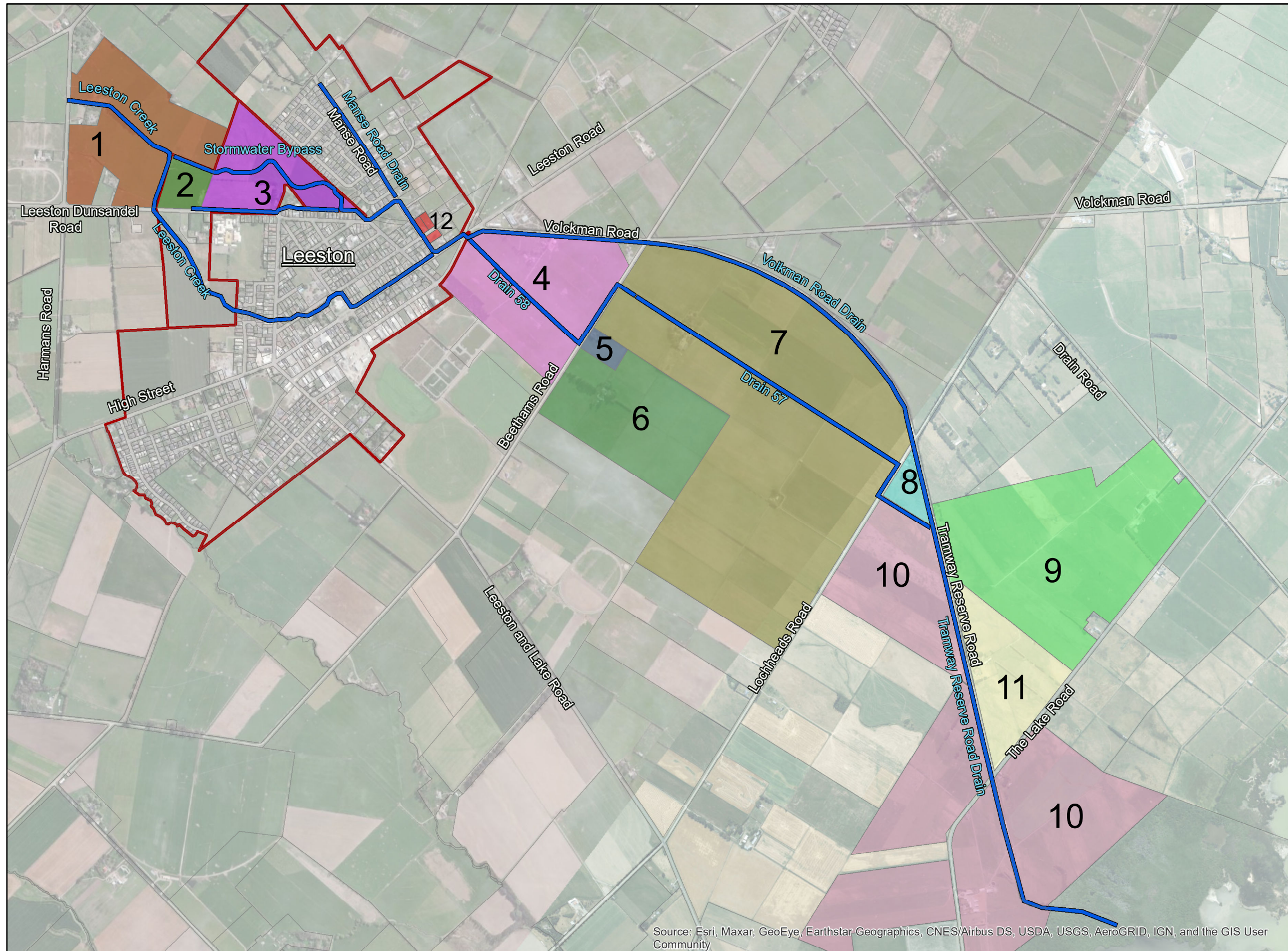




### Legend

- Drain Locations
- Leeston Urban Boundary

### Properties of Interest

- (1) 178 Harmans Road
- (2) 60 Leeston Dunsadel Road
- (3) 2 Leeston Dunsadel Road
- (4) 483 Volckman Road
- (5) 189 Beethams Road
- (6) 211 Beethams Road
- (7) 159 Beethams / 206 Lochheads
- (8) 143 Lochheads Road
- (9) 141 / 143 Drain Road
- (10) 1171 / 1247 The Lake Road
- (11) 293 Tramway Reserve Road
- (12) 1-4 Showground Place

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Date: 18/01/2022

Version: 2



A3 scale: 1:20,000

Job No: 227110

Projection: NZTM00

0

200

300

400

500m

# LEESTON NORTH STORMWATER BYPASS STAGE 4

## DRAWING INDEX

| DRG No.                 | REVISION | DRAWING TITLE                   |
|-------------------------|----------|---------------------------------|
| 505193-0000-DRG-CC-4000 | B        | LOCALITY PLAN AND DRAWING INDEX |
| 505193-0000-DRG-CC-4001 | B        | SAFETY IN DESIGN - SHEET 1      |
| 505193-0000-DRG-CC-4002 | B        | SAFETY IN DESIGN - SHEET 2      |
|                         |          |                                 |
| 505193-0000-DRG-CC-4010 | B        | EXISTING CONTOURS - SHEET 1     |
| 505193-0000-DRG-CC-4011 | B        | EXISTING CONTOURS - SHEET 2     |
| 505193-0000-DRG-CC-4012 | B        | EXISTING CONTOURS - SHEET 3     |
|                         |          |                                 |
| 505193-0000-DRG-CC-4020 | B        | CUT FILL CONTOURS - SHEET 1     |
| 505193-0000-DRG-CC-4021 | B        | CUT FILL CONTOURS - SHEET 2     |
| 505193-0000-DRG-CC-4022 | B        | CUT FILL CONTOURS - SHEET 3     |
|                         |          |                                 |
| 505193-0000-DRG-CC-4100 | B        | LAYOUT PLAN - OVERALL           |
| 505193-0000-DRG-CC-4101 | B        | LAYOUT PLAN - SHEET 1           |
| 505193-0000-DRG-CC-4102 | B        | LAYOUT PLAN - SHEET 2           |
| 505193-0000-DRG-CC-4103 | B        | LAYOUT PLAN - SHEET 3           |
|                         |          |                                 |
| 505193-0000-DRG-CC-4200 | B        | LONG SECTION - SHEET 1          |
| 505193-0000-DRG-CC-4201 | B        | LONG SECTION - SHEET 2          |
|                         |          |                                 |
| 505193-0000-DRG-CC-4300 | B        | CROSS SECTIONS - SHEET 1        |
| 505193-0000-DRG-CC-4301 | B        | CROSS SECTIONS - SHEET 2        |
| 505193-0000-DRG-CC-4302 | B        | CROSS SECTIONS - SHEET 3        |
| 505193-0000-DRG-CC-4303 | B        | CROSS SECTIONS - SHEET 4        |
|                         |          |                                 |
| 505193-0000-DRG-CC-4400 | B        | DETAILS - SHEET 1               |
| 505193-0000-DRG-CC-4401 | B        | DETAILS - SHEET 2               |
| 505193-0000-DRG-CC-4402 | B        | DETAILS - SHEET 3               |
| 505193-0000-DRG-CC-4403 | A        | GENERAL REINFORCING NOTES       |



LOCALITY DIAGRAM  
1:5000

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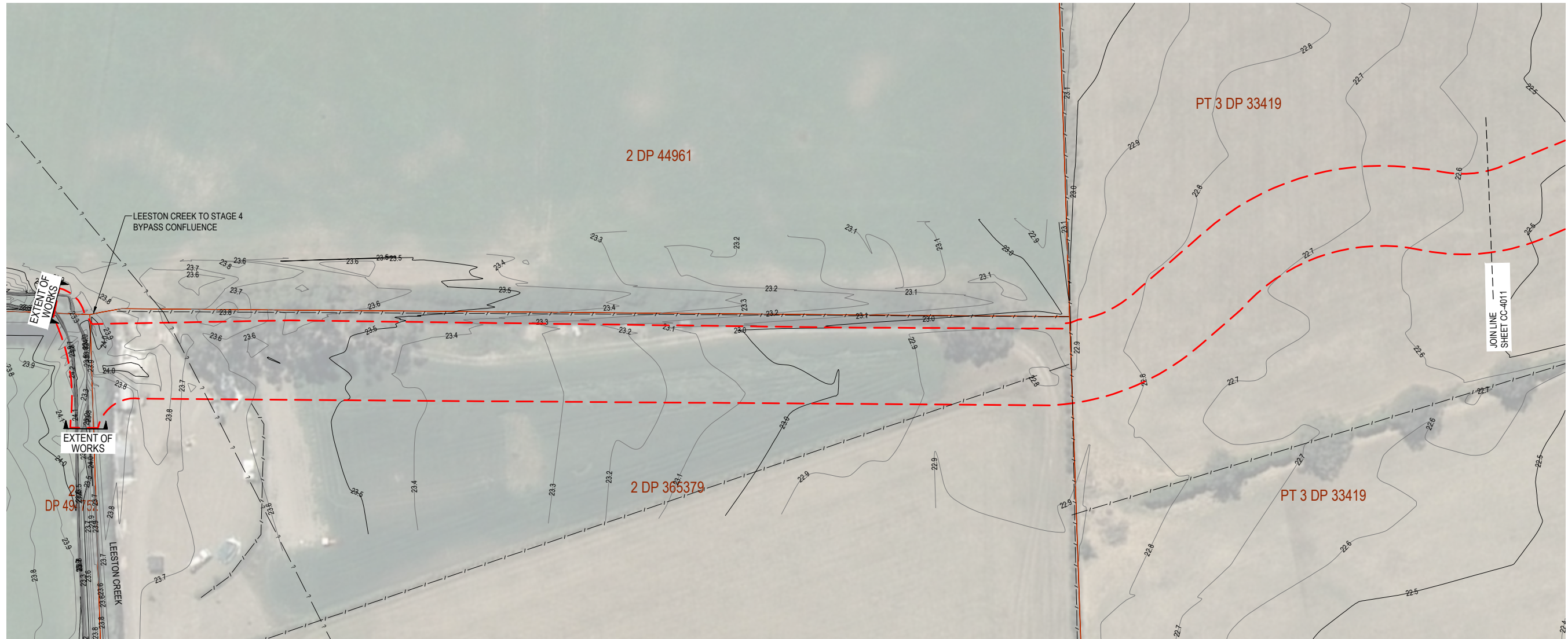
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1. In electronic form without requesting and checking them for accuracy against the original hard copy versions;  
2. For any purposes not agreed to in writing by Aurecon.  
Wherever a discrepancy in the contract documents is found and unless directed otherwise by the Principal/Engineer, the contractor shall adopt, at their own cost the greater quantum, class of finish, grade, or specification where applicable.

**FOR TENDER  
NOT FOR CONSTRUCTION**

| SIZE | PROJECT No. | DATE        | DRAWING No.      | REV |
|------|-------------|-------------|------------------|-----|
| A1   | 505193      | 12 NOV 2020 | 0000-DRG-CC-4000 | B   |



PLAN VIEW  
1:500



- MINOR CONTOUR (0.1m)
- MAJOR CONTOUR (0.5m)
- EXISTING PROPERTY BOUNDARY
- EXISTING FENCE
- EXTENT OF WORKS

VERTICAL ELEVATIONS ARE IN TERMS OF  
LYTTELTON VERTICAL DATUM (1937)  
AERIAL IMAGERY FROM LINZ DATA SERVICE BY A  
CREATIVE COMMONS LICENCE.



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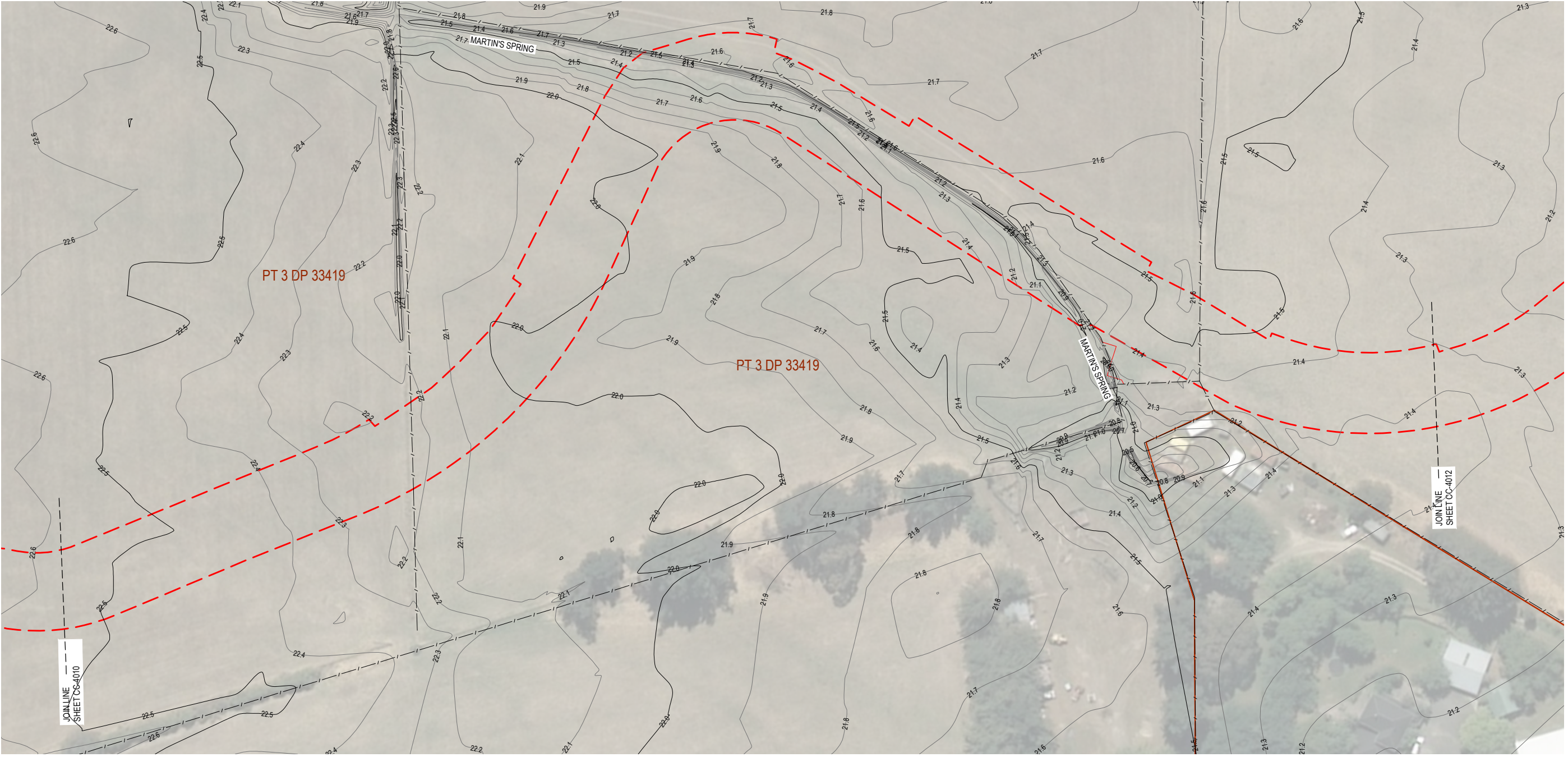
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| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
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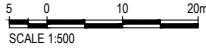
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| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE                 |
| 16/10/20             |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | EXISTING CONTOURS<br>SHEET 1                       |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 4010                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |



PLAN VIEW  
1:500



- MINOR CONTOUR (0.1m)
- MAJOR CONTOUR (0.5m)
- EXISTING PROPERTY BOUNDARY
- EXISTING FENCE
- EXTENT OF WORKS

VERTICAL ELEVATIONS ARE IN TERMS OF  
LYTTELTON VERTICAL DATUM (1937)  
AERIAL IMAGERY FROM LINZ DATA SERVICE BY A  
CREATIVE COMMONS LICENCE.



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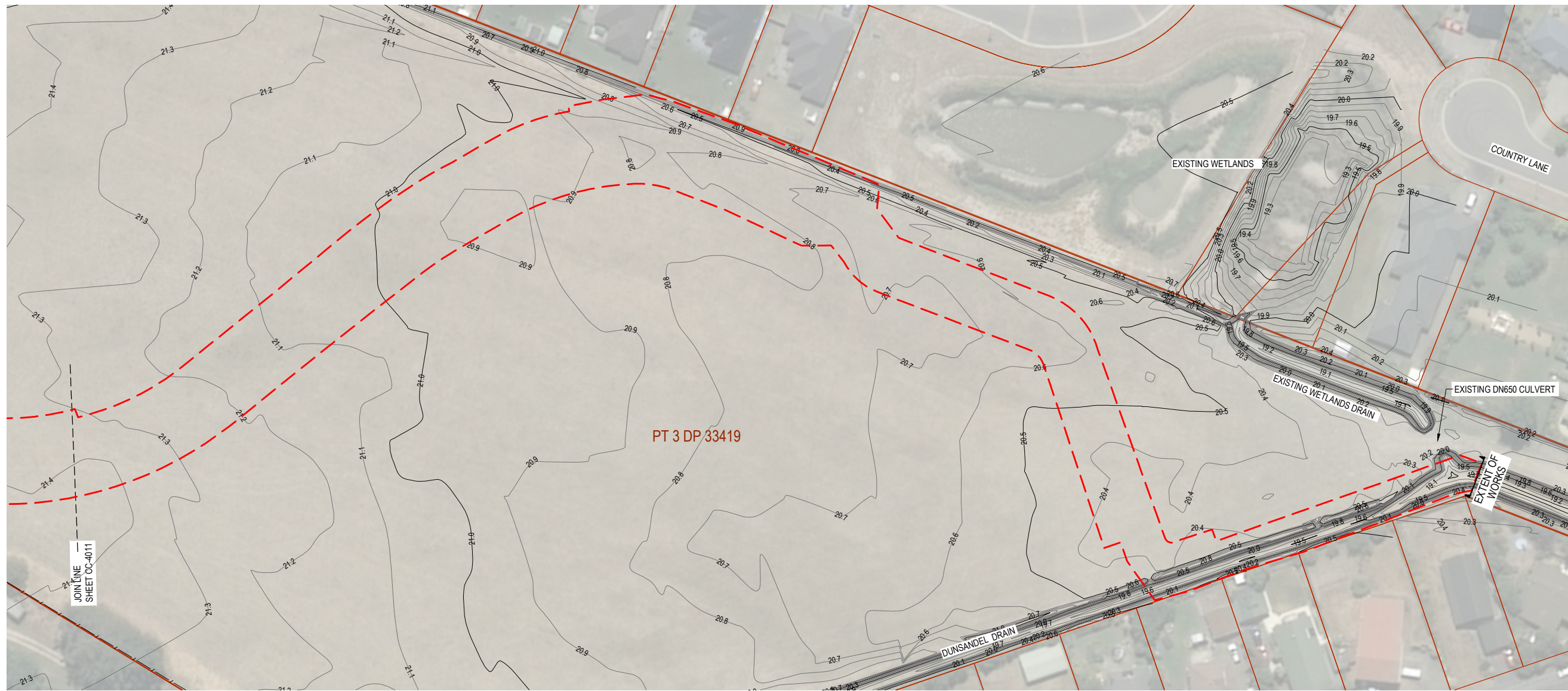


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| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
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| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE                 |
| 16/10/20             |

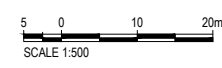
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| REV         |                                                    |



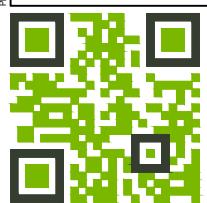
PLAN VIEW  
1:500

- MINOR CONTOUR (0.1m)
- MAJOR CONTOUR (0.5m)
- EXISTING PROPERTY BOUNDARY
- EXISTING FENCE
- EXTENT OF WORKS

VERTICAL ELEVATIONS ARE IN TERMS OF  
LYTTLETON VERTICAL DATUM (1937)  
AERIAL IMAGERY FROM LINZ DATA SERVICE BY A  
CREATIVE COMMONS LICENCE.



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DISTRICT COUNCIL

| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
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| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

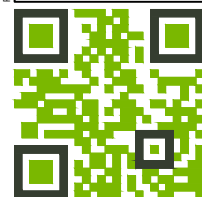
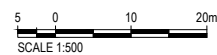
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| A. LINDGREN          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | EXISTING CONTOURS<br>SHEET 3                       |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 4012                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |



PLAN VIEW  
1:500

|                                 |
|---------------------------------|
| — 0.0m (NO CUT FILL) CONTOUR    |
| — FILL CONTOUR (0.1m INTERVALS) |
| — CUT CONTOUR (0.1m INTERVALS)  |
| --- EXTENT OF WORKS             |



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| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
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| APPROVED    | SCALE    | SIZE |
|-------------|----------|------|
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|             |          |      |
|             |          |      |
|             |          |      |
|             |          |      |

| DRAWN     |
|-----------|
| R DAWSON  |
| DESIGNED  |
| N CATTO   |
| REVIEWED  |
| R. DAVIES |

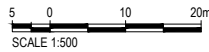
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| DATE 16/10/20        |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | CUT FILL CONTOURS<br>SHEET 1                       |
| DRAWING No. | 505193                                             |
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| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 4020                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |



PLAN VIEW  
1:500

|       |                               |
|-------|-------------------------------|
| —     | 0.0m (NO CUT FILL) CONTOUR    |
| —     | FILL CONTOUR (0.1m INTERVALS) |
| —     | CUT CONTOUR (0.1m INTERVALS)  |
| - - - | EXTENT OF WORKS               |



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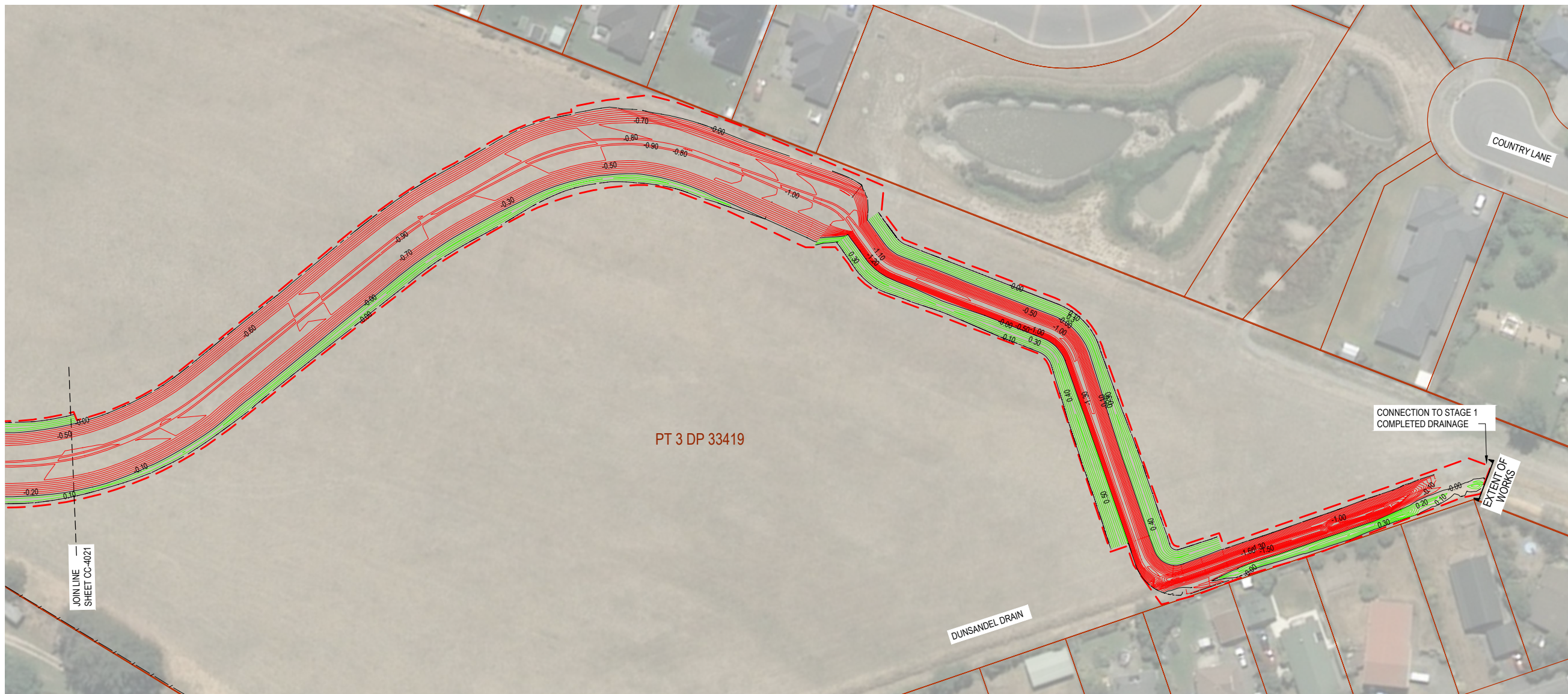


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| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
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| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

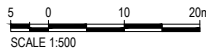
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| APPROVED             |          |
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| A. LINDGREN          |          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |        |       |      |        |     |
|-------------|----------------------------------------------------|--------|-------|------|--------|-----|
| TITLE       | CUT FILL CONTOURS<br>SHEET 2                       |        |       |      |        |     |
| DRAWING No. | PROJECT No.                                        | AREA   | TYPE  | DISC | NUMBER | REV |
|             | 505193                                             | - 0000 | - DRG | - CC | - 4021 | - B |



PLAN VIEW  
1:500

|       |                               |
|-------|-------------------------------|
| —     | 0.0m (NO CUT FILL) CONTOUR    |
| —     | FILL CONTOUR (0.1m INTERVALS) |
| —     | CUT CONTOUR (0.1m INTERVALS)  |
| - - - | EXTENT OF WORKS               |

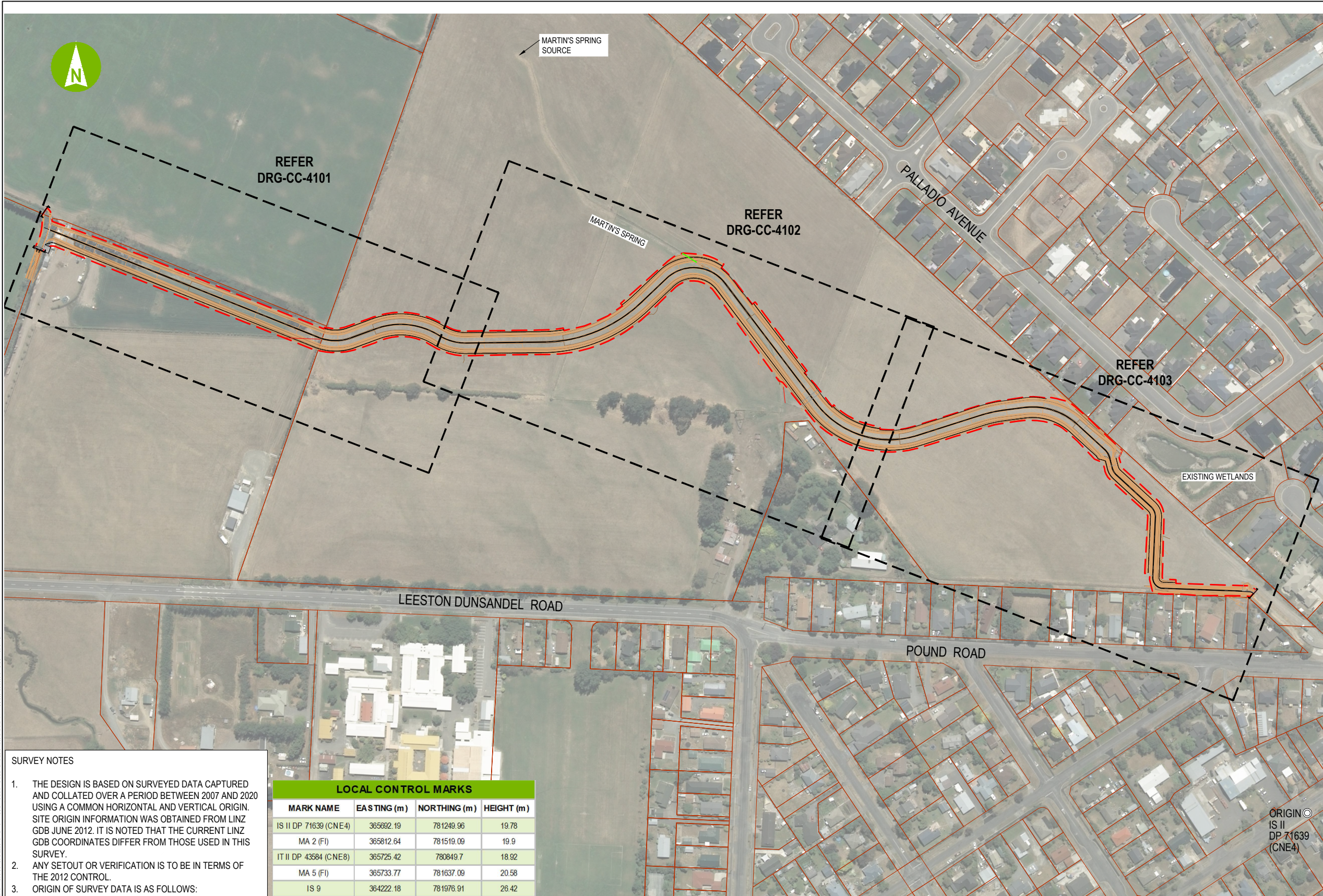


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|     |          |                    |             |
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| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

| TENDER               | APPROVED         |
|----------------------|------------------|
| NOT FOR CONSTRUCTION | DATE<br>16/10/20 |
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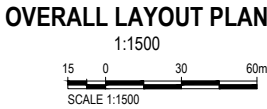
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|-------------|----------------------------------------------------|--------|---|------|------|---|------|-----|---|------|----|---|--------|------|---|-----|---|
| TITLE       | CUT FILL CONTOURS<br>SHEET 3                       |        |   |      |      |   |      |     |   |      |    |   |        |      |   |     |   |
| DRAWING No. | PROJECT No.                                        | 505193 | - | AREA | 0000 | - | TYPE | DRG | - | DISC | CC | - | NUMBER | 4022 | - | REV | B |



**SURVEY NOTES**

- THE DESIGN IS BASED ON SURVEYED DATA CAPTURED AND COLLATED OVER A PERIOD BETWEEN 2007 AND 2020 USING A COMMON HORIZONTAL AND VERTICAL ORIGIN. SITE ORIGIN INFORMATION WAS OBTAINED FROM LINZ GDB JUNE 2012. IT IS NOTED THAT THE CURRENT LINZ GDB COORDINATES DIFFER FROM THOSE USED IN THIS SURVEY.
- ANY SETOUT OR VERIFICATION IS TO BE IN TERMS OF THE 2012 CONTROL.
- ORIGIN OF SURVEY DATA IS AS FOLLOWS:  
ORIGINS OF SURVEY:  
NZ GEODETIC DATUM 2000, MOUNT PLEASANT CIRCUIT  
IS II DP 71639 (CNE4)  
781249.964mN 365692.185mE  
SOURCED FROM LINZ GEODETIC DATABASE JUNE 2012  
ORIGIN OF LEVELS:  
LYTTETON VERTICAL DATUM: V61 NO 2 (AF4R)  
RL 32.2759M  
SOURCED FROM LINZ GEODETIC DATABASE JUNE 2012

| LOCAL CONTROL MARKS   |             |              |            |
|-----------------------|-------------|--------------|------------|
| MARK NAME             | EASTING (m) | NORTHING (m) | HEIGHT (m) |
| IS II DP 71639 (CNE4) | 365692.19   | 781249.96    | 19.78      |
| MA 2 (FI)             | 365812.64   | 781519.09    | 19.9       |
| IT II DP 43584 (CNE8) | 365725.42   | 780849.7     | 18.92      |
| MA 5 (FI)             | 365733.77   | 781637.09    | 20.58      |
| IS 9                  | 364222.18   | 781976.91    | 26.42      |
| IS 10                 | 364324.8    | 781961.19    | 25.76      |
| IS 11                 | 364419.69   | 781950.57    | 25.49      |
| IS 12                 | 364439.29   | 781946.32    | 25.34      |
| IS 13                 | 364524.25   | 781866.38    | 24.87      |
| IS 14                 | 364611.3    | 781787.74    | 24.38      |
| IS 15                 | 364707.44   | 781726.37    | 23.93      |
| IS 16                 | 364738.51   | 781712.52    | 23.78      |



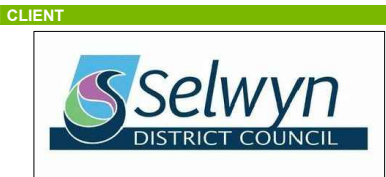
- NOTES:**
- WHILST EVERY EFFORT HAS BEEN MADE TO SHOW ALL KNOWN SERVICES, THE LOCATION AND EXISTENCE OF UTILITIES SHOWN IS TO BE TREATED AS INDICATIVE ONLY. THE CONTRACTOR IS TO CONFIRM THE LOCATION OF SERVICES ONSITE.
  - CONTRACTOR TO LIAISE WITH LAND OWNER TO CONFIRM IF KNOWN SERVICES EXIST ON SITE. EXISTING SERVICES THAT ARE TO BE RETAINED ARE TO BE ADEQUATELY SUPPORTED TO PREVENT DAMAGE FOR THE DURATION OF WORKS.
  - PLAN IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERING DOCUMENTS.
  - PROPOSED WORK IS WITHIN EXISTING WATERWAY, THE CONTRACTOR IS TO HAVE A ROBUST TEMPORARY WORKS PLAN TO DEAL WITH FLOWS GENERATED FROM SIGNIFICANT RAINFALL EVENTS.
  - REFER SHEET 4100 FOR SURVEY HEIGHT & CONTROL DETAILS.
- GENERAL NOTES:**
- ROCK PROTECTION TO BE PROVIDED IN ACCORDANCE WITH PROJECT SPECIFICATION AND DRAWINGS.
  - ALL WORKS ARE TO COMPLY WITH THESE DRAWINGS AND THE SELWYN DISTRICT COUNCIL (SDC) CODE OF PRACTICE (COP). WHERE THERE IS CONFLICT BETWEEN THE TWO THE DRAWINGS HAVE PRECEDENCE.
  - SITE PREPARATION AND RESTORATION SHALL BE AS PER THE PROJECT SPECIFICATION.
  - SETOUT CO-ORDINATES / DIMENSIONS ARE TO BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCING WORK. DRAWINGS SHALL NOT BE SCALED.
  - ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH ANY WORK. NO SUBSTITUTE MATERIALS SHALL BE USED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
  - MAKE SMOOTH CONNECTION TO EXISTING WORK.
  - SURFACES WHICH LIE OUTSIDE THE GENERAL LIMIT OF WORKS WHICH ARE DISTURBED DURING THE CONSTRUCTION OF THE WORKS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE PRE-CONSTRUCTION CONDITION.
  - PRIOR TO ANY EXCAVATION OR CONSTRUCTION ON SITE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND SERVICES ON THE SITE.
  - IMAGE SOURCED FROM LINZ. IMAGE IS INDICATIVE ONLY, NOT BE USED FOR CONSTRUCTION PURPOSES.

- EARTHWORKS NOTES**
- EW1. CLEARING AND GRUBBING**
- CLEARING, STRIPPING AND GRUBBING SHALL BE CARRIED OUT IN AREAS SUBJECT TO EARTHWORKS. ALL SOIL CONTAINING ORGANIC MATTER SHALL BE STRIPPED FROM THE CONSTRUCTION AREA AND STOCKPILED FOR FUTURE SITE REHABILITATION OR USED AS TOPSOIL.

- EW2. MATERIAL SPECIFICATION.**
- 2.1 ALL MATERIALS USED AS FILL SHALL BE FREE FROM DELETERIOUS MATTER.
- 2.2 NO MATERIAL CONTAINING THE FOLLOWING MAY BE USED AS FILL
- VEGETABLE MATTER
  - MATERIALS CONTAMINATED THROUGH PAST SITE USE
  - ORGANIC CLAYS OR SILTS
  - ASHES, COAL OR THE LIKE
  - ANY MATERIALS WHICH IN THE OPINION OF THE ENGINEER WILL SCOUR BADLY OR ANY DISPERSIVE SOIL.
- 2.3 RIPRAP SHOULD MEET THE FOLLOWING SPECIFICATIONS
- ROCKS SHOULD BE ANGULAR IN SHAPE, NOT ROUNDED AND EACH PIECE SHOULD HAVE ITS GREATEST DIMENSION NOT GREATER THAN THREE TIMES ITS LEAST DIMENSION.
  - THE SPECIFIC GRAVITY SHOULD NOT BE LESS THAN 2.5
  - THE RIPRAP SHOULD MEET THE FOLLOWING SCREENING CRITERIA:

| DIAMETER | PERCENT OF MATERIAL SMALLER |
|----------|-----------------------------|
| 300mm    | 100                         |
| 200mm    | 60-80                       |
| 150mm    | 30-50                       |
| 100mm    | 0                           |

- 2.4 WHERE POSSIBLE, BUNDING IS TO BE COMPOSED OF COMPACTED SPOIL.

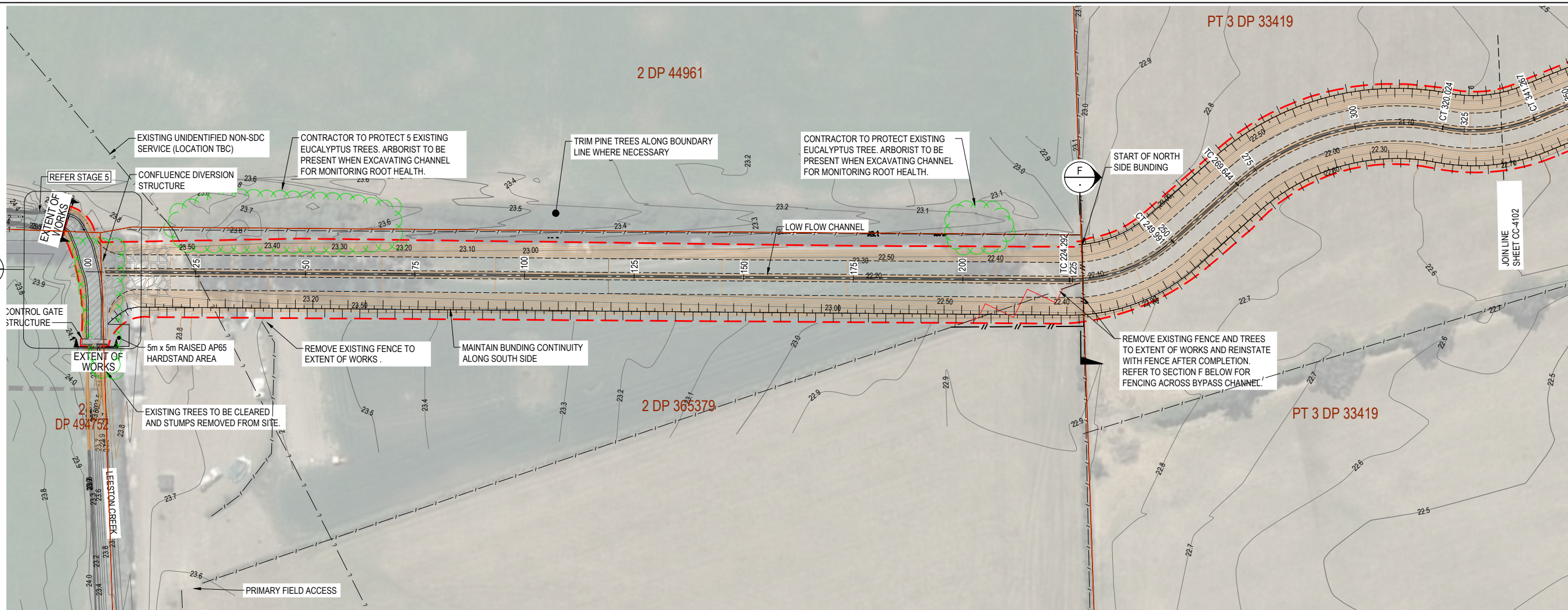


| REV | DATE     | REVISION DETAILS   |
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| B   | 12/11/20 | ISSUE FOR TENDER   |

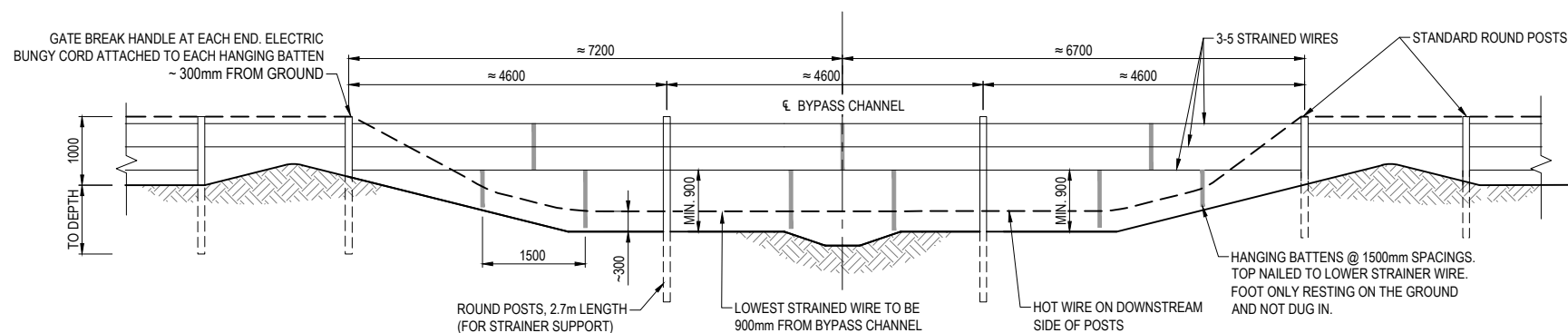
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| A. LINDGREN |
| A. LINDGREN |
| SCALE       |
| AS SHOWN    |
| SIZE        |
| A1          |
| DRAWN       |
| R DAWSON    |
| DESIGNED    |
| N CATTO     |
| REVIEWED    |
| R. DAVIES   |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| A. LINDGREN          |
| DATE                 |
| 12/11/2020           |

| PROJECT                                            |
|----------------------------------------------------|
| SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
| TITLE                                              |
| OVERALL LAYOUT PLAN                                |
| DRAWING No.                                        |
| 505193                                             |
| PROJECT No.                                        |
| 0000                                               |
| AREA                                               |
| 0000                                               |
| TYPE                                               |
| DRG                                                |
| DISC                                               |
| CC                                                 |
| NUMBER                                             |
| 4100                                               |
| REV                                                |
| B                                                  |

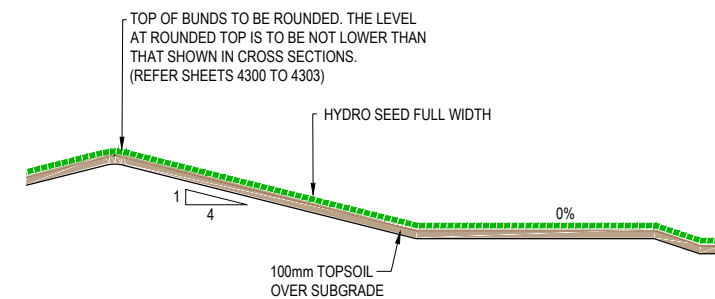


PLAN VIEW  
1:500

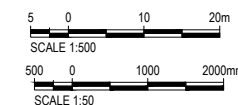


SECTION F FENCE CROSSING BYPASS  
CHANNEL ≈ CH226 (WITH HOT WIRE)  
1:50

- NOTES:
1. EXPERIENCED FENCING CONTRACTOR TO INSTALL ALL FENCING, MEETING STANDARD FARMING REQUIREMENTS.
  2. PROPOSED BYPASS FENCE CROSSINGS TO BE CONFIRMED IN LIAISON WITH AN EXPERIENCED FENCING CONTRACTOR.
  3. WHERE HOT WIRE IS NOT ACCESSIBLE, USE WIRE & BATTEN FENCE SPANNING THE BYPASS AS PER SECTION F BUT INSTEAD OF HANGING BATTENS USE HORIZONTAL BOARDS HUNG BY WIRE FROM THE LOWER STRAINER, AS PER THE PHOTO SHOWN ON DRAWING 4102



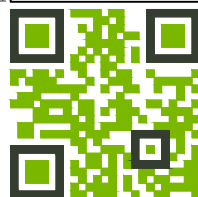
TYPICAL CROSS SECTION - SLOPE TREATMENT (BOTH SIDES)  
CH 5 TO CH920  
1:50



#### LEGEND

- DESIGN MINOR CONTOUR (0.1m)
- DESIGN MAJOR CONTOUR (0.5m)
- EXISTING CONTOUR
- TOP OF BUND
- BOTTOM OF BANK
- DRAIN CENTRELINE
- EXISTING FENCE
- PROPOSED FENCE
- FENCE TO BE REMOVED
- EXISTING PIPE
- PROPOSED PIPE
- EXISTING PROPERTY BOUNDARY
- EXTENT OF WORKS

NOTE  
REFER SHEET 4100 FOR ALL NOTES AND SURVEY CONTROL



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#### CLIENT

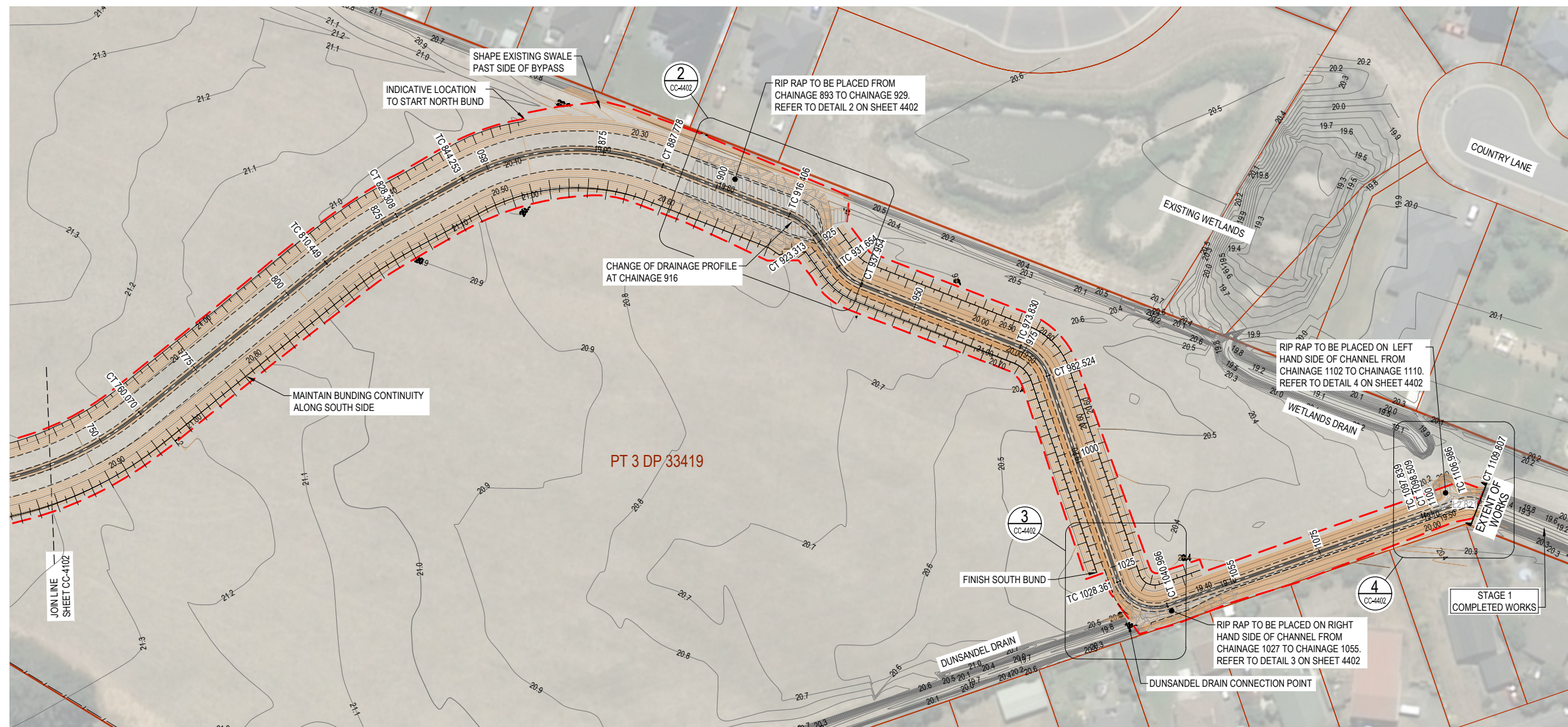
| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

| TENDER               | DATE     |
|----------------------|----------|
| NOT FOR CONSTRUCTION | 16/10/20 |
| APPROVED             |          |
| A. LINDGREN          |          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | LAYOUT PLAN<br>SHEET 1                             |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 4101                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |

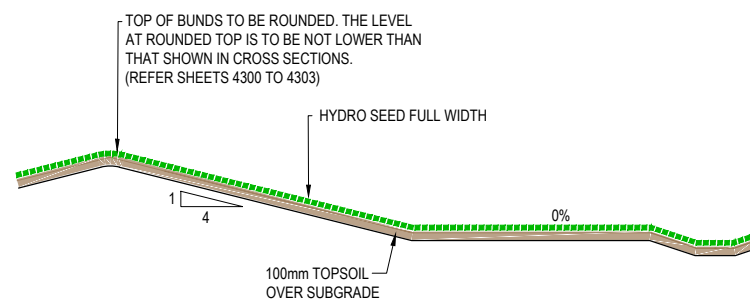




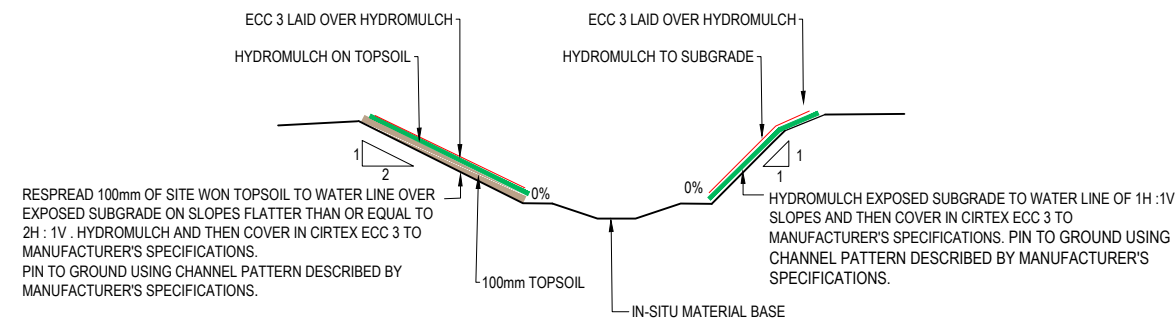
PLAN VIEW  
1:500

#### LEGEND

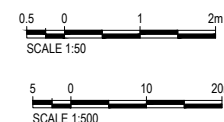
- DESIGN MINOR CONTOUR (0.1m)
- DESIGN MAJOR CONTOUR (0.5m)
- EXISTING CONTOUR
- TOP OF BUND
- BOTTOM OF BANK
- DRAIN CENTRELINE
- EXISTING FENCE
- PROPOSED FENCE
- FENCE TO BE REMOVED
- EXISTING PIPE
- PROPOSED PIPE
- EXISTING PROPERTY BOUNDARY
- EXTENT OF WORKS



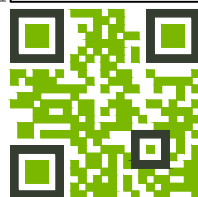
TYPICAL CROSS SECTION - SLOPE TREATMENT (BOTH SIDES)  
CH 15 TO CH893  
1:50



TYPICAL CROSS SECTION - SLOPE TREATMENT  
FROM CH929 TO CH1110  
1:50



NOTE  
REFER SHEET 4100 FOR ALL NOTES AND SURVEY CONTROL



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| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

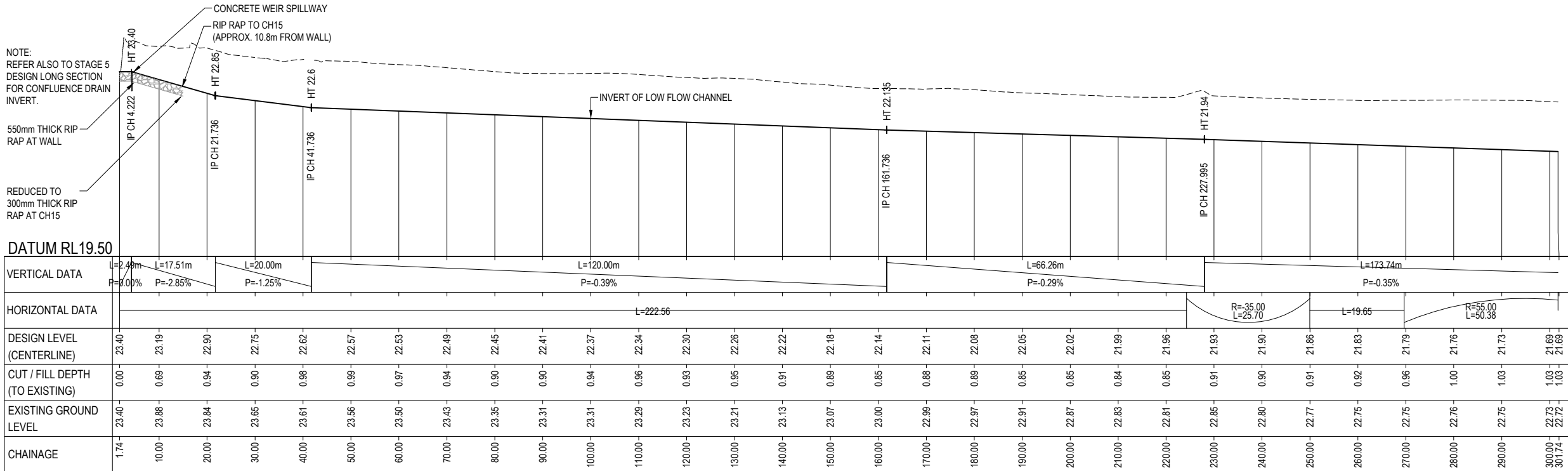
| TENDER               | DATE        |
|----------------------|-------------|
| NOT FOR CONSTRUCTION | 12/11/2020  |
| APPROVED             | A. LINDGREN |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | LAYOUT PLAN<br>SHEET 3                             |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 4103                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |

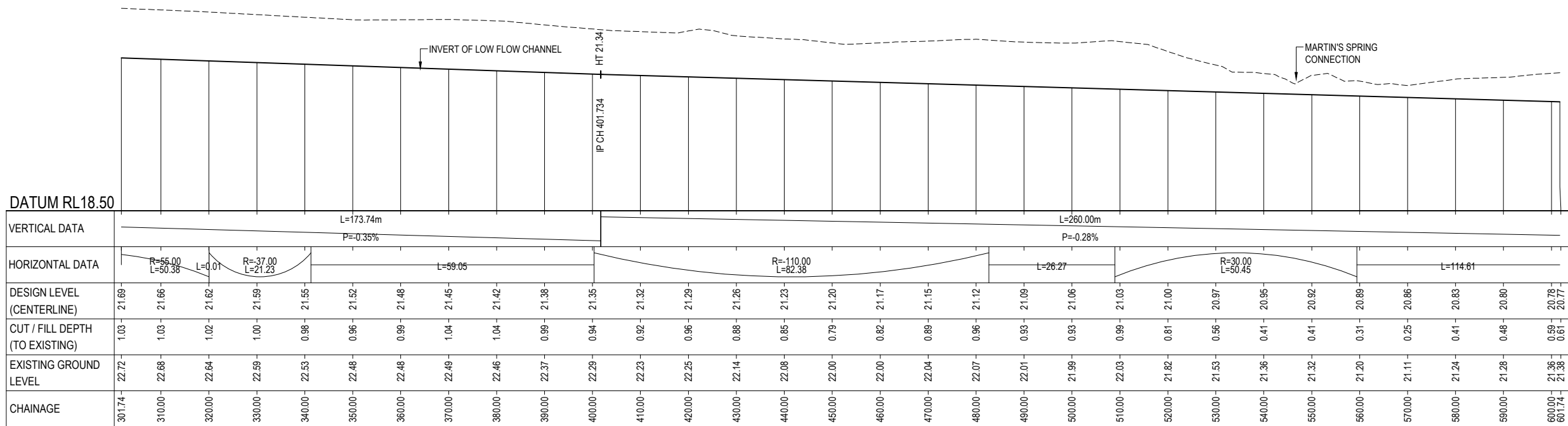
NOTE:  
VERTICAL ELEVATIONS ARE IN TERMS  
OF LYTTTELTON VERTICAL DATUM (1937)

LEGEND

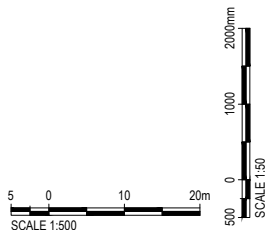
———— DESIGN SURFACE  
----- EXISTING SURFACE



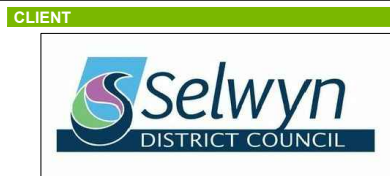
LONGITUDINAL SECTION STAGE 4 PART 1  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:50



LONGITUDINAL SECTION STAGE 4 PART 2  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:50



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| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |

| APPROVED    |
|-------------|
| A. LINDGREN |
| A. LINDGREN |
|             |
|             |
|             |
|             |
|             |

| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

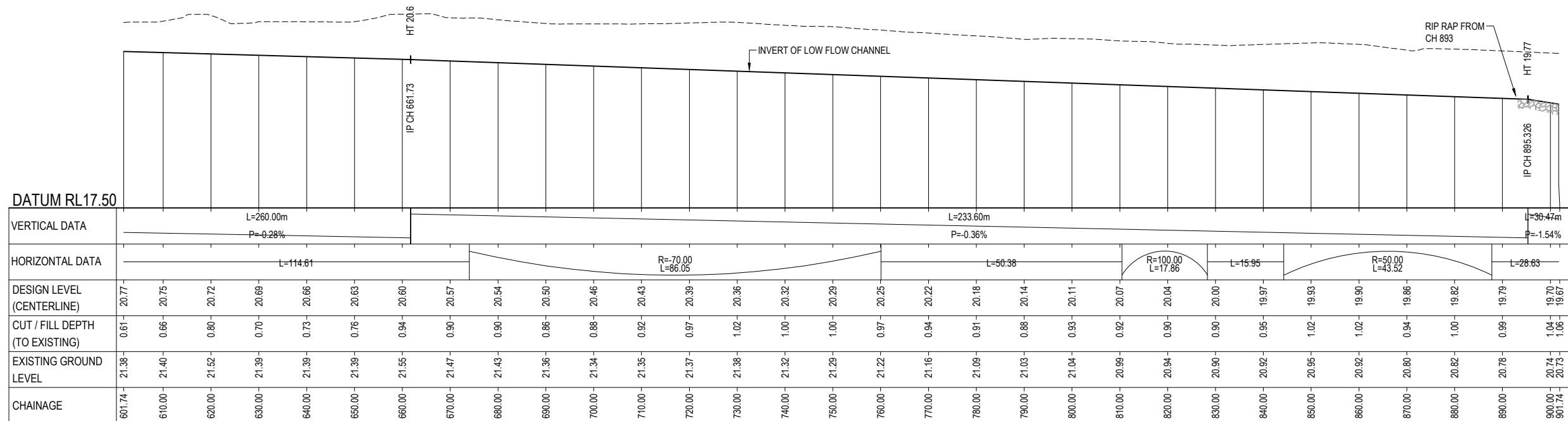
| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE                 |
| 16/10/20             |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | LONG SECTION<br>SHEET 1                            |
| DRAWING No. | 505193                                             |
| PROJECT No. | 505193                                             |
| AREA        | 0000                                               |
| TYPE        | DRG                                                |
| DISC        | CC                                                 |
| NUMBER      | 4200                                               |
| REV         | B                                                  |

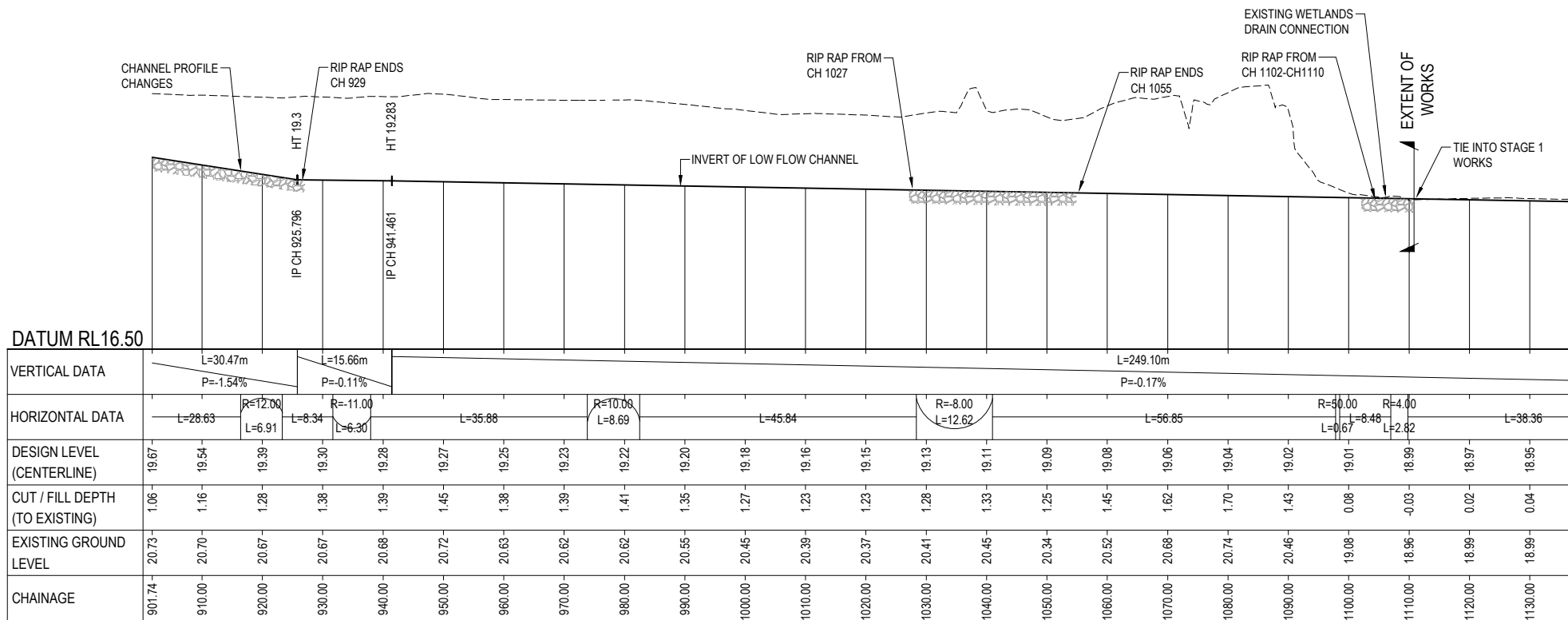
NOTE:  
VERTICAL ELEVATIONS ARE IN TERMS  
OF LYTTTELTON VERTICAL DATUM (1937)

LEGEND

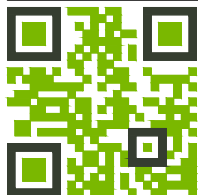
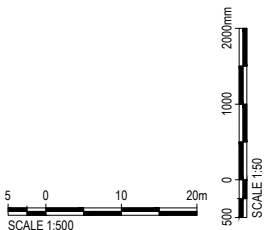
———— DESIGN SURFACE  
----- EXISTING SURFACE



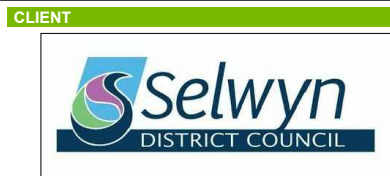
LONGITUDINAL SECTION STAGE 4 PART 3  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:50



LONGITUDINAL SECTION STAGE 4 PART 4  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:50



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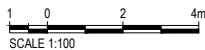
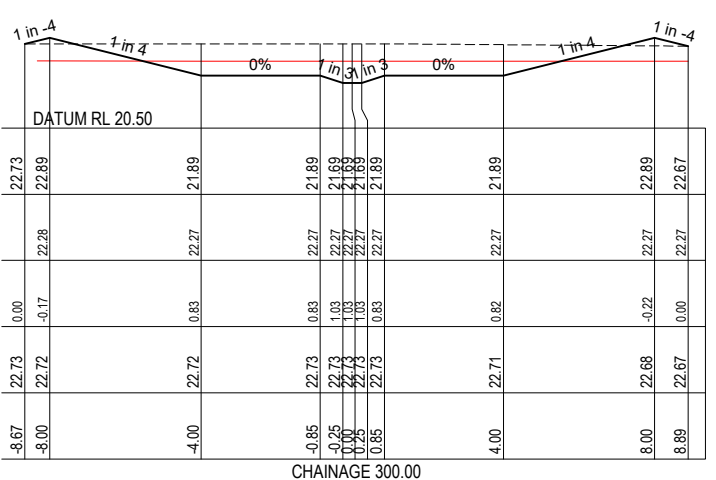
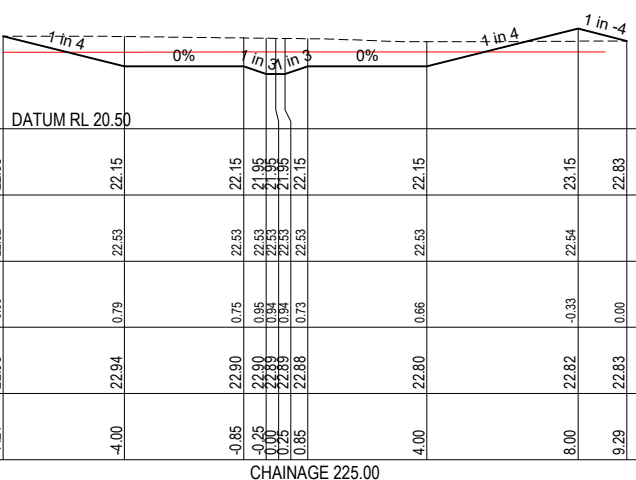
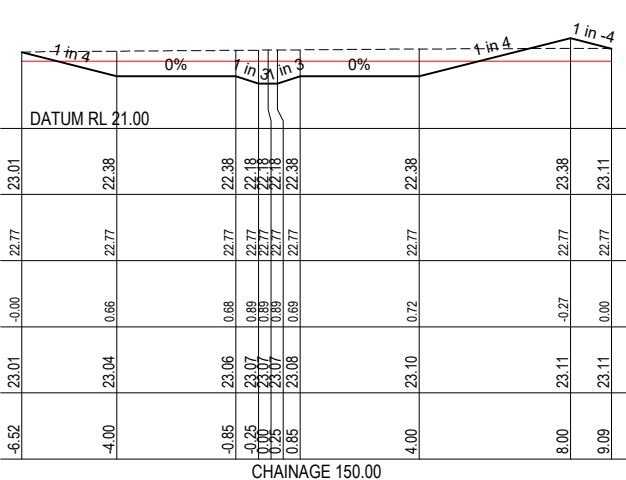
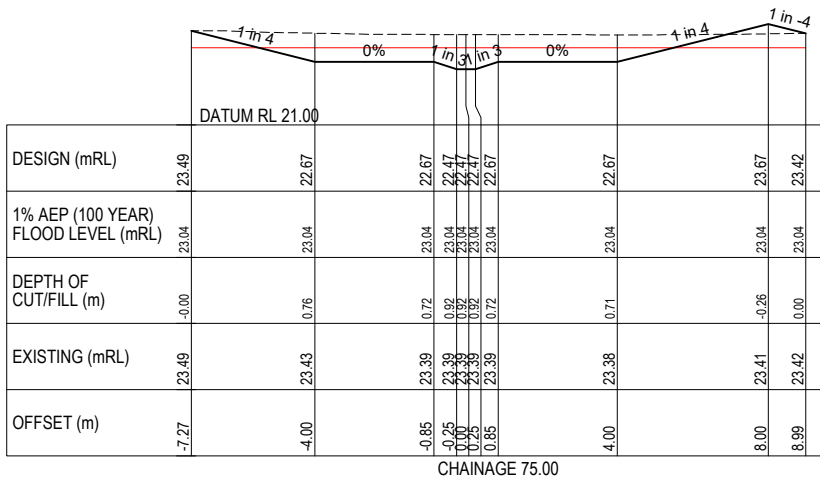
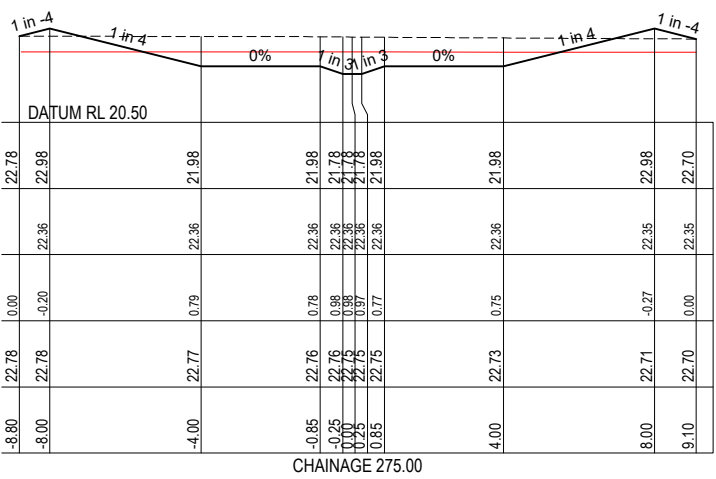
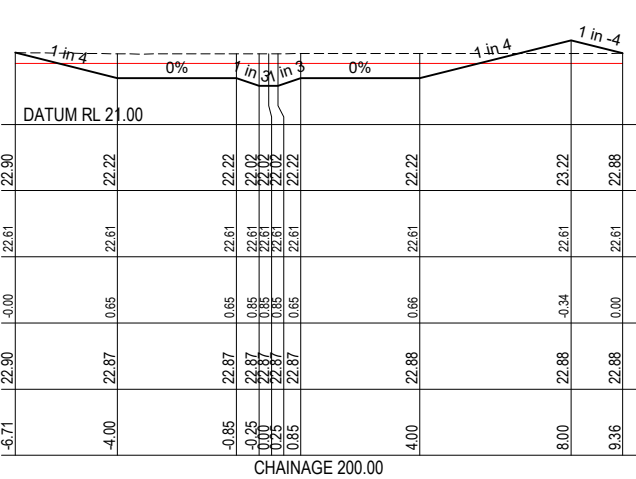
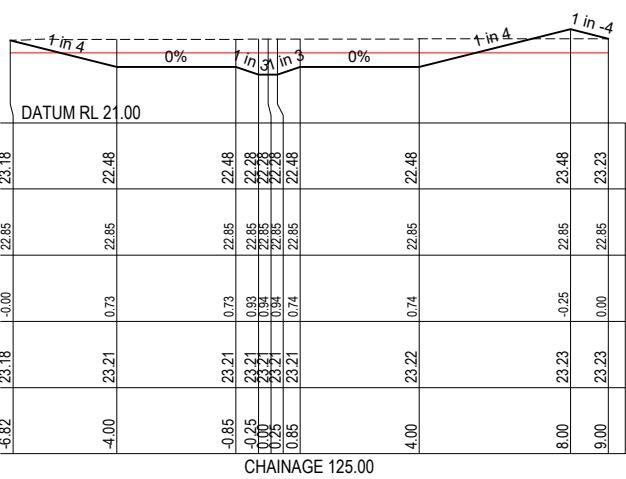
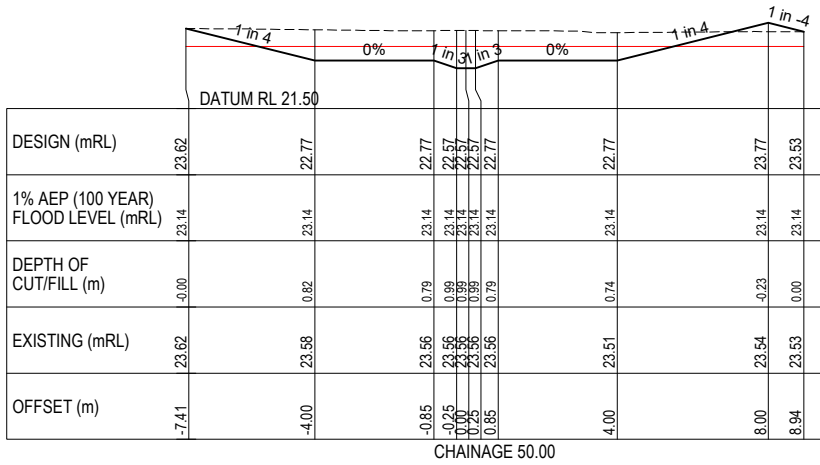
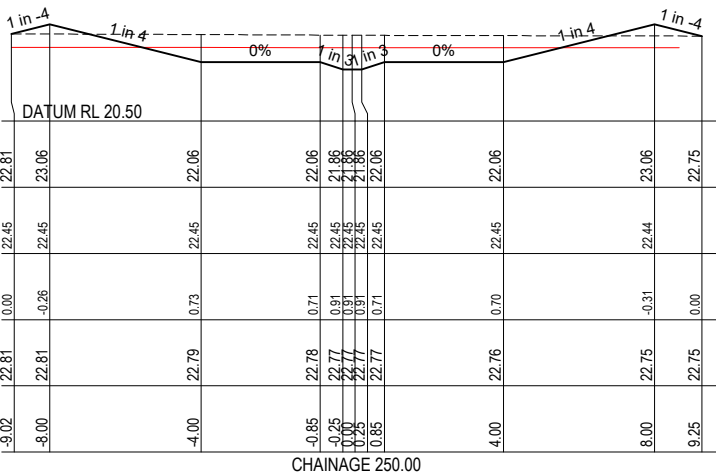
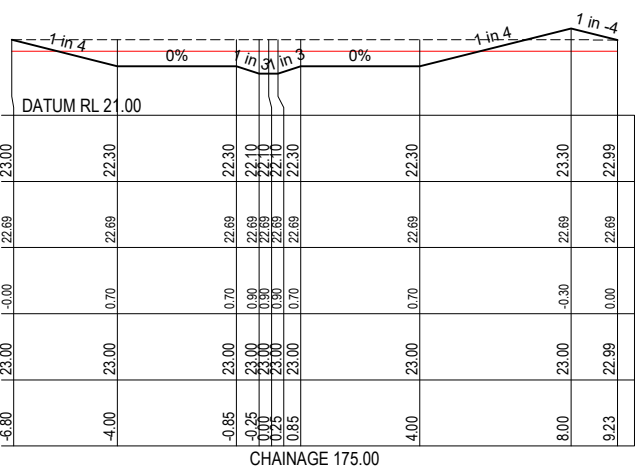
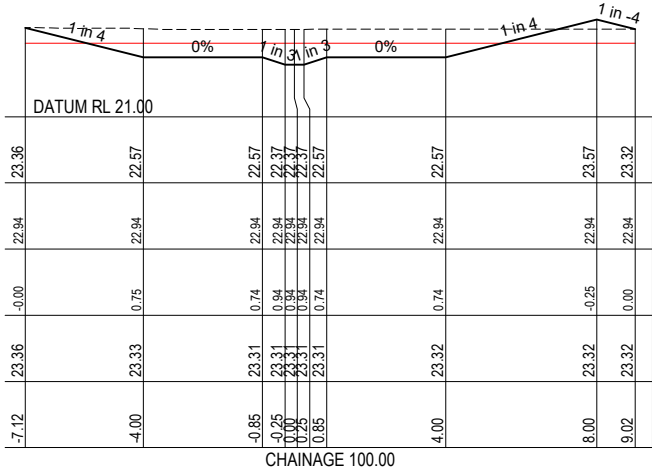
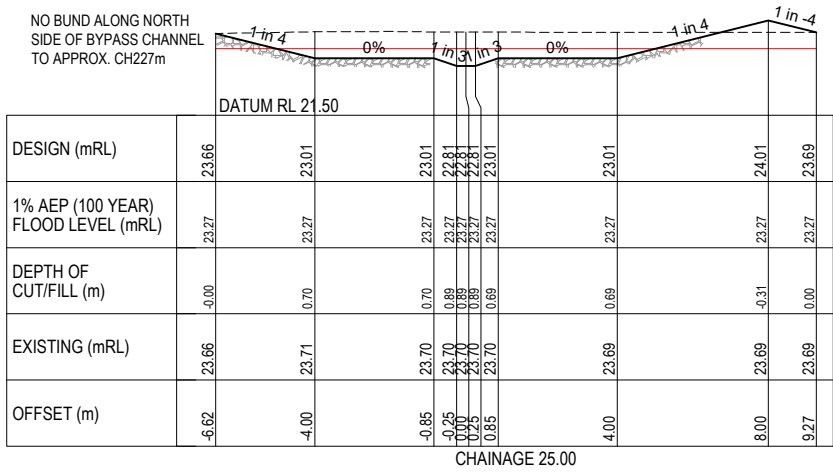


| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

| TENDER               | APPROVED |
|----------------------|----------|
| NOT FOR CONSTRUCTION |          |
|                      |          |
| A. LINDGREN          |          |
|                      |          |
|                      |          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | LONG SECTION<br>SHEET 2                            |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 4201                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |



LEGEND

DESIGN SURFACE

100 YEAR STORM EVENT HIGH WATER LEVEL

EXISTING SURFACE

RIP RAP

NOTE:

1. TOP OF BUNDS TO BE ROUNDED. HEIGHT TO MATCH THAT SHOWN ON CROSS SECTIONS.

2. VERTICAL ELEVATIONS ARE IN TERMS OF LYTTELTON VERTICAL DATUM (1937)

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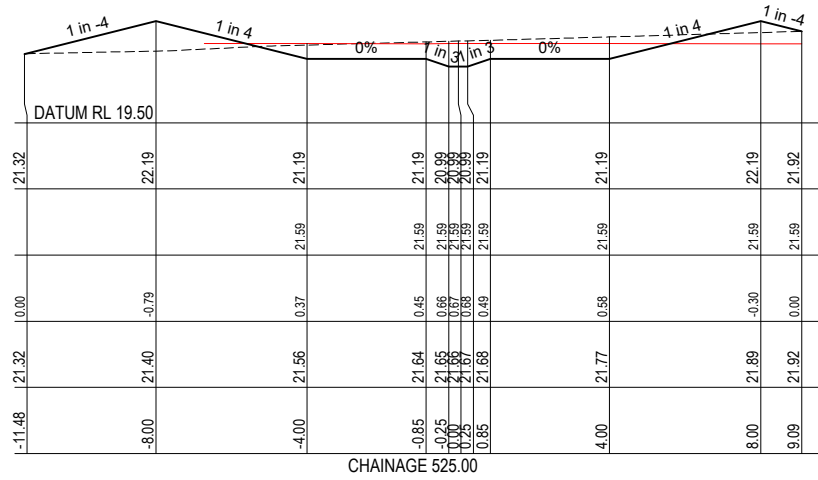
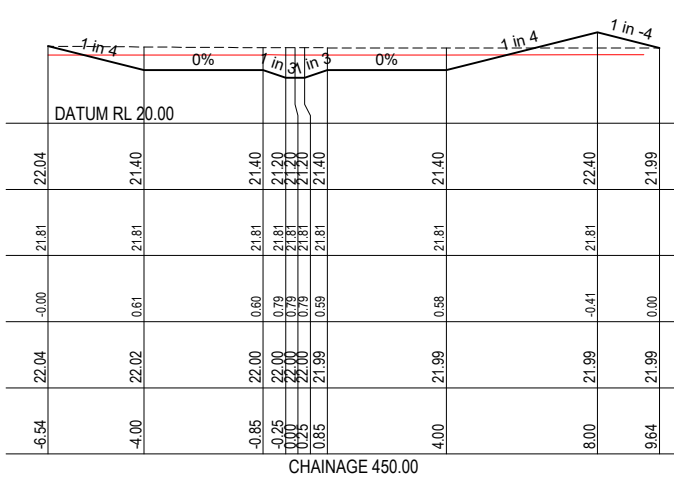
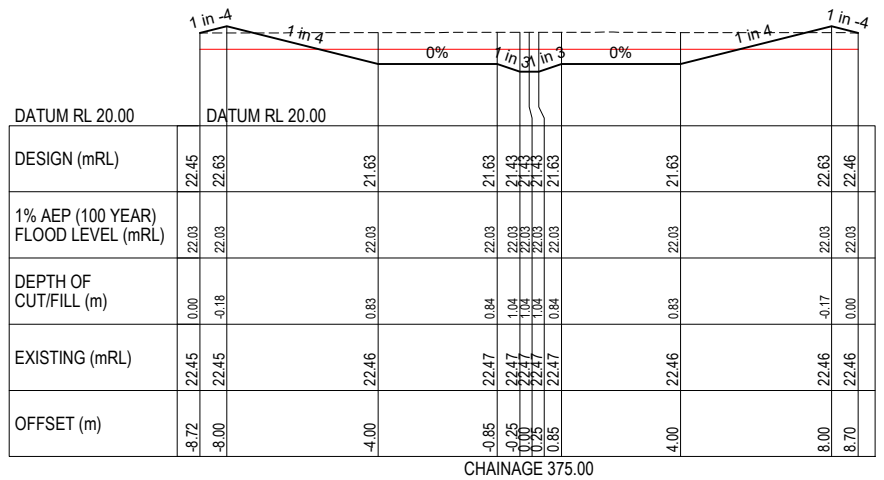
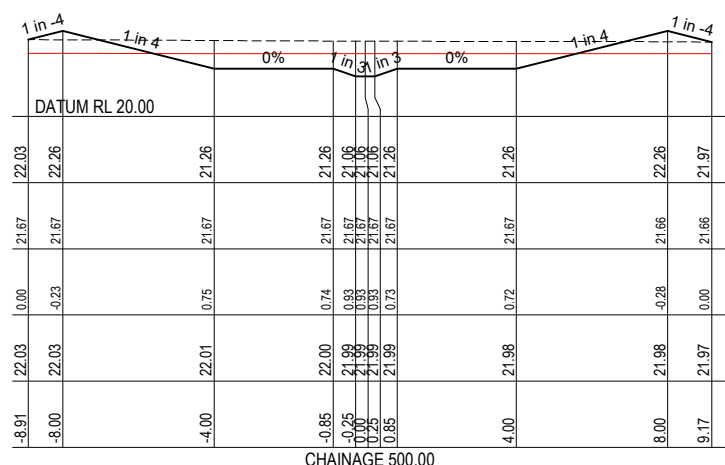
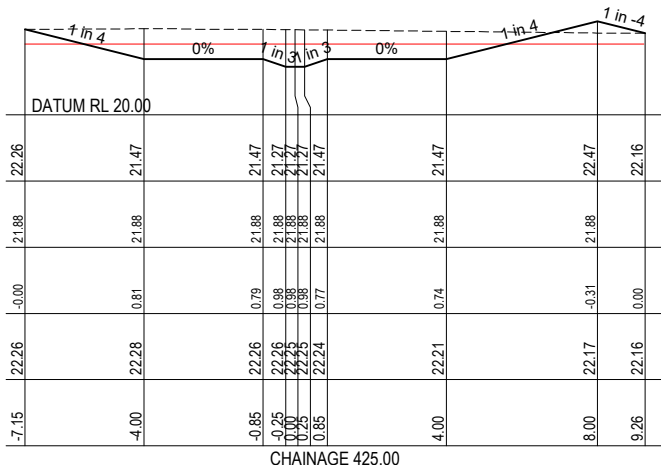
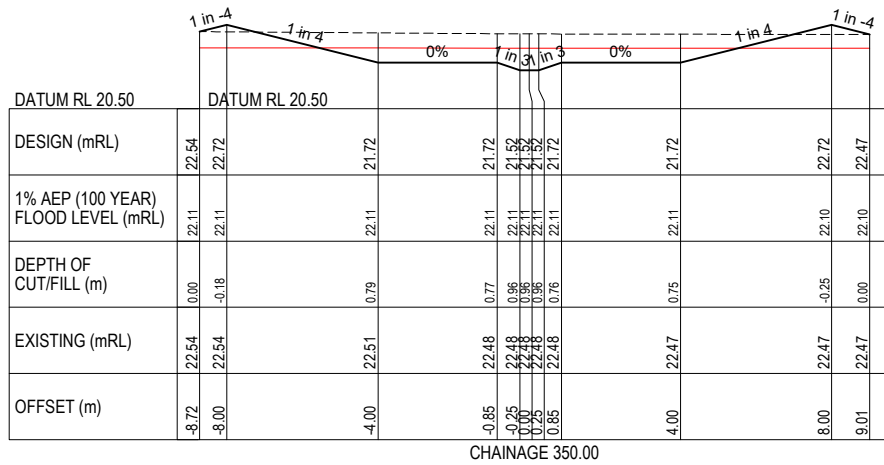
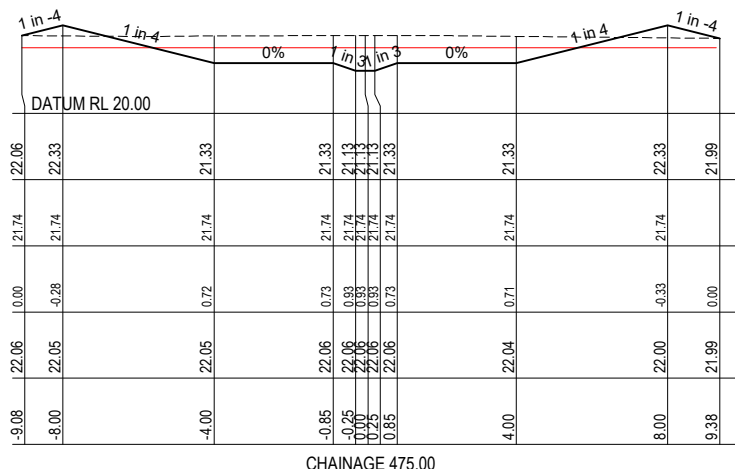
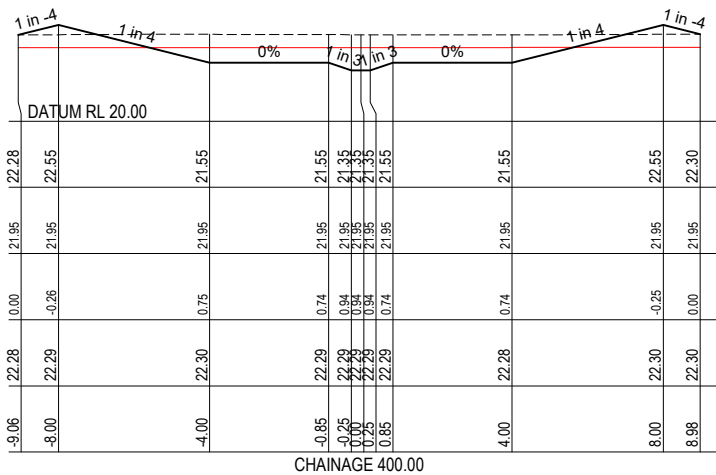
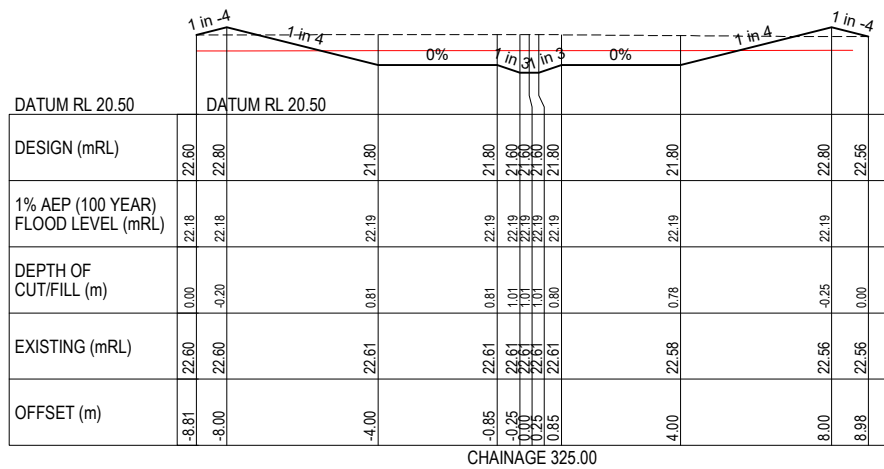
CLIENT

| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |

| APPROVED    | SCALE     | SIZE |
|-------------|-----------|------|
| A. LINDGREN | AS SHOWN  | A1   |
|             | DRAWN     |      |
|             | R DAWSON  |      |
|             | DESIGNED  |      |
|             | N CATTO   |      |
|             | REVIEWED  |      |
|             | R. DAVIES |      |

| TENDER               | APPROVED |
|----------------------|----------|
| NOT FOR CONSTRUCTION |          |
|                      | DATE     |
| A. LINDGREN          | 18/10/20 |
| A. LINDGREN          |          |

| PROJECT     | SDC - LEESTON NORTH STORMWATER BYPASS - STAGE 4 |
|-------------|-------------------------------------------------|
| TITLE       | CROSS SECTIONS SHEET 1                          |
| DRAWING No. | 505193                                          |
| PROJECT No. | 0000                                            |
| AREA        | DRG                                             |
| TYPE        | CC                                              |
| DISC        | 4300                                            |
| NUMBER      | B                                               |
| REV         |                                                 |



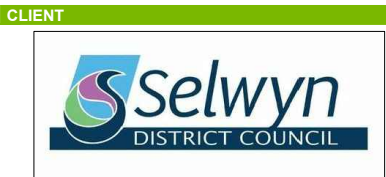
1 0 2 4m  
SCALE 1:100

LEGEND  
— DESIGN SURFACE  
— 100 YEAR STORM EVENT HIGH WATER LEVEL  
--- EXISTING SURFACE  
RIP RAP

NOTE:  
1. TOP OF BUNDS TO BE ROUNDED.  
HEIGHT TO MATCH THAT SHOWN ON  
CROSS SECTIONS.  
2. VERTICAL ELEVATIONS ARE IN TERMS  
OF LYTTELTON VERTICAL DATUM (1937)



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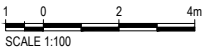
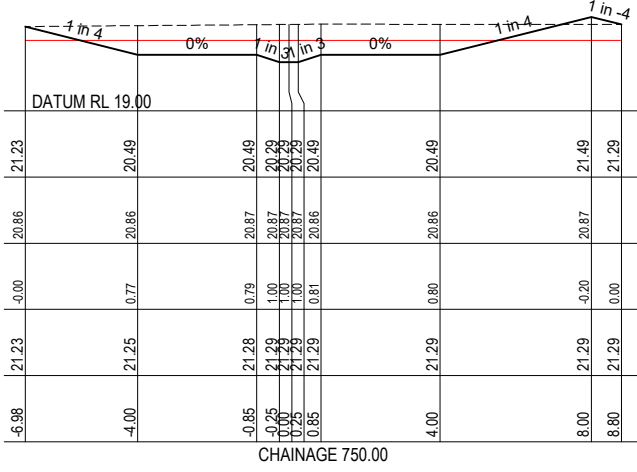
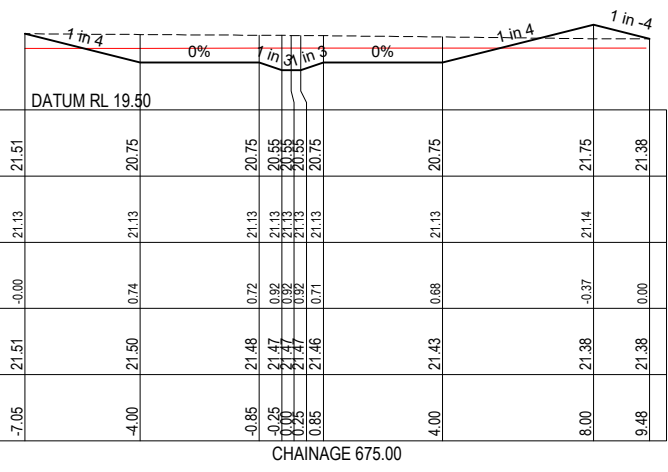
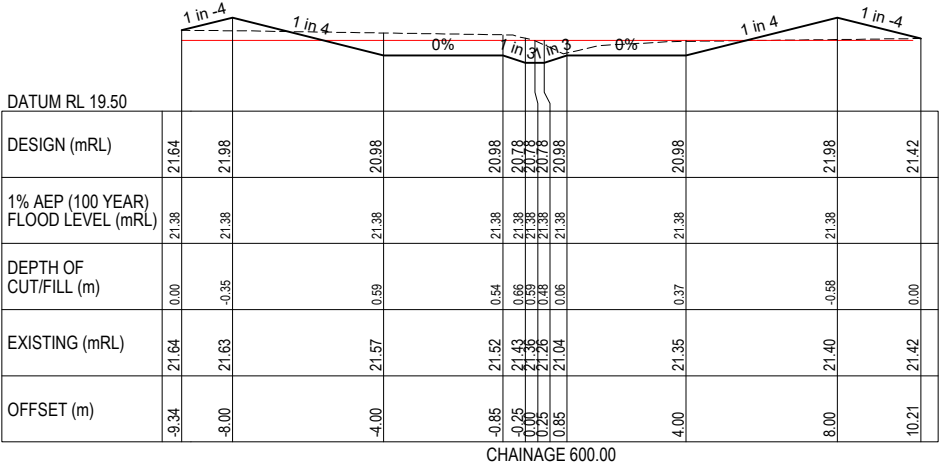
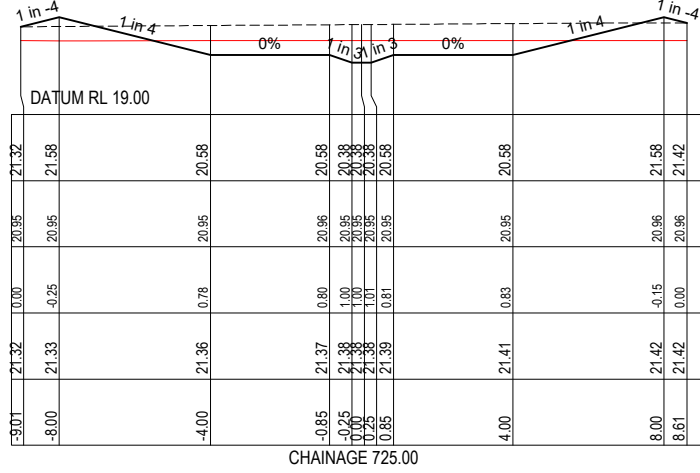
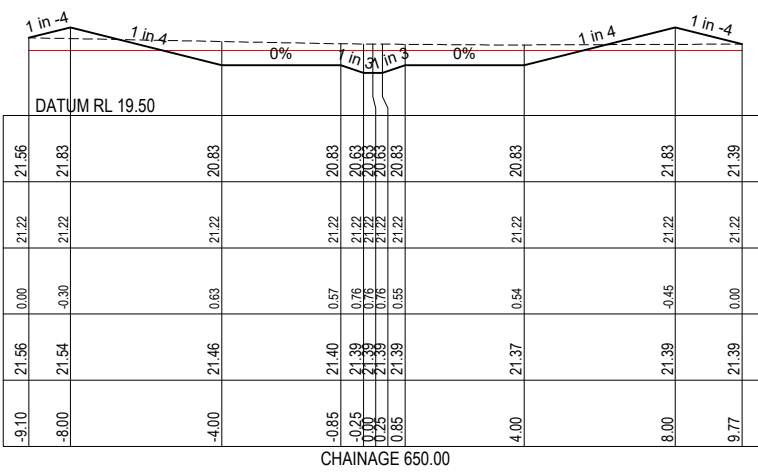
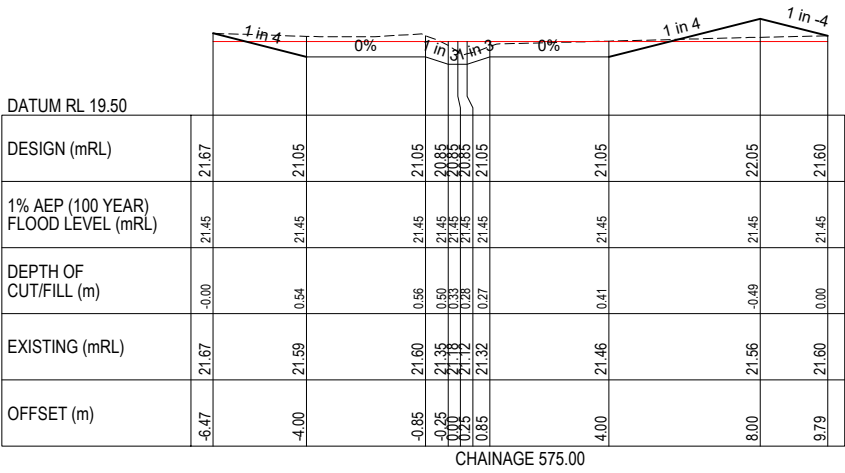
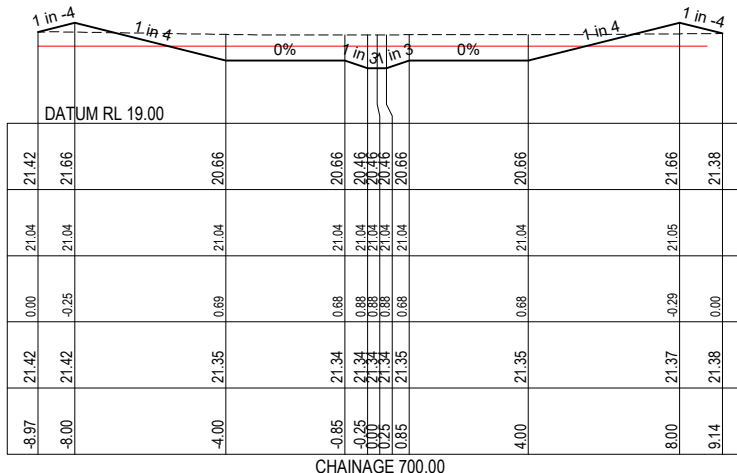
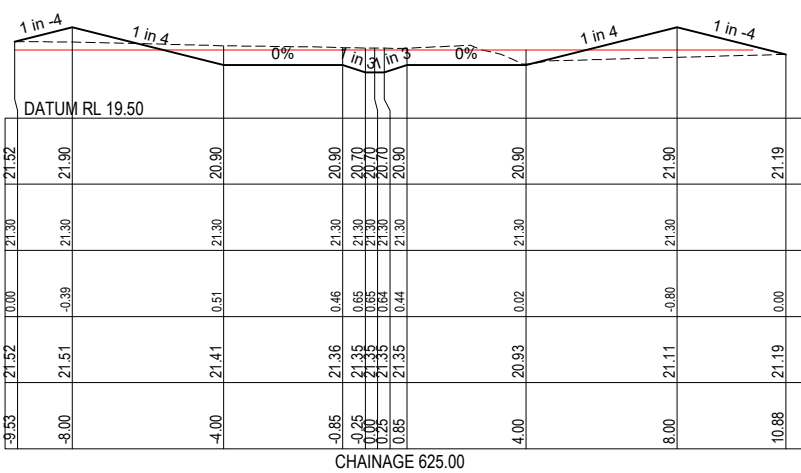
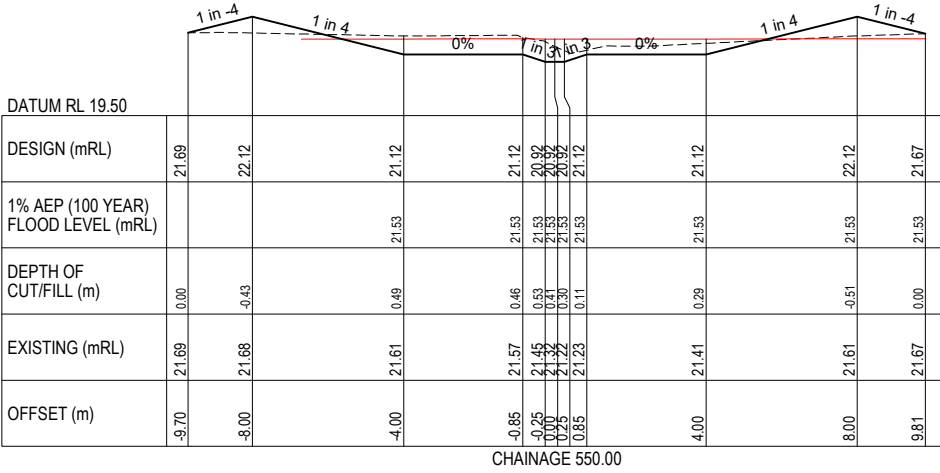


| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

| TENDER               | APPROVED         |
|----------------------|------------------|
| NOT FOR CONSTRUCTION | DATE<br>18/10/20 |
| A. LINDGREN          | A. LINDGREN      |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |
|-------------|----------------------------------------------------|
| TITLE       | CROSS SECTIONS<br>SHEET 2                          |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 4301                                               |
| NUMBER      | B                                                  |



LEGEND

|  |                                       |
|--|---------------------------------------|
|  | DESIGN SURFACE                        |
|  | 100 YEAR STORM EVENT HIGH WATER LEVEL |
|  | EXISTING SURFACE                      |
|  | RIP RAP                               |

NOTE:

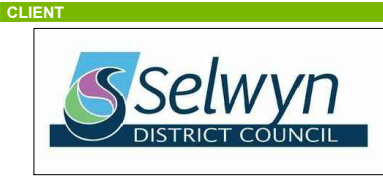
1. TOP OF BUNDS TO BE ROUNDED. HEIGHT TO MATCH THAT SHOWN ON CROSS SECTIONS.

2. VERTICAL ELEVATIONS ARE IN TERMS OF LYTTELTON VERTICAL DATUM (1937)



**aurecon**

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| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
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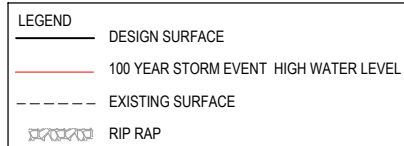
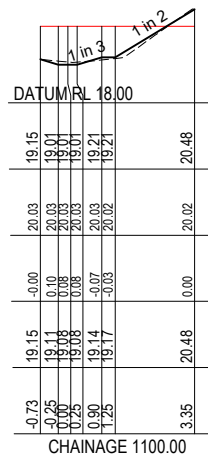
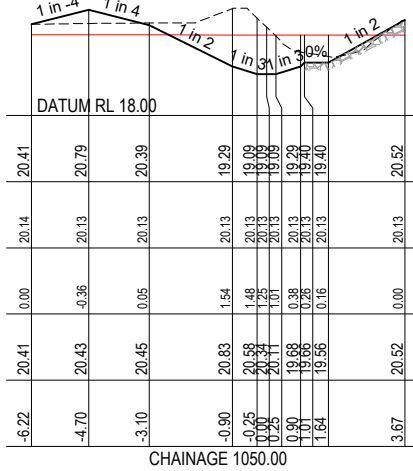
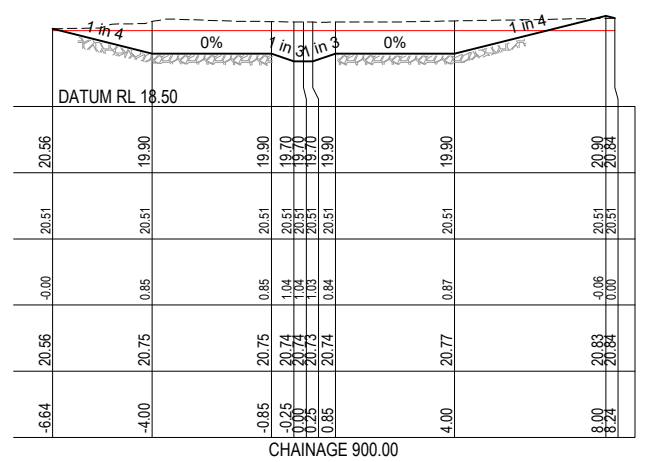
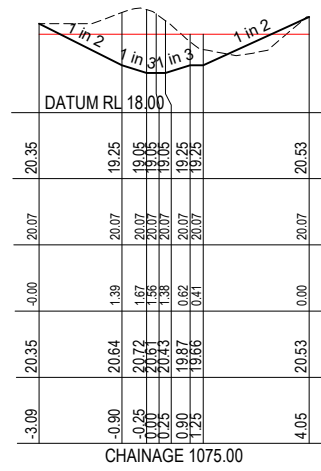
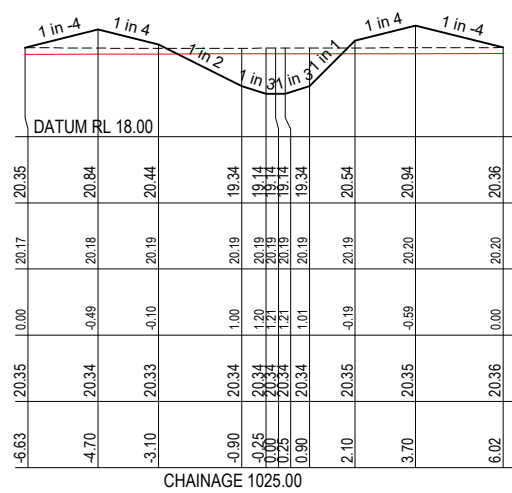
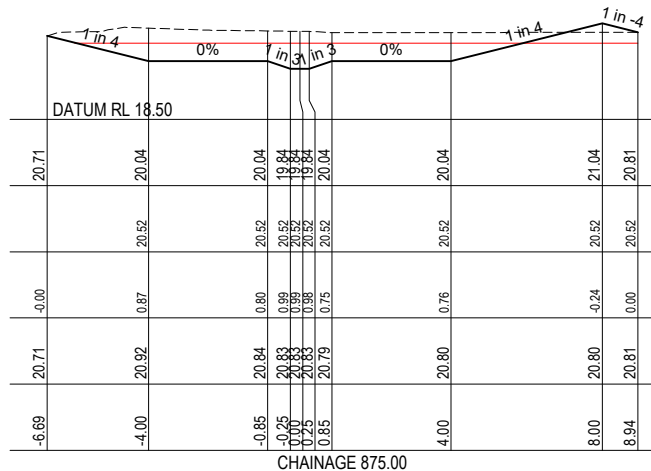
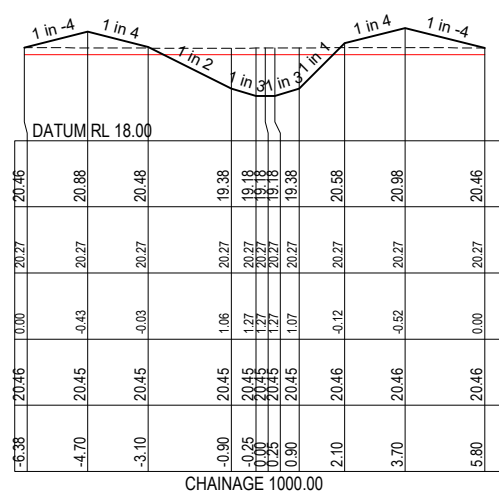
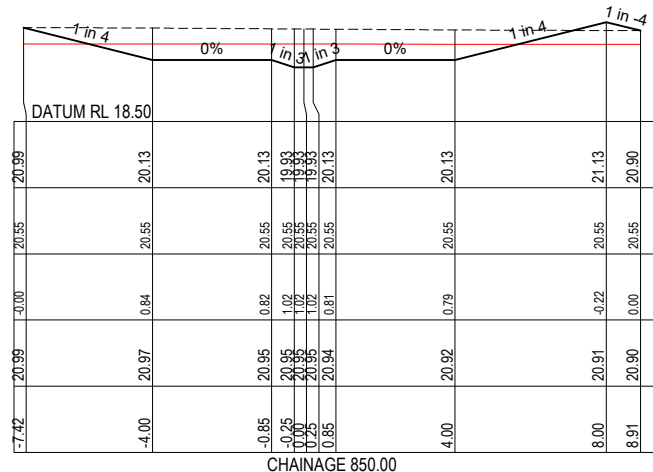
| APPROVED    | SCALE    | SIZE |
|-------------|----------|------|
| A. LINDGREN | AS SHOWN | A1   |
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|             |          |      |
|             |          |      |
|             |          |      |
|             |          |      |
|             |          |      |
|             |          |      |

| DRAWN    | DESIGNED | REVIEWED  |
|----------|----------|-----------|
| R DAWSON | N CATTO  | R. DAVIES |
|          |          |           |
|          |          |           |
|          |          |           |
|          |          |           |
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|          |          |           |
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| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
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| APPROVED    | DATE     |
|-------------|----------|
| A. LINDGREN | 18/10/20 |
|             |          |
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|             |          |
|             |          |
|             |          |

| PROJECT     | SDC - LEESTON NORTH STORMWATER BYPASS - STAGE 4 |
|-------------|-------------------------------------------------|
| TITLE       | CROSS SECTIONS SHEET 3                          |
| DRAWING No. | 505193                                          |
| PROJECT No. | 0000                                            |
| AREA        | DRG                                             |
| TYPE        | CC                                              |
| DISC        | 4302                                            |
| NUMBER      | B                                               |
| REV         |                                                 |



NOTE:

1. TOP OF BUNDS TO BE ROUNDED.  
HEIGHT TO MATCH THAT SHOWN ON  
CROSS SECTIONS.
2. VERTICAL ELEVATIONS ARE IN TERMS  
OF LYTTELTON VERTICAL DATUM (1937)



| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
|     |          |                    |
|     |          |                    |
|     |          |                    |
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|     |          |                    |

|                 |             |
|-----------------|-------------|
| <b>SCALE</b>    | <b>SIZE</b> |
| AS SHOWN        | A1          |
| <b>DRAWN</b>    |             |
| R DAWSON        |             |
| <b>DESIGNED</b> |             |
| N CATTO         |             |
| <b>REVIEWED</b> |             |
| R. DAVIES       |             |

**TENDER**  
**NOT FOR CONSTRUCTION**

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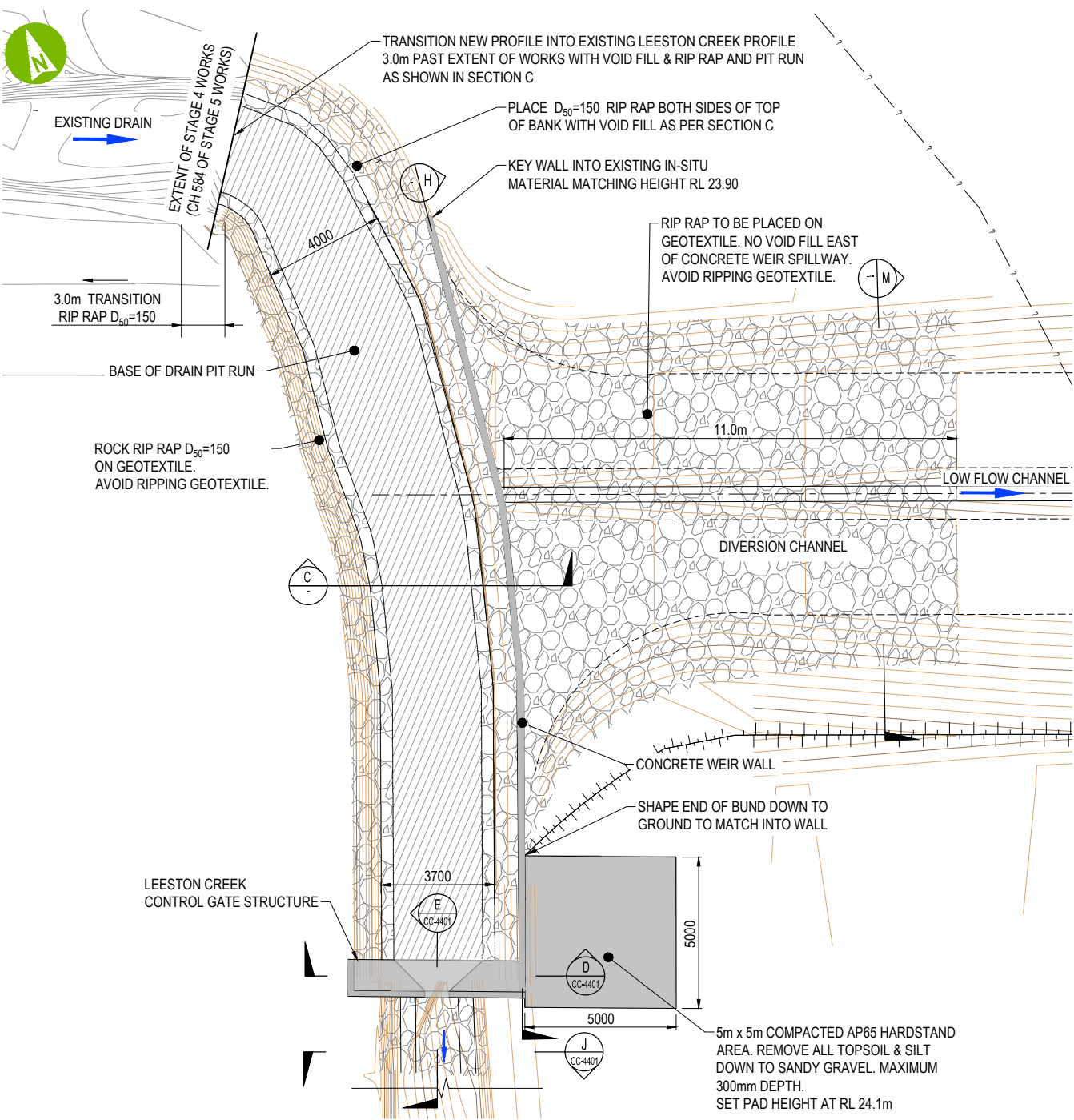
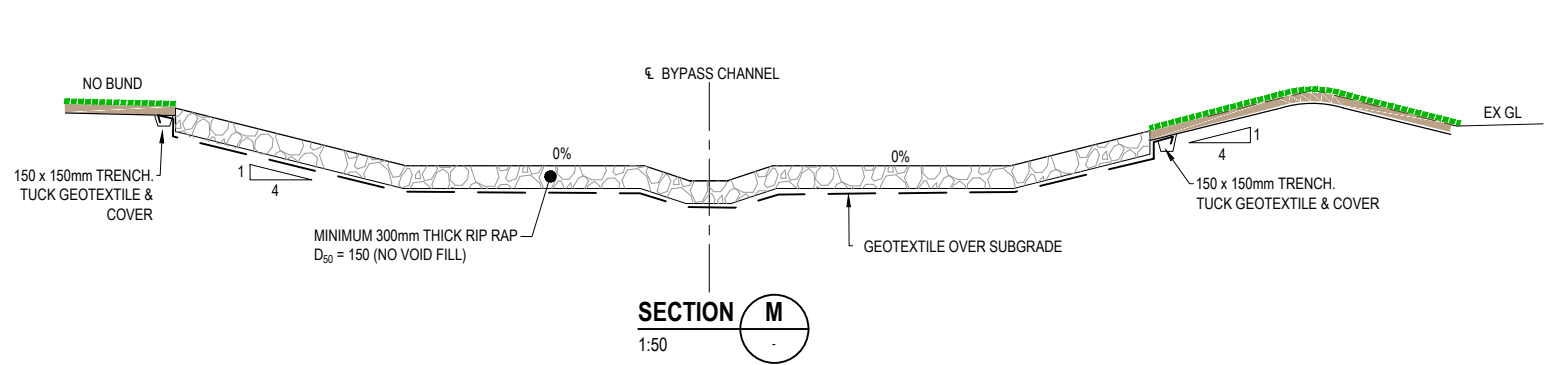
**APPROVED**

DATE  
16/10/20

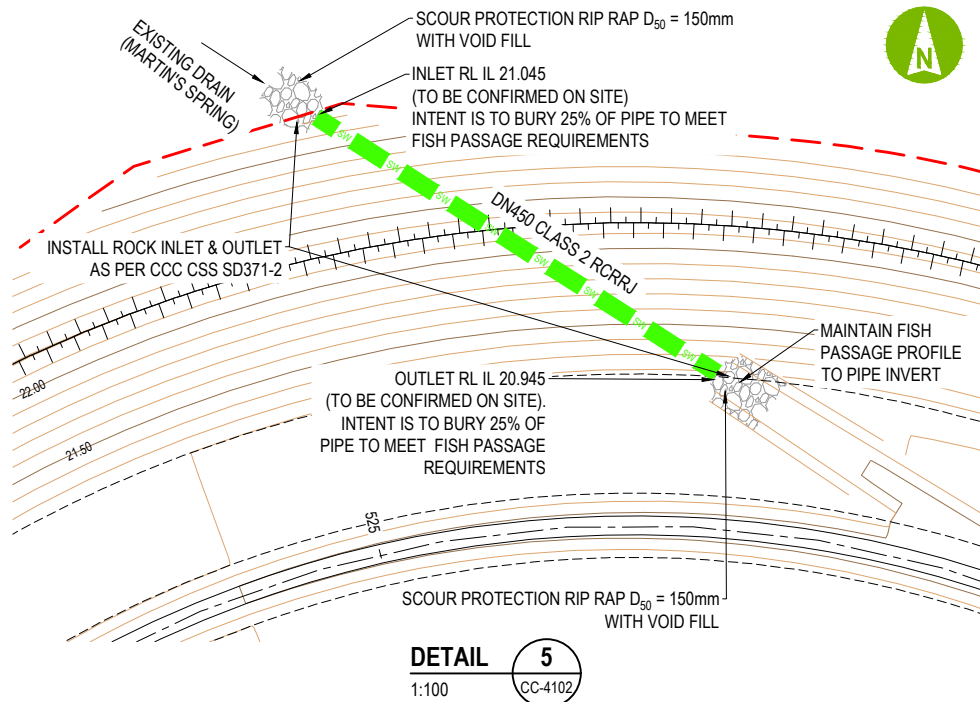
A. LINDGREN

A. LINDGREN

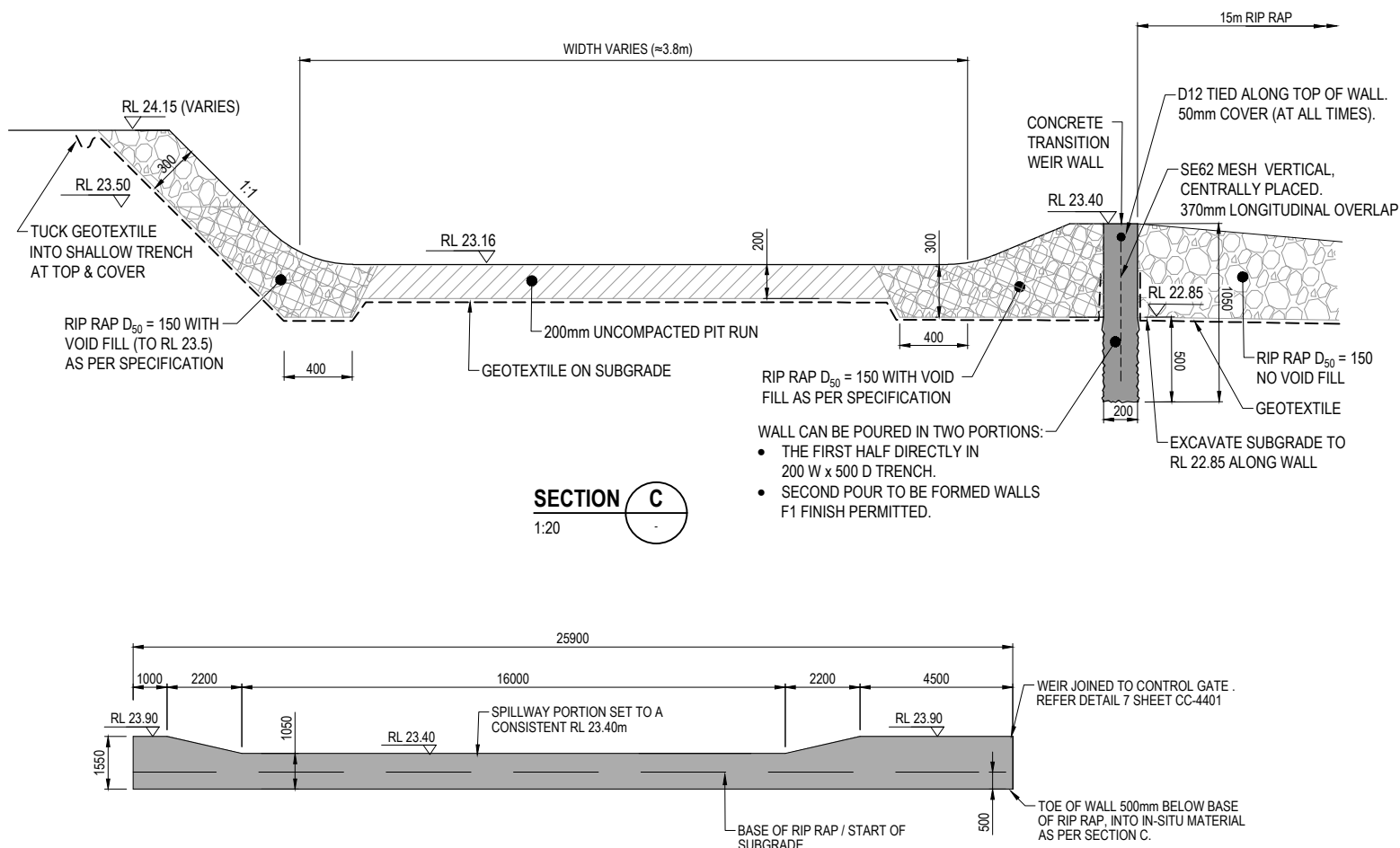
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|-------------|----------------------------------------------------|--------------|-------------|------------|----------------|----------|
| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |              |             |            |                |          |
| TITLE       | CROSS SECTIONS<br>SHEET 4                          |              |             |            |                |          |
| DRAWING No. | PROJECT No.<br>505193                              | AREA<br>0000 | TYPE<br>DRG | DISC<br>CC | NUMBER<br>4303 | REV<br>B |



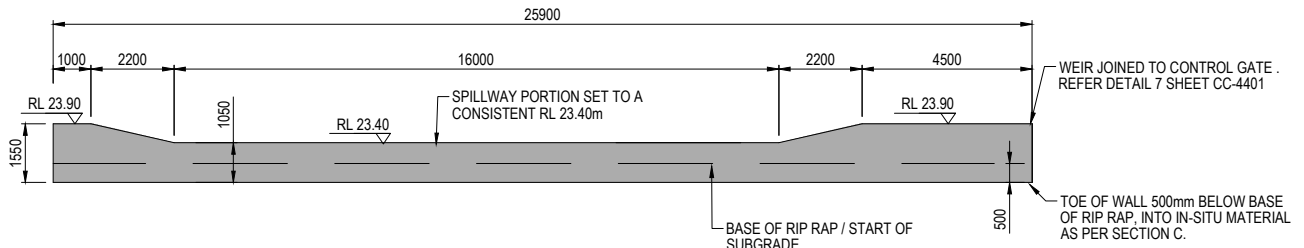
**DETAIL 1**  
1:100  
CC-4101



**DETAIL 5**  
1:100  
CC-4102



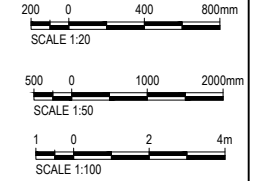
**SECTION C**  
1:20



**SECTION H**  
1:100

**CONFLUENCE DIVERSION  
CONCRETE WEIR SPILLWAY**

- NOTE:**
- CONTROL JOINTS EVERY 4.3m TO BE STOPPED WITH FILLER STRIP AND SEALANT
  - CONTROL JOINTS WITH HR12 LAPPING BARS 800mm LONG, EMBEDDED 400mm EACH END, 300mm CRS.
  - MESH TO STOP BEFORE JOINT TO HAVE 50mm COVER.



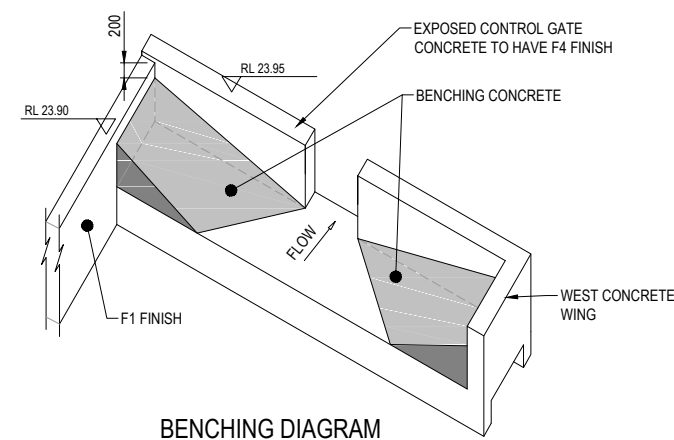
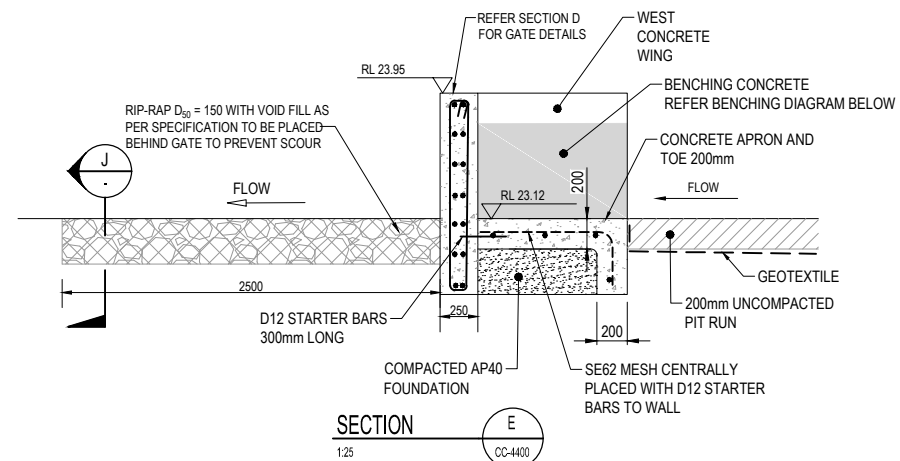
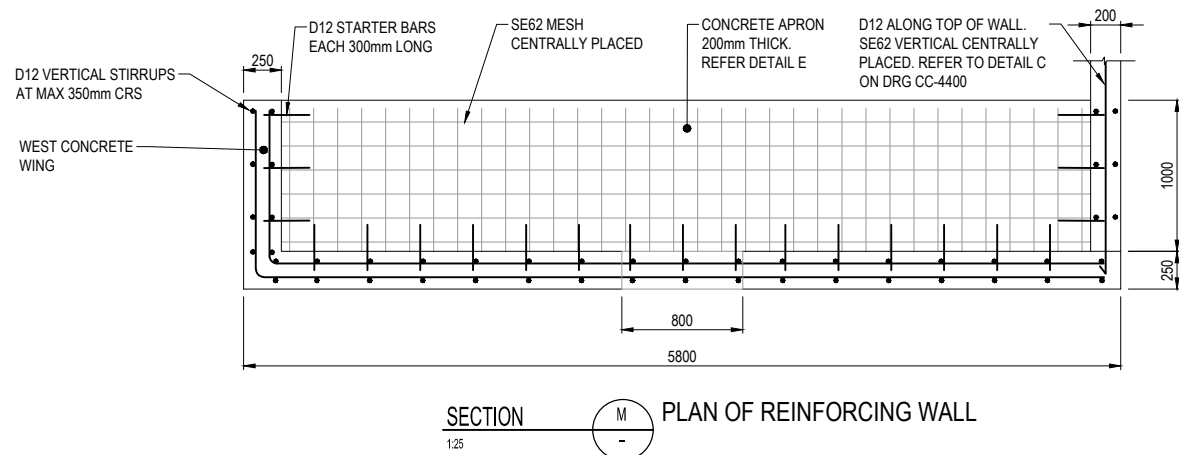
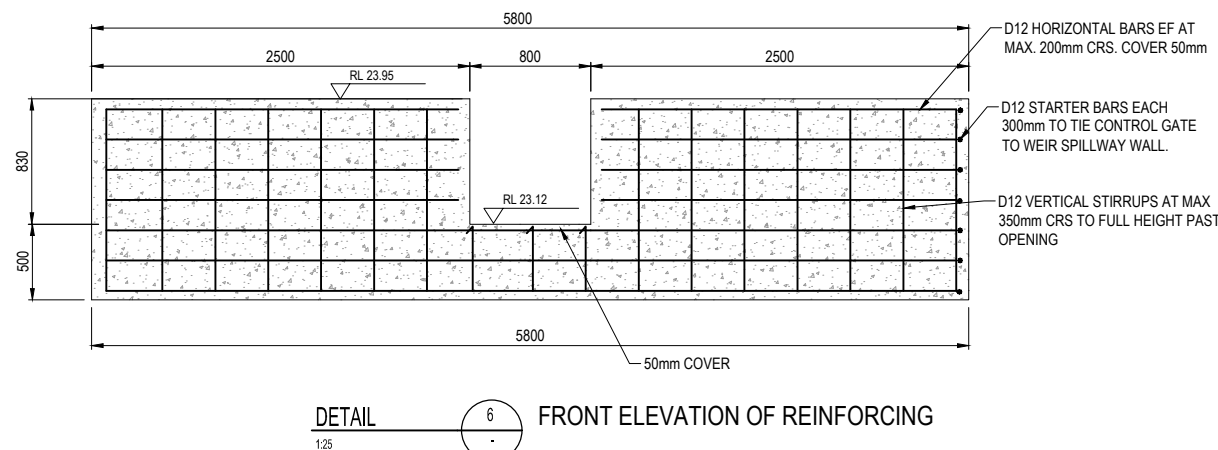
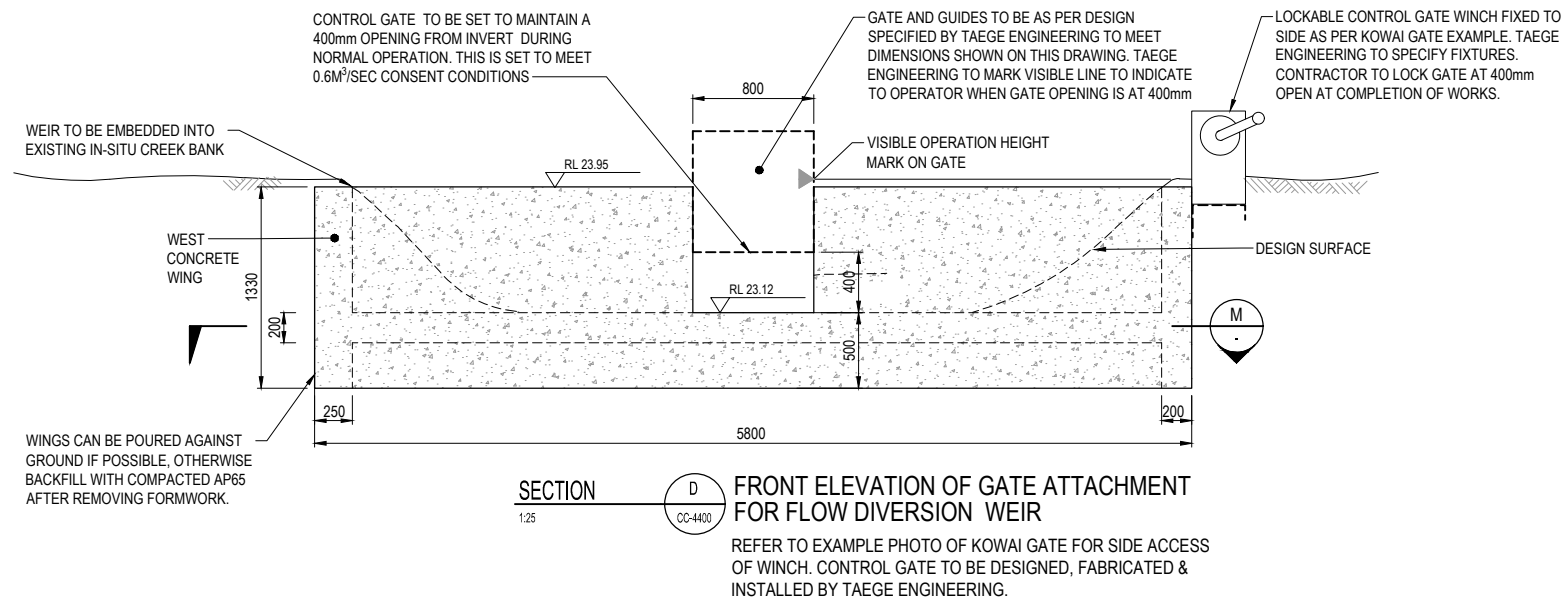
- NOTES:**
- REFER GENERAL NOTES ON SHEET 4100
  - ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN
  - CONCRETE TO 40MPa AFTER 28 DAYS
  - RIP RAP GRADING TABLE AS PER SHEET 4100
  - GEOTEXTILE AS PER SPECIFICATION

| REV | DATE     | REVISION DETAILS |
|-----|----------|------------------|
| A   | 16/10/20 | FOR APPROVAL     |
| B   | 12/11/20 | ISSUE FOR TENDER |

| APPROVED    | SCALE           | SIZE |
|-------------|-----------------|------|
| A. LINDGREN | AS SHOWN        | A1   |
|             | <b>DRAWN</b>    |      |
|             | R DAWSON        |      |
|             | <b>DESIGNED</b> |      |
|             | N CATTO         |      |
|             | <b>REVIEWED</b> |      |
|             | R DAVIES        |      |

| TENDER               | PROJECT |
|----------------------|---------|
| NOT FOR CONSTRUCTION |         |
| APPROVED             | TITLE   |
| A. LINDGREN          |         |
| DATE                 |         |
| 18/10/20             |         |

|             |                                                    |        |       |      |        |     |
|-------------|----------------------------------------------------|--------|-------|------|--------|-----|
| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |        |       |      |        |     |
| TITLE       | DETAILS<br>SHEET 1                                 |        |       |      |        |     |
| DRAWING No. | PROJECT No.                                        | WBS    | TYPE  | DISC | NUMBER | REV |
|             | 505193                                             | - 0000 | - DRG | - CC | - 4400 | - B |



KOWAI GATE EXAMPLE

- NOTES:**
1. REFER GENERAL NOTES ON SHEET 4100
  2. 6.REFER TO GENERAL REINFORCING NOTES ON DRAWING CC-4403.
  3. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN
  4. CONCRETE TO 40MPa AFTER 28 DAYS
  5. RIP RAP GRADING TABLE AS PER SHEET 4100
  6. GEOTEXTILE AS PER SPECIFICATION
  7. DEFORMED REINFORCING BAR TO BE 300E GRADE DUCTILE STEEL.

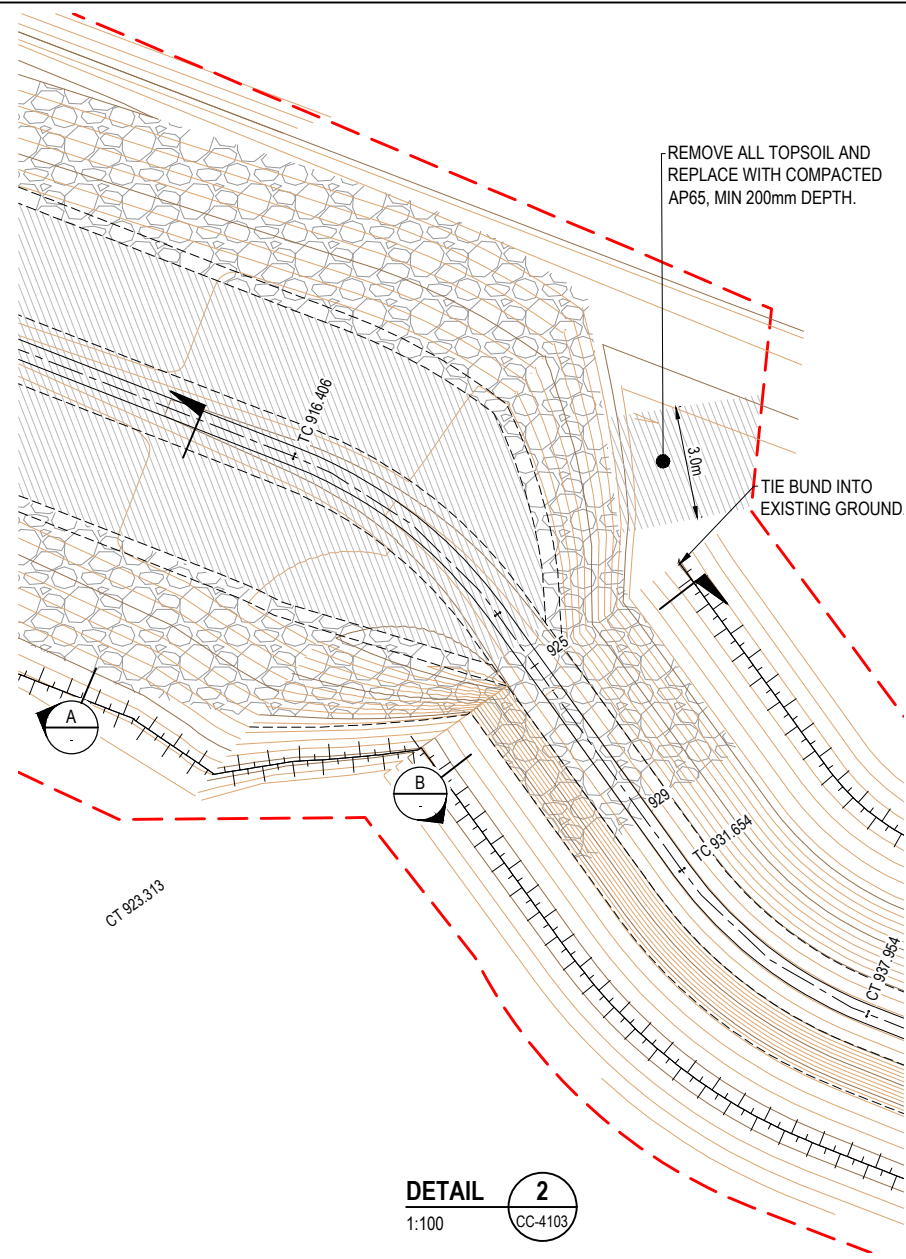
| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
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| APPROVED    |
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| A. LINDGREN |
| A. LINDGREN |
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| SCALE           | SIZE |
|-----------------|------|
| AS SHOWN        | A1   |
| <b>DRAWN</b>    |      |
| R.DAWSON        |      |
| <b>DESIGNED</b> |      |
| N CATTO         |      |
| <b>REVIEWED</b> |      |
| R DAVIES        |      |

|                      |          |
|----------------------|----------|
| TENDER               |          |
| NOT FOR CONSTRUCTION |          |
| APPROVED             |          |
|                      | DATE     |
| A. LINDGREN          | 16/10/20 |
| A. LINDGREN          |          |

|             |                                                    |      |      |      |        |     |  |  |  |  |  |  |
|-------------|----------------------------------------------------|------|------|------|--------|-----|--|--|--|--|--|--|
| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |      |      |      |        |     |  |  |  |  |  |  |
| TITLE       | DETAILS<br>SHEET 2                                 |      |      |      |        |     |  |  |  |  |  |  |
| DRAWING No. | PROJECT No.                                        | WBS  | TYPE | DISC | NUMBER | REV |  |  |  |  |  |  |
|             | 505193                                             | 0000 | DRG  | CC   | 4401   | B   |  |  |  |  |  |  |



EXISTING DN600  
CULVERT OUTLET ONLY  
TO CCC CSS SD371-2

L

TC 1091.838  
CT 1098.509  
TC 1100.986  
CT 1109.807

19.10  
19.50  
20.00

EXTENT OF WORKS

DETAIL 4

**SECTION A**

1:50

EX GL

150 x 150mm TRENCH. TUCK GEOTEXTILE & COVER

300mm THICK RIP RAP  $D_{50} = 150$

RIP RAP  $D_{50} = 150$  WITH VOID FILL AS PER SPECIFICATIONS TO 200mm ABOVE INVERT

1:4

400

0%

200mm UNCOMPACTED PITRUN

GEOTEXTILE OVER SUBGRADE

LOW FLOW CHANNEL

**SECTION B**

1:50

EX GL

150 x 150mm TRENCH. TUCK GEOTEXTILE & COVER

300mm THICK RIP RAP  $D_{50} = 150$  (NO VOID FILL)

RIP RAP  $D_{50} = 150$  WITH VOID FILL AS PER SPECIFICATIONS TO 200mm ABOVE INVERT

1:4

1:2

200

LOW FLOW CHANNEL

1:1

150 x 150mm TRENCH. TUCK GEOTEXTILE & COVER

GEOTEXTILE OVER SUBGRADE

LOW FLOW CHANNEL

EX GL

200  
LOW FLOW CHANNEL

1:6

1:1

EX GL

150x150mm TRENCH.  
TUCK GEOTEXTILE & COVER

GEOTEXTILE OVER SUBGRADE

300mm THICK RIP RAP  $D_{50} = 150$   
(NO VOID FILL)

RIP RAP  $D_{50} = 150$  WITH VOID FILL AS PER  
SPECIFICATIONS TO 200mm ABOVE INVERT

**SECTION K**

1:50

EX GL

150x 150mm TRENCH. TUCK GEOTEXTILE & COVER

200

GEOTEXTILE OVER SUBGRADE

300mm THICK RIP RAP  $D_{30} = 150$

RIP RAP  $D_{30} = 150$  WITH VOID FILL AS PER SPECIFICATIONS TO 200mm ABOVE INVERT

**SECTION L**

1:50

[illegible]

GENERAL NOTES

1. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION.
2. UNLESS NOTED OTHERWISE, ALL REDUCED LEVELS (RLs) ARE IN METRES, AND ALL DIMENSIONS ARE IN MILLIMETRES
3. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM DRAWINGS.
4. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE REFERRED TO THE ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
5. THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION, INCLUDING TEMPORARY WORKS DESIGN, IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE METHOD OF EXCAVATION AND TEMPORARY SUPPORT OF ALL CUT FACES IS THE RESPONSIBILITY OF THE CONTRACTOR
7. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT CODES OF PRACTICE EXCEPT WHERE VARIED BY SPECIFICATION OR THE DRAWINGS
8. WHERE PROPRIETARY PRODUCTS ARE SPECIFIED IN THE DOCUMENTS THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE PRODUCT FOR APPROVAL. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.
9. ALL NON-LOAD BEARING WALLS SHALL BE KEPT CLEAR OF THE UNDERSIDE OF SLABS AND BEAMS BY 20mm UNLESS OTHERWISE SHOWN.
10. THE ENGINEER SHALL INSPECT STRUCTURAL DETAILS TO CM3 AS DEFINED IN THE ACENZ/IPENZ MODEL CONDITIONS. TYPICALLY INSPECT PRIOR TO:

- MAJOR CONCRETE TOURS
- STRUCTURAL STEEL BEING CONCEALED
- LININGS BEING PLACED OVER TIMBER BRACING DETAILS

CONTACT THE ENGINEER AT LEAST 48 HOURS PRIOR TO ARRANGE INSPECTION WHEN REQUIRED

STANDARD ABBREVIATIONS

1. GENERAL ABBREVIATIONS AS FOLLOWS:

  - ALT - ALTERNATING
  - ARCH - ARCHITECT(S)
  - BOS - BOTTOM OF STEEL
  - BLG - BUILDING
  - C/C - CENTRE TO CENTRE
  - CJ - CONSTRUCTION JOINT
  - COS - CHECK ON SITE
  - CONC - CONCRETE
  - COV - COVER TO REINFORCEMENT
  - CVR - COVER TO REINFORCEMENT
  - CL - CENTRE LINE
  - CRS - CENTRES
  - C/W - COMPLETE WITH
  - DFT - DRY FILM THICKNESS
  - DPM - DAMP-PROOF MEMBRANE
  - DIA - DIAMETER
  - FFL - FINISHED FLOOR LEVEL
  - FPBW - FULL PENETRATION BUTT WELD
  - FWAR - FILLET WELD ALL ROUND
  - GALV - GALVANISED
  - GL - GROUND LEVEL
  - HD - HOLDING DOWN (BOLT)
  - ID - INSIDE DIAMETER
  - IL - INVERT LEVEL
  - LG - LONG
  - MAX - MAXIMUM
  - MIN - MINIMUM
  - MS - MILD STEEL
  - NOM - NOMINAL
  - NTS - NOT TO SCALE
  - O/A - OVERALL
  - OD - OUTSIDE DIAMETER
  - PC - PRECAST CONCRETE
  - RAD - RADIUS
  - REQ'D - REQUIRED
  - RL - REDUCED LEVEL
  - SED - SMALL END DIAMETER
  - STGD - STAGGERED
  - STD - STANDARD
  - STP - STIRRUPS
  - STR - STARTERS
  - COG - STANDARD COG
  - SPEC - SPECIFICATION
  - SQ - SQUARE
  - SS - STAINLESS STEEL
  - TOS - TOP OF STEEL
  - THRU - THROUGH
  - TYP - TYPICAL
  - U/S - UNDERSIDE
  - UNO - UNLESS NOTED OTHERWISE
  - WP - WELD PLATE
  - ø - DRILL DIAMETER
2. ABBREVIATIONS FOR REINFORCED CONCRETE

  - B - BOTTOM
  - Bb - BOTTOM BARS, BOTTOM LAYER
  - Bt - BOTTOM BARS, TOP LAYER
  - T - TOP
  - Tb - TOP BARS, BOTTOM LAYER
  - Tt - TOP BARS, TOP LAYER
  - EW - EACH WAY
  - EF - EACH FACE
  - FF - FAR FACE
  - NF - NEAR FACE
  - LAR - LAP AT RANDOM LOCATIONS
  - REBAR - REINFORCING BARS
  - REINF - REINFORCEMENT
  - STR(S) - STIRRUP(S)
  - STR(S) - STARTER(S)
  - R - PLAIN ROUND REBAR GRADE 300
    - eg. R20 REFERS TO GRADE 300 PLAIN ROUND REBAR 20mm DIA.
  - HR - PLAIN ROUND REBAR GRADE 500
    - eg. HR20 REFERS TO GRADE 500 PLAIN ROUND REBAR 20mm DIA.
  - D - DEFORMED REBAR GRADE 300
    - eg. D20 REFERS TO GRADE 300 DEFORMED REBAR 20mm DIA.
  - H - DEFORMED REBAR GRADE 500
    - eg. H20 REFERS TO GRADE 500 DEFORMED REBAR 20mm DIA.
  - RB - DEFORMED REID BAR (GRADE 500)
    - eg. RB20 REFERS TO DEFORMED REID BAR 20mm DIA,
  - M - MESH eg. SE 62

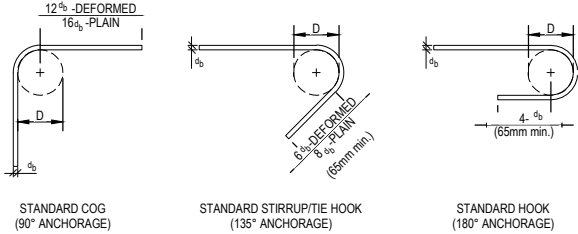
GRADE 500 REFERS TO GRADE 500E MA

NOTES ON REINFORCED CONCRETE

1. MINIMUM CONCRETE STRENGTHS SHALL BE AS FOLLOWS UNLESS NOTED ON DRAWINGS:
- FOUNDATION CONCRETE - 40MPa
  - SLAB ON GRADE - 30MPa
  - PRECAST CONCRETE - 40MPa
  - GROUT INFILL TO BLOCK WALLS - 17.5MPa
  - TIDY SLABS OR ANY OTHER NON-STRUCTURAL CONCRETE - 30MPa
2. SHRINKAGE CONTROL
- CONCRETE STRUCTURES THAT REQUIRE CONSTRUCTION OR SHRINKAGE CONTROL JOINTS HAVE REQUIREMENTS GOVERNED BY THE SIZE OF THE POUR, SIZE OF THE SLAB, THICKNESS OF SLAB, SITE CONDITIONS AND MIX DESIGN. THESE JOINTS MAY BE A SIMPLE KEYED CONSTRUCTION JOINT. THE FINAL SOLUTION SHALL BE DETERMINED BY THE ENGINEER AFTER CONSULTATION WITH THE CONTRACTOR AND ANY NECESSARY SUB-CONTRACTORS.
3. NO PENETRATIONS, CHASES OR EMBEDMENT OF PIPES SHALL BE MADE IN CONCRETE ELEMENTS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
4. SURFACE FINISHES TO THE CONCRETE SHALL BE AS STATED IN THE SPECIFICATION OR ON THE DRAWINGS.
5. THE CONTRACTOR IS TO SUBMIT SHOP DRAWINGS OF ALL PRECAST ELEMENTS FOR REVIEW PRIOR TO MANUFACTURE.
6. PROPRIETARY PRECAST ELEMENTS REFERRED TO IN THE DRAWINGS (IF ANY) SHALL BE DESIGNED AND DETAILED BY SUPPLIER AND A COPY OF THE DOCUMENTATION SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO MANUFACTURE.
7. CONCRETE PLACING AND MOULDING TOLERANCES ARE TO BE AS STATED IN THE SPECIFICATION.
8. ALL PENETRATIONS THROUGH CONCRETE SLABS SHALL BE TRIMMED BY 2-H12 BARS TO EACH EDGE OF THE PENETRATION UNLESS OTHERWISE NOTED. TRIMMER BARS ARE TO EXTEND 750mm BEYOND THE EDGE OF THE PENETRATIONS.
9. WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER. IN PILES AND CIRCULAR COLUMNS, SPIRAL TIES MAY BE SUBSTITUTED BY WELDED HOOPS. REFER TO LAP WELDING DETAIL FOR REQUIREMENTS
10. TOP AND BOTTOM REINFORCEMENT IN SLABS SHALL BE ADEQUATELY SUPPORTED TO ENSURE ALL REINFORCING STAYS IN PLACE DURING CONCRETE POURING, BY HIGH CHAIRS OR OTHER APPROVED METHODS. PRECAST BLOCKS ARE NOT TO BE USED.
11. HOOKS AND BENDS TO REBAR ARE TO BE IN ACCORDANCE WITH NZS3109 UNLESS NOTED OTHERWISE ON THE DRAWINGS.
12. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE SITE BENT UNLESS SHOWN ON THE DRAWINGS OR SPECIFICALLY APPROVED BY THE ENGINEER.
13. REINFORCEMENT SHALL BE GRADE 300E UNLESS NOTED OTHERWISE
14. NO REINFORCEMENT SPLICES SHALL BE MADE, OTHER THAN THOSE SHOWN ON THE DRAWINGS, WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL REINFORCEMENT LAPS IN CONCRETE TO COMPLY WITH THE TABLE ON THIS SHEET.
15. SPLICING OF REINFORCEMENT WHETHER BY LAPPING, WELDING OR MECHANICAL SPLICE, SHALL BE CARRIED OUT AS SHOWN ON THE DRAWINGS OR AS SPECIFICALLY APPROVED BY THE ENGINEER, EXCEPT AS NOTED BELOW:
- WELDED WIRE MESH SHALL BE SPLICED AS REQUIRED, BUT NOT THROUGH SLAB JOINTS.
  - REINFORCEMENT IN SLABS ON GRADE AND IN TOPPINGS SHALL BE SPLICED AS REQUIRED, BUT NOT THROUGH SLAB JOINTS.
16. ALL HOOKS ON STIRRUPS AND TIES MUST FIT CLOSELY AROUND MAIN BARS UNLESS NOTED OTHERWISE. FIRST STIRRUP NOT TO BE PLACED FURTHER THAN THE LESSER OF ½ STIRRUP SPACING OR 50mm FROM SUPPORT FACE.
17. ALL EXPOSED ANCHORS SHALL BE HILTI HIT RE 500 SD (UNO)

| BAR SIZE | MAIN STEEL | STIRRUPS AND TIES |
|----------|------------|-------------------|
| 6        | 30         | 22                |
| 10       | 50         | 32                |
| 12       | 60         | 40                |
| 16       | 80         | 60                |
| 20       | 100        | 70                |
| 25       | 150        | .....             |
| 32       | 195        | .....             |
| 40       | 240        | .....             |

MINIMUM FORMER PIN DIAMETERS "D" FOR BENDING REINFORCING BARS



REINFORCING BENDING DETAILS

| CONCRETE COVERS                                                  |                                                    |    |    |
|------------------------------------------------------------------|----------------------------------------------------|----|----|
| ENVIRONMENT                                                      | CONCRETE COMPRESSIVE STRENGTH f <sub>c</sub> (MPa) |    |    |
|                                                                  | 25                                                 | 30 | 40 |
| SURFACES CAST AGAINST AND EXPOSED TO EARTH                       | 75                                                 | 75 | 75 |
| SURFACES CAST AGAINST DPM ON EARTH                               | 50                                                 | 50 | 50 |
| EXTERIOR ENVIRONMENT WITHIN 500m OF HIGH TIDE MARK               | 50                                                 | 45 | 40 |
| OTHER EXTERIOR ENVIRONMENT                                       | 40                                                 | 35 | 30 |
| SURFACES EXPOSED TO EARTH (NON-AGRESSIVE OR PROTECTED BY D.P.M.) | 40                                                 | 35 | 30 |
| INTERIOR ENVIRONMENT NOT SUBJECTED TO REPEATED WETTING OR DRYING | 25                                                 | 20 | 20 |

NOTE:  
CONCRETE COVERS ARE THE MINIMUM DISTANCE TO ANY REINFORCING STEEL, INCLUDING STIRRUPS AND TIES

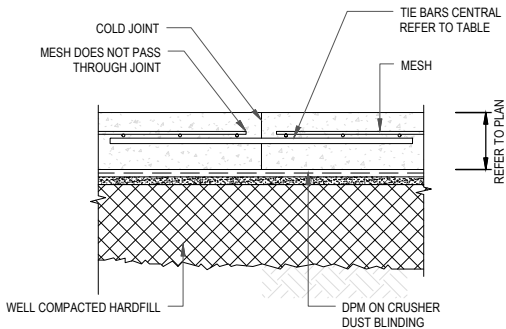
EMBEDMENT DEPTHS

ANCHOR EMBEDMENT DEPTHS

| ANCHOR SIZE d <sub>f</sub> | DEPTH OF ANCHOR h (mm) |
|----------------------------|------------------------|
| M10                        | 100                    |
| M12                        | 110                    |
| M16                        | 190                    |
| M20                        | 170                    |
| M24                        | 210                    |

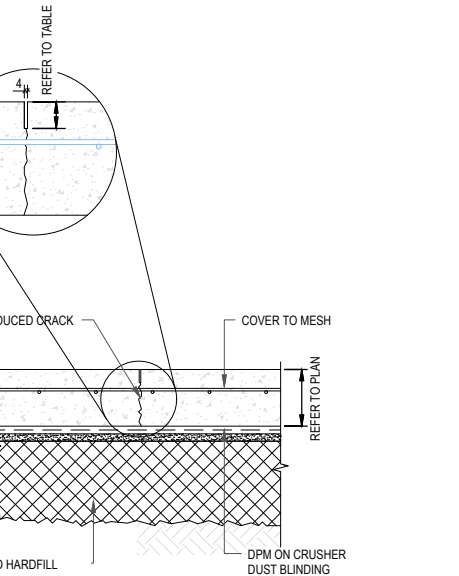
EPOXIED REINFORCEMENT EMBEDMENT DEPTHS

| BAR SIZE d <sub>f</sub> | EMBEDMENT DEPTH h (mm) |
|-------------------------|------------------------|
| H12                     | 250                    |
| H16                     | 350                    |



| SLAB DEPTH | BAR SIZE | BAR LENGTH | BAR SPACING |
|------------|----------|------------|-------------|
| 100mm      | H10      | 800mm      | 300mm       |
| 125mm      | H10      | 800mm      | 300mm       |
| 150mm      | H12      | 800mm      | 300mm       |
| 175mm      | H12      | 800mm      | 300mm       |
| 200mm      | H16      | 1000mm     | 350mm       |

DOWELLED JOINT



| SLAB DEPTH | SAWCUT DEPTH | MESH COVER |
|------------|--------------|------------|
| 100mm      | 25mm         | 35mm       |
| 125mm      | 30mm         | 40mm       |
| 150mm      | 35mm         | 50mm       |
| 175mm      | 45mm         | 60mm       |
| 200mm      | 50mm         | 65mm       |

TIED INDUCED JOINT - SAW CUT

NOTE:  
IF LAP LENGTHS ARE NOT SPECIFICALLY STATED ON THE DRAWINGS, THE FOLLOWING SHALL BE USED;

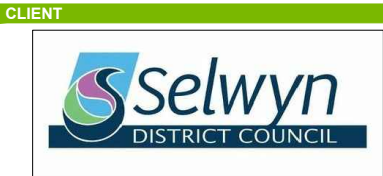
| DEFORMED BAR LAP LENGTHS (mm) |     |     |     |      |      |      |
|-------------------------------|-----|-----|-----|------|------|------|
| 30MPa CONCRETE                |     |     |     |      |      |      |
| BAR SIZE                      | 10  | 12  | 16  | 20   | 25   | 32   |
| GRADE 300 (D)                 | 360 | 430 | 570 | 720  | 900  | 1150 |
| GRADE 500 (H)                 | 600 | 720 | 950 | 1200 | 1500 | 1900 |
| 40MPa CONCRETE                |     |     |     |      |      |      |
| BAR SIZE                      | 10  | 12  | 16  | 20   | 25   | 32   |
| GRADE 300 (D)                 | 320 | 370 | 500 | 620  | 800  | 1000 |
| GRADE 500 (H)                 | 520 | 620 | 850 | 1050 | 1300 | 1650 |

THIS TABLE ACCOUNTS FOR NZS3101-8.6.3.1 EQUAL TO 1.3

FOR NON-CONTACT LAPS, LARGER LENGTHS WILL BE REQUIRED. CONTACT THE ENGINEER FOR DETAILS.



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| REV | DATE     | REVISION DETAILS |
|-----|----------|------------------|
| A   | 12/11/20 | ISSUE FOR TENDER |
|     |          |                  |
|     |          |                  |
|     |          |                  |
|     |          |                  |
|     |          |                  |
|     |          |                  |

| APPROVED    |
|-------------|
| A. LINDGREN |

| SCALE     |
|-----------|
| NA        |
| DRAWN     |
| R DAWSON  |
| DESIGNED  |
| B HENRY   |
| REVIEWED  |
| R. DAVIES |

| TENDER                            |
|-----------------------------------|
| NOT FOR CONSTRUCTION              |
| APPROVED                          |
| DATE<br>12/11/2020<br>A. LINDGREN |
| A. LINDGREN                       |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 4 |        |       |      |        |     |  |
|-------------|----------------------------------------------------|--------|-------|------|--------|-----|--|
| TITLE       | GENERAL REINFORCING NOTES                          |        |       |      |        |     |  |
| DRAWING No. | PROJECT No.                                        | AREA   | TYPE  | DISC | NUMBER | REV |  |
|             | 505193                                             | - 0000 | - DRG | - CC | - 4403 | - A |  |

File: \aurecon\in\shaham\NZCH\Projects\505\505\_13C\_Section\SW\Bypass Stage 3 & 4\5 Deliver\Design\505\_13C CAD\Drawing\505\505\_13C-ORG-CC-000-000-00.dwg Plot Date: 29/03/2019 9:11:17 PM Name: Jordan Wairitch-Kode Xref: 505\_13C-CANTERBURY-0m-RURAL-ALERTAL-ERPHOTOS-2016-2-04\_505193XRR-Base Images: Aurecon\_Logo www.SDC.Logo

File: \aurecon\in\shaham\NZCH\Projects\505\505\_13C\_Section\SW\Bypass Stage 3 & 4\5 Deliver\Design\505\_13C CAD\Drawing\505\505\_13C-ORG-CC-000-000-00.dwg Plot Date: 29/03/2019 9:11:17 PM Name: Jordan Wairitch-Kode Xref: 505\_13C-CANTERBURY-0m-RURAL-ALERTAL-ERPHOTOS-2016-2-04\_505193XRR-Base Images: Aurecon\_Logo www.SDC.Logo



File: \aurecon\in\shaham\NZCH\Projects\505\505\_13C\_Section\SW\Bypass Stage 3 & 4\5 Deliver\Design\505\_13C CAD\Drawing\505\505\_13C-ORG-CC-000-000-00.dwg Plot Date: 29/03/2019 9:11:17 PM Name: Jordan Wairitch-Kode Xref: 505\_13C-CANTERBURY-0m-RURAL-ALERTAL-ERPHOTOS-2016-2-04\_505193XRR-Base Images: Aurecon\_Logo www.SDC.Logo



File: \aurecon\in\shaham\NCHC\Projects\505\505\_13C\_Section\SW\Bypass Stage 3 & 4\5 Deliver\Design\505\_13C CAD\Drawing\505 13C DRG-CC-000-000-00.dwg Plot Date: 29/03/2019 11:18:17 PM Name: Jordan Wairlich-Kode Xref: 505 13C-CANTERBURY-03m-RURAL-ALERTAL-ERPHOTOS-2016-2-04; 505 13C-RASE Images: Aurecon\_Logo www.SDC.Logo

File: \aurecon\in\shaham\NCHC\Projects\505\505\_13C\_Section\SW\Bypass Stage 3 & 4\5 Deliver\Design\505\_13C CAD\Drawing\505 13C DRG-CC-000-000-00.dwg Plot Date: 29/03/2019 11:18:17 PM Name: Jordan Wairlich-Kode Xref: 505 13C-CANTERBURY-03m-RURAL-ALERTAL-ERPHOTOS-2016-2-04; 505 13C-RASE Images: Aurecon\_Logo www.SDC.Logo

File: \aurecon\in\shaham\NCHC\Projects\505\505\_13C\_Section\SW\Bypass Stage 3 & 4\5 Deliver\Design\505\_13C CAD\Drawing\505 13C DRG-CC-000-000-00.dwg Plot Date: 29/03/2019 11:18:17 PM Name: Jordan Wairlich-Kode Xref: 505 13C-CANTERBURY-03m-RURAL-ALERTAL-ERPHOTOS-2016-2-04; 505 13C-RASE Images: Aurecon\_Logo www.SDC.Logo

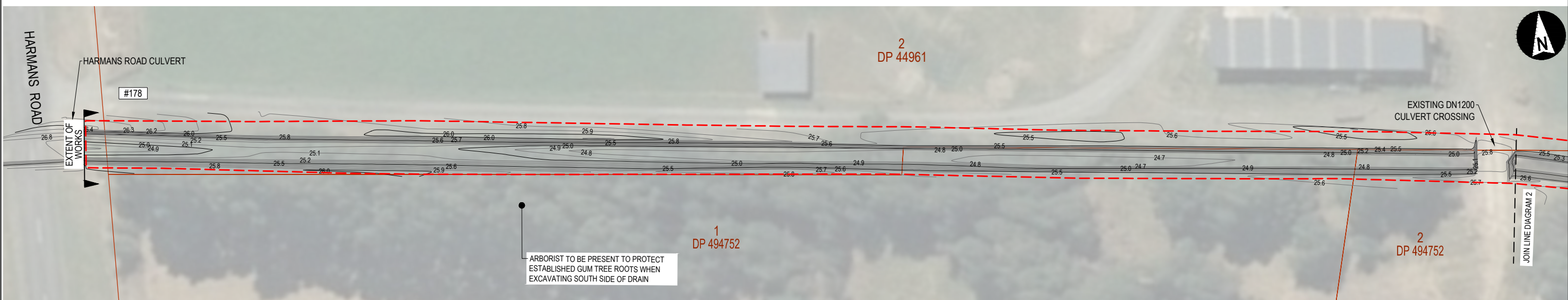


DIAGRAM 1  
1:250

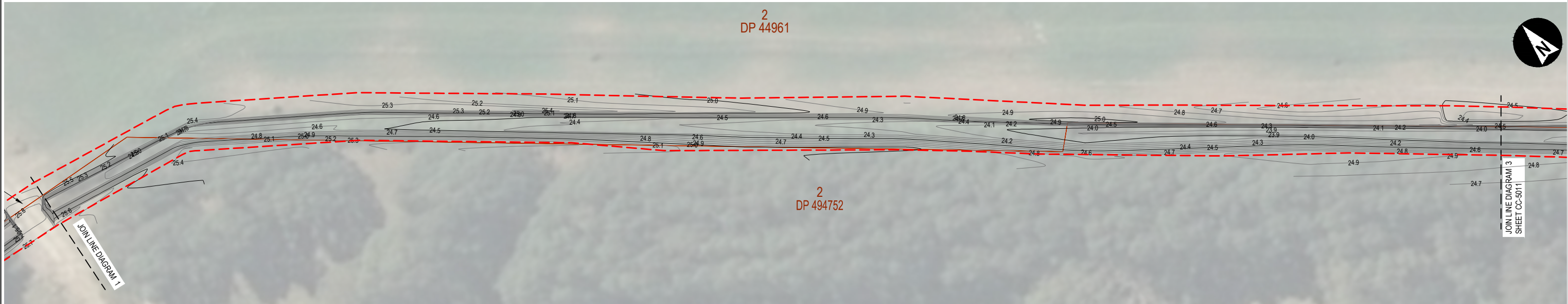
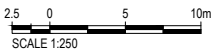


DIAGRAM 2  
1:250

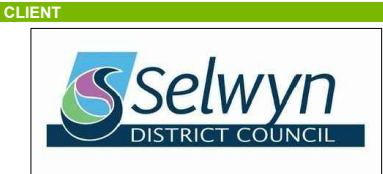


- MINOR CONTOUR (0.1m)
- MAJOR CONTOUR (0.5m)
- EXISTING PROPERTY BOUNDARY
- EXISTING FENCE
- EXTENT OF WORKS

VERTICAL ELEVATIONS ARE IN TERMS OF  
LYTTTELTON VERTICAL DATUM (1937)  
AERIAL IMAGERY FROM LINZ DATA SERVICE BY A  
CREATIVE COMMONS LICENCE.



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| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE<br>12/11/2020   |
| A. LINDGREN          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |
|-------------|----------------------------------------------------|
| TITLE       | EXISTING CONTOURS<br>SHEET 1                       |
| DRAWING No. | 505193                                             |
| PROJECT No. | 505193                                             |
| AREA        | 0000                                               |
| TYPE        | DRG                                                |
| DISC        | CC                                                 |
| NUMBER      | 5010                                               |
| REV         | B                                                  |

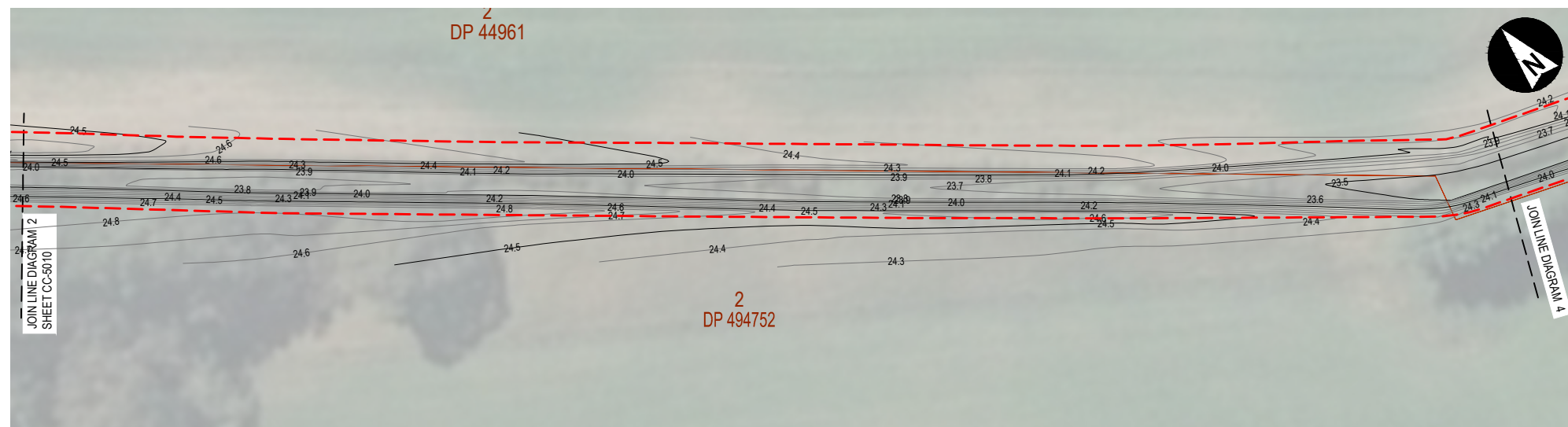


DIAGRAM 3  
1:250



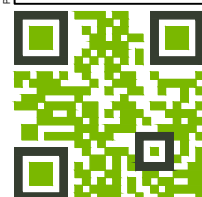
DIAGRAM 4  
1:250

- MINOR CONTOUR (0.1m)
- MAJOR CONTOUR (0.5m)
- EXISTING PROPERTY BOUNDARY
- EXISTING FENCE
- EXTENT OF WORKS

VERTICAL ELEVATIONS ARE IN TERMS OF  
LYTTELTON VERTICAL DATUM (1937)  
AERIAL IMAGERY FROM LINZ DATA SERVICE BY A  
CREATIVE COMMONS LICENCE.

2.5 0 5 10m  
SCALE 1:250

Plot Date: 12/11/2020 10:13 PM C:\Users\N2CHC\Favorites\P050193\_SDC LEESTON SW BYPASS STAGE 3 & 46 DELIVER DESIGN\WG CAD\DRAWINGS\050193\000.DWG CC-011.DWG



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| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

| TENDER               | DATE       |
|----------------------|------------|
| NOT FOR CONSTRUCTION | 12/11/2020 |
| APPROVED             |            |
| A. LINDGREN          |            |
| A. LINDGREN          |            |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |
|-------------|----------------------------------------------------|
| TITLE       | EXISTING CONTOURS<br>SHEET 2                       |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 5011                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |



DIAGRAM 1  
1:250

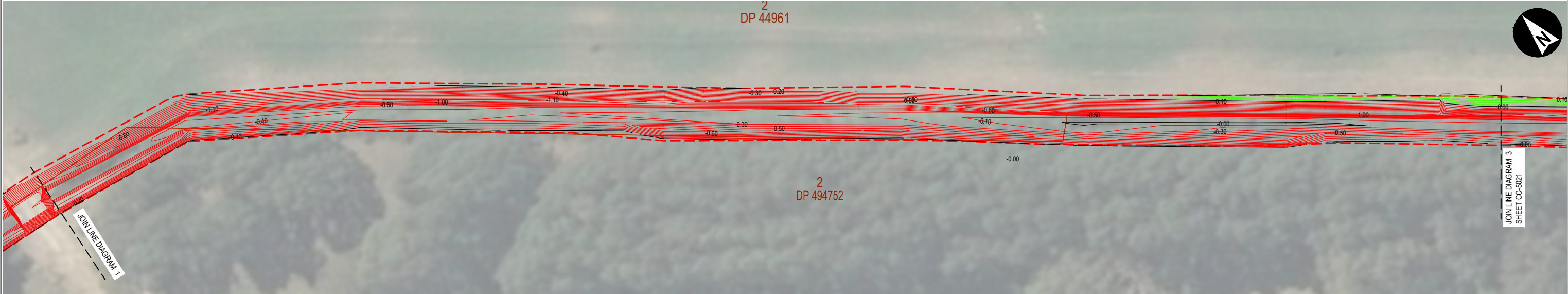


DIAGRAM 2  
1:250

- 0.0m (NO CUT FILL) CONTOUR
- FILL CONTOUR (0.1m INTERVALS)
- CUT CONTOUR (0.1m INTERVALS)
- EXTENT OF WORKS

2.5 0 5 10m  
SCALE 1:250





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|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |

| APPROVED    | SCALE    | SIZE |
|-------------|----------|------|
| A. LINDGREN | AS SHOWN | A1   |
|             |          |      |
|             |          |      |
|             |          |      |
|             |          |      |

| DRAWN     |
|-----------|
| R DAWSON  |
| DESIGNED  |
| N CATTO   |
| REVIEWED  |
| R. DAVIES |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE 12/11/2020      |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |      |      |      |        |     |  |  |  |  |  |
|-------------|----------------------------------------------------|------|------|------|--------|-----|--|--|--|--|--|
| TITLE       | CUT FILL CONTOURS<br>SHEET 1                       |      |      |      |        |     |  |  |  |  |  |
| DRAWING No. | PROJECT No.                                        | AREA | TYPE | DISC | NUMBER | REV |  |  |  |  |  |
|             | 505193                                             | 0000 | DRG  | CC   | 5020   | B   |  |  |  |  |  |

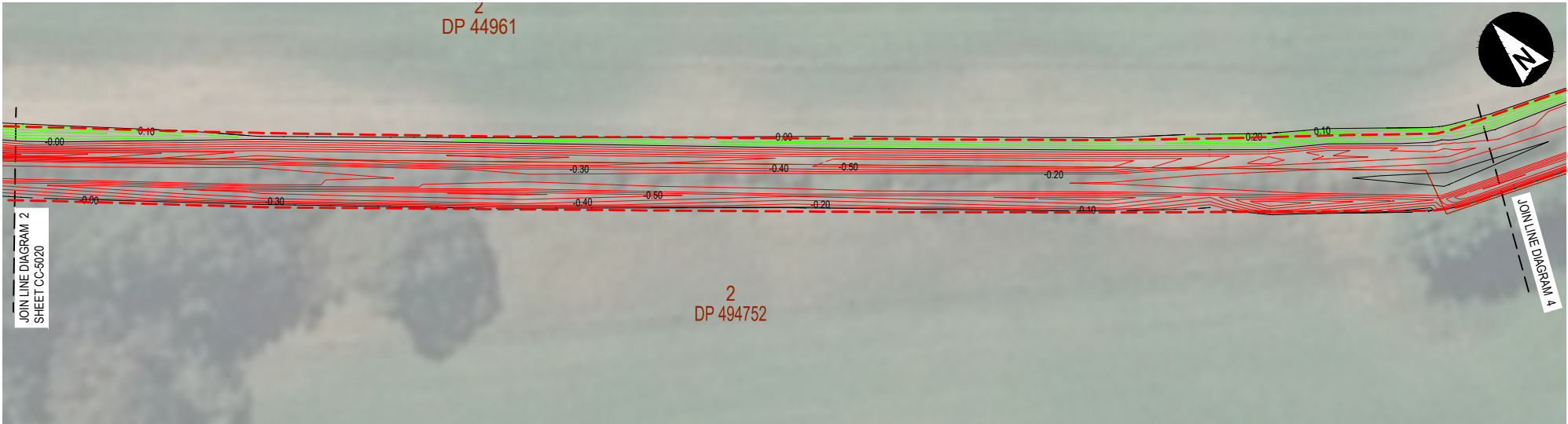


DIAGRAM 3  
1:250

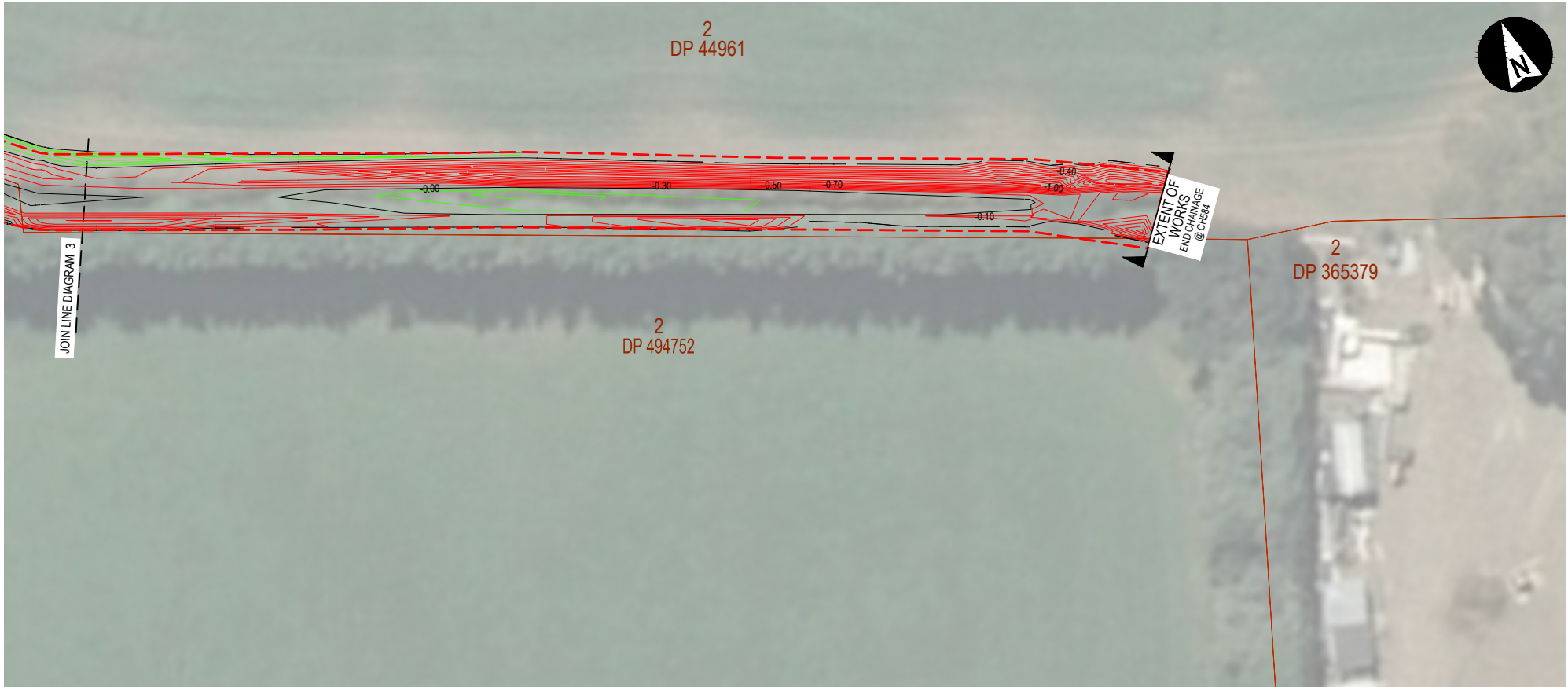
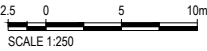


DIAGRAM 4  
1:250

- 0.0m (NO CUT FILL) CONTOUR
- FILL CONTOUR (0.1m INTERVALS)
- CUT CONTOUR (0.1m INTERVALS)
- EXTENT OF WORKS



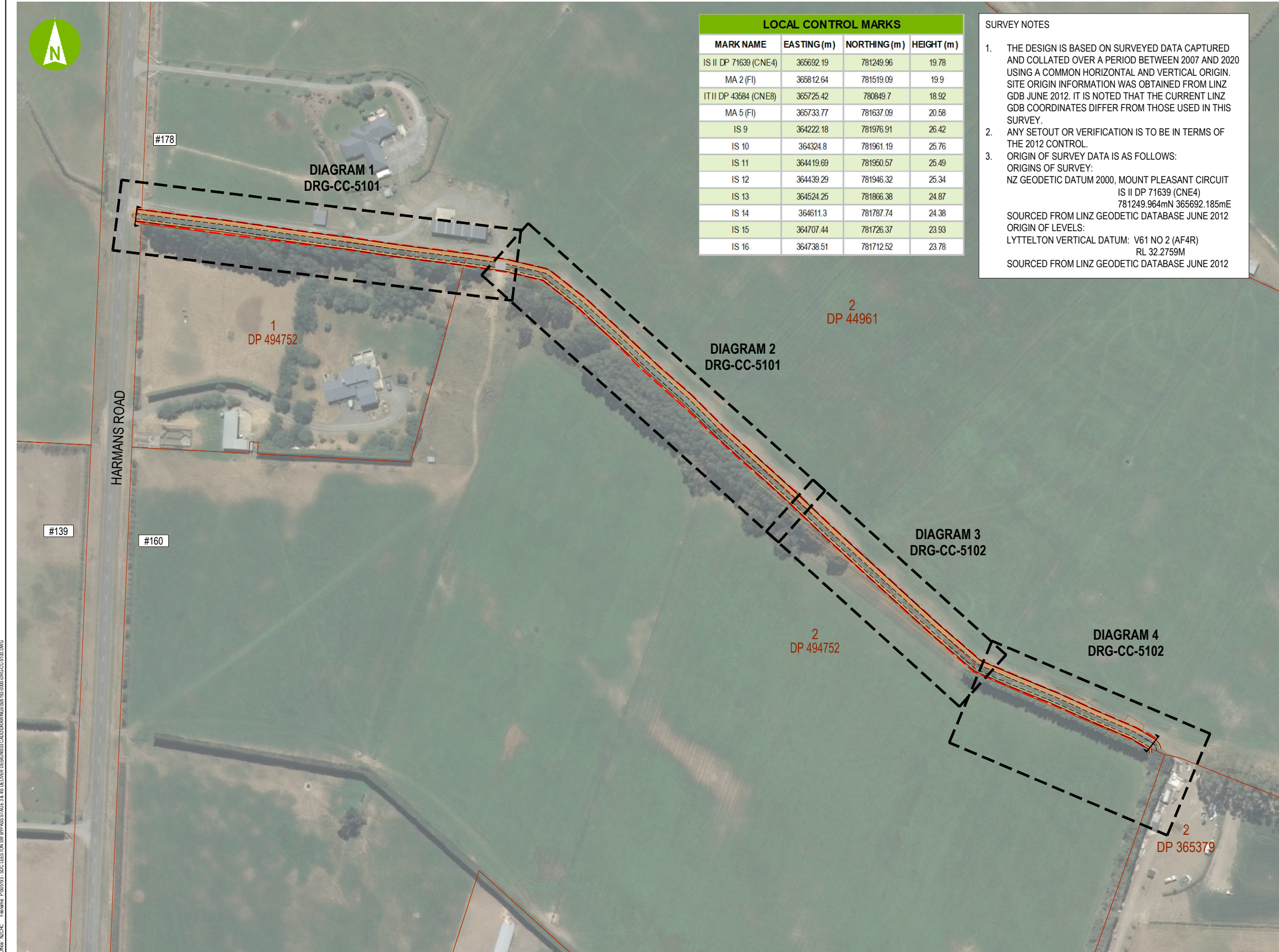
| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |

| APPROVED    | SCALE    | SIZE |
|-------------|----------|------|
| A. LINDGREN | AS SHOWN | A1   |
|             |          |      |
|             |          |      |
|             |          |      |
|             |          |      |

| DRAWN     |
|-----------|
| R DAWSON  |
| DESIGNED  |
| N CATTO   |
| REVIEWED  |
| R. DAVIES |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE 12/11/2020      |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |        |   |      |      |   |      |     |   |      |    |   |        |      |   |     |   |
|-------------|----------------------------------------------------|--------|---|------|------|---|------|-----|---|------|----|---|--------|------|---|-----|---|
| TITLE       | CUT FILL CONTOURS<br>SHEET 2                       |        |   |      |      |   |      |     |   |      |    |   |        |      |   |     |   |
| DRAWING No. | PROJECT No.                                        | 505193 | - | AREA | 0000 | - | TYPE | DRG | - | DISC | CC | - | NUMBER | 5021 | - | REV | B |



| LOCAL CONTROL MARKS   |             |              |            |
|-----------------------|-------------|--------------|------------|
| MARK NAME             | EASTING (m) | NORTHING (m) | HEIGHT (m) |
| IS II DP 71639 (CNE4) | 365692.19   | 781249.96    | 19.78      |
| MA 2 (FI)             | 365812.64   | 781519.09    | 19.9       |
| IT II DP 43584 (CNE8) | 365725.42   | 780849.7     | 18.92      |
| MA 5 (FI)             | 365733.77   | 781637.09    | 20.58      |
| IS 9                  | 364222.18   | 781976.91    | 26.42      |
| IS 10                 | 364324.8    | 781961.19    | 25.76      |
| IS 11                 | 364419.69   | 781950.57    | 25.49      |
| IS 12                 | 364439.29   | 781946.32    | 25.34      |
| IS 13                 | 364524.25   | 781866.38    | 24.87      |
| IS 14                 | 364611.3    | 781787.74    | 24.38      |
| IS 15                 | 364707.44   | 781726.37    | 23.93      |
| IS 16                 | 364738.51   | 781712.52    | 23.78      |

SURVEY NOTES

1. THE DESIGN IS BASED ON SURVEYED DATA CAPTURED AND COLLATED OVER A PERIOD BETWEEN 2007 AND 2020 USING A COMMON HORIZONTAL AND VERTICAL ORIGIN. SITE ORIGIN INFORMATION WAS OBTAINED FROM LINZ GDB JUNE 2012. IT IS NOTED THAT THE CURRENT LINZ GDB COORDINATES DIFFER FROM THOSE USED IN THIS SURVEY.

2. ANY SETOUT OR VERIFICATION IS TO BE IN TERMS OF THE 2012 CONTROL.

3. ORIGIN OF SURVEY DATA IS AS FOLLOWS:  
ORIGINS OF SURVEY:  
NZ GEODETIC DATUM 2000, MOUNT PLEASANT CIRCUIT  
IS II DP 71639 (CNE4)  
781249.964mN 365692.185mE  
SOURCED FROM LINZ GEODETIC DATABASE JUNE 2012  
ORIGIN OF LEVELS:  
LYTTELTON VERTICAL DATUM: V61 NO 2 (AF4R)  
RL 32.2759M  
SOURCED FROM LINZ GEODETIC DATABASE JUNE 2012

- NOTES:
- WHILST EVERY EFFORT HAS BEEN MADE TO SHOW ALL KNOWN SERVICES, THE LOCATIONS AND EXISTENCE OF UTILITIES SHOWN IS TO BE TREATED AS INDICATIVE ONLY. THE CONTRACTOR IS TO CONFIRM THE LOCATION OF SERVICE ON SITE.
  - CONTRACTOR TO LIAISE WITH LAND OWNER TO CONFIRM IF KNOWN SERVICES EXIST ON SITE. EXISTING SERVICES THAT ARE TO BE RETAINED ARE TO BE ADEQUATELY SUPPORTED TO PREVENT DAMAGE FOR THE DURATION WORKS.
  - PLAN IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERING DOCUMENTS.
  - PROPOSED WORK IS WITHIN EXISTING WATERWAY, THE CONTRACTOR IS TO HAVE A ROBUST TEMPORARY WORKS PLAN TO DEAL WITH FLOWS GENERATED FROM SIGNIFICANT RAINFALL EVENTS.
- GENERAL NOTES:
- ROCK PROTECTION TO BE PROVIDED IN ACCORDANCE WITH PROJECT SPECIFICATION AND DRAWINGS.
  - ALL WORKS ARE TO COMPLY WITH THESE DRAWINGS AND THE SELWYN DISTRICT COUNCIL (SDC) CODE OF PRACTICE (COP). WHERE THERE IS CONFLICT BETWEEN THE TWO THE DRAWINGS HAVE PRECEDENCE.
  - SITE PREPARATION AND RESTORATION SHALL BE AS PER THE PROJECT SPECIFICATION.
  - SETOUT CO-ORDINATES / DIMENSIONS ARE TO BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCING WORK. DRAWINGS SHALL NOT BE SCALED.
  - ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH ANY WORK. NO SUBSTITUTE MATERIALS SHALL BE USED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
  - MAKE SMOOTH CONNECTION TO EXISTING WORK.
  - SURFACES WHICH LIE OUTSIDE THE GENERAL LIMIT OF WORKS WHICH ARE DISTURBED DURING THE CONSTRUCTION OF THE WORKS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE PRE-CONSTRUCTION CONDITION.
  - PRIOR TO ANY EXCAVATION OR CONSTRUCTION ON SITE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND SERVICES ON THE SITE.
  - IMAGE SOURCED FROM LINZ. IMAGE IS INDICATIVE ONLY, NOT BE USED FOR CONSTRUCTION PURPOSES.

EARTHWORKS NOTES

EW1. CLEARING AND GRUBBING

CLEARING, STRIPPING AND GRUBBING SHALL BE CARRIED OUT IN AREAS SUBJECT TO EARTHWORKS. ALL SOIL CONTAINING ORGANIC MATTER SHALL BE STRIPPED FROM THE CONSTRUCTION AREA AND STOCKPILED FOR FUTURE SITE REHABILITATION OR USED AS TOPSOIL.

EW2. MATERIAL SPECIFICATION.

2.1 ALL MATERIALS USED AS FILL SHALL BE FREE FROM DELETERIOUS MATTER.

2.2 NO MATERIAL CONTAINING THE FOLLOWING MAY BE USED AS FILL

- VEGETABLE MATTER
- MATERIALS CONTAMINATED THROUGH PAST SITE USE
- ORGANIC CLAYS OR SILTS
- ASHES, COAL OR THE LIKE
- ANY MATERIALS WHICH IN THE OPINION OF THE ENGINEER WILL SCOUR BADLY OR ANY DISPERSIVE SOIL.

2.3 RIPRAP SHOULD MEET THE FOLLOWING SPECIFICATIONS

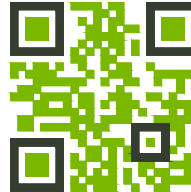
- ROCKS SHOULD BE ANGULAR IN SHAPE, NOT ROUNDED AND EACH PIECE SHOULD HAVE ITS GREATEST DIMENSION NOT GREATER THAN THREE TIMES ITS LEAST DIMENSION.
- THE SPECIFIC GRAVITY SHOULD NOT BE LESS THAN 2.5
- THE RIPRAP SHOULD MEET THE FOLLOWING SCREENING CRITERIA:

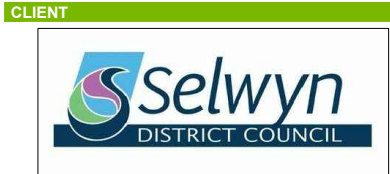
| DIAMETER | PERCENT OF MATERIAL SMALLER |
|----------|-----------------------------|
| 300mm    | 100                         |
| 200mm    | 60-80                       |
| 150mm    | 30-50                       |
| 100mm    | 0                           |

2.4 WHERE POSSIBLE, BUNDING IS TO BE COMPOSED OF COMPACTED SPOIL.

OVERALL LAYOUT PLAN  
1:1000

10 0 20 40m  
SCALE 1:1000





| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE                 |
| 12/11/2020           |
| A. LINDGREN          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |
|-------------|----------------------------------------------------|
| TITLE       | OVERALL LAYOUT PLAN                                |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 5100                                               |
| NUMBER      | B                                                  |

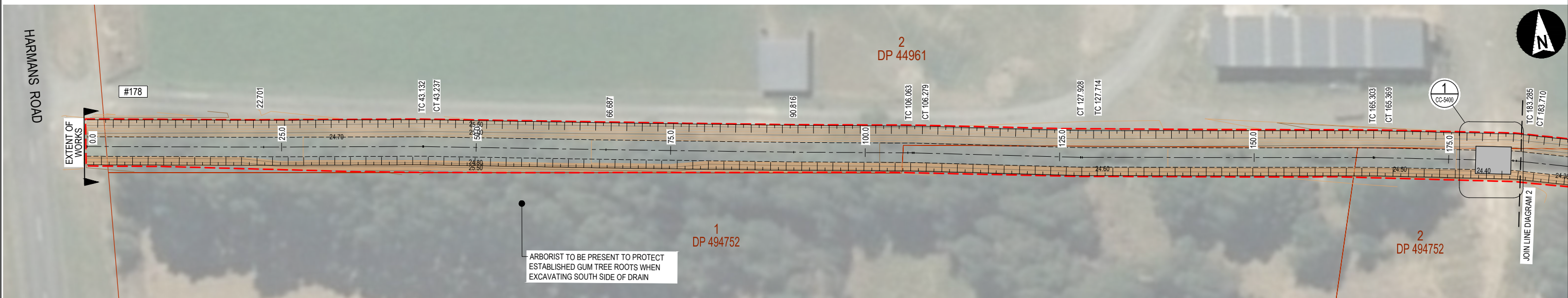


DIAGRAM 1  
1:250

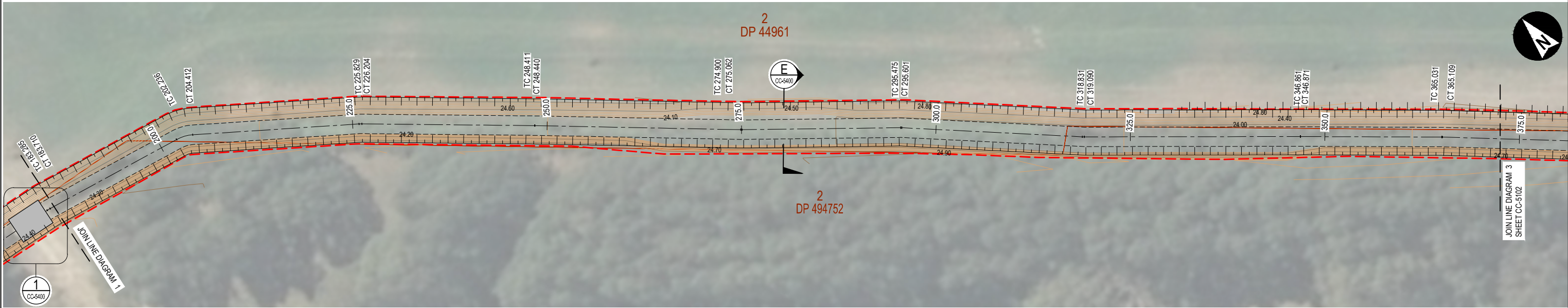


DIAGRAM 2  
1:250

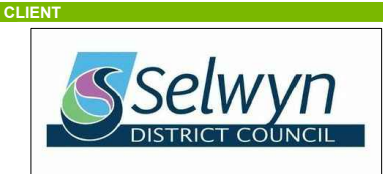
| LEGEND |                            |
|--------|----------------------------|
|        | MINOR CONTOUR (0.1m)       |
|        | MAJOR CONTOUR (0.5m)       |
|        | TOP OF BANK                |
|        | BOTTOM OF BANK             |
|        | DRAIN CENTRELINE           |
|        | CULVERT                    |
|        | EXISTING PROPERTY BOUNDARY |
|        | EXTENT OF WORKS            |

NOTE  
REFER SHEET 5100 FOR ALL NOTES AND SURVEY CONTROL

2.5 0 5 10m  
SCALE 1:250



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| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

| TENDER               | APPROVED           |
|----------------------|--------------------|
| NOT FOR CONSTRUCTION |                    |
|                      | DATE<br>12/11/2020 |
| A. LINDGREN          | A. LINDGREN        |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |
|-------------|----------------------------------------------------|
| TITLE       | LAYOUT PLAN<br>SHEET 1                             |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 5101                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |



DIAGRAM 3  
1:250

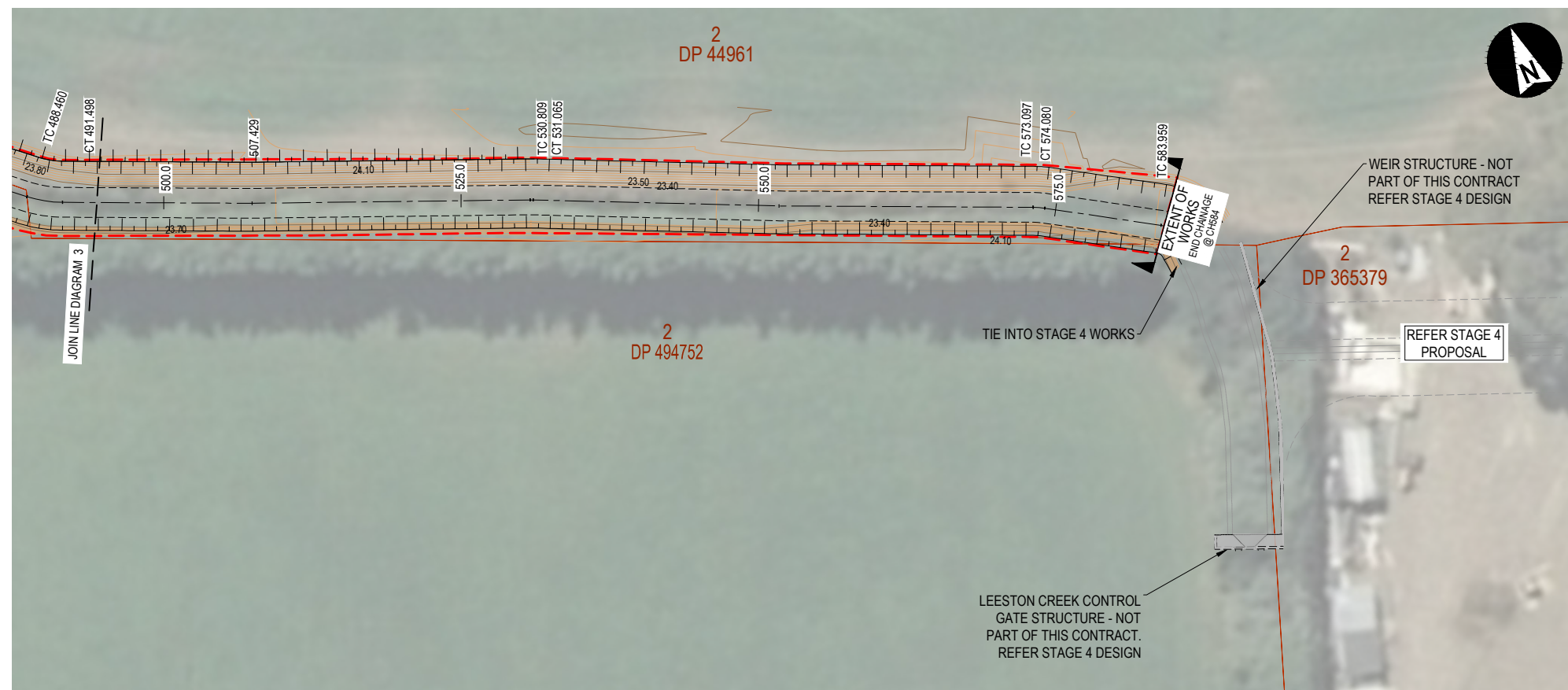


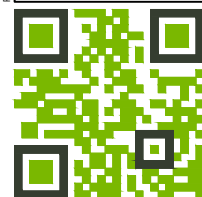
DIAGRAM 4  
1:250

NOTE  
REFER SHEET 5100 FOR ALL NOTES AND SURVEY CONTROL

| LEGEND |                            |
|--------|----------------------------|
|        | MINOR CONTOUR (0.1m)       |
|        | MAJOR CONTOUR (0.5m)       |
|        | TOP OF BANK                |
|        | BOTTOM OF BANK             |
|        | DRAIN CENTRELINE           |
|        | CULVERT                    |
|        | EXISTING PROPERTY BOUNDARY |
|        | EXTENT OF WORKS            |



Plot Date: 12/11/2020 10:04 PM    Client: NDCH    Filename: P:\09193\_SDC LEESTON SW BYPASS STAGE 3 & 46 DELIVER DESIGN\WG CAD\DRAWINGS\05\10\000\DRG-CC-5102.DWG



| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

| TENDER               |  |
|----------------------|--|
| NOT FOR CONSTRUCTION |  |
| APPROVED             |  |
| A. LINDGREN          |  |
| A. LINDGREN          |  |
| DATE                 |  |
| 12/11/2020           |  |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |             |      |      |     |      |
|-------------|----------------------------------------------------|-------------|------|------|-----|------|
| TITLE       | LAYOUT PLAN<br>SHEET 2                             |             |      |      |     |      |
| DRAWING No. | 505193                                             | PROJECT No. | 0000 | AREA | DRG | TYPE |
| DISC        | CC                                                 | NUMBER      | 5102 | REV  | B   |      |

NOTE:  
VERTICAL ELEVATIONS ARE IN TERMS  
OF LYTTTELTON VERTICAL DATUM (1937)

LEGEND

———— DESIGN SURFACE  
----- EXISTING SURFACE

PROPOSED FARM  
CULVERT UPGRADE  
RIP RAP

DATUM RL21.50

|                                   |                       |       |                            |       |                            |       |         |       |         |                            |                            |        |         |                            |         |        |                            |        |                            |        |                           |        |                            |        |                            |        |                            |        |                            |        |        |
|-----------------------------------|-----------------------|-------|----------------------------|-------|----------------------------|-------|---------|-------|---------|----------------------------|----------------------------|--------|---------|----------------------------|---------|--------|----------------------------|--------|----------------------------|--------|---------------------------|--------|----------------------------|--------|----------------------------|--------|----------------------------|--------|----------------------------|--------|--------|
| VERTICAL DATA                     | L=613.16m<br>P=-0.27% |       |                            |       |                            |       |         |       |         |                            |                            |        |         |                            |         |        |                            |        |                            |        |                           |        |                            |        |                            |        |                            |        |                            |        |        |
| HORIZONTAL DATA                   | L=22.67               |       | L=20.40                    |       | L=23.45                    |       | L=24.11 |       | L=15.23 |                            | L=21.43                    |        | L=37.38 |                            | L=17.92 |        | L=18.53                    |        | L=21.42                    |        | L=22.21                   |        | L=26.46                    |        | L=20.32                    |        | L=23.14                    |        |                            |        |        |
| DESIGN LEVEL<br>(CENTERLINE)      | 24.77                 | 24.75 | 24.72<br>R=0.07<br>L=10.00 | 24.69 | 24.67<br>R=0.10<br>L=10.00 | 24.64 | 24.61   | 24.59 | 24.56   | 24.53<br>R=0.04<br>L=10.00 | 24.51<br>R=0.22<br>L=10.00 | 24.48  | 24.45   | 24.42<br>R=0.21<br>L=10.00 | 24.40   | 24.37  | 24.34<br>R=0.07<br>L=10.00 | 24.32  | 24.29<br>R=0.43<br>L=10.00 | 24.26  | 24.24<br>R=2.18<br>L=5.00 | 24.21  | 24.18<br>R=0.38<br>L=10.00 | 24.15  | 24.13<br>R=0.03<br>L=10.00 | 24.10  | 24.07<br>R=0.16<br>L=10.00 | 24.05  | 24.02<br>R=0.32<br>L=10.00 | 23.99  | 23.97  |
| CUT / FILL DEPTH<br>(TO EXISTING) | 0.00                  | 0.16  | 0.32                       | 0.37  | 0.39                       | 0.32  | 0.21    | 0.15  | 0.19    | 0.23                       | 0.24                       | 0.24   | 0.21    | 0.20                       | 0.27    | 0.34   | 0.41                       | 0.46   | 1.59                       | 0.45   | 0.39                      | 0.37   | 0.38                       | 0.37   | 0.34                       | 0.31   | 0.27                       | 0.23   | 0.20                       | 0.17   | 0.13   |
| EXISTING GROUND<br>LEVEL          | 24.77                 | 24.91 | 25.04                      | 25.07 | 25.05                      | 24.96 | 24.82   | 24.73 | 24.75   | 24.76                      | 24.75                      | 24.72  | 24.66   | 24.62                      | 24.66   | 24.71  | 24.75                      | 24.77  | 25.88                      | 24.72  | 24.63                     | 24.58  | 24.56                      | 24.53  | 24.47                      | 24.41  | 24.34                      | 24.28  | 24.22                      | 24.17  | 24.09  |
| CHAINAGE                          | 0.00                  | 10.00 | 20.00                      | 30.00 | 40.00                      | 50.00 | 60.00   | 70.00 | 80.00   | 90.00                      | 100.00                     | 110.00 | 120.00  | 130.00                     | 140.00  | 150.00 | 160.00                     | 170.00 | 180.00                     | 190.00 | 200.00                    | 210.00 | 220.00                     | 230.00 | 240.00                     | 250.00 | 260.00                     | 270.00 | 280.00                     | 290.00 | 300.00 |

LONGITUDINAL SECTION STAGE 5 - PART 1  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:50

DRAINAGE INVERTS TO BE  
CONFIRMED WITH ENGINEER PRIOR  
TO EXCAVATION

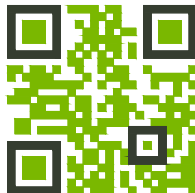
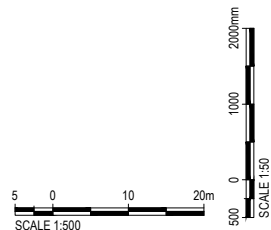
STAGE 4 WORKS

EXTENT OF STAGE 5  
WORKS CH 584

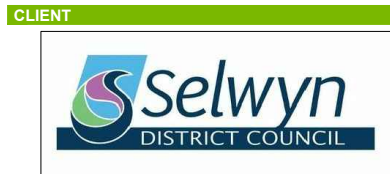
DATUM RL21.00

|                                   |                       |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |                       |        |        |        |        |        |        |        |        |
|-----------------------------------|-----------------------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| VERTICAL DATA                     | L=613.16m<br>P=-0.27% |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        | L=613.16m<br>P=-0.27% |        |        |        |        |        |        |        |        |
|                                   |                       |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |                       |        |        |        |        |        |        |        |        |
| HORIZONTAL DATA                   | L=23.14               |        | L=27.76 |        | L=18.15 |        | L=24.94 |        | L=22.42 |        | L=22.18 |        | L=26.84 |        | L=26.66 |        | L=15.89 |        | L=23.34 |        | L=20.62 |        | L=21.48 |        | L=10.01 |        | L=4.17                |        | L=5.99 |        | L=4.86 |        | L=9.38 |        |        |
| DESIGN LEVEL<br>(CENTERLINE)      | 23.97                 | 23.94  | 23.91   | 23.88  | 23.86   | 23.83  | 23.80   | 23.78  | 23.75   | 23.72  | 23.67   | 23.64  | 23.61   | 23.59  | 23.56   | 23.53  | 23.51   | 23.48  | 23.45   | 23.43  | 23.40   | 23.37  | 23.32   | 23.29  | 23.26   | 23.24  | 23.21                 | 23.18  | 23.16  | 23.13  | 23.10  | 23.07  | 23.04  | 23.01  | 22.98  |
| CUT / FILL DEPTH<br>(TO EXISTING) | 0.13                  | 0.05   | -0.02   | -0.02  | -0.03   | -0.01  | 0.04    | 0.06   | 0.05    | 0.03   | 0.09    | 0.15   | 0.16    | 0.15   | 0.12    | 0.10   | 0.06    | 0.01   | -0.02   | 0.00   | -0.12   | -0.24  | -0.18   | -0.11  | -0.08   | -0.06  | 0.14                  | 0.07   | 0.07   | 0.06   | 0.05   | 0.04   | 0.03   | 0.02   | 0.01   |
| EXISTING GROUND<br>LEVEL          | 24.09                 | 23.99  | 23.89   | 23.86  | 23.83   | 23.82  | 23.85   | 23.84  | 23.80   | 23.75  | 23.79   | 23.82  | 23.80   | 23.76  | 23.72   | 23.68  | 23.63   | 23.56  | 23.49   | 23.43  | 23.40   | 23.25  | 23.10   | 23.13  | 23.18   | 23.17  | 23.35                 | 23.26  | 23.42  | 23.27  | 23.12  | 22.97  | 22.82  | 22.67  | 22.52  |
| CHAINAGE                          | 300.00                | 310.00 | 320.00  | 330.00 | 340.00  | 350.00 | 360.00  | 370.00 | 380.00  | 390.00 | 400.00  | 410.00 | 420.00  | 430.00 | 440.00  | 450.00 | 460.00  | 470.00 | 480.00  | 490.00 | 500.00  | 510.00 | 520.00  | 530.00 | 540.00  | 550.00 | 560.00                | 570.00 | 580.00 | 590.00 | 600.00 | 610.00 | 620.00 | 630.00 | 640.00 |

LONGITUDINAL SECTION STAGE 5 - PART 2  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:50



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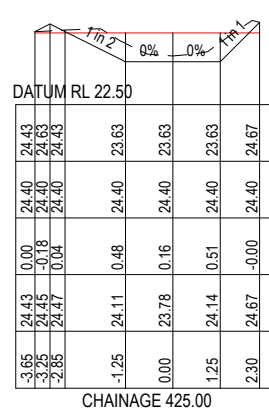
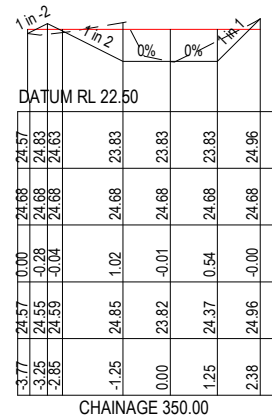
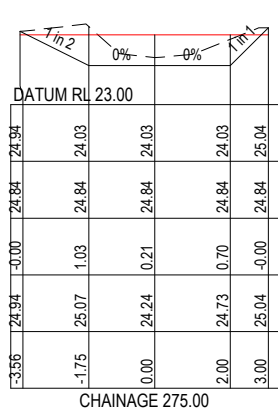
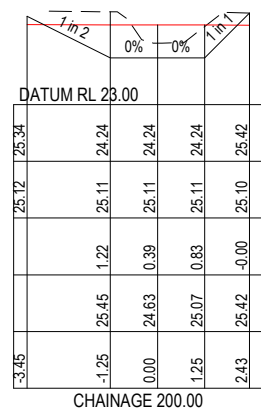
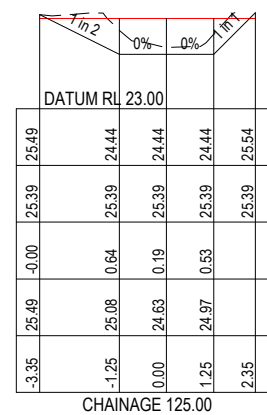
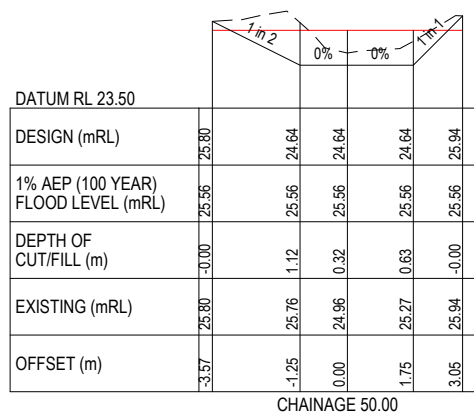
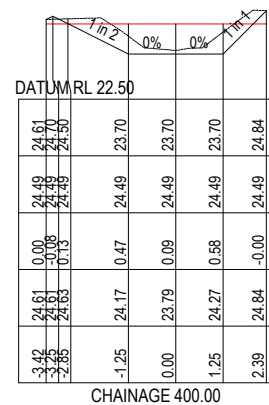
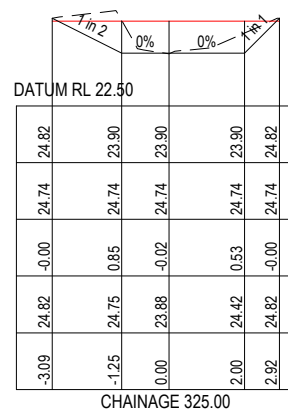
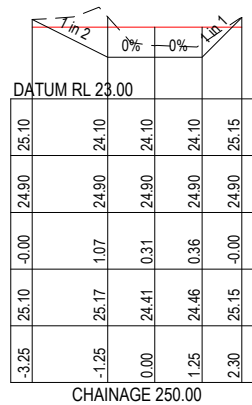
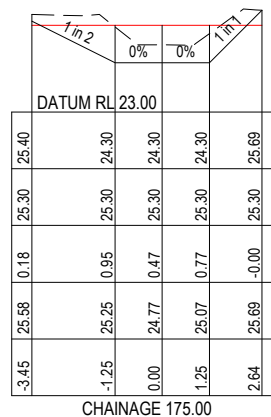
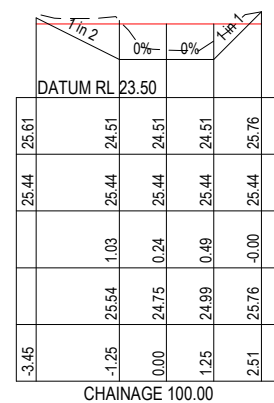
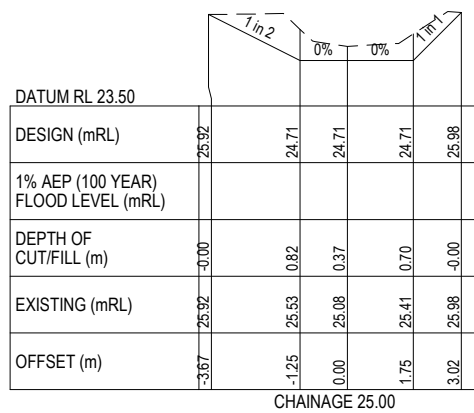
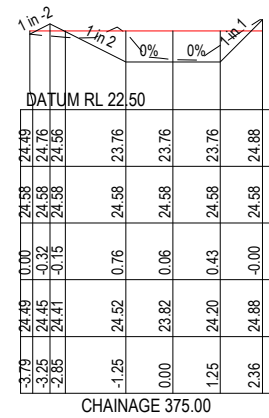
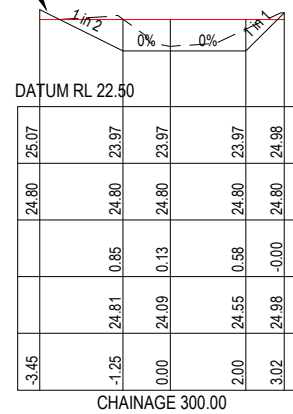
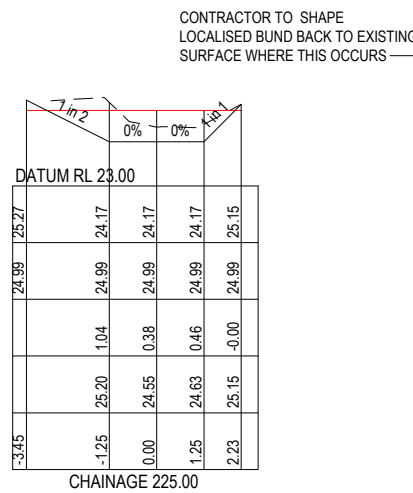
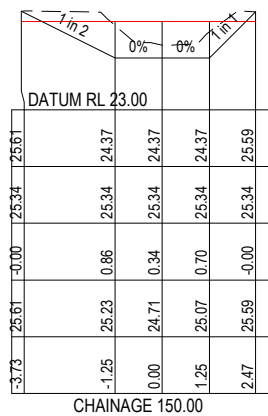
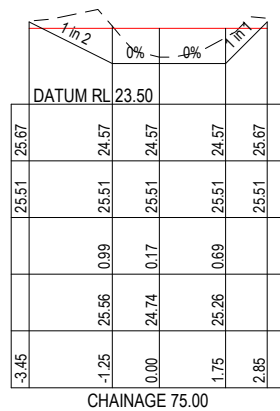
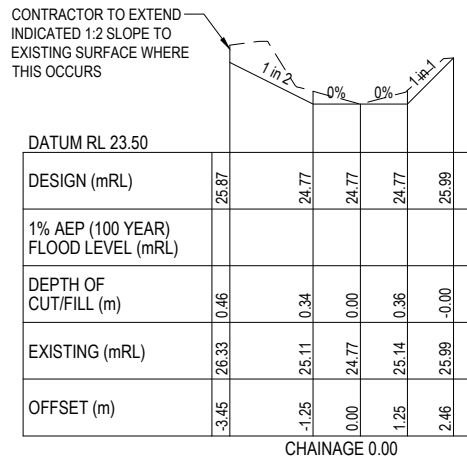
| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |
|     |          |                    |

| APPROVED    |
|-------------|
| A. LINDGREN |
| A LINDGREN  |
|             |
|             |
|             |
|             |

| SCALE    | SIZE      |
|----------|-----------|
| AS SHOWN | A1        |
| DRAWN    | R DAWSON  |
| DESIGNED | N CATTO   |
| REVIEWED | R. DAVIES |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE                 |
| 12/11/2020           |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |      |      |        |      |
|-------------|----------------------------------------------------|------|------|--------|------|
| TITLE       | LONG SECTION                                       |      |      |        |      |
| DRAWING No. | 505193                                             | AREA | 0000 | TYPE   | DRG  |
| PROJECT No. | 505193                                             | DISC | CC   | NUMBER | 5200 |
| REV         | B                                                  |      |      |        |      |

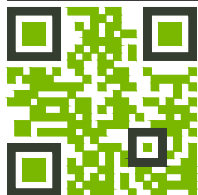


NOTE:  
VERTICAL ELEVATIONS ARE IN TERMS  
OF LYTTELTON VERTICAL DATUM (1937)

LEGEND

- DESIGN SURFACE
- EXISTING SURFACE
- 100 YEAR STORM EVENT HIGH WATER LEVEL

1 0 2 4m  
SCALE 1:100



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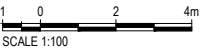
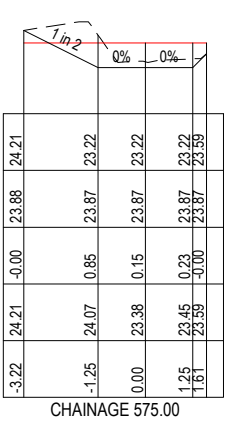
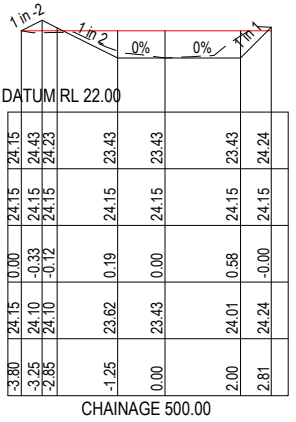
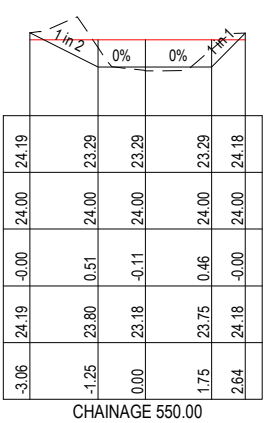
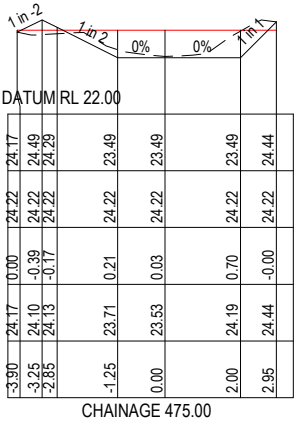
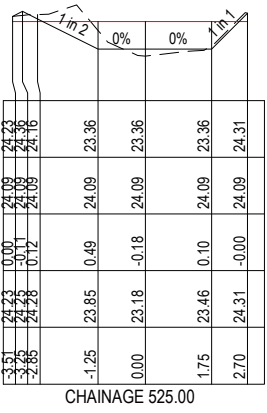
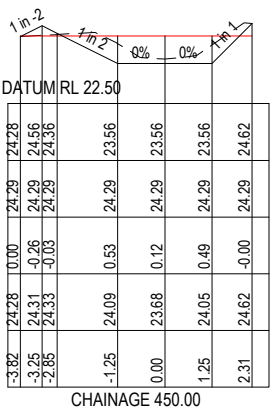
| REV | DATE     | REVISION DETAILS   |
|-----|----------|--------------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL |
| B   | 12/11/20 | ISSUE FOR TENDER   |
|     |          |                    |
|     |          |                    |
|     |          |                    |
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|     |          |                    |
|     |          |                    |

| APPROVED    |
|-------------|
| A. LINDGREN |
| A. LINDGREN |
|             |
|             |
|             |
|             |
|             |

| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE                 |
| 12/11/2020           |
| A. LINDGREN          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |
|-------------|----------------------------------------------------|
| TITLE       | CROSS SECTIONS<br>SHEET 1                          |
| DRAWING No. | 505193                                             |
| PROJECT No. | 0000                                               |
| AREA        | DRG                                                |
| TYPE        | CC                                                 |
| DISC        | 5300                                               |
| NUMBER      | B                                                  |
| REV         |                                                    |



NOTE:  
VERTICAL ELEVATIONS ARE IN TERMS  
OF LYTTELTON VERTICAL DATUM (1937)

LEGEND

— DESIGN SURFACE

--- EXISTING SURFACE

— 100 YEAR STORM EVENT  
HIGH WATER LEVEL

CLIENT



Selwyn  
DISTRICT COUNCIL

| REV | DATE     | REVISION DETAILS   | APPROVED    |
|-----|----------|--------------------|-------------|
| A   | 16/10/20 | ISSUE FOR APPROVAL | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER   | A. LINDGREN |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |
|     |          |                    |             |

| SCALE     | SIZE |
|-----------|------|
| AS SHOWN  | A1   |
| DRAWN     |      |
| R DAWSON  |      |
| DESIGNED  |      |
| N CATTO   |      |
| REVIEWED  |      |
| R. DAVIES |      |

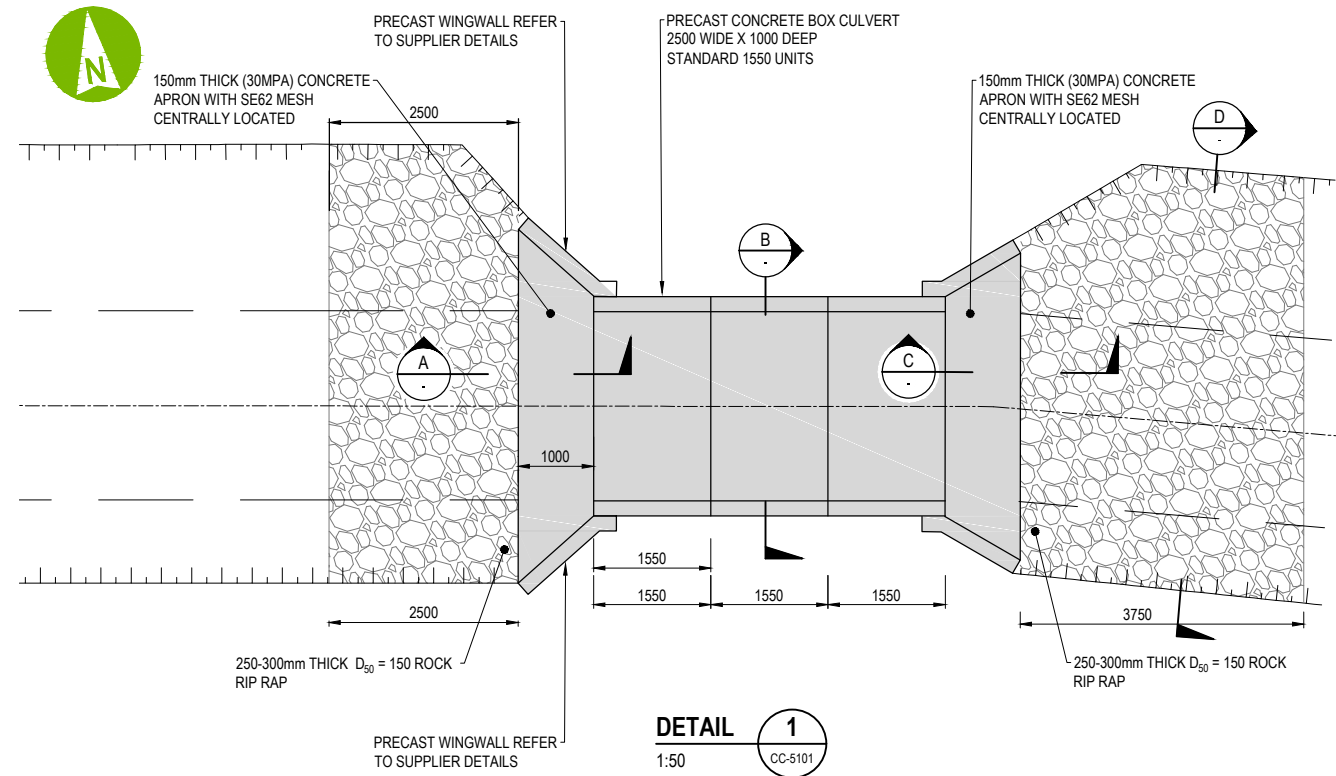
| TENDER               |
|----------------------|
| NOT FOR CONSTRUCTION |
| APPROVED             |
| A. LINDGREN          |
| DATE<br>12/11/2020   |
| A. LINDGREN          |

| PROJECT     | SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 |
|-------------|----------------------------------------------------|
| TITLE       | CROSS SECTIONS<br>SHEET 2                          |
| DRAWING No. | 505193                                             |
| PROJECT No. | 505193                                             |
| AREA        | 0000                                               |
| TYPE        | DRG                                                |
| DISC        | CC                                                 |
| NUMBER      | 5301                                               |
| REV         | B                                                  |



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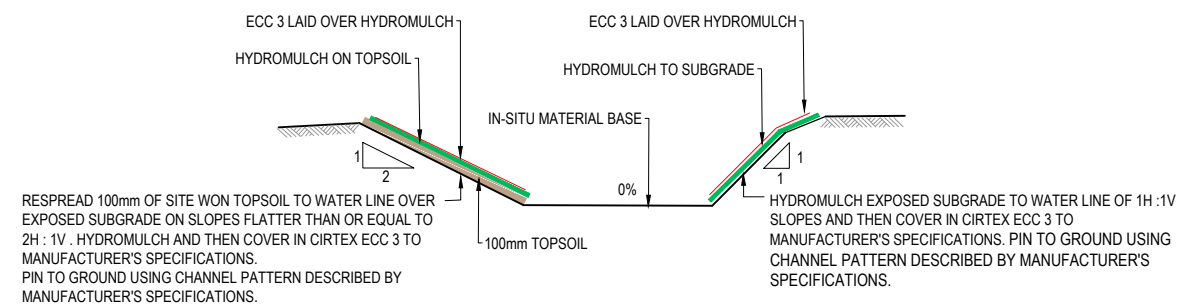
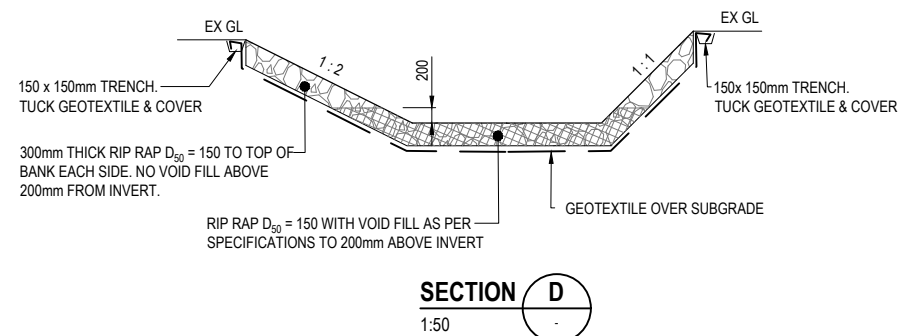
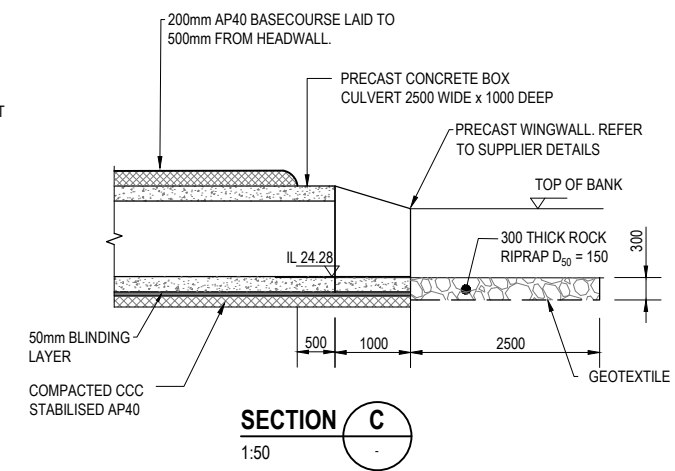
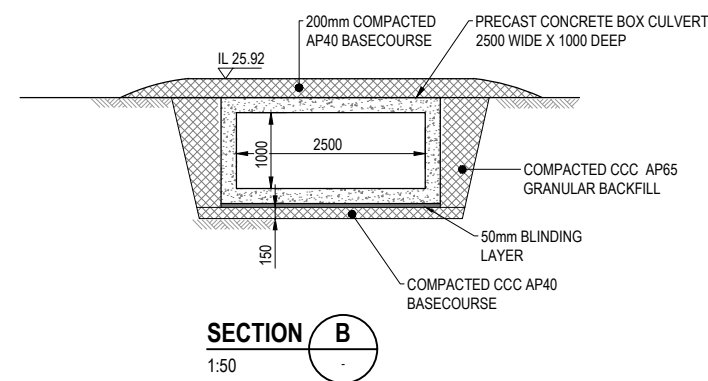
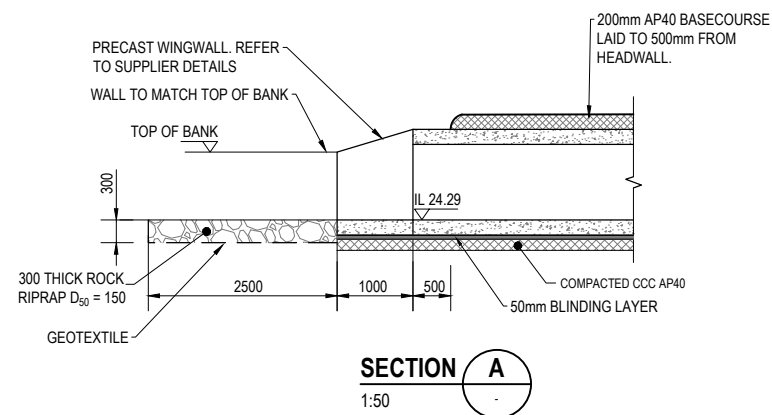
#### NOTES:

##### EXCAVATION

1. CONTRACTOR TO CONFIRM WITH LAND OWNER IF ANY EXISTING UTILITIES CROSS AT THE EXISTING CULVERT.
2. EXCAVATION SIDES AND BASES TO BE INSPECTED BY ENGINEER PRIOR TO PLACEMENT OF WALL AND FILL.
3. BASE OF EXCAVATION TO BE DRY DURING FILLING. CONTRACTOR TO CARRY OUT DE-WATERING AS REQUIRED.

##### BACKFILL:

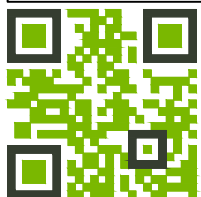
4. FILL MATERIAL BEHIND WALL SHALL BE CRUSHED CCC AP65 WITH MINIMUM TWO BROKEN FACES. (PIT RUN OR RIVER RUN WITH ROUND STONE IS NOT PERMITTED). FILL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO PLACEMENT. FILL TO BE COMPACTED TO 95% MAX DRY DENSITY (MDD).
5. CONCRETE BOX CULVERT DESIGN USING STANDARD DIMENSIONS TO MANUFACTURER'S REQUIREMENTS & TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.



#### TYPICAL SLOPE TREATMENT

0.5 0 1 2m  
SCALE 1:50

VERTICAL ELEVATIONS ARE IN TERMS OF  
LYTTLETON VERTICAL DATUM (1937)  
(ADOPTED FROM DATA PROVIDED BY ELLIOT SINCLAIR)



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| REV | DATE     | REVISION DETAILS | APPROVED    |
|-----|----------|------------------|-------------|
| A   | 16/10/20 | FOR APPROVAL     | A. LINDGREN |
| B   | 12/11/20 | ISSUE FOR TENDER | A. LINDGREN |
|     |          |                  |             |
|     |          |                  |             |
|     |          |                  |             |
|     |          |                  |             |

| SCALE             | SIZE |
|-------------------|------|
| AS SHOWN          | A1   |
| DRAWN             |      |
| R DAWSON          |      |
| DESIGNED          |      |
| N CATTO / B HENRY |      |
| REVIEWED          |      |
| R. DAVIES         |      |

| TENDER               | APPROVED        |
|----------------------|-----------------|
| NOT FOR CONSTRUCTION |                 |
|                      | DATE 12/11/2020 |
| A. LINDGREN          |                 |
| A. LINDGREN          |                 |

| PROJECT                                            | TITLE                               | PROJECT No. | AREA | TYPE | DISC | NUMBER | REV |
|----------------------------------------------------|-------------------------------------|-------------|------|------|------|--------|-----|
| SDC - LEESTON NORTH<br>STORMWATER BYPASS - STAGE 5 | TYPICAL SECTION AND CULVERT DETAILS | 505193      | 0000 | DRG  | CC   | 5400   | B   |