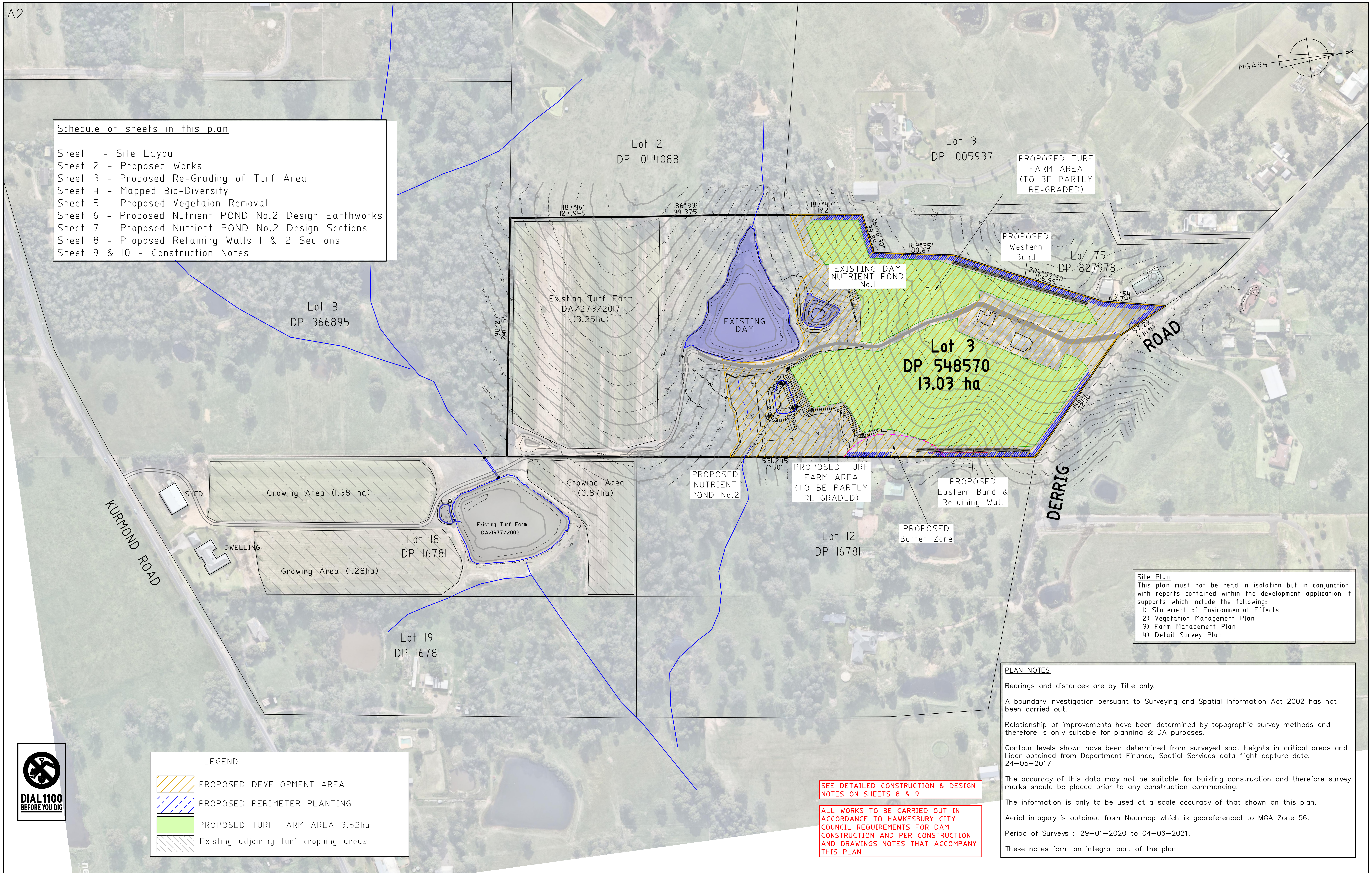
Attachment 3
to
Item 2.1.2

Architectural Plans

Date of meeting: 19 October 2023
Location: By audio-visual link
Time: 10:00 a.m.

A2



Schedule of sheets in this plan

LEGEND

▨	PROPOSED DEVELOPMENT AREA
▨	PROPOSED PERIMETER PLANTING
🟩	PROPOSED TURF FARM AREA 3.52ha
▨	Existing adjoining turf cropping areas

SEE DETAILED CONSTRUCTION & DESIGN NOTES ON SHEETS 8 & 9

ALL WORKS TO BE CARRIED OUT IN ACCORDANCE TO HAWKESBURY CITY COUNCIL REQUIREMENTS FOR DAM CONSTRUCTION AND PER CONSTRUCTION AND DRAWINGS NOTES THAT ACCOMPANY THIS PLAN

Site Plan
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1) Statement of Environmental Effects
2) Vegetation Management Plan
3) Farm Management Plan
4) Detail Survey Plan

PLAN NOTES

Bearings and distances are by Title only.

A boundary investigation persuant to Surveying and Spatial Information Act 2002 has not been carried out.

Relationship of improvements have been determined by topographic survey methods and therefore is only suitable for planning & DA purposes.

Contour levels shown have been determined from surveyed spot heights in critical areas and Lidar obtained from Department Finance, Spatial Services data flight capture date: 24–05–2017

The accuracy of this data may not be suitable for building construction and therefore survey marks should be placed prior to any construction commencing.

The information is only to be used at a scale accuracy of that shown on this plan.

Aerial imagery is obtained from Nearmap which is georeferenced to MGA Zone 56.

Period of Surveys : 29–01–2020 to 04–06–2021.

These notes form an integral part of the plan.

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Amendment No.	Date
Revision 7	07/01/22
Revision 8 – Biodiverse area impact changes	05/04/22

0 | 10 | 20 | 30 | 40 | 50 | Table of mm | 100 | 110 | 120 | 130 | 140 | 150

Reduction Ratios
Plan : 1:2500
Horiz. : – Vert. :–
Contour Interval :
Datum : A.H.D.
Origin : SCIMS PM43998 RL99.919

Prepared by : MP
Plan Date : 05/04/2022
Checked : GM
Surveyed by : MP+GM
Survey Date : 23/04/2021
Registered Surveyor Gregory J Monaghan (ID.1645)

Client : Greenway Turf Supplies
Project :
Site Plan of Proposed Turf Farm
No. 54 Derrig Road, Tennyson
being Lot 3 in D.P.548570
Site Layout

Issue No :
SHEET No. 1 OF 10 SHEETS
File Ref : 19026–S1 Rev8.dwg
Proj. Name :
Plan Ref : 19026–S1

A2

Lot 2
DP 1044088

Lot 3
DP 1005937

Lot 75
DP 827978

Lot 12
DP 16781

MGA94

LEGEND

- PROPOSED CATCH DRAIN REFER SHT 10
- GEOTEXTILE SILT FENCE
- EXISTING VEGETATION EXTENT
- PROPOSED PERIMETER PLANTING
- PROPOSED TURF FARM AREA 3.52ha TO BE PARTLY RE-GRADED.

PROPOSED 5m WIDE PERIMETER PLANTING

PROPOSED CATCH DRAINS REFER TO REPORT BY JWP "110636-02"

Existing spillway to be reshaped to comply with HCC DCP. Ensure min level of RL70.3 is retained

EXISTING DAM (NUTRIENT POND No.1) TWL RL70.30 1.68ML REFER TO REPORT BY JWP "110636-02"

EXISTING DAM TWL RL67.86 19.9ML

SPILLWAY OVERFLOW

EXISTING VEHICLE ACCESS TRACK

THE LOCATION OF PROPOSED CATCH DRAINS AND DRAIN PIPES ARE TO BE ROUTED TO THE NUTRIENT POND SO NOT TO DISTURB EXISTING TREE ROOTS

SEDIMENT CONTROL SILT FENCE TO BE INSTALLED PRIOR TO & DURING CONSTRUCTION WORKS

Ø300mm DIRECTIONAL DRILLED GRAVITY OVERFLOW TO NUTRIENT POND No.1 REFER TO DESIGN BY JWP "110636-02-DA001-DA102"

PROPOSED CONCRETE BLOCK RETAINING WALL No.2 REFER SHEET 3, 8 & 9 FIG 4

Headwall

Headwall

JUNCTION PIT A01/2

SURFACE PIT A01/3

SURFACE INLET PIT A01/1

PROPOSED CATCH DRAIN REFER TO REPORT BY JWP "110636-02"

PROPOSED 5m WIDE PERIMETER PLANTING

PROPOSED CATCH DRAINS 1.9m WIDE REFER TO REPORT BY JWP "110636-02"

50m DWELLING BUFFER

Existing Dwelling

PROPOSED Western Bund 2.6m WIDE REFER TO REPORT BY JWP "110636-02"

5m WIDE ACCESS

3m WIDE ACCESS

DWELLING

DWELLING

PROPOSED 3m WIDE TRACK FOR TRUCK & MACHINE ACCESS FROM APPROVED ADJACENT TURF FARM (0273/17)

PROPOSED 5m WIDE TRACK FOR TRUCK ACCESS REFER TO CONSTRUCTION NOTES SHEET 9

PROPOSED 5m WIDE PERIMETER PLANTING

ACCESS DETAILS FROM DERRIG ROAD ARE TO BE ADDRESSED AT CONSTRUCTION CERTIFICATE STAGE

SEDIMENT CONTROL SILT FENCE TO BE INSTALLED PRIOR TO & DURING CONSTRUCTION WORKS

EXISTING CONTOURS SHOWN REFER SHEET 3 FOR SITE REGRADING DETAILS

PROPOSED CATCH DRAIN REFER TO REPORT BY JWP "110636-02"

PROPOSED NUTRIENT POND No.2 REFER SHEET 6

Ø300mm DIRECTIONAL DRILLED GRAVITY OVERFLOW TO NUTRIENT POND No.1 REFER TO DESIGN BY JWP "110636-02-DA001-DA102"

DERRIG ROAD

SEE DETAILED CONSTRUCTION & DESIGN NOTES ON SHEETS 8 & 9

ALL WORKS TO BE CARRIED OUT IN ACCORDANCE TO HAWKESBURY CITY COUNCIL REQUIREMENTS FOR DAM CONSTRUCTION AND PER CONSTRUCTION AND DRAWINGS NOTES THAT ACCOMPANY THIS PLAN

PLAN NOTES
SEE SHEET 1

PROPOSED BUFFER ZONE TO CROPPING AREA MINIMUM 50m FROM EXISTING ADJOINING DWELLING

PROPOSED Eastern Bund 3m WIDE REFER TO REPORT BY JWP "110636-02"

SURFACE INLET PIT B01/2

SURFACE INLET PIT B01/1

JUNCTION PIT B01/3

PROPOSED 5m WIDE PERIMETER PLANTING

VEGETATED RIPARIAN ZONE (VRZ) MINIMUM 20M WIDE NATIVE REVEGETATION & ENHANCEMENT TO BE FENCED

WATERCOURSE

PROPOSED CATCH DRAIN REFER TO REPORT BY JWP "110636-02"

PROPOSED 5m WIDE PERIMETER PLANTING

SEDIMENT CONTROL SILT FENCE TO BE INSTALLED PRIOR TO & DURING CONSTRUCTION WORKS

PROPOSED CONCRETE BLOCK RETAINING WALL No.1 REFER SHEET 3, 8 & 9 FIG 4

SEDIMENT CONTROL SILT FENCE TO BE INSTALLED PRIOR TO & DURING CONSTRUCTION WORKS

Chandler Dwelling
No. 74 Derrig Road

50m

50m

5m

91m

29m

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0 15 30 45 60 METRES
1:1000

DIAL 1100 BEFORE YOU DIG

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Client : Greenway Turf Supplies

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Site Plan of Proposed Turf Farm
No. 54 Derrig Road, Tennyson
being Lot 3 in D.P.548570
Proposed Works

Issue No :

SHEET No. 2 OF 10 SHEETS

File Ref : 19026–S1 Rev8.dwg

Proj. Name :

Plan Ref : 19026–S1

A2

LEGEND

GEOTEXTILE SILT FENCE

PROPOSED PERIMETER PLANTING

PROPOSED TURF FARM AREA 3.52ha
TO BE PARTLY RE-GRADED.

PROPOSED TURF FARM AREA TO BE
RE-GRADED 2.53ha
+2.26 DENOTES FILL AT 2.26m
-0.82 DENOTES CUT AT 0.82m

MGA94

Lot 3
DP 1005937

Lot 2
DP 1044088

Lot 75
DP 827978

Lot 12
DP 16781

SILT FENCE TO BE ERECTED PRIOR TO ANY EARTHWORKS

SILT FENCE TO BE ERECTED PRIOR TO ANY EARTHWORKS

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LIMIT OF EARTHWORKS

TOP WALL
RL74.0 (at existing surface)

TOP WALL
RL72.7 (2.4m above existing surface at low point)

TOP WALL
RL74.0 (at existing surface)

FILL BATTER
4hz:1v

PROPOSED CONCRETE BLOCK RETAINING WALL No.2
REFER SHEET 8 & SHEET 10 FIG 4

SURFACE INLET PIT A01/1

JUNCTION PIT A01/2

SURFACE PIT A01/3

FILL BATTERS
4hz:1v

PROPOSED SITE REGRADING AREA
(Design surface contours shown dashed)

DESIGN CONTOURS FOR RE-GRADING ARE SHOWN
REFER SHEET 2 FOR EXISTING CONTOURS

PROPOSED SITE FOR STOCKPILING OF STRIPPED TOP SOIL
REFER NOTES SHEET 8

PROPOSED NUTRIENT POND No.2
REFER SHEET 6

JUNCTION PIT B01/3

SURFACE INLET PIT B01/2

SURFACE INLET PIT B01/1

TOP WALL
RL74.0 (at existing surface)

TOP WALL
RL73.5 (2.0m above existing surface at low point)

PROPOSED CONCRETE BLOCK RETAINING WALL No.1
REFER SHEET 8 & SHEET 10 FIG 4

TOP WALL
RL76.0 (at existing surface)

DERRIG ROAD

SEE DETAILED CONSTRUCTION & DESIGN NOTES ON SHEETS 8 & 9

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PLAN NOTES
SEE SHEET 1

TURF AREA EARTHWORKS & RE-GRADING CALCULATION

cut volumes are negative
fill volumes are positive

Approx. Total cut taken = -8330 cub m
Approx. Total fill needed = 9275 cub m

Approx. excess of fill needed over cut = 945 cub m
to be sourced from excess in cut from Nutrient POND No.2 earthworks

earthworks area = 2631l sqm (2.63ha)

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0 15 30 45 60 METRES
1:1000

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Surveyed by : MP+GM
Survey Date : 23/04/2021
Registered Surveyor Gregory J Monaghan (ID.1645)

Client : Greenway Turf Supplies

Project :
Site Plan of Proposed Turf Farm
No. 54 Derrig Road, Tennyson
being Lot 3 in D.P.548570
Proposed Re-Grading within Turf Area

Issue No :

SHEET No. 3 OF 10 SHEETS

File Ref : 19026-S1 Rev8.dwg

Proj. Name :

Plan Ref : 19026-S1

A2

LEGEND

EXISTING VEGETATION EXTENT

PROPOSED PERIMETER PLANTING

PROPOSED TURF FARM AREA

MAPPED BIODIVERSITY AREA

MGA94

187°16'
127.945

186°33'
99.375

187°47'
172

261°16'30"
39.894

189°35'
80.67

204°57'50"
156.85

191°54'
62.745

57.22
334°17'

98°27'
240.155

531.245
7°50'

SURFACE INLET PIT A01/1

JUNCTION PIT A01/2

SURFACE PIT A01/3

EXISTING CONTOURS SHOWN
REFER SHEET 9 FOR DESIGN
CONTOURS FROM RE-GRADING

SURFACE INLET PIT B01/2

SURFACE INLET PIT B01/1

JUNCTION PIT B01/3

SEE DETAILED CONSTRUCTION & DESIGN NOTES ON SHEETS 8 & 9

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0 30 60 90 120 METRES

1:1500

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Reduction Ratios
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Horiz. : – Vert. :–

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Survey Date : 23/04/2021
Registered Surveyor Gregory J Monaghan (ID.1645)

Client : Greenway Turf Supplies

Project :
Site Plan of Proposed Turf Farm
No. 54 Derrig Road, Tennyson
being Lot 3 in D.P.548570
Mapped Bio-Diversity

Issue No :

SHEET No. 4 OF 10 SHEETS

File Ref : 19026-S1 Rev8.dwg

Proj. Name :

Plan Ref : 19026-S1

A2

LEGEND

EXISTING VEGETATION TO RETAIN

PROPOSED VEGETATION TO REMOVE (1021 sqm)

PROPOSED PERIMETER PLANTING

PROPOSED TURF FARM AREA

MAPPED BIODIVERSITY AREA

T02 4/0.2/4 TREE NUMBER SPREAD/TRUNK DIA/HEIGHT

MGA94

T9 8/0.5/18
T8 8/0.4/18
T11 10/0.5/15
T10 10/0.5/15
T7 8/0.4/18
T6 6/0.2/10
T05 10/0.4/14
T04 8/0.3/14
T03 10/0.5/10

SURFACE INLET PIT A01/1

T12 6/0.4/6
T13 6/0.3/7
T14 8/0.4/9
JUNCTION PIT A01/2

T15 6/0.3/6
T16 4/0.2/5
SURFACE PIT A01/3

T17 6/0.4/7
T18 6/0.3/5

ENDEMIC TREES BE RETAINED

T01 10/0.5/13
T02 8/0.4/15

EXISTING CONTOURS SHOWN
REFER SHEET 3 FOR DESIGN
CONTOURS FROM RE-GRADING

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0 10 20 30 40 METRES
1:500

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Reduction Ratios
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Registered Surveyor Gregory J Monaghan (ID.1645)

Client : Greenway Turf Supplies

Project :
Site Plan of Proposed Turf Farm
No. 54 Derrig Road, Tennyson
being Lot 3 in D.P.548570
Proposed Vegetaion to Remove

Issue No :

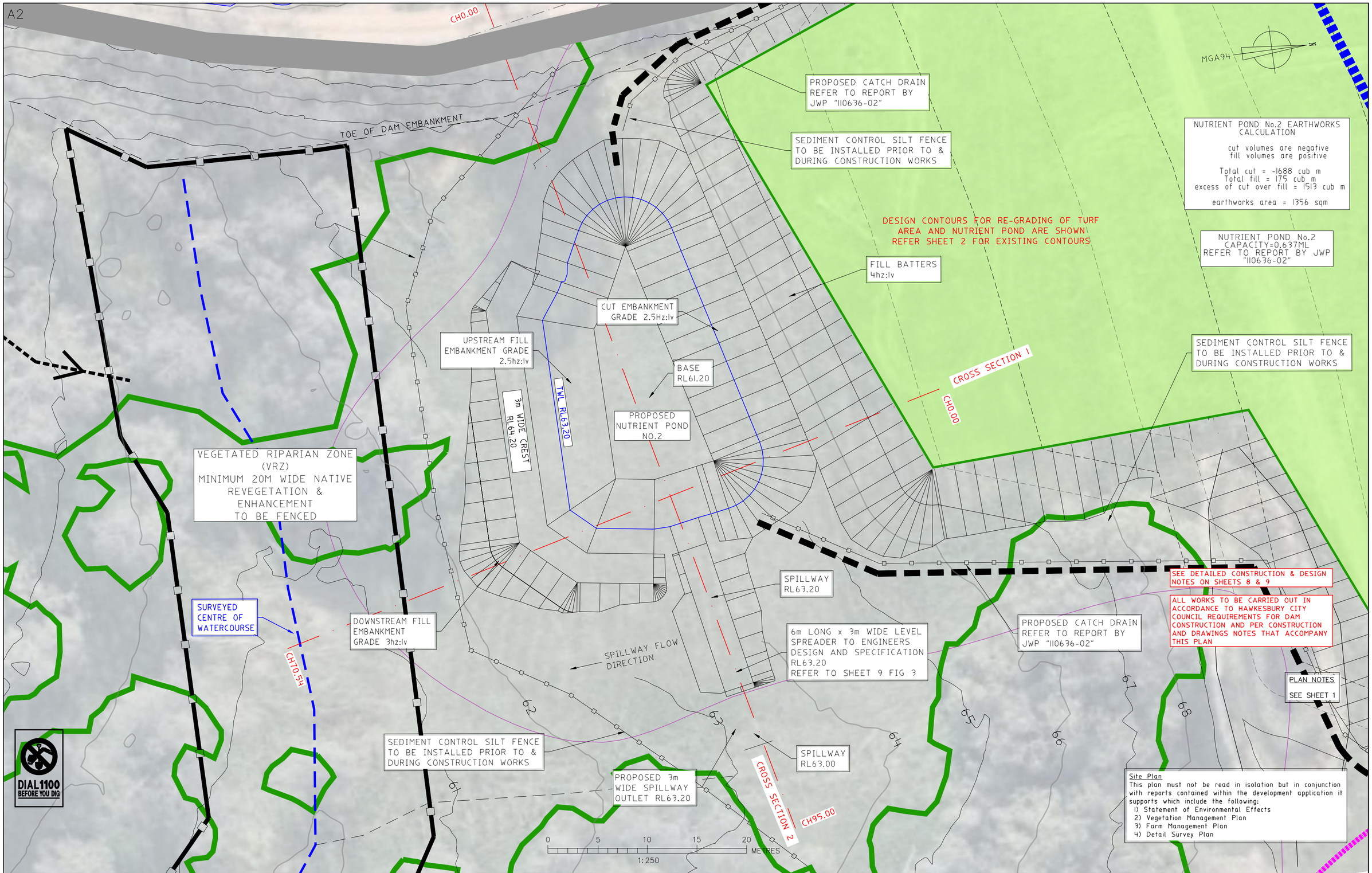
SHEET No. 5 OF 10 SHEETS

File Ref : 19026–S1 Rev8.dwg

Proj. Name :

Plan Ref : 19026–S1

A2



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Amendment No.	Date
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Reduction Ratios
Plan : 1:250
Horiz. : – Vert. :–

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Client : Greenway Turf Supplies

Project :
Site Plan of Proposed Turf Farm
No. 54 Derrig Road, Tennyson
being Lot 3 in D.P.548570
Proposed Nutrient Pond No.2 Design

Issue No :
SHEET No. 6 OF 10 SHEETS
File Ref : 19026-S1 Rev8.dwg
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A2

SEE DETAILED CONSTRUCTION & DESIGN NOTES ON SHEETS 8 & 9

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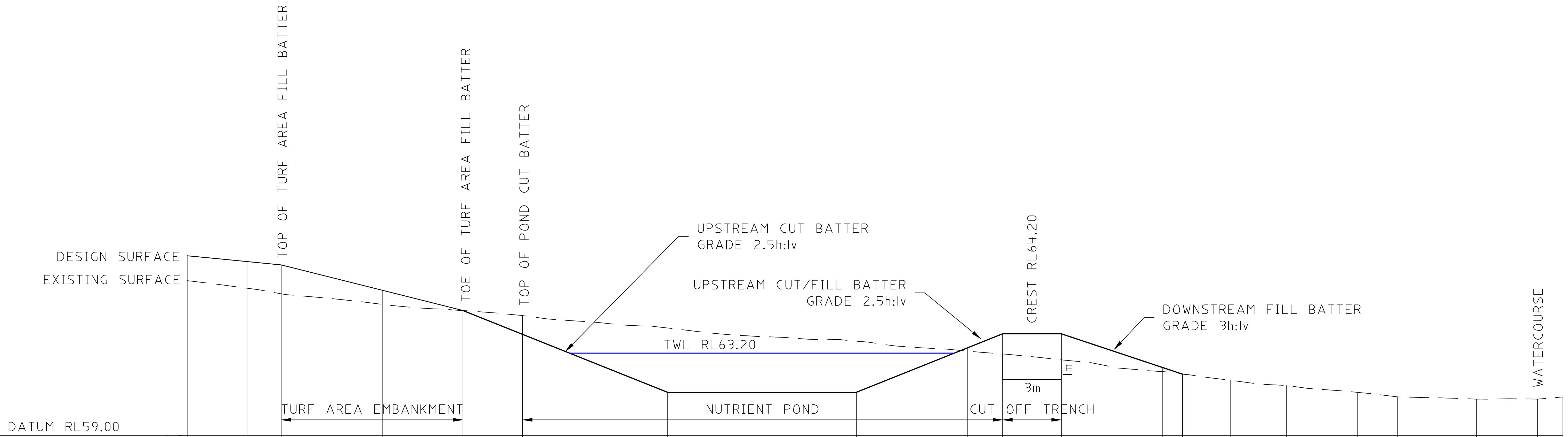

Depth Existing to Finished	+1.27	+1.36	+1.48	+0.72	0	0	-3.3	-2.6	+0.16	+1.03	+1.33	+0.21	0	0	0	0	0	0	0	0
Finished Surface Level	68.19	67.90	67.73	66.43	65.39	65.13	61.2	61.20	63.48	64.20	64.20	62.48	62.13	61.82	61.55	61.20	60.97	60.85	60.85	60.97
Chainage	0.00	3.07	4.82	10.00	14.14	17.19	24.64	34.31	40.00	41.82	44.82	50.00	51.04	53.51	56.36	60.00	62.07	66.10	69.23	70.54

Nutrient Pond No.2 – SECTION 1

SCALE 1:200 HORIZONTAL.
SCALE 1:200 VERTICAL.

PLAN NOTES

SEE SHEET 1

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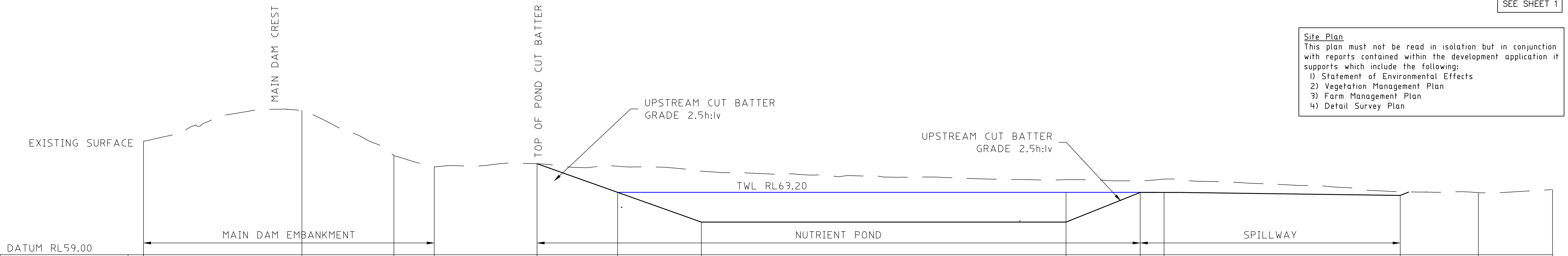

Depth Existing to Finished	0	0	0	0	0	-1.77	-3.44	-2.86	-0.8	-0.9	-0.25	0	0
Finished Surface Level	66.65	68.74	65.69	64.93	65.13	63.2	61.20	61.20	63.20	63.20	63.00	63.18	63.40
Chainage	0.00	10.68	16.88	19.60	24.00	31.97	37.61	62.20	67.2	68.81	84.73	90.00	95.00

Nutrient Pond No.2 – SECTION 2

SCALE 1:200 HORIZONTAL.
SCALE 1:200 VERTICAL.

0 5 10 15 20 METRES
1:200

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Site Plan of Proposed Turf Farm
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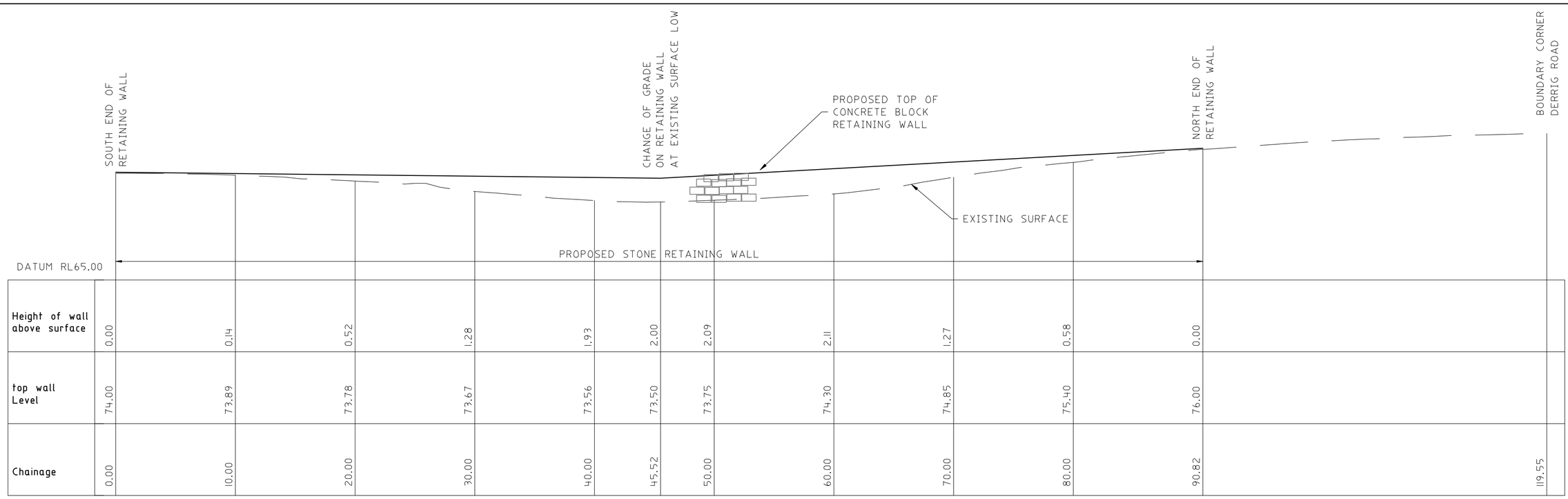
Proposed Nutrient POND No.2 Design Sections

Issue No :
SHEET No. 7 OF 10 SHEETS
File Ref : 19026–S1 Rev8.dwg
Proj. Name :
Plan Ref : 19026–S1

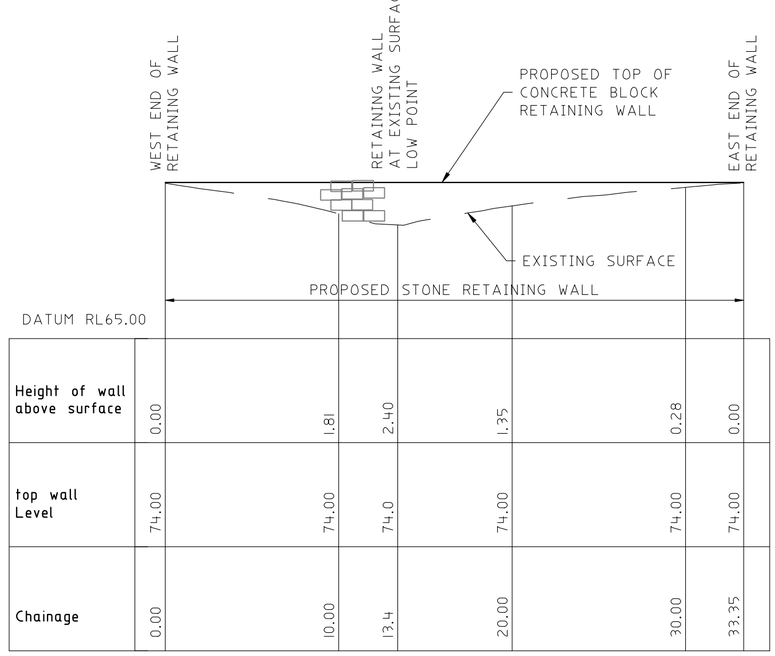
A2



Height of wall above surface	0.00	0.14	0.52	1.28	1.93	2.00	2.09	2.11	1.27	0.58	0.00
top wall Level	74.00	73.89	73.78	73.67	73.56	73.50	73.75	74.30	74.85	75.40	76.00
Chainage	0.00	10.00	20.00	30.00	40.00	45.52	50.00	60.00	70.00	80.00	90.82	119.55

Retaining Wall No.1 – SECTION

SCALE 1:250 HORIZONTAL.
SCALE 1:250 VERTICAL.



Height of wall above surface	0.00	1.81	2.40	1.35	0.28	0.00
top wall Level	74.00	74.00	74.0	74.00	74.00	74.00
Chainage	0.00	10.00	13.4	20.00	30.00	33.35

Retaining Wall No.2 – SECTION

SCALE 1:250 HORIZONTAL.
SCALE 1:250 VERTICAL.

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0 5 10 15 20 METRES
1:250

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P.O. Box 39, WINDSOR N.S.W. 2756
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Amendment No.	Date
Revision 7	07/01/22
Revision 8 – no change on this plan	05/04/22

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Reduction Ratios
Plan : 1:250
Horiz. : – Vert. :–

Contour Interval :
Datum : A.H.D.
Origin : SCIMS PM43998 RL99.919

Prepared by : MP
Plan Date : 05/04/2022
Checked : GM
Surveyed by : MP+GM
Survey Date : 23/04/2021
Registered Surveyor Gregory J Monaghan (ID.1645)

Client : Greenway Turf Supplies

Project :
Site Plan of Proposed Turf Farm
No. 54 Derrig Road, Tennyson
being Lot 3 in D.P.548570
Proposed Retaining Walls 1 & 2 Sections

Issue No :

SHEET No. 8 OF 10 SHEETS

File Ref : 19026-S1 Rev8.dwg

Proj. Name :

Plan Ref : 19026-S1

A2

Notes for proposed Turf Farm

Proposed Nutrient Pond No.2
Nutrient pond construction is subject to approved design plans prepared in accordance with DCP Part D Chapter 6 Dam Construction after DA approval from Hawkesbury City Council.

Key design features to include:
- Stripping and stockpiling of all material and used in construction of the embankments and lining layer.
- The very stiff to hard clay material found below the ground surface is the material to be used for the clay blanket on the face of the wall, the core trench and the floor of the excavation. This clay shall be stockpiled and re-used once the excavation has been completed.
- A core trench.
- The pond spillways are to be directed and shaped to match the current watercourse.

Access Tracks:
The proposed access tracks will be constructed with all-weather gravel surfaces (possibly in road base crushed rock and/or recycled milled asphalt), materials to be sourced from on site where available and maintained to a standard where gravel contamination to the turf crop is minimised and be maintained to minimise dust by vehicles. This should ensure that material run-off during storm events is controlled.
The pavement of the accessway shall be sealed in order to suppress dust generation and the roadway to boundary zone shall be upgraded and maintained in accordance with Hawkesbury City Council “Driveway Specifications” : January 2016 in particular adopting the requirements of the Rural Vehicular Crossing standard drawings M57-3 & M57-4. Maintenance to these standards shall be carried out for the duration of the approved works

Catch Drains/Swales:
Drains are to be constructed of open channel and bunding. They are to channel all runoff from the farmed area into the proposed nutrient control ponds.
Refer to design by JWP "110636-02-DA001-DA102"

Riparian Corridor:
The watercourse area and the Vegetated Riparian Zone (VRZ) is to be detailed in a separate Landscape Plan (Vegetation Management Plan).

Screen Planting:
Perimeter planting of low lying native shrubs and ground cover is to be detailed in a separate Landscape Plan (Vegetation Management Plan).

Site regrading:
All paddocks shall be trimmed and excess material from the nutrient pond shall be used to level irregular areas over the remainder of the site regrading area.
The area marked on the plan as to be re-graded should include:
Stripping of top soil layer (approximated at 150mm) and stockpiled in appropriate locations as shown on the plan and specific detail shall be provided at Construction Certificate stage.
Earthworks cut and fill shalll be carried out in accordance with HCC and EPA guidelines and specifications.
Soil and sediment erosion controls to be in place prior to commencement of any works.

Erosion and Sediment Control
All erosion and sediment controls shall be in accordance with Managing Urban Stormwater: Soils and Construction ("Landcom Blue Book") (i.e. geotextile sediment fence and straw bales) shall be in place before any works are commenced. Erosion and sediment controls are to be adequately maintained at all times and must be installed in accordance with EPA guidelines. All controls shall remain in proper operation until all development activities have been completed and the site fully stabilised.

Construction/Installation of proposed gravity overflow drainage to Nutrient Pond No.1.
Construction is to be carried out by a suitably experienced contractor. The surplus material is to be used as fill in the area requiring re-grading or in the proposed bunds no. 1 or 2.
Refer to design by JWP "110636-02-DA001-DA102"

General Notes for Dam Construction
(as per previously adopted Soil Conservation Service NSW design recommendations)

General

1. Dimensions shall not be obtained by scaling the drawings.
2. Set out dimensions shall be verified by the earthworks contractor.
3. Prior to the commencement of works the earthworks contractor shall locate all services in the area. Any damage to the existing services shall be rectified at the earthworks contractor’s expense.
4. Any underground services not referenced on the drawings may require specific protection works. The relevant authorities are to be contacted for instruction.
5. Workmanship and materials shall comply with the current Australian Standards.
6. All dimensions are in metres unless otherwise shown.

Construction Requirements for Dam Bank Embankments
(Extract from previously adopted dam design by Soil Conservation NSW)

1. All available topsoil shall be stripped from the new dam site. The topsoil is to be stripped before the construction of the dam embankment. The topsoil shall be re-used to cover the completed dam embankment down to 750mm below TWL. Any Excavation above TWL shall be covered with a minimum of 100mm of topsoil and then covered with Kikuyu Turf once excavation is completed.
2. All unsuitable material as observation during construction by the site supervisor shall be removed from beneath the location of the new dam embankment and used to fill the back batter of the dam wall.
3. Any stiff to hard clay material found below the ground surface is the material to be used for the clay blanket on the face of the wall, the core trench and the floor of the excavation. This clay shall be stockpiled out to the sides of the excavation, and re-used once the excavation has been completed and the plastic has been placed on the face of the wall. The clay material used for the clay blanket on the face of the wall & the floor of the excavation can be mixed with bentonite if required.
4. A core trench shall be excavated into suitable in-situ soil material for the length of the new dam wall to a minimum of 3m wide by 1m deep. This shall be verified on site by the earthworks supervisor before construction of the dam embankment.
5. Structural fill for the new dam embankments shall be placed in layers no greater than 150mm thick and be compacted to 98% Standard Maximum Dry Density at the optimum moisture content. To meet industry standards one compaction test should be done for every 200m³ of structural fill material placed in the dam embankment in accordance with AS 1289. A vibrating pad foot roller should be used.
6. A plastic liner shall be placed across the face of the wall. The Plastic liner shall be heavy duty builders plastic with a minimum thickness of 0.2mm. The Plastic liner shall extend from 1 metre above top water level down to the toe of the wall and out to the sides in the core trench of the dam wall a minimum of 1000mm deep. Consider clay bentonite mix material free of stones and rocks which can be placed back over the plastic liner in a 600mm layer to form the clay blanket across the face of the wall to finish with a 3(h):1(v) batter slope.
7. The outside batter of the dam embankment and crest of the dam embankment shall be covered with a minimum 100mm of topsoil on completion. The inside batter of the dam embankment shall be covered with topsoil 100mm thick to a minimum of 750mm below TWL.
8. Due to the low pH of the sub-soil 0.7kgs/m2 shall be spread on the finished surface of the dam embankment and any other areas of exposed sub-soil prior to the placement of topsoil.
9. On competition the topsoil shall be seeded with a pasture grass mixture suitable for the local area.

Dam Spillways:

1. All available topsoil shall be stripped from the site of the spillway to a depth of no less than 100mm for reuse in stabilisation works.
2. The earth spillway channel shall be a minimum of 3000mm wide and level along the contour. The outlet of the spillway shall be a minimum of 6000mm wide with 100mm of back slope on the channel.
3. The grassed slope below the sill shall be protected during construction of the dam embankment to ensure it is not disturbed by any machinery.

Dam Site Ground Water:

1. No dirty water can be discharged directly into any water course or drainage channel. Any discharge of water from site will need to meet EPA & Local council guide lines. The construction contractor will need to consult with the EPA and local council to determine their requirements in regards to discharge of water during construction prior to the commencement of works.

Other including Hawkesbury City Council (HCC) DCP Part D Chapter 6 Dam Construction requirements:

1. All earthwork areas including spillway are to be replanted or seeded with kikuyu grass.
2. A fenced area upstream and adjacent to the TWL is to be revegetated to filter water runoff..
3. Adhere to HCC rules regarding to Hydrological Aspects
4. Adhere to HCC rules regarding sediment control
5. Refer to HCC Chapter 6 Dam Construction for remaining construction requirements.
6. A work-as-executed plan shall be prepared upon completion of the works and shall include the location of the dam in relation to property boundaries.

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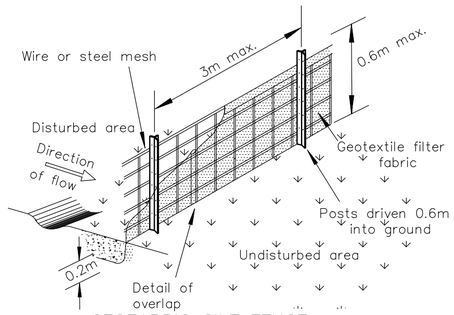
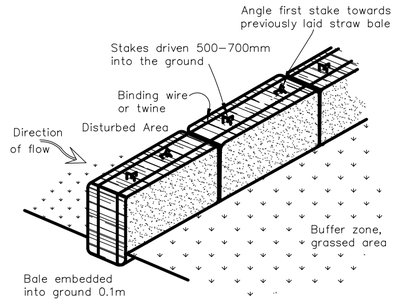


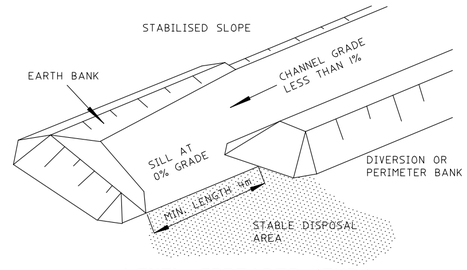
GEOFABRIC SILT FENCE

NOT TO SCALE
(FIGURE 1)



STRAW BALE SEDIMENT FILTER

NOT TO SCALE
(FIGURE 2)



LEVEL SPREADER (TYP.)

NOT TO SCALE
(FIGURE 3)

2. CATCH DRAIN PROFILES

Catch drains will be implemented to ensure that all runoff from the site is captured and directed to the nutrient control ponds. The catch drains have been sized for each catchment using the flow estimates derived from the XP-Rafts modelling and using Manning's calculations to determine the required configurations. The catch drains have been assumed to have a v-shaped profile with 1 in 4 batter slopes for ease of maintenance. A typical catch drain section is provided in Plate 2 below. The resulting profile configurations for each catchment are detailed in Table 3 below.

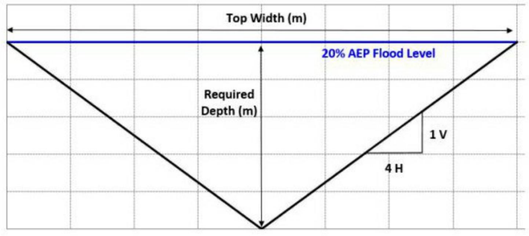


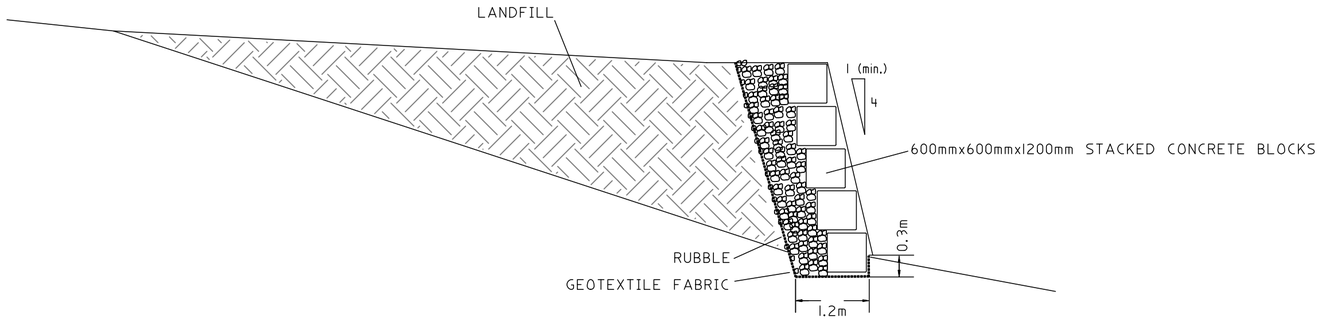
Plate 2 – Typical Section

Table 3 – Catch Drain Profiles

Catch Drain	20% AEP Flow (m^3/s)	Required Depth (m)	Top Width (m)
Cat 1	0.13	0.23	1.84
Cat 2	0.25	0.29	2.32
Cat 3	0.49	0.37	2.96
Cat 4	0.18	0.26	2.08

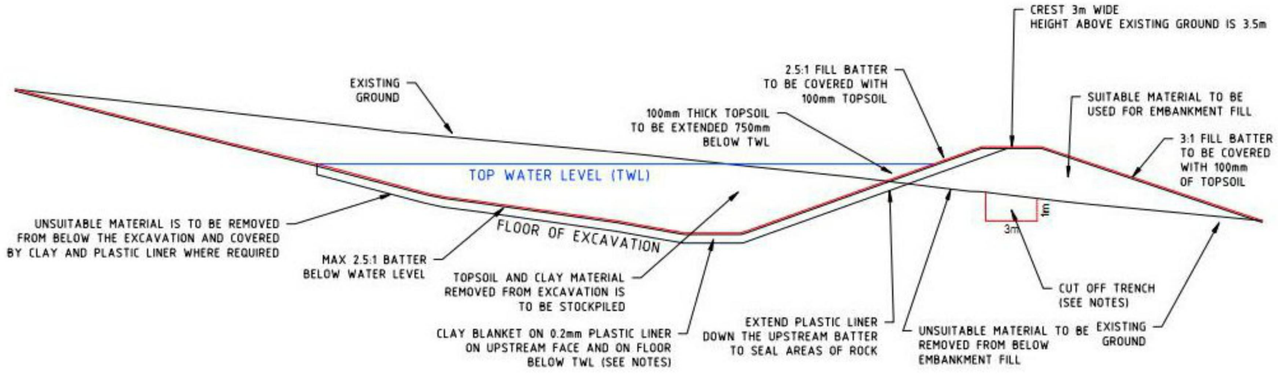
CATCH DRAIN PROFILE AND SIZING

REFER TO REPORT BY J WYNDHAM PRINCE CONSULTING ENGINEERS
110636–02–Nutrient Control Ponds – Stormwater Assessment



TYPICAL CONCRETE BLOCK RETAINING WALL

NOT TO SCALE
(FIGURE 4)



TYPICAL CONSTRUCTION ELEMENTS OF A DAM OR NUTRIENT POND

NOT TO SCALE

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