MONTGROVE COLLEGE

BRINGELLY RD, ORCHARD HILLS

QUIGG PLACE CUL-DE-SAC, CARPARK & SCHOOL BUILDNG PHASES P4 to P10

CONCEPT CIVIL & STORMWATER DRAINAGE WORKS

GENERAL NOTES

G1. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL DRAWINGS AND SPECIFICATIONS AND OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED.
G2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWINGS. REFER ARCHITECTS DRAWINGS FOR ALL DIMENSIONS.
G3. REFER ANY DISCREPANCY TO THE ENGINEER/ARCHITECT.
G4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE APPROPRIATE SAA SPECIFICATIONS OR CODE AND WITH THE REQUIREMENTS OF THE RELEVANT LOCAL AUTHORITY.
G5. THE ALIGNMENT AND LEVEL OF ALL SERVICES SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL CONFIRM THE POSITION AND LEVEL OF ALL SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED AT THE CONTRACTORS EXPENSE.
G6. NO WORKS ARE TO COMMENCE UNTIL THE REQUIRED TREE REMOVAL PERMITS HAVE BEEN GRANTED BY RELEVANT LOCAL AUTHORITY, AND THE APPROPRIATE NOTICE OF INTENTION TO COMMENCE GIVEN.
G7. ALL SERVICES, OR CONDUITS FOR SERVICING SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF PAVEMENT CONSTRUCTION.
G8. SUBSOIL DRAINAGE, COMPRISING 100 AGRICULTURE PIPE IN GEO-STOCKING TO BE PLACED AS SHOWN AND AS MAY BE DIRECTED BY THE SUPERINTENDENT. SUBSOIL DRAINAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
G9. NO WORK IS PERMITTED WITHIN ADJOINING PROPERTIES WITHOUT WRITTEN PERMISSION FROM THE OWNERS OR RESPONSIBLE AUTHORITY.

DRAINAGE NOTES

D1. ALL DRAINAGE OUTLET LEVELS SHALL BE CONFIRMED ON SITE, PRIOR TO CONSTRUCTION COMMENCING.
D2. ALL PIPES WITHIN THE PROPERTY TO BE MIN. 100 DIA UPVC @ 1% MIN. GRADE, UNO.
D3. ALL PITS WITHIN THE PROPERTY ARE TO BE FITTED WITH "WELDLOK" OR APPROVED EQUIVALENT GRATES:
- LIGHT DUTY FOR LANDSCAPED AREAS
- HEAVY DUTY WHERE SUBJECTED TO VEHICULAR TRAFFIC
D4. PITS WITHIN THE PROPERTY MAY BE CONSTRUCTED AS:
1) PRECAST STORMWATER PITS
2) CAST INSITU MASS CONCRETE
3) CEMENT RENDERED 230mm BRICKWORK
SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.
D5. ENSURE ALL GRATES TO PITS ARE SET BELOW FINISHED SURFACE LEVEL WITHIN THE PROPERTY. TOP OF PIT RL'S ARE APPROXIMATE ONLY AND MAY BE VARIED SUBJECT TO APPROVAL OF THE ENGINEER. ALL INVERT LEVELS ARE TO BE ACHIEVED.
D6. ANY PIPES BENEATH RELEVANT LOCAL AUTHORITY ROAD TO BE RUBBER RING JOINTED RCP, UNO.
D7. ALL PITS IN ROADWAYS ARE TO BE FITTED WITH HEAVY DUTY GRATES WITH LOCKING BOLTS AND CONTINUOUS HINGE.
D8. PROVIDE STEP IRONS TO STORMWATER PITS GREATER THAN 1200 IN DEPTH.
D9. TRENCH BACK FILL IN ROADWAYS SHALL COMPRISE SHARP, CLEAN GRANULAR BACK FILL IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION TO NON-TRAFFICABLE AREAS TO BE COMPACTED BY RODDING AND TAMPING USING A FLAT PLATE VIBRATOR.
D10. WHERE A HIGH EARLY DISCHARGE (HED) PIT IS PROVIDED ALL PIPES ARE TO BE CONNECTED TO THE HED PIT, UNO.
D11. DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100 COLORBOND/ZINCALUME STEEL, UNO.
D12. COLORBOND OR ZINCALUME STEEL BOX GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.
D13. EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL, UNO.
D14. SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM, UNO.

EARTHWORKS NOTES

E1. THE EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT.
E2. THE SITE OF THE WORKS SHALL BE PREPARED BY STRIPPING ALL EXISTING TOPSOIL, FILL AND VEGETATION.
E3. SUBGRADE SHALL BE COMPACTED UNTIL A DRY DENSITY HAS BEEN ACHIEVED OF NOT LESS THAN 100% OF THE STANDARD MAXIMUM DRY DENSITY WHEN TESTED IN ACCORDANCE WITH AS 1289 TESTS E.1.1. OR E.1.2.
E4. THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED TO DETECT ANY SOFT OR WET AREAS WHICH SHOULD BE LOCALLY EXCAVATED AND BACK FILLED WITH SELECTED MATERIAL.
E5. THE BACK FILLING MATERIAL SHALL BE IMPORTED GRANULAR FILL OF LOW PLASTICITY, PREFERABLY CRUSHED SANDSTONE, AND TO BE PLACED IN LAYERS NOT EXCEEDING 150 LOOSE THICKNESS AND COMPACTED TO 98% OF STANDARD DRY DENSITY AT A MOISTURE CONTENT WITHIN 2% OF OPTIMUM.
E6. SITE WORKS ARE TO BE BATTERED TO ADJACENT PROPERTY LEVELS.
E7. STORMWATER MUST NOT BE CONCENTRATED ON TO AN ADJACENT PROPERTY.
E8. AT NO TIME DURING OR AFTER CONSTRUCTION IS STORMWATER TO BE PONDED ON ADJOINING PROPERTIES.
E9. THE SITE SHALL BE GRADED AND DRAINED SO THAT STORMWATER WILL BE DIRECTED AWAY FROM THE BUILDING PLATFORM.
E10. STORMWATER DRAINAGE SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION. ALL STORMWATER RUNOFF SHALL BE GRADED AWAY FROM THE SITE WORKS AND DISPOSED OF VIA SURFACE CATCHDRAINS AND STORMWATER COLLECTION PITS.
E11. ALL SURFACE CATCH DRAINS SHALL BE GRADED AT 1% (1 IN 100) MINIMUM. THE GROUND SHALL GRADE AWAY FROM ANY DWELLING AT 5% (1 IN 20) FOR THE FIRST METRE THEN AT 2.5% (1 IN 40).
E12. WHERE A CUT FILL PLATFORM IS USED THERE SHALL BE A MINIMUM BERM 1000 WIDE TO THE PERIMETER OF THE SITE WORKS WHICH SHALL BE SUPPORTED BY BATTERS OF 3:1 IN FILL.
E13. ANY VERTICAL OR NEAR VERTICAL PERMANENT EXCAVATION (CUT) DEEPER THAN 600 IN MATERIAL OTHER THAN ROCK SHALL BE ADEQUATELY RETAINED OR BATTERED AT A MINIMUM OF 3:1.
E14. WHERE BATTERS CANNOT BE PROVIDED TO SUPPORT THE CUT OR FILL, THEY SHALL BE ADEQUATELY RETAINED.
E15. RETAINING WALLS ARE TO BE CONSTRUCTED WITH ADEQUATE SUBSOIL DRAINAGE.

CONCRETE PAVEMENT

C1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
C2. PROVIDE JOINTING AT MINIMUM 6000 MAX. INTERVALS OR AS OTHERWISE SPECIFIED IN THE DRAWINGS.
C3. CONCRETE SHALL COMPRISE A MIN. COMPRESSIVE STRENGTH OF 32MPa AT 28 DAYS IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATION, UNO.
C4. ANY SUB-BASE MATERIAL SHALL BE COMPACTED AS OUTLINED IN EARTHWORKS.
C5. CONCRETE KERB AND GUTTER SHALL COMPRISE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa, UNO.
C6. CONCRETE WORKS ARE TO BE CURED BY ONE OF THE FOLLOWING MEANS:
i) WETTING TWICE DAILY FOR THE FIRST THREE DAYS;
ii) USING AN APPROVED CURING COMPOUNDED FOR A MINIMUM OF 7 DAYS COMMENCING IMMEDIATELY AFTER POURING.

FLEXIBLE PAVEMENT NOTES

F1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
F2. PAVEMENT MATERIAL SHALL CONSIST OF APPROVED OR RIPPED SANDSTONE, NATURAL GRAVEL OR FINE CRUSH ROCK AS PER THE RELEVANT COUNCIL AUTHORITY SPECIFICATION.
F3. PAVEMENT MATERIALS SHALL BE SPREAD IN LAYERS NOT EXCEEDING 150 AND NOT LESS 75 COMPACTED THICKNESS.
F4. PAVEMENT MATERIALS SHALL BE SIZED AND OF A STANDARD OUTLINED IN AS1141.
F5. CRUSHED OR RIPPED SANDSTONE SHALL BE MINUS 75 NOMINAL SIZE DERIVED FROM SOUND, CLEAN SANDSTONE FREE FROM OVERBURDEN, CLAY SEAMS, SHALE AND OTHER DELETERIOUS MATERIAL.
F6. PAVEMENT MATERIALS SHALL BE COMPACTED BY SUITABLE MEANS TO SATISFY THE FOLLOWING MINIMUM SPECIFICATIONS (AS PER AS1289.2)

DESCRIPTION	MEDIUM DENSITY RATIO
SUB-BASE	98% MOD
BASE COURSE	98% MOD
ASPHALTIC CONCRETE	97% MOD

AND SUBJECT TO THE RELEVANT LOCAL AUTHORITY CONSTRUCTION SPECIFICATION.

F7. TESTING FOR EACH LAYER SHALL BE UNDERTAKEN BY A N.A.T.A. REGISTERED LABORATORY IN ACCORDANCE WITH AS1289, AT NOT MORE THAN 50m INTERVALS AND A MINIMUM OF TWO PER LAYER. FURTHER FREQUENCY OF TESTING SHALL BE NO LESS THAN THAT REQUIRED BY AS3978.

PAVED AREAS NOTES

A1. SUBGRADE SHALL BE PREPARED AS OUTLINED IN EARTHWORKS.
A2. ALL PAVERS ARE TO BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
A3. TRAFFICABLE AREAS:
SUB-BASE TO BE 150 COMPACTED THICKNESS DGS75.
SUB-BASE TO BE SUITABLY COMPACTED TO MEDIUM DENSITY 98% MOD.
SUB-BASE TO EXTEND AT LEAST 200 BEYOND PAVED SURFACE.
PAVERS TO BE 80 THICK INTERLOCKING PAVERS ON 50 SAND BEDDING.
A4. NON TRAFFICABLE AREAS:
SUB BASE AS PER TRAFFICABLE AREAS
PAVERS TO BE 60 INTERLOCKING PAVERS ON 50 SAND BEDDING (UNO).

EROSION AND SEDIMENT NOTES

B1. THIS PLAN TO BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL DETAILS AS ATTACHED.
B2. THE CONTRACTOR SHALL IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY AND TO THE SATISFACTION OF THE RELEVANT LOCAL AUTHORITY PRIOR TO THE COMMENCEMENT OF AND DURING CONSTRUCTION. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT THE RELEVANT LOCAL AUTHORITY APPROVAL. ALL EROSION AND SEDIMENT CONTROL DEVICES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH STANDARDS OUTLINED IN NSW DEPARTMENT OF HOUSING'S "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTIONS".
B3. TOPSOIL SHALL BE STRIPPED AND STOCKPILED OUTSIDE HAZARD AREAS SUCH AS DRAINAGE LINES. THIS TOPSOIL SHALL BE RESPREAD LATER ON AREAS TO BE REVEGETATED AND STABILISED ONLY, (I.E. ALL FOOTPATHS, BATTERS, SITE REGARDING AREAS, BASINS AND CATCHDRAINS). TOPSOIL SHALL NOT BE RESPREAD ON ANY OTHER AREAS UNLESS SPECIFICALLY INSTRUCTED BY THE SUPERINTENDENT. IF THEY ARE TO REMAIN FOR LONGER THAN ONE MONTH STOCKPILES SHALL BE PROTECTED FROM EROSION BY COVERING THEM WITH A MULCH AND HYDROSEEDING AND, IF NECESSARY, BY LOCATING BANKS OR DRAINS DOWNSTREAM OF A STOCKPILE TO RETARD SILT LADEN RUNOFF.
B4. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES AND REMOVE ACCUMULATED SILT FROM SUCH DEVICES SUCH THAT MORE THAN 60% OF THEIR CAPACITY IS LOST. ALL THE SILT IS TO BE PLACED OUTSIDE THE LIMIT OF WORKS. THE PERIOD FOR MAINTAINING THESE DEVICES SHALL BE AT LEAST UNTIL ALL DISTURBED AREAS ARE REVEGETATED AND FURTHER AS MAY BE DIRECTED BY THE SUPERINTENDENT OR COUNCIL.
B5. LAY TURF STRIP (MIN 300 WIDE) ON 100 TOPSOIL BEHIND ALL KERB WITH 1000 LONG RETURNS EVERY 6000 AND AROUND STRUCTURES IMMEDIATELY AFTER BACKFILLING AS PER THE RELEVANT LOCAL AUTHORITY SPECIFICATION.
B6. THE CONTRACTOR SHALL GRASS SEED ALL DISTURBED AREAS WITH AN APPROVED MIX AS SOON AS PRACTICABLE AFTER COMPLETION OF EARTHWORKS AND REGRADING.
B7. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING CONSTRUCTION CONFINING ACCESS WHERE POSSIBLE TO NOMINATED STABILISED ACCESS POINTS.
B8. WHEN ANY DEVICES ARE TO BE HANDED OVER TO COUNCIL THEY SHALL BE IN CLEAN AND STABLE CONDITION.
B9. THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL BY REGULAR WETTING DOWN (BUT NOT SATURATING) DISTURBED AREA.
B10. PROVIDE AND MAINTAIN SILT TRAPS AROUND ALL SURFACE INLET PITS UNTIL CATCHMENT IS REVEGETATED OR PAVED.
B11. REVEGETATE ALL TRENCHES IMMEDIATELY UPON COMPLETION OF BACKFILLING.
B12. ALL DRAINAGE PIPE INLETS TO BE CAPPED UNTIL:
- DOWNPIPES CONNECTED
- PITS CONSTRUCTED AND PROTECTED WITH SILT BARRIER

CONCRETE STRUCTURES NOTES

S1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
S2. CONCRETE COMPONENTS AND QUALITY SHALL BE AS FOLLOWS, UNO:

ELEMENT	SLUMP mm	MAX. SIZE AGG. mm	CEMENT TYPE	fc AT 28 DAYS - MPa	ADMIXTURE
FOOTINGS	80	20	A	25	-
PIERS & CAPS	80	20	A	25	-
SLABS ON GROUND	80	20	A	32	-
SUSPENDED SLABS	80	20	A	32	-
PITS	80	20	A	25	-

S3. MINIMUM CLEAR CONCRETE COVER TO REINFORCEMENT INCLUDING TIES AND STIRRUPS SHALL BE AS FOLLOWS UNO.

EXPOSURE CLASSIFICATION	MINIMUM COVER (mm)				
	CONCRETE STRENGTH (f'c)				
	20 MPa	25 MPa	32 MPa	40 MPa	>50 MPa
A1	20	20	20	20	20
A2	(50)	30	25	20	20
B1	-	(60)	40	30	25
B2	-	-	(65)	45	35
C	-	-	-	(70)	50

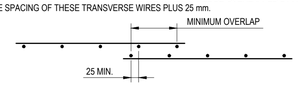
FOR BRACKETED FIGURES REFER TO AS 3600 CURRENT EDITION TABLE 4.10.3.2

S4. MINIMUM COVER FOR FIRE RESISTANCE LEVEL (FRL) SHALL BE AS FOLLOWS;

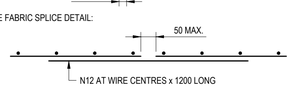
MINIMUM ELEMENT WIDTH OR THICKNESS / MIN COVER (mm)				
FRL	BEAM	SLAB	COLUMN	WALL
60	125 / 30	80 / 20	200 / 20	80 / 20
90	150 / 45	100 / 25	250 / 35	100 / 35
120	200 / 55	120 / 30	300 / 45	120 / 40
180	240 / 70	150 / 45	400 / 60	150 / 45
240	270 / 80	170 / 55	450 / 70	170 / 50

NOTE - 1. REFER TO AS 3600 CURRENT EDITION FOR REDUCED COVERS IF GREATER ELEMENT THICKNESSES ARE ADOPTED FOR BEAMS & COLUMNS.
2. COVER IS MEASURED TO THE MAIN REINFORCEMENT

S5. COVER TO REINFORCEMENT SHALL BE OBTAINED BY THE USE OF APPROVED BAR CHAIRS. ALL CHAIRS SHALL BE SPACED AT 1000 CTS MAXIMUM.
S6. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. VIBRATORS SHALL NOT BE USED TO SPREAD CONCRETE.
S7. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
S8. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
S9. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO APPROVAL OF THE ENGINEER. ALL CONSTRUCTION JOINTS SHALL BE SCABBLED OVER THE WHOLE FACE AND ANY UNSOUND MATERIAL REMOVED.
S10. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY; IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
S11. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS APPROVED BY THE ENGINEER. WHERE THE LAP LENGTH IS NOT SHOWN IT SHALL BE SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT AS SPECIFIED IN AS3600. LOSS AND HOOKS SHALL BE STANDARD UNLESS SHOWN OTHERWISE.
S12. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.
S13. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.
S14. REINFORCEMENT SYMBOLS:
N - DENOTES DEFORMED GRADE 500 NORMAL DUCTILITY REINFORCING BARS TO AS/NZS 4671.
R - DENOTES PLAIN ROUND GRADE 250 NORMAL DUCTILITY REINFORCING BARS TO AS/NZS 4671.
SL - DENOTES DEFORMED GRADE 500 LOW DUCTILITY REINFORCING MESH TO AS/NZS 4671.
RL - DENOTES DEFORMED GRADE 500 LOW DUCTILITY REINFORCING MESH TO AS/NZS 4671.
L--TM - DENOTES DEFORMED GRADE 500 LOW DUCTILITY TRENCH MESH TO AS/NZS 4671.
S15. ALL REINFORCING FABRIC SHALL COMPLY WITH AS1303 AND AS1304 AND SHALL BE SUPPLIED IN FLAT SHEETS.
S16. SPLICES IN FABRIC: THE OUTERMOST TRANSVERSE WIRES SHALL BE OVERLAPPED BY AT LEAST THE SPACING OF THESE TRANSVERSE WIRES PLUS 25 mm.



ALTERNATIVE FABRIC SPLICE DETAIL:



S17. EXPOSED CORNERS SHALL BE 20 mm CHAMFERED UNO.
S18. ALL REINFORCEMENT SHALL BE INSPECTED BY THE SUPERINTENDENT OR ENGINEER PRIOR TO PLACING CONCRETE.
S19. ALL SLAB CONCRETE TO BE CURED IN AN APPROVED MANNER FOR A MINIMUM OF 7 DAYS.
S20. ALL FORMWORK AND PROPS FOR SLABS AND BEAMS SHALL BE REMOVED BEFORE CONSTRUCTION OF ANY MASONRY WALLS OR PARTITIONS ON THE FLOOR.
S21. ALL ABBREVIATIONS ARE IN ACCORDANCE WITH AS1100.
S22. FORMWORK SHALL NOT BE STRIPPED UNTIL CONCRETE HAS ACHIEVED A MINIMUM STRENGTH OF 20 MPa. THE CONCRETE SLAB AND BEAMS SHALL BE TEMPORARILY BACK PROPPED UNTIL THE CONCRETE HAS ACHIEVED 28 DAY STRENGTH AND ANY PROPPING TO HIGHER LEVEL FORMS HAVE BEEN REMOVED.
S23. WHERE A SUSPENDED SLAB IS TO BE SUPPORTED OFF A SUSPENDED SLAB BELOW, WRITTEN APPROVAL SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO ANY SITE WORKS.

SITE PLAN

MASONRY

M1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3700.
M2. THE DESIGN STRENGTH OF MASONRY SHALL BE AS FOLLOWS U.N.O. :

EXPOSURE CLASSIFICATION TO AS 3600	MASONRY COMPRESSIVE STRENGTH MPa (f'm)	MASONRY SALT RESISTANCE GRADE	DURABILITY CLASSIFICATION OF BUILT IN COMPONENTS	MORTAR MIX	
				GP PORTLAND CEMENT : LIME : SAND	f'c MPa
A1 / A2	> 6.3	General Purpose	R3 (Galvanised)	1.0 : 1.0 : 6.0	2.8
B1	> 6.3	General Purpose	R3 (Galvanised)	1.0 : 1.0 : 6.0	2.8
B2	> 6.7	Exposure	R4 (Stainless)	1.0 : 0.5 : 4.5	2.8

M3. ALL MASONRY WALLS SUPPORTING SLABS AND BEAMS SHALL HAVE A PRE-GREASED TWO LAYER GALVANISED STEEL SLIP JOINT BETWEEN CONCRETE AND MASONRY.
M4. ALL MASONRY WALLS SUPPORTING OR SUPPORTED BY CONCRETE FLOORS SHALL BE PROVIDED WITH VERTICAL JOINTS TO MATCH ANY CONTROL JOINTS IN THE CONCRETE.
M5. NON LOAD BEARING WALLS SHALL BE SEPARATED FROM CONCRETE ABOVE BY 20 mm THICK CLOSED CELL POLYETHYLENE STRIP.
M6. MASONRY SHALL BE ARTICULATED IN ACCORDANCE WITH TECHNICAL NOTE 61 FROM THE CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA. VERTICAL CONTROL JOINTS SHALL NOT EXCEED 5 METRES MAXIMUM CENTRES, AND 4 METRES MAXIMUM FROM CORNERS IN MASONRY WALLS, AND BETWEEN NEW & EXISTING BRICKWORK.
M7. MASONARY RETAINING WALLS ARE TO BE BACKFILLED WITH EITHER OF THE FOLLOWING MATERIAL:
- COARSE GRAINED SOIL WITH LOW SILT CONTENT
- RESIDUAL SOIL CONTAINING STONES
- FINE SILTY SAND
- GRANULAR MATERIALS WITH LOW CLAY CONTENT

BLOCKWORK

B1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.
B2. REINFORCED CONCRETE BLOCKWORK SHALL COMPLY WITH THE FOLLOWING, UNO:
- BLOCKS : GRADE 15 CONFORMING TO AS1500.
- MORTAR : 1 CEMENT / 0.25 LIME / 3 SAND.
- PROVIDE CLEANOUT HOLES AT BASE OF WALL & ROD CORE HOLES TO REMOVE PROTRUDING MORTAR FINS.
- CORE FILLING : f'c = 20 MPa, 10 AGG, 230 SLUMP +/- 30 mm.
- COVER : 55 mm MIN. FROM OUTSIDE OF BLOCKWORK.

B3. BACKFILL TO RETAINING WALLS TO BE FREE DRAINING GRANULAR MATERIAL, UNO. PROVIDE SUBSOIL DRAIN BEHIND WALL AND AT WEEP HOLES.
B4. VERTICAL CONTROL JOINTS SHALL BE PROVIDED AT 10 m MAX. CENTRES.
B5. NO ADMIXTURES SHALL BE USED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

STANDARD LINE TYPES AND SYMBOLS:

PROPOSED KERB & GUTTER
EXISTING KERB & GUTTER
PROPOSED BELOW GROUND PIPELINE
PROPOSED SUSPENDED PIPELINE
EXISTING PIPELINE
SUBSOIL DRAINAGE LINE
PROPOSED KERB INLET PIT
EXISTING KERB INLET PIT
PROPOSED JUNCTION OR INLET PIT
EXISTING JUNCTION OR INLET PIT
DESIGN CENTRELINE
EXISTING EDGE OF BITUMEN
TELECOMUNICATION CONDUIT
GAS MAIN
WATER MAIN
SEWER MAIN
UNDERGROUND ELECTRICITY CABLES
PERMANENT MARK & S.S.M.
BENCH MARK, SURVEY STATION

SCHEDULE OF DRAWINGS

DA APPROVAL ONLY

NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

REVISION	DATE	AMENDMENT DESCRIPTION
D	05.04.17	RE-ISSUED FOR DA APPROVAL
C	30.01.17	ISSUED FOR DA APPROVAL
B	07.09.16	ISSUED FOR DA APPROVAL
A	02.09.16	ISSUED FOR DA APPROVAL

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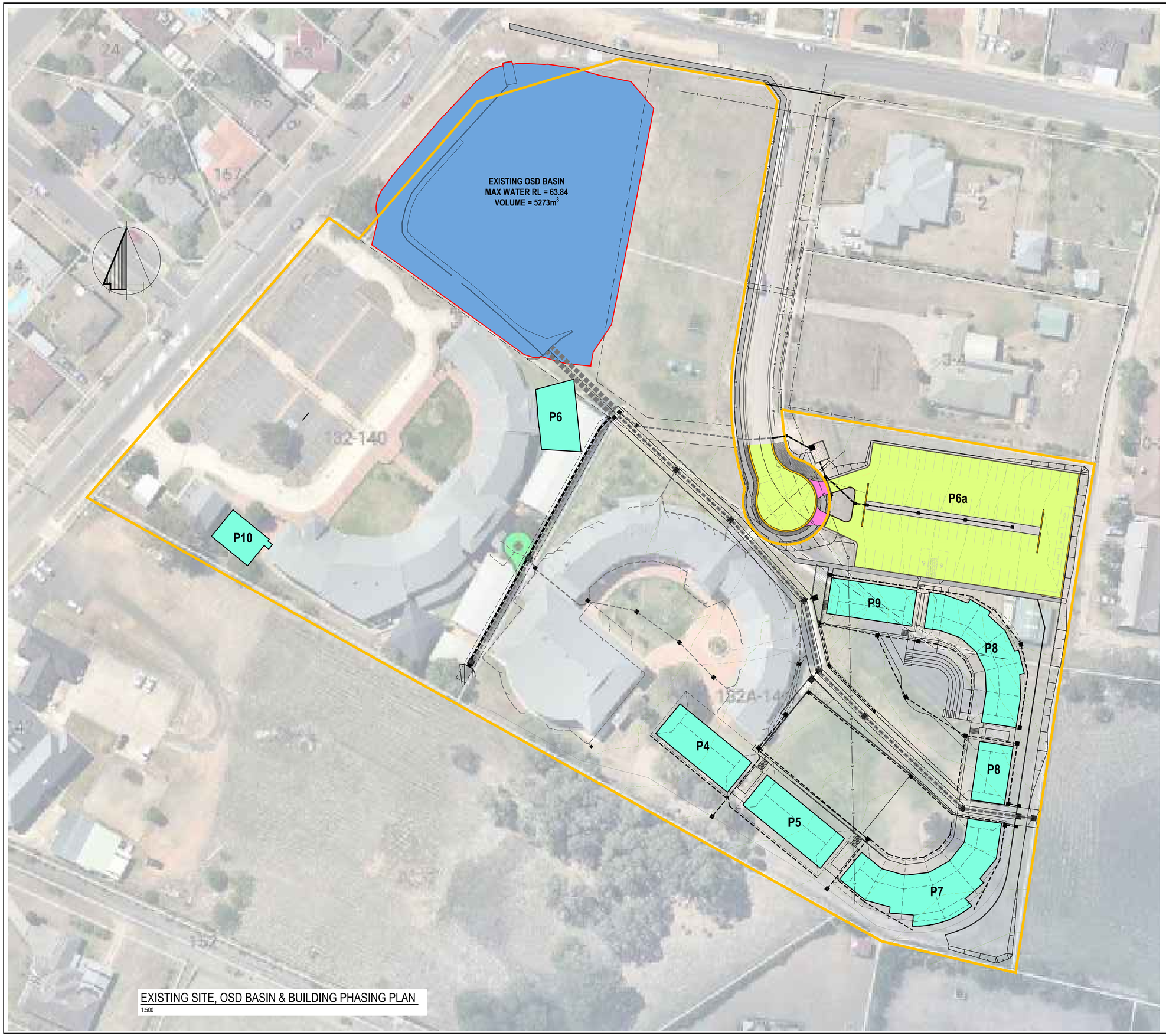
MONTGROVE COLLEGE

Bringelly Road, Orchard Hills

For The Pared Foundation

GENERAL NOTES

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		-	C01 - D



LEGEND

- EXISTING OSD BASIN
- PROPOSED NEW SCHOOL BUILDING WORKS
- PROPOSED NEW CARPARK
- SITE BOUNDARY

EXISTING SITE, OSD BASIN & BUILDING PHASING PLAN
1:500

DA APPROVAL ONLY

NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

REVISION	DATE	AMENDMENT DESCRIPTION
D	05.04.17	RE-ISSUED FOR DA APPROVAL
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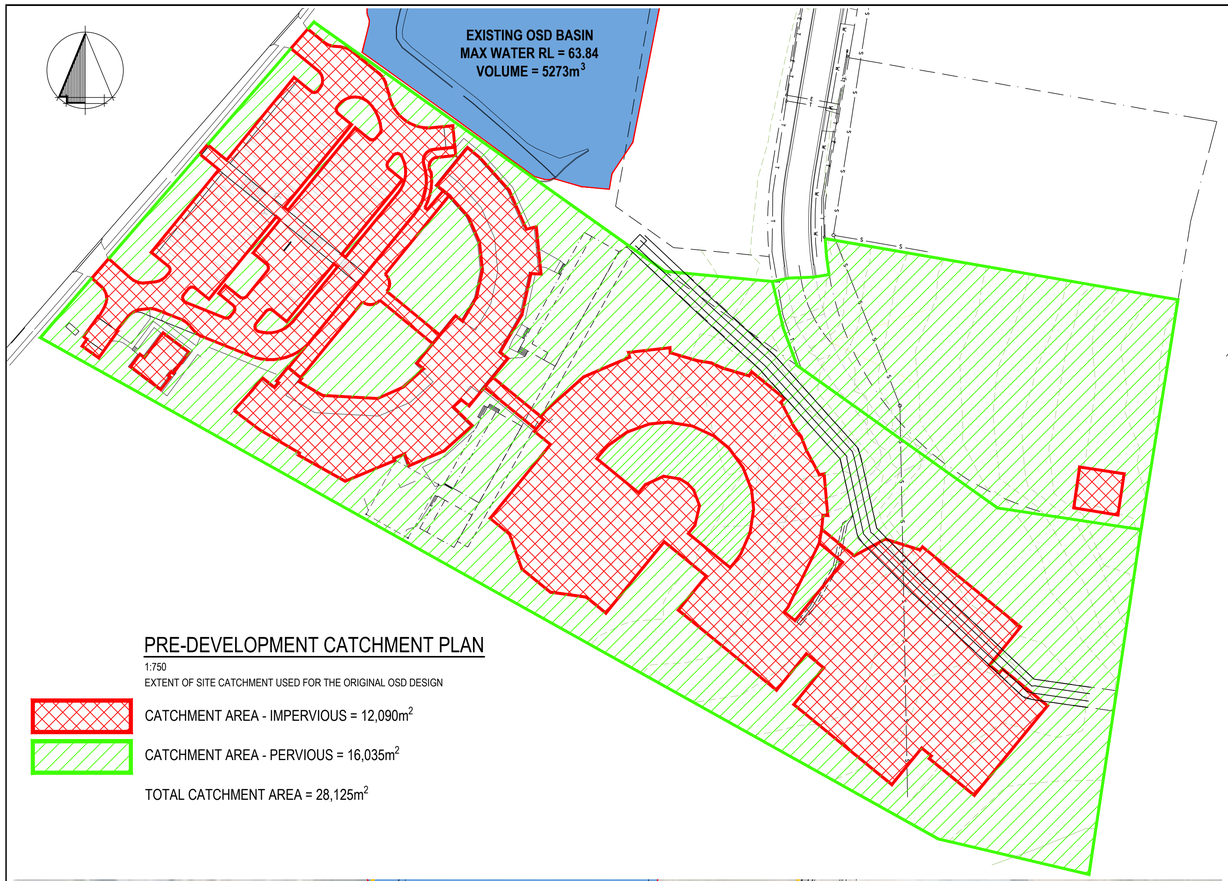
MONTGROVE COLLEGE

Bringelly Road, Orchard Hills

For The Pared Foundation

EXISTING SITE, OSD BASIN & PHASING PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:500	C02 - D



PRE-DEVELOPMENT CATCHMENT PLAN

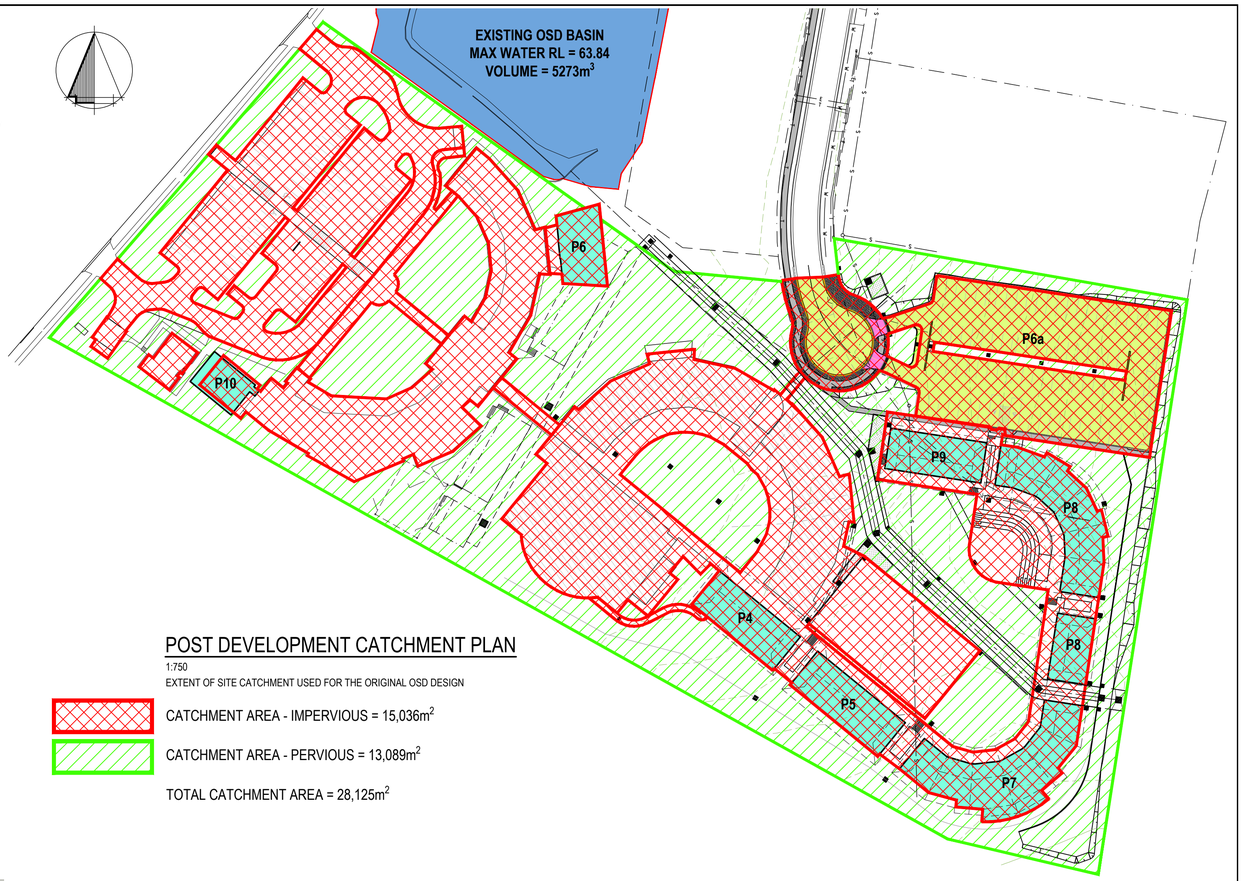
1:750

EXTENT OF SITE CATCHMENT USED FOR THE ORIGINAL OSD DESIGN

CATCHMENT AREA - IMPERVIOUS = 12,090m^2

CATCHMENT AREA - PERVIOUS = 16,035m^2

TOTAL CATCHMENT AREA = 28,125m^2



POST DEVELOPMENT CATCHMENT PLAN

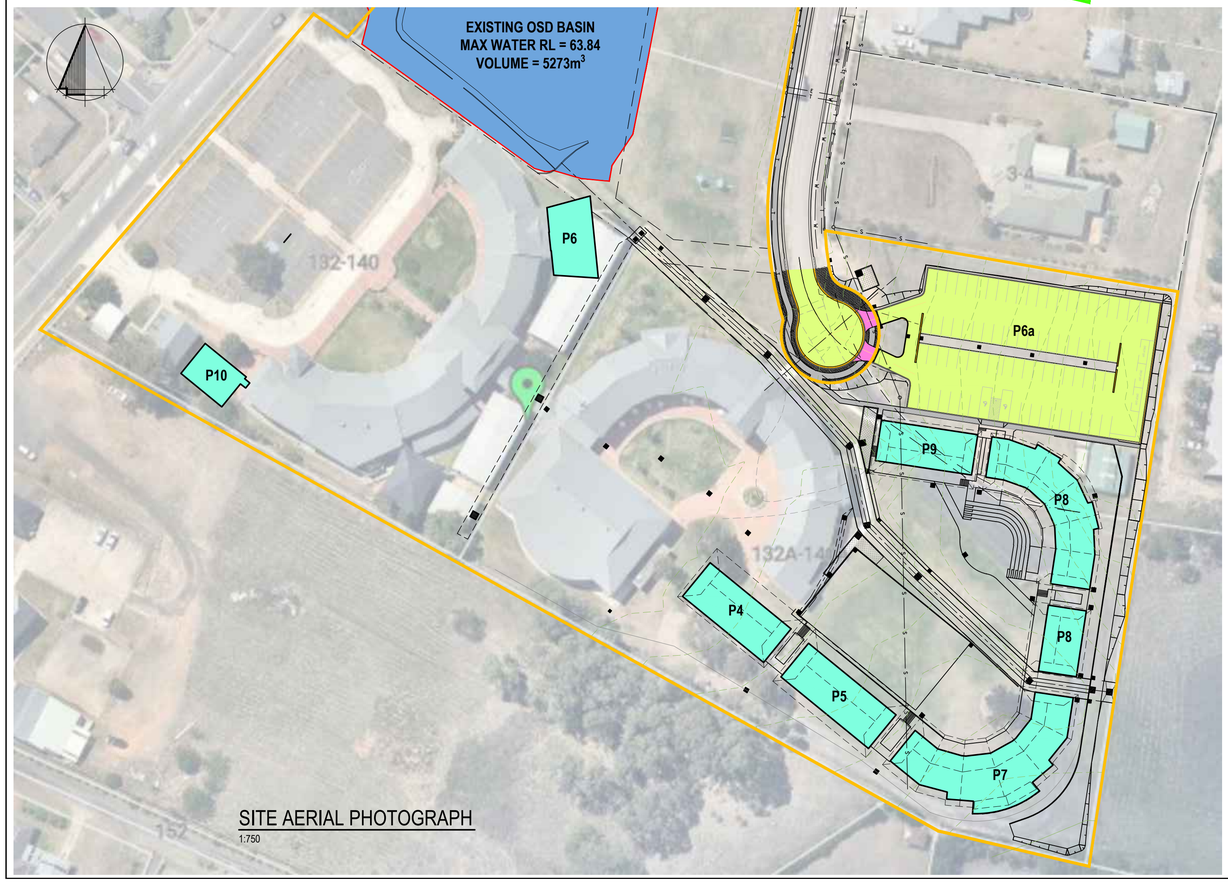
1:750

EXTENT OF SITE CATCHMENT USED FOR THE ORIGINAL OSD DESIGN

CATCHMENT AREA - IMPERVIOUS = 15,036m^2

CATCHMENT AREA - PERVIOUS = 13,089m^2

TOTAL CATCHMENT AREA = 28,125m^2



SITE AERIAL PHOTOGRAPH

1:750

DA APPROVAL ONLY

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A1 ORIGINAL SIZE

REVISION	DATE	AMENDMENT DESCRIPTION
D	05.04.17	RE-ISSUED FOR DA APPROVAL
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www.eclipseconsulting.com.au

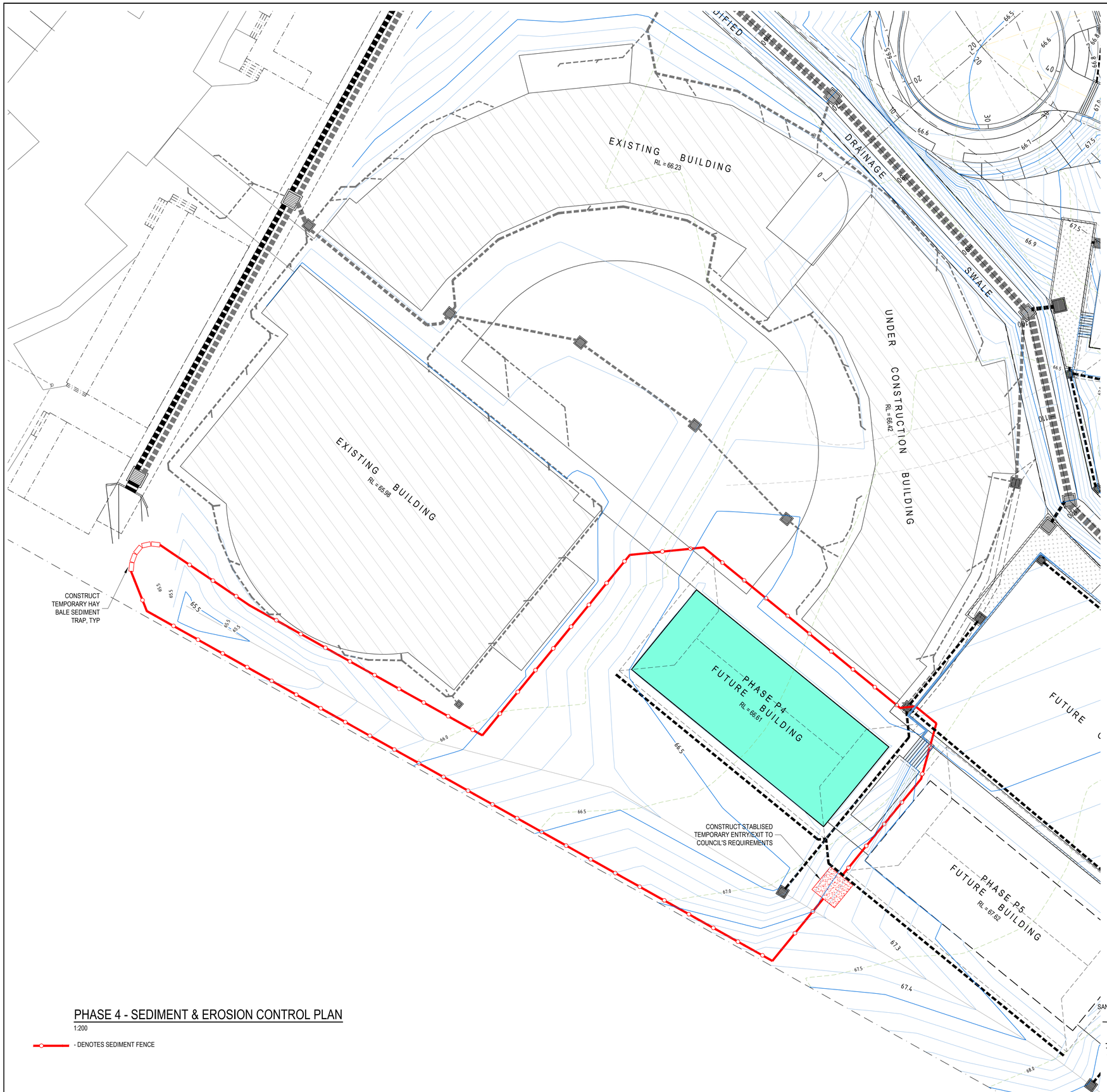
MONTGROVE COLLEGE

Bringelly Road, Orchard Hills

For The Pared Foundation

PRE & POST DEVELOPMENT CATCHMENT PLANS

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:750	C03 - D



PHASE 4 - SEDIMENT & EROSION CONTROL PLAN

1:200

- DENOTES SEDIMENT FENCE

SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT AND EROSION CONTROL SHALL BE EFFECTIVELY MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL THE SITE HAS BEEN STABILISED OR LANDSCAPED TO THE SUPERINTENDENT'S SATISFACTION.

A SINGLE ALL WEATHER ACCESS WAY WILL BE PROVIDED AT THE FRONT OF THE PROPERTY CONSISTING OF 50-75 AGGREGATE OR SIMILAR MATERIAL AT A MINIMUM THICKNESS OF 150 LAID OVER NEEDLE-PUNCHED GEOTEXTILE FABRIC AND CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT NO SPOIL OR FILL ENCROACHES UPON ADJACENT AREAS FOR THE DURATION OF WORKS.

THE CONTRACTOR SHALL ENSURE THAT KERB INLETS AND DRAINS RECEIVING STORMWATER SHALL BE PROTECTED AT ALL TIMES DURING DEVELOPMENT. KERB INLET SEDIMENT TRAPS SHALL BE INSTALLED ALONG THE IMMEDIATE VICINITY ALONG THE STREET FRONTAGE.

SEDIMENT FENCING SHALL BE SECURED BY POST (WHERE METAL STAR PICKETS ARE USED PLASTIC SAFETY CAPS SHALL BE USED) AT 2000 INTERVALS WITH GEOTEXTILE FABRIC EMBEDDED 200 IN SOIL.

ALL TOPSOIL STRIPPED FROM THE SITE AND STOCKPILED DOES NOT INTERFERE WITH DRAINAGE LINES AND STORMWATER INLETS AND WILL BE SUITABLY COVERED WITH AN IMPERVIOUS MEMBRANE MATERIAL AND SCREENED BY SEDIMENT FENCING.

SOIL CONSERVATION NOTE:

PRIOR TO COMMENCEMENT OF CONSTRUCTION PROVIDE 'SEDIMENT FENCE,' 'SEDIMENT TRAP' AND WASHOUT AREA TO ENSURE THE CAPTURE OF WATER BORNE MATERIAL GENERATED FROM THE SITE.

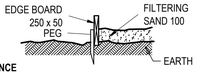
MAINTAIN THE ABOVE DURING THE COURSE OF CONSTRUCTION, AND CLEAR THE 'SEDIMENT TRAP AFTER EACH STORM.

SEDIMENT TRAP

1000 x 1000 WIDE 500 DEEP PIT, LOCATED AT THE LOWEST POINT TO THE TRAP SEDIMENT.

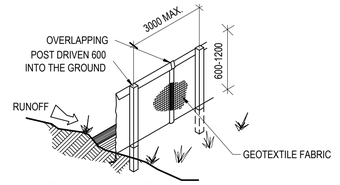
WASHOUT AREA

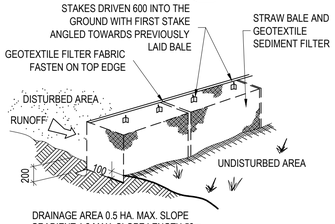
TO BE 1800 x 1800 ALLOCATED FOR THE WASHING OF TOOL & EQUIPMENT.



SEDIMENT FENCE

PROVIDE 'SEDIMENT FENCE ON DOWN SLOPE BOUNDARY AS SHOWN ON PLAN. FABRIC TO BE BURIED BELOW GROUND AT LOWER EDGE.

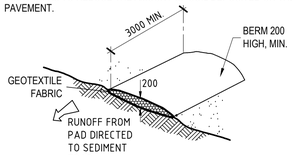




DRAINAGE AREA 0.5 HA. MAX. SLOPE GRADIENT 1:2 MAX. SLOPE LENGTH 50m.

VEHICLE ACCESS TO SITE

VEHICLE ACCESS TO THE BUILDING SITE SHOULD BE RESTRICTED TO A SINGLE POINT SO AS TO REDUCE THE AMOUNT OF SOIL DEPOSITED ON THE STREET PAVEMENT.



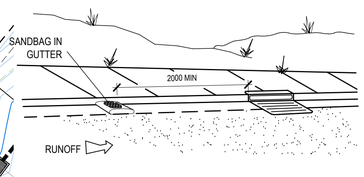
BUILDING MATERIAL STOCKPILES

ALL STOCKPILES OF BUILDING MATERIAL SUCH AS SAND AND SOIL MUST BE PROTECTED TO PREVENT SCOUR AND EROSION.

THEY SHOULD NEVER BE PLACED IN THE STREET GUTTER WHERE THEY WILL WASH AWAY WITH THE FIRST RAINSTORM.

SANDBAG KERB SEDIMENT TRAP

IN CERTAIN CIRCUMSTANCES EXTRA SEDIMENT TRAPPING MAY BE NEEDED IN THE STREET GUTTER.



GENERAL NOTES

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NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DURING EXCAVATION WORK THE STRUCTURE SHALL BE MAINTAINED IN A STABLE AND NO PART SHALL BE OVERSTRESSED.

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ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACK FILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCIL.

ALL TRENCH BACK FILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS UNLESS DIRECTED OTHERWISE.

STORMWATER DRAINAGE

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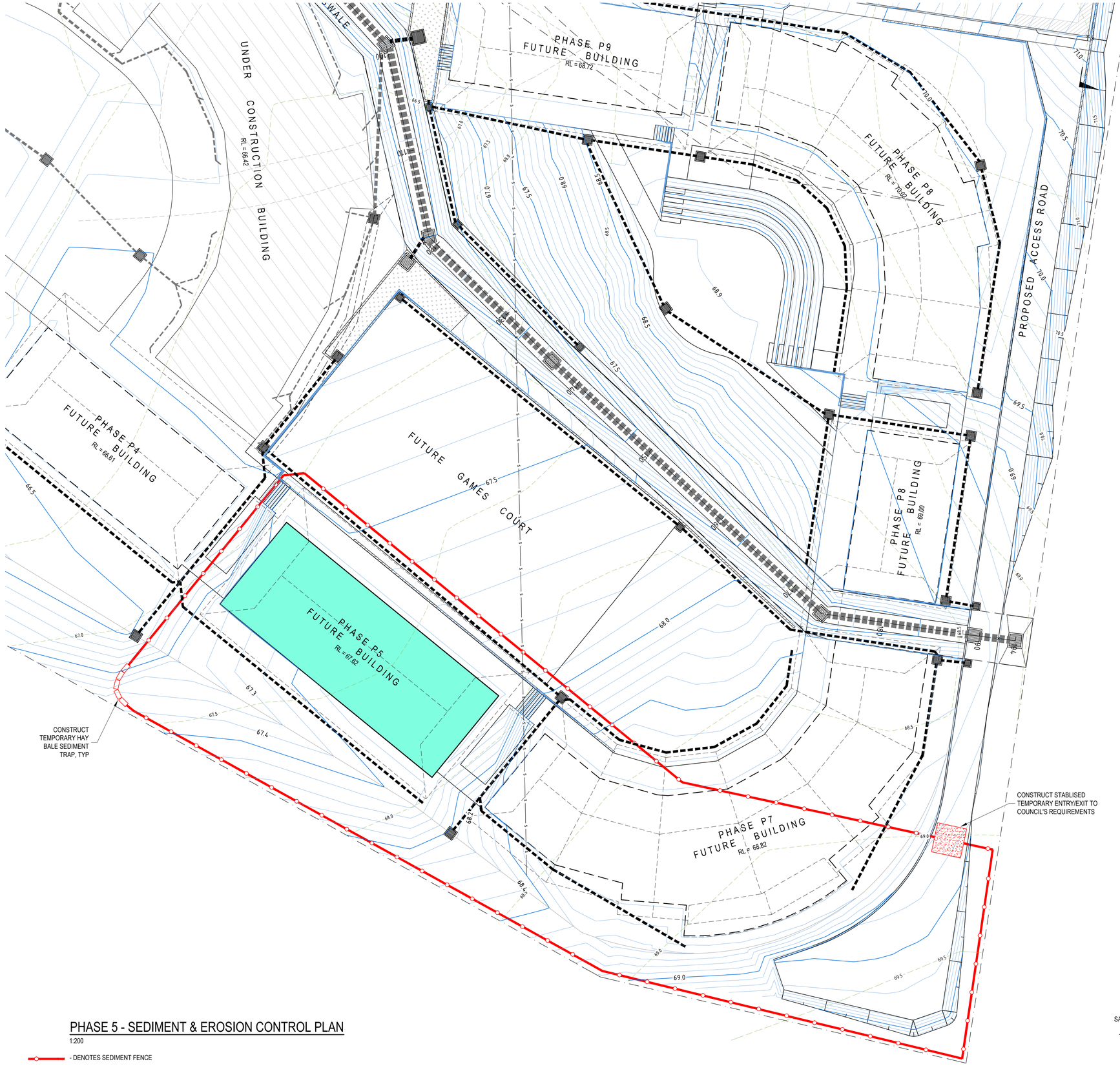
PHASE 4 - SEDIMENT & EROSION CONTROL PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:200	C04 - D



PHASE 5 - SEDIMENT & EROSION CONTROL PLAN

1:200

- DENOTES SEDIMENT FENCE

SEDIMENT AND EROSION CONTROL NOTES

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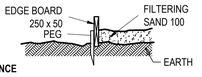

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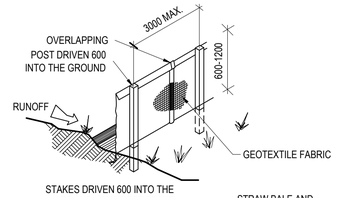

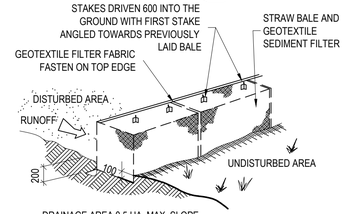

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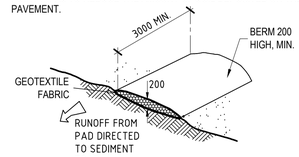

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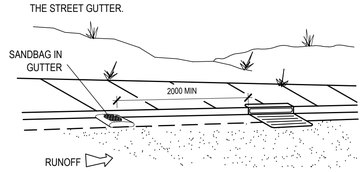

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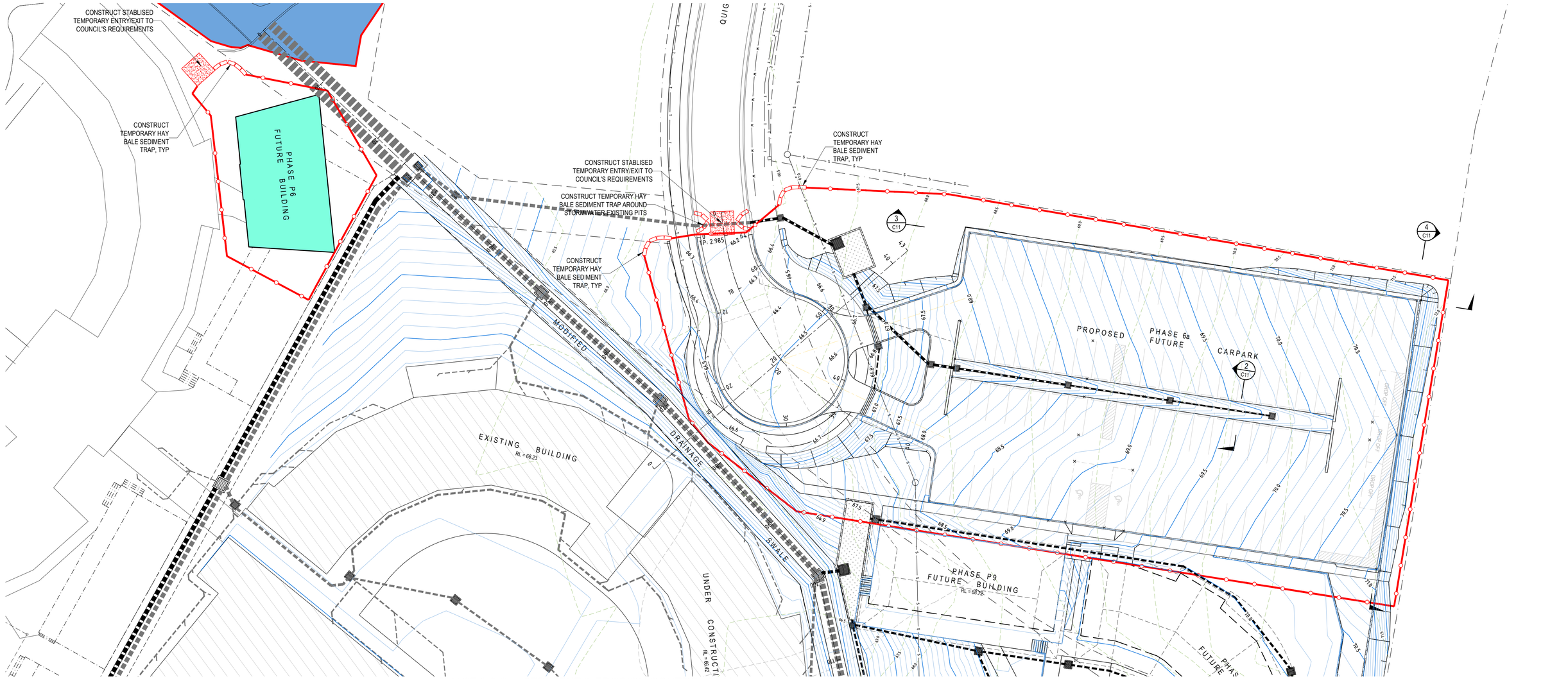
PHASE 5 - SEDIMENT & EROSION CONTROL PLAN

DESIGN	DRAWN	DATE	PROJECT No
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:200	C05 - D



PHASE 6 & 6a - SEDIMENT & EROSION CONTROL PLAN

1:250

- DENOTES SEDIMENT FENCE

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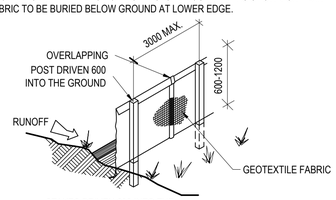

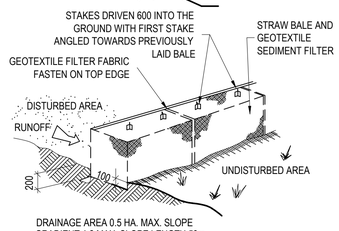

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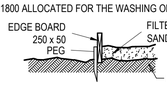

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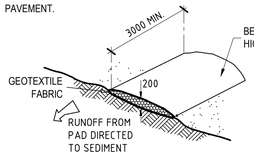

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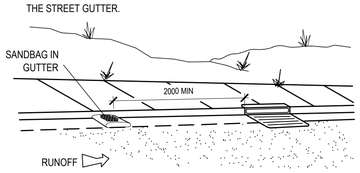

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DA APPROVAL ONLY

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A1 ORIGINAL SIZE

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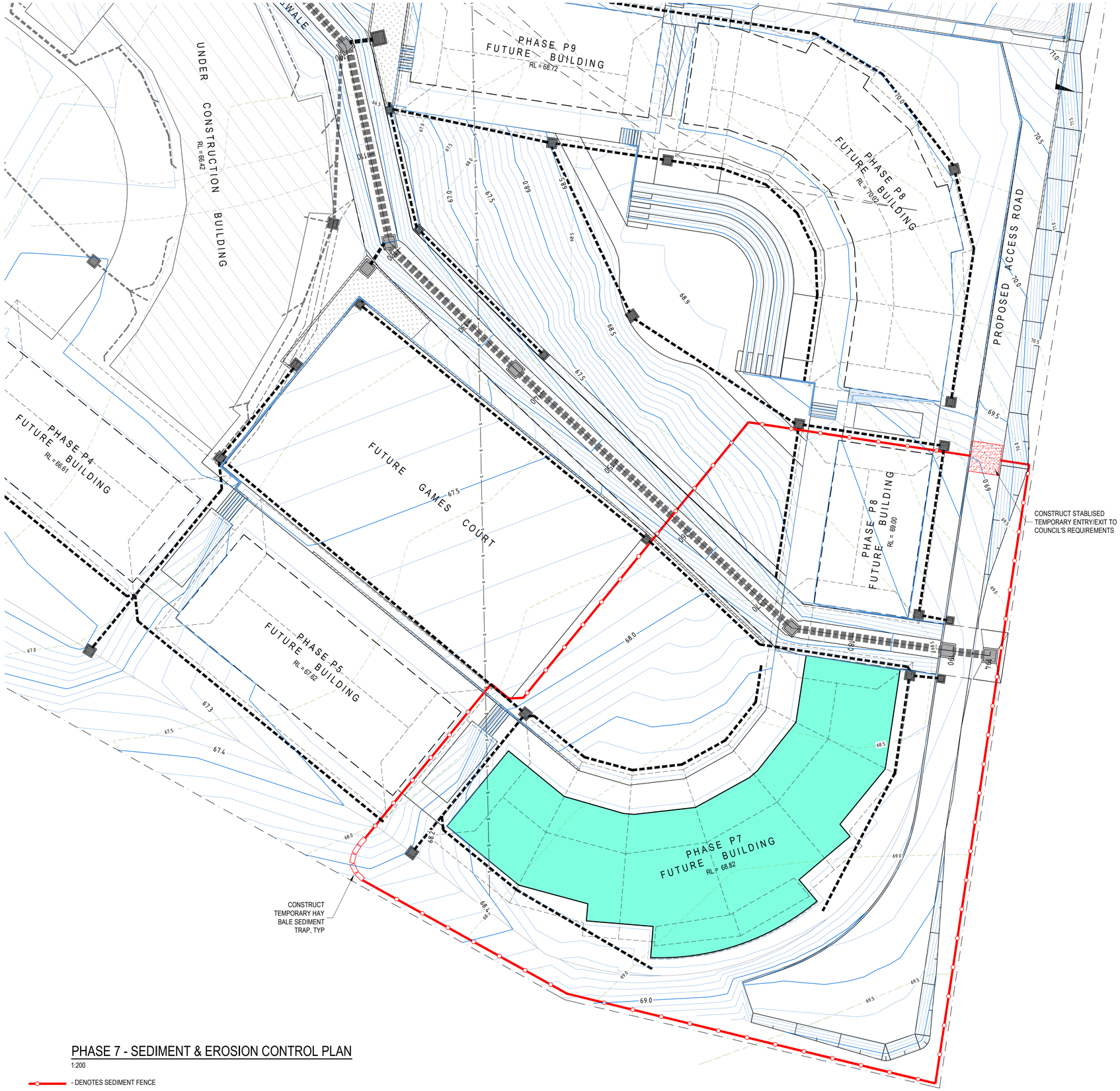
MONTGROVE COLLEGE

Bringelly Road, Orchard Hills

For The Pared Foundation

PHASE 6 & 6a - SEDIMENT & EROSION CONTROL PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:250	C06 - D



PHASE 7 - SEDIMENT & EROSION CONTROL PLAN

1:200

- DENOTES SEDIMENT FENCE

SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT AND EROSION CONTROL SHALL BE EFFECTIVELY MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL THE SITE HAS BEEN STABILISED OR LANDSCAPED TO THE SUPERINTENDENT'S SATISFACTION.

A SINGLE ALL WEATHER ACCESS WAY WILL BE PROVIDED AT THE FRONT OF THE PROPERTY CONSISTING OF 50-75 AGGREGATE OR SIMILAR MATERIAL AT A MINIMUM THICKNESS OF 150 LAID OVER NEEDLE-PUNCHED GEOTEXTILE FABRIC AND CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.

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SEDIMENT FENCING SHALL BE SECURED BY POST (WHERE METAL STAR PICKETS ARE USED PLASTIC SAFETY CAPS SHALL BE USED) AT 2000 INTERVALS WITH GEOTEXTILE FABRIC EMBEDDED 200 IN SOIL.

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SOIL CONSERVATION NOTE:

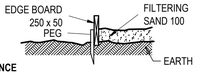
PRIOR TO COMMENCEMENT OF CONSTRUCTION PROVIDE 'SEDIMENT FENCE,' 'SEDIMENT TRAP' AND WASHOUT AREA TO ENSURE THE CAPTURE OF WATER BORNE MATERIAL GENERATED FROM THE SITE.

MAINTAIN THE ABOVE DURING THE COURSE OF CONSTRUCTION, AND CLEAR THE 'SEDIMENT TRAP AFTER EACH STORM.

SEDIMENT TRAP

1000 x 1000 WIDE 500 DEEP PIT, LOCATED AT THE LOWEST POINT TO THE TRAP SEDIMENT.

WASHOUT AREA
TO BE 1800 x 1800 ALLOCATED FOR THE WASHING OF TOOL & EQUIPMENT.



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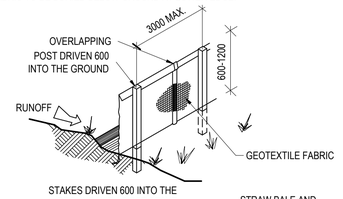

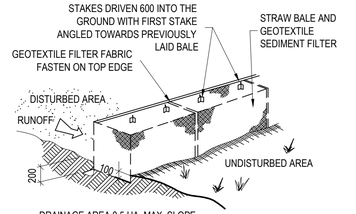

DRAINAGE AREA 0.5 HA. MAX. SLOPE GRADIENT 1:2 MAX. SLOPE LENGTH 50m.

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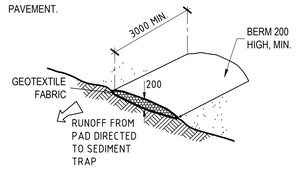

BUILDING MATERIAL STOCKPILES

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SANDBAG KERB SEDIMENT TRAP

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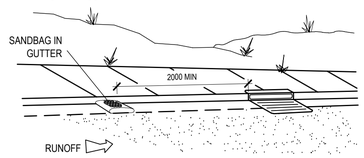

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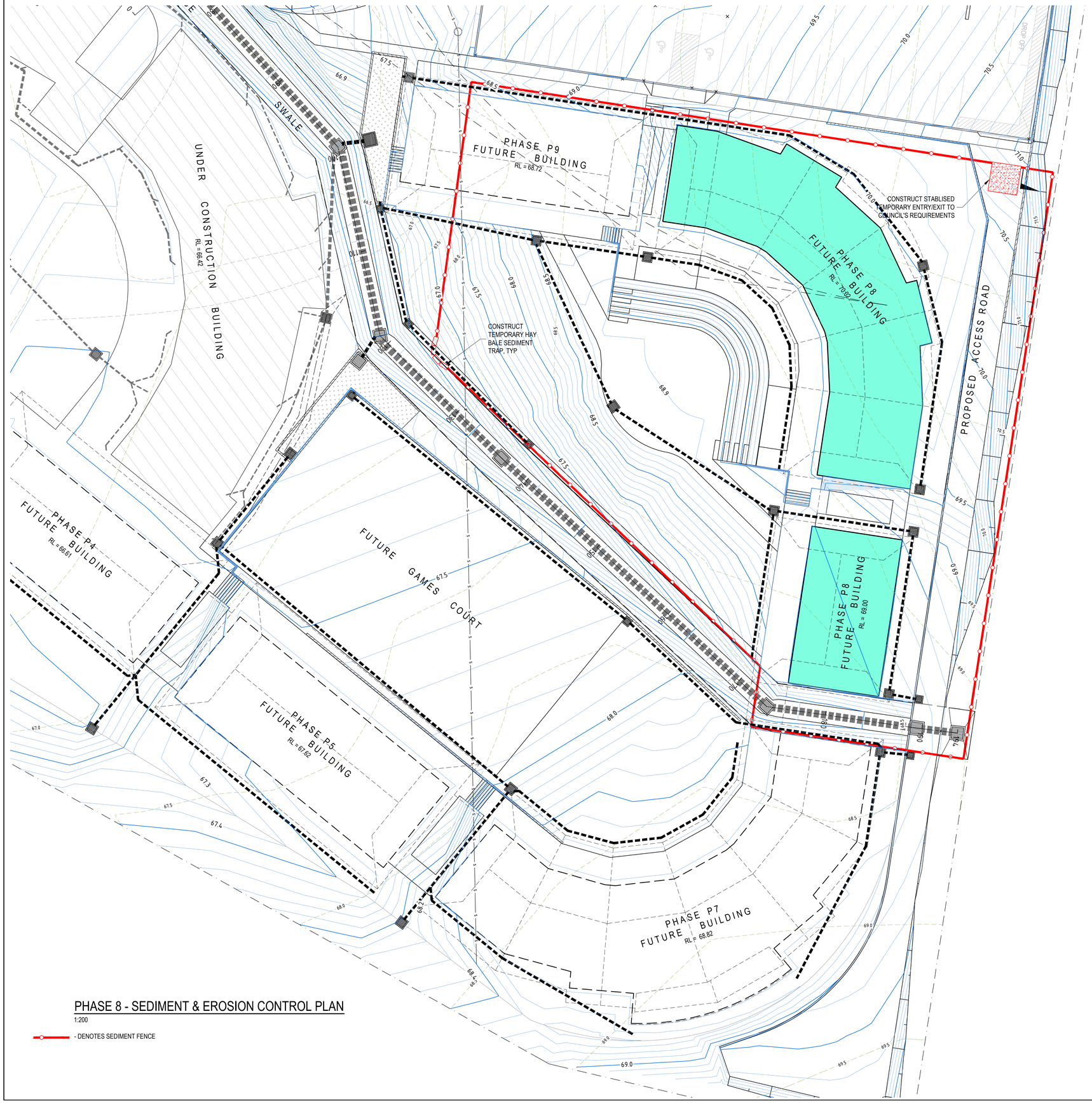
PHASE 7 - SEDIMENT & EROSION CONTROL PLAN

DESIGN	DRAWN	DATE	PROJECT No
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:200	C07 - D



PHASE 8 - SEDIMENT & EROSION CONTROL PLAN

1:200

- DENOTES SEDIMENT FENCE

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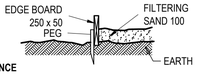

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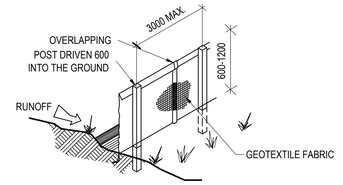

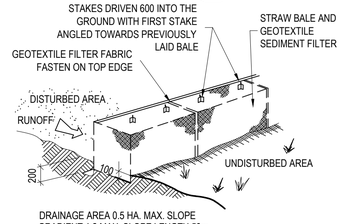

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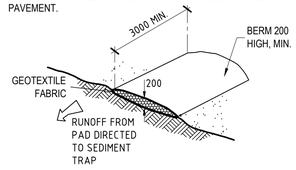

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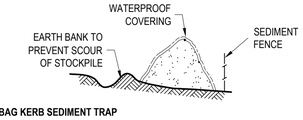

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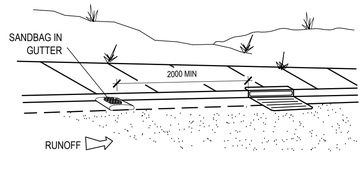

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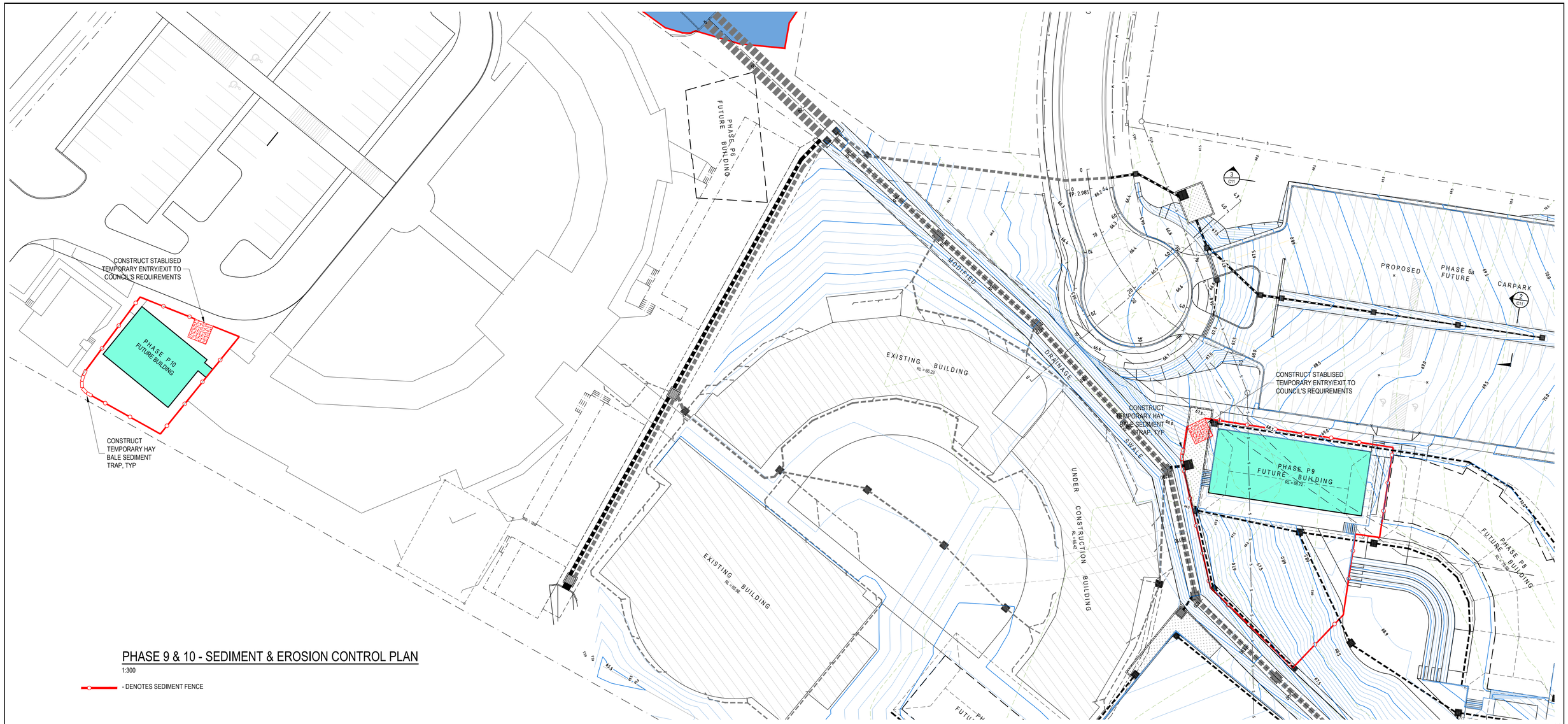
PHASE 8 - SEDIMENT & EROSION CONTROL PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:200	C08 - D



PHASE 9 & 10 - SEDIMENT & EROSION CONTROL PLAN

1:300

- DENOTES SEDIMENT FENCE

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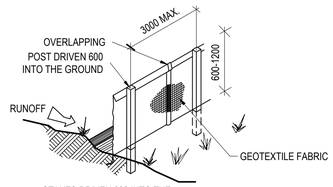

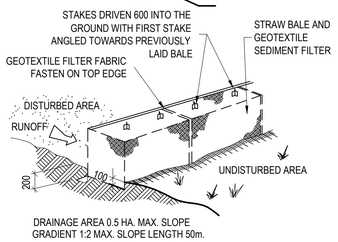

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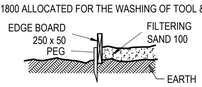
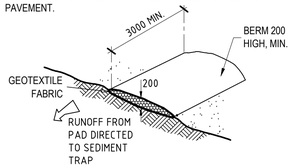


VEHICLE ACCESS TO SITE

VEHICLE ACCESS TO THE BUILDING SITE SHOULD BE RESTRICTED TO A SINGLE POINT SO AS TO REDUCE THE AMOUNT OF SOIL DEPOSITED ON THE STREET PAVEMENT.



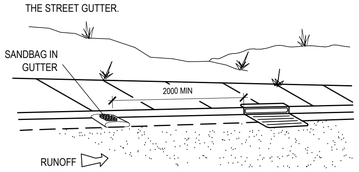
BUILDING MATERIAL STOCKPILES

ALL STOCKPILES OF BUILDING MATERIAL SUCH AS SAND AND SOIL MUST BE PROTECTED TO PREVENT SCOUR AND EROSION.

THEY SHOULD NEVER BE PLACED IN THE STREET GUTTER WHERE THEY WILL WASH AWAY WITH THE FIRST RAINSTORM.

SANDBAG KERB SEDIMENT TRAP

IN CERTAIN CIRCUMSTANCES EXTRA SEDIMENT TRAPPING MAY BE NEEDED IN THE STREET GUTTER.



GENERAL NOTES

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS ARE IN MILLIMETRES & ALL LEVELS ARE IN METRES, UNO (UNLESS NOTED OTHERWISE).

NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DURING EXCAVATION WORK THE STRUCTURE SHALL BE MAINTAINED IN A STABLE AND NO PART SHALL BE OVERSTRESSED.

ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE SPECIFICATION.

EXISTING SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM SUPPLIED DATA AND SUCH THEIR ACCURACY CAN NOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK.

ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACK FILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCIL.

ALL TRENCH BACK FILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS UNLESS DIRECTED OTHERWISE.

STORMWATER DRAINAGE

THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3 - 1990 "STORMWATER DRAINAGE" & AS/NZS 3500.3.2-1998 "STORMWATER DRAINAGE - ACCEPTABLE SOLUTIONS".

ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.

ANY VARIATIONS TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL.

DOWN PIPES SHALL BE A MINIMUM OF DN100 SW GRADE UPVC OR 100X100 COLORBOND/ZINCALUME STEEL, UNO.

BOX COLORBOND OR ZINCALUME STEEL. GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP.

EAVES GUTTERS SHALL BE A MINIMUM OF 125 WIDE X 100 DEEP (OR OF EQUIVALENT AREA) COLORBOND OR ZINCALUME STEEL.

SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

DA APPROVAL ONLY

NOT TO BE USED FOR CONSTRUCTION PURPOSES

A1 ORIGINAL SIZE

REVISION	DATE	AMENDMENT DESCRIPTION
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MONTGROVE COLLEGE

Bringelly Road, Orchard Hills

For The Pared Foundation

PHASE 9 & 10 - SEDIMENT & EROSION CONTROL PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:300	C09 - D

FOR CONTINUATION REFER TO SHEET C13

QUIGG PLACE CUL-DE-SAC & CARPARK WORKS PLAN

1:200

66.5 DENOTES EXISTING SURFACE LEVEL CONTOUR

66.5 DENOTES PROPOSED DESIGN LEVEL CONTOUR

66.2 DENOTES PROPOSED DESIGN SPOT LEVEL

DENOTES EXTENT OF NEW ROLL OVER KERB & KERB ONLY

DENOTES EXTENT OF NEW FLEXIBLE PAVEMENT

DENOTES EXTENT OF NEW CONCRETE DRIVEWAY

DENOTES EXTENT OF NEW GRASSED VERGE

DENOTES EXTENT OF NEW CONCRETE FOOTPATH

ALL EXISTING LEVELS & ROAD SETOUT HAVE BEEN TAKEN FROM SURVEY PLAN PREPARED BY **SDG LAND DEVELOPMENT SOLUTIONS REFERENCE 3284 DATED 17.09.2013**

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO.
ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.

(SS) DENOTES STORMWATER PIT TO BE FITTED WITH SPEL STORMSACK - REFER TYPICAL DETAIL

DESIGN SUMMARY - FULL DEVELOPED SITE

DRAINS MODEL HAS BEEN PREPARED FOR CALCULATION OF PRE & POST DEVELOPMENT FLOWS.

REFER TO STAGED CIVIL DRAWINGS FOR DETAILED ROOF STORMWATER DRAINAGE DESIGN & DETAILS

PRE & POST DEVELOPMENT FLOWS

	1 YEAR ARI	5 YEAR ARI	20 YEAR ARI	100 YEAR ARI
PRE - DEVELOPMENT FLOW (l/s)	268	1110	1390	1730
POST - DEVELOPMENT FLOW (l/s)	271	1080	1400	1720
PEAK WATER LEVEL (AHD)	62.65	62.95	63.33	63.82
STORAGE REQUIRED (m³)	585	1520	2928	4952

STORAGE VOLUME PROVIDED = 5273m³

EXISTING OSD BASIN
MAX WATER RL = 63.80

NEW CONCRETE FOOTPATH
REFER TO STANDARD DETAIL

QUIGG PLACE

1-2 EXISTING SIP
RL = 64.38
IL = 62.79

EXISTING SIP
RL = 64.34
IL = 63.72

EXISTING KIP
RL = 66.07
IL = 64.96

EXISTING KIP
RL = 66.10
IL = 65.03

600 SQ SIP
RL = 66.55
IL = 65.07

REFER TO PROPOSED QUIGG PLACE CUL-DE-SAC GUTTER INVERT LONGITUDINAL SECTION ON SHEET C03

EXIST. Ø375 RCP

EXISTING Ø375 RCP

1-2 EXISTING SIP
RL = 64.38
IL = 62.78

EXISTING Ø750 RCP

REFER TO PROPOSED QUIGG PLACE CUL-DE-SAC CENTRELINE LONGITUDINAL SECTION ON SHEET C03

BIO-RETENTION BASIN 3
BASIN FLOOR RL = 66.20
AREA = 20m²
REFER TO DETAIL

3 C11

1V:4H CUT BATTER

600 SQ SIP
RL = 66.85
IL = 66.25

1V:4H FILL BATTER

4 C11

1V:3H CUT BATTER

1-3 EXISTING SIP
NEW RL = 65.30
IL = 63.21

MODIFIED

EXISTING Ø750 RCP

1-4 EXISTING SIP
NEW RL = 65.50
IL = 63.63

450 SQ SIP
RL = 66.85
IL = 66.60

600 SQ SIP
RL = 67.62
IL = 67.02

PROPOSED PHASE 6a FUTURE CARPARK

2 C11

600 SQ SIP
RL = 68.30
IL = 67.77

600 SQ SIP
RL = 67.62
IL = 67.09

600 SQ SIP
RL = 68.93
IL = 68.40

600 SQ SIP
RL = 69.55
IL = 69.02

1V:3H CUT BATTER BEHIND RETAINING WALL

BLOCKWORK RETAINING WALL

RETAINING WALL
800 MAX HEIGHT

EXISTING BUILDING
RL = 66.23

1 C13

DRAINAGE SWALE

EXISTING Ø750 RCP

600 SQ SIP

BIO-RETENTION BASIN 2
BASIN FLOOR RL = 65.85
AREA = 40m²
REFER TO DETAIL

PHASE P9 FUTURE BUILDING
RL = 68.72

1-5 EXISTING SIP
NEW RL = 65.80
IL = 64.32

UNDER CONSTRUCTION BUILDING
RL = 66.42

1-6 EXISTING SIP
NEW RL = 66.00
NEW IL = 64.78

EXISTING Ø750 RCP

CATCH DRAIN

EXISTING Ø750 RCP

CATCH DRAIN

PHASE P8 FUTURE BUILDING
RL = 70.92

BLOCKWORK RETAINING WALL

PROPOSED ACCESS ROAD

FOR CONTINUATION REFER TO SHEET C11

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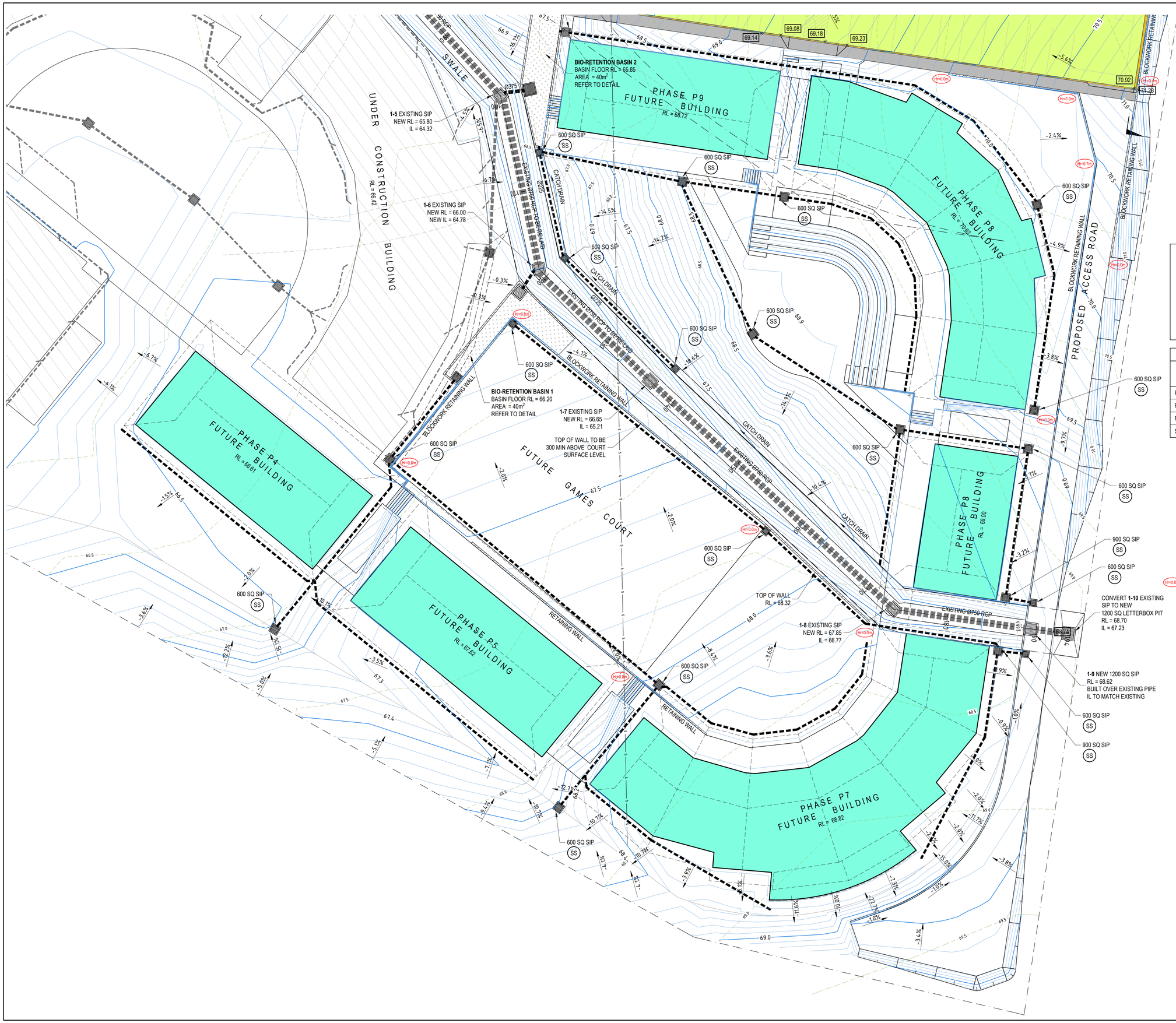
For The Pared Foundation

QUIGG PLACE CUL-DE-SAC WORKS PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:200	C10 - D



DESIGN SUMMARY - FULL DEVELOPED SITE

DRAINS MODEL HAS BEEN PREPARED FOR CALCULATION OF PRE & POST DEVELOPMENT FLOWS.

REFER TO STAGED CIVIL DRAWINGS FOR DETAILED ROOF STORMWATER DRAINAGE DESIGN & DETAILS

PRE & POST DEVELOPMENT FLOWS				
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PEAK WATER LEVEL (AHD)	62.65	62.95	63.33	63.82
STORAGE REQUIRED (m^3)	585	1520	2928	4952

STORAGE VOLUME PROVIDED = 5273m^3

STORMWATER TRUNK DRAINAGE PLAN

1:200

ALL DRAINAGE LINES SHALL BE UPVC (CLASS SH) STORMWATER DRAINAGE PIPE, UNO.
ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.

THE FOLLOWING SYMBOLS & ABBREVIATIONS HAVE BEEN USED:

X [100.00] = PROPOSED FINISHED SURFACE LEVEL

(SS) = STORMWATER PIT TO BE FITTED WITH **SPEL STORMSACK** - REFER TYPICAL DETAIL

Hr=0.8m DENOTES HEIGHT OF RETAINING AT WALL - DIFFERENCE BETWEEN SURFACE LEVEL EACH SIDE OF WALL
FOR TOP OF WALL LEVELS REFER TO NOTES ON PLAN

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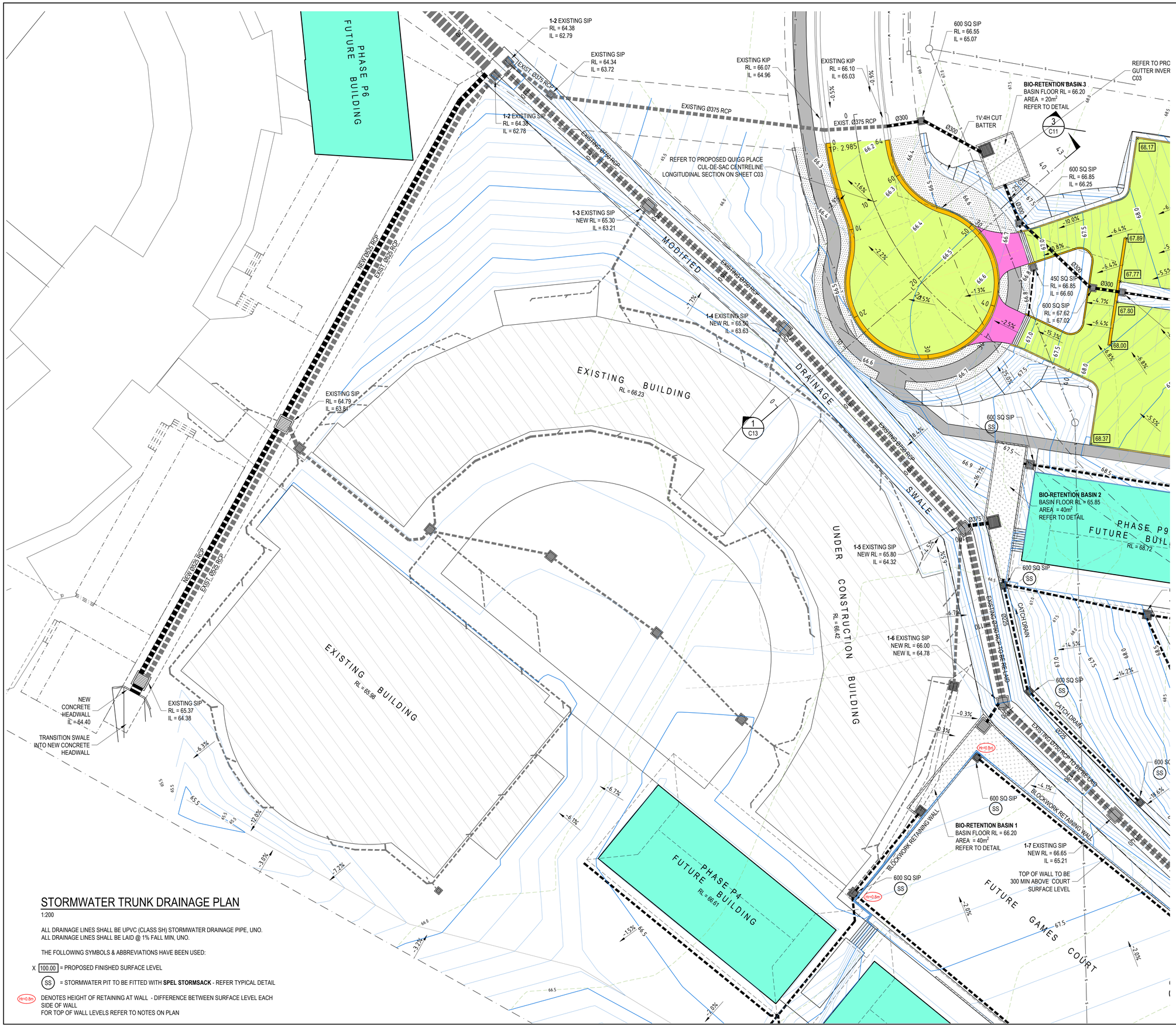
STORMWATER TRUNK DRAINAGE PLAN SHT 1 of 2

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE 1:200	DRG No. C11 - D



STORMWATER TRUNK DRAINAGE PLAN

1:200

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(SS) = STORMWATER PIT TO BE FITTED WITH **SPEL STORMSACK** - REFER TYPICAL DETAIL

(H=0.8m) DENOTES HEIGHT OF RETAINING AT WALL - DIFFERENCE BETWEEN SURFACE LEVEL EACH SIDE OF WALL
FOR TOP OF WALL LEVELS REFER TO NOTES ON PLAN

DESIGN SUMMARY - FULL DEVELOPED SITE

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STORAGE VOLUME PROVIDED = 5273m³

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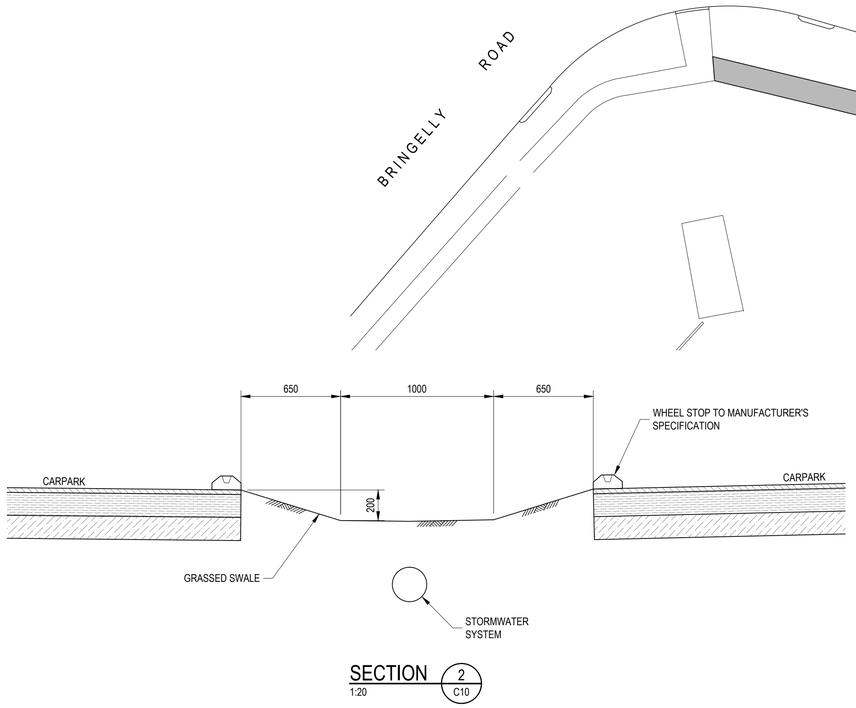
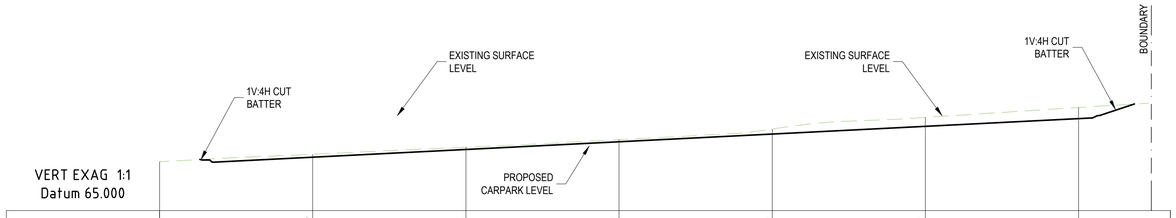
STORMWATER TRUNK DRAINAGE PLAN SHT 2 of 2

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:200	C12 - D

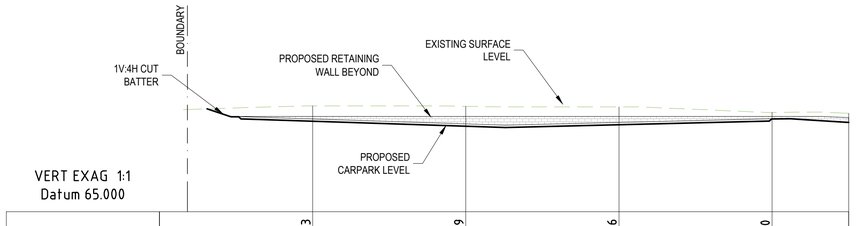


SECTION 2 / C10
1:20



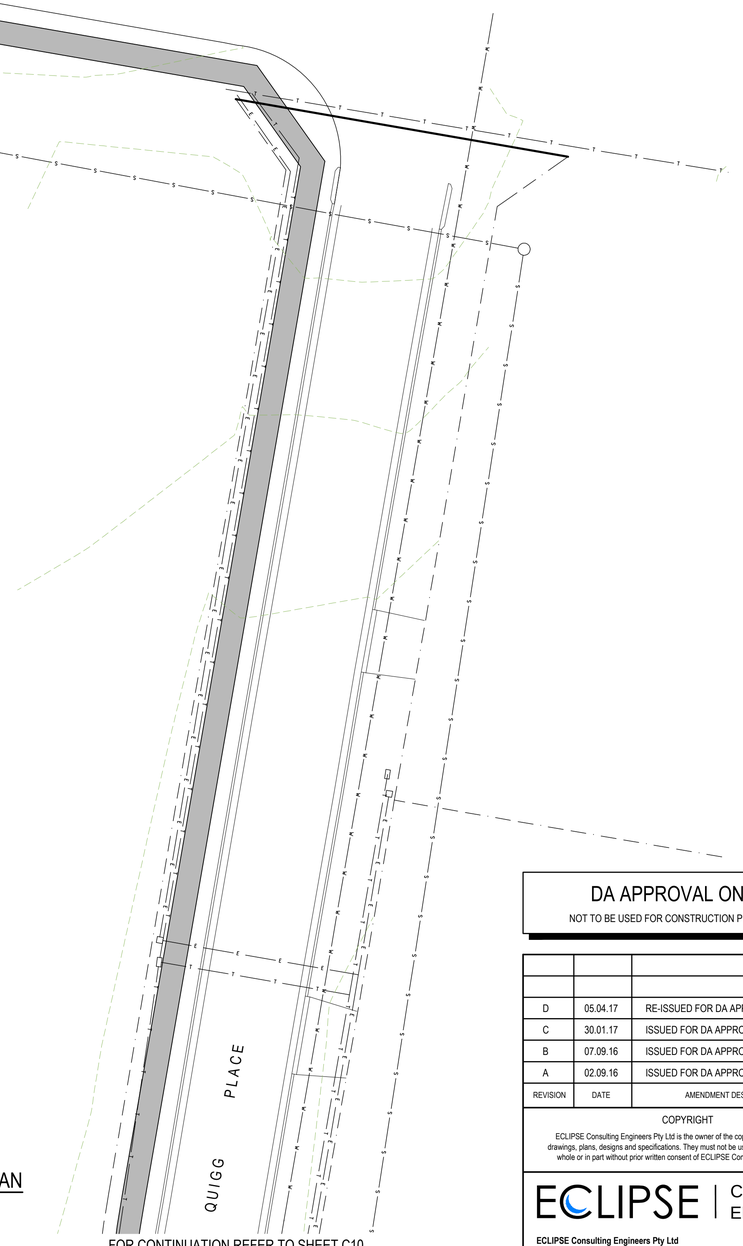
DESIGN LEVELS		68.496	68.999	69.502	70.004	70.507	71.010
EXISTING LEVELS	68.195	68.678	69.140	69.636	70.330	71.087	71.734
DEPTH		-0.182	-0.142	-0.135	-0.325	-0.580	-0.724
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	66.000

PROPOSED CARPARK NORTH ELEVATION - SECTION 3 / C10
1:200



DESIGN LEVELS		70.903	70.579	70.676	71.050	
EXISTING LEVELS		71.903	71.879	71.842	71.482	71.421
DEPTH		-1.000	-1.300	-1.166	-0.432	
CHAINAGE	0.000	10.000	20.000	30.000	40.000	45.000

PROPOSED CARPARK EAST ELEVATION - SECTION 4 / C10
1:200



QUIGG PLACE CUL-DE-SAC & CARPARK WORKS PLAN
1:200

66.5 DENOTES EXISTING SURFACE LEVEL CONTOUR

66.5 DENOTES PROPOSED DESIGN LEVEL CONTOUR

66.2 DENOTES PROPOSED DESIGN SPOT LEVEL

DENOTES EXTENT OF NEW ROLL OVER KERB & KERB ONLY

DENOTES EXTENT OF NEW FLEXIBLE PAVEMENT

DENOTES EXTENT OF NEW CONCRETE DRIVEWAY

DENOTES EXTENT OF NEW GRASSED VERGE

DENOTES EXTENT OF NEW CONCRETE FOOTPATH

ALL EXISTING LEVELS & ROAD SETOUT HAVE BEEN TAKEN FROM SURVEY PLAN PREPARED BY **SDG LAND DEVELOPMENT SOLUTIONS REFERENCE 3284 DATED 17.09.2013**

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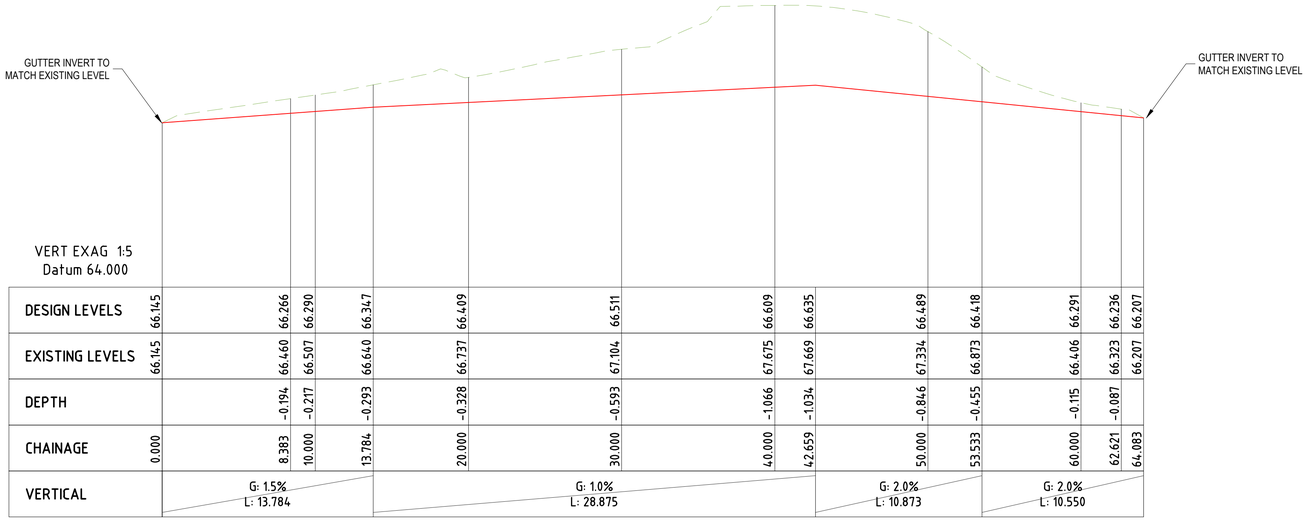
For The Pared Foundation

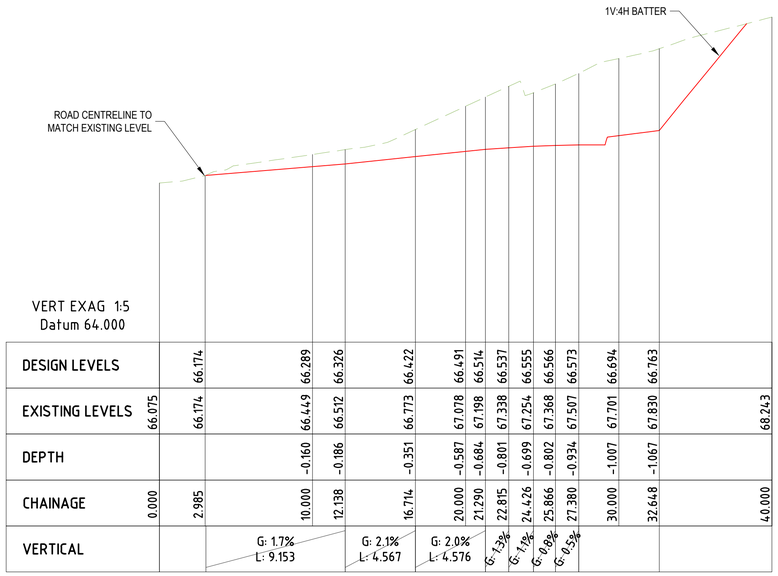
QUIGG PLACE CUL-DE-SAC FOOTPATH PLAN

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE	DRG No.
		1:200	C13 - D



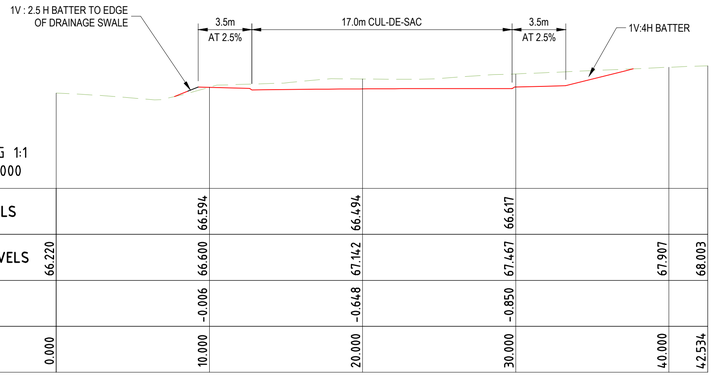
PROPOSED QUIGG PLACE CUL-DE-SAC GUTTER INVERT LONGITUDINAL SECTION

1:200 HORIZONTAL
1:40 VERTICAL

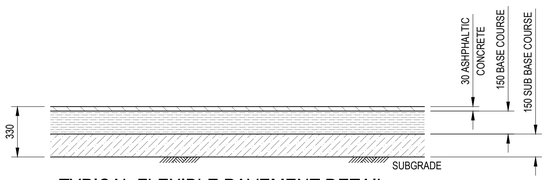


PROPOSED QUIGG PLACE CUL-DE-SAC ROAD CENTRELINE LONGITUDINAL SECTION

1:200 HORIZONTAL
1:40 VERTICAL



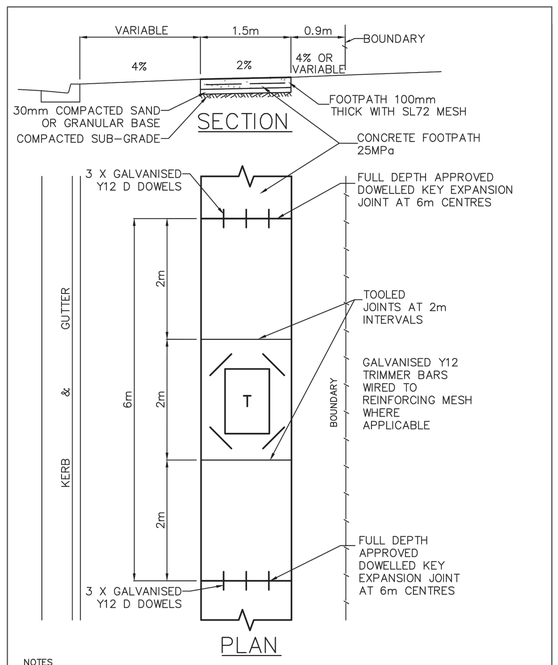
SECTION 1 / C10
SCALE = 1:200



TYPICAL FLEXIBLE PAVEMENT DETAIL

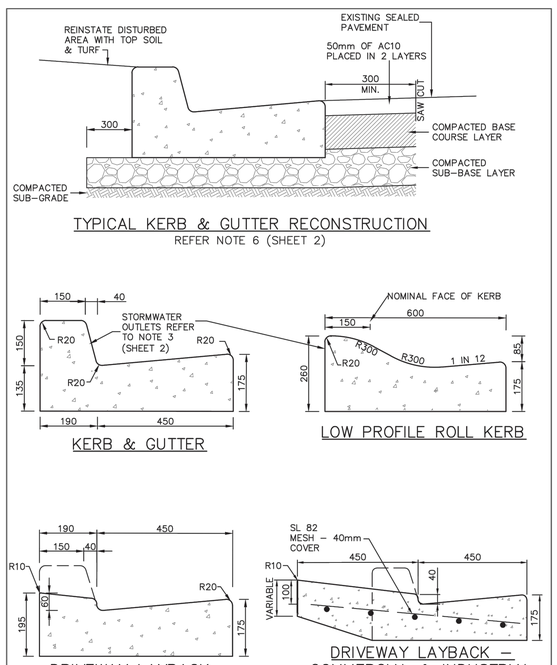
1:20

TYPICAL FLEXIBLE PAVEMENT MATERIAL & COMPACTION CRITERIA		
PAVEMENT LAYER	MATERIAL QUALITY	COMPACTION (AS1289.5.2.1-1997)
ASPHALTIC CONCRETE	AC10	
BASECOURSE	DGB20 TO RTA 3501	98% MODIFIED
SUBBASE	DGS40 TO RTA 3051 OR CRUSHED SANDSTONE WITH MAX. PARTICLE SIZE OF 75mm, SOAKED CBR NOT LESS THAN 30% & P.I. LESS THAN 10%	95% MODIFIED
SUBGRADE	INSITU CLAY, PROOF ROLLED WITH MIN. 8 TONNE STATIC WEIGHT ROLLER, CBR = 3.5%	100% STANDARD



NOTES
1. LONGITUDINAL EDGING IS REQUIRED ON FOOTPATHS. ALL EXPANSION JOINTS SHALL ALSO BE EDGED.
2. THE FOOTPATH SHALL BE FINISHED WITH A BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.
3. FOR MACHINE LAID FOOTPATHS, REFER TO SECTION 7 OF COUNCIL'S CONSTRUCTION SPECIFICATION.
4. FOR CYCLEWAYS, REFER TO SECTION 7 OF COUNCIL'S CONSTRUCTION SPECIFICATION.

DRAWN: M.WARDA	STANDARD FOOTPATH DETAILS	APPROVED:
PENRITH CITY COUNCIL		PLAN No. SD1001



DRAWN:	STANDARD KERB & GUTTER, LAYBACKS & DISH CROSSING SHEET 1 OF 2	APPROVED:
PENRITH CITY COUNCIL		PLAN No: SD1003/1

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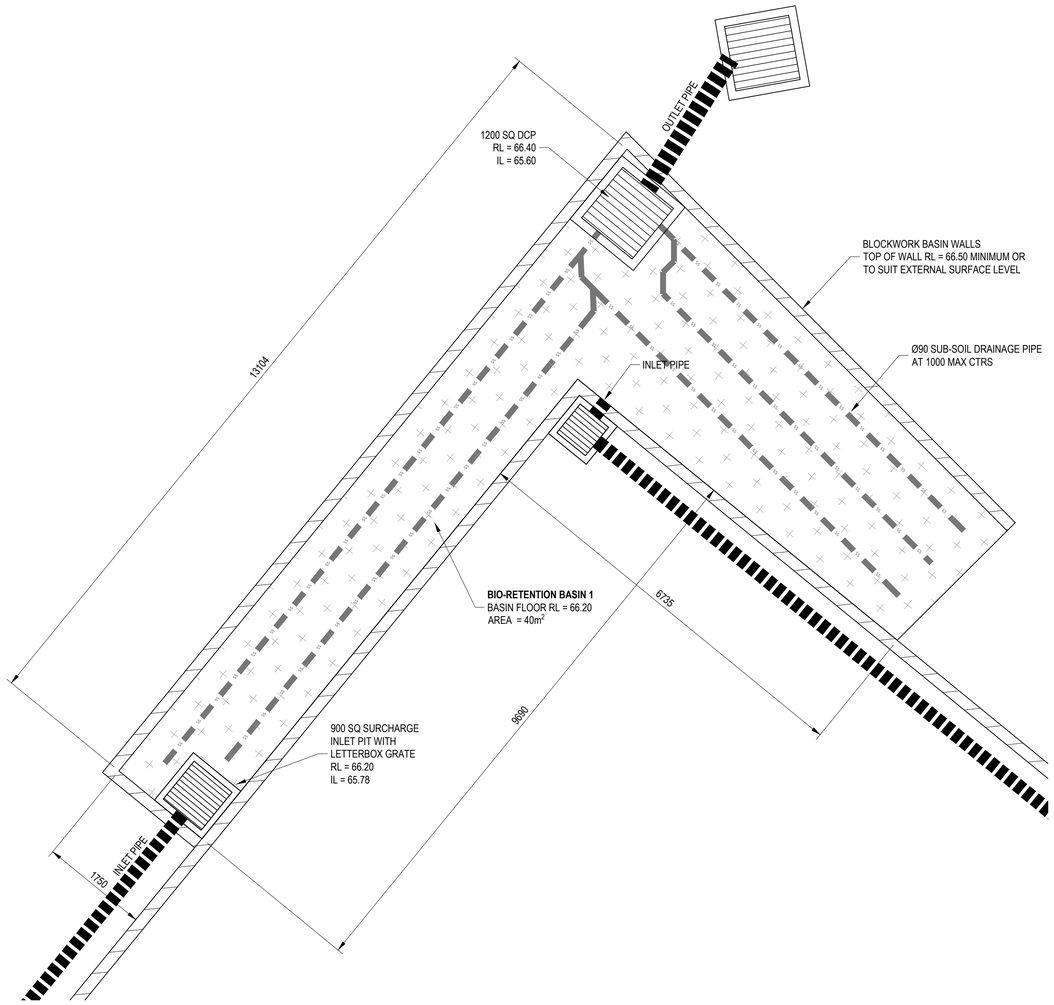
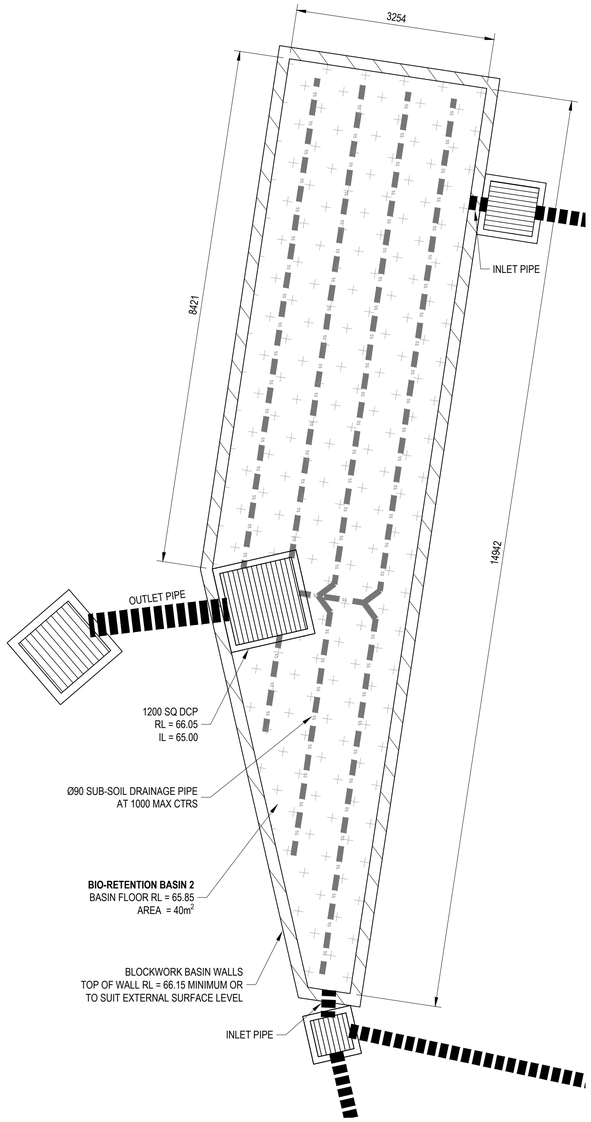
QUIGG PLACE CUL-DE-SAC WORKS SECTIONS

DESIGN	DRAWN	DATE	PROJECT No.
SWH	GOH	JAN 2016	8187
CHECKED	APPROVED	SCALE 1:200	DRG No. C14 - D



BIO-RETENTION BASIN 1 PLAN

1:50



BIO-RETENTION BASIN 2 PLAN

1:50

BIO-RETENTION BASIN / OSD BASIN PLANTING SPECIFICATION

BATTERS: LOCAL TURF TO MATCH EXISTING

FLAT BASE: LOMADRA LONGIFOLIA OR MICROLAENA STIPOIDES GRASSES

BIO-RETENTION BASIN SOIL MEDIA SPECIFICATION

Filter Media Specification:

In general the filter media should be a loamy sand with an appropriately high permeability under compaction and should be free of rubbish, deleterious material, toxicants, declared plants and local weeds, and should not be hydrophobic. The filter media should contain some organic matter for increased water holding capacity but be low in nutrient content.

The filter media should be well-graded i.e. it should have all particle size ranges present from the 0.075 mm to the 4.75 mm sieve (as defined by AS 1289 .3.6.1 - 199 5]. There should be no gap in the particle size grading, and the composition should not be dominated by a small particle size range. An ideal particle size distribution is as follows:

- Clay & Silt (<0.05 mm) <3%
- Very Fine Sand (0.05-0.15 mm] 5-30%
- Fine Sand (0.15-0.25 mm] 10-30%
- Medium to Coarse Sand (0.25-1.0 mm] 40-60%
- Coarse Sand [1.0-2.0 mm] 7-10%
- Fine Gravel <3% (2.0-3.4 mm]

Organic Matter Content- less than 5% (w/w).
pH - as specified for "natural soils and soil blends" 5.5- 7.5 (pH 1:5 in water].
Electrical Conductivity (EC) - as specified for "natural soils and soil blends" <1.2 dS/m.
Phosphorus - <50 mg/kg
Hydraulic conductivity - 150 mm/hr minimum, as measured using the ASTM F1815-06 method.

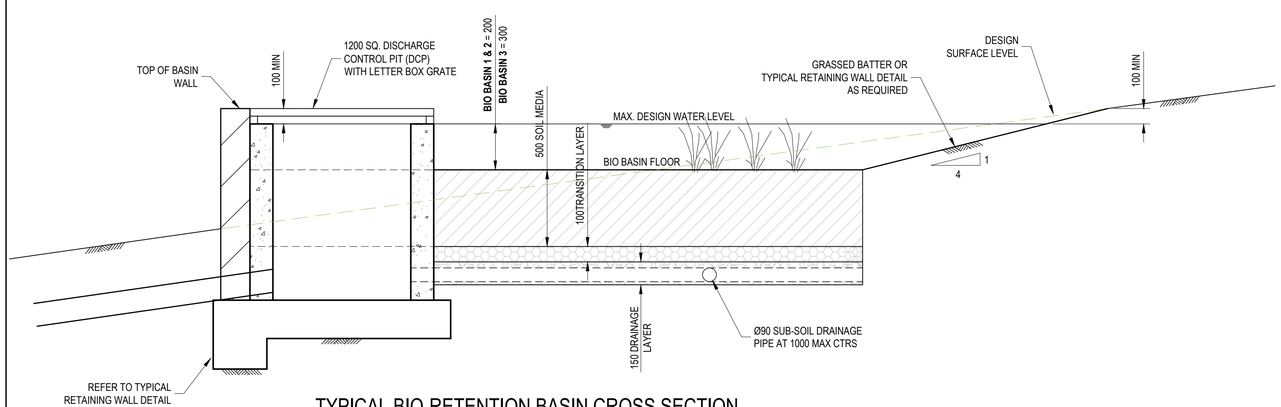
Transition Layer Specification:

Transition layer material should be a clean, well-graded sand/coarse sand material containing little or no fines

Drainage Layer Specification:

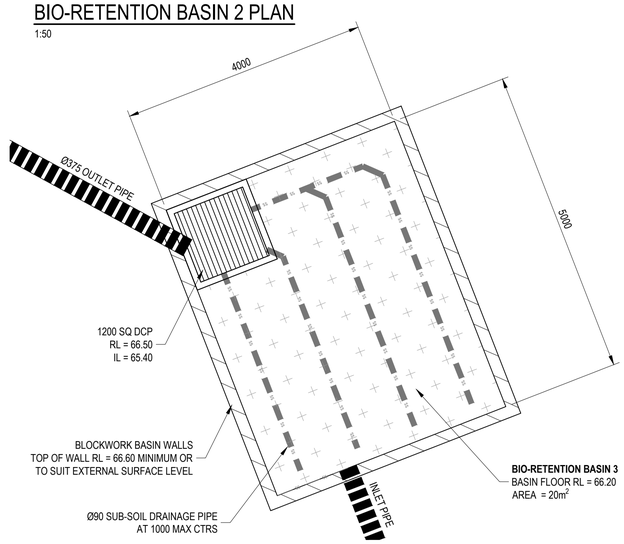
The drainage layer should be a clean, fine gravel, such as 2-5 mm washed screenings.

Note that the filter media, transition layer and drainage layer specifications ore designed to minimise the migration of fines through the bioretention system, without the use of geotextiles.



TYPICAL BIO-RETENTION BASIN CROSS SECTION

1:20



BIO-RETENTION BASIN 3 PLAN

1:50

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A1 ORIGINAL SIZE

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MONTGROVE COLLEGE

Bringelly Road, Orchard Hills

For The Pared Foundation

BIO-RETENTION BASIN DETAILS

DESIGN	DRAWN	DATE	PROJECT No.
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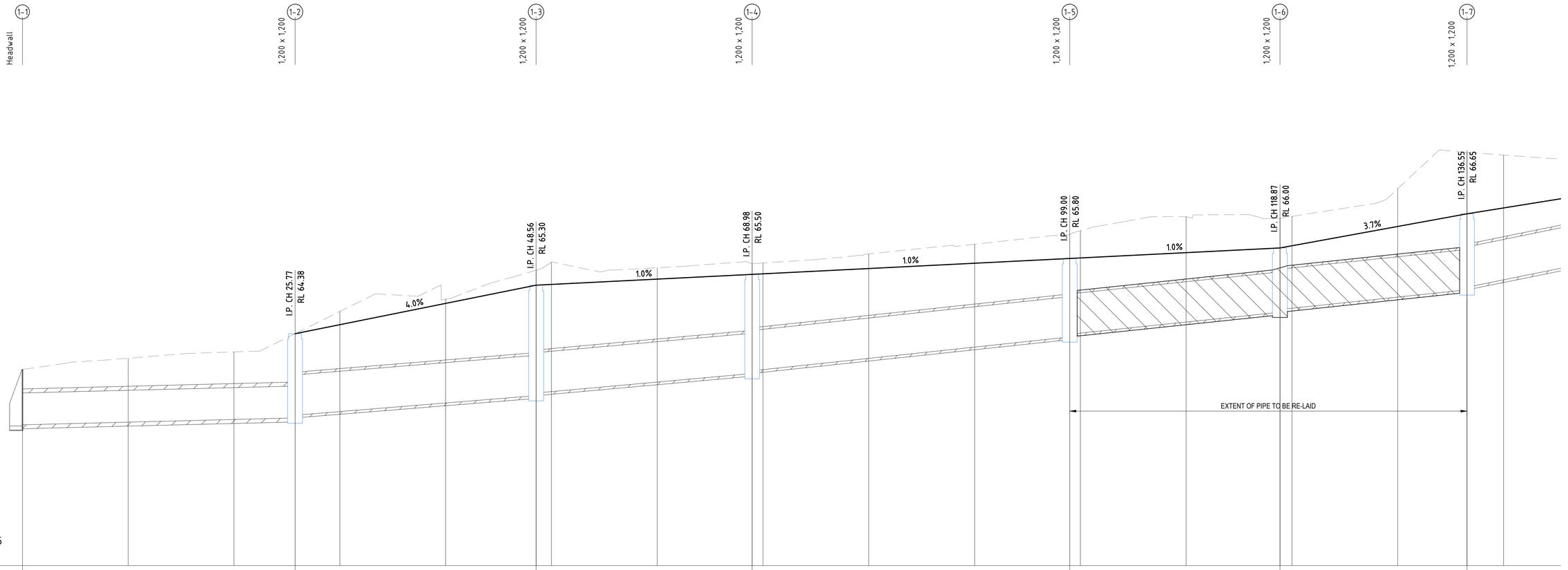
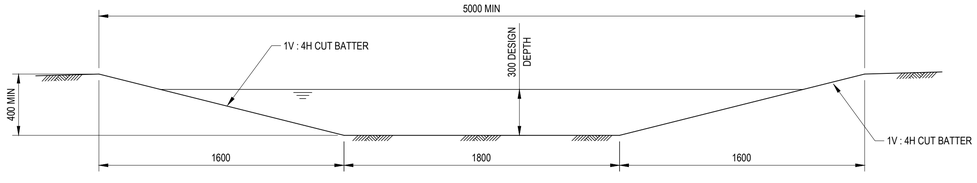
		1:50,1:20	C15 - D



GRADE %		0.50%		1.62%		1.81%		2.13%		2.10%		2.11%	
PIPE DETAILS (CL to CL LENGTHS)		2 / 600 DEEP x 1200 WIDE BOX CULVERTS 3D LENGTH: 25.767 2D LENGTH: 25.767		750 NB RCRRJ CLASS 2 3D LENGTH: 22.797 2D LENGTH: 22.794		750 NB RCRRJ CLASS 2 3D LENGTH: 20.420 2D LENGTH: 20.417		750 NB RCRRJ CLASS 2 3D LENGTH: 30.024 2D LENGTH: 30.017		750 NB RCRRJ CLASS 2 3D LENGTH: 19.875 2D LENGTH: 19.871		750 NB RCRRJ CLASS 2 3D LENGTH: 17.690 2D LENGTH: 17.686	
DESIGN LEVEL AT MH CL	64.405		64.382		65.297		65.501		65.801		66.000		66.646
INVERT LEVEL	62.660		62.790 62.840		63.210 63.260		63.630 63.680		64.320 64.370		64.787 64.837		65.210 65.260
COVER	-0.250		0.297 0.729		1.274 1.224		1.058 1.008		0.668 0.618		0.400 0.350		0.623 0.573
CHAINAGE	0.000		25.767		48.561		68.978		98.995		118.866		136.552

MODIFIED DRAINAGE SWALE CENTRELINE LONGITUDINAL SECTION

1:200



PROPOSED DRAINAGE SWALE CROSS SECTION

1:20

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MONTGROVE COLLEGE

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PROPOSED DRAINAGE SWALE LONG SECTION

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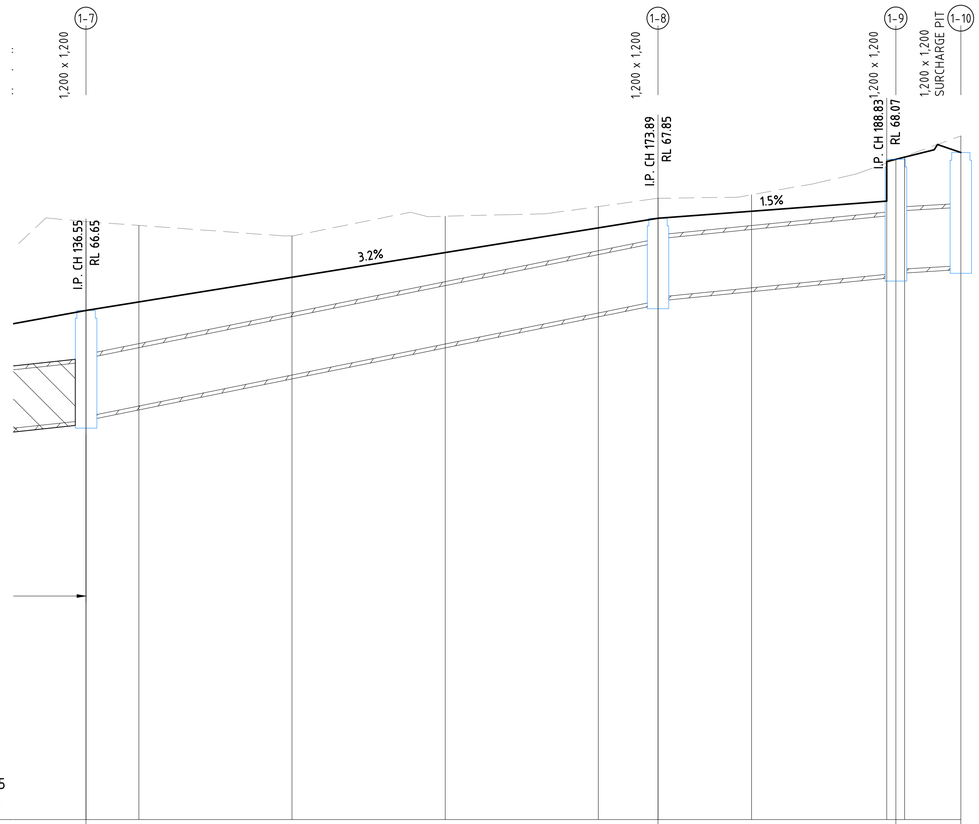
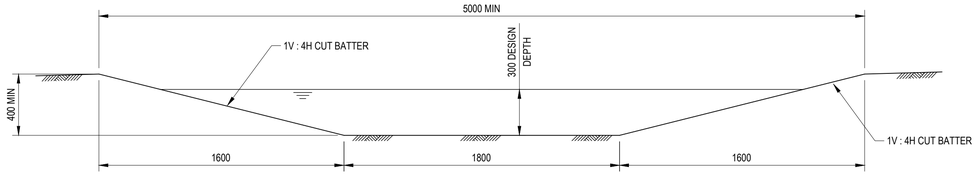
		1:200	C16 - D

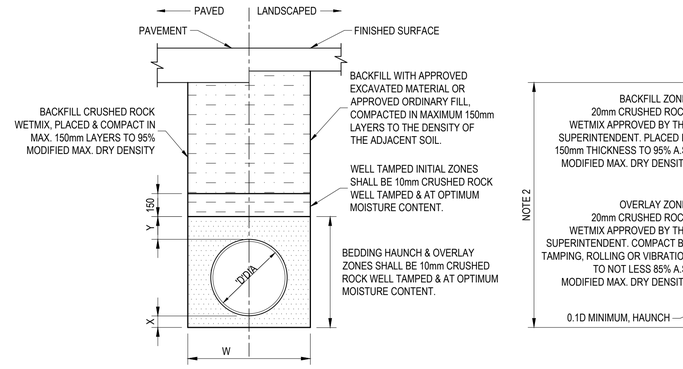


GRADE %		4.04%				1.99%		1.18%	
PIPE DETAILS (CL to CL LENGTHS)		750 NB RCRRJ CLASS 2 3D LENGTH: 37.373 2D LENGTH: 37.342				750 NB RCRRJ CLASS 2 3D LENGTH: 15.543 2D LENGTH: 15.540		750 NB RCRRJ CLASS 2 3D LENGTH: 4.239 2D LENGTH: 4.239	
DESIGN LEVEL AT MH CL	66.646				67.850			68.620	68.707
INVERT LEVEL	65.210	65.260			66.770	66.820		67.130	67.180	67.230
COVER	0.623	0.573			0.267	0.217		0.190	0.623	0.882
CHAINAGE	136.552				173.894			189.434		193.673

MODIFIED DRAINAGE SWALE CENTRELINE LONGITUDINAL SECTION
1:200



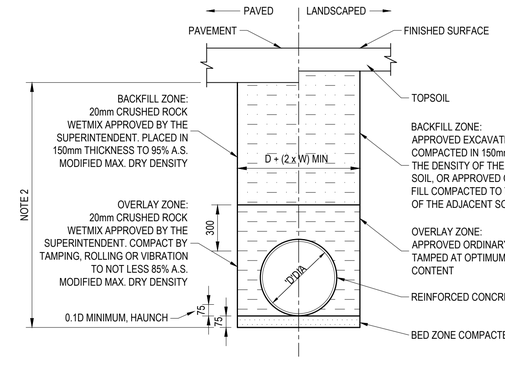
PROPOSED DRAINAGE SWALE CROSS SECTION
1:20



NOTE:
1 REFER TO PIPE LAYING SPECIFICATIONS FOR DETAILS.

PIPE DIA 'D'	W	X MIN	Y
100-150	300	75	75
225-300	600	75	75

UPVC PIPE

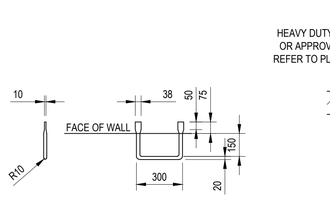


NOTE:
1 REFER TO PIPE LAYING SPECIFICATION FOR DETAILS.
2 BACKFILL OVERLAY & BEDDING ZONES 20mm CRUSHED ROCK COMPACT BY TAMPING ROLLING OR VIBRATION TO NOT LESS THAN 85% A.S. STD. MAX. DRY DENSITY.

D	W
150-300	150
375-750	300
+750	600

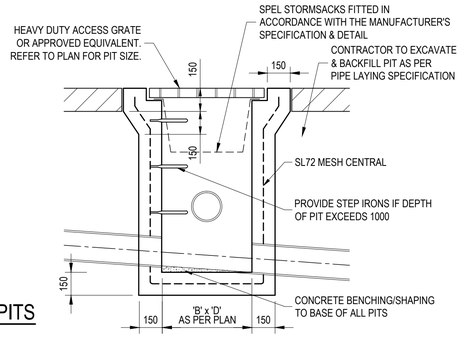
REINFORCED CONCRETE PIPE

TYPICAL PIPE LAYING DETAIL
1:20

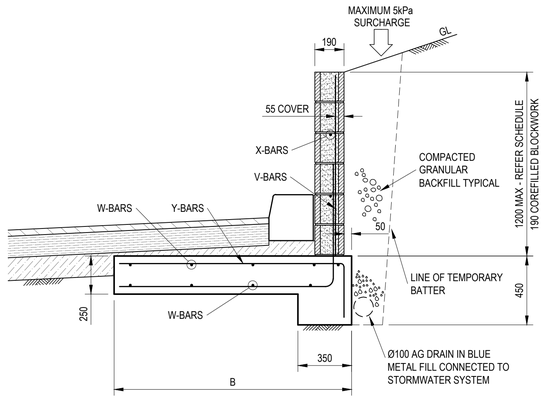


STEP IRONS FOR DRAINAGE PITS
NOTE:
1, FIRST RUNG 150mm DOWN FROM TOP, THEN SPACED AT 300 CENTRES.
2. STEP IRON MATERIAL, 20m DIAMETER MILD STEEL, HEAVY GALVANISED.

STEP IRONS FOR DRAINAGE PITS
1:20



TYPICAL SURFACE INLET PIT DETAIL
1:20
TYPICAL FOR ALL PITS IN DRIVEWAY/CARPARK AREAS.



400 to 800 HIGH RETAINING HEIGHT					
HEIGHT	B	V-BARS	W-BARS	X-BARS	Y-BARS
400	650	N12-400	N12-300	N12-400	N16-400
600	850	N12-400	N12-300	N12-400	N16-400
800	1150	N12-400	N12-300	N12-400	N16-400
1000	1350	N12-400	N12-300	N12-400	N12-400
1200	1550	N12-400	N12-300	N12-400	N12-400

TYPICAL EXTERNAL BLOCKWORK RETAINING WALL DETAILS
1:20

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PROPOSED DRAINAGE SWALE LONG SECTION

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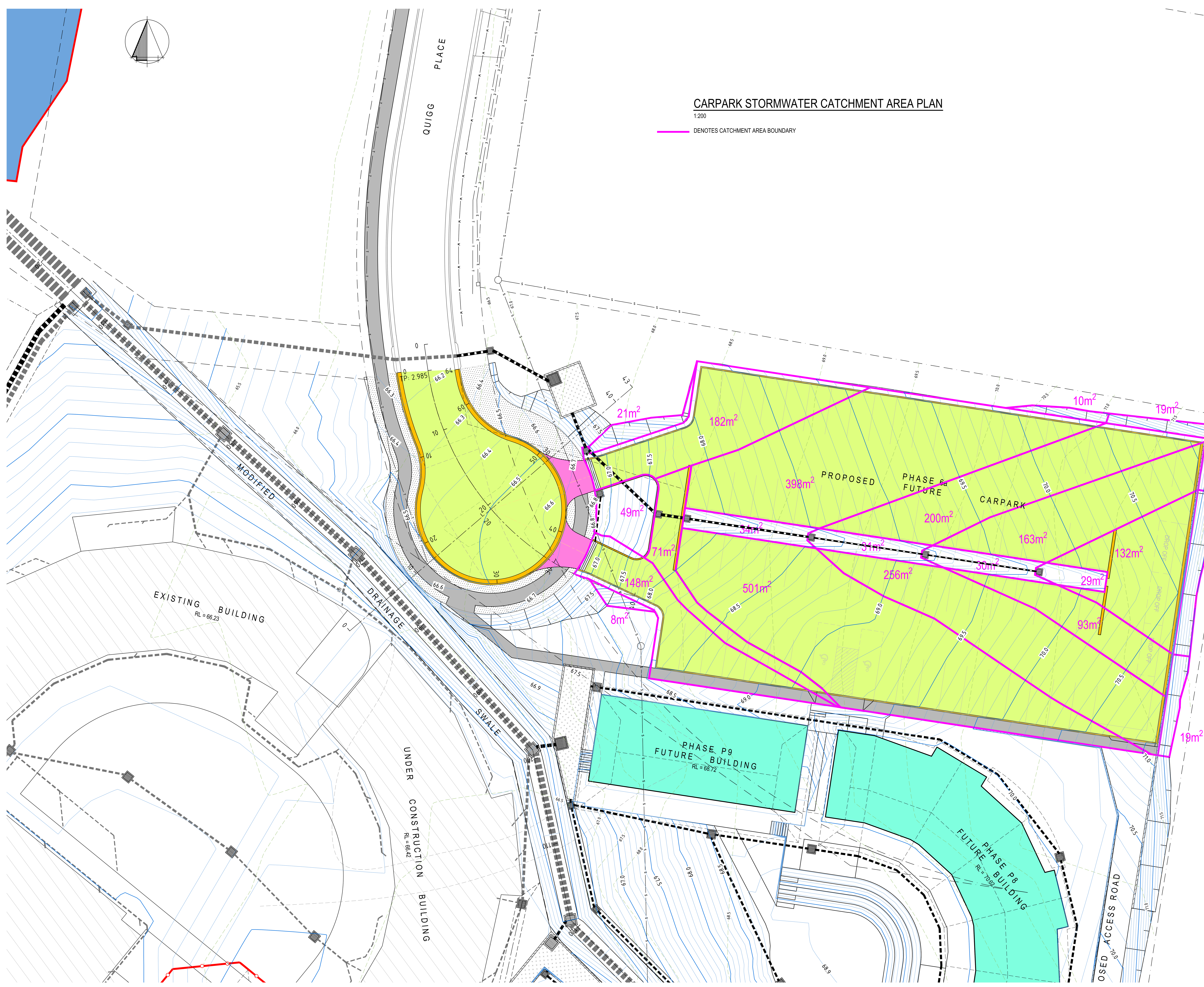
		1:200	C17 - D



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CARPARK CATCHMENT AREA PLAN

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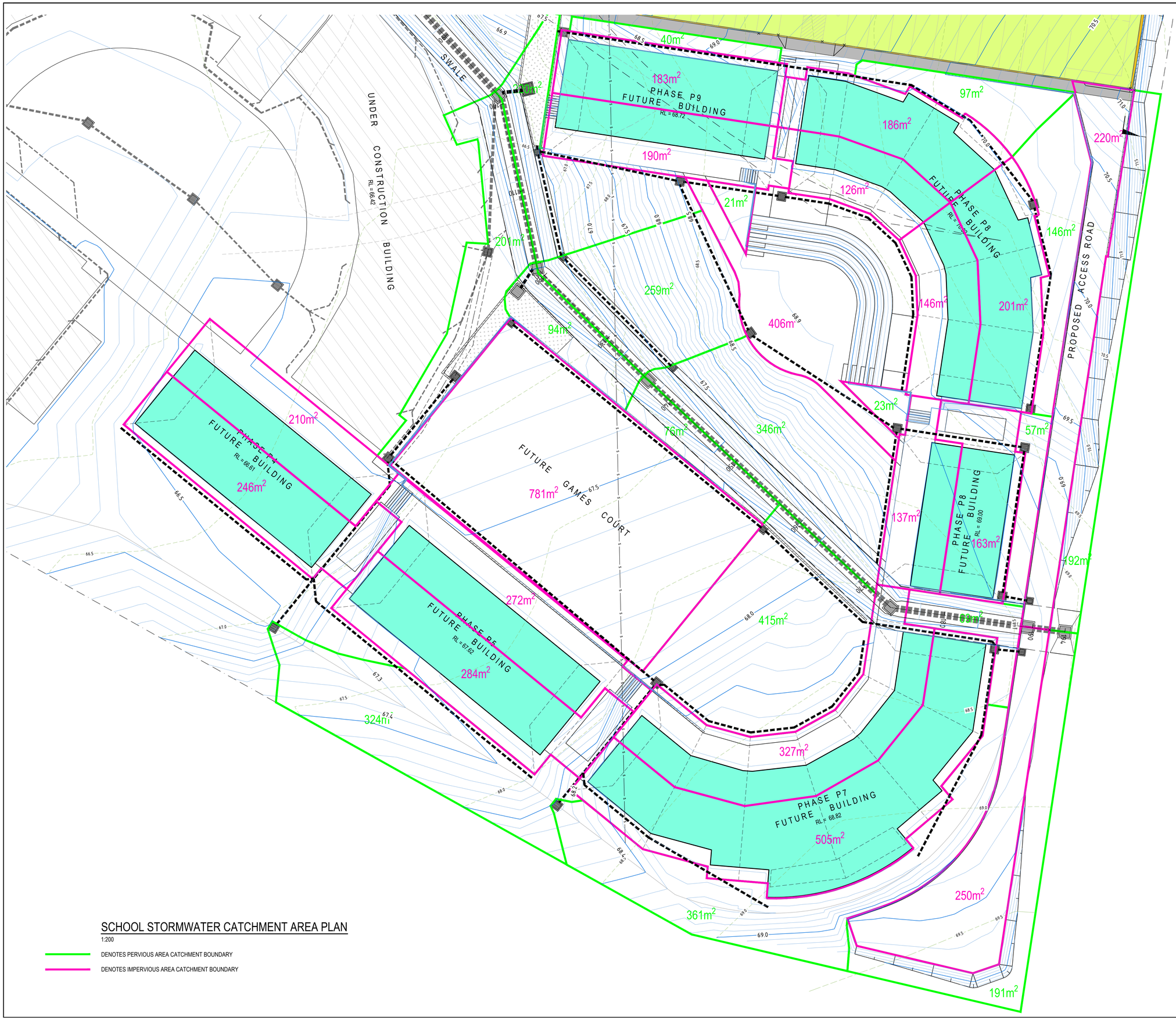
		1:200	C18 - D



SCHOOL STORMWATER CATCHMENT AREA PLAN

1:200

DENOTES PERVIOUS AREA CATCHMENT BOUNDARY

DENOTES IMPERVIOUS AREA CATCHMENT BOUNDARY

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SCHOOL STORMWATER CATCHMENT PLAN

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		1:200	C19 - D

MODIFIED BOUNDARY AREA SUMMARY PLAN

1:200

DENOTES PROPOSED COUNCIL DEDICATED AREA
TOTAL AREA = 160.9m²

DENOTES PROPOSED PRIVATE OWNERSHIP AREA
TOTAL AREA = 160.6m²

121.8m²

39.1m²

160.6m²

DROP OFF

DROP OFF

DROP OFF

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		1:200	C20 - D