STORMWATER DRAINAGE

PROPOSED TWO-STOREY DWELLING

73 FENWICK STREET, BANKSTOWN NSW 2200

DRAWING REGISTER	
DRAWING NO.	DRAWING TITLE
V241227 - SW000	COVER SHEET
V241227 - SW001	GENERAL NOTES
V241227 - SW100	LOWER GROUND FLOOR DRAINAGE PLAN
V241227 - SW101	GROUND FLOOR DRAINAGE PLAN
V241227 - SW200	DRAINAGE DETAILS - SHEET 1
V241227 - SW300	POST-DEVELOPMENT CATCHMENT PLAN

REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED
A	ISSUED FOR DA	07.09.2024	D.D.	M.N.	D.S.	D.S.

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ARCHITECT

STUDIO

CLIENT

SCALE

NOT TO SCALE

GRID

HEIGHT DATUM AHD

DRAWING TITLE

COVER SHEET

STATUS

FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

PROJECT

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BANKSTOWN NSW 2200

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SITEWORKS NOTES

1. ORIGIN OF LEVELS:- REFER SURVEY NOTES
2. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LOCAL GOVERNMENT AUTHORITIES ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS.
3. PRIOR TO THE COMMENCEMENT OF THE WORKS THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO VANGUARD.
4. PRIOR TO THE COMMENCEMENT OF THE WORKS, THE CONTRACTOR IS TO VERIFY THE ALIGNMENT AND LEVELS OF ALL EXISTING SERVICES AT ALL LOCATIONS WHERE THE PROPOSED SERVICES ARE TO CROSS, CONNECT TO OR ARE LOCATED IN CLOSE PROXIMITY TO THE EXISTING SERVICES. ANY DISCREPANCIES TO BE REPORTED TO VANGUARD.
5. CONTRACTOR MUST MAKE SMOOTH CONNECTION WITH ALL EXISTING WORKS.
6. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
7. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL, REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289.5.2.1 (OR A DENSITY INDEX OF NOT LESS THAN 75).
8. PROVIDE 10mm WIDE ISOLATION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVEMENTS.
9. ASPHALTIC CONCRETE SHALL CONFORM TO THE CURRENT TFNSW SPECIFICATION TS 03283.1 (R116) HEAVY DUTY DENSE GRADED ASPHALT.
10. ALL BASECOURSE AND SUB-BASE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH THE CURRENT TFNSW SPECIFICATION TS 03315.1 (3051) GRANULAR BASE AND SUBBASE MATERIALS FOR SURFACED ROAD PAVEMENTS COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289 5.2.1.
    FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m^2 OF SUB-BASE COURSE MATERIAL PLACED UNLESS OTHERWISED APPROVED BY VANGUARD.
11. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL (IN NOTE 10) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH THE CURRENT TFNSW SPECIFICATION TS 03315.1 (3051) GRANULAR BASE AND SUBBASE MATERIALS FOR SURFACED ROAD PAVEMENTS WILL BE CONSIDERED, SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF VANGUARD.
12. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THE CONTRACTOR IS TO SEEK ACCEPTANCE OF THE PRODUCT FROM VANGUARD. THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
13. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (EG. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.
14. ALL WORKS CARRIED OUT ADJACENT TO AND WITHIN SERVICE EASEMENTS ARE TO COMPLY WITH THE RELEVANT SERVICE AUTHORITIES GUIDELINES AND REQUIREMENTS.

EXISTING UNDERGROUND SERVICES NOTES

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE. AT & L CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.

CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.

CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

BEFORE YOU DIG
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BEFORE YOU DIG AUSTRALIA 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.

STORMWATER DRAINAGE NOTES

GENERAL NOTES

1. STORMWATER DESIGN CRITERIA:
   ANNUAL EXCEEDANCE PROBABILITY:
   MINOR STORM: 5% AEP
   MAJOR STORM: 1% AEP
2. PIPES LESS THAN 300 DIA SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS.
3. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN DN300.
4. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF THE CURRENT AS 3500 3.1 AND AS/NZS 3500 3.2.
5. ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE 6. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT.
6. ALL DRAINAGE LINES TO PROVIDE A 3.0M LENGTH OF DN100 SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, ON THE UPSTREAM SIDE OF EACH PIT. ALLOW FOR SECONDARY SUBSOIL FOR PIPES FOR PIPE GRATER THAN DN825.
7. SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK SHALL BE PROVIDED BENEATH ALL KERBLINES WHERE NO DRAINAGE LINES ARE SHOWN ON THE DRAWINGS AND SHALL DISCHARGE INTO DOWNSTREAM PITS.
8. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPES ARE TO BE USED.
9. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL FROM VANGUARD.
10. GRATES AND COVERS SHALL CONFORM TO THE CURRENT AS 3996. CLASS D COVER (MINIMUM) SHALL BE PROVIDED IN TRAFFICKED PAVEMENTS WITH CLASS B (MINIMUM) BEING PROVIDED IN NON-TRAFFICKED AREAS.
11. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, THE CONTRACTOR SHALL PROVIDE ADEQUATE SAFETY PROCEDURES TO PREVENT THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
12. ALL PITS AND PIPES TO BE FOUNDED ON SUITABLE MATERIAL WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPa UP TO 3.0m DEPTH TO INVERT AND 150KPa FROM 3.0m TO 6.0m DEPTH TO INVERT ONCE EXCAVATED. A CONCRETE BLINDING LAYER (MINIMUM 100mm THICK 25MPa OR DEEPER TO ENSURE MINIMUM SPECIFIED BEARING CAPACITY IS ACHIEVED) MAY BE PROVIDED. CONTRACTOR TO ENGAGE GEOTECHNICAL ENGINEER TO PROVIDE WRITTEN CONFIRMATION.
13. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.
14. ALL STORMWATER PITS ARE TO BE CAST IN-SITU IN ACCORDANCE WITH THE STORMWATER DETAILS AND SPECIFICATIONS.
15. ALL PITS MUST BE BENCHED AND STREAMLINED TO DIRECT WATER FROM THE INLET PIPE TO THE OUTLET PIPE.
16. PITS DEEPER THAN 600mm MUST BE FITTED WITH DOUBLE STEP-IRONS IN ACCORDANCE WITH THE CURRENT AS1657. PLASTIC ENCAPSULATED MAY BE USED. STEP-IRONS TO BE PROVIDED ON A SINGLE FACE WHERE POSSIBLE. SHOULD STEP-IRONS REQUIRE TO CHANGE FACE THEN 3 OVERLAPPING STEP IRONS ARE TO BE LOCATED ON EACH FACE.
17. FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN 1 TEST PER 2 LAYERS PER 40 LINEAR METERS.

RIGID & SEMI-RIGID PIPE NOTES

18. PIPES 300 DIA. AND LARGER TO BE STEEL REINFORCED CONCRETE CLASS '3' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O. ALL ROAD CROSSINGS TO BE CLASS '4' U.N.O. EQUIVALENT STRENGTH FIBRE REINFORCED CONCRETE PIPES MAY BE USED SUBJECT TO APPROVAL BY VANGUARD OR THE LOCAL GOVERNMENT AUTHORITY.
19. REINFORCED CONCRETE PIPES TO COMPLY WITH THE CURRENT AS/NZS 4058.
    FIBRE REINFORCED CONCRETE PIPES TO COMPLY WITH THE CURRENT AS 4139.
    PIPES TO BE INSTALLED WITH TYPE HS3 (ROAD) AND HS2 (LOTS) SUPPORT IN ACCORDANCE WITH THE CURRENT AS/NZS 3725. N ALL CASES BACKFILL EMBEDMENT ZONE WITH SELECT FILL (MINIMUM CBR 15%) TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289.5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75).

FLEXIBLE PIPE NOTES

20. FLEXIBLE PIPES TO COMPLY WITH THE CURRENT AS/NZS 2566.1.
    PIPES TO BE INSTALLED IN ACCORDANCE WITH THE CURRENT AS/NZS 2566.2. IN ALL CASES BACKFILL EMBEDMENT ZONE WITH GRAVEL OR SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE CURRENT AS 1289.5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)

PRECAST CONCRETE PIT NOTES

21. PRECAST PIT MAY BE USED WITH THE APPROVAL OF VANGUARD THE SUPERINTENDENT AND THE LOCAL GOVERNMENT AUTHORITY AND SHALL BE INSTALLED TO THE MANUFACTURERS RECOMENDATIONS.
22. ALL PRE-CAST PITS ARE TO BE STRUCTURALLY CERTIFIED TO MEET RELEVANT REQUIREMENTS OF THE CURRENT AS3600 AND AS3996 (2019).
23. PRE-CAST STORMWATER PITS ARE TO BE APPROVED FOR TFNSW CONSTRUCTION (R11) AND ARE TO ARE TO BE DESIGNED AND CUSTOM MADE WITH OPENINGS UP TO A MAXIMUM +50mm OD OF THE STORMWATER PIPES. PITS ARE ALSO TO INCLUDE PENETRATIONS FOR SUBSOIL CONNECTIONS AND DOUBLE STEP-IRONS INSTALLED FOR PITS >0.6m DEEP. DEMOLITION SAWS MAY BE USED PROVIDING A NEAT FULL DEPTH CUT IS APPLIED AND ANY ADDITIONAL PENETRATIONS REQUIRED ARE TO BE CORE DRILLED.
24. SHOP DRAWINGS ARE TO BE PROVIDED FOR REVIEW AND ACCEPTANCE. IT SHOULD BE NOTED THAT THE CONTRACTOR IS TO ENSURE THAT THE STRUCTURAL COMPONENTS OF THE PITS ARE NOT COMPROMISED AND ONLY THE PIPE KNOCKOUTS ARE TO BE REMOVED FOR THE PIPE PENETRATIONS.

STORMWATER DRAINAGE NOTES (CONTINUED)

1. ALL PRECAST PITS TO BE FOUNDED ON CONCRETE BLINDING LAYER (100mm ON AN EARTH FOUNDATION OR 150mm ON A ROCK FORMATION) WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPa UP TO 3.0m DEPTH TO INVERT AND 150KPa FROM 3.0m TO 6.0m DEPTH TO INVERT (MINIMUM 100mm THICK 25MPa OR DEEPER TO ENSURE MINIMUM SPECIFIED BEARING CAPACITY IS ACHIEVED). CONTRACTOR TO ENGAGE GEOTECHNICAL ENGINEER TO PROVIDE WRITTEN CONFIRMATION.
2. ALL PRE-CAST PIT PENETRATIONS SHALL BE CUT SO THAT IT IS FLUSH WITH THE INTERNAL WALL.
3. ALL PIPE JOINTING, SPARGING, RENDERING, FILLING OF GAPS TO BE FILLED WITH A HIGH STRENGTH NON-SHRINK GROUT WITH A MINIMUM 40MPa COMPRESSIVE STRENGTH AT 28 DAYS. (LANKO DURABED 702 OR SIMILAR).
4. SINGLE UNITS PREFERRED BUT IF REQUIRED MINIMUM RISER DEPTH 600mm PIT INSTALLATION AND JOINTING BETWEEN UNITS SHALL BE UNDERTAKEN IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
5. ANY DAMAGE TO THE STRUCTURAL INTEGRITY OF THE PRE-CAST PIT WILL BE REPAIRED AND STRUCTURALLY CERTIFIED AT THE CONTRACTORS EXPENCE TO THE SATISFACTION OF THE VANGUARD, SUPERINTENDENT / LOCAL GOVERNMENT AUTHORITY.

SURVEY NOTES

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. VANGUARD CONSULTING ENGINEERS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT VANGUARD CONSULTING ENGINEERS.

AS3500.3
MINIMUM INTERNAL DIMENSIONS FOR STORMWATER AND INLET PITS

DEPTH TO INVERT OF OUTLET		MINIMUM INTERNAL DIMENSIONS mm		
		RECTANGULAR		CIRCULAR
		WIDTH	LENGTH	DIAMETER
	≤ 600	450	450	600
> 600	≤ 900	600	600	900
> 900	≤ 1200	600	900	1000
> 1200		900	900	1000

AS3500.3
MINIMUM GRADIENT OF SITE STORMWATER DRAINS

NOMINAL SIZE	MINIMUM GRADIENT		NOMINAL SIZE	MINIMUM GRADIENT	
DN	AU	NZ	DN	AU	NZ
90	1:100	1:90	225	1:200	1:350
100	1:100	1:120	300	1:250	1:350
150	1:100	1:200	375	1:300	1:350

AS3500.3
TABLE 7.1: MINIMUM PIPE COVER
(FROM FINISHED SURFACE TO TOP OF PIPE)

LOCATION	CAST IRON, DUCTILE IRON, GALVANIZED STEEL	OTHER AUTHORIZED(*) PRODUCTS
	MINIMUM COVER (millimeters)	
1 NOT SUBJECT TO VEHICULAR LOADING		
(A) WITHOUT PAVEMENT -		
(i) FOR SINGLE DWELLINGS	NIL	100
(ii) FOR OTHER THAN ITEM (i)	NIL	300
(B) WITH PAVEMENT OF BRICK OR UNREINFORCED CONCRETE	NIL (†)	50 (†)
2 SUBJECT TO VEHICULAR LOADING		
(A) OTHER THAN ROADS -		
(i) WITHOUT PAVEMENT	300	450
(ii) WITH PAVEMENT OF -		
(A) REINFORCED CONCRETE FOR HEAVY VEHICULAR LOADING	NIL (†‡)	100 (†‡)
(B) BRICK OR UNREINFORCED CONCRETE FOR LIGHT VEHICULAR LOADING	NIL (†‡)	75 (†‡)
(B) ROADS -		
(i) SEALED	300	500 (†‡)
(ii) UNSEALED	300	500 (†‡)
3 SUBJECT TO CONSTRUCTION EQUIPMENT LOADING OR IN EMBANKMENT CONDITIONS	300	500 (†‡)

(*) INCLUDE OVERLAY ABOVE THE TOP OF THE PIPE OF NOT LESS THAN 50mm THICK.
(†) BELOW THE UNDERSIDE OF THE PAVEMENT.
(‡) SUBJECT TO COMPLIANCE WITH AS1762, AS2033, AS/NZS 2566.1, AS3725 OR AS4060.

LEGEND

DP ●	DOWNPIPE
SW >	STORMWATER LINE
RW >	ROOF WATER LINE
SSD	SUBSOIL DRAINAGE LINE
OF >	OVERFLOW LINE
SWRM SWRM	STORMWATER RISING MAIN
e	EXISTING STORMWATER LINE
SW SW	AUTHORITY STORMWATER LINE
HL HL	HIGH LEVEL 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
OH(E)	AUTHORITY OVERHEAD ELECTRICAL LINE
/ /	FENCE LINE
	GRATED SURFACE INLET PIT
	GRATED SURFACE INLET PIT WITH ENVIROPOD INSERT
	JUNCTION PIT
	KERB INLET PIT
	EXISTING GRATED SURFACE INLET PIT
	GRATED TRENCH DRAIN
	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
eBT	EXISTING BOUNDARY TRAP
eSMH	EXISTING SEWER MANHOLE
OFP	OVERLAND FLOW PATH
RWO	RAINWATER OUTLET
CO	CLEAR OUT POINT
DDO	DISH DRAIN OUTLET
PD	PLANTER DRAIN
	CAPPING
A.05	PIT TAG/NUMBER

LEGEND

FF	FIRST FLUSH
RH	RAINHEAD
	DOWNPIPE DROP
	NON RETURN VALVE
	WALL PENETRATION
DP	DOWNPIPE SPREADER
	WARNING LIGHT
80.00	SPOT LEVELS
	BENCHMARK

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
LS	LONGITUDINAL SECTION
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

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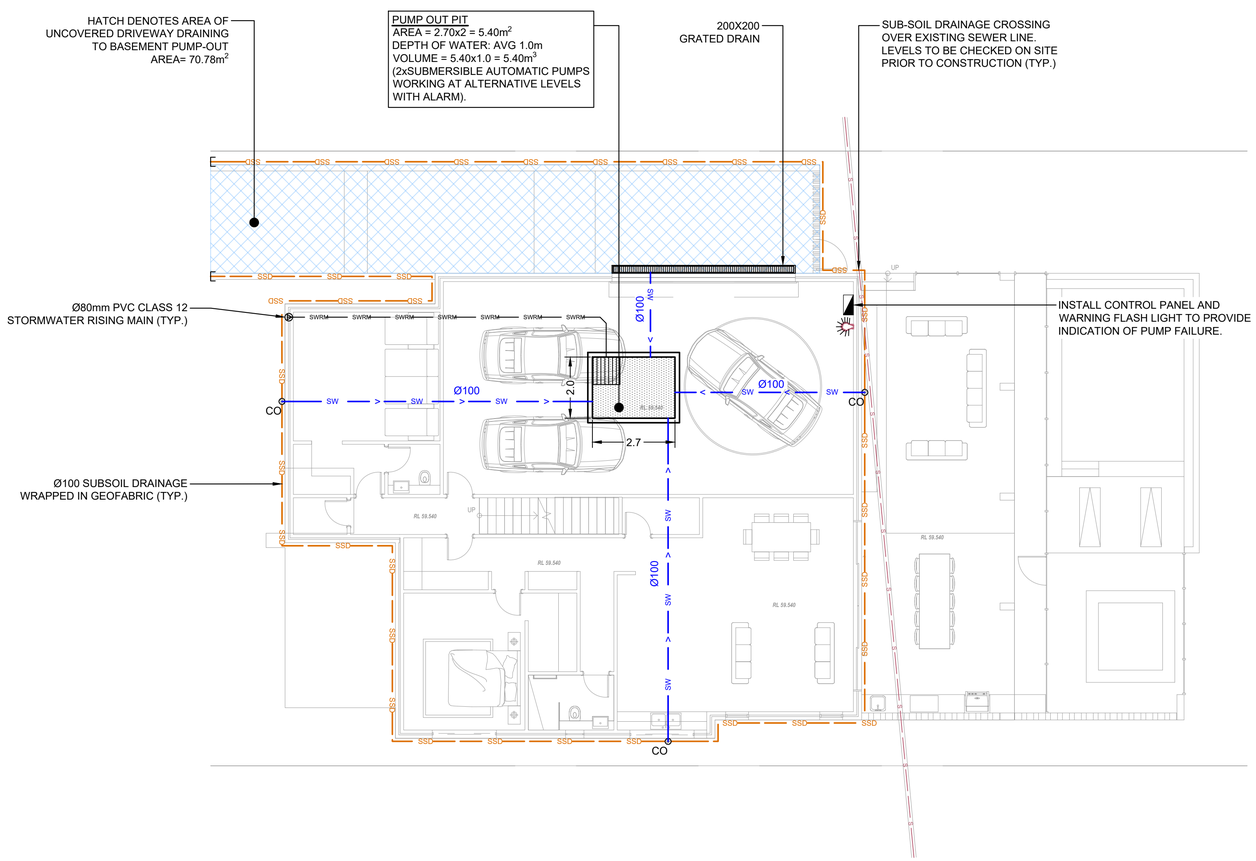
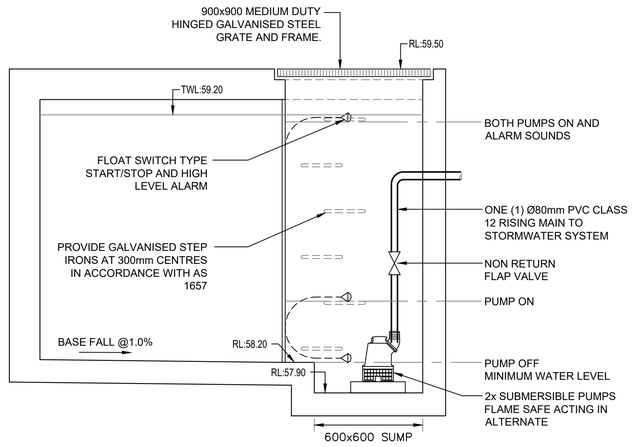




DETAIL 1
SUBSOIL PUMP OUT PIT
SCALE 1:20

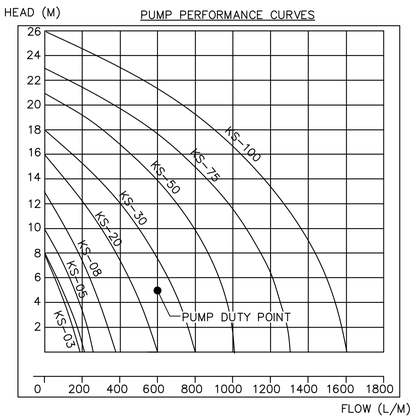
DETAIL 2
CONFINED SPACE SIGN
SCALE 1:10

NOTE:
PLATE CAN BE 150x100mm AND INSTALLED TO SIDE OF ACCESS OPENING IF NEEDED.

DETAIL 3
CONFINED SPACE SIGN
SCALE 1:10

NOTE:
SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT.

A SUITABLE ALARM SYSTEM POSITIONED AT ENTRANCE OF BASEMENT CARPARK TO PROVIDE A FLOOD WARNING IN CASE OF PUMP FAILURE (TO COUNCILS SPEC).



PUMP SIZING

PUMP-OUT TANK CALCULATION:

1. STORAGE VOLUME

AREA DRAINING TO PUMP-OUT PIT = 70.78 m2
RAINFALL DEPTH (100yr-2hr) = 73.6 mm
VOLUME REQUIRED = A x d = 70.78 x 73.6 /1000 = 5.21m3
VOLUME PROVIDED = 2.7x2.0x1.0 = 5.40m3

2. PUMP-OUT RATE

RAINFALL INTENSITY I (100yr-5mins) = 201mm/hr
PUMP-OUT RATE REQUIRED Q = 1x 201 x 70.78 / 3600 = 3.95 L/s
PUMP-OUT RATE PROVIDED = 10L/s OVER 5m HEAD.

SPECIFY 2x SUBMERSIBLE PUMPS ALINE KS-30
OR APPROVED EQUAL.

PUMP-OUT TANK NOTES:

1. PUMPS SHALL WORK ALTERNATIVELY
2. A LOW LEVEL FLOAT TO BE PROVIDED TO MAINTAIN MIN. WATER LEVEL IN THE TANK (OFF SWITCH)
3. A SECOND FLOAT, 300mm HIGHER SHOULD BE PROVIDED TO ACTIVATE ONE PUMP THAT WILL DRAIN THE TANK TO THE LEVE OF THE LOW LEVEL FLOAT
4. A THIRD FLOAT SHALL BE PROVIDED APPROX. AT THE SOFFIT OF THE TANK; THIS FLOAT WILL ACTIVATE THE SECOND PUMP THAT IS NOT IN OPERATION AND WILL ACTIVATE THE ALARM
5. AN ALARM SYSTEM SHALL BE PROVIDED WITH FLASHING STROBE LIGHT AND A PUMP FAILURE SIGN WHICH ARE TO BE PROVIDED IN A VISIBLE SPOT AT THE DRIVEWAY ENTRANCE.
6. A BACK-UP BATTERY SHALL BE PROVIDED FOR THE ALARM SYSTEM IN CASE OF POWER FAILURE
7. A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH GUIDELINES FROM SAFE WORK AUSTRALIA.

RECOMMENDED PUMP

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

RECOMMENDED PUMP SPECIFICATIONS

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ARCHITECT
STUDIO

CLIENT

SCALE
1:100 / 1:200 A1 / A3
0 1 2 3 4m

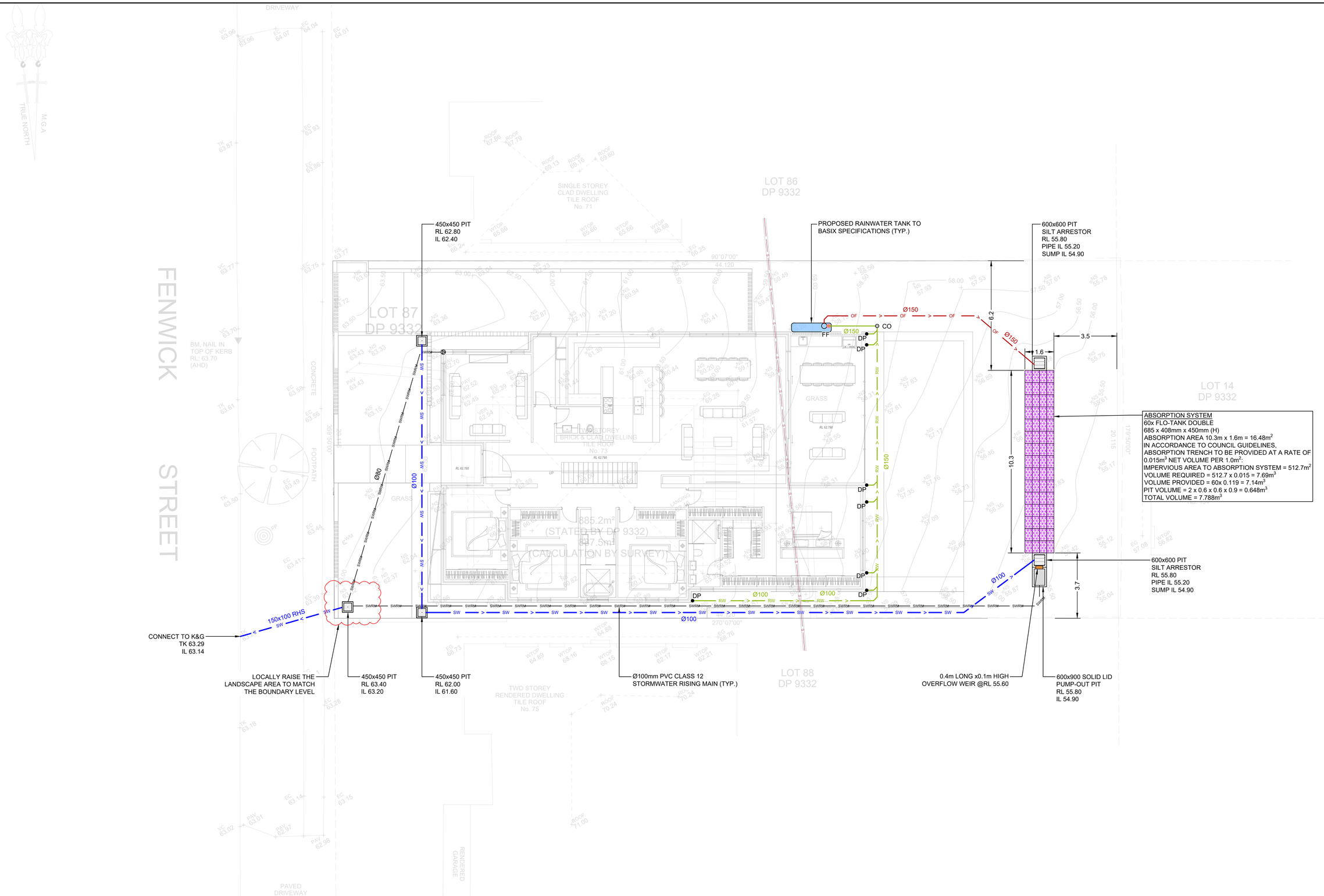
GRID
HEIGHT DATUM AHD

DRAWING TITLE
LOWER GROUND FLOOR DRAINAGE PLAN

STATUS
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

PROJECT
PROPOSED TWO-STOREY DWELLING
73 FENWICK STREET,
BANKSTOWN NSW 2200

DRAWING NUMBER	REFERENCE NUMBER	REVISION
V241227 - SW100	V241227	A



REVISION	REVISION DETAILS	DATE	DRAWN	DESIGN	CHECK	APPROVED
A	ISSUED FOR DA	07.09.2024	D.D.	M.N.	D.S.	D.S.

PREPARED BY

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ARCHITECT

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SCALE

1:100 / 1:200
A1 / A3

0 1 2 3 4m

GRID

HEIGHT DATUM AHD

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PROJECT

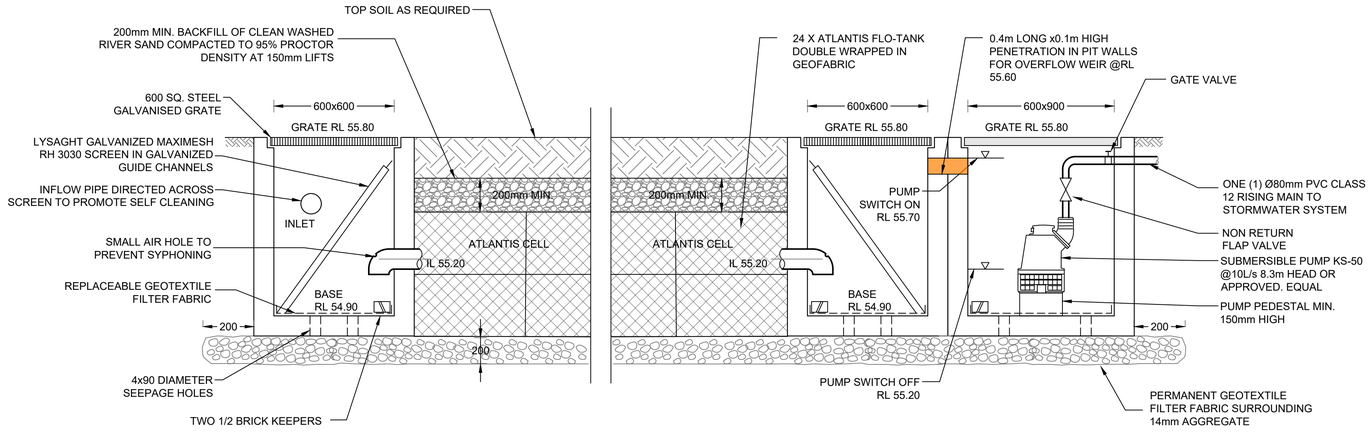
PROPOSED TWO-STOREY DWELLING

73 FENWICK STREET,
BANKSTOWN NSW 2200

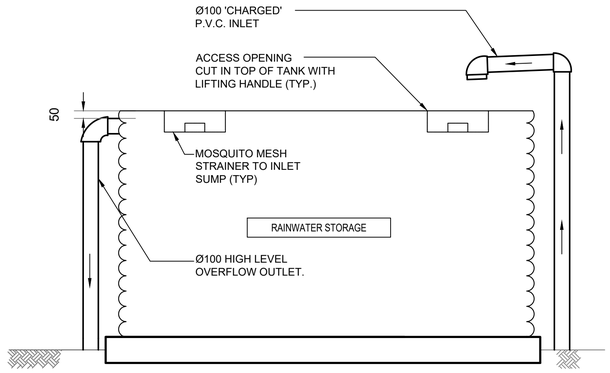
DRAWING TITLE

GROUND FLOOR DRAINAGE PLAN

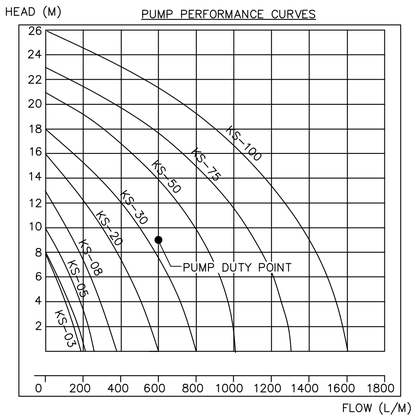
DRAWING NUMBER	REFERENCE NUMBER	REVISION
V241227 - SW101	V241227	A



DETAIL 1 -
ABSORPTION SYSTEM
NOT TO SCALE



DETAIL 2 -
TYPICAL ABOVE GROUND RAINWATER TANK
NOT TO SCALE

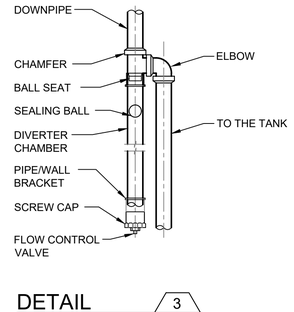


PUMP SIZING

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

RECOMMENDED PUMP

RECOMMENDED PUMP SPECIFICATIONS



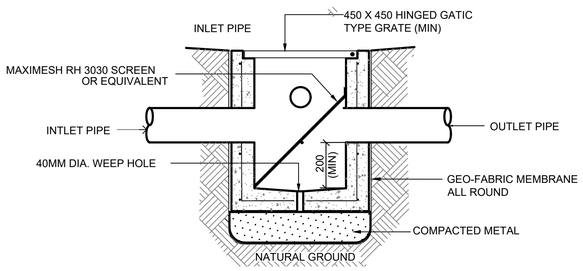
DETAIL 3 -
FIRST FLUSH DIVERTER
SCALE 1:20

LEGEND:
BACKGROUND IS YELLOW
TEXT IS WHITE ON BLACK BACKGROUND

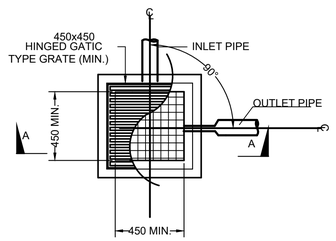
DETAIL 4 -
RAINWATER SIGN
SCALE 1:10

SILT ARRESTOR PIT GENERAL NOTES:

1. PITS TO BE CONSTRUCTED IN THE FOLLOWING MANNER
   1.1 PRECAST
   1.2 BRICKS WITH CEMENT RENDER
2. OUTLET PIPES TO BE PLACED AT 90 DEGREES TO THE INLET PIPELINE (AS SHOWN IN THE PLAN).
3. INLET TO BE ABOVE THE SCREEN AND THE OUTLET TO BE BELOW THE SCREEN.
4. ALL WORK TO BE TO THE SATISFACTION OF THE DIRECTOR OF TECHNICAL SERVICES.
5. ORIFICE PLATES ARE NOT TO BE USED.
6. FOR CONNECTION TO COUNCIL'S DRAINAGE SYSTEM
   6.1 CONNECTION TO BE MADE INTO TOP ONE THIRD OF COUNCIL'S PIPE AT 45 DEGREES TO FLOW
   6.2 ON PIPE PROTRUSAION ALLOWED INTO COUNCIL'S PIPELINE
   6.3 INSPECTION TO BE MADE BY COUNCIL'S ENGINEER PRIOR TO THE SEALING OF THE JOINT

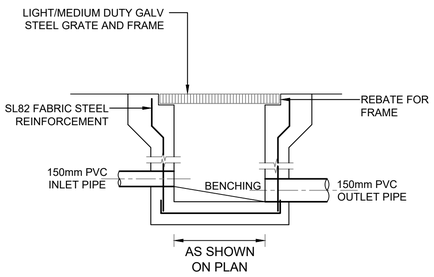


DETAIL
SILT ARRESTOR PIT DETAILS
SCALE 1:20

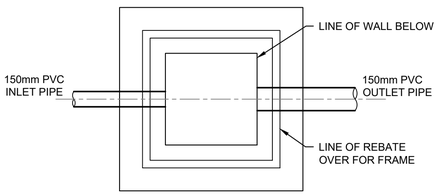


PLAN
SCALE 1:20

DETAIL 5 -
SILT ARRESTOR PIT DETAILS & NOTES
SCALE N.T.S.



SECTION



PLAN WITHOUT GRATE

DETAIL 6 -
STORMWATER PIT
SCALE 1:20

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0 1 2 3 4m

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HEIGHT DATUM AHD

DRAWING TITLE
STORMWATER DETAILS - SHEET 1

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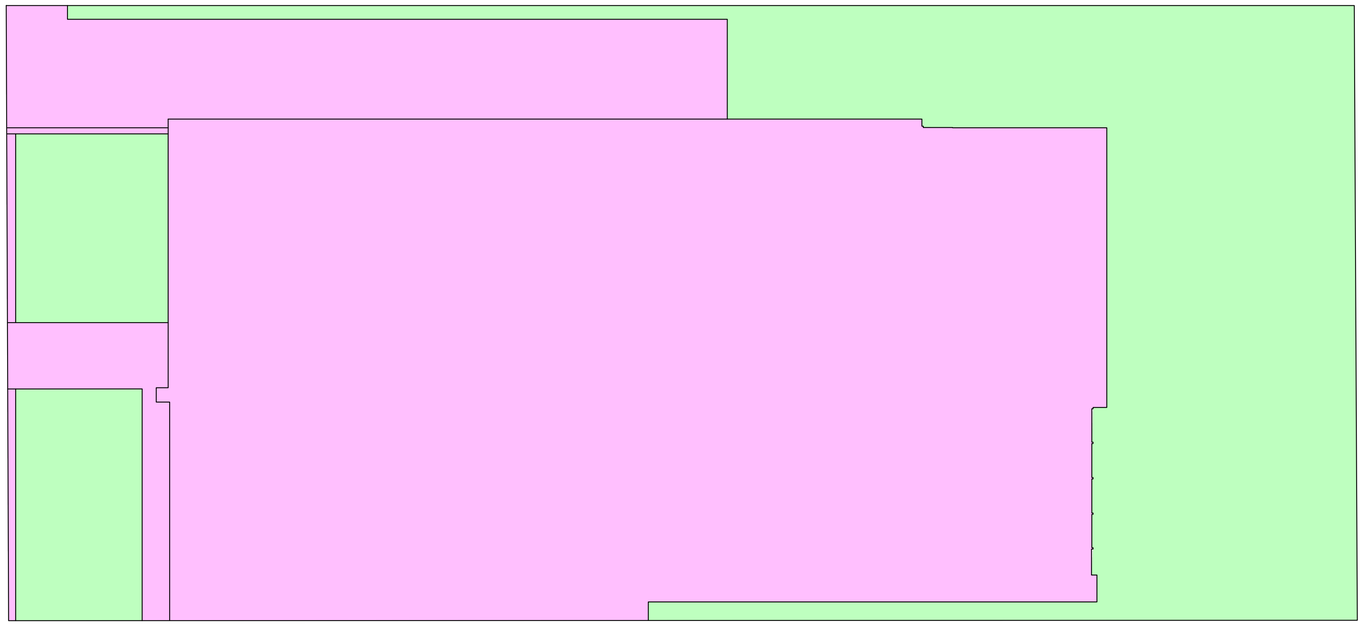
PROJECT
PROPOSED TWO-STOREY DWELLING
73 FENWICK STREET,
BANKSTOWN NSW 2200

DRAWING NUMBER	REFERENCE NUMBER	REVISION
V241227 - SW200	V241227	A



POST-DEVELOPMENT CATCHMENT PLAN

IMPERVIOUS AREA = 592.2m^2

PERVIOUS AREA = 295.8m^2

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POST-DEVELOPMENT CATCHMENT PLAN

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PROJECT

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V241227 - SW300	V241227	A