t. 02 4927 5566
f. 02 4927 5577

Level 1, 16 Telford Street
Newcastle East NSW 2300
PO Box 553, The Junction 2291
ABN: 14 904 295 412

mpceng.com.au

MPC ref: 210072

28 August 2020

Alesco Senior College
C/- Avid Project Management
PO Box 206
Carrington NSW 2294

(By Email: david.read@avidpm.com.au)

Attn: Mr. David Read

Project: Proposed Alesco Senior College at No.27 – 29 Chapman Street Charlestown
Subject: Report on Stormwater Management

1. Background

MPC Consulting Engineers has been contracted by Alesco Senior College to provide civil engineering services to address stormwater management for the proposed adaptive re-use of the property located at No.27-29 Chapman Street Charlestown NSW. This report provides a summary of the stormwater management inspection, review, design and documentation processes undertaken by MPC.

2. Site Description

The property comprises Lots 18, 19 and 20 in DP23975, with property frontage to St Albans Close and was previously used as St Alban's Anglican Church. The combined site area is approximately 1865m^2.

Review of the site survey prepared by Land Development Solutions (Ref. 5651 dated 16/01/2020, copy attached) indicated a change in level across the site of up to 5.6m with an average slope in the order of 9.6% down to the north-west.

The property currently comprises:

- two main buildings;
- a central courtyard with awnings over;
- External pathways;
- A concrete driveway and car park, with access of St Albans Close;

the maths in the middle

3. The Existing Site Stormwater Drainage System

MPC conducted a visual civil engineering inspection of the existing property on 12 August 2020. The inspection was conducted by Benjamin Curran, a Senior Civil/Structural Engineer and Director of MPC.

The purpose of the inspection was to observe the existing stormwater drainage infrastructure on the property so that it could be assessed for adequacy for adaptive re-use in the proposed Alesco Senior College development.

The configuration of the existing stormwater drainage, as well as the stormwater management works for the proposed re-use of the property by Alesco Senior College, are depicted on the MPC drawings attached to this report (Drawings No. 210072-C01 to C06, 6 sheets).

3.1 The Existing Church

The existing church building (in Lot 18, at the northern extent of the property) comprised a 22m long x 16m wide tiled mono-pitched roof with fall downward towards the west (towards St Albans Close), visible in Photograph 1.

Photograph 1: Existing church roof and eaves gutter

A large "half-round" eaves gutter (visible in Photograph 1) drained to 150mm diameter downpipes at each end of the gutter, which directed rainwater to an existing above-ground rainwater tank located just to the north of the church building. Overflows from this tank were directed via PVC pipes to a kerb outlet in St Albans Close.

3.2 The Existing Hall

The existing hall building (in Lots 19 and 20, at the southern end of the property) comprised a plan area in the order of 12m x 31m with a multi-gable roof. Eaves gutters and box gutters from this roof were connected via PVC pipes to a rainwater re-use "bladder tank" system located beneath the hall (in the sub-floor void area). The existing Bladder Tank system comprised 3x individual tanks each with rainwater storage capacity of 2500L, thus providing a

the maths in the middle

total storage capacity of 7500L. A pump was connected to the re-use tank system with plumbing observed back into the building for re-use opportunities.

The existing re-use tank system is depicted n Photographs 2, 3 and 4.

Photograph 2: Existing "bladder" rainwater re-use tanks under the Hall

Photograph 3: The existing re-use pump under the Hall

the maths in the middle

Photograph 4: Existing PVC pipe connection from roof drainage to the re-use tanks

3.3 External Drainage

The paved central courtyard and the front driveway and car park pavement generally directed surface stormwater to an in-ground pit and pipe network which connected to the kerb drainage in St Albans Close. Much of the paved paths around the perimeter of the buildings directed surface stormwater to landscaped garden beds or turfed areas for infiltration.

The existing surface slope and the roof drainage is depicted in Photographs 5 and 6.

Existing site levels have also been obtained from the site survey prepared by Land Development Solutions (Ref: 5651 dated 16/01/2020), copy attached.

the maths in the middle

Photograph 5: The Property Sloping towards St Albans Close

Photograph 6: Roof drainage from the rear (east) of the property

the maths in the middle

4. The Proposed Works

4.1 General

The proposed re-use of the property by Alesco Senior College requires only a small (49m^2) increase in external paving footprint, for the purpose of adding two extra car parking spaces. The civil engineering drawings prepared by MPC for these works (copy attached) specify the measures needed to manage the stormwater runoff from this new paving area.

Stormwater from the new car park pavement will be directed to a vegetated filter strip for infiltration. Overflows will follow the existing overland flow paths.

4.2 On Site Detention

Additional impermeable area being added by the two extra car spaces and driveway connection is in the order of 48m^2. This small increase in impermeable area only increases the site stormwater flows by 1.2 L/s for the 20-year ARI storm event, and by 1.8L/s for the 100-year ARI major storm event.

To address On Site Detention requirements, and in consideration of the planned improvements to the LMCCC stormwater drainage assets in St Albans Close, it is proposed to provide detention storage in the above-ground rainwater tank just north of the existing Church building.

MPC's site analysis of the existing property layout indicated a total property area of 1865m2 with 65% being impervious. The addition of the extra car spaces and driveway slab would increase the impervious are to 67% of the site.

When estimating stormwater runoff from existing developed medium-density residential land it is common to adopt a figure of 60% impervious area. In conducting this design MPC consulted with LMCC's engineering team to obtain preliminary stormwater design information relating to the planned drainage improvements in St Albans Close. A copy of the information supplied by LMCC to MPC is attached to this report.

LMCC advised that *"… Council has used 90% impervious area for the roads and shopping centre, and 60% impervious area for the Church catchment."* MPC therefore considers it appropriate to provide on-site detention to reduce the site stormwater flows to what would occur if the property was 60% impervious rather than the actual proposed 67% impervious. This will ensure that the flow rate leaving the proposed Alesco Senior School property will not have a detrimental impact on the proposed drainage improvement works in St Albans Close.

the maths in the middle

The OSD calculations by MPC for this design approach indicate the following:

Parameter	Current	Proposed
Catchment length	58m	58m
Roughness (n*)	0.01	0.01
Slope	9.60%	9.60%
Site Area	1865m^2	1865m^2
Fraction Impervious	60%	67%
Time of concentration	5 min	5 min
Minor storm flow (20year ARI)	70.5 L/s	73.8 L/s (without OSD)
Minor storm OSD storage:	V_{minor} = 0.06 x tc x (73.8-70.5) = 1000L	
Major storm flow (100year ARI)	104.5 L/s	109.4 L/s (without OSD)
Major storm OSD storage:	V_{major} = 0.06 x tc x (109.4-104.5) = 1500L	

Therefore, providing 1500L of temporary storage in the existing above-ground tank will address On Site Detention requirements for the adaptive re-use development. The existing tank has 5,000L of storage capacity. The stormwater plans prepared by MPC specify installation of a flow-control pipe into the existing tank. This additional OSD storage therefore addresses the requirements for On Site Detention for the proposed development.

4.3 Rainwater Harvesting

MPC has inspected the existing rainwater harvesting tanks on the property, which were in the sub-floor space under the existing Hall. The tanks were observed to be in good condition at the time of MPC's inspection and will be suitable for use in the proposed Alesco Senior School Development with some minor maintenance works.

The 7,500L of rainwater re-use volume is considered an appropriate volume for the proposed school development. The pump system has already been plumbed back into the existing building for re-use within the facility and will only require minor maintenance work from a plumber.

MPC therefore considers that the rainwater harvesting requirements of the DCP have been met for the proposed development.

4.4 Major Storm Flows and Flooding

MPC conducted a desktop review of the flood risk for the proposed Alesco Senior College site, which included review of topographic maps, visual inspection of the property and surrounds, and review of the LMCC stormwater drainage asset information relevant to the site.

the maths in the middle

The results of MPC's review indicated that the flood risk to the property is very low and is limited to local flows from a small portion of the property to the east of the site, as depicted in Figure 1.

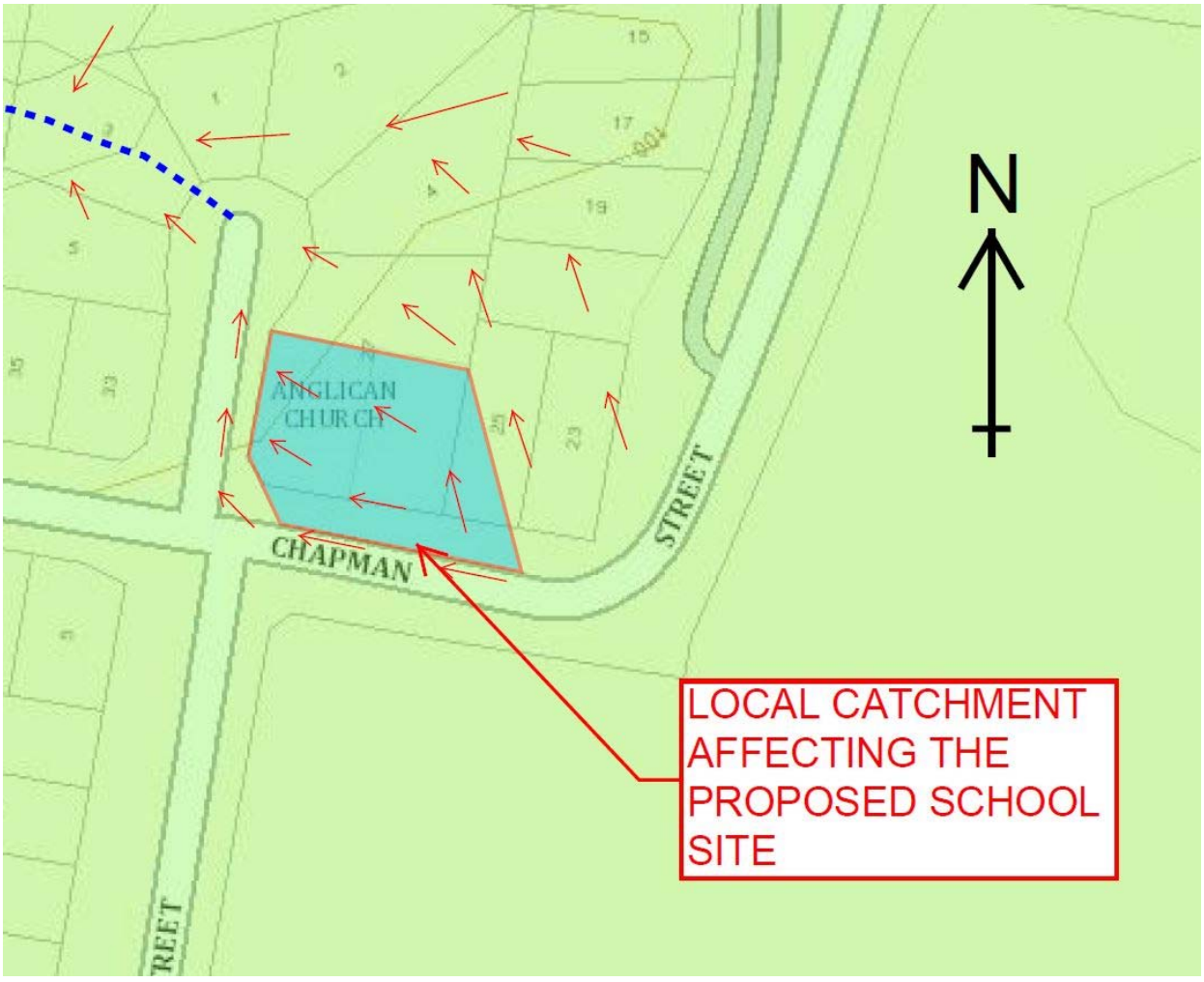


Figure 1: Local Flood Catchment Schematic

The visual inspection and desktop review conducted by MPC indicated that the existing site has adequate provision for safe conveyance of surface stormwater flows in the event of a major storm. MPC therefore considers that the flooding requirements of the DCP for this proposed Alesco Senior College have been satisfied.

4.5 Stormwater Quality

Stormwater runoff from roof areas is directed to rainwater storage tanks with first-flush devices and gross pollutant screens.

Surface stormwater from the new external paving proposed for this development will be directed to a vegetated filter strip for infiltration.

MPC considers that these measures will ensure that the proposed Alesco Senior College development can effectively manage stormwater quality for the property.

the maths in the middle

Should you require any additional information in relation to the information presented in this report please contact the undersigned on 0417 049 818 or benjaminc@mpceng.com.au.

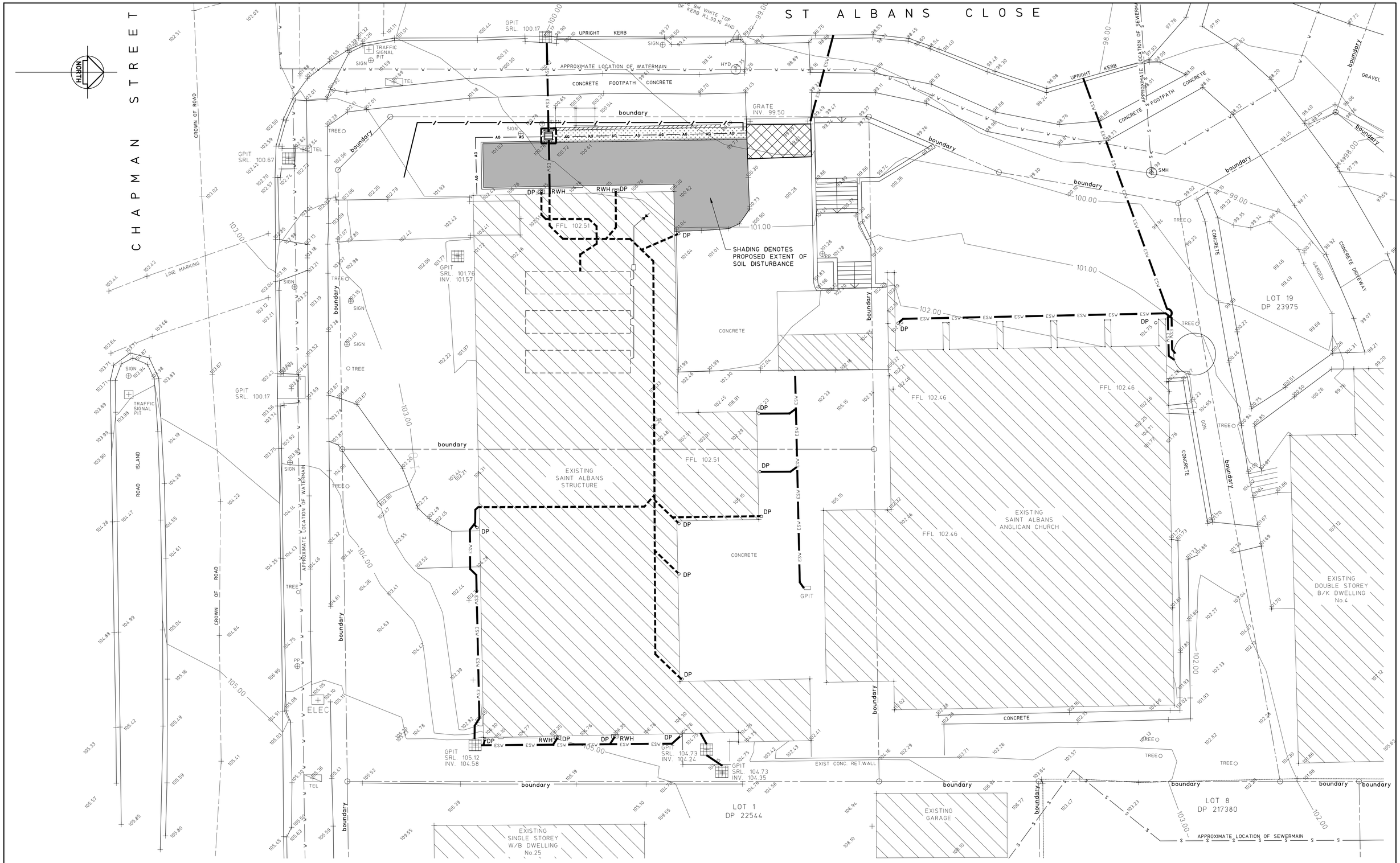
Yours Faithfully,
MPC Consulting Engineers

BENJAMIN CURRAN
B.E (Civil)(Hons) MIEAust CPEng NER RPEQ
BSPTas APEC Engineer IntPE(Aust)
Director

Enclosed:

- MPC Drawings 210072-C01 [0] – C06 [0] dated 27.8.2020 (6 sheets)
- LMCC Road Drainage information (supplied by LMCC)
- Site survey

the maths in the middle



SEDIMENTATION AND EROSION CONTROL PLAN

SCALE 1:100

SEDIMENTATION AND EROSION CONTROL NOTES

REFER TO DRAWING C02 FOR SEDIMENTATION AND EROSION CONTROL NOTES AND LEGEND

NOT FOR CONSTRUCTION

ISSUE	REASON FOR ISSUE	DATE
0	FOR APPROVAL	27.08.20

© Copyright MPC Consulting Engineers as date of issue

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

COPYRIGHT

The concepts and information contained in this document are the copyright of MPC Consulting Engineers
Use or copying of the document in whole or in part without the written permission of MPC Consulting Engineers constitutes an infringement of copyright.

mpc consulting engineers civil+structural

Level 1,
16 Telford Street,
NEWCASTLE EAST, NSW 2300
PO BOX 553
THE JUNCTION, NSW 2291
Tel: (02) 4927 5566
Fax: (02) 4927 5577
Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
ALESCO SENIOR COLLEGE

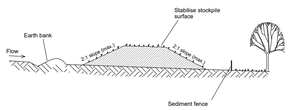
TITLE
SEDIMENTATION AND EROSION CONTROL PLAN

PROJECT
PROPOSED ALTERATIONS AND ADDITION AT; ALESCO SENIOR COLLEGE, No.27 CHAPMAN STREET, CHARLESTOWN

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
C.W.	B.C.	6	A1
SCALES	JOB No	DRAWING No	ISSUE
1:100	210072	C01	0

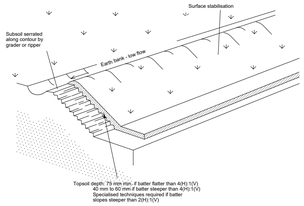
FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm



Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

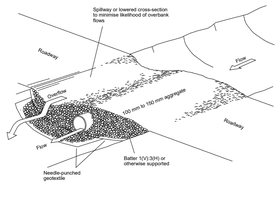
STOCKPILES SD 4-1



Construction Notes

1. Scarify the ground surface along the line of the contour to a depth of 50 mm to 100 mm to break up any hardsettling surfaces and to provide a good bond between the respread material and subsoil.
2. Add soil ameliorants as required by the ESCP or SWMP.
3. Rip to a depth of 300 mm if compacted layers occur.
4. Where possible, replace topsoil to a depth of 40 to 60 mm on lands where the slope exceeds 4(H):1(V) and to at least 75 mm on lower gradients.

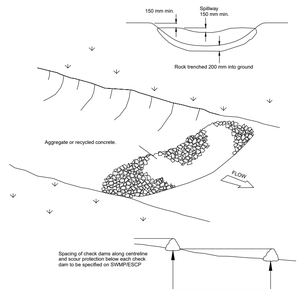
REPLACING TOPSOIL SD 4-2



Construction Notes

1. Prohibit all traffic until the access way is constructed.
2. Strip any topsoil and place a needle-punched textile over the base of the crossing.
3. Place clean, rigid, non polluting aggregate or gravel in the size class over the fabric to a minimum depth of 200 mm. 100 mm to 150 mm
4. Provide a 3-metre wide carriageway with sufficient length of culvert pipe to allow less than a 3(H): 1 (V) slope on side batters.
5. Install a lower section to act as an emergency spillway in greater than
6. Ensure that culvert outlets extend beyond the toe of fill embankments.

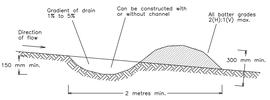
TEMPORARY WATERWAY CROSSING SD 5-1



Construction Notes

1. Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
2. Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
3. Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least mm lower than the outer edges.
4. Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM SD 5-4

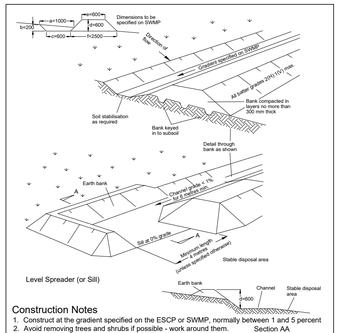


NOTE: Only to be used as temporary bank where maximum upslope length is 80 metres.

Construction Notes

1. Build with gradients between 1 percent and 5 percent.
2. Avoid removing trees and shrubs if possible - work around them.
3. Ensure the structures are free of projections or other irregularities that could impede water flow.
4. Build the drains with circular, parabolic or trapezoidal cross sections, not V shaped.
5. Ensure the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction.

EARTH BANK (LOW FLOW) SD 5-5

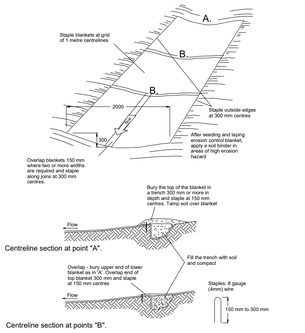


Level Spreader (or Sill)

Construction Notes

1. Construct at the gradient specified on the ESCP or SWMP, normally between 1 and 5 percent
2. Avoid removing trees and shrubs if possible - work around them.
3. Ensure the structures are free of projections or other irregularities that could impede water flow.
4. Build the drains with circular, parabolic or trapezoidal cross sections, not V-shaped, at the dimensions shown on the SWMP.
5. Ensure the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction following Table 5.2 in Landcom (2004).
7. Where discharging to erodible lands, ensure they outlet through a properly constructed level spreader.
8. Construct the level spreader at the gradient specified on the ESCP or SWMP, normally less than 1 percent or level.
9. Where possible, ensure they discharge waters onto either stabilised or undisturbed disposal sites within the same subcatchment area from which the water originated. Approval might be required to discharge into other subcatchments.

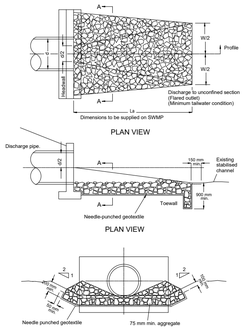
EARTH BANK (HIGH FLOWS) SD 5-6



Construction Notes

1. Remove any rocks, clods, sticks or grass from the surface before laying matting
2. Ensure that topsoil is at least 75 mm deep.
3. Complete fertilising and seeding before laying the matting.
4. Ensure fabric will be continuously in contact with the soil by grading the surface carefully first.
5. Lay the fabric in "shingle-fashion", with the end of each upstream roll overlapping those downstream. Ensure each roll is anchored properly at its upslope end.
6. Ensure that the full width of flow in the channel is covered by the matting up to the design storm event, usually in the 10-year ARI time of concentration storm event.
7. Divert water from the structure until vegetation is stabilised properly.

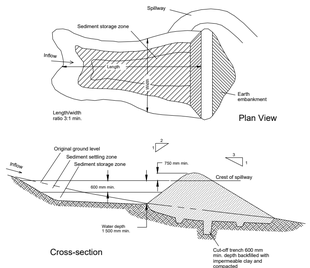
RECP : CONCENTRATED FLOW SD 5-7



Construction Notes

1. Compact the subgrade fill to the density of the surrounding undisturbed material.
2. Prepare a smooth, even foundation for the structure that will ensure that the needle-punched geotextile does not sustain serious damage when covered with rock.
3. Should any minor damage to the geotextile occur, repair it before spreading any aggregate. For repairs, patch one piece of fabric over the damage, making sure that all joints and patches overlap more than 300 mm.
4. Lay rock following the drawing, according to Table 5.2 of Landcom (2004) and with a minimum diameter of 75 mm.
5. Ensure that any concrete or riprap used for the energy dissipater or the outlet protection conforms to the grading limits specified on the SWMP.

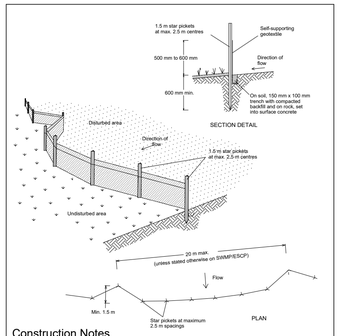
ENERGY DISSIPATER SD 5-8



Construction Notes

1. Remove all vegetation and topsoil from under the dam wall and from within the storage area.
2. Construct a cut-off trench 500 mm deep and 1,200 mm wide along the centreline of the embankment extending to a point on the gully wall level with the riser crest.
3. Maintain the trench free of water and recompact the materials with equipment as specified in the SWMP to 95 per cent Standard Proctor Density.
4. Select fill following the SWMP that is free of roots, wood, rock, large stone or foreign material.
5. Prepare the site under the embankment by ripping to at least 100 mm to help bond compacted fill to the existing substrate.
6. Spread the fill in 100 mm to 150 mm layers and compact it at optimum moisture content following the SWMP.
7. Construct the emergency spillway.
8. Rehabilitate the structure following the SWMP.

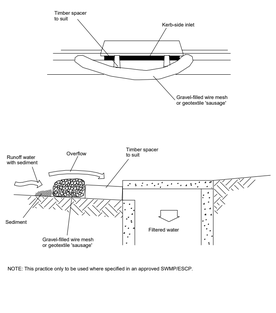
EARTH BASIN - WET
(APPLIES TO TYPE D AND TYPE F SOILS ONLY)
SD 6-4



Construction Notes

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are 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 as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE SD 6-8

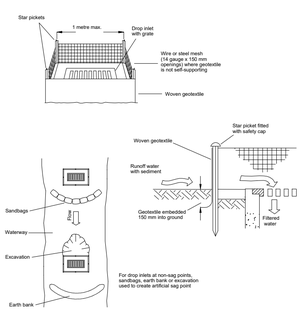


NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

Construction Notes

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer 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 pass between.

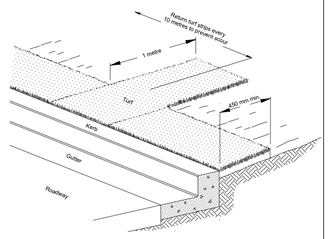
MESH AND GRAVEL INLET FILTER SD 6-11



Construction Notes

1. Fabricate a sediment barrier made from geotextile or straw bales.
2. Follow Standard Drawing 6-8 for installation procedures for the straw bales or geofabric. Reduce the picket spacing to 1 metre centres.
3. In waterways, artificial sag points can be created with sandbags or earth banks as shown in the drawing.
4. Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it.

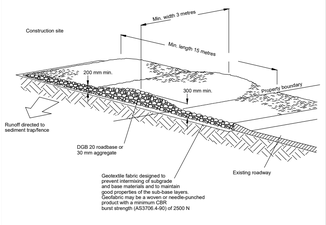
GEOTEXTILE INLET FILTER SD 6-12



Construction Notes

1. Install a 450 mm minimum wide roll of turf on the footpath next to the kerb and at the same level as the top of the kerb.
2. Lay 1.4 metre long turf strips normal to the kerb every 10 metres.
3. Rehabilitate disturbed soil behind the turf strip following the ESCP/SWMP.

KERBSIDE TURF STRIP SD 6-13



Construction Notes

1. Strip the topsoil, level the site and compact the subgrade.
2. Cover the area with needle-punched geotextile.
3. Construct a 200 mm thick pad over the geotextile using road base or 30 mm aggregate.
4. Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres 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

STABILISED SITE ACCESS SD 6-14

SEDIMENTATION AND EROSION CONTROL DETAILS

SEDIMENTATION AND EROSION CONTROL NOTES

1. SELECTIVE CLEARING OF VEGETATION TO BE RESTRICTED TO NOMINATED AREAS WITH CLEARED VEGETATION WIND ROWED ON THE CONTOUR.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO SITE DISTURBANCE.
3. TOPSOIL FROM ALL AREAS THAT WILL BE DISTURBED TO BE STRIPPED AND STOCKPILED AT THE NOMINATED SITE.
4. NO MORE THAN 150m OF TRENCH TO BE OPEN AT ANY ONE TIME.
5. CUT AND FILL BATTER GRADIENTS OF 1:2 (MAXIMUM).
6. A STRIP OF TURF 450mm WIDE IS TO BE PLACED IMMEDIATELY BEHIND THE KERB ON ALL NEW ROAD TO ACT AS A FILTER TRAP. REFER TO DETAIL SD6-13.
7. ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED BY SITE SUPERVISOR AFTER EACH RAINFALL EVENT FOR STRUCTURAL DAMAGE AND ALL TRAPPED SEDIMENT TO BE REMOVED TO A NOMINATED STOCKPILE SITE.
8. THE PROJECT MANAGER TO INFORM ALL CONTRACTORS AND SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN.
9. NO DISTURBED AREA IS TO REMAIN DENUDED LONGER THAN 14 DAYS.
10. ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S OPERATION.
11. THE CONTRACTOR MUST ENSURE THE SUITABILITY AND INTEGRITY OF ALL WORKS AT THE END OF EACH DAY'S WORK.
12. ORANGE BARRIER TAPE TO BE AFFIXED TO TOP OF SEDIMENT CONTROL BARRIER TO IDENTIFY WORK AREA.
13. ALL SEDIMENTATION & EROSION CONTROL MEASURES ARE TO STRICTLY COMPLY WITH THE GUIDELINES DETAILED IN THE DEPARTMENT OF HOUSING PUBLICATION, "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", 4TH EDITION.
14. WATER TRUCKS TO BE USED AS REQUIRED TO PREVENT WIND EROSION.
15. SUBGRADE MATERIAL TO BE CONSTRUCTED IMMEDIATELY FOLLOWING FILL.

LEGEND

—/—	DENOTES SEDIMENT FENCE, REFER TO DETAIL SD6-8
	DENOTES GEOTEXTILE INLET FILTER, REFER TO DETAIL SD6-12
	DENOTES STABILISED SITE ACCESS, REFER TO DETAIL SD6-14

NOT FOR CONSTRUCTION

ISSUE	REASON FOR ISSUE	DATE
0	FOR APPROVAL	27.08.20

© Copyright MPC Consulting Engineers as date of issue

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

COPYRIGHT
The concepts and information contained in this document are the copyright of MPC Consulting Engineers
Use or copying of the document in whole or in part without the written permission of MPC Consulting Engineers constitutes an infringement of copyright.

mpc consulting engineers civil+structural
Level 1,
16 Telford Street,
NEWCASTLE EAST, NSW 2300
PO BOX 553
THE JUNCTION, NSW 2291
Tel: (02) 4927 5566
Fax: (02) 4927 5577
Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
ALESCO SENIOR COLLEGE

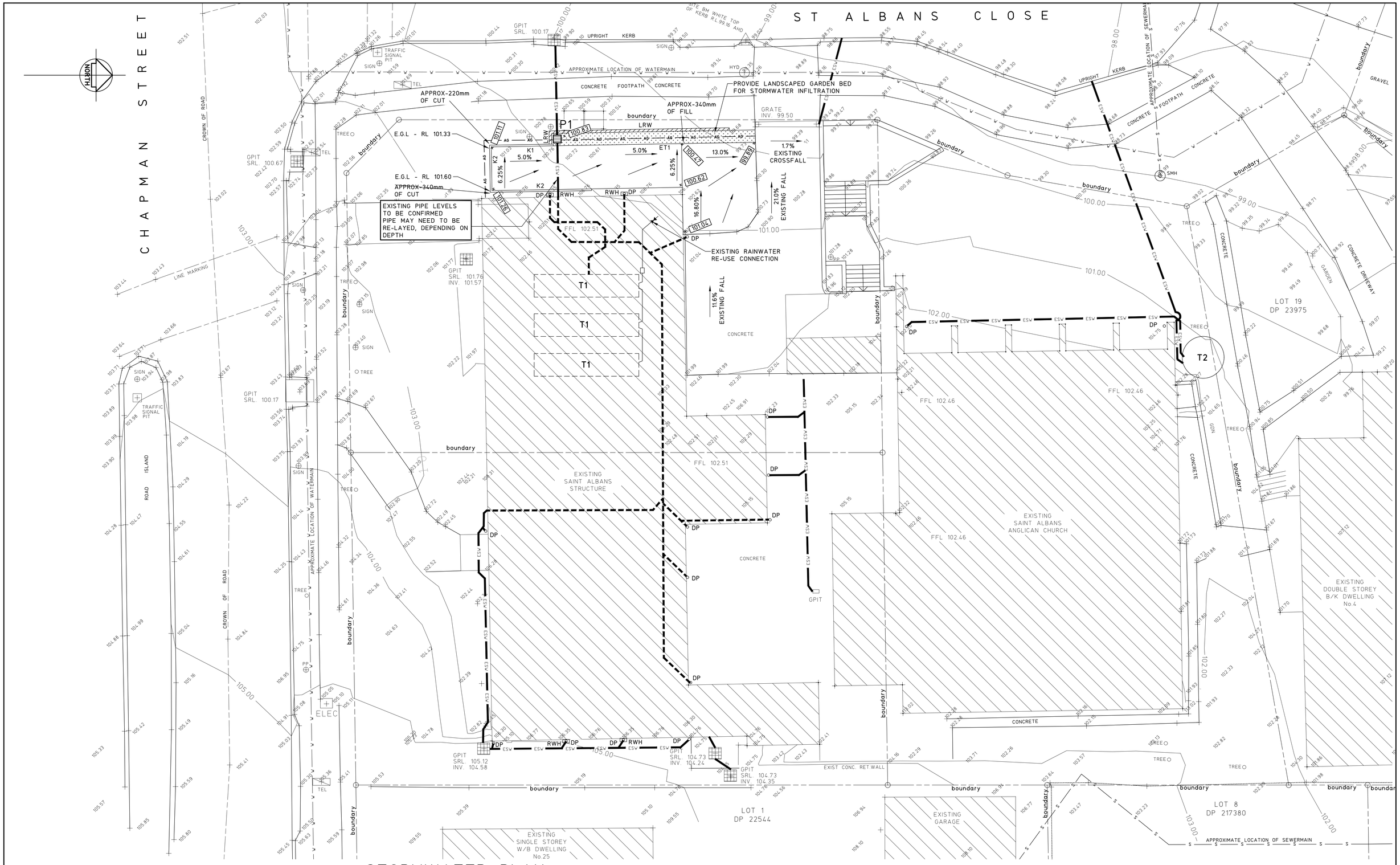
TITLE
STORMWATER PLAN

PROJECT
PROPOSED ALTERATIONS AND ADDITION AT;
ALESCO SENIOR COLLEGE,
No.27 CHAPMAN STREET,
CHARLESTOWN

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
C.W.	B.C.	6	A1
SCALES	JOB No	DRAWING No	ISSUE
N.T.S.	210072	C02	0

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm



STORMWATER PLAN

SCALE 1:100

STORMWATER NOTES

REFER TO DRAWING C04 FOR STORMWATER NOTES, PIT SCHEDULE AND LEGEND

NOT FOR CONSTRUCTION

ISSUE	REASON FOR ISSUE	DATE
0	FOR APPROVAL	27.08.20

© Copyright MPC Consulting Engineers as date of issue

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

COPYRIGHT

The concepts and information contained in this document are the copyright of MPC Consulting Engineers
Use or copying of the document in whole or in part without the written permission of MPC Consulting Engineers constitutes an infringement of copyright.

mpc consulting engineers civil+structural

Level 1,
16 Telford Street,
NEWCASTLE EAST, NSW 2300
PO BOX 553
THE JUNCTION, NSW 2291
Tel: (02) 4927 5566
Fax: (02) 4927 5577
Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
ALESCO SENIOR COLLEGE

TITLE
STORMWATER PLAN

PROJECT
PROPOSED ALTERATIONS AND ADDITION AT; ALESCO SENIOR COLLEGE, No.27 CHAPMAN STREET, CHARLESTOWN

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
C.W.	B.C.	6	A1
SCALES	JOB No	DRAWING No	ISSUE
1:100	210072	C03	0

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

STORMWATER NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AS3500.3.
2. ALL PIPES TO HAVE A 1% MINIMUM FALL U.N.O.
3. ALL DOWNPIPES (DP) TO BE SPECIFIED BY ARCHITECT. FOR EXACT LOCATION OF DOWNPIPES, REFER TO ARCHITECTURAL DRAWINGS.
4. ALL PIPES TO BE UPVC U.N.O
5. ALL UPVC PIPES TO BE SEWER GRADE AND TO AS1260.
6. ALL REINFORCED CONCRETE PIPES (RCP) TO BE SPIGOT AND SOCKET TYPE WITH RUBBER RINGS CLASS 2 TO AS4058.
7. PITS TO BE CI&D REINFORCED PRE-CAST CONCRETE PITS OR EQUIVALENT PROPRIETARY PITS.
8. ALL LIDS AND GRATES TO BE PROPRIETARY HEAVY DUTY IN AREAS OF VEHICULAR TRAFFIC, LIGHT DUTY ELSEWHERE, IN ACCORDANCE WITH AS3996.
9. MINIMUM COVER TO STORMWATER PIPES TO BE AS FOLLOW U.N.O:
   TRAFFICABLE AREAS - 450mm, LANDSCAPED AREAS - 300mm.
   PIPES TO BE CONCRETE ENCASED IF MINIMUM COVERS CANNOT BE OBTAINED IN TRAFFICABLE AREAS, REFER TO CLAUSE 3.8 AS3500.3. ALTERNATIVELY USE UPVC SEWER GRADE PIPES UNDER ROAD AND BUILDINGS.
10. PROVIDE 100Φ AG DRAINS IN FILTER SOCKS TO ALL LANDSCAPED AREAS, PLANTER BEDS AND STORMWATER PIPE TRENCHES.
    ALL AG DRAINS TO BE BEDDED IN COARSE AGGREGATE AND TO BE CONNECTED TO STORMWATER SYSTEM.
11. ALL PITS, DETENTION TANKS AND PROPRIETARY POLLUTION CONTROL DEVICES TO BE CLEANED OF SEDIMENT AT 3 MONTH MAXIMUM INTERVALS.
12. ALL EXISTING SERVICES TO BE LOCATED PRIOR TO COMMENCEMENT OF WORK.
13. ANY FOOTPATHS, KERB AND GUTTER OR ROADWAY DISTURBED BY WORKS TO BE REINSTATED TO CURRENT COUNCIL REQUIREMENTS.
14. PROVIDE ACCESS LADDER TO TANK AS REQUIRED, REFER TO AS1657.

LEGEND

	DENOTES STORMWATER PIPE
ESV	DENOTES EXISTING INGROUND PVC STORMWATER PIPE, 90Φ U.N.O.
	DENOTES EXISTING SUSPENDED FROM FLOOR FRAMING PVC STORMWATER PIPE, 90Φ U.N.O.
102.00	DENOTES EXISTING CONTOUR
× 101.95	DENOTES EXISTING LEVELS
× 101.22	DENOTES DESIGN SPOT LEVELS
K1	DENOTES 150 WIDEx150 HIGH KERB, REFER TO DRAWING C06 FOR DETAILS
K2	DENOTES 150 WIDE x 300 HIGH KERB WITH DROP EDGE REFER TO DRAWING C06 FOR DETAILS
ET1	DENOTES 300 WIDE EDGE THICKENING REFER TO DRAWING C06 FOR DETAILS
LRW	DENOTES LANDSCAPE RETAINING WALL 340 MAX HIGH, TO MANUFACTURERS SPECIFICATIONS
DP ○	DENOTES EXISTING DOWNPIPE
RWH DP	DENOTES EXISTING DOWNPIPE AND METAL RAINWATER HEAD
	DENOTES DIRECTION OF SURFACE FLOWS
AG	DENOTES 100Φ AG DRAIN IN FILTER SOCK
T1	DENOTES EXISTING RAINWATER STORAGE BLADDER TANK WITH 2500 LITRE STORAGE CAPACITY EACH
T2	DENOTES EXISTING ABOVE GROUND RAINWATER STORAGE TANK 2400 DIA, WITH 5000 LITRE STORAGE CAPACITY

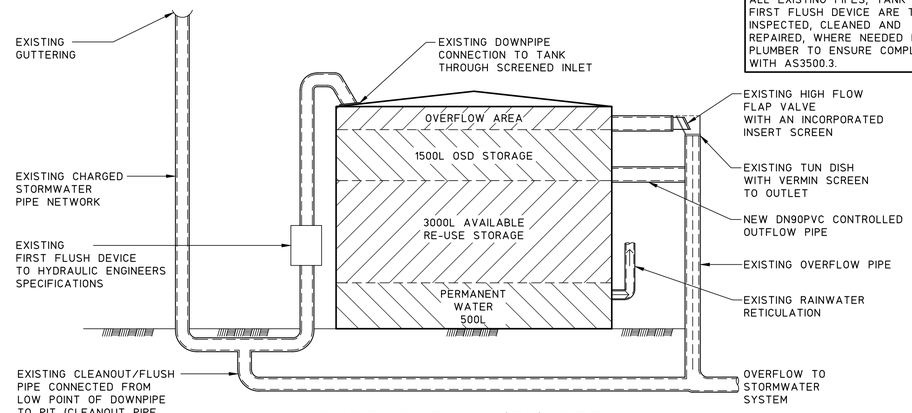
PIT SCHEDULE

PIT No.	SIZE	TYPE	SURFACE LEVEL S.L.	INVERT LEVEL I.L.
P1	600x600	GRATED PIT	100.83	100.23 T.B.C.

NOTE
ALL SETOUT, DIMENSIONS AND RL's TO ARCHITECTS SPECIFICATION & DETAILS

NOTE
ALL STRIP DRAINS AND AG LINES BEHIND RETAINING WALLS (RW1) AND KERBS (K1) TO CONNECT TO STORMWATER SYSTEM TYPICAL

NOTE
ALL EXISTING PIPES, TANK AND FIRST FLUSH DEVICE ARE TO BE INSPECTED, CLEANED AND REPAIRED, WHERE NEEDED BY A PLUMBER TO ENSURE COMPLIANCE WITH AS3500.3.



EXISTING TANK (T2) DETAIL
SCALE 1:20

NOT FOR CONSTRUCTION

ISSUE	REASON FOR ISSUE	DATE
0	FOR APPROVAL	27.08.20

© Copyright MPC Consulting Engineers as date of issue

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

COPYRIGHT
The concepts and information contained in this document are the copyright of MPC Consulting Engineers
Use or copying of the document in whole or in part without the written permission of MPC Consulting Engineers constitutes an infringement of copyright.

mpc consulting engineers civil+structural
Level 1,
16 Telford Street,
NEWCASTLE EAST, NSW 2300
PO BOX 553
THE JUNCTION, NSW 2291
Tel: (02) 4927 5566
Fax: (02) 4927 5577
Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
ALESCO SENIOR COLLEGE

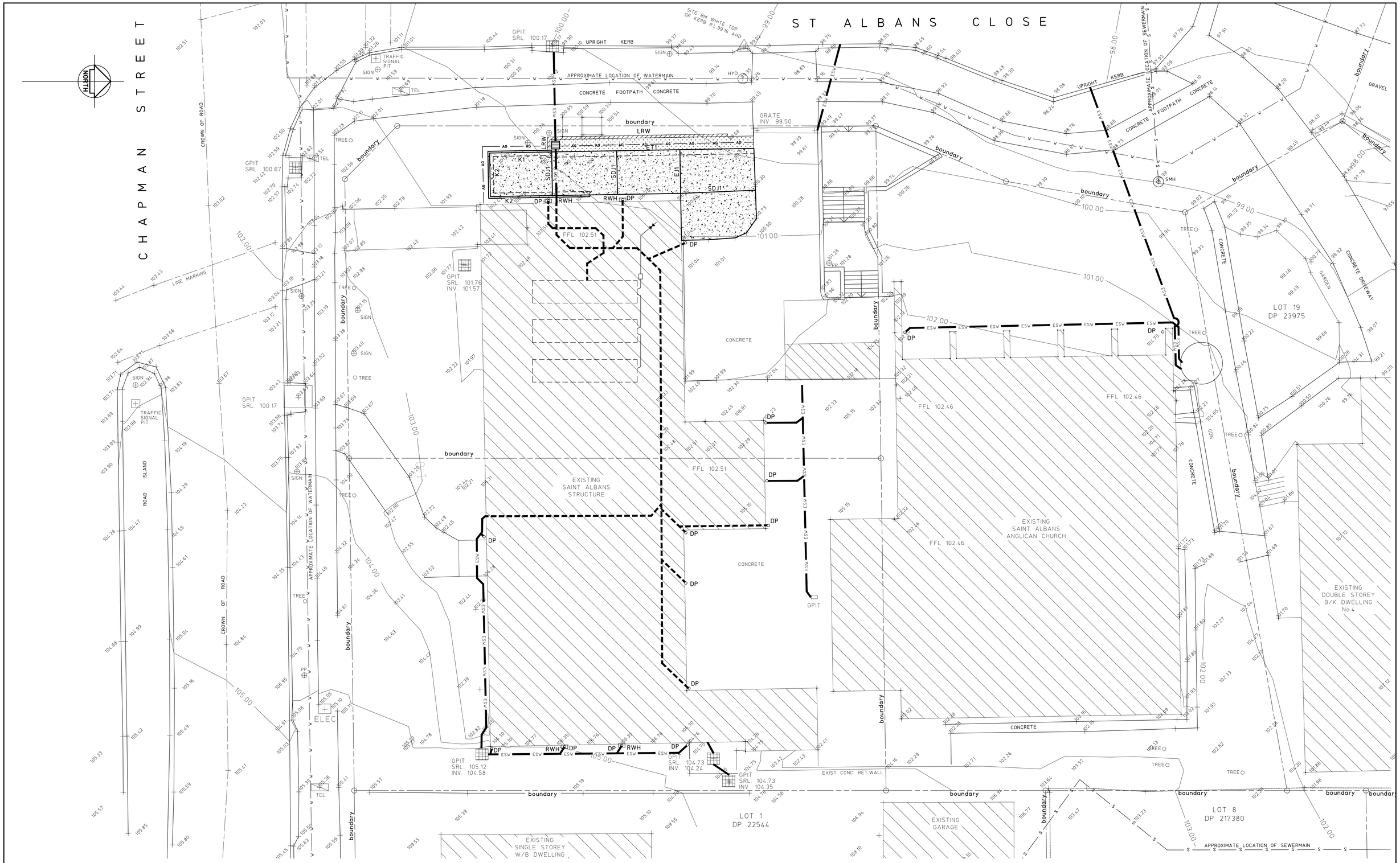
TITLE
STORMWATER NOTES AND DETAILS

PROJECT
PROPOSED ALTERATIONS AND ADDITION AT; ALESCO SENIOR COLLEGE, No.27 CHAPMAN STREET, CHARLESTOWN

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
C.W.	B.C.	6	A1
SCALES	JOB No	DRAWING No	ISSUE
1:100	210072	C04	0

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm



EXTERNAL PAVING PLAN

SCALE 1:100

EXTERNAL PAVING NOTES

REFER TO DRAWING C06 FOR EXTERNAL PAVING NOTES

NOT FOR CONSTRUCTION

ISSUE	REASON FOR ISSUE	DATE
0	FOR APPROVAL	27.08.20

DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

© Copyright MPC Consulting Engineers as date of issue

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

COPYRIGHT

The concepts and information contained in this document are the copyright of MPC Consulting Engineers
Use or copying of the document in whole or in part without the written permission of MPC Consulting Engineers constitutes an infringement of copyright.

mpc consulting engineers civil+structural

Level 1,
16 Telford Street,
NEWCASTLE EAST, NSW 2300
PO BOX 553
THE JUNCTION, NSW 2291
Tel: (02) 4927 5566
Fax: (02) 4927 5577
Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
ALESCO SENIOR COLLEGE

TITLE
EXTERNAL PAVING PLAN

PROJECT
PROPOSED ALTERATIONS AND ADDITION AT; ALESCO SENIOR COLLEGE, No.27 CHAPMAN STREET, CHARLESTOWN

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
C.W.	B.C.	6	A1
SCALES	JOB No	DRAWING No	ISSUE
1:100	210072	C05	0

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

SITE PREPARATION NOTES
1. REMOVE TOPSOIL AND ALL OTHER DELETERIOUS MATERIALS.
2. FOOTINGS TO BE FOUNDED ON FIRM NATURAL CUT GROUND, NOT FILL.
3. ANY SOFT AREAS ENCOUNTERED TO BE REMOVED AND REPLACED WITH COMPACTED FILL.
4. ANY FILL MUST BE PLACED IN 150mm MAXIMUM LAYERS AND COMPACTED TO A RELATIVE DRY DENSITY OF 98% TO AS 1289.5.1.1. BUILDING CONTRACTOR TO PROVIDE COMPACTION TEST RESULTS TO MPC FOR REVIEW PRIOR TO POURING CONCRETE.

EXTERNAL PAVEMENT NOTES
1. PROVIDE 10 ABELFLEX WHERE SLABS ABUT BRICKWORK AND POURED SLABS ETC.
2. JOINTS IN STRUCTURAL PAVEMENT SLAB UNDER TO BE REFLECTED IN ARCHITECTURAL FINISHES OVER.

DENOTES 125 MIN THICK SLAB WITH SL82 FABRIC TOP, REFER TO 'CONCRETE PAVEMENT SECTION' FOR DETAILS

CONCRETE PAVEMENT:

CP1 Concrete Mix Parameters
- Concrete Strength F'c = 32 MPa
- Flexural Strength at 28 days = 3.5 MPa
- Flexural Strength at 90 days = 3.85 MPa
- Maximum Shrinkage Limit = 600 Microstrain (AS1012 Part 13)
- Cement to be Normal Class to AS1379
- Slump = 60mm

CP2 All work to be broom finish U.N.O.

CP3 A Joints as detailed.
- B Bond breaker to be two (2) uniform coats of bitumen emulsion all over the exposed surface & on end. Joint sealant to be compatible with bond breaker.
- C Dowels and tie bars to meet strength requirements of structural grade steel in accordance with AS4671.
- D Dowels and tie bars shall be :
  - Straight
  - To length specified
  - Galvanised
  - Sawn to length not cropped.

CP4 Joint to be sawn as soon as concrete has hardened sufficiently that it will not be damaged by sawing.

CP5 Dimensions of sealant reservoir depend on the sealant type adopted. Engineers approval to be obtained for sealant and reservoir dimensions and detail proposed by the contractor.

CP6 Where slabs abut walls or buildings, provide 10mm abelflex all round typical.

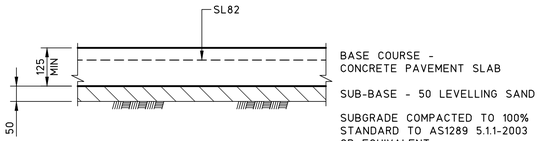
CP7 Match new pavements neatly and flush with existing where required.

CP8 No concrete to be poured on days forecast to be greater than 30° degrees celsius.

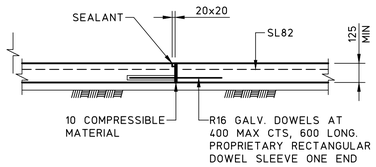
CP9 Nominal compaction pavements:
- * Base 100% standard
- * Sub-grade 100% standard

CP10 Allow for at least two successful compaction tests in each layer. Allow for one additional test per 200 sq.m of pavement. Testing to be undertaken by N.A.T.A. registered labratory.

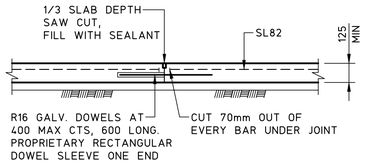
CP11 All trafficable concrete pavements to be 32MPa with footpath pavements minimum 25MPa (U.N.O.).



CONCRETE PAVEMENT SECTION
SCALE 1:10

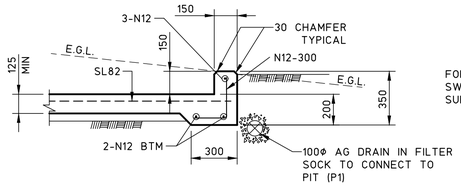


EXPANSION JOINT - EJ1
SCALE 1:20

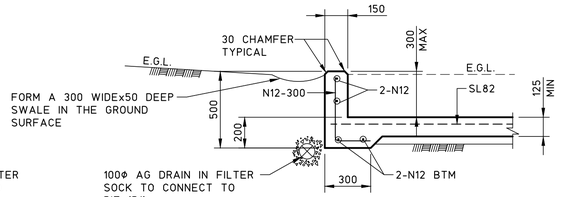


SAWN DOWEL JOINT - SDJ1
SCALE 1:20

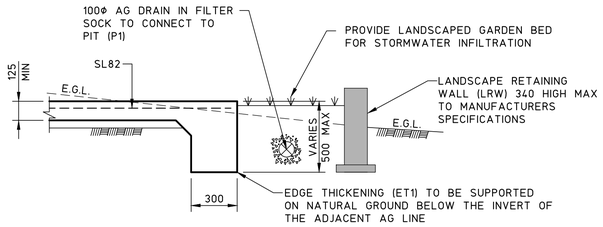
NOTE
JOINT TO BE SAWN AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING.



KERB - K1
SCALE 1:20



KERB - K2
SCALE 1:20



EDGE THICKENING - ET1
SCALE 1:20

NOT FOR CONSTRUCTION

ISSUE	REASON FOR ISSUE	DATE
0	FOR APPROVAL	27.08.20

© Copyright MPC Consulting Engineers as date of issue

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ENDORSED BELOW

DATE OF RELEASE	RESPONSIBLE PRINCIPAL SIGNATURE	ISSUE

COPYRIGHT
The concepts and information contained in this document are the copyright of MPC Consulting Engineers
Use or copying of the document in whole or in part without the written permission of MPC Consulting Engineers constitutes an infringement of copyright.

mpc consulting engineers civil+structural
Level 1,
16 Telford Street,
NEWCASTLE EAST, NSW 2300
PO BOX 553
THE JUNCTION, NSW 2291
Tel: (02) 4927 5566
Fax: (02) 4927 5577
Email: admin@mpceng.com.au
Web: www.mpceng.com.au
A.C.N. 098 542 575

CLIENT
ALESCO SENIOR COLLEGE

TITLE
EXTERNAL PAVING NOTES AND DETAILS

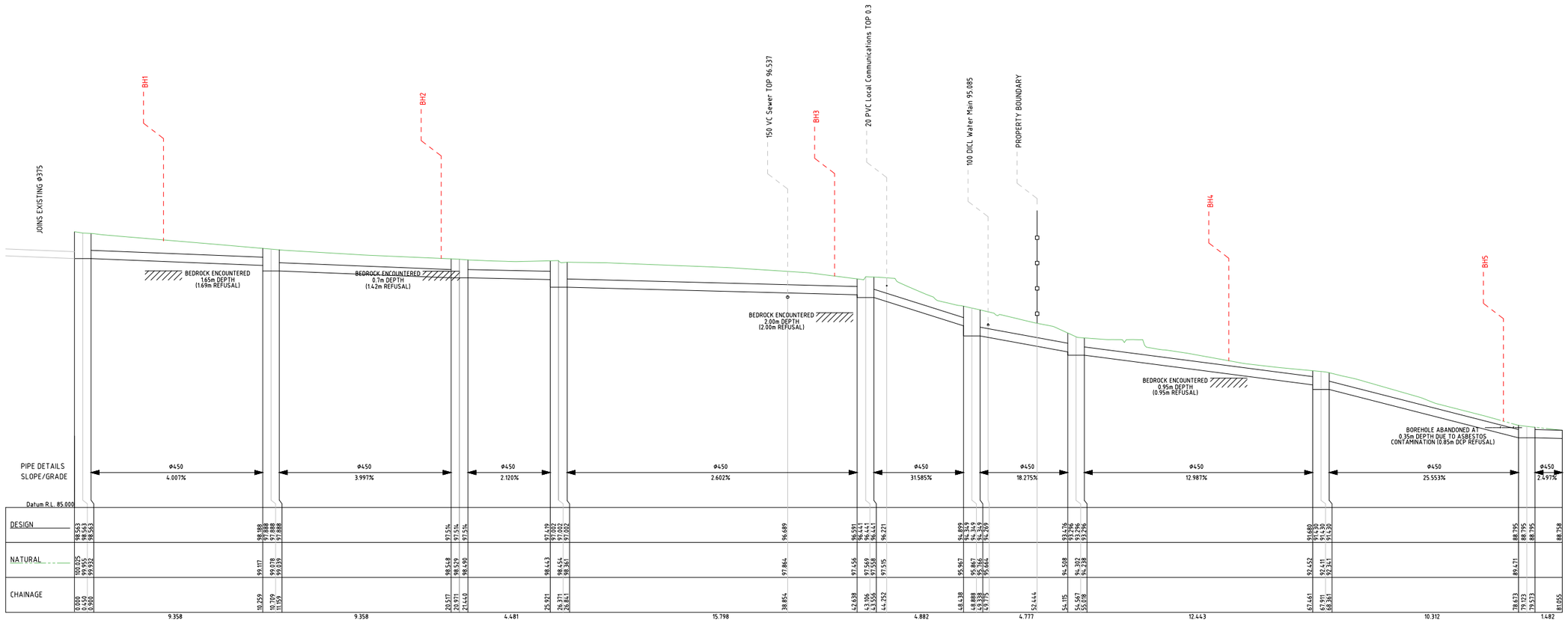
PROJECT
PROPOSED ALTERATIONS AND ADDITION AT; ALESCO SENIOR COLLEGE, No.27 CHAPMAN STREET, CHARLESTOWN

DO NOT SCALE DRAWING

DRAWN	ENGINEER	No in SET	SHEET
C.W.	B.C.	6	A1
SCALES	JOB No	DRAWING No	ISSUE
1:20, 10	210072	C06	0

FULL SIZE ON ORIGINAL 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm

Figure 9: Proposed works for Option 3



VERSION	DATE	COMMENTS	CHK BY	APP'D BY

CAD FILES: CHAR-PM19-0024-D-01 | THIS DRAWING IS AN UNCONTROLLED COPY UNLESS STATED OTHERWISE

DRAWN BY: K.CROSS | DESIGNED BY: K. CROSS | SURVEYED BY: I. NAYLOR

SCALE

HEIGHT DATUM	COORDINATES	ORIG. SHEET SIZE
A.H.D.	M.G.A.	A1

CLIENT : LAKE MACQUARIE CITY

PREPARED BY : CITY PROJECTS ~ ENGINEERING ~
126-138 MAIN ROAD, SPEERS POINT
PHONE (02)49210 333
FAX (02)49587 257

WORK TO FIGURED DIMENSIONS - DO NOT SCALE. CHECK DIMENSIONS AND LEVELS ON JOB BEFORE ORDERING MATERIALS OR COMMENCING WORK. THIS DRAWING IS SUBJECT TO COPYRIGHT AND IS THE PROPERTY OF LAKE MACQUARIE CITY COUNCIL. DO NOT RETAIN, COPY OR USE WITHOUT THE WRITTEN PERMISSION OF CITY PROJECTS- ABN 81 065 027 868

PROJECT NAME
DRAINAGE INVESTIGATION AND CONCEPT DESIGN

PROJECT ADDRESS & DETAILS
3 & 5 ST ALBANS CLOSE
CHARLESTOWN

DRAWING TITLE
OPTION 3 LONGSECTION

FOLDER NO:	SHEET:	DRAWING No:	VERSION
PM19/0024	3 OF 5 SHEETS	PM19-0024-01	01

Benjamin Curran

From: Georgia Halvorsen <ghalvorsen@lakemac.nsw.gov.au>
Sent: Friday, 28 August 2020 7:58 AM
To: Benjamin Curran
Cc: File [MPCCE]; David Read; Ross Jones
Subject: RE: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

Hi Ben,

I have been advised that Council has used 90% impervious area for the roads and shopping centre, and 60% impervious area for the Church catchment.

Kevin Cross (Mob 0405714334) was the design engineer if you would like to discuss it further with him.

Thanks,
Georgia

Georgia Halvorsen
Development Engineer

T 02 4921 0281 **M** 0439 714 429
E ghalvorsen@lakemac.nsw.gov.au
lakemac.com.au

From: Benjamin Curran <benjaminc@mpceng.com.au>
Sent: Thursday, 27 August 2020 2:38 PM
To: Georgia Halvorsen <ghalvorsen@lakemac.nsw.gov.au>
Cc: File [MPCCE] <File@mpceng.com.au>; David Read <david.read@avidpm.com.au>; Ross Jones <rjones@lakemac.nsw.gov.au>
Subject: RE: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Thanks Georgia.

That information is very helpful, thank you very much. I only have one question for the designer, which is just to clarify what % impervious they would have assumed for the upstream properties when estimating the rainfall runoff heading into the St Alban's Close drainage – I assumed 60% but I just wanted to check.

I spoke with Ross briefly on this to explain the basis for requesting this information. It is really just to ensure that we manage the flows on the school site so that the outflows form the site do not exceed what has been allowed for in the design of the planned drainage improvements in St Albans Close.

Thank you very much.

Regards
Benjamin Curran
Director, Senior Structural/Civil Engineer
B.E (Civil)(Hons) MIEAust CPEng NER RPEQ BSPTas APEC Engineer IntPE(Aust)

MPC Consulting Engineers
Level 1, 16 Telford Street, NEWCASTLE EAST NSW 2300 | PO Box 553, The Junction, 2291
m. 0417 049 818 | t. +61 2 4927 5566 | f. +61 2 4927 5577 | e. benjaminc@mpceng.com.au
ACN: 098 542 575 | ABN: 14 904 295 412 | www.mpceng.com.au

the maths in the middle

Confidentiality and Disclaimer Statement.
The information contained in this electronic mail is privileged and confidential, and is intended only for use of the addressee. If you have received this communication in error, please notify the sender by reply transmission and delete the message without copying or disclosing it. MPC Consulting Engineers has implemented anti-virus software, and whilst all care is taken, it is the recipient's responsibility to ensure that the message and any attachments are scanned for viruses prior to opening.

From: Georgia Halvorsen <ghalvorsen@lakemac.nsw.gov.au>
Sent: Thursday, 27 August 2020 9:03 AM
To: Benjamin Curran <benjaminc@mpceng.com.au>
Cc: File [MPCCE] <File@mpceng.com.au>; David Read <david.read@avidpm.com.au>
Subject: RE: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

Hi Ben,

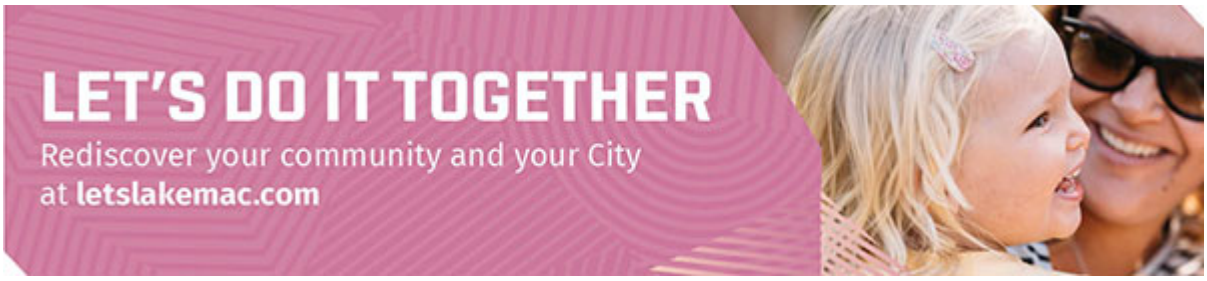
Apologies for the delay, please see the attached email. The design has not yet been finalised and is expected to be complete by the end of August, however the Project Manager has sent me a draft of the plans for you to review. We can send through the final plans once they are complete.

Please let me know if you need further information.

Thanks,
Georgia

Georgia Halvorsen
Development Engineer

T 02 4921 0281 **M** 0439 714 429
E ghalvorsen@lakemac.nsw.gov.au
lakemac.com.au



From: Benjamin Curran <benjaminc@mpceng.com.au>
Sent: Wednesday, 26 August 2020 10:36 PM
To: Georgia Halvorsen <ghalvorsen@lakemac.nsw.gov.au>
Cc: File [MPCCE] <File@mpceng.com.au>; David Read <david.read@avidpm.com.au>
Subject: RE: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hello Georgia,

I am required to submit my stormwater management report for this project very soon and will need some time to review the LMCC drawings for the proposed drainage asset improvements at the end of St Albans Close as part of that report.

Would it be possible for you to follow up with the Drainage Engineer to see when the requested drawings could be made available?

Thank you very much for your time on the matter.

Regards
Benjamin Curran
Director, Senior Structural/Civil Engineer
B.E (Civil)(Hons) MIEAust CPEng NER RPEQ BSPTas APEC Engineer IntPE(Aust)

MPC Consulting Engineers

ACN: 098 542 575 | ABN: 14 904 295 412
Level 1, 16 Telford Street, NEWCASTLE EAST NSW 2300 | PO Box 553, The Junction, 2291
m. 0417 049 818 | t. +61 2 4927 5566 | f. +61 2 4927 5577 | e. benjaminc@mpceng.com.au

the maths in the middle

Confidentiality and Disclaimer Statement.
The information contained in this electronic mail is privileged and confidential, and is intended only for use of the addressee. If you have received this communication in error, please notify the sender by reply transmission and delete the message without copying or disclosing it. MPC Consulting Engineers has implemented anti-virus software, and whilst all care is taken, it is the recipient's responsibility to ensure that the message and any attachments are scanned for viruses prior to opening.

From: Georgia Halvorsen <ghalvorsen@lakemac.nsw.gov.au>
Sent: Friday, 21 August 2020 11:31 AM
To: Benjamin Curran <benjaminc@mpceng.com.au>
Cc: File [MPCCE] <File@mpceng.com.au>
Subject: RE: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

Hi Ben,

I sent your query to our Assets team yesterday who should have this information – the Drainage Engineer seems to be on leave today but I'll get the information to you as soon as I hear back.

Cheers,
Georgia

Georgia Halvorsen
Development Engineer

LAKE MACQUARIE CITY

T 02 4921 0281 **M** 0439 714 429
E ghalvorsen@lakemac.nsw.gov.au
lakemac.com.au

From: Benjamin Curran <benjaminc@mpceng.com.au>
Sent: Thursday, 20 August 2020 4:21 PM
To: Georgia Halvorsen <ghalvorsen@lakemac.nsw.gov.au>
Cc: File [MPCCE] <File@mpceng.com.au>
Subject: RE: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Thank you very much Geogria.

The screenshot looks good to me. Do you have any data on the pipe sizes going into and out of Pit 26702? That would be very helpful.

Regards
Benjamin Curran
Director, Senior Structural/Civil Engineer
B.E (Civil)(Hons) MIEAust CPEng NER RPEQ BSPTas APEC Engineer IntPE(Aust)

MPC Consulting Engineers

ACN: 098 542 575 | ABN: 14 904 295 412
Level 1, 16 Telford Street, NEWCASTLE EAST NSW 2300 | PO Box 553, The Junction, 2291
m. 0417 049 818 | t. +61 2 4927 5566 | f. +61 2 4927 5577 | e. benjaminc@mpceng.com.au

the maths in the middle

Confidentiality and Disclaimer Statement.
The information contained in this electronic mail is privileged and confidential, and is intended only for use of the addressee. If you have received this communication in error, please notify the sender by reply transmission and delete the message without copying or disclosing it. MPC Consulting Engineers has implemented anti-virus software, and whilst all care is taken, it is the recipient's responsibility to ensure that the message and any attachments are scanned for viruses prior to opening.

From: Georgia Halvorsen <ghalvorsen@lakemac.nsw.gov.au>
Sent: Thursday, 20 August 2020 3:27 PM
To: Benjamin Curran <benjaminc@mpceng.com.au>
Subject: RE: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

Hi Ben,

I am looking into your below query. Please see below screenshot of drainage assets in this area, let me know if this is not what you are after.

In regards to the engineering plans, I have asked Council's Assets team to locate these so I will send them through as soon as I hear back.

Thanks,
Georgia

Georgia Halvorsen
Development Engineer

T 02 4921 0281 **M** 0439 714 429
E ghalvorsen@lakemac.nsw.gov.au
lakemac.com.au

From: Benjamin Curran <benjaminc@mpceng.com.au>
Sent: Wednesday, 19 August 2020 12:11 PM
To: Heath Robertson <hrobertson@lakemac.nsw.gov.au>
Cc: File [MPCCE] <File@mpceng.com.au>
Subject: MPC ref: 210072 Drainage Asset Enquiry - St Albans Close, Charlestown (LMCC drainage asset upgrade)

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hello Heath,

MPC is providing civil engineering services for a proposed adaptive re-use of the existing St Albans Anglican Church site in St Albans Close Charlestown.

The LMCC response to the SEARs application (copy attached) requested that the project consider the planned improvement works to public stormwater drainage assets at the north end of St Albans Close (to ensure the planned works at the Church will not have a detrimental impact on those planned drainage works).

Subsequently, could you please therefore provide the following:

1. A screenshot from the LMCC drainage asset database, for the area visible on the attached PDF;
2. A copy of the engineering drawings for the planned drainage upgrade works at the north end of St Albans Close;

Thank you very much for your time on the matter.

Regards
Benjamin Curran
Director, Senior Structural/Civil Engineer
B.E (Civil)(Hons) MIEAust CPEng NER RPEQ BSPTas APEC Engineer IntPE(Aust)

MPC Consulting Engineers

ACN: 098 542 575 | ABN: 14 904 295 412
Level 1, 16 Telford Street, NEWCASTLE EAST NSW 2300 | PO Box 553, The Junction, 2291
m. 0417 049 818 | t. +61 2 4927 5566 | f. +61 2 4927 5577 | e. benjaminc@mpceng.com.aU

the maths in the middle

Confidentiality and Disclaimer Statement.
The information contained in this electronic mail is privileged and confidential, and is intended only for use of the addressee. If you have received this communication in error, please notify the sender by reply transmission and delete the message without copying or disclosing it. MPC Consulting Engineers has implemented anti-virus software, and whilst all care is taken, it is the recipient's responsibility to ensure that the message and any attachments are scanned for viruses prior to opening.

This information is intended for the addressee only. The use, copying or distribution of this message or any information it contains, by anyone other than the addressee is prohibited by the sender.

Any views expressed in this communication are those of the individual sender, except where the sender specifically states them to be the views of Council.

Information provided to Council in correspondence, submissions or requests (verbal, electronic or written), including personal information such as your name and address, may be made publicly available, including via Council website, in accordance with the Government Information (Public Access) Act (GIPA Act) 2009.
This information is intended for the addressee only. The use, copying or distribution of this message or any information it contains, by anyone other than the addressee is prohibited by the sender.

Any views expressed in this communication are those of the individual sender, except where the sender specifically states them to be the views of Council.

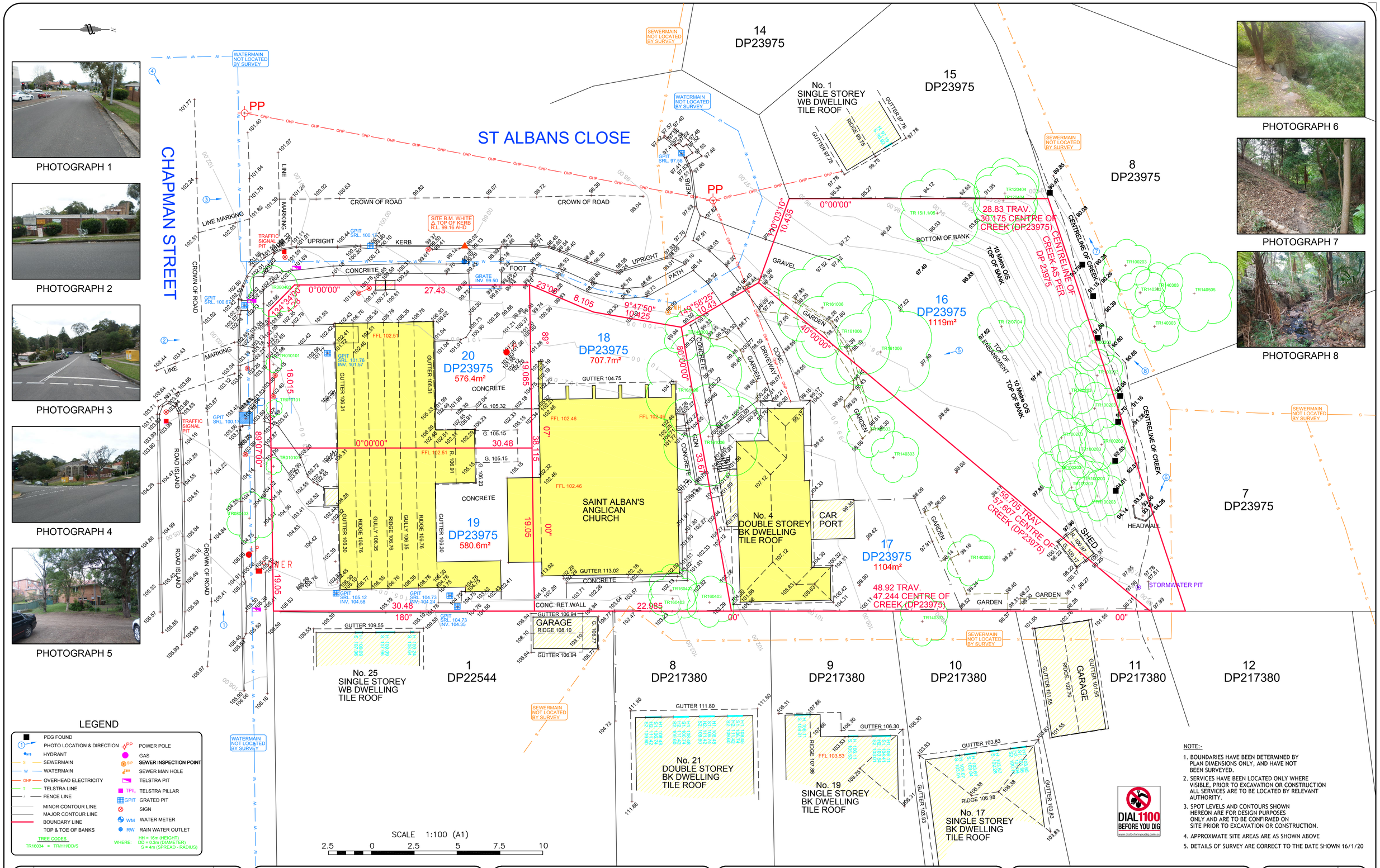
Information provided to Council in correspondence, submissions or requests (verbal, electronic or written), including personal information such as your name and address, may be made publicly available, including via Council website, in accordance with the Government Information (Public Access) Act (GIPA Act) 2009.
This information is intended for the addressee only. The use, copying or distribution of this message or any information it contains, by anyone other than the addressee is prohibited by the sender.

Any views expressed in this communication are those of the individual sender, except where the sender specifically states them to be the views of Council.

Information provided to Council in correspondence, submissions or requests (verbal, electronic or written), including personal information such as your name and address, may be made publicly available, including via Council website, in accordance with the Government Information (Public Access) Act (GIPA Act) 2009.
This information is intended for the addressee only. The use, copying or distribution of this message or any information it contains, by anyone other than the addressee is prohibited by the sender.

Any views expressed in this communication are those of the individual sender, except where the sender specifically states them to be the views of Council.

Information provided to Council in correspondence, submissions or requests (verbal, electronic or written), including personal information such as your name and address, may be made publicly available, including via Council website, in accordance with the Government Information (Public Access) Act (GIPA Act) 2009.



PHOTOGRAPH 1

PHOTOGRAPH 2

PHOTOGRAPH 3

PHOTOGRAPH 4

PHOTOGRAPH 5

PHOTOGRAPH 6

PHOTOGRAPH 7

PHOTOGRAPH 8

LEGEND

- PEG FOUND
- PHOTO LOCATION & DIRECTION
- HYDRANT
- SEWERMAIN
- WATERMAIN
- OVERHEAD ELECTRICITY
- TELSTRA LINE
- FENCE LINE
- MINOR CONTOUR LINE
- MAJOR CONTOUR LINE
- BOUNDARY LINE
- TOP & TOE OF BANKS
- POWER POLE
- GAS
- SEWER INSPECTION POINT
- SEWER MAN HOLE
- TELSTRA PIT
- TELSTRA PILLAR
- GRATED PIT
- SIGN
- WATER METER
- RAIN WATER OUTLET

TREE CODES
TR16034 = TR/HH/DD/S
WHERE: HH = 16m (HEIGHT)
DD = 0.3m (DIAMETER)
S = 4m (SPREAD - RADIUS)

NOTE:-

1. BOUNDARIES HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY, AND HAVE NOT BEEN SURVEYED.
2. SERVICES HAVE BEEN LOCATED ONLY WHERE VISIBLE, PRIOR TO EXCAVATION OR CONSTRUCTION ALL SERVICES ARE TO BE LOCATED BY RELEVANT AUTHORITY.
3. SPOT LEVELS AND CONTOURS SHOWN HEREON ARE FOR DESIGN PURPOSES ONLY AND ARE TO BE CONFIRMED ON SITE PRIOR TO EXCAVATION OR CONSTRUCTION.
4. APPROXIMATE SITE AREAS ARE AS SHOWN ABOVE
5. DETAILS OF SURVEY ARE CORRECT TO THE DATE SHOWN 16/1/20

DIAL 1100 BEFORE YOU DIG
www.dialbeforeyoudig.com.au

Ed.	Details of Revisions	Date
B	ADDITIONAL SURVEY	16/01/20
A	INITIAL ISSUE	22/06/17

"COPYRIGHT NOTICE"
THIS PLAN AND THE INFORMATION IT CONTAINS ARE COPYRIGHT AND REMAIN THE PROPERTY OF LAND DEVELOPMENT SOLUTIONS Pty Ltd.
USE OF THE PLAN AND INFORMATION IT CONTAINS FOR ANY OTHER PURPOSE IS NOT PERMITTED UNLESS PRIOR WRITTEN APPROVAL HAS BEEN OBTAINED FROM LAND DEVELOPMENT SOLUTIONS Pty Ltd.

Client / Council Development Consent Number

Scale:	1:200 (A1) 1:400 (A3)	Datum:	AHD
Origin:	SSM 116956	Contour Int:	1.0
Surveyor:	E.Z.	Drawn:	E.Z.
Checked:	J.H	Approved:	J.H.
Job Number:	5651	Drawing File:	5651-D2.dwg

Registered Surveyor: .....

LAND DEVELOPMENT SOLUTIONS
Surveying • Planning • Engineering
PO Box 853 THE JUNCTION NSW 2291
Phone: (02) 4963 5520 Fax: (02) 4963 5521
E-mail: mail@lds.net.au
ABN: 42 110 897 928

DETAIL SURVEY OF LOTS 16-20 DP 23975
BEING No.2-4 ST ALBANS CLOSE & 27-31
CHAPMAN STREET
CHARLESTOWN, LAKE MACQUARIE

Drawing Number	Edition
1	B

Sheet 1 of 1