

Concord High School Upgrade OSD Tanks & MUSIC Catchment Plans

15 September 2023 | 22-108 | Revision [A]

OSD TANK 2 CATCHMENT INFORMATION SUMMARY

TOTAL PROPOSED DEVELOPMENT AREA = 1400m²
POST-DEVELOPMENT PERVIOUS AREA = 0m²
POST-DEVELOPMENT IMPERVIOUS AREA = 1400m²

PROPOSED DEVELOPMENT AREA DIRECTING TO OSD TANK 2 = 1340m²
PROPOSED DEVELOPMENT AREA BYPASSING OSD TANK 2 = 60m²

PERCENTAGE OF PROPOSED DEVELOPMENT AREA BYPASSING OSD TANK 2 = 4.3%

OSD REQUIREMENTS

SITE STORAGE = 200m³ PER HECTARE OF PROPOSED DEVELOPMENT AREA.
PERMISSIBLE SITE DISCHARGE = 180L/s PER HECTARE OF PROPOSED DEVELOPMENT AREA.

REFER TO THE CITY OF CANADA BAY COUNCIL DEVELOPMENT CONTROL PLAN, APPENDIX 2 - ENGINEERING SPECIFICATIONS, PAGE APP2 -285.

OSD VOLUME REQUIRED FOR 1400m² OF PROPOSED DEVELOPMENT AREA = 28m³
PERMISSIBLE SITE DISCHARGE FOR 1400m² OF PROPOSED DEVELOPMENT AREA = 25.2L/s

40% OF THE REQUIRED OSD VOLUME WILL BE ADDED TO THE OSD TANK 2 FOR AREA BYPASSING OSD TANK 2 AND NON-HED CONTROL PIT TYPE..

OSD TANK 2 SUMMARY

OSD VOLUME PROVIDED = 39m³
ORIFICE DIAMETER = 107mm
CENTRE OF ORIFICE = RL 3.49
MAXIMUM OSD TOP WATER LEVEL = RL 4.20

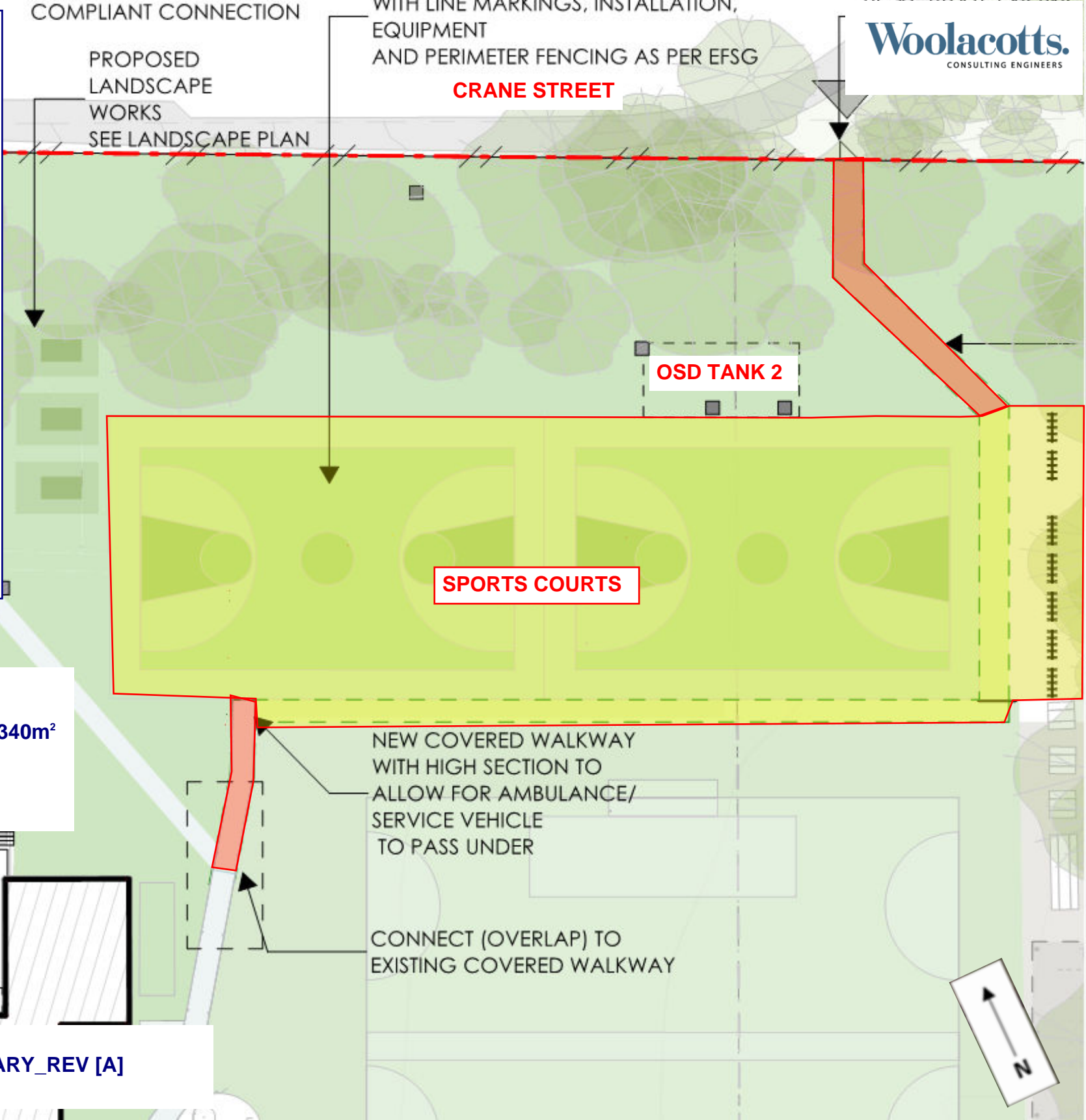
OSD TANK 2 MAXIMUM DISCHARGE RATE = 20L/s (80% OF PERMISSIBLE SITE DISCHARGE FOR 1400m²)

REFER TO DRAWING C002 FOR OSD TANK 2 SECTION.

LEGEND

PROPOSED DEVELOPMENT AREA DIRECTING TO OSD TANK 2 = 1340m²

PROPOSED DEVELOPMENT AREA BYPASSING OSD TANK 2 = 60m²



OSD TANK 3 CATCHMENT INFORMATION SUMMARY

TOTAL PROPOSED DEVELOPMENT AREA = 1000m²
POST-DEVELOPMENT PERVIOUS AREA = 0m²
POST-DEVELOPMENT IMPERVIOUS AREA = 1000m²

PROPOSED DEVELOPMENT AREA DIRECTING TO OSD TANK 3 = 840m²
PROPOSED DEVELOPMENT AREA BYPASSING OSD TANK 3 = 160m²

PERCENTAGE OF PROPOSED DEVELOPMENT AREA BYPASSING OSD TANK 3 = 16%

OSD REQUIREMENTS

SITE STORAGE = 200m³ PER HECTARE OF PROPOSED DEVELOPMENT AREA
PERMISSIBLE SITE DISCHARGE = 180L/s PER HECTARE OF PROPOSED DEVELOPMENT AREA

REFER TO THE CITY OF CANADA BAY COUNCIL DEVELOPMENT CONTROL PLAN, APPENDIX 2 -
ENGINEERING SPECIFICATION, PAGE APP2 - 285.

OSD VOLUME REQUIRED FOR 1000m² OF PROPOSED DEVELOPMENT AREA = 20m³
PERMISSIBLE SITE DISCHARGE FOR 1400m² OF PROPOSED DEVELOPMENT AREA = 18L/s

40 % OF THE REQUIRED OSD VOLUME WILL BE ADDED TO THE OSD TANK 3 FOR AREA BYPASSING
OSD TANK 3 AND NON-HED CONTROL PIT TYPE.

OSD TANK 3 SUMMARY

OSD VOLUME PROVIDED = 30m³
ORIFICE DIAMETER = 88mm
CENTRE OF ORIFICE = RL 7.20
MAXIMUM OSD TOP WATER LEVEL = RL 7.95

OSD TANK 3 MAXIMUM DISCHARGE RATE = 14L/s (80% OF PERMISSIBLE DISCHARGE FOR 1000m²)

REFER TO DRAWING C002 FOR OSD TANK 3 SECTION.

LEGEND



PROPOSED DEVELOPMENT AREA DIRECTING TO OSD TANK 3 = 810m²



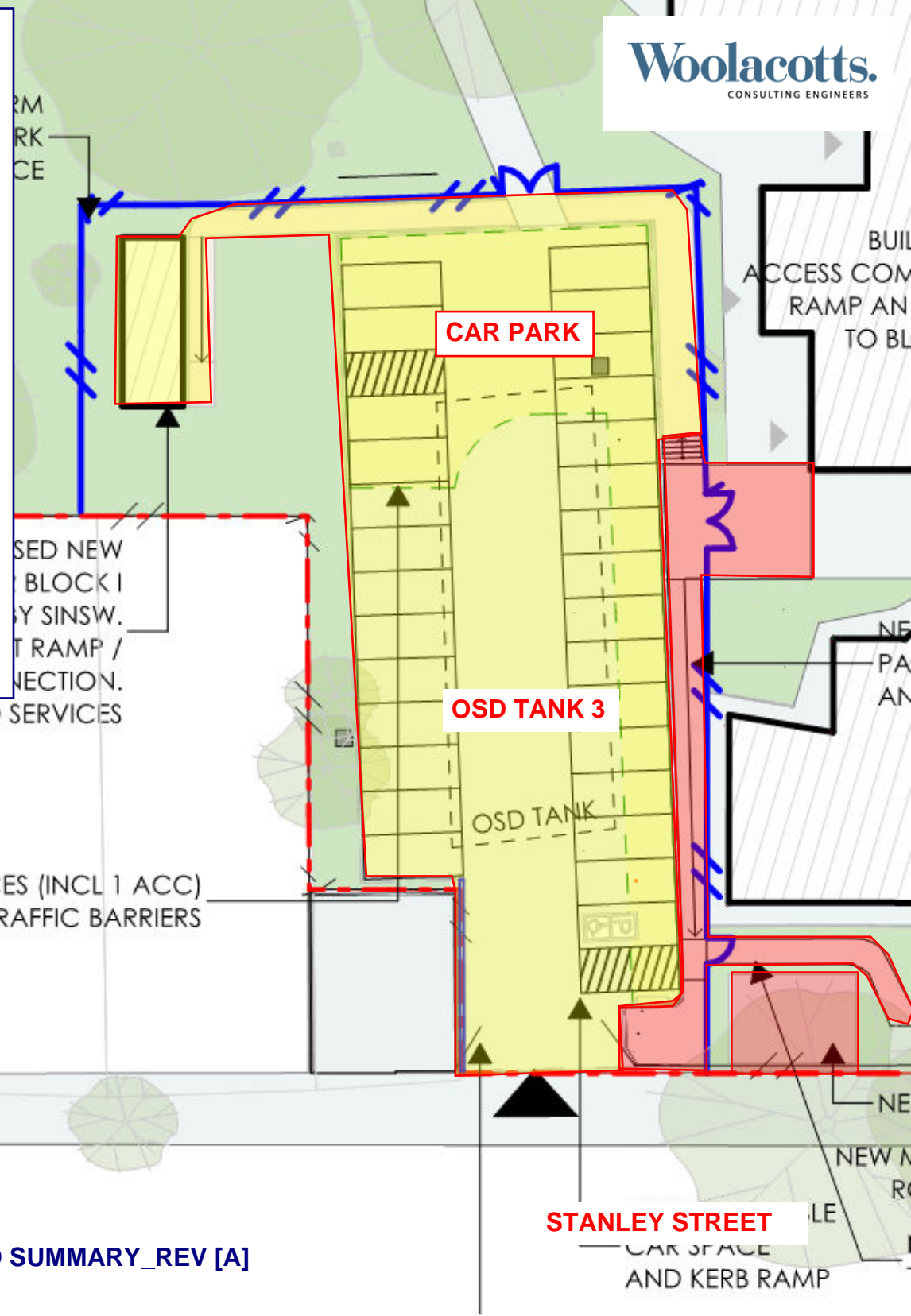
PROPOSED DEVELOPMENT AREA BYPASSING OSD TANK 3 = 190m²



TO 29 SPACES (INCL 1 ACC)
PROVIDE WHEEL STOPS AND SCURE TRAFFIC BARRIERS

STANLEY STREET

CAR SPACE
AND KERB RAMP



STORMWATER QUALITY- MUSIC CATCHMENT PLAN 1

DESIGN IN ACCORDANCE WITH THE CITY OF CANADA BAY COUNCIL DEVELOPMENT CONTROL PLAN, APPENDIX 2 - ENGINEERING SPECIFICATION. POLLUTANT LOAD REDUCTION MUST BE A MINIMUM PERCENTAGE REDUCTION OF THE POST DEVELOPMENT AVERAGE ANNUAL LOAD OF POLLUTANTS IN ACCORDANCE WITH THOSE OUTLINED BELOW:

| POLLUTANT | POST DEVELOPMENT AVERAGE ANNUAL LOAD REDUCTION TARGETS (%) REQUIRED |
|------------------------------|---------------------------------------------------------------------|
| TOTAL SUSPENDED SOLIDS (TSS) | 80 |
| TOTAL NITROGEN (TN) | 45 |
| TOTAL PHOSPHORUS (TP) | 45 |
| GROSS POLLUTANTS (GP) | 70 |

TREATMENT DEVICES:

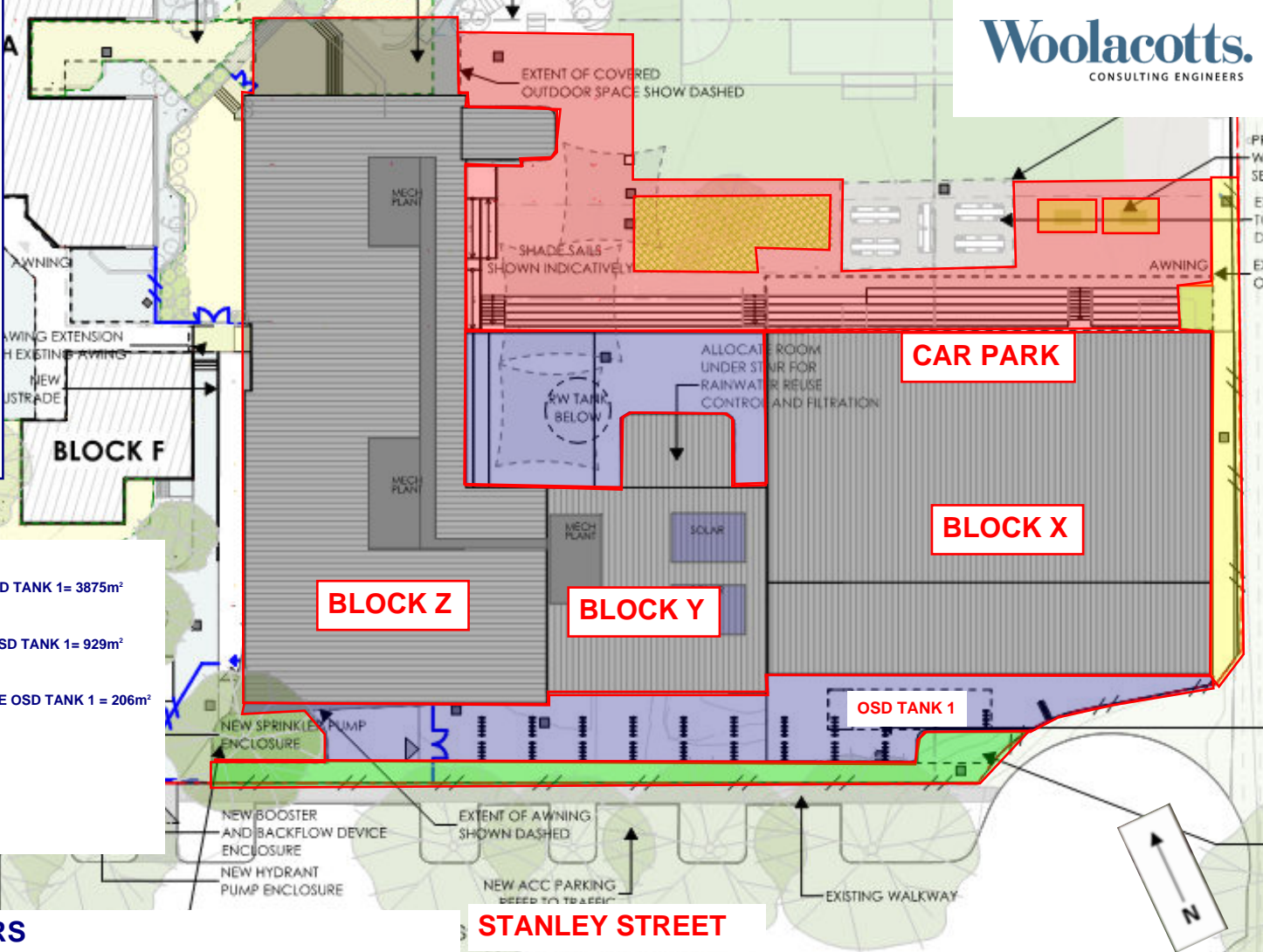
RAINWATER TANK = 65m³
 OSD TANK 1 = 186m³
 13 x 690 PSORB CARTRIDGES BY OCEAN PROTECT
 GRASSSED SWALES
 ENVIROPOD 200 INSERTS IN ALL GRATED PITS

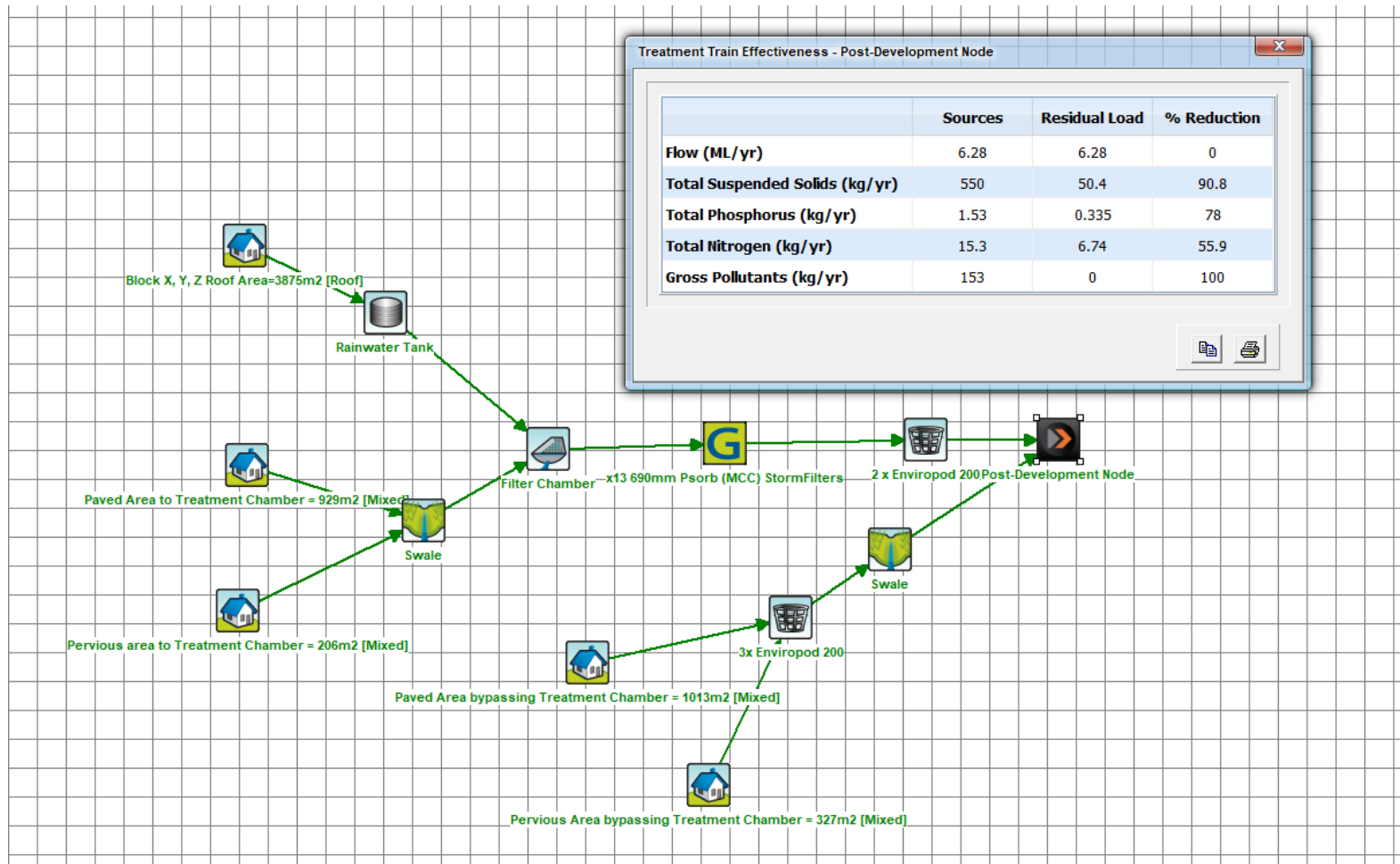
| POLLUTANT | POST DEVELOPMENT AVERAGE ANNUAL LOAD REDUCTION TARGETS (%) ACHIEVED |
|------------------------------|---------------------------------------------------------------------|
| TOTAL SUSPENDED SOLIDS (TSS) | 90.8 |
| TOTAL NITROGEN (TN) | 55.9 |
| TOTAL PHOSPHORUS (TP) | 78 |
| GROSS POLLUTANTS (GP) | 100 |

REFER TO MUSIC MODEL FOR DETAILS.

LEGEND

- ROOF AREA TO STORMWATER TREATMENT CHAMBER INSIDE OSD TANK 1= 3875m²
- PAVED AREA TO STORMWATER TREATMENT CHAMBER INSIDE OSD TANK 1= 929m²
- PERVIOUS AREA TO STORMWATER TREATMENT CHAMBER INSIDE OSD TANK 1 = 206m²
- PAVED AREA BYPASSING OSD TANK 1= 1013m²
- PERVIOUS AREA BYPASSING OSD TANK 1 = 327m²





WOOLACOTTS CONSULTING ENGINEERS

22-108_CONCORD HIGH SCHOOL_MUSIC CATCHMENT PLAN 1_MUSIC MODEL RESULTS_REV [A]

DATE 15.09.2023

REFER TO MUSIC MODEL FOR DETAILS.

CRANE STREET

LANDSCAPE
WORKS
SEE LANDSCAPE PLAN

OSD TANK 2

SPORTS COURTS

STORMWATER QUALITY - MUSIC CATCHMENT PLAN 2

DESIGN IN ACCORDANCE WITH THE CITY OF CANADA BAY COUNCIL DEVELOPMENT CONTROL PLAN, APPENDIX 2 - ENGINEERING SPECIFICATIONS. POLLUTANT LOAD REDUCTION MUST BE A MINIMUM PERCENTAGE REDUCTION OF THE POST DEVELOPMENT AVERAGE ANNUAL LOAD OF POLLUTANTS IN ACCORDANCE WITH THOSE OUTLINED BELOW:

| POLLUTANT | POST DEVELOPMENT AVERAGE ANNUAL LOAD REDUCTION TARGETS (%) REQUIRED |
|-----------|------------------------------------------------------------------------|
|-----------|------------------------------------------------------------------------|

| | |
|------------------------------|----|
| TOTAL SUSPENDED SOLIDS (TSS) | 80 |
| TOTAL NITROGEN (TN) | 45 |
| TOTAL PHOSPHORUS (TP) | 45 |
| GROSS POLLUTANTS (GP) | 70 |

TREATMENT DEVICES:

OSD TANK 2 = 39m³
6 x 310 PSORB CARTRIDGES BY OCEAN PROTECT

| POLLUTANT | POST DEVELOPMENT AVERAGE ANNUAL LOAD REDUCTION TARGETS (%) ACHIEVED |
|-----------|------------------------------------------------------------------------|
|-----------|------------------------------------------------------------------------|

| | |
|------------------------------|------|
| TOTAL SUSPENDED SOLIDS (TSS) | 81.4 |
| TOTAL NITROGEN (TN) | 48.5 |
| TOTAL PHOSPHORUS (TP) | 76.2 |
| GROSS POLLUTANTS (GP) | 99.7 |

REFER TO MUSIC MODEL FOR DETAILS.

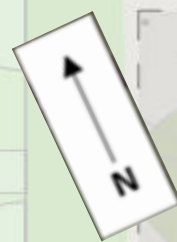
LEGEND

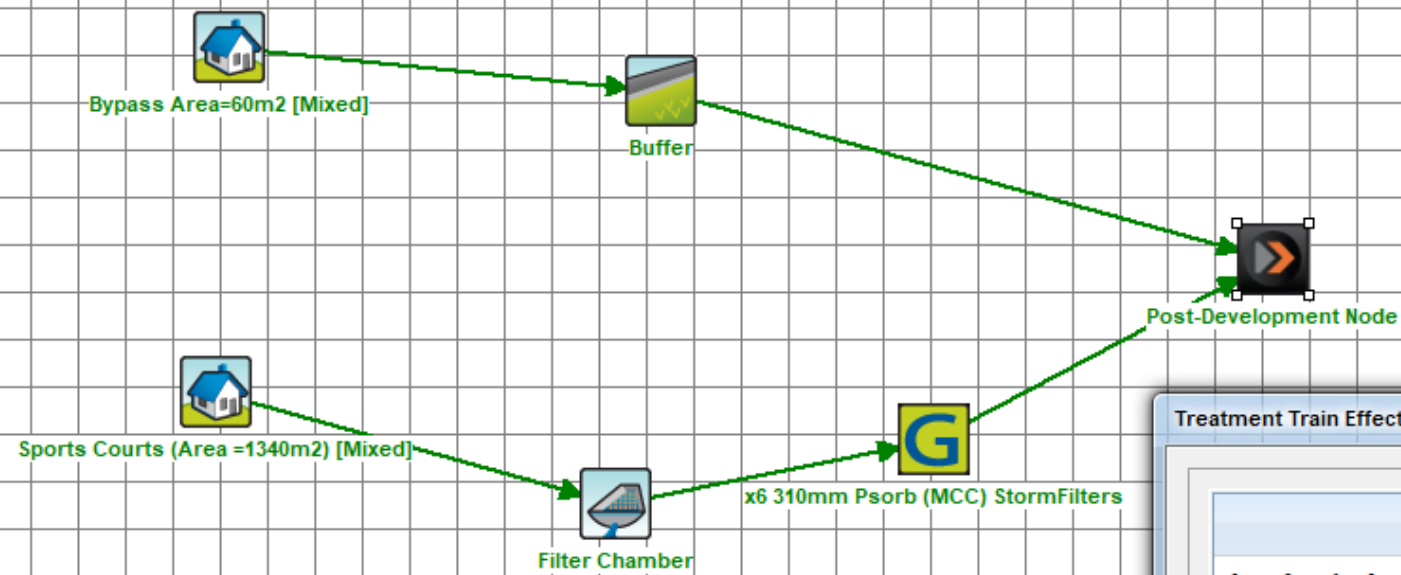
- PAVED AREA TO STORMWATER TREATMENT CHAMBER WITHIN OSD TANK 2 = 1340m²
- PAVED AREA BYPASSING STORMWATER TREATMENT CHAMBER WITHIN OSD TANK 2 = 60m²

BLOCK D

NEW COVERED WALKWAY
WITH HIGH SECTION TO
ALLOW FOR AMBULANCE/
SERVICE VEHICLE
TO PASS UNDER

CONNECT (OVERLAP) TO
EXISTING COVERED WALKWAY





| | Sources | Residual Load | % Reduction |
|--------------------------------|---------|---------------|-------------|
| Flow (ML/yr) | 1.46 | 1.4 | 3.9 |
| Total Suspended Solids (kg/yr) | 303 | 55.9 | 81.5 |
| Total Phosphorus (kg/yr) | 0.611 | 0.146 | 76.2 |
| Total Nitrogen (kg/yr) | 4.23 | 2.17 | 48.6 |
| Gross Pollutants (kg/yr) | 36.8 | 0.0934 | 99.7 |

STORMWATER QUALITY - MUSIC CATCHMENT PLAN 3

DESIGN IN ACCORDANCE WITH THE CITY OF CANADA BAY COUNCIL DEVELOPMENT CONTROL PLAN, APPENDIX 2 - ENGINEERING SPECIFICATION. POLLUTANT LOAD REDUCTION MUST BE A MINIMUM PERCENTAGE REDUCTION OF THE POST DEVELOPMENT AVERAGE ANNUAL LOAD OF POLLUTANTS IN ACCORDANCE WITH THOSE OUTLINED BELOW:

| POLLUTANT | POST DEVELOPMENT AVERAGE ANNUAL LOAD REDUCTION TARGETS (%) REQUIRED |
|------------------------------|---------------------------------------------------------------------|
| TOTAL SUSPENDED SOLIDS (TSS) | 80 |
| TOTAL NITROGEN (TN) | 45 |
| TOTAL PHOSPHORUS (TP) | 45 |
| GROSS POLLUTANTS (GP) | 70 |

TREATMENT DEVICES:

OSD TANK 3 = 30m³
6 x 310mm PSORB CARTRIDGES BY OCEAN PROTECT
ENVIROPOD 200 INSERTS IN ALL GRATED PITS

| POLLUTANT | POST DEVELOPMENT AVERAGE ANNUAL LOAD REDUCTION TARGETS (%) ACHIEVED |
|------------------------------|---------------------------------------------------------------------|
| TOTAL SUSPENDED SOLIDS (TSS) | 85.0 |
| TOTAL NITROGEN (TN) | 49.4 |
| TOTAL PHOSPHORUS (TP) | 77.7 |
| GROSS POLLUTANTS (GP) | 84.0 |

REFER TO MUSIC MODEL FOR DETAILS.

LEGEND

- PAVED AREA TO TREATMENT CHAMBER WITHIN OSD TANK 3 = 840m²
- PAVED AREA BYPASSING TREATMENT CHAMBER WITHIN OSD TANK 3 = 160m²

CONFIRM
CARPARK
OP FENCE

CAR PARK

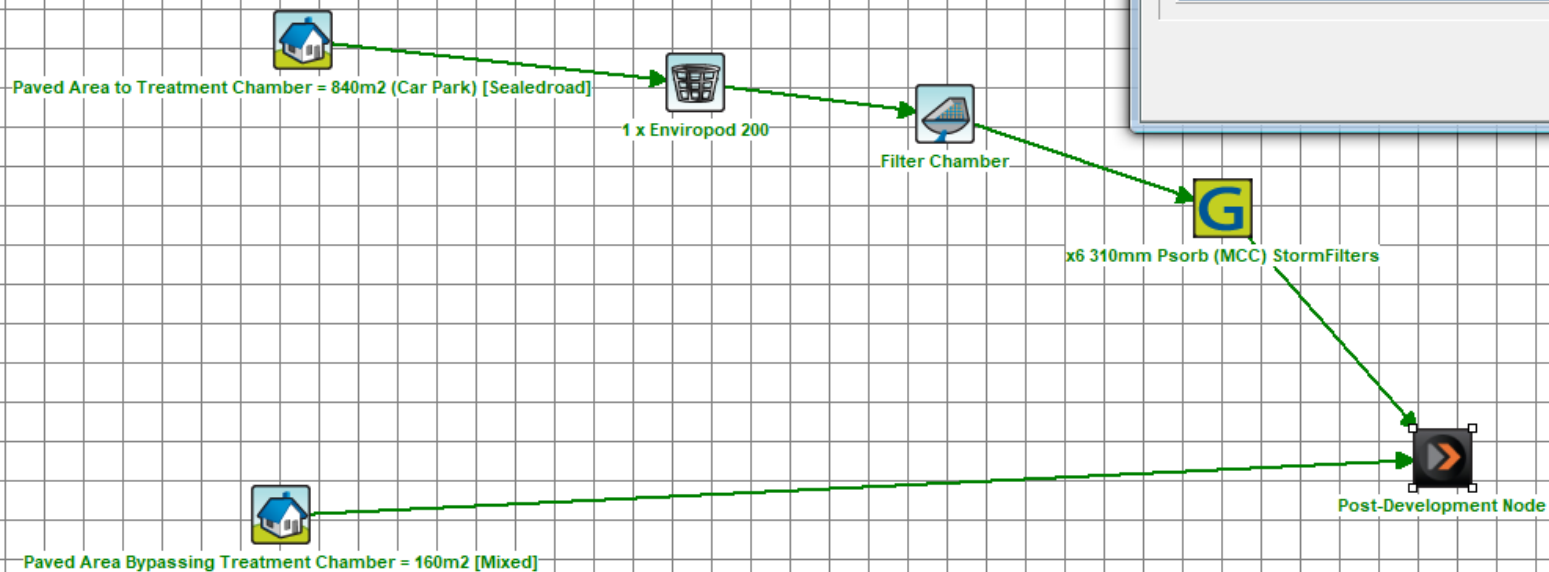
OSD TANK 3

PROPOSED NEW
ON FOR BLOCK I
TBC BY SIN SW.
ACCESS COMPLIANT RAMP /
H CONNECTION.
ION TO SERVICES

EXTEND EXISTING CARPARK TO 29 SPACES (INCL 1 ACC)
PROVIDE WHEEL STOPS AND SCURE TRAFFIC BARRIERS

STANLEY STREET

NEW ACCESSIBLE
CAR SPACE
AND KERB RAMP



| | Sources | Residual Load | % Reduction |
|--------------------------------|---------|---------------|-------------|
| Flow (ML/yr) | 1.04 | 1.04 | 0 |
| Total Suspended Solids (kg/yr) | 345 | 51.7 | 85 |
| Total Phosphorus (kg/yr) | 0.589 | 0.132 | 77.7 |
| Total Nitrogen (kg/yr) | 2.59 | 1.31 | 49.6 |
| Gross Pollutants (kg/yr) | 26.3 | 4.21 | 84 |