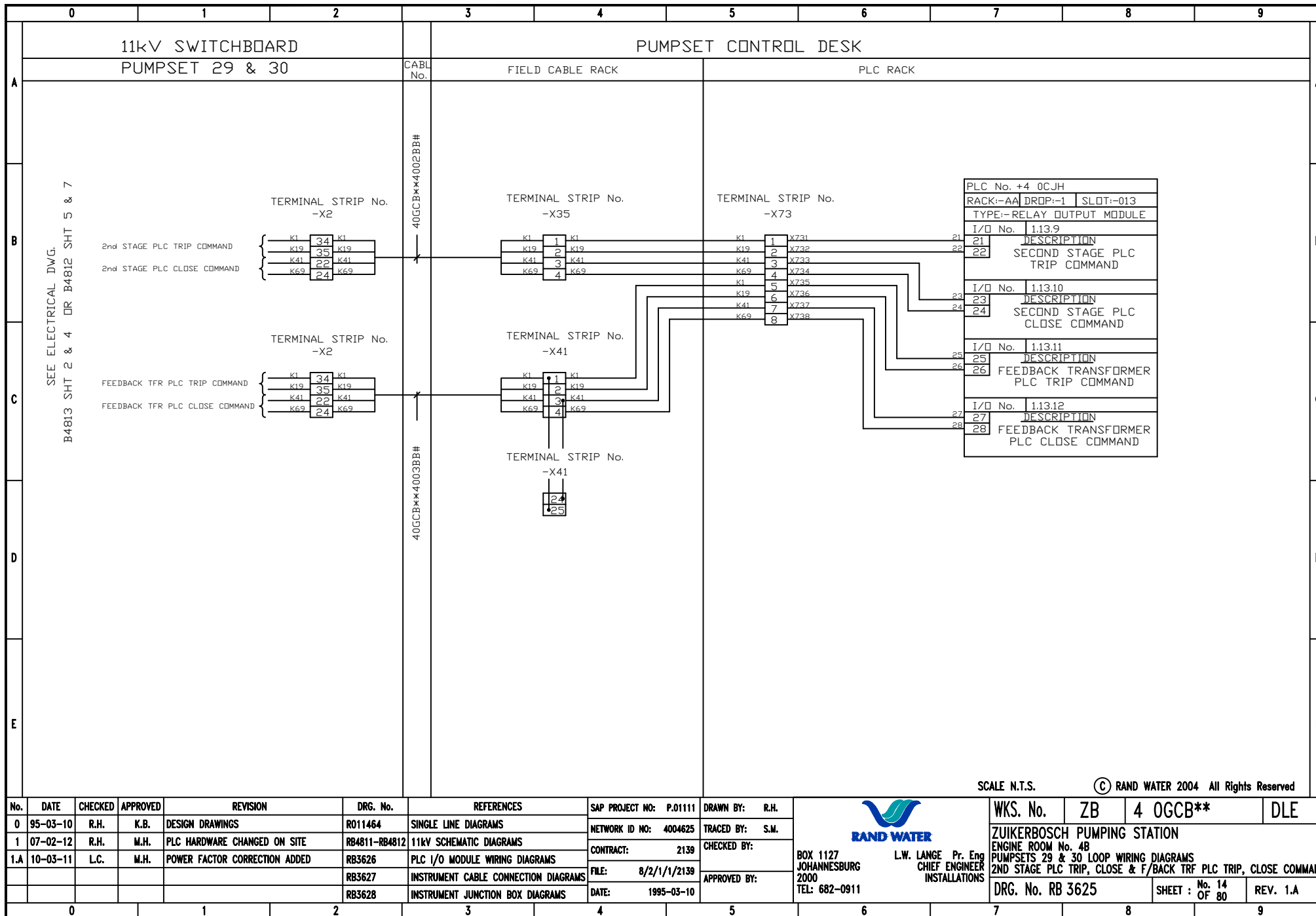


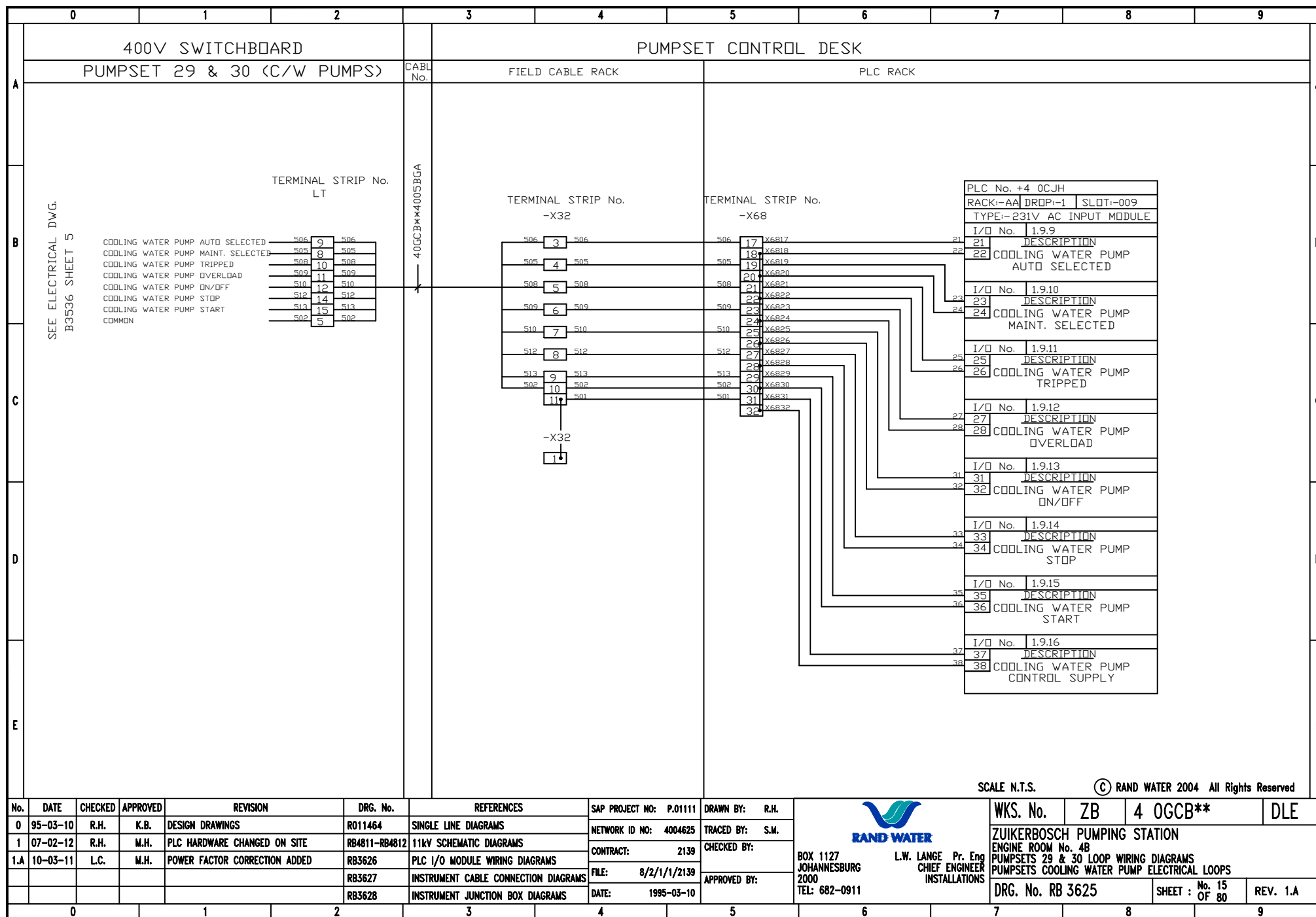


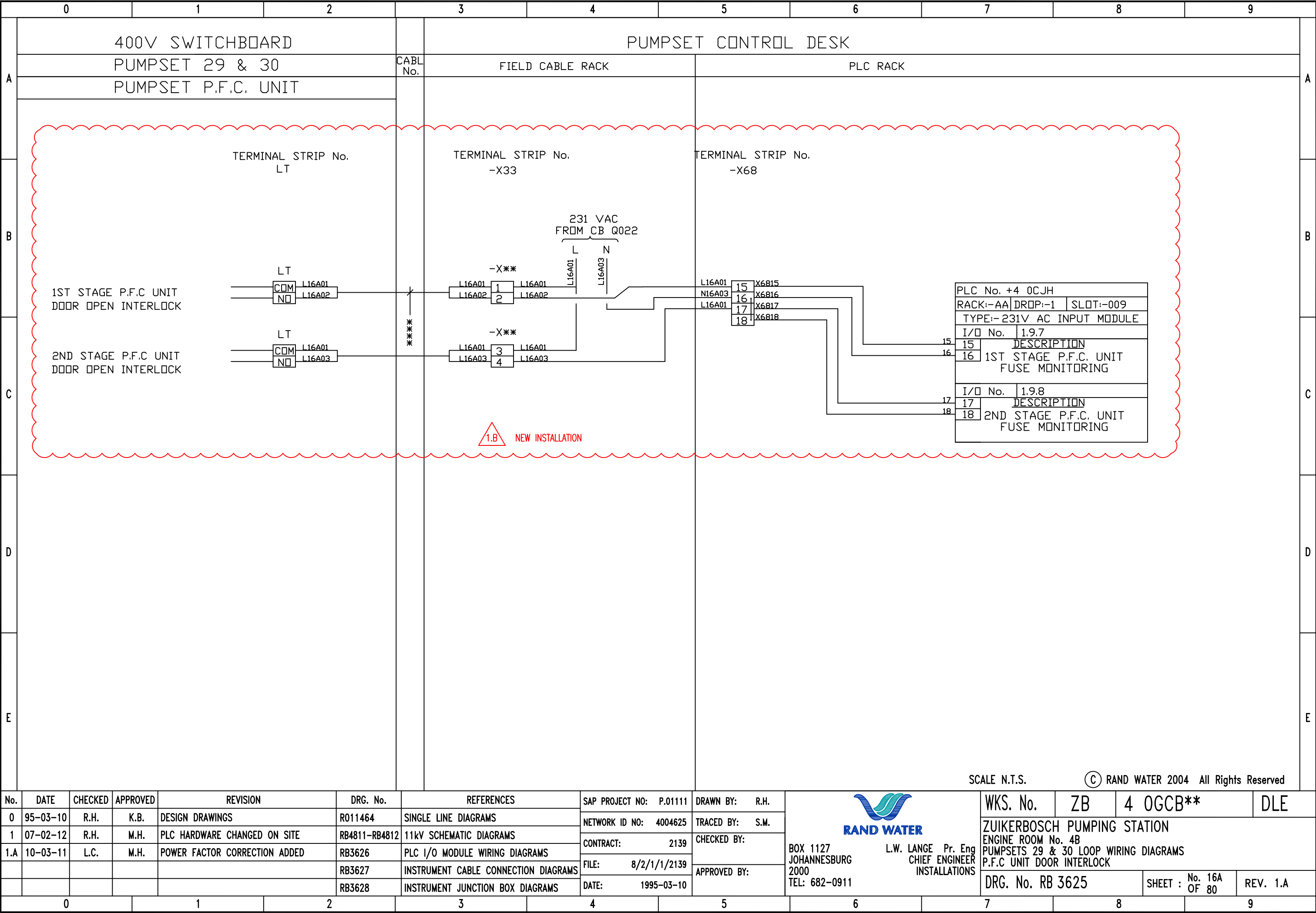


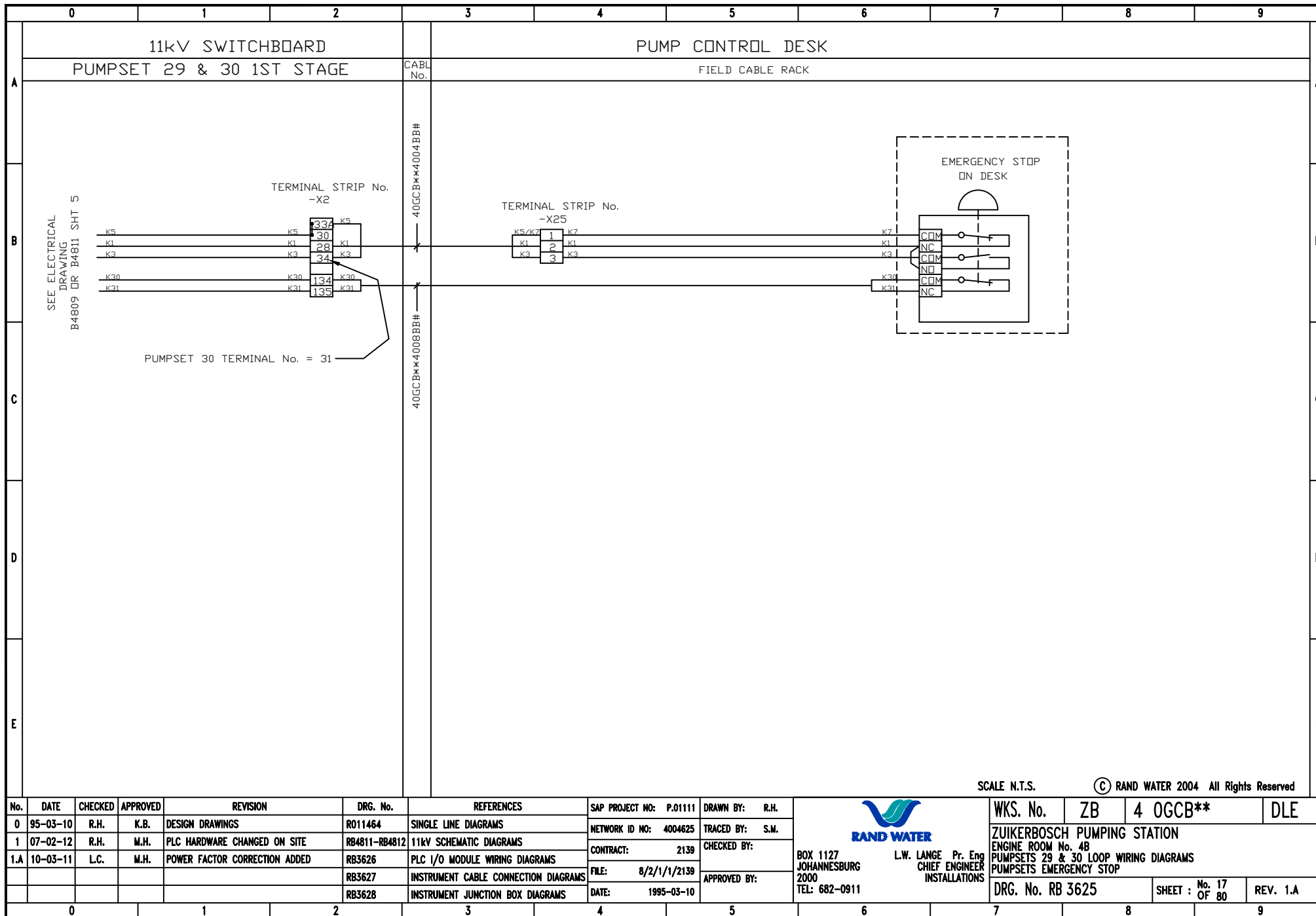
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0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.		ZUIKERBOSCH PUMPING STATION			
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:		ENGINE ROOM No. 4B			
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:		PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS			
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10			PUMPSETS ELECTRICALS LOOPS			
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS				DRG. No. RB 3625		SHEET : No. 10 OF 80	REV. 1.A

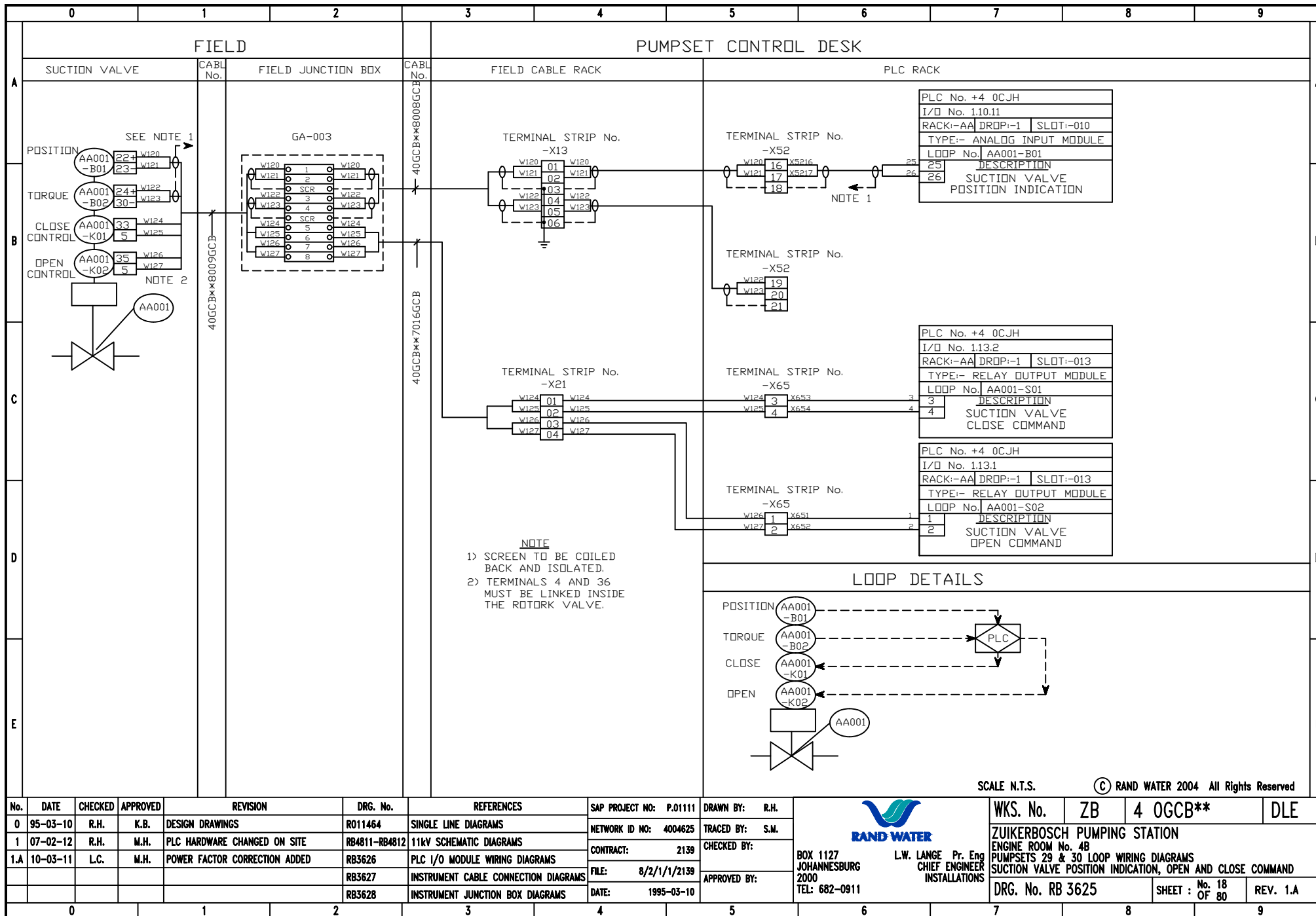


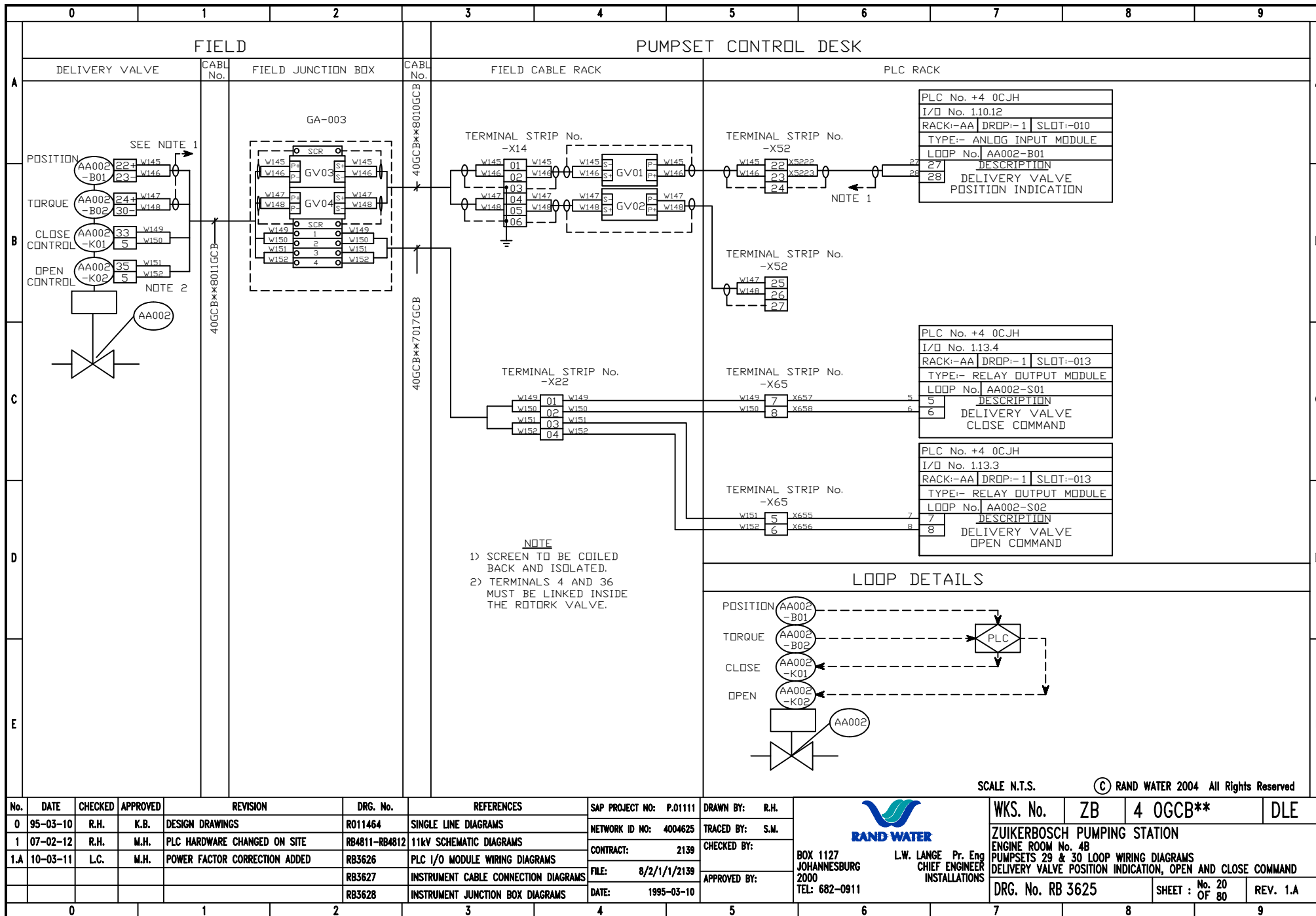


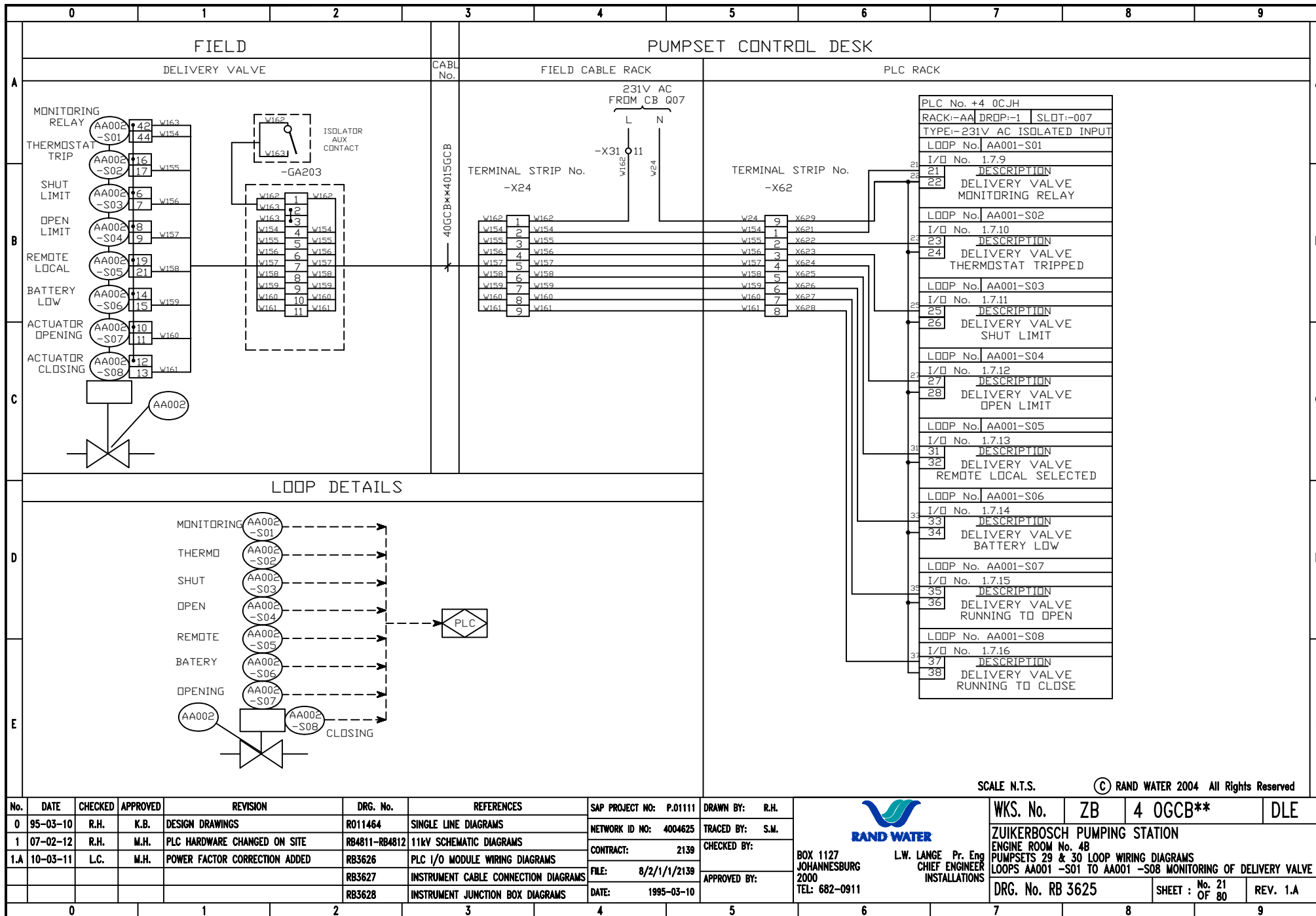


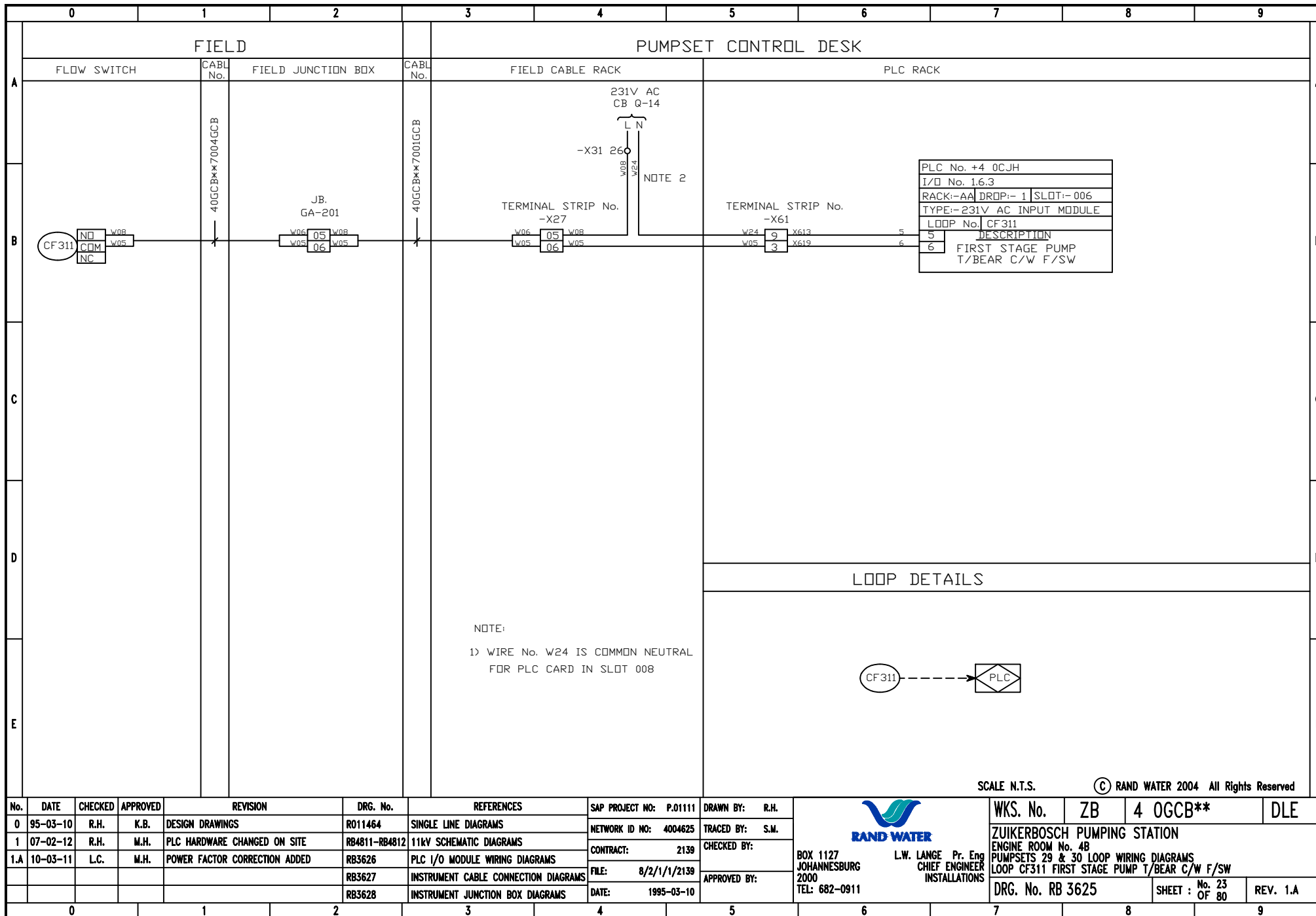


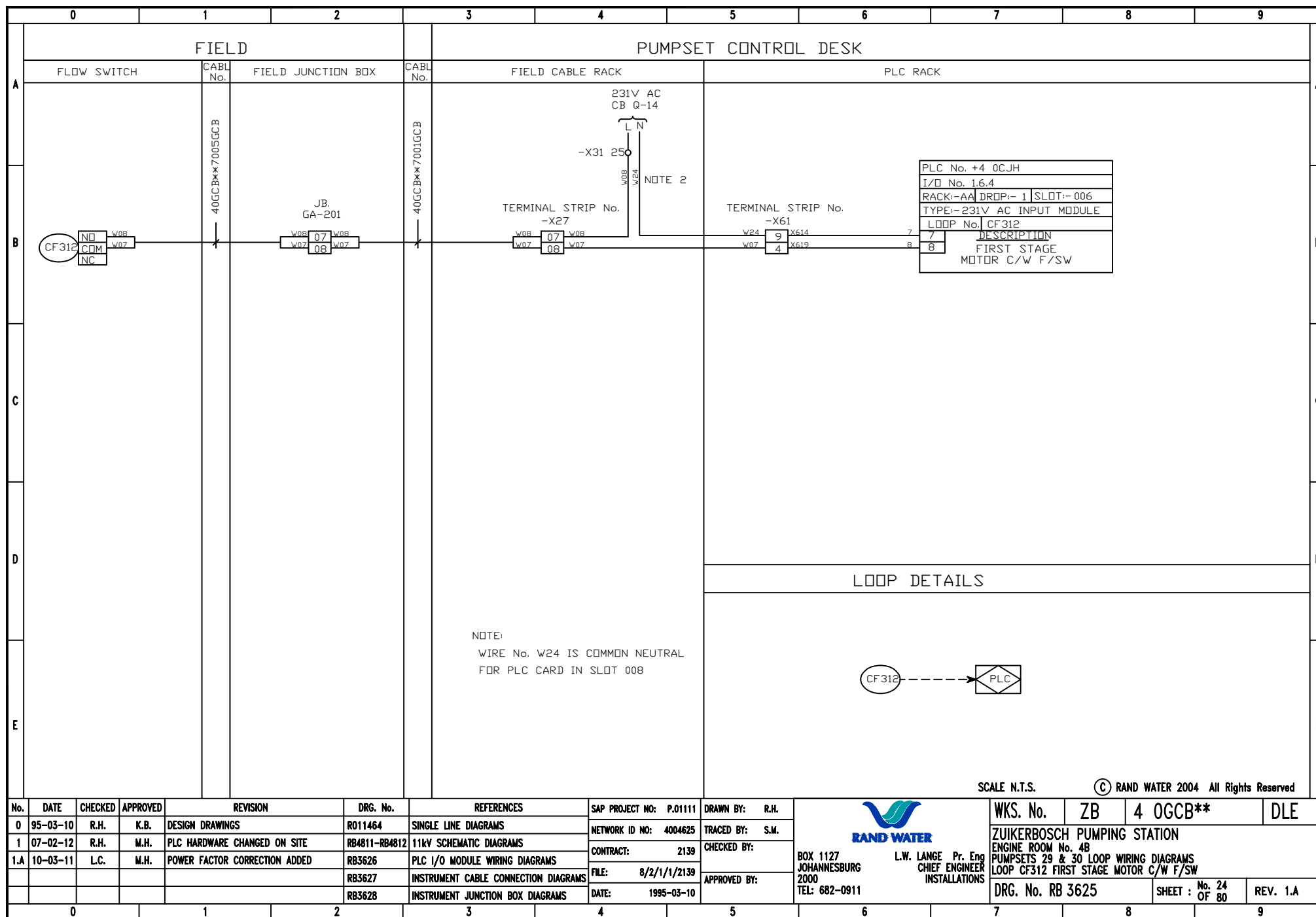


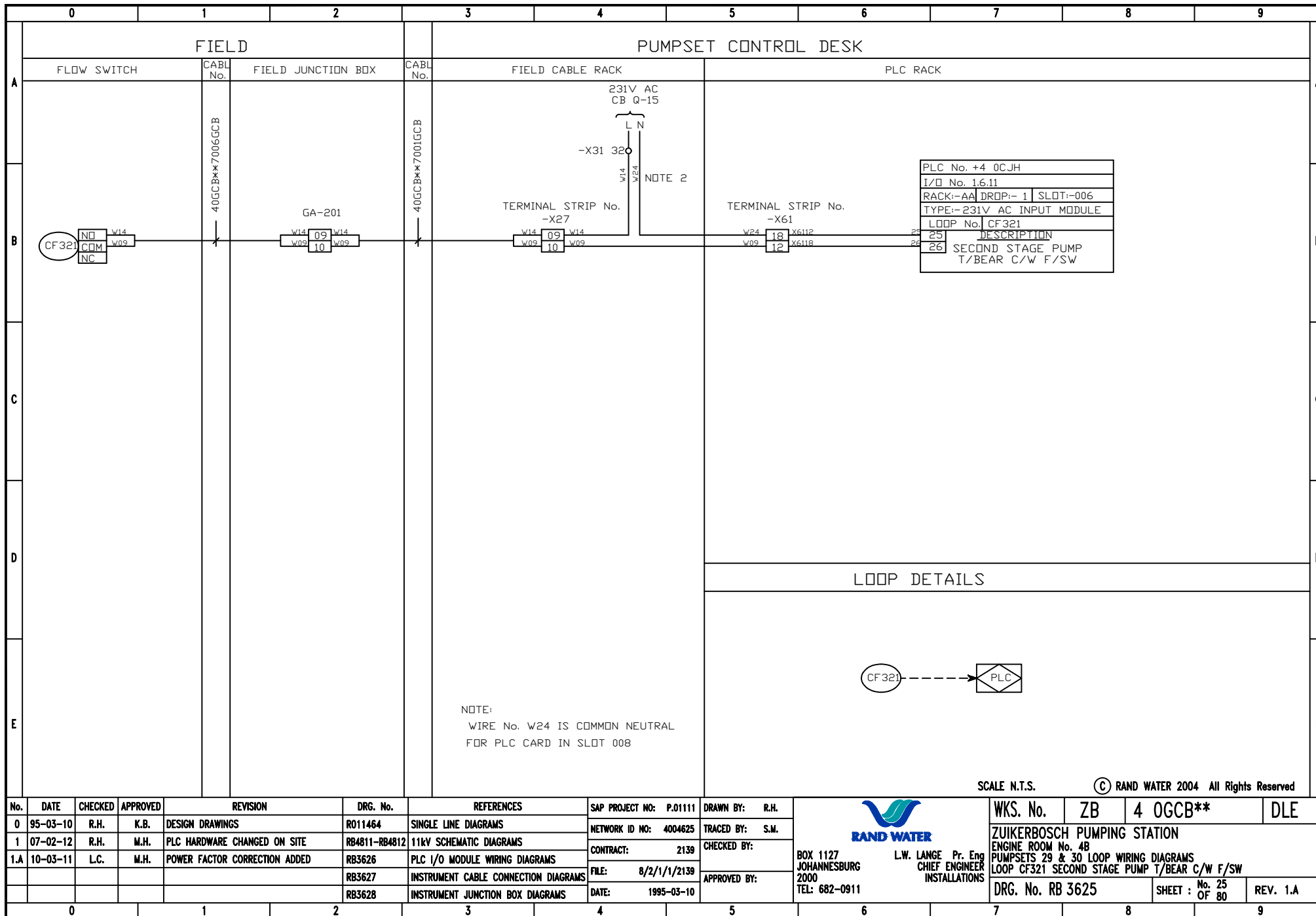


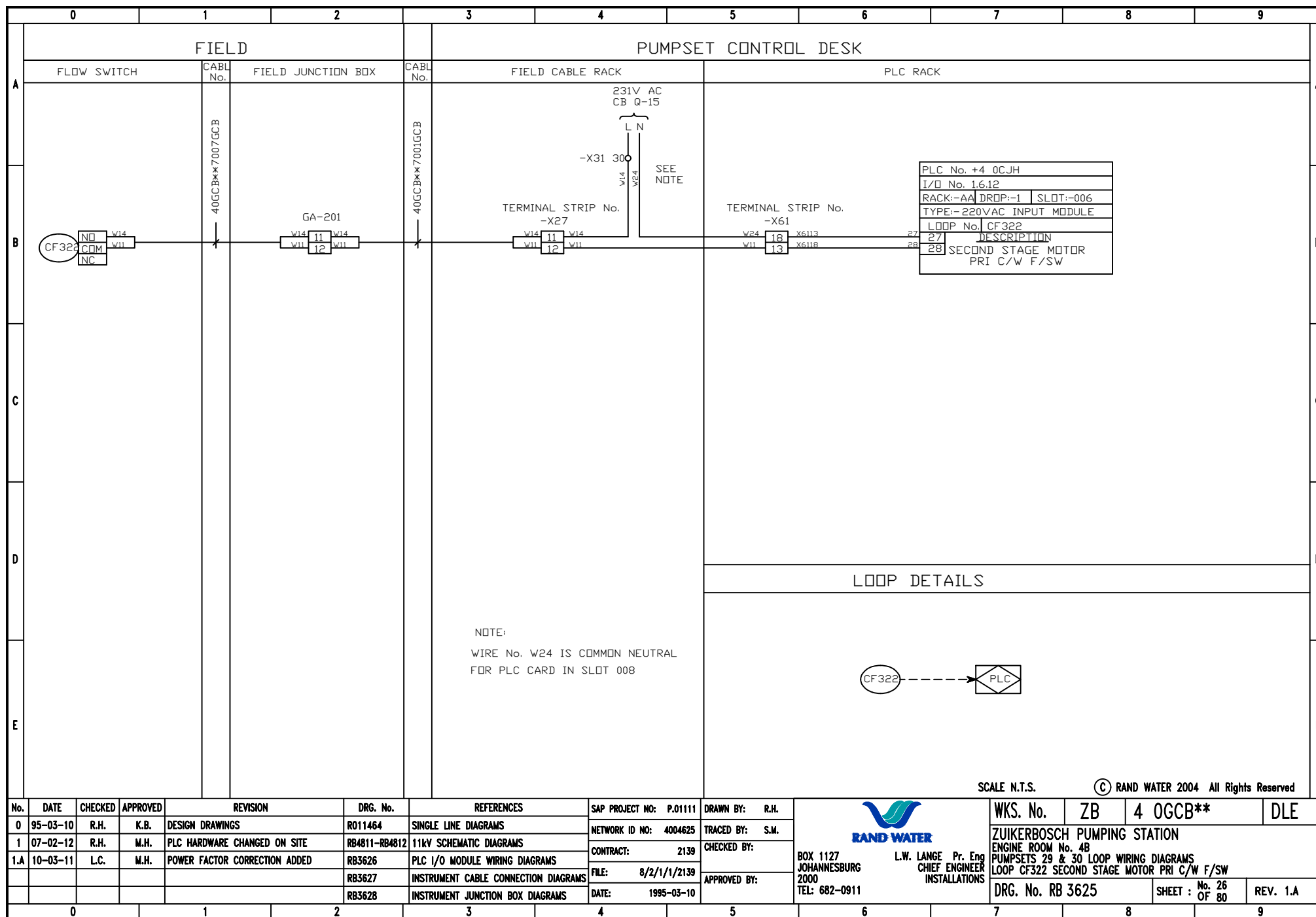


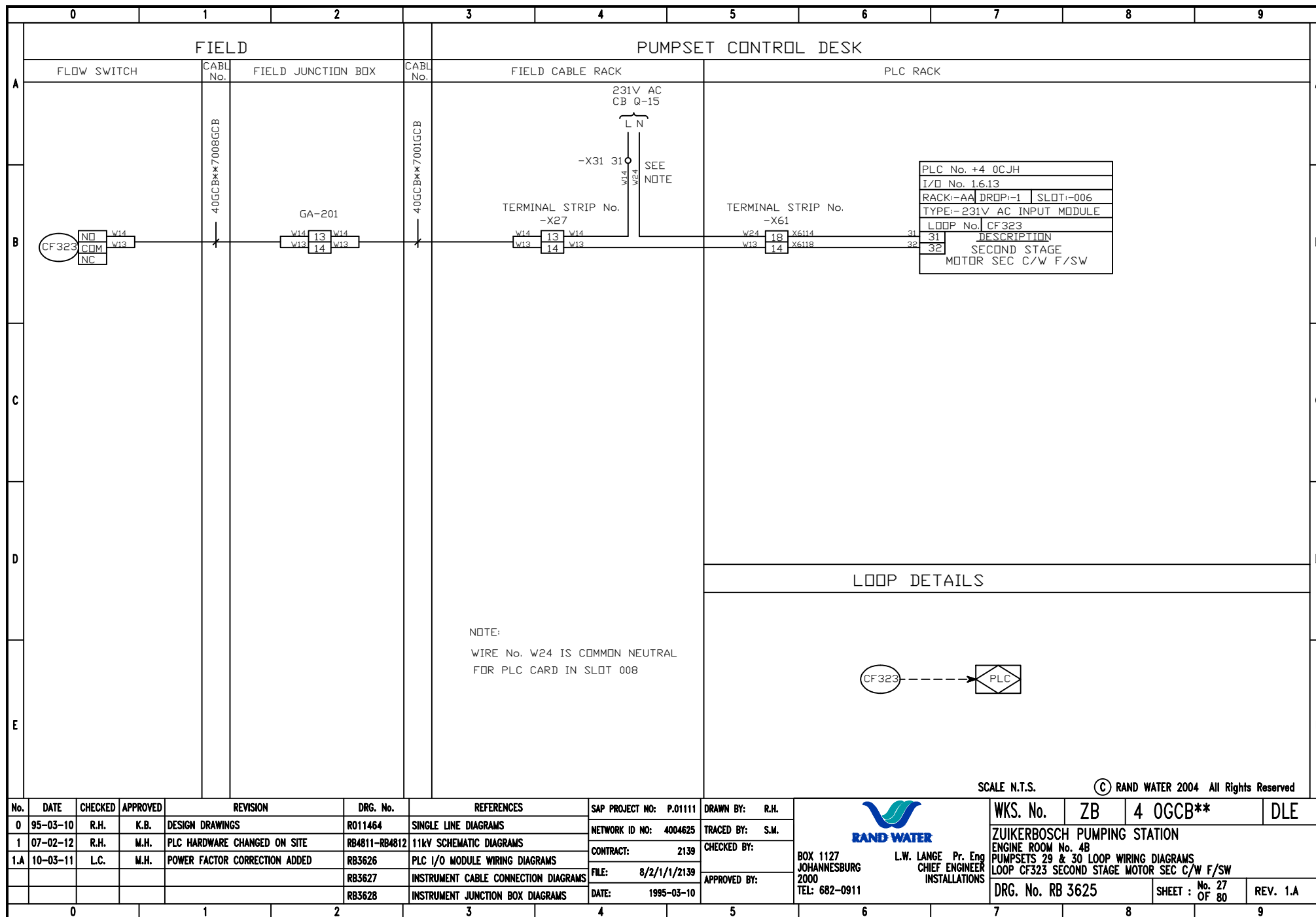


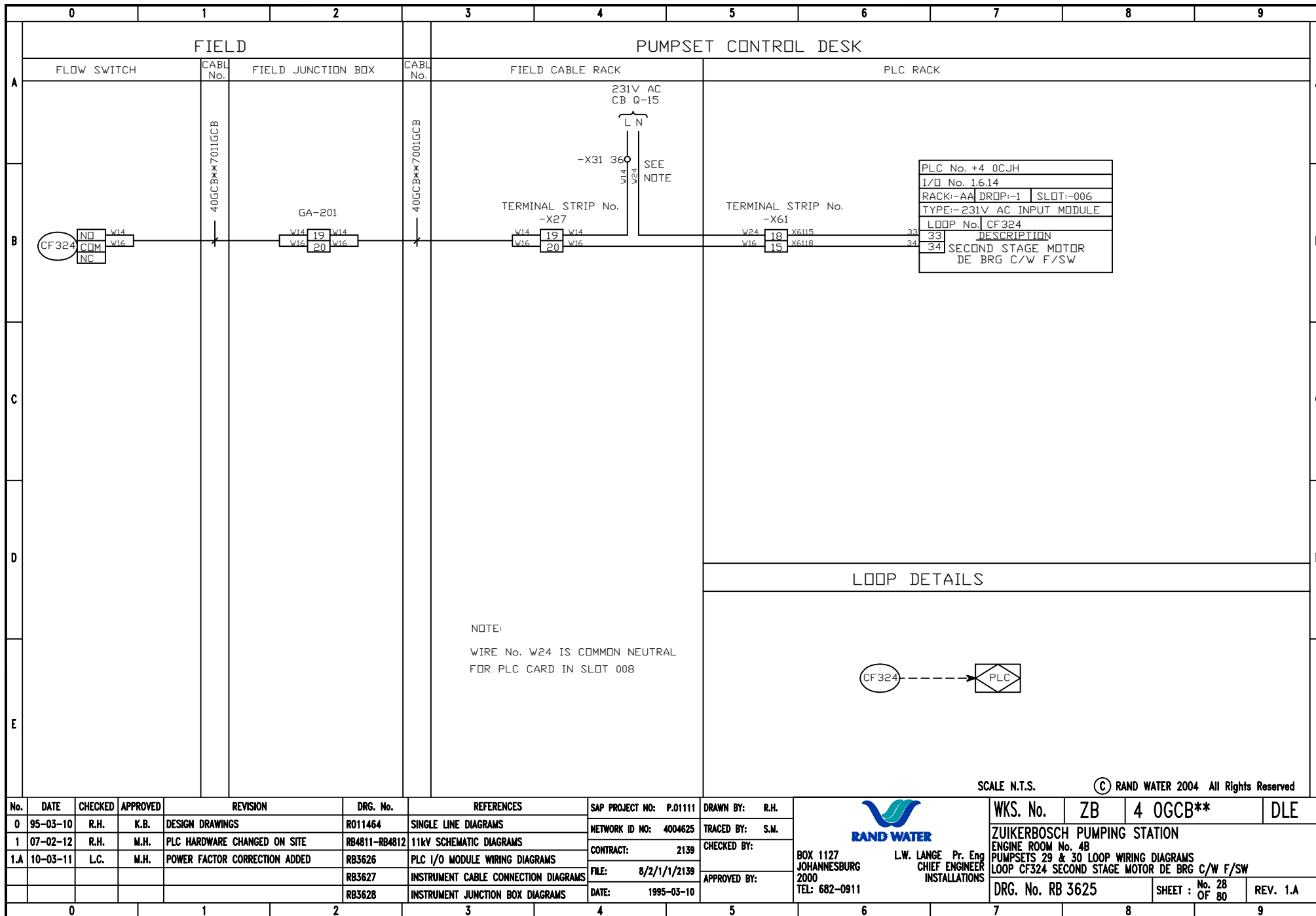


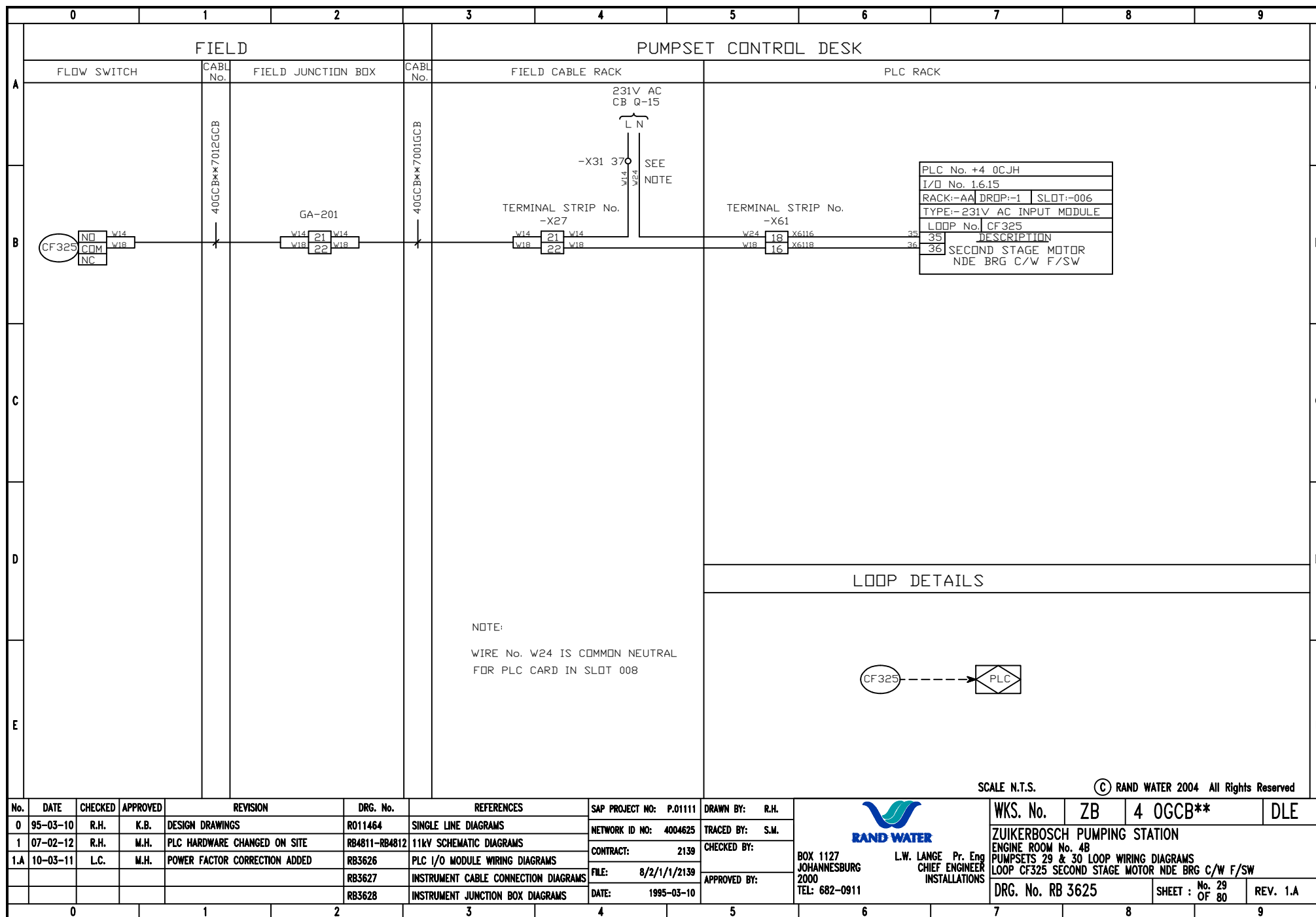


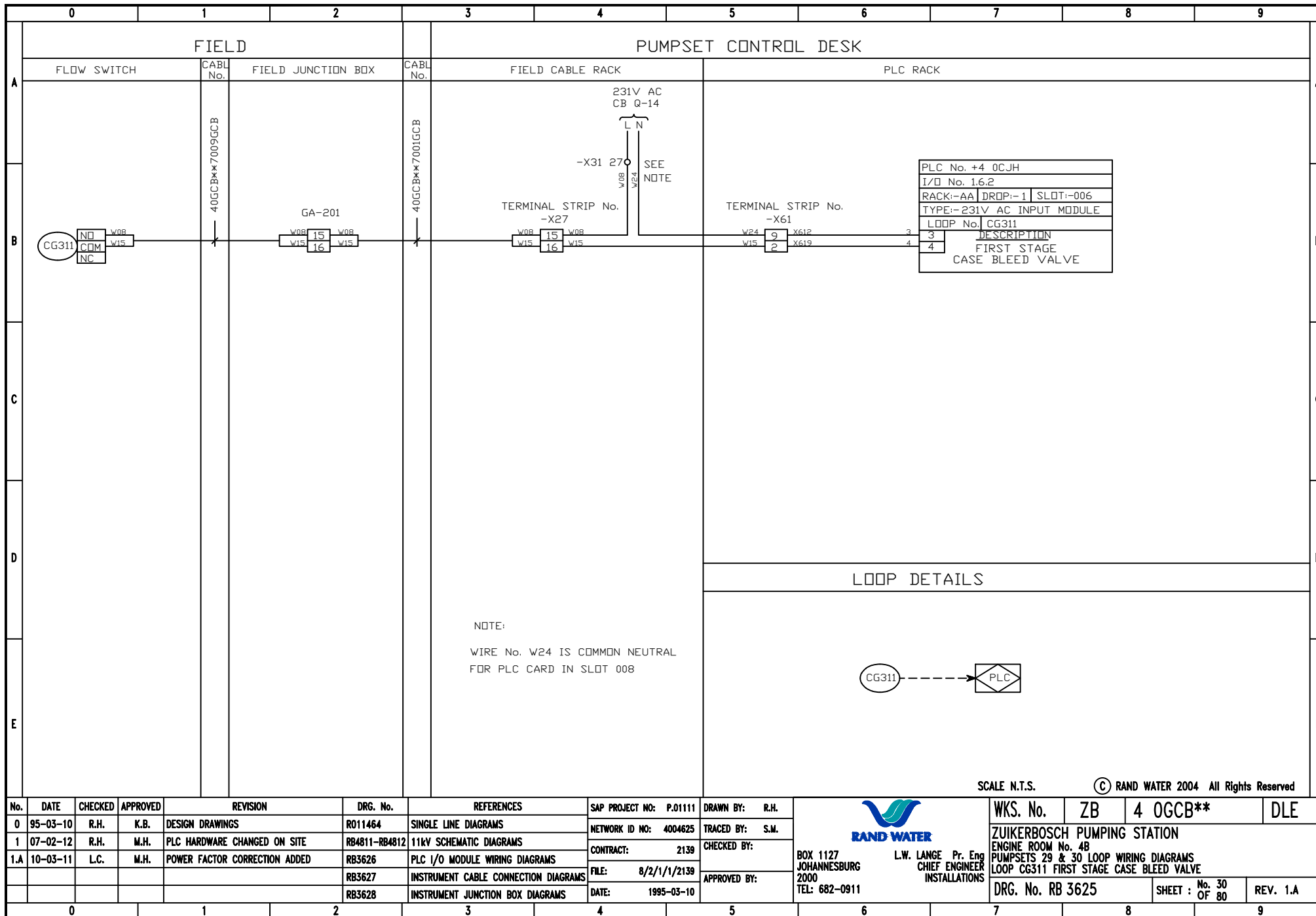


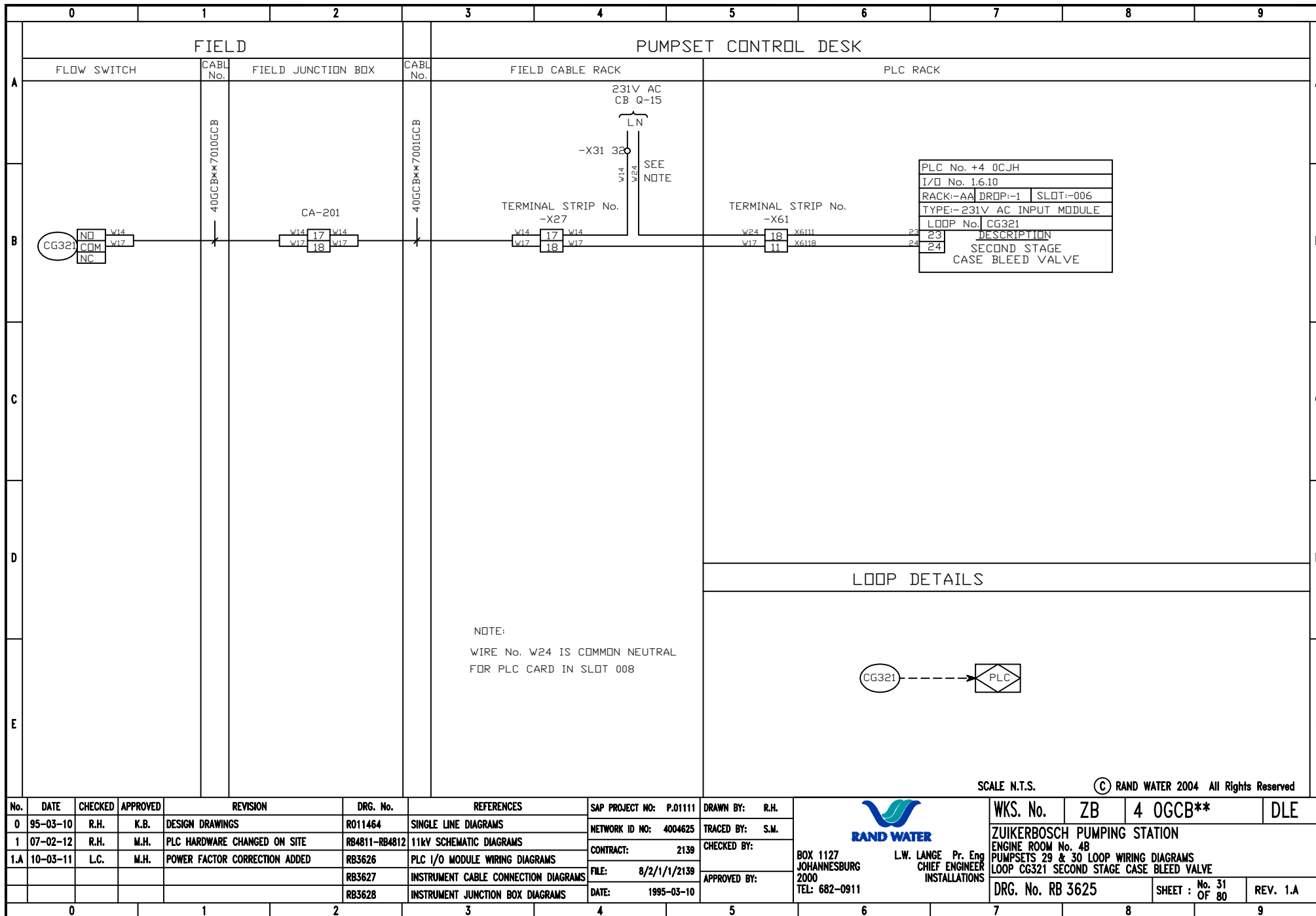


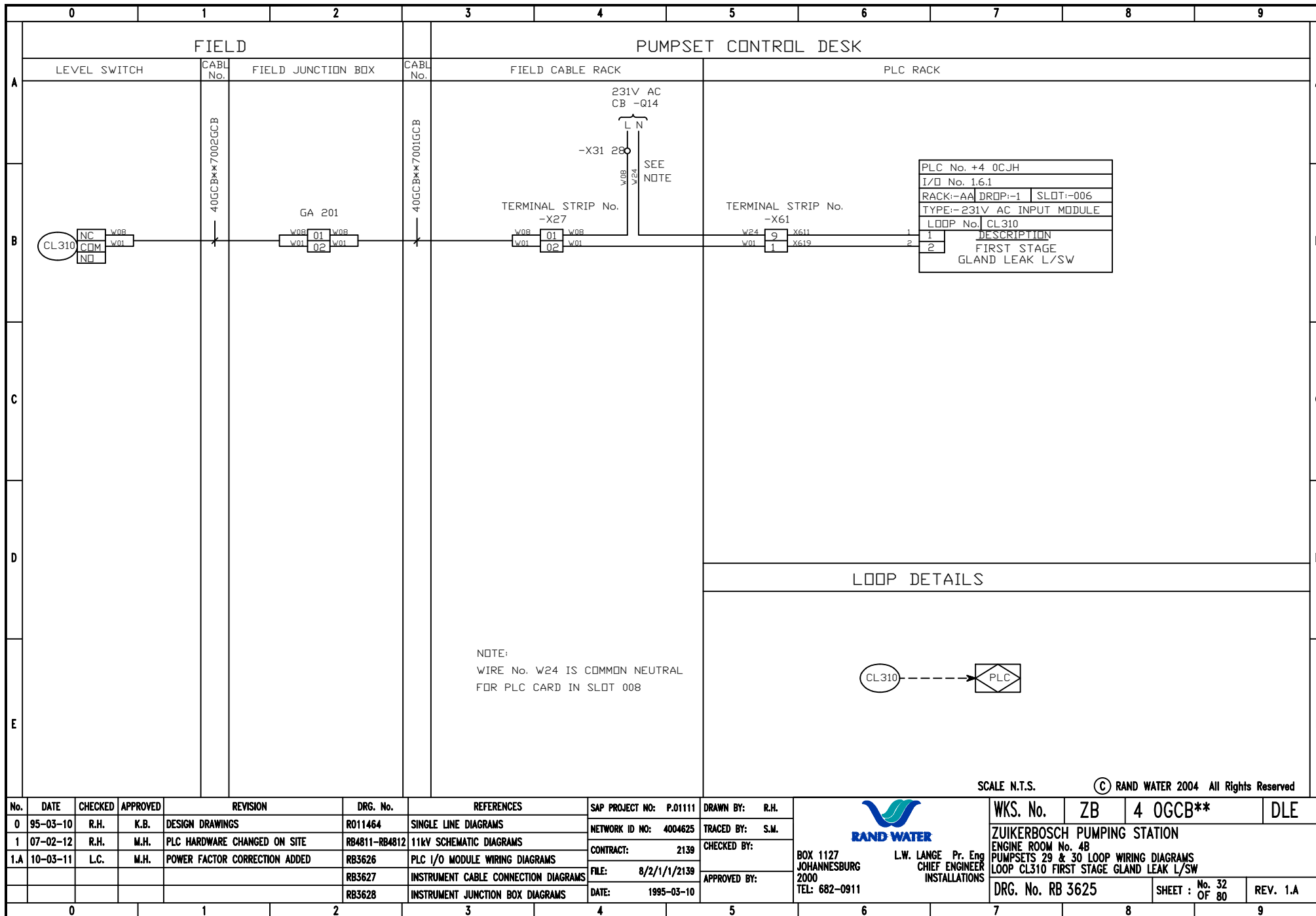


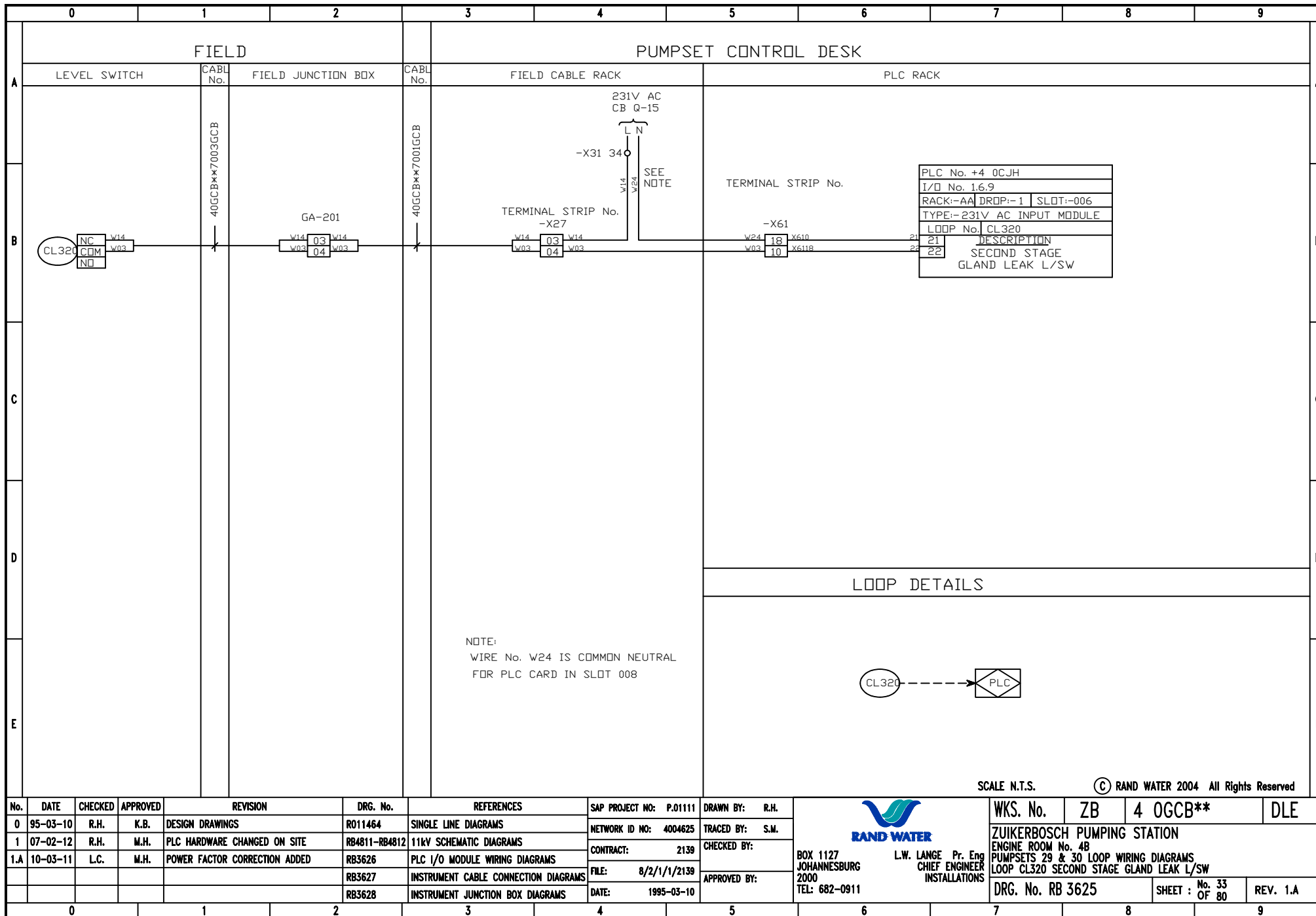


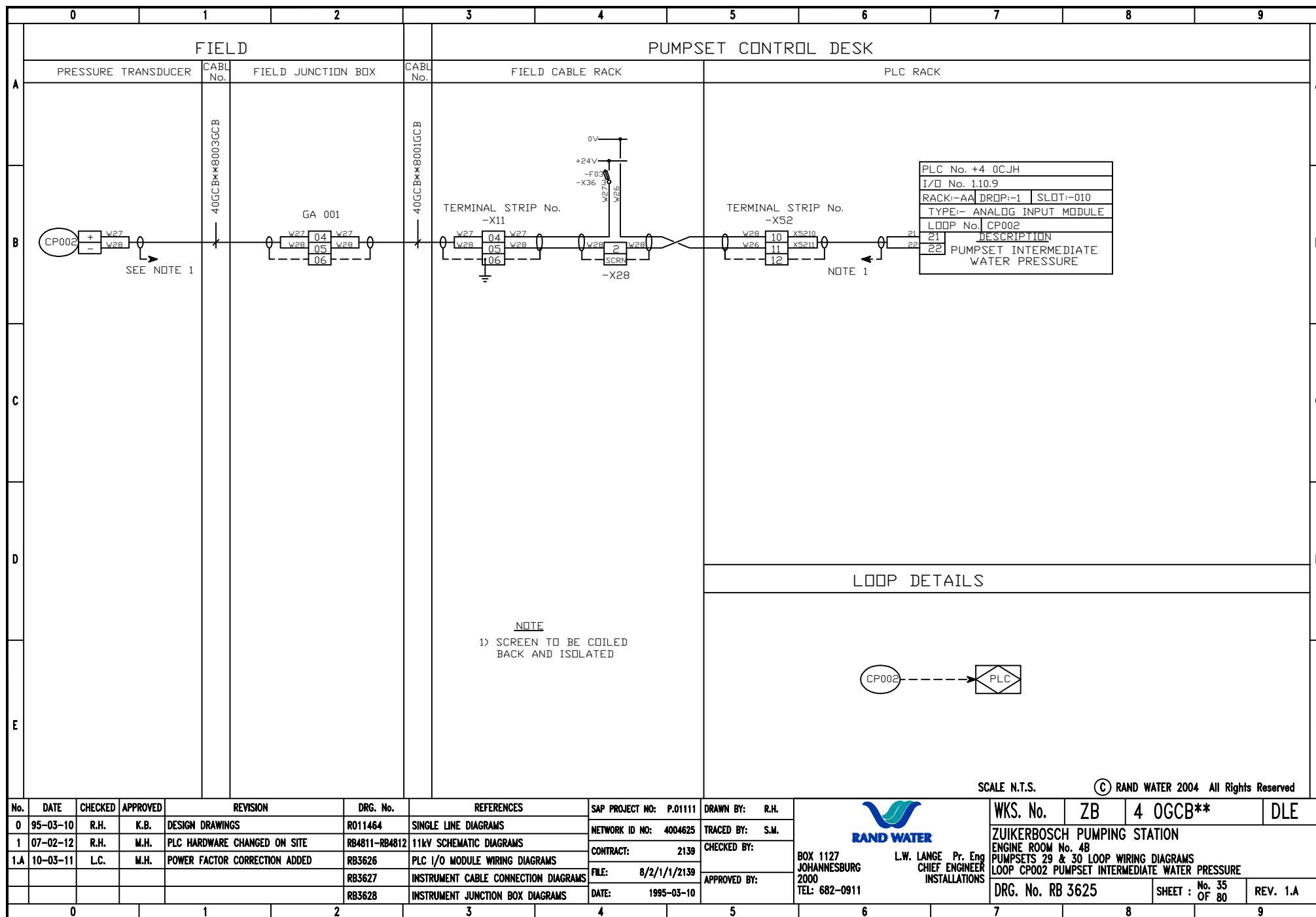


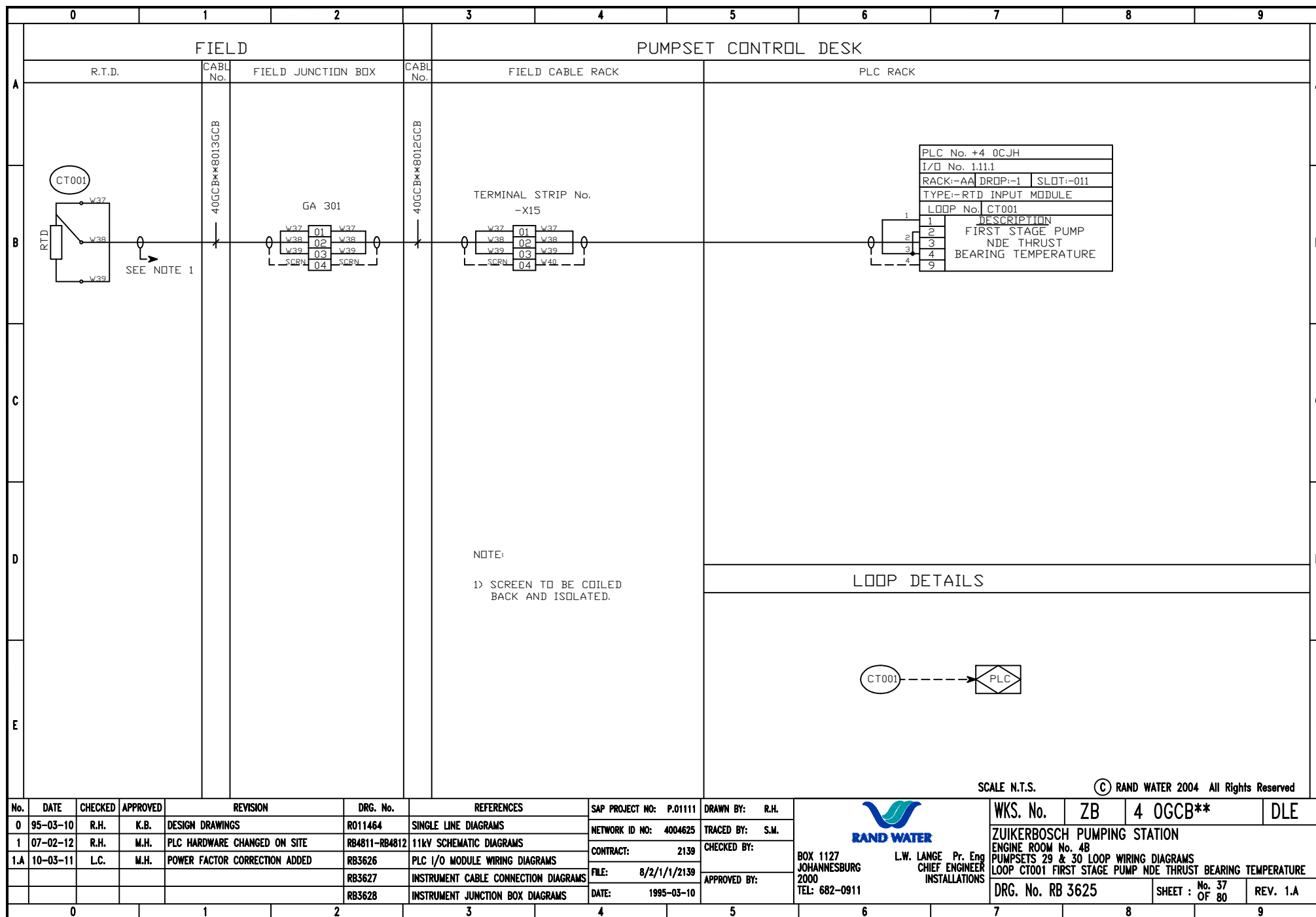


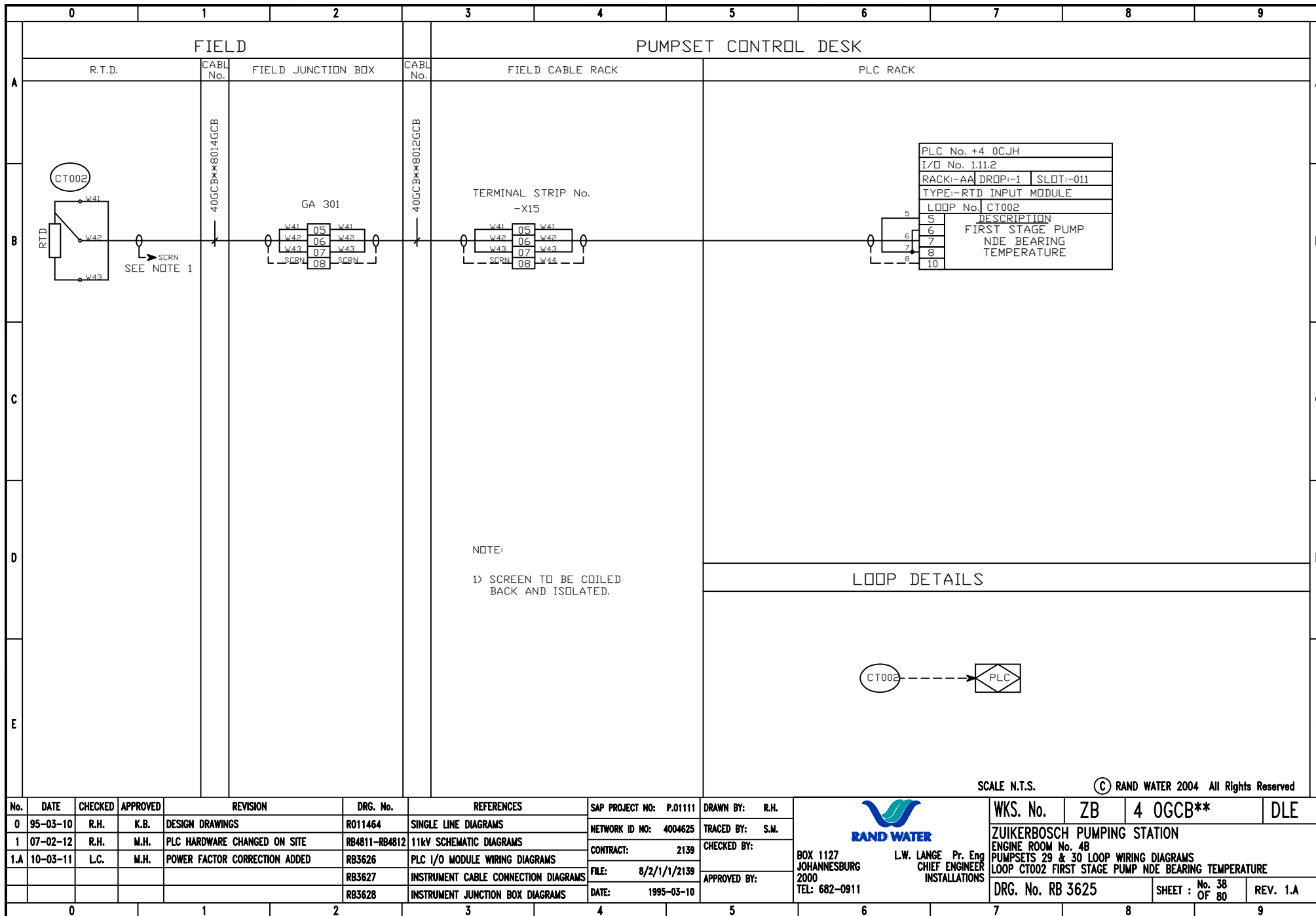


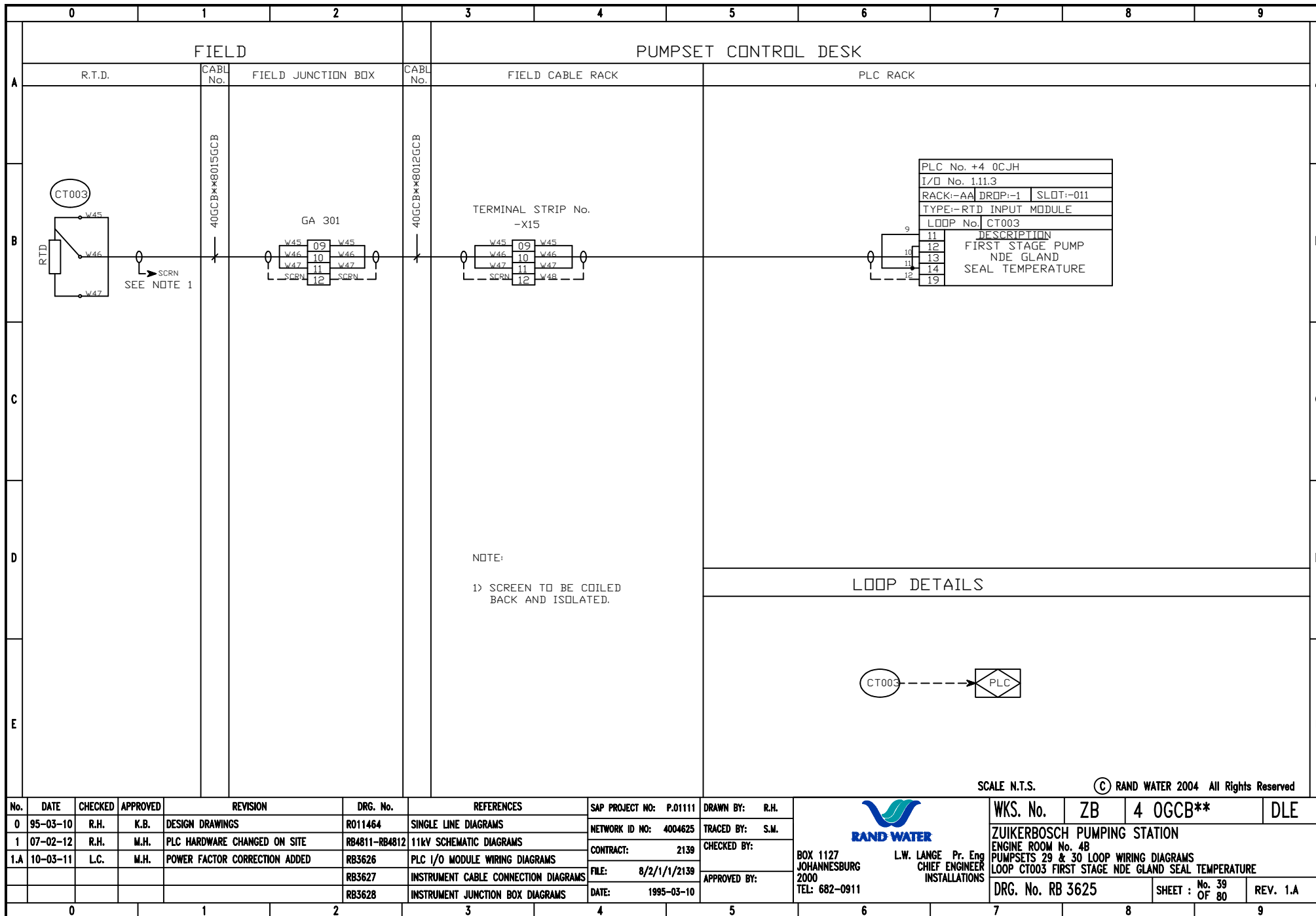


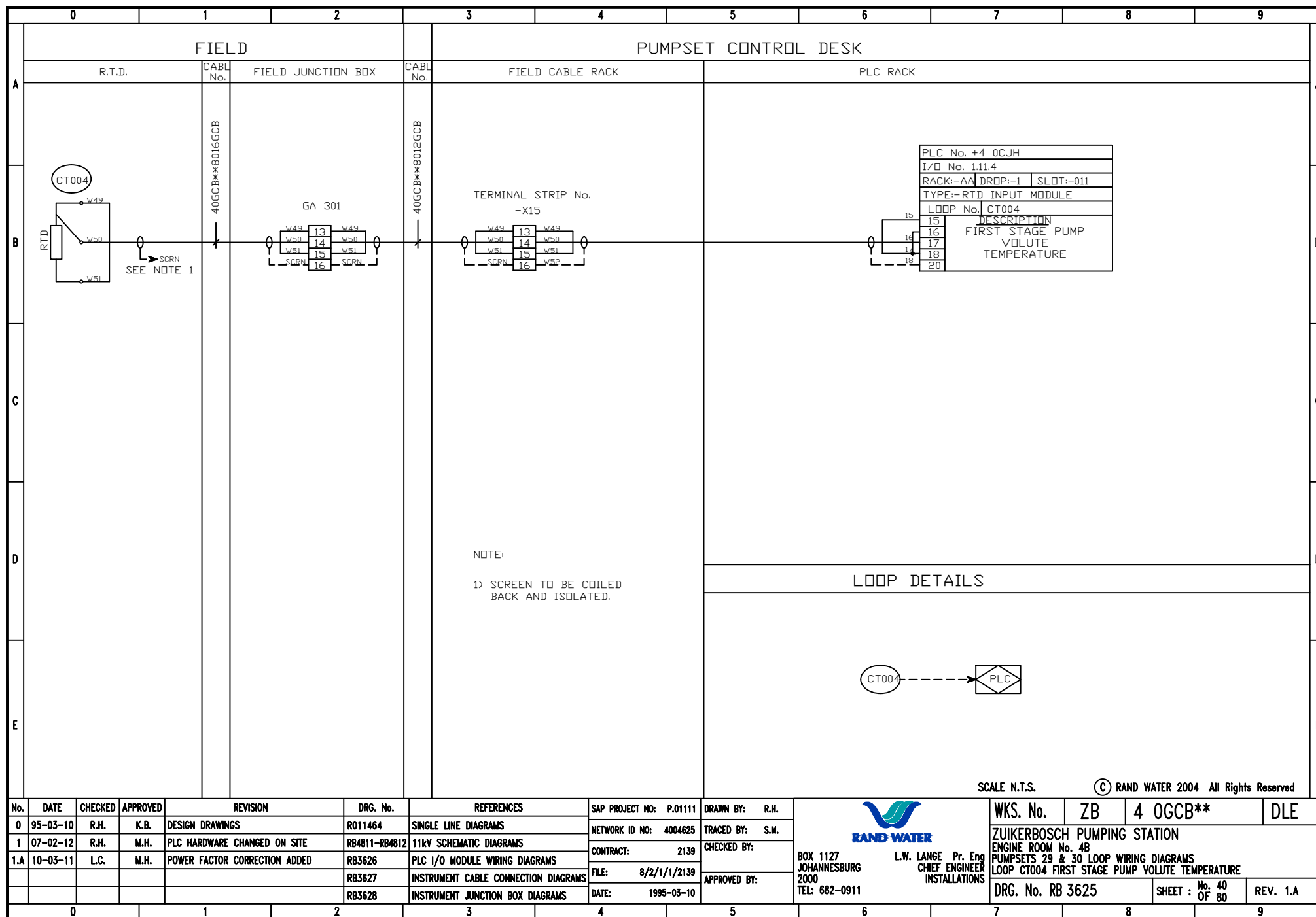


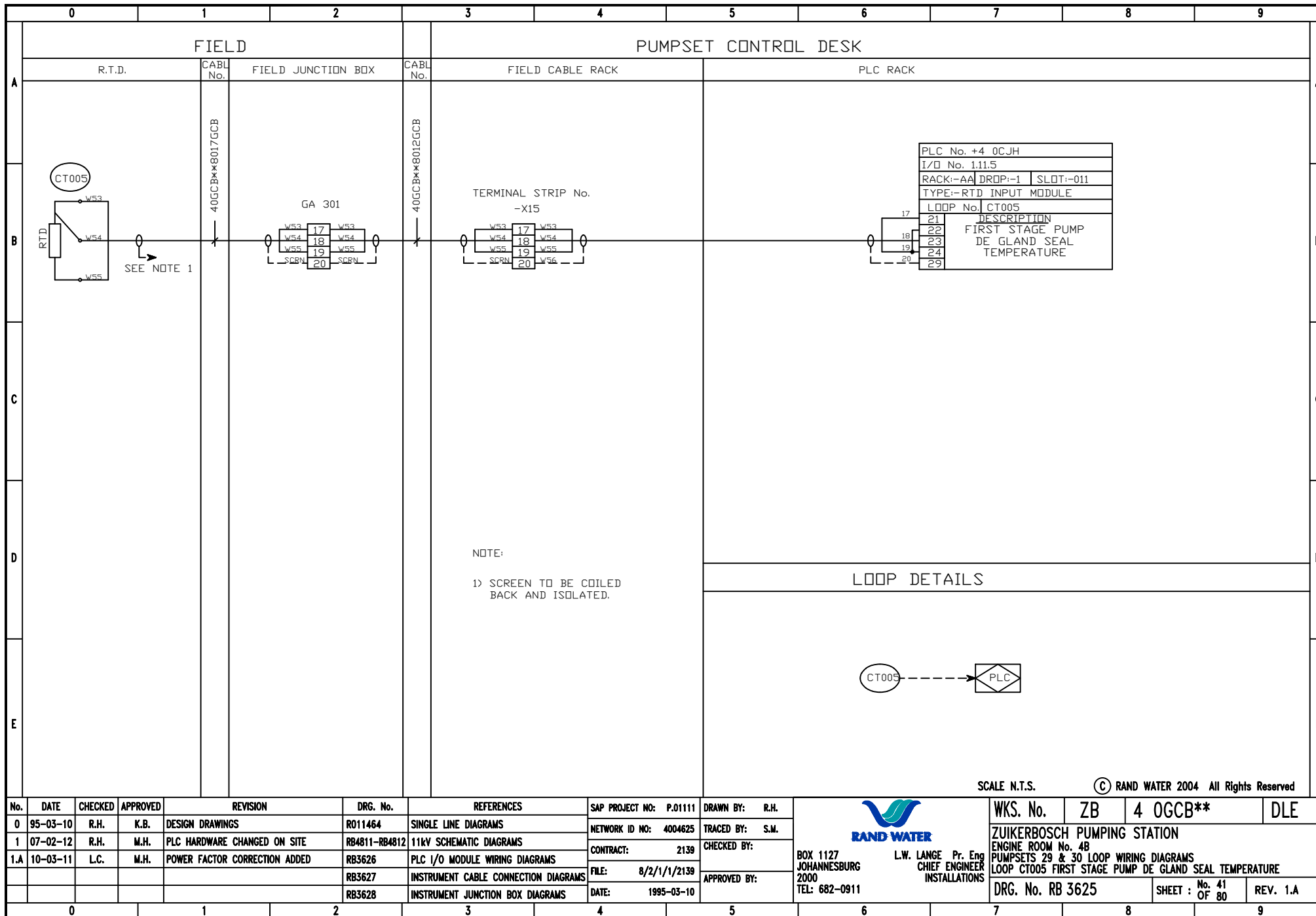


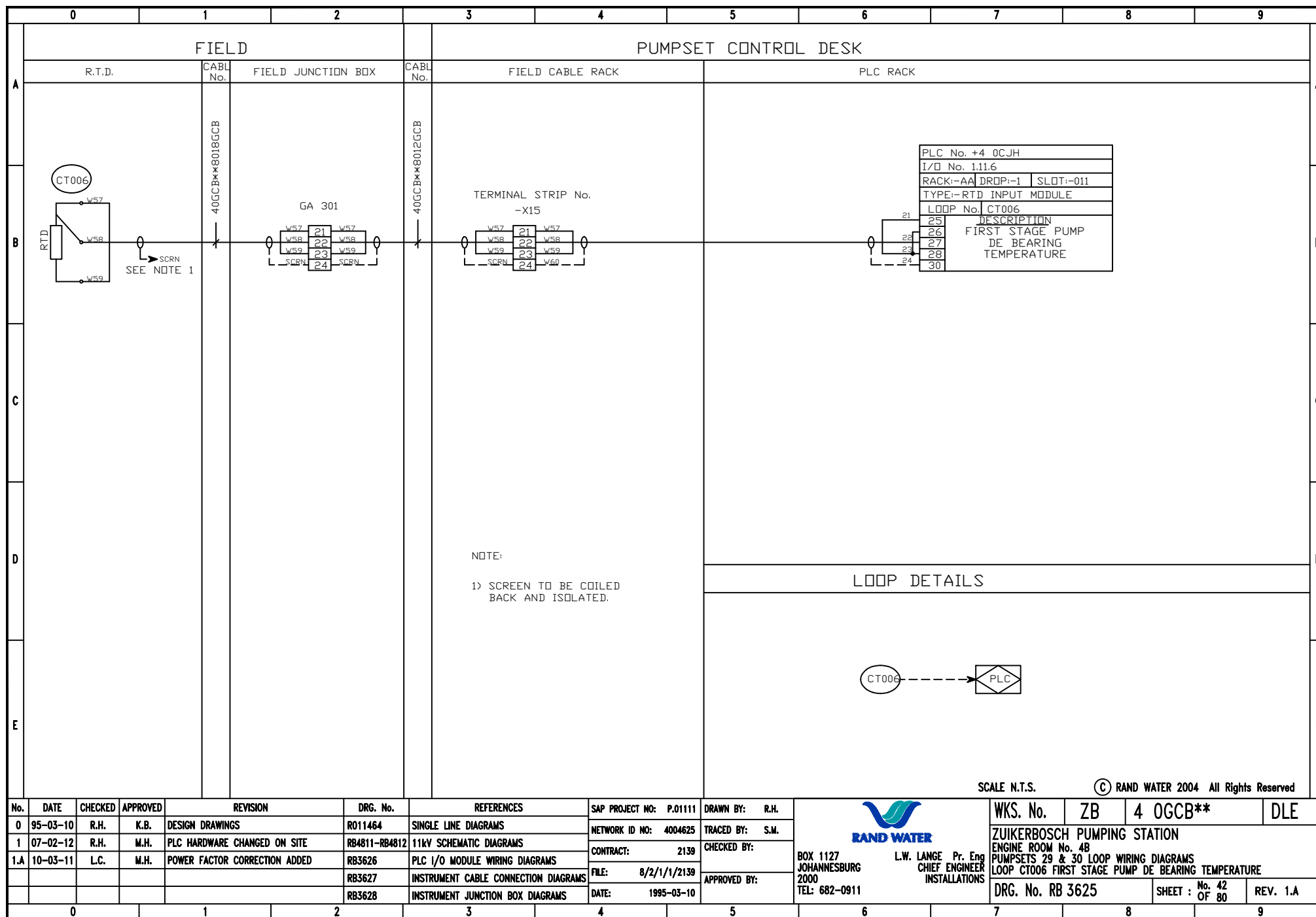


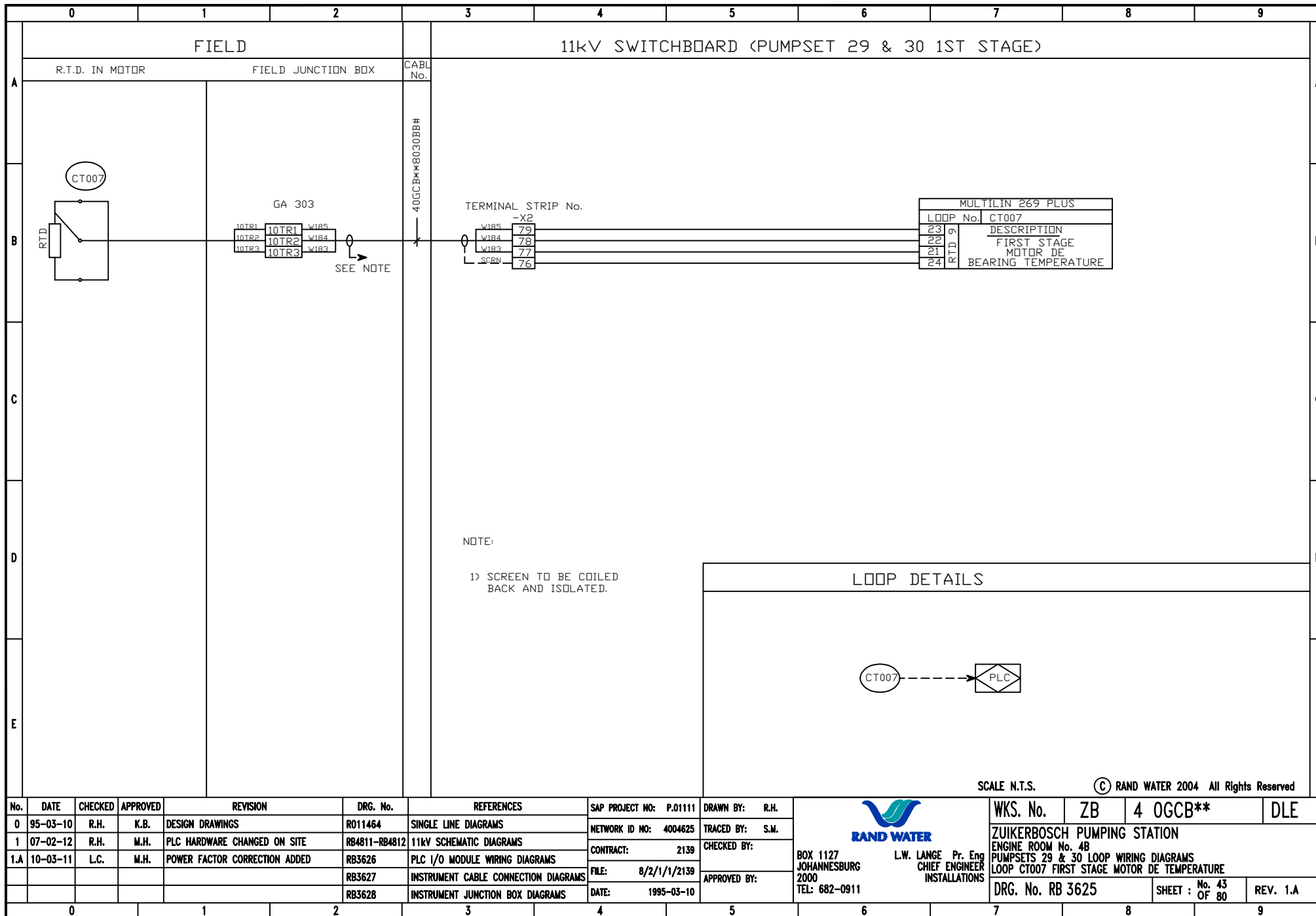


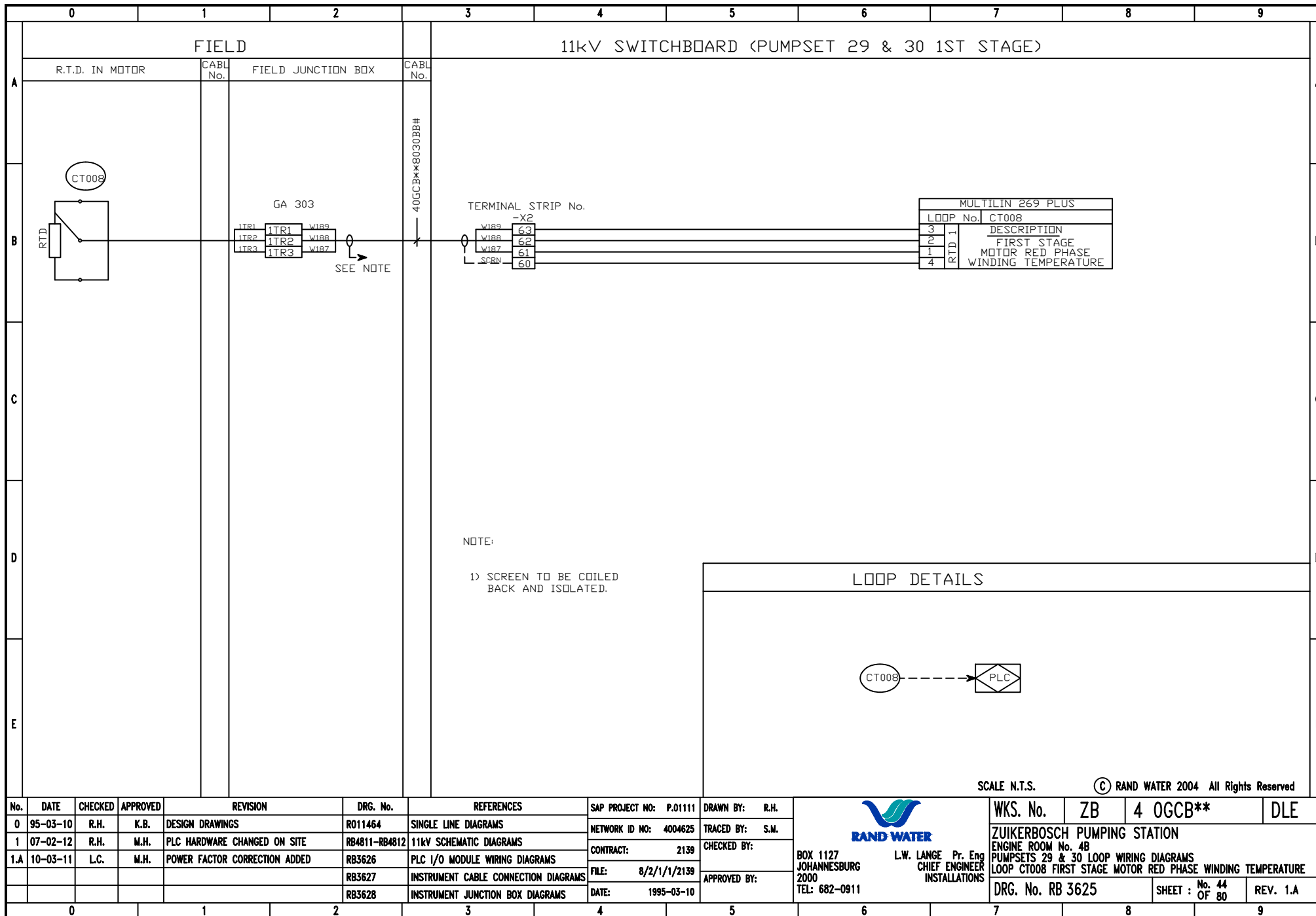


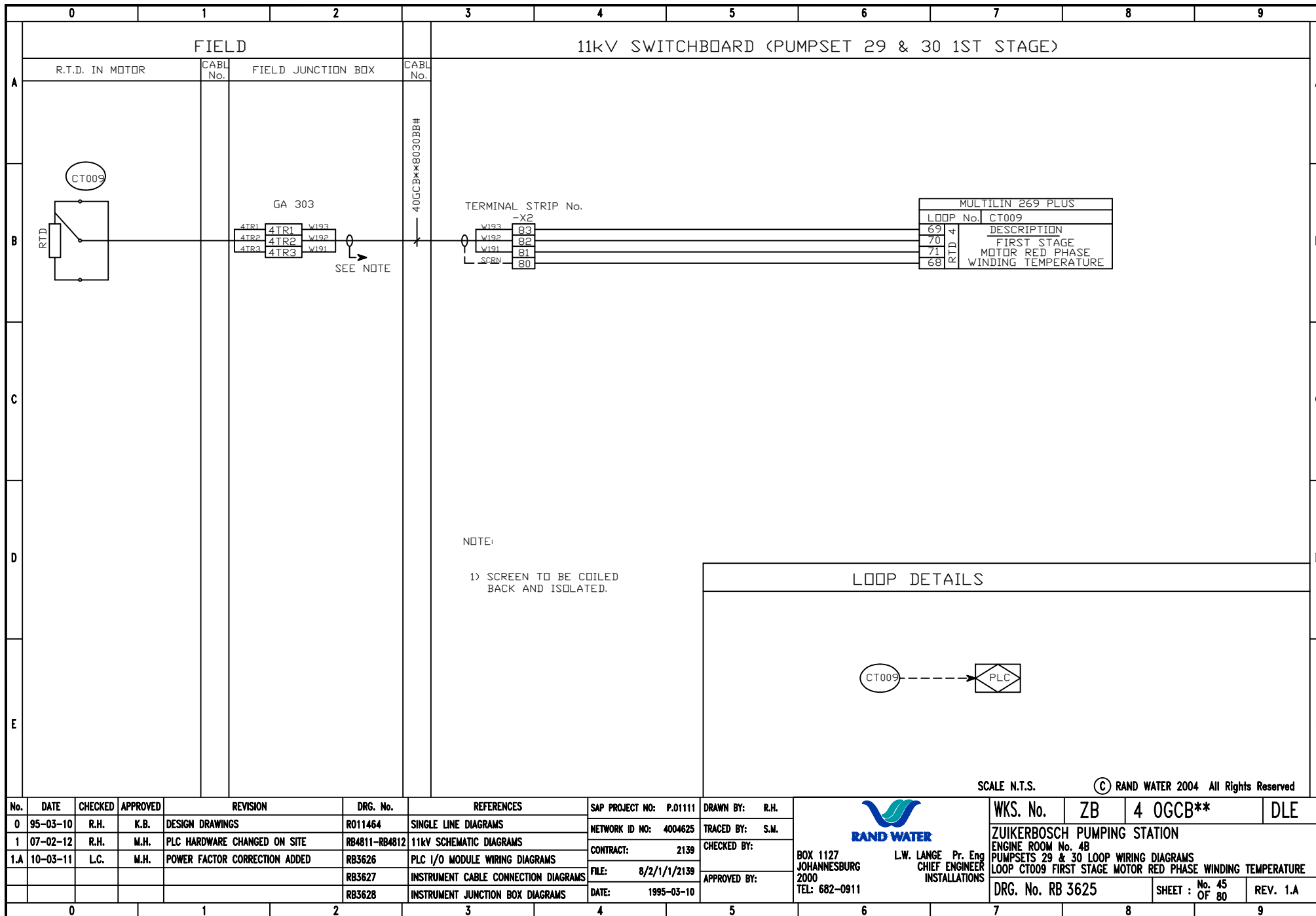


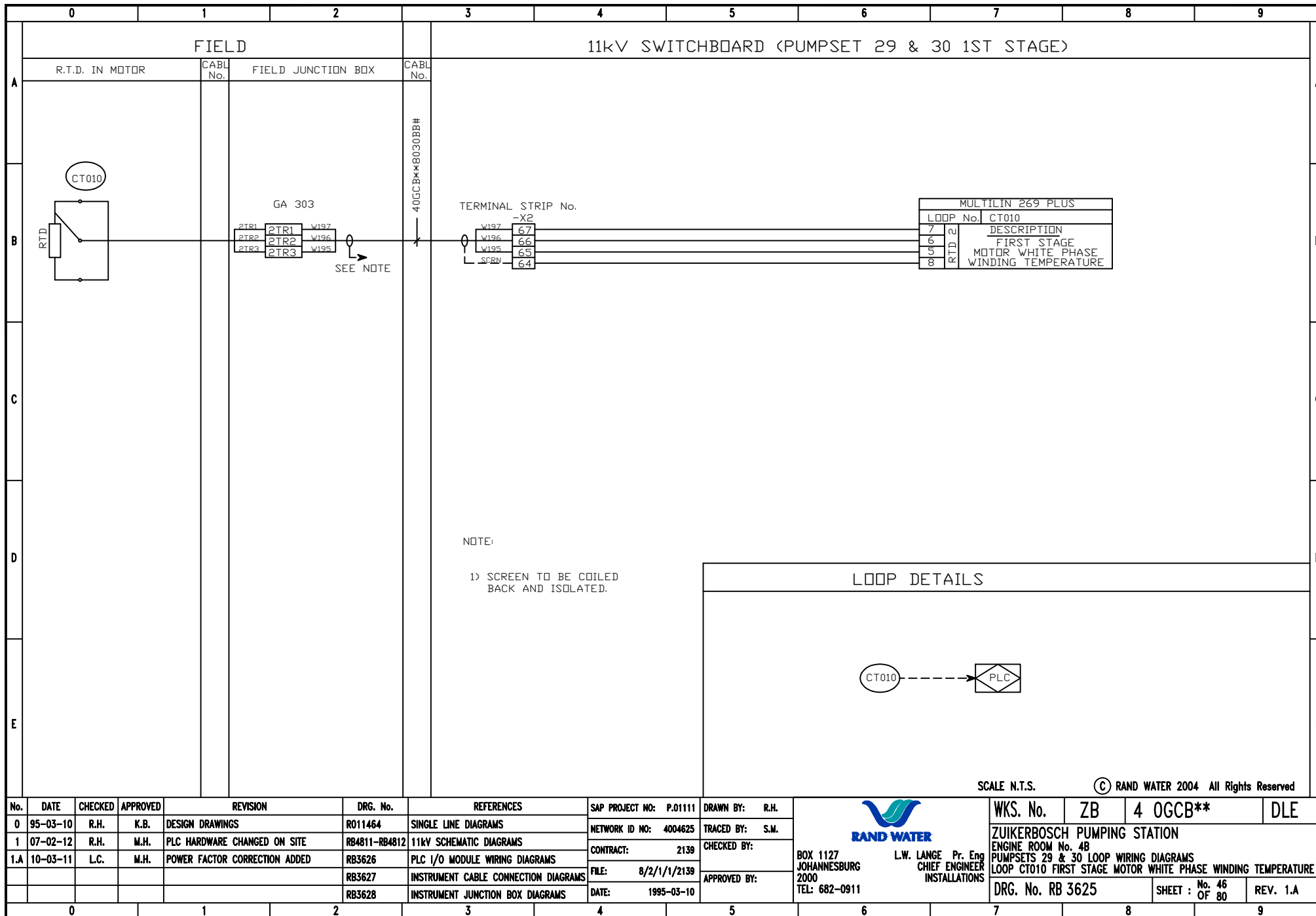


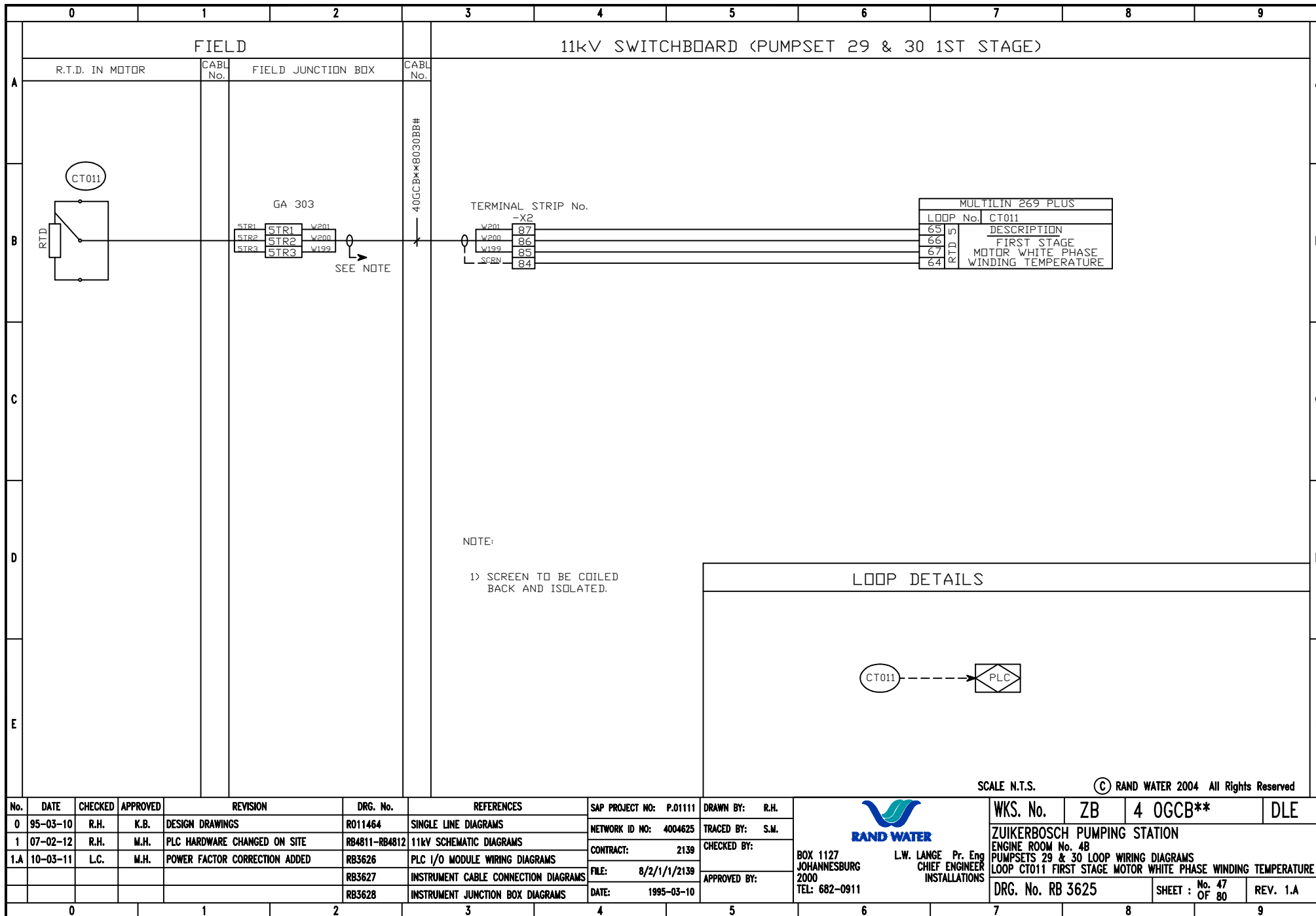


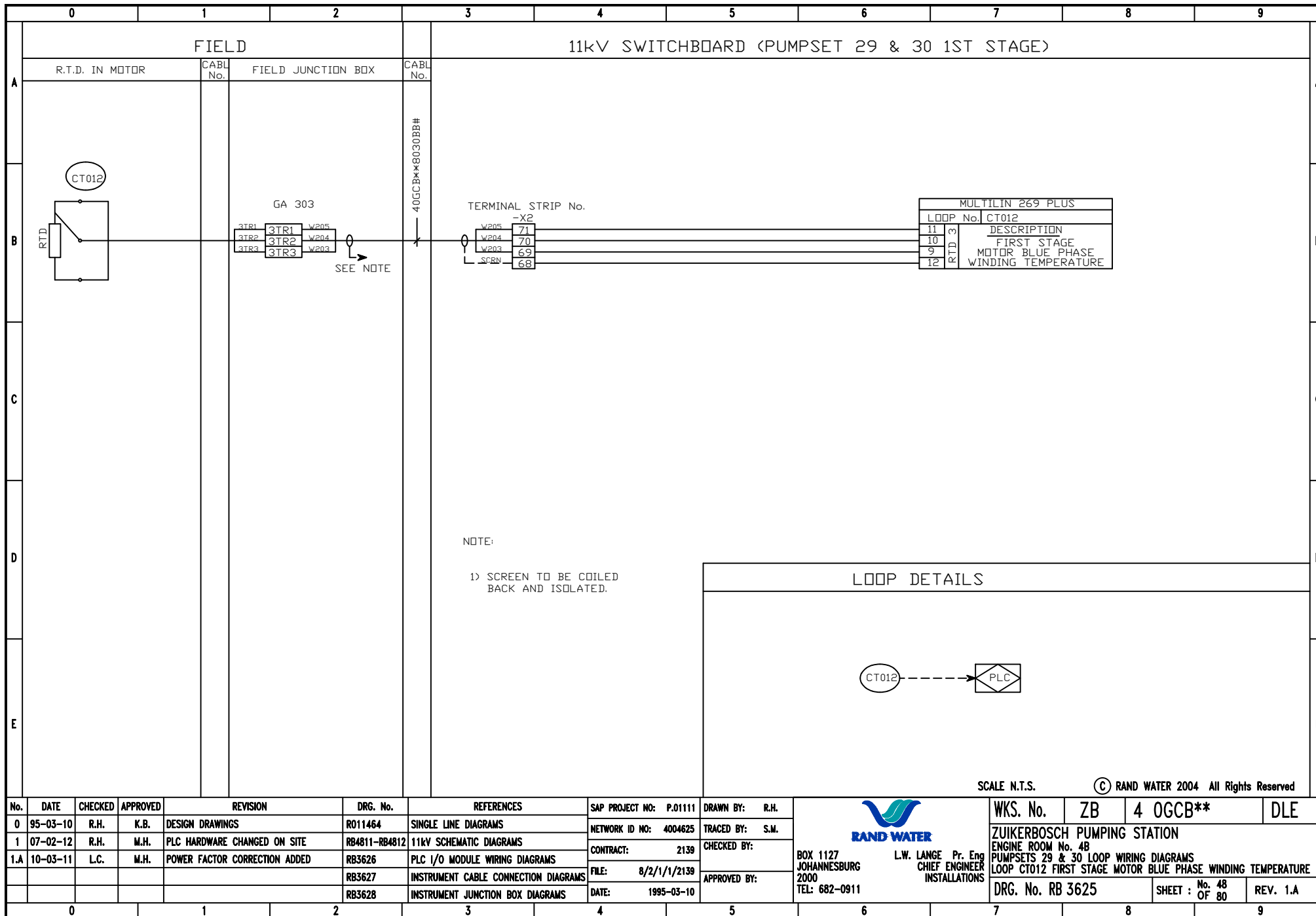


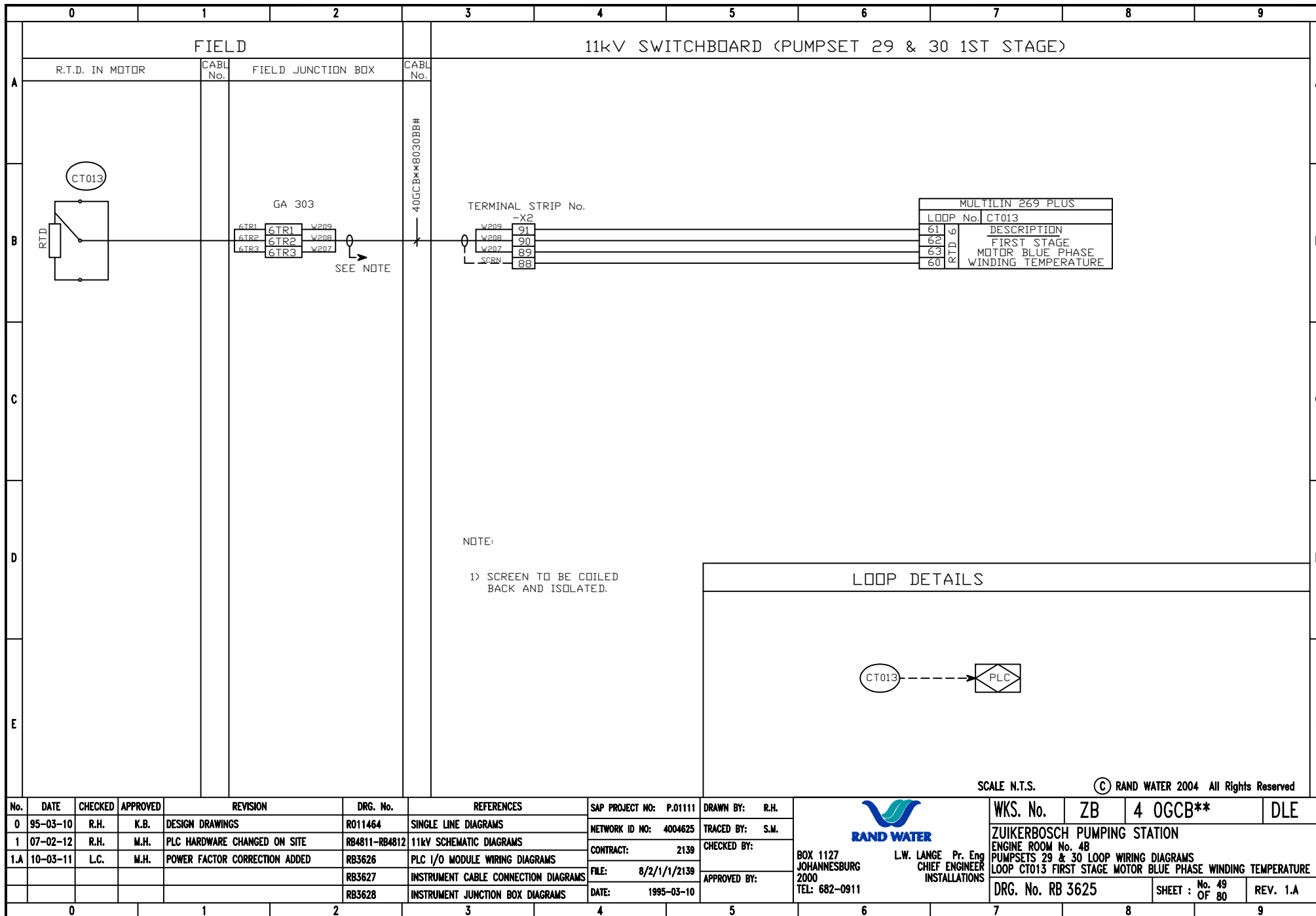


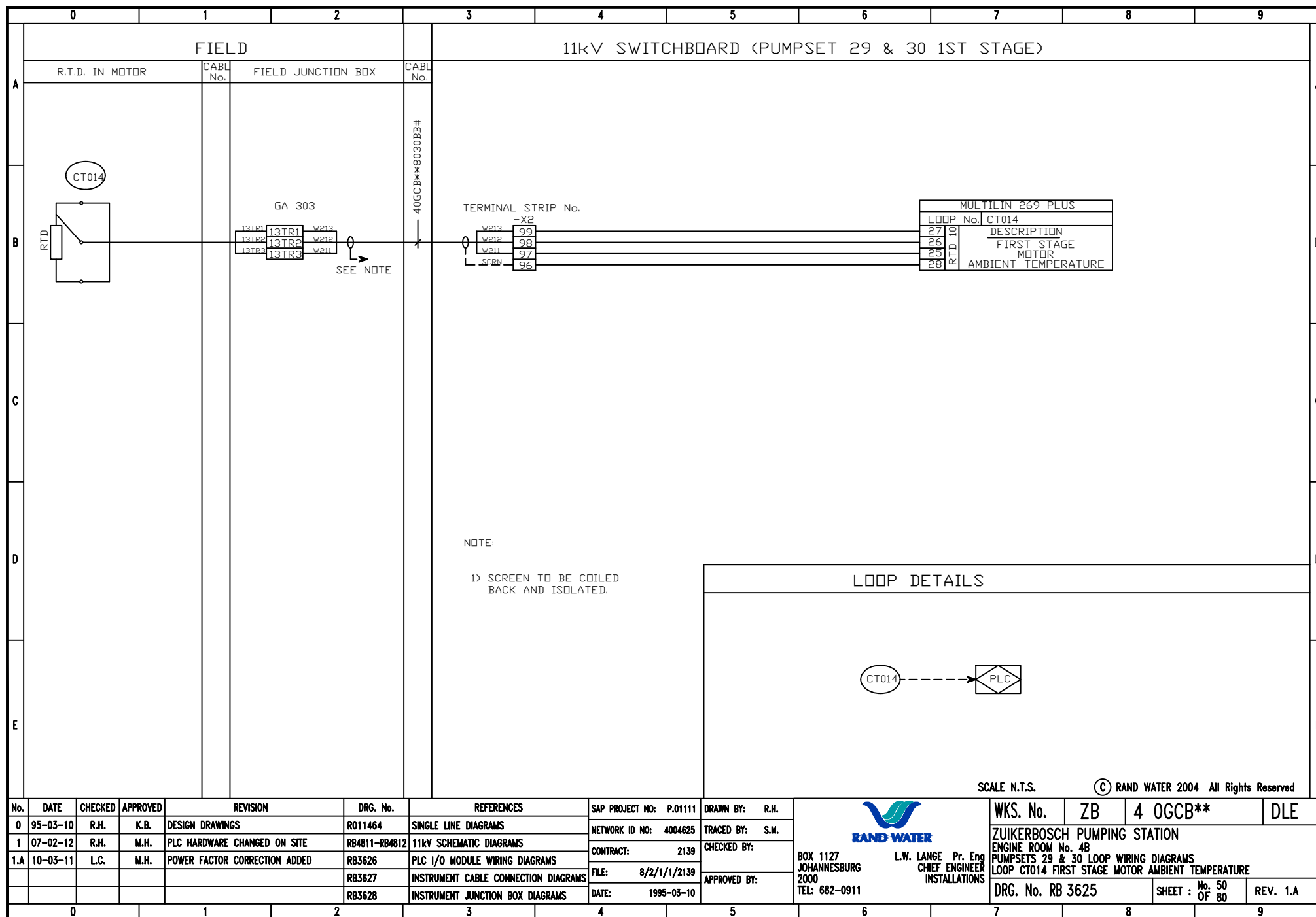


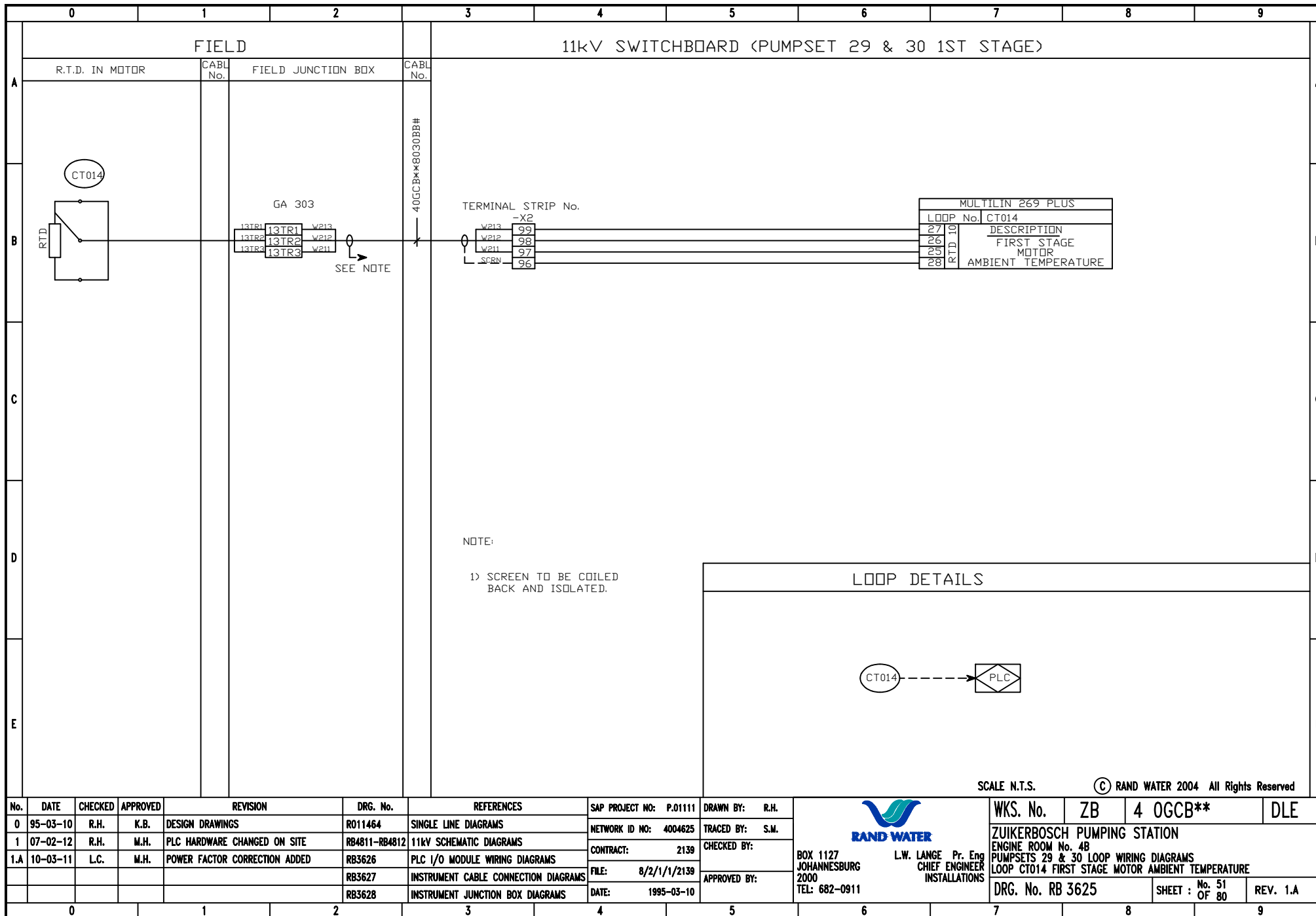


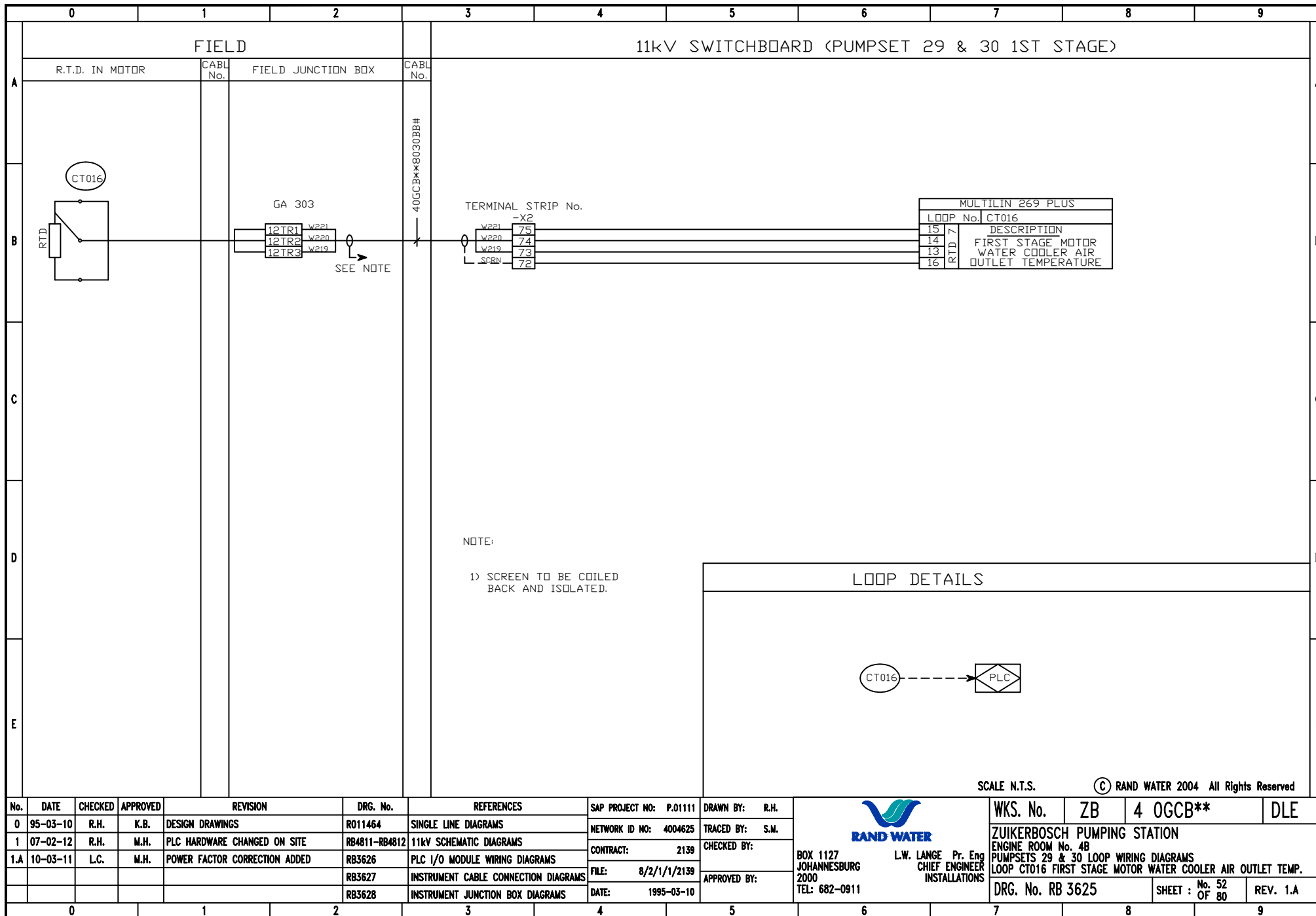


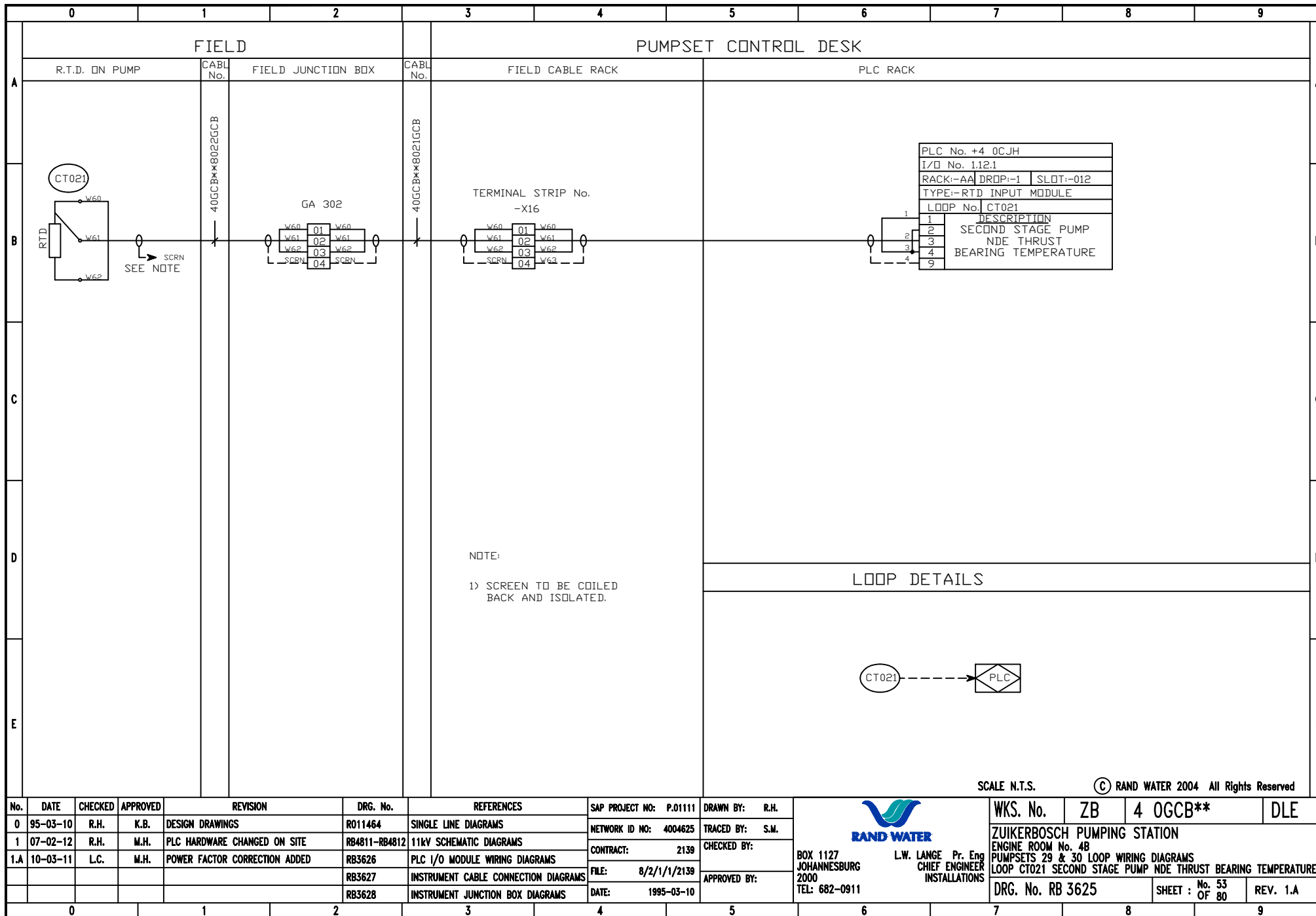


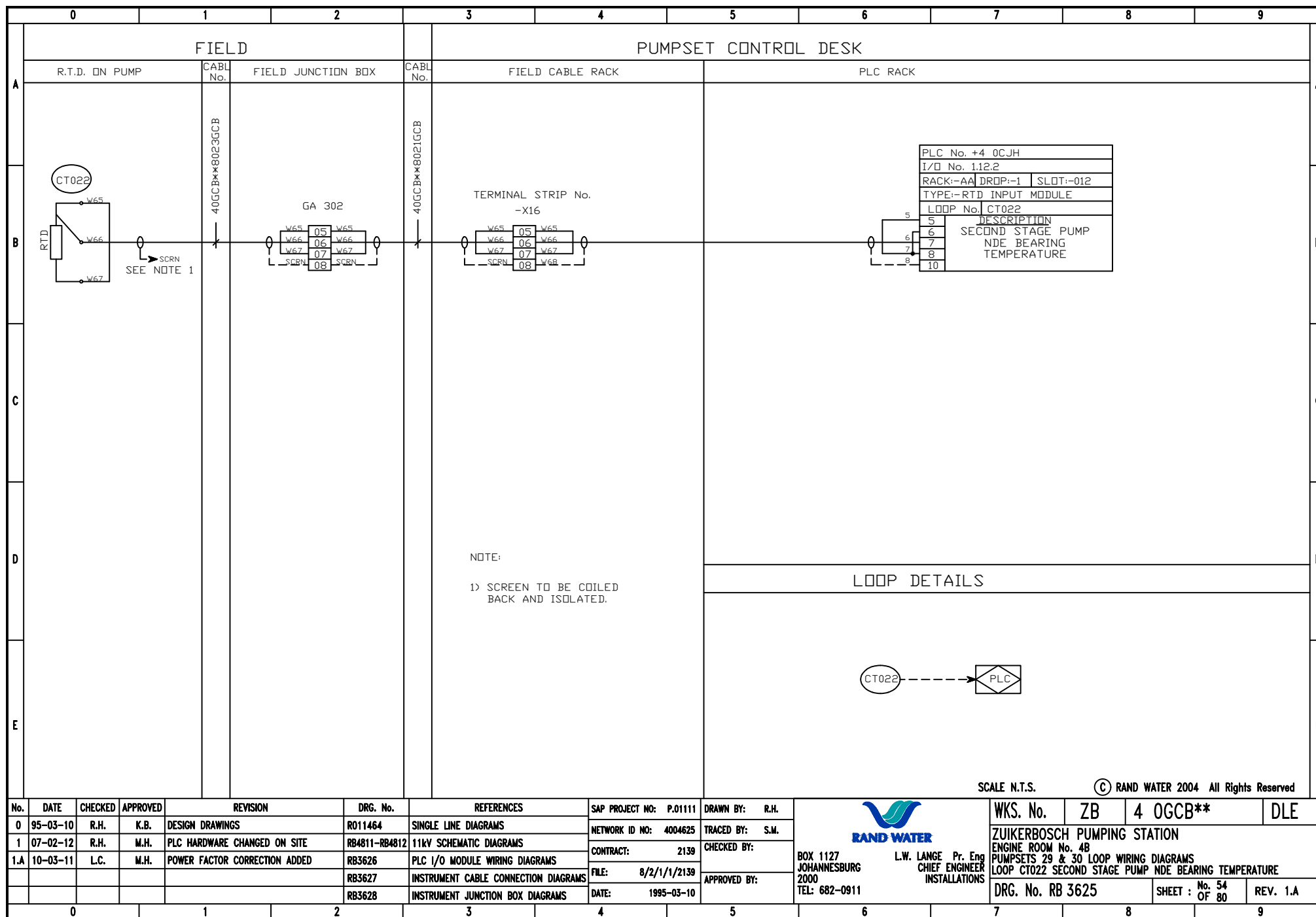


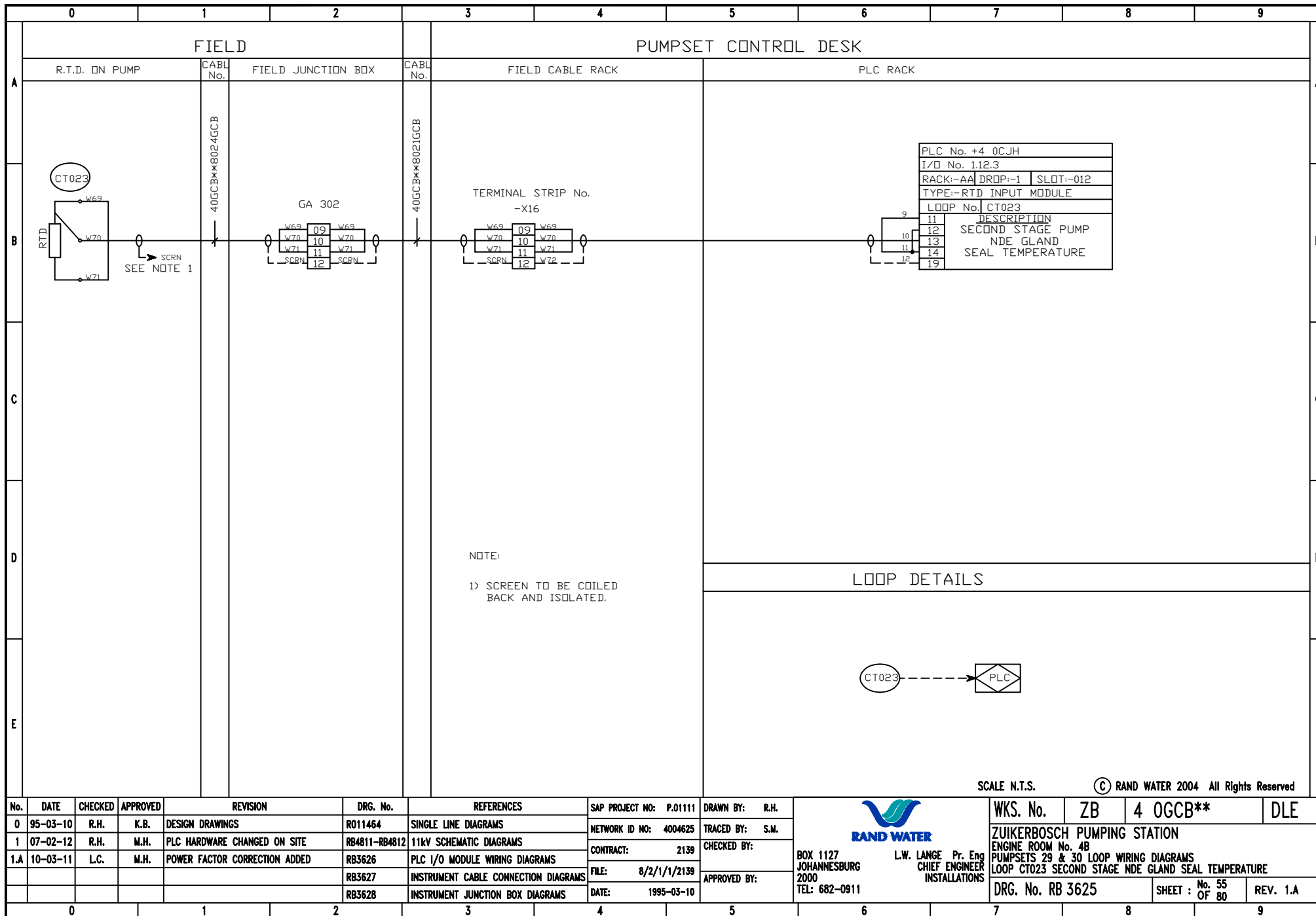


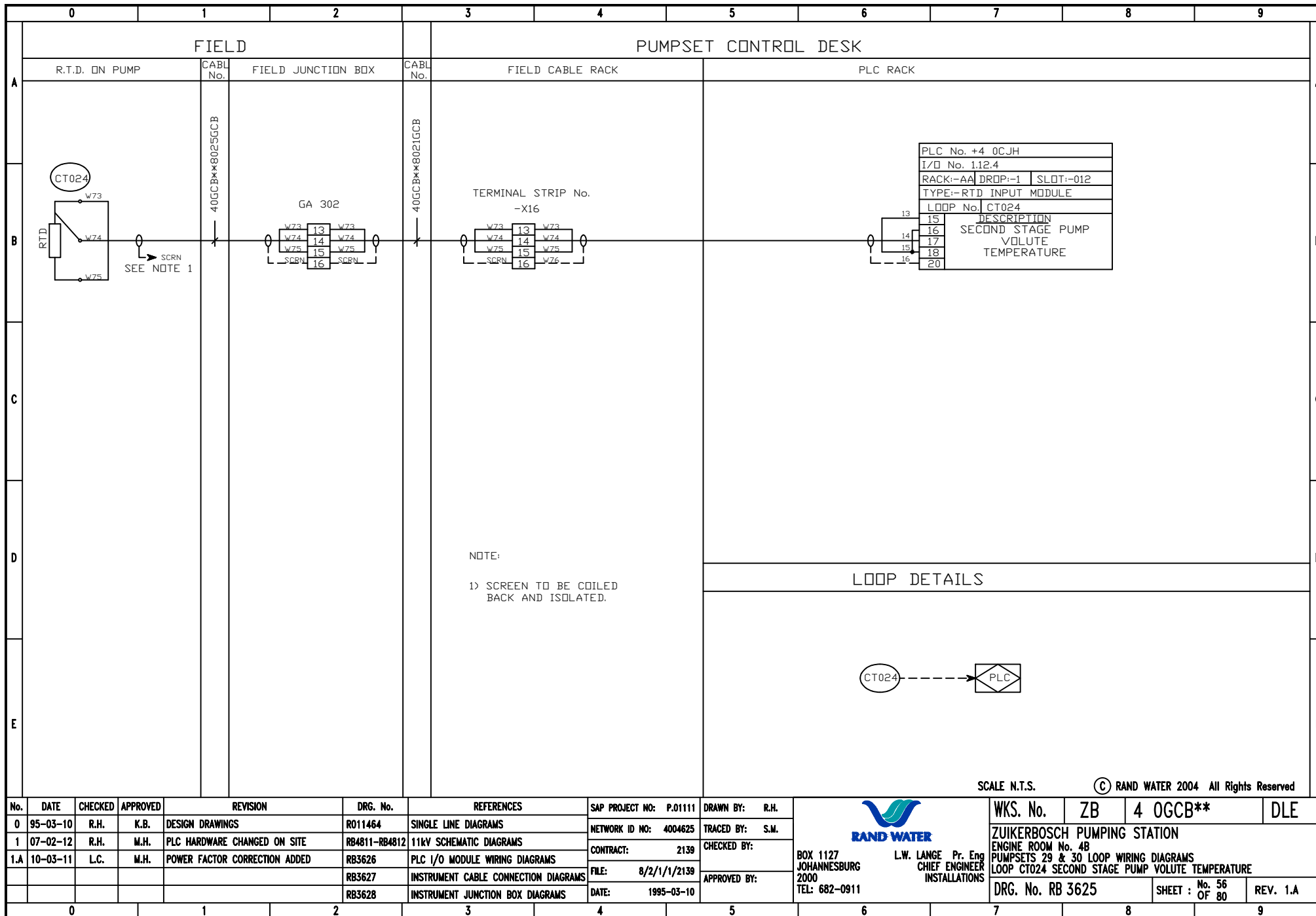


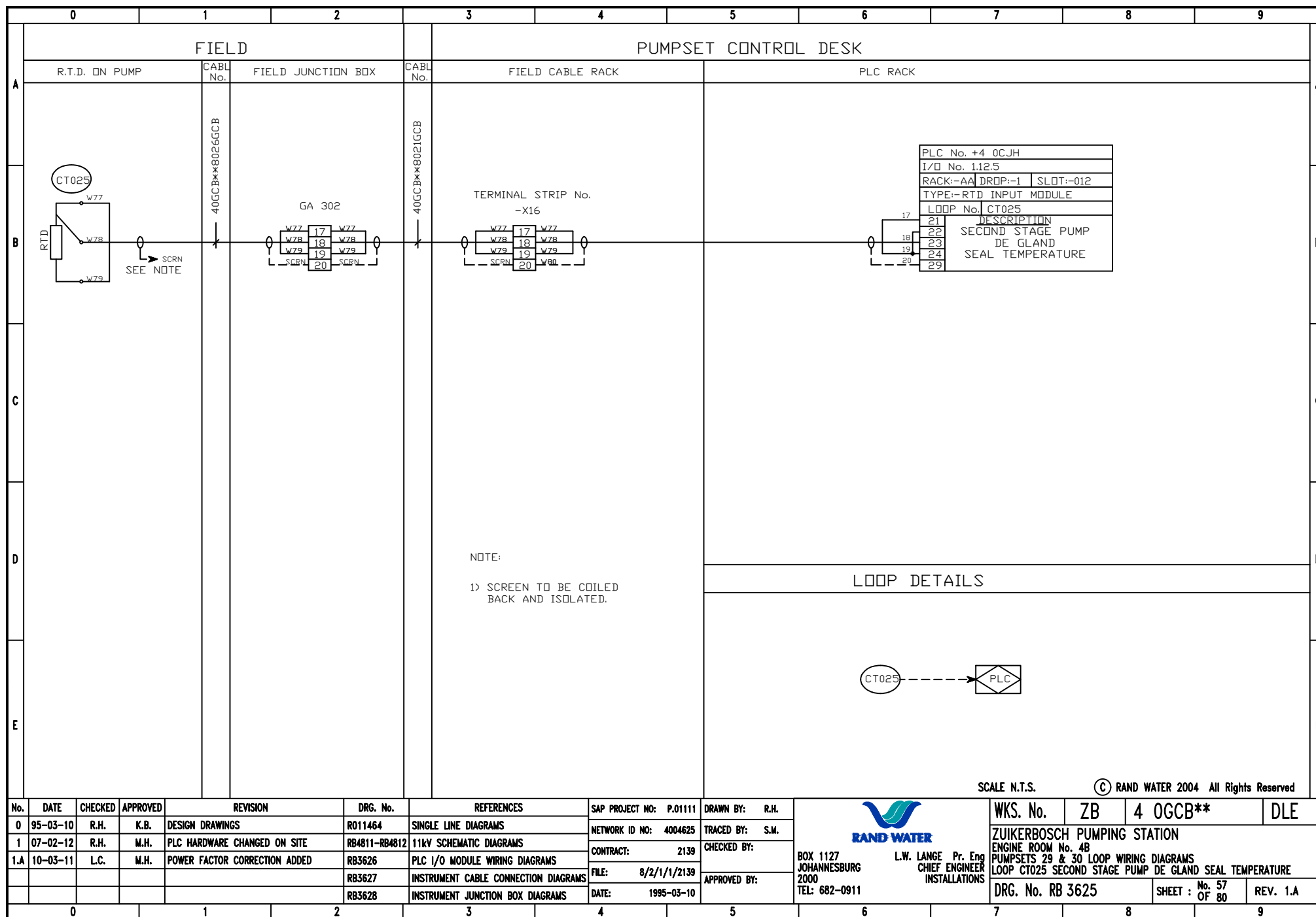


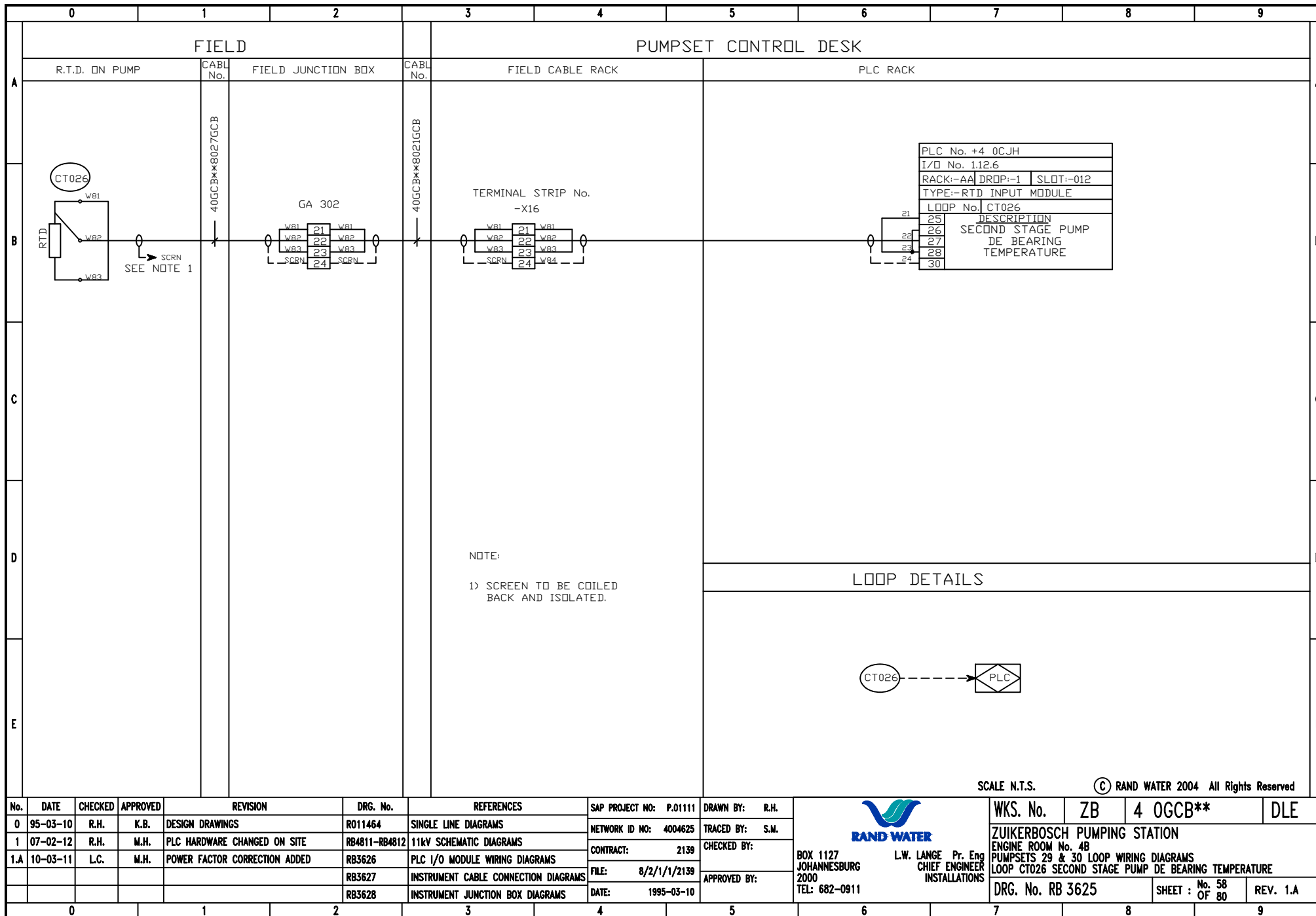


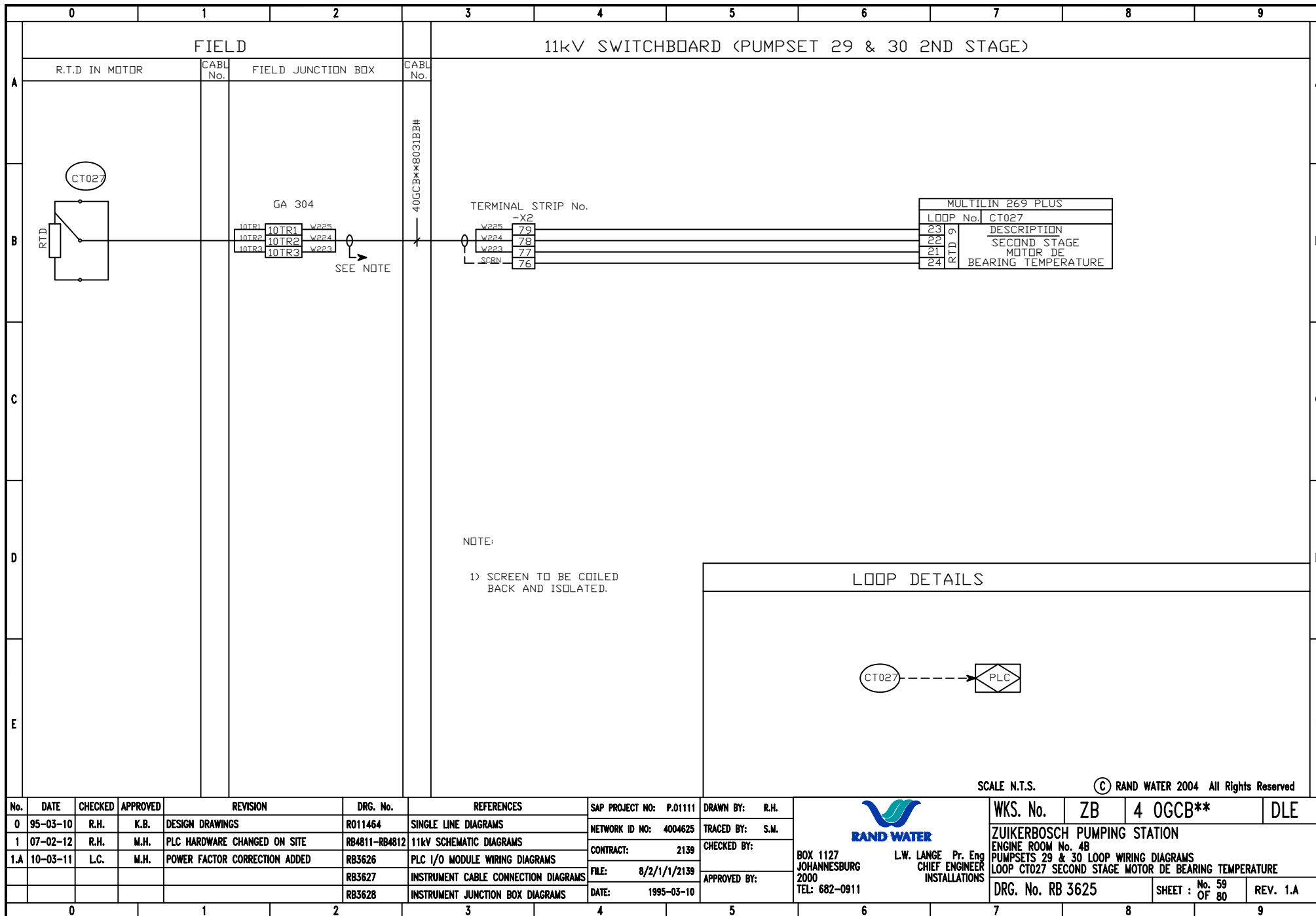


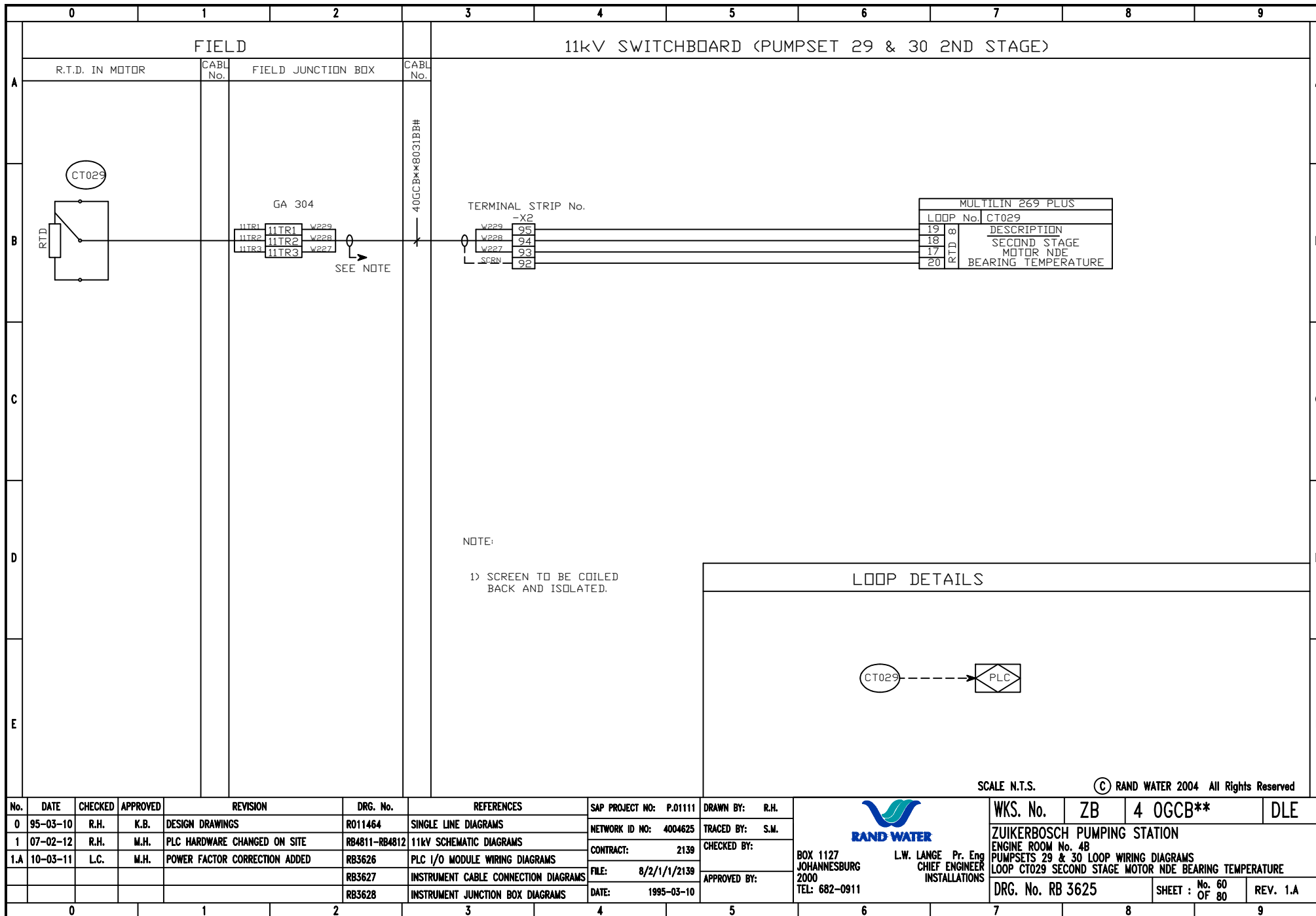


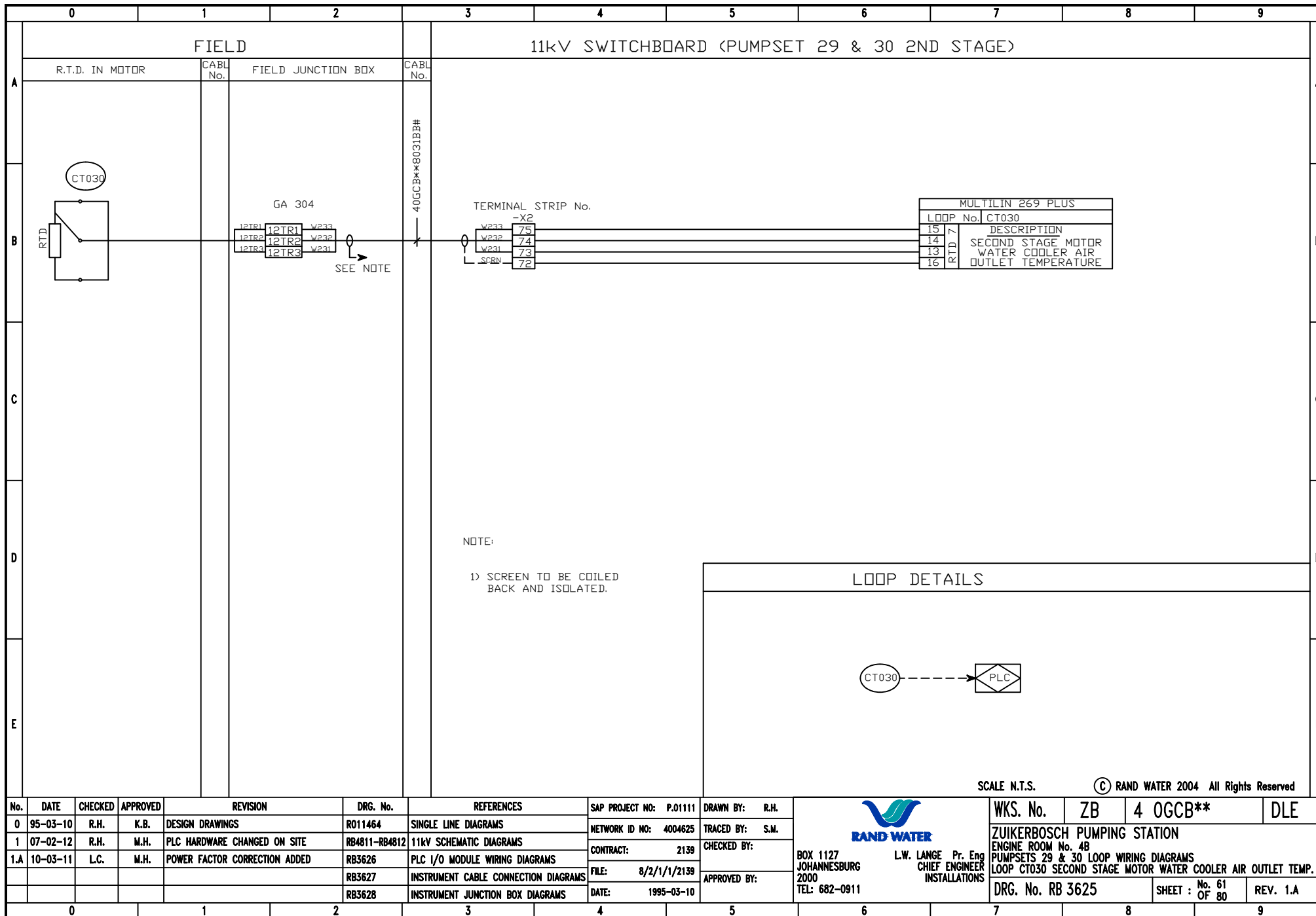


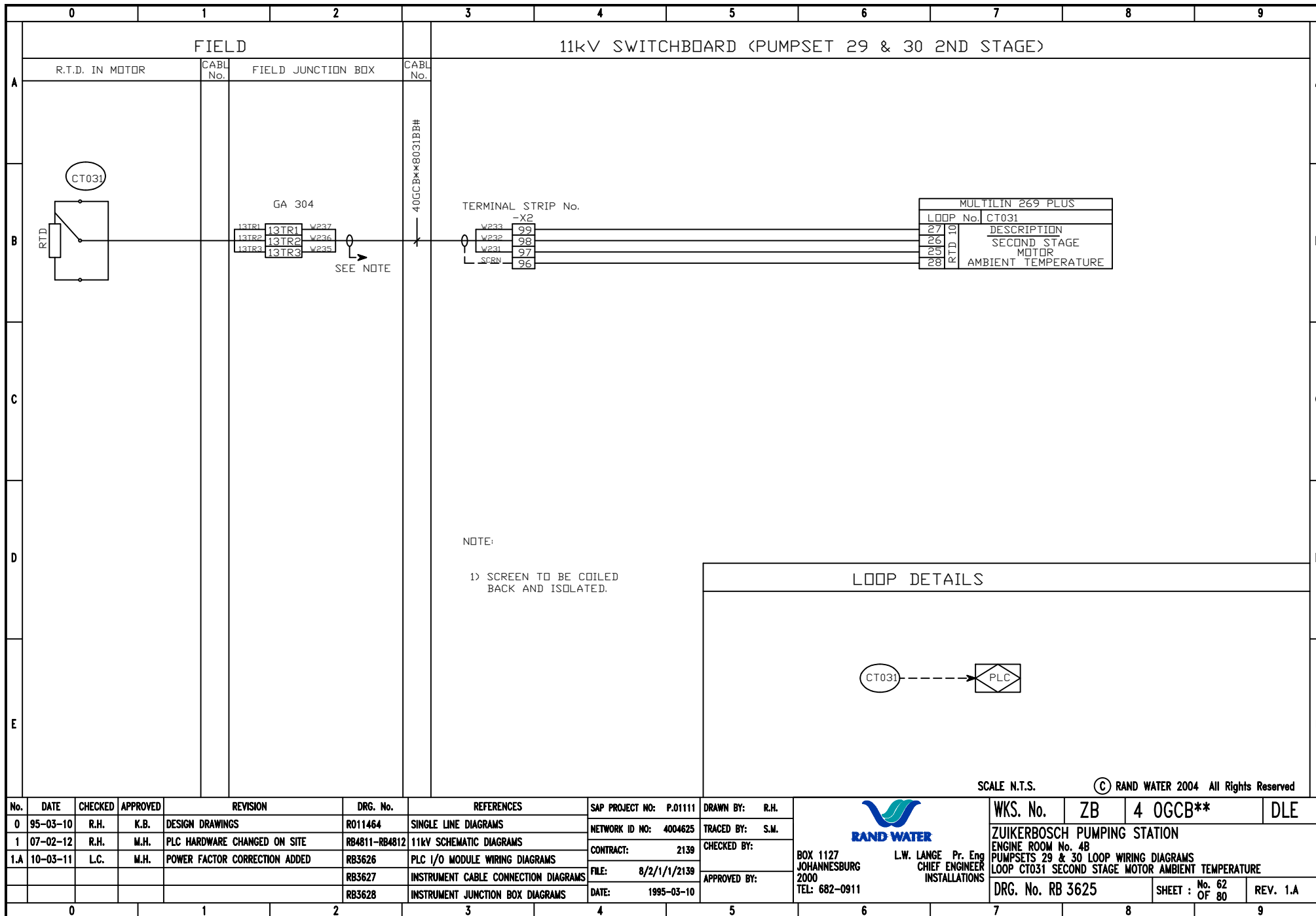


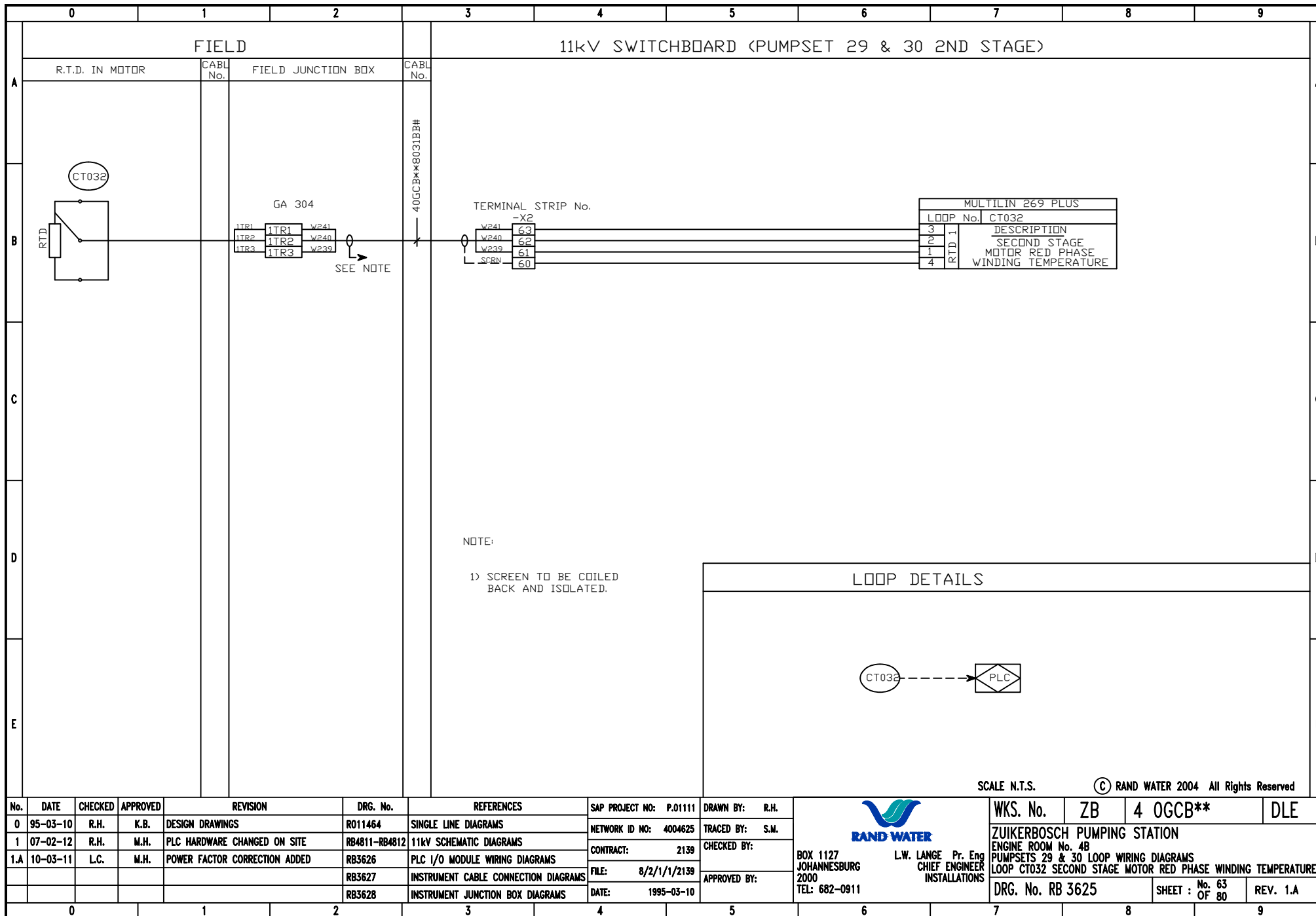


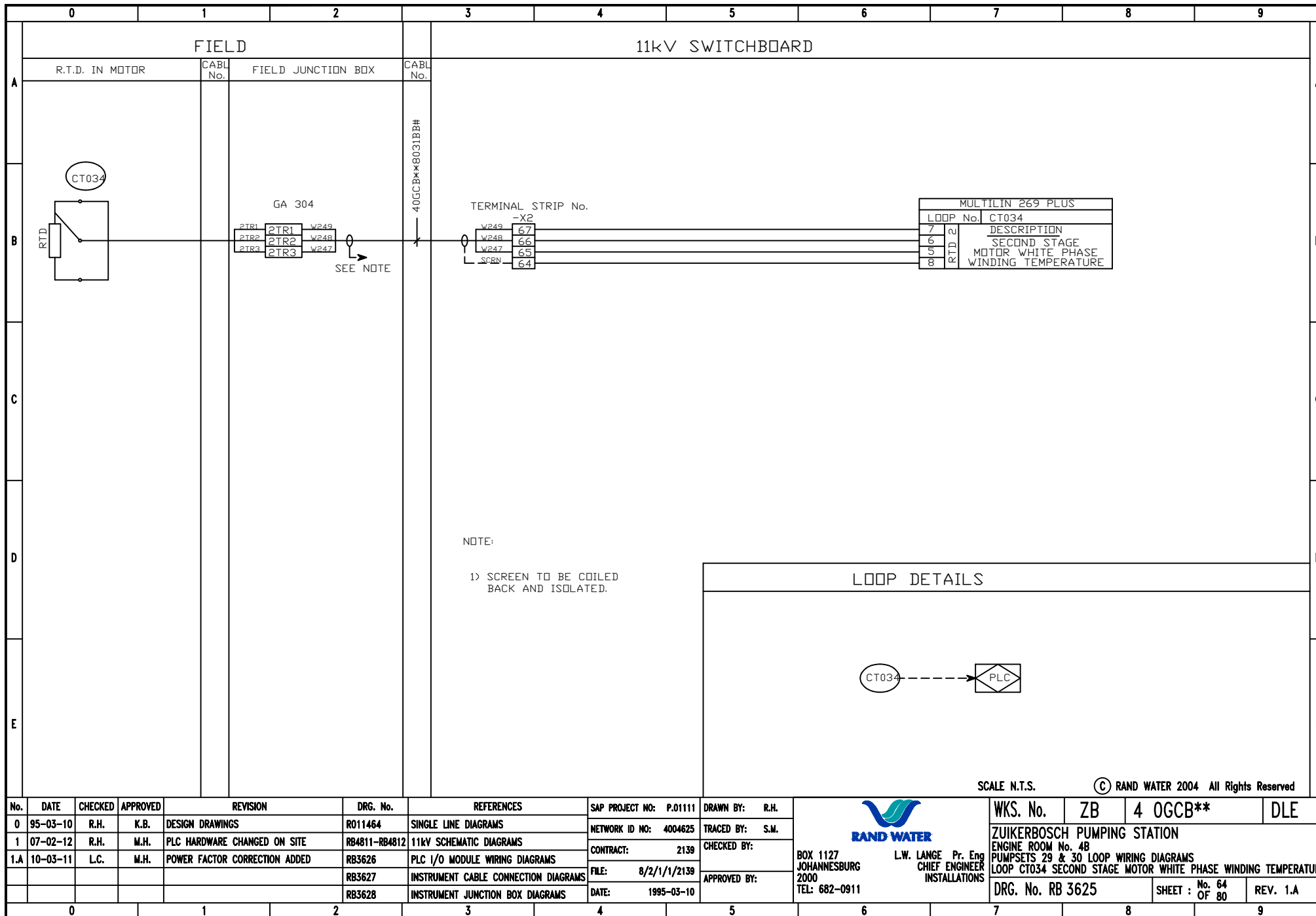


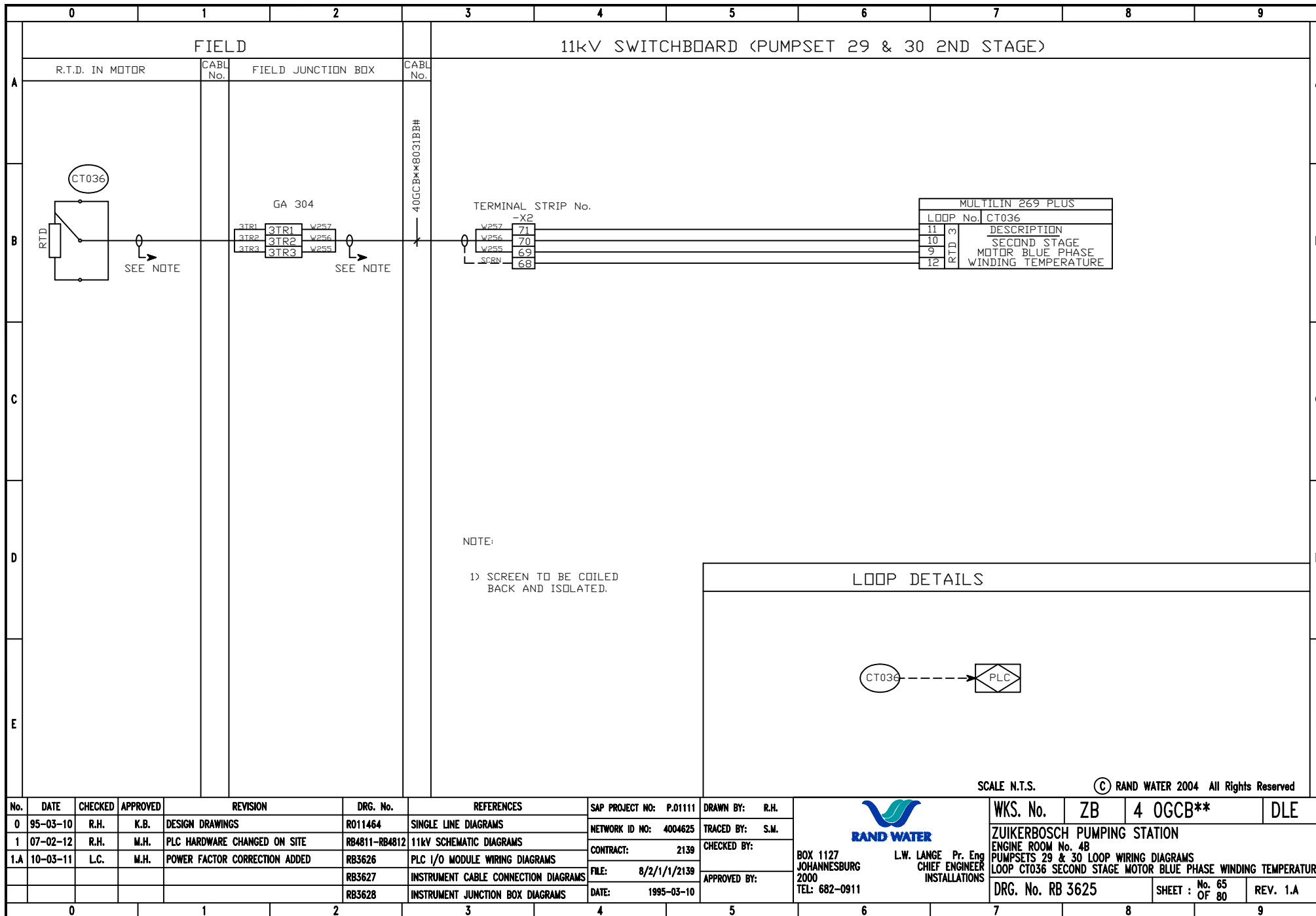


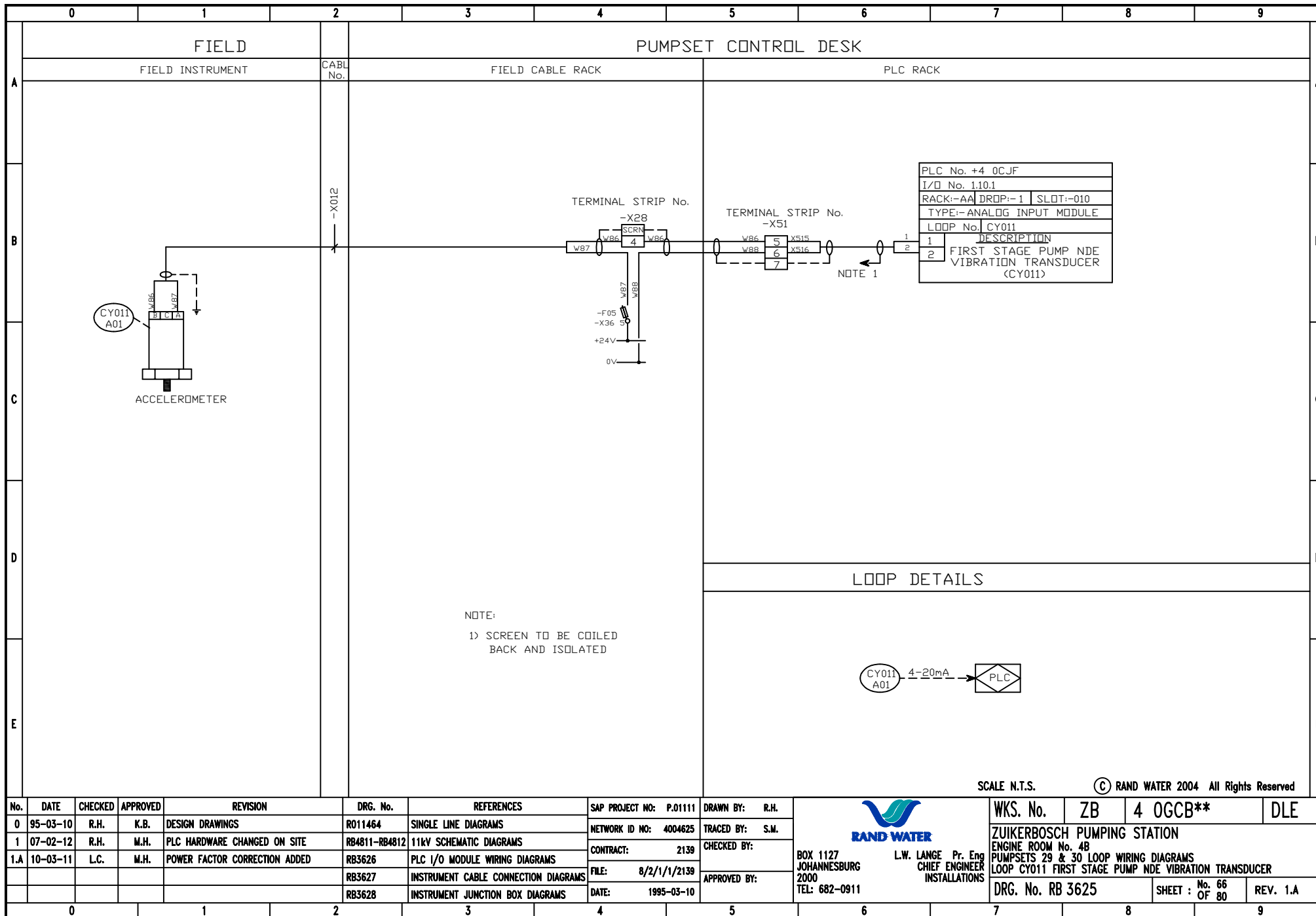


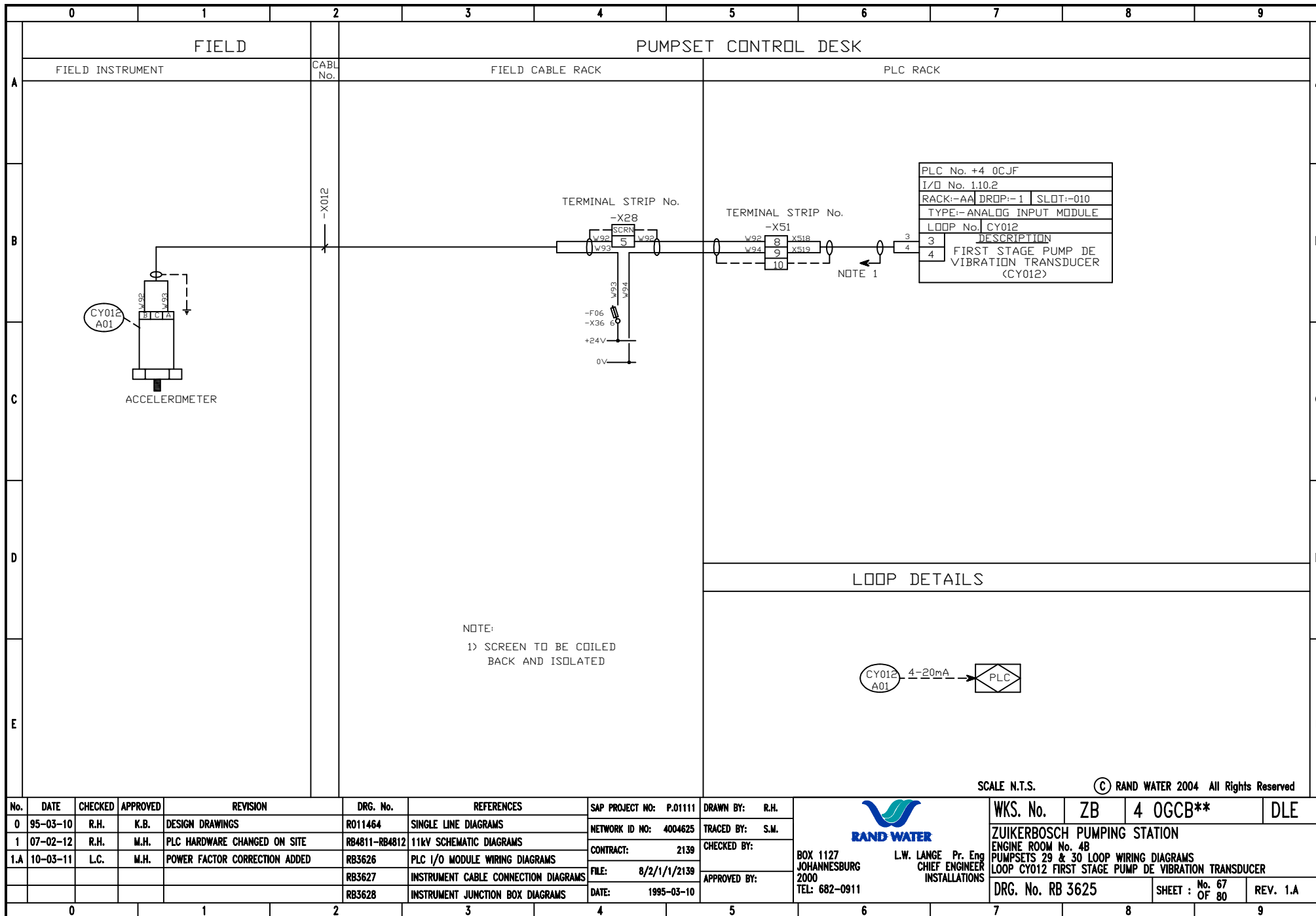


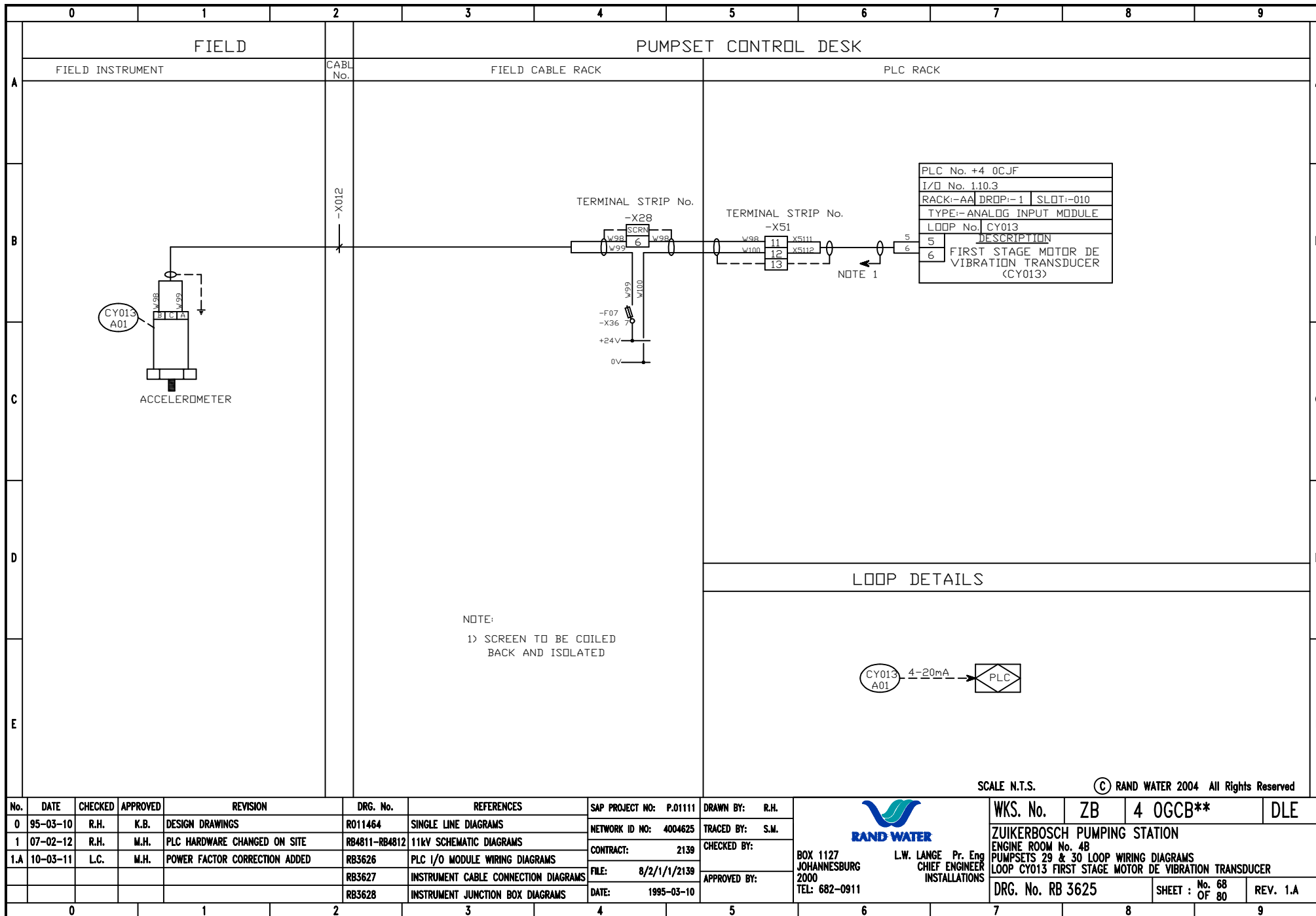


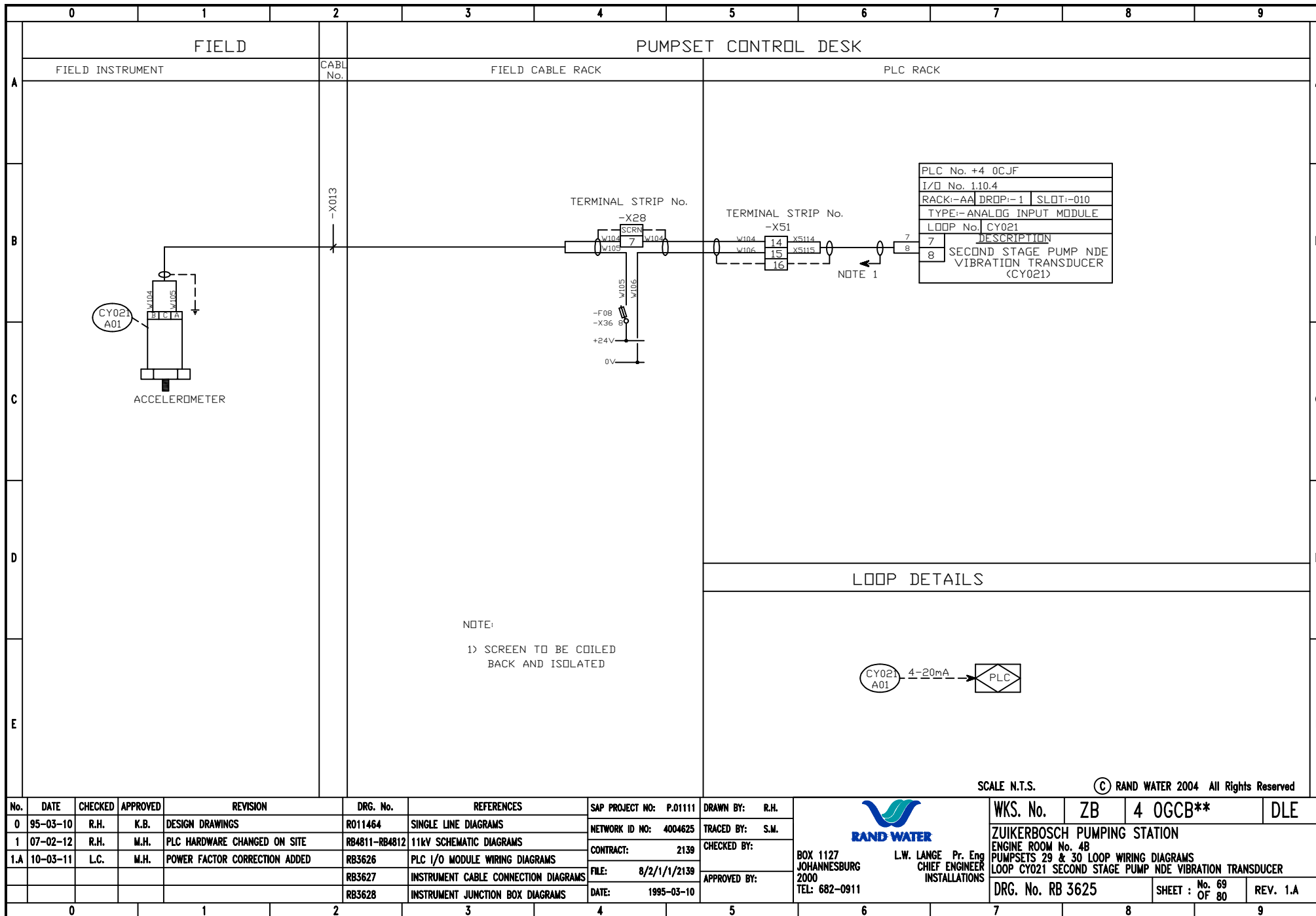


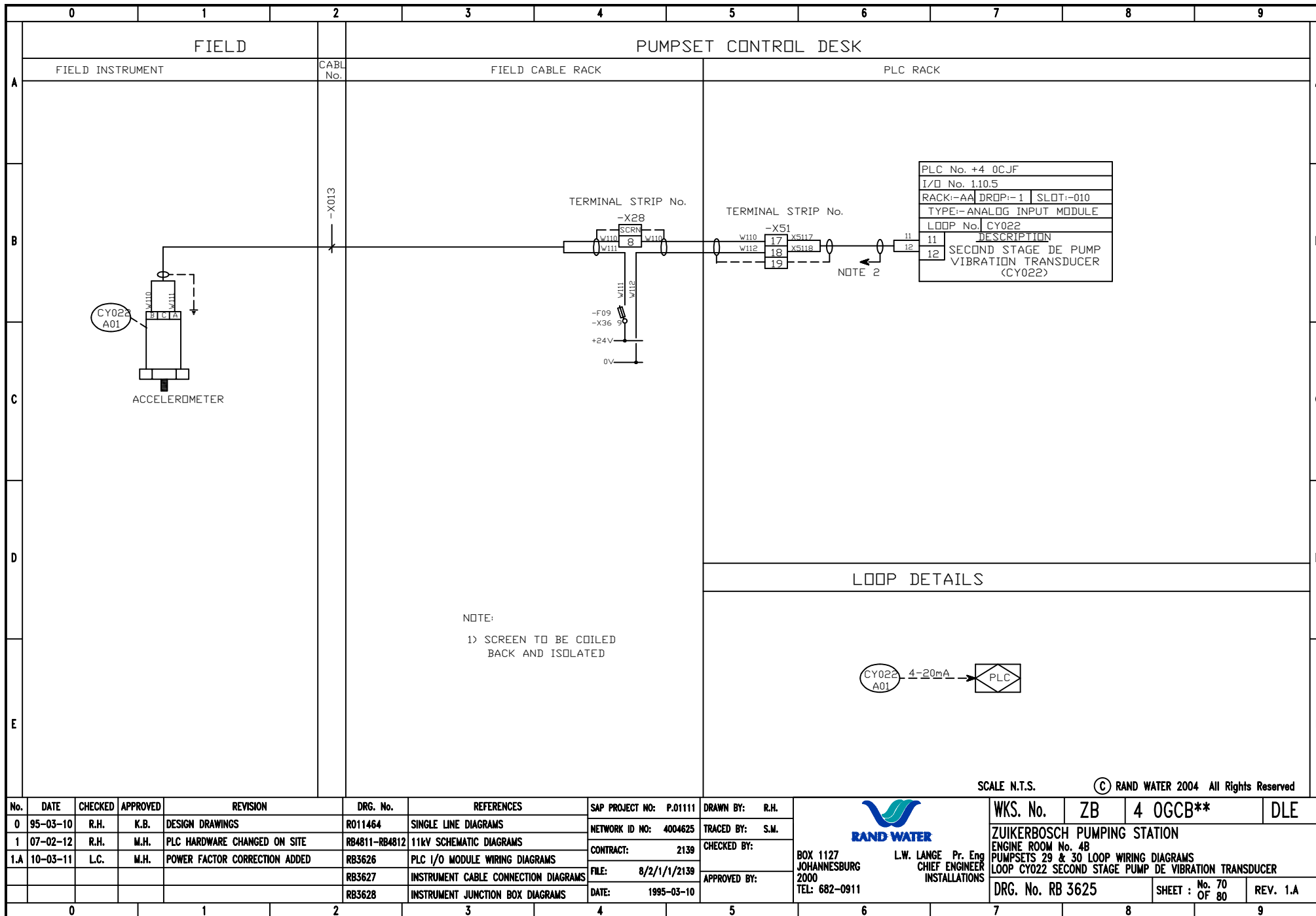


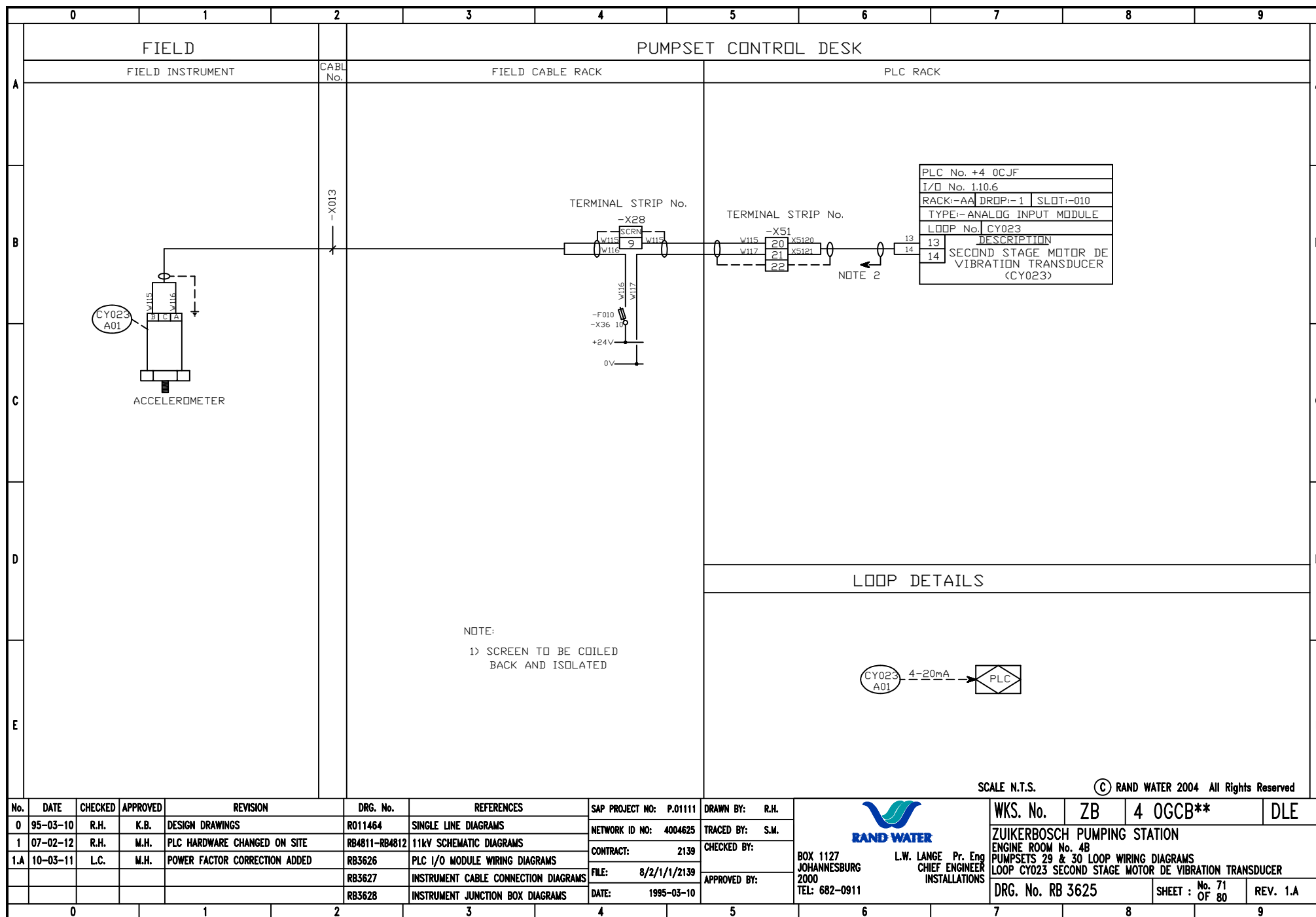


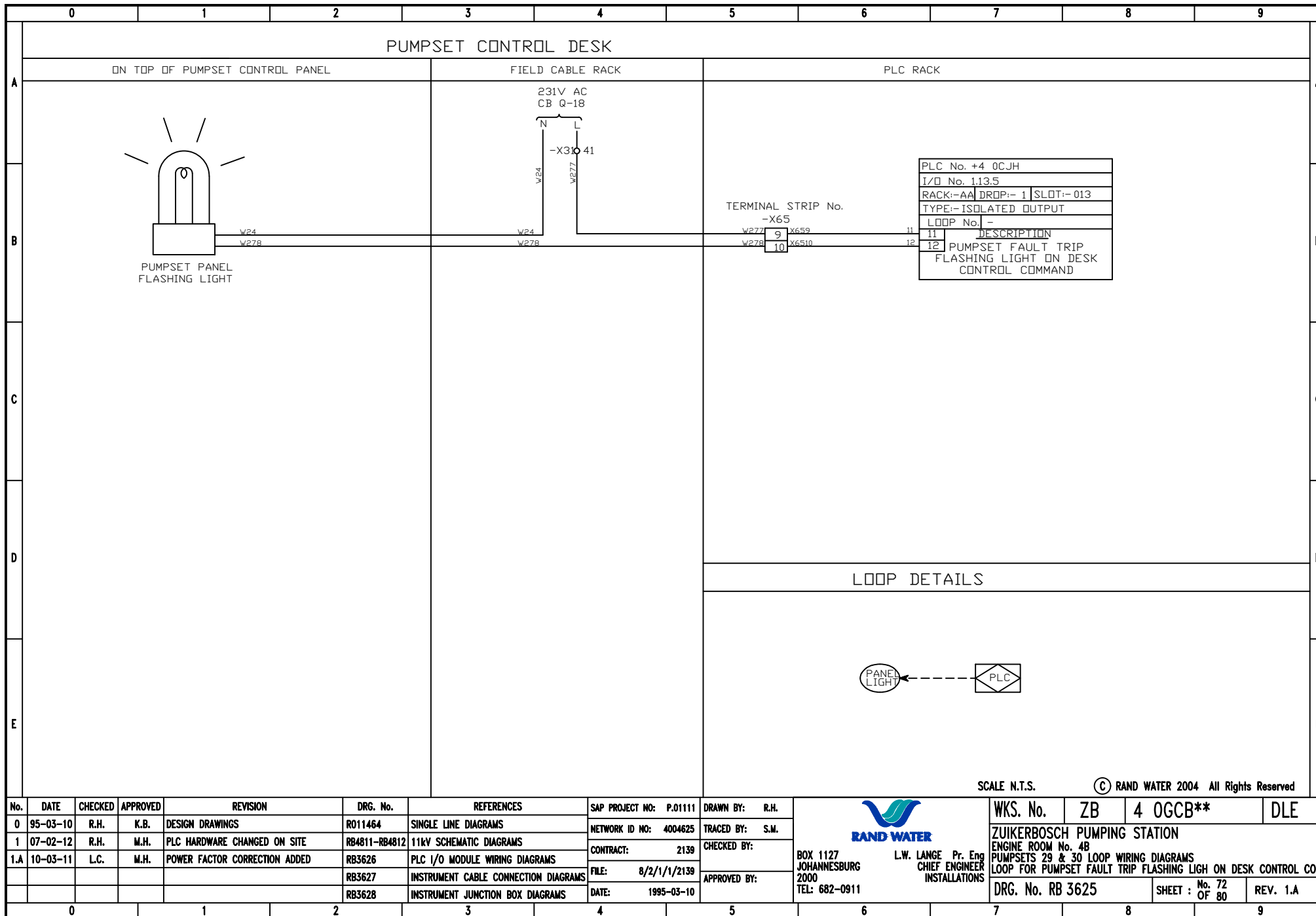











B

PLC No. +4 0CJH	
I/O No. 113.5	
RACK:-AA DROP:- 1 SLOT:- 013	
TYPE:- ISOLATED OUTPUT	
LOOP No. -	
11	DESCRIPTION
12	PUMPSET FAULT TRIP FLASHING LIGHT ON DESK CONTROL COMMAND

C

PLC No. +4 0CJH	
I/O No. 113.5	
RACK:-AA DROP:- 1 SLOT:- 013	
TYPE:- ISOLATED OUTPUT	
LOOP No. -	
11	DESCRIPTION
12	PUMPSET FAULT TRIP FLASHING LIGHT ON DESK CONTROL COMMAND

D

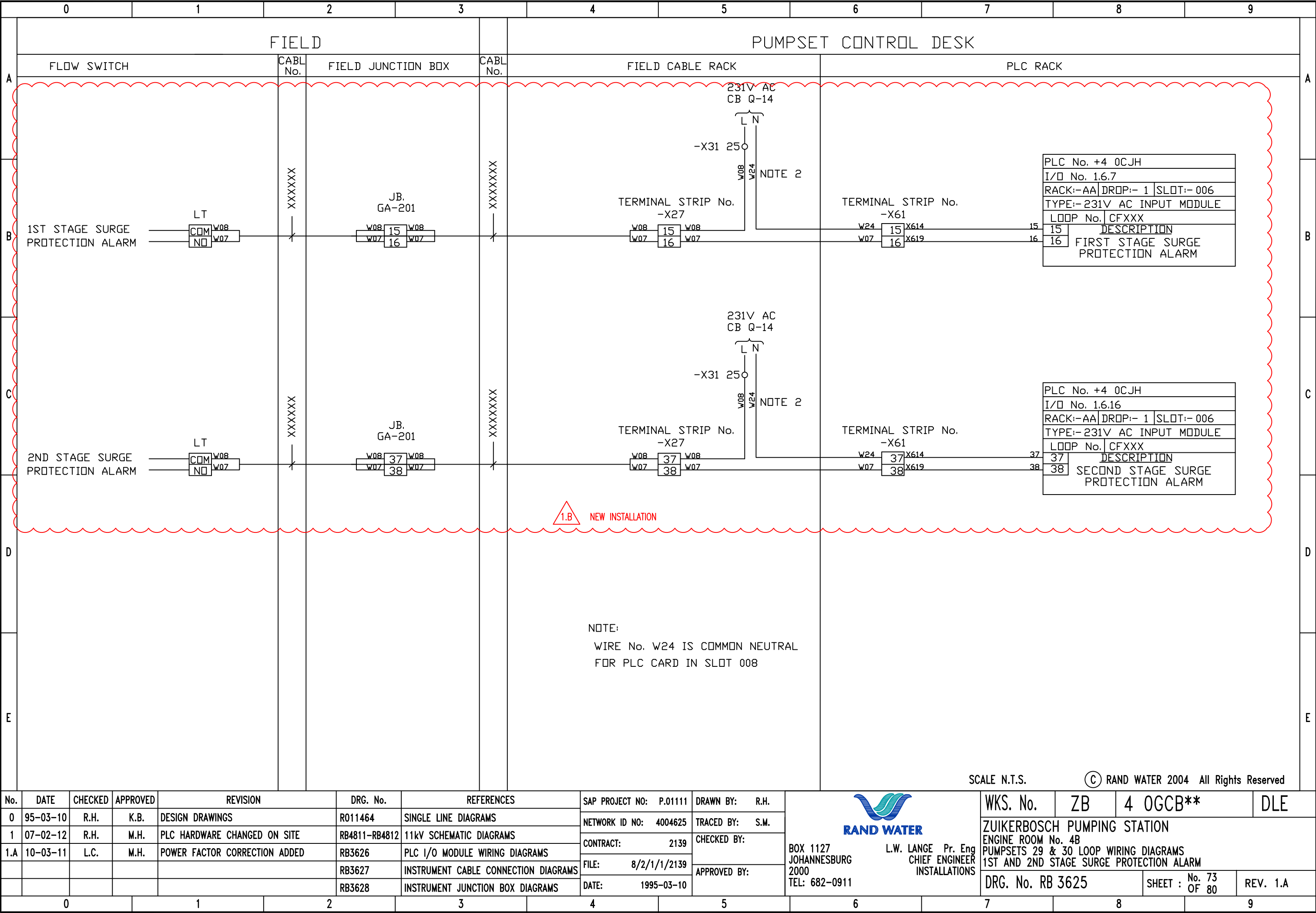
PLC No. +4 0CJH	
I/O No. 113.5	
RACK:-AA DROP:- 1 SLOT:- 013	
TYPE:- ISOLATED OUTPUT	
LOOP No. -	
11	DESCRIPTION
12	PUMPSET FAULT TRIP FLASHING LIGHT ON DESK CONTROL COMMAND

E

PLC No. +4 0CJH	
I/O No. 113.5	
RACK:-AA DROP:- 1 SLOT:- 013	
TYPE:- ISOLATED OUTPUT	
LOOP No. -	
11	DESCRIPTION
12	PUMPSET FAULT TRIP FLASHING LIGHT ON DESK CONTROL COMMAND

LOOP DETAILS

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	0	1	2	3	4	5	6	7	8	9									
A											A								
B											B								
C											C								
D											D								
E											E								
SCALE N.T.S. © RAND WATER 2004 All Rights Reserved																			
No.	DATE	CHECKED	APPROVED	REVISION	DRG. No.	REFERENCES	SAP PROJECT NO: P.01111	DRAWN BY: R.H.	 L.W. LANGE Pr. Eng CHIEF ENGINEER INSTALLATIONS		WKS. No.	ZB	4 OGCB**	DLE					
0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.			ZUIKERBOSCH PUMPING STATION								
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:			ENGINE ROOM No. 4B								
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:			PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS								
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10				BLANK SHEET								
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS			DRG. No. RB 3625		SHEET : No. 74 OF 80	REV. 1.A							
0		1		2		3		4		5		6		7		8		9	

	0	1	2	3	4	5	6	7	8	9				
A														
B														
C														
D														
E														
SCALE N.T.S. © RAND WATER 2004 All Rights Reserved														
No.	DATE	CHECKED	APPROVED	REVISION	DRG. No.	REFERENCES	SAP PROJECT NO: P.01111	DRAWN BY: R.H.	 L.W. LANGE Pr. Eng CHIEF ENGINEER INSTALLATIONS	WKS. No.	ZB	4 OGCB**	DLE	
0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.		BOX 1127 JOHANNESBURG 2000 TEL: 682-0911	ZUIKERBOSCH PUMPING STATION			
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:			ENGINE ROOM No. 4B			
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:			PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS			
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10				BLANK SHEET			
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS				DRG. No. RB 3625		SHEET : No. 75 OF 80	REV. 1.A	
	0	1	2	3	4	5	6	7	8	9				

	0	1	2	3	4	5	6	7	8	9	
A											A
B											B
C											C
D											D
E											E

No.	DATE	CHECKED	APPROVED	REVISION	DRG. No.	REFERENCES	SAP PROJECT NO: P.01111	DRAWN BY: R.H.	 L.W. LANGE Pr. Eng CHIEF ENGINEER INSTALLATIONS	WKS. No.	ZB	4 OGCB**	DLE	
0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.		ZUIKERBOSCH PUMPING STATION ENGINE ROOM No. 4B PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS BLANK SHEET				
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:						
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:						
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10			DRG. No. RB 3625				
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS			SHEET : No. 76 OF 80					
	0	1	2	3	4	5	6	7	8	9				

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[illegible]

	0	1	2	3	4	5	6	7	8	9
A										
B										
C										
D										
E										

SCALE N.T.S.

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No.	DATE	CHECKED	APPROVED	REVISION	DRG. No.	REFERENCES	SAP PROJECT NO: P.01111	DRAWN BY: R.H.	 L.W. LANGE Pr. Eng CHIEF ENGINEER INSTALLATIONS	WKS. No.	ZB	4 OGCB**	DLE	
0	95-03-10	R.H.	K.B.	DESIGN DRAWINGS	R011464	SINGLE LINE DIAGRAMS	NETWORK ID NO: 4004625	TRACED BY: S.M.		BOX 1127 JOHANNESBURG 2000 TEL: 682-0911	ZUIKERBOSCH PUMPING STATION ENGINE ROOM No. 4B PUMPSETS 29 & 30 LOOP WIRING DIAGRAMS BLANK SHEET			
1	07-02-12	R.H.	M.H.	PLC HARDWARE CHANGED ON SITE	RB4811-RB4812	11kV SCHEMATIC DIAGRAMS	CONTRACT: 2139	CHECKED BY:						
1.A	10-03-11	L.C.	M.H.	POWER FACTOR CORRECTION ADDED	RB3626	PLC I/O MODULE WIRING DIAGRAMS	FILE: 8/2/1/1/2139	APPROVED BY:						
					RB3627	INSTRUMENT CABLE CONNECTION DIAGRAMS	DATE: 1995-03-10							
					RB3628	INSTRUMENT JUNCTION BOX DIAGRAMS				DRG. No. RB 3625	SHEET : No. 78 OF 80	REV. 1.A		

0	1	2	3	4	5	6	7	8	9
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[illegible]

