

LEGEND

| | |
|--|---|
| | SITE BOUNDARY |
| | CONTOUR |
| | BATTER |
| | RETAINING WALL |
| | KERB AND GUTTER |
| | ROLL KERB AND GUTTER |
| | BULK EARTHWORKS PAD LEVEL |
| | EXISTING LEVEL |
| | FINISHED LEVEL |
| | INVERT LEVEL |
| | SWALE DRAIN |
| | TEMPORARY DRAINAGE CHANNEL |
| | PIPE SIZE |
| | STORMWATER DRAINAGE LINE (SUBDIVISION) |
| | TRUNK STORMWATER DRAINAGE LINE |
| | STORMWATER LINE/PIT NUMBER |
| | KERB INLET PIT |
| | SURFACE INLET PIT/JUNCTION PIT |
| | HEADWALL |
| | DRIVEWAY LOCATION (FUTURE) |
| | EXISTING SEWER PIPE |
| | EXISTING SEWER MAINTENANCE SHAFT & MANHOLE |
| | STAMPED AC, PORPHYRY PAVERS OR SIMILAR |
| | EXISTING 1% AEP FLOOD LINE (RL 4.361) REFER WATER MANAGEMENT REPORT BY CRAIG & RHODES |
| | EXISTING 20% AEP FLOOD LINE (RL 3.755) REFER WATER MANAGEMENT REPORT BY CRAIG & RHODES |
| | PROPOSED 1% AEP FLOOD LINE (RL 4.361) |
| | PROPOSED 20% AEP FLOOD LINE (RL 3.755) |
| | ELECTRICAL SUBSTATION |
| | OVERLAND FLOW |
| | SCOUR PROTECTION |
| | STORMWATER PIT INSERTS (OCEANGUARD) |
| | PAVEMENT INTERFACE DETAIL |
| | TINS STEEL RAIL SAFETY BARRIER TO MANUFACTURER SPECIFICATIONS |
| | EXISTING TREE TO BE RETAINED REFER ARBORIST REPORT PREPARED BY THE TREE GUARDIAN |



RAISED THRESHOLD CROSSING EXAMPLE

1. WATER QUALITY REQUIREMENTS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

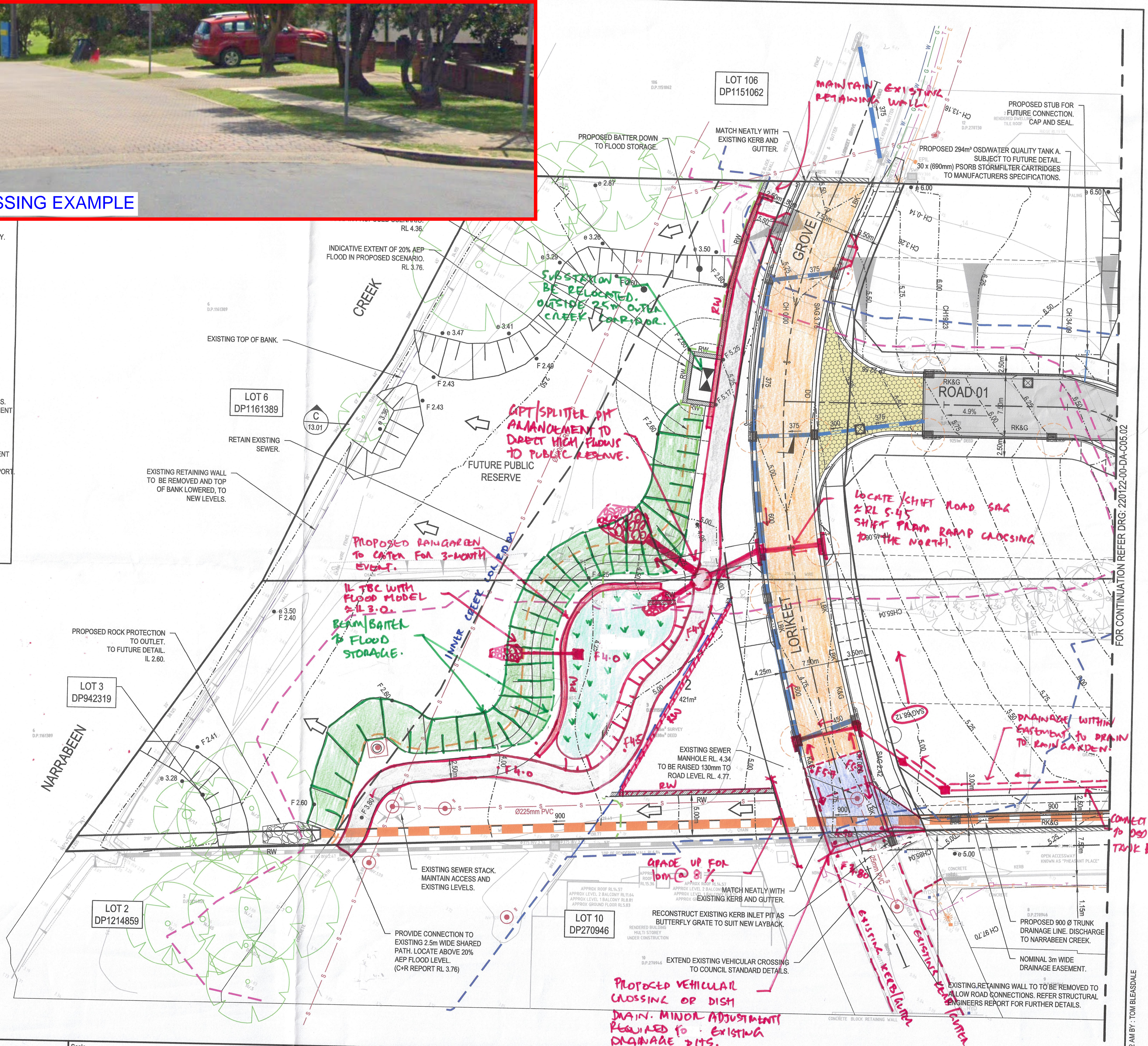
| POLLUTANT | TARGET | REDUCTION |
|-----------|--------|-----------|
| GP | 90% | 96% |
| TSS | 85% | 85% |
| TP | 65% | 65% |
| TN | 45% | 51.1% |

2. WATER QUALITY TREATMENT PROVIDED BY:
2.1. PROPRIETARY FILTER CARTRIDGE SYSTEM LOCATED WITHIN OSD/WATER QUALITY TANKS.
2.2. OCEAN SAVE PIT BASKETS.
2.3. RAINWATER TANKS IN FUTURE RESIDENTIAL LOTS.
3. REFER MUSIC MODEL PREPARED BY ENSPIRE SOLUTIONS FOR DETAILS.
4. FILTER CARTRIDGE SYSTEM TO BE INSTALLED AFTER 80% OF CATCHMENT IS DEVELOPED.

C - FLOOD STORAGE

1. FLOOD STORAGE HAS BEEN MAINTAINED AS PART OF THIS DEVELOPMENT AS FOLLOWS:
2. PEAK SURFACE WATER LEVELS AS PER C&R WATER MANAGEMENT REPORT.

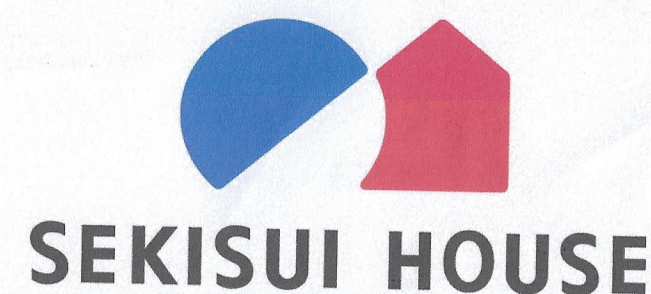
| STORM EVENT | EXISTING | PROPOSED |
|-------------|----------|----------|
| 20% AEP | 2001m³ | 3104m³ |
| 5% AEP | 3303m³ | 3908m³ |
| 1% AEP | 4736m³ | 4664m³ |



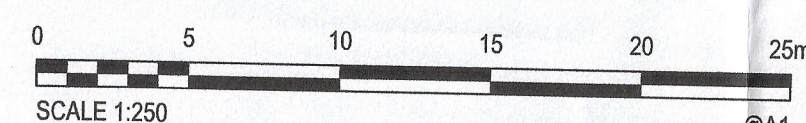
ENSPIRE SOLUTIONS
SK0019-220122
15-11-2024 - MC
CIVIL OPTION 1- RAINGARDEN.

| REV. | DATE | DESCRIPTION | DRN. | DES. | VERIF. | APPD. |
|------|------------|------------------------------------|------|------|--------|-------|
| 3 | 1/07/2024 | ISSUED FOR DEVELOPMENT APPLICATION | SS | TPB | RLE | MC |
| 2 | 12/06/2024 | ISSUED FOR INFORMATION | SS | TPB | RL | MC |
| 1 | 6/05/2024 | ISSUED FOR INFORMATION | JS | TPB | RLE | MC |

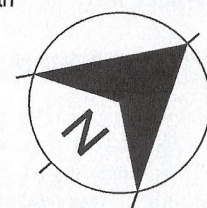
Client



Scale



North



Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project
53A & 53B WARRIWOOD ROAD
WARRIWOOD NSW 2102
CIVIL ENGINEERING WORKS

Title
SITEWORKS AND STORMWATER MANAGEMENT PLAN
SHEET 01

Scale
1:250
Date
06/05/2024
Size
A1
Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
220122-00-DA-C05.01

Revision
3

LEGEND

| | |
|--|--|
| | SITE BOUNDARY |
| | CONTOUR |
| | BATTER |
| | RETAINING WALL TO FUTURE DETAIL |
| | KERB AND GUTTER TO COUNCILS STANDARD |
| | ROLL KERB AND GUTTER TO COUNCILS STANDARD |
| | BULK EARTHWORKS PAD LEVEL |
| | EXISTING LEVEL |
| | FINISHED LEVEL |
| | INVERT LEVEL |
| | DRAINAGE CHANNEL |
| | PIPE SIZE STORMWATER DRAINAGE LINE (SUBDIVISION) FLOW DIRECTION |
| | TRUNK STORMWATER DRAINAGE LINE |
| | STORMWATER LINE/PIT NUMBER |
| | KERB INLET PIT |
| | SURFACE INLET PIT/JUNCTION PIT |
| | HEADWALL |
| | DRIVEWAY LOCATION (FUTURE) |
| | EXISTING SEWER PIPE |
| | EXISTING SEWER MAINTENANCE SHAFT & MANHOLE |
| | STAMPED AC, PORPHYRY PAVERS OR SIMILAR |
| | EXISTING 1% AEP FLOOD LINE (INDICATIVE) REFER FLOOD STUDY AND REPORT BY CSS |
| | EXISTING 20% AEP FLOOD LINE (INDICATIVE) REFER FLOOD STUDY AND REPORT BY CSS |
| | ELECTRICAL SUBSTATION |
| | OVERLAND FLOW |
| | SCOUR PROTECTION TO FUTURE DETAIL |
| | STORMWATER PIT INSERTS (OCEANGUARD) |
| | PAVEMENT INTERFACE DETAIL REFER DETAIL ON C14.01 |
| | TNSW STEEL RAIL SAFETY BARRIER TO MANUFACTURER SPECIFICATIONS |
| | EXISTING TREE TO BE RETAINED REFER ARBORIST REPORT PREPARED BY THE TREE GUARDIAN |
| | INDICATIVE STREET LIGHT LOCATION |

DESIGN SUMMARY:

TOTAL CATCHMENT AREA = 1.654 ha
CATCHMENT AREA EXCLUDING FLOOD STORAGE = 1.24 ha
LGA = NORTHERN BEACHES COUNCIL
REGION = NORTHERN STORMWATER REGION 1.

A - WATER QUANTITY

- OSD REQUIRED IN ACCORDANCE WITH COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY
- REFER DRAINS MODEL BY ENSPIRE SOLUTIONS FOR DETAILS.
- SSR = 368m³/ha
SSR = 368 x 1.24
SSR = 456m³ REQUIRED.

| STORM EVENT | PRE-DEVELOPMENT FLOWS (m ³ /s) | POST-DEVELOPMENT FLOWS (m ³ /s) |
|-------------|---|--|
| 20% AEP | 0.509 | 0.487 |
| 5% AEP | 0.717 | 0.631 |
| 1% AEP | 0.921 | 0.777 |

B - WATER QUALITY

- WATER QUALITY REQUIREMENTS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

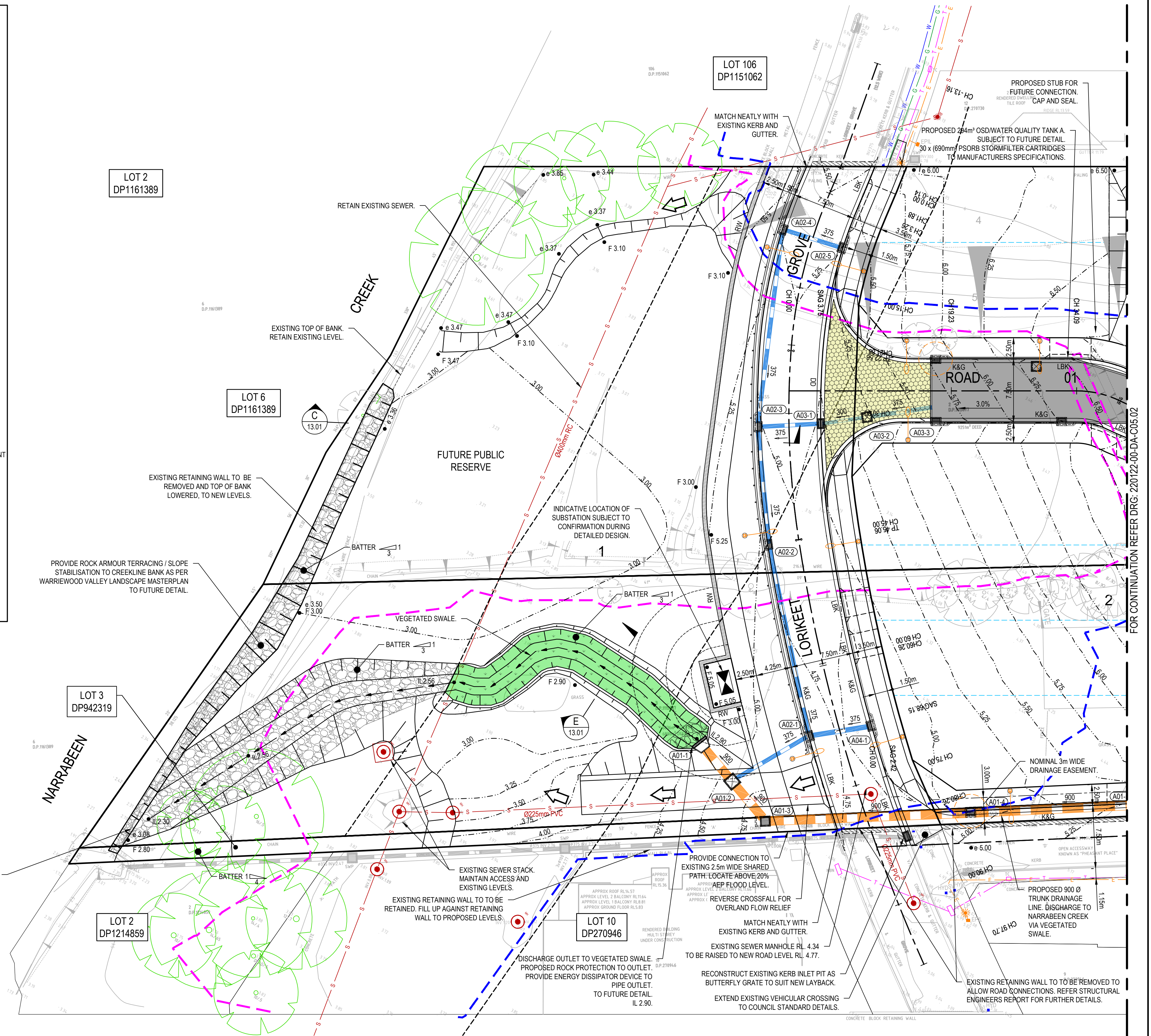
| POLLUTANT | TARGET | REDUCTION |
|-----------|--------|-----------|
| GP | 90% | 96% |
| TSS | 85% | 85% |
| TP | 65% | 65% |
| TN | 45% | 51.1% |

- WATER QUALITY TREATMENT PROVIDED BY:
 - PROPRIETARY FILTER CARTRIDGES SYSTEM LOCATED WITHIN OSD/WATER QUALITY TANKS.
 - OCEAN SAVE PIT BASKETS.
 - RAINWATER TANKS IN FUTURE RESIDENTIAL LOTS.
- REFER MUSIC MODEL PREPARED BY ENSPIRE SOLUTIONS FOR DETAILS.
- FILTER CARTRIDGE SYSTEM TO BE INSTALLED AFTER 80% OF CATCHMENT IS DEVELOPED.

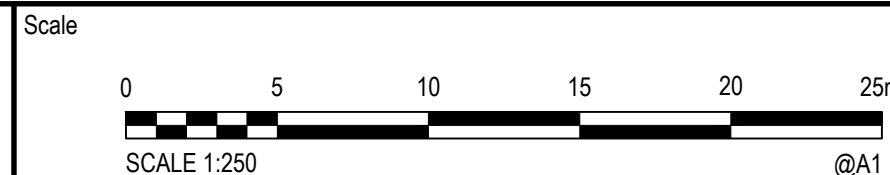
C - FLOOD STORAGE

- FLOOD STORAGE IS PROPOSED WITHIN LOT 1.
- PEAK SURFACE WATER LEVELS AS PER CSS FLOOD STUDY.

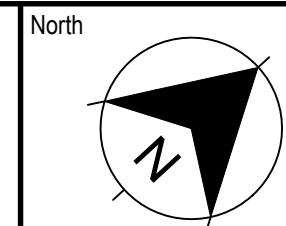
| STORM EVENT | EXISTING | PROPOSED |
|-------------|--------------------|--------------------|
| 20% AEP | 5798m ³ | 5462m ³ |
| 5% AEP | 6658m ³ | 5913m ³ |
| 1% AEP | 8053m ³ | 6616m ³ |



| | | | | | | |
|------|------------|------------------------------------|------|------|--------|-------|
| 7 | 21/03/2025 | ISSUED FOR DEVELOPMENT APPLICATION | SS | TPB | MKH | MC |
| 6 | 14/03/2025 | ISSUED FOR COORDINATION | SS | TPB | | MC |
| 5 | 03/03/2025 | ISSUED FOR INFORMATION | SS | TPB | RLE | MC |
| 4 | 02/03/2025 | ISSUED FOR INFORMATION | SS | TPB | RLE | MC |
| 3 | 1/07/2024 | ISSUED FOR DEVELOPMENT APPLICATION | SS | TPB | RLE | MC |
| 2 | 12/06/2024 | ISSUED FOR INFORMATION | SS | TPB | RL | MC |
| 1 | 6/05/2024 | ISSUED FOR INFORMATION | JS | TPB | RLE | MC |
| REV. | DATE | DESCRIPTION | DRN. | DES. | VERIF. | APPD. |



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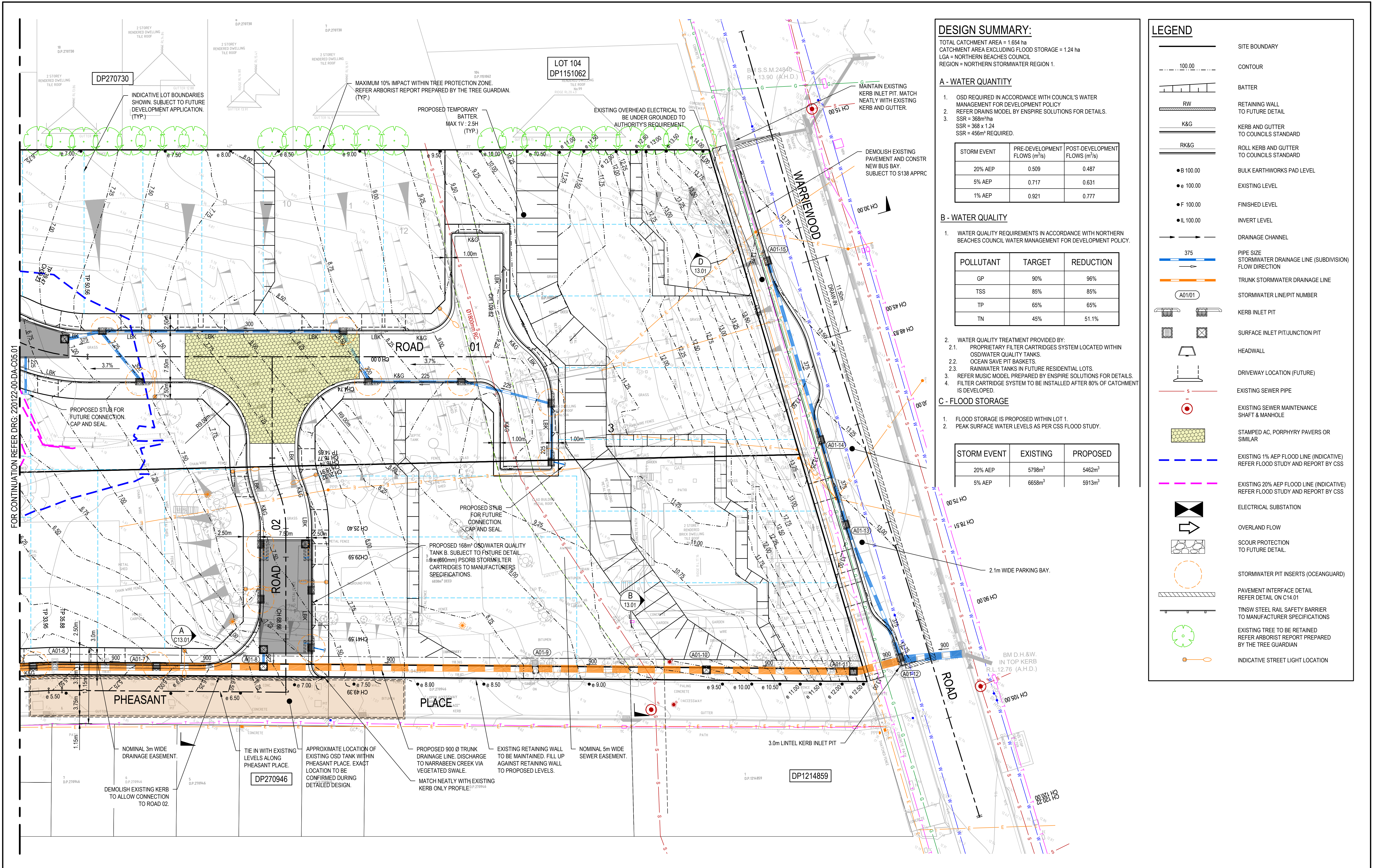


ensfire
Ensfire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project
53A & 53B WARRIWOOD ROAD
WARRIWOOD NSW 2102
CIVIL ENGINEERING WORKS
Title
SITEWORKS AND STORMWATER MANAGEMENT PLAN
SHEET 01

Scale
1:250
Date
06/05/2024
Size
A1
Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION
Project Number/Drawing Number
220122-00-DA-C05.01
Revision
7



DESIGN SUMMARY:

TOTAL CATCHMENT AREA = 1.654 ha
CATCHMENT AREA EXCLUDING FLOOD STORAGE = 1.24 ha
LGA = NORTHERN BEACHES COUNCIL
REGION = NORTHERN STORMWATER REGION 1.

A - WATER QUANTITY

- OSD REQUIRED IN ACCORDANCE WITH COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY
- REFER DRAINS MODEL BY ENSPIRE SOLUTIONS FOR DETAILS.
- SSR = 368m³/ha
SSR = 368 x 1.24
SSR = 456m³ REQUIRED.

| STORM EVENT | PRE-DEVELOPMENT FLOWS (m ³ /s) | POST-DEVELOPMENT FLOWS (m ³ /s) |
|-------------|---|--|
| 20% AEP | 0.509 | 0.487 |
| 5% AEP | 0.717 | 0.631 |
| 1% AEP | 0.921 | 0.777 |

B - WATER QUALITY

- WATER QUALITY REQUIREMENTS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

| POLLUTANT | TARGET | REDUCTION |
|-----------|--------|-----------|
| GP | 90% | 96% |
| TSS | 85% | 85% |
| TP | 65% | 65% |
| TN | 45% | 51.1% |

- WATER QUALITY TREATMENT PROVIDED BY:
 - PROPRIETARY FILTER CARTRIDGES SYSTEM LOCATED WITHIN OSD/WATER QUALITY TANKS.
 - OCEAN SAVE PIT BASKETS.
 - RAINWATER TANKS IN FUTURE RESIDENTIAL LOTS.
- REFER MUSIC MODEL PREPARED BY ENSPIRE SOLUTIONS FOR DETAILS.
- FILTER CARTRIDGE SYSTEM TO BE INSTALLED AFTER 80% OF CATCHMENT IS DEVELOPED.

C - FLOOD STORAGE

- FLOOD STORAGE IS PROPOSED WITHIN LOT 1.
- PEAK SURFACE WATER LEVELS AS PER CSS FLOOD STUDY.

| STORM EVENT | EXISTING | PROPOSED |
|-------------|--------------------|--------------------|
| 20% AEP | 5798m ³ | 5462m ³ |
| 5% AEP | 6658m ³ | 5913m ³ |

LEGEND

- SITE BOUNDARY
- CONTOUR
- BATTER
- RETAINING WALL TO FUTURE DETAIL
- K&G KERB AND GUTTER TO COUNCILS STANDARD
- RK&G ROLL KERB AND GUTTER TO COUNCILS STANDARD
- BULK EARTHWORKS PAD LEVEL
- EXISTING LEVEL
- FINISHED LEVEL
- INVERT LEVEL
- DRAINAGE CHANNEL
- PIPE SIZE
- STORMWATER DRAINAGE LINE (SUBDIVISION) FLOW DIRECTION
- TRUNK STORMWATER DRAINAGE LINE
- STORMWATER LINE/PIT NUMBER
- KERB INLET PIT
- SURFACE INLET PIT/JUNCTION PIT
- HEADWALL
- DRIVEWAY LOCATION (FUTURE)
- EXISTING SEWER PIPE
- EXISTING SEWER MAINTENANCE SHAFT & MANHOLE
- STAMPED AC, PORPHYRY PAVERS OR SIMILAR
- EXISTING 1% AEP FLOOD LINE (INDICATIVE) REFER FLOOD STUDY AND REPORT BY CSS
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- ELECTRICAL SUBSTATION
- OVERLAND FLOW
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- PAVEMENT INTERFACE DETAIL REFER DETAIL ON C14.01
- TNSW STEEL RAIL SAFETY BARRIER TO MANUFACTURER SPECIFICATIONS
- EXISTING TREE TO BE RETAINED REFER ARBORIST REPORT PREPARED BY THE TREE GUARDIAN
- INDICATIVE STREET LIGHT LOCATION

| REV. | DATE | DESCRIPTION | DRN. | DES. | VERIF. | APPD. |
|------|------------|------------------------------------|------|------|--------|-------|
| 8 | 21/03/2025 | ISSUED FOR DEVELOPMENT APPLICATION | SS | TPB | MKH | MC |
| 7 | 14/03/2025 | ISSUED FOR COORDINATION | SS | TPB | | MC |
| 6 | 5/03/2025 | ISSUED FOR INFORMATION | SS | TPB | | MC |
| 5 | 5/02/2025 | ISSUED FOR INFORMATION | SS | TPB | RLE | MC |
| 4 | 5/08/2024 | ISSUED FOR DEVELOPMENT APPLICATION | SS | TPB | RLE | MC |
| 3 | 1/07/2024 | ISSUED FOR DEVELOPMENT APPLICATION | SS | TPB | RLE | MC |
| 2 | 12/06/2024 | ISSUED FOR INFORMATION | SS | TPB | RL | MC |
| 1 | 6/05/2024 | ISSUED FOR INFORMATION | JS | TPB | RLE | MC |



Scale: 0 5 10 15 20 25m
SCALE 1:250
@A1

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North

ensfire

Ensfire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project: 53A & 53B WARRIEWOOD ROAD
WARRIEWOOD NSW 2102
CIVIL ENGINEERING WORKS

Title: SITEWORKS AND STORMWATER MANAGEMENT PLAN

SHEET 02

Scale: 1:250
Date: 06/05/2024
Size: A1
Datum: MGA2020

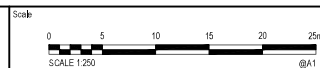
Status: FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number: 220122-00-DA-C05.02

Revision: 8

| | |
|--|---|
| | SITE BOUNDARY |
| | CONTOUR |
| | BATTER |
| | RETAINING WALL |
| | KERB AND GUTTER |
| | ROLL KERB AND GUTTER |
| | BULK EARTHWORKS PAD LEVEL |
| | EXISTING LEVEL |
| | FINISHED LEVEL |
| | INVERT LEVEL |
| | SWALE DRAIN |
| | TEMPORARY DRAINAGE CHANNEL |
| | PIPE SIZE |
| | STORMWATER DRAINAGE LINE (SUBDIVISION) FLOW DIRECTION |
| | TRUNK STORMWATER DRAINAGE LINE |
| | STORMWATER LINE/PIT NUMBER |
| | KERB INLET PIT |
| | SURFACE INLET PIT/A JUNCTION PIT |
| | HEADWALL |
| | DRIVEWAY LOCATION (FUTURE) |
| | EXISTING SEWER PIPE |
| | EXISTING SEWER MAINTENANCE SHAFT & MANHOLE |
| | STAMPED AC, PORPHYRY PAVERS OR SIMILAR |
| | EXISTING 1% AEP FLOOD LINE (RL 4.361) REFER WATER MANAGEMENT REPORT BY CRAG & RHODES |
| | EXISTING 20% AEP FLOOD LINE (RL 3.755) REFER WATER MANAGEMENT REPORT BY CRAG & RHODES |
| | PROPOSED 1% AEP FLOOD LINE (RL 4.361) |
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| | ELECTRICAL SUBSTATION |
| | OVERLAND FLOW |
| | SCOUR PROTECTION |
| | STORMWATER PIT INSERTS (OCEANGUARD) |
| | PAVEMENT INTERFACE DETAIL |
| | TINSW STEEL RAIL SAFETY BARRIER TO MANUFACTURER SPECIFICATIONS |


FOR CONTINUATION REFER DRG. 220122-00-DA-C03.02

[illegible]

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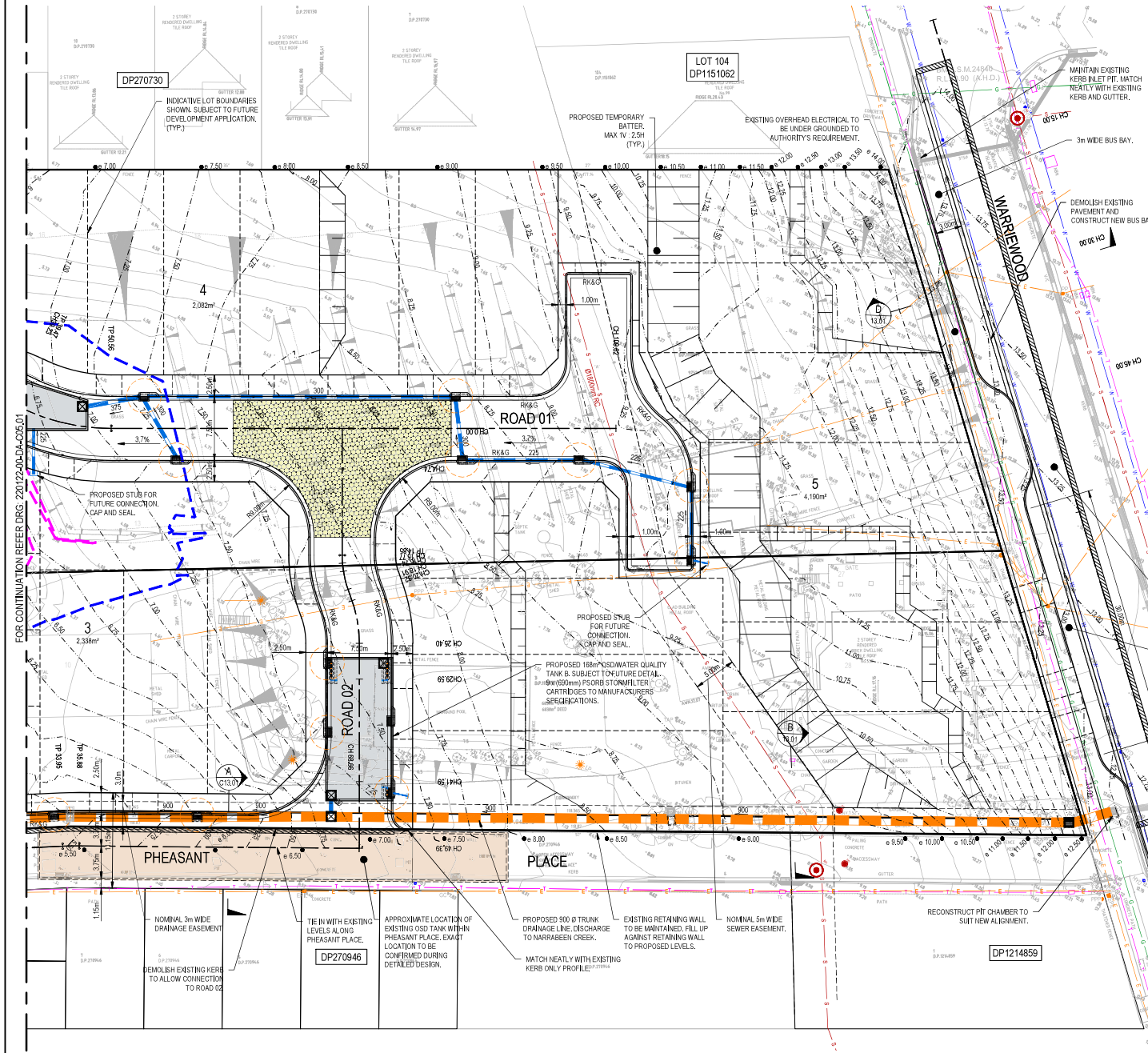


Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

| | |
|---|---|
|  | Project |
| | 53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 CIVIL ENGINEERING WORKS |
| | Title |
| | SITWORKS AND STORMWATER MANAGEMENT PLAN |
| | SHEET 01 |

| | | | |
|---|---|--|--|
| N | Scale 1"=50' | Status <div style="color: red; text-align: center;"> FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION </div> | Revision <div style="font-size: 2em; text-align: center;">3</div> |
| | Date 06/05/2024 | | |
| | Size A1 | | |
| | Project Number/Drawing Number <div style="font-size: 1.5em; text-align: center;">220122-00-DA-C05.01</div> | | |
| | Date MGA2020 | | |

FOR CONTINUATION REFER DRG. 220122-00-DA-C05.01



DESIGN SUMMARY:

CATCHMENT AREA = 1.654 ha
LGA = NORTHERN BEACHES COUNCIL
REGION = NORTHERN STORMWATER REGION 1.

A - WATER QUANTITY

- OSD REQUIRED IN ACCORDANCE WITH COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY
- REFER DRAINS MODEL BY ENSPIRE SOLUTIONS FOR DETAILS.

| STORM EVENT | PRE-DEVELOPMENT FLOWS (m³/s) | POST-DEVELOPMENT FLOWS (m³/s) |
|-------------|------------------------------|-------------------------------|
| 20% AEP | 0.509 | 0.487 |
| 5% AEP | 0.717 | 0.631 |
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B - WATER QUALITY

- WATER QUALITY REQUIREMENTS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

| POLLUTANT | TARGET | REDUCTION |
|-----------|--------|-----------|
| GP | 90% | 96% |
| TSS | 85% | 85% |
| TP | 65% | 65% |
| TN | 45% | 51.1% |

C - FLOOD STORAGE

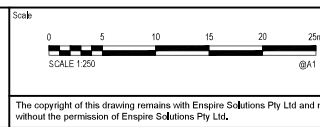
- FLOOD STORAGE HAS BEEN MAINTAINED AS PART OF THIS DEVELOPMENT AS FOLLOWS
- PEAK SURFACE WATER LEVELS AS PER C&R WATER MANAGEMENT REPORT

| STORM EVENT | EXISTING | PROPOSED |
|-------------|----------|----------|
| 20% AEP | 2001m³ | 3104m³ |
| 5% AEP | 3303m³ | 3908m³ |
| 1% AEP | 4736m³ | 4694m³ |

LEGEND

| | |
|--|---|
| | SITE BOUNDARY |
| | CONTOUR |
| | BATTER |
| | RETAINING WALL |
| | K&G |
| | ROLL KERB AND GUTTER |
| | BULK EARTHWORKS PAD LEVEL |
| | EXISTING LEVEL |
| | FINISHED LEVEL |
| | INVERT LEVEL |
| | SWALE DRAIN |
| | TEMPORARY DRAINAGE CHANNEL |
| | PIPE SIZE |
| | STORMWATER DRAINAGE LINE (SUBDIVISION) FLOW DIRECTION |
| | TRUNK STORMWATER DRAINAGE LINE |
| | STORMWATER LINE/PIT NUMBER |
| | KERB INLET PIT |
| | SURFACE INLET PIT/JUNCTION PIT |
| | HEADWALL |
| | DRIVEWAY LOCATION (FUTURE) |
| | EXISTING SEWER PIPE |
| | EXISTING SEWER MAINTENANCE SHAFT & MANHOLE |
| | STAMPED AC, PORPHYRY PAVERS OR SIMILAR |
| | EXISTING 1% AEP FLOOD LINE (RL 4.361) |
| | EXISTING 20% AEP FLOOD LINE (RL 3.756) |
| | EXISTING 5% AEP FLOOD LINE (RL 3.756) |
| | PROPOSED 1% AEP FLOOD LINE (RL 4.361) |
| | PROPOSED 20% AEP FLOOD LINE (RL 3.756) |
| | ELECTRICAL SUBSTATION |
| | OVERLAND FLOW |
| | SCOUR PROTECTION |
| | STORMWATER PIT INSERTS (OCEANGUARD) |
| | PAVEMENT INTERFACE DETAIL |
| | TNSW STEEL RAIL SAFETY BARRIER TO MANUFACTURER SPECIFICATIONS |

| REV | DATE | DESCRIPTION | DRN | DES | VER | APPR |
|-----|------------|------------------------------------|-----|-----|-----|------|
| 3 | 1/07/2024 | ISSUED FOR DEVELOPMENT APPLICATION | SS | TPB | RLE | MC |
| 2 | 12/06/2024 | ISSUED FOR INFORMATION | SS | TPB | RL | MC |
| 1 | 06/05/2024 | ISSUED FOR INFORMATION | JS | TPB | RLE | MC |



| | |
|---------|---|
| Project | 53A & 53B WARREWOOD ROAD WARREWOOD NSW 2102 CIVIL ENGINEERING WORKS |
| Title | SITEWORKS AND STORMWATER MANAGEMENT PLAN |
| Sheet | SHEET 02 |

| | | | |
|-------|------------|-------------------------------|---|
| Scale | 1:250 | Status | FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION |
| Date | 06/05/2024 | Project Number/Drawing Number | 220122-00-DA-C05.02 |
| Size | A1 | Revision | 3 |
| Drawn | MSA2020 | | |

LEGEND

| | |
|--|--|
| | SITE BOUNDARY |
| | CONTOUR |
| | BATTER |
| | RETAINING WALL |
| | K&G |
| | RK&G |
| | BULK EARTHWORKS PAD LEVEL |
| | EXISTING LEVEL |
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| | EXISTING 1% AEP FLOOD LINE (RL 4.361) |
| | EXISTING 20% AEP FLOOD LINE (RL 3.755) |
| | PROPOSED 1% AEP FLOOD LINE (RL 4.361) |
| | PROPOSED 20% AEP FLOOD LINE (RL 3.755) |
| | ELECTRICAL SUBSTATION |
| | OVERLAND FLOW |
| | SCOUR PROTECTION |
| | STORMWATER PIT INSERTS (OCEANGUARD) |
| | PAVEMENT INTERFACE DETAIL |



RAISED THRESHOLD CROSSING EXAMPLE

1. WATER QUALITY REQUIREMENTS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

| POLLUTANT | TARGET | REDUCTION |
|-----------|--------|-----------|
| GP | 90% | 96% |
| TSS | 85% | 85% |
| TP | 65% | 65% |
| TN | 45% | 51.1% |

2. WATER QUALITY TREATMENT PROVIDED BY:
2.1. PROPRIETARY FILTER CARTRIDGE SYSTEM LOCATED WITHIN OSD/WATER QUALITY TANKS.
2.2. OCEAN SAVE PIT BASKETS.
2.3. RAINWATER TANKS IN FUTURE RESIDENTIAL LOTS.
3. REFER MUSIC MODEL PREPARED BY ENSPIRE SOLUTIONS FOR DETAILS.
4. FILTER CARTRIDGE SYSTEM TO BE INSTALLED AFTER 80% OF CATCHMENT IS DEVELOPED.

C - FLOOD STORAGE

1. FLOOD STORAGE HAS BEEN MAINTAINED AS PART OF THIS DEVELOPMENT AS FOLLOWS:
2. PEAK SURFACE WATER LEVELS AS PER C&R WATER MANAGEMENT REPORT.

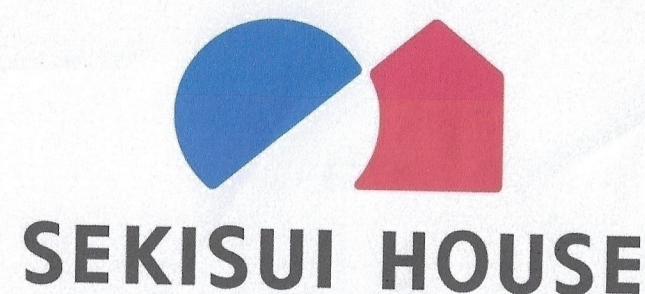
| STORM EVENT | EXISTING | PROPOSED |
|-------------|--------------------|--------------------|
| 20% AEP | 2001m ³ | 3104m ³ |
| 5% AEP | 3303m ³ | 3908m ³ |
| 1% AEP | 4736m ³ | 4664m ³ |

NOTES:

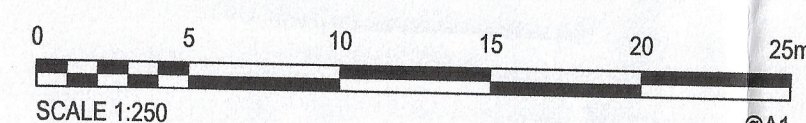
- FLOOD LEVELS TBC. IT IS EXPECTED WETLAND WILL BE INUNDATED IN MAJORITY OF STORM EVENTS.
- ROAD LEVELS TO BE RAISED TO FACILITATE EITHER WETLAND OR RAINGARDEN OPTIONS
- WETLAND SHOWN IS CONCEPTUAL ONLY.
- WETLAND SIZING: 2% OF SITE AREA DRAINING TO WETLAND. CIRCA 1.65 Ha CATCHMENT = 0.033 Ha.

| | | | |
|-------------|---------------------------|-------------|----------|
| Date: | 09/01/2025 | Project No: | 220122 |
| Project: | WARRIEWOOD RD | | |
| Title: | CIVIL OPTION 3A - WETLAND | | |
| Drawing No: | SK0023 | Revision: | 1 |
| Drawn: | MC | Scale: | AS SHOWN |

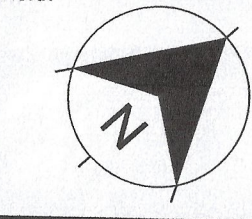
Client



Scale



North



Ensfire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
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Phone: 02 9922 6135

Project
53A & 53B WARRIEWOOD ROAD
WARRIEWOOD NSW 2102
CIVIL ENGINEERING WORKS

Title
SITEWORKS AND STORMWATER MANAGEMENT PLAN

SHEET 01

Scale

1:250

Date

06/05/2024

Size

A1

Datum

MGA2020

Status

FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number

220122-00-DA-C05.01

Revision

3

CAD File: P:\220122 Warriewood Rd\Civil\00-SiteWide\Drawings\6-DACC11 - DA\220122-00-DA-C05.01-C05.02 SITEWORKS AND STORMWATER MANAGEMENT PLAN.dwg

DATE PLOTTED: 11 November 2024 9:22 AM BY: TOM BLEASDALE



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Job Number:

220122

Date:

7/11/25

Project:

WATHURBOO ROAD

Prepared by:

ME

Subject:

WETLAND SECTION - 3A

Reviewed by:

MKT1.

* FLOOD LEVELS TO BE CONFIRMED BY FLOODING ENGINEER.

