

ON-SITE DETENTION CALCULATION SUMMARY					
CATCHMENT DETAIL					
Catchment Name	Upper Ku Ring Gai				
Catchment Discharge Rate	0.0139	l/sec/m2	A		
Catchment Storage Rate	0.0308	m3/m2	B		
SITE DETAILS					
Site Area	4575	m2			
60% of site area	2745	m2	C		
Area(s) not draining to the detention system	450	m2			
Total impervious area ( roofs, driveways, paving, etc.)	2642	m2	D		
Impervious area bypassing detention system	36	m2	E		
Permitted Site Discharge					
C ( 2745 m2) x A ( 0.0139 l/sec/m2)	38.2	l/sec	FLOW 1		
Adjustment for any uncontrolled impervious flow E/D	0	(+0.25) F			
Flow 1 ( l/sec x F )	0.865	l/sec	FLOW 2		
Flow 1 ( l/sec) - FLOW 2 (l/sec)	62.7	l/sec	PSD		
Site Storage Requirement					
C ( m2) x B ( m3/m2)	84.5	m3	SSR1		
If the storage is in a landscaped basin, SSR1 x 1.2	N/A	m3	SSR2		
Outlet Control					
25% rainfallwater tank offset -	5	m3			
Height difference between top water surface level and the centre of the orifice	1.3	m	G		
Orifice Diameter 21.8 x PSD/G	161.6	mm	OD		
SITE STORAGE REQUIRED					
LESS 10% RE-USE AND RETENTION	141.0	m3			
PSD = Permitted Site Discharge	128.9	m3			
SSR1 = Site Storage Requirement (except for landscaped basins)					
SSR2 = Site Storage Requirement (landscaped basins) (Note: Use only SSR1 or SSR2)					
OD = Orifice Diameter					
RUNOFF REDUCTION					
8% Runoff Reduction From Development					

STORMWATER DRAINAGE NOTES:

- ALL DRAINAGE LINES SHALL BE uPVC (CLASS SH) STORMWATER DRAINAGE PIPE, U.N.O.
- ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN. U.N.O.
- FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL, TYPICAL
- MINIMUM EFFECTIVE EAVES GUTTER SIZE = 120 x 65
- MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500 U.N.O.
- THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:
- Ø90 OR 100 x 75 RECTANGULAR DOWN PIPE, U.N.O.
- Ø90 INSPECTION POINT
- RAINWATER SPREADER
- FIRST FLUSH RAINWATER DEVICE TO BUILDERS DETAIL
- X 100.00 = PROPOSED FINISHED SURFACE LEVEL
- Ø100 (S) = DENOTES SUSPENDED PIPE
- Ø100 (C) = DENOTES CHARGED PIPE
- GR = 150 WIDE x MIN 100 DEEP GRATED DRAIN MIN 1% FALL TO OUTLET
- 300SQ SURFACE INLET PIT SURFACE LEVEL & INVERT LEVEL AS SHOWN ON PLAN
- 450SQ MAINTENANCE PIT REFER TO DETAILS SURFACE LEVEL & INVERT LEVEL AS SHOWN ON PLAN
- OD = Orifice Diameter
- ARROWS INDICATE DIRECTION OF FALL TO DRAINAGE INLET
- DENOTES APPROXIMATE LOCATION OF EXISTING PIPE LAYOUT
- DENOTES EXISTING OVERLAND FLOWPATHS
- DENOTES DRAINS MODEL NODE POINTS
- DENOTES SUBSOIL DRAINAGE
- DENOTES 200 WIDE x 100 DEEP GRATED DRAIN
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NOTE: - ALL 450 SQ SIL R/A TO BE FILTERED WITH ENVIROPOPT OR EQUIVALENT

MUSIC MODEL TREATMENT TRAIN RESULTS

	SOURCES	RESIDUAL	REDUCTION
FLOW (ML/yr)	4.00	3.08	23.8 %
TOTAL SUSPENDED SOLIDS (kg/yr)	62.7E3	121	80.8 %
TOTAL PHOSPHOROUS (kg/yr)	1.19	0.451	62.0 %
TOTAL NITROGEN (kg/yr)	11.3	5.80	48.90 %
TOTAL GROSS POLLUTANTS (kg/yr)	98.2	0.00	100%

ISSUED FOR D.A. APPROVAL  
NOT FOR CONSTRUCTION

NOTE: DO NOT SCALE OFF DRAWINGS. REFER TO ARCHITECTURAL PLANS. VERIFY DIMENSIONS ON SITE

REV	DATE	DESCRIPTION	BY
C	28.07.15	ISSUED FOR COUNCIL COMMENTS	BW
B	16.06.15	ISSUED FOR DA APPROVAL	LB
A	17.10.14	ISSUED FOR DA APPROVAL	CK
P1	08.10.14	ISSUED FOR INFORMATION	LB

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PROPOSED RESIDENTIAL DEVELOPMENT  
124 - 128 KILLEATON STREET ST IVES NSW 2075  
FOR AUSPROSPECT PTY. LTD.

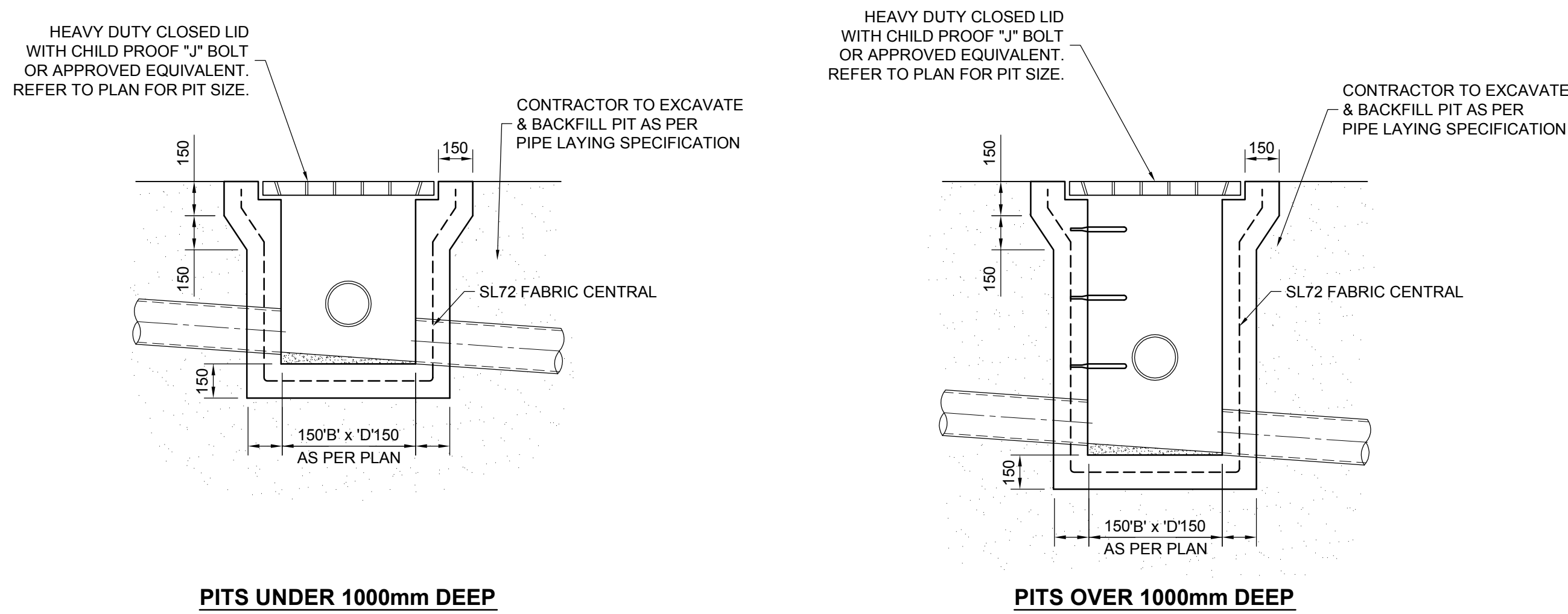
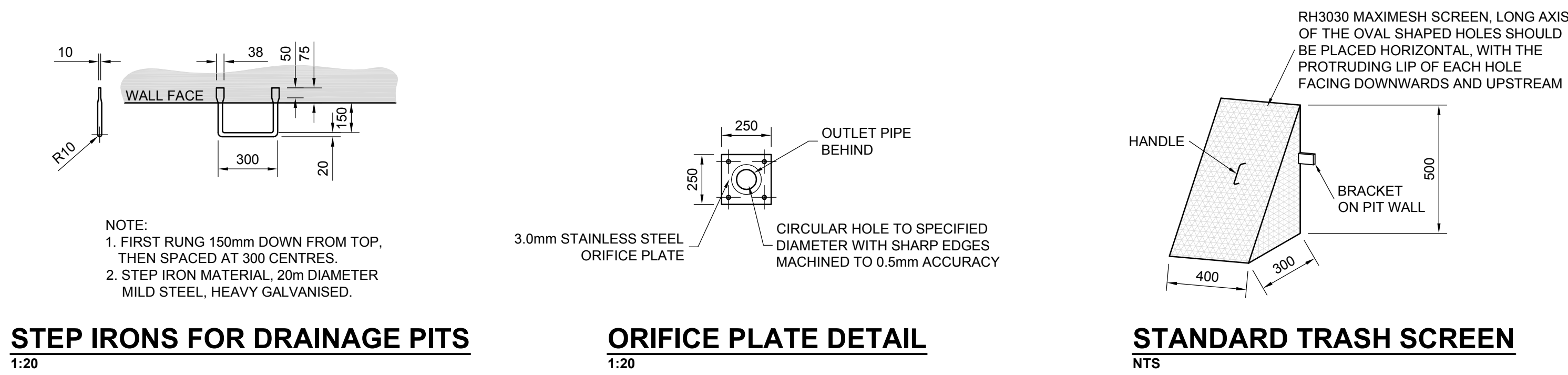
GROUND STORMWATER DRAINAGE PLAN

JOB NUMBER: 14160	DWG NUMBER: C04.01	ORIGINAL SIZE: A0
DESIGNED BY: L.G.	DATE: SEP 2014	
DRAWN BY: L.B.	SCALE: 1:100	

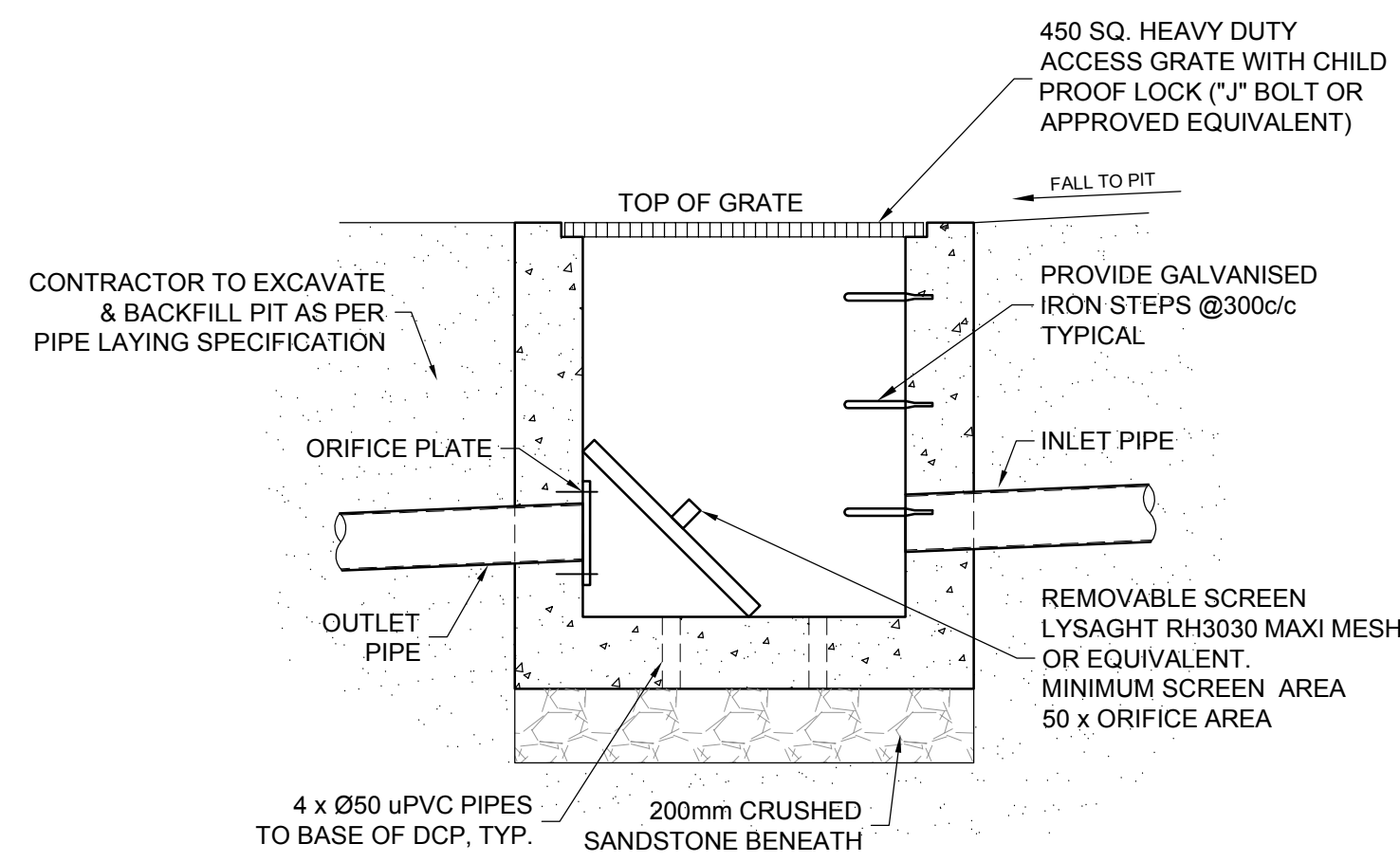


CORPUS CHRISTI CATHOLIC





**TYPICAL SURFACE INLET PIT DETAILS**  
1:20



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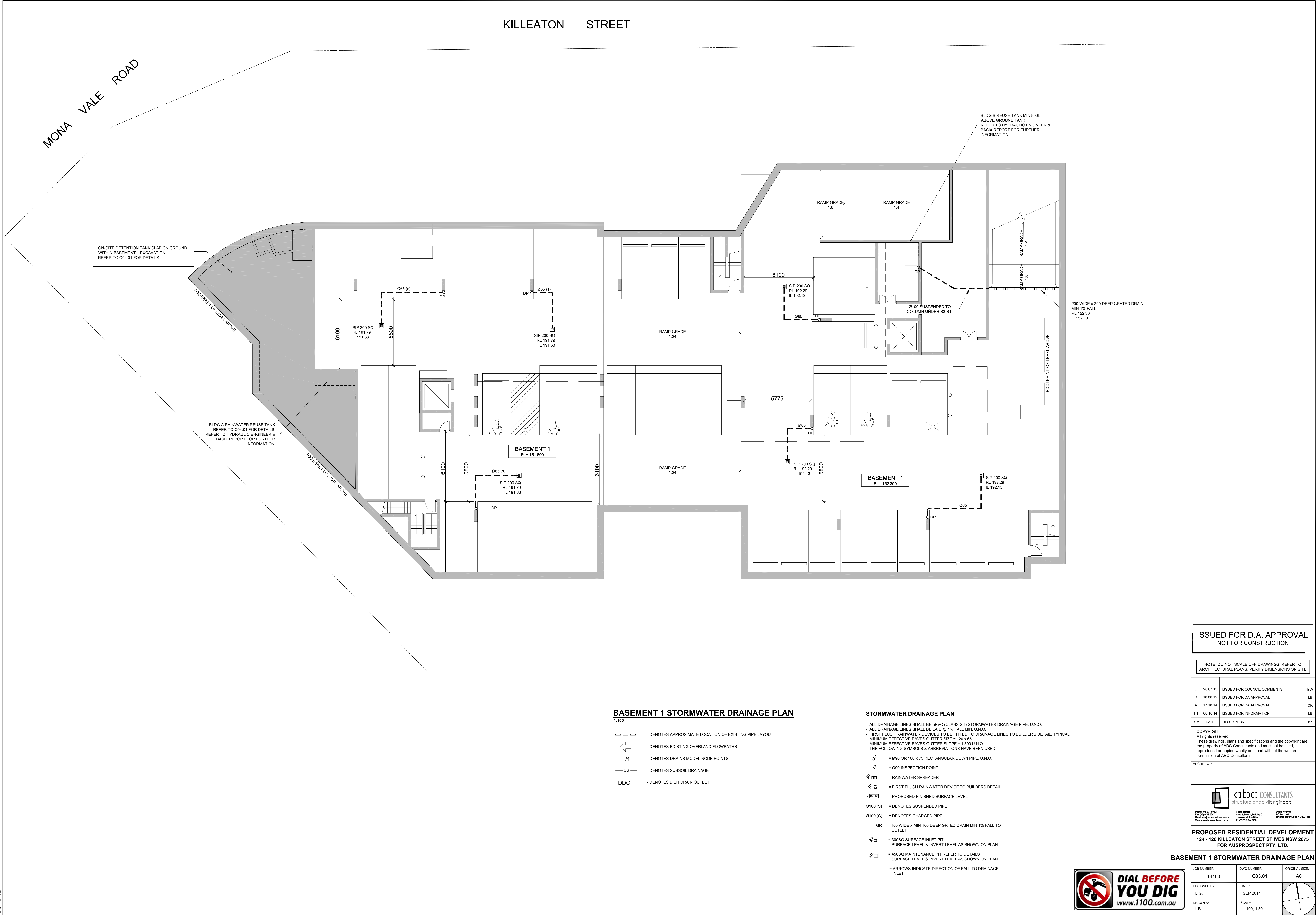
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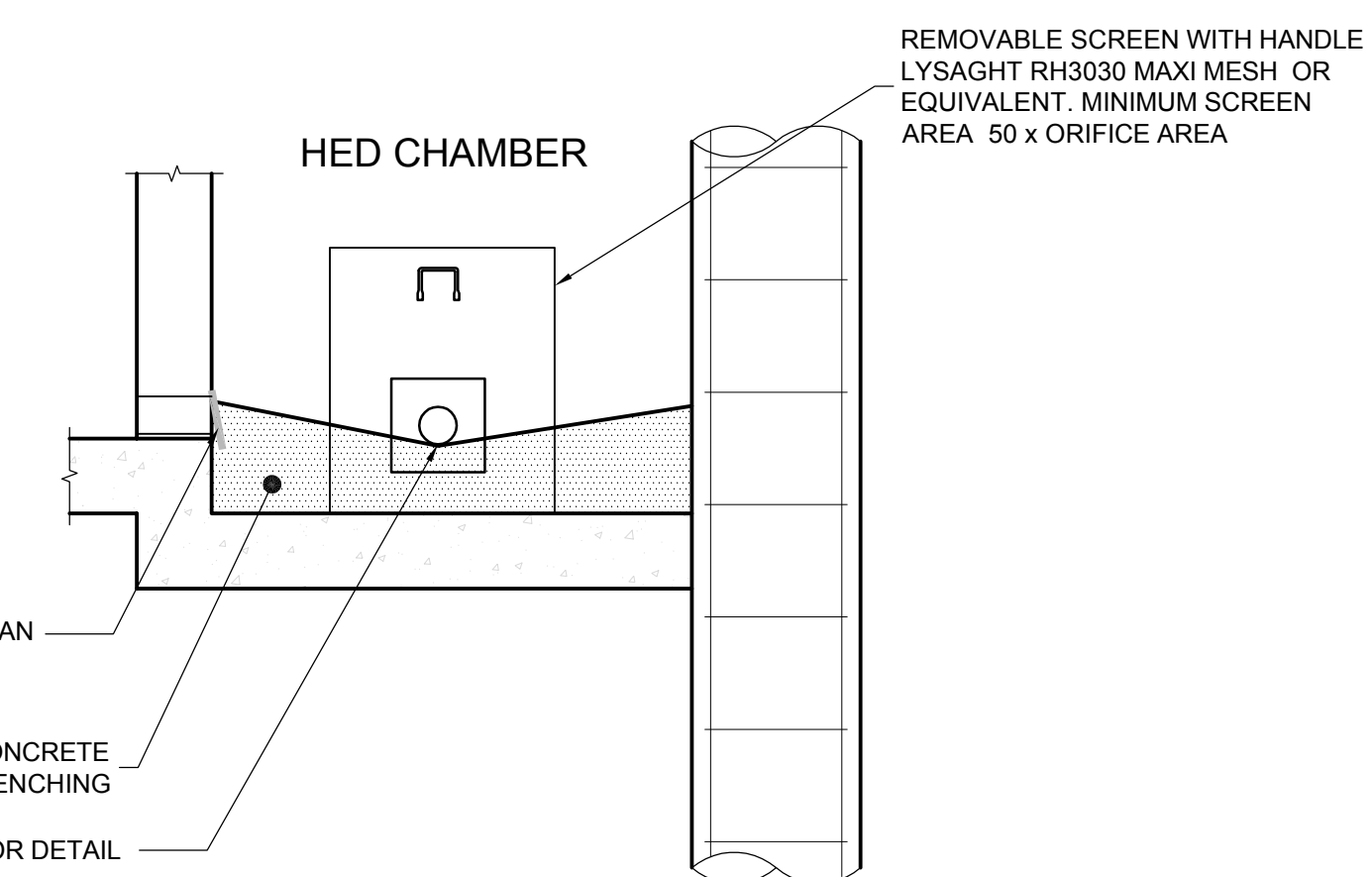
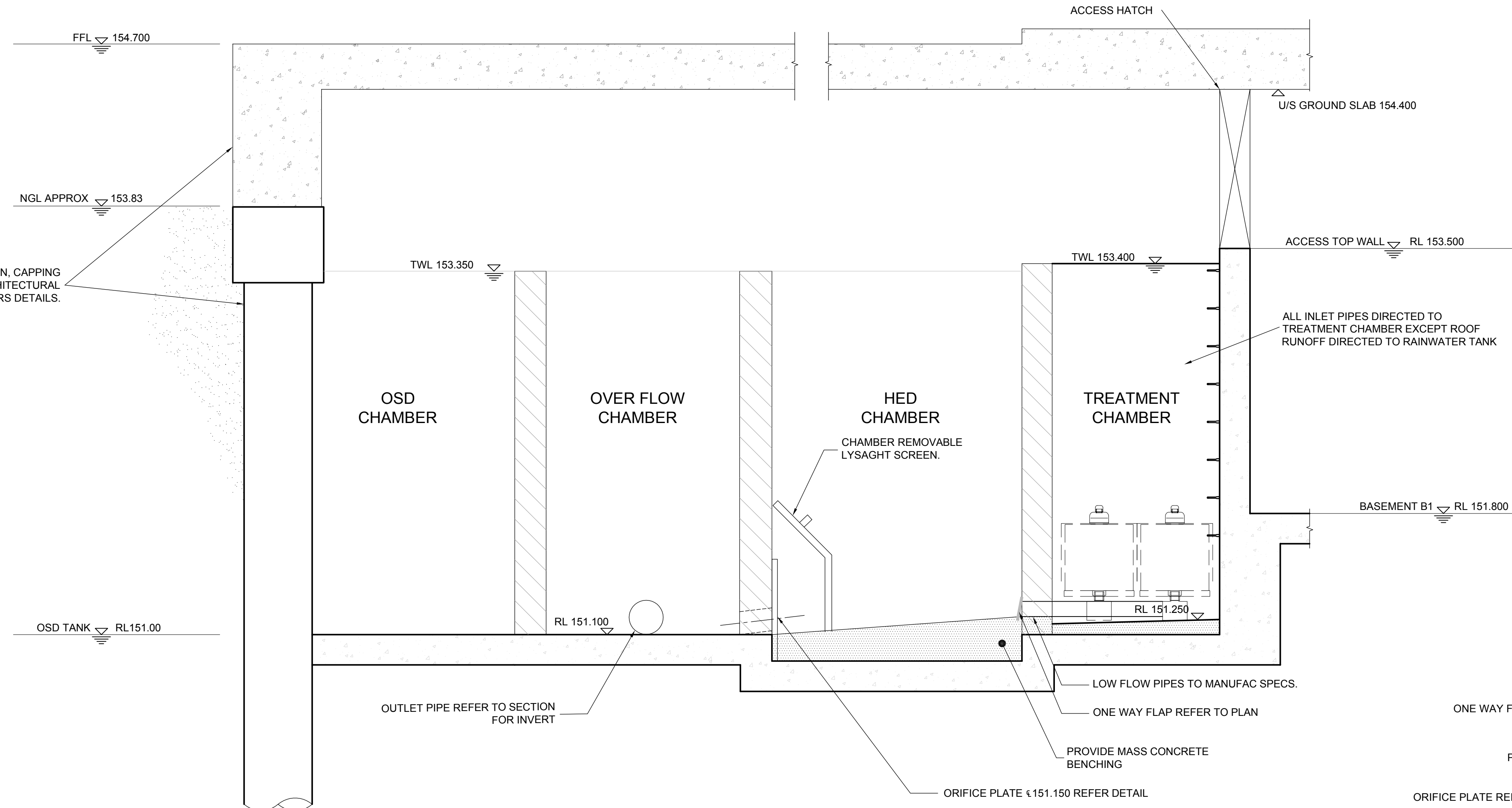
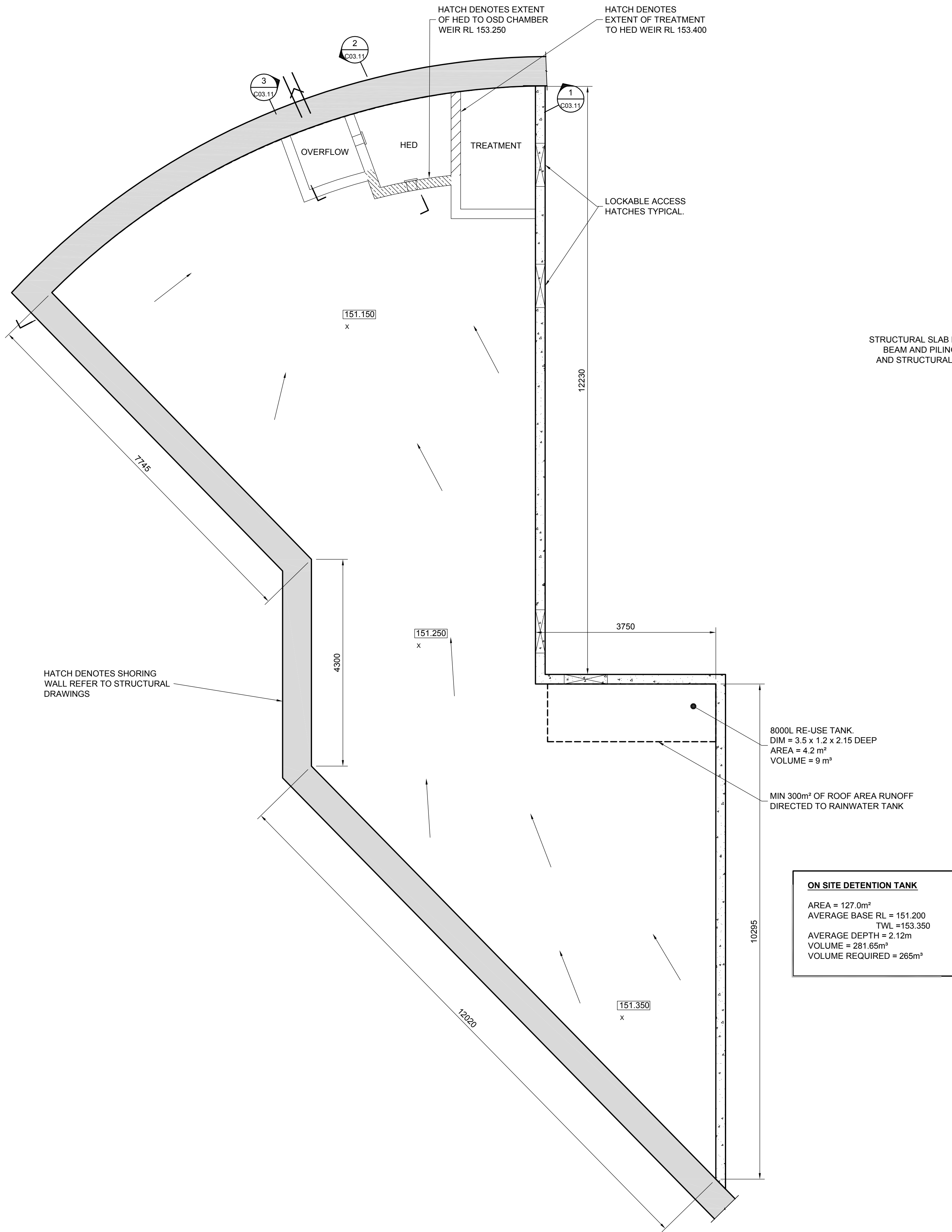
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Shop 110/111/112/113/114/115/116/117/118/119/120/121/122/123/124/125/126/127/128/129/130/131/132/133/134/135/136/137/138/139/140/141/142/143/144/145/146/147/148/149/150/151/152/153/154/155/156/157/158/159/160/161/162/163/164/165/166/167/168/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/185/186/187/188/189/190/191/192/193/194/195/196/197/198/199/200/201/202/203/204/205/206/207/208/209/210/211/212/213/214/215/216/217/218/219/220/221/222/223/224/225/226/227/228/229/230/231/232/233/234/235/236/237/238/239/240/241/242/243/244/245/246/247/248/249/250/251/252/253/254/255/256/257/258/259/260/261/262/263/264/265/266/267/268/269/270/271/272/273/274/275/276/277/278/279/280/281/282/283/284/285/286/287/288/289/290/291/292/293/294/295/296/297/298/299/300/301/302/303/304/305/306/307/308/309/310/311/312/313/314/315/316/317/318/319/320/321/322/323/324/325/326/327/328/329/330/331/332/333/334/335/336/337/338/339/340/341/342/343/344/345/346/347/348/349/350/351/352/353/354/355/356/357/358/359/360/361/362/363/364/365/366/367/368/369/370/371/372/373/374/375/376/377/378/379/380/381/382/383/384/385/386/387/388/389/390/391/392/393/394/395/396/397/398/399/400/401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000/1001/1002/1003/1004/1005/1006/1007/1008/1009/1010/1011/1012/1013/1014/1015/1016/1017/1018/1019/1020/1021/1022/1023/1024/1025/1026/1027/1028/1029/1030/1031/1032/1033/1034/1035/1036/1037/1038/1039/1040/1041/1042/1043/1044/1045/1046/1047/1048/1049/1050/1051/1052/1053/1054/1055/1056/1057/1058/1059/1060/1061/1062/1063/1064/1065/1066/1067/1068/1069/1070/1071/1072/1073/1074/1075/1076/1077/1078/1079/1080/1081/1082/1083/1084/1085/1086/1087/1088/1089/1090/1091/1092/1093/1094/1095/1096/1097/1098/1099/1100/1101/1102/1103/1104/1105/1106/1107/1108/1109/1110/1111/1112/1113/1114/1115/1116/1117/1118/1119/1120/1121/1122/1123/1124/1125/1126/1127/1128/1129/1130/1131/1132/1133/1134/1135/1136/1137/1138/1139/1140/1141/1142/1143/1144/1145/1146/1147/1148/1149/1150/1151/1152/1153/1154/1155/1156/1157/1158/1159/1160/1161/1162/1163/1164/1165/1166/1167/1168/1169/1170/1171/1172/1173/1174/1175/1176/1177/1178/1179/1180/1181/1182/1183/1184/1185/1186/1187/1188/1189/1190/1191/1192/1193/1194/1195/1196/1197/1198/1199/1200/1201/1202/1203/1204/1205/1206/1207/1208/1209/1210/1211/1212/1213/1214/1215/1216/1217/1218/1219/1220/1221/1222/1223/1224/1225/1226/1227/1228/1229/1230/1231/1232/1233/1234/1235/1236/1237/1238/1239/1240/1241/1242/1243/1244/1245/1246/1247/1248/1249/1250/1251/1252/1253/1254/1255/1256/1257/1258/1259/1260/1261/1262/1263/1264/1265/1266/1267/1268/1269/1270/1271/1272/1273/1274/1275/1276/1277/1278/1279/1280/1281/1282/1283/1284/1285/1286/1287/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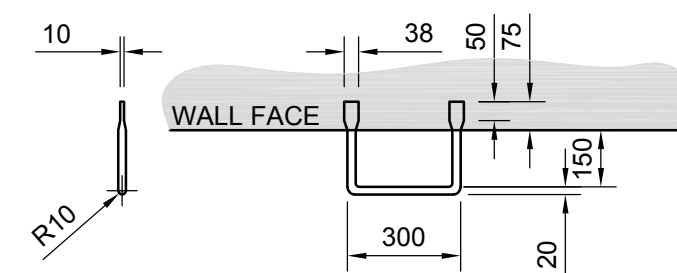




**ON SITE DETENTION TANK**  
AREA = 127.0m²  
AVERAGE BASE RL = 151.200  
AVERAGE DEPTH = 2.12m  
VOLUME = 261.65m³  
VOLUME REQUIRED = 265m³

#### OSD TANK BASE SLAB LAYOUT PLAN

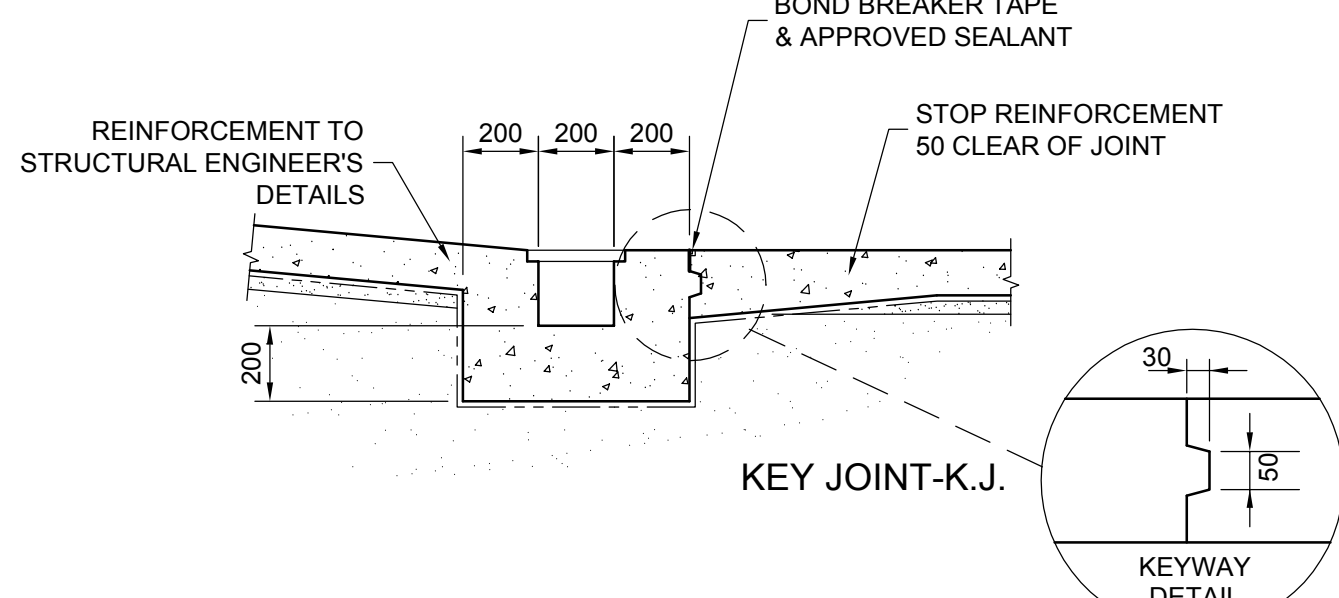
1:50



NOTE:  
1. FIRST RUNG 150mm DOWN FROM TOP, THEN SPACED AT 300 CENTRES.  
2. STEP IRON MATERIAL-20mm DIAMETER MILD STEEL, HEAVY GALVANISED.

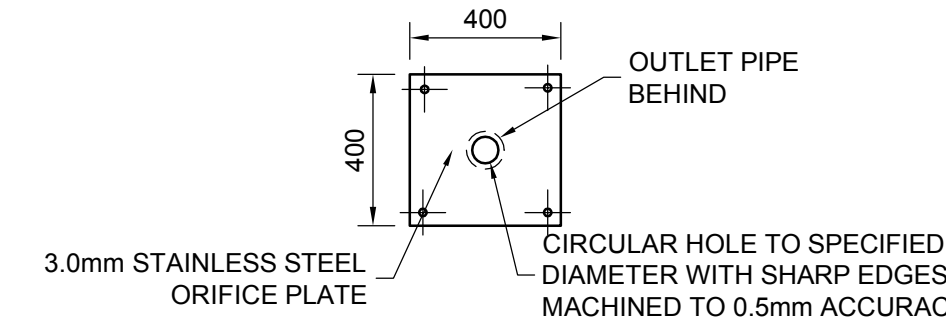
#### STEP IRONS FOR DRAINAGE PITS

1:20



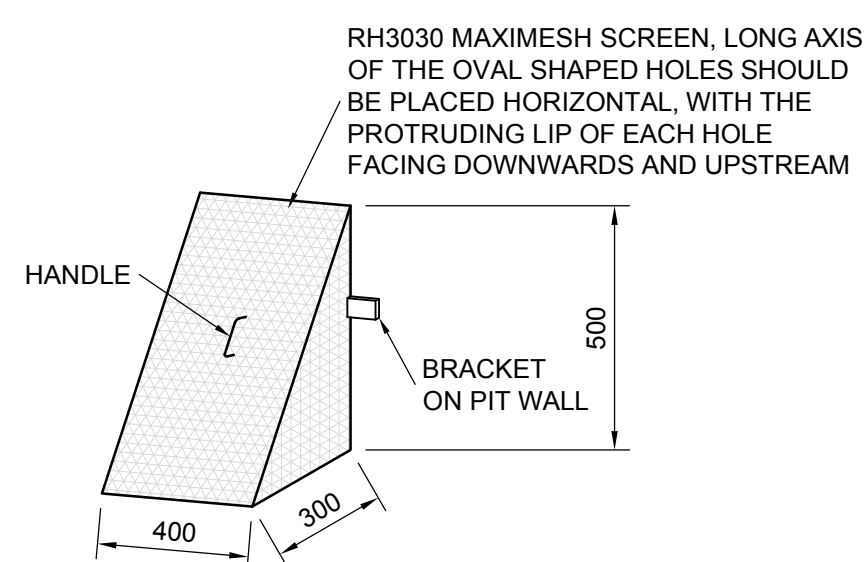
#### TYPICAL GRATED DRAIN DETAIL

1:20



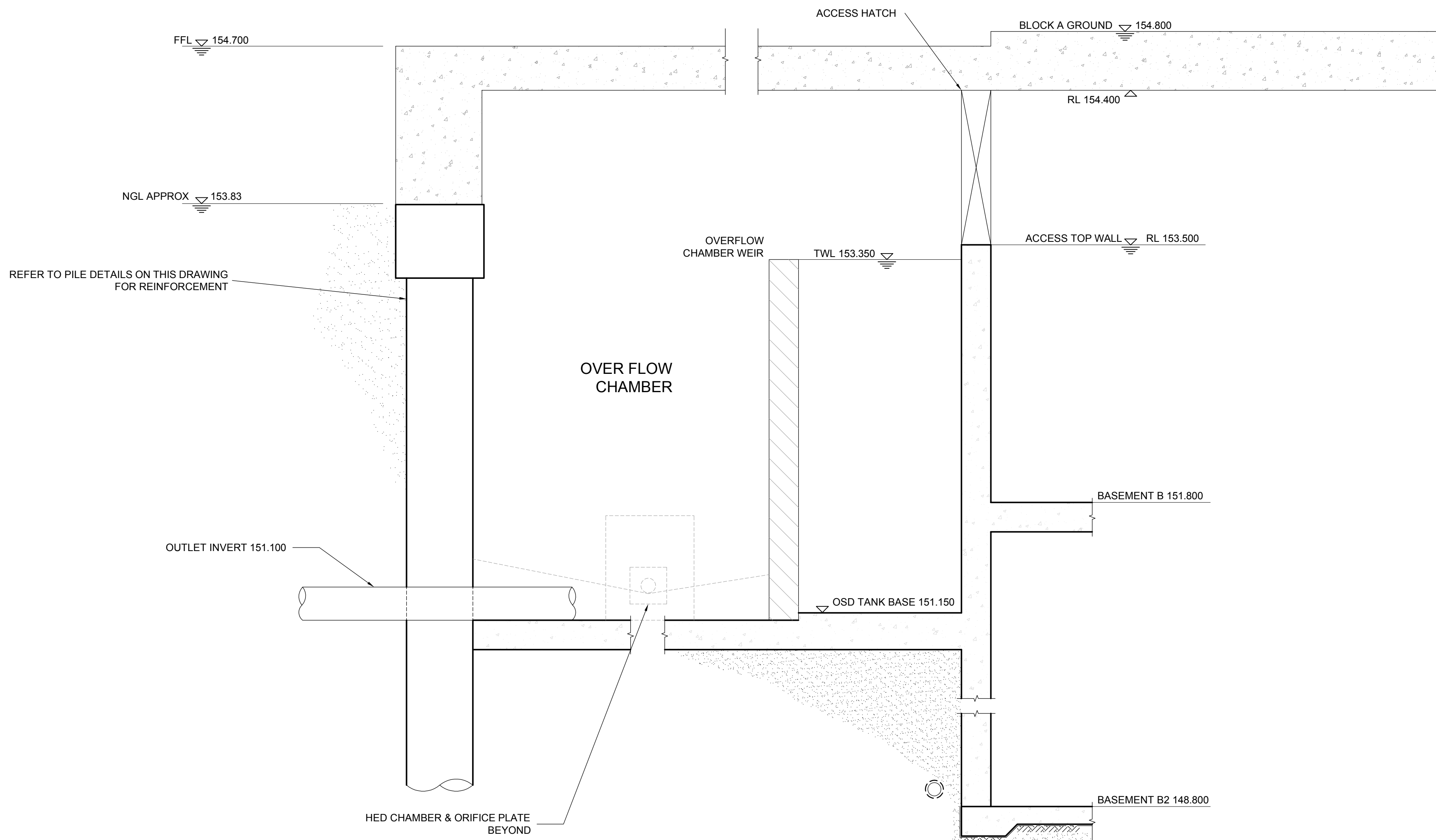
#### ORIFICE PLATE DETAIL

1:20



#### STANDARD TRASH SCREEN

NTS



#### SECTION 3

1:20

ISSUED FOR D.A. APPROVAL  
NOT FOR CONSTRUCTION

NOTE: DO NOT SCALE OFF DRAWINGS. VERIFY DIMENSIONS ON SITE

REV	DATE	DESCRIPTION	BY
B	28.07.15	ISSUED FOR COUNCIL COMMENTS	BW
A	16.06.15	ISSUED FOR DA APPROVAL	LB

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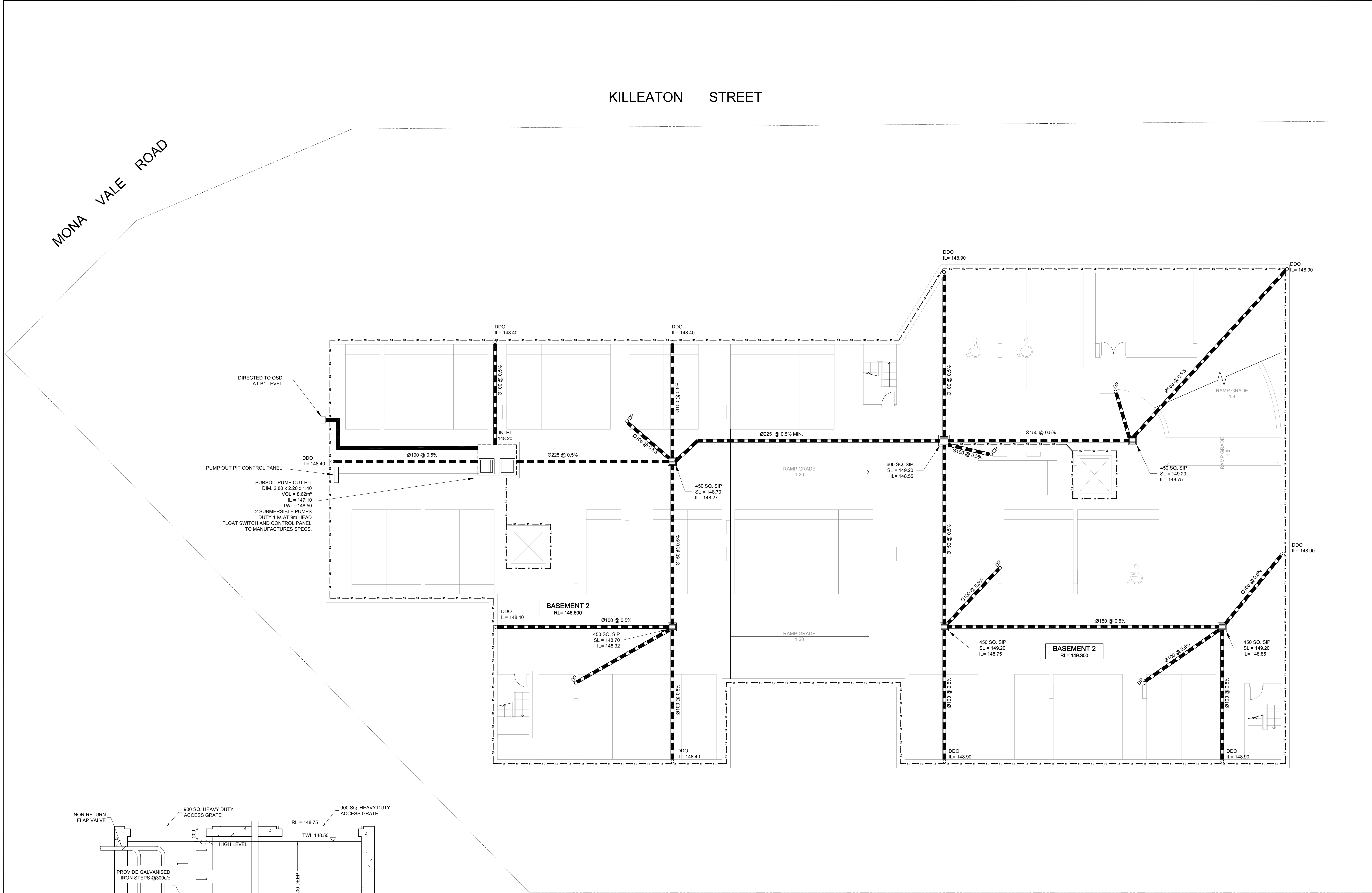
**PROPOSED RESIDENTIAL DEVELOPMENT**  
124 - 128 KILLEATON STREET ST IVES NSW 2075  
FOR AUSPROSPECT PTY. LTD.

#### TANK PLAN & SECTIONS

JOB NUMBER:	DWG NUMBER:	ORIGINAL SIZE:
14160	C03.11	A0
DESIGNED BY:	DATE:	
L.G.	SEP 2014	
DRAWN BY:	SCALE:	
L.B.	1:100, 1:50	







PUMP DESIGN SUMMARY

CATCHMENT AREA = 67 m<sup>2</sup>  
1:100 ARI 3 HOUR STORM = 67 mm/hr  
TOTAL STORAGE VOLUME REQUIRED = 8.40m<sup>3</sup>  
VOLUME PROVIDED = 8.62m<sup>3</sup>  
RAINFALL INTENSITY FOR CALCULATIONS = 5 YEAR ARI  
STORM DURATION 1 HOUR = 54.4 mm/hr  
PUMP RATE REQUIRED = (67 x 54.4) / (60 x 60) = 1.01 l/s  
HEAD REQUIRED = 9 m

PUMP OUT PIT NOTE:

AUDIBLE & FLASHING ALARM SHALL BE POSITIONED AT THE FIRST FLOOR LEVEL OF EACH COMMON STAIRWAY & A FLASHING LIGHT AT EACH COMMON ENTRANCE TO THE CARPARK AREA IN THE CASE OF PUMP FAILURE.

STANDARD PUMP OUT DESIGN NOTES

- THE PUMP OUT SYSTEM SHALL BE DESIGNED TO BE OPERATED IN THE FOLLOWING MANNER:
- > THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATIVELY SO AS TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.
  - > A LOW LEVEL 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.
  - > A SECOND FLOAT SHALL BE PROVIDED AT A HIGHER LEVEL, APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL, WHEREBY ONE OF THE PUMPS WILL OPERATE AND DRAIN THE TANK TO THE LEVEL OF THE LOW LEVEL FLOAT.
  - > A THIRD FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHOULD START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
  - > AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT 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.

ISSUED FOR D.A. APPROVAL  
NOT FOR CONSTRUCTION

NOTE: DO NOT SCALE OFF DRAWINGS. REFER TO ARCHITECTURAL PLANS. VERIFY DIMENSIONS ON SITE

REV	DATE	DESCRIPTION	BY
C	28.07.15	ISSUED FOR COUNCIL COMMENTS	BW
B	16.06.15	ISSUED FOR DA APPROVAL	LB
A	17.10.14	ISSUED FOR DA APPROVAL	LG
P1	08.10.14	ISSUED FOR INFORMATION	LB

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PROPOSED RESIDENTIAL DEVELOPMENT  
124 - 128 KILLEATON STREET ST IVES NSW 2075  
FOR AUSPROSPECT PTY. LTD.

BASEMENT 2 STORMWATER DRAINAGE PLAN

JOB NUMBER:	DWG NUMBER:	ORIGINAL SIZE:
14160	C02.01	A0
DESIGNED BY:	DATE:	
L.G.	SEP 2014	
DRAWN BY:	SCALE:	
LB	1:100 1:20	



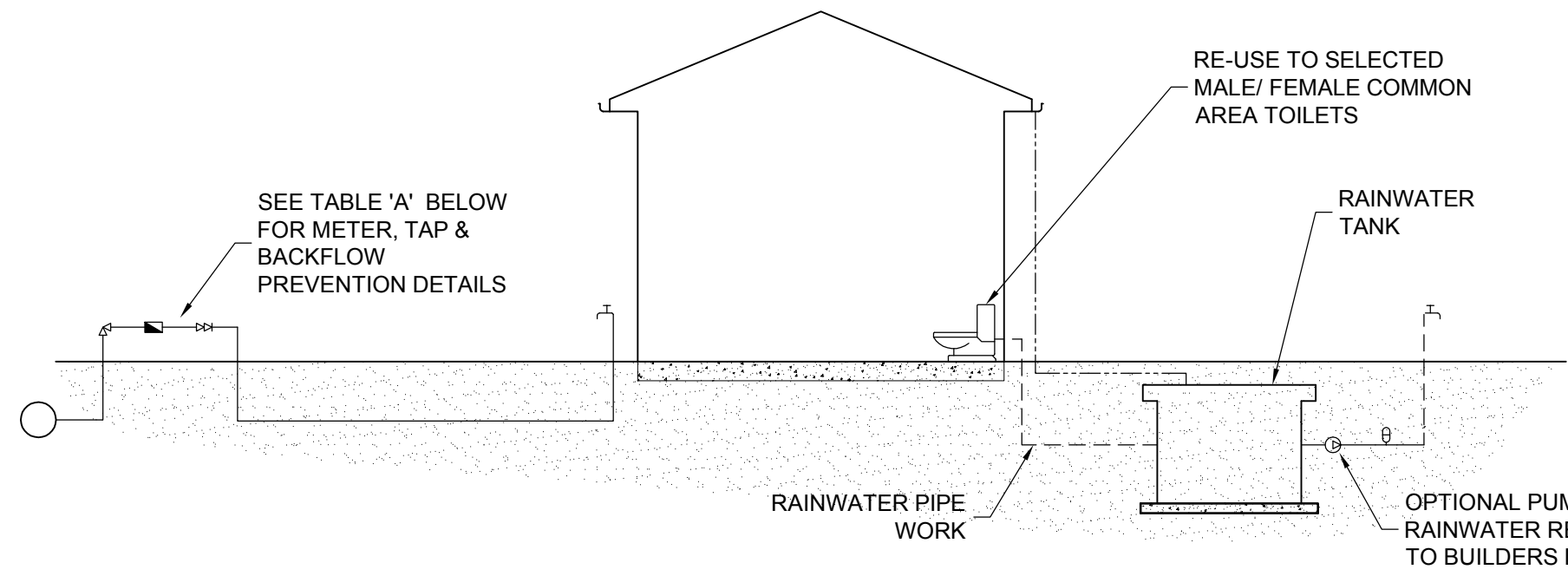


TABLE A			
RAINWATER TANK LOCATION	METER SIZE (mm)	TYPE OF TAP	TYPE OF BACKFLOW PREVENTION
ABOVE GROUND	20	BALL VALVE	DUAL CHECK VALVE (COMBINED WITH METER)
	25	BALL VALVE	DUAL CHECK VALVE
	≥ 32	BALL VALVE	DUAL CHECK VALVE
BELOW GROUND	20	BALL VALVE	TESTABLE DOUBLE CHECK VALVE
	25	BALL VALVE	TESTABLE DOUBLE CHECK VALVE
	≥ 32	BALL VALVE	TESTABLE DOUBLE CHECK VALVE

LEGEND	
	PRESSURE VESSEL
	METER
	BALL VALVE RIGHT ANGLE TYPE
	DUAL CHECK VALVE
	PUMP
	GARDEN TAP
	DRINKING WATER SUPPLY PIPES
	RAINWATER SUPPLY PIPES
	DOWN PIPES

- DIAGRAM NOTES:
- DRAWING TO BE READ IN CONJUNCTION WITH SYDNEY WATER PLUMBING REQUIREMENTS
  - FOR TANKS 10,000 LITRES OR LESS, COUNCIL DEVELOPMENT CONSENT IS NOT REQUIRED, IF THEIR CONDITIONS FOR INSTALLATION ARE FOLLOWED.
  - FOR TANKS GREATER THAN 10,000 LITRES COUNCIL DEVELOPMENT CONSENT IS GENERALLY REQUIRED.
  - FOR TANKS MORE THAN 10,000 LITRES APPROVAL IS REQUIRED FOR BUILDING OVER SEWERS.
  - SYDNEY WATER'S APPROVAL IS REQUIRED FOR ANY TOP UP FROM DRINKING WATER SUPPLY, REGARDLESS OF TANK SIZE. NO DIRECT CONNECTION IS ALLOWED BETWEEN THE DRINKING WATER SUPPLY AND THE RAINWATER TANK SUPPLY.
  - RAINWATER PIPEWORK IS SHOWN ON THE DIAGRAM AS SUPPLYING INTERNAL AND EXTERNAL RAINWATER USES. CUSTOMERS MAY WANT ONE OR THE OTHER.
  - ANY DESIGNED ACCESS LID INTO RAINWATER RE-USE TANK IS TO HAVE A LOCKABLE LID. IF THE LID IS DESIGNED TO BE ACCESSED BY A MAINTENANCE PERSON, IT MUST BE AT LEAST 600 mm x 900 mm IN SIZE.

**DUAL DRINKING WATER & RAINWATER SUPPLY DIAGRAM**  
N.T.S.

ISSUED FOR D.A. APPROVAL  
NOT FOR CONSTRUCTION

NOTE: DO NOT SCALE OFF DRAWINGS. REFER TO ARCHITECTURAL PLANS. VERIFY DIMENSIONS ON SITE

REV	DATE	DESCRIPTION	BY
C	28.07.15	ISSUED FOR COUNCIL COMMENTS	BW
B	16.06.15	ISSUED FOR DA APPROVAL	LB
A	17.10.14	ISSUED FOR DA APPROVAL	LG
P1	08.10.14	ISSUED FOR INFORMATION	LB

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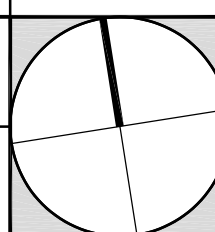
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**PROPOSED RESIDENTIAL DEVELOPMENT**  
**124 - 128 KILLEATON STREET ST IVES NSW 2075**  
**FOR AUSPROSPECT PTY. LTD.**

BASEMENT DRAINAGE DETAILS		
JOB NUMBER: 14160	DWG NUMBER: C02.11	ORIGINAL SIZE: A0
DESIGNED BY: L.G.	DATE: SEP 2014	
DRAWN BY: L.B.	SCALE: 1:200 U.N.O.	





MONA VALE ROAD

KILLEATON STREET

CONSTRUCT TEMPORARY HAY BALE  
SEDIMENT TRAP, TYP

CONSTRUCT FOOTPATH TO COUNCIL SPECIFICATION

CONSTRUCT STABILISED TEMPORARY ENTRY/EXIT REFER TO  
DETAILS.

DEMOLISH KERB CONSTRUCT DRIVEWAY & LAYBACK TO  
COUNCIL SPECIFICATION

WINTER GARDEN

WINTER GARDEN

COMMUNAL  
OUTDOOR  
SPACE  
409m<sup>2</sup>

SEDIMENT & EROSION FENCE

CHAIN WIRE FENCE



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REV	DATE	DESCRIPTION	BY
A	28.07.15	ISSUED FOR COUNCIL COMMENTS	SW

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
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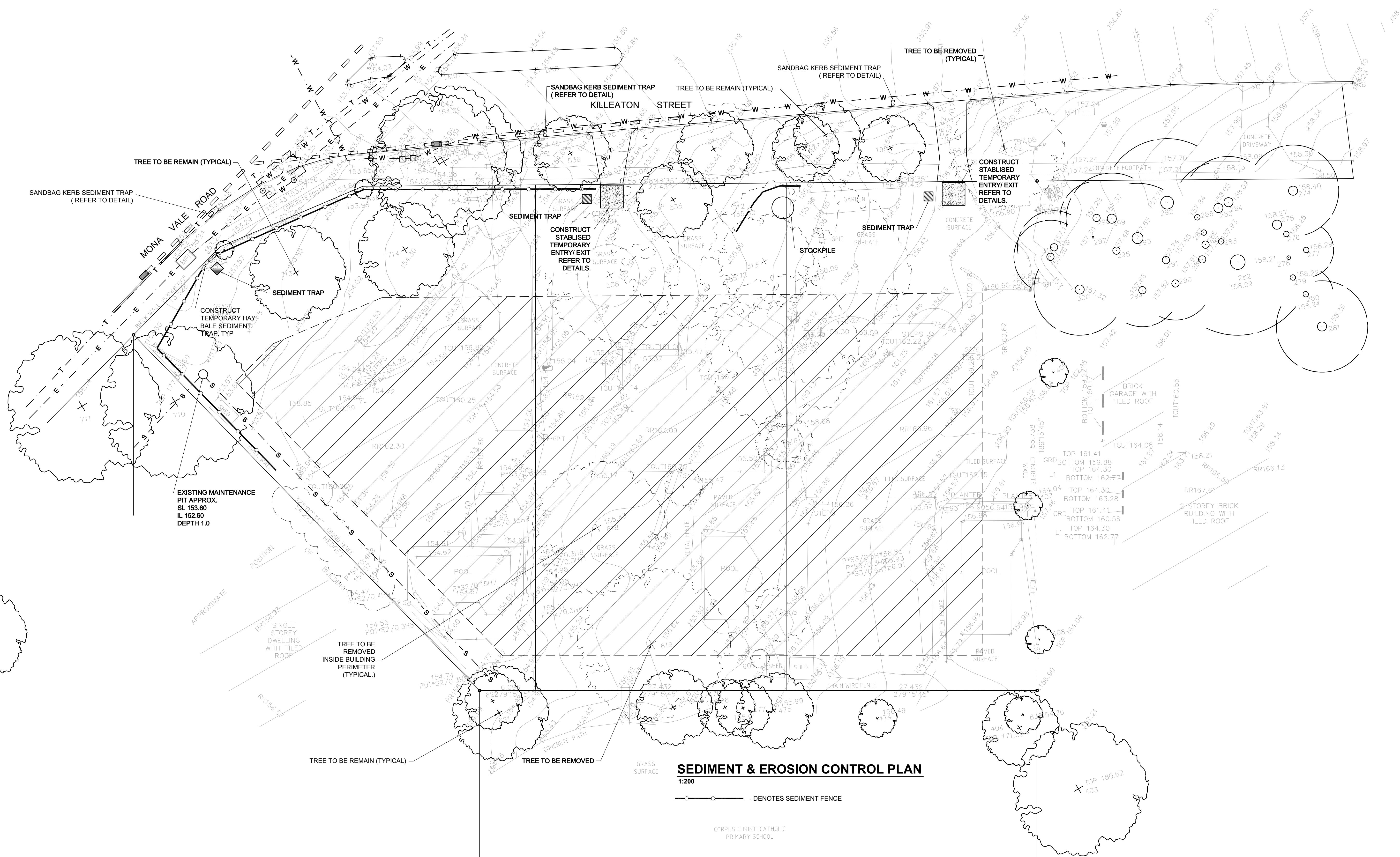
Postal Address  
PO Box 255  
NORTH STRATHFIELD NSW 2157

**PROPOSED RESIDENTIAL DEVELOPMENT**  
**124 - 128 KILLEATON STREET ST IVES NSW 2075**  
**FOR AUSPROSPECT PTY. LTD.**

**SEDIMENT & EROSION CONTROL PLAN**

JOB NUMBER: 14160	DWG NUMBER: C01.--	ORIGINAL SIZE: A0
DESIGNED BY: L.G.	DATE: SEP 2014	
DRAWN BY: L.B.	SCALE: 1:200 U.N.O.	





### SEDIMENT & EROSION CONTROL PLAN

1:200

CORPUS CHRISTI CATHOLIC  
PRIMARY SCHOOL

#### GENERAL NOTES

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS ARE IN MILLIMETRES & ALL LEVELS ARE IN METRES, UNO (UNLESS NOTED OTHERWISE).

NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DURING EXCAVATION WORK THE STRUCTURE SHALL BE MAINTAINED IN A STABLE AND NO PART SHALL BE OVERSTRESSED.

ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE SPECIFICATION.

EXISTING SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM SUPPLIED DATA AND SUCH THEIR ACCURACY CAN NOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK.

ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACK FILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCIL.

ALL TRENCH BACK FILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS UNLESS DIRECTED OTHERWISE.

#### STORMWATER DRAINAGE

THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3 - 1990 'STORMWATER DRAINAGE' & AS/NZS 3500.3.2-1998 'STORMWATER DRAINAGE - ACCEPTABLE SOLUTIONS'.

ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.

ANY VARIATIONS TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL.

DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE uPVC OR 100 X 100 COLORBOND OR ZINCALUME STEEL, UNO.

BOX COLORBOND OR ZINCALUME STEEL. GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.

EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL.

SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

#### SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT AND EROSION CONTROL SHALL BE EFFECTIVELY MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL THE SITE HAS BEEN STABILISED OR LANDSCAPED TO THE SUPERINTENDENT'S SATISFACTION

A SINGLE ALL WEATHER ACCESS WAY WILL BE PROVIDED AT THE FRONT OF THE PROPERTY CONSISTING OF 50-75 AGGREGATE OR SIMILAR MATERIAL AT A MINIMUM THICKNESS OF 150 LAID OVER NEEDLE-PUNCHED GEOTEXTILE FABRIC AND CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.

#### SOIL CONSERVATION NOTE:

PRIOR TO COMMENCEMENT OF CONSTRUCTION PROVIDE 'SEDIMENT FENCE', 'SEDIMENT TRAP' AND WASHOUT AREA TO ENSURE THE CAPTURE OF WATER BORNE MATERIAL GENERATED FROM THE SITE.

MAINTAIN THE ABOVE DURING THE COURSE OF CONSTRUCTION, AND CLEAR THE 'SEDIMENT TRAP' AFTER EACH STORM.

#### COMMENCEMENT OF WORKS

THE CONTRACTOR SHALL ENSURE THAT NO SPOIL OR FILL ENROACHES UPON ADJACENT AREAS FOR THE DURATION OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT KERB INLETS AND DRAINS RECEIVING STORMWATER SHALL BE PROTECTED AT ALL TIMES DURING DEVELOPMENT. KERB INLET SEDIMENT TRAPS SHALL BE INSTALLED ALONG THE IMMEDIATE VICINITY ALONG THE STREET FRONTAGE.

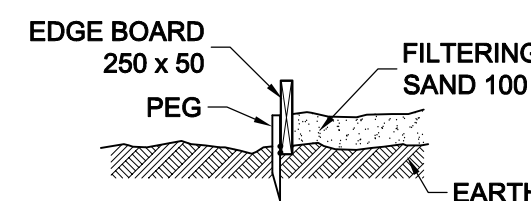
SEDIMENT FENCING SHALL BE SECURED BY POST (WHERE METAL STAR PICKETS ARE USED PLASTIC SAFETY CAPS SHALL BE USED) AT 2000 INTERVALS WITH GEOTEXTILE FABRIC EMBEDDED 200 IN SOIL.

ALL TOPSOIL STRIPPED FROM THE SITE AND STOCKPILED DOES NOT INTERFERE WITH DRAINAGE LINES AND STORMWATER INLETS AND WILL BE SUITABLY COVERED WITH AN IMPERVIOUS MEMBRANE MATERIAL AND SCREENED BY SEDIMENT FENCING.

#### SEDIMENT TRAP

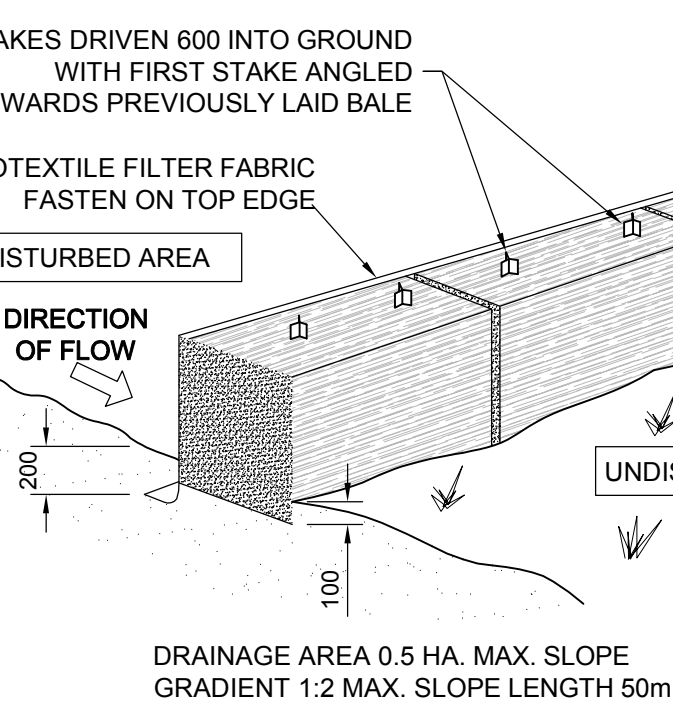
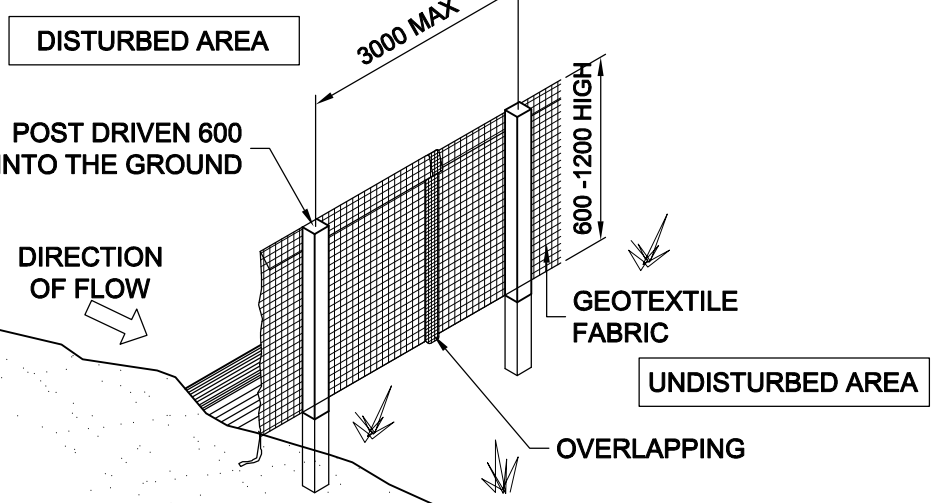
1000 x 1000 WIDE 600 DEEP PIT, LOCATED AT THE LOWEST POINT TO THE TRAP SEDIMENT.

WASHOUT AREA TO BE 1800 x 1800 ALLOCATED FOR THE WASHING OF TOOL & EQUIPMENT.



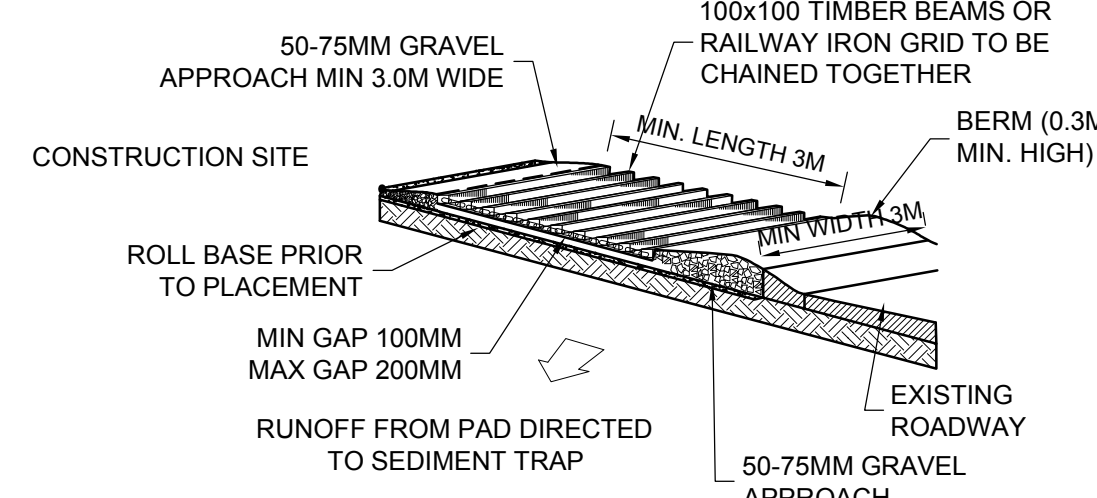
SEDIMENT FENCE PROVIDE 'SEDIMENT FENCE ON DOWN SLOPE BOUNDARY AS SHOWN ON PLAN.

FABRIC TO BE BURIED BELOW GROUND AT LOWER EDGE.



DRAINAGE AREA 0.5 HA. MAX. SLOPE GRADIENT 1:2 MAX. SLOPE LENGTH 50m.

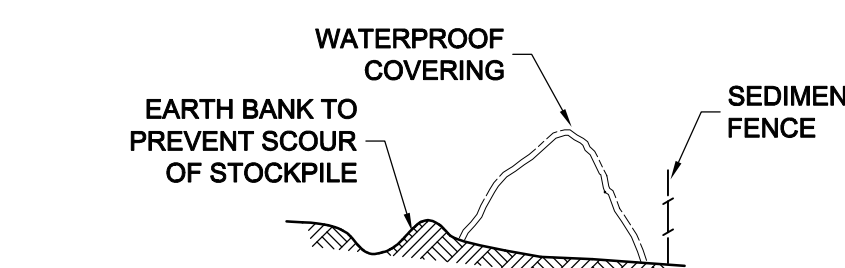
TEMPORARY CONSTRUCTION ENTRY/EXIT VEHICLE ACCESS TO THE BUILDING SITE SHOULD BE RESTRICTED TO A SINGLE POINT SO AS TO REDUCE THE AMOUNT OF SOIL DEPOSITED ON THE STREET PAVEMENT.



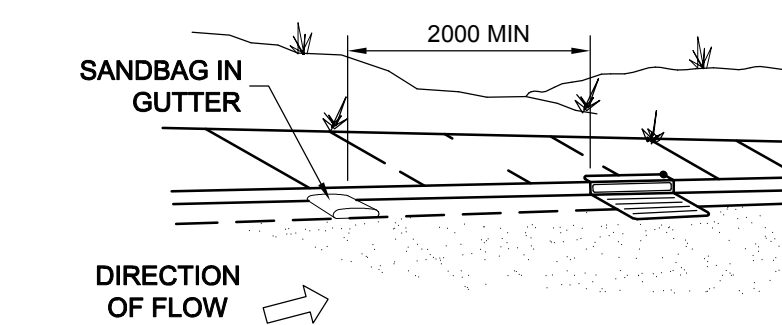
#### BUILDING MATERIAL STOCKPILE

ALL STOCKPILES OF BUILDING MATERIAL SUCH AS SAND AND SOIL MUST BE PROTECTED TO PREVENT SCOUR AND EROSION.

THEY SHOULD NEVER BE PLACED IN THE STREET GUTTER WHERE THEY WILL WASH AWAY WITH THE FIRST RAINSTORM.



SANDBAG KERB SEDIMENT TRAP IN CERTAIN CIRCUMSTANCES EXTRA SEDIMENT TRAPPING MAY BE NEEDED IN THE STREET GUTTER.



ISSUED FOR D.A. APPROVAL  
NOT FOR CONSTRUCTION

NOTE: DO NOT SCALE OFF DRAWINGS. REFER TO ARCHITECTURAL PLANS. VERIFY DIMENSIONS ON SITE

REV	DATE	DESCRIPTION	BY
B	16.06.15	ISSUED FOR DA APPROVAL	LB
A	17.10.14	ISSUED FOR DA APPROVAL	CK
P1	08.10.14	ISSUED FOR INFORMATION	LB

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PROPOSED RESIDENTIAL DEVELOPMENT  
124 - 128 KILLEATON STREET ST IVES NSW 2075  
FOR AUSPROSPECT PTY. LTD.

SEDIMENT & EROSION CONTROL PLAN

JOB NUMBER:	DWG NUMBER:	ORIGINAL SIZE:
14160	C01.01	A0
DESIGNED BY:	DATE:	
L.G.	SEP 2014	
DRAWN BY:	SCALE:	
L.B.	1:200 U.N.O.	





# PROPOSED RESIDENTIAL DEVELOPMENT

## 124-128 KILLEATON STREET ST IVES

### GENERAL

- G1** These drawings shall be read in conjunction with all architectural and other consultants drawings and specifications and with such other written instructions and sketches as may be issued during the course of the Contract. Any discrepancies shall be referred to the Superintendent before proceeding with any related works. Construction from these drawings, and their associated consultant's drawings is not to commence until approved by the Local Authority.
- G2** All materials and workmanship shall be in accordance with the relevant and current Standards Australia codes and with the By-Laws and Ordinances of the relevant building authorities except where varied by the project specification.
- G3** All set out dimensions shall be obtained from Architect's and Engineer's details. All discrepancies shall be referred to the Architect and Engineer for decision before proceeding with related work.
- G4** During construction the structure shall be maintained in a stable condition and no part shall be overstressed. Temporary bracing shall be provided by the builder/contractor to keep the works and excavations stable at all times.
- G5** Unless noted otherwise levels are in metres and dimensions are in millimetres.
- G6** The alignment and level of all services shown are approximate only. The contractor shall confirm the position and level of all services prior to commencement of construction. Any change to services shall be notified at the contractor's expense.
- G7** Any substitution of materials shall be approved by the Engineer and included in any tender.
- G8** All services, or conduits for servicing shall be installed prior to commencement of pavement construction.
- G9** Subsoil drainage, comprising 100 agriculture pipe in geo-stocking to be placed as shown and as may be directed by the superintendent. Subsoil drainage shall be constructed in accordance with the relevant local authority construction specification.
- G10** The structural components detailed on these drawings have been designed in accordance with the relevant Standards Australia codes and Local Government Ordinances for the following loadings. Refer to the Architectural drawings for proposed floor usage. Refer to drawings for live loads and superimposed dead loads.

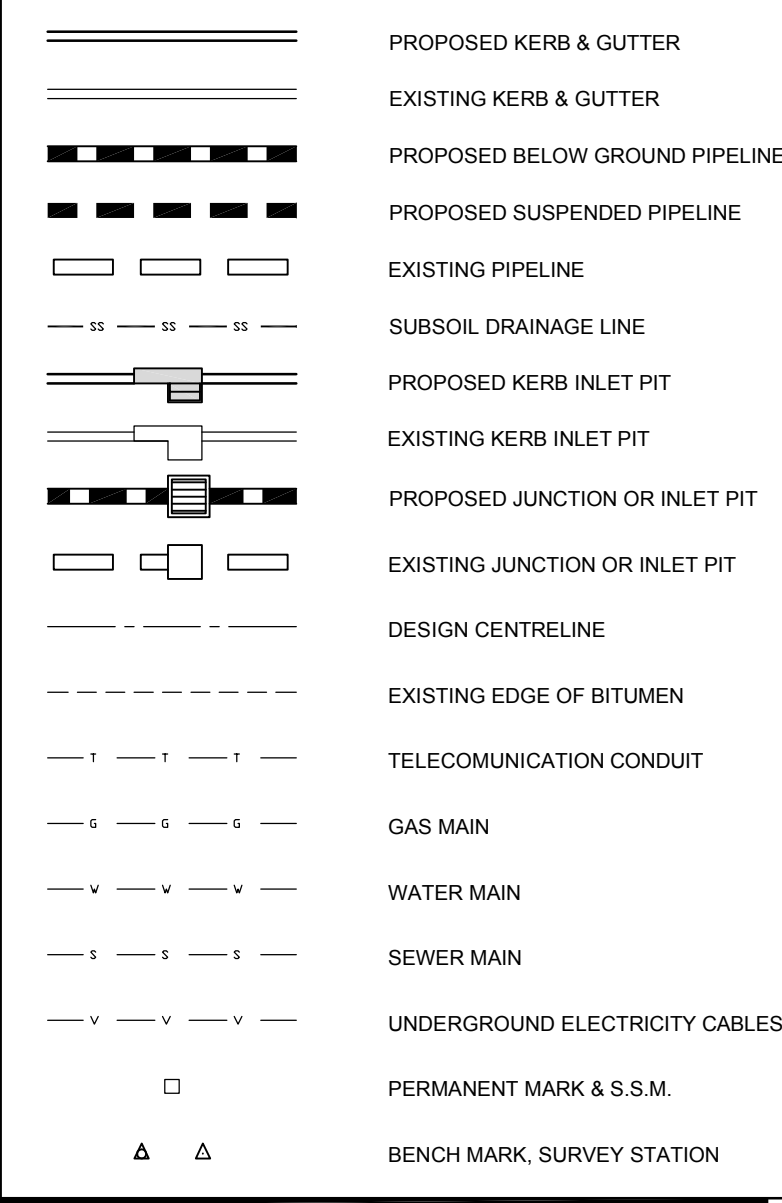
### DRAINAGE NOTES

- D1** All drainage levels to be confirmed on site, prior to any construction commencing.
- D2** All pipes within the property to be a minimum of 100 dia upvc @ 1% minimum grade, uno.
- D3** All pits within the property are to be fitted with "welded" or approved equivalent grates:  
- Light duty for landscaped areas  
- Heavy duty where subjected to vehicular traffic
- D4** All pits within the property to be constructed as one of the following:  
1) Precast stormwater pits  
2) Cast in situ mass concrete  
3) Concrete rendered 200mm brickwork subject to the relevant local authority construction specification.
- D5** Ensure all grates to pits are set below finished surface level within the property. Top of pit RL's are approximate only and may be varied subject to approval of the engineer. All invert levels are to be achieved.
- D6** Any pipes beneath relevant local authority road to be rubber ring jointed RCP, uno.
- D7** All pits in roadways are to be fitted with heavy duty grates with locking bolts and continuous hinge.
- D8** Provide step irons to stormwater pits greater than 1200 in depth.
- D9** Trench back fill in roadways shall comprise sharp, clean granular back fill in accordance with the relevant local authority specification to non-trafficable areas to be compacted by rodding and tamping using a flat plate vibrator.
- D10** Where a high early discharge (hed) pit is provided all pipes are to be connected to the hed pit, uno.
- D11** Down pipes shall be a minimum of dn100 sv grade upvc or 100 x100 colorbond/zincalume steel, uno.
- D12** Colorbond or zincalume steel box gutters shall be a minimum of 450 wide x 150 deep.
- D13** Eaves gutters shall be a minimum of 125 wide x 100 deep (or of equivalent area colorbond or zincalume steel, uno).
- D14** Subsoil drainage shall be provided to all retaining walls & embankments, with the lines feeding into the stormwater drainage system, uno.

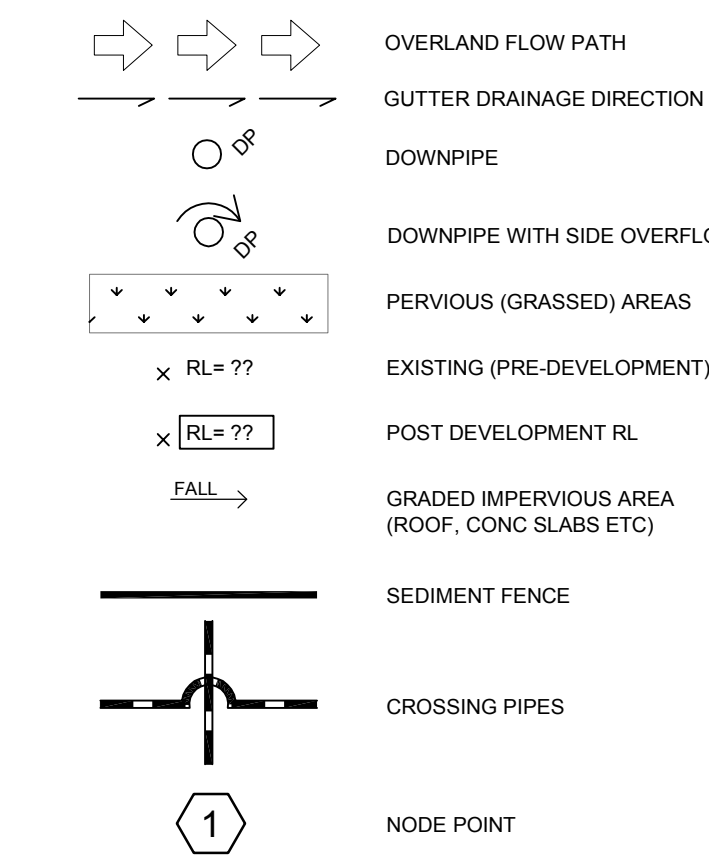
### EROSION AND SEDIMENT CONTROL NOTES

- E1** These notes are to be read in conjunction with erosion and sediment control details in this drawing set.
- E2** The contractor shall implement all soil erosion and sediment control measures as necessary and to the satisfaction of the relevant local authority prior to the commencement of and during construction. No disturbance to the site shall be permitted other than in the immediate area of the works and no material shall be removed from the site without the relevant local authority approval. All erosion and sediment control devices to be installed and maintained in accordance with standards outlined in our department of housing's "managing urban stormwater - soils and constructions".
- E3** Place straw bales length wise in a row as parallel as possible to the site contours, uno. Bale ends to be tightly butted. Bales are to be placed so that straw is parallel to the row. Bales are to be placed 1.0m to 2.0m down slope from the toe of the disturbed batter, uno.
- E4** Council approved filter fabric to be emmeshed 150mm deep upslope towards disturbed surface. Fabric to be a minimum SF2000 or better. Fit fabric to posts with wire ties as recommended with manufacturer's specifications. Fabric joints to have a minimum of 150mm overlap. Wire to be strung between posts with filter fabric overlap to prevent sagging.
- E5** Stabilised entry/exit points to remain intact until finished driveway is complete. Construction of entry/exit points to be maintained and repaired as required so that its function is not compromised. Construction of entry/exit point to be in accordance with the detail contained within this drawing set.
- E6** All drainage pipe works to be capped until:  
- downpipes connected  
- pits constructed and protected with silt barrier
- E7** Provide and maintain silt traps around all surface inlet pits until catchment is revegetated or paved.
- E8** The contractor shall regularly maintain all erosion and sediment control devices and remove accumulated silt from such devices such that more than 60% of their capacity is lost. All the silt is to be placed outside the limit of works. The period for maintaining these devices shall be at least until all disturbed areas are revegetated and further as may be directed by the superintendent or council.
- E9** The contractor shall implement dust control by regularly wetting down (but not saturating) disturbed area.
- E10** Topsoil shall be stripped and stockpiled outside hazard areas such as drainage lines. This topsoil shall be respread later on areas to be revegetated and stabilised only (i.e. all footpaths, batters, site retaining areas, basins and catchpans). Topsoil shall not be respread on any other areas unless specifically instructed by the superintendent. If they are to remain for longer than one month stockpiles shall be protected from erosion by covering them with a mesh and hedges and, if necessary, by locking banks or drains downstream of a stockpile to retard silt laden runoff.
- E11** Lay 300 wide minimum turf strip on 100 topsoil behind all kerbs and gutter with 1000 long returns every 6000 and around structures immediately after backfilling as per the relevant local authority specification.
- E12** The contractor shall grass seed all disturbed areas with an approved mix as soon as practicable after completion of earthworks and grading.
- E13** Revegetate all benches immediately upon completion of backfilling.
- E14** When any devices are to be handed over to council they shall be in clean and stable condition.

### STANDARD LINE TYPES AND SYMBOLS



### STANDARD LINE TYPES AND SYMBOLS



### LEGEND

AHD	Australian height datum	SS	Stainless steel
AS	As pipe (Sub-soil drainage)	SJ	Box gutter sump
ARI	Average recurrence interval	TW	Top of wall
BS	Box Gutter	TYL	Top water level
BWL	Bottom water level	US	Underside of slab
CL	Cover level	VO	Vally gutter
CO	Clean out inspection opening	UNO	Unless noted otherwise
DCP	Discharge control pit		
DP	Down pipe		
DIP	Dropper pipe		
EBG	Existing box gutter		
EOP	Existing down pipe		
EEG	Existing eaves gutter		
EG	Eaves gutter		
FRC	Fibre reinforced concrete		
FW	Floor waste		
GD	Grated drain		
GSIP	Grated surface inlet pit		
HSD	High early discharge		
HP	High point of gutter		
IL	Invert level		
IO	Inspection opening		
OF	Overflow		
OSD	On-site detention		
PSD	Permeable site discharge		
P1	Pipe 1		
RCP	Reinforced concrete pipe		
RHS	Rectangular hollow section		
RL	Reduced level		
RRJ	Rubber ring joint		
RNT	Rainwater in-situ tank		
RAH	Rain water head		
RWO	Rain water outlet		
SLAP	Sealed 1st access pit		
SP	Sprinkler pipe		
SPR	Sprinkler		

### SCHEDULE OF DRAWINGS

C00.01	GENERAL NOTES
C01.01	SEDIMENT AND EROSION CONTROL PLAN
C02.01	BASEMENT 2 STORMWATER DRAINAGE PLAN
C02.11	BASEMENT DRAINAGE DETAIL SHEET 1
C03.01	BASEMENT 1 STORMWATER DRAINAGE PLAN
C04.01	GROUND LEVEL STORMWATER DRAINAGE PLAN
C04.11	GROUND LEVEL STORMWATER DETAILS

### RECOMMENDED MAINTENANCE SCHEDULE

DISCHARGE CONTROL PIT (DCP)	FREQUENCY	RESPONSIBILITY	PROCEDURE
Inspect flap valve and remove any blockages.	Six monthly	Owner	Remove grate. Ensure flap valve moves freely and remove any blockages or debris.
Inspect screen and clean.	Six monthly	Owner	Remove grate and screen if required and clean it.
Inspect & remove any blockage of orifice.	Six monthly	Owner	Remove grate & screen to inspect orifice. see plan for location of dcp.
Inspect drip pump & remove any sediment-sludge.	Six monthly	Owner	Remove grate and screen. Remove sediment/sludge build-up and check orifice and flap valve clear.
Inspect grate for damage or blockage.	Six monthly	Owner	Check both sides of grate for corrosion, (especially corners and welds) damage or blockage.
Inspect return pipe from storage and return any blockage.	Six monthly	Owner	Remove grate and screen, ventilate underground storage if present, open flap valve and remove any blockages in return line. Check for sludge/debris on upstream side of return line.
Inspect outlet pipe and remove any blockage.	Six monthly	Maintenance Contractor	Remove grate and screen, ventilate underground storage if present. Check orifice and remove any blockages in outlet pipe. Push outlet pipe to confirm it drains freely. Check for sludge/debris on upstream side of return line.
Check fixing of step irons is secure.	Six monthly	Maintenance Contractor	Remove grate and ensure fixings secure prior to placing weight on step iron.
Inspect overflow weir & remove any blockage.	Six monthly	Maintenance Contractor	Remove grate and open cover to ventilate underground storage if present, ensure weir clear of blockages.
Empty basket at overflow weir (if present).	Six monthly	Maintenance Contractor	Remove grate and ventilate underground storage chamber if present. Empty basket, check fixings secure and not corroded.
Check attachment of orifice plate to wall of pit (gaps less than 5 mm).	Annually	Maintenance Contractor	Remove grate and screen, ensure plate mounted securely, tighten fixings if required, seal gaps as required.
Check attachment of screen to wall of pit.	Annually	Maintenance Contractor	Remove grate and screen, ensure screen fixings secure, repair as required.
Check screen for corrosion.	Annually	Maintenance Contractor	Remove grate and examine screen for rust or corrosion, especially at corners or welds.
Check attachment of flap valve to wall of.	Annually	Maintenance Contractor	Remove grate. Ensure fixings of valve are secure.
Check flap valve seals against wall of pit.	Annually	Maintenance Contractor	Remove grate, fill pit with water and check that flap seals against side of pit with minimal leakage.
Check any hinges of flap valve move freely.	Annually	Maintenance Contractor	Remove grate. Test valve hinge by moving flap to full extent.
Inspect drip walls (internal and external, if appropriate) for cracks or spalling.	Annually	Maintenance Contractor	Remove grate to inspect internal walls, repair as required. Clear vegetation from external walls if necessary and repair as required.
Check step irons for corrosion.	Annually	Maintenance Contractor	Remove grate. Examine step irons and repair any corrosion or damage.
Check orifice diameter correct and retains sharp edge.	Five yearly	Maintenance Contractor	Compare diameter to design (see work-as- executed) and ensure edge is not pitted or damaged.
STORAGE			
Inspect & remove any blockage of orifice.	Six monthly	Owner	Remove grate and screen, remove sediment/sludge build-up.
Check orifice diameter correct and retains sharp edge.	Six monthly	Owner	Remove blockages from grate and check if pit blocked.
Inspect screen and clean.	Six monthly	Owner	Remove debris and floatable material likely to be carried to grates.
Check attachment of orifice plate to wall of pit (gaps less than 5 mm).	Annually	Maintenance Contractor	Remove grate to inspect internal walls, repair as required, clear vegetation from external walls if necessary and repair as required.
Check attachment of screen to wall of pit.	Five yearly	Maintenance Contractor	Compare actual storage available with work-as executed plans. If volume loss is greater than 5%, arrange for reconstruction to replace the volume lost. Council to be notified of the proposal.
Check attachment of screen to wall of pit.	Five yearly	Maintenance Contractor	Check along drainage lines and at pits for subsidence likely to indicate leakages.

ISSUED FOR D.A. APPROVAL  
NOT FOR CONSTRUCTION

NOTE: DO NOT SCALE OFF DRAWINGS. REFER TO ARCHITECTURAL PLANS. VERIFY DIMENSIONS ON SITE

C	28.07.15	ISSUED FOR COUNCIL COMMENTS
B	16.06.15	ISSUED FOR DA APPROVAL
A	17.10.14	ISSUED FOR DA APPROVAL
P1	08.10.14	ISSUED FOR INFORMATION
REV	DATE	DESCRIPTION

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FOR AUSPROSPECT PTY. LTD.

### GENERAL NOTES

JOB NUMBER: 14160	DWG NUMBER: C00.01	ORIGINAL SIZE: A0
DESIGNED BY: L.G.	DATE: SEP 2014	
DRAWN BY: L.B.	SCALE: N.T.S.	

