

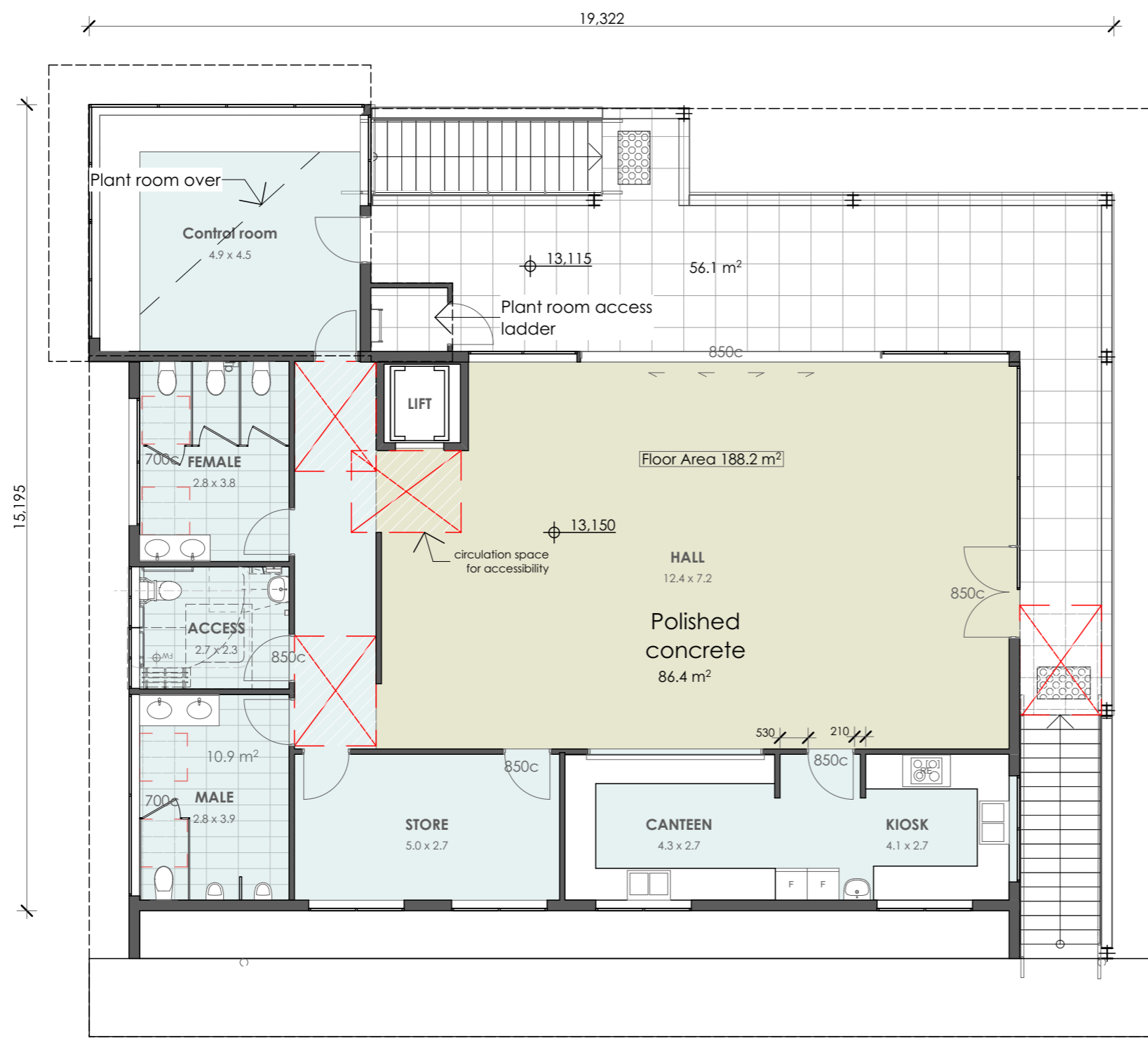


Attachment 1 to Item 2.1.2

Plans of the Proposal

Date of meeting: 20 April 2023
Location: By audio-visual link
Time: 10:00 a.m.

Issue	Date	Amendments
A	31/08/21	Sketch design
B	20/01/22	Sketch design
C	21/06/22	
D	19/07/22	Development Application



Upper Level 1:100



366 George Street, Windsor NSW 2756

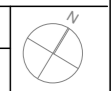
Windsor Power Boat Club

Address
 Lot x DP 161237
 Governor Philip Park,
 George Street,
 Windsor, NSW

Stage
Development Application

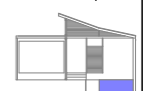
Drawing Title
Upper Level

Drawing No.
20110303



Date	Drawn by	Sheet size	Project No.	Issue
26/02/2021	BT	A3	210226	D

PO Box 32 Kurrajong NSW 2758
 p 02 4573 1320
 e barbara@btarchitects.com.au
 www.btarchitects.com.au



Barbara Tarnawski Architects Pty Ltd

CHECK ALL DIMENSIONS ON SITE.
 REFER ANY DISCREPANCIES TO THE ARCHITECT
 BEFORE PROCEEDING WITH THE WORKS



Issue	Date	Amendments
A	31/08/21	Sketch design
B	20/01/22	Sketch design
C	21/06/22	
D	19/07/22	Development Application



10,543
900

Lower Level 1:100



366 George Street, Windsor NSW 2756

Windsor Power Boat Club

Address
Lot x DP 161237
Governor Philip Park,
George Street,
Windsor, NSW

Stage
Development Application

Drawing Title
Lower Level

Drawing No.
20110304

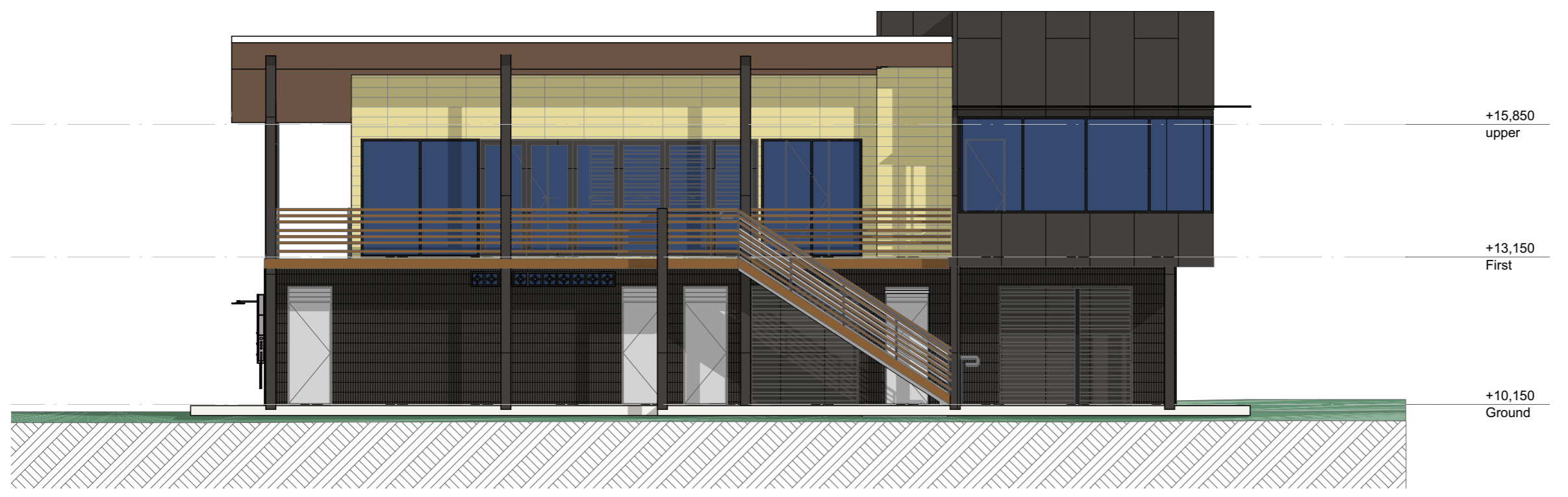
Date	Drawn by	Sheet size	Project No.	Issue
26/02/2021	BT	A3	210226	D

PO Box 32 Kurrajong NSW 2758
p 02 4573 1320
e barbara@btarchitects.com.au
www.btarchitects.com.au

Barbara Tarnawski Architects Pty Ltd

CHECK ALL DIMENSIONS ON SITE.
REFER ANY DISCREPANCIES TO THE ARCHITECT
BEFORE PROCEEDING WITH THE WORKS

Issue	Date	Amendments
A	31/08/21	Sketch design
B	20/01/22	Sketch design
C	21/06/22	
D	19/07/22	Development Application



NW Elevation

1:100



NE Elevation

1:100




366 George Street, Windsor NSW 2756

Windsor Power Boat Club

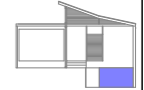
Address
 Lot x DP 161237
 Governor Philip Park,
 George Street,
 Windsor, NSW

Stage
Development Application

Drawing Title Elevations		
Drawing No. 20110305		

Date 26/02/2021	Drawn by BT	Sheet size A3	Project No. 210226	Issue D
---------------------------	-----------------------	-------------------------	------------------------------	-------------------

PO Box 32 Kurrajong NSW 2758
 p 02 4573 1320
 e barbara@btarchitects.com.au
 www.btarchitects.com.au



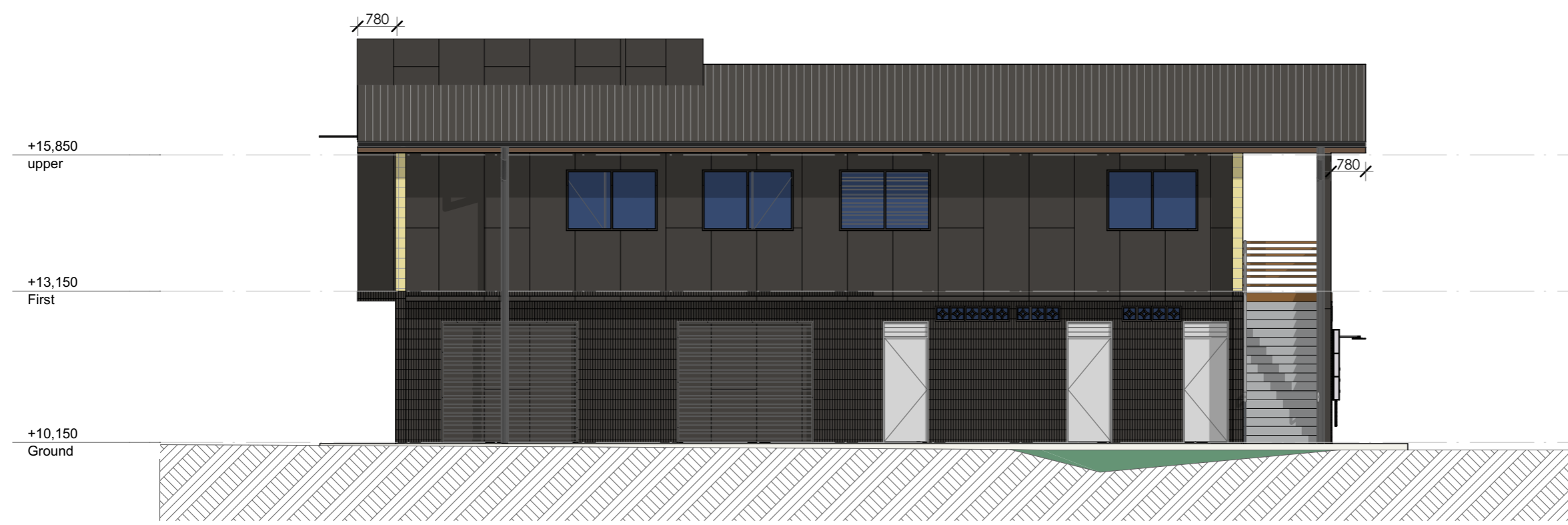
Barbara Tarnawski Architects Pty Ltd

CHECK ALL DIMENSIONS ON SITE.
 REFER ANY DISCREPANCIES TO THE ARCHITECT
 BEFORE PROCEEDING WITH THE WORKS

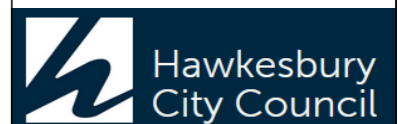
Issue	Date	Amendments
A	31/08/21	Sketch design
B	20/01/22	Sketch design
C	21/06/22	
D	19/07/22	Development Application



SW Elevation 1:100



SE Elevation 1:100



366 George Street, Windsor NSW 2756

Windsor Power Boat Club

Address
 Lot x DP 161237
 Governor Philip Park,
 George Street,
 Windsor, NSW

Stage
Development Application

Drawing Title
Elevations

Drawing No.
20110306

Date
26/02/2021

Drawn by
BT

Sheet size
A3

Project No.
210226

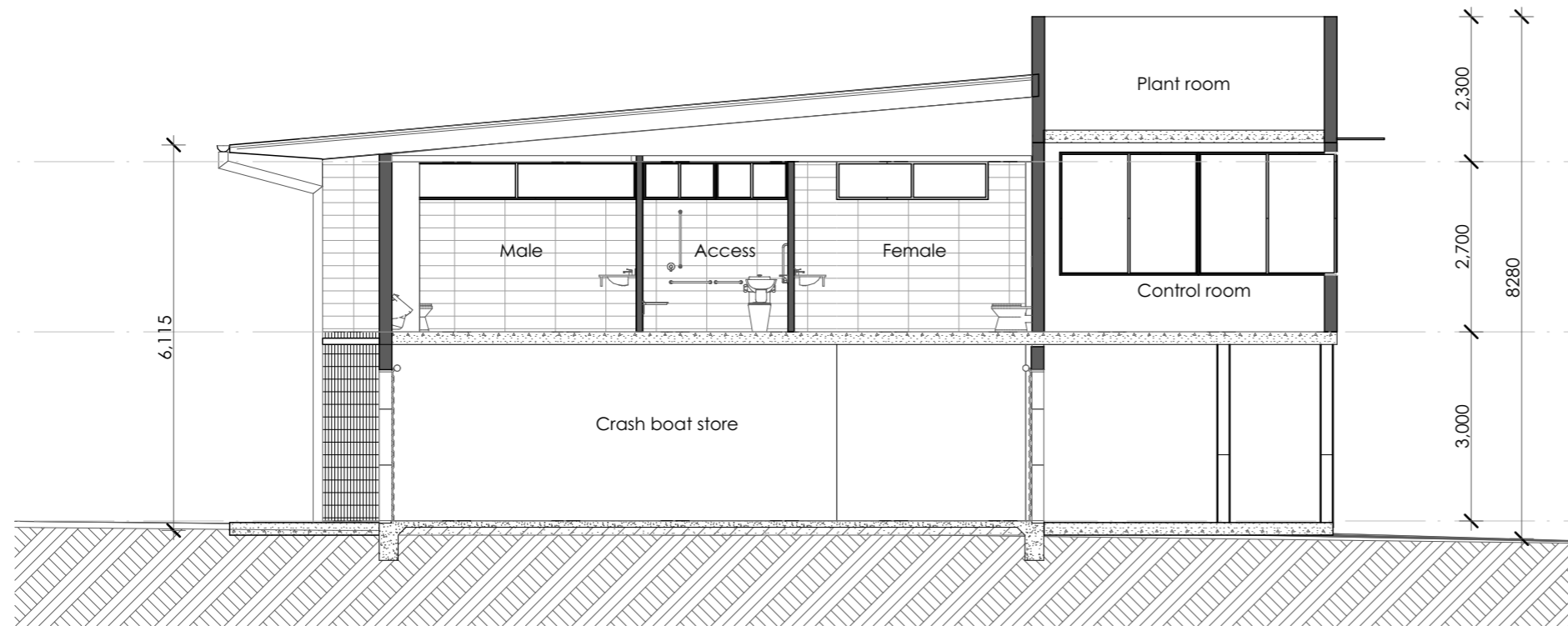
Issue
D

PO Box 32 Kurrajong NSW 2758
 p 02 4573 1320
 e barbara@btarchitects.com.au
 www.btarchitects.com.au

Barbara Tarnawski Architects Pty Ltd

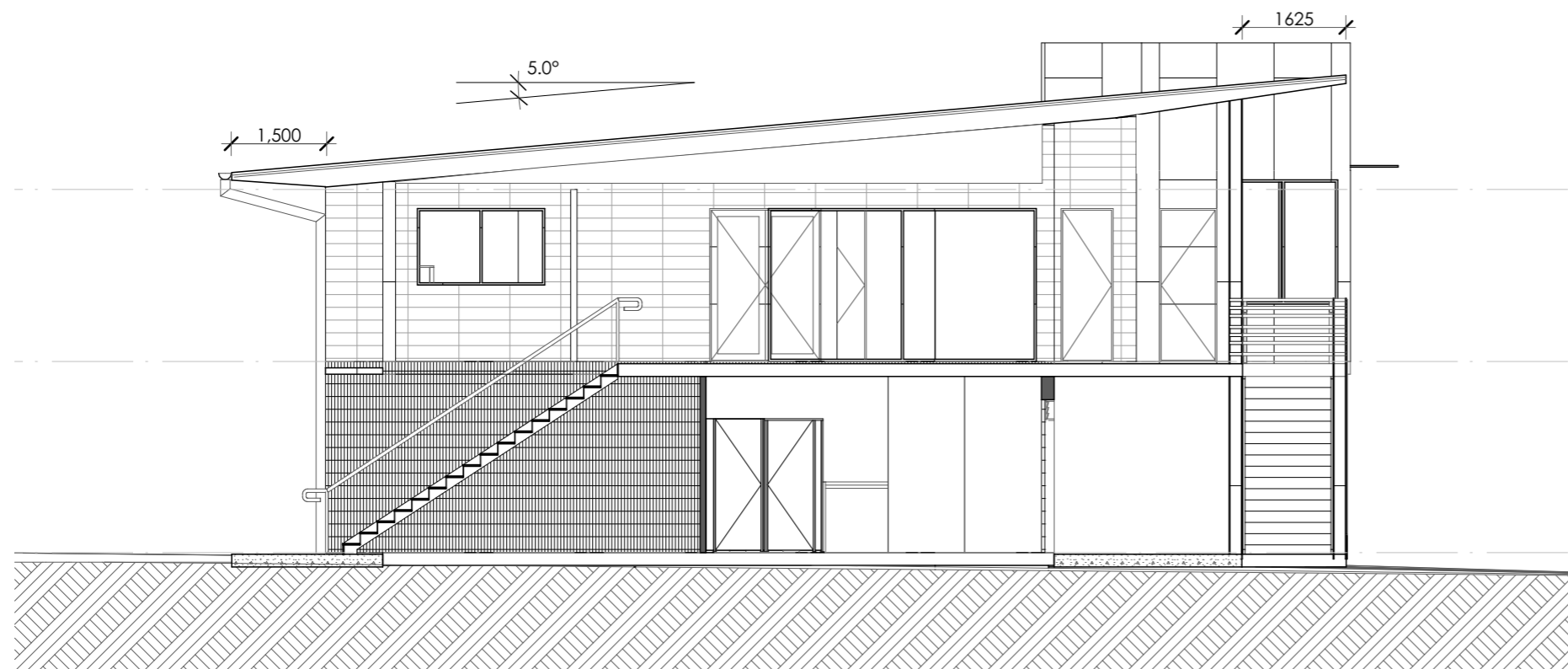
CHECK ALL DIMENSIONS ON SITE.
 REFER ANY DISCREPANCIES TO THE ARCHITECT
 BEFORE PROCEEDING WITH THE WORKS

Issue	Date	Amendments
A	31/08/21	Sketch design
B	20/01/22	Sketch design
C	21/06/22	
D	19/07/22	Development Application



Section A-A

1:100



Section B-B

1:100



366 George Street, Windsor NSW 2756

Windsor Power Boat Club

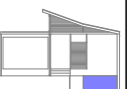
Address
 Lot x DP 161237
 Governor Philip Park,
 George Street,
 Windsor, NSW

Stage
Development Application

Drawing Title Sections	
Drawing No. 20110307	

Date	Drawn by	Sheet size	Project No.	Issue
26/02/2021	BT	A3	210226	D

PO Box 32 Kurrajong NSW 2758
 p 02 4573 1320
 e barbara@btarchitects.com.au
 www.btarchitects.com.au

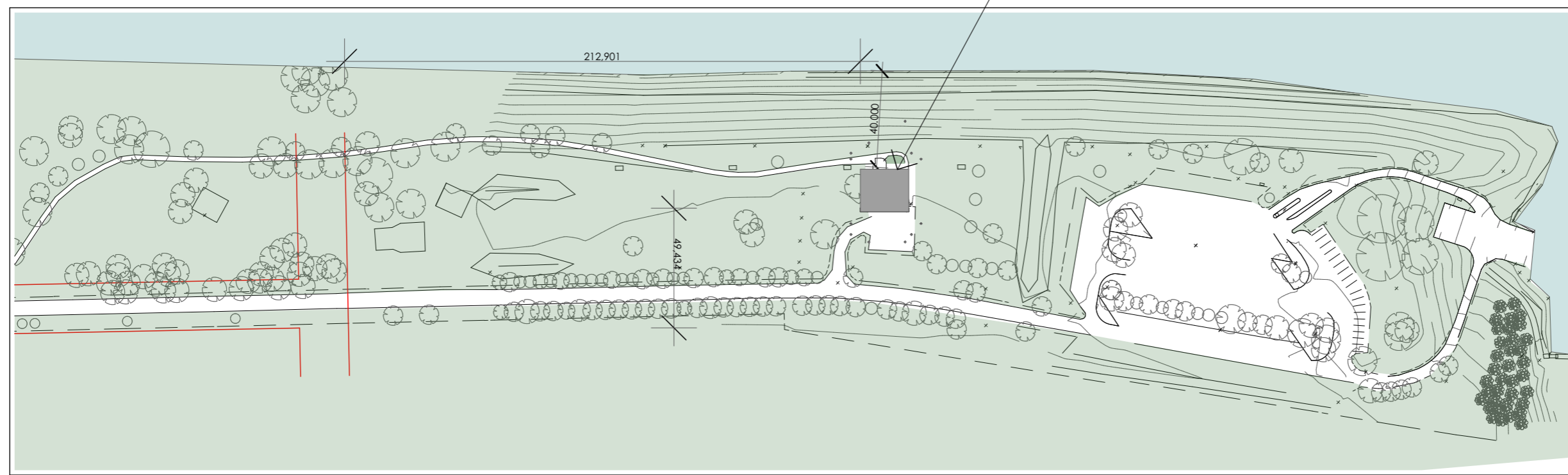


Barbara Tarnawski Architects Pty Ltd

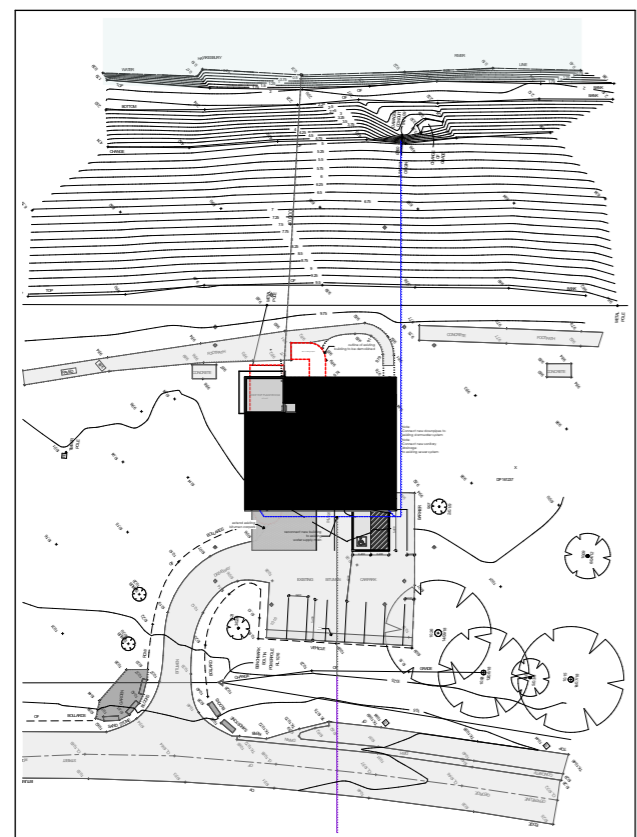
CHECK ALL DIMENSIONS ON SITE.
 REFER ANY DISCREPANCIES TO THE ARCHITECT
 BEFORE PROCEEDING WITH THE WORKS

Drawing No:	Description	Issue	Date
01	Cover sheet and Location Plan	D	19/07/22
02	Site Plan	D	19/07/22
03	Upper Level	D	19/07/22
04	Lower Level	D	19/07/22
05	Elevations	D	19/07/22
06	Elevations	D	19/07/22
07	Sections	D	19/07/22
08	Images, Material and Finishes Schedule	D	19/07/22

Issue	Date	Amendments
A	31/08/21	Sketch design
B	20/01/22	Sketch design
C	21/06/22	
D	19/07/22	Development Application



Site Plan 1:2000



Part Site Plan 1:1000



Location Plan source six maps



366 George Street, Windsor NSW 2756

Windsor Power Boat Club

Address
 Lot x DP 161237
 Governor Philip Park,
 George Street,
 Windsor, NSW

Stage
Development Application

Drawing Title
Cover sheet and Location Plan

Drawing No.
20110301

Date	Drawn by	Sheet size	Project No.	Issue
26/02/2021	BT	A3	210226	D

PO Box 32 Kurrajong NSW 2758
 p 02 4573 1320
 e barbara@btarchitects.com.au
 www.btarchitects.com.au

Barbara Tarnawski Architects Pty Ltd

CHECK ALL DIMENSIONS ON SITE.
 REFER ANY DISCREPANCIES TO THE ARCHITECT
 BEFORE PROCEEDING WITH THE WORKS

STORMWATER CONCEPT PLAN

WINDSOR POWER BOAT CLUB REBUILD

GEORGE STREET WINDSOR (LOT X, DP16237)

GENERAL					
1.	THIS PLAN IS TO BE USED IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, & LANDSCAPING PLANS. ANY DISCREPANCIES OR OMISSIONS ARE TO BE REFERRED TO THE ENGINEER FOR RESOLUTION PRIOR TO COMMENCING WORK.				
2.	ALL MATERIALS AND WORKMANSHIP IS TO MEET AS 3500.3:2015 STORMWATER DRAINAGE, BCA AND LOCAL COUNCIL DEVELOPMENT POLICIES, CONSENTS AND REQUIREMENTS.				
3.	IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND DRAINAGE LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORKS. THIS INCLUDES EXISTING SERVICES AND/OR OTHER STRUCTURES THAT MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO CONSTRUCTION.				
4.	THIS DRAWING IS NOT TO BE USED FOR SET-OUT PURPOSES. ALL SURVEY INFORMATION, PROPOSED BUILDING LEVELS, FINISHED SURFACE LEVELS AND SITE DETAILS SHOWN IN THESE DRAWINGS ARE ESTABLISHED UPON LEVELS/DETAILS SUPPLIED BY OTHERS.				
5.	FLOOR WASTE & DOWNPIPE LOCATIONS ARE INDICATIVE ONLY. ULTIMATE FLOOR WASTE & DOWNPIPE LOCATION, SIZE, & QUANTITY ARE TO BE DETERMINED BY BUILDER IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.				
6.	IT IS THE BUILDERS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES OR OTHER STRUCTURES WHICH MAY AFFECT/BE AFFECTED BY THIS DESIGN PRIOR TO COMMENCEMENT OF WORKS.				
7.	ANY SUBSTITUTION OF MATERIALS SHALL BE APPROVED BY THE ENGINEER AND INCLUDED IN THE DEVELOPMENT APPLICATION.				
8.	CONTRACTORS ARE TO INVESTIGATE ALL EXISTING SERVICES AND APPLY FOR "DIAL BEFORE YOU DIG" PRIOR TO COMMENCEMENT OF CONSTRUCTION.				

COMPLIANCE
1. THESE PLANS WERE PREPARED IN ACCORDANCE WITH COUNCIL'S POLICIES AND REQUIREMENTS, BASIX REQUIREMENTS, AS 3500:2013, ARR (2016), ARQ (2006), BCA (2015), RELEVANT LEGISLATION, AND NSW MUSIC MODELLING GUIDELINES.

SCOPE OF WORKS
1. DETAILED DESIGN, CALCULATION AND DOCUMENTATION FOR THE FOLLOWING (WHERE APPLICABLE): ROOFED, IMPERVIOUS AND PERVIOUS AREAS; RAINWATER REUSE SYSTEM, ON-SITE DETENTION AND STORMWATER DISPOSAL.

MODELLING AND CALCULATIONS
1. SEE ATTACHED DRAINS MODEL AND OUTPUT DATE (WHERE APPLICABLE; ELECTRONIC COPIES ONLY).

GENERAL
1. ALL GUTTERS TO BE FITTED WITH LEAF GUARDS AND SUBJECT TO REGULAR INSPECTION / CLEAN OUT.
2. MIN. TANK SIZE TO BE THAT SPECIFIED WITHIN DETAIL AND PLAN.
3. TANKS ARE TO BE INSTALLED BY A LICENSED PLUMBER IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS, AS3500 AND COUNCIL REQUIREMENTS.
4. RAINWATER RETENTION FOR RE-USE AS SPECIFIED BY BASIX CERTIFICATE.

MINIMUM PIPE COVER		
TOP OF PIPE (O.L.) TO FINISHED SURFACE LEVEL (F.S.L.)		
LOCATION	MINIMUM COVER (mm)	
	CAST IRON, DUCTILE IRON, GALV. STEEL	OTHER PRODUCTS x
1. NOT SUBJECT TO VEHICULAR LOADING:		
(a) WITHOUT PAVEMENT –		
(i) FOR SINGLE DWELLINGS	100	100
(ii) FOR ITEMS OTHER THAN (i)	100	300
(b) WITH PAVEMENT OF BRICK / UNREINFORCED CONCRETE	100*	100*
2. SUBJECT TO VEHICULAR LOADING:		
(a) OTHER THAN ROADS:		
(i) WITHOUT PAVEMENT	300	450
(ii) WITH PAVEMENT OF–		
(A) REINFORCED CONCRETE FOR HEAVY VEHICLE LOADING; OR	NIL*	NIL*
(B) BRICK OR UNREINFORCED CONCRETE FOR LIGHT VEHICULAR LOADING.	NIL*	75*
(b) ROADS–		
(i) SEALED: OR	600	600
(ii) UNSEALED	600	750
3. SUBJECT TO CONSTRUCTION EQUIPMENT LOADING OR IN EMBANKMENT CONDITIONS	600	750
4. LAND ZONE FOR AGRICULTURAL USE	600	600

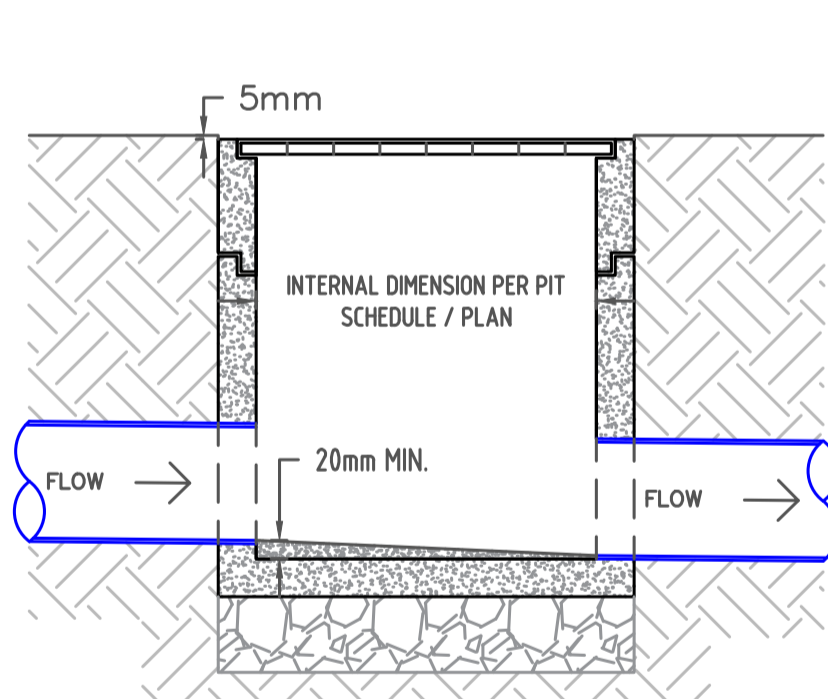
NOTES
 * BELOW THE UNDERSIDE OF PAVEMENT
 1. ALL MINIMUM PIPE COVERS SUBJECT TO COMPLIANCE WITH AS 1762, AS 2033, AS 2566.1, AS 3725, AS 4060

DRAINAGE LINES
1. MINIMUM PIPE GRADE AS SPECIFIED IN TABLE BELOW. MINIMUM DIAMETER IS TO BE (U.N.O): a. Ø100mm WHERE LINE RECEIVES ROOF WATER. b. Ø150mm WHERE LINE RECEIVES RUN-ON FROM PAVED/UNPAVED EXTERNAL SURFACES
2. PIPE EMBEDMENT IS TO BE IN ACCORDANCE WITH LOCAL AUTHORITY SPEC., AS 3500.3, AS 2032 FOR PVC, & AS 3725 FOR FCR/RCP PIPEWORK.
3. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS AND EMBANKMENTS WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

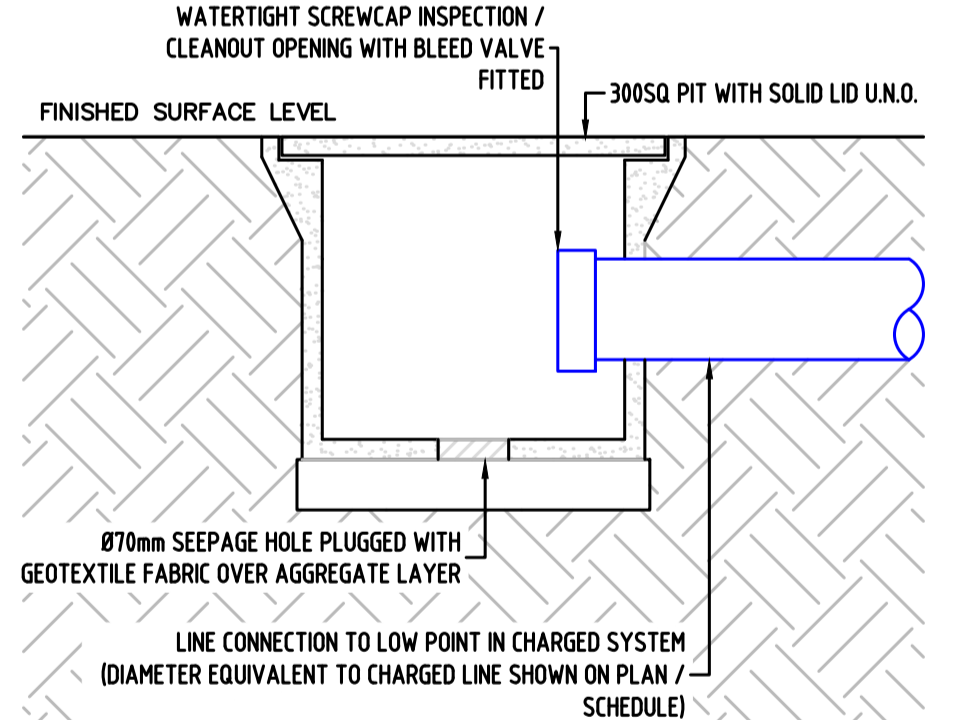
MINIMUM SITE PIPE GRADIENT (U.N.O)			MINIMUM INTERNAL DIMENSIONS FOR STORMWATER PITS		
DIAMETER Ø (mm)	MIN. GRADE	MIN. % SLOPE	DEPTH TO I.L. OF OUTLET (mm)	MIN. INTERNAL DIMENSIONS (mm)	
				WIDTH	LENGTH
≤ Ø150	1:100	1%	≤ 600	450	450
225	1:200	0.5%	> 600 TO ≤ 900	600	600
300	1:250	0.4%	> 900 TO ≤ 1200	600	900
375	1:300	0.33%	> 1200	900	900

PITS
1. ALL PITS TO BE FITTED WITH APPROVED GALVANISED STEEL GRATES AND TO BE SUITABLE FOR THE FOLLOWING LOAD RATING (U.N.O): a. CLASS-B MIN. FOR LANDSCAPED AREAS b. CLASS-C WHERE SUBJECT TO VEHICULAR TRAFFIC
2. ALL PITS FITTED WITH CHILDPROOF SPRING LOCKING J-BOLTS.
3. GRATED COVERS OF PITS > 600SQ mm ARE TO BE HINGED & OFFSET FROM OBSTRUCTIONS TO ALLOW FOR FULL OPENING.
4. PROVIDE STEP IRONS TO STORMWATER PITS > 1200mm IN DEPTH.
5. PIT BASES ARE TO BE BENCHED LEVEL TO THE I.L. OF THE OUTLET PIPE (NO SUMP U.N.O), WITH A MIN. FALL OF 20mm BETWEEN THE INLET AND OUTLET PIPE I.L.S. ALL PIPES SHOULD BE CUT FLUSH WITH THE WALL OF THE PITS.
6. PRECAST PITS ARE TO BE SET ON A 75mm CONCRETE BASE AND BACKFILLED WITH CONCRETE TO HALF THE PIT'S HEIGHT.
7. WATER SHOULD NOT BE PERMITTED TO POND WITHIN THE DRAINAGE SYSTEM.

ABBREVIATIONS	ABBREVIATIONS	ABBREVIATIONS
A.H.D AUSTRALIAN HEIGHT DATUM	G.S.I.P GRATED SURFACE INLET PIT	R.H.S RECTANGULAR HOLLOW SECTION
A.R.I AVERAGE RECURRENCE INTERVAL	HGL HYDRAULIC GRADE LINE	R.L REDUCED LEVEL
A.E.P ANNUAL EXCEEDANCE PROBABILITY	I.L. INVERT LEVEL	R.W.T RAINWATER TANK
C.O CLEAN-OUT PIT	I.O INSPECTION OPENING	S.L SURFACE LEVEL
DP DOWNPIPE	N.S.L NATURAL SURFACE LEVEL	SQ SQUARE
D/S DOWNSTREAM	N.T.S NOT TO SCALE	TYP. TYPICAL
FF FIRST FLUSH DEVICE	O.F OVERFLOW	T.W.L TOP WATER LEVEL
F.F.L FINISHED FLOOR LEVEL	O.L OBVERT LEVEL	U/S UPSTREAM
F.G.L FINISHED GROUND LEVEL	O.S.D ON-SITE DETENTION	U.N.O UNLESS NOTED OTHERWISE
FW FLOOR WASTE	R.C.P REINFORCED CONCRETE PIPE	w/ WITH



GRADED SURFACE INLET PIT (GSIP) – TYPICAL SECTION DETAIL
 SCALE: N.T.S.



CHARGED LINE CLEAN-OUT PIT (CO) – TYPICAL SECTION DETAIL
 SCALE: N.T.S.

KEY	
	SITE BOUNDARY
	EXISTING DRAINAGE LINE
	ROOF DRAINAGE LINE
	SURFACE DRAINAGE LINE
	GRATED SURFACE INLET PIT
	SURFACE FLOW DIRECTION
	DOWNPIPE TYPE 1
	SPREADER TO LWR ROOF TYPE 1
	INSPECTION OPENING
	VERTICAL DROPPER / VERTICAL RISER
	RAINWATER OUTLET
	TANK OVERFLOW TO PIT / PIPE BELOW
	VERTICAL RISER OUTLET INTO TANK
	CHARGED LINE CLEAN-OUT POINT WITHIN PIT

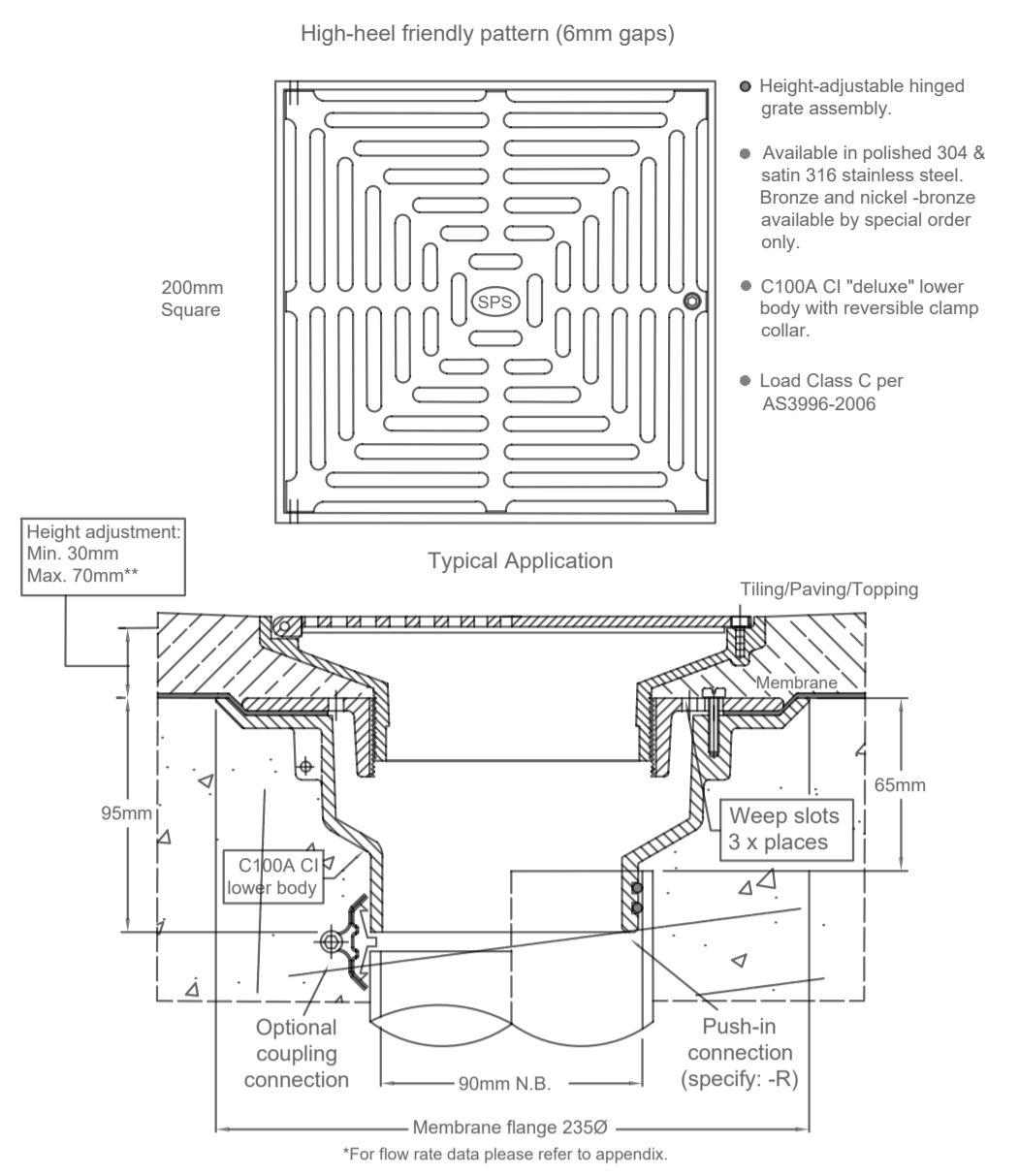
REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
A-02	21-07-22	RS	RS	LS	UPDATE WITH REFERENCE TO BANK STABILISATION
A-01	29/06/22	RS	RS	LS	ISSUE FOR REVIEW

BROADCREST
 ENGINEERING AND ENVIRONMENTAL CONSULTANTS
 broadcrest.com.au | contact@broadcrest.com.au | 1300 554 945
 ENVIRONMENTAL FLOOD STORMWATER GEOTECHNICAL ACOUSTICS WASTEWATER
 BROADCREST CONSULTING PTY LTD | ACN 622 508 187

PROJECT DESCRIPTION	SHEET
WINDSOR POWER BOAT CLUB REBUILD	TITLE PAGE & GENERAL NOTES
PROJECT SITE	PLAN
GEORGE STREET WINDSOR (LOT X, DP16237)	STORMWATER CONCEPT PLAN
LGA	CLIENT
HAWKESBURY CITY COUNCIL	HAWKESBURY CITY COUNCIL

PROJECT ID: 2083-SW
 SCALE: NTS @ A3
 NTS @ A1
 SHEET NO. 1 of 7

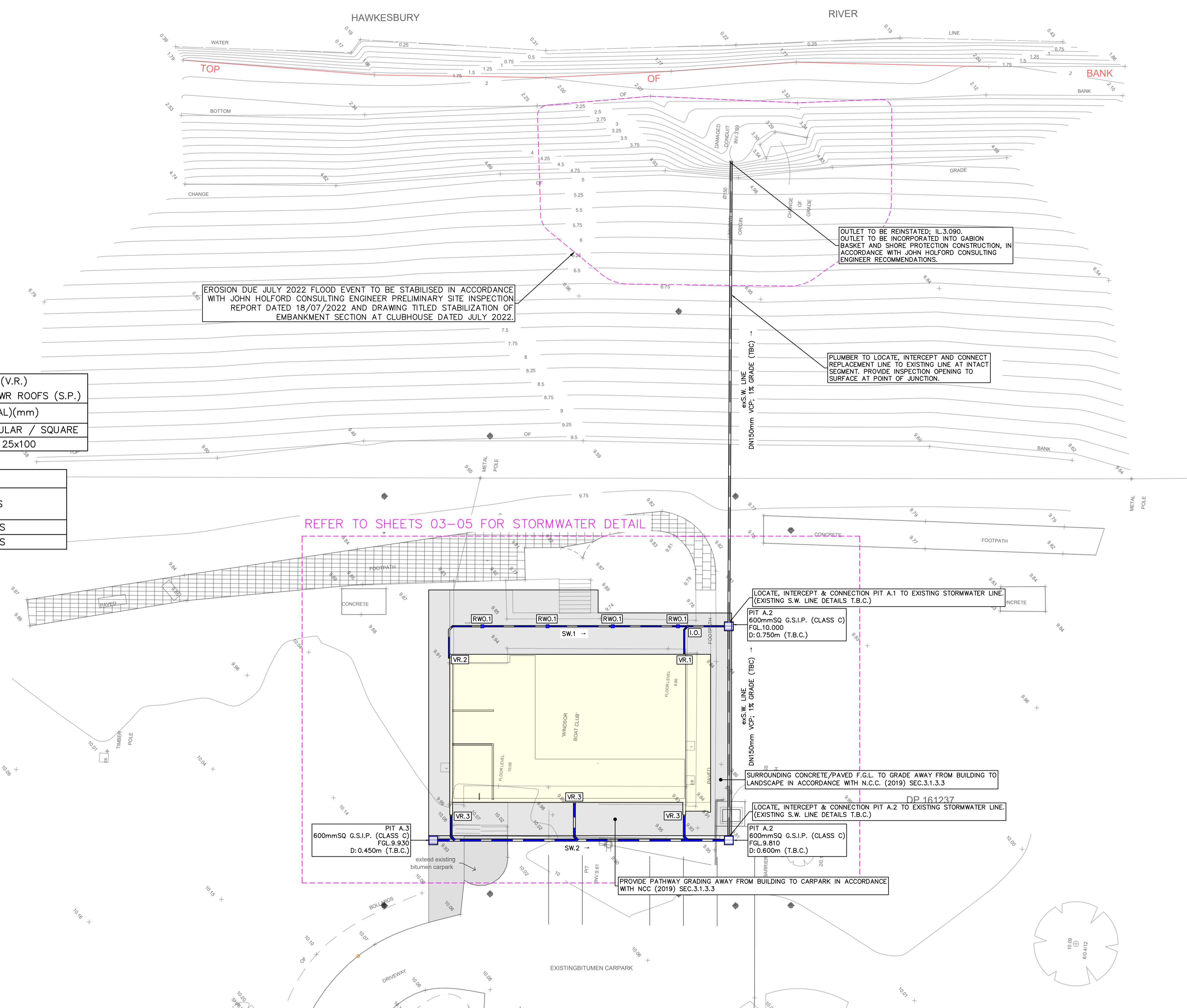
THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE MADE INCOMPLETE IF COPIED



RAINWATER OUTLET 1 [RWO.1] – SPS 200mm SQUARE VERTICAL DRAIN
SCALE: N.T.S.

SCHEDULE	VERTICAL DROPPERS (V.D.) & RISERS (V.R.) DOWNPIPES (D.P.) & SPREADERS TO LWR ROOFS (S.P.)	
ID	MINIMUM DIMENSIONS (INTERNAL)(mm)	
	CIRCULAR (Ø)	RECTANGULAR / SQUARE
DP.1/SP.1/V.D.1/V.R.1	150	125x100

PIPE SCHEDULE (GENERAL)				
ID	TYPE	DN (Ø)	PIPE GRADIENT	NOTES
		(m)	(%)	
SW.1	uPVC DWV	100	1	STORMWATER LINES
SW.2	uPVC DWV	150	1	STORMWATER LINES



ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
A-02	21-07-22	RS	RS	LS	UPDATE WITH REFERENCE TO BANK STABILISATION
A-01	29/06/22	RS	RS	LS	ISSUE FOR REVIEW

BROADCREST
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
broadcrest.com.au | contact@broadcrest.com.au | 1300 554 945

ENVIRONMENTAL FLOOD STORMWATER GEOTECHNICAL ACOUSTICS WASTEWATER
BROADCREST CONSULTING PTY LTD | ACN 622 508 187

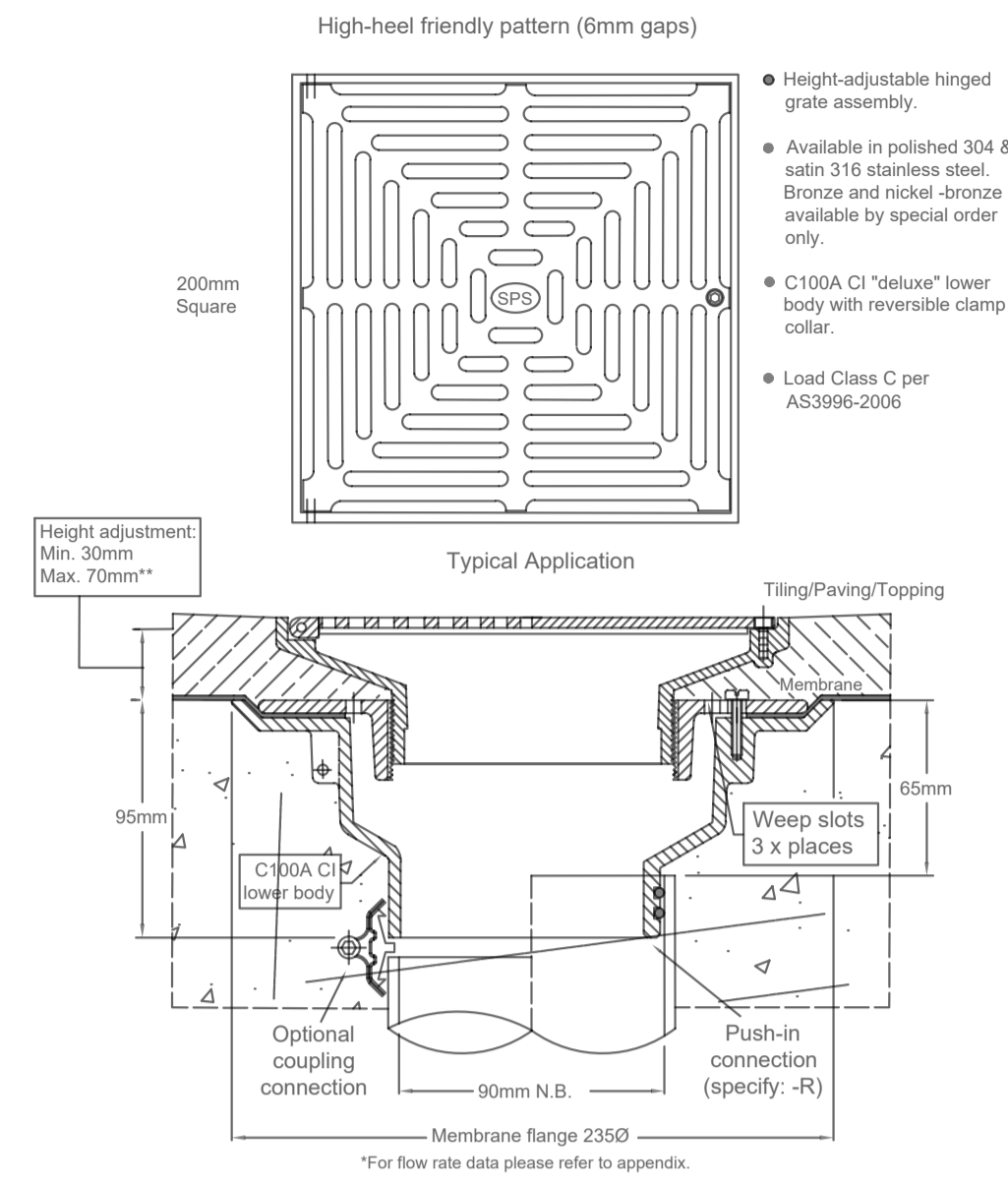
PROJECT DESCRIPTION	WINDSOR POWER BOAT CLUB REBUILD	SHEET	DRAINAGE PLAN
PROJECT SITE	GEORGE STREET WINDSOR (LOT X, DP16237)	PLAN	STORMWATER CONCEPT PLAN
LGA	HAWKESBURY CITY COUNCIL	CLIENT	HAWKESBURY CITY COUNCIL

PROJECT ID	2083-SW
SCALE	1:300 @ A3
	1:150 @ A1
SHEET NO.	2 of 7

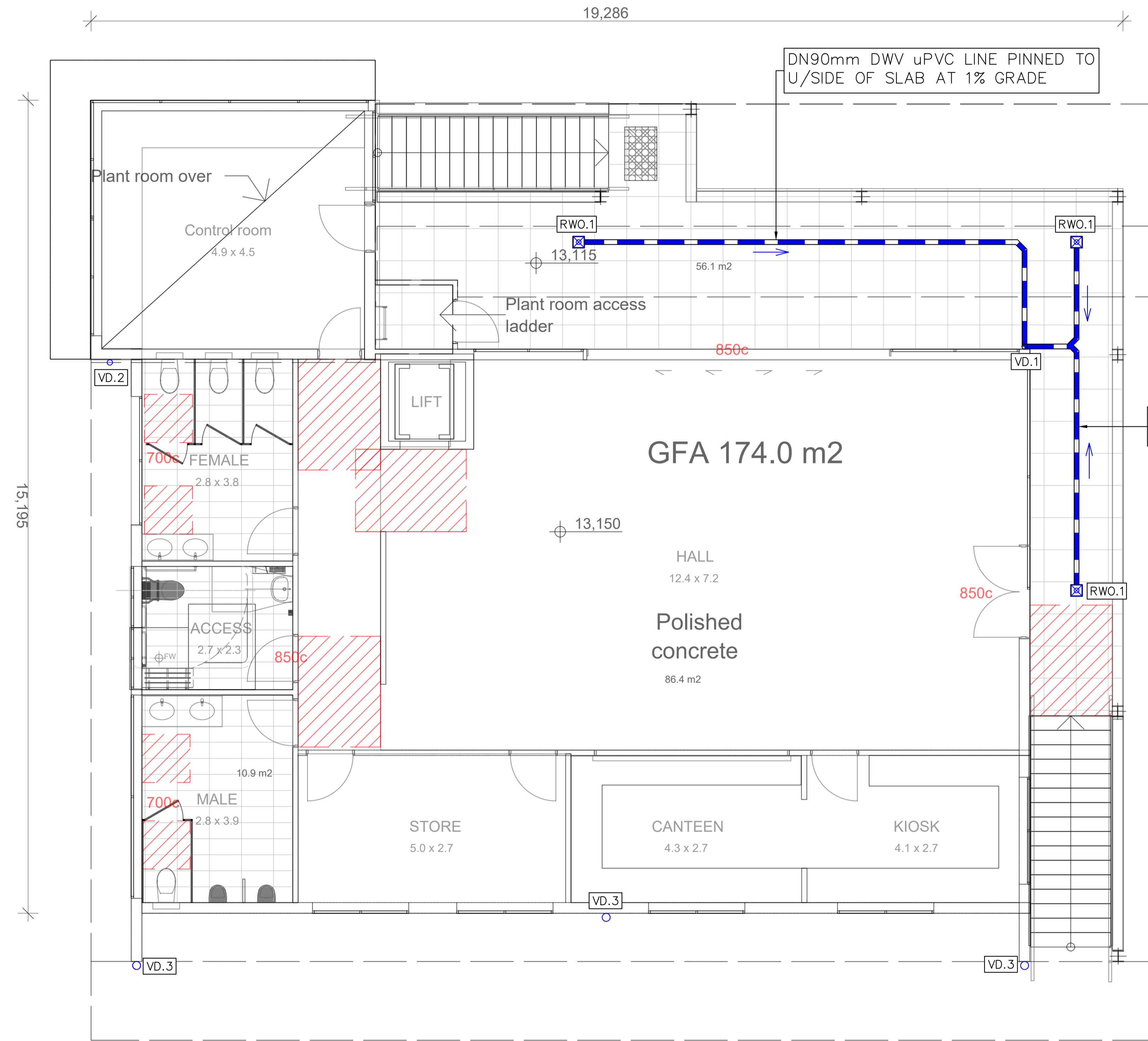
THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE MADE INCOMPLETE IF COPIED

SCHEDULE	VERTICAL DROPPERS (V.D.) & RISERS (V.R.) DOWNPIPES (D.P.) & SPREADERS TO LWR ROOFS (S.P.)	
ID	MINIMUM DIMENSIONS (INTERNAL)(mm)	
	CIRCULAR (Ø)	RECTANGULAR / SQUARE
DP.1/SP.1/V.D.1/V.R.1	150	125x100

PIPE SCHEDULE (GENERAL)				
ID	TYPE	DN (Ø)	PIPE GRADIENT	NOTES
		(m)	(%)	
SW.1	uPVC DWV	100	1	STORMWATER LINES
SW.2	uPVC DWV	150	1	STORMWATER LINES



RAINWATER OUTLET 1 [RWO.1] – SPS 200mm SQUARE VERTICAL DRAIN
SCALE: N.T.S.



DN90mm DWV uPVC LINE PINNED TO V.D.

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE MADE INCOMPLETE IF COPIED

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

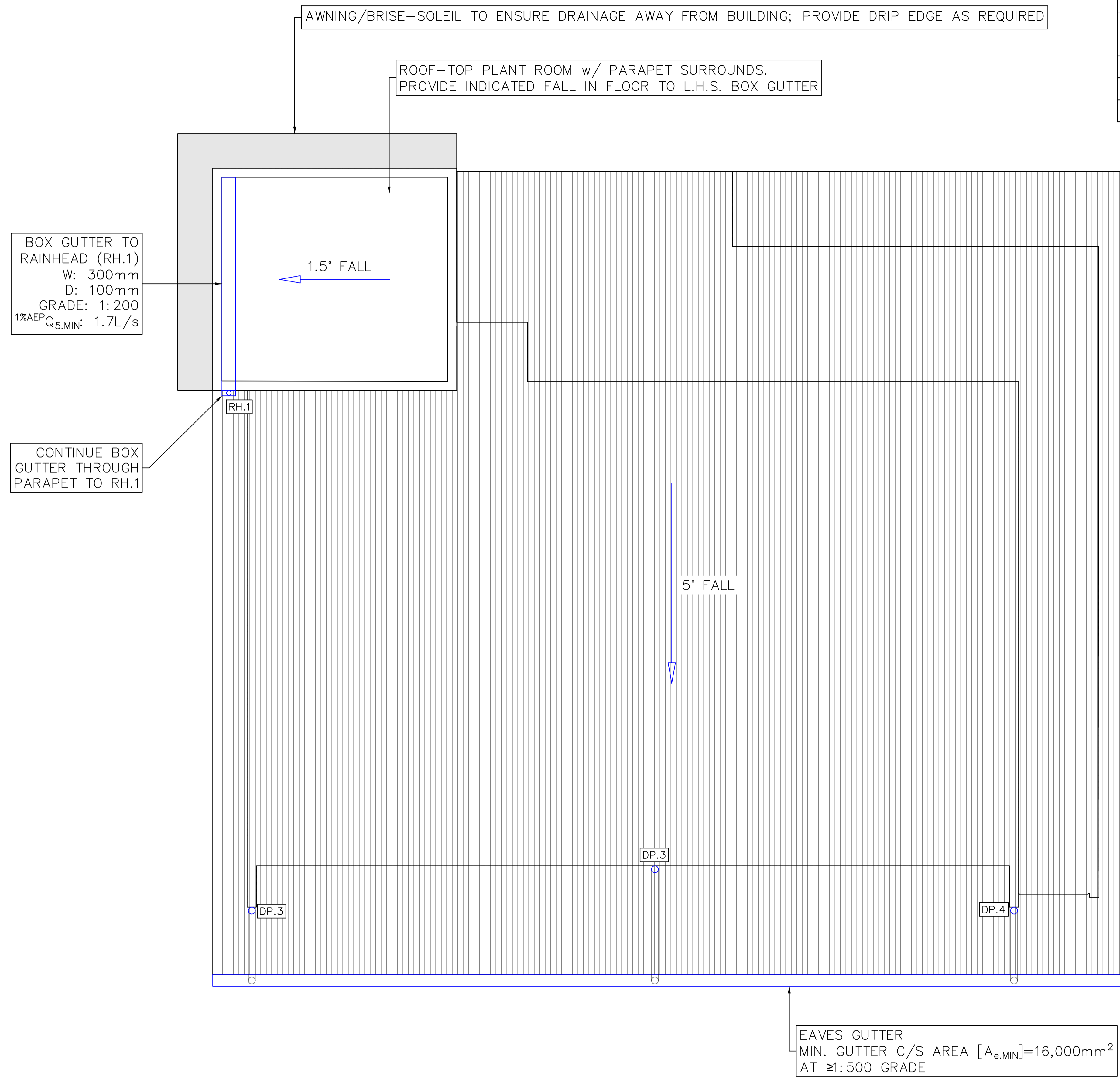
REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
A-02	21-07-22	RS	RS	LS	UPDATE WITH REFERENCE TO BANK STABILISATION
A-01	29/06/22	RS	RS	LS	ISSUE FOR REVIEW

BROADCAST
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
broadcrest.com.au | contact@broadcrest.com.au | 1300 554 945
ENVIRONMENTAL FLOOD STORMWATER GEOTECHNICAL ACOUSTICS WASTEWATER
BROADCAST CONSULTING PTY LTD | ACN 622 508 187

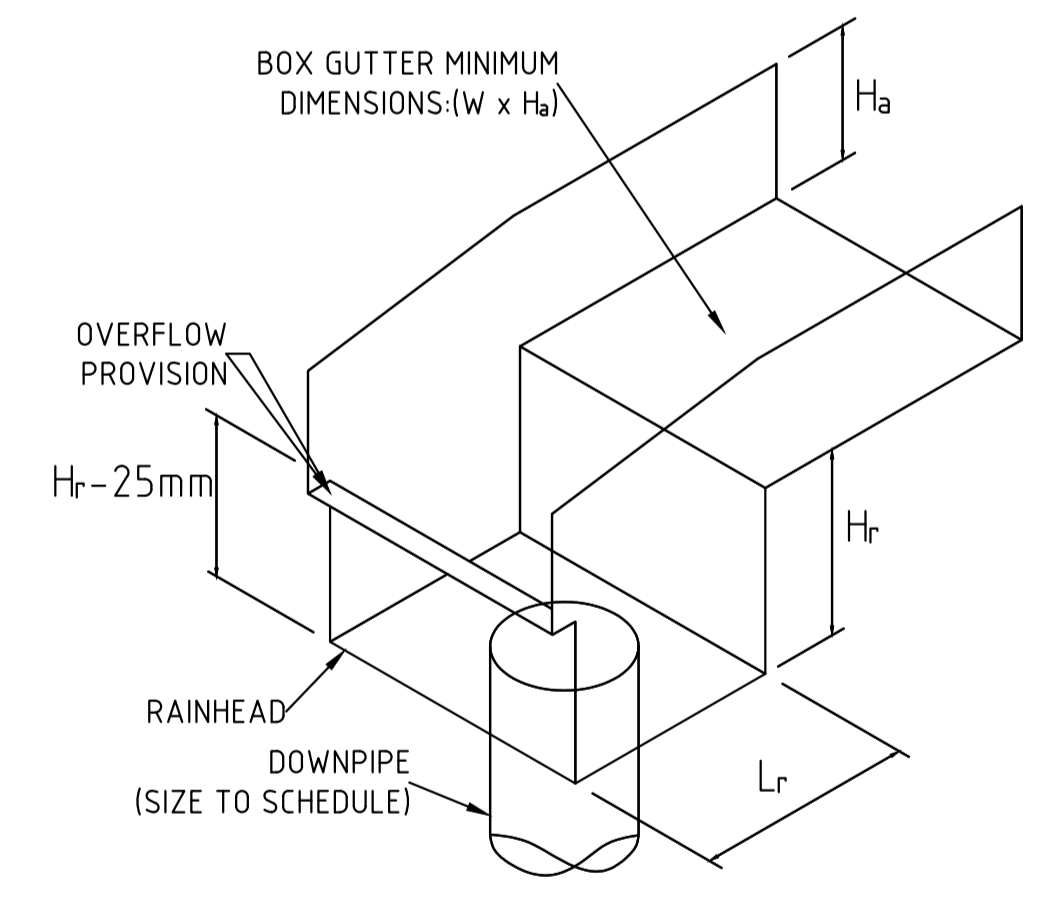
PROJECT DESCRIPTION	WINDSOR POWER BOAT CLUB REBUILD	SHEET	DRAINAGE PLAN
PROJECT SITE	GEORGE STREET WINDSOR (LOT X, DP16237)	PLAN	STORMWATER CONCEPT PLAN
LGA	HAWKESBURY CITY COUNCIL	CLIENT	HAWKESBURY CITY COUNCIL

PROJECT ID: 2083-SW
SCALE: 1:100 @ A3
1:50 @ A1
SHEET NO.: 4 OF 7

SCHEDULE	DOWNPIPES (DP) & VERTICAL DROPPERS (VD)	
	MINIMUM DIMENSIONS (INTERNAL)(mm)	
ID	CIRCULAR (Ø)	RECTANGULAR / SQUARE
DP.1/VD.1	90	75x70
DP.2/VD.2	100	100x75
DP.3/VD.3	150	125x100



RAINHEAD SCHEDULE					
ID	MIN. DIMENSIONS (INTERNAL)(mm)				
	DP	W	H _a	L _r	H _r
RH.1	Ø100	300	100	120	125



TYPICAL BOX GUTTER OVERFLOW TO RAINHEAD
NOTE:
1. SEE RAINHEAD SCHEDULE FOR DIMENSIONS.
2. RAINHEAD WIDTH = BOX GUTTER WIDTH 'W'
3. THE RAINHEAD IS TO BE FULLY SEALED TO THE BOX GUTTER AND THE FRONT OF THE RAINHEAD LEFT OPEN ABOVE THE OVERFLOW WEIR.

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE MADE INCOMPLETE IF COPIED

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
A-02	21-07-22	RS	RS	LS	UPDATE WITH REFERENCE TO BANK STABILISATION
A-01	29/06/22	RS	RS	LS	ISSUE FOR REVIEW

BROADCREST
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
broadcrest.com.au | contact@broadcrest.com.au | 1300 554 945

ENVIRONMENTAL FLOOD STORMWATER GEOTECHNICAL ACOUSTICS WASTEWATER
BROADCREST CONSULTING PTY LTD | ACN 622 508 187

PROJECT DESCRIPTION WINDSOR POWER BOAT CLUB REBUILD	SHEET DRAINAGE PLAN
PROJECT SITE GEORGE STREET WINDSOR (LOT X, DP16237)	PLAN STORMWATER CONCEPT PLAN
LGA HAWKESBURY CITY COUNCIL	CLIENT HAWKESBURY CITY COUNCIL

PROJECT ID 2083-SW	
SCALE 1:75 @ A3 1:50 @ A1	
SHEET NO. 5 of 5	

GENERAL PROCEDURE - EROSION AND SEDIMENT CONTROL

1. THESE ESC PLANS ARE TO BE POSTED AVAILABLE ONSITE.
2. STABILISED SITE EGRESS AND INGRESS IS TO BE CONSTRUCTED (AS PER SD.6-14).
3. ALL ESC MANAGEMENT MEASURE FOR DOWNSTREAM AND OUTLETING RECEIVERS ARE TO BE CONSTRUCTED PRIOR TO OTHER RECOMMENDED ESC WORKS. THIS INCLUDES SEDIMENT CONTROL FENCES (SEE SD.6-15).
4. CLEAN-WATER DIVERSION /DRAINS ARE TO BE CONSTRUCTED FOLLOWED BY DIRTY-WATER DRAINS/DIVERSIONS (WHERE REQ.). SILT TRAPS AND CHECK DAMS ARE TO THEN BE INSTALLED.
5. ALL DISTURBED AREAS U.N.O. ARE TO BE STABILISED WITH TOPSOIL REPLACEMENT AND GRASS SEEDING AS PER SD.7-1. ALTERNATIVE MEASURES IN AREAS OF HIGH SHEET FLOW AND DRAINAGE CHANNELS SHALL BE SPRAYED BONDED FIBRE MATRIX WITH SEED WHICH IS TO INCLUDE SUFFICIENT BINDING AGENT / TACKIFIER TO ACHIEVE A COVER FACTOR OF 0.05. THIS INCLUDES EARTHEN BUNDS AND ANY BARK OR SOIL SLOPE BREAKS (IF EMPLOYED). ALTERNATIVE METHOD IS THE INSTALLATION OF TURF STRIPS LAID PERPENDICULAR TO THE DIRECTION OF FLOW.
6. THE AREAS OF DISTURBANCE SHOULD BE RESTRICTED FROM ACCESS AND TRAFFICKING EXCEPT FOR MAINTENANCE AND INSPECTION UNTIL REVEGETATION IS ACHIEVED.
7. THE SITE AND ESC MEASURES ARE TO BE MONITORED AND MAINTAINED UNTIL FULL REVEGETATION IS ACHIEVED (GRASS COVERAGE GREATER THAN 70%).
8. FOLLOWING FULL REVEGETATION, TEMPORARY ESC MEASURES (SED.FENCES, BUNDS, SILT TRAPS, PIT INLET FILTERS, ETC.) MAY BE REMOVED AND DISPOSED OF APPROPRIATELY.
9. UP-SLOPE AREAS DRAINING INTO SITE ARE TO BE DIVERTED AWAY OR AROUND SITE BY CLEAN-WATER CHANNELS (SANDBAGS OR EQUIV., WHERE REQUIRED).

STATEMENT OF SOIL MANAGEMENT

1. ALL TOPSOIL IS TO BE STOCKPILED AT LOCATIONS DESIGNATED WITHIN THE PLAN, OR AT LOCATION COORDINATED BETWEEN THE SITE SUPERINTENDENT AND DESIGN ENGINEER.
2. ALL FORMED CUT & FILL EMBANKMENTS ARE TO BE STABILISED AND SEEDING WITHIN 7 DAYS OF FINAL TRIMMING.
3. AREAS OF DISTURBANCE INCLUDING FILL WORKS ARE TO BE TOP-SOILED, STABILISED AND SEEDING PRIOR TO COMPLETION OF WORKS. AREAS UNABLE TO BE STABILISED WITHIN 2 MONTHS MUST BE TEMPORARILY RE-VEGETATED WITHIN 7 DAYS OF CLEARING WORKS.
4. AREAS THAT FAIL TO ESTABLISH ARE TO HAVE DEFICIENCIES IN SOIL / WATERING REGIME / SEED SELECTION ADDRESSED AND RE-SOWN IMMEDIATELY.
5. SOIL SURFACES ARE TO BE SCARIFIED TO MIN. 100mm DEPTH PRIOR TO RE-SEEDING.
6. TEMPORARY RE-VEGETATION INCLUDING SELECTED SPECIES AND MIX IS TO COMPLY WITH COUNCIL SPECIFICATIONS.
10. THE SITE SUPERINTENDENT AND CONTRACTORS ARE TO REGULARLY LIAISE WITH THE DESIGN ENGINEER TO COORDINATE RE-VEGETATION.
11. ALL KERB INLET AND SURFACE INLET PITS ARE TO BE PROVIDED WITH SEDIMENT FILTER BARRIERS (e.g. STRAW BALES, SANDBAGS).
12. BERMS ARE TO BE CONSTRUCTED UPSTREAM OF CUT & FILL EMBANKMENTS TO PREVENT RUN-ON. BERMS ARE TO BE MAINTAINED AND PROGRESS WITH THE ADVANCEMENT OF EXCAVATION WORKS.
13. EXCAVATION FOR DRAINAGE LINES/DRAINS IS TO BE TOP-SOILED, LINED AND SEEDING IMMEDIATELY AFTER INSTALLATION.
14. THE SITE SUPERINTENDENT AND CONTRACTORS ARE RESPONSIBLE FOR IMPLEMENTING DUST CONTROL AND MITIGATING WIND EROSION. SOIL TACKIFIER'S (EPA APPROVED) OR WATER-SPRAYING ARE TO BE EMPLOYED AS REQUIRED TO ALL AREAS OF DISTURBANCE, INCLUDING STOCKPILES. APPLICATION RATES ARE TO BE TO MANUFACTURE'S SPECIFICATION.
15. VEHICULAR AND MACHINERY ACCESS IS TO BE DESIGNATED BY PARAWEBBING FENCING TO LIMIT SITE DISTURBANCE AND DIRECT TRAFFIC TO STABILIZED ACCESS POINTS.
16. THE SITE-SUPERINTENDENT AND CONTRACTORS ARE RESPONSIBLE FOR THE CORRECT INSTALLATION AND MAINTENANCE OF CONTROL DEVICES, INCLUDING DISPOSAL OF ACCUMULATED MATERIAL.

MAINTENANCE PROCEDURES

1. ALL SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE MONITORED AND MAINTAINED AT ALL TIMES TO ENSURE THEY ARE FULLY FUNCTIONAL AND OPERATIONAL DURING THE PERIOD OF WORKS. THIS INCLUDES NON-ACTIVE PERIODS DURING THE CONSTRUCTION PHASE INCLUDING HOLIDAYS, LEAVE OR PERIODS OF DELAY.
2. MATERIAL ACCUMULATED DURING THE OPERATION OF THE CONTROL MEASURES ARE TO BE RE-SPREAD AND STABILISED WITHIN THE SITE, OR PLACED IN MANAGED STOCKPILES.

SITE STABILISATION AND REHABILITATION GUIDELINES

1. IMPLEMENTATION OF ESC MEASURES AND PERMANENT SITE STABILISATION (C-FACTOR <0.1; EQUIV. TO 60% GRASS COVERAGE) IS TO BE ACHIEVED WITHIN 10-DAYS OF COMPLETION OF WORKS.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO REMAIN IN-PLACE REHABILITATION IS ACHIEVED ACROSS THE WHOLE SITE (C-FACTOR <0.05; EQUIV. TO 70% GRASS COVERAGE).

WEATHER & FORECAST MONITORING

1. THE SITE SUPERINTENDENT AND CONTRACTORS ARE RESPONSIBLE FOR MONITORING WEATHER AND FORECASTS FOR THE SITE LOCALE.
2. A MANAGEMENT REGIME IS TO BE IMPLEMENTED PRIOR TO THE COMMENCEMENT OF WORKS TO ENSURE SITE STABILISATION CAN OCCUR WITHIN A 24HR PERIOD PRIOR TO RAINFALL AND/OR WIND EVENTS.
3. DISTURBED LANDS MUST NOT HAVE A C-FACTOR OF >0.1 (EQUIVALENT TO 60% GRASS COVERAGE) UNLESS A 3-DAY FORECAST INDICATES RAIN TO BE UNLIKELY. WHERE FORECASTS PROVE TO BE INCORRECT, THE MANAGEMENT REGIME IS TO BE ENACTED TO ACHIEVE SITE STABILISATION TO A C-FACTOR OF 0.1 WITHIN 24HRS.

REFERENCES - E.S.C.

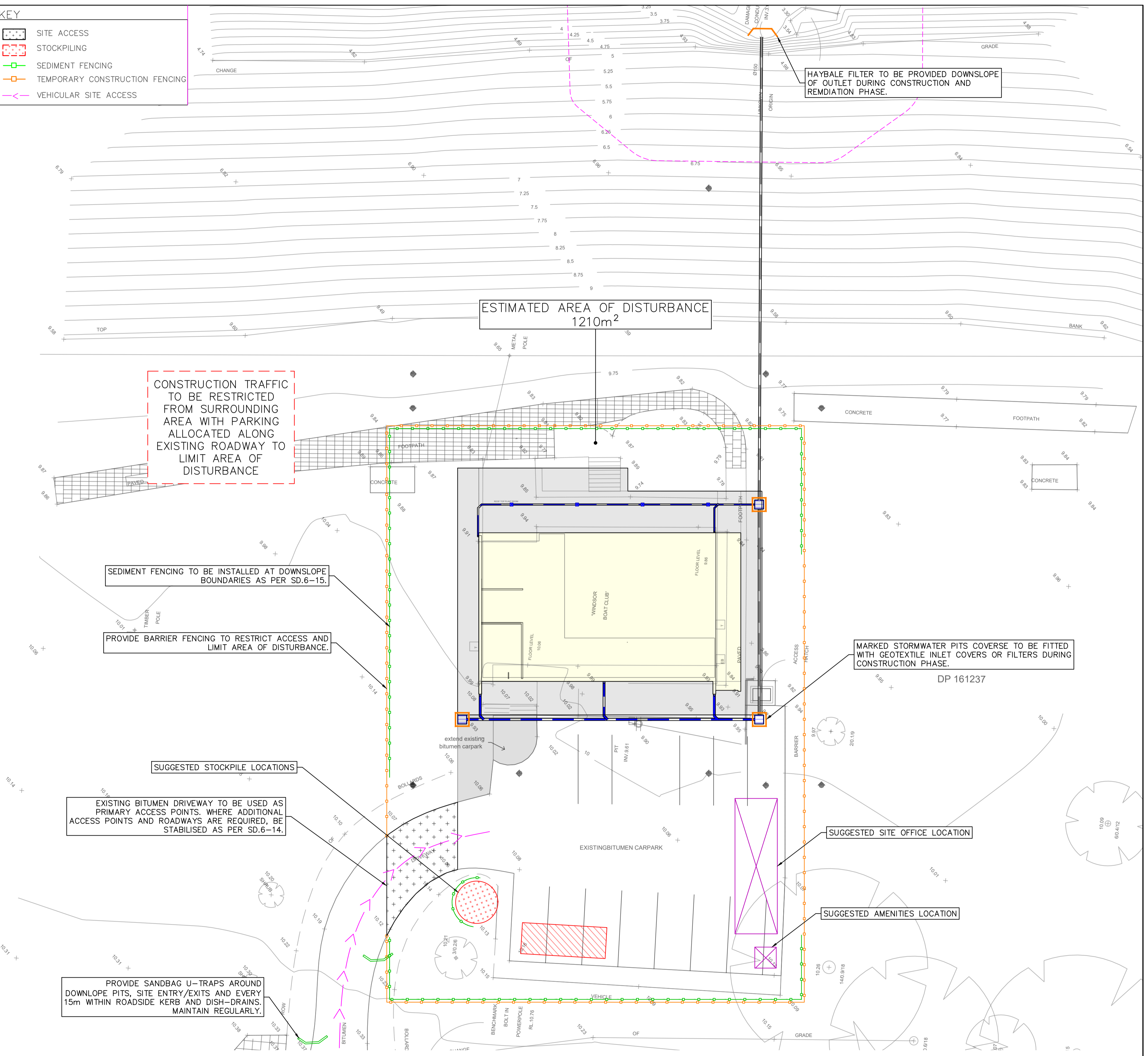
TYPICAL DRAWINGS AND ULTIMATE GUIDANCE ON IMPLEMENTATION OF EROSION AND SEDIMENT CONTROLS, PLEASE REFER FIRST TO 'THE BLUE BOOK' (LANDCOM 2004) AND SECONDLY TO 'A ESC FIELD GUIDE FOR CONSTRUCTION SITE MANAGERS' (CREEKS & CATCHMENTS 2012).

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
A-02	21-07-22	RS	RS	LS	UPDATE WITH REFERENCE TO BANK STABILISATION
A-01	29/06/22	RS	RS	LS	ISSUE FOR REVIEW

KEY

- SITE ACCESS
- STOCKPILING
- SEDIMENT FENCING
- TEMPORARY CONSTRUCTION FENCING
- VEHICULAR SITE ACCESS

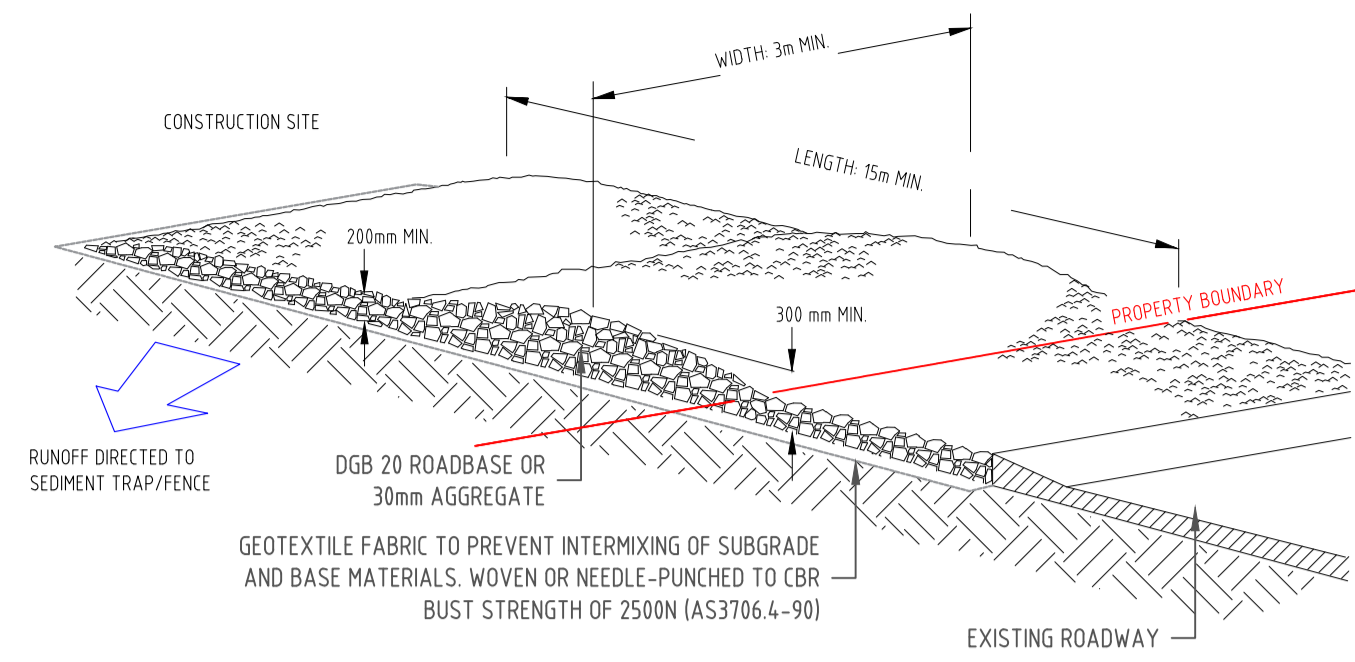


THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE MADE INCOMPLETE IF COPIED

BROADCREST
 ENGINEERING AND ENVIRONMENTAL CONSULTANTS
 broadcrest.com.au | contact@broadcrest.com.au | 1300 554 945
 ENVIRONMENTAL FLOOD STORMWATER GEOTECHNICAL ACOUSTICS WASTEWATER
 BROADCREST CONSULTING PTY LTD | ACN 622 508 187

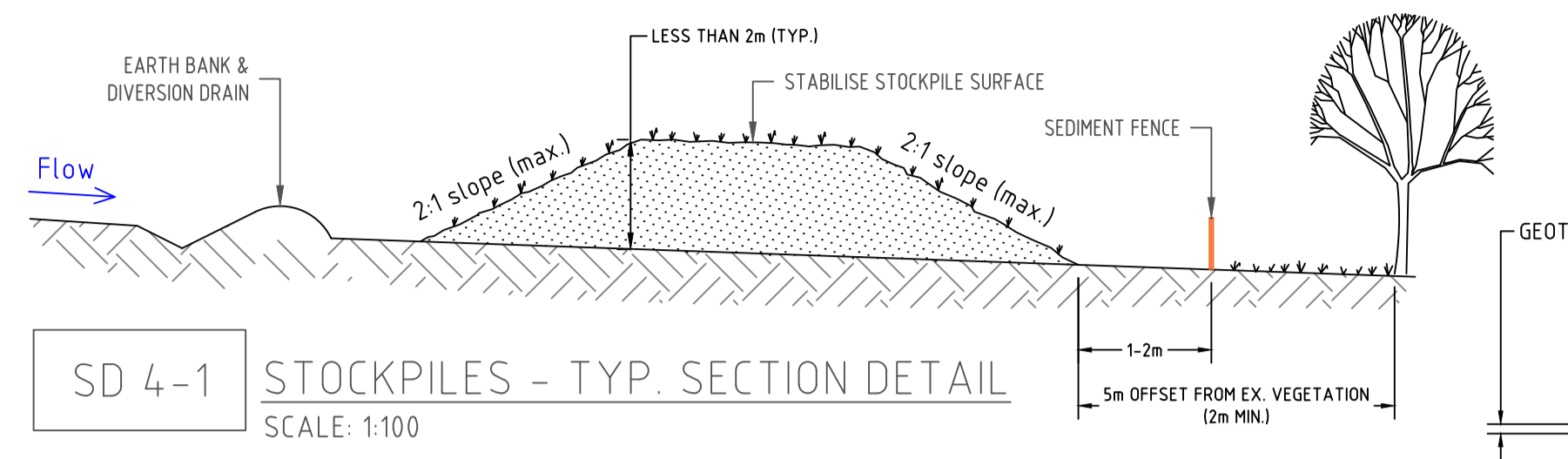
PROJECT DESCRIPTION	WINDSOR POWER BOAT CLUB REBUILD	SHEET	DRAINAGE PLAN
PROJECT SITE	GEORGE STREET WINDSOR (LOT X, DP16237)	PLAN	STORMWATER CONCEPT PLAN
LGA	HAWKESBURY CITY COUNCIL	CLIENT	HAWKESBURY CITY COUNCIL

PROJECT ID
2083-SW
SCALE
1:300 @ A3
1:150 @ A1
SHEET NO.
6 of 5



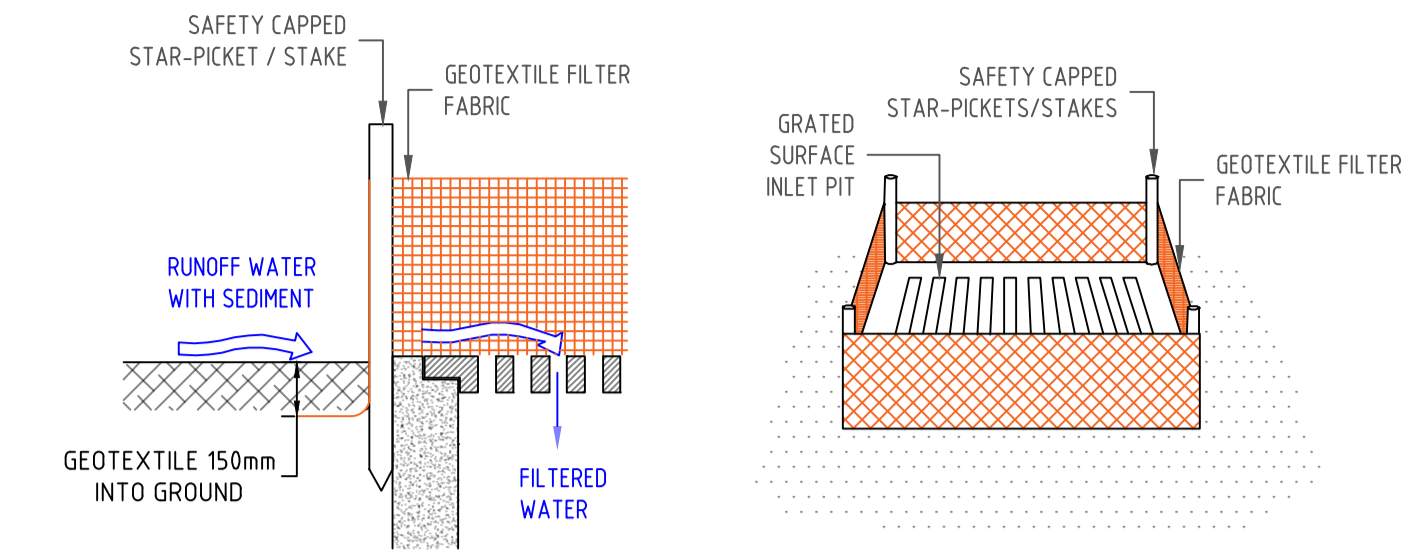
SD 6-14 STABILISED SITE ACCESS - TYP. DETAIL
SCALE: 1:50

- CONSTRUCTION NOTES:**
1. STRIP THE TOPSOIL, LEVEL THE SITE, AND COMPACT SUBGRADE.
 2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
 3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD-BASE / 30mm AGGREGATE.
 4. ENSURE THE STRUCTURE IS AT LEAST 15m LONG OR TO BUILDING ALIGNMENT, AND AT LEAST 3.0m WIDE.
 5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.



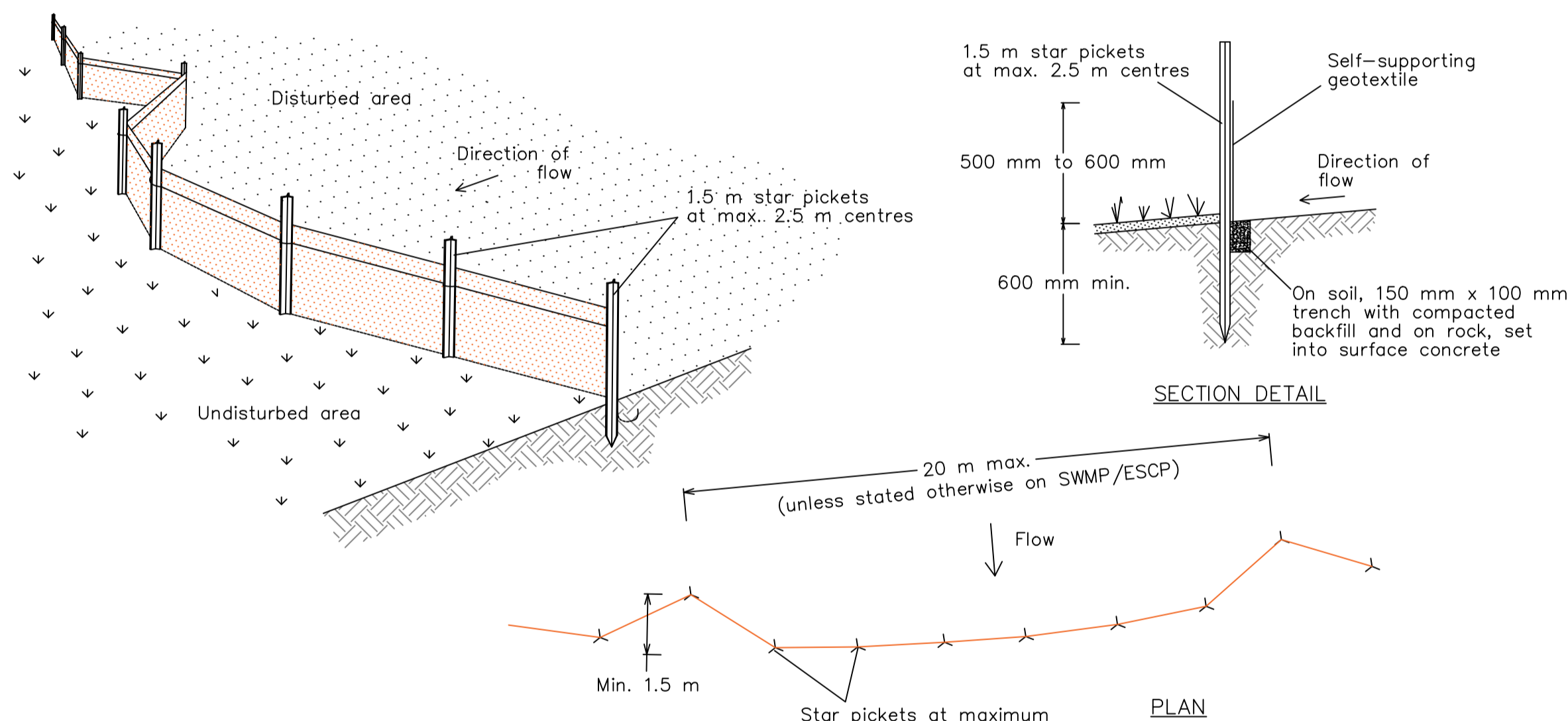
SD 4-1 STOCKPILES - TYP. SECTION DETAIL
SCALE: 1:100

- CONSTRUCTION NOTES:**
1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS, AND HAZARD AREAS.
 2. CONSTRUCT STOCKPILES ON THE CONTOUR AS LOW, FLAT, AND ELONGATED MOUNDS.
 3. WHERE SPACE PERMITS, MAINTAIN STOCKPILE HEIGHTS AT LESS THAN 2m.
 4. WHERE STOCKPILE DURATION IS GREATER THAN 10-DAYS, STABILISE STOCKPILE FOLLOWING APPROVED ESCP / SWMP TO REDUCE THE C-FACTOR TO < 0.10.
 5. CONSTRUCT EARTH (SD 5-5) UPSLOPE OF STOCKPILES, AND SEDIMENT FENCING (SD 6-8) 1-2m DOWNSLOPE.



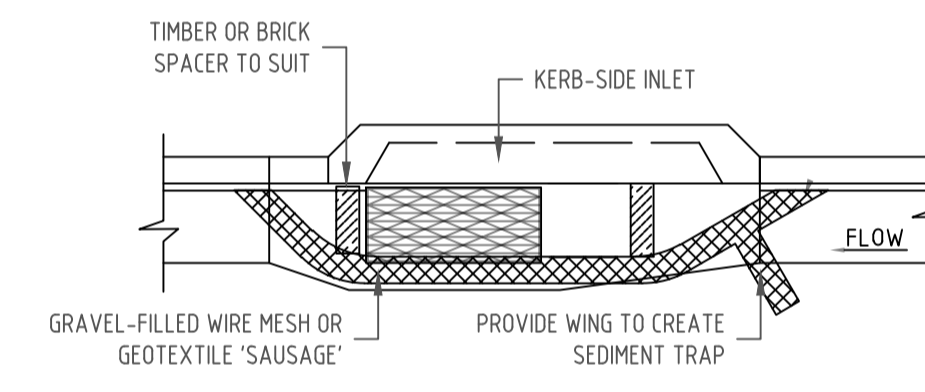
SD 6-12 GEOTEXTILE INLET FILTER (SURFACE INLET PIT) - TYP. SECTION DETAIL
SCALE: 1:20

- CONSTRUCTION NOTES:**
1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE FOLLOWING SD 6-8 WITH REDUCED PICKET SPACING OF 1m MAX.
 2. WHERE GEOTEXTILE IS NOT SELF-SUPPORTING, WRAP WIRE MESH (14-GAUGE x 150mm OPENINGS) WITH THE GEOTEXTILE FABRIC.
 3. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATER TO BYPASS THE PIT.



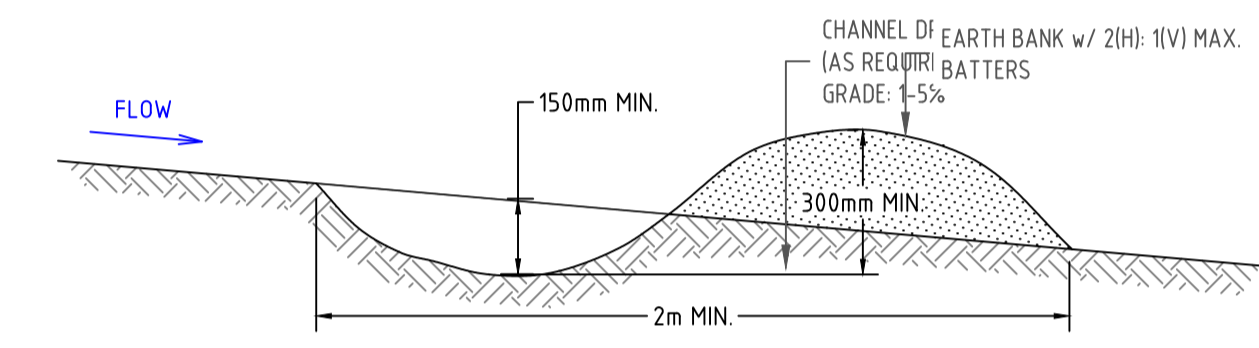
SD 6-8 SEDIMENT FENCE - TYP. DETAIL
SCALE: 1:25

- CONSTRUCTION NOTES:**
1. CONSTRUCT SEDIMENT FENCES PARALLEL TO CONTOUR (OR AS CLOSE AS POSSIBLE), WITH SMALL RETURNS AS DETAILED TO LIMIT CATCHMENT AREA TO ANY ONE SECTION OF FENCE RUN. CATCHMENT AREA TO A SINGLE RUN IS TO BE 50 L/s FOR THE 10% AEP STORM EVENT.
 2. CUT 105mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
 3. DRIVE 1.5m LONG STAR-PICKETS INTO THE GROUND AT 2.5m (MAX.) INTERVALS AT THE DOWNSLOPE EDGE OF THE TRENCH. ALL STAR PICKETS TO BE FITTED WITH SAFETY CAPS.
 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE-TIES (OR PER MANUFACTURE'S SPEC). ONLY USE GEOTEXTILE SPECIFIED FOR SEDIMENT FENCE USE.
 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH 150mm OVERLAP.
 6. BACK FILL TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



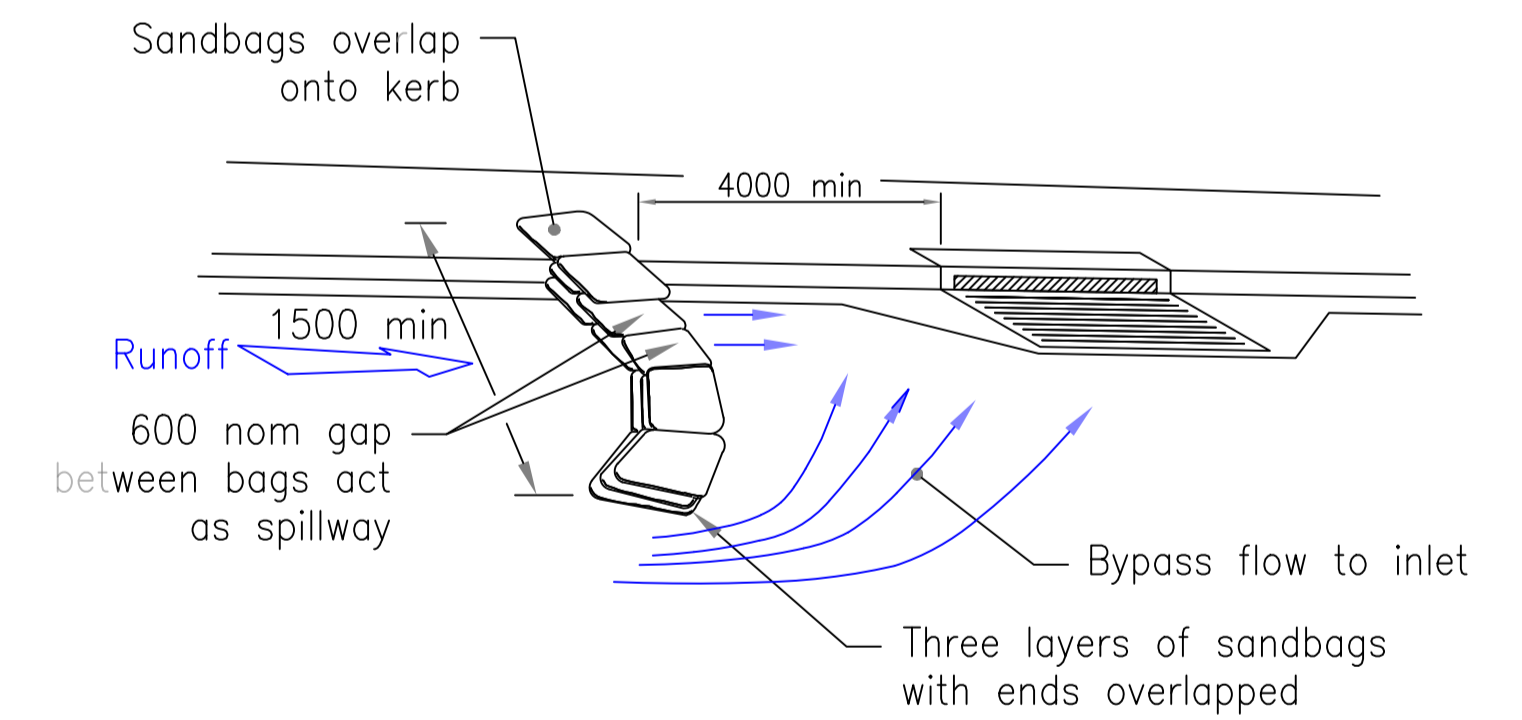
SD 6-11 KERB PIT INLET FILTER
SCALE: 1:20

- CONSTRUCTION NOTES:**
1. INSTALL FILTERS TO KERB ONLY AT SAG POINTS.
 2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL WITH 25mm TO 50mm GRAVEL.
 3. FORM ELLIPTICAL CROSS SECTION ABOUT 150mm HIGH x 400mm WIDE.
 4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACE BLOCKS.
 5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
 6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT BASS BETWEEN.



SD 5-5 EARTH BANK (LOW FLOW) - TYP. SECTION DETAIL
SCALE: 1:20

- CONSTRUCTION NOTES:**
1. BUILD WITH GRADIENT BETWEEN 1-5%.
 2. AVOID REMOVING TREES & SHRUBS WHERE POSSIBLE - DIRECT DRAIN AROUND.
 3. ENSURE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
 4. BUILD THE DRAIN WITH A CIRCULAR, PARABOLIC, OR TRAPEZOIDAL CROSS-SECTION (NOT 'V' SHAPED).
 5. COMPACT BANKS ON CONSTRUCTION TO PREVENT FAILURE.
 6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10-DAYS OF CONSTRUCTION.
 7. WHERE UPSLOPE LENGTH IS $\geq 80m$, THIS CONFIGURATION IS TO BE USED AS A TEMPORARY MEASURE ONLY.



SD A-22 KERB INLET PIT SAND SEDIMENT TRAP - TYP. DETAIL
SCALE: 1:100

ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
A-02	21-07-22	RS	RS	LS	UPDATE WITH REFERENCE TO BANK STABILISATION
A-01	29/06/22	RS	RS	LS	ISSUE FOR REVIEW

BROADCREST
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
broadcrest.com.au | contact@broadcrest.com.au | 1300 554 945

ENVIRONMENTAL FLOOD STORMWATER GEOTECHNICAL ACOUSTICS WASTEWATER
BROADCREST CONSULTING PTY LTD | ACN 622 508 187

PROJECT DESCRIPTION WINDSOR POWER BOAT CLUB REBUILD	SHEET DRAINAGE PLAN
PROJECT SITE GEORGE STREET WINDSOR (LOT X, DP16237)	PLAN STORMWATER CONCEPT PLAN
LGA HAWKESBURY CITY COUNCIL	CLIENT HAWKESBURY CITY COUNCIL

PROJECT ID 2083-SW	
SCALE NTS @ A3	
NTS @ A1	
SHEET NO. 7 of 5	

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE MADE INCOMPLETE IF COPIED