

GENERAL NOTES:

- CONTRACTOR TO LIAISE WITH ALL RELEVANT UTILITY OPERATORS AFFECTED BY THE WORKS.
- ALL UTILITY LAYOUT PLANS AND TYPICAL CROSS-SECTIONS MUST BE READ IN CONJUNCTION WITH RELATED DRAWINGS (IN PARTICULAR, LIGHTING, STORMWATER, RETAINING WALLS, BRIDGES, BARRIER AND LANDSCAPING PLANS AND DETAILS) AND SPECIFICATIONS.DISCREPANCIES SHALL BE REFEREED TO THE ENGINEER FOR RESOLUTION.
- CONTRACTOR SHALL VALIDATE ALL AS-BUILT INFORMATION AND EXISTING UTILITIES ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS. DISCREPANCIES BETWEEN EXISTING UTILITIES AND AS-BUILT INFORMATION TO BE REFERRED TO THE ENGINEER FOR RESOLUTION
- THE CONTRACTOR IS RESPONSIBLE FOR SITE TEMPORARY SUPPLIES AND ENABLING WORKS.
- WEEKEND WORKS MAY HAVE TO BE UNDERTAKEN TO ACCOMMODATE NETWORK OR CUSTOMER REQUIREMENTS; THE CONTRACTOR SHALL ACCOMMODATE THESE WEEKEND WORKS.
- ALL CONNECTIONS TO PRIVATE PROPERTIES WILL BE ARRANGED AND COMPLETED BY RELEVANT UTILITY OPERATORS.
- THE CONTRACTOR SHALL OBTAIN A PERMIT TO WORK AROUND SERVICES FROM RELEVANT UTILITY OPERATORS.
- ALL REDUNDANT INFRASTRUCTURE IS TO BE ABANDONED UNLESS OTHERWISE AGREED WITH UTILITY OPERATORS.
- CONTRACTOR TO IDENTIFY ANY CLASHES AT NEW SERVICE POLES, TERMINAL POLES, LIGHTING POLES, TRANSFORMERS, SWITCHES, PITS, PILLARS AND MANHOLE LOCATIONS PRIOR TO RELOCATING SERVICES BY SETTING OUT NEW LOCATIONS AND PILOT TRENCHING.
- ALL DUCTS ARE TO BE CLEARED, CAPPED, TESTED AND DRAW WIRES INSTALLED, READY FOR UTILITY OPERATORS TO DRAW CABLES.
- ALL SERVICE LIDS TO BE FLUSH WITH FINISHED GROUND OR AS ACCEPTED BY THE ENGINEER. WHERE LIDS ARE LOCATED ON FOOTPATHS, SERVICES LID SHOULD HAVE ANTI-SKID SURFACING.
- ALL EXISTING SERVICE LINE TERMINATIONS OR RELOCATIONS SHALL BE AGREED WITH THE RELEVANT UTILITY OPERATOR ON-SITE.
- CONTRACTOR TO REINSTATE ALL ABOVE GROUND SERVICES MARKERS.
- FINAL POSITION OF NEW SERVICE POLES, TERMINAL POLES, LIGHTING POLES, TRANSFORMERS, SWITCHES, PITS, PILLARS AND MANHOLES TO BE AGREED ON SITE WITH CONTRACTOR'S ENGINEER AND RELEVANT UTILITY OPERATORS PRIOR TO CONSTRUCTION.
- WHERE INDICATED ON LAYOUT PLANS, DUCTS SHALL BE LOCALLY DEEPEENED OR MADE SHALLOW TO PASS STORMWATER PIPE/CULVERT CROSSINGS. A MINIMUM VERTICAL SEPARATION OF 150mm TO STORMWATER PIPES/CULVERTS AND MINIMUM/MAXIMUM BENDING RADIUS' FOR EACH SERVICE SHOULD BE MET.
- THE LOCATION OF EXISTING SERVICES SHOWN ON PLANS IS INDICATIVE ONLY AS SOME EXISTING ASSETS MAY NOT HAVE BEEN CAPTURED. THE CONTRACTOR SHALL LIAISE WITH SERVICE PROVIDERS CONTRACTORS TO MARK OUT AND LOCATE EXISTING SERVICES PRIOR TO EXCAVATION. PILOT TRENCHING SHALL BE UNDERTAKEN TO DETERMINE THE ACTUAL POSITION OF EXISTING SERVICES. THE CONTRACTOR SHALL PROTECT THE EXISTING UTILITIES NETWORK AND IS RESPONSIBLE FOR ANY DAMAGES.

VECTOR NOTES:

- CONTRACTOR TO ADHERE TO VECTOR'S 'GAS PIPELINE SAFETY GUIDE' AND 'A GUIDE TO WORKING SAFELY AROUND VECTOR'S ELECTRICITY, GAS AND COMMUNICATIONS NETWORKS' DOCUMENTS.
- WHEN WORKING WITHIN 2m OF A GAS PIPELINE, CONTRACTOR TO ACQUIRE A CLOSE APPROACH CONSENT. CONSENT TO BE ISSUED PRIOR TO STARTING WORK.
- JOB START DATE, CONTRACTOR NAME, CONTACT NUMBER, PREFERRED APPOINTMENT DATE AND TIME TO BE INDICATED BY PHONE CALL AND EMAIL TO NETWORK PLANNER JOHN MCALISTER 021 996-989 OR JOHN.MCALISTER@ELECTRIX.CO.NZ. MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
- THE VECTOR POWER DUCTS INSTALLATION MUST COMPLY WITH THE FOLLOWING VECTOR STANDARDS:
 - VECTOR STANDARD ESE303 - INSTALLATION REQUIREMENTS FOR CABLES AND DUCTS
 - VECTOR STANDARD EDE3021-3024 - UNDERGROUND RETICULATION - TRENCH PROFILE
 - VECTOR STANDARD ENS-0110 - THERMAL BACKFILL FOR UNDERGROUND CABLES
 - VECTOR STANDARD CAP-095 - CIVIL WORKS SPECIFICATION (NZS 3910)
 - VECTOR STANDARD END-2122 - SERVICE PIT ARRANGEMENT - TYPICAL CROSS-SECTION INSTALLATION DETAIL
- FOR EACH CROSSING BETWEEN VECTOR UTILITIES AND STORMWATER, THE CONTRACTOR MUST SUBMIT CONSTRUCTION METHODOLOGY TO VECTOR FOR APPROVAL
- CONTRACTOR TO ENSURE MINIMUM BENDING RADIUS OF CABLES / GAS PIPES ARE ADHERED TO.
- PILLARS TO BE 450L x 450W x 600H mm (ABOVE GROUND DUCTS) x 400D (BELOW GROUND).
- PITS TO BE 450mm DIAMETER AND 600mm DEEP. U.N.O
- FINAL MANHOLES, PITS, PILLARS, JOINTS, SERVICE POLES, TERMINAL POLES, TRANSFORMERS AND SWITCH LOCATIONS TO BE CONFIRMED ON SITE WITH VECTOR AND CONTRACTOR'S ENGINEER.

TRAFFIC SIGNAL NOTES:

- TRAFFIC SIGNAL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH NZTA P43 SPECIFICATION FOR TRAFFIC SIGNAL (2018) AND THE AUCKLAND TRAFFIC MANAGEMENT UNIT: TRAFFIC SIGNALS DESIGN GUIDELINES (VERSION 3.0 AUGUST 2010).
- REFER TO SIGNAGE AND MARKING DRAWINGS 3235084-CT-2800 TO 2813 FOR DETAILS AND NOTES.

TRANSPOWER NOTES:

- WHERE THE PROPOSED WORKS, INCLUDING USE OF MOBILE PLANT ARE WITHIN CLOSE PROXIMITY (CLOSER THAN 200m) TO TRANSPOWER TRANSMISSION LINES, THE CONTRACTOR SHALL INFORM TRANSPOWER PRIOR TO UNDERTAKING WORKS.

CHORUS NOTES:

- MANHOLES TO BE STANDARD SIKA 1200L x 600W x 600Dmm.

- PITS TO BE 600L x 600W x 600D mm IN SIZE.
- FINAL MANHOLE AND PIT LOCATIONS TO BE CONFIRMED ON SITE WITH CHORUS.
- CHORUS SHALL CONNECT NEW DUCTS/CABLES TO EXISTING CHORUS DUCTS AND CABLES.
- NEW CHORUS FIBRE CONNECTIONS TO PROPERTIES MAY HAVE BEEN INSTALLED THAT HAVE NOT BEEN IDENTIFIED IN THESE DRAWINGS. PRIOR TO CONSTRUCTION ALL NEW CONNECTIONS MUST BE IDENTIFIED BY CONTACTING DANIEL SAMUEL PH. 0212970982
- THE RIBBONET DUCT TO BE LAID CLOSEST TO THE BOUNDARY TO INSTALL DROP OFF'S. CONTRACTOR TO LIAISE WITH VISIONSTREAM FIELD MANAGER FOR ALL ASPECTS OF RIBBONET INSTALLATION.
- THE STANDARD GROUND COVER REQUIRED IS 600mm FOR NEW DUCT LINES IN STABLE WELL FORMED AREAS AND 1.0m UNDER CARRIAGEWAY AREAS UNLESS SPECIFIED OTHERWISE.

SPARK NOTES:

- THE SPARK HIGH VOLTAGE INTERNATIONAL CABLE RUNS ALONG THE NORTHERN SIDE OF SH16 INSIDE A SHARED TRENCH WITH CHORUS COMMUNICATION DUCTS. THE LOCATION AND DEPTH OF INTERNATIONAL CABLE SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF ANY WORKS, AND THE INTERNATIONAL CABLE SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION.
- SPARK INTERNATIONAL PATROLMAN IAN MACCLURE (OR NOMINATED ALTERNATIVE) WILL BE REQUIRED TO STAND OVER DURING THE INSTALLATION OR RELOCATION OF ANY WORKS WITHIN THE VICINITY OF THE SPARK INTERNATIONAL CABLE.
- THE CONTRACTOR SHALL NOTIFY AND LIAISE WITH SPARK FOR THE REVIEW OF PROPOSED RELOCATION/PROTECTION METHODOLOGY.
- THE EXISTING SPARK DUCTS AND CABLES, INCLUDING THE SOUTHERN CROSS INTERNATIONAL CABLE, ARE NOT REQUIRED TO BE RELOCATED
- THE EXISTING SPARK DUCTS AND CABLES, INCLUDING THE SOUTHERN CROSS INTERNATIONAL CABLE, ARE TO BE PROTECTED AT ALL TIMES
- THE CONTRACTOR(S) DOING THE WORKS SHALL NOT EXCAVATE WITHIN 0.5m VERTICAL CLEARANCE OR 1m LATERAL CLEARANCE OF THE SPARK DUCTS AND CABLES, INCLUDING THE SOUTHERN CROSS INTERNATIONAL CABLE
- SPARK SHALL BE CONSULTED ON ANY DESIGN CHANGES THROUGHOUT THE PROJECT THAT MAY AFFECT THE ONGOING OPERATION OF SPARK DUCTS AND CABLES, INCLUDING THE SOUTHERN CROSS INTERNATIONAL CABLE
- THE PROJECT DESIGN WILL AIM TO PROVIDE FOR ONGOING ACCESS TO THE SPARK DUCTS AND CABLES, INCLUDING THE SOUTHERN CROSS INTERNATIONAL CABLE, ESPECIALLY SPARK MANHOLES, FOR ONGOING OPERATIONAL PURPOSES AND FOR THE REUSE OF THE DUCTLINE FOR FUTURE DABLES. WHERE THIS MAY NOT BE ACHIEVED, PROJECT DESIGN TEAM SHALL NOTIFY SPARK AND LIAISE WITH SPARK TO ARRIVE AT AN ACCEPTABLE ALTERNATIVE DESIGN SOLUTION

VODAFONE NOTES:

- PITS TO BE 1200L x 600W x 900D mm IN SIZE.
- FINAL MANHOLE AND PIT LOCATIONS TO BE CONFIRMED ON SITE WITH VODAFONE.
- VODAFONE SHALL CONNECT NEW DUCTS/CABLES TO EXISTING VODAFONE DUCTS AND CABLES.
- THE STANDARD GROUND COVER REQUIRED IS 900mm FOR NEW DUCT LINES IN STABLE WELL FORMED AREAS AND 1.0m UNDER CARRIAGEWAY AREAS UNLESS SPECIFIED OTHERWISE.
- THE LOCATION OF EXISTING SERVICES SHOWN ON PLANS IS INDICATIVE ONLY AS SOME EXISTING ASSETS MAY NOT HAVE BEEN CAPTURED. THE CONTRACTOR SHALL LIAISE WITH VODAFONE CONTRACTORS TO MARK OUT AND LOCATE EXISTING SERVICES PRIOR TO EXCAVATION. PILOT TRENCHING SHALL BE UNDERTAKEN TO DETERMINE THE ACTUAL POSITION OF EXISTING SERVICES. THE CONTRACTOR SHALL PROTECT THE VODAFONE NETWORK AND IS RESPONSIBLE FOR ANY DAMAGES.

VOCUS NOTES:

- JOINTING PITS TO BE SIKA ALUMINIUM MANHOLE 1200L x 600W x 1200D mm IN SIZE.
- FINAL MANHOLE AND PIT LOCATIONS TO BE CONFIRMED ON SITE WITH VOCUS.
- VOCUS SHALL CONNECT NEW DUCTS/CABLES TO EXISTING VOCUS DUCTS AND CABLES.
- THE STANDARD GROUND COVER REQUIRED IS 600mm FOR NEW DUCT LINES IN STABLE WELL FORMED AREAS AND 1.0m UNDER CARRIAGEWAY AREAS UNLESS SPECIFIED OTHERWISE.

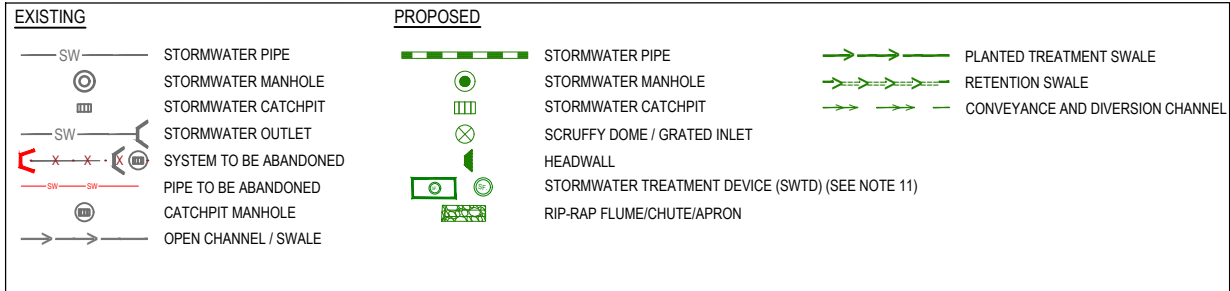
WATERCARE NOTES:

- EXISTING CRITICAL WATERMAIN (450 OD PE100) IS TO BE RETAINED AND PROTECTED DURING CONSTRUCTION.
- PIPELINE SHALL BE INSTALLED WITH THE FOLLOWING DEPTH TO INVERT MEASURED TO THE FINAL SURFACE LEVEL.
 - IN BERMS A MINIMUM COVER OF 600mm UP TO A MAXIMUM OF 1000mm;
 - IN CARRIAGEWAYS A MINIMUM 900mm UP TO 1200mm; OR
 - AS OTHERWISE AGREED OR REQUIRED BY WATERCARE AND THE CORRIDOR MANAGER WHERE THE WORKS ARE IN THE ROAD RESERVE

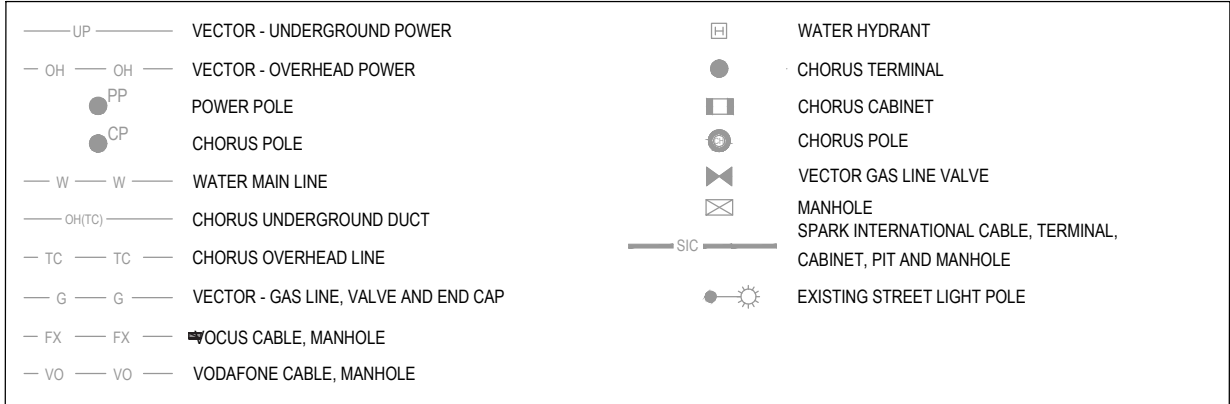
CONSTRUCTION CO-ORDINATION CHECKS:

- CHORUS, VECTOR AND NZTA CONTRACTORS TO SET OUT PERMANENT WORKS FOR PRIVATE PROPERTY CONNECTIONS (PITS, PILLARS, SERVICE POLES) WITH THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION TO ALLOW FOR A FINAL COORDINATION CHECK TO BE MADE BY ALL RELEVANT PARTIES.

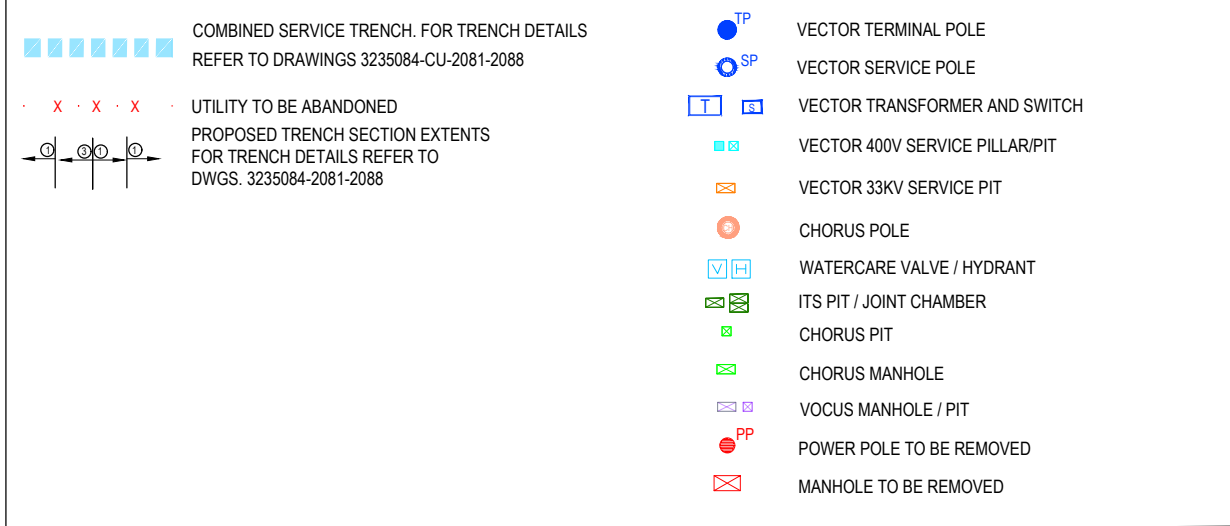
STORMWATER LEGEND



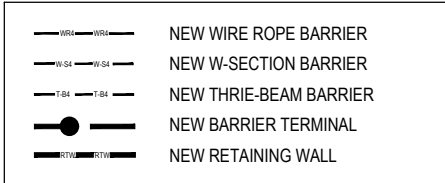
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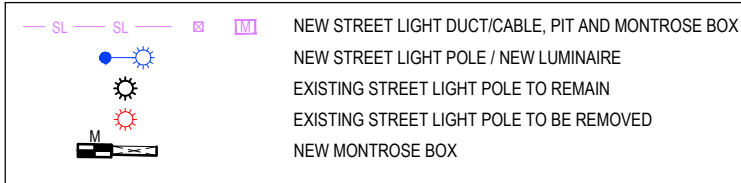
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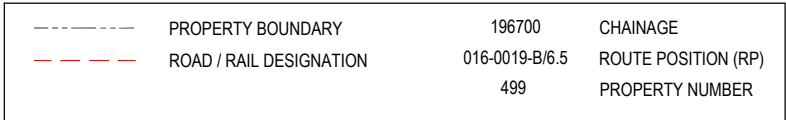
BARRIERS/RETAINING WALL



LIGHTING LEGEND:



GENERAL LEGEND:



ORIGINAL DRAWING
IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION

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C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk.	Appd.	Date

Drawing Originator:

Original Scale (A1)	Design	T.WU	26.03.21	Approved For Construction*
NTS	Drawn	ES, OH	26.03.21	
Reduced Scale (A3)	Design Check	KM	10.10.22	Date
NTS	* Refer to Revision 1 for Original Signature			

Client:

Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

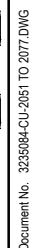
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NOTES AND LEGEND

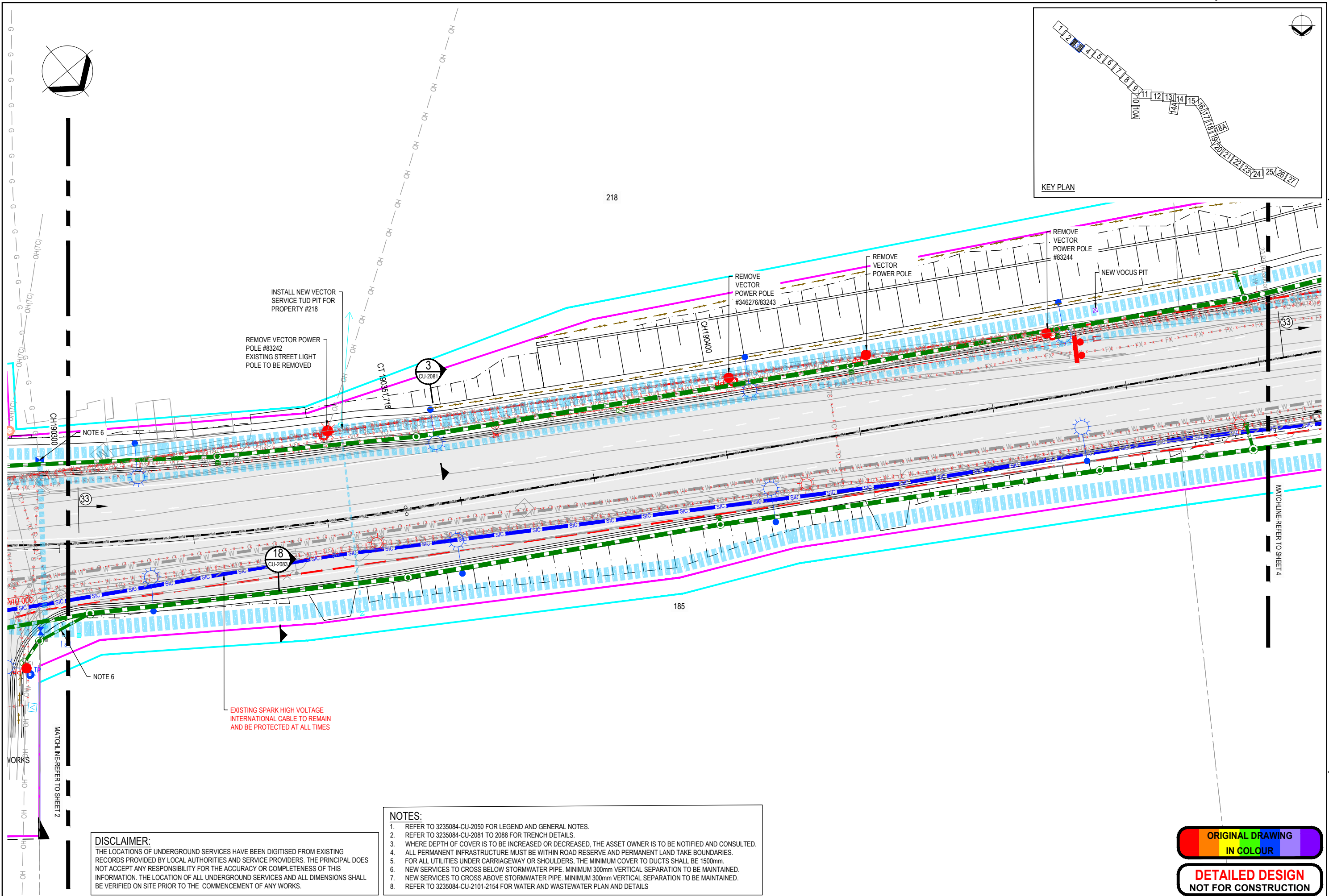
Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2050
Rev.	D

NOTES:

1. REFER TO 3235084-CU-2050 FOR LEGEND AND GENERAL NOTES.
2. REFER TO 3235084-CU-2081 TO 2088 FOR TRENCH DETAILS.
3. WHERE DEPTH OF COVER IS TO BE INCREASED OR DECREASED, THE ASSET OWNER IS TO BE NOTIFIED AND CONSULTED.
4. ALL PERMANENT INFRASTRUCTURE MUST BE WITHIN ROAD RESERVE AND PERMANENT LAND TAKE BOUNDARIES.
5. FOR ALL UTILITIES UNDER CARRIAGEWAY OR SHOULDERS, THE MINIMUM COVER TO DUCTS SHALL BE 1500mm.
6. NEW SERVICES TO CROSS BELOW STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
7. NEW SERVICES TO CROSS ABOVE STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
8. REFER TO 3235084-CU-2101-2154 FOR WATER AND WASTEWATER PLAN AND DETAILS

Discipline		CIVIL ENGINEERING
Drawing No.	3235084-CU-2051	Rev. D





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 8. REFER TO 3235084-CU-2101-2154 FOR WATER AND WASTEWATER PLAN AND DETAILS

**ORIGINAL DRAWING
IN COLOUR**

**DETAILED DESIGN
NOT FOR CONSTRUCTION**

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A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date



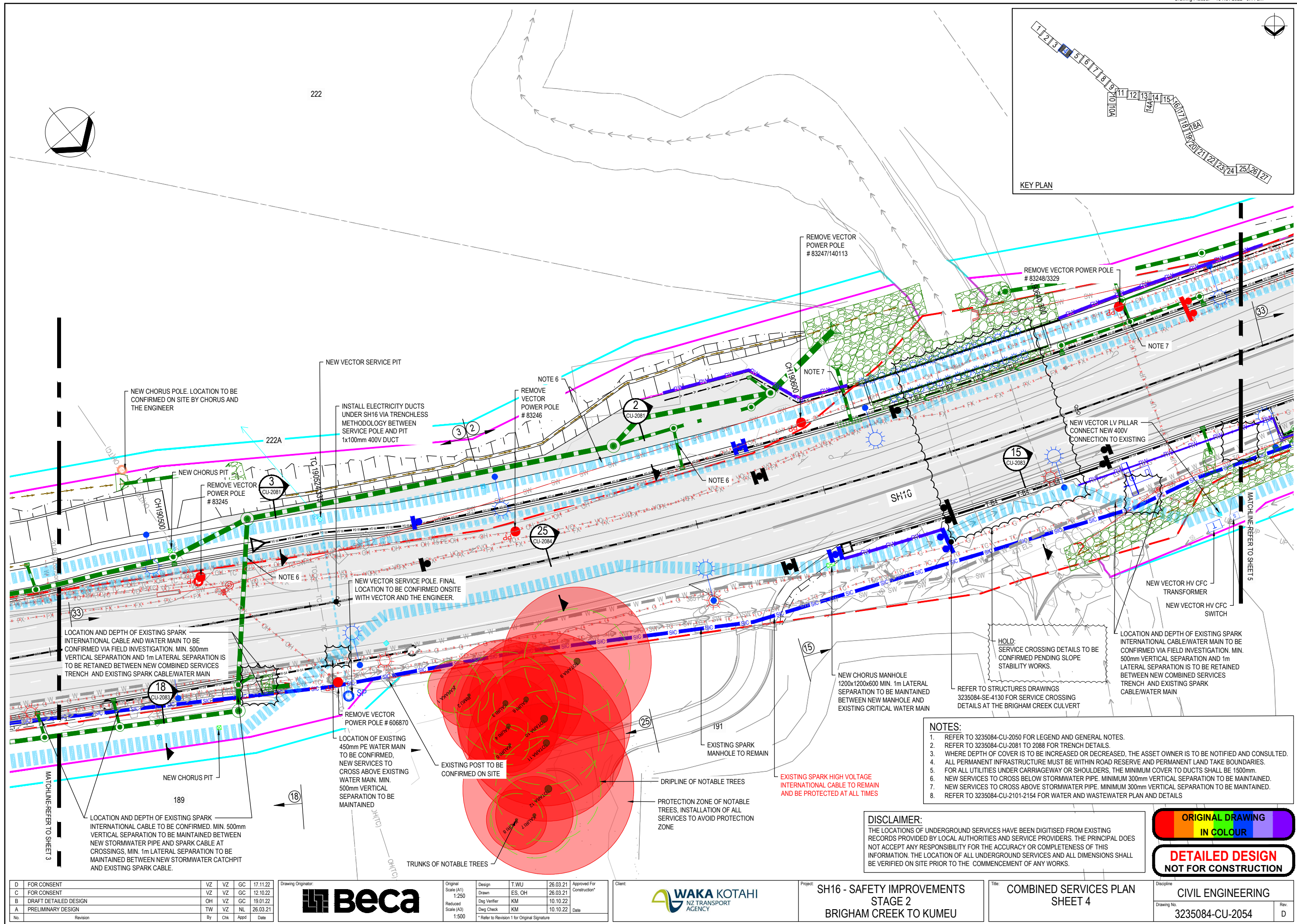
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Reduced Scale (A3)	Design Verifier	KM	10.10.22	Date
1:500	Dwg Check	KM	10.10.22	
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Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 3

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2053
Rev.	D



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A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:

Beca

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Reduced Scale (A3)	Design Check	KM	10.10.22	Date
1:500				

* Refer to Revision 1 for Original Signature

Client:

WAKA KOTAHU
NZ TRANSPORT AGENCY

Project:

SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title:

COMBINED SERVICES PLAN
SHEET 4

Discipline:

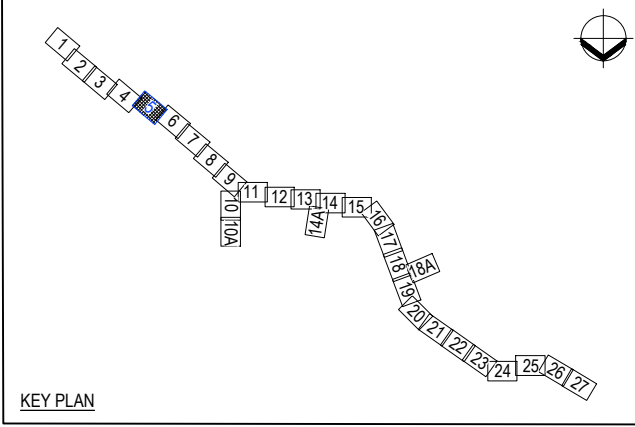
CIVIL ENGINEERING

Drawing No.

3235084-CU-2054

Rev.

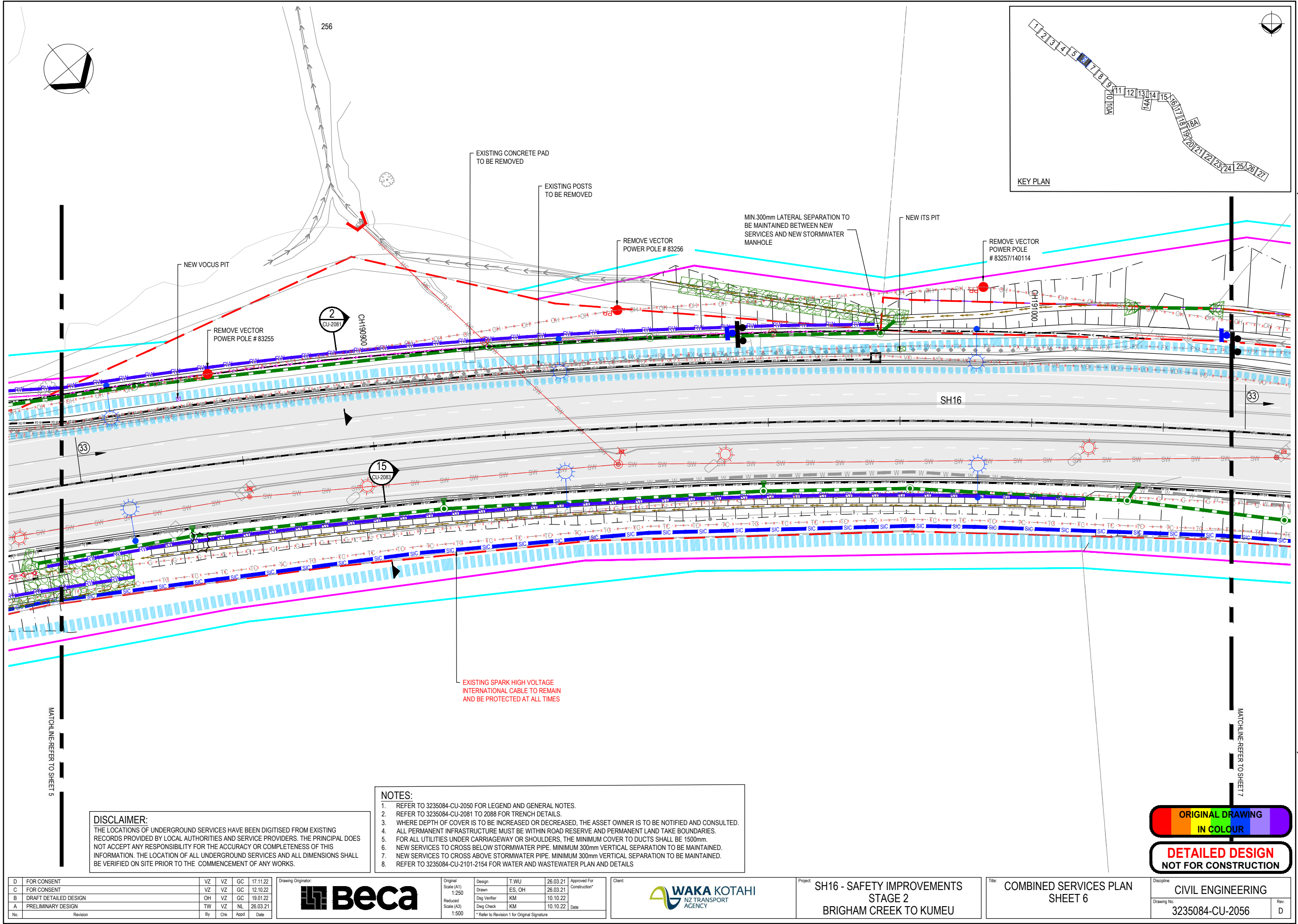
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Document No. 3235084-CU-2051 TO 2077.DWG



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 4. ALL PERMANENT INFRASTRUCTURE MUST BE WITHIN ROAD RESERVE AND PERMANENT LAND TAKE BOUNDARIES.
 5. FOR ALL UTILITIES UNDER CARRIAGEWAY OR SHOULDERS, THE MINIMUM COVER TO DUCTS SHALL BE 1500mm.
 6. NEW SERVICES TO CROSS BELOW STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
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ORIGINAL DRAWING
IN COLOUR

DETAILED DESIGN
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C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
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Drawing Originator:

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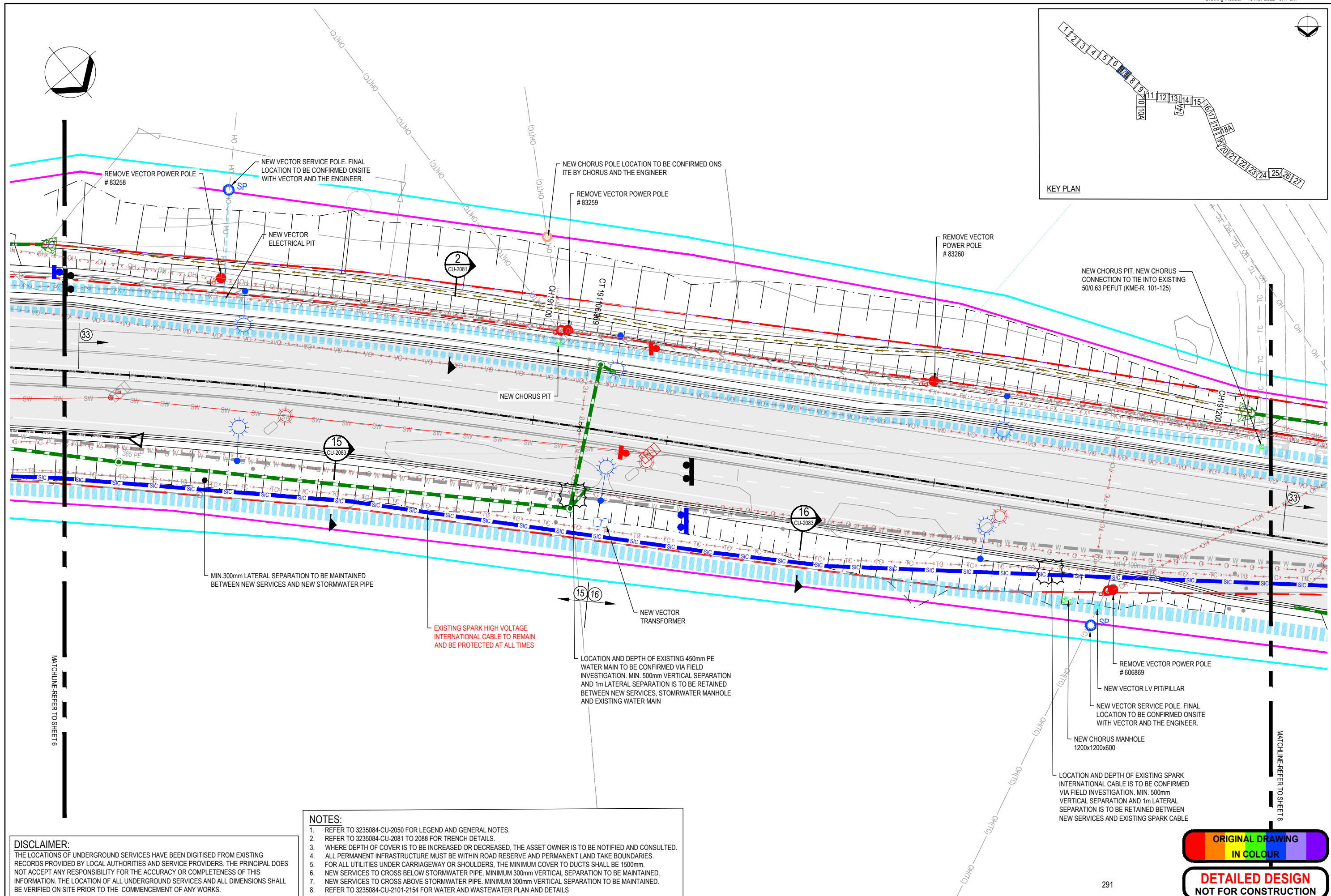
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Client:

Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 6

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2056
Rev.	D



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No.	Revision	By	Chk	Appd	Date

Drawing Originator:

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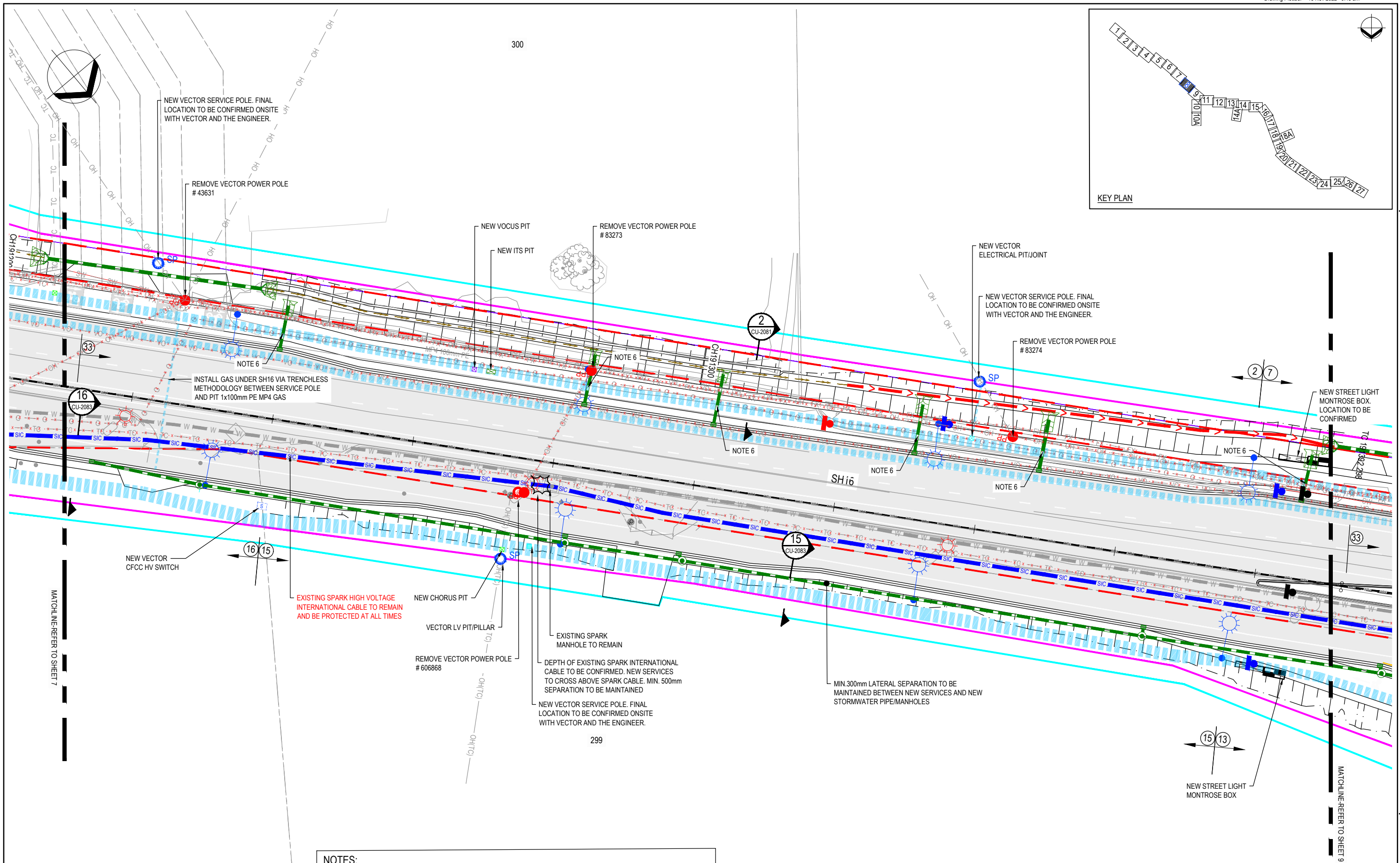
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WAKA KOTAHĪ
NZ TRANSPORT AGENCY

Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 7

Discipline: CIVIL ENGINEERING
Drawing No: 3235084-CU-2057
Rev: D



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 6. NEW SERVICES TO CROSS BELOW STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
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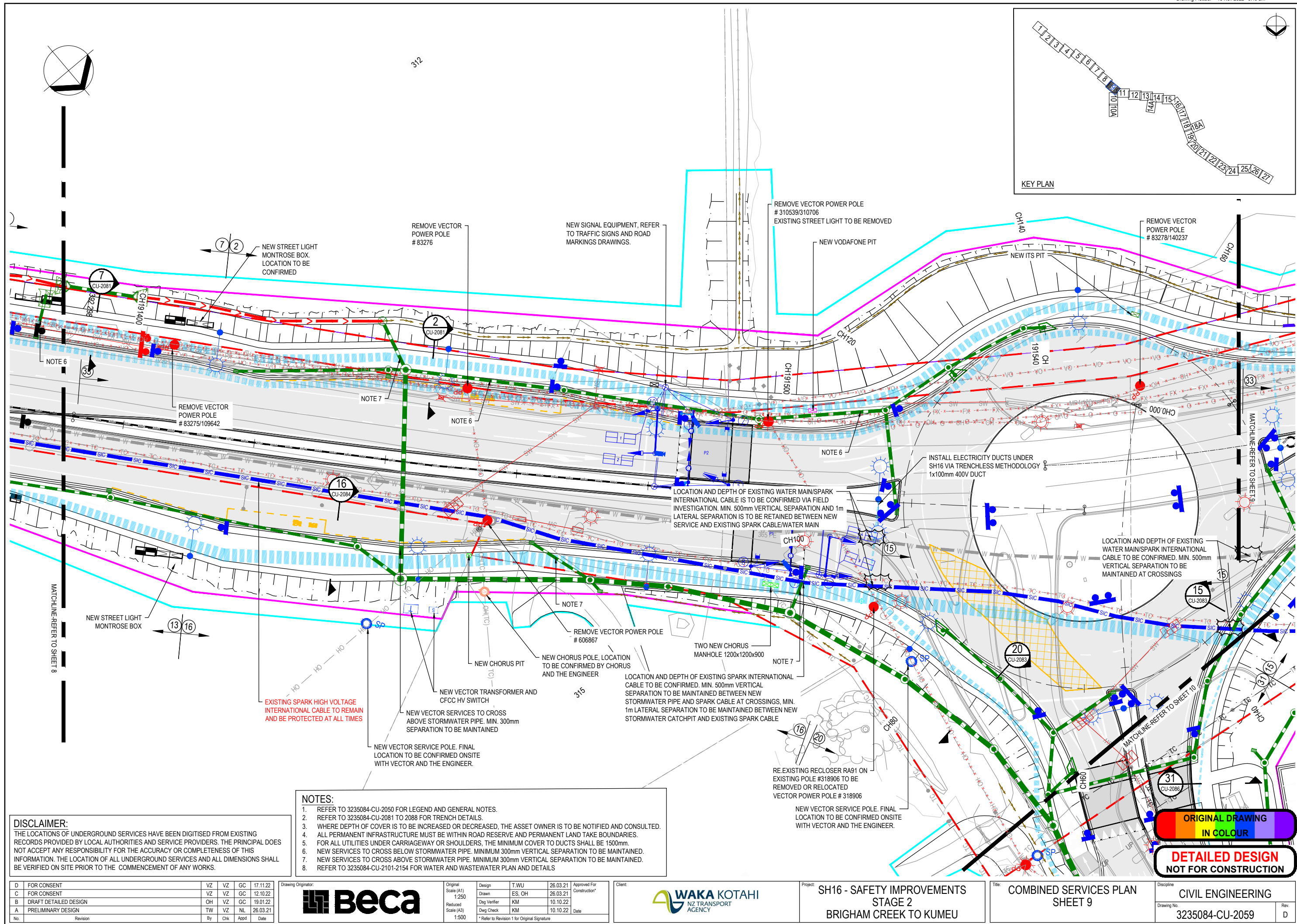


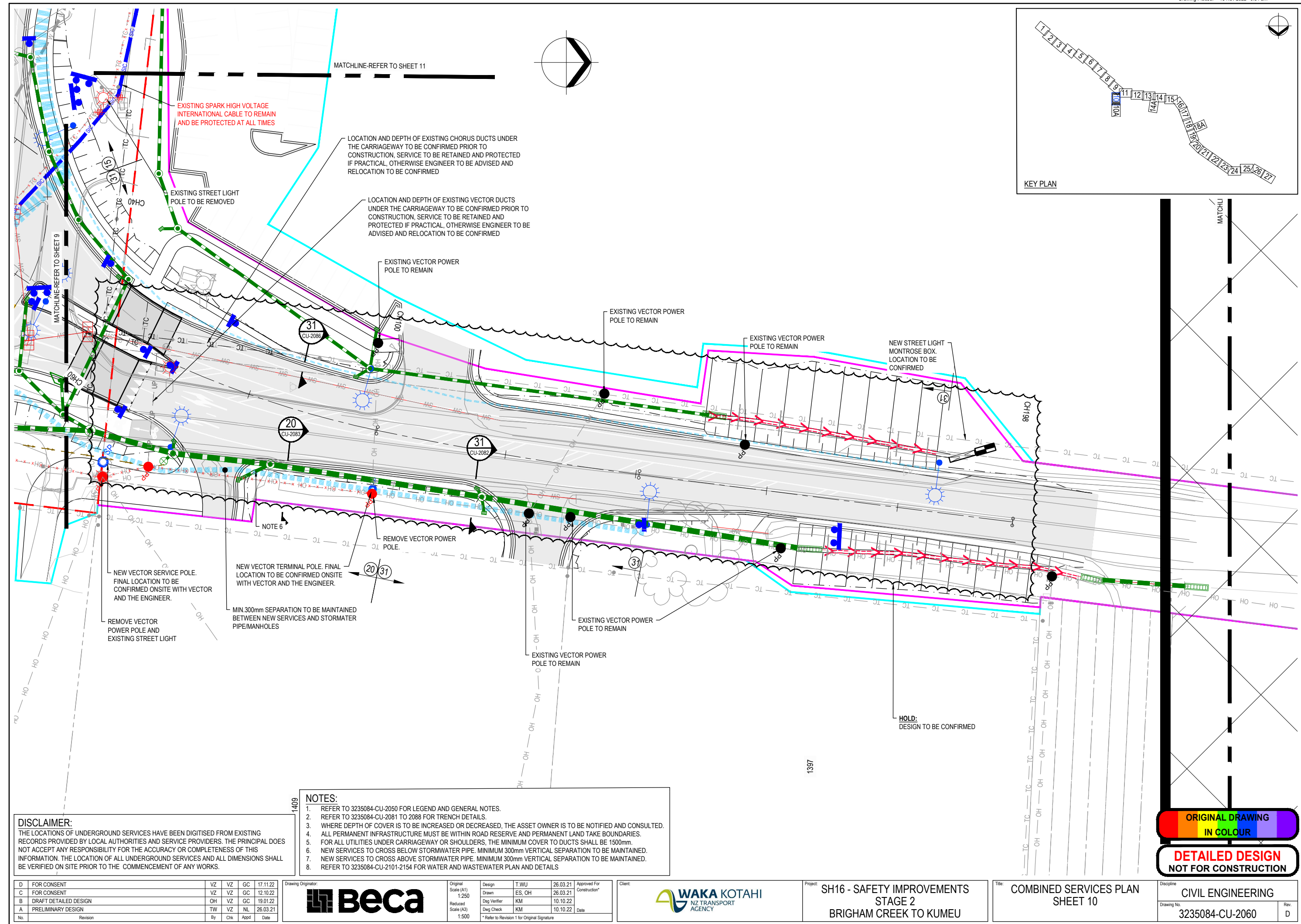
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STAGE 2
BRIGHAM CREEK TO KUMEU

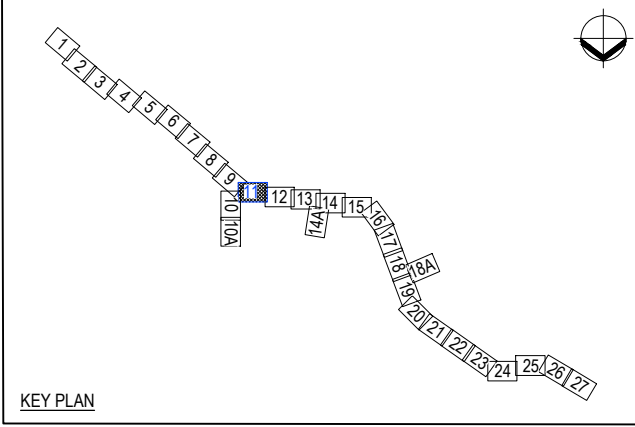
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SHEET 8

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2058
Rev.	D









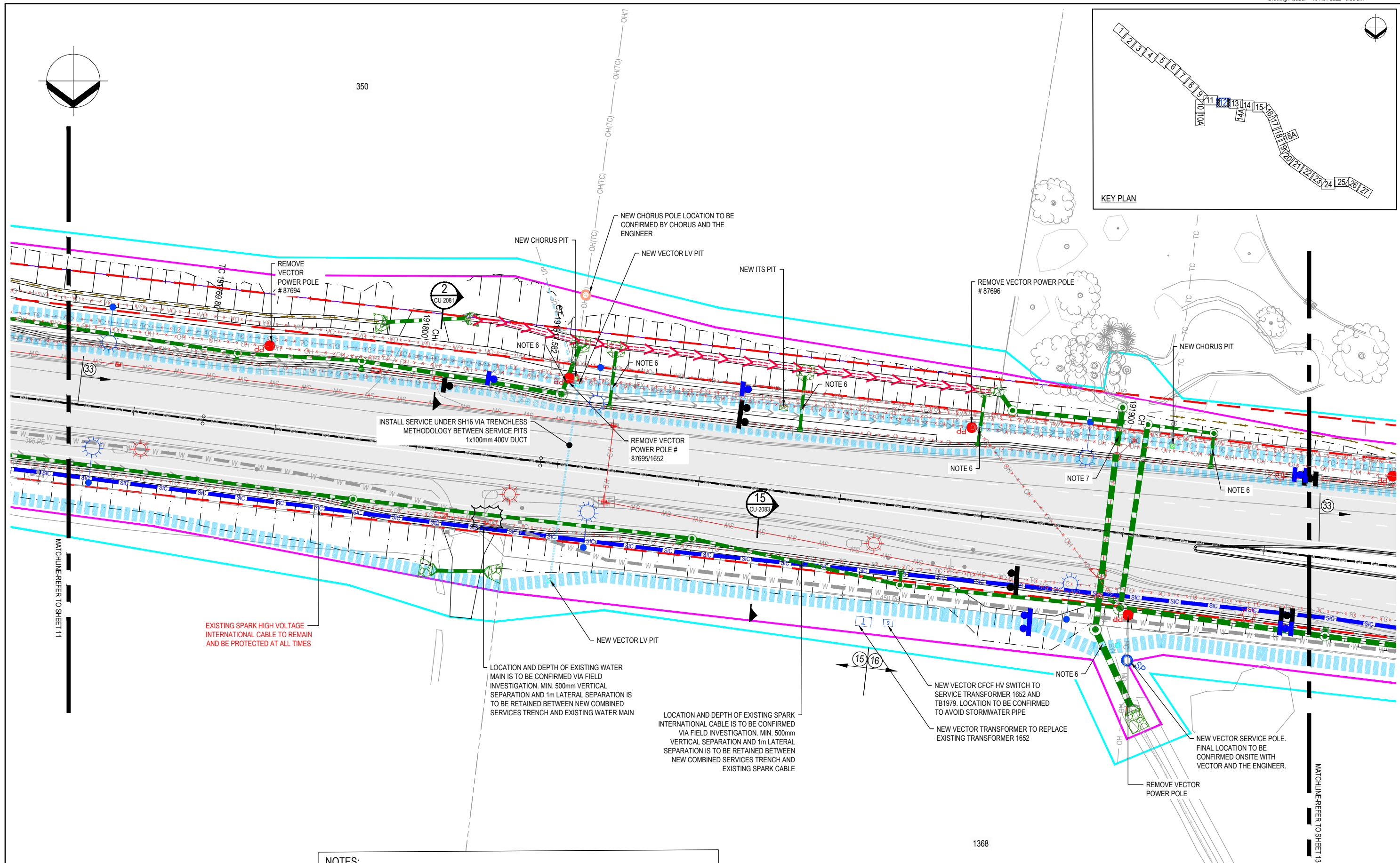
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1. REFER TO 3235084-CU-2050 FOR LEGEND AND GENERAL NOTES.
2. REFER TO 3235084-CU-2081 TO 2088 FOR TRENCH DETAILS.
3. WHERE DEPTH OF COVER IS TO BE INCREASED OR DECREASED, THE ASSET OWNER IS TO BE NOTIFIED AND CONSULTED.
4. ALL PERMANENT INFRASTRUCTURE MUST BE WITHIN ROAD RESERVE AND PERMANENT LAND TAKE BOUNDARIES.
5. FOR ALL UTILITIES UNDER CARRIAGEWAY OR SHOULDERS, THE MINIMUM COVER TO DUCTS SHALL BE 1500mm.
6. NEW SERVICES TO CROSS BELOW STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
7. NEW SERVICES TO CROSS ABOVE STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
8. REFER TO 3235084-CU-2101-2154 FOR WATER AND WASTEWATER PLAN AND DETAILS

**ORIGINAL DRAWING
IN COLOUR**

**DETAILED DESIGN
NOT FOR CONSTRUCTION**

D	FOR CONSENT	VZ	VZ	GC	17.11.22	Drawing Originator: 	Original Scale (A1)	Design	T.WJ	26.03.21	Approved For Construction*	Client: 	Project: SH16 - SAFETY IMPROVEMENTS STAGE 2 BRIGHAM CREEK TO KUMEU	Title: COMBINED SERVICES PLAN SHEET 11	Discipline: CIVIL ENGINEERING
C	FOR CONSENT	VZ	VZ	GC	12.10.22		1:250	Drawn	ES, OH	26.03.21					
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22		Reduced Scale (A3)	Dwg Verifier	KM	10.10.22					
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21		1:500	Dwg Check	KM	10.10.22	Date				
No.	Revision	By	Chk	Appd	Date		* Refer to Revision 1 for Original Signature								



NOTES:

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8. REFER TO 3235084-CU-2101-2154 FOR WATER AND WASTEWATER PLAN AND DETAILS

DISCLAIMER:

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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:

Original Scale (A1)	Design	T.WU	26.03.21	Approved For Construction*
1:250	Drawn	ES, OH	26.03.21	
Reduced Scale (A3)	Design Check	KM	10.10.22	Date
1:500				

* Refer to Revision 1 for Original Signature

Client:

Project:

SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title:

COMBINED SERVICES PLAN
SHEET 12

Discipline:

CIVIL ENGINEERING

Drawing No.:

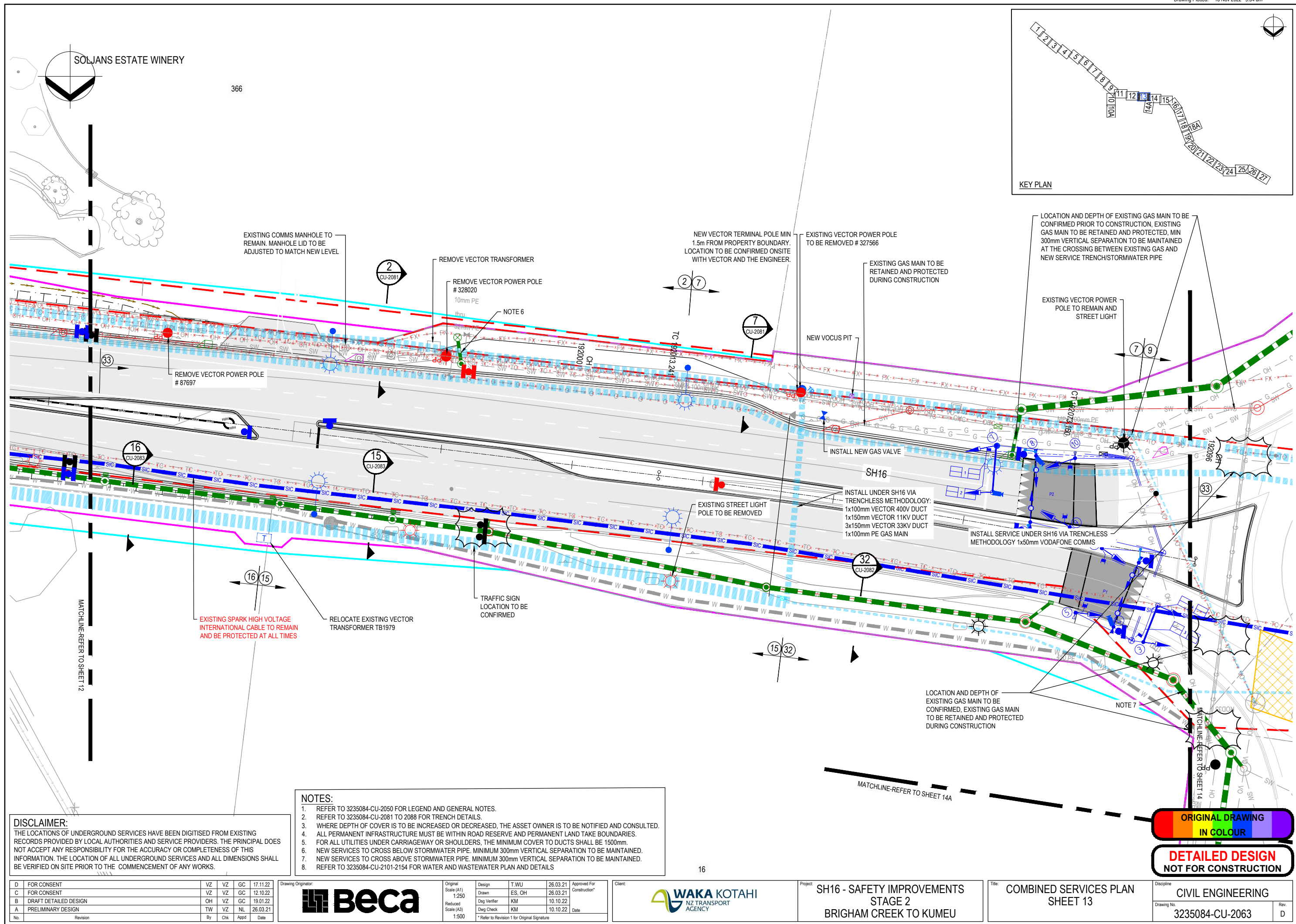
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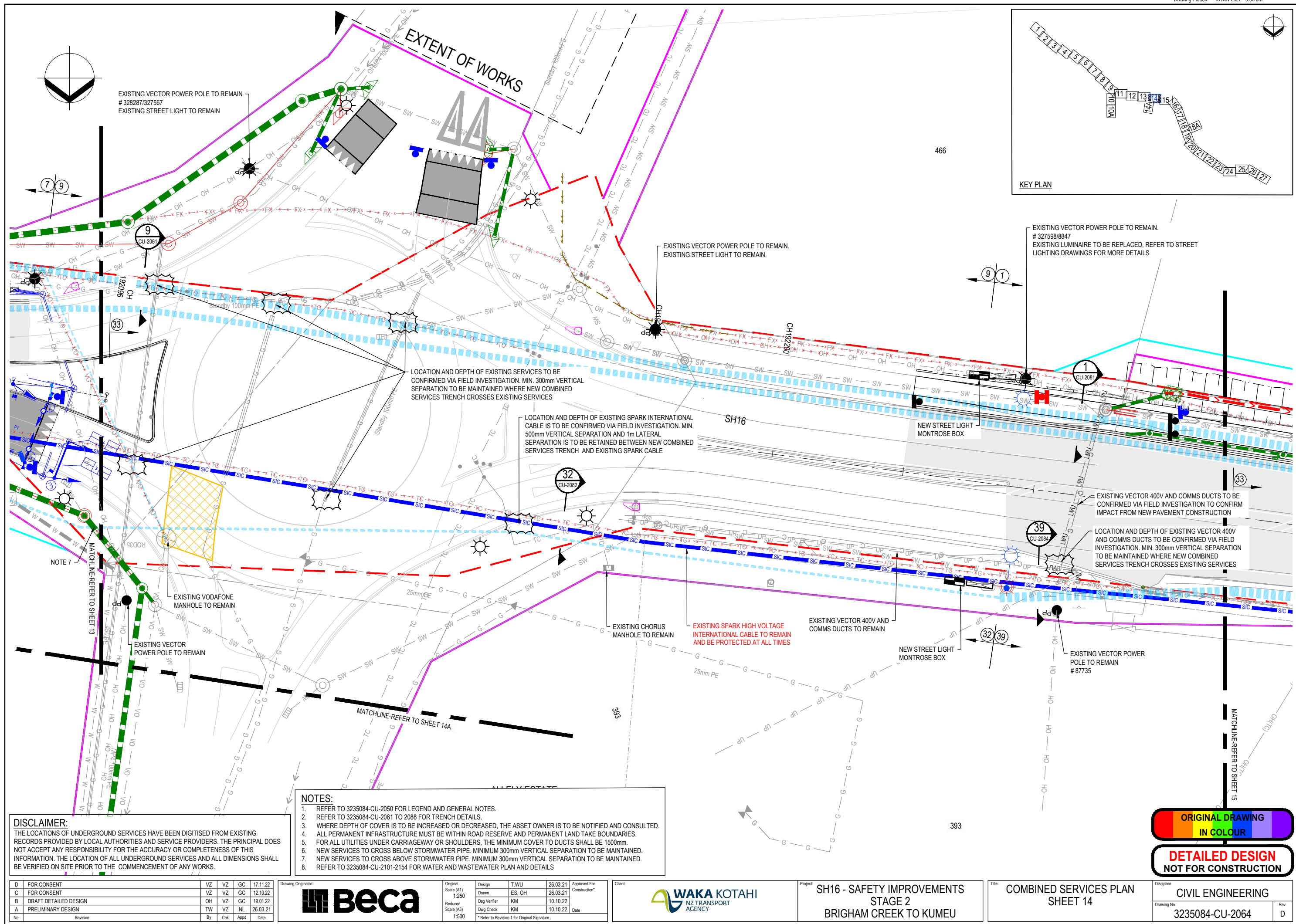
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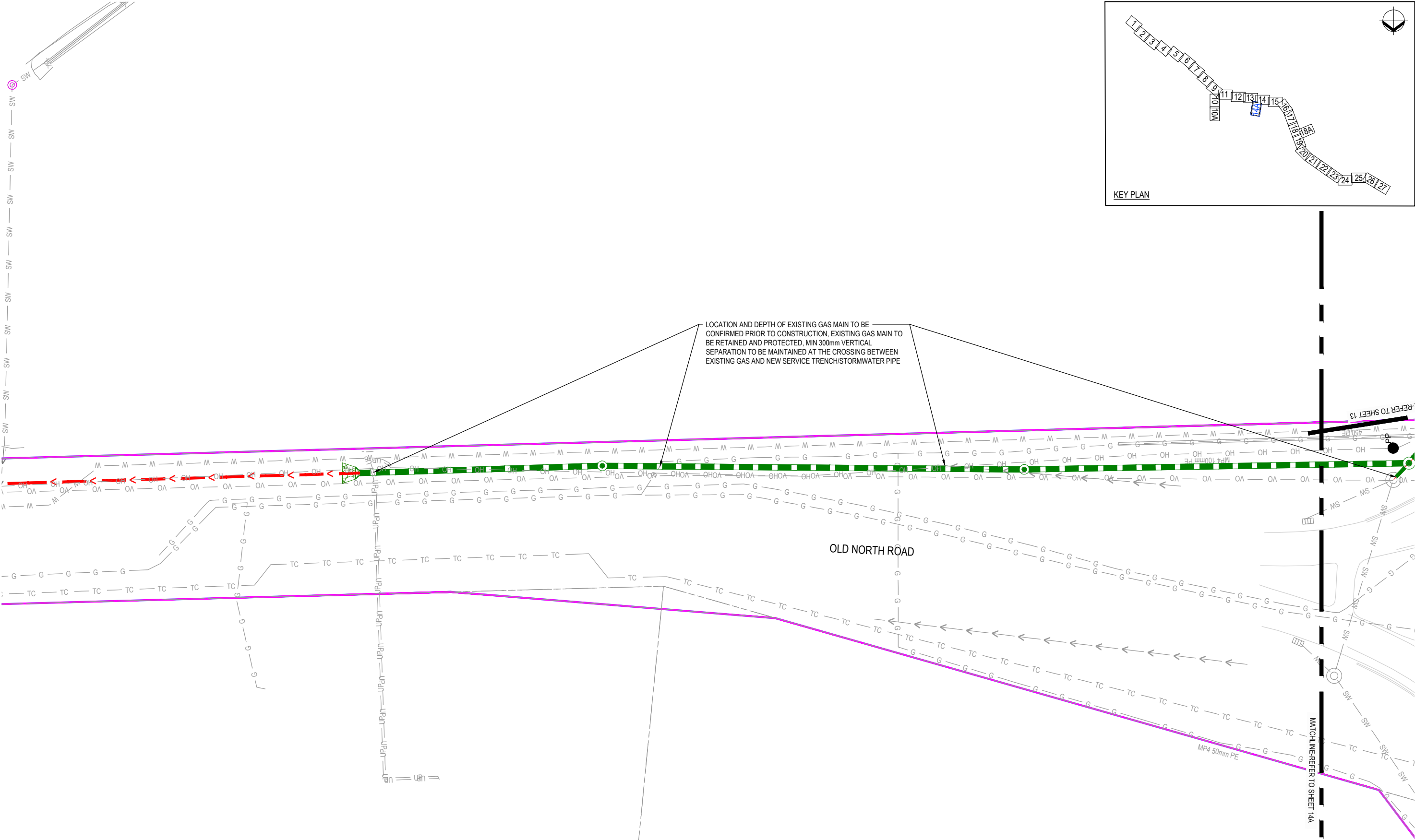
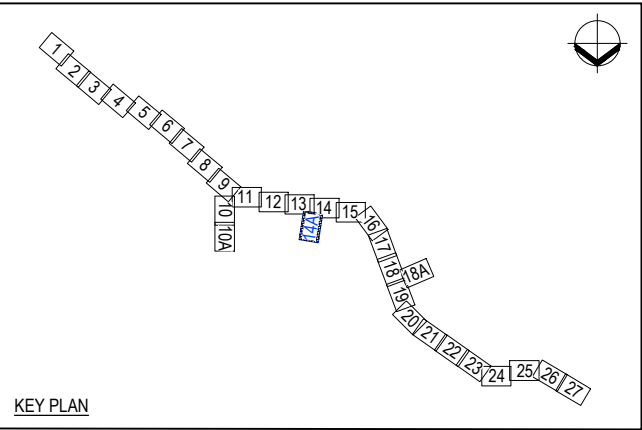
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ORIGINAL DRAWING
IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION







DISCLAIMER:
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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:

Beca

Original Scale (A1)	Design	T.WU	26.03.21	Approved For Construction*
1:250	Drawn	ES, OH	26.03.21	
Reduced Scale (A3)	Design Verifier	KM	10.10.22	Date
1:500	Dwg Check	KM	10.10.22	
	* Refer to Revision 1 for Original Signature			

Client:

WAKA KOTAHU
NZ TRANSPORT AGENCY

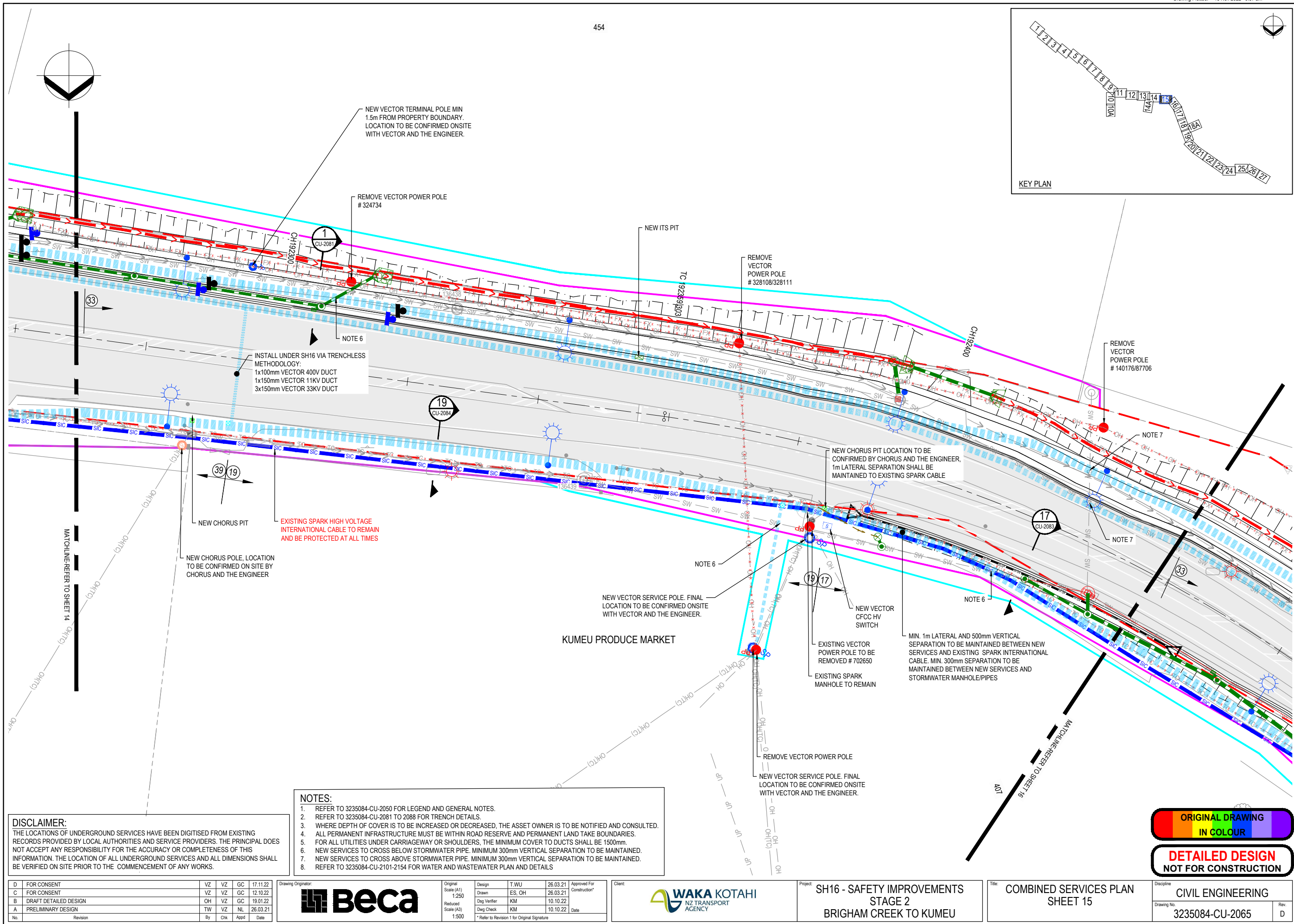
Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

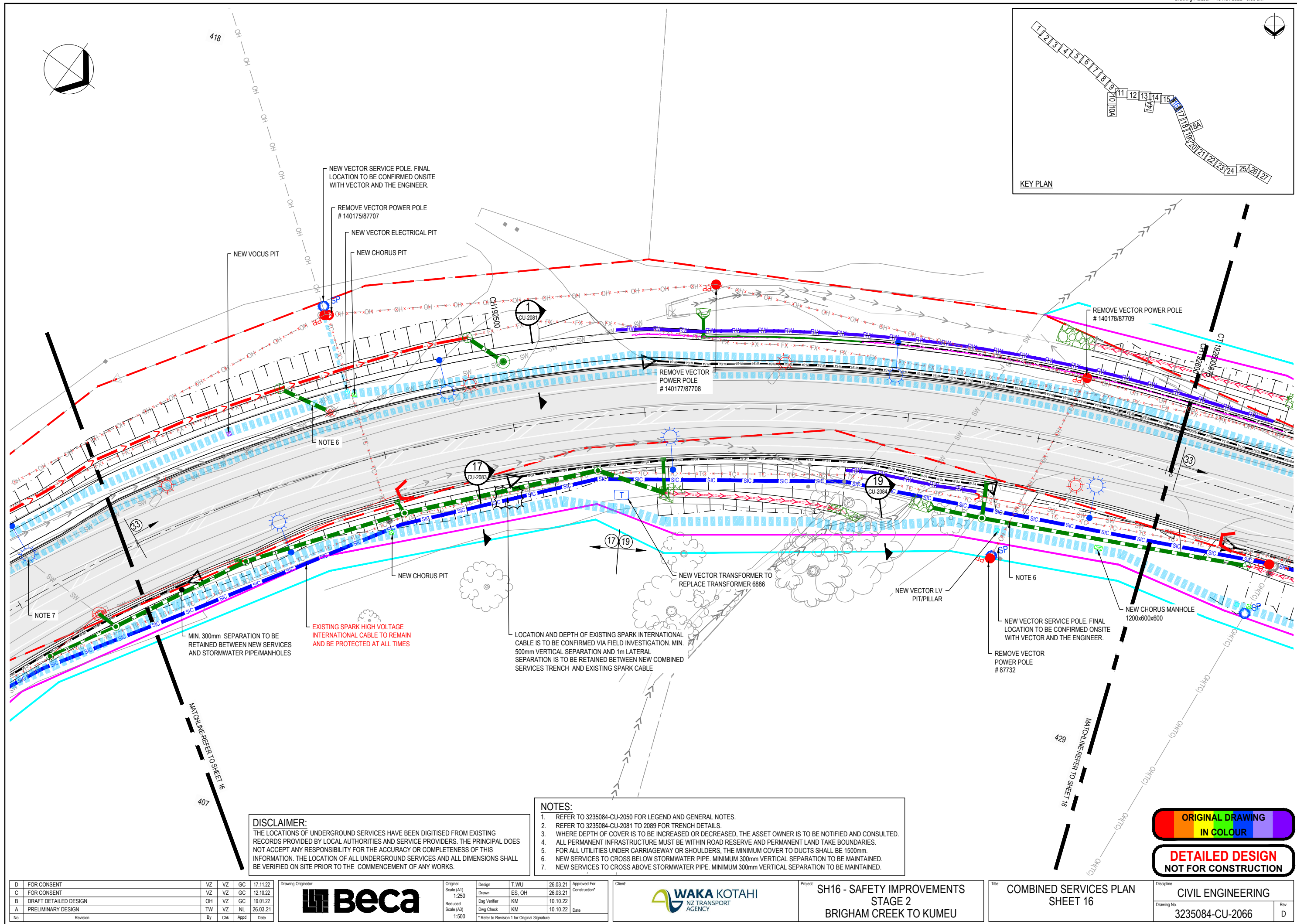
Title: COMBINED SERVICES PLAN
SHEET 14A

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2064A
Rev.	D

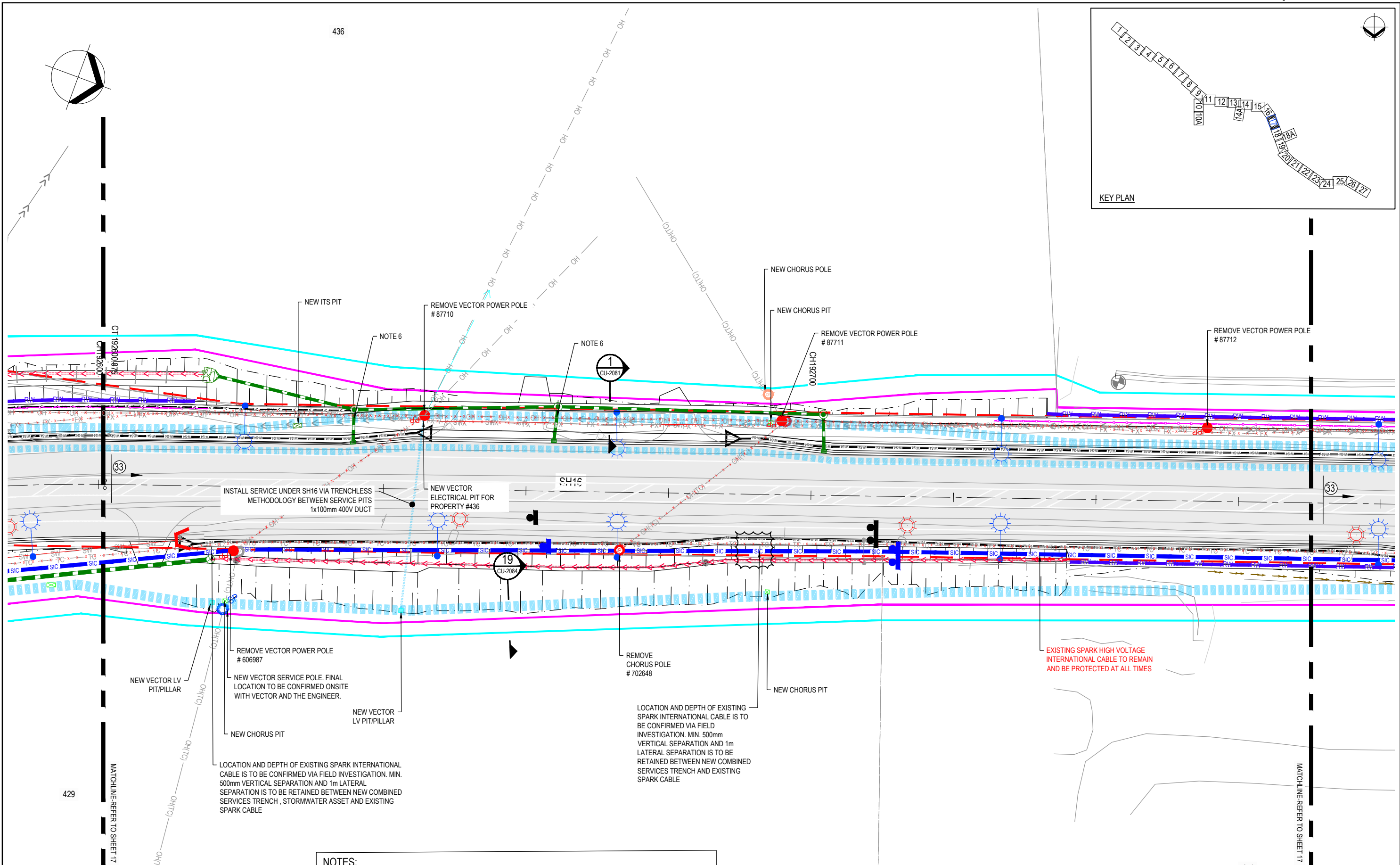
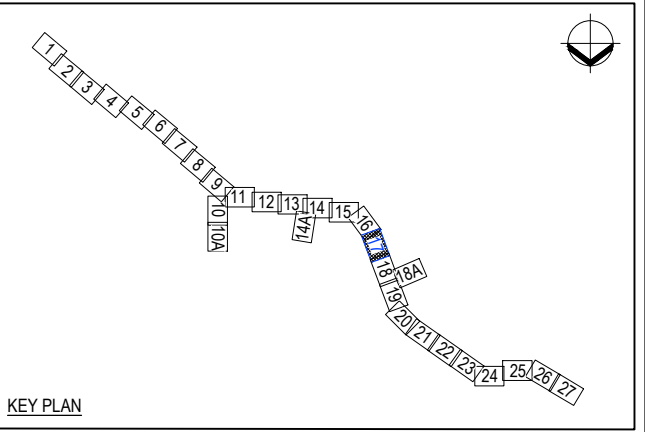
ORIGINAL DRAWING
IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION





436



- NOTES:**
1. REFER TO 3235084-CU-2050 FOR LEGEND AND GENERAL NOTES.
 2. REFER TO 3235084-CU-2081 TO 2088 FOR TRENCH DETAILS.
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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:
Beca

Original Scale (A1)	Design	T.WU	26.03.21	Approved For Construction*
1:250	Drawn	ES, OH	26.03.21	
Reduced Scale (A3)	Dwg Verifier	KM	10.10.22	
1:500	Dwg Check	KM	10.10.22	Date
	* Refer to Revision 1 for Original Signature			

Client:
WAKA KOTAHU
NZ TRANSPORT AGENCY

Project:
SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title:
COMBINED SERVICES PLAN
SHEET 17

451

ORIGINAL DRAWING
IN COLOUR

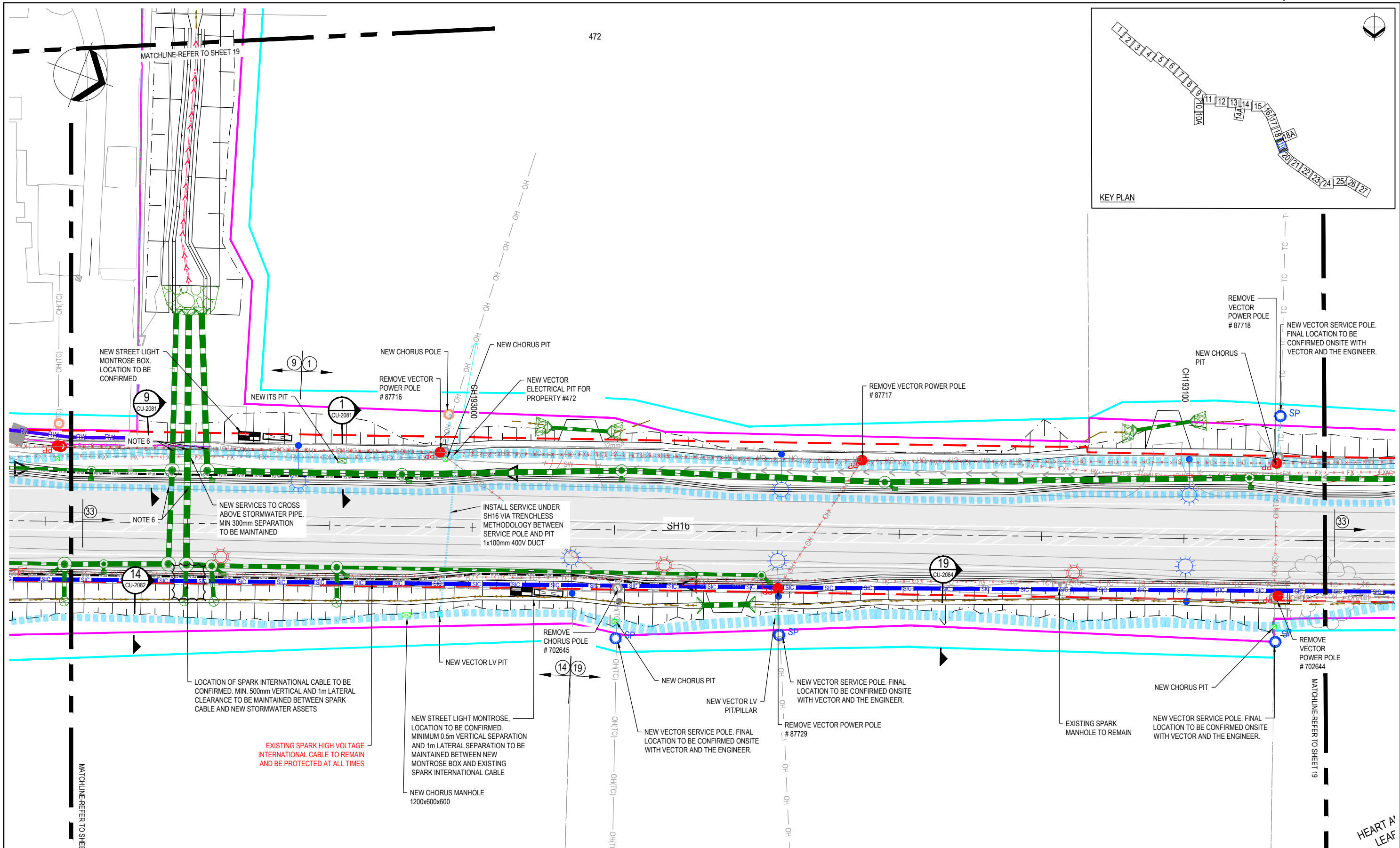
DETAILED DESIGN
NOT FOR CONSTRUCTION

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2067
Rev.	D



472

KEY PLAN



NOTES:

1. REFER TO 3235084-CU-2050 FOR LEGEND AND GENERAL NOTES.
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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:

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1:250	Drawn	ES, OH	26.03.21	
Reduced Scale (A3)	Design Check	KM	10.10.22	Date
1:500				

* Refer to Revision 1 for Original Signature

Client:	WAKA KOTAHU NZ TRANSPORT AGENCY
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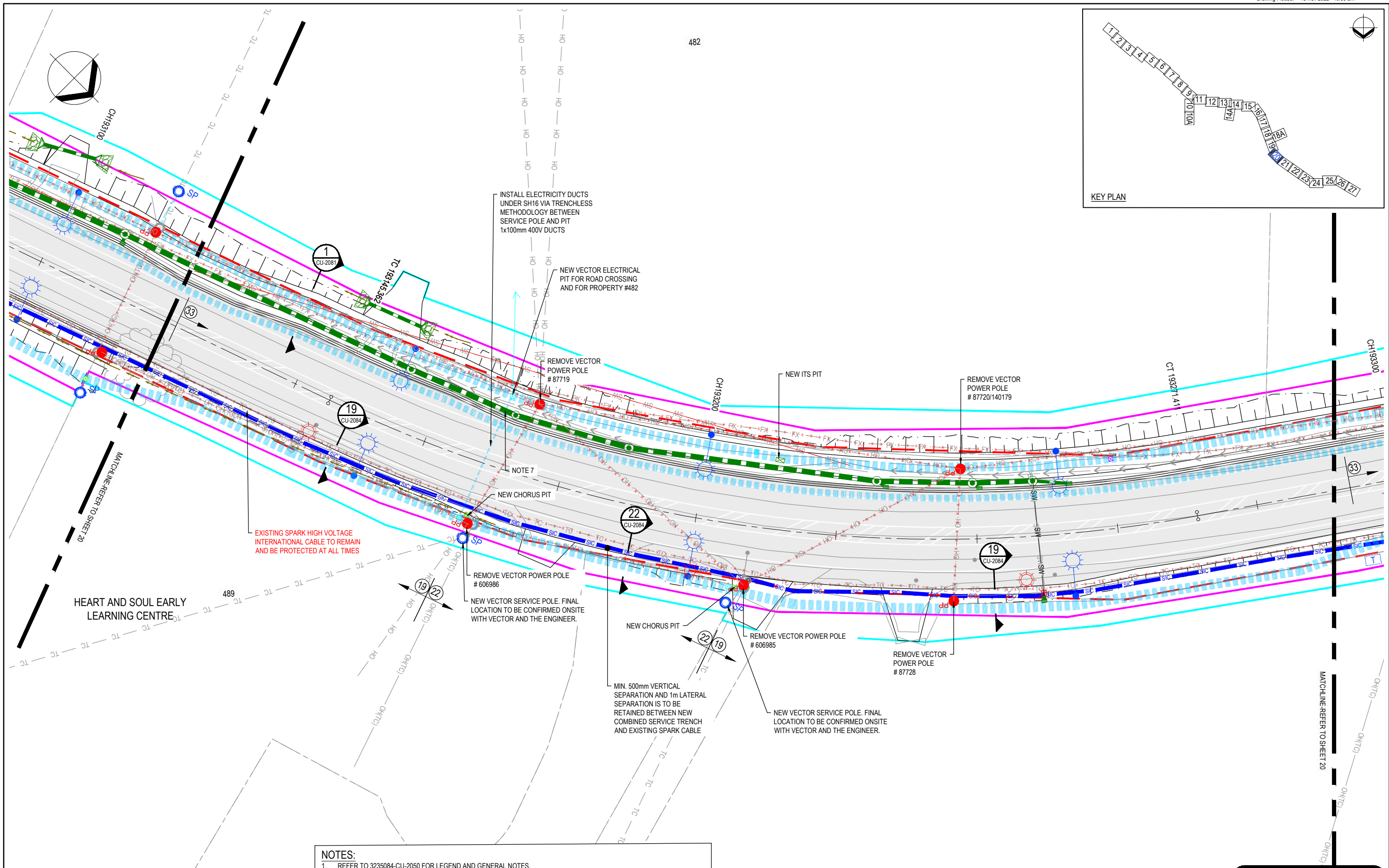
Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 19

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2069
Rev.	D

ORIGINAL DRAWING
IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION

**DISCLAIMER:**

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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:

Original Scale (A1)

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Reduced Scale (A3)

1:500

Design

T.WU

26.03.21

Approved For Construction*

Drawn

ES, OH

26.03.21

Date

Dwg Verifier

KM

10.10.22

Date

Dwg Check

KM

10.10.22

Date

* Refer to Revision 1 for Original Signature

Client:

Project:

SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title:

COMBINED SERVICES PLAN
SHEET 20

Discipline

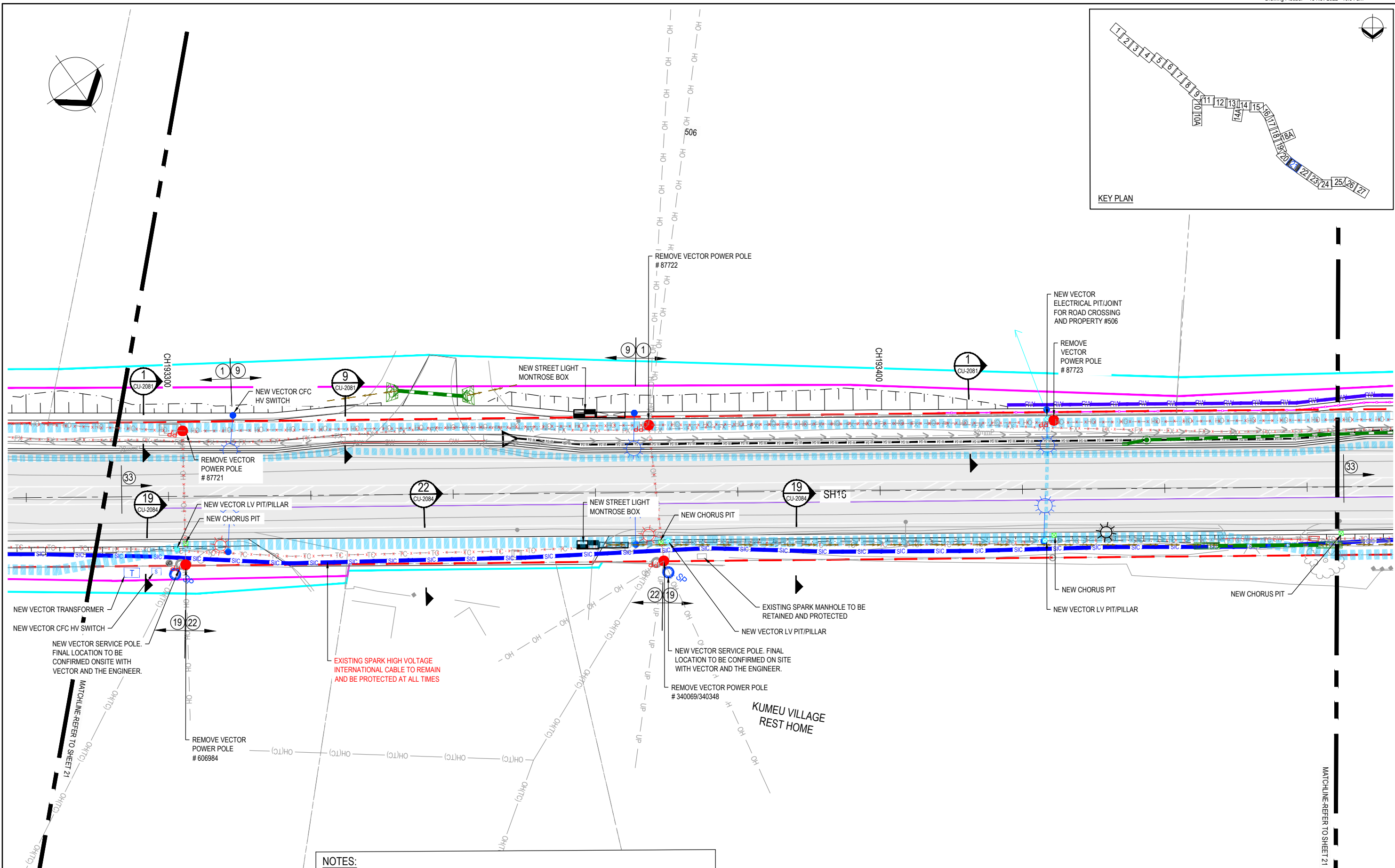
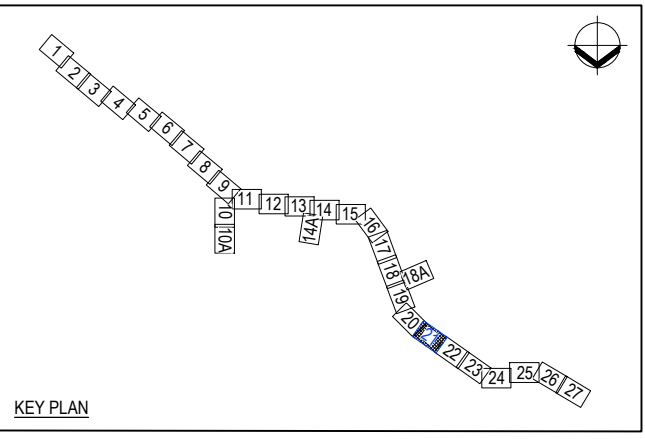
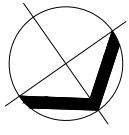
CIVIL ENGINEERING

Drawing No.

3235084-CU-2070

Rev.

D



- NOTES:**
1. REFER TO 3235084-CU-2050 FOR LEGEND AND GENERAL NOTES.
 2. REFER TO 3235084-CU-2081 TO 2088 FOR TRENCH DETAILS.
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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.21
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date



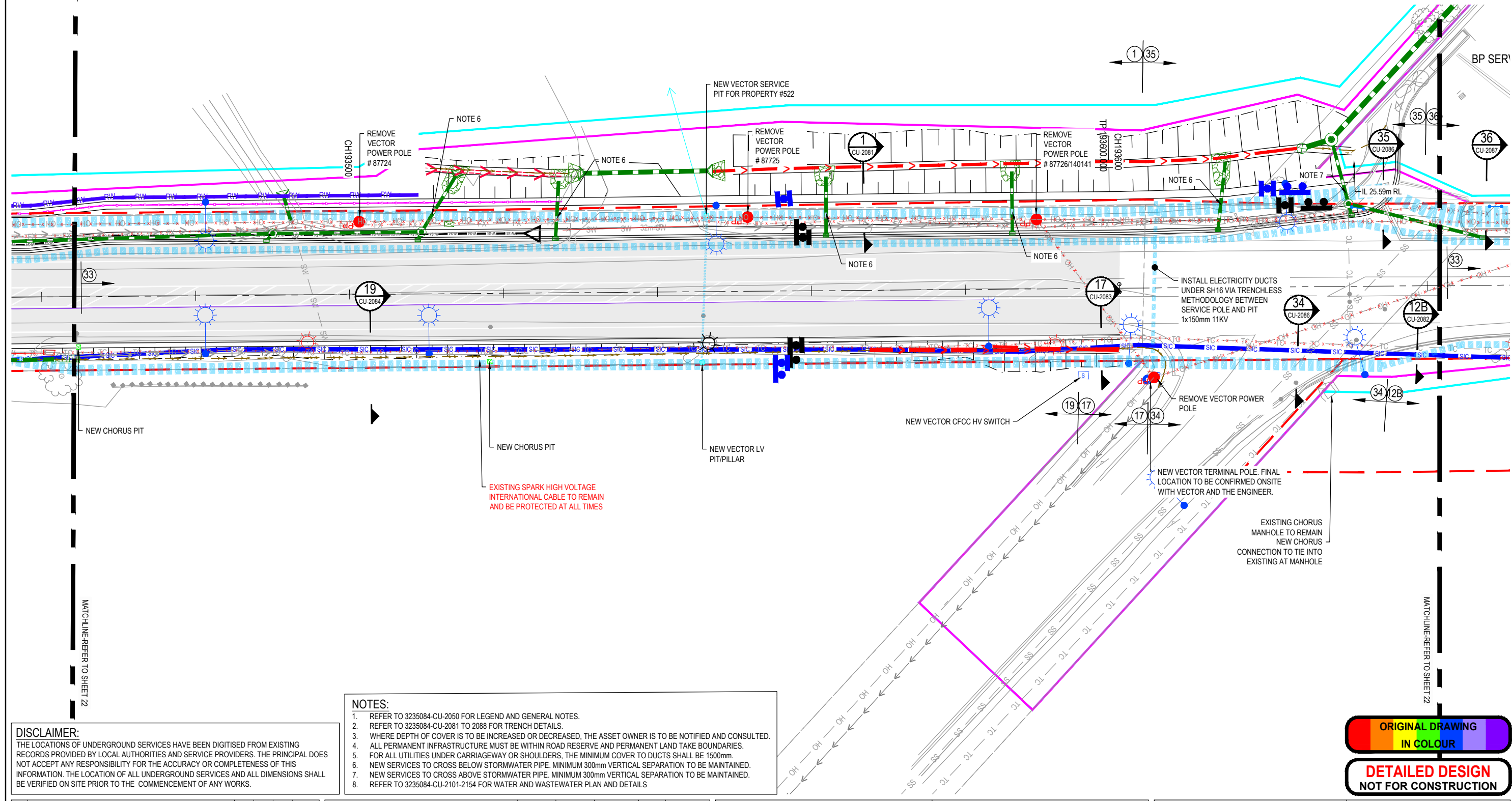
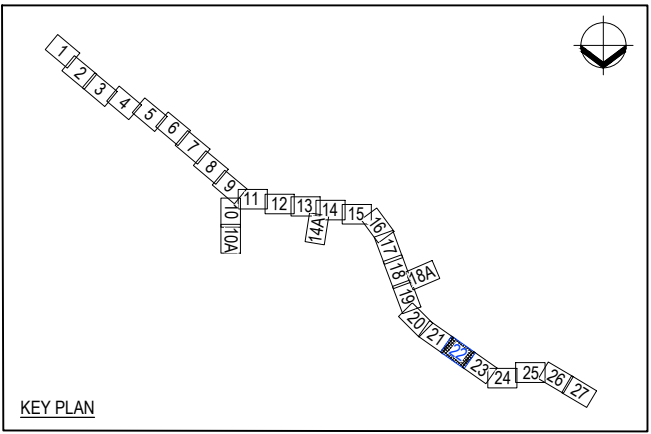
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Reduced Scale (A3)	Dwg Verifier	KM	10.10.22	
1:500	Dwg Check	KM	10.10.22	Date
	* Refer to Revision 1 for Original Signature			



Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 21

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2071
Rev.	D



DISCLAIMER:
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- NOTES:**
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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date



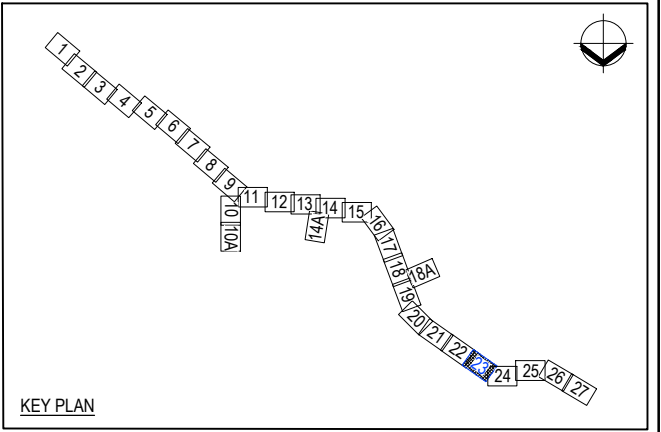
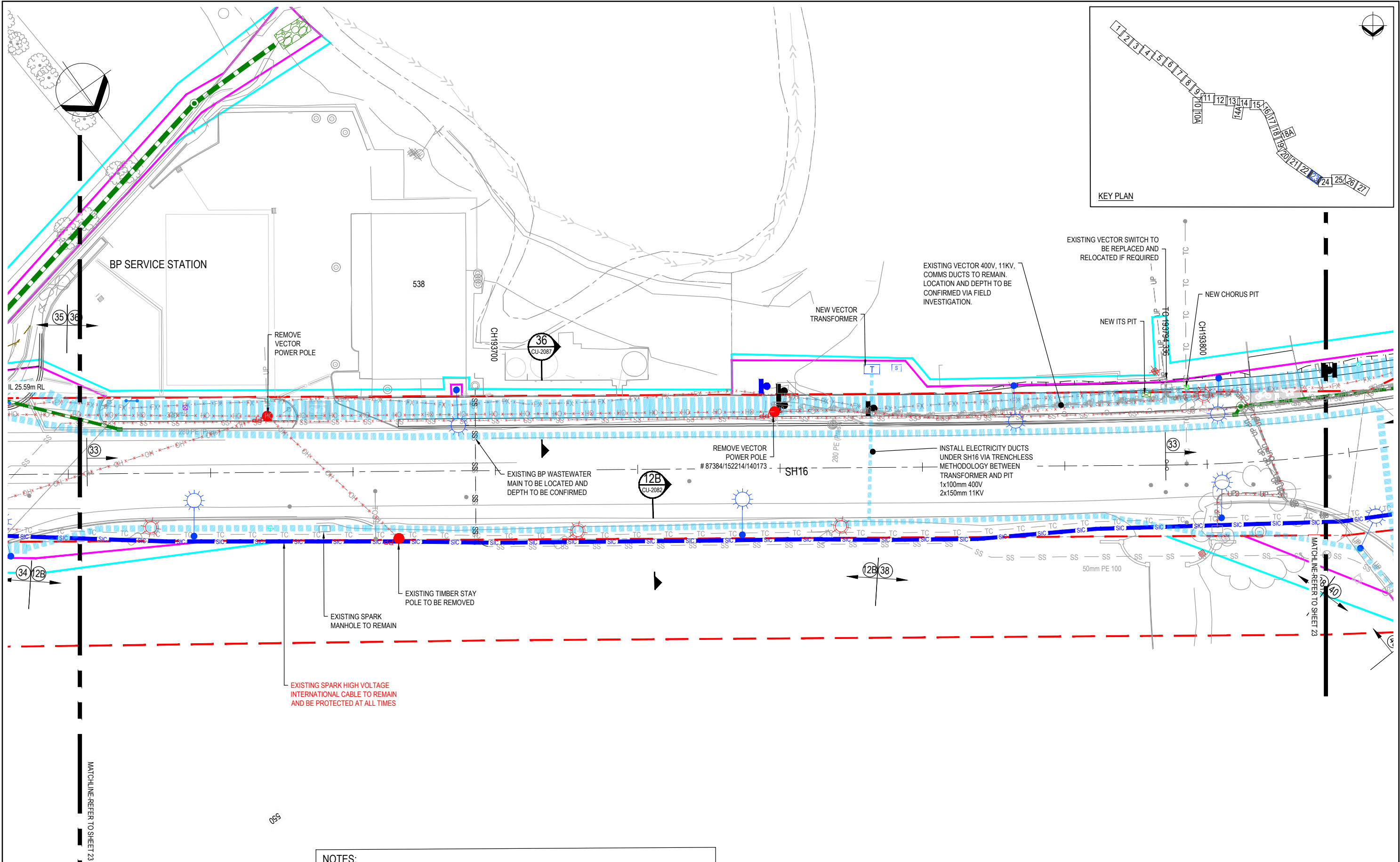
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Reduced Scale (A3)	Design	KM	10.10.22	
1:500	Check	KM	10.10.22	
	* Refer to Revision 1 for Original Signature			



Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 22

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2072
Rev.	D



DISCLAIMER:
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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date



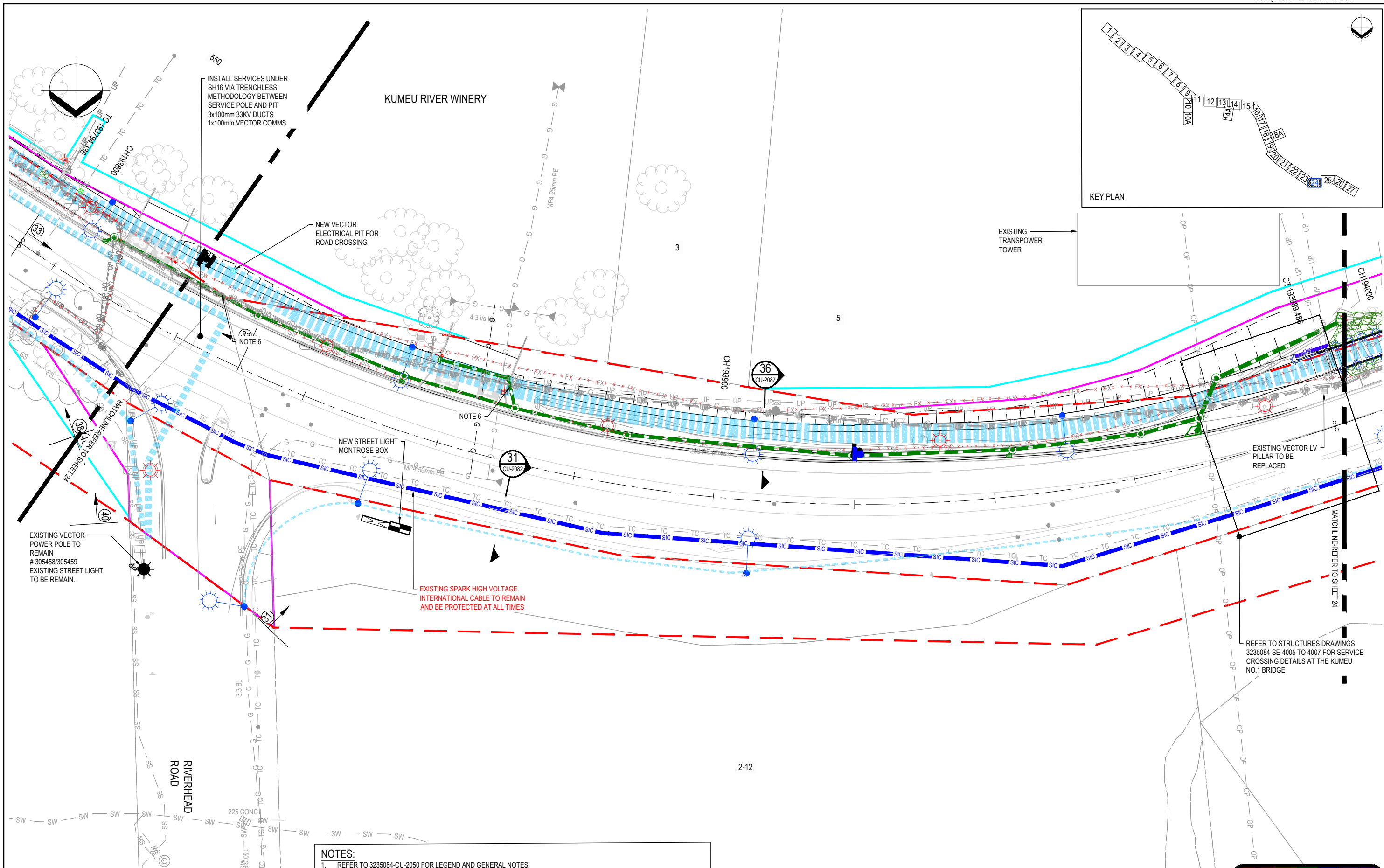
Original Scale (A1)	Design	T.WU	26.03.21	Approved For Construction*
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Reduced Scale (A3)	Design	KM	10.10.22	Date
1:500	Dwg Check	KM	10.10.22	
	* Refer to Revision 1 for Original Signature			



Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 23

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2073
Rev.	D



DISCLAIMER:
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2. REFER TO 3235084-CU-2081 TO 2088 FOR TRENCH DETAILS.
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D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:



Original Scale (A1)	Design	T.WU	26.03.21	Approved For Construction*
1:250	Drawn	ES. OH	26.03.21	
Reduced Scale (A3)	Dwg Verifier	KM	10.10.22	Date
1:500	Dwg Check	KM	10.10.22	
	* Refer to Revision 1 for Original Signature			

Client:

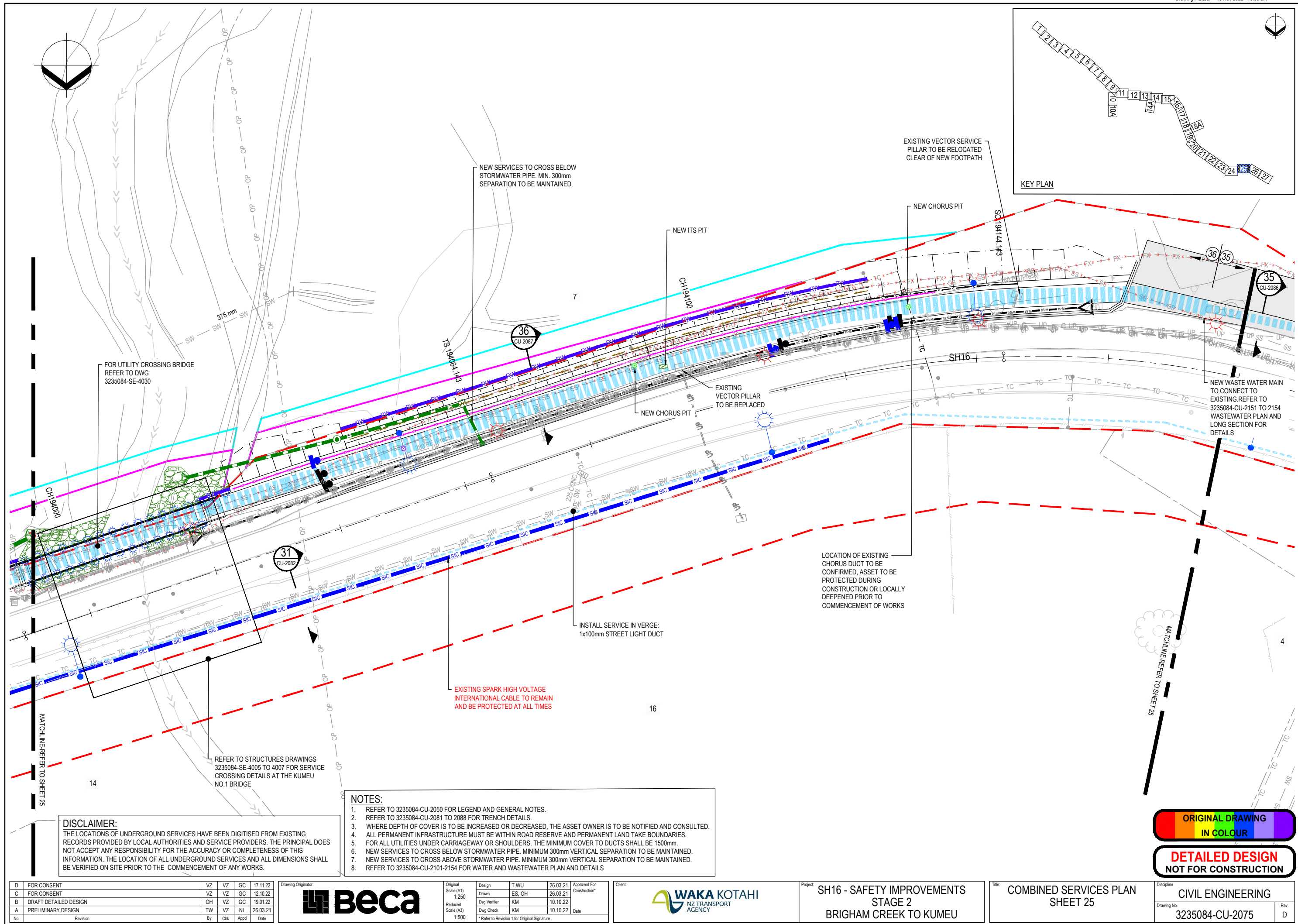


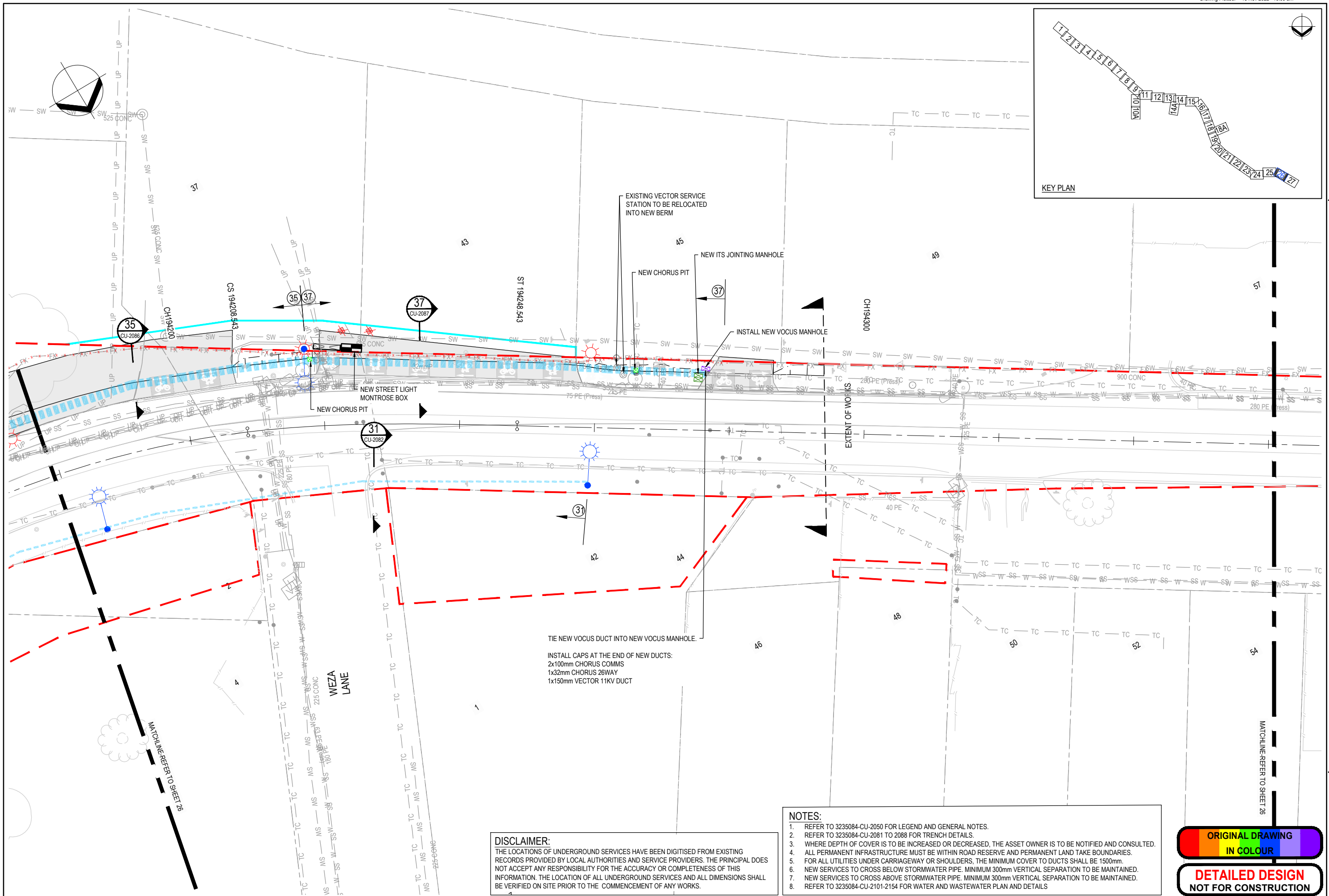
Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 24

Discipline: CIVIL ENGINEERING
Drawing No. 3235084-CU-2074
Rev. D







D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:

Beca

Design	T.WU	26.03.21	Approved For Construction*
Drawn	ES. OH	26.03.21	
Dwg Verifier	KM	10.10.22	
Dwg Check	KM	10.10.22	
* Refer to Revision 1 for Original Signature			

Client:

WAKA KOTAHU
NZ TRANSPORT AGENCY

Project: SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU

Title: COMBINED SERVICES PLAN
SHEET 26

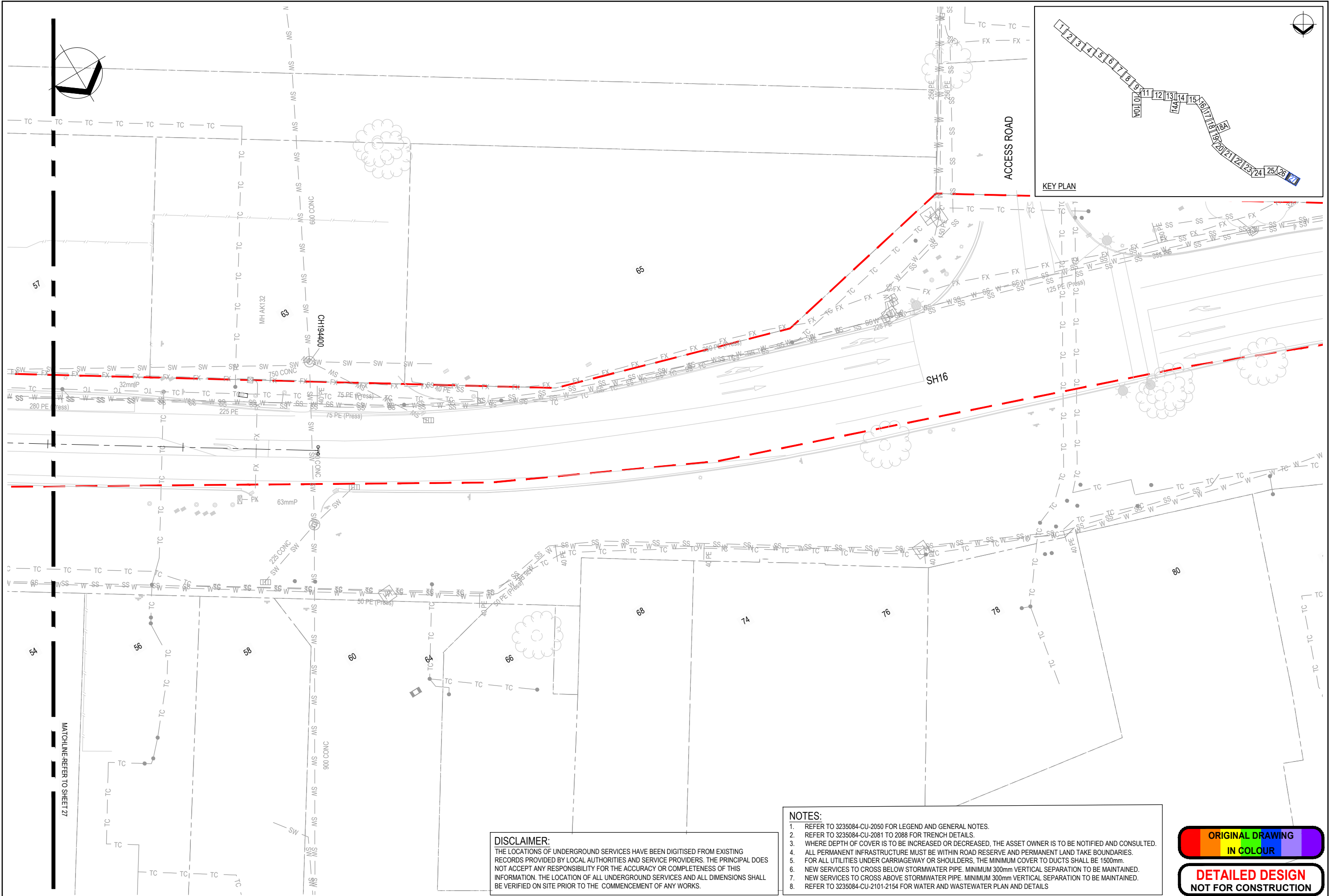
Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2076
Rev.	D

DISCLAIMER:
THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN DIGITISED FROM EXISTING RECORDS PROVIDED BY LOCAL AUTHORITIES AND SERVICE PROVIDERS. THE PRINCIPAL DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THIS INFORMATION. THE LOCATION OF ALL UNDERGROUND SERVICES AND ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORKS.

- NOTES:**
1. REFER TO 3235084-CU-2050 FOR LEGEND AND GENERAL NOTES.
 2. REFER TO 3235084-CU-2081 TO 2088 FOR TRENCH DETAILS.
 3. WHERE DEPTH OF COVER IS TO BE INCREASED OR DECREASED, THE ASSET OWNER IS TO BE NOTIFIED AND CONSULTED.
 4. ALL PERMANENT INFRASTRUCTURE MUST BE WITHIN ROAD RESERVE AND PERMANENT LAND TAKE BOUNDARIES.
 5. FOR ALL UTILITIES UNDER CARRIAGEWAY OR SHOULDERS, THE MINIMUM COVER TO DUCTS SHALL BE 1500mm.
 6. NEW SERVICES TO CROSS BELOW STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
 7. NEW SERVICES TO CROSS ABOVE STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
 8. REFER TO 3235084-CU-2101-2154 FOR WATER AND WASTEWATER PLAN AND DETAILS

ORIGINAL DRAWING
IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION



D	FOR CONSENT	VZ	VZ	GC	17.11.22
C	FOR CONSENT	VZ	VZ	GC	12.10.22
B	DRAFT DETAILED DESIGN	OH	VZ	GC	19.01.22
A	PRELIMINARY DESIGN	TW	VZ	NL	26.03.21
No.	Revision	By	Chk	Appd	Date

Drawing Originator:

Beca

Original Scale (A1)	1:250	Design	T.WU	26.03.21	Approved For Construction*
Reduced Scale (A3)	1:500	Drawn	ES. OH	26.03.21	
		Design Verifier	KM	10.10.22	
		Dwg Check	KM	10.10.22	
		* Refer to Revision 1 for Original Signature			

Client:

WAKA KOTAHU
NZ TRANSPORT AGENCY

Project:

**SH16 - SAFETY IMPROVEMENTS
STAGE 2
BRIGHAM CREEK TO KUMEU**

Title:

**COMBINED SERVICES PLAN
SHEET 27**

Discipline	CIVIL ENGINEERING
Drawing No.	3235084-CU-2077
Rev.	D

DISCLAIMER:
THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN DIGITISED FROM EXISTING RECORDS PROVIDED BY LOCAL AUTHORITIES AND SERVICE PROVIDERS. THE PRINCIPAL DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THIS INFORMATION. THE LOCATION OF ALL UNDERGROUND SERVICES AND ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORKS.

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 7. NEW SERVICES TO CROSS ABOVE STORMWATER PIPE. MINIMUM 300mm VERTICAL SEPARATION TO BE MAINTAINED.
 8. REFER TO 3235084-CU-2101-2154 FOR WATER AND WASTEWATER PLAN AND DETAILS

**ORIGINAL DRAWING
IN COLOUR**

**DETAILED DESIGN
NOT FOR CONSTRUCTION**