
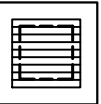

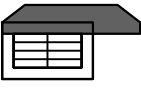



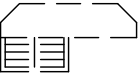












PROPOSED ALTERATIONS AND ADDITIONS AT
39 CUMBERLAND AVENUE, COLLAROY NSW

LEGEND	
DP ●	DOWNPIPE
— >>> —	STORMWATER LINE
— >>> —	STORMWATER LINE DRAINING TO RWT
— OF —	OVER FLOW PIPE
— SSD —	SUBSOIL LINE
— 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
— / — / —	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

LEGEND	
FF ○	FIRST FLUSH
 eSMH	EXISTING SEWER MANHOLE
OFF ➡	OVERLAND FLOW PATH
RWO ○	RAINWATER OUTLET
PS ●	PIPE STAND
CO ○	CLEAR OUT POINT
DDO ○	DISH DRAIN OUTLET
PD ○	PLANTER DRAIN
]	CAPPING
(1.0)	PIT TAG/NUMBER
RH ☒	RAINHEAD
	DOWNPIPE DROP
	NON RETURN VALVE
	WALL PENETRATION
DP ● —	DOWNPIPE SPREADER
	WARNING LIGHT
0.00 ●	SPOT LEVELS
▲	BENCHMARK



DIAL BEFORE YOU DIG SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION ON SITE
TM: TRADE MARK OF THE ASSOCIATION OF DIAL BEFORE YOU DIG SERVICES LTD. USED UNDER LICENSE.

DRAWING REGISTER		
NUMBER	NAME	REVISION
SW001	COVER SHEET	A
SW010	SITE STORMWATER AND ROOF PLAN & DETAILS	A
ER001	EROSION AND SEDIMENT CONTROL PLAN	A

DRAINAGE NOTES:

ALL PIPES TO BE LAID ON 75mm SAND BED WITH THE BARRELS FULLY SUPPORTED

100mm AND 150mm DIAMETER PIPES TO BE LAID ON MINIMUM 1% GRADE

MINIMUM DEPTH OF COVER FOR PIPES NOT SUBJECT TO VEHICULAR LOADING TO BE 300mm

ALL DRAINAGE PIPES LAID UNDER PAVEMENT SHALL BE REINFORCED CONCRETE WITH RUBBER RING JOINTS

BACKFILL TRENCHES WITH COMPACTED SAND OR APPROVED AGGREGATE MATERIAL

ALL PITS TO HAVE 600x600mm INTERNAL DIMENSIONS (U.N.O.)

SILT ARRESTORS TO HAVE 900x900mm INTERNAL DIMENSIONS

HEAVY DUTY GRATES AND COVERS ARE TO BE PROVIDED IN TRAFFICABLE AREAS

PIT GRATE TO BE TYPE WELDLOK OR APPROVED EQUIVALENT

ALL PITS SHALL BE PROVIDED WITH A LOCKING CLIP

ALL PITS SHALL BE MAINTAINED REGULARLY

TOP OF BENCHING SHALL BE TO THE HALF OF THE OUTLET PIPE DIAMETER

MAXIMUM FRONT ENTRY PIPE: –
STRAIGHT ENTRY – ø750
SKEW ENTRY 45° – ø525

ø100 SUBSOIL DRAINAGE PIPE 3000mm LONG WRAPPED IN FABRIC SOCK TO BE PROVIDED ADJACENT TO INLET PIPES

COMPRESSIVE STRENGTH f_c FOR CAST IN SITU CONCRETE TO BE A MINIMUM OF 20MPa AT 28 DAYS

PROVIDE CLEANING EYES TO ALL DOWNPIPES NOT DIRECTLY CONNECTED TO PITS

ISOLATED JOINTS TO BE PROVIDED TO ISOLATE CONCRETE PAVEMENTS FROM PITS

ALL TRENCH GRATES PROVIDED SHALL HAVE A MINIMUM CLEAR WIDTH OF 200mm

STORMWATER DRAINAGE CONNECTIONS TO THE MAIN SYSTEM SHALL BE TO THE REQUIREMENTS AND THE SATISFACTION OF LOCAL COUNCIL

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
OPF	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

STORMWATER PIPE BEDDING/PAVING NOTES:

WHERE TRENCH BASE IS ROCK A MINIMUM OF 75mm BEDDING TO BE PROVIDED UNDER PIPE COLLARS.

STORMWATER PIPE BEDDING DETAIL TO BE IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS. BEDDING DETAILS TO BE CONFIRMED UPON EXCAVATION & PRIOR TO INSTALLATION OF PIPEWORK.

FOOTPATH REINSTATEMENT NOTES:

REMOVE ALL SAND FILL WITHIN THE FOOTPATH AREA TO THE EXISTING SUBGRADE.

SUPPORT ALL AUTHORITY SERVICES TO STRUCTURAL ENGINEERS DETAILS DURING EXCAVATION.

REINSTATE FOOTPATH SUBGRADE.

THE CONTRACTOR SHALL PROVIDE CERTIFICATION OF COMPACTION FROM A NATA REGISTERED TESTING AUTHORITY. MINIMUM THREE TESTS PER LAYER AS FOLLOWS:
SELECT FILL 95% MODIFIED
SELECT FILL (LESS THAN 300mm BELOW BASE COURSE) 98% MODIFIED
BASE COURSE 100% MODIFIED

EROSION & SEDIMENT CONTROL NOTES:

PROVIDE SILT FENCE/HAY BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS (TYPICAL).

ISOLATE EXISTING STORMWATER PITS WITH HAY BALES TO FILTER ALL INCOMING FLOWS.

DO NOT STOCK PILE EXCAVATED MATERIAL ON THE ROAD WAY.

SURVEY

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. CAPITAL ENGINEERING CONSULTANTS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAW.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT CAPITAL ENGINEERING CONSULTANTS.

ADOPT DATUM BM CUT IN KERB RL:13.47 (A.H.D)

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

IT IS THE BUILDERS RESPONSIBILITY TO MAKE SURE ALL SURVEY MARKS TO BE PRESERVED AT ALL COST.

Rev.	Description	By.	Chk.	App.	Date
A	ISSUED FOR DEVELOPMENT APPLICATION	H.Y	R.F.	P.E.	3/12/2020



capital engineering consultants

8 Buller Street,
North Parramatta 2151
Ph: (02) 9630 0121
Fax: (02) 9630 0132
info@capitalengineering.com.au
www.capitalengineering.com.au

Client

KAREN AND LUKE TAGGART

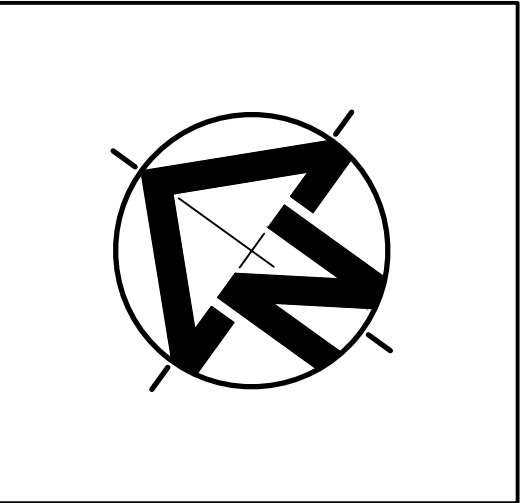
Project

39 CUMBERLAND AVENUE, COLLAROY

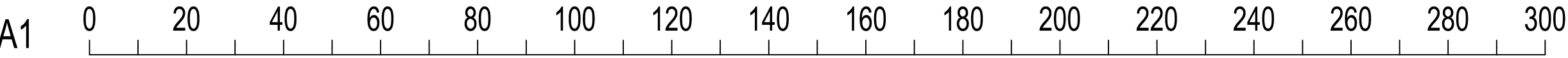
This drawing remains the property of Capital Engineering Consultants and must not be reproduced or used without written consent.

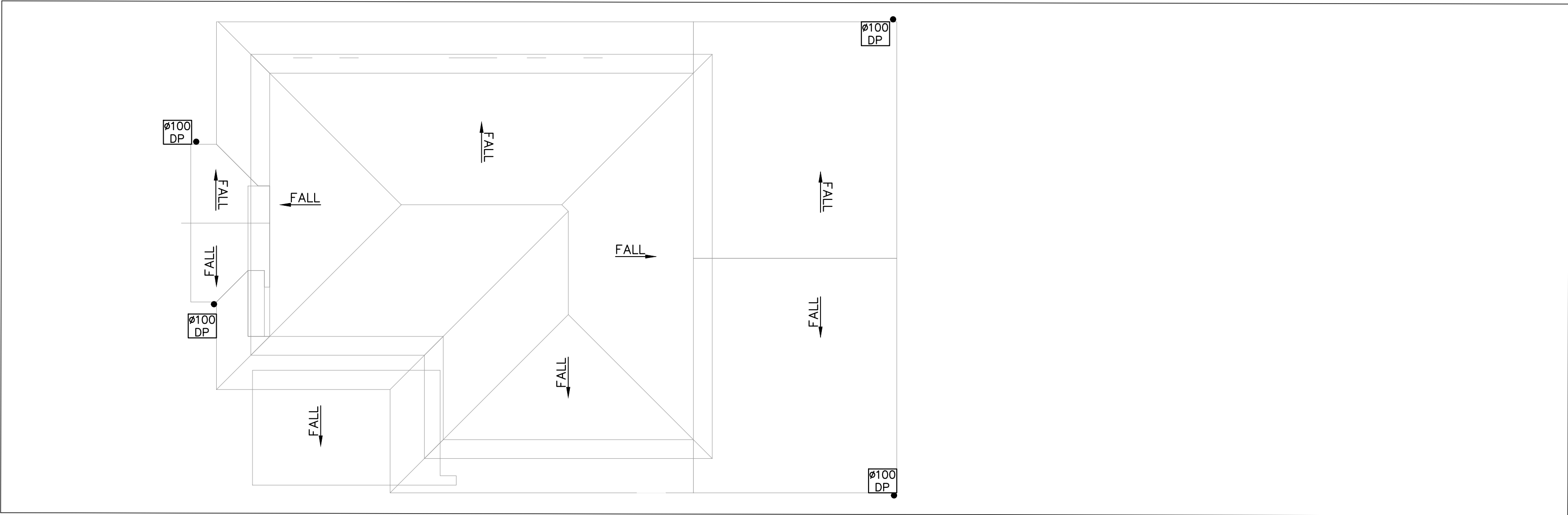
Title

COVER SHEET

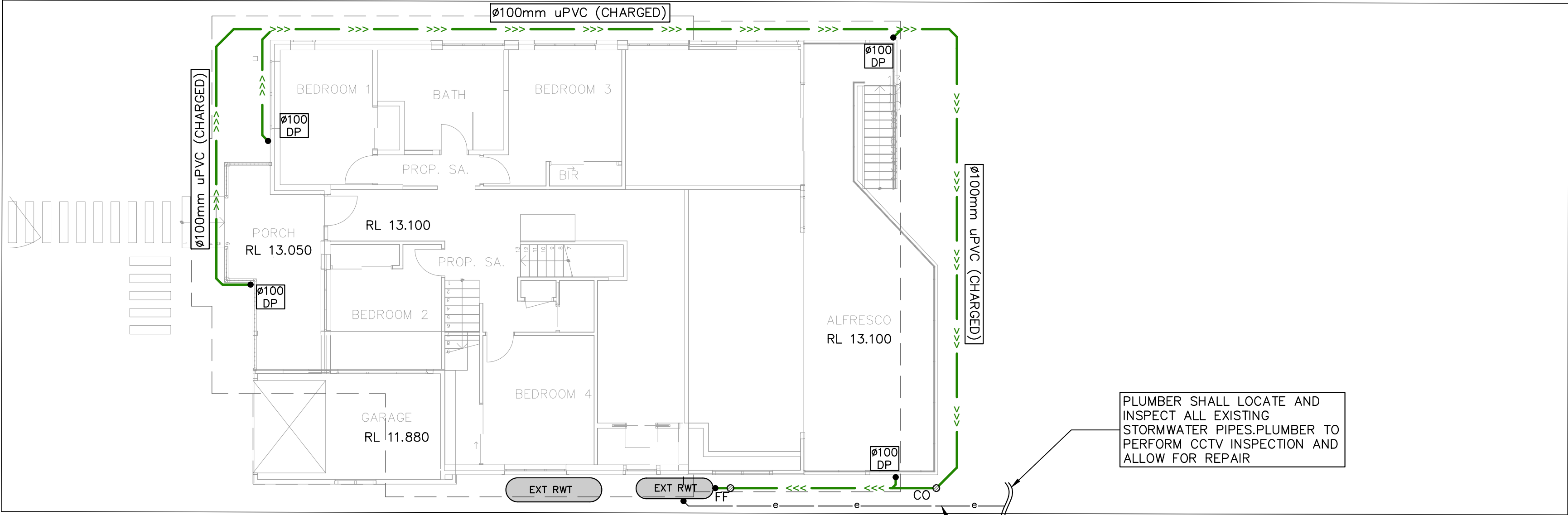


DEVELOPMENT APPLICATION (DA)					Approved	
FOR APPROVAL					P.E.	
Paper Size	Design	Drawn	Checked	Datum	PAUL EL-BAYEH B.E., M.E., FIEAust, CPEng, NER, RPEQ	
A1	H.Y	H.Y	R.F.	AHD		
Scale	Date	Project Number		Drawing Number	Revision	
1:100	3/12/2020	SW20209		SW001	A	

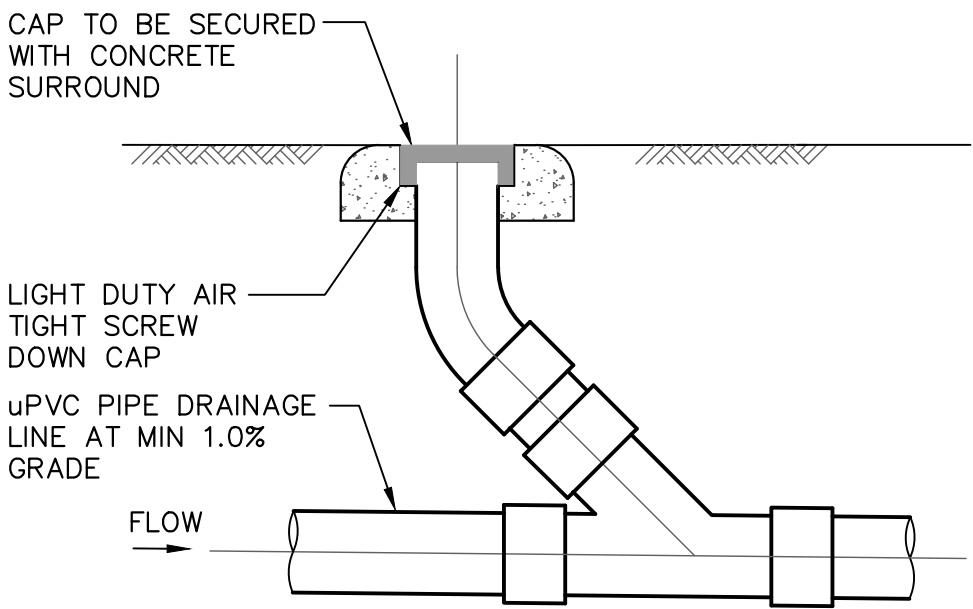




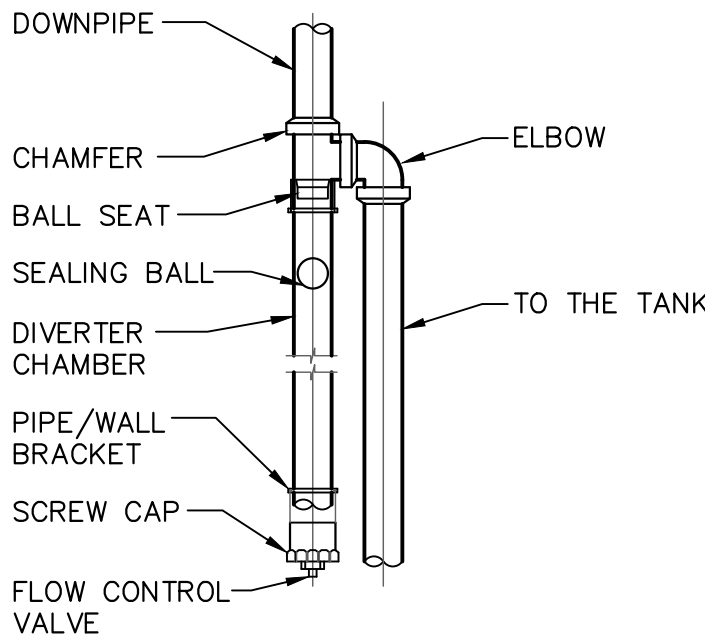
ROOF PLAN
SCALE 1:100



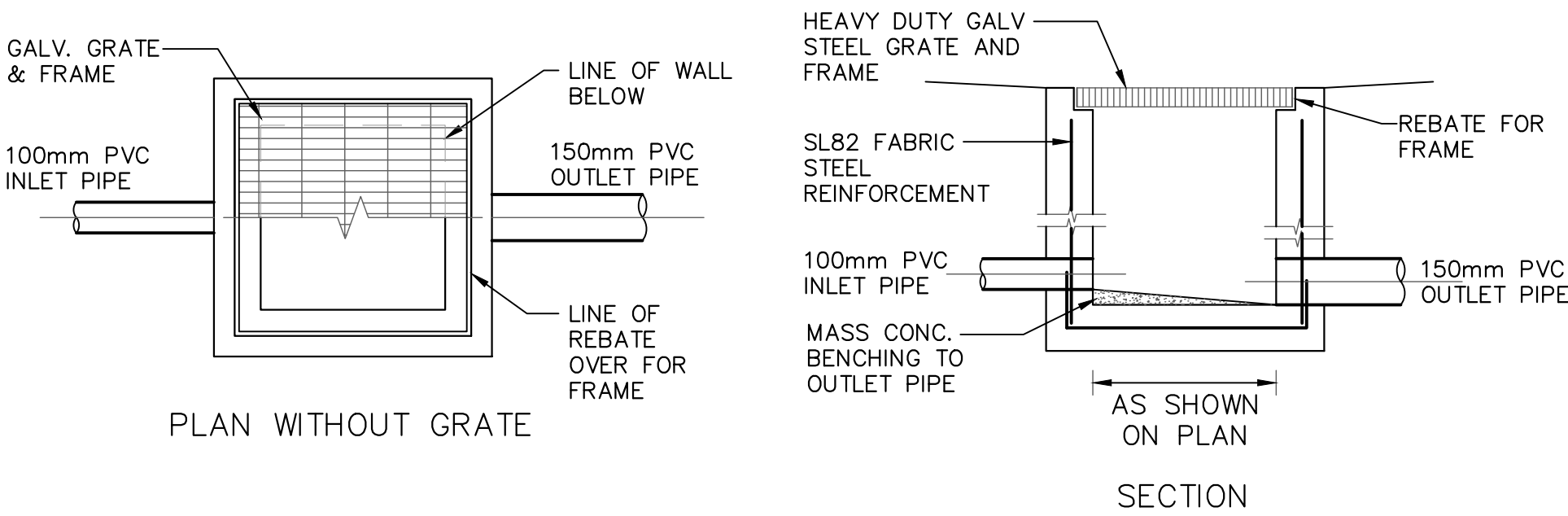
SITE STORMWATER PLAN
SCALE 1:100



CLEANING EYE DETAIL
SCALE: 1:20



FIRST FLUSH DIVERTER
SCALE: 1:20



TYPICAL GRATED INLET PIT DETAIL
SCALE: 1:20

CHARGED LINES:

ALL CHARGED LINES SHALL BE MIN. 100mm SEWER GRADE uPVC FROM CONNECTION POINT TO THE GUTTER INVERT LEVEL.

ALL EXPOSED PIPEWORK SHALL BE PAINTED IN A COLOUR TO COMPLIMENT THE DEVELOPMENT AND TO PROTECT AGAINST ULTRA-VIOLET LIGHT DAMAGE FROM THE SUN.

ALL JOINTS WITHIN THE CHARGED SYSTEM MUST BE SOLVENT WELDED AND PRESSURE TESTED IN ACCORDANCE WITH AS3500.3.

CLEAR-OUT POINTS (IN ADDITION TO THOSE SHOWN ON PLAN) SHALL BE PROVIDED AT 20m INTERVALS AND AT CRITICAL BENDS WITHIN THE CHARGED SYSTEM.

DESIGN NOTES:

THE SITE IS LOCATED IN NORTHERN BEACHES COUNCIL.

SITE AREA = 682.8m² (BY CALC'S)

THE DEVELOPMENT PROPOSAL IS FOR ALTERATIONS AND ADDITIONS TO AN EXISTING DWELLING.

OSD IS NOT REQUIRED AS PER NORTHERN BEACHES COUNCIL WATER MANAGEMENT POLICY

ALL NEW STORMWATER PIPES TO HAVE A MINIMUM OF 100mm CONCRETE OR 300mm TOPSOIL COVER U.N.O.

INSTALL CLEAR OUT FOR INSPECTION AND MAINTENANCE PURPOSES WHERE REQUIRED.

RAINWATER TANK TO BE EQUIPPED WITH FIRST FLUSH AND MOSQUITO PROTECTION DEVICES (REFER DETAIL).

LOCATION OF RAINWATER TANK SHOWN ON PLAN IS INDICATIVE. TO BE CONFIRMED DURING CONSTRUCTION.

ALL STORMWATER PIPES ARE TO BE A MINIMUM OF 600mm CLEAR FROM EXISTING SEWER LINE (TYP).

Rev.	Description	By.	Chk.	App.	Date
A	ISSUED FOR DEVELOPMENT APPLICATION	H.Y	R.F.	P.E.	3/12/2020



capital engineering consultants

8 Buller Street,
North Parramatta 2151
Ph: (02) 9630 0121
Fax: (02) 9630 0132
info@capitalengineering.com.au
www.capitalengineering.com.au

Client

KAREN AND LUKE TAGGART

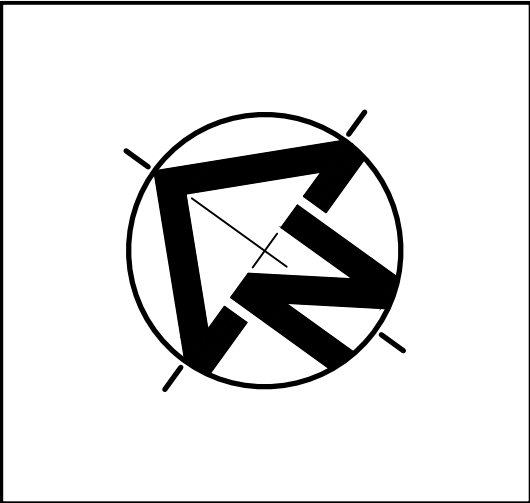
Project

39 CUMBERLAND AVENUE, COLLAROY

This drawing remains the property of Capital Engineering Consultants and must not be reproduced or used without written consent.

Title

SITE STORMWATER PLAN
& DETAILS



DEVELOPMENT APPLICATION (DA)				
FOR APPROVAL				
Paper Size A1	Design H.Y	Drawn H.Y	Checked R.F.	Datum AHD
Scale 1:100	Date 3/12/2020	Project Number SW20209		

Approved	
P.E.	
PAUL EL-BAYEH B.E., M.E., FIEAust, CPEng, NER, RPEQ	
Drawing Number SW010	Revision A

EROSION CONTROL

BEFORE EARTHWORKS CAN COMMENCE THE EROSION & SEDIMENT CONTROL MEASURES MUST BE IN PLACE.

DURING THE CONSTRUCTION PERIOD, THESE CONTROL MEASURES WILL NEED TO BE INSPECTED & MAINTAINED REGULARLY, ESPECIALLY AFTER STORM EVENTS, BY THE CONTRACTOR.

ALL WORK IS TO BE CARRIED OUT TO PREVENT EROSION, CONTAMINATION & SEDIMENTATION OF THE STORAGE SITE, SURROUNDING AREAS & DRAINAGE SYSTEMS.

MINIMIZE DISTURBED AREA COVERED WITH NATURAL VEGETATION. ONLY THOSE AREAS DIRECTLY REQUIRED FOR CONSTRUCTION ARE TO BE DISTURBED.

INSTALL EROSION/SEDIMENT CONTROL MEASURES PRIOR TO COMMENCEMENT OF CONSTRUCTION OR EXCAVATION OPERATIONS.

PROVIDE SILT FENCE/STRAW BAIL BARRIERS TO THE LOW SIDE OF ALL EXPOSED EARTH EXCAVATIONS. TIE SEDIMENT FENCING MATERIAL TO CYCLONE WIRE SECURITY FENCE. SEDIMENT CONTROL FABRIC SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.

ISOLATE EXISTING STORMWATER PITS WITH STRAW BALES OR SILT TRAPS TO FILTER ALL INCOMING FLOWS.

DO NOT STOCKPILE EXCAVATED MATERIAL ON THE ROAD WAY.

DIVERT CLEAN WATER FROM UNDISTURBED AREAS AROUND THE WORKING AREAS.

CONSTRUCTION ENTRY/EXIT SHALL BE VIA THE LOCATION NOTED ON THE DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE DO SO IN A FORWARD DIRECTION.

TREAT THE STORMWATER RUNOFF WITH SUSPENDED SOLIDS SO THE DISCHARGE WATER QUALITY TO COUNCIL STORMWATER DRAINAGE SYSTEM HAS A MAXIMUM CONCENTRATION OF SUSPENDED SOLIDS THAT DOES NOT EXCEED 50 MILLIGRAMS PER LITRE IN ACCORDANCE WITH THE PROTECTION OF THE ENVIRONMENT OPERATION ACT (POEO 1997) AND SHALL BE APPROVED BY LOCAL COUNCIL.

ADOPT TEMPORARY MEASURES AS MAY BE NECESSARY FOR EROSION & SEDIMENT CONTROL, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

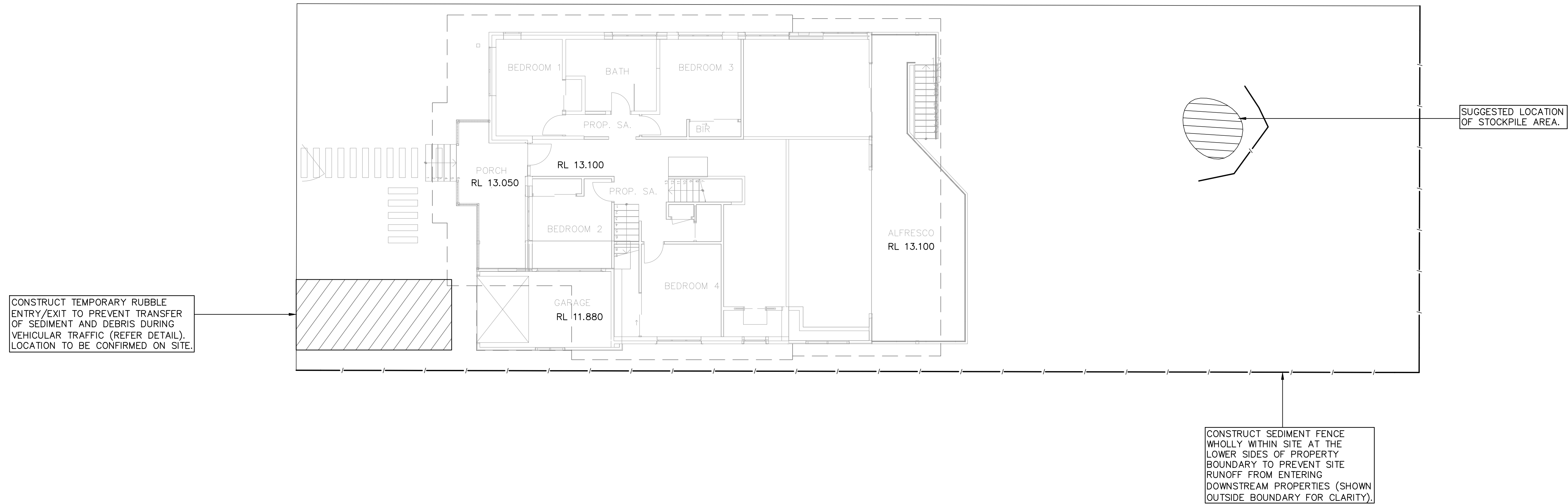
- DRAINS: TEMPORARY DRAINS AND CATCH DRAINS.
- SPREADER BANKS OR OTHER STRUCTURES: TO DISPERSE CONCENTRATED RUNOFF.
- SILT TRAPS: CONSTRUCTION AND MAINTENANCE OF SILT TRAPS TO PREVENT DISCHARGE OF SCOURED MATERIAL TO DOWNSTREAM AREAS.

AFTER RAIN, INSPECT, CLEAN, AND REPAIR IF REQUIRED, TEMPORARY EROSION & SEDIMENT CONTROL MEASURES.

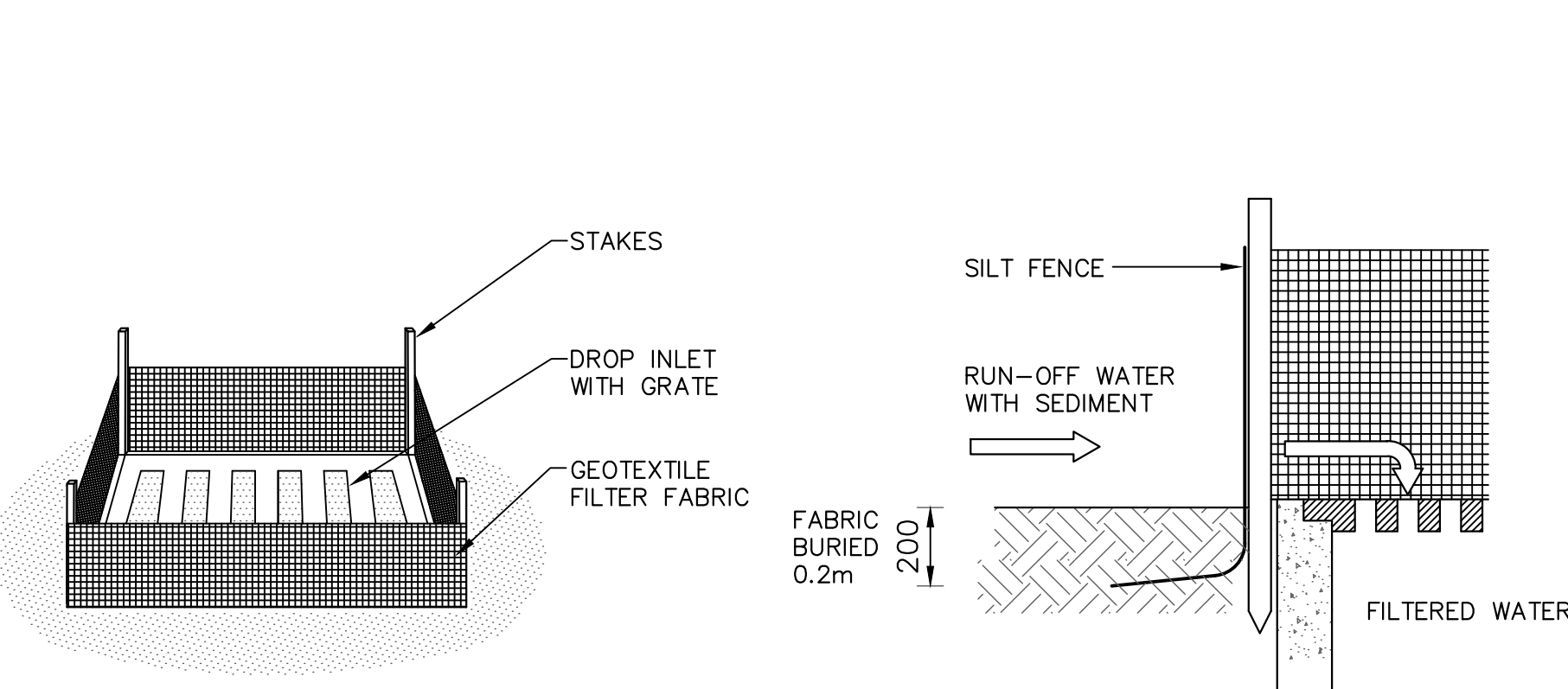
REMOVE TEMPORARY EROSION & SEDIMENT CONTROL MEASURES WHEN THEY ARE NO LONGER REQUIRED.

COMPLY WITH THE REQUIREMENTS OF LANDCOM'S MANAGING URBAN STORMWATER – SOIL AND CONSTRUCTION 'THE BLUE BOOK' LATEST EDITION

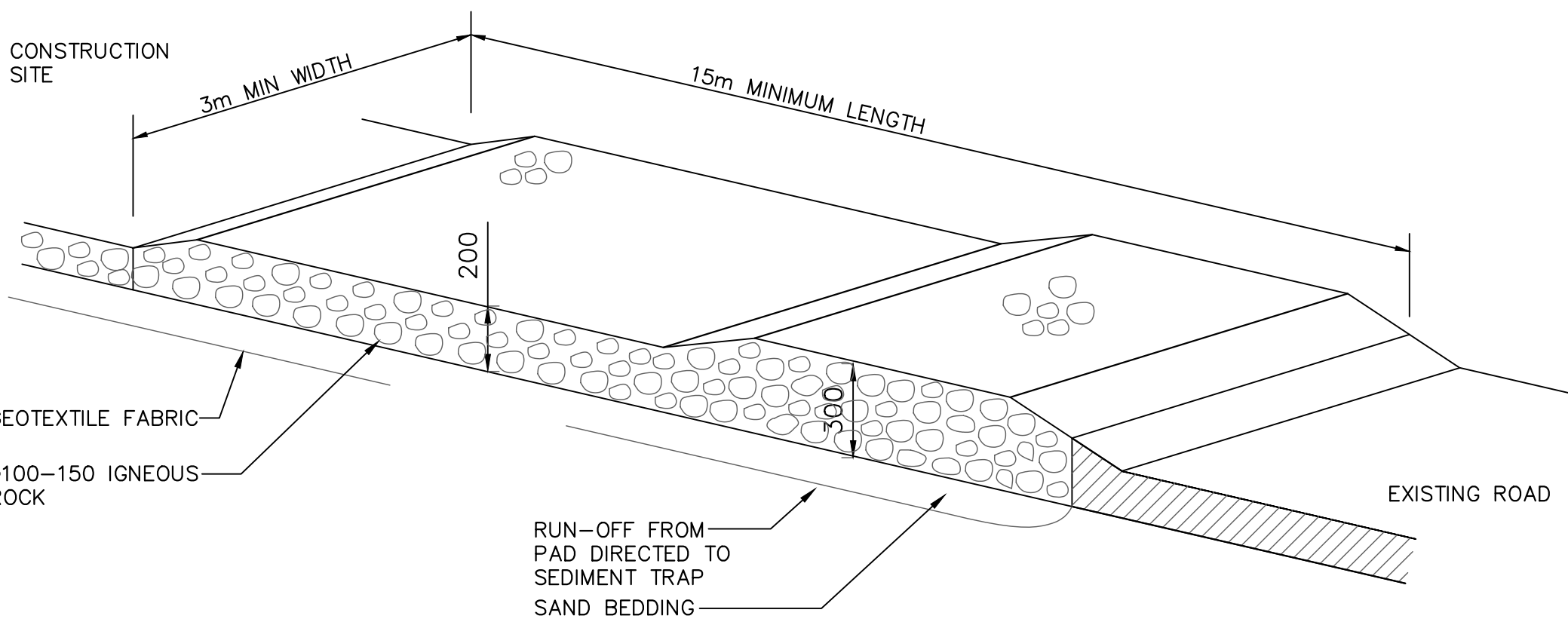
THE EROSION & SEDIMENT CONTROL PLAN PROVIDED IS ONLY INDICATIVE. THE CONTRACTOR SHOULD PREPARE A DETAILED ESCP SUITABLE FOR THE SPECIFIC SITE CONDITIONS



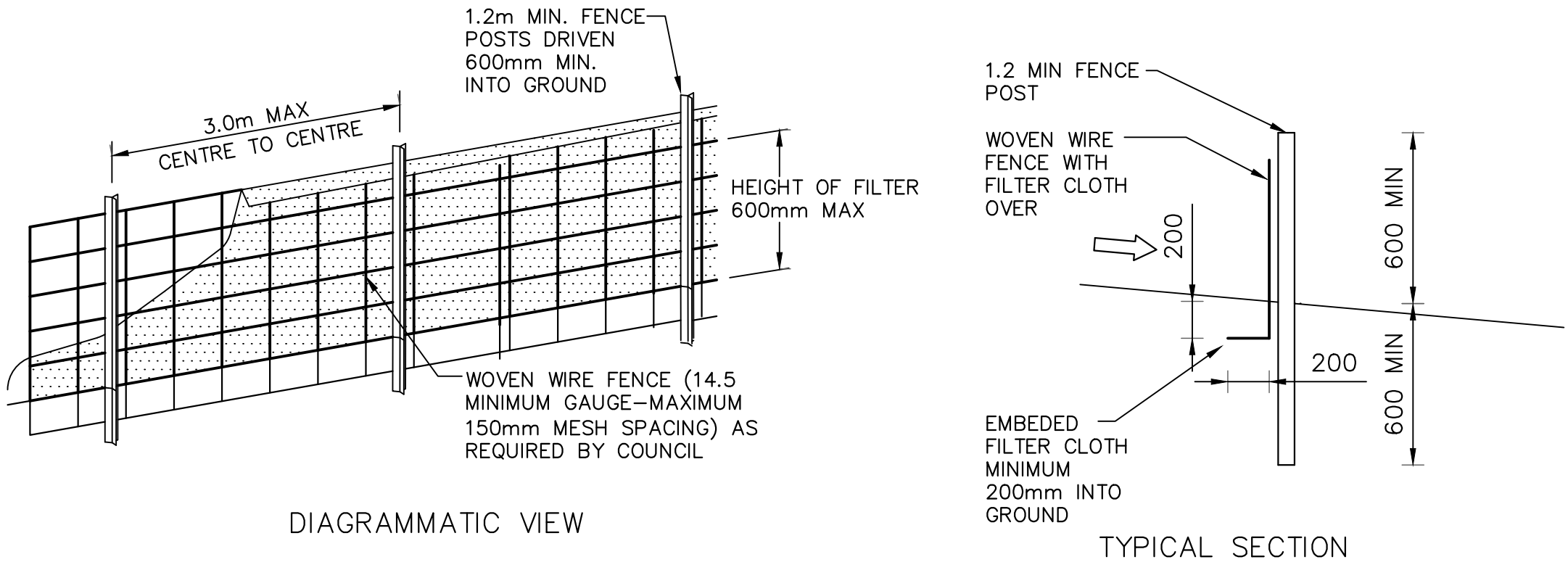
EROSION & SEDIMENT CONTROL PLAN
SCALE 1:100



SUMP SEDIMENT TRAP DETAIL
NOT TO SCALE



TEMPORARY CONSTRUCTION EXIT (RUBBLE ALTERNATIVE)
NOT TO SCALE



SEDIMENT FENCE DETAIL
NOT TO SCALE

Rev.	Description	By.	Chk.	App.	Date
A	ISSUED FOR DEVELOPMENT APPLICATION	H.Y	R.F.	P.E.	3/12/2020



capital engineering consultants

8 Buller Street,
North Parramatta 2151
Ph: (02) 9630 0121
Fax: (02) 9630 0132
info@capitalengineering.com.au
www.capitalengineering.com.au

Client

KAREN AND LUKE TAGGART

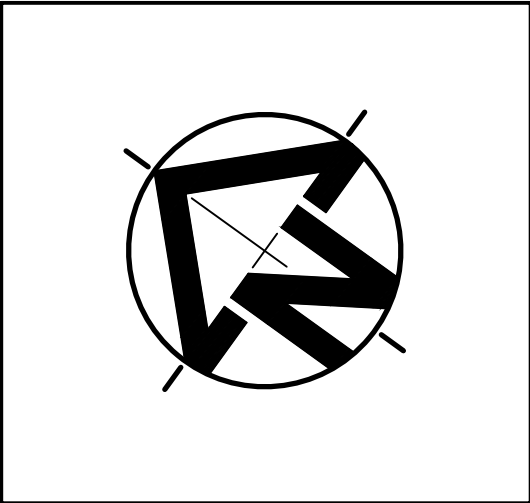
Project

39 CUMBERLAND AVENUE, COLLAROY

This drawing remains the property of Capital Engineering Consultants and must not be reproduced or used without written consent.

Title

EROSION AND SEDIMENT CONTROL PLAN



DEVELOPMENT APPLICATION (DA)				
FOR APPROVAL				
Paper Size A1	Design H.Y	Drawn H.Y	Checked R.F.	Datum AHD
Scale 1:100	Date 3/12/2020	Project Number SW20209		

Approved	
P.E.	
PAUL EL-BAYEH B.E., M.E., FIEAust, CPEng, NER, RPEQ	
Drawing Number SW020	Revision A