Distribution Deficiency Report

983S Cadomin

May 19 2026

Prepared	Reviewed	Approved	Authentication	Responsible Member Validation
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			Authenticated and filed with the Engineering Department	

Executive Summary

FortisAlberta Inc. (FortisAlberta) is requesting system access service to address a predicted distribution system capacity concern in the Cadomin area.

Load studies indicate that in 2024, there is insufficient transformation capacity at the 983S Cadomin substation to accommodate for a committed load demand increase of 1.87 MW at NW SEC 30 TWP 46 RGE 23 W5M.

Potential distribution only solutions were assessed and found to be cost-prohibitive in addressing the capacity concern at the project site. FortisAlberta will work collaboratively with the AESO and the Transmission Facility Owner (TFO) to develop a wholistic solution to address this concern through the AESO Connection Process.

Further, potential solutions beyond distribution system upgrades were assessed to address these supply related capacity concerns. Based on information available to FortisAlberta, technical merit, and estimated transmission and distribution capital cost, the FortisAlberta preferred alternative includes transmission upgrades composed of:

- Increasing the transformation capacity at the 983S Cadomin substation; and
- Other associated upgrades as required.

The full scope of the required transmission upgrades and the estimated transmission capital cost associated with the preferred alternative will be provided by the TFO, AltaLink Management Limited (AltaLink).

In consideration of the target timelines of the AESO Connection Process and customer requirement, the In-Service Date (ISD) of the transmission and distribution facility upgrades to address the supply related capacity concern in the Cadomin area is Oct 1, 2026.

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1. Background

FortisAlberta has a fully executed electrical service agreement with a customer for an expected peak demand of 1.87 MW of new load scheduled for connection in the Cadomin area. This service is located at NW SEC 30 TWP 46 RGE 23 W5M. The 1.87 MW load consists of a mix of mining infrastructure and mobile equipment, with pumps, fans, drills and compressors. At the time of this analysis, the largest rated piece of equipment is the main vent fan, with a rating of 500 hp. Refer to Appendix B Figure B-1 for more information on project load profile. The project is situated approximately 3.5 km southwest of the hamlet of Cadomin. The closest FortisAlberta Point-of Delivery (POD) substation to the project site is the 983S Cadomin substation. The distance between the 983S Cadomin substation and the project site is approximately 6 km. The distances between the project site and the next closest POD substations in the area are the 406S Fickle Lake and 602S Cold Creek substations, which are approximately 77 kilometers and 57 kilometers away, respectively.

Distribution service in the area consists primarily of mining and industrial loads with some residential load in the hamlet of Cadomin. The major load center in the area is the existing mining and industrial operations in the established vicinity of the new committed load. Connected to distribution feeder 983S-165LS at this site is an existing service through a 1.5 MVA transformer. Please refer to Table 4-1 for feeder loading information of the 983S Cadomin substation.

Refer to Appendix A Figure A-1, for the existing FortisAlberta POD substations and distribution system in the area.

The 983S Cadomin substation is located at SE SEC 17 TWP 47 RGE 23 W5M which is approximately 2.5 km north of the hamlet of Cadomin. The 983S Cadomin substation supplies one 25 kV distribution feeder via one 72.5/26.5 kV 2.5 MVA source transformer (T1) connected in series with a 24.9 kV 1.44 MVA (per phase) voltage regulator (VR1). The output of substation regulator (VR1) is limited to approximately 2.5 MVA. The distribution system supplied from the 983S Cadomin substation extends south through the hamlet of Cadomin and further south into a mining and industrial area.

The 406S Fickle Lake substation is located at SE SEC 22 TWP 51 RGE 19 W5M, which is approximately 25km southwest of the town of Edson. The 406S Fickle Lake substation supplies one 25 kV distribution feeder via one 138/26.5 kV 15/20/25 MVA source transformer (T1). There is equipment located at the 406S Fickle Lake substation limiting the capacity to 24.7 MVA. The distribution system supplied from 406S Fickle Lake substation extends southwest along highway 47.

The 602S Cold Creek substation is located at SE SEC 02 TWP 51 RGE 25 W5M which is approximately 4km south of the town of Hinton. The 602S Cold Creek substation supplies four 25kV distribution feeders via two 138/26.5 kV 25/33/42 MVA source transformers (T1) and (T2). The 602S-524L feeder extends slightly toward highway 734 and in the direction of the Cadomin area.

2. Criteria

The analysis for the existing system and potential alternatives in the area have been conducted based upon the following criteria:

- Normal loading of FortisAlberta 25 kV distribution feeders is not to exceed 13.0 MVA.
- Transmission equipment must not be operated at load levels greater than the equipment nameplate rating.
- Distributed Energy Resources (DER) in the area are considered for the purposes of solving the identified distribution deficiencies.
- Delivered voltage on the distribution system shall comply with the requirements of CSA Standard C235 – Preferred Voltage Levels for AC Systems, 0 to 50,000 V. Refer to Appendix E for more information on voltage criteria.
- Voltage fluctuation on the distribution system shall comply with the requirements of CSA Standard C61000-3-7 – Limits - Assessment of emission limits for the connection of fluctuating installations to MV, HV and EHV power systems, with maximum voltage fluctuation of 5%.

3. Forecasting Methodology

FortisAlberta's load forecasting approach is performed on all the company's 25 kV distribution feeders that are connected to POD substations. A consistent bottom-up load forecast approach, as described below, is utilized that incorporates localized influences specific to the area supplied by the distribution feeders and the associated POD substation.

On an annual basis, this peak demand load of each distribution feeder is obtained from meters located at the substation that serves the feeder. This recorded meter date is reviewed over a date range of March 1 of the current year through February 28 of the following year to capture the yearly distribution feeder peak loads.

The load forecast involves statistical trending of historical feeder recorded peaks and includes aggregated committed load with the application of distribution system planning and engineering judgement. The resultant feeder load forecast identifies the anticipated upper bounds of electric system peak capacity that would be required annually to address customer needs.

Committed loads include individual customer-contracted peak demands and load allocated to committed subdivision developments where FortisAlberta holds signed contracts with developers. Differences between the forecast and actual committed loads occur when customers do not make full use of their committed contracted demand.

For individual feeder load forecasting, the forecast increases from year 0 to year 1 is the result of the following four factors:

- Forecasted aggregated customer load growth;
- New contracted committed load additions;
- Existing contracted committed loads; and
- Planned load transfers.

The individual 25 kV anticipated feeder peak loads are then summed up, with the application of a coincidence factor to the individual distribution feeder peaks, to determine the anticipated peak loads on the substation transformer that the 25 kV feeders are connected to. The resultant anticipated peak loads on the substation transformers are then totaled, with the application of a coincidence factor to the individual calculated substation transformer loads, to determine the total substation predicted peak loads.

The DTS contract level of each project is determined from the load forecast table in this document. This is done by identifying the predicted peak load at the POD substation during the year of the project’s ISD. A conversion of power units is needed to contract for DTS. This is accomplished by multiplying the POD forecast by the substation power factor (pf). The resultant is subsequently multiplied by a POD load coincidence factor of 0.9 to determine the DTS level that FortisAlberta requests from the AESO.

4. Existing System Assessment

The existing FortisAlberta POD substations and associated distribution systems in the Cadomin substation area are presented in Figure A-1, Appendix A.

4.1 Load Forecast

Table 4-1 provides the historical and forecasted peak for the 983S Cadomin POD substation and feeder. This table was used to assess the existing system in this Distribution Deficiency Report document.

								Historic and Forecast Load											
					LOADING-RECORDED						FORECAST LOAD								
				W	2021	2022	2023	2024	2025		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
SUB		CAPACITY		or	Peak	Peak	Peak	Peak	PEAK		Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak
No	Tx/Feeder/VR	MVA		S	MVA	MVA	MVA	MVA	MVA	PF	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
983S	T1	2.5																		
	VR1	2.5																		
	165LS			W	0.96	0.98	0.99	1.01	0.91	94.37%	0.99	1	1	1.01	1.02	1.02	1.03	1.03	1.04	1.04
				Total	0.96	0.98	0.99	1.01	0.91		0.99	1	1	1.01	1.02	1.02	1.03	1.03	1.04	1.04

Table 4-1: FortisAlberta Historic and Forecast Supply: Existing System 983S

Based on the existing loading on feeder 983S-165LS, and using the load ramping schedule provided by proposed load customer in Appendix B, it is found that connection of the new project to the existing 983S substation results in substation equipment loading beyond nameplate ratings of 983S-T1 and 983S-VR1 by 2026. Table 4-2 highlights these findings. The MW values were converted to MVA values presented in the historic and forecast table utilizing historical metered power factors (PFs) for the existing load.

								Historic and Forecast Load											
					LOADING-RECORDED						FORECAST LOAD								
				W	2021	2022	2023	2024	2025		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
SUB		CAPACITY		or	Peak	Peak	Peak	Peak	PEAK		Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak
No	Tx/Feeder/VR	MVA		S	MVA	MVA	MVA	MVA	MVA	PF	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
983S	T1	2.5																		
	VR1	2.5																		
	165LS			W	0.96	0.98	0.99	1.01	0.91	94.37%	2.883	3.279	3.63	3.64	3.65	3.65	3.66	3.66	3.67	3.67
				Total	0.96	0.98	0.99	1.01	0.91		2.883	3.279	3.63	3.64	3.65	3.65	3.66	3.66	3.67	3.67

Table 4-2: FortisAlberta Historic and Forecast Supply: Existing System 983S with load addition

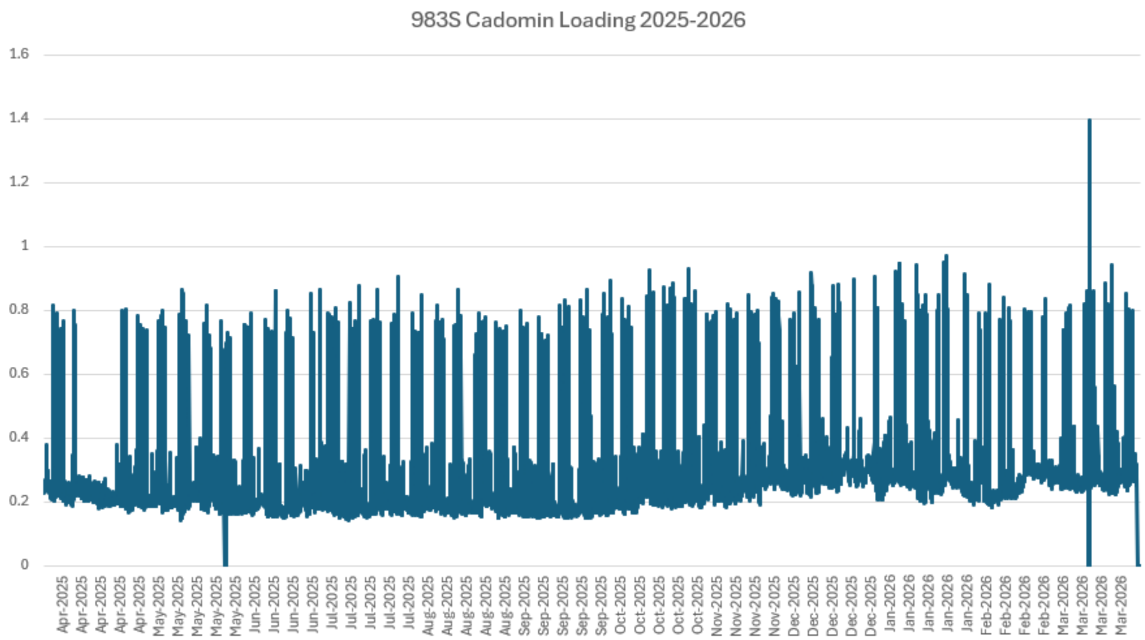


Figure 4-3: 15-min Interval Load trend from Apr 2025 - Apr 2026

Figure 4-3 shows the 15-min. interval loading trend of the past year at 983S Cadomin substation. Figure 4-4 shows the projected load trend into 2026-2028. The committed load ramping trend of the new customer is taken from values provided in Appendix B. The values and resulting trend-lines represent the best estimate for projected loading at the time of this report, and is subject to change. The figure shows that the total projected load at 983S Cadomin substation will surpass the substation capacity in 2026. Note that the trend shown in figure 4-4 does not directly inform the staged requested DTS capacities table in the SASR.

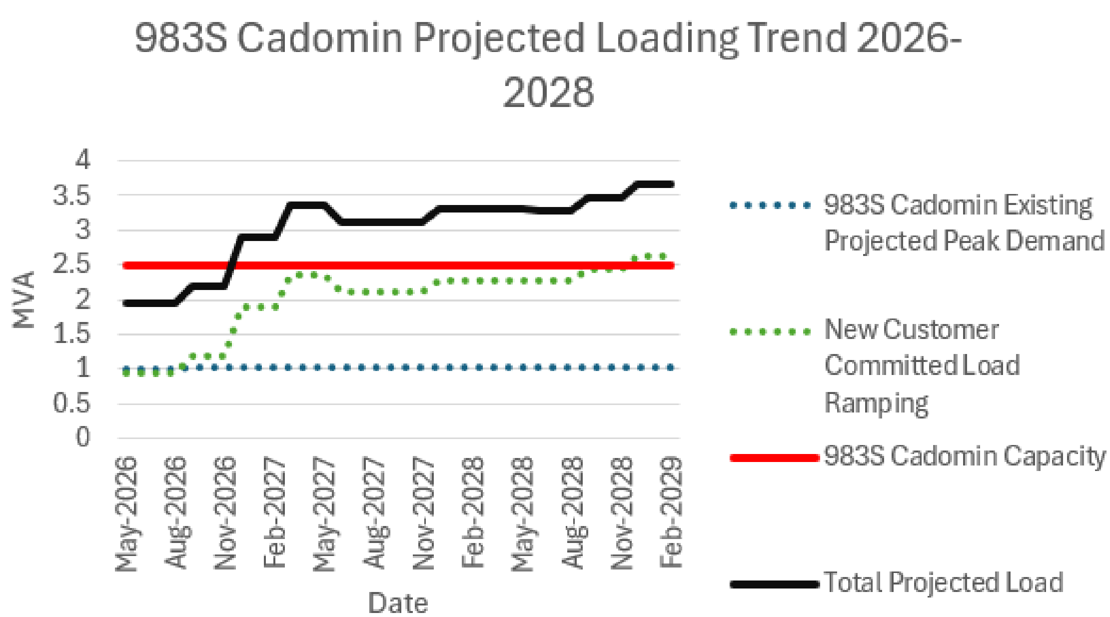


Figure 4-4: Projected Loading Trend 2026-2028

4.2 Restoration Procedures

Because 983S Cadomin substation does not have ties to other substations, the restoration procedure for unplanned outages is to restore service as soon as possible by directly addressing the cause(s) of the outage. Planned outages for this substation are typically pre-arranged with customers. For complex or longer duration outages, generators are utilized to provide service to the customer site(s). Restoration times can vary depending on the circumstances around the outage. Planned outages do not occur under extreme weather conditions.

4.3 DCG Summary

The following table provides a summary of existing and known planned DCG additions in the Cadomin area

DCG Summary in the Cadomin Area			
DCG Name	Type	Size	Feeder
Hinton Pulp	Biomass - Synchronous	20 MW	602S-2082L
Renewable Geo Resources	Synchronous	16.6 MW	406S-153L

Table 4-6: Existing and known planned DCG additions in the Cadomin Area

In the following sections, existing and planned DCGs at 602S and 406S substations were considered as a solution toward solving the distribution deficiency in the area.

5. Alternative Analysis

Several alternatives were considered based on information available to FortisAlberta, technical merit and distribution capital cost. Three alternatives are presented in this document.

5.1 Alternative 1: 406S-153L Feeder Connection and Distribution Only Upgrades

5.1.1 Description

To connect the proposed project to 406S-153L, it would be necessary to construct approximately 35 km of new distribution lines and rebuild approximately 19 km of existing distribution lines to a larger conductor.

5.1.2 Technical Analysis

The connection of the new 1.87 MW project to the 406S-153L feeder would require approximately 35 km of new distribution line build from an existing portion of feeder 406S-153L geographically closest to the project site. The conductor size is determined by attempts to mitigate voltage violations on the feeder that would be introduced due to the addition of this load. The new line build must use a conductor size of minimum 3/0, with additional line rebuild of approximately 19 km of existing line to 3/0, beginning from the 477 mainline to tap point of new line build. A lower conductor size than 3/0 for the new distribution line and line rebuild would result in violations of FortisAlberta's voltage criteria. The proposal would see a total build and rebuild of approximately 55 km of minimum 3/0 3PH line.

A preliminary costing of this distribution proposal is approximately $22.3M with a confidence level of +100% / - 50%.

The feeder 406S-153L has sufficient capacity to service this new 1.87 MW load, as shown in Table 5-1 and 5-2. Assuming a new line build with conductor size of 3/0, the approximate maximum capacity of a service at the end of the proposed line build would be 2.2 MW. Exceeding this value would introduce voltage violations onto the system.

These findings suggest that a proposal involving 406S Fickle Lake is not a cost-effective alternative for increasing capacity in the Cadomin area. A single line diagram of this alternative is shown in Figure A-2 in Appendix A.

				Historic and Forecast Load															
				LOADING-RECORDED						FORECAST LOAD									
			W	2021	2022	2023	2024	2025		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
SUB		CAPACITY	or	Peak	Peak	Peak	Peak	PEAK		Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak
No	Tx/Feeder/VR	MVA	S	MVA	MVA	MVA	MVA	MVA	PF	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
406S	T1	25																	
	Equipment	24.7																	
	153L		S	4.7	4.7	4.9	4.52	4.37	99.62%	4.91	4.94	4.96	4.99	5.01	5.04	5.06	5.09	5.11	5.25
			Total	4.7	4.7	4.9	4.52	4.37		4.91	4.94	4.96	4.99	5.01	5.04	5.06	5.09	5.11	5.25

Table 5-1: FortisAlberta Historic and Forecast Supply: Existing System 406S

				Historic and Forecast Load															
				LOADING-RECORDED						FORECAST LOAD									
			W	2021	2022	2023	2024	2025		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
SUB		CAPACITY	or	Peak	Peak	Peak	Peak	PEAK		Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak
No	Tx/Feeder/VR	MVA	S	MVA	MVA	MVA	MVA	MVA	PF	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
406S	T1	25																	
	Equipment	24.7																	
	153L		S	4.7	4.7	4.9	4.52	4.37	99.62%	6.81	7.22	7.59	7.62	7.64	7.67	7.69	7.72	7.74	7.88
			Total	4.7	4.7	4.9	4.52	4.37		6.81	7.22	7.59	7.62	7.64	7.67	7.69	7.72	7.74	7.88

Table 5-2: FortisAlberta Historic and Forecast Supply: Existing System 406S with load addition

5.2 Alternative 2: 602S-524L Feeder Connection and Distribution Only Upgrades

5.2.1 Description

To connect the proposed project to 602S-524L, it would be necessary to construct approximately 49 km of new distribution line. In addition, one 300A voltage regulator would need to be installed along this new line.

5.2.2 Technical Analysis

The connection of the new 1.87 MW project to the 602S- 524L feeder would require approximately 49km of new distribution line build from an existing portion of feeder 602S-524L geographically closest to the project site. The total distance of the project site from the 602S substation is approximately 57 km. The conductor size is determined by attempts to mitigate voltage violations on the feeder that would be introduced due to the addition of this load. The new line build must use a conductor size of minimum 3/0, beginning from the tap point off the 477 mainline all the way to the project site. A lower conductor size than 3/0 for the new distribution line would result in violations of FortisAlberta voltage criteria. A 300A voltage regulator would need to be installed at approximately 30 km from the substation on this new line to prevent violations of FortisAlberta's voltage criteria.

A preliminary costing of this distribution proposal is approximately $21.5M with a confidence level of +100% / - 50%.

The feeder 602S-524L has sufficient capacity to service this new 1.87 MW load, as shown in Tables 5-3 and 5-4. Assuming a new line build with conductor size of 3/0, the approximate maximum capacity of a service at the end of the proposed line build would be 2.8 MW. Exceeding this value would introduce voltage violations onto the system.

These findings suggest that a proposal involving 602S Cold Creek is not a cost-effective alternative for increasing capacity in the Cadomin area. A single line diagram of this alternative is shown in Figure A-3 in Appendix A.

									Historic and Forecast Load											
					LOADING-RECORDED						FORECAST LOAD									
				W	2021	2022	2023	2024	2025		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
SUB		CAPACITY		or	Peak	Peak	Peak	Peak	PEAK		Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak
No	Tx/Feeder/VR	MVA		S	MVA	MVA	MVA	MVA	MVA	PF	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
602S	T1	42																		
	524L			W	8.4	9	8.65	8.65	7.9	99.77%	8.83	8.88	8.92	8.97	9.01	9.06	9.1	9.15	9.19	9.25
				Total	8.4	9	8.65	8.65	7.9		8.83	8.88	8.92	8.97	9.01	9.06	9.1	9.15	9.19	9.25

Table 5-3: FortisAlberta Historic and Forecast Supply: Existing System 602S

									Historic and Forecast Load											
					LOADING-RECORDED						FORECAST LOAD									
				W	2021	2022	2023	2024	2025		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
SUB		CAPACITY		or	Peak	Peak	Peak	Peak	PEAK		Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak
No	Tx/Feeder/VR	MVA		S	MVA	MVA	MVA	MVA	MVA	PF	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA	MVA
602S	T1	42																		
	524L			W	8.4	9	8.65	8.65	7.9	99.77%	10.723	11.159	11.55	11.6	11.64	11.69	11.73	11.78	11.82	11.88
				Total	8.4	9	8.65	8.65	7.9		10.723	11.159	11.55	11.6	11.64	11.69	11.73	11.78	11.82	11.88

Table 5-4: FortisAlberta Historic and Forecast Supply: Existing System 602S with load addition

5.3 Alternative 3: 983S substation upgrade

5.3.1 Description

To connect the proposed project to 983S-165LS, and to ensure that 983S Cadomin substation has adequate capacity to meet future area load growth, it would be necessary to upgrade T1 and VR1 at the 983S Cadomin substation to a larger capacity.

5.3.2 Technical Analysis

As per existing loading of 983S-165LS shown in Tables 4-1 and 4-2, connection of the new 1.87 MW project to the existing 983S substation results in substation equipment loading beyond nameplate ratings of 983S-T1 and 983S-VR1. To connect the new load at 983S-165LS, it is necessary to upgrade the existing 2.5 MVA transformer at 983S Cadomin substation. Solutions consisting of a partial transmission solution in combination with additional distribution were considered, but no suitable proposal is available at 983S Cadomin substation as the associated distribution system consists of a single feeder and is sufficient to connect the new load. The new committed load customer has expressed plans to continue expansion and growth in the Cadomin area for their industrial operations. Due to the limited potential for Cadomin area load growth via distribution solutions as per Alternatives 1 and 2, there is a need to ensure that 983S Cadomin substation has adequate capacity to meet future expansion plans. Therefore, a transformer with a larger capacity is proposed to address the distribution deficiency at 983S Cadomin substation.

6. Conclusion

The result of the FortisAlberta distribution planning assessment identified distribution upgrade alternatives as inadequate to address the distribution system capacity concern in the Cadomin area. Therefore, FortisAlberta is requesting system access service to the AESO.

FortisAlberta will work collaboratively with the AESO and the TFO in developing a wholistic solution to address the distribution capacity concern in the Cadomin area through the AESO Connection Process.

The TFO will provide the required scope of transmission facility upgrades and the estimated transmission capital costs. After which, FortisAlberta will provide the scope of the associated distribution upgrades and the estimated distribution capital costs.

Appendix A – Distribution Single Line Diagrams

Figure A-1: Existing FortisAlberta Distribution System

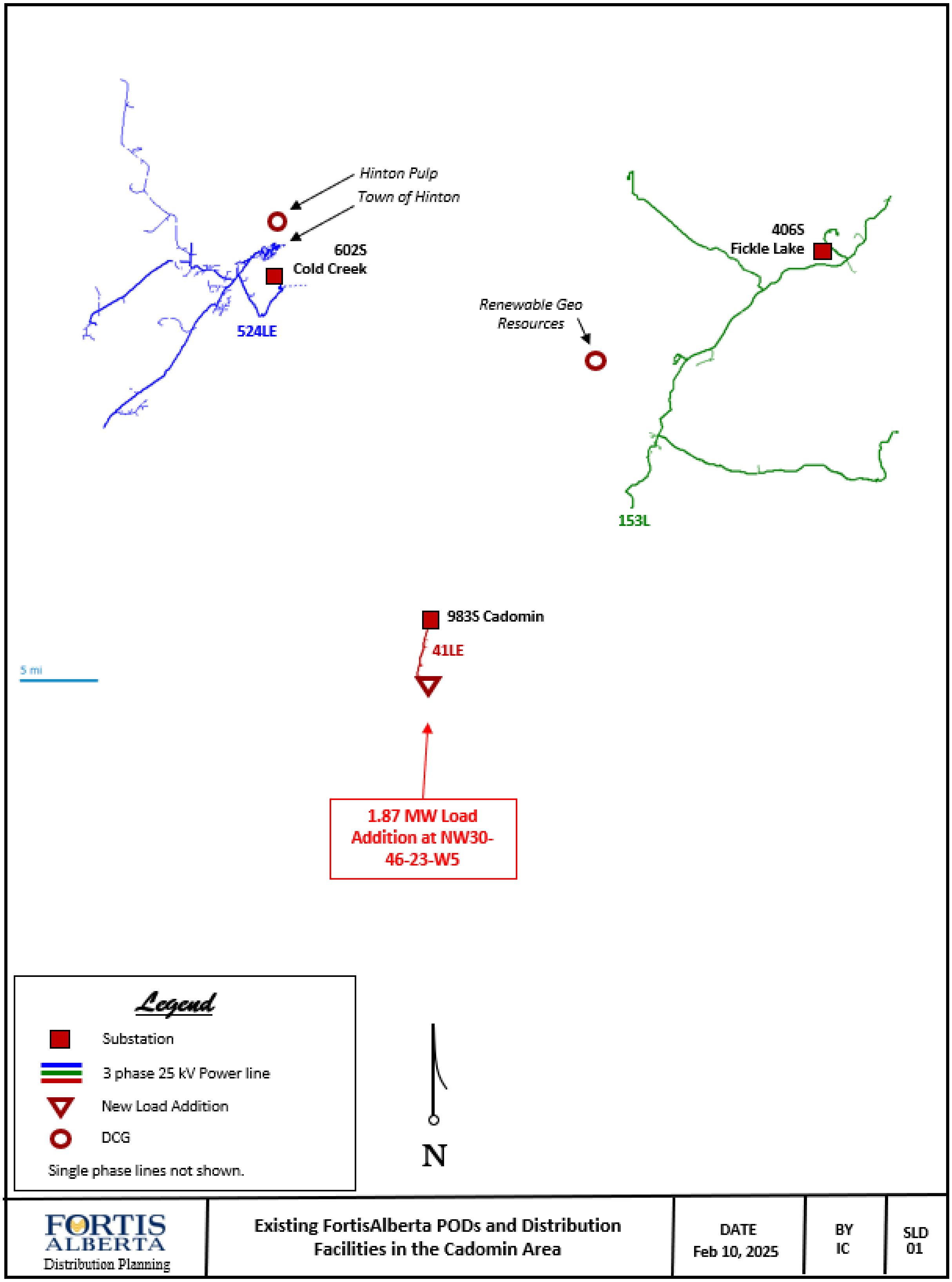


Figure A-2: Alternative 1: 406S-153L Feeder Connection and Distribution Only Upgrades

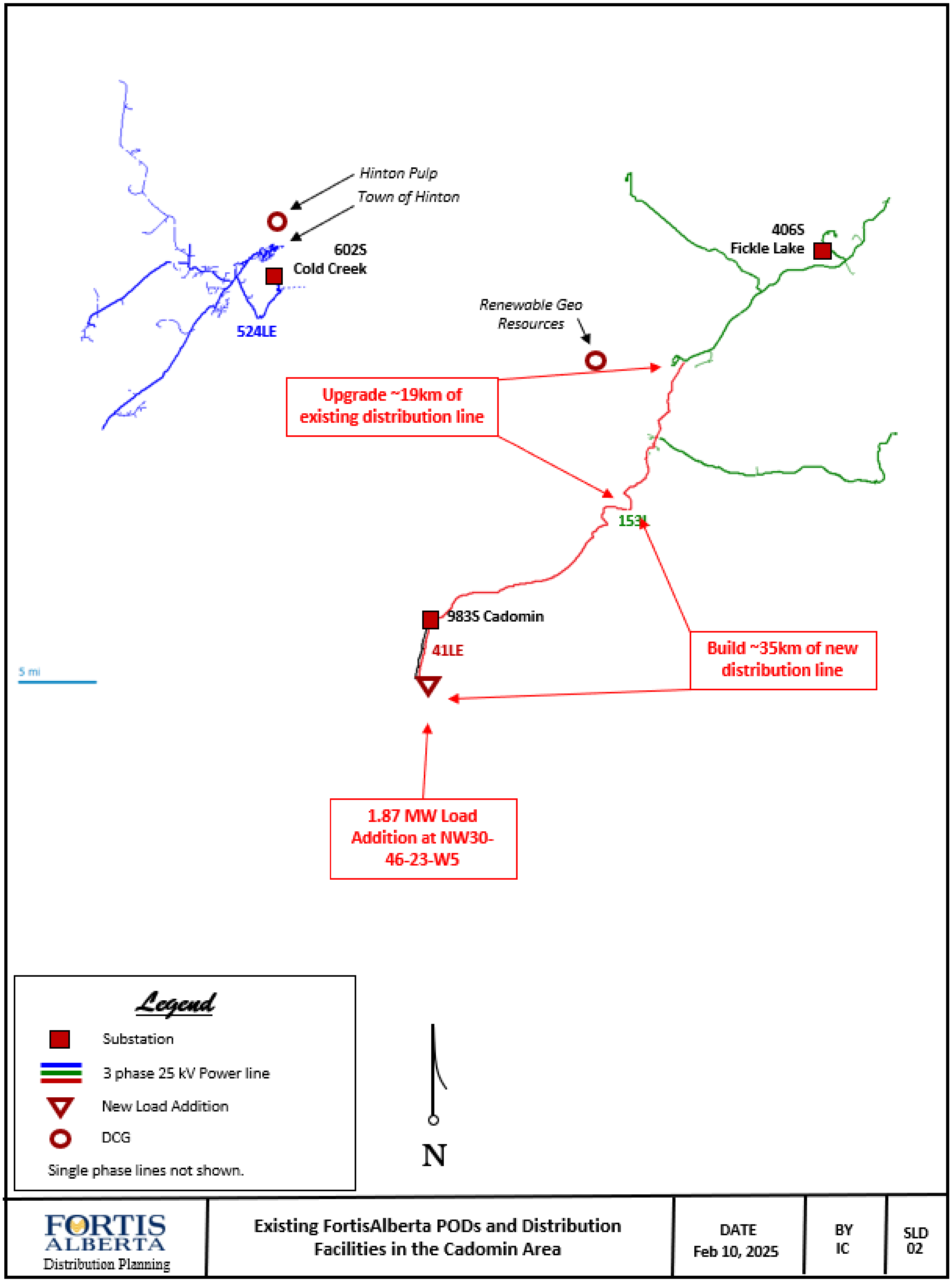
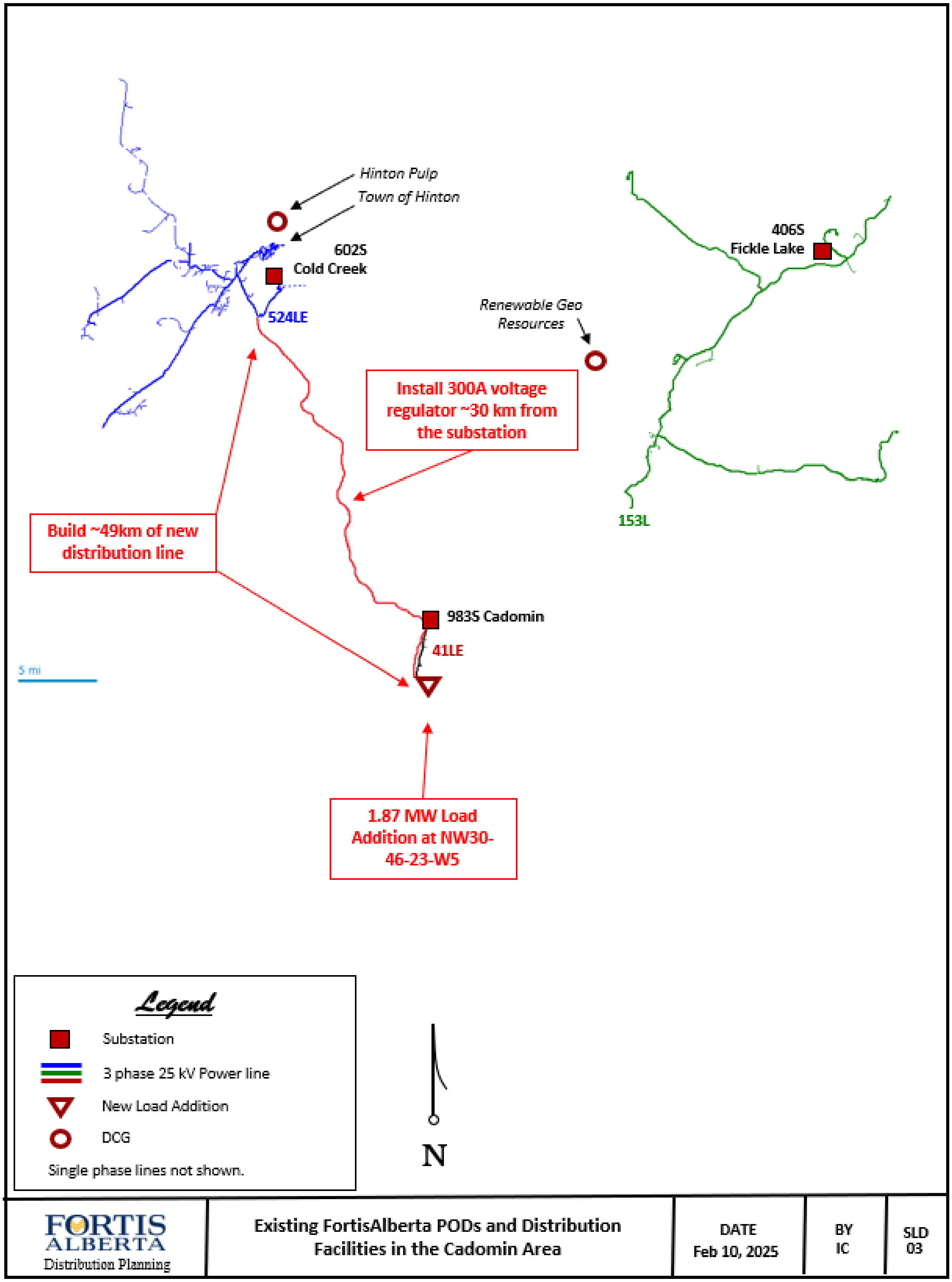


Figure A-3: Alternative 2: 602S-524L Feeder Connection and Distribution Only Upgrades



Appendix B –Load Ramping Schedule

Figure B-1: Load Ramping Schedule

Competence Center Cement (CCC)

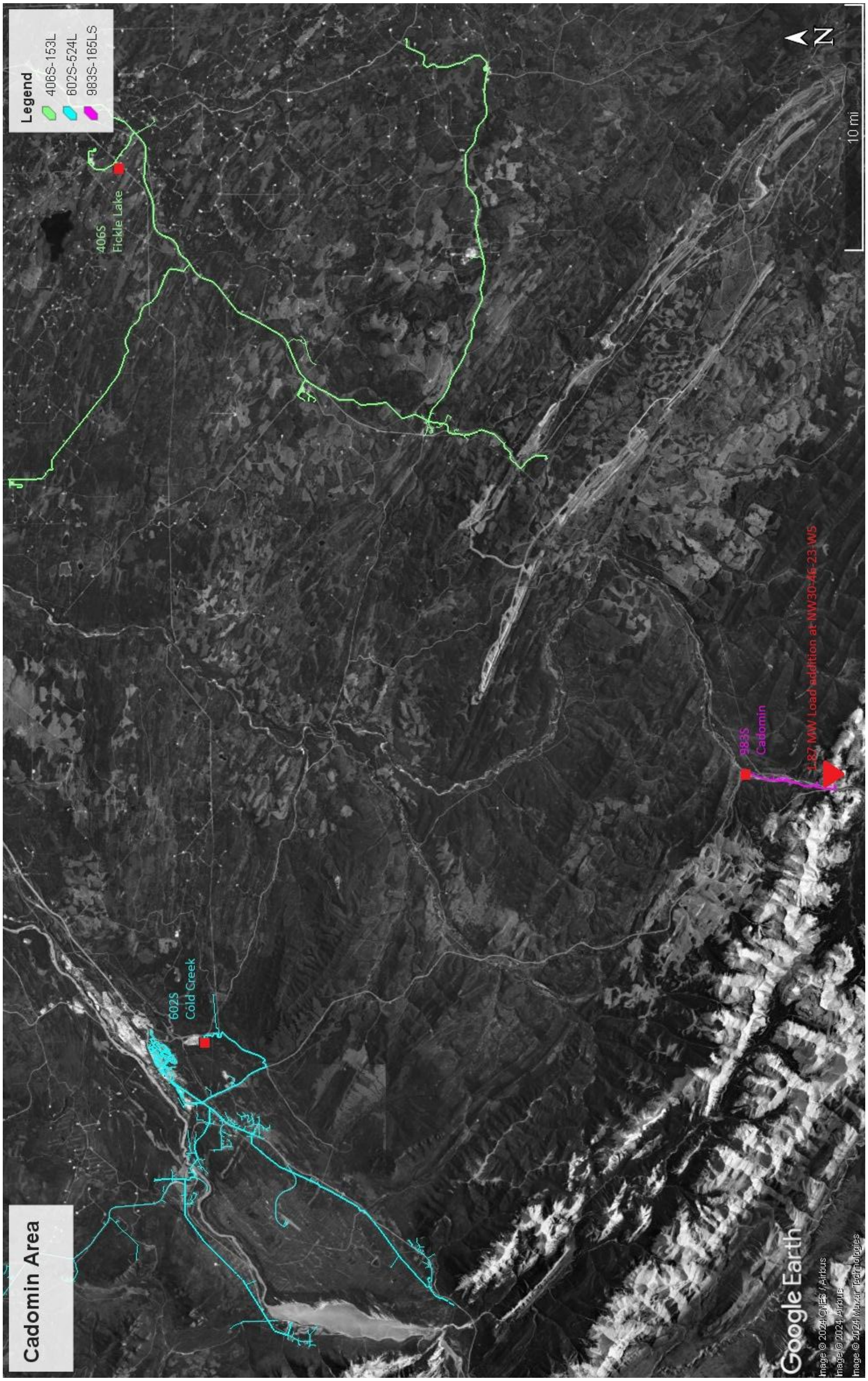
Heidelberg Materials

Cadomin Mine Load Profile for New Quarry Development

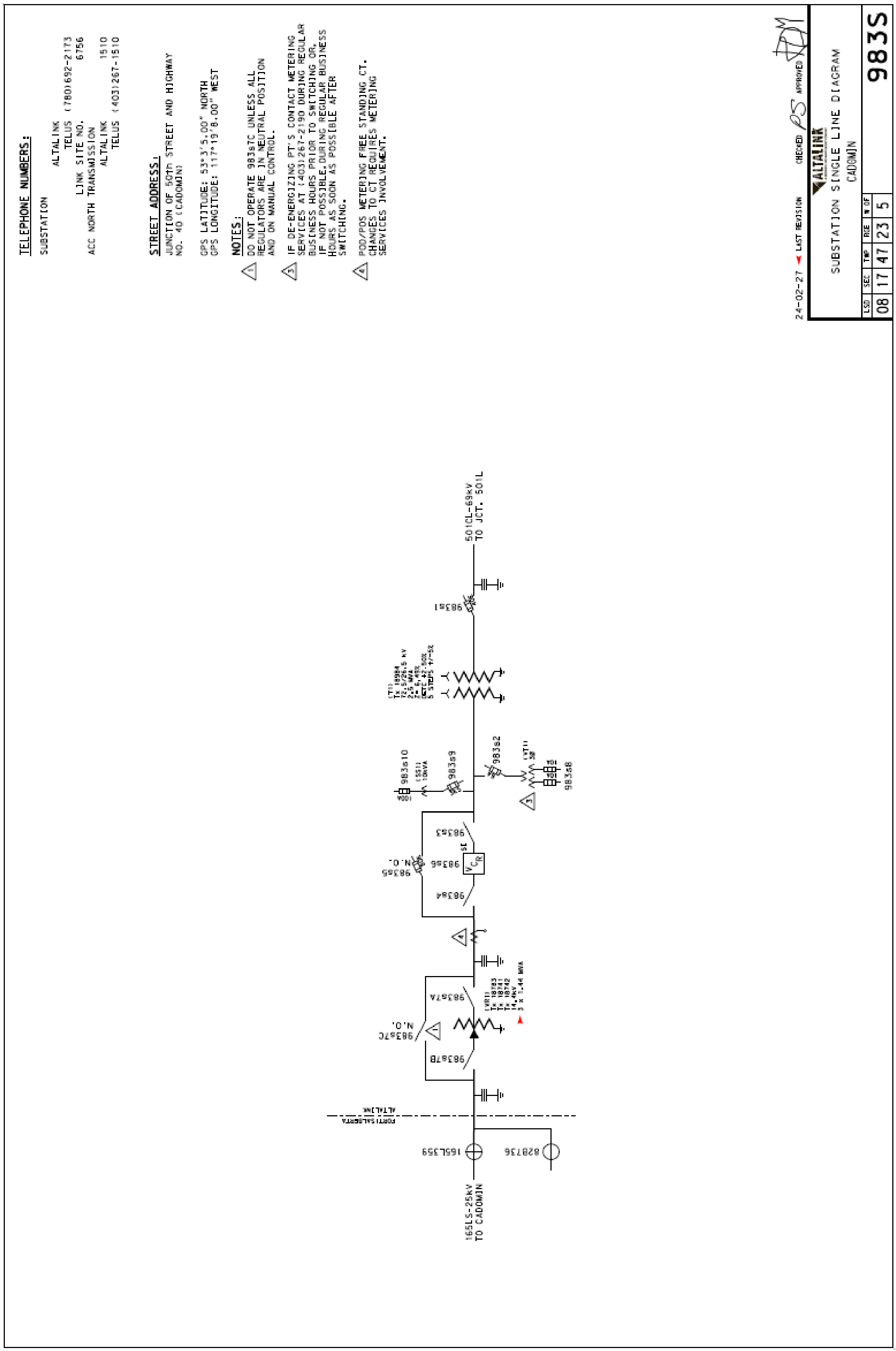
Completed by:	SDr, NSm, JYa
Date:	15-Apr-24
Revision:	3

Milestones					Start of Project				Shop On Line									
	HP	LF	KVA:	2Q25	3Q25	4Q25	1Q26	2Q26	3Q26	4Q26	1Q27	2Q27	3Q27	4Q27	1Q28	2Q28	3Q28	4Q28
Total Load in KVA:				1200	1539	1824	1859	1859	2092	2798	3255	3005	3005	3185	3185	3180	3356	3536
Total New Load in KVA:					633	918	953	953	1186	1893	2349	2099	2099	2279	2279	2274	2450	2630
Global Power Factor 85%	0.85																	
Existing Load Cntr																		
Existing Plant			906	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fortis Other Customers - Local			294	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Employee Facilities																		
Surface Mine Dry & Offices	75	0.8	53								1	1	1	1	1	1	1	1
Shop, Fuel and Lube Bay	300	0.5	132						1	1	1	1	1	1	1	1	1	1
Electric 60kW Heaters			60							3	3			3	3			3
Mine Infrastructure																		
Main Vent Fan 1 VFD	500	0.5	219							1	1	1	1	1	1	1	1	1
Main Vent Fan 2 VFD	500	0.5	219							1	1	1	1	1	1	1	1	1
Light Plant	75	0.8	53								1	1	1	1	1	1	1	1
Sump Pumps	50	0.8	35						1	1	1	1	1	1	1	1	1	1
Air Compressor	150	0.5	66						1	1	1	1	1	1	1	1	1	1
Booster Aux Fan 1 Ramp VFD	100	0.8	70		0.5	0.75	1	1	1	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Booster Aux Fan 2 Ramp VFD	100	0.8	70		0.5	0.75	1	1	1	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Aux Fan 3 VFD	250	0.8	176								1	1	1	1	1	1	1	1
Aux Fan 4	250	0.8	176								1	1	1	1	1	1	1	1
Aux Fan 5	250	0.8	176													0.5	1	1
Aux Fan 6	250	0.8	176													0.5	1	1
Mobile Equipment																		
Jumbo Drill 1	300	0.95	250		1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jumbo Drill 2	300	0.95	250			1	1	1	1	1	1	1	1	1	1	1	1	1
Long Hole Drill	125	0.8	88							1	1	1	1	1	1	1	1	1
Bolter	85	0.25	19		1	1	1	1	1	1	1	1	1	1	1	1	1	1
			0															
			0															
			0															
			0															

Appendix C – Topographical Area Map



Appendix D – 983S Cadomin Substation Single Line Diagram



Appendix E – Distribution Planning Criteria

Voltages are converted to 120V base.

Under steady state conditions, any transients from disturbances are assumed to have settled down and the system state is unchanging. This is known also as normal operating conditions.

Planning Criteria:

Planning designs the distribution feeders to ensure that customers have acceptable voltage at their utilization point. Planning will take corrective action when the predicted loading on the distribution feeder model indicates that the primary voltage (three phase and/or single phase) is outside of the minimum or maximum voltage parameters stated in Table 1:

Table 1- FortisAlberta Planning Voltage Criteria – Steady State

	Minimum	Maximum
Three Phase Voltage	115 V	127 V
Single Phase Voltage	113 V	127 V

The minimum voltages shown in Table 1 above apply when the source voltage is set at 123.5 V and the maximum voltages shown above apply when the source voltage is set at 126.5 V. The 123.5 V and 126.5 V levels reflect the typical operating range of a source substation.