



KEKENO — INVERCARGILL



REFERENCE DRAWINGS

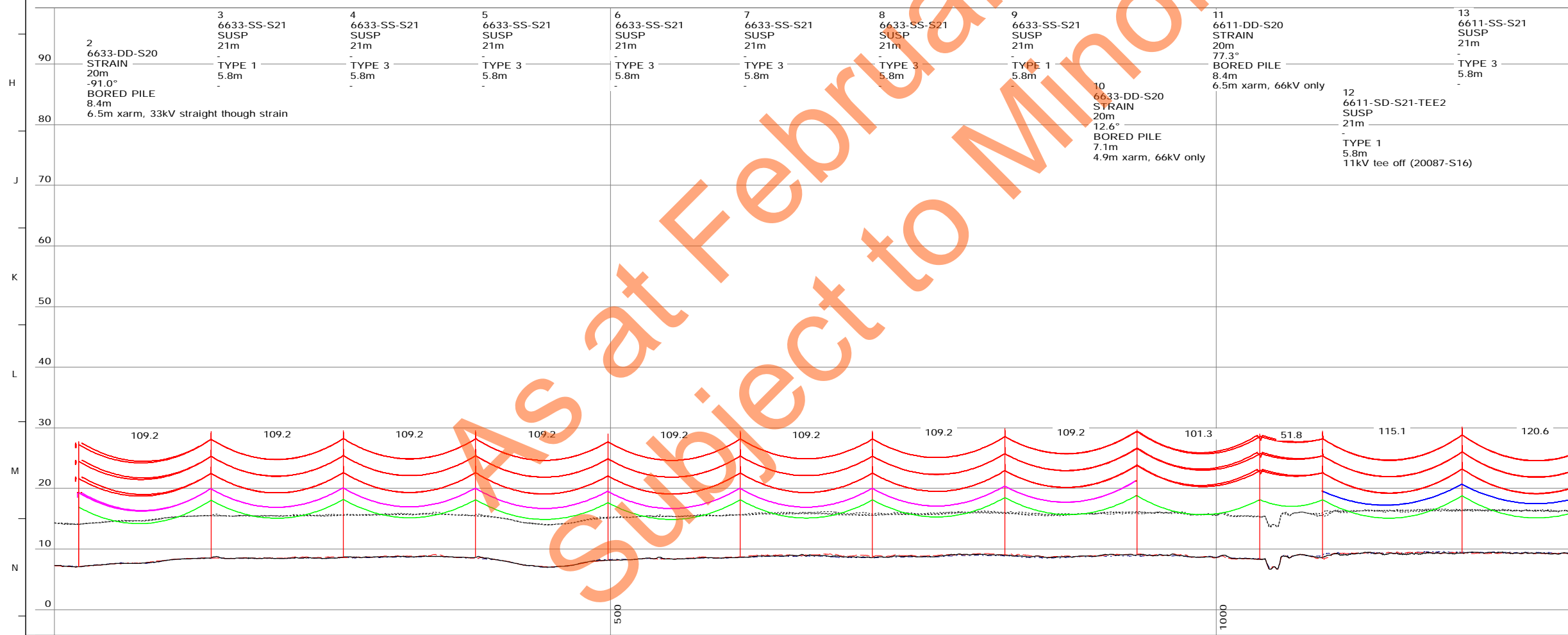
- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED	K CHANG		SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE	DRAWN	PLS-CADD		SEP 2024
LUMEN	KC	12/24	PLS	12/24	DS	DS	2/25	DS	2/25	DS	2/25	CHECKED	D STEVENS		SEP 2024
LUMEN	KC	2/25	PLS	2/25	DS	DS	8/24	DS	8/24	DS	8/24	APPROVED	D STEVENS		SEP 2024
LUMEN	KC	8/24	PLS	8/24	DS	DS	9/24					CLIENT APPRV.			
LUMEN	KC	9/24	PLS	9/24								PREPARED BY:	LUMEN		
LUMEN	KC	10/24	PLS	10/24									210 HAZELDEAN ROAD		
LUMEN	KC	10/24	PLS	10/24	ID	ID	10/24	ID	10/24				CHRISTCHURCH		

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 2 - 13

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-
DRAWING NUMBER		20087/RPP		SHEET	1/18
CAD FILE NAME		MODEL NAME: 20087-OPEN-DAIRY-20250213			
REV	6	REV	6	REV	6

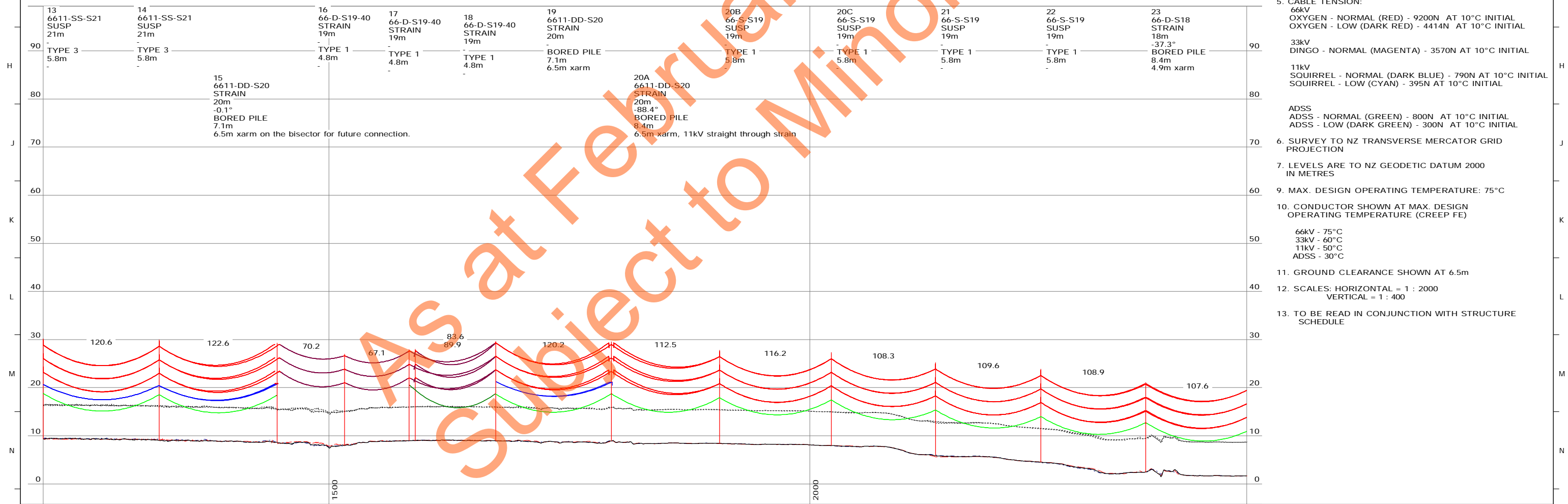
As at February 2025
Subject to Minor Changes



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LUMEN	KC	12/24	PLS	12/24	DS	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25
LUMEN	KC	2/25	PLS	2/25	DS	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24
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LUMEN	KC	10/24	PLS	10/24	ID	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 13 - 23

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	2/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					

As at February 2025
Subject to Minor Change



KEKENO — INVERCARGILL



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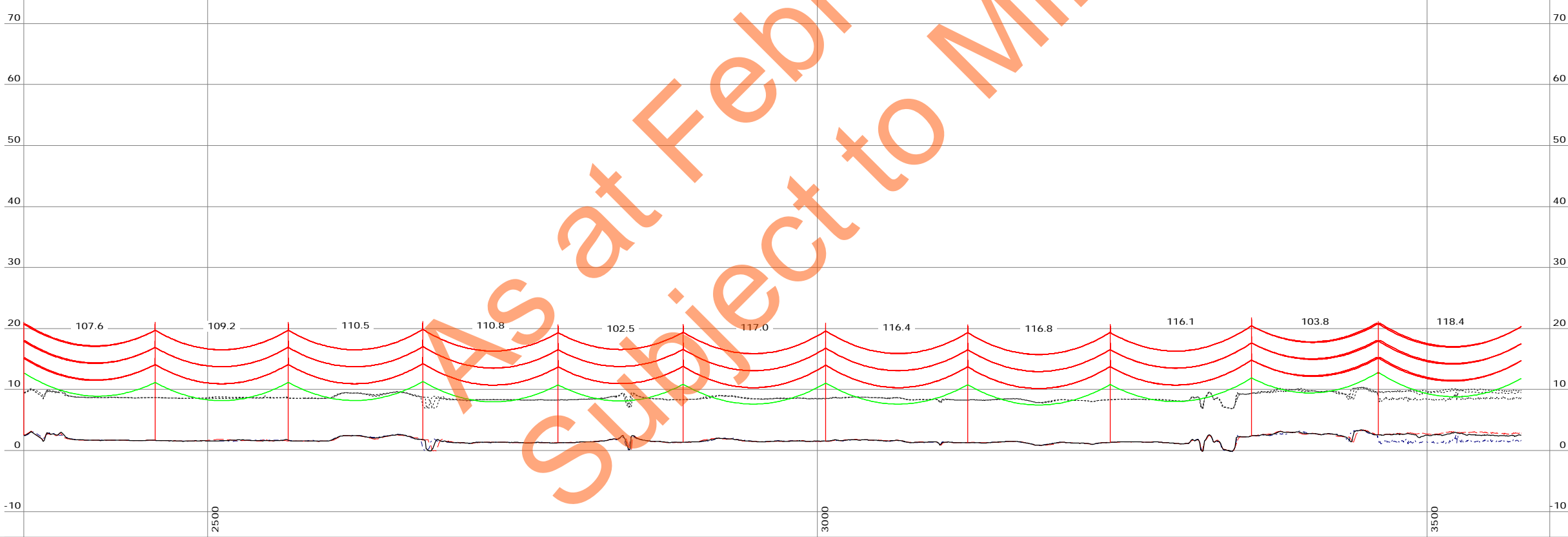
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23	24	25	26	27	28	29	30	31	32	33
66-D-S18 STRAIN	66-S-S19 SUSP	66-S-S19 SUSP	66-S-S19 SUSP	66-S-S19 SUSP	66-S-S19 SUSP	66-S-S19 SUSP	66-S-S19 SUSP	66-S-S19 SUSP	66-S-S19 SUSP	66-D-S18 STRAIN
18m	19m	19m	19m	19m	19m	19m	19m	19m	19m	18m
-37.3°										52.2°
BORED PILE	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	BORED PILE
8.4m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m	8.4m
4.9m xarm										4.9m xarm



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CONSULTANT										TP		DESIGNED	
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	APP	DATE	
LUMEN	KC	12/24	PLS	12/24	DS							SEP 2024	
LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25				SEP 2024	
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24				SEP 2024	
LUMEN	KC	9/24	PLS	9/24									
LUMEN	KC	10/24	PLS	10/24									
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24					

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 23 - 33

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	3/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					



KEKENO —> INVERCARGILL



REFERENCE DRAWINGS

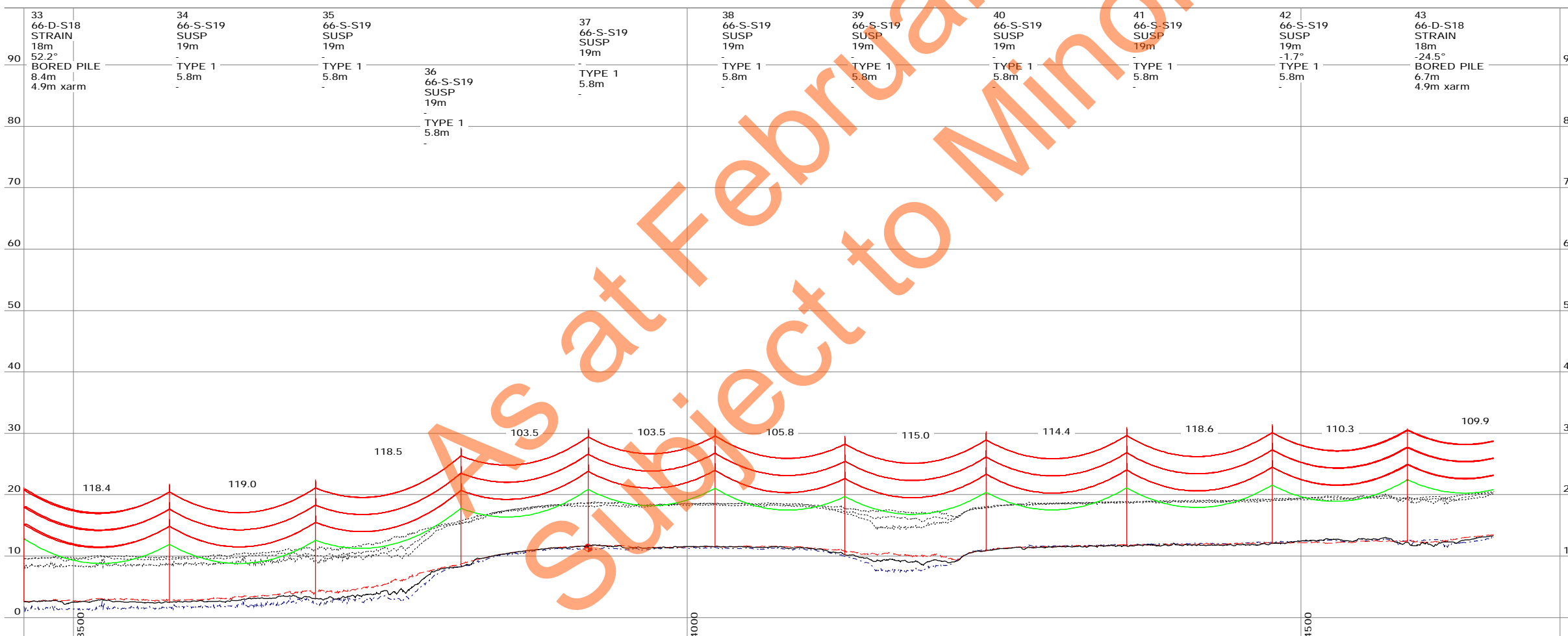
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CONSULTANT										TP		DESIGNED		DRAWN		CHECKED		APPROVED		CLIENT APPRV.		
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	
LUMEN	KC	12/24	PLS	12/24	DS																	
LUMEN	KC	2/25	PLS	2/25	DS																	
LUMEN	KC	8/24	PLS	8/24	DS																	
LUMEN	KC	9/24	PLS	9/24																		
LUMEN	KC	10/24	PLS	10/24																		
LUMEN	KC	10/24	PLS	10/24	ID																	

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 33 - 43

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	4/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					

Subject to February 2025 Changes



KEKENO → INVERCARGILL



REFERENCE DRAWINGS

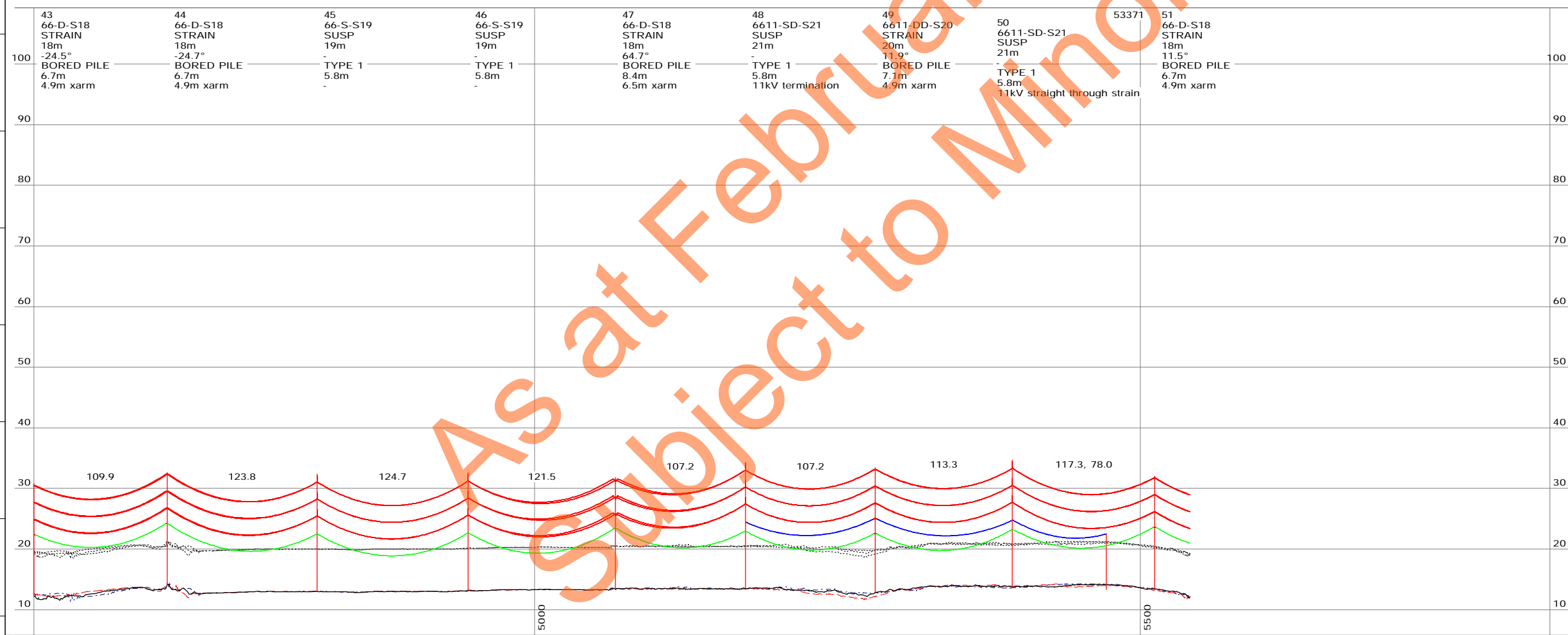
- 20087 STRUCTURE SCHEDULE
- 20087-F1 PILE FOUNDATIONS
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- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

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Station	Structure	Type	Height (m)	Notes
43	66-D-S18 STRAIN	-	18m	-24.5°
44	66-D-S18 STRAIN	-	18m	-24.7°
45	66-S-S19 SUSP	TYPE 1	19m	-
46	66-S-S19 SUSP	TYPE 1	19m	-
47	66-D-S18 STRAIN	-	18m	64.7°
48	6611-SD-S21 SUSP	TYPE 1	21m	11kV termination
49	6611-DD-S20 STRAIN	-	20m	11.9°
50	6611-SD-S21 SUSP	TYPE 1	21m	11kV straight through strain
53371	66-D-S18 STRAIN	-	18m	-
51	66-D-S18 STRAIN	-	18m	11.5°

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LUMEN	KC	12/24	PLS	12/24	DS											
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LUMEN	KC	9/24	PLS	9/24												
LUMEN	KC	10/24	PLS	10/24												
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24								

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 43 - 51

SIZE	SCALE	FOLDER	
A1	SEE NOTE 12	-	-
DRAWING NUMBER		SHEET	REV
20087/RPP		5/18	6
CAD FILE NAME			
MODEL NAME: 20087-OPEN-DAIRY-20250213			

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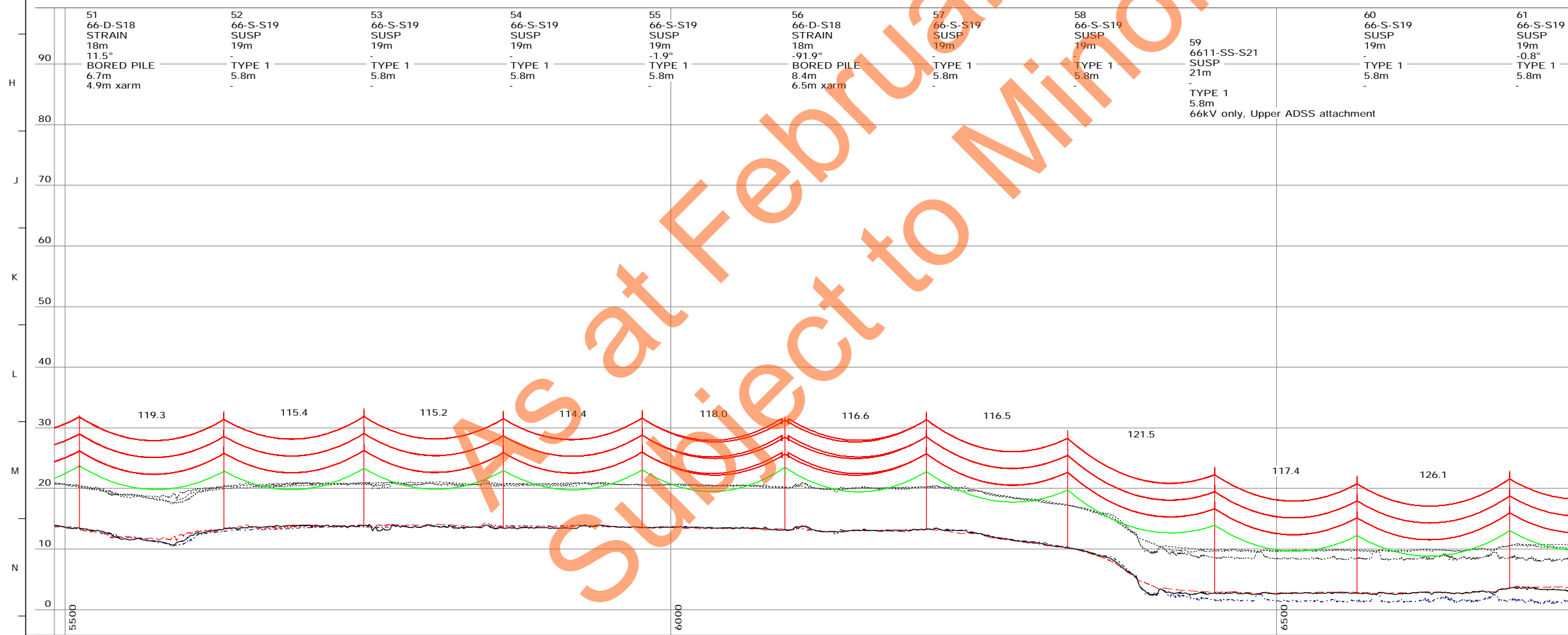
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LUMEN	KC	12/24	PLS	12/24	DS	2/25	DS	2/25	DS	2/25	K CHANG	SEP 2024	PLS-CADD	SEP 2024	D STEVENS	SEP 2024	D STEVENS	SEP 2024			
LUMEN	KC	9/24	PLS	9/24	DS	10/24	DS	10/24	ID	10/24	LUMEN	210 HAZELDEAN ROAD									
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24			CHRISTCHURCH										

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 51 - 61

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4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED	K CHANG		SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE	DATE	DATE	DATE	DATE
LUMEN	KC	12/24	PLS	12/24	DS										
LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25							
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24							
LUMEN	KC	9/24	PLS	9/24											
LUMEN	KC	10/24	PLS	10/24											
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24							

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 61 - 72

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	7/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					

Subject to February 2025 Changes



- REFERENCE DRAWINGS**
- 20087 STRUCTURE SCHEDULE
 - 20087-F PILE FOUNDATIONS
 - 20087-F1 EMBEDDED FOUNDATIONS
 - 20087-F2 FOUNDATION SCHEDULE
 - 2008-S STRUCTURE DRAWINGS

- STRUCTURE COMMENTS**
- STRUCTURE NUMBER
 - STRUCTURE TYPE
 - STRUCTURE FUNCTION
 - STRUCTURE HEIGHT ABOVE GROUND
 - TURN OFF ANGLE
 - FOUNDATION TYPE
 - FOUNDATION DEPTH BELOW GROUND (m)
 - SPECIAL FEATURES

- NOTES:**
- ALL DIMENSIONS IN METRES
 - CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
 - EARTHWIRE: NONE
 - ADSS: AFL SMM8 **PE0BK
 - CABLE TENSION:
 - 66kV OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
 - ADSS
 - ADSS - NORMAL (GREEN) - 800N AT 10°C INITIAL
 - ADSS - LOW (DARK GREEN) - 300N AT 10°C INITIAL
 - SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
 - LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
 - MAX. DESIGN OPERATING TEMPERATURE: 75°C
 - CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
 - GROUND CLEARANCE SHOWN AT 6.5m
 - SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
 - TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION	NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE
5A	FOR INFORMATION ONLY	LUMEN	KC	12/24	PLS	12/24	DS					
6	FOR CONSTRUCTION	LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25		
3	UPDATED ALIGNMENT	LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24		
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION	LUMEN	KC	9/24	PLS	9/24						
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY	LUMEN	KC	10/24	PLS	10/24						
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG	LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24		

CONSULTANT												DESIGNED	TP	
												K CHANG	SEP 2024	
												PLS-CADD	SEP 2024	
												D STEVENS	SEP 2024	
												D STEVENS	SEP 2024	
												LUMEN	210 HAZELDEAN ROAD CHRISTCHURCH	

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 72 - 83

SIZE A1	SCALE SEE NOTE 12	FOLDER -	
DRAWING NUMBER 20087/RPP		SHEET 8/18	REV 6
CAD FILE NAME MODEL NAME: 20087-OPEN-DAIRY-20250213			

Subject to February 2025 Changes



KEKENO ———> INVERCARGILL



REFERENCE DRAWINGS

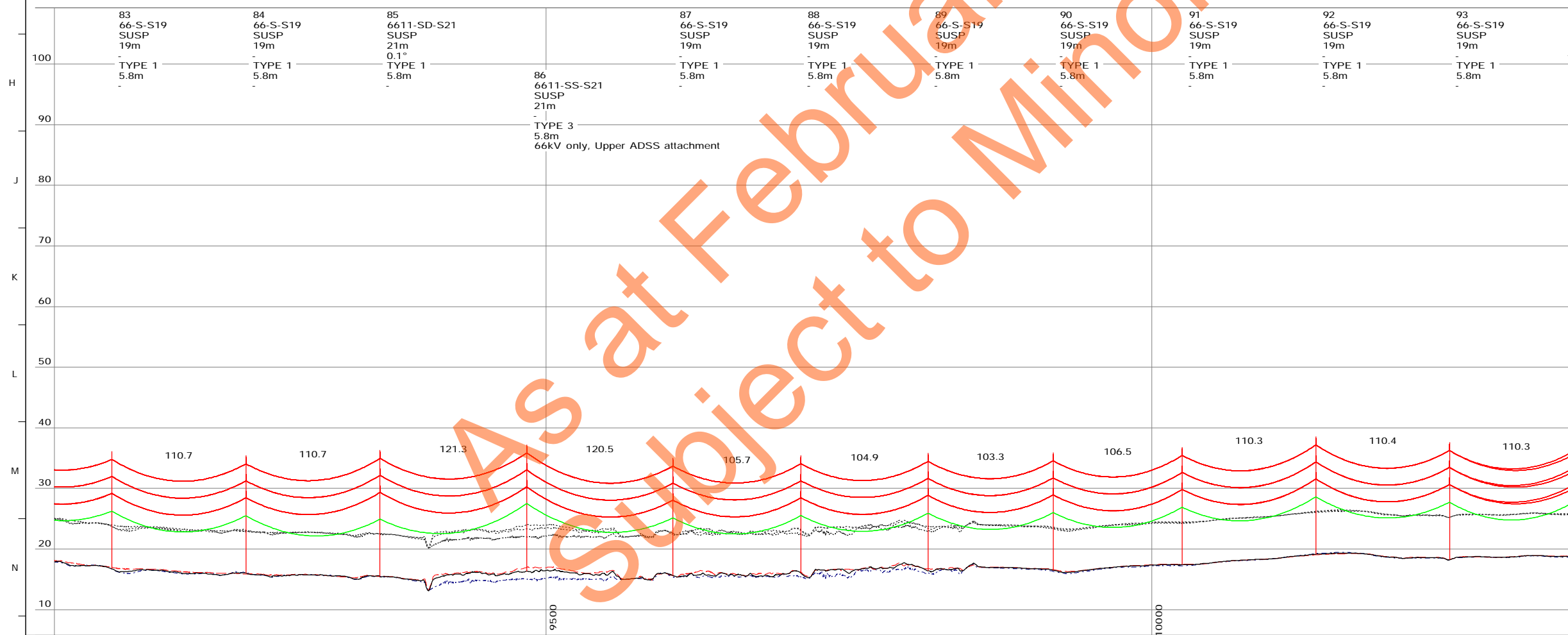
- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV
 - OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV
 - DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV
 - SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
 - ADSS
 - ADSS - NORMAL (GREEN) - 800N AT 10°C INITIAL
 - ADSS - LOW (DARK GREEN) - 300N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED	K CHANG		SEP 2024	
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE
LUMEN	KC	12/24	PLS	12/24	DS											
LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25								
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24								
LUMEN	KC	9/24	PLS	9/24												
LUMEN	KC	10/24	PLS	10/24												
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24								

DRAWN		PLS-CADD	SEP 2024
CHECKED		D STEVENS	SEP 2024
APPROVED		D STEVENS	SEP 2024
CLIENT APPRV.			
PREPARED BY:		LUMEN	
		210 HAZELDEAN ROAD	
		CHRISTCHURCH	

INVERCARGILL TO KEKENO 66kV LINE		SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-
ROUTE PLAN AND PROFILE		DRAWING NUMBER		20087/RPP		SHEET	9/18
STRUCTURES 83 - 93		CAD FILE NAME		MODEL NAME: 20087-OPEN-DAIRY-20250213			
		REV	6				

As at February 2025 Subject to Minor Change

KEKENO → INVERCARGILL



REFERENCE DRAWINGS

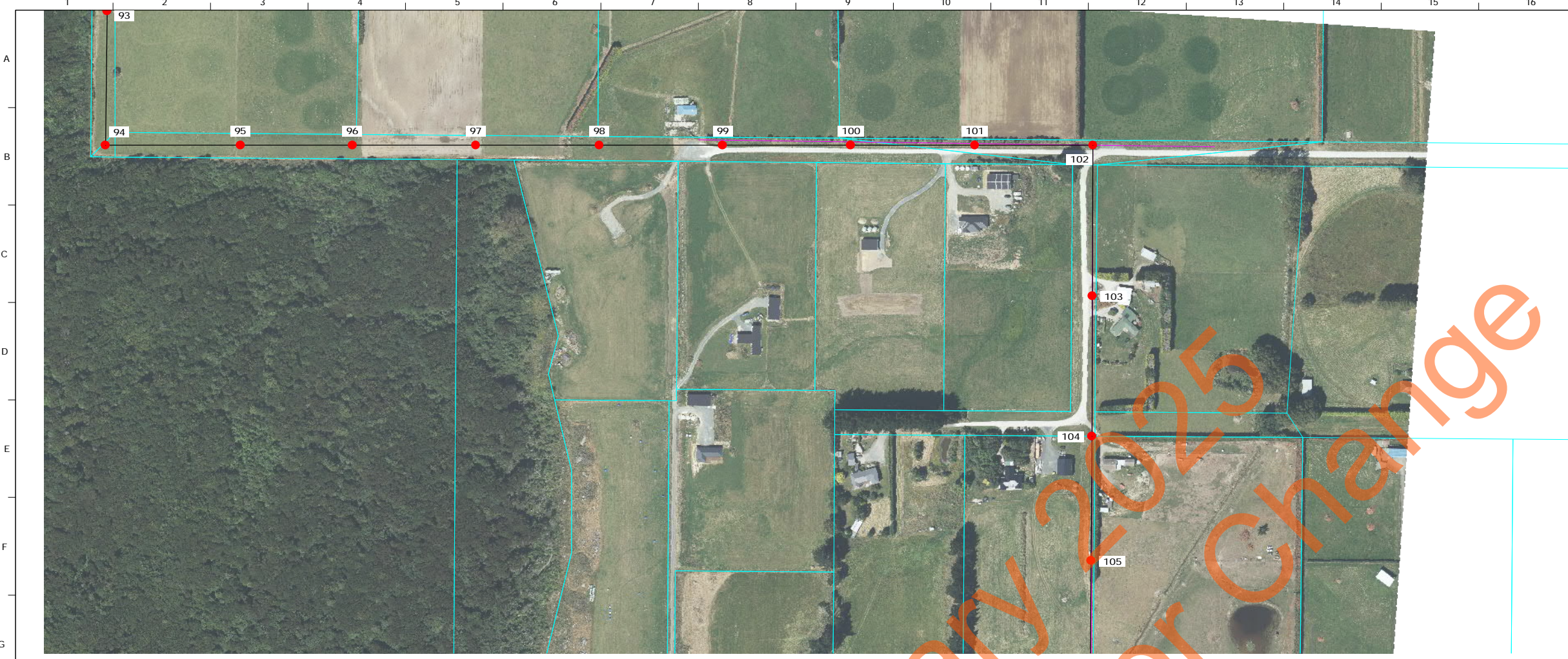
- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



93	94	95	96	97	98	99	100	101	103	104
66-S-S19	66-D-S18	66-S-S19	66-S-S19	66-S-S19	6611-SS-S21	6611-SD-S21	6611-SS-S21	6611-SS-S21	6611-SS-S21	6611-SS-S21
SUSP	STRAIN	SUSP	SUSP	SUSP	SUSP	SUSP	SUSP	SUSP	SUSP	SUSP
19m	18m	19m	19m	19m	21m	21m	21m	21m	21m	21m
-	-90.7°	-	-	-	-	-	-	-	-	0.3°
TYPE 1	BORED PILE	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 1	TYPE 3	TYPE 3
5.8m	8.4m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m	5.8m
-	6.5m xarm	-	-	-	66kV only	-	-	-	-	-



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

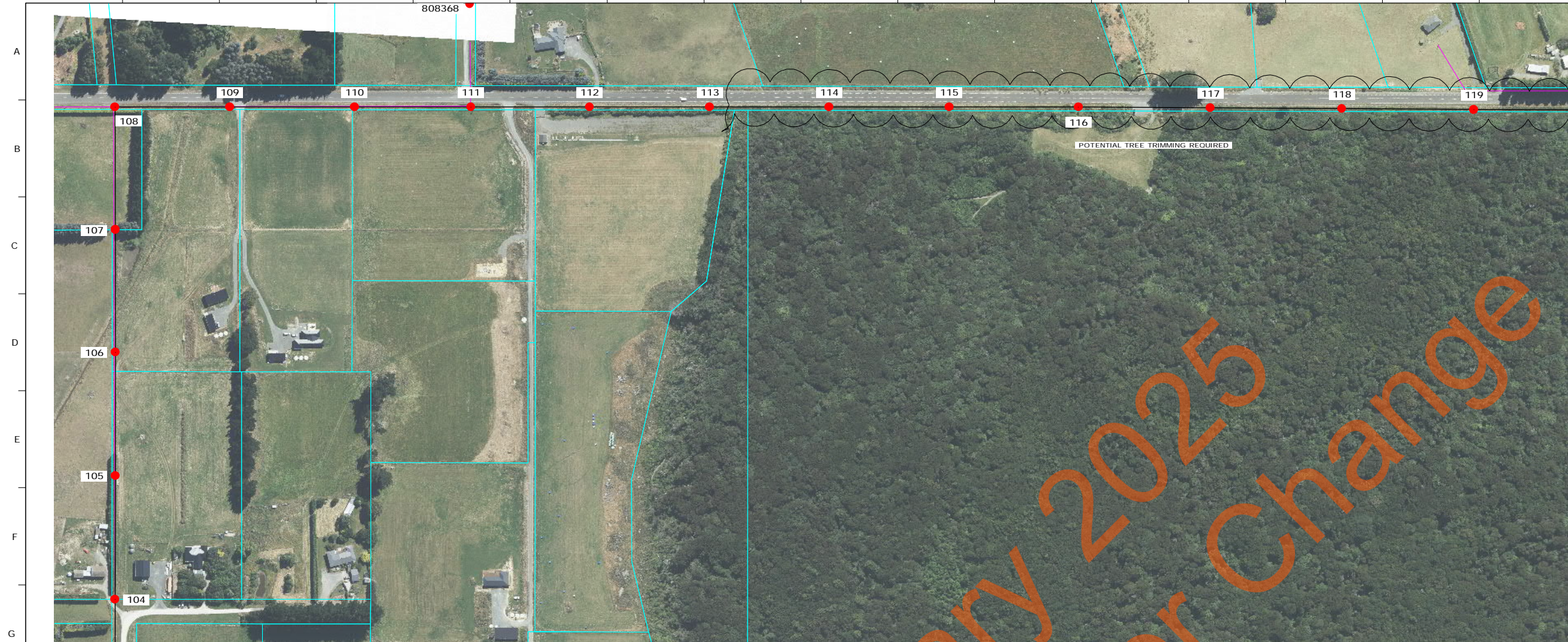
CONSULTANT										TP		DESIGNED	K CHANG	SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE	DATE	DATE	DATE
LUMEN	KC	12/24	PLS	12/24	DS									
LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25						
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24						
LUMEN	KC	9/24	PLS	9/24										
LUMEN	KC	10/24	PLS	10/24										
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24						

INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 93 - 104

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	10/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					



KEKENO —> INVERCARGILL



REFERENCE DRAWINGS

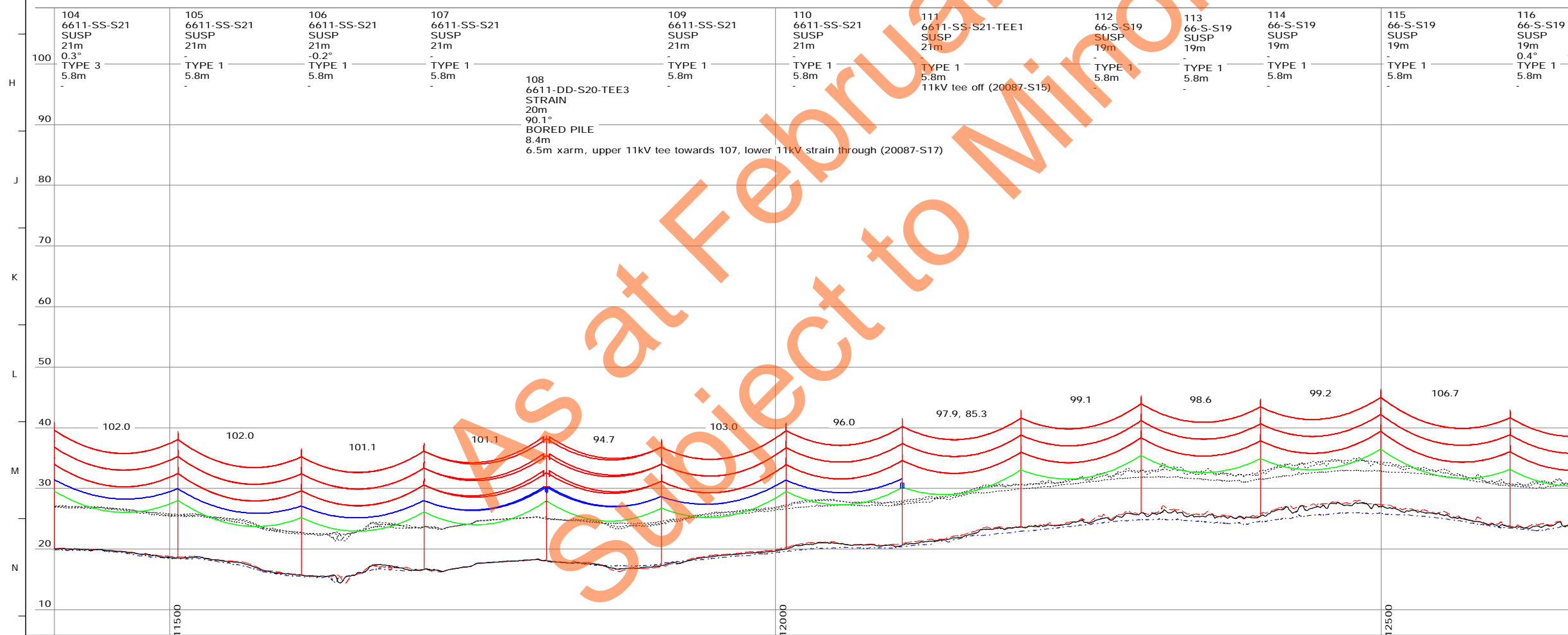
- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV
 - OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV
 - DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV
 - SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED	K CHANG		SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE	DATE	DATE	DATE	DATE
LUMEN	KC	12/24	PLS	12/24	DS	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25
LUMEN	KC	2/25	PLS	2/25	DS	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24
LUMEN	KC	9/24	PLS	9/24	DS	DS	10/24	PLS	10/24	PLS	10/24	PLS	10/24	PLS	10/24
LUMEN	KC	10/24	PLS	10/24	ID	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24

INVERCARGILL TO KEKENO 66kV LINE		
ROUTE PLAN AND PROFILE		
STRUCTURES 104 - 116		

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	11/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					

As at February 2025 Subject to Minor Change

KEKENO ———> INVERCARGILL



REFERENCE DRAWINGS

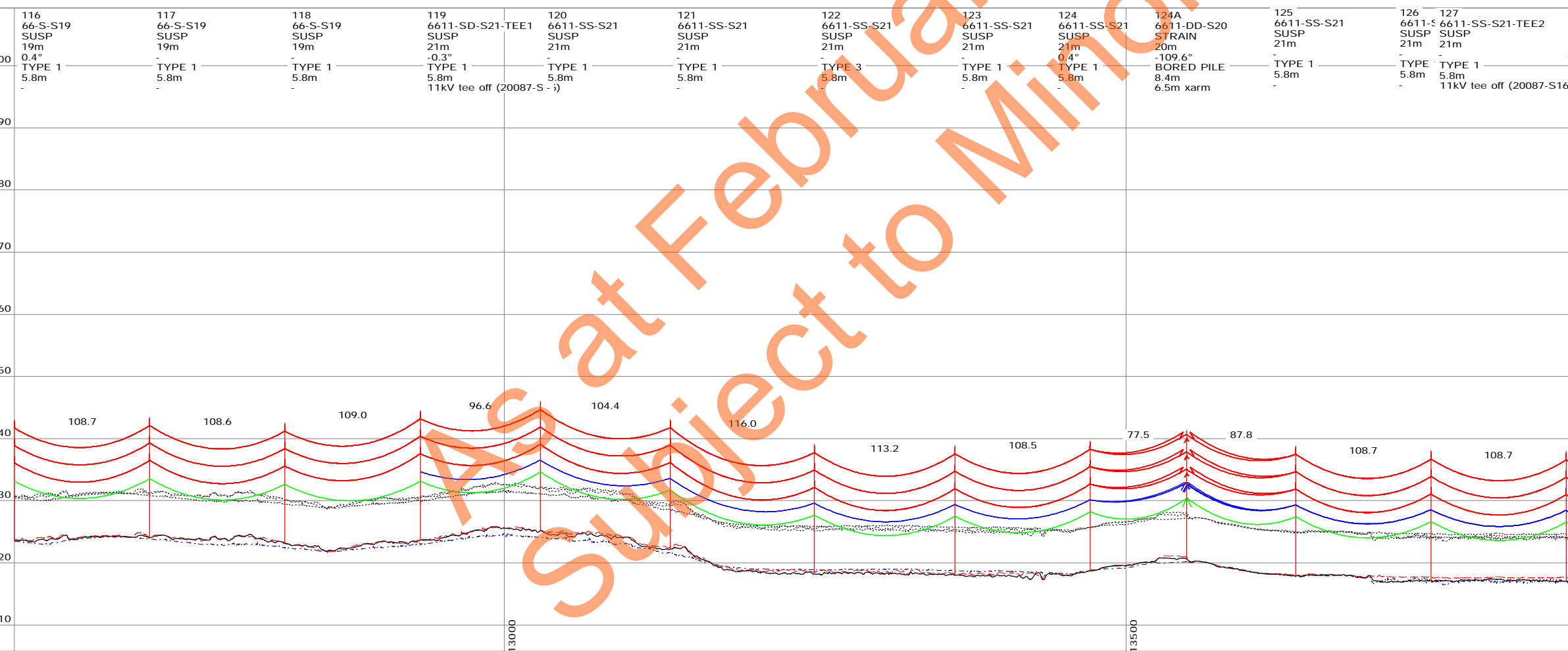
- 20087 STRUCTURE SCHEDULE
- 20087-F1 PILE FOUNDATIONS
- 20087-F2 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

- ALL DIMENSIONS IN METRES
- CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
- EARTHWIRE: NONE
- ADSS: AFL SMM8 **PE0BK
- CABLE TENSION:
 - 66kV OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
- ADSS
 - ADSS - NORMAL (GREEN) - 800N AT 10°C INITIAL
 - ADSS - LOW (DARK GREEN) - 300N AT 10°C INITIAL
- SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
- LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
- MAX. DESIGN OPERATING TEMPERATURE: 75°C
- CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
- GROUND CLEARANCE SHOWN AT 6.5m
- SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
- TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED	K CHANG		SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE	DRAWN	PLS-CADD	SEP 2024	
LUMEN	KC	12/24	PLS	12/24	DS	DS	2/25	DS	2/25	DS	2/25	CHECKED	D STEVENS	SEP 2024	
LUMEN	KC	8/24	PLS	8/24	DS	DS	8/24	DS	8/24	DS	8/24	APPROVED	D STEVENS	SEP 2024	
LUMEN	KC	9/24	PLS	9/24								CLIENT APPRV.			
LUMEN	KC	10/24	PLS	10/24								PREPARED BY:	LUMEN		
LUMEN	KC	10/24	PLS	10/24	ID	ID	10/24	ID	10/24	ID	10/24		LUMEN		
													210 HAZELDEAN ROAD		
													CHRISTCHURCH		

INVERCARGILL TO KEKENO 66KV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 116 - 127

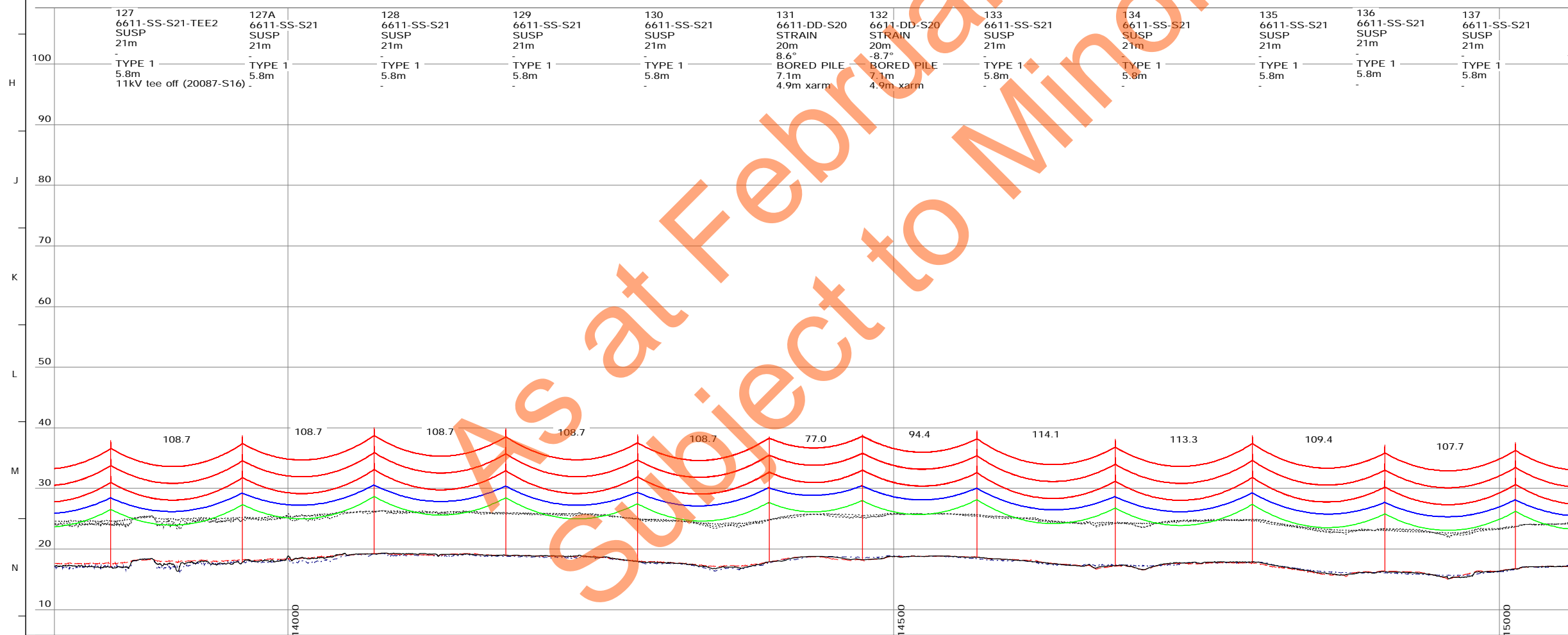
SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-
DRAWING NUMBER		20087/RPP		SHEET	12/18
CAD FILE NAME		MODEL NAME: 20087-OPEN-DAIRY-20250213		REV	6



- REFERENCE DRAWINGS**
- 20087 STRUCTURE SCHEDULE
 - 20087-F PILE FOUNDATIONS
 - 20087-F1 EMBEDDED FOUNDATIONS
 - 20087-F2 FOUNDATION SCHEDULE
 - 2008-S STRUCTURE DRAWINGS

- STRUCTURE COMMENTS**
- STRUCTURE NUMBER
 - STRUCTURE TYPE
 - STRUCTURE FUNCTION
 - STRUCTURE HEIGHT ABOVE GROUND
 - TURN OFF ANGLE
 - FOUNDATION TYPE
 - FOUNDATION DEPTH BELOW GROUND (m)
 - SPECIAL FEATURES

- NOTES:**
1. ALL DIMENSIONS IN METRES
 2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
 3. EARTHWIRE: NONE
 4. ADSS: AFL SMM8 **PE0BK
 5. CABLE TENSION:
 - 66kV
 - OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV
 - DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV
 - SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
 6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
 7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
 9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
 10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
 11. GROUND CLEARANCE SHOWN AT 6.5m
 12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
 13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED	K CHANG	SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE
LUMEN	KC	12/24	PLS	12/24	DS									
LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25						
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24						
LUMEN	KC	9/24	PLS	9/24										
LUMEN	KC	10/24	PLS	10/24										
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24						

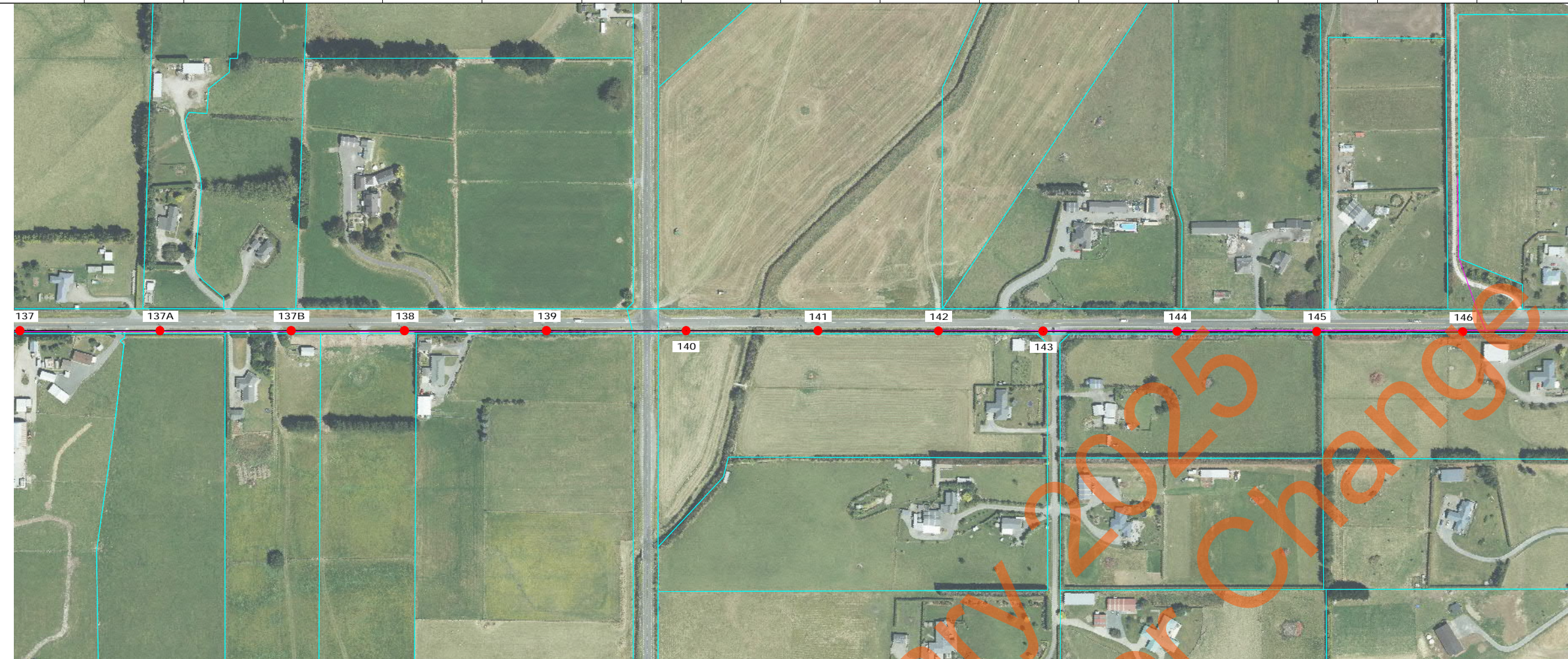
INVERCARGILL TO KEKENO 66KV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 127 - 137

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	13/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					

Subject to Minor Changes at February 2025



KEKENO → INVERCARGILL



REFERENCE DRAWINGS

- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

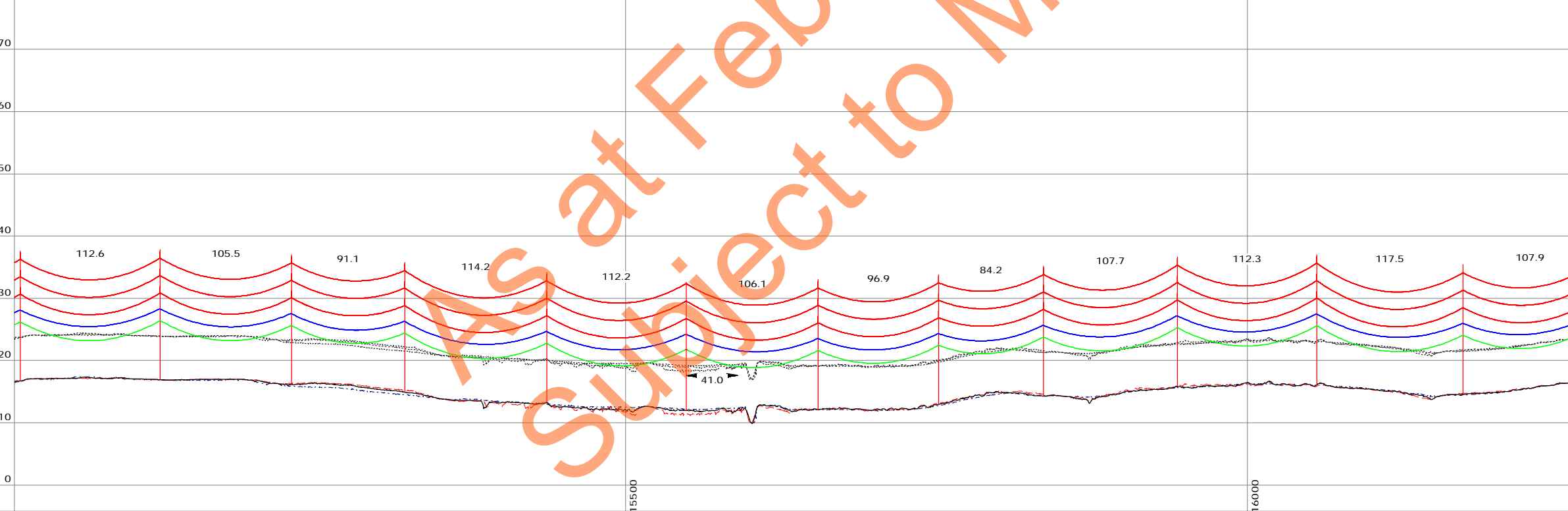
STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
 - ADSS - NORMAL (GREEN) - 800N AT 10°C INITIAL
 - ADSS - LOW (DARK GREEN) - 300N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE

Station	Structure	Type	Height (m)
137	6611-SS-S21	SUSP	21m
137A	6611-SS-S21	SUSP	21m
137B	6611-SS-S21	SUSP	21m
138	6611-SS-S21	SUSP	21m
139	6611-SS-S21	SUSP	21m
140	6611-DD-S20 STRAIN		20m
141	6611-SS-S21	SUSP	21m
142	6611-SS-S21	SUSP	21m
143	6611-SS-S21	SUSP	21m
144	6611-SS-S21	SUSP	21m
145	6611-SS-S21	SUSP	21m
146	6611-SS-S21	SUSP	21m



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED	K CHANG		SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	DATE	DATE	DATE	DATE	DATE
LUMEN	KC	12/24	PLS	12/24	DS	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25
LUMEN	KC	2/25	PLS	2/25	DS	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24
LUMEN	KC	9/24	PLS	9/24	DS	DS	10/24	PLS	10/24	ID	10/24	ID	10/24	ID	10/24

INVERCARGILL TO KEKENO 66KV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 137 - 146

SIZE	SCALE	FOLDER	
A1	SEE NOTE 12	-	-
DRAWING NUMBER		SHEET	REV
20087/RPP		14/18	6
CAD FILE NAME			
MODEL NAME: 20087-OPEN-DAIRY-20250213			

KEKENO → INVERCARGILL



REFERENCE DRAWINGS

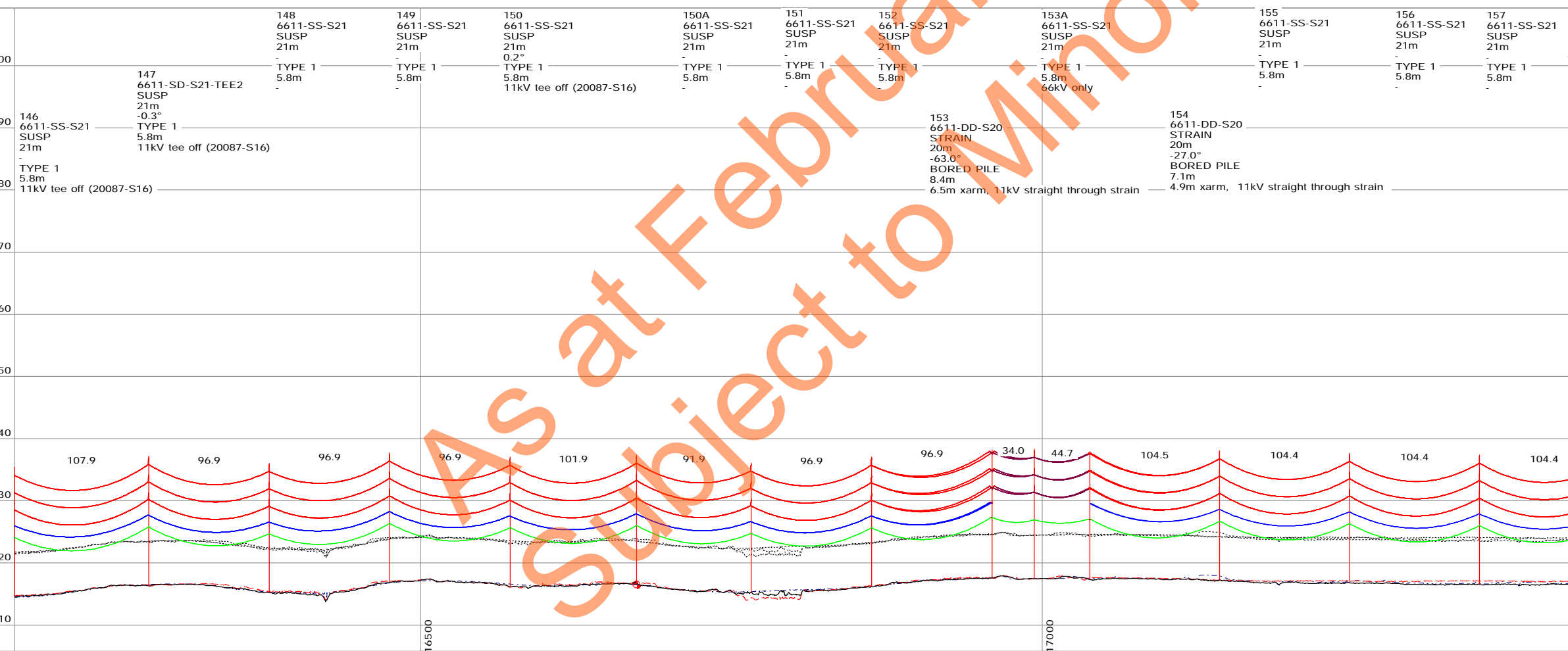
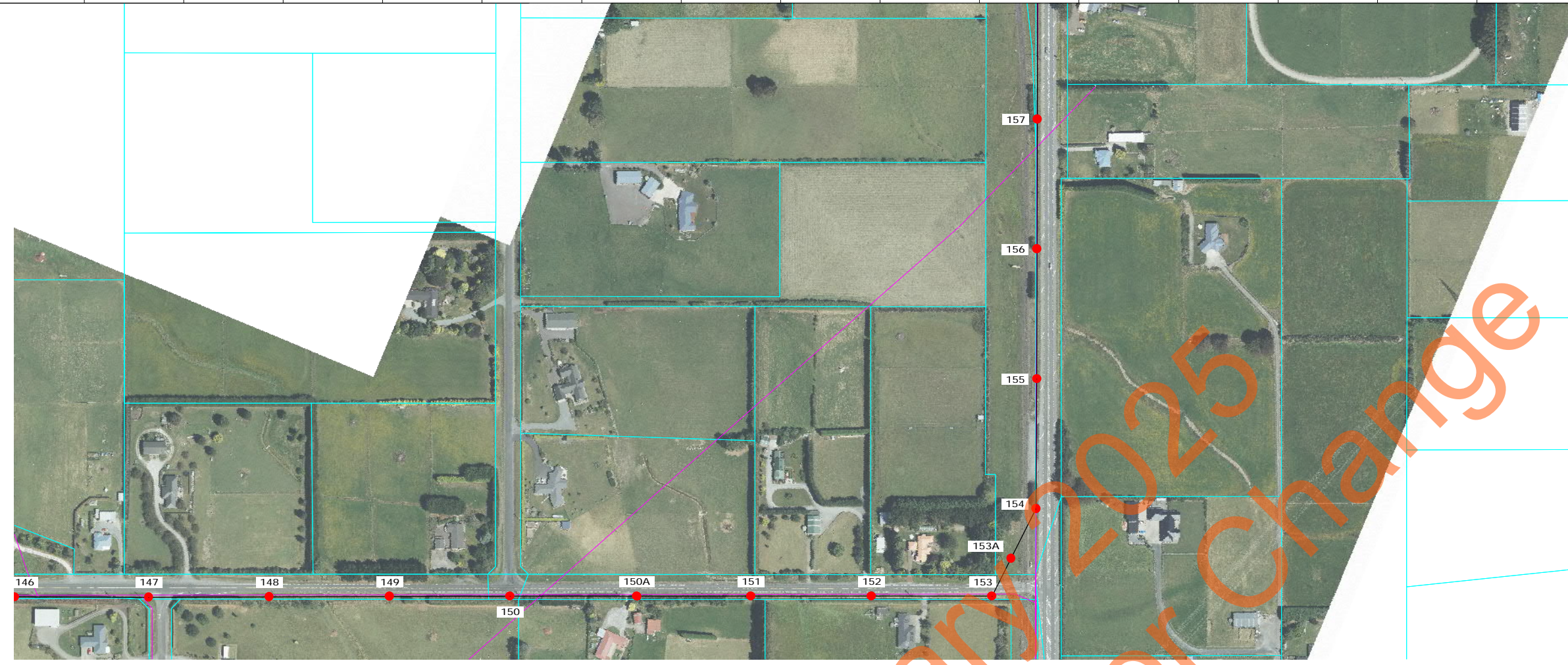
- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
6. ADSS
 - ADSS - NORMAL (GREEN) - 800N AT 10°C INITIAL
 - ADSS - LOW (DARK GREEN) - 300N AT 10°C INITIAL
7. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
8. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT												DESIGNED		DRAWN		CHECKED		APPROVED		CLIENT APPRV.		PREPARED BY:	
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	APP	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	
LUMEN	KC	12/24	PLS	12/24	DS																		
LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25															
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24															
LUMEN	KC	9/24	PLS	9/24																			
LUMEN	KC	10/24	PLS	10/24																			
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24															

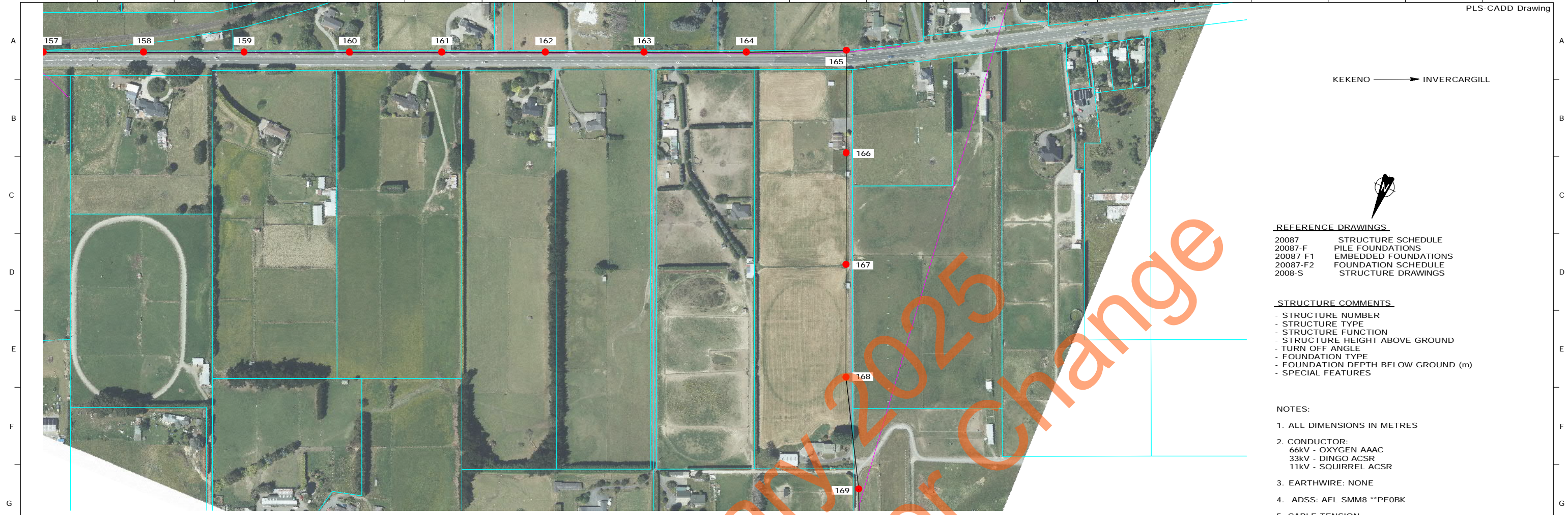
INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 146 - 157

SIZE	SCALE	FOLDER	
A1	SEE NOTE 12	-	-
DRAWING NUMBER		SHEET	REV
20087/RPP		15/18	6
CAD FILE NAME			
MODEL NAME: 20087-OPEN-DAIRY-20250213			

Subject to Minor Change 2025



KEKENO → INVERCARGILL



REFERENCE DRAWINGS

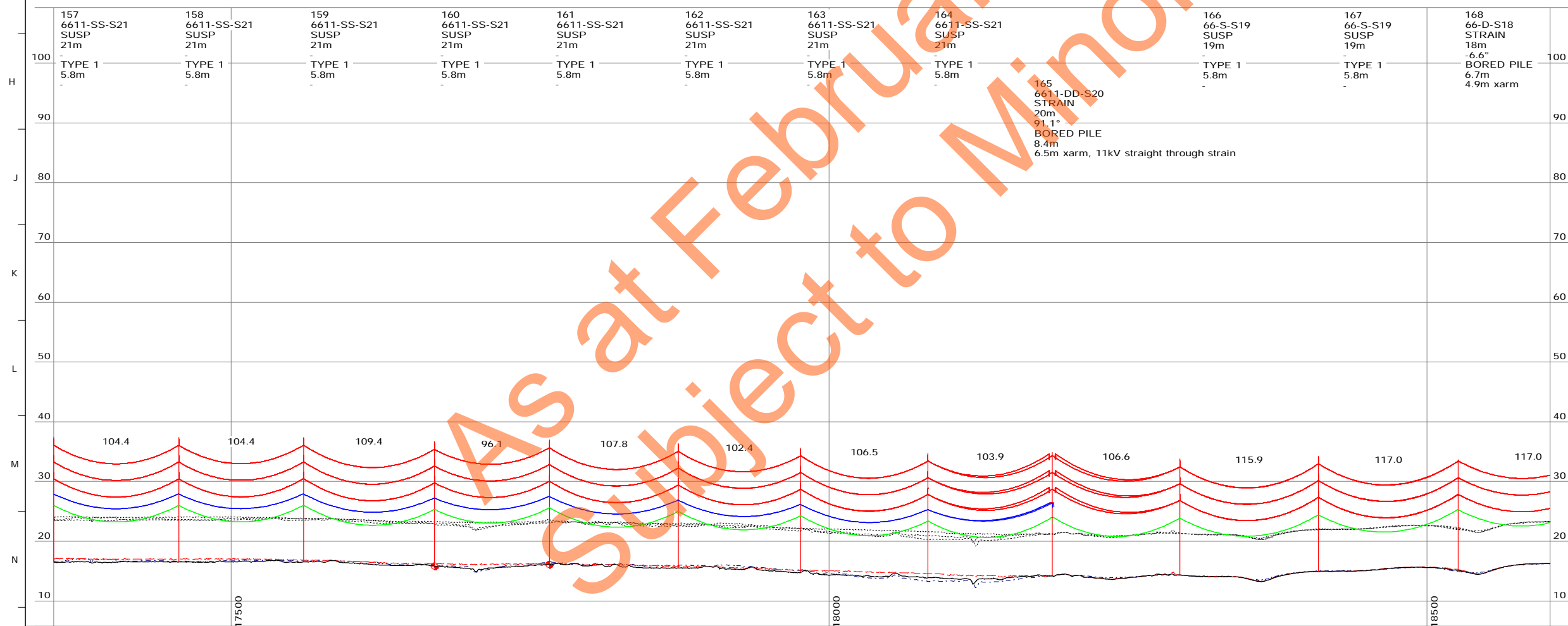
- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33KV UNDERSLUNG

CONSULTANT										TP		DESIGNED		DRAWN		CHECKED		APPROVED		CLIENT APPRV.		PREPARED BY:		
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	DATE	APP	
LUMEN	KC	12/24	PLS	12/24	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25	DS	2/25
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24	DS	8/24
LUMEN	KC	9/24	PLS	9/24	DS	9/24	DS	9/24	DS	9/24	DS	9/24	DS	9/24	DS	9/24	DS	9/24	DS	9/24	DS	9/24	DS	9/24
LUMEN	KC	10/24	PLS	10/24	DS	10/24	DS	10/24	DS	10/24	DS	10/24	DS	10/24	DS	10/24	DS	10/24	DS	10/24	DS	10/24	DS	10/24
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24	ID	10/24

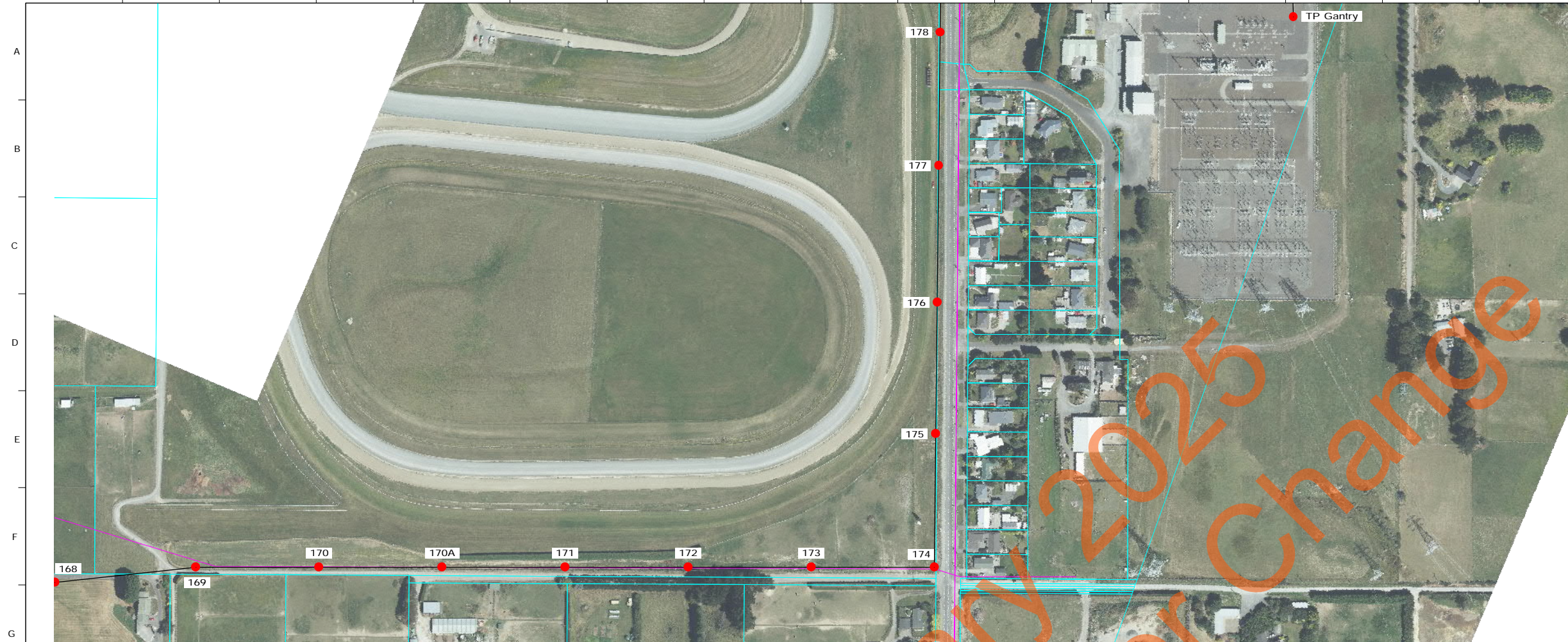
INVERCARGILL TO KEKENO 66kV LINE

ROUTE PLAN AND PROFILE

STRUCTURES 157 - 168

SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-	
DRAWING NUMBER	20087/RPP		SHEET	16/18	REV	6
CAD FILE NAME	MODEL NAME: 20087-OPEN-DAIRY-20250213					

As at February 2025
Subject to Minor Change



KEKENO → INVERCARGILL



REFERENCE DRAWINGS

- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

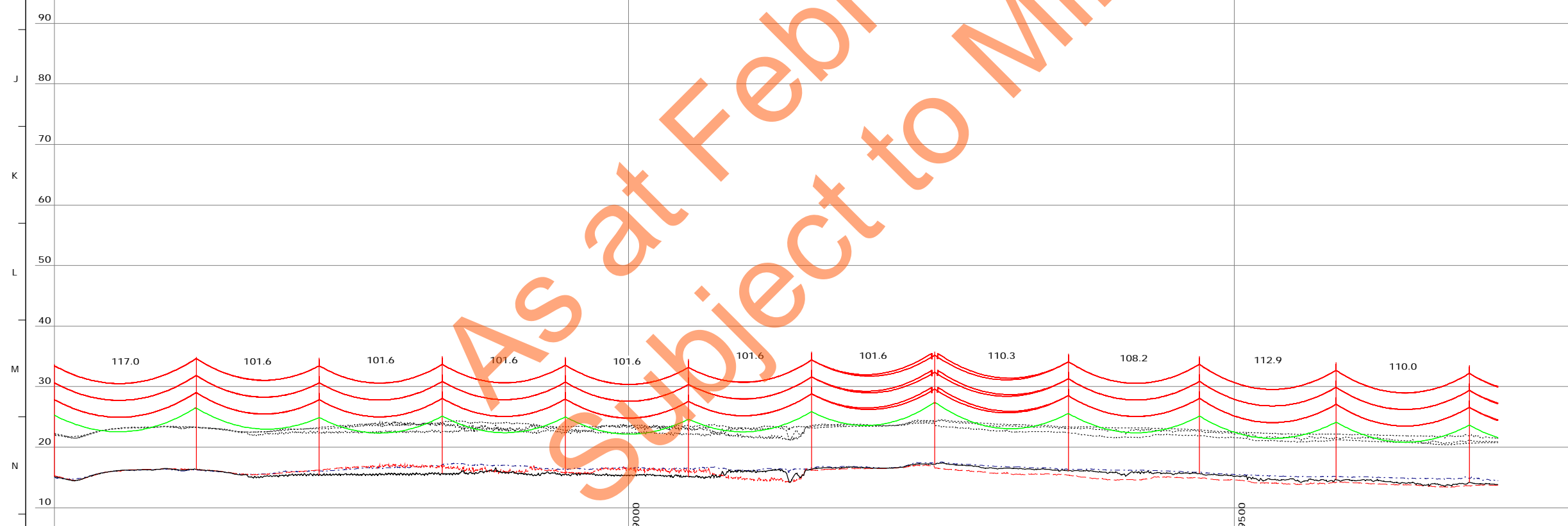
STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV
 - OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV
 - DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV
 - SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE

REV	DESCRIPTION	NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE
168	66-D-S18 STRAIN	18m	-6.6°	BORED PILE	6.7m	4.9m xarm						
169	66-D-S18 STRAIN	18m	6.1°	BORED PILE	6.7m	4.9m xarm						
170	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
170A	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
171	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
172	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
173	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
174	66-D-S18 STRAIN	18m	-89.4°	BORED PILE	8.4m	6.5m xarm						
175	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
176	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
177	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						
178	66-S-S19 SUSP	19m	-	TYPE 1	5.8m	-						



REV	DESCRIPTION	NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE
5A	FOR INFORMATION ONLY	LUMEN	KC	12/24	PLS	12/24	DS					
6	FOR CONSTRUCTION	LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25		
3	UPDATED ALIGNMENT	LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24		
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION	LUMEN	KC	9/24	PLS	9/24						
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY	LUMEN	KC	10/24	PLS	10/24						
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33kV UNDERSLUNG	LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24		

DESIGNED: K CHANG		SEP 2024	
DRAWN: PLS-CADD		SEP 2024	
CHECKED: D STEVENS		SEP 2024	
APPROVED: D STEVENS		SEP 2024	
CLIENT APPRV:			
PREPARED BY: LUMEN		210 HAZELDEAN ROAD	
		CHRISTCHURCH	
INVERCARGILL TO KEKENO 66kV LINE			
ROUTE PLAN AND PROFILE			
STRUCTURES 168 - 178			
SIZE: A1	SCALE: SEE NOTE 12	FOLDER: -	
DRAWING NUMBER: 20087/RPP		SHEET: 17/18	REV: 6
CAD FILE NAME: MODEL NAME: 20087-OPEN-DAIRY-20250213			

Subject to Minor Change 2025



KEKENO → INVERCARGILL



REFERENCE DRAWINGS

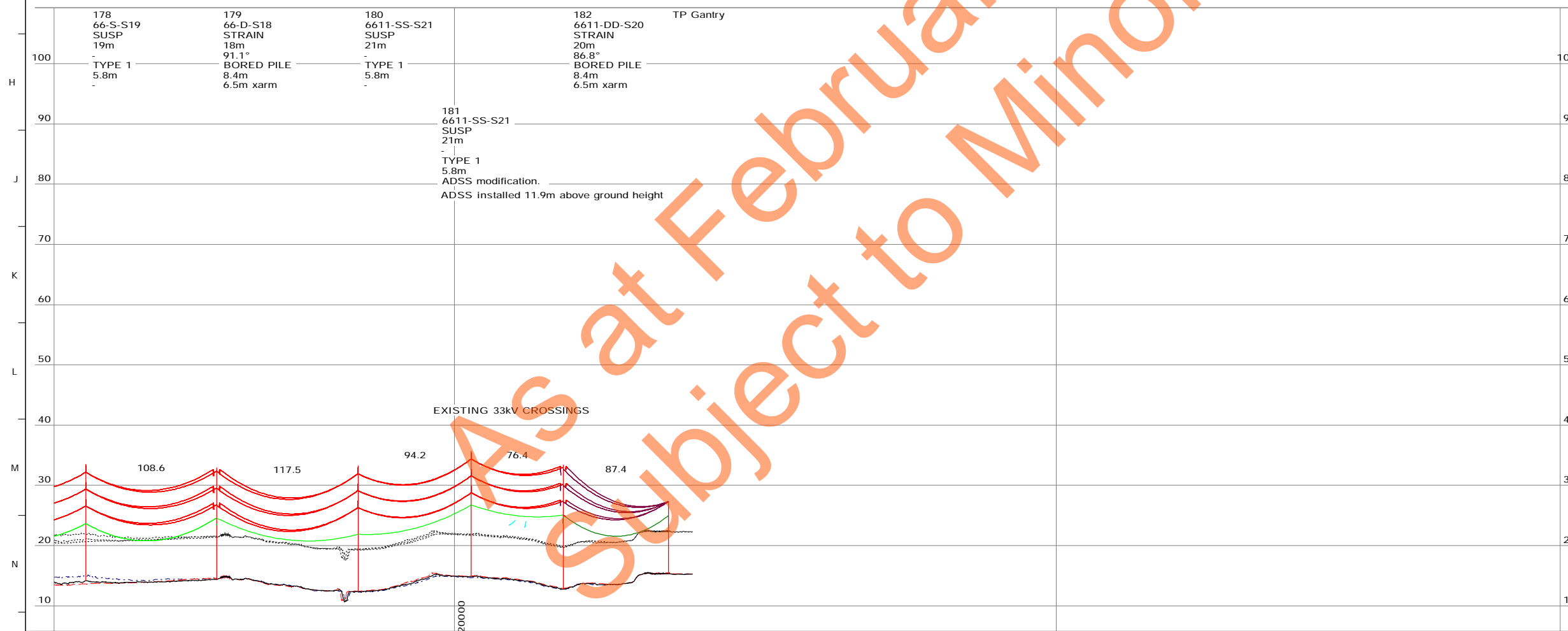
- 20087 STRUCTURE SCHEDULE
- 20087-F PILE FOUNDATIONS
- 20087-F1 EMBEDDED FOUNDATIONS
- 20087-F2 FOUNDATION SCHEDULE
- 2008-S STRUCTURE DRAWINGS

STRUCTURE COMMENTS

- STRUCTURE NUMBER
- STRUCTURE TYPE
- STRUCTURE FUNCTION
- STRUCTURE HEIGHT ABOVE GROUND
- TURN OFF ANGLE
- FOUNDATION TYPE
- FOUNDATION DEPTH BELOW GROUND (m)
- SPECIAL FEATURES

NOTES:

1. ALL DIMENSIONS IN METRES
2. CONDUCTOR:
 - 66kV - OXYGEN AAAC
 - 33kV - DINGO ACSR
 - 11kV - SQUIRREL ACSR
3. EARTHWIRE: NONE
4. ADSS: AFL SMM8 **PE0BK
5. CABLE TENSION:
 - 66kV
 - OXYGEN - NORMAL (RED) - 9200N AT 10°C INITIAL
 - OXYGEN - LOW (DARK RED) - 4414N AT 10°C INITIAL
 - 33kV
 - DINGO - NORMAL (MAGENTA) - 3570N AT 10°C INITIAL
 - 11kV
 - SQUIRREL - NORMAL (DARK BLUE) - 790N AT 10°C INITIAL
 - SQUIRREL - LOW (CYAN) - 395N AT 10°C INITIAL
6. SURVEY TO NZ TRANSVERSE MERCATOR GRID PROJECTION
7. LEVELS ARE TO NZ GEODETIC DATUM 2000 IN METRES
9. MAX. DESIGN OPERATING TEMPERATURE: 75°C
10. CONDUCTOR SHOWN AT MAX. DESIGN OPERATING TEMPERATURE (CREEP FE)
 - 66kV - 75°C
 - 33kV - 60°C
 - 11kV - 50°C
 - ADSS - 30°C
11. GROUND CLEARANCE SHOWN AT 6.5m
12. SCALES: HORIZONTAL = 1 : 2000
VERTICAL = 1 : 400
13. TO BE READ IN CONJUNCTION WITH STRUCTURE SCHEDULE



EXISTING 33kV CROSSINGS

REV	DESCRIPTION
5A	FOR INFORMATION ONLY
6	FOR CONSTRUCTION
3	UPDATED ALIGNMENT
4A	UPDATED MILL SOUTH ROAD - FOR DISCUSSION
4B	UPDATED ALIGNMENT FOR DISCUSSION ONLY
5	FOR CONSTRUCTION - ALIGNMENT CHANGE AND 33kV UNDERSLUNG

CONSULTANT											TP	DESIGNED	K CHANG	SEP 2024
NAME	DSN	DATE	DRN	DATE	CHK	DATE	APP	DATE	APP	DATE				
LUMEN	KC	12/24	PLS	12/24	DS									
LUMEN	KC	2/25	PLS	2/25	DS	2/25	DS	2/25						
LUMEN	KC	8/24	PLS	8/24	DS	8/24	DS	8/24						
LUMEN	KC	9/24	PLS	9/24										
LUMEN	KC	10/24	PLS	10/24										
LUMEN	KC	10/24	PLS	10/24	ID	10/24	ID	10/24						

DRAWN	PLS-CADD	SEP 2024
CHECKED	D STEVENS	SEP 2024
APPROVED	D STEVENS	SEP 2024
CLIENT APPRV.		
PREPARED BY:	LUMEN 210 HAZELDEAN ROAD CHRISTCHURCH	

INVERCARGILL TO KEKENO 66kV LINE		SIZE	A1	SCALE	SEE NOTE 12	FOLDER	-
ROUTE PLAN AND PROFILE		DRAWING NUMBER		20087/RPP		SHEET	18/18
STRUCTURES 178 - TP Gantry		CAD FILE NAME		MODEL NAME: 20087-OPEN-DAIRY-20250213			

REV	6
SHEET	18/18