



19 October 2017

Principal Certifying Authority
c/- DesignInc Pty Ltd
Attention Mr Robert Godfrey
Level 12, 77 Pacific Highway
NORTH SYDNEY 2060

Dear Sir,

**RE: REPORT ON EXISTING DRAINAGE INFRASTRUCTURE AT
100 ETON ROAD, LINDFIELD**

A walk over of the abovementioned building was carried out by this office on 04 July 2016. The object of our inspection was to carry out a visual inspection of the existing site drainage.

The inspection was visual only and we did not lift any pits or send any cameras to investigate the condition of the pipes. Based on our visual inspection, the existing infrastructure appears sound. At the time of the inspection several pits had accumulated leaves and other debris, this may have been flushed through the drainage system during the next rain event however the cause of the accumulation is likely due to the site not being occupied and consequently maintenance has not been carried out at regularly intervals.

There are no new buildings being proposed during the new works. The proposed development alters the internal space of the building and adds a number of COLA structures above the existing concrete roof of the building in zones 'D', 'K', and 'M' as shown in the Architectural drawings. A new ground COLA structure is also being added in zone 'N'/R'. Several new downpipes are introduced around the structure in order to capture rainwater from the new COLA structures without introducing additional loads to the existing downpipes of the building. Other than the ground COLA structure in zone 'N'/R', the new COLA structures in zones 'D', 'K', and 'M' do not increase the catchment area of the building. It is therefore proposed to keep the current drainage infrastructure in place with a recommendation as part of the main contracts works to carry out thorough maintenance of all pits and to carry out a photographic investigation of the main stormwater lines. In our opinion the proposed development will not increase the loads on the existing stormwater infrastructure.

In order to mitigate any additional loads from the 'GROUND COLA' into the existing stormwater infrastructure, the proposed development includes the addition of 4 x 1100L (4400L) rainwater tanks which will capture the rainwater from the 'GROUND COLA' structure (65sqm) and reuse the harvested rainwater for irrigation purposes - please refer to Hydraulic Engineer's drawings for details.

DIRECTORS

B Fimmano B.E. (Hons), M.I.E. Aust., C.P.Eng.

R P Clifford O.M.I.E. Aust.

M A Grogan B.E., M.Eng., M.I.E. Aust., C.P.Eng.

CONSULTANT

A J Birzulis B.E., M.Eng. Sc., F.I.E. Aust., C.P.Eng.

The aim of the policy document "Guidelines for developing adjoining land and water managed by DECCW" clause 2.2 Stormwater Runoff is "Nutrient levels are minimised, and stormwater flow regimes and patterns mimic natural levels before it reaches OEH land". We believe that the discharge from our site to DECWW land remains as per the status quo and no further action is required to meet this policy.

We also believe that the above also addresses the requirements of the SEARS report for water sensitive urban design (WSUD), since the existing stormwater drainage is not being altered thus the introduction of WSUD into the existing infrastructure should not be required.

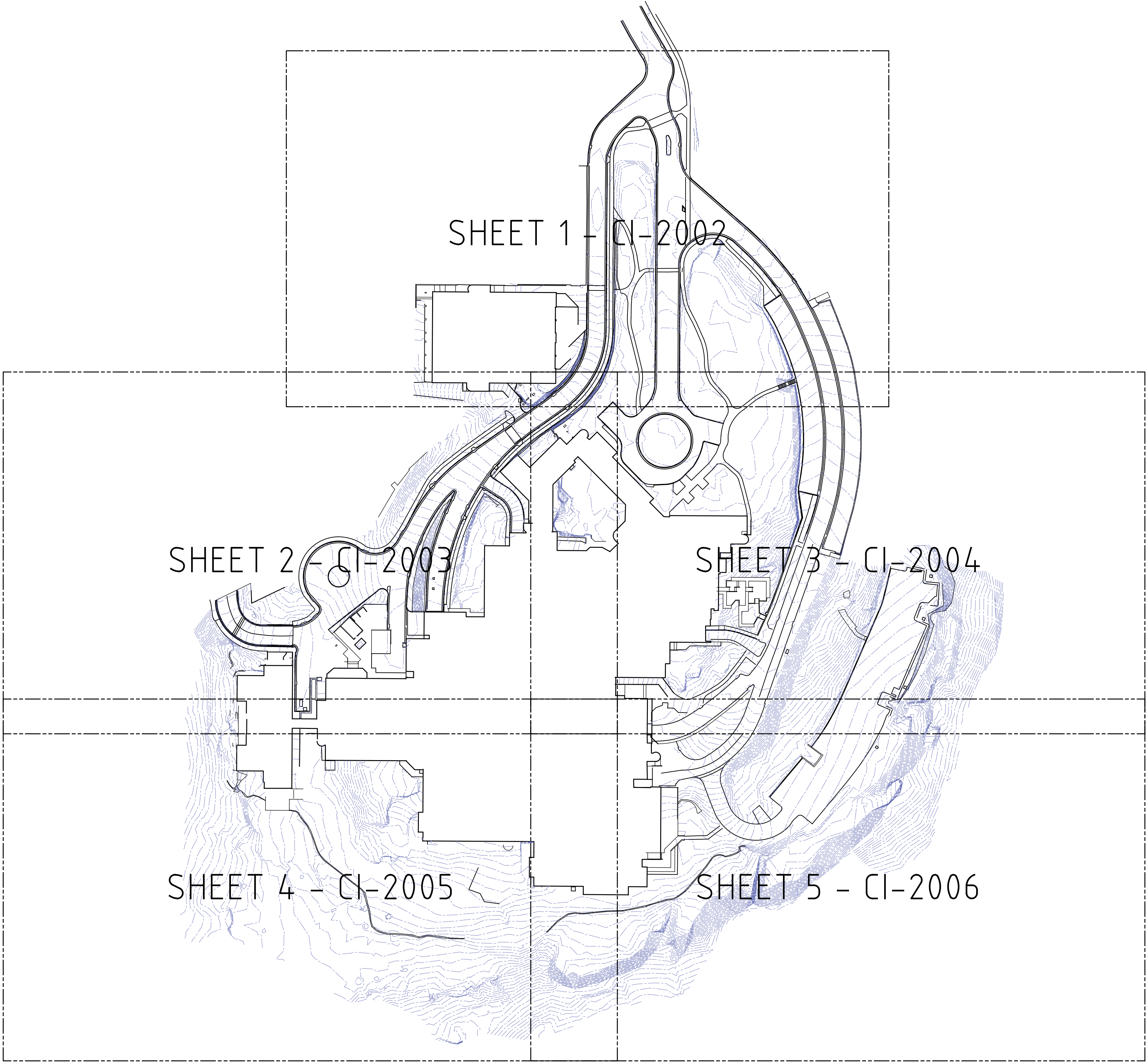
We trust that this is acceptable for your purposes at this stage but should you require any further information or clarification please do not hesitate to contact the undersigned.

Yours faithfully



MICHAEL GROGAN
Director

Attachment: CI-2001_2, CI-2002_2, CI-2003_2, CI-2004_2, CI-2005_2, CI-2006_2



ABBREVIATIONS	
Ø OR DIA	DIAMETER
CNR	CALIFORNIA BEARING RATIO
CH	CHAINAGE
CL	CENTRE LINE
CE	CLEANING EYE/INSPECTION OUTLET
CO	CLEAR OUT
DD	DISH CROSSING
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
GSP	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
OFF	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
SD	STRIP DRAIN
SJ	SAWN CONTROL JOINT
SMH	SEWER MAN HOLE
SSD	SUBSOIL DRAINAGE
SW	STORMWATER
SWP	STORMWATER PIT
SWRM	STORMWATER RISING MAIN
SWS	STORMWATER SUMP
SV	STOP VALVE
TOK	TOP OF KERB
TOW	TOP OF WALL
TP	TANGENT POINT
UPVC	UNPLASTICISED POLYVINYL CHLORIDE
UNO	UNLESS NOTED OTHERWISE
WPJ	WEAKENED PLANE JOINT

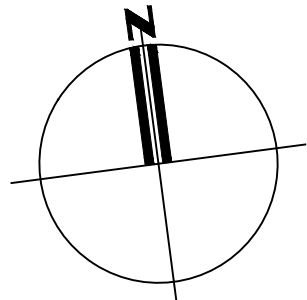
STORMWATER SITE PLAN
SCALE 1:800 (A1), 1:1600 (A3)

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2	TENDER ISSUE		01-09-17
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PO BOX 651 NORTH SYDNEY NSW 2059 AUSTRALIA
T + 612 8905 7100 F + 612 8905 7199
www.designinc.com.au E:sydney@sydney.designinc.com.au
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BIRZULIS
ASSOCIATES

CONSULTING STRUCTURAL & CIVIL ENGINEERS

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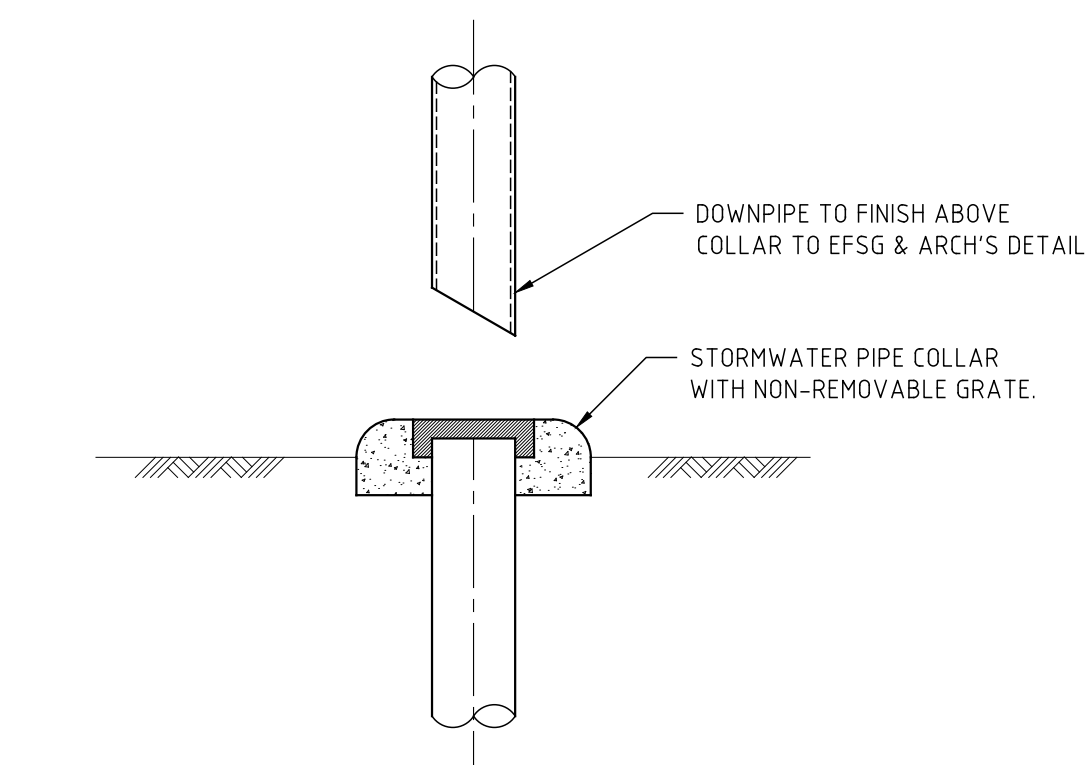
PROJECT

LINFIELD LEARNING VILLAGE
ETON ROAD,
LINFIELD NSW 2070

TITLE

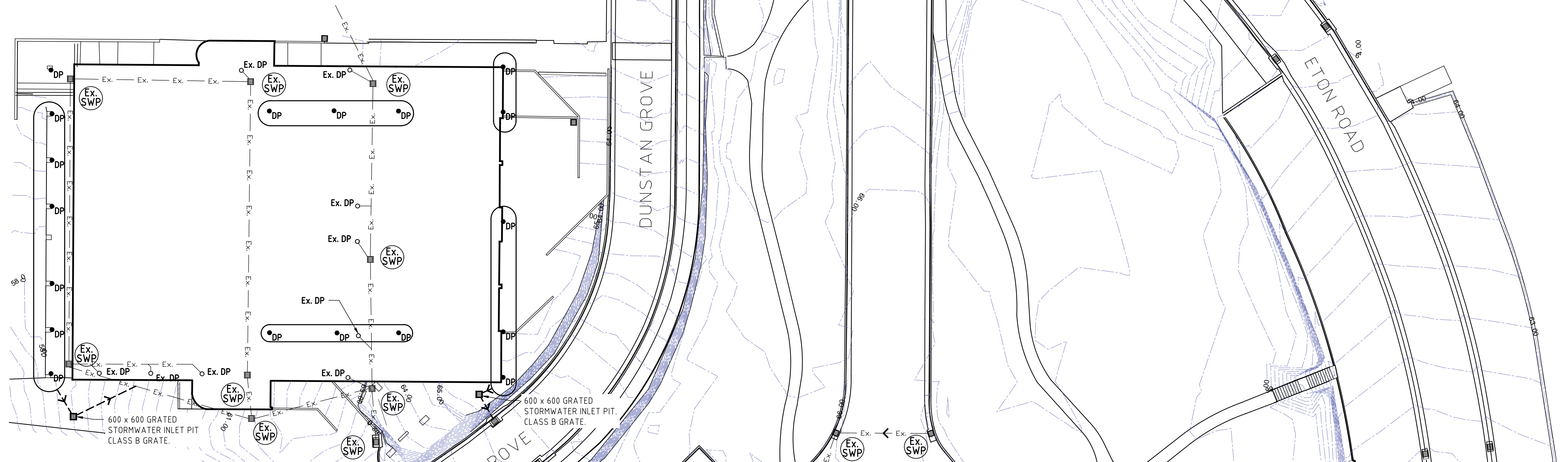
STORMWATER SITE PLAN

SCALES		as noted @ A1		DATE FEB. 2017	
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ISSUE		PROJECT No.		DRAWING No.	
2		6490		CI-2001	



SCALE 1:10

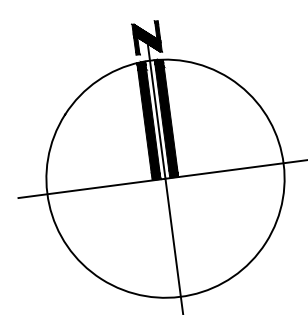
- BUILDER TO ASSESS & VERIFY EXTENT AND CONDITION OF ALL EXISTING STORMWATER SERVICES.
- BUILDER TO REINSTATE & MAKE GOOD ALL SURFACES AFFECTED BY STORMWATER SERVICES.
- BUILDER TO REINSTATE & MAKE GOOD ALL CONNECTIONS OF NEW STORMWATER SERVICES TO EXISTING.
- REFER HYDRAULIC DRAWINGS FOR FINAL LOCATIONS OF DOWNPIPE/HYDRAULIC INLET TAILS. ALL LOCATIONS SHOWN ON THESE DRAWINGS ARE APPROXIMATE & INDICATIVE ONLY & MAY NOT REFLECT FINAL LAYOUT.
- ALL STORMWATER CONNECTIONS TO COMPLY TO EDUCATIONAL FACILITIES STANDARDS & GUIDELINES (IEFSG).



SCALE BAR 1:250 0m 10m 20m

SCALE BAR 1:500 0m 2m 20m 40m

SERVICES ON THIS DRAWING
ARE SHOWN BELOW SLAB U.N.O.



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tel: (02) 9555 7230 email : office@birzulisassociates.com

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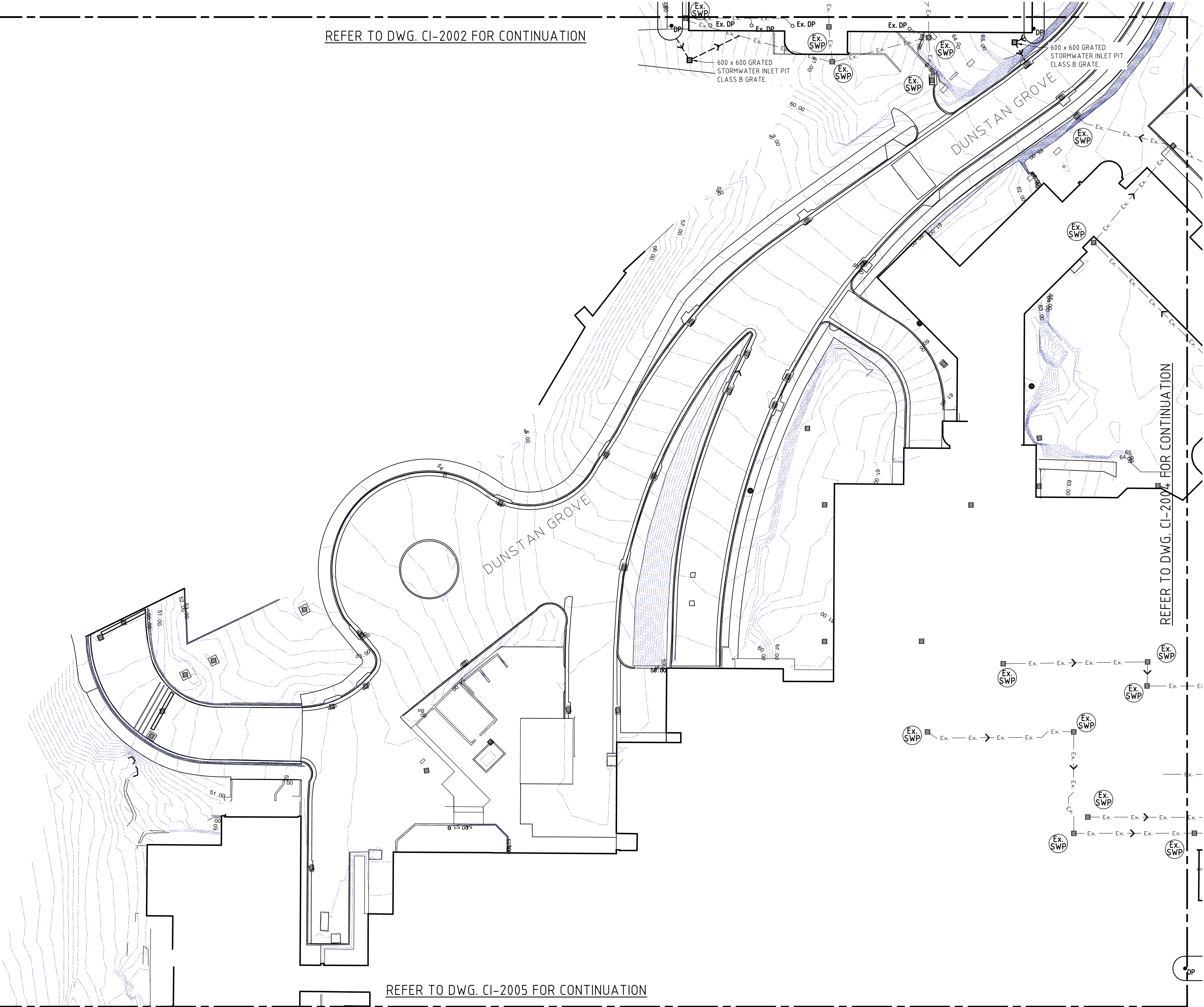
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REFER TO DWG. CI-2002 FOR CONTINUATION

- STORMWATER NOTES:**
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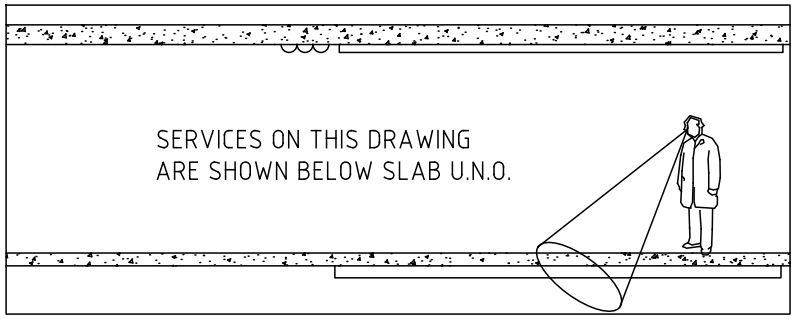
REFER TO DWG. CI-2004 FOR CONTINUATION

REFER TO DWG. CI-2005 FOR CONTINUATION

STORMWATER PLAN SHEET 2
SCALE 1:250 (A1), 1:500 (A3)



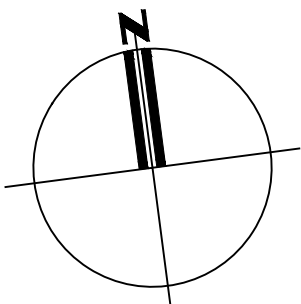
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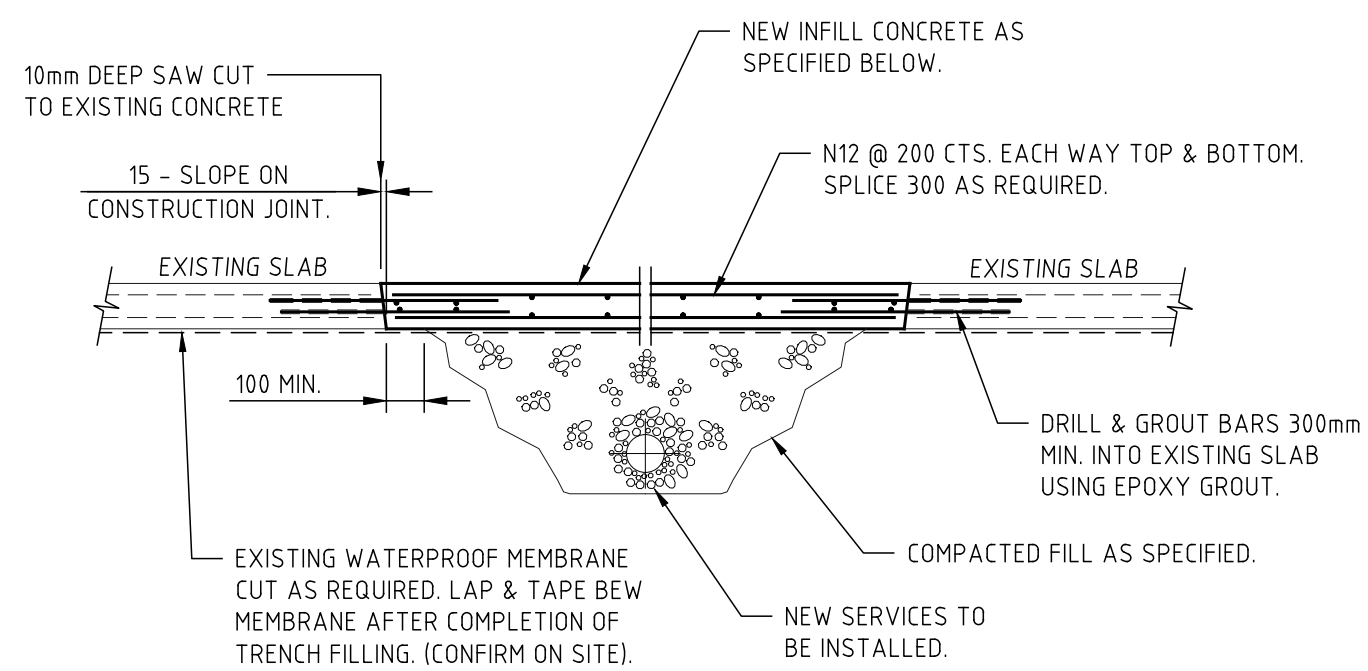
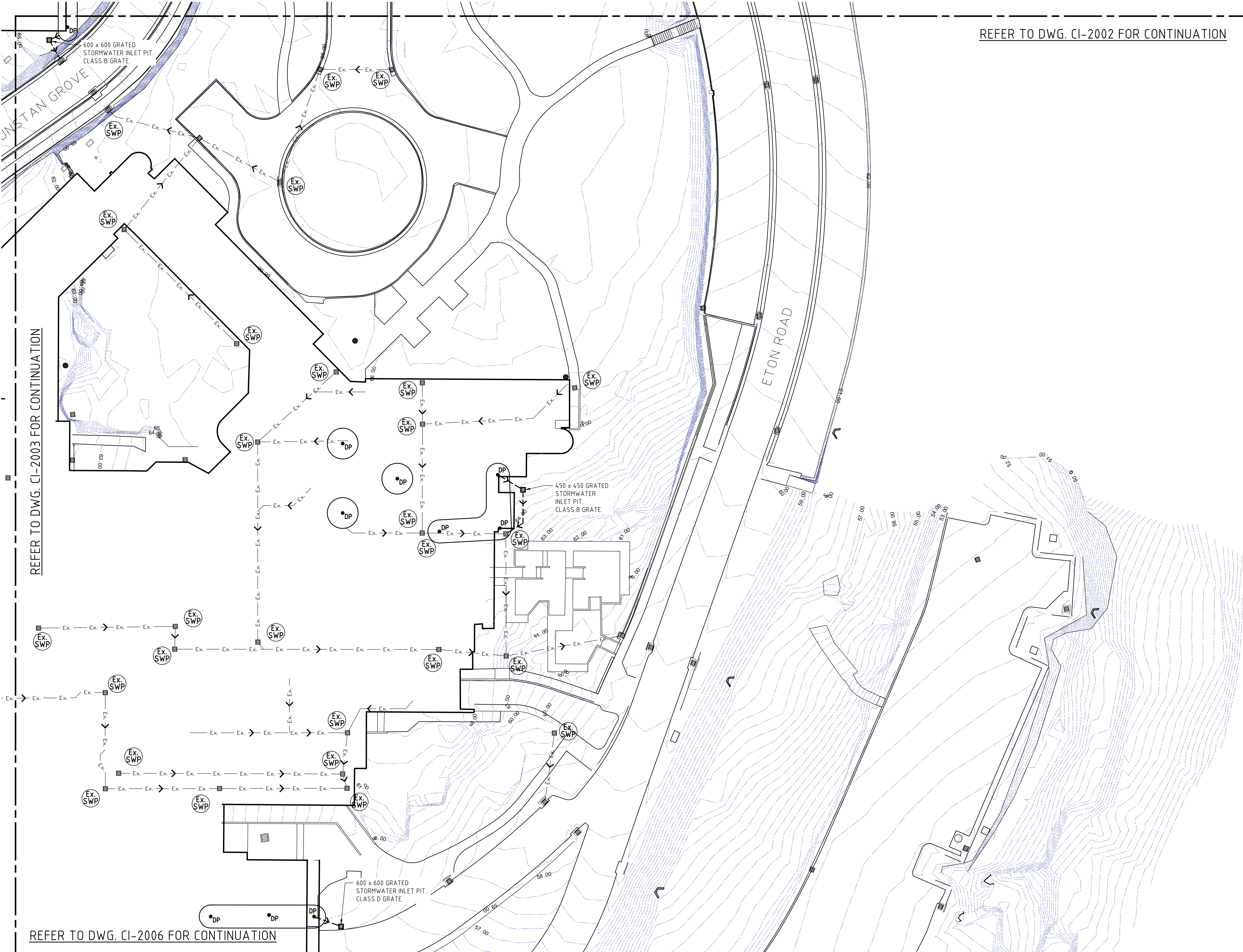
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583 DARLING STREET ROZELLE NSW 2039
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PROJECT
LINFIELD LEARNING VILLAGE
ETON ROAD,
LINFIELD NSW 2070

TITLE
**STORMWATER PLAN
SHEET 2**

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TYPICAL DETAIL OF REMEDIAL WORK TO CONCRETE SLABS AT LOCATIONS OF NEW SERVICES INSTALLATION

SCALE 1:20
(TO BE CONFIRMED ON SITE)

PROVIDE TEMPORARY PROPPING & BRACING NECESSARY DURING THE CUTTING OF THE EXISTING CONCRETE AND INSTALLATION OF THE ADDITIONAL REINFORCEMENT TO ENSURE THE STABILITY OF THE EXISTING STRUCTURE. TAKE CARE TO AVOID INDUCING EXCESSIVE VIBRATION OF THE EXISTING STRUCTURE.

SPECIFICATION FOR REPAIR INFILL CONCRETE

AREAS OF CONCRETE TO BE REINSTATED AFTER THE INSTALLATION OF NEW WORK SHALL BE REPAIRED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION:

1. SAW-CUT THE EDGES OF THE EXISTING CONCRETE AREA TO BE REMOVED TO A DEPTH OF 10mm TO AVOID FEATHER EDGING.
2. REMOVE EXISTING CONCRETE TO THE PROFILE NECESSARY, TAKING CARE NOT TO DAMAGE THE EXISTING REINFORCEMENT.
3. MODIFY THE EXISTING REINFORCEMENT AS NECESSARY. IF THE EXISTING REINFORCEMENT IS CUT ENSURE THAT THE REPLACEMENT REINFORCEMENT IS EQUIVALENT IN AREA AND STRENGTH. THE REPLACEMENT REINFORCEMENT SHALL BE LAPPED OR WELDED TO THE REINFORCEMENT AS SHOWN ON DETAILS.
4. SCABBLE THE CONTACT SURFACES OF THE REPAIR TO PROVIDE A MECHANICAL KEY.
5. THE CONTACT SURFACES OF THE REPAIR AREA SHALL BE CLEANED SO THAT ALL LOOSE OR SOFT MATERIAL, FREE WATER, FOREIGN MATTER AND LAITANCE REMOVED.
6. THE CONTACT SURFACES OF THE REPAIR AREA SHALL BE THOROUGHLY SOAKED LEAVING NO FREE WATER AND THE PRIMED WITH BONDING AGENT APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
7. WHILE THE BONDING AGENT IS STILL TACKY INSTALL THE INFILL CONCRETE. THE INFILL CONCRETE SHALL HAVE THE CHARACTERISTIC COMPRESSIVE STRENGTH (f_c) EQUAL TO 32 MPa. THE INFILL CONCRETE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 10mm AND A MAXIMUM SLUMP OF 80mm.
8. CURE THE REPAIR AREA USING AN APPROVED METHOD.

STORMWATER NOTES:

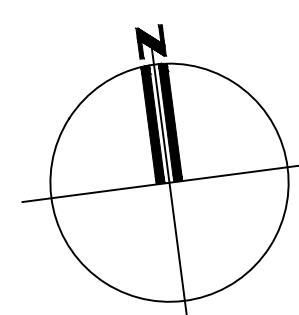
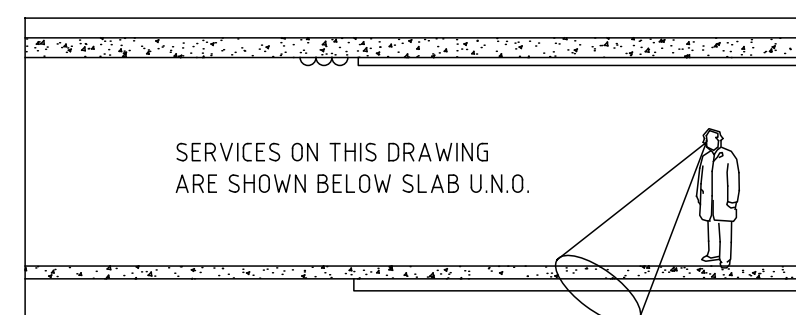
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STORMWATER PLAN SHEET 3

SCALE 1:250 (A1), 1:500 (A3)



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STORMWATER PLAN
SHEET 3

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REFER TO DWG. CI-2003 FOR CONTINUATION

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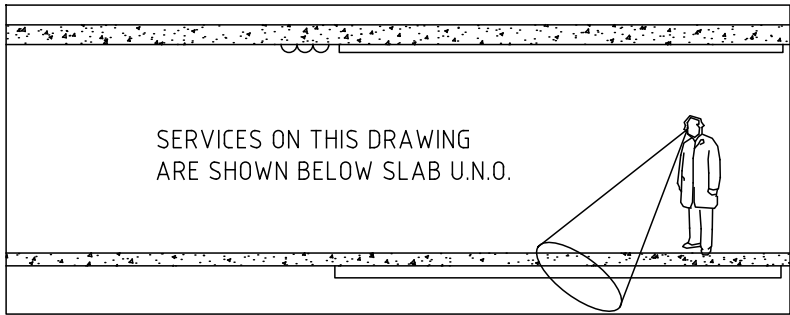
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STORMWATER PLAN SHEET 4

SCALE 1:250 (A1), 1:500 (A3)



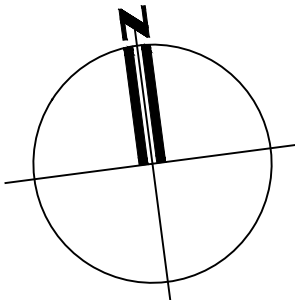
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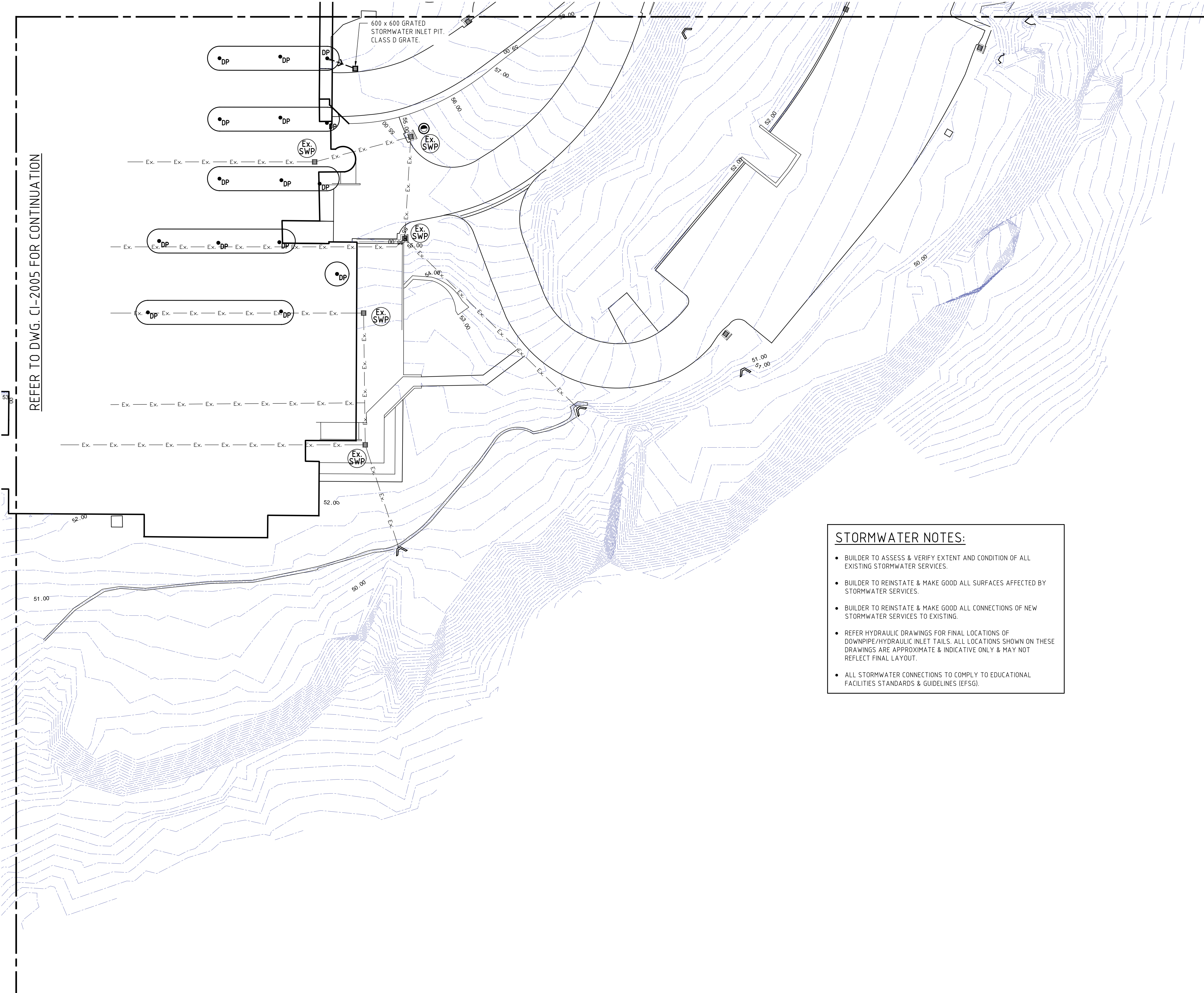
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**STORMWATER PLAN
SHEET 4**

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REFER TO DWG. CI-2004 FOR CONTINUATION



STORMWATER NOTES:

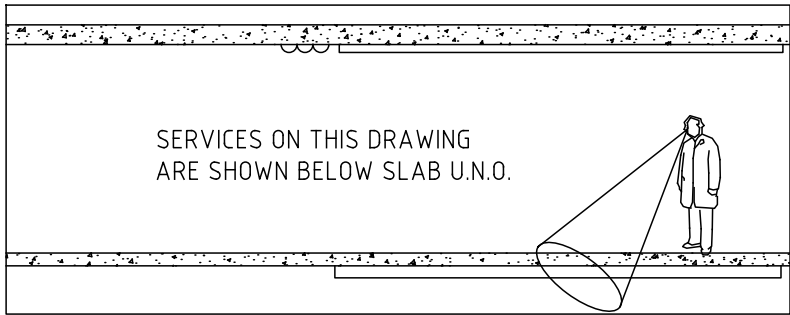
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STORMWATER PLAN SHEET 5

SCALE 1:250 (A1), 1:500 (A3)



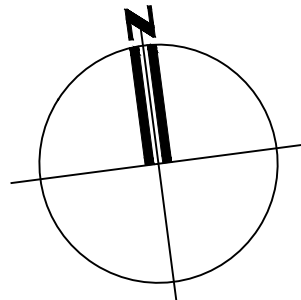
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