

# AUSTRAX STRUCTURAL CIVIL ENGINEERS

## STORMWATER MANAGEMENT PLAN AND DETAIL

11 RAVEN CIRUIT, WARRIEWOOD NSW

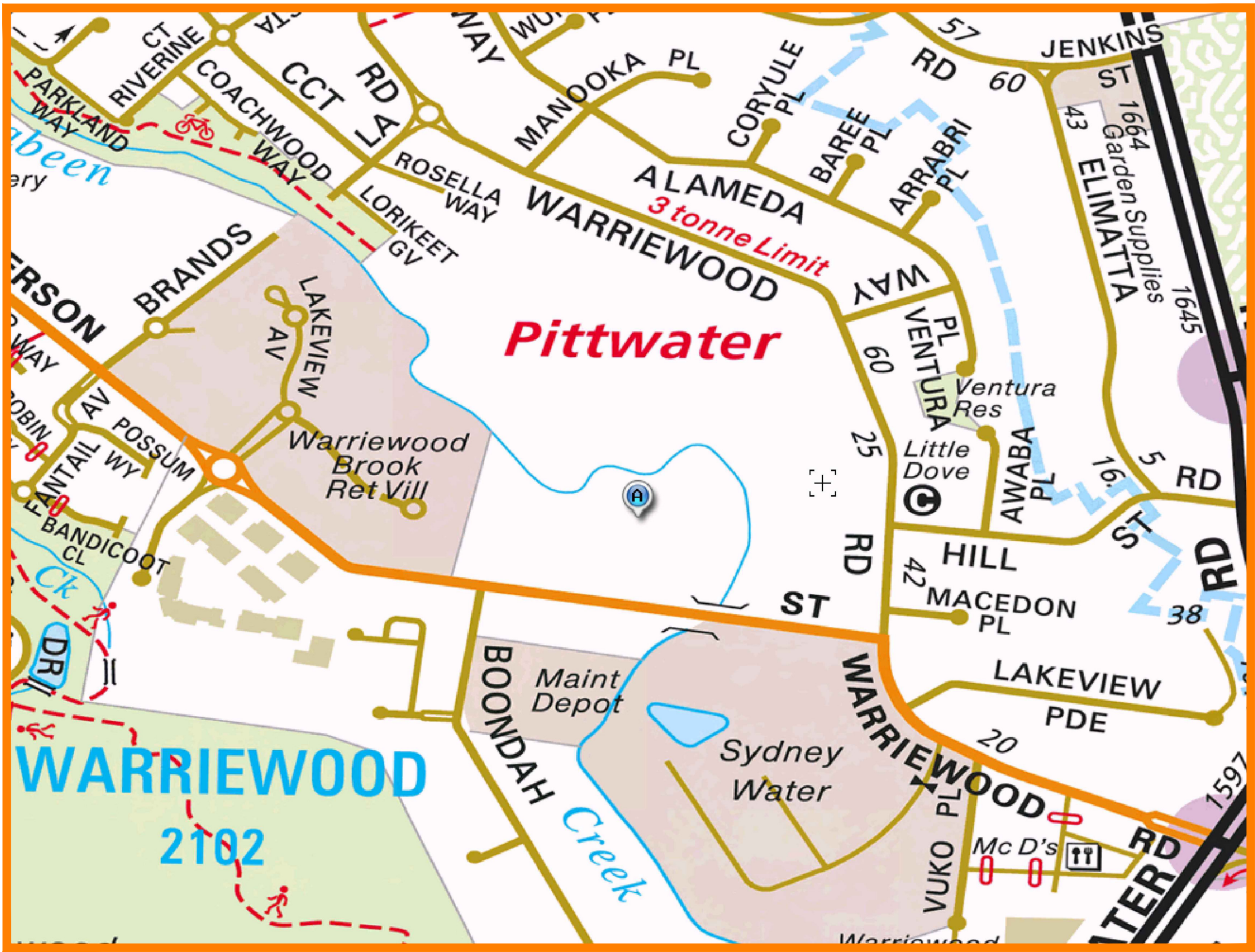
### LEGEND:

- STORMWATER LINE  
CHARGED LINE  
SUBSOIL LINE  
STORMWATER RISING MAIN  
OVERFLOW LINE  
AUTHORITY STORMWATER LINE  
AUTHORITY SEWER LINE  
AUTHORITY WATER LINE  
EXISTING STORMWATER LINE  
AUTHORITY ELECTRICITY LINE  
AUTHORITY UNDERGROUND ELECTRICITY LINE  
AUTHORITY COMMS LINE  
FENCE LINE

- GRATED SURFACE INLET PIT  
GRATED SURFACE INLET PIT WITH ENVIROPOD INSERT  
JUNCTION PIT  
KERB INLET PIT  
EXISTING GRATED SURFACE INLET PIT  
EXISTING JUNCTION PIT  
EXISTING KERB INLET PIT  
EXISTING TELSTRA PIT  
EXISTING HYDRANT  
EXISTING STOP VALVE  
EXISTING GAS VALVE  
EXISTING POWER POLE  
EXISTING BOUNDARY TRAP  
EXISTING SEWER MANHOLE

### ABBREVIATIONS:

- Ø or DIA DIAMETER  
CL CENTER LINE  
CO CLEAR OUT  
DGS DENSE GRADED SUB-BASE  
DP DOWNPIPE  
e EXISTING  
FFL FINISHED FLOOR LEVEL  
GTD GRATED TRENCH DRAIN  
GSIP GRATED SURFACE INLET PIT  
IL INVERT LEVEL  
K&G KERB & GUTTER  
OFP OVERLAND FLOW PATH  
OSD ON-SITE DETENTION  
R RADIUS  
RCP REINFORCED CONCRETE PIPE  
RL REDUCED LEVEL  
RW RAINWATER TANK  
RWT RAINWATER TANK  
SMH SEWER MAN HOLE  
SW STORMWATER  
SV STOP VALVE  
TOK TOP OF KERB  
TOW TOP OF WALL  
TWL TOP WATER LEVEL  
UPVC UNPLASTICISED POLYVINYL CHLORIDE  
UNO UNLESS NOTED OTHERWISE  
FF FIRST FLUSH DEVICE  
TYP TYPICAL  
OFP OVERLAND FLOW PATH  
RWO RAINWATER OUTLET  
CO CLEAR OUT POINT  
FF FIRST FLUSH  
DDO DISH DRAIN OUTLET  
PD PLANTER DRAIN  
FW FLOOR WASTE  
CAPPING  
PIT TAG/NUMBER  
RH RAINHEAD  
DOWNPIPE DROP  
DP DOWNPIPE  
NRV NON RETURN VALVE  
WP WALL PENETRATION  
DP DOWNPIPE SPREADER  
RH RAINHEAD  
WL WARNING LIGHT  
SPOT LEVELS  
BENCHMARK



### SITE LOCATION

#### DRAWING REGISTER

NUMBER	NAME	REVISION
SWDP01	COVER SHEET	A
SWDP02	EROSION SEDIMENT CONTROL PLAN	A
SWDP03	STORMWATER MANAGEMENT PLAN	A
SWDP04	STORMWATER DRAINAGE DETAILS	A

### DRAINAGE NOTES:

- ALL PIPES TO BE LAID ON 75mm SAND BED WITH THE BARRELS FULLY SUPPORTED
- 100mm AND 150mm DIAMETER PIPES TO BE LAID ON MINIMUM 1% GRADE
- MINIMUM DEPTH OF COVER FOR PIPES NOT SUBJECT TO VEHICULAR LOADING TO BE 300mm
- ALL DRAINAGE PIPES LAID UNDER PAVEMENT SHALL BE REINFORCED CONCRETE WITH RUBBER RING JOINTS
- BACKFILL TRENCHES WITH COMPACTED SAND OR APPROVED AGGREGATE MATERIAL
- ALL PITS TO HAVE 600x600mm INTERNAL DIMENSIONS (U.N.O.)
- SILT ARRESTORS TO HAVE 900x900mm INTERNAL DIMENSIONS
- HEAVY DUTY GRATES AND COVERS ARE TO BE PROVIDED IN TRAFFICABLE AREAS
- PIT GRATE TO BE TYPE WELDLK OR APPROVED EQUIVALENT
- ALL PITS SHALL BE PROVIDED WITH A LOCKING CLIP
- ALL PITS SHALL BE MAINTAINED REGULARLY
- TOP OF BENCHING SHALL BE TO THE HALF OF THE OUTLET PIPE DIAMETER
- MAXIMUM FRONT ENTRY PIPE: -  
STRAIGHT ENTRY - Ø750  
SKEW ENTRY 45° - Ø525
- Ø100 SUBSOIL DRAINAGE PIPE 3000mm LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES
- COMPRESSIVE STRENGTH f<sub>c</sub> FOR CAST IN SITU CONCRETE TO BE A MINIMUM OF 20MPa AT 28 DAYS
- PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS
- ISOLATED JOINTS TO BE PROVIDED TO ISOLATE CONCRETE PAVEMENTS FROM PITS
- ALL TRENCH GRATES PROVIDED SHALL HAVE A MINIMUM CLEAR WIDTH OF 200mm
- STORMWATER DRAINAGE CONNECTIONS TO THE MAIN SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL

### STORMWATER PIPE BEDDING/PAVING NOTES:

- WHERE TRENCH BASE IS ROCK A MINIMUM OF 75mm BEDDING TO BE PROVIDED UNDER PIPE COLLARS.
- STORMWATER PIPE BEDDING DETAIL TO BE IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS. BEDDING DETAILS TO BE CONFIRMED UPON EXCAVATION & PRIOR TO INSTALLATION OF PIPEWORK.

### FOOTPATH REINSTATEMENT NOTES:

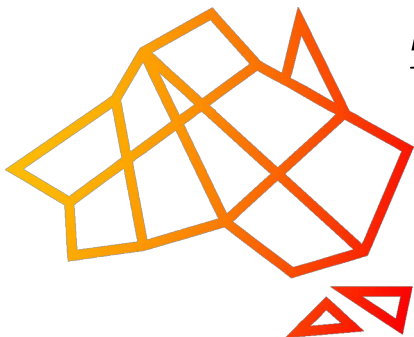
- REMOVE ALL SAND FILL WITHIN THE FOOTPATH AREA TO THE EXISTING SUBGRADE.
- SUPPORT ALL AUTHORITY SERVICES TO STRUCTURAL ENGINEERS DETAILS DURING EXCAVATION.
- REINSTATE FOOTPATH SUBGRADE.
- THE CONTRACTOR SHALL PROVIDE CERTIFICATION OF COMPACTION FROM A NATA REGISTERED TESTING AUTHORITY. MINIMUM THREE TESTS PER LAYER AS FOLLOWS:
- |   |               |
|---|---------------|
| SELECT FILL                                     | 95% MODIFIED  |
| SELECT FILL (LESS THAN 300mm BELOW BASE COURSE) | 98% MODIFIED  |
| BASE COURSE                                     | 100% MODIFIED |

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.

SERVICES SHOWN ON PLAN ARE INDICATIVE, EXACT DEPTH AND LOCATION TO BE CONFIRMED ONSITE. CONTRACTOR TO CARRY OUT DIAL BEFORE YOU DIG APPLICATION AND ENGAGE A REGISTERED SURVEYOR TO PEG OUT ALL EXISTING SERVICES PRIOR TO ANY WORK COMMENCING ONSITE.

REV	DESCRIPTION	DATE	APP
B	FOR CONSTRUCTION	05.04.2025	G.K.
A	FOR CONSTRUCTION	11.01.2025	G.K.



### AUSTRAX STRUCTURAL CIVIL ENGINEERS

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38 STATION STREET, BONNELLS BAY NSW

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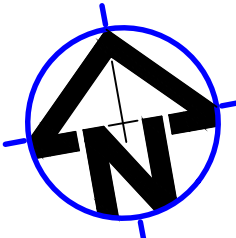
D PROJECTS

PROJECT

11 RAVEN CIRCUIT  
WARRIEWOOD NSW

COUNCIL

NORTHERN  
BEACHES  
COUNCIL



TITLE

COVER SHEET  
DRAWING  
FOR APPROVAL

DATE

05.04.2025

SCALE

1:200-A3

DESIGNED:

G.K

PROJECT NO.  
GCE.25115

ENGINEER:

G.K.

DRAWING NO.  
SWDP01

CHECKED:

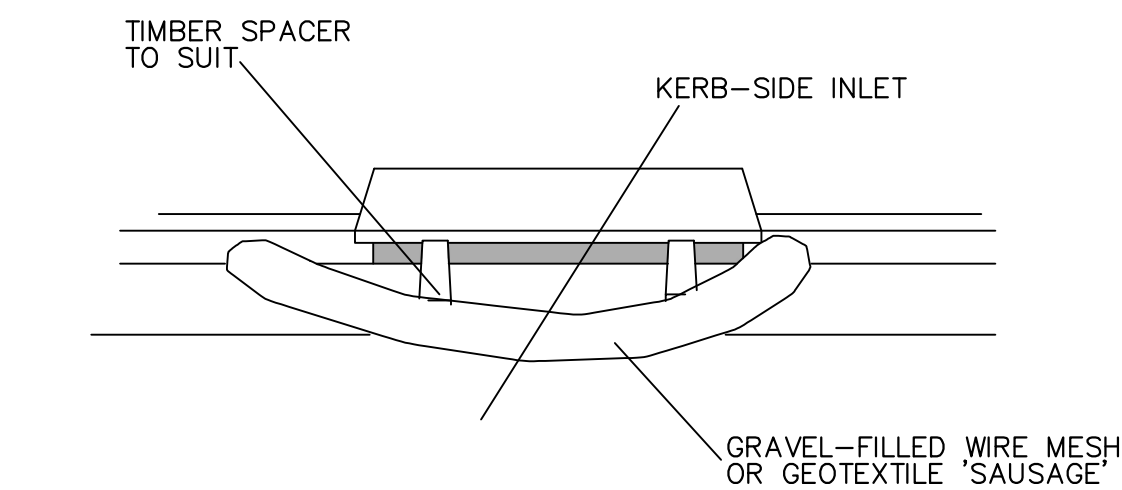
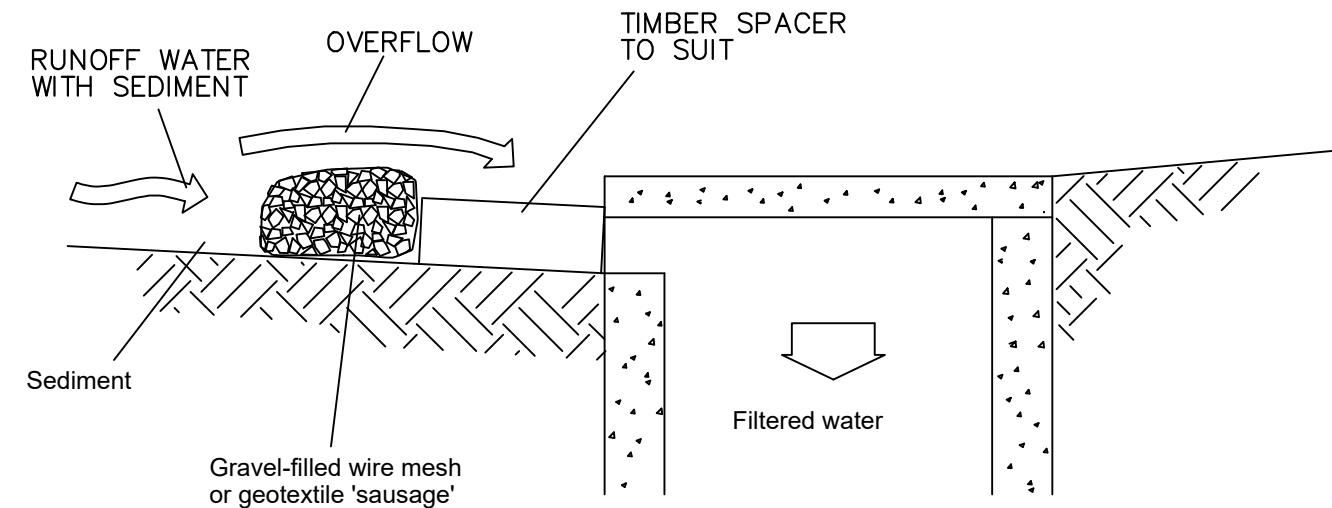
G.K.

REVISION NO.  
A

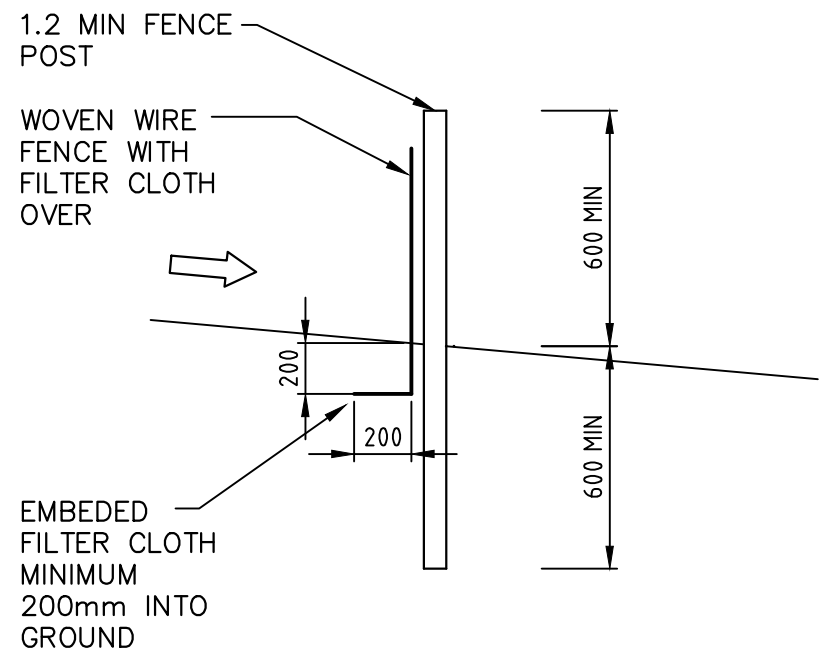


SEDIMENTATION AND EROSION CONTROL PLAN

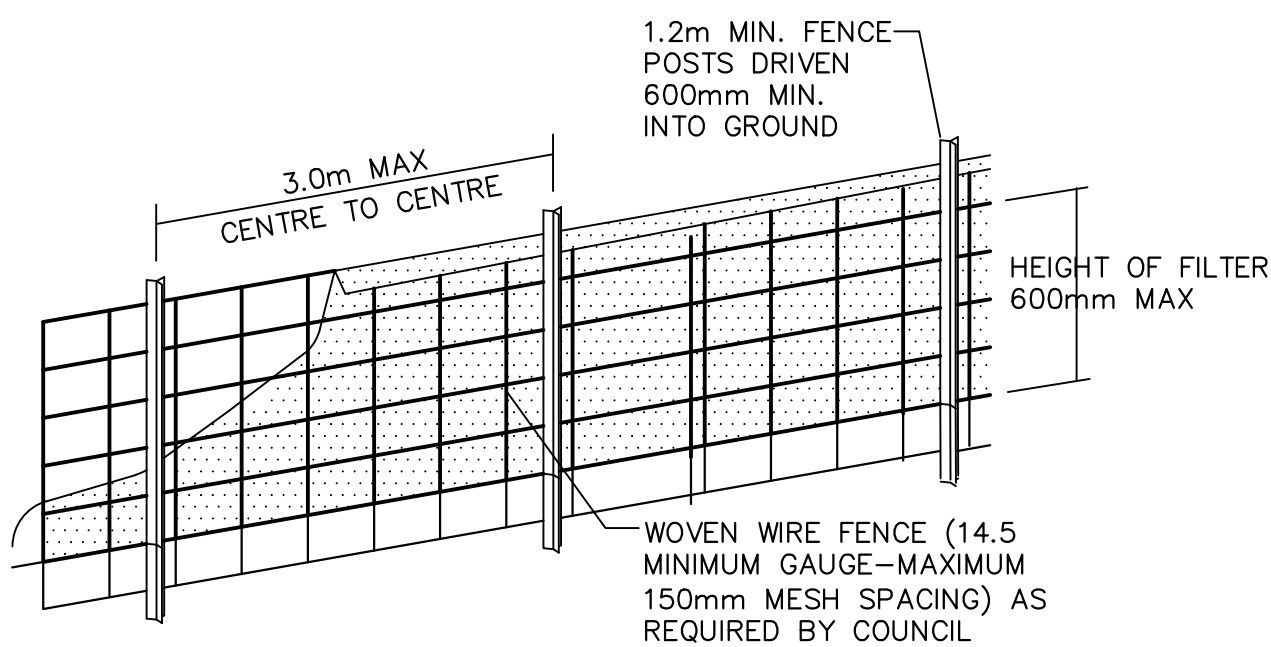
- SEDIMENTATION AND EROSION CONTROL NOTES
1. SELECTIVE CLEARING OF VEGETATION TO BE RESTRICTED TO NOMINATED AREAS WITH CLEARED VEGETATION WIND ROWED ON THE CONTOUR.
  2. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO SITE DISTURBANCE.
  3. TOPSOIL FROM ALL AREAS THAT WILL BE DISTURBED TO BE STRIPPED AND STOCKPILED AT THE NOMINATED SITE.
  4. NO MORE THAN 150m OF TRENCH TO BE OPEN AT ANY ONE TIME.
  5. CUT AND FILL BATTER GRADIENTS OF 1:2 (MAXIMUM).
  6. A STRIP OF TURF 450mm WIDE IS TO BE PLACED IMMEDIATELY BEHIND THE KERB ON ALL NEW ROAD TO ACT AS A FILTER TRAP. REFER TO DETAIL.
  7. ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED BY SITE SUPERVISOR AFTER EACH RAINFALL EVENT FOR STRUCTURAL DAMAGE AND ALL TRAPPED SEDIMENT TO BE REMOVED TO A NOMINATED STOCKPILE SITE.
  8. THE PROJECT MANAGER TO INFORM ALL CONTRACTORS AND SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN.
  9. NO DISTURBED AREA IS TO REMAIN DENUDED LONGER THAN 14 DAYS.
  10. ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S OPERATION.
  11. THE CONTRACTOR MUST ENSURE THE SUITABILITY AND INTEGRITY OF ALL WORKS AT THE END OF EACH DAY'S WORK.
  12. ORANGE BARRIER TAPE TO BE AFFIXED TO TOP OF SEDIMENT CONTROL BARRIER TO IDENTIFY WORK AREA.
  13. ALL SEDIMENTATION & EROSION CONTROL MEASURES ARE TO STRICTLY COMPLY WITH THE GUIDELINES DETAILED IN THE DEPARTMENT OF HOUSING PUBLICATION, "MANAGING URBAN STORMWATER – SOILS AND CONSTRUCTION", 4TH EDITION.
  14. WATER TRUCKS TO BE USED AS REQUIRED TO PREVENT WIND EROSION.
  15. SUBGRADE MATERIAL TO BE CONSTRUCTED IMMEDIATELY FOLLOWING FILL.



DETAIL  
SAND BAG DETAILS  
NOT TO SCALE



TYPICAL SECTION



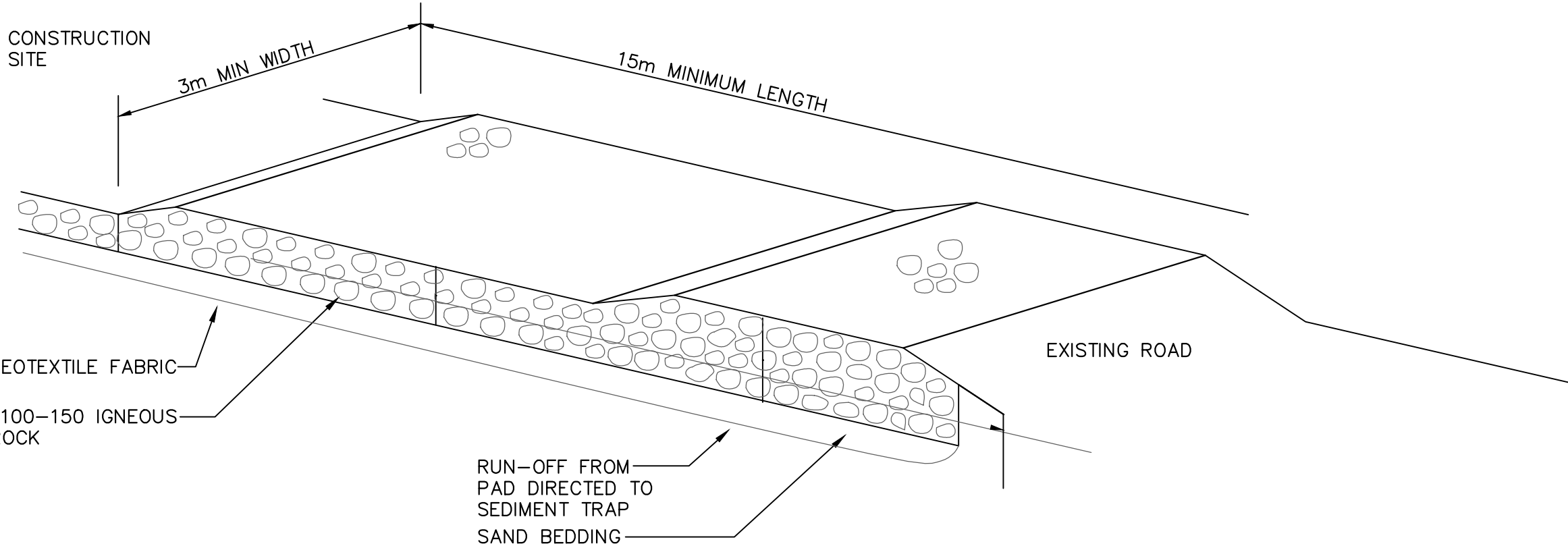
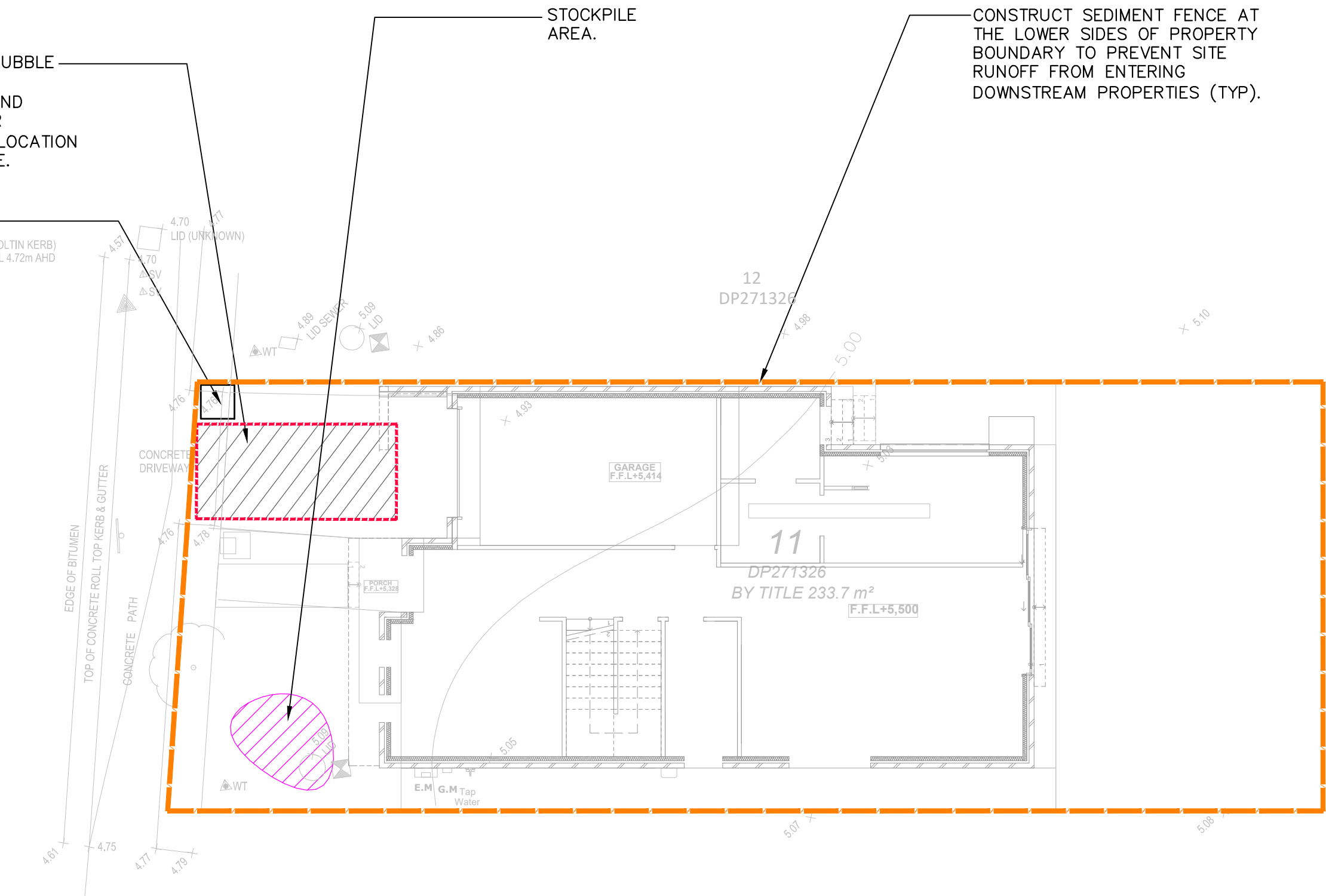
DIAGRAMMATIC VIEW

DETAIL  
SEDIMENT FENCE  
NOT TO SCALE

CONSTRUCT TEMPORARY RUBBLE ENTRY/EXIT TO PREVENT TRANSFER OF SEDIMENT AND DEBRIS DURING VEHICULAR TRAFFIC (REFER DETAIL). LOCATION TO BE CONFIRMED ON SITE.

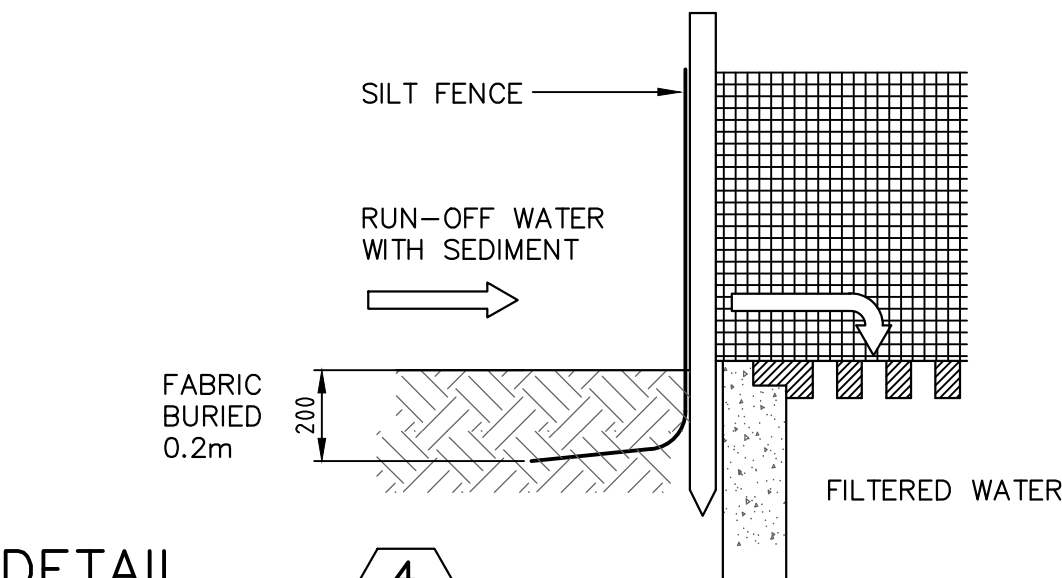
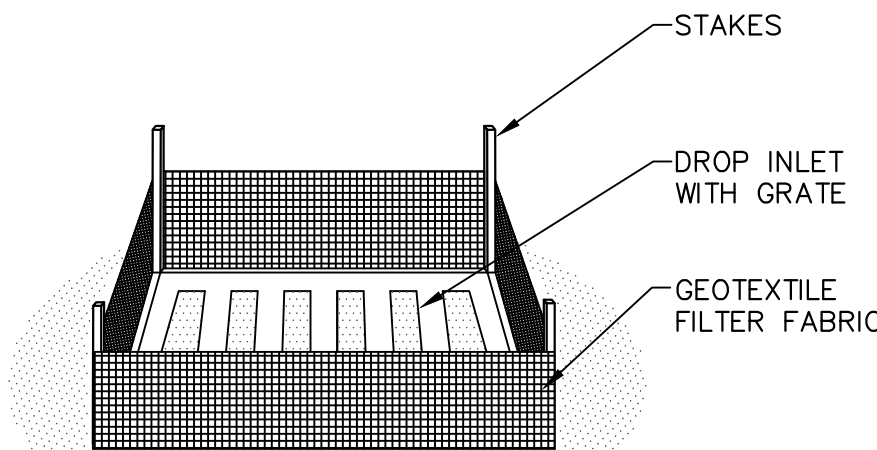
CONSTRUCT TEMPORARY SILT FENCE AROUND PITS, AS SHOWN (TYP). REFER DETAIL.

RAVEN CIRCUIT



RUBBLE ALTERNATIVE

DETAIL  
TEMPORARY  
CONSTRUCTION EXIT  
NOT TO SCALE



DETAIL  
SUMP SEDIMENT TRAP  
NOT TO SCALE

LEGEND	
	DENOTES SEDIMENT FENCE, REFER TO DETAIL
	DENOTES MESH AND GRAVEL INLET FILTER, REFER TO DETAIL
	DENOTES GEOTEXTILE INLET FILTER, REFER TO DETAIL
	DENOTES STABILISED SITE ACCESS, REFER TO DETAIL

NOTE  
THIS DRAWING HAS BEEN DEVELOPED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CENTRAL COAST COUNCIL, PLANNING FOR EROSION AND SEDIMENT CONTROL ON RESIDENTIAL ALLOTMENTS. AND THE REQUIREMENTS OUTLINED IN THE LANDCOM PUBLICATION "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION-2004".

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D PROJECTS		NORTHERN BEACHES COUNCIL		EROSION SEDIMENT CONTROL PLAN DRAWING FOR APPROVAL			
PROJECT				DATE	DESIGNED:	ENGINEER:	CHECKED:
11 RAVEN CIRCUIT WARRIEWOOD NSW				05.04.2025	G.K	G.K.	G.K.
				SCALE	PROJECT NO.	DRAWING NO.	REVISION NO.
				1:200-A3	GCE.25115	SWDP02	B



1. THE PRE/POST-DEVELOPMENT IMPERVIOUS AREA WAS MEASURED THROUGH AUTOCAD.
2. THE POST-DEVELOPMENT IMPERVIOUS AREA WAS DESIGNATED A VALUE OF 100% FOR A MORE CONSERVATIVE VALUE AND TO REPLICATE THE PROPOSED IMPERVIOUS AREA FOR SIZING OSD ON DRAINS.
3. THE RAINFALL DATA WAS CALCULATED AND OBTAINED BY THE BUREAU OF METEOROLOGY, AUSTRALIA FOR THE RESPECTIVE LOCATION OF THE SITE.
  - LATITUDE: -33.68885
  - LONGITUDE: 151.29876

THE SITE IS LOCATED IN NORTHERN BEACHES COUNCIL.

THE OSD STORAGE SYSTEM WILL BE BELOW GROUND.

OSD WAS DESIGNED USING DRAINS. THE RESULTS ARE SHOWN BELOW:

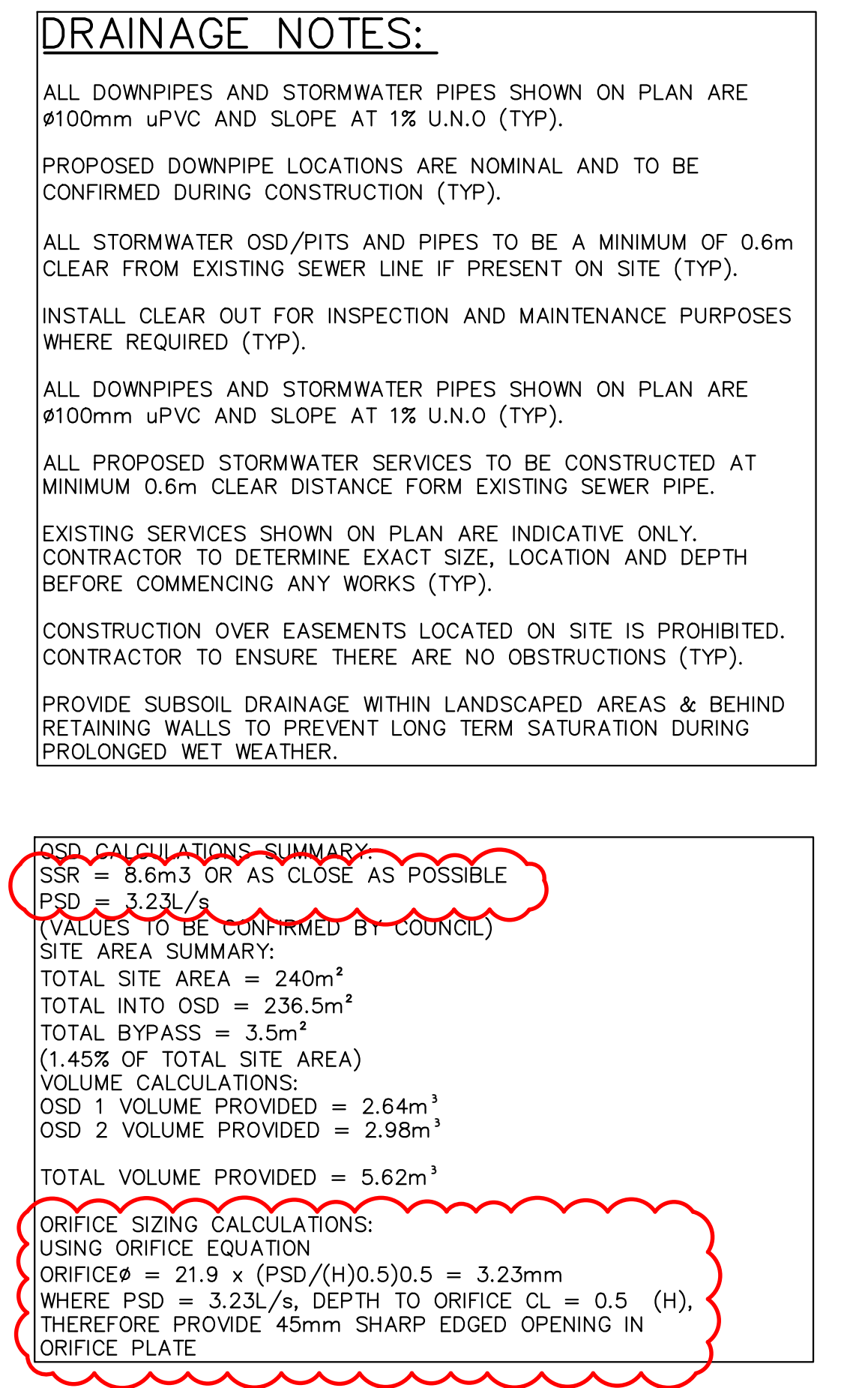
DRAINS MODELLING PARAMETERS:

THE STORAGE CAPACITY AND PERMISSIBLE SITE DISCHARGE OF THE OSD WAS CALCULATED THROUGH A DRAINS MODEL WITH REGARDS TO NORTHERN BEACHES COUNCIL DCP REQUIREMENTS LISTED BELOW;

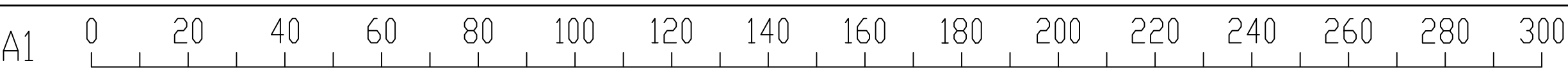
100YR POST-DEVELOPMENT FLOWS RESTRICTED TO THE 20YR(5%AE) PRE-DEVELOPMENT FLOWS.

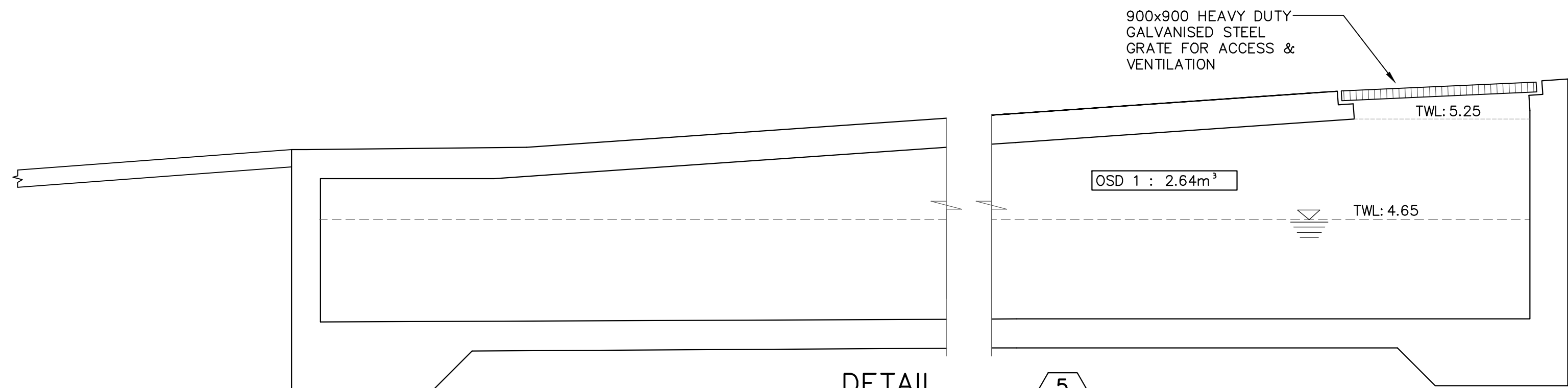
PRE-DEVELOPMENT CATCHMENT = 0% IMPERVIOUS, 100% PERVIOUS.  
POST-DEVELOPMENT CATCHMENT = 60% IMPERVIOUS, 40% PERVIOUS.

TIME OF CONCENTRATION = 5min(s)

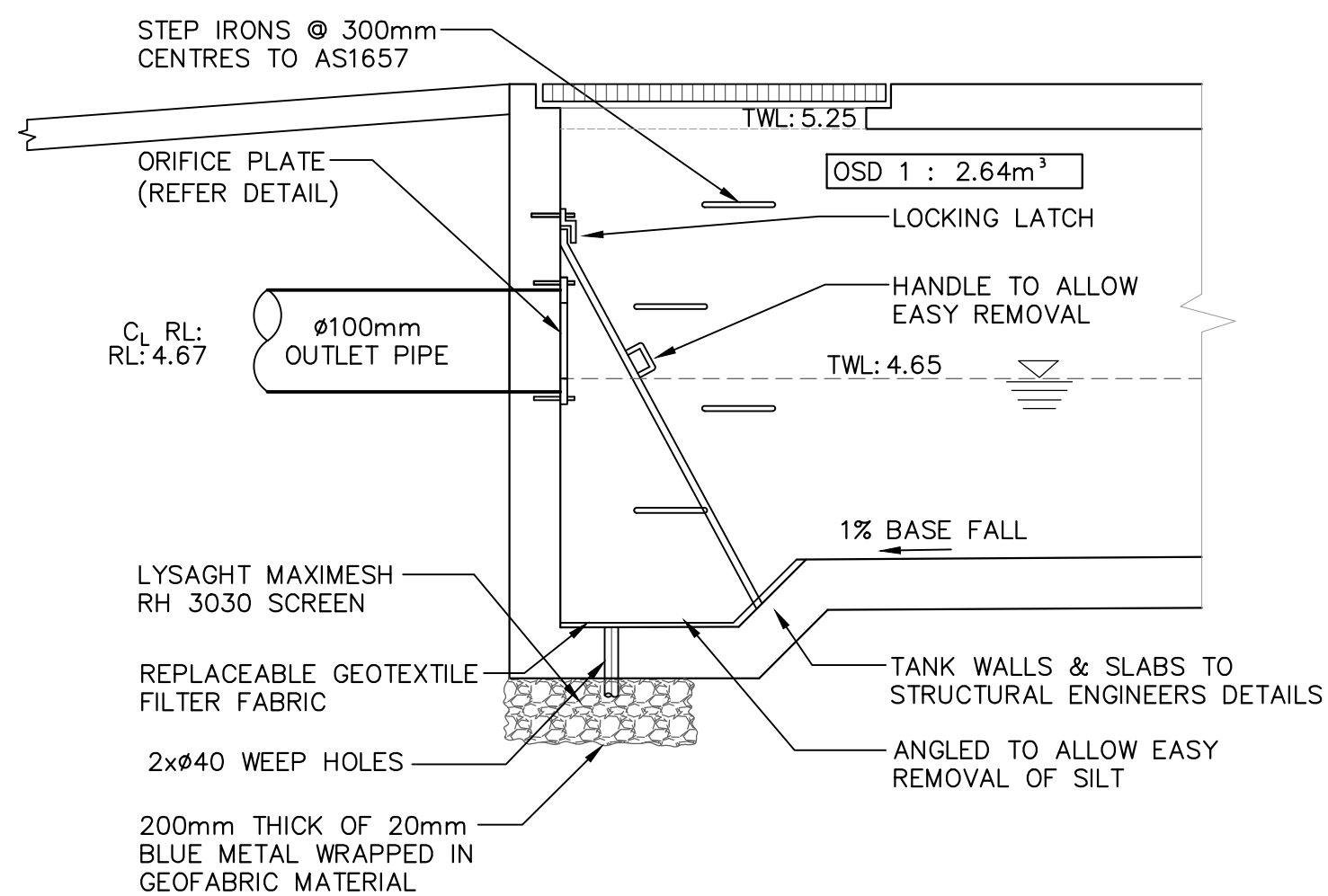


				<div><div><b>AUSTRAX STRUCTURAL CIVIL ENGINEERS</b> <b>PH: 0423095373</b> <small>2/4 COLONY CLOSE, TUGGERAH NSW 671 HUNTER STREET, NEWCASTLE NSW 38 STATION STREET, BONNELLS BAY NSW</small></div><div>Structural • Civil • Hydraulic • Flooding • Residential • Commercial Industrial • Land Development</div><div><small>©This drawing is copyright to Global Consulting Engineers, no part of this drawing shall be used for any other purpose without the prior written consent of Global Consulting Engineers.</small></div></div>	<div>Sydney Newcastle Central Coast Hunter Valley New South Wales Victoria Queensland <b>A.B.N. 91 620 485 716</b> <b><a href="http://www.globalceng.com.au">www.globalceng.com.au</a></b> <b>E: <a href="mailto:info@globalceng.com.au">info@globalceng.com.au</a></b></div>	CLIENT	COUNCIL <b>NORTHERN BEACHES COUNCIL</b>	TITLE <b>STORMWATER DRAINAGE PLAN</b> DRAWING FOR APPROVAL			
D PROJECTS		DATE 05.04.2025	DESIGNED: G.K			ENGINEER: G.K.		CHECKED: G.K.			
PROJECT <b>11 RAVEN CIRCUIT WARRIEWOOD NSW</b>			SCALE 1:200-A3			PROJECT NO. GCE.25115	DRAWING NO. SWDP03	REVISION NO. B			
B	FOR CONSTRUCTION		05.04.2025			G.K.					
A	FOR CONSTRUCTION		11.01.2025			G.K.					
REV	DESCRIPTION	DATE	APP								

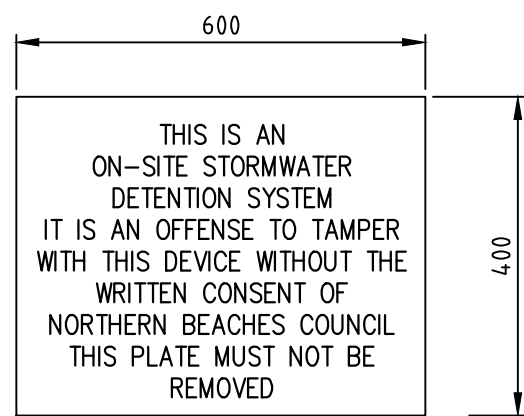




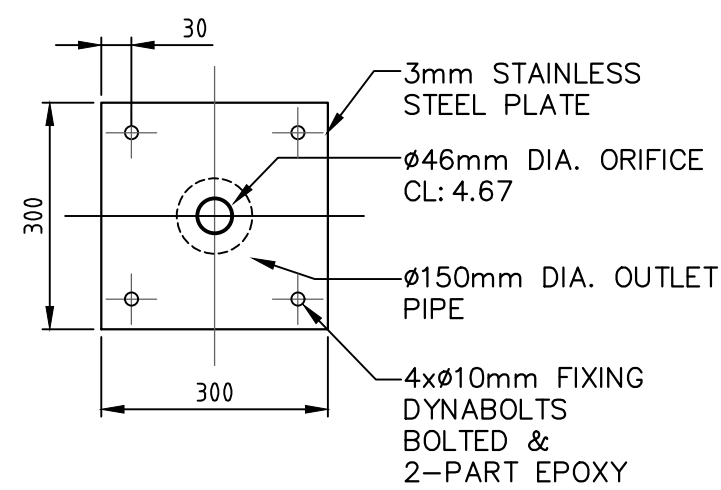
DETAIL  
DCP - ONSITE  
DETENTION TANK



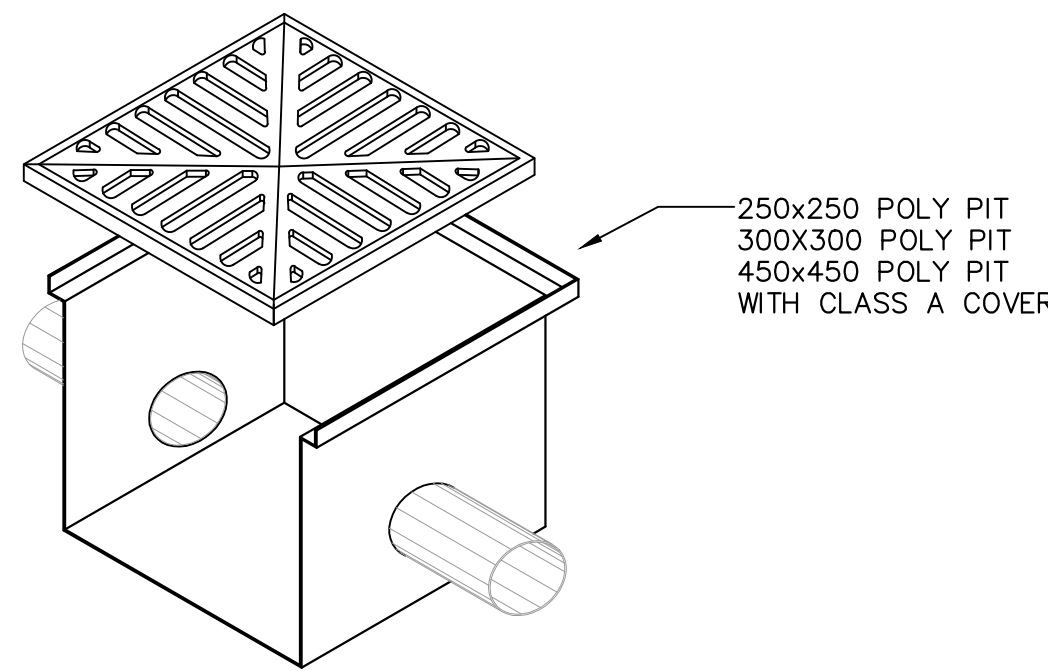
DETAIL  
DCP - ONSITE  
DETENTION TANK



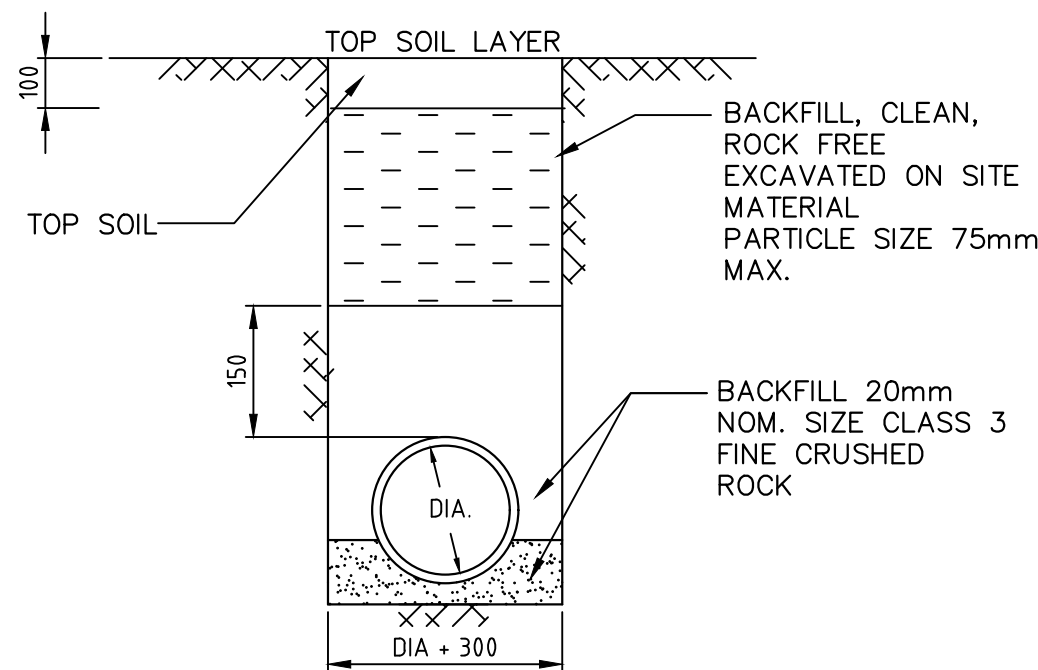
DETAIL  
OSD SIGN



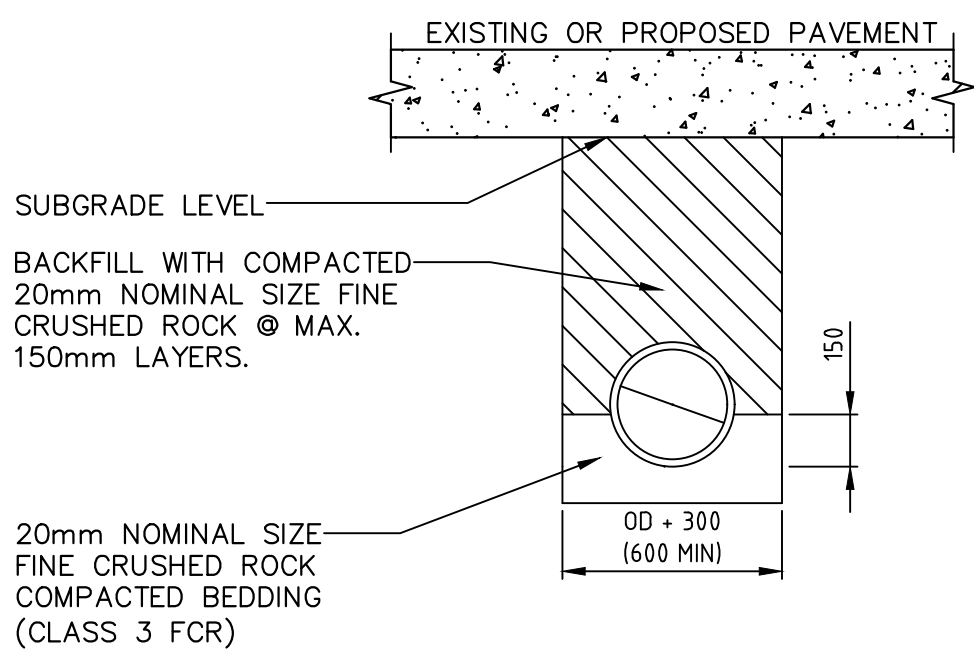
DETAIL  
ORIFICE PLATE



DETAIL  
POLY PIT CLASS A  
COVER  
(FOR LANDSCAPED AND  
BACKYARD AREAS ONLY)



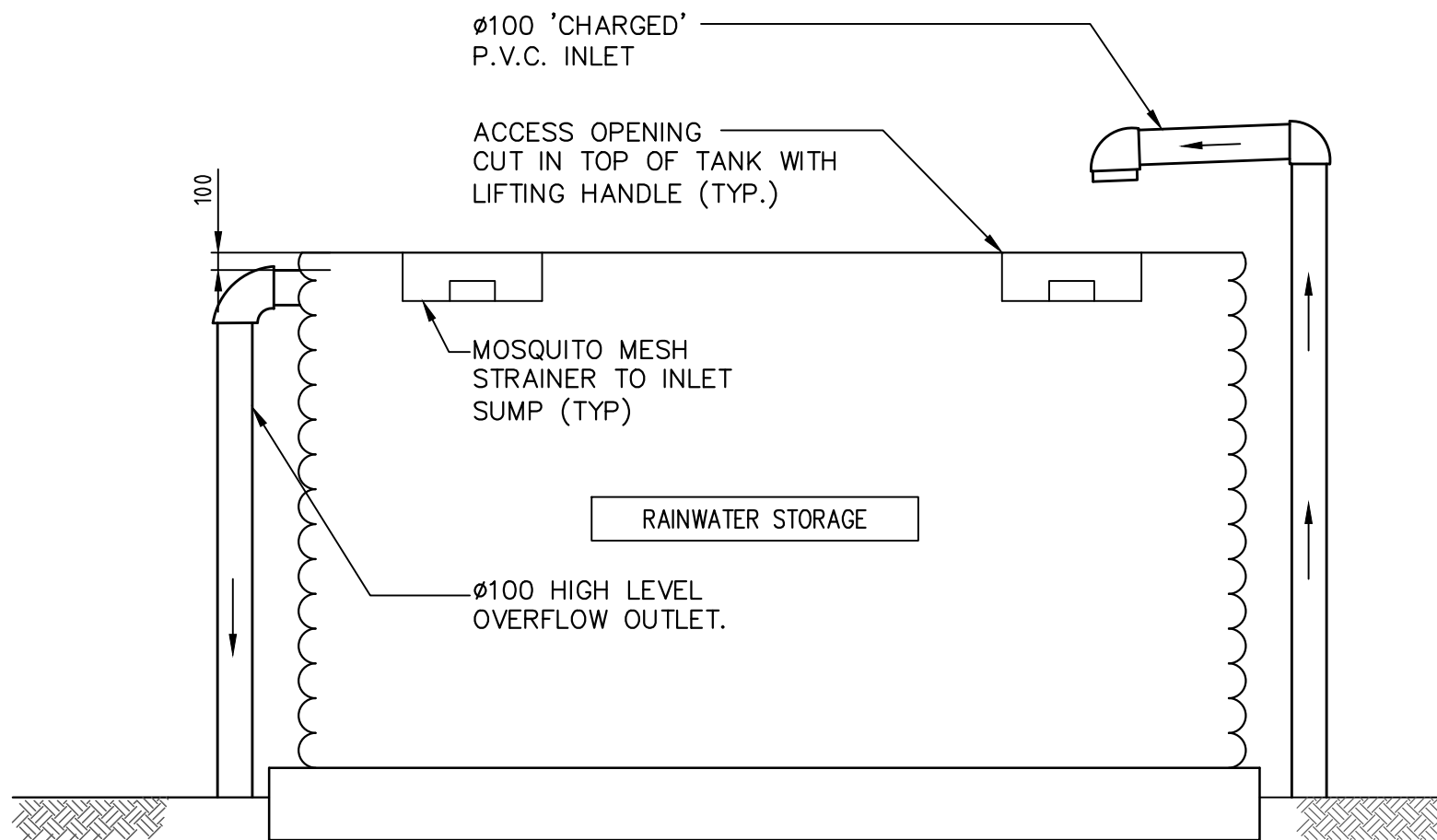
DETAIL  
TRENCH FOR  
PIPING  
NOT UNDER  
PAVEMENT



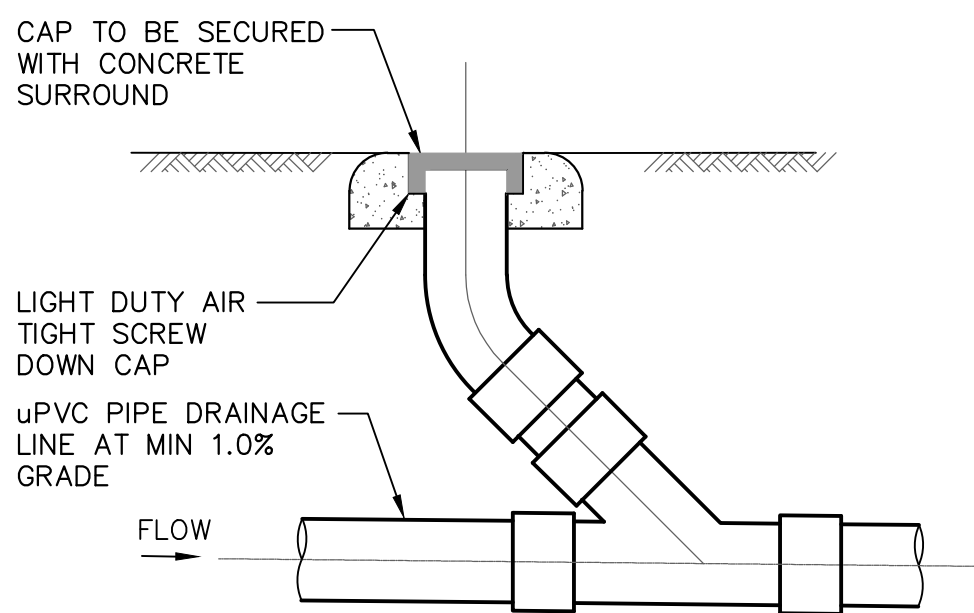
DETAIL  
TRENCH FOR  
PIPING UNDER  
PAVEMENT



DETAIL  
RAINWATER SIGN



DETAIL  
RAINWATER  
STORAGE TANK



DETAIL  
CLEANING EYE

B	FOR CONSTRUCTION	05.04.2025	G.K.
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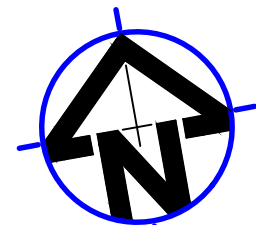


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CLIENT <b>D PROJECTS</b>		COUNCIL <b>NORTHERN BEACHES COUNCIL</b>		TITLE <b>DRAINAGE DETAILS</b>			
PROJECT <b>11 RAVEN CIRCUIT WARRIEWOOD NSW</b>				DRAWING FOR APPROVAL			
		DATE <b>05.04.2025</b>	DESIGNED: <b>G.K</b>	ENGINEER: <b>G.K.</b>	CHECKED: <b>G.K.</b>		
		SCALE <b>1:200-A3</b>	PROJECT NO. <b>GCE.25115</b>	DRAWING NO. <b>SWDP04</b>	REVISION NO. <b>B</b>		