# STORMWATER MANAGEMENT PLAN

## 140-142 OCEAN STREET. NARRABEEN

## GENERAL NOTES:

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS, BUILDING CODE OF AUSTRALIA, NSW CODE OF PRACTICE AND THE TO THE RELEVANT SERVICE CODES.

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS SHOWN ON THE DRAWINGS ARE IN MILLIMETERS (U.N.O.). DIMENSIONS SHALL NOT BE OBTAINED BY SCALING OF THESE DRAWINGS. USE FIGURED DIMENSIONS ONLY.

BENCHMARKS HAVE BEEN ESTABLISHED WHERE INDICATED ON THE DRAWINGS. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (A.H.D.). THE CONTRACTOR SHALL UNDERTAKE ALL NECESSARY SURVEY WORK TO ENSURE THAT THE WORKS ARE CONSTRUCTED TO DESIGN LINE AND LEVEL.

SETTING OUT DIMENSIONS AND LEVELS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR.

ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT SAA CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL SAFETY FENCES, WARNING SIGNS, TRAFFIC DIVERSIONS AND THE LIKE DURING CONSTRUCTION. ALL WORKS TO COMPLY WITH WORK HEALTH AND SAFETY REQUIREMENTS AND OTHER RELEVANT AUTHORITY SAFETY REQUIREMENTS.

NO TREES SHALL BE REMOVED, CUTBACK OR RELOCATED WITHOUT THE WRITTEN INSTRUCTION FROM THE SUPERINTENDENT.

WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.

ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS AND THESE SPECIFICATIONS.

DESIGN LEVELS GIVEN ARE TO FINISHED SURFACE LEVEL AND INCLUSIVE OF TOPSOIL. (TOPSOIL DEPTH VARIES)

THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A N.A.T.A. REGISTERED SURVEYOR.

CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER TELECOMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THE DRAWING HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED SOLELY FOR THE AUTHORITIES OWN USE AND MAY NOT NECESSARILY BE UPDATED OR ACCURATE.

THE POSITION OF SERVICES AS RECORDED BY THE AUTHORITY AT THE TIME OF INSTALLATION MAY NOT REFLECT CHANGES IN THE PHYSICAL ENVIRONMENT SUBSEQUENT TO INSTALLATION.

CAPITAL ENGINEERING CONSULTANTS DOES NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THE DRAWING SHOWS MORE THAN THE PRESENCE OR ABSENCE OF SERVICES, AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FROM THE UTILITY SERVICES AUTHORITIES A CURRENT COPY OF UNDERGROUND SERVICES SEARCH FOR THE LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY WORK AND NOTIFY ANY CONFLICT WITH THE DRAWINGS IMMEDIATELY. CLEARANCE SHALL BE OBTAINED FROM THE RELEVANT REGULATORY AUTHORITY. CONTRACTOR TO KEEP COPY OF UNDERGROUND SERVICES SEARCH ON SITE AT ALL TIMES. ANY DAMAGES TO SERVICES OR SERVICES ADJUSTMENTS SHALL BE CARRIED OUT BY THE CONTRACTOR OR RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE.

VISIT THE SITE BEFORE SUBMITTING THE FINAL TENDER PRICE TO ASSESS 'ON SITE' CONDITIONS. FAILURE TO DO SO WILL FORFEIT ANY CLAIM FOR NOT BEING AWARE OF CONDITIONS AFFECTING THE TENDER.

THE CONTRACTOR SHALL PREPARE ACCURATE WORK-AS-EXECUTED DRAWINGS FOLLOWING THE COMPLETION OF ALL WORKS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN PLACE & MAINTAIN TRAFFIC FACILITIES AT ALL TIMES DURING CONSTRUCTION.

## STORMWATER NOTES:

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE AS3500.3-2018: 'STORMWATER DRAINAGE'.

FOR STORMWATER DRAINAGE PIPES THAT EXCEED 1:5 GRADE, REINFORCED CONCRETE ANCHOR BLOCKS SHALL BE INSTALLED. ANCHOR BLOCKS TO BE CONSTRUCTED TO SPECIFICATIONS SET OUT IN AS3500.3-2018.

COORDINATE THE INSTALLATION OF NEW SERVICES WITH ALL NEW & EXISTING SERVICES & STRUCTURAL PROVISIONS AS DETERMINED ON SITE.

ALL PIPEWORK TO BE SUPPORTED IN ACCORDANCE WITH AS3500.3-2018.

ALL PIPEWORK IS TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS AS SET DOWN IN AS3500.3-2018. ALL IN-GROUND PIPEWORK TO BE INSPECTED BY THE SUPERINTENDENT UNDER TEST CONDITIONS PRIOR TO BACKFILLING.

PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT THE CENTRE OF THE INLET PIPE INTERSECTS WITH THE CENTRE OF THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PIT.

BED ALL PIPES FIRMLY AND EVENLY WITH IMPORTED FILL ONLY. THICKNESS OF BEDDING LAYER SHALL BE 75mm IN SOIL AND 200mm IN ROCK.

LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS3725-2007: 'DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES'.

ALLOW TO TEST ALL PIPES AND PITS TO LOCAL AUTHORITY'S REQUIREMENTS.

EXCAVATE TRENCHES AND STOCKPILE ALL MATERIAL FOR INSPECTION WITH REGARD TO REUSE FOR TRENCH BACKFILL. REMAINING MATERIAL TO BE REMOVED FROM SITE.

BACKFILL PIPES WITH IMPORTED FILL. PROVIDE 200mm SIDE SUPPORT AND 150mm OVERLAY ABOVE PIPE CROWN. TRENCH FILL ABOVE THE EMBEDMENT ZONE TO THE UNDERSIDE OF THE ROAD PAVEMENT OR THE FOOTWAY SHALL BE AS FOLLOW: -

UNDER ROADWAY
TRENCH FILL MATERIAL SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN OF EITHER HIGH GRADE COMPACTION SAND OR APPROVED CRUSHED ROAD GRAVEL CONFORMING TO RMS QA SPECIFICATION 3051 OR SIMILAR.

OTHER THAN ROADWAY
TRENCH MATERIAL EXCAVATED SHALL CONSIST OF SELECT FILL AS SPECIFIED HEREIN AND SHALL NOT CONTAIN MORE THAN 20% OF STONES OF SIZE BETWEEN 25mm AND 75mm AND NONE LARGER THAN 75mm. PRIOR TO USE OF THE EXCAVATED MATERIAL IT SHALL BE INSPECTED AND APPROVED BY THE ENGINEER.

COMPACT BEDDING. EMBEDMENT AND TRENCH FILL MATERIALS AS FOLLOW: -

EMBEDMENT: -
FOR GRANULAR FILL MATERIAL (NON-COHESIVE SOIL) e.g. COARSE AGGREGATE FILL, THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%.

TRENCH FILL: -
FOR GRANULAR MATERIAL (NON COHESIVE SOILS). THE DENSITY INDEX (ID) SHALL BE NOT LESS THAN 70%. FOR NON-GRANULAR FILL MATERIAL (COHESIVE SOILS), THE DRY DENSITY RATIO (RD) SHALL BE NOT LESS THAN 95%.

UTILITY INFORMATION SHOWN ON THE PLANS IS NOT INTENDED TO DEPICT MORE THAN THE PRESENCE OF ANY SERVICES. ACTUAL LOCATIONS SHOULD BE VERIFIED BY HAND EXCAVATION PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS.

GEOTEXTILE FABRIC MATERIAL TO BE BIDIM A24 OR APPROVED EQUIVALENT AND SHALL COMPLY WITH AS3705-2012: 'GEOTEXTILES - IDENTIFICATION, MARKING AND GENERAL DATA'

THE CONTRACTOR SHALL ENSURE THAT SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED AT ALL TIMES. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING WHERE REQUIRED. ONCE THE WORKS ARE COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD ALL DISTURBED AREAS.

## STORMWATER NOTES (CONT):

EXISTING PIPES WHICH FORM NO PART OF THE DRAINAGE SYSTEM SHALL BE REMOVED OR SEALED AS INDICATED ON THE PLANS. PIPES UP TO 300mm DIAMETER SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS (U.N.O.). ALL PIPE JUNCTIONS AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.

WHERE DOWNPIPES PASS UNDER FLOOR SLABS, SEWER GRADE uPVC WITH RUBBER RING JOINTS ARE TO BE USED.

MINIMUM GRADE TO DRAINAGE PIPES TO BE 1% (U.N.O.), MIN. SIZE 100mm DIAMETER (U.N.O.).

PIPES LARGER THAN OR EQUAL TO 300mm DIAMETER TO BE REINFORCED CONCRETE RUBBER RING JOINTED TYPE (CLASS 2) MANUFACTURED TO AS4058 (U.N.O.).

PIPE INSTALLATION UNDER TRAFFICABLE AREAS SHALL BE IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION OF AUSTRALIA PUBLICATION "CONCRETE PIPE SELECTION & INSTALLATION" TYPE HS3 SUPPORT.

EQUIVALENT STRENGTH FRC PIPES MAY BE USED SUBJECT TO AUTHORITY APPROVAL.

MINIMUM PIPE COVER TO BE 600mm UNDER TRAFFICABLE AREAS AND 300mm ELSEWHERE (U.N.O.).

CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.

PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS.

STORMWATER DRAINAGE CONNECTIONS TO COUNCIL'S SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL.

PITS DEEPER THAN 1200mm TO BE FITTED WITH STEP IRONS AT 300 CENTRES TO AS1657-2013: 'FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS - DESIGN, CONSTRUCTION AND INSTALLATION'.

ALL EXPOSED EDGES TO BE ROUNDED WITH 20mm RADIUS, OR CHAMFERED 20mm x 20mm.

PIT REINFORCEMENT - MESH SL82 LAP TO BE 400mm MIN. CLEAR COVER 40 MIN. CAST AGAINST BLINDING OR FORMWORK. CORNER RETURNS MAY BE FABRIC OR EQUIVALENT BARS.

BENCHING TO BE HALF OUTGOING PIPE DEPTH. CONCRETE FOR BENCHING TO BE 20MPa MASS CONCRETE.

BRICKWORK, BLOCKWORK, CONCRETE OR APPROVED PRECAST PITS ARE TO BE USED IN TRAFFICABLE AREAS SUBJECT TO APPROVAL.

FIBREGLASS, HARD-PLASTIC OR APPROVED PRECAST PITS ARE TO BE USED IN NON-TRAFFICABLE AREAS SUBJECT TO APPROVAL.

100mm DIAMETER HOLE FOR SUBSOIL DRAINAGE OUTLET TO BE LOCATED 100mm ABOVE INVERT OF ALL INLET PIPES. SUBSOIL DRAINAGE TO EXTEND FOR A DISTANCE OF 3m UPSTREAM OF PIT (AT EACH INLET TRENCH) WITH THE UPSTREAM END SEALED.

ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.

PIT GRATE, FRAMES AND SOLID COVERS SHALL BE CLASS B IN NON TRAFFIC AREAS AND CLASS C IN TRAFFICABLE AREAS IN ACCORDANCE WITH AS3996 U.N.O.

ALL GRATES SHALL BE PROVIDED WITH A 'J-LOCK' TYPE LOCKING CLIPS.

GRATES TO PITS IN FOOTPATH AREAS SHALL BE HEEL SAFE COMPLYING WITH THE DISABLED ACCESS CODE

PIT GRATING TO BE GALVANISED STEEL TYPE 'WELDLOK' OR APPROVED EQUIVALENT.

SUBSOIL PIPES SHALL BE LAID AT A MIN GRADE OF 1% (U.N.O.).

ADDITIONAL SUBSOIL DRAINAGE SHALL BE LAID TO SUIT SITE CONDITIONS AND GROUNDWATER PRESENCE AS DIRECTED. SUBSOIL PIPES SHALL BE LAID BEHIND KERBS IN CUT AREAS OF THE SITE.

PROVIDE A MINIMUM OF 150mm GRAVEL AROUND SUBSOIL PIPE. TRENCH TO BE LINED WITH GEOTEXTILE FABRIC TYPE BIDIM A24

## SURVEY

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN.

CAPITAL ENGINEERING CONSULTANTS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION OR DESIGN.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT CAPITAL ENGINEERING CONSULTANTS.

## ABBREVIATIONS:

| | |
|---|---|
| ø or DIA | DIAMETER |
| CBR | CALIFORNIA BEARING RATIO |
| CH | CHAINAGE |
| CL | CENTER LINE |
| CO | CLEAR OUT |
| DD | DISH DRAIN |
| DDO | DISH DRAIN OUTLET |
| DEJ | DOWELLED EXPANSION JOINT |
| DGB | DENSE GRADED BASECOURSE |
| DGS | DENSE GRADED SUB-BASE |
| DP | DOWNPIPE |
| e | EXISTING |
| FFL | FINISHED FLOOR LEVEL |
| GTD | GRATED TRENCH DRAIN |
| GSIP | GRATED SURFACE INLET PIT |
| HYD | HYDRANT |
| IJ | ISOLATING JOINT |
| IK | INTEGRAL KERB |
| IL | INVERT LEVEL |
| IP | INTERSECTION POINT |
| KIP | KERB INLET PIT |
| KO | KERB ONLY |
| K&G | KERB & GUTTER |
| KR | KERB RETURN |
| NGL | NATURAL GROUND LEVEL |
| OFP | OVERLAND FLOW PATH |
| OSD | ON-SITE DETENTION |
| R | RADIUS |
| RCP | REINFORCED CONCRETE PIPE |
| RK | ROLL KERB & GUTTER |
| RL | REDUCED LEVEL |
| RW | RETAINING WALL |
| RWT | RAINWATER TANK |
| SJ | SAWN CONTROL JOINT |
| SMH | SEWER MAN HOLE |
| SW | STORMWATER |
| SWP | STORMWATER PIT |
| SWRM | STORMWATER RISING MAIN |
| SWS | STORMWATER SUMP |
| SV | STOP VALVE |
| TOK | TOP OF KERB |
| TOW | TOP OF WALL |
| TWL | TOP WATER LEVEL |
| TP | TANGENT POINT |
| UPVC | UNPLASTICISED POLYVINYL CHLORIDE |
| UNO | UNLESS NOTED OTHERWISE |
| WPJ | WEAKENED PLANE JOINT |
| FF | FIRST FLUSH DEVICE |
| TYP | TYPICAL |
| BM | BENCH MARK |

BEFORE YOU DIG www.byda.com.au

DIAL BEFORE YOU DIG SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION ON SITE

TM: TRADE MARK OF THE ASSOCIATION OF DIAL BEFORE YOU DIG SERVICES LTD. USED UNDER LICENSE.

| DRAWING REGISTER | | |
|---|---|---|
| NUMBER | NAME | REVISION |
| SW001 | COVER SHEET | A |
| SW010 | BASEMENT FLOOR PLAN, NOTES & DETAILS | A |
| SW020 | GROUND FLOOR PLAN, NOTES & DETAILS | A |
| SW021 | SITE CATCHMENT PLAN | A |
| SW022 | ABSORPTION SYSTEM PLAN & SECTION DETAILS | A |
| SW030 | LEVEL 01 FLOOR PLAN, NOTES & DETAILS | A |
| SW040 | LEVEL 02 FLOOR PLAN, NOTES & DETAILS | A |
| SW050 | ROOF PLAN, NOTES & DETAILS | A |
| ER001 | EROSION AND SEDIMENT CONTROL PLAN | A |

## LEGEND:

- DP — DOWNPIPE
- >>> — STORMWATER LINE
- >>> — STORMWATER LINE DRAINING TO RWT
- OF — OVER FLOW PIPE
- SSD — SUBSOIL LINE
- SWRM — STORMWATER RISING MAIN
- e — EXISTING STORMWATER LINE
- S — AUTHORITY SEWER LINE
- W — AUTHORITY WATER LINE
- G — G — AUTHORITY GAS LINE
- E — AUTHORITY ELECTRICITY LINE
- FO — FO — FO — AUTHORITY FIBRE OPTIC LINE
- TEL — AUTHORITY COMMS LINE
- SEDIMENT FENCE
- GRATED SURFACE INLET PIT
- GRATED SURFACE INLET PIT WITH OCEANGUARD INSERT
- SEALED JUNCTION PIT
- PROPOSED KERB INLET PIT
- GRATED TRENCH DRAIN
- R/W TANK — RAINWATER RE-USE TANK
- PROPOSED RETAINING WALL
- eSMH — EXISTING SEWER MANHOLE
- EXISTING JUNCTION PIT
- EXISTING KERB INLET PIT
- eTEL — EXISTING TELSTRA PIT
- eHYD — EXISTING HYDRANT
- eSV — EXISTING STOP VALVE
- eGAS — EXISTING GAS VALVE
- ePP — EXISTING POWER POLE
- EXISTING GRATED SURFACE INLET PIT
- FF — FIRST FLUSH
- RWO — RAINWATER OUTLET
- CO — CLEAR OUT POINT
- DDO — DISH DRAIN OUTLET
- PD — PLANTER DRAIN
- CAPPING
- RH — RAINHEAD
- SP — DOWNPIPE SPREADER
- WARNING LIGHT
- 144.37 — SPOT LEVELS
- BENCHMARK
- OFP — OVERLAND FLOW PATH

# PROPOSED COMMERCIAL DEVELOPMENT

## 140-142 OCEAN STREET. NARRABEEN

Scale 1:100 @ A1 | Date 07/02/2025 | Drawn B.E. | Design B.E. | Approved P.E.


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| Rev | Description | By | Chk | Date |
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FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE

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DATE: 07/02/2025

REGISTERED NER Engineers Australia

# FOR COUNCIL APPROVAL ONLY (CONCEPT)

A1 0 20 40 60 80 100

DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

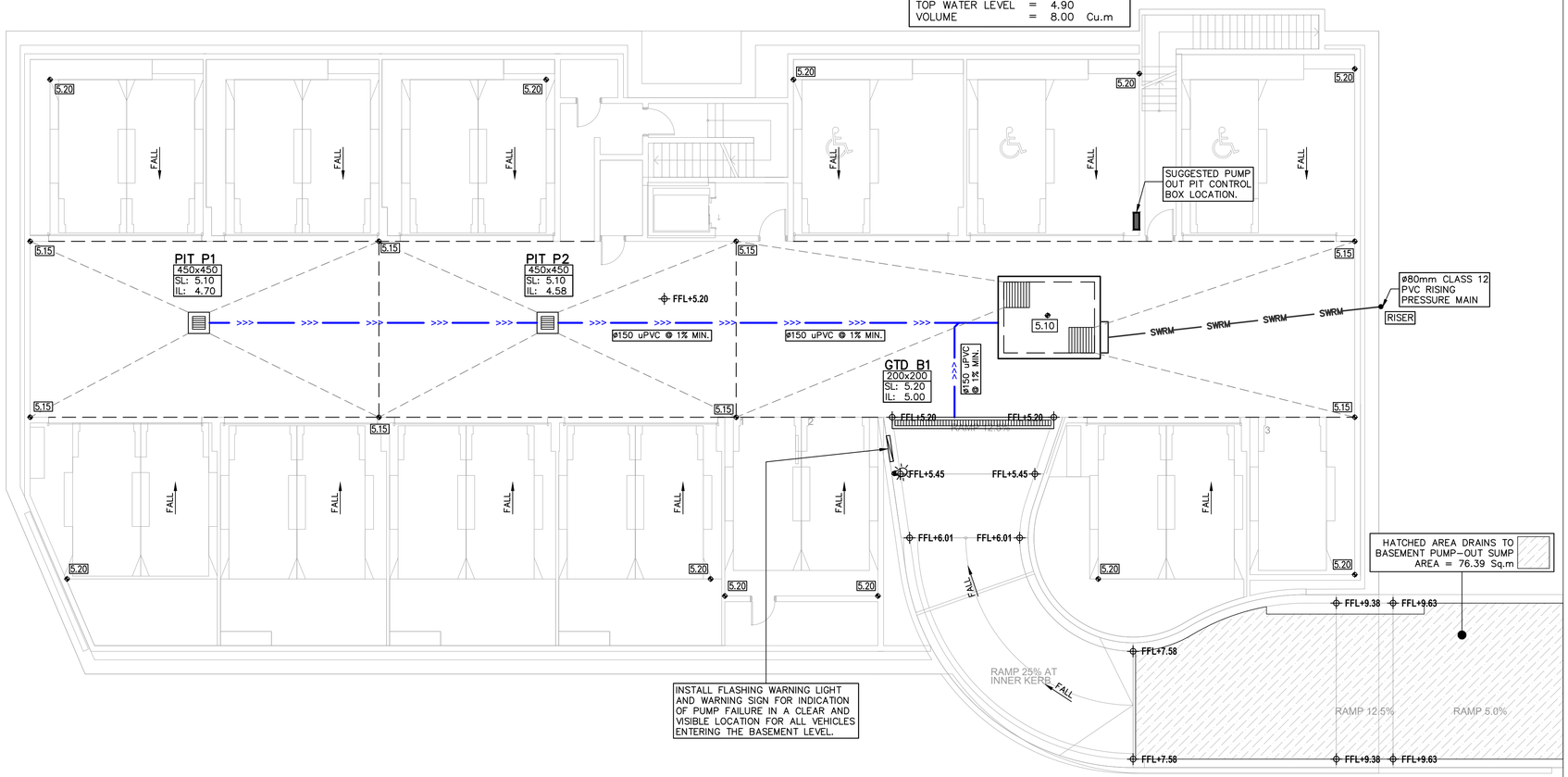
Title: STORMWATER LAYOUT PLAN COVER SHEET

North

Project Number: SW24372
Revision: A
Drawing Number: SW001

## PUMP–OUT TANK

| | | | |
|---|---|---|---|
| AREA | = | 8.00 | Sq.m |
| MAX DEPTH | = | 1050 | mm |
| TOP WATER LEVEL | = | 4.90 | |
| VOLUME | = | 8.00 | Cu.m |




## STANDARD PUMP OUT DESIGN NOTES:

THE PUMP OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED IN THE FOLLOWING MANNER: –

I). THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.

II). A FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300MM ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.

III). A SECOND FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.

IV). AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBELIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK–UP IN CASE OF POWER FAILURE.

V). A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINTS TO THE PUMP OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATTA RIVER CATCHMENT TRUST OSD HANDBOOK.

## KEY NOTES:

INSTALL STEP IRONS FOR EASE OF ACCESS DURING MAINTENANCE OF PUMP OUT CONTROL PIT TO COUNCIL SATISFACTION.

INSTALL CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING.

ALL STORMWATER PIPES ARE ø100mm uPVC AND SLOPING @ 1.0% U.N.O (TYP).

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO–ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO–ORDINTED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

## PUMP STORAGE CALCS:

TOTAL STORAGE:

100yr 2hr ARI STORM= 92.10mm
CATCHMENT AREA= 76.39m$^2$

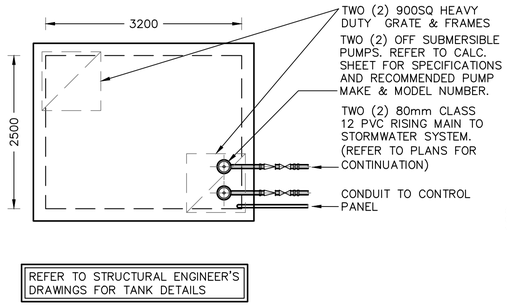
V=Axd
=76.39x(92.10/1000)
=7.04m$^3$ REQUIRED

PUMP–OUT VOLUME REQUIRED = 7.04m$^3$
PUMP–OUT VOLUME PROVIDED = 8.00m$^3$

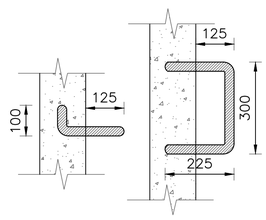
PUMP DISCHARGE RATE WAS DESIGNED FOR THE 100yr 5 MIN STORM:

Q=CIA/3600
=1.0x261x76.39/3600
=5.54L/s REQUIRED @ 5.75 m OF HEAD

RECOMMENDED PUMP: DUAL **SABRE MODEL NO. KS–20** PUMPS WITH **80mm PVC CLASS 12** OUTLETS.




### PUMP–OUT TANK PLAN DETAIL
SCALE 1:50

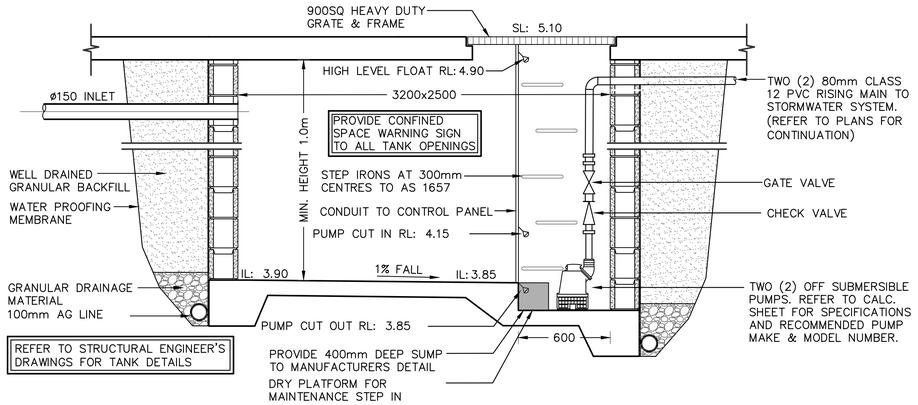



### STEP IRON DETAIL
SCALE: 1:10

### STORMWATER LAYOUT PLAN BASEMENT FLOOR
SCALE 1:100

PUMP TO BE USED (IN ACCORDANCE WITH AS/NZS 3500.3 A 5.54L/S PUMP IS REQUIRED AT MINIMUM)

| Type | Output | | Outlet | | Rated Head Capacity | | Maximum Head | Maximum Capacity | Weigh | Dimension | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HP | kW | mm | Inch | M | LPM | M | LPM | Kg | L(mm) | W(mm) | H(mm) |
| KS-03 | 1/3 | 0.25 | 40 | 1 1/2" | 3 | 130 | 8 | 180 | 9 | 188 | 141 | 305 |
| KS-04 | 1/2 | 0.4 | 50 | 2" | 5 | 150 | 8 | 220 | 11 | 208 | 140 | 359 |
| KS-05 | 1/2 | 0.4 | 50 | 2" | 5 | 160 | 10 | 260 | 14 | 230 | 156 | 375 |
| KS-08 | 1 | 0.75 | 50 | 2" | 6 | 240 | 13 | 380 | 21 | 290 | 180 | 425 |
| KS-20 | 2 | 1.5 | 80 | 3" | 10 | 300 | 16 | 600 | 31 | 278 | 182 | 475 |
| KS-30 | 3 | 2.2 | 80 | 3" | 10 | 500 | 18 | 800 | 42 | 390 | 250 | 450 |
| KS-50 | 5 | 3.7 | 100 | 4" | 10 | 800 | 21 | 1100 | 48 | 450 | 240 | 530 |
| KS-75 | 7 1/2 | 5.6 | 100 | 4" | 15 | 800 | 23 | 1300 | 60 | 550 | 310 | 590 |
| KS-100 | 10 | 7.5 | 150 | 6" | 18 | 900 | 25 | 1600 | 70 | 550 | 310 | 610 |



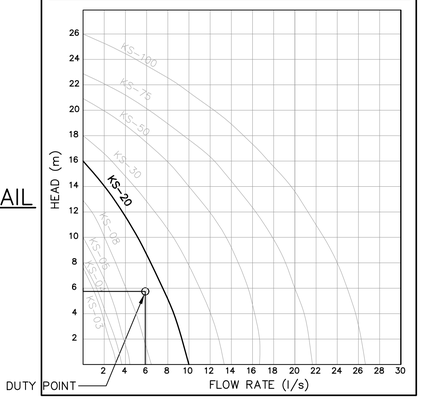

### PUMP–OUT TANK SECTION DETAIL'
SCALE N.T.S.

**WARNING**
PUMP OUT SYSTEM FAILURE IN BASEMENT WHEN LIGHT IS FLASHING AND SIREN SOUNDING

### PUMP–OUT WARNING SIGN DETAIL
SCALE 1:20


### CONFINED SPACE SIGN DETAIL
SCALE 1:20

### PUMP PERFORMANCE CURVES:




### PUMP MAKE & MODEL DETAILS
SCALE N.T.S.

# PROPOSED COMMERCIAL DEVELOPMENT

## 140-142 OCEAN STREET. NARRABEEN

| Scale | Date | Drawn | Design | Approved |
|---|---|---|---|---|
| 1:100 @ A1 | 07/02/2025 | B.E. | B.E. | P.E. |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DATE: 07/02/2025

REGISTERED NER Engineers Australia

# FOR COUNCIL APPROVAL ONLY (CONCEPT)

A1 0 20 40 60 80 100
DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

Title: STORMWATER LAYOUT PLAN

North

Project Number: SW24372
Revision: A
Drawing Number: SW010

## R/W TANK

| | | |
|---|---|---|
| AREA | = | 4.72 $m^2$ |
| MAX DEPTH. | = | 1500 mm |
| TOP WATER LEVEL | = | 7.55 |
| VOLUME PROVIDED | = | 7.08 $m^3$ |

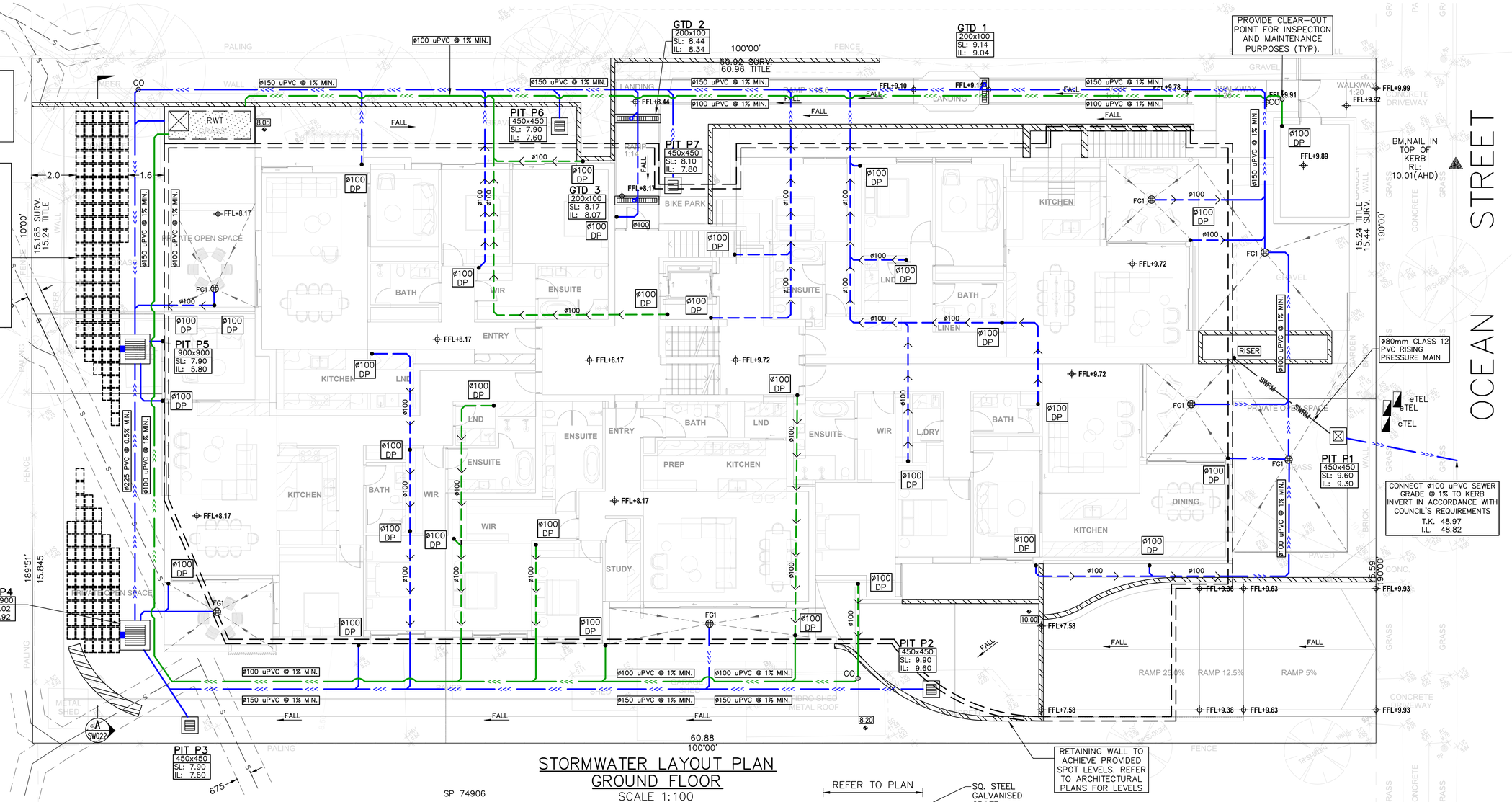
## ON–SITE ABSORPTION TRENCH

IMPERVIOUS CATCHMENT AREA = 1700.10 Sq.m

| | | |
|---|---|---|
| TRENCH BASE | = | 42.00 Sq.m |
| NO. OF ROWS | = | 2 |
| BASE THICKNESS | = | 300 mm |
| NO. OF TRENCHES | = | 350 ENVIROMODULE (600x400x450) |
| VOID AREA | = | 95 % |
| NOMINAL ABSORPTION RATE | = | 2.00 L/Sq.m/s |
| DESIGN ABSORPTION RATE | = | 1.00 L/Sq.m/s |
| DESIGN YEAR ARI | = | 100 YEAR (MASS CURVE ANALYSIS) |
| VOLUME PROVIDED | = | 35.91 Cu.m |

ERTED TO FULL TORRENS TITLE.
ONS ARE APPROXIMATE ONLY

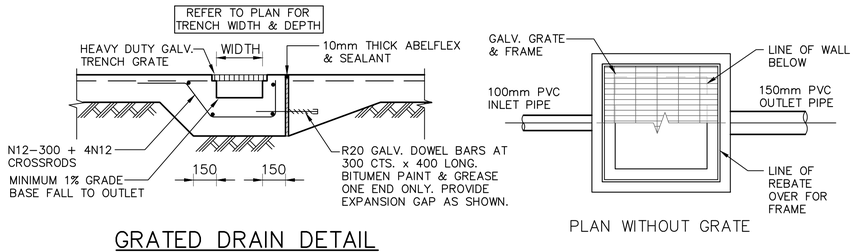
SP 75982




## STORMWATER LAYOUT PLAN GROUND FLOOR

SCALE 1:100

SP 74906

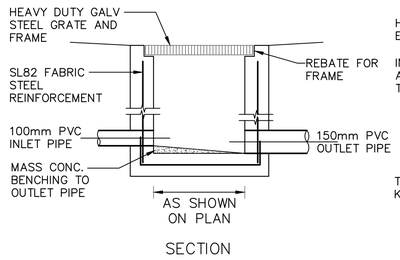



## GRATED DRAIN DETAIL

SCALE: 1:20



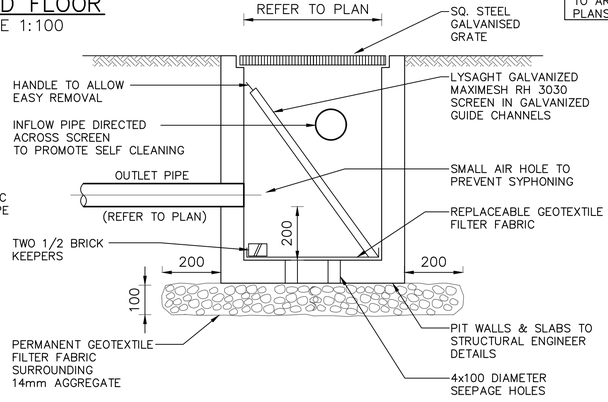

PLAN WITHOUT GRATE




SECTION

## TYPICAL GRATED INLET PIT DETAIL

SCALE: 1:20




## DETAIL 1

SILT/LITTER ARRESTOR PIT(S) P2, P3, P4, P6

SCALE 1:20

## DESIGN NOTES:

SITE IS LOCATED IN NORTHERN BEACHES COUNCIL AND IS GOVERNED BY NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY 2021.

ON–SITE INFILTRATION HAS BEEN SELECTED AS THE PRIAMRY MEANS OF STORMWATER DISPOSAL IN ACCORDANCE WITH COUNCIL'S STORMWATER POLICY.

ALL STORMWATER PIPES TO HAVE A MINIMUM OF 100mm CONCRETE OR 300mm TOPSOIL COVER U.N.O.

INSTALL CLEAR OUT FOR INSPECTION AND MAINTENANCE PURPOSES WHERE REQUIRED (TYP).

ALL DOWNPIPES AND STORMWATER PIPES SHOWN ON PLAN ARE ø100mm uPVC AND SLOPE AT 1% U.N.O (TYP).

PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).

ALL STORMWATER PITS AND PIPES TO BE A MINIMUM OF 0.6m CLEAR FROM EXISTING SEWER LINE (TYP).

ALLOW FOR FILL & MINOR REGRADING OF FINISHED SURFACE TO ARCHIVE NOMINATED REDUCED LEVEL OF GRATED SURFACE INLET PITS, WHERE REQUIRED (TYP).

PROVIDE SUBSOIL DRAINAGE WITHIN LANDSCAPED AREAS & BEHIND RETAINING WALLS TO PREVENT LONG TERM SATURATION DURING PROLONGED WET WEATHER.

# PROPOSED COMMERCIAL DEVELOPMENT

## 140-142 OCEAN STREET. NARRABEEN

| Scale | Date | Drawn | Design | Approved |
|---|---|---|---|---|
| 1:100 @ A1 | 07/02/2025 | B.E. | B.E. | P.E. |


Capital Engineering Consultants

9630 0121

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www.cec-au.com


| Rev | Description | By | Chk | Date |
|---|---|---|---|---|
| A | ISSUED FOR DA APPROVAL | B.E. | M.W. | 07/02/2025 |


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FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE

APPROVED BY:

PAUL EL-BAYEH

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DATE: 07/02/2025

NER Registered Engineers Australia

## FOR COUNCIL APPROVAL ONLY (CONCEPT)

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Title

STORMWATER LAYOUT PLAN

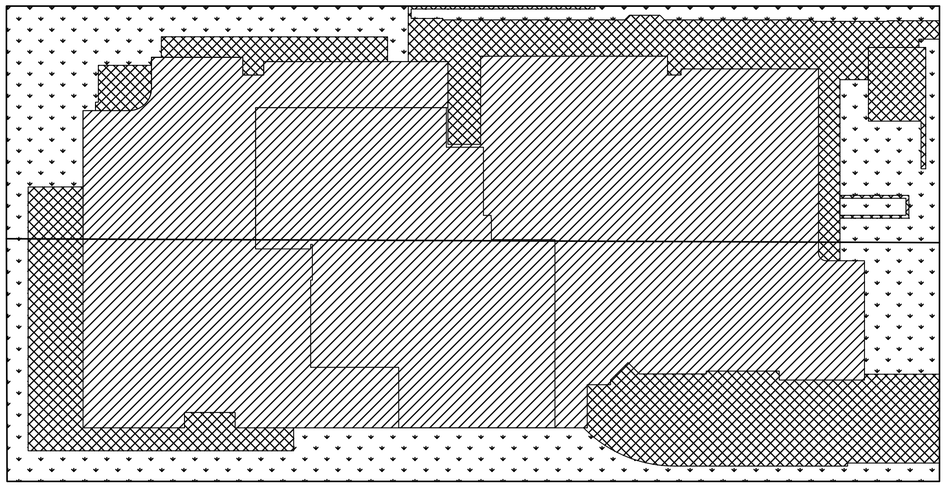
GROUND FLOOR PLAN, NOTES & DETAILS

North

Project Number: SW24372

Revision: A

Drawing Number: SW020



POST–DEVELOPED CATCHMENT PLAN
SCALE 1:200

UNIT 1 – ROOF AREA = 554.7 Sq.m
UNIT 1 – HARDSTAND AREA = 206.3 Sq.m
UNIT 1 – PERVIOUS AREA = 196.3 Sq.m
UNIT 2 – ROOF AREA = 535.2 Sq.m
UNIT 2 – HARDSTAND AREA = 189.6 Sq.m
UNIT 2 – PERVIOUS AREA = 207.9 Sq.m

# PROPOSED COMMERCIAL DEVELOPMENT

140-142 OCEAN STREET. NARRABEEN

Scale 1:100 @ A1 | Date 07/02/2025 | Drawn B.E. | Design B.E. | Approved P.E.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FOR COUNCIL APPROVAL ONLY (CONCEPT)

A1 0 20 40 60 80 100
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Title
STORMWATER LAYOUT PLAN
SITE CATCHMENT PLAN

North

Project Number SW24372
Revision A
Drawing Number SW021

## INFILTRATION PIT DESIGN
## NORTHERN BEACHES COUNCIL

**TANK STYLE ABSORPTION**

Fill in only those boxes that appear as:

| No. Pods | No. of Rows | CSA (m^2) | = Base Area | | |
|---|---|---|---|---|---|
| 350 | 2 | 0.24 | 42 | Base Thickness (m) = | 0.3 |
| Height | 0.9 | | | OSA Storage = | 35.91 |
| | | | | Holding Tank Storage = | 0 |
| **Available Storage (m^3) =** | | | **39.69** | Void area of 95% used for EnviroMod | |
| | | | | Void area of 30% used for Gravel Bas | |

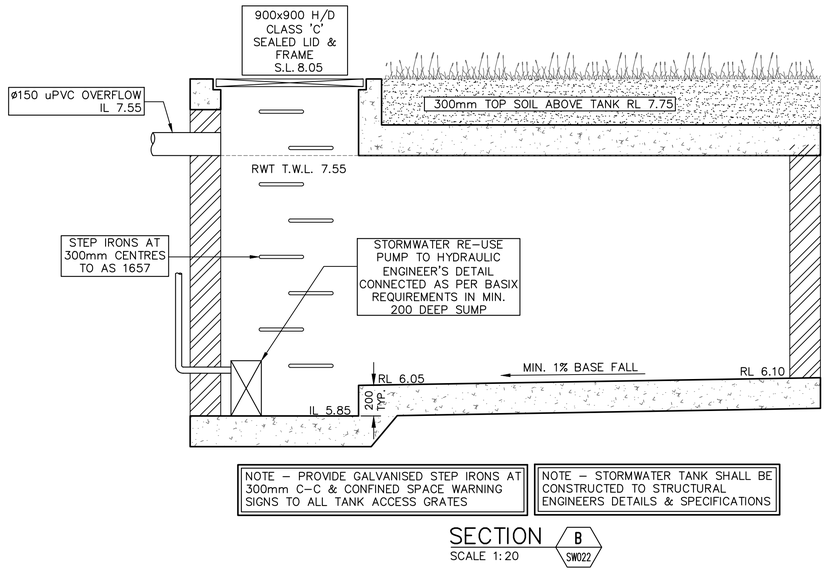
**Calculating Inflows, Outflows and Storages**

Contributing Impervious Area (m^2)= 1700.1 $F_R$= 0.5

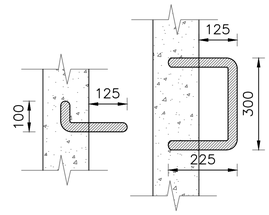
Nominal Absorption Rate (l/s/m^2) = 2

Design Absorption Rate (l/s/m^2) = 1 Outflow (l/s) = 42

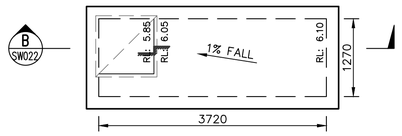
| Time (min) | Intensity (mm/hr) | Inflow (l/s) | Inflow Vol (m^3) | Outflow Vol (m^3) | Required Vol (m^3) | Avail-Requd (m^3) |
|---|---|---|---|---|---|---|
| 5 | 261 | 123.26 | 36.98 | 12.60 | 24.38 | 15.31 |
| 6 | 251 | 118.53 | 42.67 | 15.12 | 27.55 | 12.14 |
| 7 | 242 | 114.28 | 48.00 | 17.64 | 30.36 | 9.33 |
| 8 | 233 | 110.03 | 52.82 | 20.16 | 32.66 | 7.03 |
| 9 | 224 | 105.78 | 57.12 | 22.68 | 34.44 | 5.25 |
| 10 | 216 | 102.01 | 61.20 | 25.20 | 36.00 | 3.69 |
| 11 | 208 | 98.23 | 64.83 | 27.72 | 37.11 | 2.58 |
| 12 | 201 | 94.92 | 68.34 | 30.24 | 38.10 | 1.59 |
| 13 | 194 | 91.62 | 71.46 | 32.76 | 38.70 | 0.99 |
| 14 | 188 | 88.78 | 74.58 | 35.28 | 39.30 | 0.39 |
| 15 | 182 | 85.95 | 77.35 | 37.80 | 39.55 | 0.14 |
| 20 | 156 | 73.67 | 88.41 | 50.40 | 38.01 | 1.68 |
| 25 | 137 | 64.70 | 97.05 | 63.00 | 34.05 | 5.64 |
| 30 | 122 | 57.61 | 103.71 | 75.60 | 28.11 | 11.58 |
| 40 | 101 | 47.70 | 114.47 | 100.80 | 13.67 | 26.02 |
| 45 | 92.8 | 43.82 | 118.33 | 113.40 | 4.93 | 34.76 |
| 50 | 86.2 | 40.71 | 122.12 | 126.00 | -3.88 | 43.57 |
| 55 | 80.5 | 38.02 | 125.45 | 138.60 | -13.15 | 52.84 |
| 60 | 75.6 | 35.70 | 128.53 | 151.20 | -22.67 | 62.36 |
| 65 | 71.4 | 33.72 | 131.50 | 163.80 | -32.30 | 71.99 |
| 70 | 67.7 | 31.97 | 134.28 | 176.40 | -42.12 | 81.81 |
| 75 | 64.4 | 30.41 | 136.86 | 189.00 | -52.14 | 91.83 |
| 80 | 61.5 | 29.04 | 139.41 | 201.60 | -62.19 | 101.88 |
| 85 | 58.9 | 27.82 | 141.86 | 214.20 | -72.34 | 112.03 |
| 90 | 56.5 | 26.68 | 144.08 | 226.80 | -82.72 | 122.41 |
| 100 | 52.4 | 24.75 | 148.48 | 252.00 | -103.52 | 143.21 |
| 120 | 46 | 21.72 | 156.41 | 302.40 | -145.99 | 185.68 |
| | | | | **MAX:** | **39.55** | **0.14** |




SECTION B SW022
SCALE 1:20




STEP IRON DETAIL
SCALE: 1:10




RAINWATER TANK PLAN DETAIL
SCALE 1:50

## ABSORPTION TRENCH NOTES:

MAKE SURE THE TRENCH EXCAVATION IS WIDE ENOUGH TO ACCEPT THE SELECTED TRENCH LINER

EXCAVATE THE TRENCH ALONG THE SITE CONTOUR TO PROVIDE AT LEAST 100mm COVER OVER THE TOP OF THE LINER

ALLOW AT LEAST 75mm OVERLAP FOR EACH LENGTH OF LINER

FIT THREE SPREADER BARS INTO EACH STANDARD LINER, THE FIRST 220mm FROM THE INLET END, THEN EQUALLY SPACED ALONG THE EXCAVATION

CUT THE ENTRY PIPE HOLES IN THE TRENCHS LINER END CAP AND FIT THE CAPS TO THE LINER.

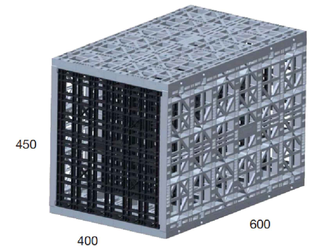
PLACE 20mm CRUSHED AGGREGATE ALONG TRENCH LINER AND 200mm MIN AT BOTH ENDS

LAY GEOTEXTILE FABRIC (TYPE 'BIDIM' A12 OR EQUIVALENT) AROUND THE AGGREGATE FOR THE FULL LENGTH OF THE TRENCH

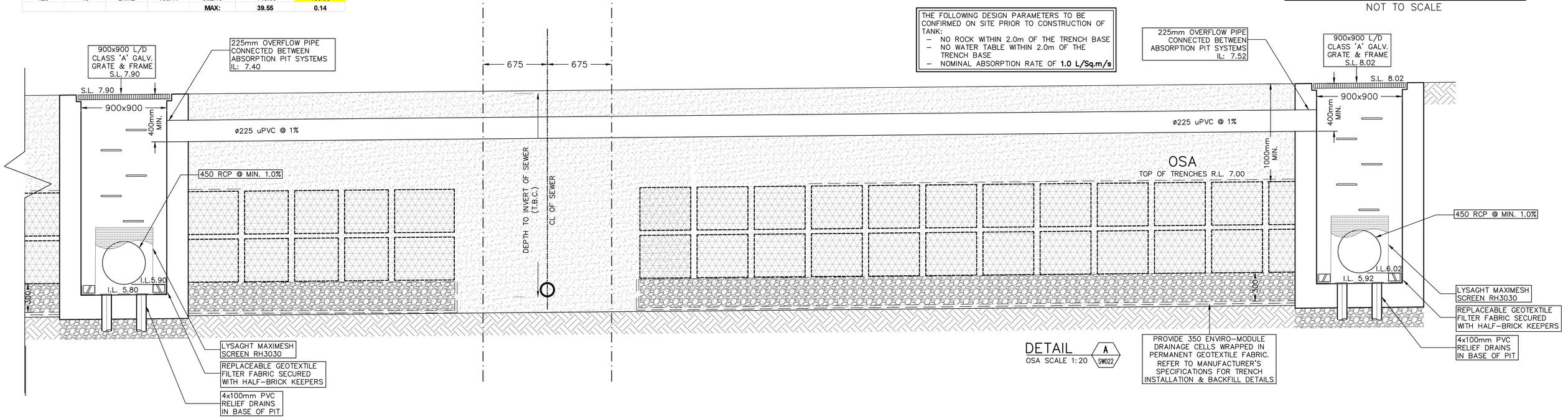
COVER THE GEOTEXTILE FABRIC WITH WATER CONSOLIDATED LAYERS OF APPROVED SANDY LOAM. LAYERS NOT TO EXCEED 100mm IN THICKNESS

TURF MAY BE LAID OVER THE TRENCH AREA

DO NOT COMPACT THE TRENCH OR EXPOSE IT TO VEHICULAR LOADING OR TRAFFIC




ENVIRO–MODULE DRAINAGE CELL
NOT TO SCALE




DETAIL A SW022
OSA SCALE 1:20

# PROPOSED COMMERCIAL DEVELOPMENT

## 140-142 OCEAN STREET. NARRABEEN

Scale 1:100 @ A1 Date 07/02/2025 Drawn B.E. Design B.E. Approved P.E.

FOR COUNCIL APPROVAL ONLY (CONCEPT)

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| Rev | Description | By | Chk | Date |
|---|---|---|---|---|
| A | ISSUED FOR DA APPROVAL | B.E. | M.W. | 07/02/2025 |


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FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE

APPROVED BY: DATE: 07/02/2025

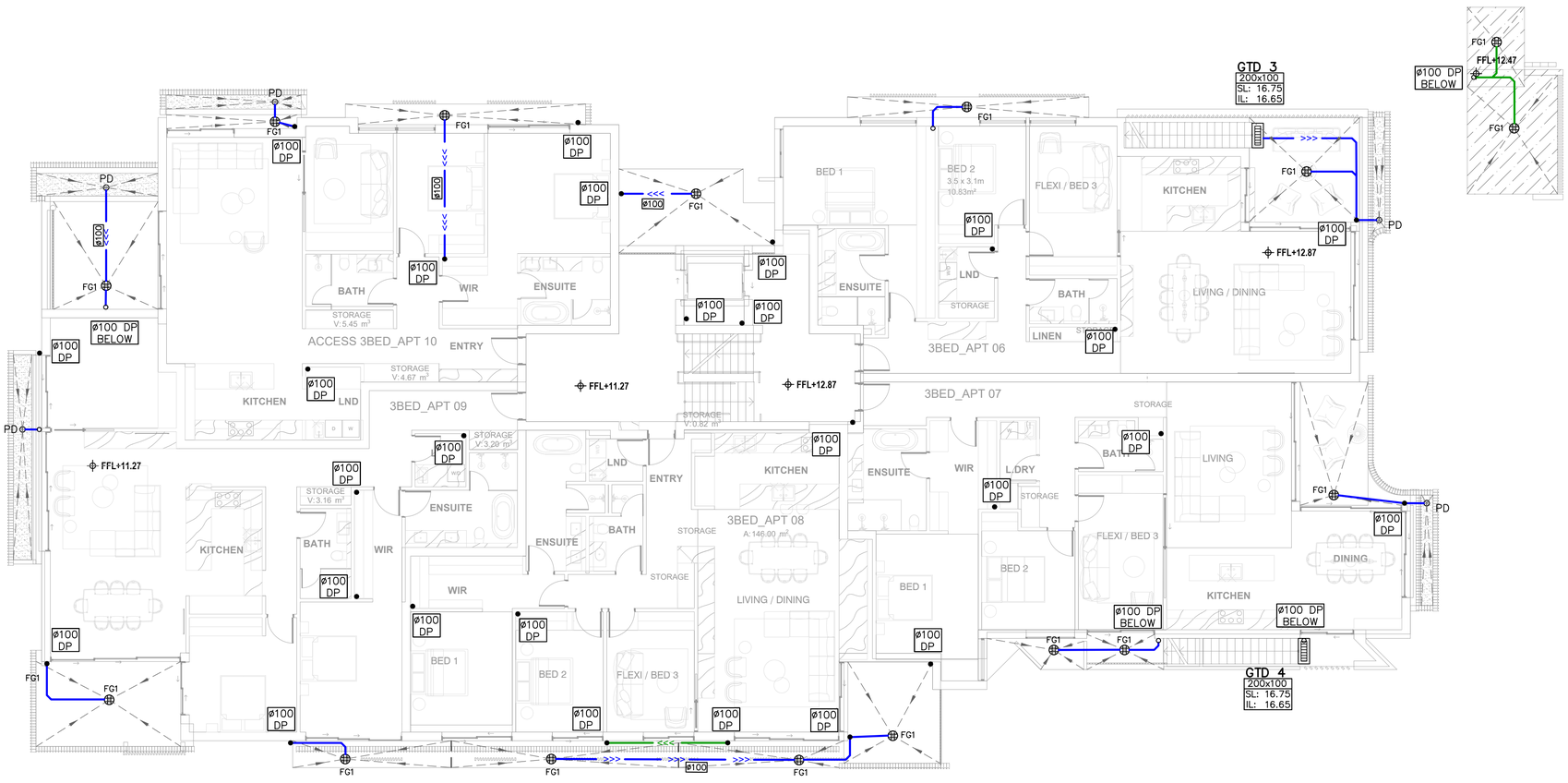
PAUL EL-BAYEH
B.E. (Civil), M.E. (Structural & Foundation), FIEAust, CPEng No. 3132148, NER, RPEQ.

REGISTERED NER Engineers Australia

Title
STORMWATER LAYOUT PLAN
ABSORPTION SYSTEM PLAN & SECTION DETAILS

North

Project Number SW24372
Revision A
Drawing Number SW022




## STORMWATER LAYOUT PLAN
## LEVEL 01 FLOOR
SCALE 1:100

## LEVEL 01 FLOOR NOTES:

INSTALL 50mm uPVC SPITTER PIPES 20mm ABOVE SURFACE LEVEL FOR BALCONY AND CONCRETE ROOF AREAS TO ALLOW FOR EMERGENCY OVERFLOW INCASE OF BLOCKAGES DURING HEAVY STORMS. PLUMBER TO CONFIRM LOCATION DURING CONSTRUCTION.

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINTED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

BALCONY, TERRACE & CONCRETE ROOF AREAS TO SLOPE TOWARDS RAINWATER OUTLETS WHERE REQUIRED (TYP).

ARROW DENOTES THE SLOPE OF FINISHED SURFACE LEVEL (TYP).

DOWNPIPES SHOWN ON PLAN ARE TO BE ø100mm uPVC U.N.O. (TYP).

ALL EAVES GUTTERS SHALL BE 145mm WIDE x 75mm DEEP (OR EQUIVALENT) AND LAID AT MIN. 1:500 SLOPE.

ALL GUTTERS TO BE FITTED WITH ADEQUATE OVERFLOW MEASURES IN ACCORDANCE WITH AS3500.3:2018.

PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).

INSTALL DOWNPIPE WITH SPREADER (IF REQUIRED) TO DISPERSE STORMWATER ONTO LOWER ROOF AREAS EFFECTIVELY.

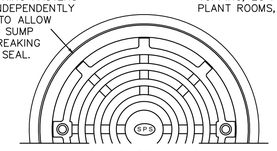
PROVIDE SURFACE DRAINAGE FOR ALL CONCRETE AND BALCONY ROOF AREAS WHERE REQUIRED.

## SPS TRUFLO RWO WITH FLAT GRATE & MEMBRANE CLAMP 100MM OUTLET

SPECIFICATION CODES:
TIA100F2 (CI BODY, ALUMINIUM FLAT GRATE & MEMBRANE RING)
TIB100F2 (CI BODY, BRONZE FLAT GRATE & MEMBRANE RING)
TBA100F2 (ALL-BRONZE ASSEMBLY)

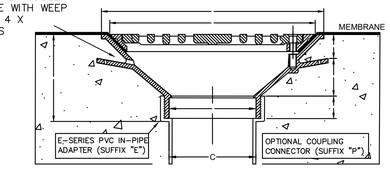
SUGGESTED APPLICATION: MEMBRANED FLOORS OR ROOFS WITH NO FURTHER TOPPING, EG PLANTER BOXES, PLANT ROOMS, ROOF DECKS.

MEMBRANE RING FASTENS TO BODY INDEPENDENTLY OF GRATE TO ALLOW ACCESS TO SUMP WITHOUT BREAKING MEMBRANE SEAL.




LOAD CLASS A – AS 3996-2006

INTEGRAL PUDDLE FLANGE WITH WEEP HOLES 4 X PLACES




Dimensions (mm)

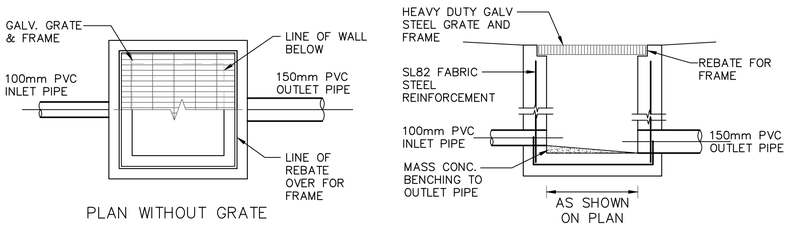
| N.B | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 100 | 260 | 240 | 103 | 106 | 28 | 45 | 25 |

*FOR FLOW RATE DATA PLEASE REFER TO APPENDIX.

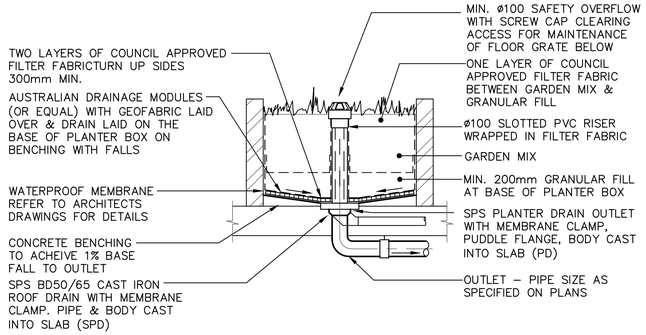
SPECIALITY PLUMBING SUPPLIES PTY LTD
TEL: (02) 9417 1900 FAX: (02) 9417 0108 E-MAIL: INFO@SPSDRAINS.COM.AU

## FLOOR GRATE WITH PUDDLE FLANGE (FG1)
NOT TO SCALE

NOTE: ALTERNATIVE ø150 FLOOR GRATES WITH PUDDLE FLANGE MAY BE USED (E.G. IPLEX ø150 FLOOR GRATE) SUBJECT TO WRITTEN APPROVAL FROM CAPITAL ENGINEERING CONSULTANTS




## TYPICAL GRATED INLET PIT DETAIL
SCALE: 1:20




## PLANTER DRAIN WITH VERTICAL OVERFLOW PROVISION (PD)
SCALE 1:20

# PROPOSED COMMERCIAL DEVELOPMENT
## 140-142 OCEAN STREET. NARRABEEN

| Scale | Date | Drawn | Design | Approved |
|---|---|---|---|---|
| 1:100 @ A1 | 07/02/2025 | B.E. | B.E. | P.E. |

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DATE: 07/02/2025

REGISTERED NER Engineers Australia

# FOR COUNCIL APPROVAL ONLY (CONCEPT)

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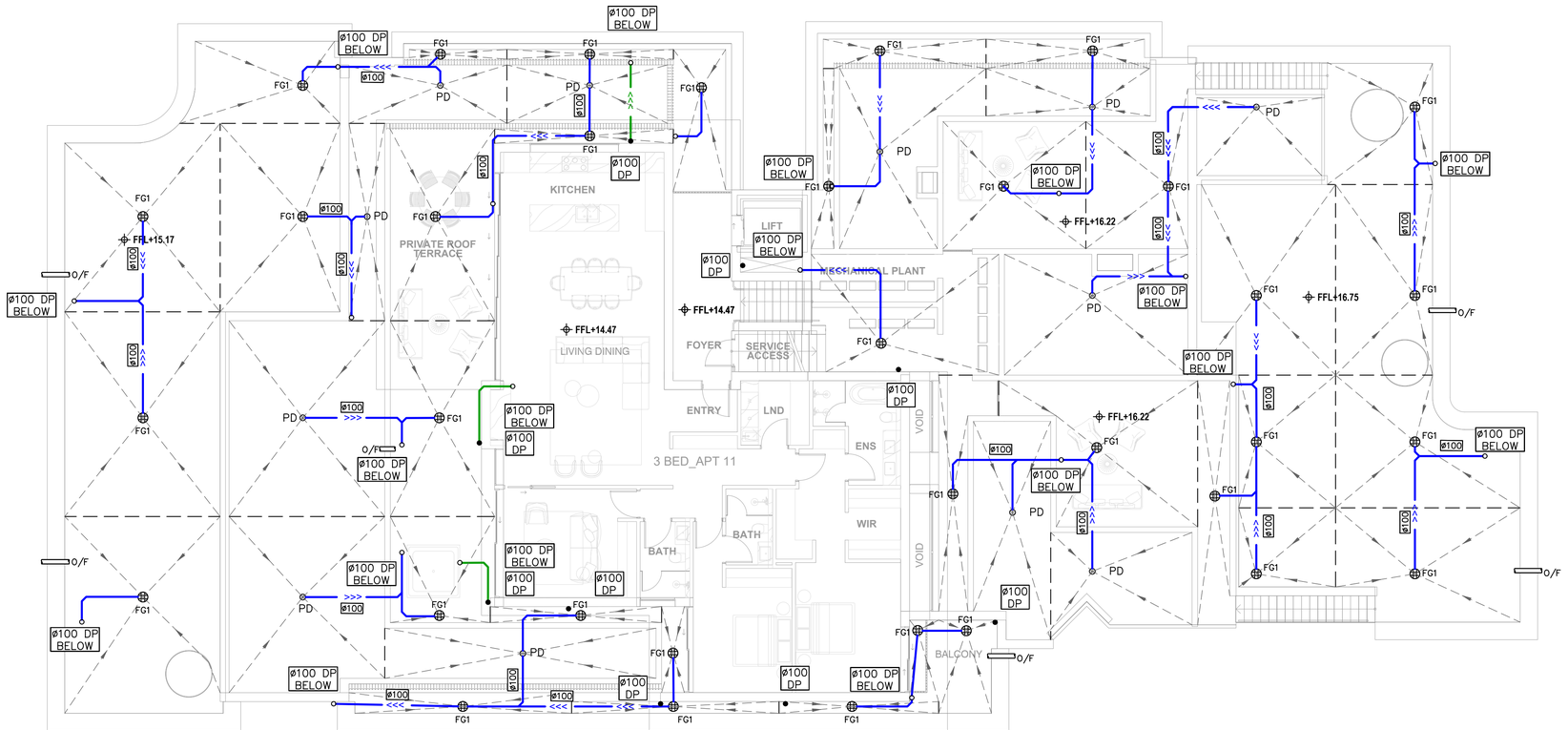
Title: STORMWATER LAYOUT PLAN LEVEL 01 FLOOR PLAN, NOTES & DETAILS

North

Project Number: SW24372

Revision: A

Drawing Number: SW030




## STORMWATER LAYOUT PLAN
## LEVEL 02 FLOOR
SCALE 1:100

## LEVEL 02 FLOOR NOTES:

INSTALL 50mm uPVC SPITTER PIPES 20mm ABOVE SURFACE LEVEL FOR BALCONY AND CONCRETE ROOF AREAS TO ALLOW FOR EMERGENCY OVERFLOW INCASE OF BLOCKAGES DURING HEAVY STORMS. PLUMBER TO CONFIRM LOCATION DURING CONSTRUCTION.

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINTED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

BALCONY, TERRACE & CONCRETE ROOF AREAS TO SLOPE TOWARDS RAINWATER OUTLETS WHERE REQUIRED (TYP).

ARROW DENOTES THE SLOPE OF FINISHED SURFACE LEVEL (TYP).

DOWNPIPES SHOWN ON PLAN ARE TO BE ø100mm uPVC U.N.O. (TYP).

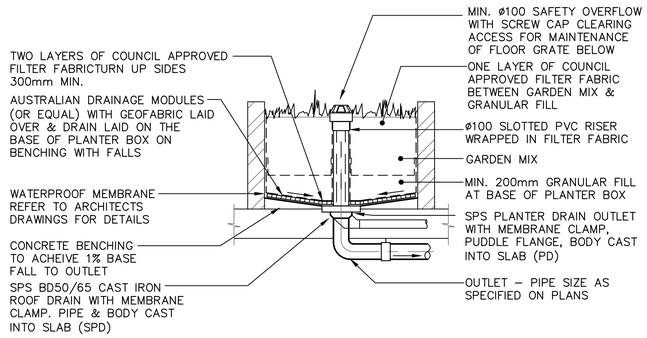
ALL EAVES GUTTERS SHALL BE 145mm WIDE x 75mm DEEP (OR EQUIVALENT) AND LAID AT MIN. 1:500 SLOPE.

ALL GUTTERS TO BE FITTED WITH ADEQUATE OVERFLOW MEASURES IN ACCORDANCE WITH AS3500.3:2018.

PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).

INSTALL DOWNPIPE WITH SPREADER (IF REQUIRED) TO DISPERSE STORMWATER ONTO LOWER ROOF AREAS EFFECTIVELY.

PROVIDE SURFACE DRAINAGE FOR ALL CONCRETE AND BALCONY ROOF AREAS WHERE REQUIRED.



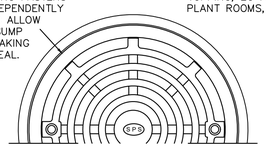

## PLANTER DRAIN WITH VERTICAL OVERFLOW PROVISION (PD)
SCALE 1:20

## SPS TRUFLO RWO WITH FLAT GRATE & MEMBRANE CLAMP 100MM OUTLET

SPECIFICATION CODES:
TIA100F2 (CI BODY, ALUMINIUM FLAT GRATE & MEMBRANE RING)
TIB100F2 (CI BODY, BRONZE FLAT GRATE & MEMBRANE RING)
TBA100F2 (ALL-BRONZE ASSEMBLY)

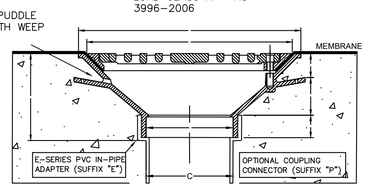
SUGGESTED APPLICATION:
MEMBRANED FLOORS OR ROOFS WITH NO FURTHER TOPPING, EG PLANTER BOXES, PLANT ROOMS, ROOF DECKS.

MEMBRANE RING FASTENS TO BODY INDEPENDENTLY OF GRATE TO ALLOW ACCESS TO SUMP WITHOUT BREAKING MEMBRANE SEAL.




LOAD CLASS A – AS 3996-2006

INTEGRAL PUDDLE FLANGE WITH WEEP HOLES 4 X PLACES




Dimensions (mm)

| N.B | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 80 | 260 | 240 | 103 | 106 | 28 | 45 | 25 |
| 100 | 260 | 240 | 103 | 106 | 28 | 45 | 25 |
| 150 | 260 | 240 | 103 | 106 | 28 | 45 | 25 |

*FOR FLOW RATE DATA PLEASE REFER TO APPENDIX.

SPECIALITY PLUMBING SUPPLIES PTY LTD
TEL: (02) 9417 1900 FAX: (02) 9417 0108 E-MAIL: INFO@SPSDRAINS.COM.AU

## FLOOR GRATE WITH PUDDLE FLANGE (FG1)
NOT TO SCALE

NOTE: ALTERNATIVE ø150 FLOOR GRATES WITH PUDDLE FLANGE MAY BE USED (E.G. IPLEX ø150 FLOOR GRATE) SUBJECT TO WRITTEN APPROVAL FROM CAPITAL ENGINEERING CONSULTANTS

# PROPOSED COMMERCIAL DEVELOPMENT
## 140-142 OCEAN STREET. NARRABEEN

Scale 1:100 @ A1 | Date 07/02/2025 | Drawn B.E. | Design B.E. | Approved P.E.

Capital Engineering Consultants
9630 0121
8 Buller Street, North Parramatta, NSW 2151
www.cec-au.com

| Rev | Description | By | Chk | Date |
|---|---|---|---|---|
| A | ISSUED FOR DA APPROVAL | B.E. | M.W. | 07/02/2025 |

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FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE

APPROVED BY: P. El-Bayeh
PAUL EL-BAYEH
B.E.(Civil), M.E. (Structural & Foundation), FIEAust. CPEng No. 3132148, NER, RPEQ.

DATE: 07/02/2025

REGISTERED NER Engineers Australia

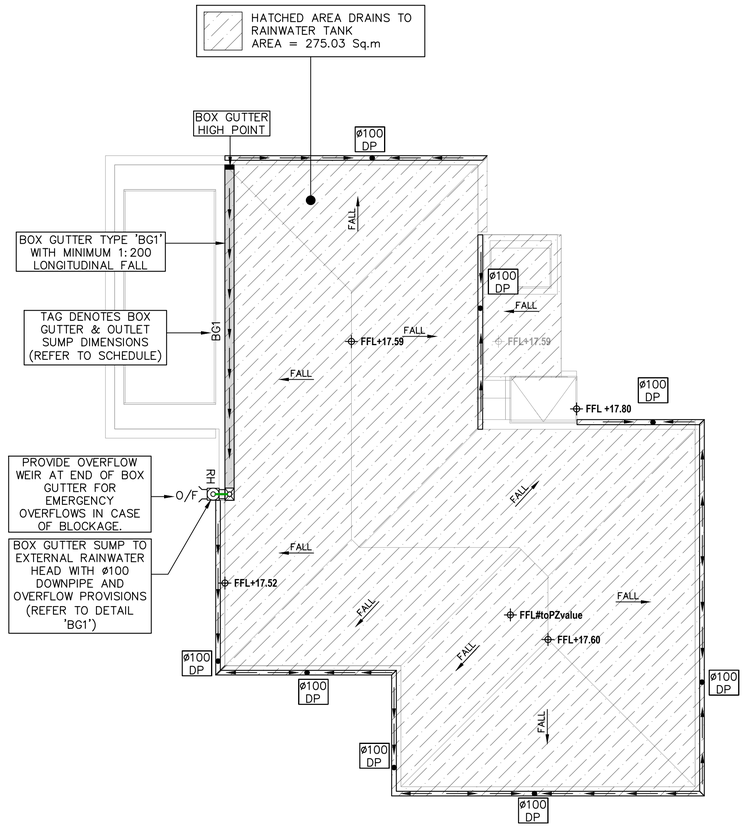
FOR COUNCIL APPROVAL ONLY (CONCEPT)

A1 0 20 40 60 80 100
DO NOT SCALE DRAWING, USE FIGURED DIMENSIONS ONLY

Title: STORMWATER LAYOUT PLAN LEVEL 02 FLOOR PLAN, NOTES & DETAILS

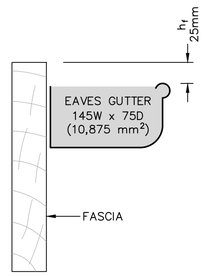
North

Project Number: SW24372
Revision: A
Drawing Number: SW040



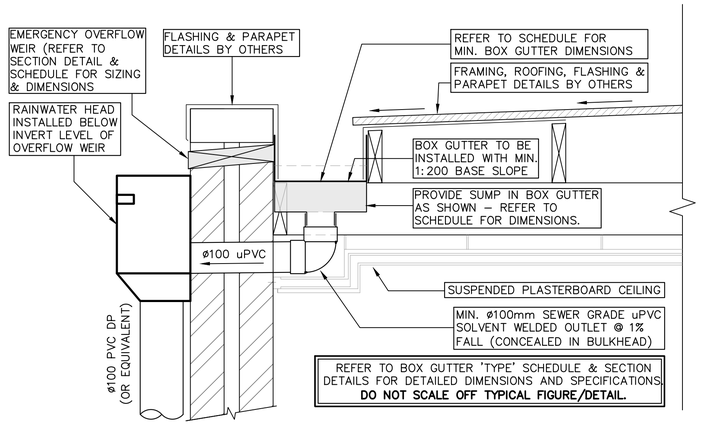

## STORMWATER LAYOUT PLAN ROOF LEVEL

SCALE 1:100




## TYPICAL EAVES GUTTER DETAIL (LOW FRONT)

NOT TO SCALE




## BOX GUTTER SUMP TO EXTERNAL RAINWATER HEAD TYPICAL DETAIL

SCALE 1:10

## ROOF NOTES:

INSTALL 50mm uPVC SPITTER PIPES 20mm ABOVE SURFACE LEVEL FOR BALCONY AND CONCRETE ROOF AREAS TO ALLOW FOR EMERGENCY OVERFLOW INCASE OF BLOCKAGES DURING HEAVY STORMS. PLUMBER TO CONFIRM LOCATION DURING CONSTRUCTION.

ALL BUILDING AND HYDRAULIC SERVICES TO BE PROPERLY CO-ORDINATED WITH STORMWATER PIPES AND ENSURE NO CLASHES ARE PRESENT DURING CONSTRUCTION (TYP).

STORMWATER PIPE ARRANGEMENT TO BE CO-ORDINTED WITH STRUCTURAL SLAB AND BEAMS WHERE REQUIRED (TYP).

BALCONY, TERRACE & CONCRETE ROOF AREAS TO SLOPE TOWARDS RAINWATER OUTLETS WHERE REQUIRED (TYP).

ARROW DENOTES THE SLOPE OF FINISHED SURFACE LEVEL (TYP).

DOWNPIPES SHOWN ON PLAN ARE TO BE ø100mm uPVC U.N.O. (TYP).

ALL EAVES GUTTERS SHALL BE 145mm WIDE x 75mm DEEP (OR EQUIVALENT) AND LAID AT MIN. 1:500 SLOPE.

ALL GUTTERS TO BE FITTED WITH ADEQUATE OVERFLOW MEASURES IN ACCORDANCE WITH AS3500.3:2018.

PROPOSED DOWNPIPE LOCATIONS ARE NOMINAL AND TO BE CONFIRMED DURING CONSTRUCTION (TYP).

INSTALL DOWNPIPE WITH SPREADER (IF REQUIRED) TO DISPERSE STORMWATER ONTO LOWER ROOF AREAS EFFECTIVELY.

PROVIDE SURFACE DRAINAGE FOR ALL CONCRETE AND BALCONY ROOF AREAS WHERE REQUIRED.

## BOX GUTTER NOTES:

ALL BOX GUTTERS SHALL BE INSTALLED WITH AN ABSOLUTE MIN. 1:200 LONGITUDINAL BASE SLOPE TO THE OUTLET (1:100 DESIRABLE BASE SLOPE).

ALL BOX GUTTERS SHALL BE FITTED WITH EMERGENCY OVERFLOW MEASURES – REFER TO PLAN & COMPLIANCE TABLE FOR DETAILS OF OVERFLOW PROVISIONS.

BOX GUTTERS SHALL BE ADEQUATELY SEALED TO THE RECEIVING RAINWATER HEAD / INTERNAL SUMP AND DISCHARGE WITHOUT CHANGES IN DIRECTION.

ALL EXPANSION JOINTS AND MINIMUM EXPANSION SPACE SHALL COMPLY WITH AS3500.3 CLAUSE 4.3.2

| BOX GUTTER TYPE 'BG1' SUMP DIMENSIONS | |
|---|---|
| DOWNPIPE | ø100mm |
| SUMP DEPTH | 50mm |
| SUMP LENGTH | 400mm |
| SUMP WIDTH | 300mm |
| OVERFLOW WIDTH | 300mm |
| OVERFLOW DEPTH | 65mm |
| BOX GUTTER WIDTH | 300mm |
| BOX GUTTER DEPTH | 150mm |
| MIN CLEARANCE LOC | 18mm |
| MIN CLEARANCE B | 13mm |
| RWH DEPTH | 125mm |
| RWH LENGTH | 140mm |
| RWH WIDTH | 300mm |

# PROPOSED COMMERCIAL DEVELOPMENT

140-142 OCEAN STREET. NARRABEEN

Scale 1:100 @ A1 | Date 07/02/2025 | Drawn B.E. | Design B.E. | Approved P.E.

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FOR COUNCIL / CONSTRUCTION CERTIFICATE ISSUE

APPROVED BY:

PAUL EL-BAYEH
B.E. (Civil), M.E. (Structural & Foundation), FIEAust, CPEng No. 3132148, NER, RPEQ.

DATE: 07/02/2025

REGISTERED NER Engineers Australia

Title: STORMWATER LAYOUT PLAN ROOF PLAN, NOTES & DETAILS

North

Project Number SW24372 | Revision A

Drawing Number SW050

FOR COUNCIL APPROVAL ONLY (CONCEPT)

A1 0 20 40 60 80 100

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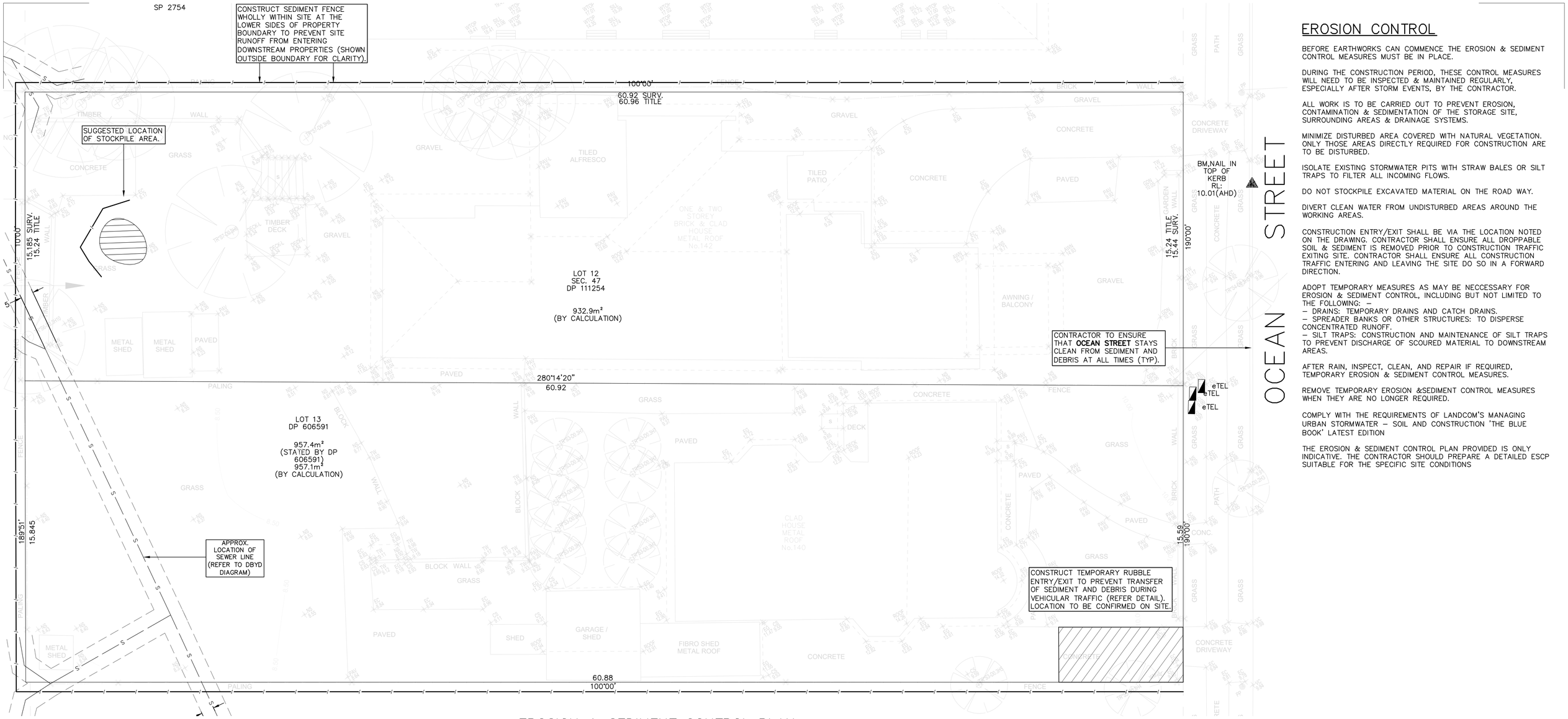



## EROSION & SEDIMENT CONTROL PLAN
SCALE 1:100

## EROSION CONTROL

BEFORE EARTHWORKS CAN COMMENCE THE EROSION & SEDIMENT CONTROL MEASURES MUST BE IN PLACE.

DURING THE CONSTRUCTION PERIOD, THESE CONTROL MEASURES WILL NEED TO BE INSPECTED & MAINTAINED REGULARLY, ESPECIALLY AFTER STORM EVENTS, BY THE CONTRACTOR.

ALL WORK IS TO BE CARRIED OUT TO PREVENT EROSION, CONTAMINATION & SEDIMENTATION OF THE STORAGE SITE, SURROUNDING AREAS & DRAINAGE SYSTEMS.

MINIMIZE DISTURBED AREA COVERED WITH NATURAL VEGETATION. ONLY THOSE AREAS DIRECTLY REQUIRED FOR CONSTRUCTION ARE TO BE DISTURBED.

ISOLATE EXISTING STORMWATER PITS WITH STRAW BALES OR SILT TRAPS TO FILTER ALL INCOMING FLOWS.

DO NOT STOCKPILE EXCAVATED MATERIAL ON THE ROAD WAY.

DIVERT CLEAN WATER FROM UNDISTURBED AREAS AROUND THE WORKING AREAS.

CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE DO SO IN A FORWARD DIRECTION.

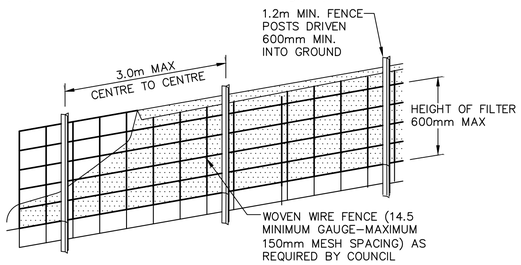
ADOPT TEMPORARY MEASURES AS MAY BE NECCESSARY FOR EROSION & SEDIMENT CONTROL, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: –
– DRAINS: TEMPORARY DRAINS AND CATCH DRAINS.
– SPREADER BANKS OR OTHER STRUCTURES: TO DISPERSE CONCENTRATED RUNOFF.
– SILT TRAPS: CONSTRUCTION AND MAINTENANCE OF SILT TRAPS TO PREVENT DISCHARGE OF SCOURED MATERIAL TO DOWNSTREAM AREAS.

AFTER RAIN, INSPECT, CLEAN, AND REPAIR IF REQUIRED, TEMPORARY EROSION & SEDIMENT CONTROL MEASURES.

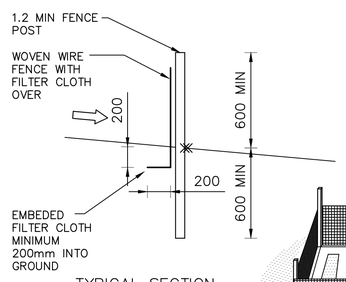
REMOVE TEMPORARY EROSION &SEDIMENT CONTROL MEASURES WHEN THEY ARE NO LONGER REQUIRED.

COMPLY WITH THE REQUIREMENTS OF LANDCOM'S MANAGING URBAN STORMWATER – SOIL AND CONSTRUCTION 'THE BLUE BOOK' LATEST EDITION

THE EROSION & SEDIMENT CONTROL PLAN PROVIDED IS ONLY INDICATIVE. THE CONTRACTOR SHOULD PREPARE A DETAILED ESCP SUITABLE FOR THE SPECIFIC SITE CONDITIONS




DIAGRAMMATIC VIEW




TYPICAL SECTION

## SEDIMENT FENCE DETAIL
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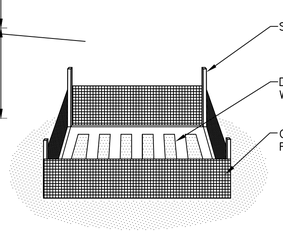
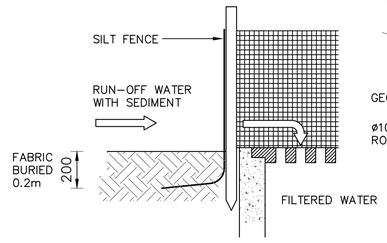
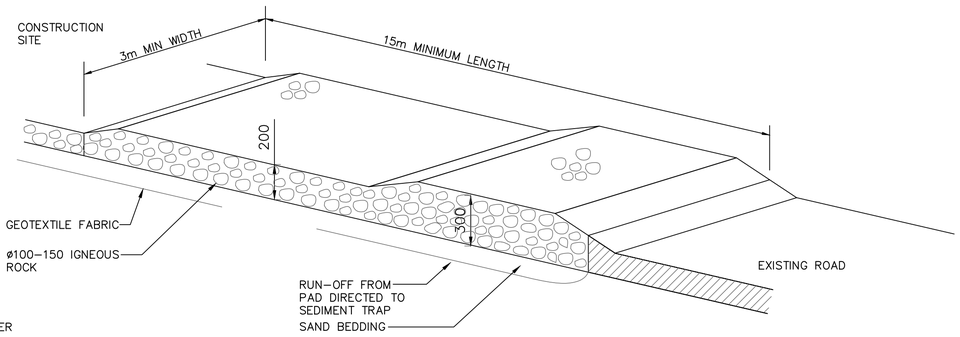



## SUMP SEDIMENT TRAP DETAIL
NOT TO SCALE




## TEMPORARY CONSTRUCTION EXIT (RUBBLE ALTERNATIVE)
NOT TO SCALE

# PROPOSED COMMERCIAL DEVELOPMENT

140-142 OCEAN STREET. NARRABEEN

| Scale | Date | Drawn | Design | Approved |
|---|---|---|---|---|
| 1:100 @ A1 | 07/02/2025 | B.E. | B.E. | P.E. |

FOR COUNCIL APPROVAL ONLY (CONCEPT)

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DATE: 07/02/2025

Title: STORMWATER LAYOUT PLAN
EROSION & SEDIMENT CONTROL PLAN, NOTES & DETAILS

North

Project Number: SW24372
Revision: A
Drawing Number: ER001