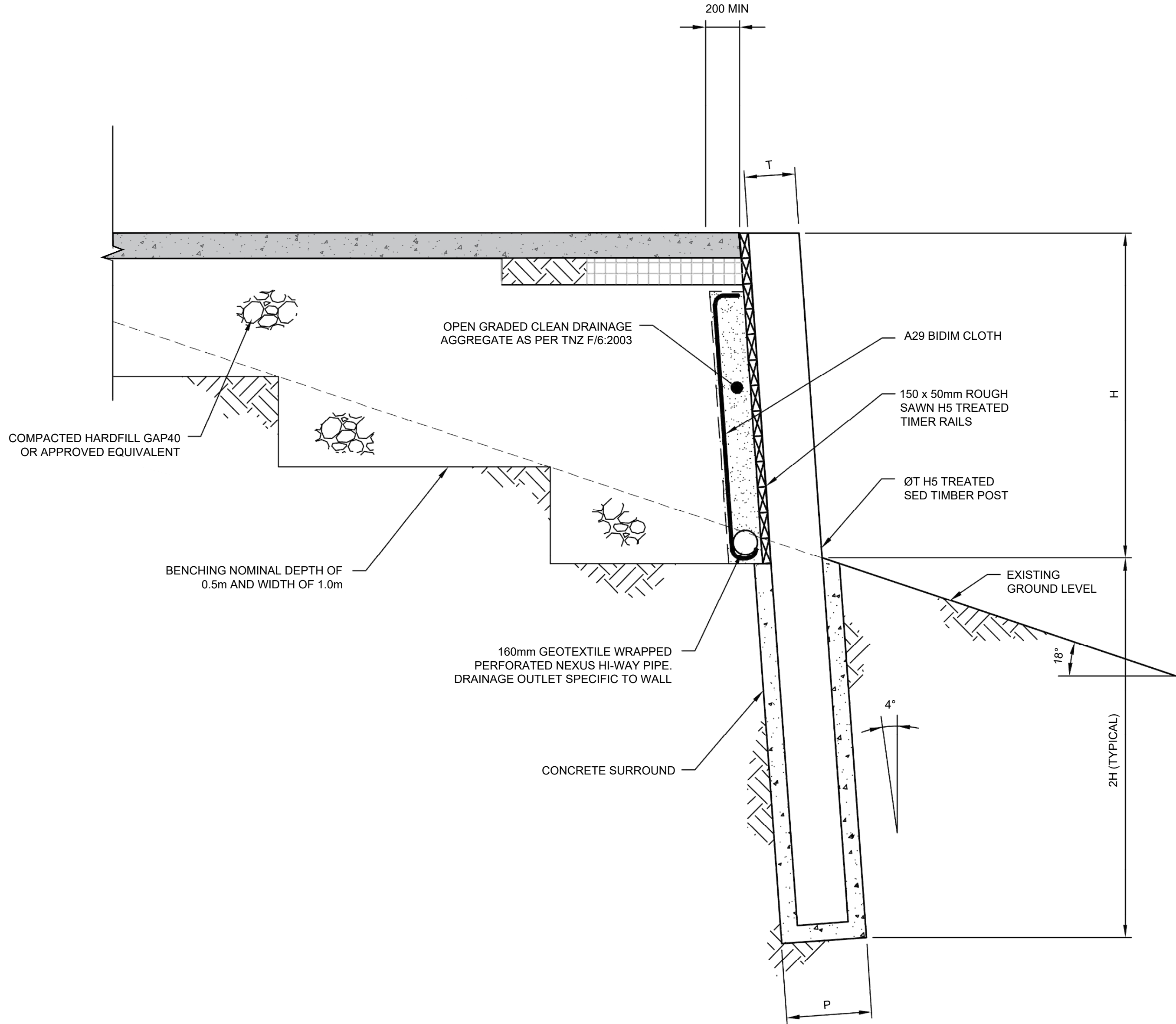
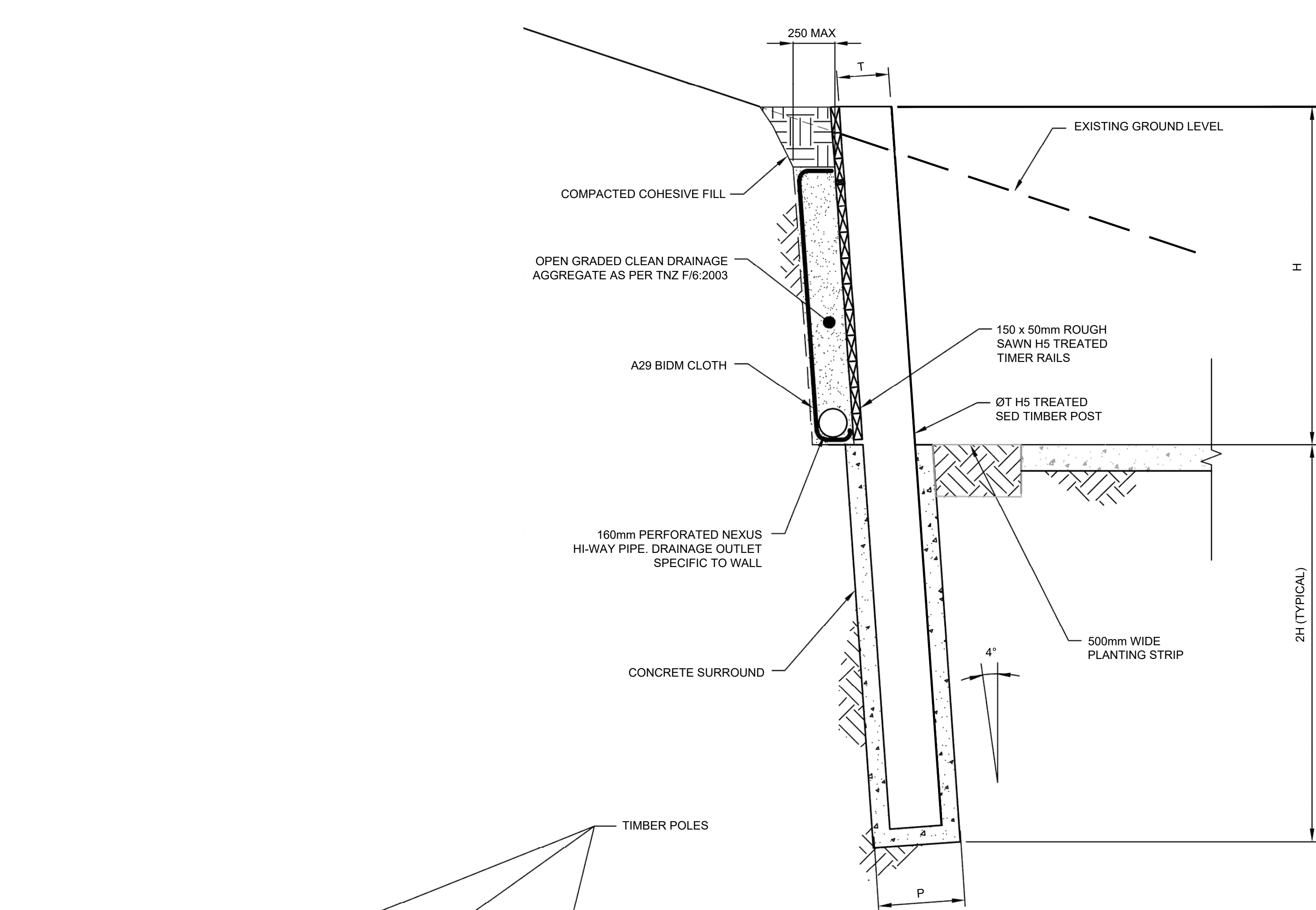
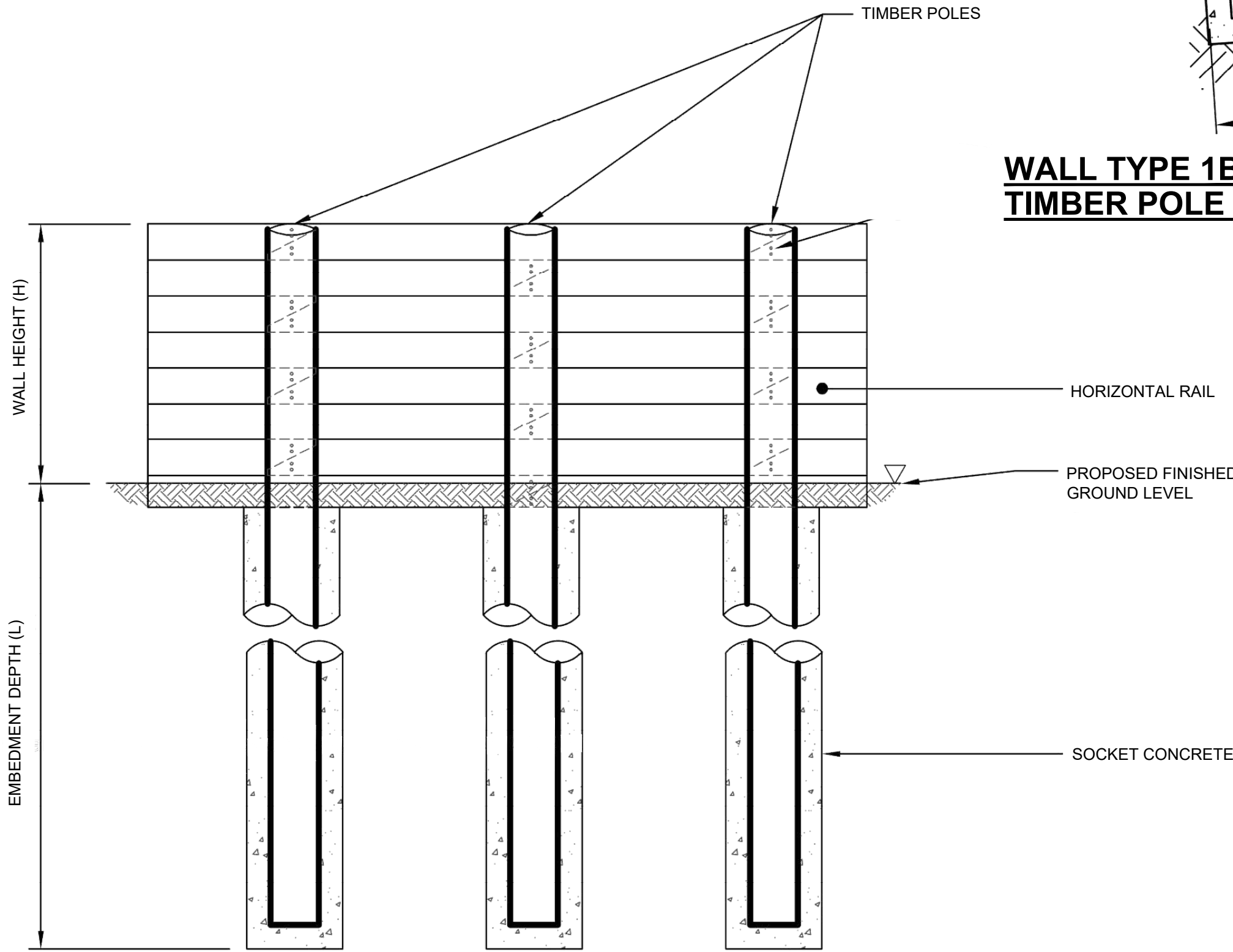




WALL TYPE 1A
TIMBER POLE RETAINING WALL - FILL WALL - TYPICAL DETAIL



WALL TYPE 1B
TIMBER POLE RETAINING WALL - CUT WALL - TYPICAL DETAIL



TYPICAL RETAINING WALL ELEVATION

- TIMBER POLE RETAINING WALL NOTES:**
1. ALL TIMBER POLES SHALL HAVE CONCRETE ENCASEMENT BELOW THE NATURAL GROUND LEVEL WITH A MINIMUM OF 100mm SIDE COVER AND 100mm AT THE BASE.
 2. THE IN-SITU SOIL HAS BEEN ASSUMED TO BE STIFF SILT OR CLAY WITH STRENGTH OF $S_u=100\text{KPa}$ FOR THE DESIGN OF RETAINING WALLS.
 3. REFER TO STAGE SPECIFIC RETAINING WALL SCHEDULES FOR DIMENSIONS H, D AND P NOT SPECIFIED, TO BE DETERMINED AT DETAILED DESIGN.

CONSULTANT

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WAKA KOTAHĪ

PROJECT

Mill Road - Stage 1
Consenting Design
Roads of National Significance

REGISTRATION

FOR CONSENT

SCALE

0 1.25 2.5 m
1:50

PROJECT MANAGEMENT INITIALS

JK	GP	DM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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ISSUE/REVISION

1	30.06.26	ISSUED FOR CONSENT
0	05.02.26	ISSUED FOR CONSENT
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60755376

SHEET TITLE

Mill Road RoNS Stage 1 FTA
Retaining Wall Details
Sheet 1 Of 6

SHEET NUMBER

60755376-SHT-RW-0501



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Mill Road - Stage 1

Consenting Design

Roads of National Significance

DATUM	AUK46	SURVEY	NZTM
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1	30.06.26	ISSUED FOR CONSENT
0	05.02.26	ISSUED FOR CONSENT
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Mill Road - Stage 1

Consenting Design

Roads of National Significance

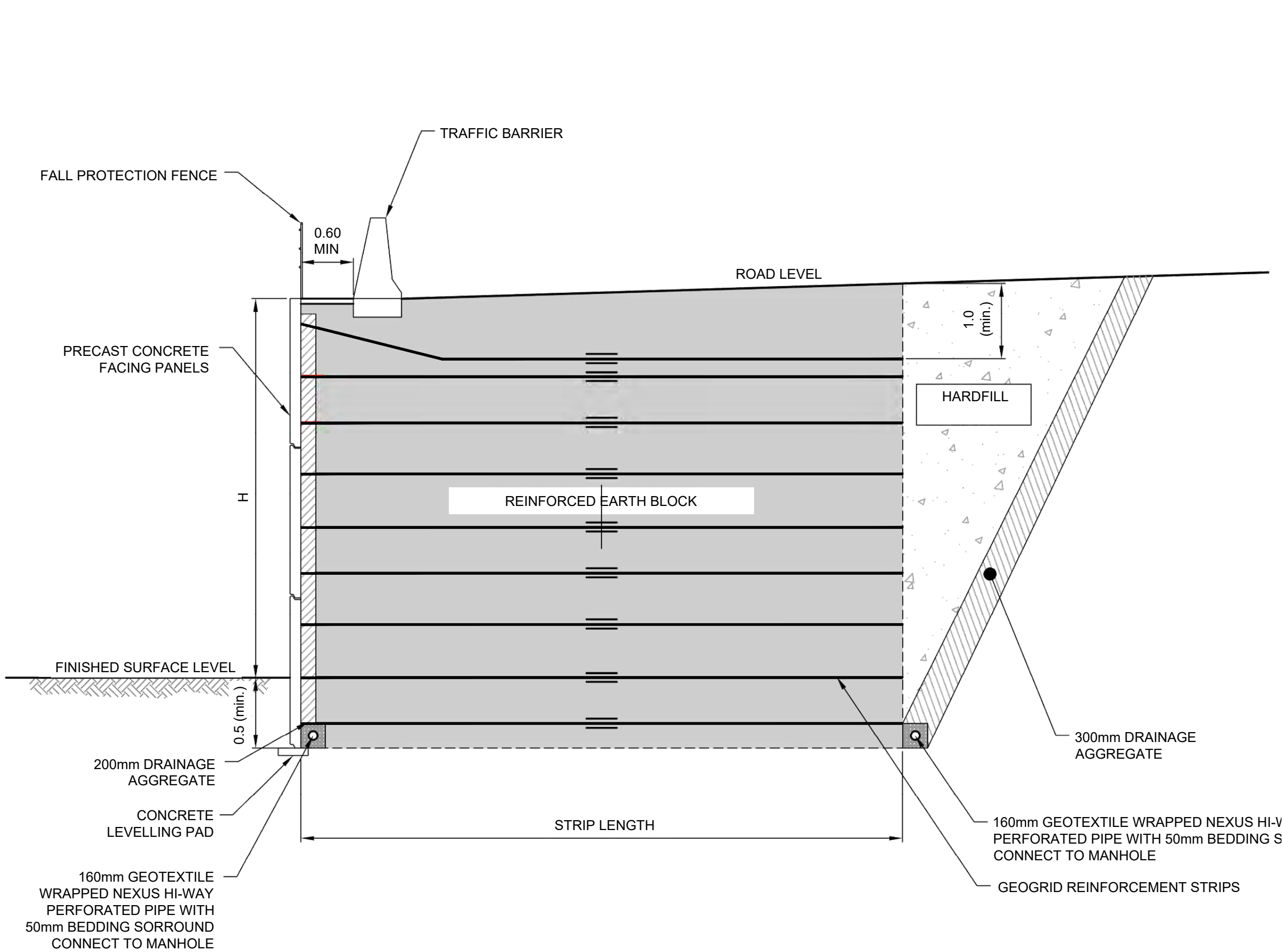
FOR CONSENT

JK	GP	DM
DESIGNER	CHECKED	APPROVED

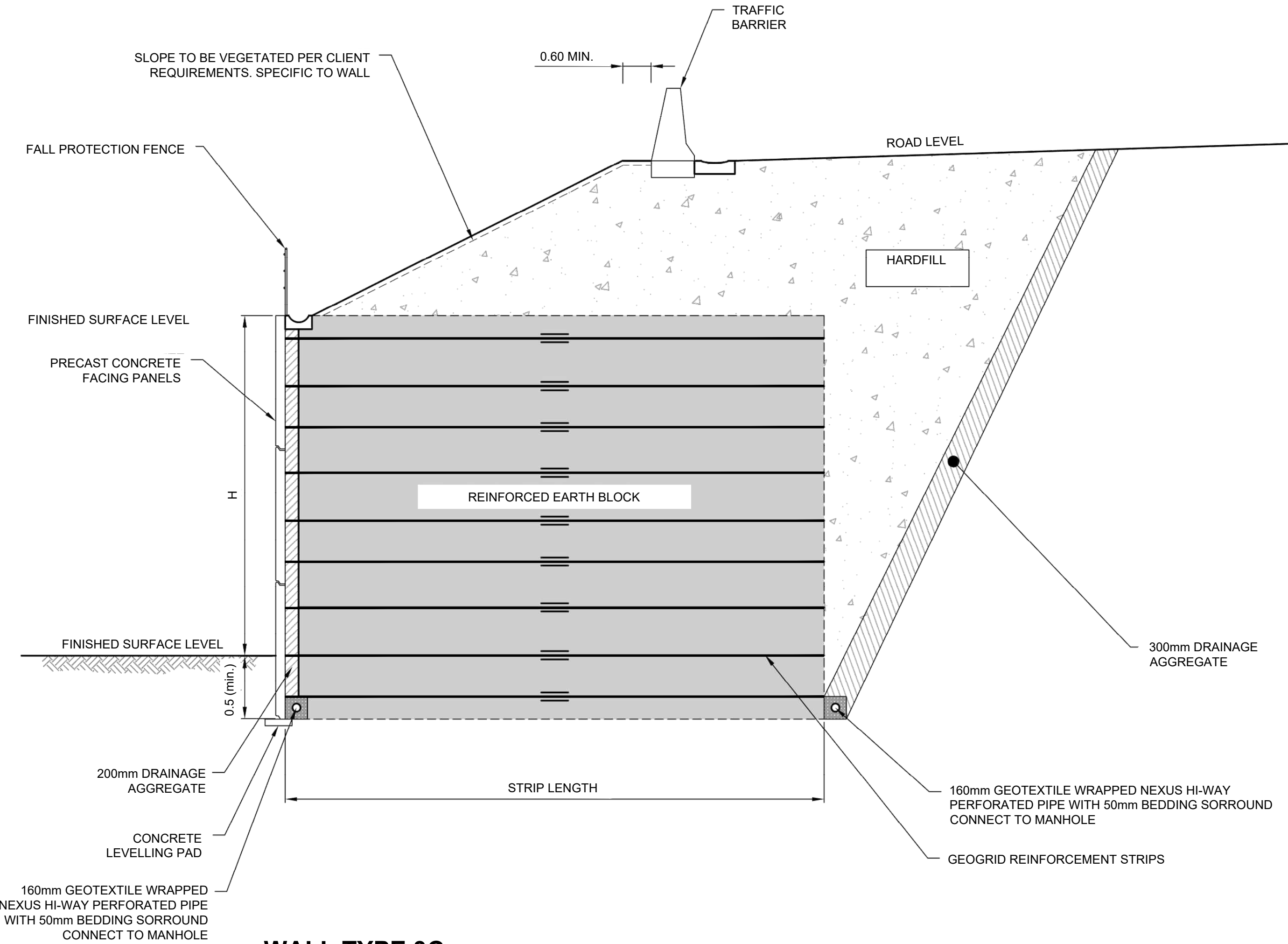
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I/R	DATE	DESCRIPTION

60755376-SHT-RW-0503



WALL TYPE 3B
MSE PRECAST PANEL WALL - FULL HEIGHT - TYPICAL DETAIL



WALL TYPE 3C
MSE PRECAST PANEL WALL - PARTIAL HEIGHT + FILL SLOPE - TYPICAL DETAIL

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CONSULTANT



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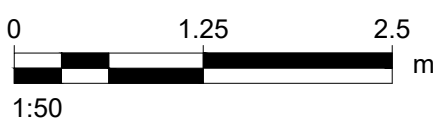
PROJECT



REGISTRATION



SCALE



PROJECT MANAGEMENT INITIALS

JK	GP	DM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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ISSUE/REVISION

I/R	DATE	DESCRIPTION
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0	05.02.26	ISSUED FOR CONSENT

PROJECT NUMBER

60755376

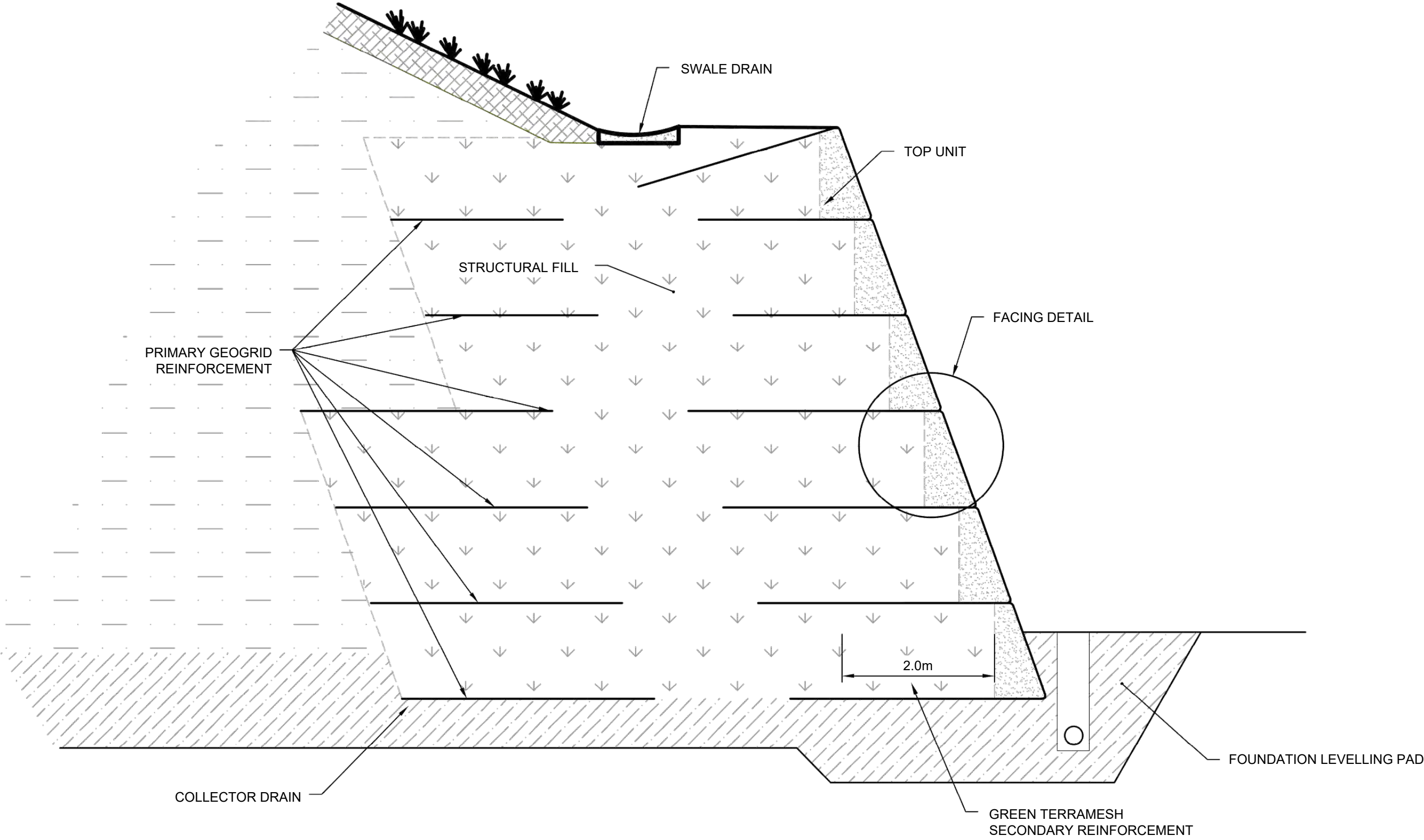
SHEET TITLE

Mill Road RoNS Stage 1 FTA
Retaining Wall Details
Sheet 4 Of 6

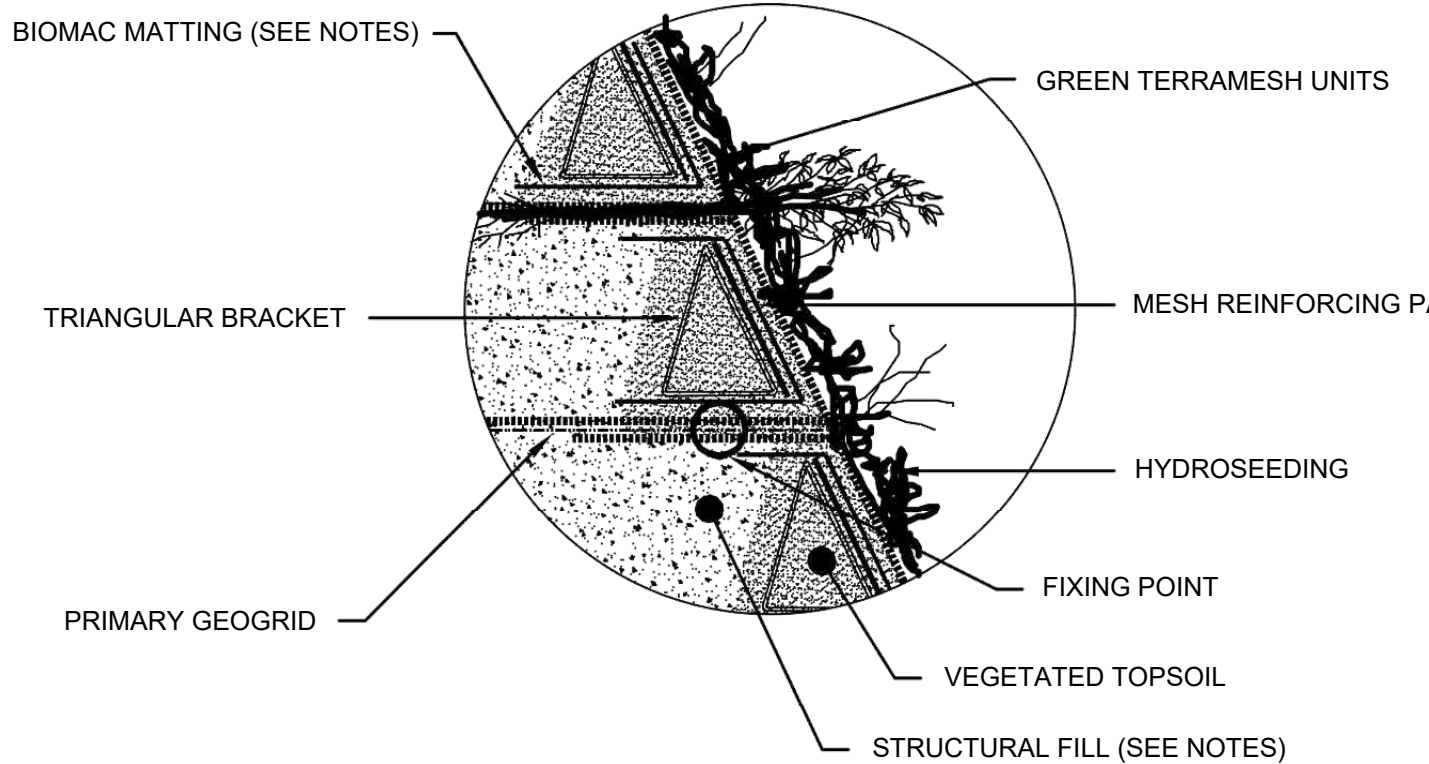
SHEET NUMBER

60755376-SHT-RW-0504

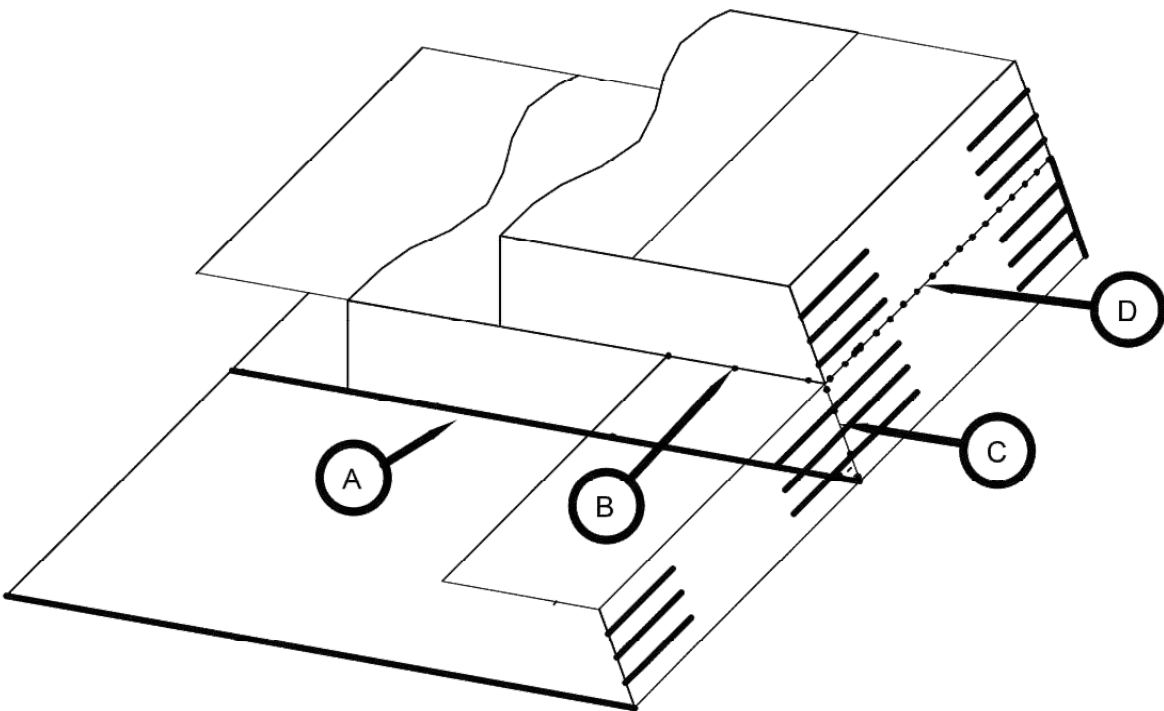
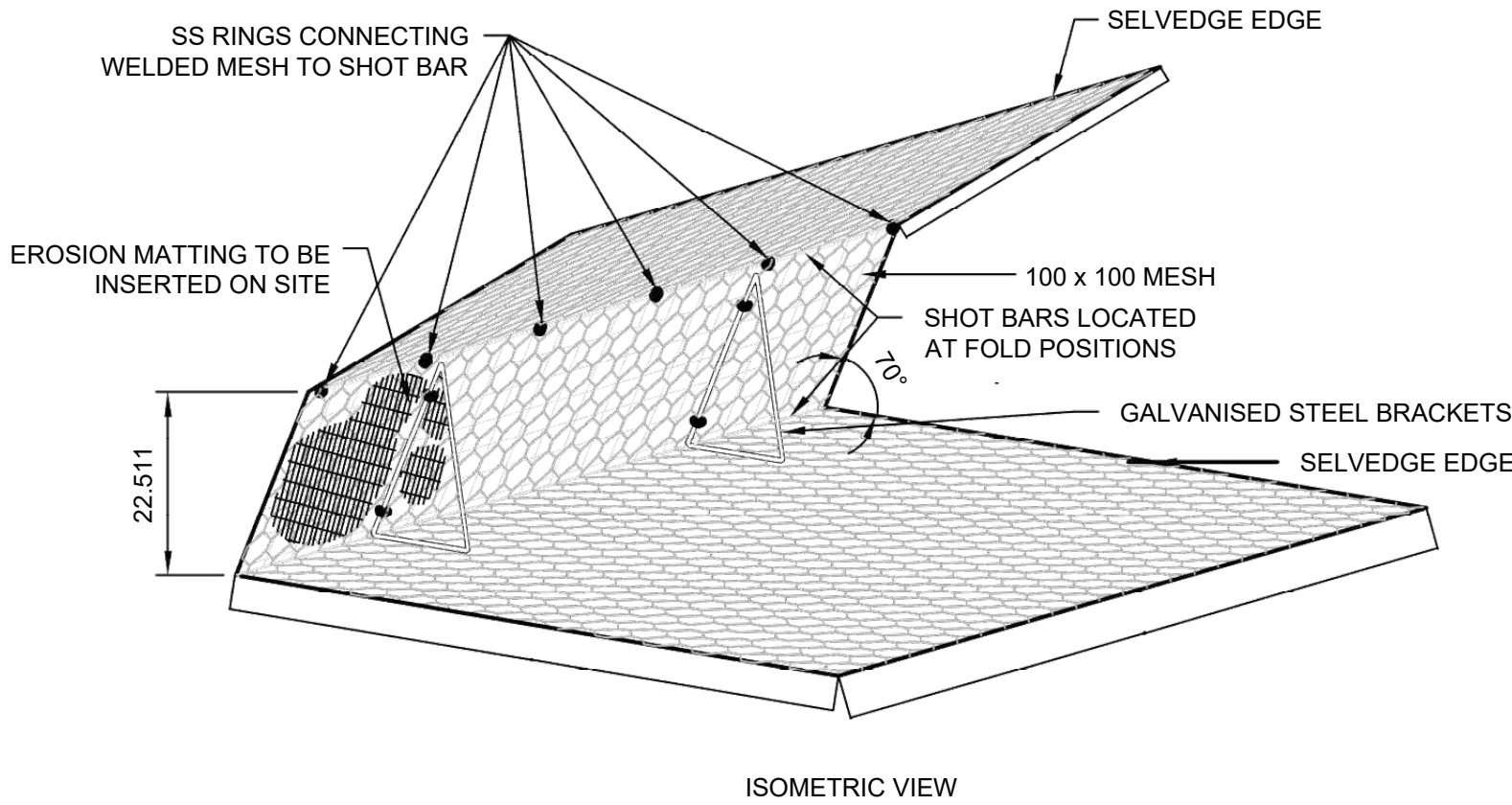
ISO A1 594mm x 841mm



WALL TYPE 3D
MSE PLANTED WALL - TYPICAL DETAIL



TYPICAL FACING DETAIL



RING CONNECTION LAYOUT FOR GREEN TERRIAMESH UNITS

GUIDELINES FOR GREENING OF THE EXTERNAL FACE

1. IN ORDER TO ACHIEVE THE MOST EFFECTIVE GREENING TREATMENT IT IS NECESSARY TO ADD TO THE STRUCTURAL FILL A SMALL LAYER OF VEGETATIVE SOIL IMMEDIATELY BEHIND THE FRONT FACING.
2. FOR RELATIVELY HIGH WORKS (ABOVE 7-8m) SUCH SOIL CAN BE BLENDED WITH EXPANDED CLAY, EITHER TO FACILITATE MOISTURE RETENTION, OR TO ALLOW A BETTER CONSOLIDATION. SUCH SOIL CAN BE MANUALLY PRE-SEEDED DURING THE INSTALLATION. THE HYDROSEEDING TREATMENT MAY BE ACHIEVED BY SPRAYING WITH SUITABLE MECHANICAL EQUIPMENT, USING A TYPICAL COMPOSITION AND QUANTITY (EITHER IN THE COMPONENTS, OR IN ITS WHOLE).
3. THE HYDROSEEDING TREATMENT SHOULD BE CARRIED OUT DURING SUITABLE WEATHER. IN PARTICULARLY DIFFICULT SITUATIONS, DUE TO THE EXPOSURE, HEIGHT AND SLOPE OF THE FACING, THE HYDROSEEDING CAN BE CARRIED OUT IN TWO SEPARATE PHASES WITH DIFFERENT SEED MIXES IN ACCORDANCE WITH THAT MENTIONED ABOVE.

NOTES ON EROSION MATTING FOR FACE:

4. THE FOLLOWING EROSION CONTROL MATTS ARE TO BE USED TO PROTECT THE TOPSOIL FACE DURING PLANT GERMINATION AND ESTABLISHMENT:
 - BIOMAC GRASSSTRIKE - HYDROSEED TREATMENT WITH OR WITHOUT ADDITIONAL PLANTING OF SHRUBS

NOTES ON STRUCTURAL FILL

5. THE BACKFILL SHALL BE A WELL GRADED SAND OR SANDY GRAVEL AND FREE DRAINING AND HAVE THE FOLLOWING MINIMUM SPECIFICATION UNLESS OTHERWISE APPROVED BY THE ENGINEER:
 - NOT MORE THAN 15% BY MASS OF TOTAL MATERIAL TO BE FINER THAN 75 MICRON SIEVE OPENING.
 - MAXIMUM PARTICLE SIZE TO BE LIMITED TO A MAXIMUM OF 75mm.
 - PH NOT LESS THAN 5.0.

NOTE:
THE APPENDED DESIGN PROPOSAL IS A TYPICAL REPRESENTATION OF THE INTENT OF THE DESIGN AND DOES NOT CONSTITUTE A FORMAL DESIGN FOR CONSTRUCTION AS SEVERAL OF THE GEOTECHNICAL AND OTHER PARAMETERS HAVE BEEN ASSUMED. WE UNDERTAKE NO LIABILITY FOR THE USAGE AND INTERPRETATION OF THE COMPUTER GENERATED DESIGN AND OF OUR PRODUCTS IN THIS PROPOSAL.

GUIDELINE FOR SS RING CONNECTIONS		
LOCATION	MAX. RING SPACING	NO. OF RINGS
A. 2m TIE BACK	500mm	4
B. 1m RETURN	500mm	3
C. 0.6m VER. FACING	120mm	5
D. 2m HOR. FACING (*)	120mm	17

*LOCATION OF RING FIXING +/-10cm BACK FROM FACE. RING FIXING TO INCLUDE GEOGRID LAYER WHERE SPECIFIED

- MAXIMUM PARTICLE SIZE TO BE LIMITED TO A MAXIMUM OF 75mm.
- PH NOT LESS THAN 5.0.

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WAKA KOTAHI

PROJECT

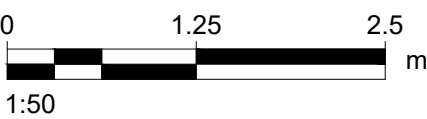
Mill Road - Stage 1
Consenting Design

Roads of National Significance

REGISTRATION

FOR CONSENT

SCALE



PROJECT MANAGEMENT INITIALS

JK	GP	DM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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ISSUE/REVISION

1	30.06.26	ISSUED FOR CONSENT
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I/R	DATE	DESCRIPTION

PROJECT NUMBER

60755376

SHEET TITLE

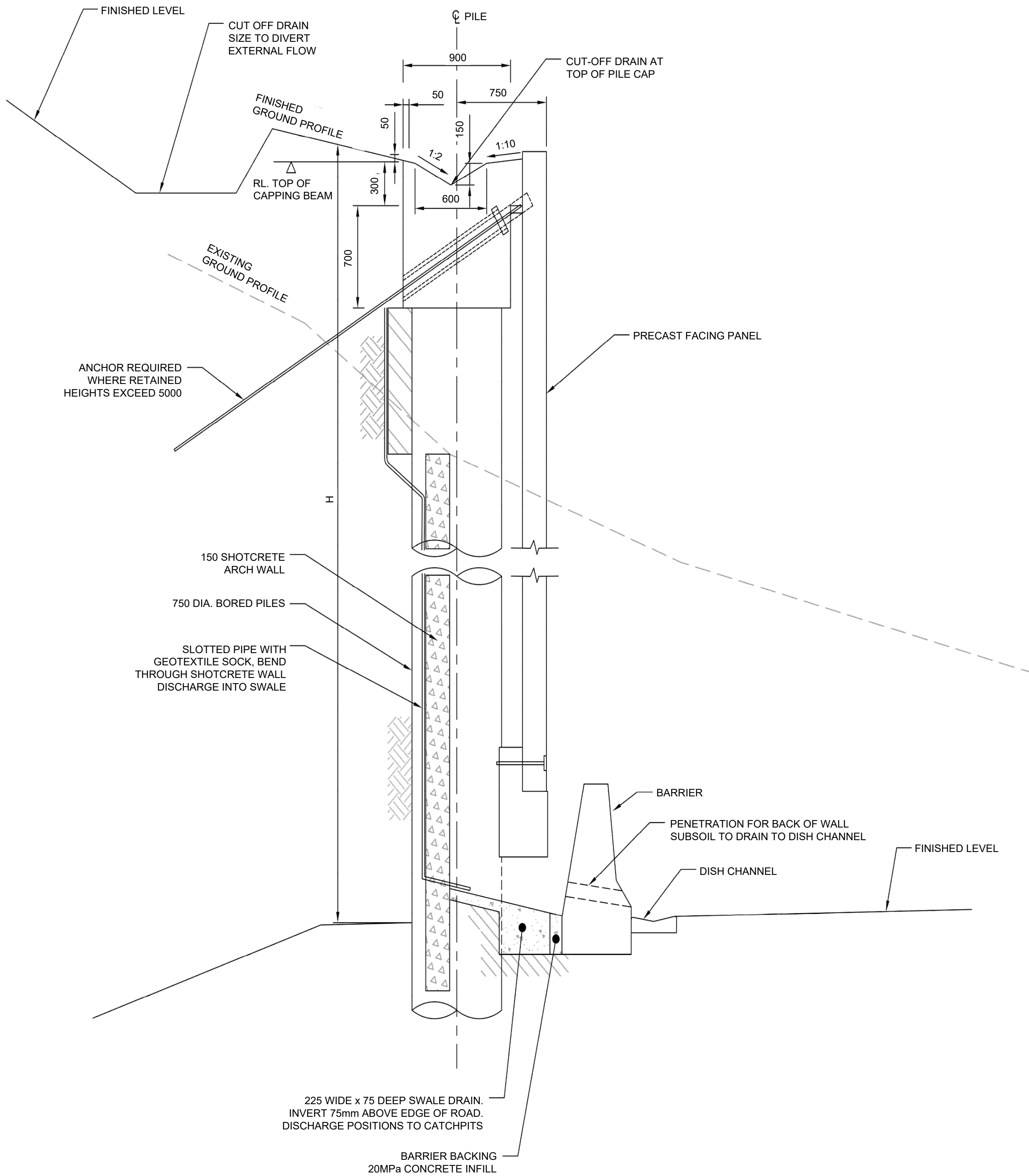
Mill Road RoNS Stage 1 FTA
Retaining Wall Details
Sheet 5 Of 6

SHEET NUMBER

60755376-SHT-RW-0505

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Last saved by: ARAMBULOEV(2025-11-14) Last Plotted: 2025-11-19
Filename: C:\P\WORKING\AECOM_AU_NZ\DM508134\60755376-SHT-RW-0505.DWG



WALL TYPE 4A
BORED PILE WALL - TYPICAL DETAIL

WALL TYPE 4B
ANCHORED BORED PILE WALL - TYPICAL DETAIL

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WAKA KOTAHI

PROJECT

Mill Road - Stage 1

Consenting Design

Roads of National Significance

REGISTRATION

FOR CONSENT

SCALE

0 1.25 2.5

1:50 m

PROJECT MANAGEMENT INITIALS

JK	GP	DM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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ISSUE/REVISION		
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PROJECT NUMBER

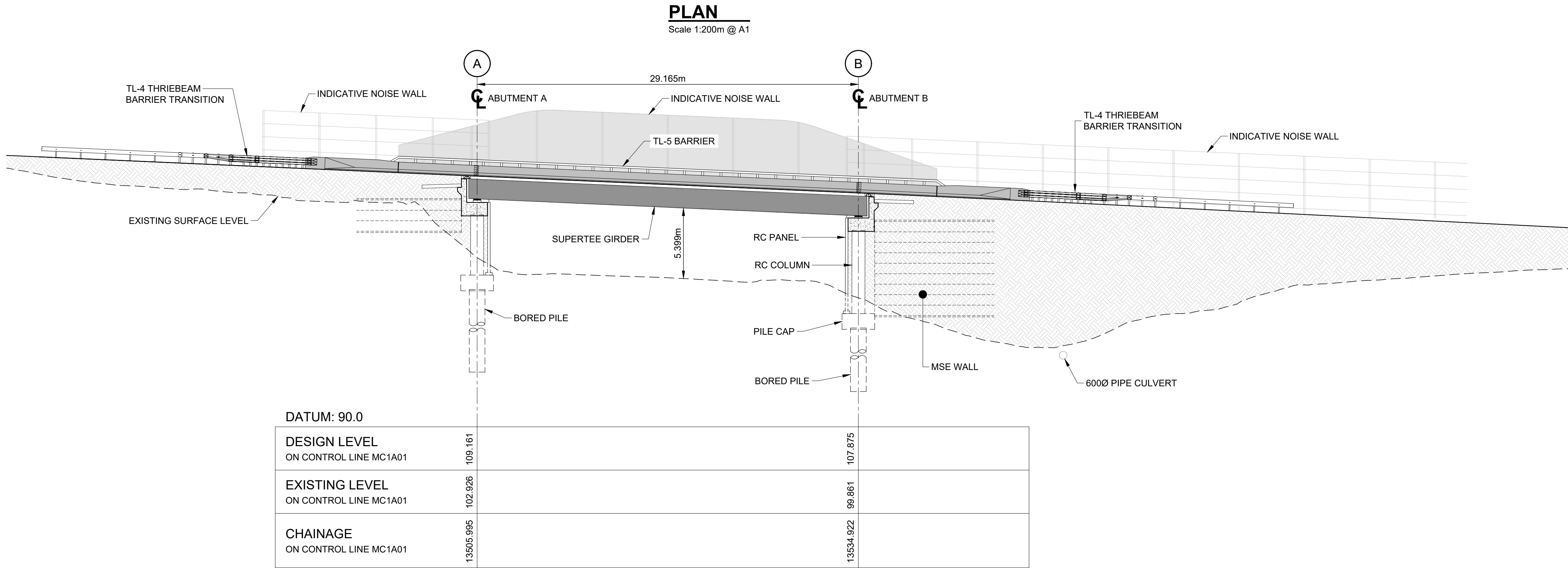
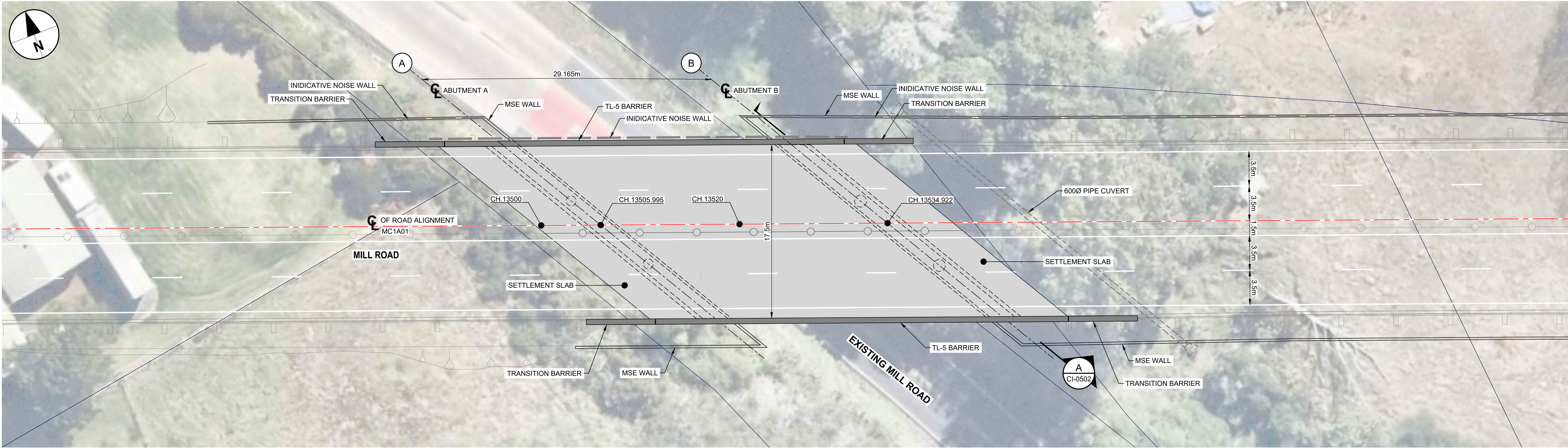
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SHEET TITLE

Mill Road RoNS Stage 1 FTA Retaining Wall Details Sheet 6 Of 6

SHEET NUMBER

60755376-SHT-RW-0506



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PROJECT

Mill Road - Stage 1
Consenting Design

Roads of National Significance

REGISTRATION

FOR CONSENT

SCALE

0 5 10 m
1:200

PROJECT MANAGEMENT INITIALS

WP	DM	JR
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM

ISSUE/REVISION

I/R	DATE	DESCRIPTION
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0	05.02.26	ISSUED FOR CONSENT

PROJECT NUMBER

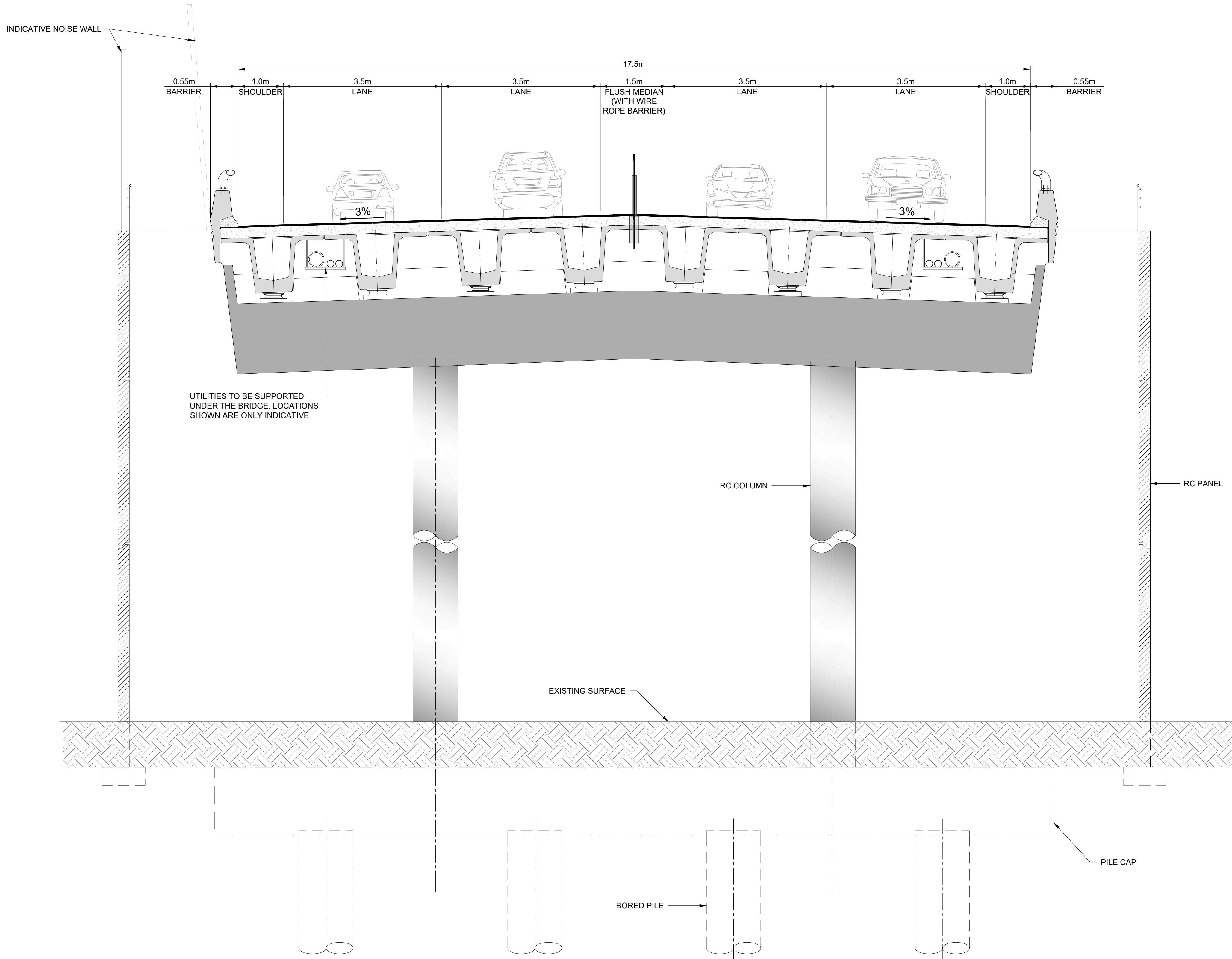
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SHEET TITLE

Mill Road RoNS Stage 1 FTA
Bridge Plan & Detail
Mill Road Overbridge

SHEET NUMBER

60755376-SHT-CI-0501



A | CROSS SECTION
CI-0501 | Scale 1:50

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Scale 1:300m @ A1



Scale 1:300m Horizontal, 1:300m Vertical @ A1

PROJECT

REGISTRATION

PROJECT MANAGEMENT INITIALS

ISSUE/REVISION

PROJECT NUMBER



Roads of National Significance

FOR CONSENT

WP	DM	JR
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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1	30.06.26	ISSUED FOR CONSENT
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0	05.02.26	ISSUED FOR CONSENT
I/R	DATE	DESCRIPTION

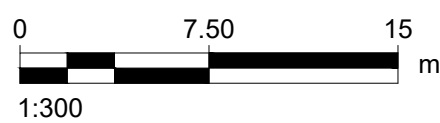
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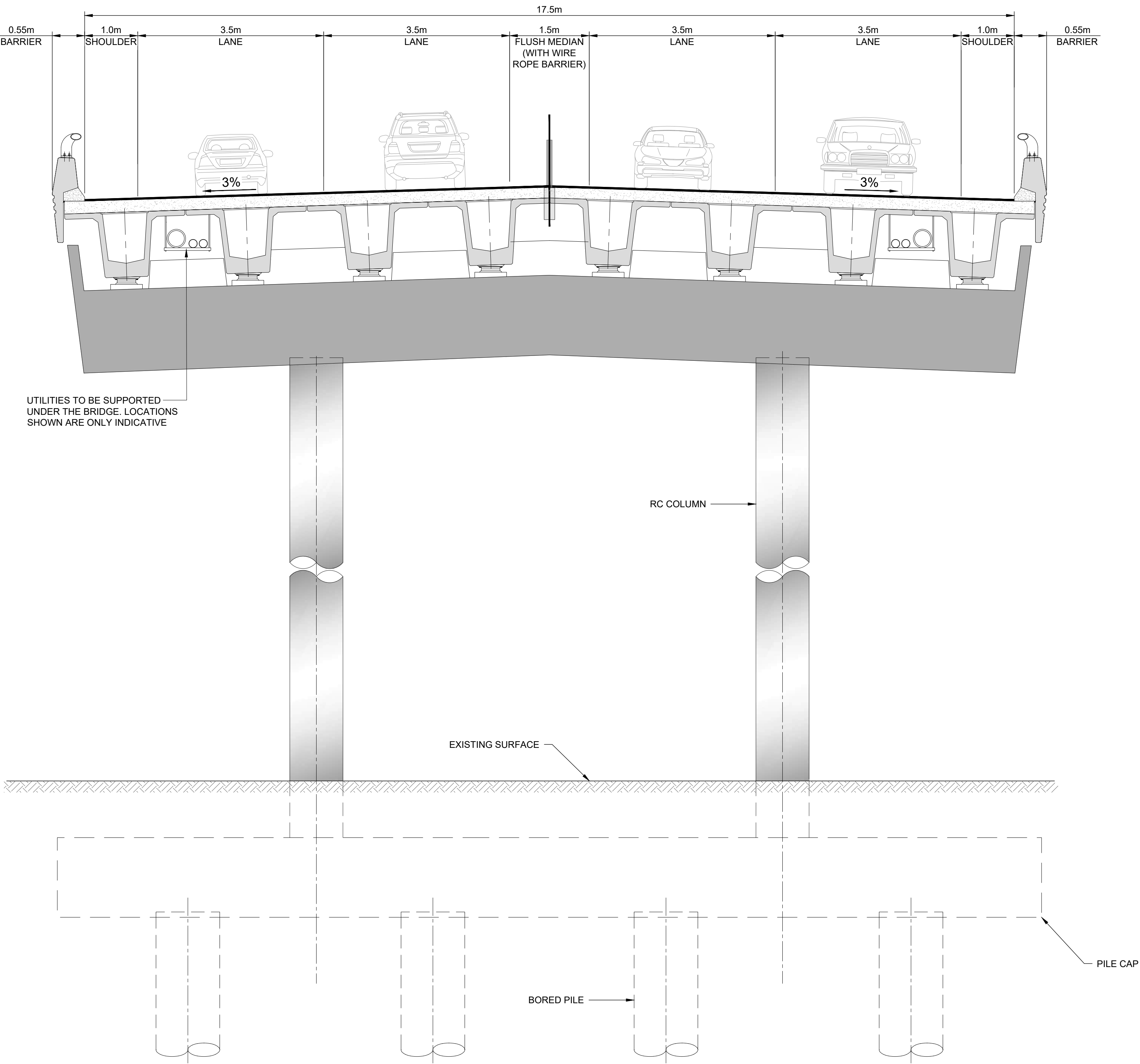
Mill Road RoNS Stage 1 FTA
Bridge Plan & Detail
Puhinui Creek Bridge

SHEET NUMBER

60755376-SHT-CI-0503

SCALE





A | CROSS SECTION
CI-0503 | Scale 1:50

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WAKA KOTAHI

Mill Road - Stage 1
Consenting Design

Roads of National Significance

REGISTRATION

FOR CONSENT

SCALE

01.252.5

m

1:50

PROJECT MANAGEMENT INITIALS

WP	DM	JR
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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ISSUE/REVISION		
1	30.06.26	ISSUED FOR CONSENT
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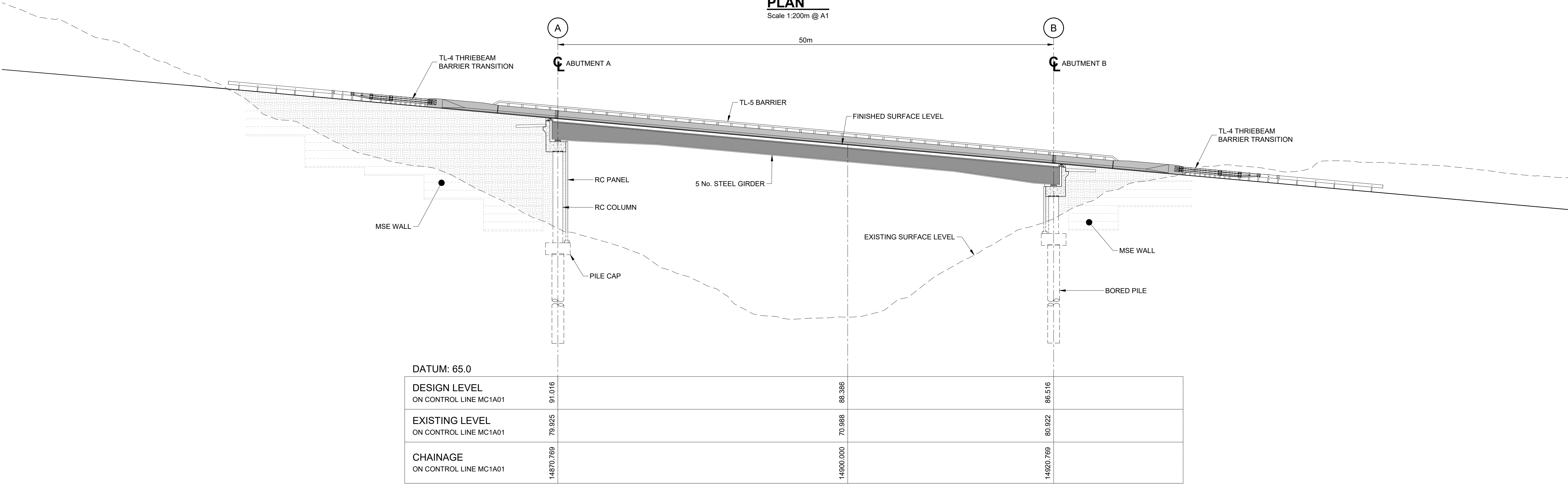
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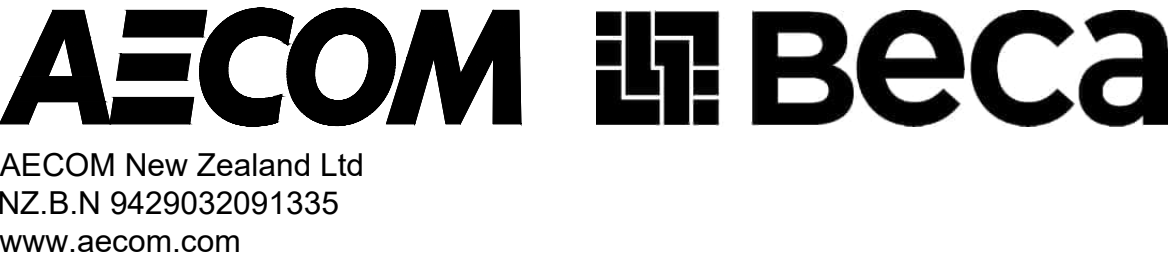
Mill Road RoNS Stage 1 FTA
Typical Section
Puhinui Creek Bridge

SHEET NUMBER

60755376-SHT-CI-0504



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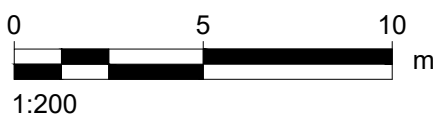
PROJECT



REGISTRATION



SCALE



PROJECT MANAGEMENT INITIALS

WP DESIGNER	DM CHECKED	JR APPROVED
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PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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ISSUE/REVISION

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PROJECT NUMBER

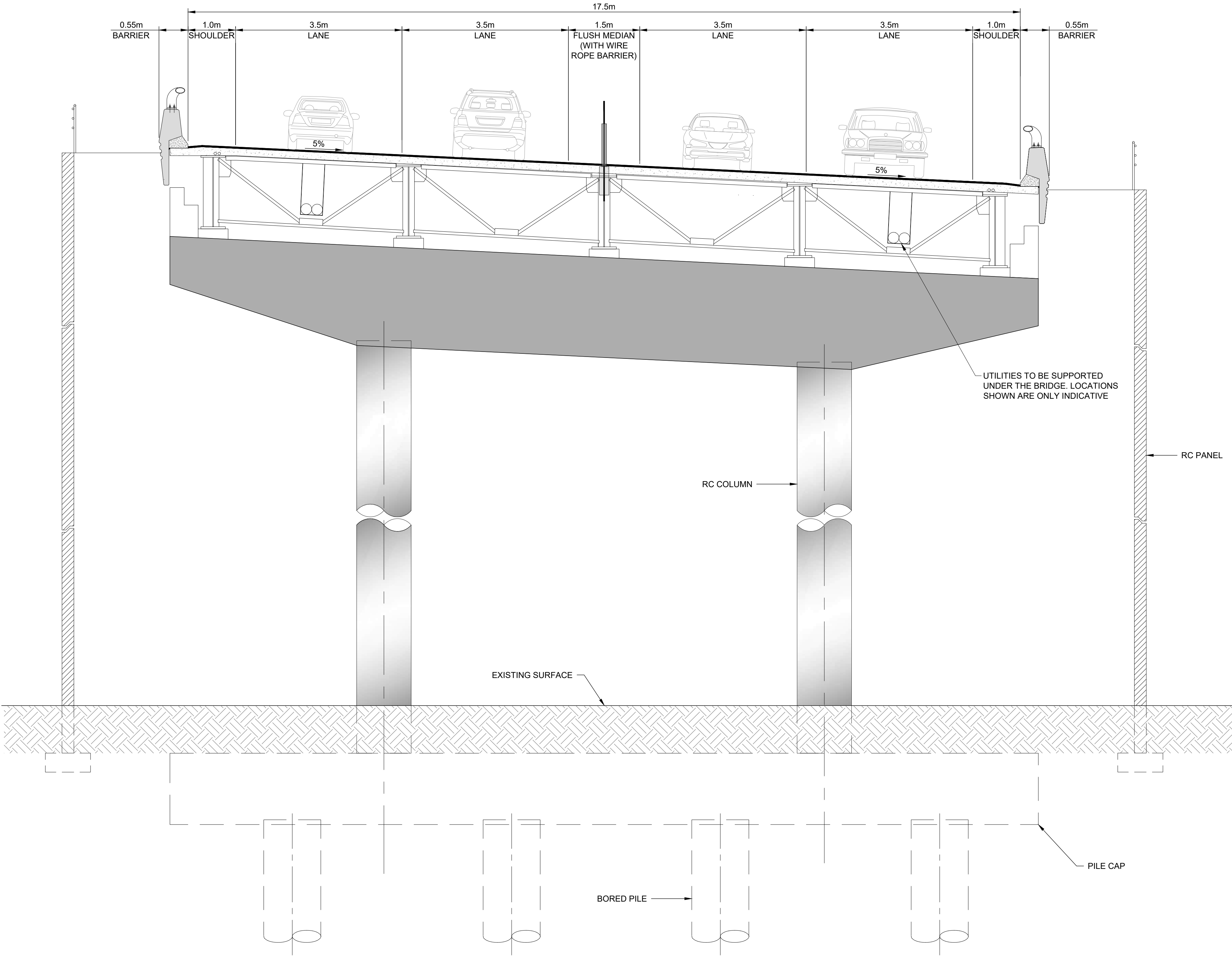
60755376

SHEET TITLE

Mill Road RoNS Stage 1 FTA
Bridge Plan & Detail
Cheesmans Bush Bridge

SHEET NUMBER

60755376-SHT-CI-0505



A | CROSS SECTION
CI-0505 Scale 1:50

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PROJECT

Mill Road - Stage 1

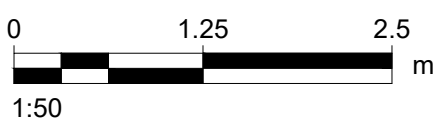
Consenting Design

Roads of National Significance

REGISTRATION

FOR CONSENT

SCALE



PROJECT MANAGEMENT INITIALS

WP	DM	JR
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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I/R	DATE	DESCRIPTION
1	30.06.26	ISSUED FOR CONSENT
0	05.02.26	ISSUED FOR CONSENT

PROJECT NUMBER

60755376

SHEET TITLE

Mill Road RoNS Stage 1 FTA
Bridge Typical Section
Cheesmans Bush Bridge

SHEET NUMBER

60755376-SHT-CI-0506



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Mill Road - Stage 1
Consenting Design

Roads of National Significance

REGISTRATION

FOR CONSENT

SCALE

N.T.S.

PROJECT MANAGEMENT INITIALS

DESIGNER	CHECKED	APPROVED
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PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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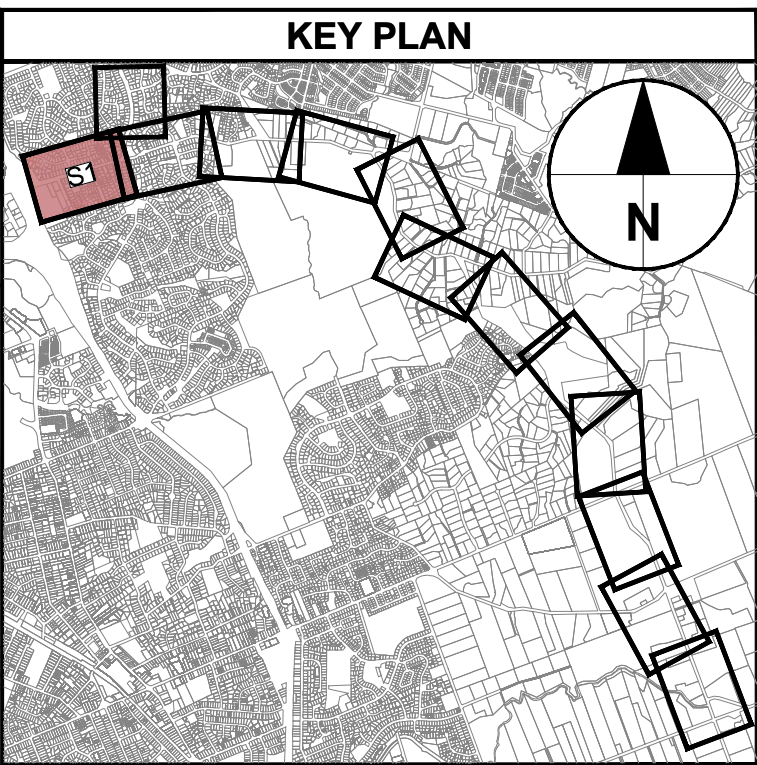
60755376

SHEET TITLE

Mill Road RoNS Stage 1 FTA
Drainage General Arrangement
Sheet Layout Plan

SHEET NUMBER

60755376-SHT-DR-0100



- NOTE:**
1. THIS DESIGN HAS BEEN PREPARED FOR RESOURCE CONSENTING PURPOSES ONLY. SIZING OF ALL STORMWATER INFRASTRUCTURE IS INDICATIVE ONLY AND SUBJECT TO CHANGE IN DETAILED DESIGN INCLUDING IN RESPONSE TO GEOMETRIC CHANGES, CONFIRMED EXISTING SERVICES AND REFINEMENT TO INFRASTRUCTURE LOCATIONS.
 2. PRIMARY DRAINAGE - RUNOFF IN URBAN AREAS IS CAPTURED IN CATCHPITS WITH KERBS ON EITHER SIDE OF THE ROAD CORRIDOR AND TREATED VIA GPTS (SUCH AS VORTCAPTURE OR CASCADE SEPARATOR) BEFORE DISCHARGE TO TREATMENT SYSTEMS. PRIMARY DRAINAGE SYSTEM GENERALLY IN ACCORDANCE WITH NZTA P46 AND ACSCOP.
 3. IN-GROUND TREATMENT SYSTEMS - PROPRIETARY IN-GROUND DEVICES USED FOR STORMWATER DETENTION STORAGE (SUCH AS TRITON S22 OR RAINSMART MODULES) AND FILTRATION (STORMFILTER). PERFORMANCE OF FINAL DEVICE SHALL HAVE BEEN CERTIFIED BY AUCKLAND COUNCIL AND APPROVED BY THE CLIENT FOR USE.
 4. GREEN INFRASTRUCTURE TREATMENT - RAINGARDENS / WETLANDS / SWALES, DESIGNED IN ACCORDANCE WITH GDD01.
 5. STREAMWORKS - EROSION PROTECTION AT OUTLETS IN ACCORDANCE WITH HEC14 OR SIMILAR WITH EROSION PROTECTION VIA ROCK RIP RAP APRONS AND / OR SOFTER STREAM REINFORCING SUCH AS SOIL FILL ROCK RIP RAP, ENKAMAT OR SIMILAR.

- LEGEND: Road Plan**
- EXISTING BERM
 - EXISTING FOOTPATH
 - PROPOSED BERM
 - PROPOSED FOOTPATH / SHARED USE PATH
 - PROPOSED CARRIAGEWAY SURFACING
 - PROPOSED BRIDGE STRUCTURE
 - PROPOSED RETAINING WALL
 - PROPOSED GUARDRAIL
 - PROPOSED WIRE-ROPE
 - PROPOSED CIVIL DESIGN
 - EXISTING DESIGNATION BOUNDARY
 - PROPOSED ALTERATION TO DESIGNATION
 - LINZ PROPERTY BOUNDARY
 - PROPOSED NOISE WALL

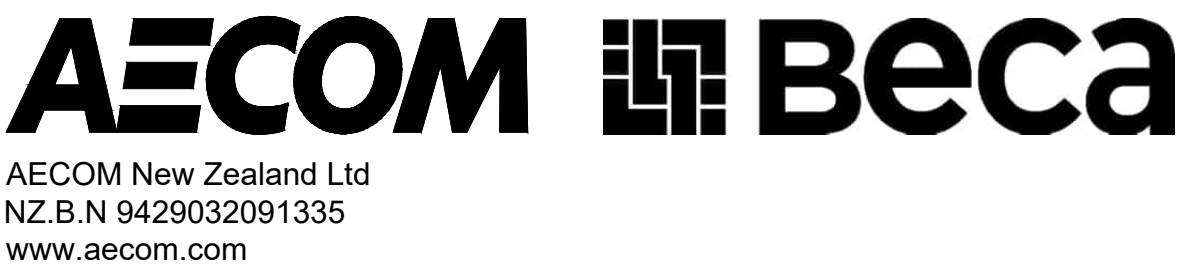
- LEGEND: Drainage General Arrangement**
- PROPOSED EARTHWORKS
 - PROPOSED RAIN GARDEN
 - PROPOSED WETLAND
 - PROPOSED RIP-RAP
 - PROPOSED STREAM EROSION PROTECTION
 - PROPOSED TANK STORAGE
 - PROPOSED PROPRIETARY FILTRATION DEV.
 - PROPOSED STORMWATER GPT
 - PROPOSED STORMWATER HEADWALL
 - PROPOSED STORMWATER MANHOLE
 - PROPOSED STORMWATER CP OR CPMH
 - PROPOSED STORMWATER SCRUFFY DOME
 - INDICATIVE STORMWATER FLOW ARROW
 - EXISTING STORMWATER PIPE
 - EXISTING STORMWATER CULVERT
 - PROPOSED STORMWATER PIPE
 - PROPOSED STORMWATER CULVERT
 - PROPOSED STORMWATER SWALE
 - PROPOSED STORMWATER OPEN DRAIN
 - PROPOSED STREAM DIVERSION

DRAINAGE GENERAL ARRANGEMENT

Scale 1:1000m @ A1

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CONSULTANT



CLIENT



PROJECT

Mill Road - Stage 1
Consenting Design

Roads of National Significance

REGISTRATION

FOR CONSENT

PROJECT MANAGEMENT INITIALS

JL	DSP	DM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AUK46	SURVEY	NZTM
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ISSUE/REVISION

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0	05.02.26	ISSUED FOR CONSENT
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PROJECT NUMBER

60755376

SHEET TITLE

Mill Road RoNS Stage 1 FTA
Drainage General Arrangement
Sheet 1

SHEET NUMBER

60755376-SHT-DR-0101

SCALE

