PIPEWORK

STW	STORMWATER
SS	SUBSOIL
DP	DOWNPIPE
RD	ROOF DRAINAGE
	EXISTING SERVICE
	EXISTING SERVICE TO BE DISCONNECTED AND REMOVED

PIPEWORK SYMBOLS

R	RISER
D	DROPPER
COF	CAPPED OFF
HP	HORIZONTAL PENETRATION
DOF	DIRECTION OF FLOW
NC	NEW CONNECTION
C	CONTINUATION
MH	MAN HOLE
IO	INSPECTION OPENING
STWKIP	STORMWATER KERB INLET PIT
STWIP	STORMWATER INLET PIT
GRD	GRATED DRAIN
SO	SAFETY OVERFLOW
SP	SPREADER
RWO	RAINWATER OUTLET
BRWO	BALCONY RAINWATER OUTLET
PRWO	PLANTER RAINWATER OUTLET
SRWO	SPOON DRAIN RAINWATER OUTLET

ABBREVIATIONS

FFL	FINISH FLOOR LEVEL
IL	INVERT LEVEL
RL	REDUCED LEVEL
UPVC	UNPLASTICIZED POLYVINIL CHLORIDE
NTS	NOT TO SCALE
UNO	UNLESS NOTED OTHERWISE
SQ	SQUARE
mm	MILLIMETRES
m	METRES
m2	SQUARE METRES
m3	CUBIC METRES
/sec	PER SECOND
MIN	MINIMUM
MAX	MAXIMUM
APPR	APPROXIMATLY
DIA	DIAMETER
EX	EXISTING
AHD	AUSTRALIAN HEIGHT DATUM

STORMWATER

GENERAL NOTES

ALL IN ACCORDANCE WITH COUNCIL's STORMWATER REQUIREMENTS

PIPEWORK DESIGN

ALL PIPEWORK IS SIZED AND DESIGNED TO HANDLE A 1:100 YEAR EVENT RAINFALL

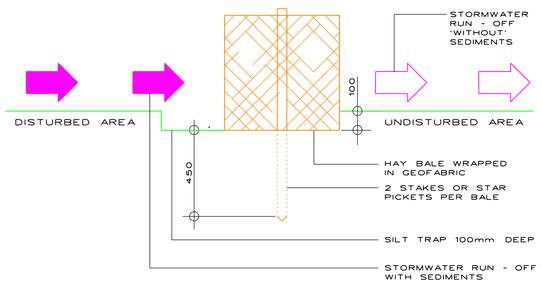
PIPEWORK

ALL PIPEWORK TO BE 100mm @ 1% FALL (UNO)

STORMWATER PIT SIZES

MINIMUM INTERNAL MEASUREMENTS:				
DEPTH TO BASE OF CHAMBER	RECTANGULAR		CIRCULAR	LADDER / STEP IRON
	WIDTH	LENGTH		
SMALLER THAN 600	450	450	600	NO
601 TO 900	600	600	900	NO
901 TO 1200	600	900	1050	NO
GREATER THAN 1200	900	900	1050	YES

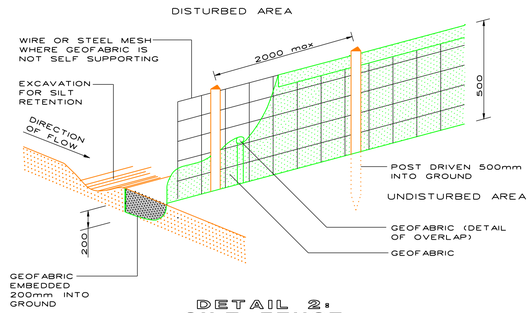
INSTALL AS REQUIRED TO SUIT CONSTRUCTION PROGRESS



DETAIL 1: HAY BALE BARRIER

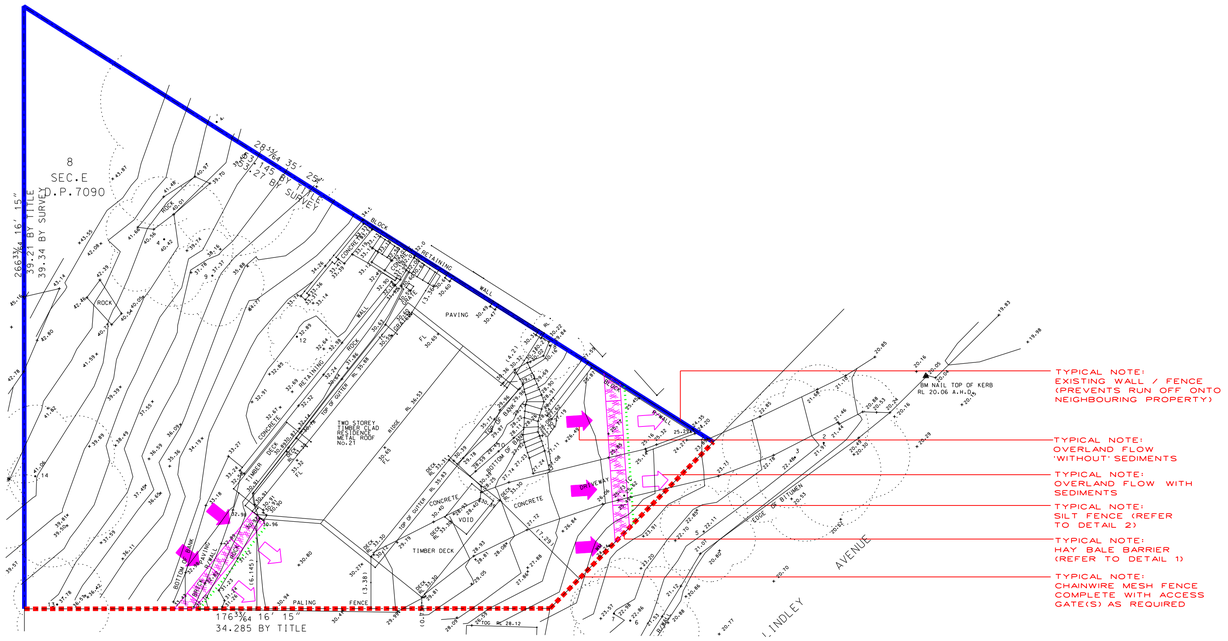
NTS

INSTALL AS REQUIRED TO SUIT CONSTRUCTION PROGRESS



DETAIL 2: SILT FENCE

NTS



SEDIMENTATION CONTROL DURING CONSTRUCTION

APPROVAL

REV	DESCRIPTION	DATE
A	ISSUED FOR DA	07.02.24

CLIENT
JULIEN ROY

ARCHITECT
HUGO HASKARD DRAFTING SERVICES

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tel (02) 9997 1566 fax (02) 9997 3266
email: markus@itmdesign.com.au

PROJECT
21 LINDLEY AVENUE
NARRABEEN

DRAWING TITLE
LEGEND, DETAILS AND SEDIMENTATION CONTROL

SCALE: 1:200 @ A1 / 1:400 @ A3

JOB No: 23/183

DISCIPLINE: HYD

DRAWING No: H-DA-00

REVISION: A

STW DA DRAWING

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STORMWATER DA DRAWING ONLY

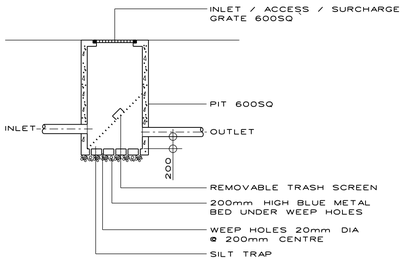
- NOT FOR CONSTRUCTION
- FINAL LOCATION OF ALL DOWNPIPES, PITS, RAINWATER OUTLETS AND SUBSOIL PIPES TO BE CONFIRMED DURING CONSTRUCTION CERTIFICATE STAGE OF THE PROPOSED DEVELOPMENT

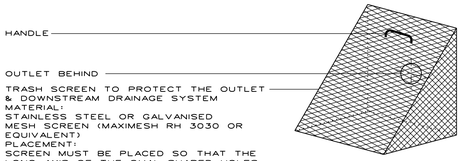
LANDSCAPING DRAINAGE

ALL LANDSCAPED AREAS LOCATED ABOVE CONCRETE SLABS TO BE EQUIPPED WITH WATERPROOFING MEMBRANE, DRAINAGE CELL AND GEOFABRIC

EXISTING DRAINAGE

DURING DEMOLITION / CONSTRUCTION: ALLOW TO INVESTIGATE EXACT LOCATION, SIZE AND CONDITION OF ALL DRAINAGE PIPES. LIAISE WITH itm design TO DISCUSS THE FINDINGS. ALLOW TO REPLACE / UPGRADE AS REQUIRED.





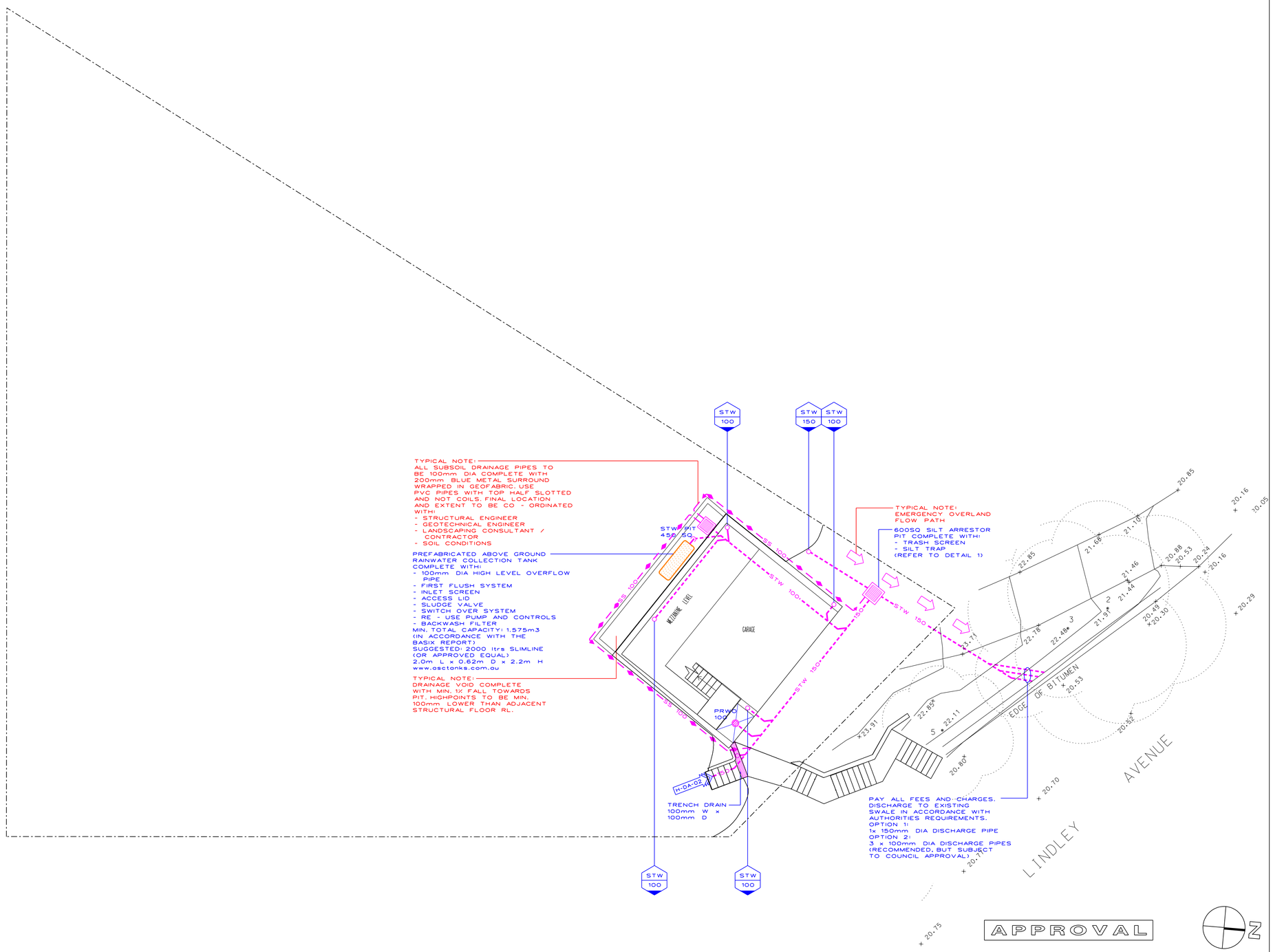
TRASH SCREEN TO PROTECT THE OUTLET & DOWNSTREAM DRAINAGE SYSTEM
MATERIAL:
STAINLESS STEEL OR GALVANISED MESH SCREEN (MAXIMESH RH 3030 OR EQUIVALENT)
PLACEMENT:
SCREEN MUST BE PLACED SO THAT THE LONG AXIS OF THE OVAL SHAPED HOLES ARE HORIZONTAL WITH THE PROTRUDING LIP ANGLED UPWARDS AND FACING DOWNSTREAM

DETAIL 1: SILT ARRESTOR PIT & TRASH SCREEN

NTS

NOTES

FOR GENERAL NOTES AND LEGEND REFER TO DRAWING H - DA - 00



REV	DESCRIPTION	DATE
A	ISSUED FOR DA	07.02.24

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email markus@itmdesign.com.au

PROJECT
21 LINDLEY AVENUE
NARRABEEN

DRAWING TITLE
SUB FLOOR STORMWATER DRAINAGE

SCALE
1:100 @ A1 / 1:200 @ A3

JOB No
23/183

DISCIPLINE
HYD

DRAWING No
H-DA-01

REVISION
A

STW DA DRAWING

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STORMWATER DA DRAWING ONLY

- NOT FOR CONSTRUCTION
- FINAL LOCATION OF ALL DOWNPIPES, PITS, RAINWATER OUTLETS AND SUBSOIL PIPES TO BE CONFIRMED DURING CONSTRUCTION CERTIFICATE STAGE OF THE PROPOSED DEVELOPMENT

LANDSCAPING DRAINAGE

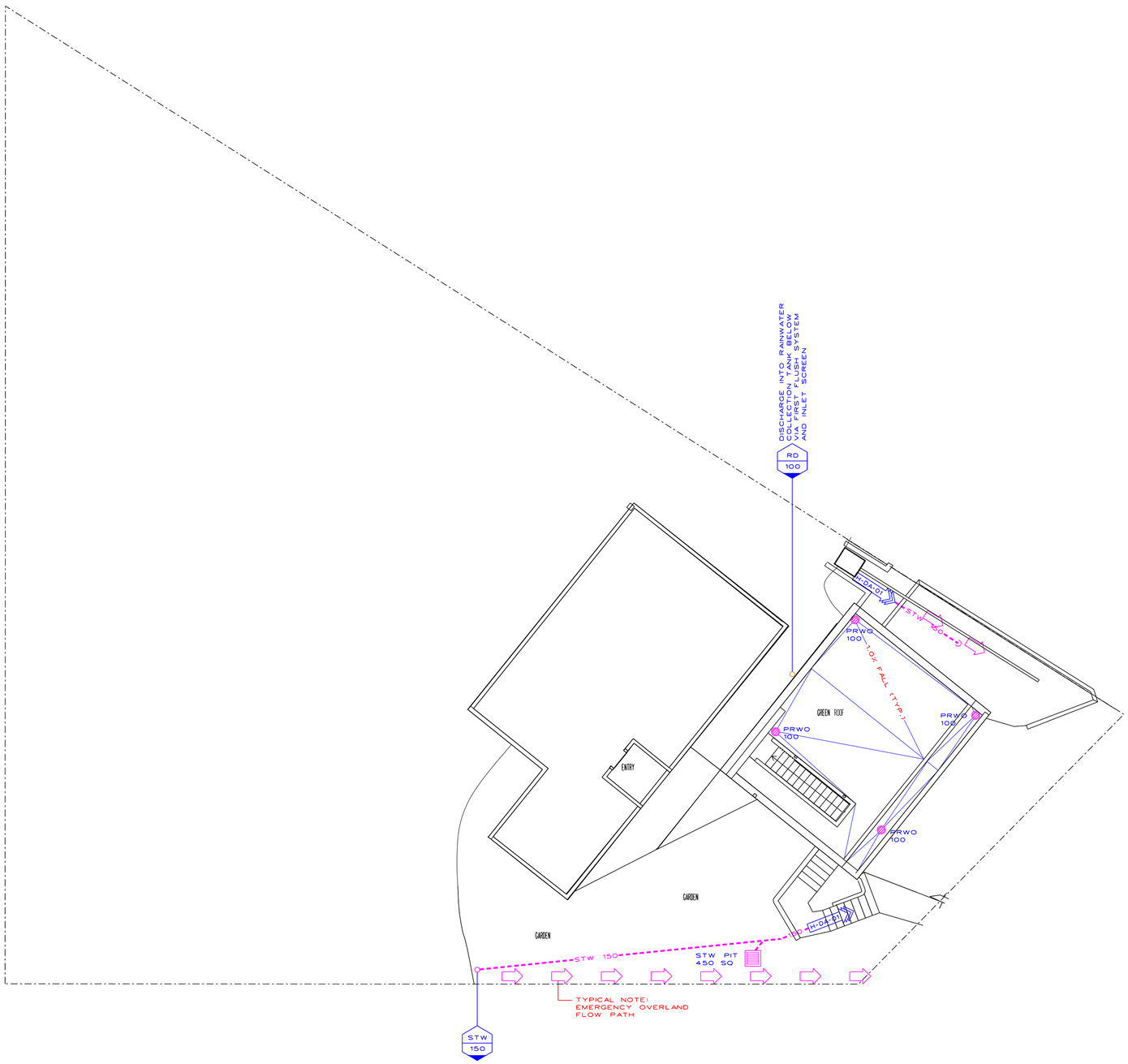
ALL LANDSCAPED AREAS LOCATED ABOVE CONCRETE SLABS TO BE EQUIPPED WITH WATERPROOFING MEMBRANE, DRAINAGE CELL AND GEOFABRIC

EXISTING DRAINAGE

DURING DEMOLITION / CONSTRUCTION: ALLOW TO INVESTIGATE EXACT LOCATION, SIZE AND CONDITION OF ALL DRAINAGE PIPES. LIAISE WITH itm design TO DISCUSS THE FINDINGS. ALLOW TO REPLACE / UPGRADE AS REQUIRED.

NOTES

FOR GENERAL NOTES AND LEGEND REFER TO DRAWING H - DA - 00



APPROVAL

N

STW DA DRAWING

REV	DESCRIPTION	DATE
A	ISSUED FOR DA	07.02.24

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PROJECT
21 LINDLEY AVENUE
NARRABEEN

DRAWING TITLE
GROUND FLOOR STORMWATER DRAINAGE

SCALE: 1:100 @ A1 / 1:200 @ A3
JOB No: 23/163
DISCIPLINE: HYD
DRAWING No: H-DA-02
REVISION: A

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STORMWATER DA DRAWING ONLY

- NOT FOR CONSTRUCTION
- FINAL LOCATION OF ALL DOWNPIPES, PITS, RAINWATER OUTLETS AND SUBSOIL PIPES TO BE CONFIRMED DURING CONSTRUCTION CERTIFICATE STAGE OF THE PROPOSED DEVELOPMENT

LANDSCAPING DRAINAGE

ALL LANDSCAPED AREAS LOCATED ABOVE CONCRETE SLABS TO BE EQUIPPED WITH WATERPROOFING MEMBRANE, DRAINAGE CELL AND GEOFABRIC

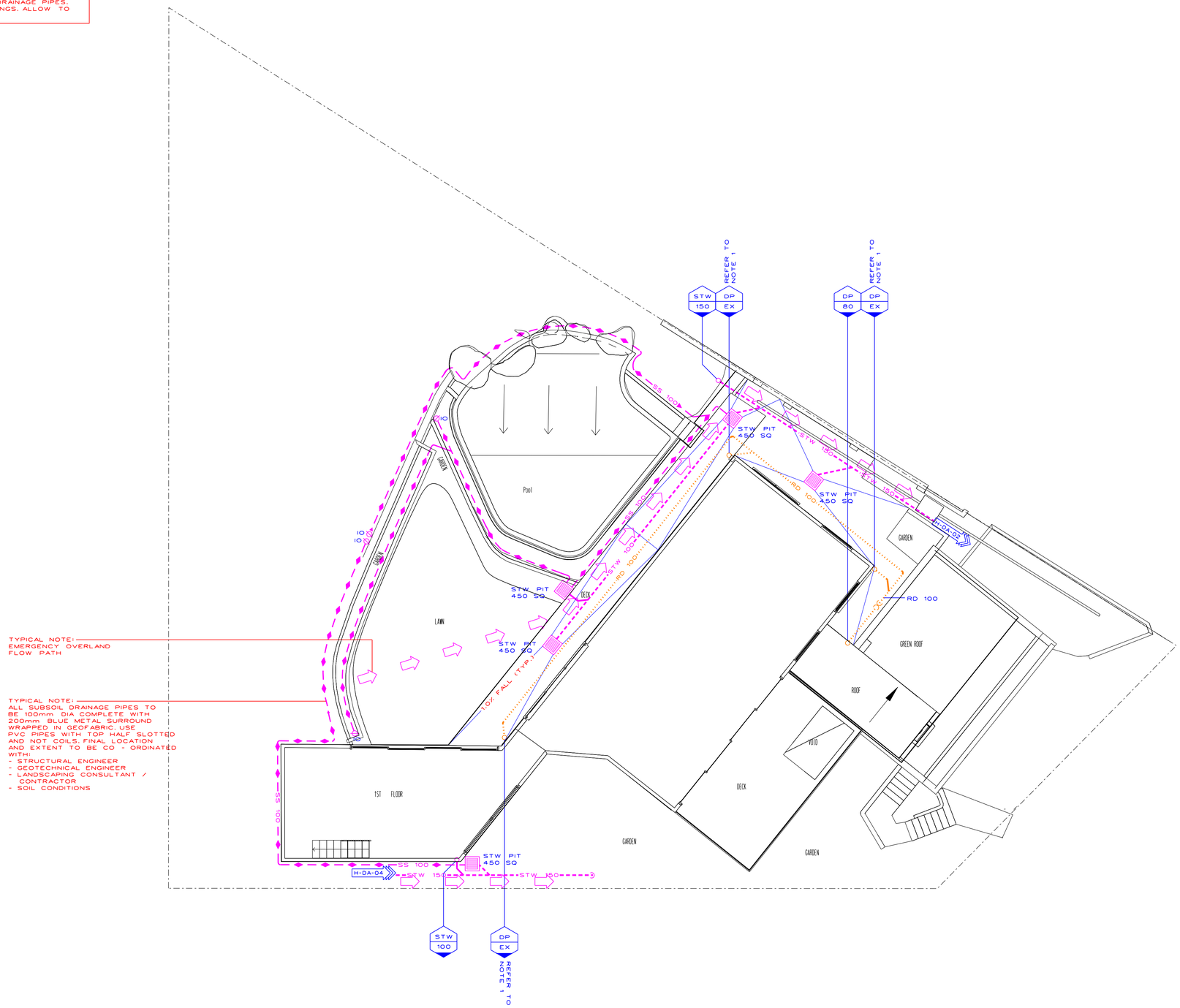
EXISTING DRAINAGE

DURING DEMOLITION / CONSTRUCTION: ALLOW TO INVESTIGATE EXACT LOCATION, SIZE AND CONDITION OF ALL DRAINAGE PIPES. LIAISE WITH itm design TO DISCUSS THE FINDINGS. ALLOW TO REPLACE / UPGRADE AS REQUIRED.

NOTES

FOR GENERAL NOTES AND LEGEND REFER TO DRAWING H - DA - 00

(1) REPLACE EXISTING DOWNPIPES AS / IF REQUIRED



TYPICAL NOTE:
EMERGENCY OVERLAND FLOW PATH

TYPICAL NOTE:
ALL SUBSOIL DRAINAGE PIPES TO BE 100mm DIA COMPLETE WITH 200mm BLUE METAL SURROUND WRAPPED IN GEOFABRIC. USE PVC PIPES WITH TOP HALF SLOTTED AND NOT COILS. FINAL LOCATION AND EXTENT TO BE CO - ORDINATED WITH:
- STRUCTURAL ENGINEER
- GEOTECHNICAL ENGINEER
- LANDSCAPING CONSULTANT / CONTRACTOR
- SOIL CONDITIONS

APPROVAL

N

STW DA DRAWING

REV	DESCRIPTION	DATE
A	ISSUED FOR DA	07.02.24

CLIENT
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email: markus@itmdesign.com.au

PROJECT
21 LINDLEY AVENUE
NARRABEEN

DRAWING TITLE
FIRST FLOOR STORMWATER DRAINAGE

SCALE: 1:100 @ A1 / 1:200 @ A3
JOB No: 23/163
DISCIPLINE: HYD
DRAWING No: H-DA-03
REVISION: A

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STORMWATER DA DRAWING ONLY

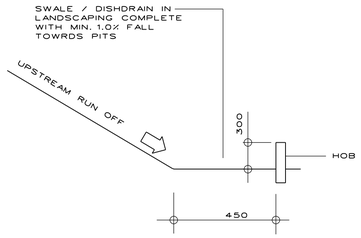
- NOT FOR CONSTRUCTION
- FINAL LOCATION OF ALL DOWNPIPES, PITS, RAINWATER OUTLETS AND SUBSOIL PIPES TO BE CONFIRMED DURING CONSTRUCTION CERTIFICATE STAGE OF THE PROPOSED DEVELOPMENT

LANDSCAPING DRAINAGE

ALL LANDSCAPED AREAS LOCATED ABOVE CONCRETE SLABS TO BE EQUIPPED WITH WATERPROOFING MEMBRANE, DRAINAGE CELL AND GEOFABRIC

EXISTING DRAINAGE

DURING DEMOLITION / CONSTRUCTION: ALLOW TO INVESTIGATE EXACT LOCATION, SIZE AND CONDITION OF ALL DRAINAGE PIPES. LIAISE WITH itm design TO DISCUSS THE FINDINGS. ALLOW TO REPLACE / UPGRADE AS REQUIRED.



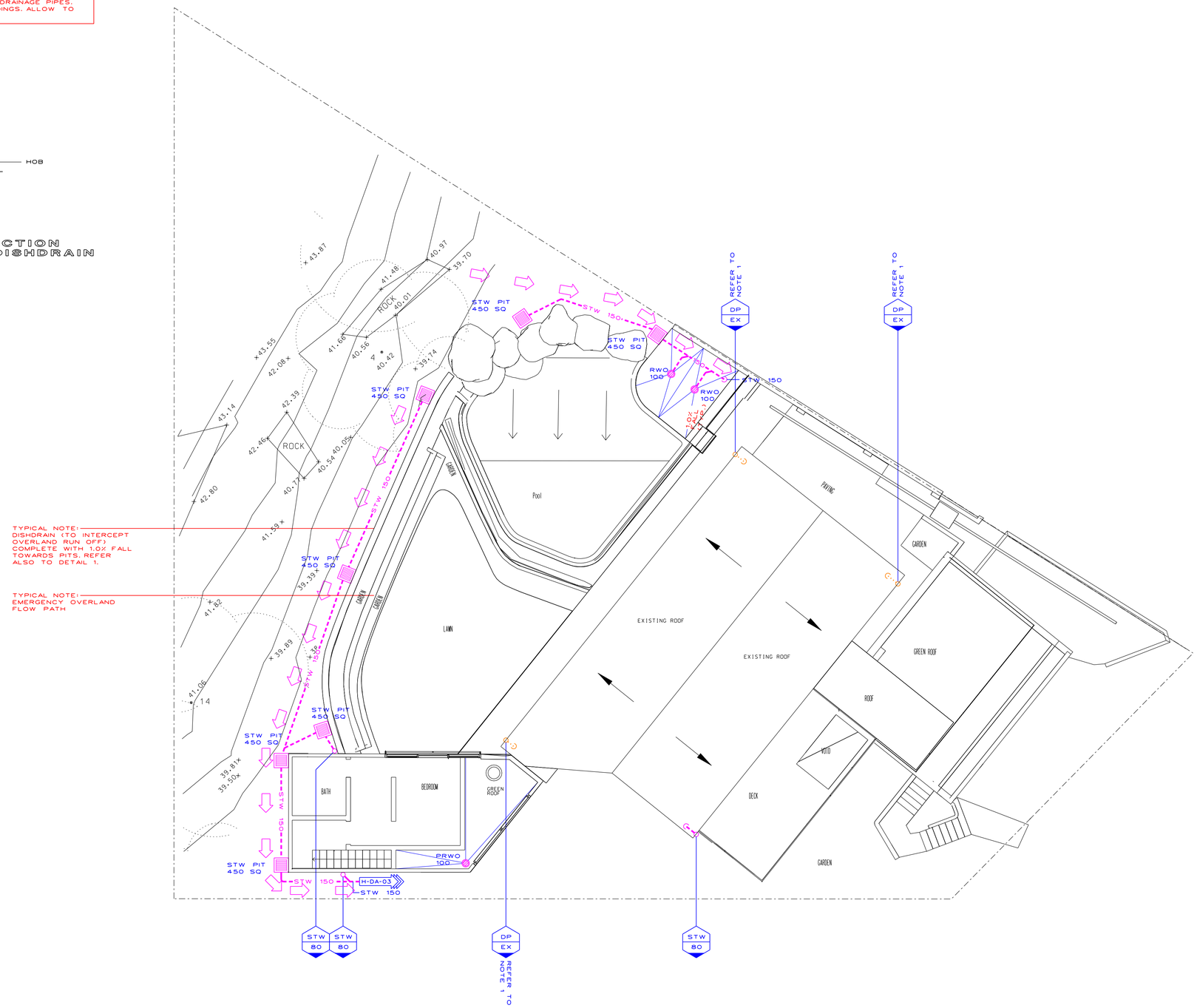
DETAIL 1:
DIAGRAMMATIC SECTION THROUGH SWALE / DISHDRAIN

NTS

NOTES

FOR GENERAL NOTES AND LEGEND REFER TO DRAWING H - DA - 00

1. REPLACE EXISTING DOWNPIPES AS / IF REQUIRED



APPROVAL

REV	DESCRIPTION	DATE
A	ISSUED FOR DA	07.02.24

CLIENT
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email: markus@itmdesign.com.au

PROJECT
21 LINDLEY AVENUE
NARRABEEN

DRAWING TITLE
SECOND FLOOR STORMWATER DRAINAGE

SCALE: 1:100 @ A1 / 1:200 @ A3
JOB No: 23/183
DISCIPLINE: HYD
DRAWING No: H-DA-04
REVISION: A

STW DA DRAWING

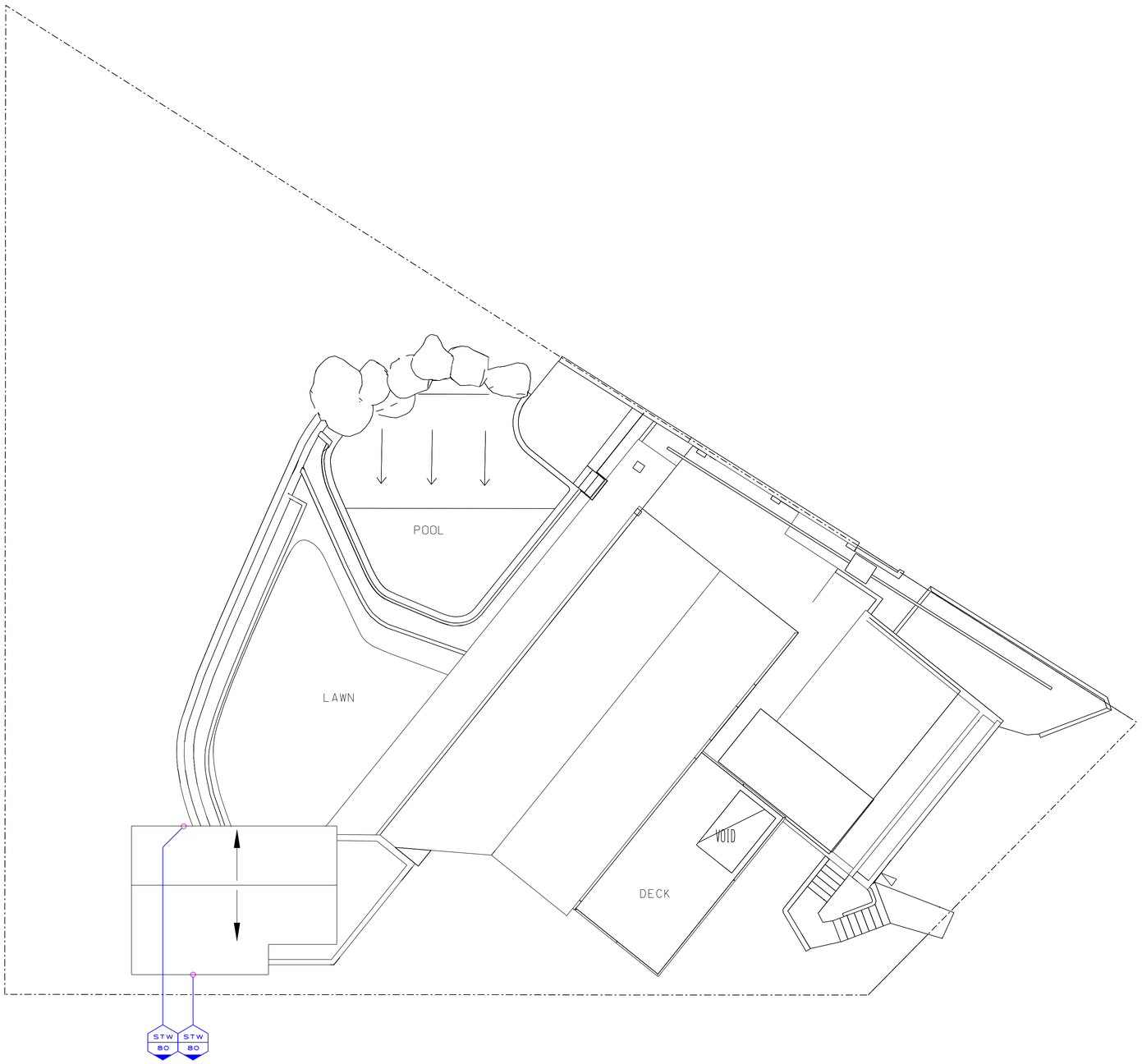
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STORMWATER DA
DRAWING ONLY

- NOT FOR CONSTRUCTION
- FINAL LOCATION OF ALL DOWNPIPES, PITS, RAINWATER OUTLETS AND SUBSOIL PIPES TO BE CONFIRMED DURING CONSTRUCTION CERTIFICATE STAGE OF THE PROPOSED DEVELOPMENT

NOTES

FOR GENERAL NOTES AND LEGEND REFER TO DRAWING H - DA - 00



APPROVAL

N

REV	DESCRIPTION	DATE
A	ISSUED FOR DA	07.02.24

CLIENT
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PROJECT
21 LINDLEY AVENUE
NARRABEEN

DRAWING TITLE
ROOF STORMWATER DRAINAGE

SCALE
1:100 @ A1 / 1:200 @ A3

JOB No
23/183

DISCIPLINE
HYD

DRAWING No
H-DA-05

REVISION
A

STW DA DRAWING

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Read in conjunction with
drawings H - DA - 00 to H - DA - 05
(all Revision 'A' / dated 05.02.2024)
Proposed works: Alterations and additions
(single dwelling)

itm design pty ltd
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6 / 3 apollo street
warriewood nsw 2102
tel (02) 9997 1566
email: info@itmdesign.com.au

northern beaches council

Appendix 16 – On-site Detention Checklist

This checklist is to be used to determine the on-site stormwater disposal requirement for developments and must be completed and included with the submission of any development application for these works. Please read this form carefully for its notes, guidelines, definition and relevant policies.

For assistance and support, please contact Council's Development Engineering and Certification team on 1300 434 434.

Part 1 Location of the Property			
House Humber	21	Legal Property Description	
Street	Lindley Avenue	Lot	8
Suburb	Narrabeen	Section	E
Postcode	2101	DP	7090

Part 2 Site Details			
Northern Beaches Stormwater Regions (refer to Map 2 of Northern Beaches Council's Water Management for Development policy)	2	Total Site Area	1071m2
Pre-Development Impervious Area		Post-Development Impervious	
N / A (no OSD required for alterations and additions)			
Is the site of the development located within an established Flood Prone Land as referred to Council's Local Environmental Plans? If yes, On-site stormwater Detention system (OSD) is not required and please proceed to part 5 of this checklist If no, please proceed to part 3 of this checklist.			Yes ☐ No ☐

Part 3: Northern Beaches Stormwater Regions (refer to Map 2 of Northern Beaches Council's Water Management for Development policy)
If the site of the development located within Region 1, please proceed to the part 4.1 of this checklist
If the site of the development located within Region 2, please proceed to the part 4.2 of this checklist
If the site of the development located within Region 3, please proceed to the part 4.3 of this checklist
If the site of the development located within Region 4, please refer to Council's Warriewood Valley Water Management Specification.

Part 4 Determination of OSD Requirements

Part 4.1 Northern Beaches Stormwater Region 1	
Is the additional impervious area of the development more than 50 m^2 on a cumulative basis since February 1996?	Yes ☐ No ☐
If yes, OSD is required and please refer to section 9.3.1 of Council's Water Management for Development Policy If no, OSD is not required and please proceed to the part 5 of this checklist	

Part 4.2 Northern Beaches Stormwater Region 2	
Part 4.2.1 Description of Work	
Residential flat building, commercial, industrial, multiple occupancy development and subdivisions resulting in the creation of three lots or more, will require OSD in all case. Please provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. Any single residential building development, please proceed to part 4.2.2 of this checklist.	
Part 4.2.2 Exemption	
Is the site area less than 450m^2?	Yes ☐ No ☐
Does the site of the development drain directly to the ocean without the need to pass through a drainage control structure such as pipe, bridge, culvert, kerb and gutter or natural drainage system?	Yes ☐ No ☐
Is it an alternation and addition development to the existing dwellings?	Yes ☐ No ☐
If yes to any of the above questions, OSD is not required. If no to all the above questions, proceed to part 4.2.3	No OSD required
Part 4.2.3 Determination of OSD Requirements	
Calculation	a) Site area m^2 x 0.40 (40%) = ... m^2 b) Post- development impervious area = ... m^2 **OSD will not be required when (a) is greater than (b)** Is OSD required for this development (tick one only) Yes ☐ No ☐ If yes, provide a design in accordance with the section 9.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5 of this checklist.

Part 4.3 Northern Beaches Stormwater Region 3	
Part 4.3.1 Stormwater Zone	
In the region, the method of stormwater control to be applied shall depend on the location of the site. Please refer to Map 3 of Northern Beaches Council's Water Management for Development policy.	
If the site of the development located within stormwater zone 1, please proceed to the part 4.3.2 of this checklist	
If the site of the development located within stormwater zone 2, please provide a design in accordance with the section 9.3.3.3 of Council's Water Management for Development Policy.	
If the site of the development located within stormwater zone 3, please provide a design in accordance with the section 9.3.3.4 of Council's Water Management for Development Policy.	
If the site of the development located within stormwater zone 4, please provide a design in accordance with the section 9.3.3.5 of Council's Water Management for Development Policy.	
Part 4.3.2 Determination of OSD requirements in Stormwater Zone 1	
Part 4.3.2.1 For A New Building	
1) Exemption	a) Is the site area less than 400? Yes ☐ No ☐ b) Is the post-development impervious area less than 190 m^2? Yes ☐ No ☐ If yes to both questions, OSD is not required. If no to any of the above questions, please process to calculation
2) Calculation	a) Site area _____m^2 x 0.35 = _____m^2 + 50 = _____m^2 b) Post- development impervious area _____m^2 OSD will not be required when (b) is less than 250 m^2 and (a) is greater than (b) Is OSD required for this development? Yes ☐ No ☐ If yes, provide a design in accordance with the section 9.3.3.2 of Council's Water Management for Development Policy. If no, OSD is not required and please proceed to part 5.
Part 4.3.2.2 For Alterations and Additions	
If the current impervious area of the site is more than 60% of the site area, OSD will be required. Alternatively, please proceed to the next calculation section.	
1) Calculation	Is the post development impervious area increased by less than 50 m^2? Yes ☐ No ☐ Is the post development impervious area less than 60% of the site area? Yes ☐ No ☐ If yes to both questions, OSD is not required. If no to any of the above questions, provide a design in accordance with section 9.3.3.2 of Council's Water Management for Development Policy

Part 5 Disposal of Stormwater
Does the site fall naturally towards the street? Yes ☐ No ☐ If yes, provide a design in accordance with section 5.1 of Council's Water Management for Development Policy. If no, provide a design in accordance with section 5.5 of Council's Water Management for Development Policy.

Definitions	
Designed to help you fill out this application	**Site area:** This refers to the area of the land bounded by its existing or proposed boundaries. **Impervious area:** This refers to driveways, parking spaces, pathways, paved areas, hardstand areas, roofed areas, garages and outbuildings. **Pre Development Impervious area**: This refers all impervious areas of the site before the development. **Post Development Impervious areas**: This refers all the impervious areas within the site after the development is completed.