

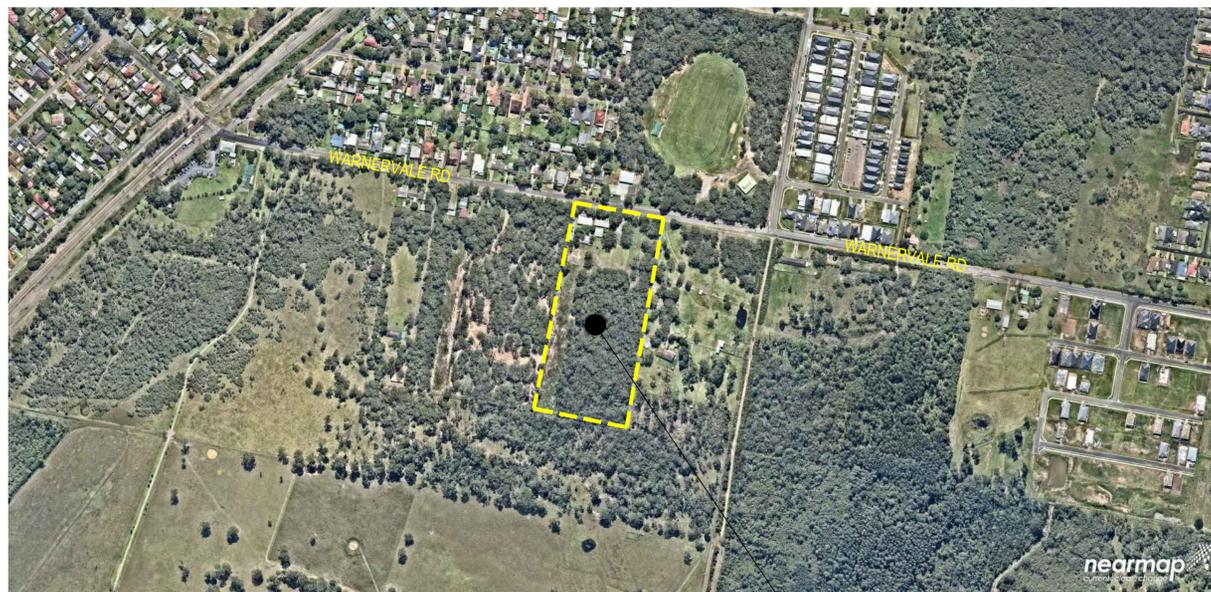
BILLARD LEECE PARTNERSHIP

THE NEW PRIMARY SCHOOL AT WARNERVALE

75 WARNERVALE RD

WARNERVALE 2259 NSW

COVER SHEET, LOCALITY PLAN & DRAWINGS SCHEDULE



LOCALITY PLAN
N.T.S

INDICATIVE AREA
OF WORKS

DRAWING SCHEDULE	
	GENERAL
80818098-01-CI-0001	COVER SHEET, LOCALITY PLAN & DRAWINGS SCHEDULE
80818098-01-CI-0002	CIVIL CONSTRUCTION NOTES
	PLANS AND SCHEDULES
80818098-CI-01-1101	SATE PLAN - LAYOUT 1
80818098-CI-01-1102	SATE PLAN - LAYOUT 2
80818098-01-CI-1201	STORMWATER PLAN - LAYOUT 1
80818098-01-CI-1202	STORMWATER PLAN - LAYOUT 2
80818098-01-CI-1204	STORMWATER SCHEDULES
80818098-01-CI-1401	SEDIMENTATION AND EROSION CONTROL PLAN - LAYOUT 1
80818098-01-CI-1402	SEDIMENTATION AND EROSION CONTROL PLAN - LAYOUT 2
	DETAILS
80818098-01-CI-2201	STORMWATER DETAILS - SHEET 1
80818098-01-CI-2202	STORMWATER DETAILS - SHEET 1
80818098-01-CI-2401	SEDIMENTATION AND EROSION CONTROL DETAILS

Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ

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Drawn	G.M.	Date	MAY 2019																				
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Approved		Date																					
		Datum	AHD	Scale	N.T.S.	Size	A1																
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CIVIL CONSTRUCTION NOTES

75 WARNERVALE ROAD, WARNERVALE

GENERAL NOTES

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCIES IN THESE DOCUMENTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
- G2. THE CONTRACTOR SHALL CHECK AND BE RESPONSIBLE FOR THE CORRECTNESS OF ALL DIMENSIONS AND ANY DISCREPANCY SHALL BE REPORTED IMMEDIATELY TO THE SUPERINTENDENT. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWINGS.
- G3. STABILITY OF THE BUILDING DURING CONSTRUCTION AND EXCAVATION IN THE VICINITY OF ADJACENT BUILDINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO PART OF THE STRUCTURE SHALL BE OVER STRESSED. APPROVAL OF ALL PROPOSALS MUST BE GRANTED BY THE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
- G4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER FORTY EIGHT (48) HOURS BEFORE THE REINFORCEMENT IS COMPLETED. THE CONTRACTOR SHALL ALLOW TWO (2) HOURS AFTER THE COMPLETION OF THE REINFORCEMENT FOR THE ENGINEER'S INSPECTION. CONCRETE SHALL NOT BE ORDERED UNTIL THE REINFORCEMENT IS APPROVED BY THE ENGINEER.
- G5. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT SAA CODES, THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITY AND THE SPECIFICATION.
- G6. NO CHANGES SHALL BE MADE WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.
- G7. U.N.O. DENOTES UNLESS NOTED OTHERWISE ON THE DRAWINGS.

BLOCK RETAINING WALLS

- RW1. VERTICAL RODS FROM BASE ARE TO BE FIXED USING TEMPLATES TO ENSURE ACCURATE SPACING AND POSITIONING.
- RW2. CONCRETE BLOCKS TO BE GRADE 15 IN ACCORDANCE WITH ASINZS4455.
- RW3. MORTAR 1:1:6 CEMENT:LIME:FINE AGGREGATE, SITE MIXED TO HAVE A COMPRESSIVE STRENGTH AT 12 DAYS OF 11 MPa.
- RW4. ALL HOLES TO BE CLEANED OF MORTAR AT END OF EACH DAY.
- RW5. GROUT: Fc = 20 MPa
SLUMP: = 230 MAXIMUM
AGGREGATE: = 10mm.
- RW6. ALL CORE HOLES TO BE VIBRATED TO ENSURE COMPACTION, USING A DEFORMED RODDING BAR.
- RW7. FILL CORES TO 1500 MAX. HEIGHT IN ANY ONE POUR. STOP POUR 50 BELOW TOP OF BLOCK. FINAL LEVELS FLUSH WITH TOP OF BLOCK.
- RW8. PROVIDE EXPANSION JOINTS AS DETAILED.
- RW9. DO NOT BACKFILL UNTIL RESTRAINING SLAB OVER & BASEMENT SLAB HAVE BEEN CAST & CURED. BACKFILLING TO BE BLUEMETAL AS DETAILED, WITH PROVISION OF CORE DRAIN, REFER TO HYDRAULIC ENGINEER'S DETAILS FOR SUBSOIL DRAINAGE REQUIREMENT.
- RW10. TANKING, SEALING AND DRAINAGE TO ARCHITECTS DETAILS.
- RW11. ALLOW FOR CLEAN-OUT BLOCKS AT BASE, IN ACCORDANCE WITH AS3700.

EROSION AND SEDIMENTATION CONTROL NOTES

- ESC1 ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH (a) LOCAL AUTHORITY REQUIREMENTS (b) EPA - POLLUTION CONTROL MANUAL FOR URBAN STORMWATER (c) DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT MANUAL - "URBAN EROSION AND SEDIMENT CONTROL"
- ESC2 EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES ARE PROVIDED FOR THE WHOLE OF THE WORKS. SHOULD THE CONTRACTOR STAGE THESE WORKS THEN THE DESIGN MAY REQUIRE TO BE MODIFIED. VARIATION TO THESE DETAILS MAY REQUIRE TO BE APPROVED BY THE RELEVANT AUTHORITIES. THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE IMPLEMENTED AND ADOPTED TO MEET THE VARYING SITUATIONS AS WORK ON SITE PROGRESSES.
- ESC3 MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
- ESC4 WHEN STORMWATER PITS ARE CONSTRUCTED PREVENT SITE RUNOFF ENTERING THE PITS UNLESS SILT FENCES ARE ERECTED AROUND THE PITS.
- ESC5 MINIMISE THE AREA OF SITE BEING DISTURBED AT ANY ONE TIME.
- ESC6 PROTECT ALL STOCKPILES OF MATERIALS FROM SCOUR AND EROSION. DO NOT STOCKPILE LOOSE MATERIAL IN ROADWAYS, NEAR DRAINAGE PITS OR IN WATERCOURSES.
- ESC7 ALL SOIL AND WATER CONTROL MEASURES ARE TO BE PUT BACK IN PLACE AT THE END OF EACH WORKING DAY, AND MODIFIED TO BEST SUIT SITE CONDITIONS.
- ESC8 CONTROL WATER FROM UPSTREAM OF THE SITE SUCH THAT IT DOES NOT ENTER THE DISTURBED SITE.
- ESC9 ALL CONSTRUCTION VEHICLES SHALL ENTER THE SITE VIA THE TEMPORARY CONSTRUCTION ENTRY/EXIT.
- ESC10 ALL VEHICLES LEAVING THE SITE SHALL BE CLEANED AND INSPECTED BEFORE LEAVING.
- ESC11 MAINTAIN ALL STORMWATER PIPES AND PITS CLEAR OF DEBRIS AND SEDIMENT. INSPECT STORMWATER SYSTEM AND CLEAN OUT AFTER EACH STORM EVENT.
- ESC12 CLEAN OUT ALL EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH STORM EVENT.

SITE PREPARATION

- ROAD WORKS**
- SP1. REMOVE TOP SOIL, ROOT AFFECTED SOIL, FILL AND OTHER DELETERIOUS MATERIAL TO EXPOSE NATURAL SUBGRADE.
 - SP2. THE EXPOSED SUBGRADE SHOULD THEN BE PROOF ROLLED WITH AT LEAST EIGHT (8) PASSES OF A 10 TONNE MIN. DEAD WEIGHT ROLLER. ANY SOFT OR HEAVING AREAS SHOULD BE REMOVED TO A MAXIMUM DEPTH OF 300mm AND REPLACED WITH CLEAN WELL GRADED MATERIAL SUCH AS RIPPED OR CRUSHED SANDSTONE COMPACTED TO AT LEAST 100% OF STANDARD MAXIMUM DRY DENSITY (SMDD) AT ±2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH AS1289.
 - SP3. COMPACTED FILL SHOULD BE PLACED IN LAYERS NOT EXCEEDING 150mm THICK AND COMPACTED TO AT LEAST 100% SMDD. FILL SHALL CONSIST OF CLEAN WELL GRADED MATERIAL SUCH AS RIPPED OR CRUSHED SANDSTONE WITH A MIN. CBR OF 15%.
 - SP4. DENSITY TESTING SHALL BE CARRIED OUT TO LEVEL 2 CERTIFICATION IN ACCORDANCE WITH AS3798.
 - SP5. SUB-BASE COURSE - TO BE DGS20 OR DGS40 OR RIPPED OR CRUSHED SANDSTONE WITH A CBR GREATER THAN 40%, MAXIMUM PARTICLE SIZE OF 60mm, WELL GRADED WITH A PLASTIC INDEX LESS THAN 10. COMPACT TO AN AVERAGE OF NOT LESS THAN 100% SMDD WITH A MINIMUM VALUE OF 98% SMDD.
 - SP6. ALL KERBS TO BE FORMED BY KERB MACHINE AND NOT BY HAND.
 - SP7. REMOVE TOP SOIL, ROOT AFFECTED SOIL, FILL AND OTHER DELETERIOUS MATERIAL TO EXPOSE NATURAL SUBGRADE.
 - SP8. THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED. ANY SOFT OR HEAVING AREAS SHOULD BE REPLACED WITH CLEAN WELL GRADED MATERIAL. FILL IF REQUIRED, SHOULD BE CLEAN AND WELL GRADED. COMPACT TO 100% SMDD.

STORMWATER CONSTRUCTION NOTES

- SW1. ESTABLISH EXACT LOCATION AND INVERT OF EXISTING SERVICES PRIOR TO COMMENCING WORKS.
- SW2. ALLOW TO PAY ALL LOCAL AUTHORITY FEES AS REQUIRED FOR PERIODIC INSPECTIONS/APPROVALS.
- SW3. ALL WORK TO BE IN ACCORDANCE WITH THE LOCAL COUNCIL STORMWATER POLICY.
- SW4. MINOR FLOW ARI = 20 YEARS
MAJOR FLOW ARI = 100 YEARS
- SW5. **PIPEWORK**
ALL WORKS TO COMPLY TO AS3500
- SW6. ALL NEW PIPES 300 DIA. & LARGER SHALL BE REINFORCED CONCRETE CLASS 2 WITH RUBBER RING JOINTS. WHERE ANGLED THE MINIMUM RADIUS SHALL BE 152m. 150/225/300mm DIA. STORMWATER PIPES SHALL BE SEWER CLASS UPVC. MINIMUM PIPE SIZE FOR AN UNDERGROUND PIPE TO BE 150mm. MINIMUM PIPE GRADIENTS 1% U.N.O.
- SW7. ALL DRAINAGE TRENCHES SHALL BE IN SOUND EXCAVATED MATERIAL. IF SOFT SPOTS EXIST, REMOVE AND BACKFILL WITH COMPACTED ROAD BASE (DGS40) WITH A MINIMUM CBR OF 25 COMPACT TO 98% STANDARD MAXIMUM DRY DENSITY TO AS 1289 E1.1.
- SW8. ALL PIPES SHALL BE BEDDED ON 100mm SAND BED AND BACKFILLED WITH SAND TO 150mm ABOVE BARREL OF PIPE. THE REMAINDER OF THE TRENCH WILL BE BACKFILLED IN 150mm COMPACTED LAYERS IN GRANULAR FILL NON DISPERSIVE (EMERSON CLASS 5 OR 6) MATERIAL - NO TOP SOIL, GRASS, ROOTS, OR DELETERIOUS MATERIAL. COMPACT TO 98% STANDARD MAXIMUM DRY DENSITY AT ±2% OMC.
- SW9. PROVIDE A 100mm DIA. UPVC. SLOTTED DRAINAGE PIPE 3000 LONG WRAPPED IN FILTER FABRIC SOCK IN ALL TRENCHES ADJACENT TO INLET PIPES TO PITS & CONNECTED TO PIT.
- SW10. OTHER SUB SOIL DRAINAGE PIPES SHALL BE 100mm DIA. UPVC SLOTTED BEDDED AND BACKFILLED WITH 20mm GAUGE BLUE METAL. CLEAN OUTS SHALL BE EXTENDED TO THE SURFACE AND PROVIDED WITH A SCREWED COVER PLATE FLUSH WITH THE FINISHED SURFACE LEVEL.
- SW11 ALL CONCRETE PITS CONSTRUCTED SHALL BE BEDDED AS PER PIPE SPECIFICATION. PIT BASES SHALL BE SMOOTH CONTOURED WITH MASS CONCRETE BENCHING PROVIDE STEP IRONS AS PER PIT SCHEDULE. PROVIDE HEAVY, MEDIUM OR LIGHT DUTY GALVANISED GRATE COVERS AS SPECIFIED IN SCHEDULE. ALL DRAINAGE WORKS ARE TO BE COMPLETED TO THE SATISFACTION OF THE SUPERVISING CIVIL ENGINEER. ALL WORKS TO COMPLY TO AS3500. HEADWALLS SHALL BE PRECAST CONCRETE BY 'BCP PRECAST' OR EQUAL. ALL PITS SHALL BE PRECAST CONCRETE TYPE DPT FOR DEEP PITS BY ICON INDUSTRIES OR EQUAL. PRECAST DRAINAGE PITS DEEPER THAN 1800mm SHALL HAVE 150mm MIN. WALL THICKNESS. 20mm DIA. GALV. MS. STEP IRONS SHALL BE INSTALLED IN PITS 1200mm AND DEEPER.
- SW12 UNLESS NOTED OTHERWISE ON THE PLANS, PROVIDE THE FOLLOWING MIN. COVER TO PIPE:
- UNDER LANDSCAPE & PAVEMENT - 300mm
- UNDER ROAD (TRAFFIC) - 600mm

CONCRETE

- C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT SAA CODE AS3600, WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- C2. CONCRETE QUALITY:

ELEMENT	SLUMP (MAX)	MAX AGG. SIZE	CEMENT TYPE	ADMIX.	CONCRETE GRADE
STRIP & PAD FOOTINGS	80	20mm	A	N/A	25 MPa
BORED PIERS	80	20mm	A	N/A	25 MPa
SLABS ON GROUND (EXTERNAL)	80	20mm	A	N/A	40 MPa
SUSPENDED SLABS & BEAMS	80	20mm	A	N/A	40 MPa
BLOCK WALL CORE GROUT FILLING	230	10mm	A	N/A	25 MPa

SUSPENDED CONCRETE FLOORS AND GROUT FILLING OF REINFORCED BLOCK WALLS:
MIN. CEMENT CONTENT = 300 kg/m³
MAX. PERMISSIBLE DRYING SHRINKAGE = 600 MICROSTRAIN AT 56 DAYS.

- C3. CLEAR CONCRETE COVER IN mm TO REINFORCEMENT U.N.O. SHALL BE AS FOLLOWS:-

STRUCTURAL ELEMENT	REINFORCEMENT COVER			
	INTERNAL		EXTERNAL	
	TOP	BTM.	TOP	BTM.
PILES	-	-	60	-
FOOTINGS	-	-	50	50
SLABS ON GROUND	30	30	40	40
SUSPENDED SLABS	20	20	30	30
SUSPENDED BEAMS	20	20	45	45
COLUMNS	30	30	45	45
CONCRETE WALLS	40	40	45	45
BLOCK RETAINING WALLS	-	-	65	-

- NOTES:
- 1. CONCRETE POURED OVER A MEMBRANE ON THE GROUND IS INCLUDED AS INTERNAL.
- 2. CONCRETE EXPOSED TO CORROSIVE VAPOURS, CORROSIVE GROUND WATER, SEA WATER OR SPRAY IS TO HAVE REINFORCEMENT COVER AS NOTED ON THE DRAWINGS.
- 3. CONCRETE REQUIRING A FIRE RESISTANCE RATING SHALL HAVE REINFORCEMENT COVER AS NOTED ON THE DRAWINGS.
- 4. EXTERNAL ABOVE GROUND ELEMENTS ARE CLASSIFIED IN NEAR COASTAL ENVIRONMENT.
- C4. CONDUITS, PIPES, ETC., SHALL NOT BE PLACED IN THE CONCRETE COVER TO REINFORCEMENT AND NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE SUPERINTENDENT.
- C5. CONCRETE SIZES DO NOT INCLUDE THE THICKNESS OF APPLIED FINISHES.
- C6. THE DEPTH OF BEAMS IS GIVEN FIRST AND INCLUDES THE SLAB THICKNESS.
- C7. CONSTRUCTION JOINTS, WHERE NOT SHOWN, SHALL BE LOCATED TO THE APPROVAL OF THE SUPERINTENDENT.
- C8. FORMWORK SHALL REMAIN IN POSITION FOR THE TIME SPECIFIED. WHERE SLABS AND BEAMS ARE TO SUPPORT MASONRY OVER, FORMWORK AND PROPS MUST BE REMOVED PRIOR TO THE CONSTRUCTION OF MASONRY.
- C9. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. THE VIBRATOR SHALL NOT BE USED TO SPREAD CONCRETE.
- C10. CONCRETE SHALL BE CURED IN ACCORDANCE WITH AS3600 WITH A PRODUCT COMPATIBLE WITH THE APPLIED FINISHES. CURING COMPOUNDS SHALL COMPLY WITH AS3799. PVA BASED CURING COMPOUNDS ARE NOT ACCEPTABLE.
- C11. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
- C12. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.

CONCRETE CONT'D

- C13. SPLICES IN THE MAIN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN. SPLICES IN THE DISTRIBUTION REINFORCEMENT MAY BE POSITIONED AS NECESSARY WITH SPLICES OF SUFFICIENT LENGTH TO DEVELOP THE FULL STRENGTH OF THE BARS. MINIMUM LAPS TO FABRIC SHALL BE TO OVER LAP TWO CROSS WIRES PLUS 50mm U.N.O. REINFORCEMENT SHALL BE SECURELY TIED AT ALL LAPS AND INTERSECTIONS WITH 1.25mm BLACK ANNEALED WIRE. THE WRITTEN APPROVAL OF THE SUPERINTENDENT SHALL BE OBTAINED FOR OTHER SPLICES WHERE THE LAP LENGTH IS NOT SHOWN. IT SHALL DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.
- C14. ALL UNSUPPORTED BARS SHALL BE TIED IN A TRANSVERSE DIRECTION WITH N12:300 U.N.O.
- C15. REINFORCEMENT SHALL BE SUPPORTED ON APPROVED PLASTIC OR PLASTIC TIPPED WIRE STOOLS AT NOT MORE THAN 600mm CENTRES BOTHWAYS IN SLABS AND AT 1000mm CENTRES IN BEAMS.



- SL..... DENOTES GRADE 500 DEFORMED WIRE REINFORCING SQUARE FABRIC OF DUCTILITY CLASS L TO AS4671.
- RL..... DENOTES GRADE 500 DEFORMED WIRE REINFORCING RECTANGULAR FABRIC OF DUCTILITY CLASS L TO AS4671.
- R DENOTES GRADE 250 ROUND BARS OF DUCTILITY CLASS N TO AS4671
- N DENOTES GRADE 500 DEFORMED BARS OF DUCTILITY CLASS N TO AS4671.
- S DENOTES GRADE 250 DEFORMED BARS OF DUCTILITY CLASS N TO AS4671.
- C17. FABRIC SHALL BE SUPPLIED IN FLAT SHEETS, ROLLS WILL NOT BE ACCEPTED
- C18. TYPICAL REINFORCEMENT NOTATION:-
SN24-200 INDICATES
5 DENOTES NUMBER OF BARS REQUIRED
N DENOTES GRADE OF REINFORCEMENT
24 DENOTES BAR DIAMETER IN MILLIMETRES
200 DENOTES BAR SPACING IN MILLIMETRES
TYPICAL ABBREVIATIONS:-
B DENOTES BARS IN BOTTOM LAYER
T DENOTES BARS IN TOP LAYER
ALT... DENOTES BARS ALTERNATING
NF ... DENOTES BARS IN NEAR FACE
FF ... DENOTES BARS IN FAR FACE
EF ... DENOTES BARS IN EACH FACE
- C19. FOR SLAB FALLS, CHAMFERS, REGLETTS, DRIP GROOVES, ETC., REFER TO THE ARCHITECT'S DRAWINGS.
- C20. LAP LENGTHS FOR DEFORMED BARS AS FOLLOWS:

BAR TYPE AND SIZE	VERTICAL BARS	HORIZONTAL BARS WITH MORE THAN 300mm OF CONCRETE BELOW BAR	OTHER LOCATIONS	90° COG LENGTH
N12	500	550	500	200
N16	700	800	700	200
N20	1000	1250	1000	250
N24	1200	1500	1200	300
N28	1400	1750	1400	350
N32	1600	1900	1600	400
N36	1700	2200	1700	450

ASPHALTIC CONCRETE

- GENERAL**
- AC1. ALL ASPHALTIC PAVING TO BE ACCORDANCE WITH AS2734 "ASPHALT (HOTMIXED) PAVING - GUIDE TO GOOD PRACTICE"
 - AC2. MINERAL AGGREGATES TO COMPLY WITH CLAUSE 3 MATERIALS D.M.R. FORM 952 "SPECIFICATION FOR THE SUPPLY AND DELIVERY OF AGGREGATE FOR USE IN PLANT MIX."
 - AC3. MINERAL FILLER TO COMPLY WITH AS2357-1980 MINERAL FILLERS FOR ASPHALT.
 - AC4. BITUMEN BINDER SHALL COMPLY WITH D.M.R. FORM 337 "SPECIFICATION FOR RESIDUAL BITUMEN"
 - AC5. JOB MIX - 10mm NOMINAL SIZE AGGREGATE. MINIMUM BITUMEN CONTENT (%) BY MASS OF TOTAL MASS - 5.1%.
 - AC6. MIX STABILITY - BETWEEN 16kN AND 36kN AS DETERMINED BY D.M.R. TEST METHOD T601 AND T603.
 - AC7. AIR VOIDS IN COMPACTED MIX - BETWEEN 4% AND 7% OF THE VOLUME OF THE MIX.
 - AC8. VOIDS FILLED IN BINDER - 65-80% OF AIR VOIDS IN THE TOTAL MINERAL AGGREGATE FILLED BY BINDER IN ACCORDANCE WITH D.M.R. TEST METHOD T601, T605 AND T606.
 - AC9. THE EXISTING SURFACE TO BE SEALED SHALL BE DRY AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL SUPERFICIAL FOREIGN MATTER
 - AC10. ALL DEPRESSIONS ON UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE.
TACK COAT
 - AC11. THE WHOLE OF THE AREA TO BE SHEETED WITH ASPHALTIC CONCRETE SHALL BE LIGHTLY AND EVENLY COATED WITH RAPID SETTING BITUMEN COMPLYING WITH D.M.R. FORM 305. APPLICATION RATE FOR RESIDUAL BITUMEN SHALL BE 0.15 TO 0.30 LITRES/SQUARE METRE. APPLICATION SHALL BE BY MEANS OF A MECHANICAL SPRAYER WITH SPRAY BAR.
SPREADING
 - AC12. ALL ASPHALTIC CONCRETE SHALL BE SPREAD WITH A SELF PROPELLED PAVING MACHINE
 - AC13. THE ASPHALTIC CONCRETE SHALL BE LAID AT A MIX TEMPERATURE AS SHOWN BELOW:-

ROAD SURFACE TEMPERATURE IN SHADE (°C)	MIX TEMPERATURE (°C)
5 - 10	NOT PERMITTED
10 - 15	150
15 - 25	145
OVER 25	140

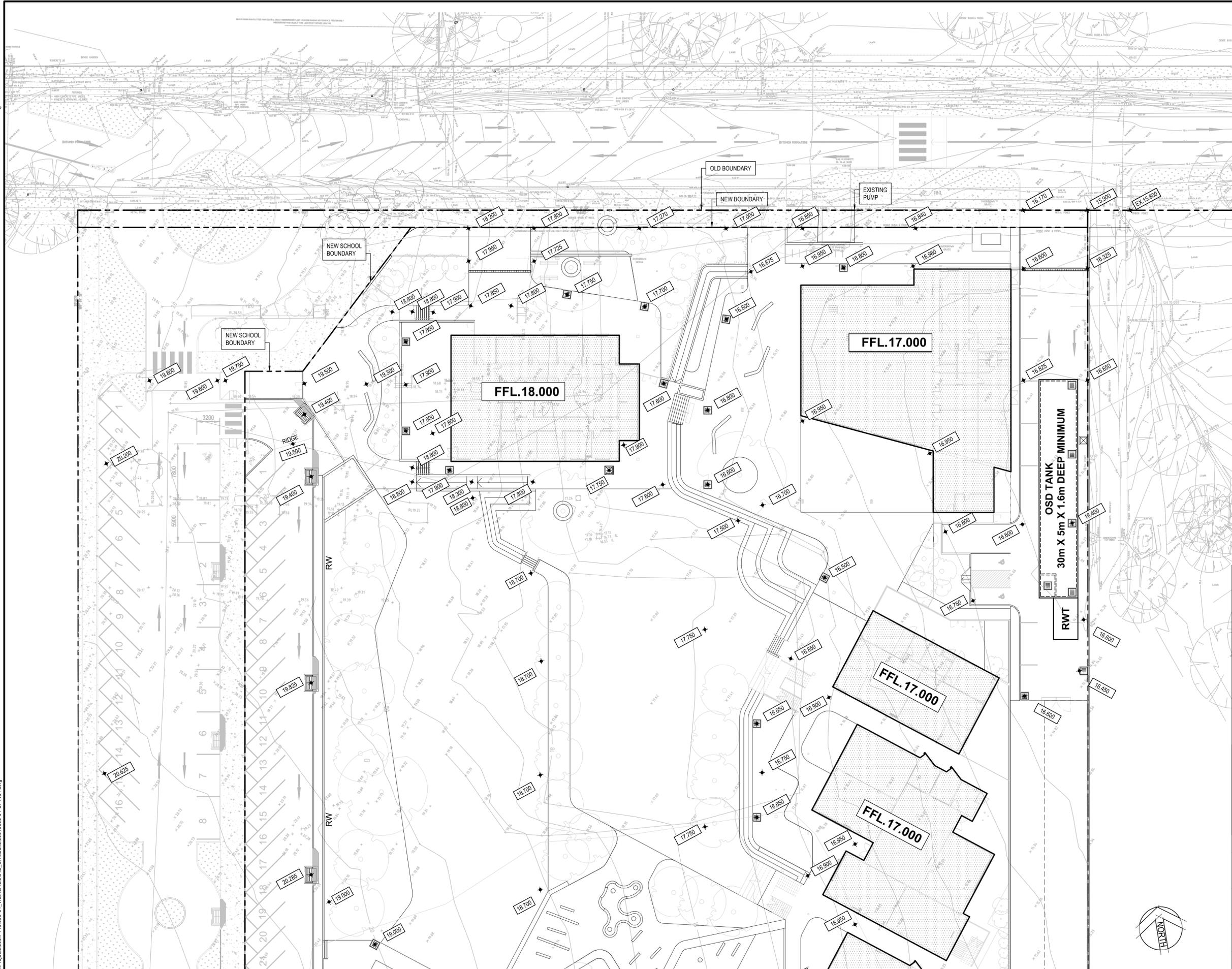
- AC14. ASPHALTIC CONCRETE SHALL NOT BE LAID WHEN THE ROAD SURFACE IS WET OR WHEN COLD WINDS SHALL CHILL THE MIX TO ADVERSELY AFFECT SPREADING AND COMPACTION.
- AC15. THE MINIMUM COMPACTED THICKNESS IS 30mm OVER NEW PAVEMENTS.
JOINTS
- AC16. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM.
- AC17. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.
COMPACTION
- AC18. ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS.
- AC19. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 105 °C.
- AC20. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 60°C.
- AC21. MINIMUM CHARACTERISTICS VALUE OF RELATIVE COMPACTION OF A LOT WHEN TESTED IN ACCORDANCE WITH D.M.R. FORM 612 SHALL BE 95%.
FINISHED PAVEMENT PROPERTIES
- AC22. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE TO SHAPE AND SHALL NOT VARY MORE THAN 10mm FROM THE SPECIFIED PLAN LEVEL AT ANY POINT SHALL NOT DEVIATE FROM THE BOTTOM OF A 3m STRAIGHT EDGE LAID IN ANY DIRECTION BY MORE THAN 5mm.

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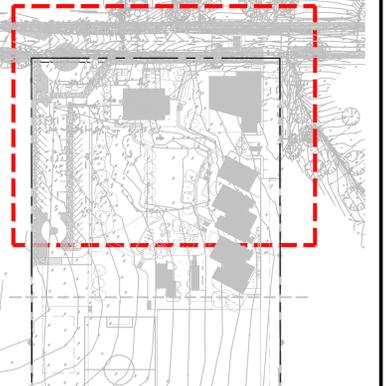
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Drawn G.M. Date MAY 2019	Client BILLARD LEECE PARTNERSHIP
Checked V.J. Date MAY 2019	Project THE NEW PRIMARY SCHOOL AT WARNERVALE
Designed V.J. Date MAY 2019	75 WARNERVALE RD WARNERVALE 2259 NSW
Verified V.J. Date MAY 2019	Status PRELIMINARY
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	Revision 4



NOTE:
FOR RLS AND STORMWATER DETAILS OF
WARNERVALE ROAD UPGRADE (INCLUDING NEW
ROUNDBOUT REFER ROADS CIVIL PACKAGE)



SITE KEY PLAN
SCALE 1:2000

LEGEND

- PROPOSED STORMWATER PIT - SOLID COVER
- EXISTING STORMWATER PIT
- PROPOSED STORMWATER PIT - GRATE COVER
- PROPOSED LEVEL
- EXISTING LEVEL TO REMAIN (C.O.S.)
- EXISTING LEVEL
- RW RETAINING WALL
- SWALE

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1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ



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Checked	Date	
V.J.	MAY 2019	
Designed	Date	
V.J.	MAY 2019	
Verified	Date	
V.J.	MAY 2019	
Approved		

Client **BILLARD LEECE PARTNERSHIP**
Project **THE NEW PRIMARY SCHOOL AT WARNERVALE**
75 WARNERVALE RD
WARNERVALE 2259 NSW

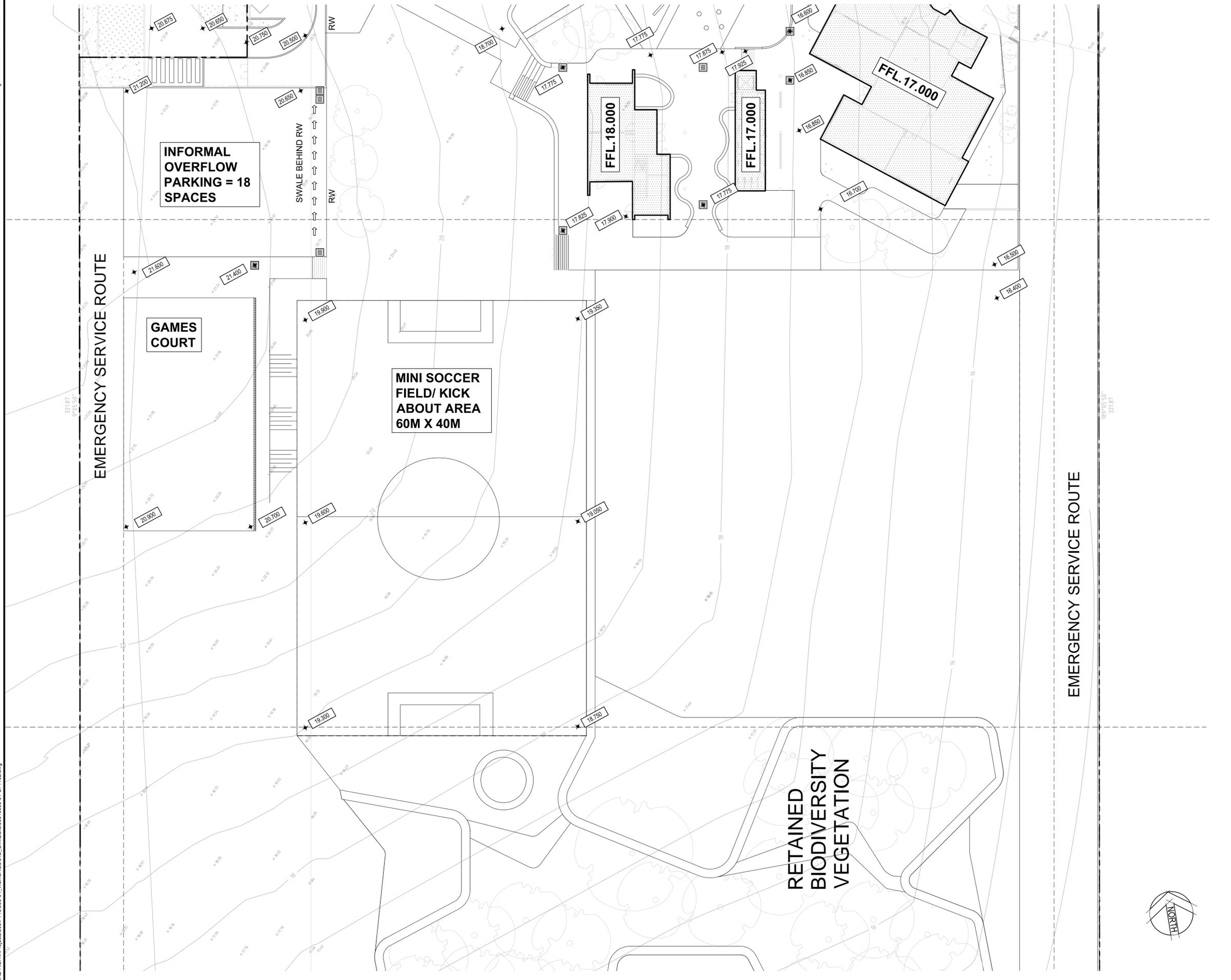
Title **SITE PLAN**
LAYOUT 1

Status **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION PURPOSES

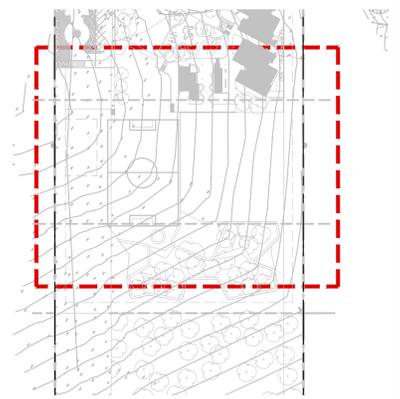
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Drawing Number	80818098-01-CI-1101	Revision	4
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FOR CONTINUATION OF SITE PLAN REFER TO DRAWING 80818098-01-CI-1102



NOTE:
FOR RLS AND STORMWATER DETAILS OF
WARNERVALE ROAD UPGRADE (INCLUDING NEW
ROUNDBOUT REFER ROADS CIVIL PACKAGE)



SITE KEY PLAN
SCALE 1:2000

LEGEND

- PROPOSED STORMWATER PIT - SOLID COVER
- EXISTING STORMWATER PIT
- PROPOSED STORMWATER PIT - GRATE COVER
- PROPOSED LEVEL
- EXISTING LEVEL TO REMAIN (C.O.S.)
- EXISTING LEVEL
- RW RETAINING WALL
- SWALE

Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ

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Verified	V.J.	Date	MAY 2019	
Approved		Date		

Client: **BILLARD LEECE PARTNERSHIP**
 Project: **THE NEW PRIMARY SCHOOL AT WARNERVALE**
 75 WARNERVALE RD
 WARNERVALE 2259 NSW

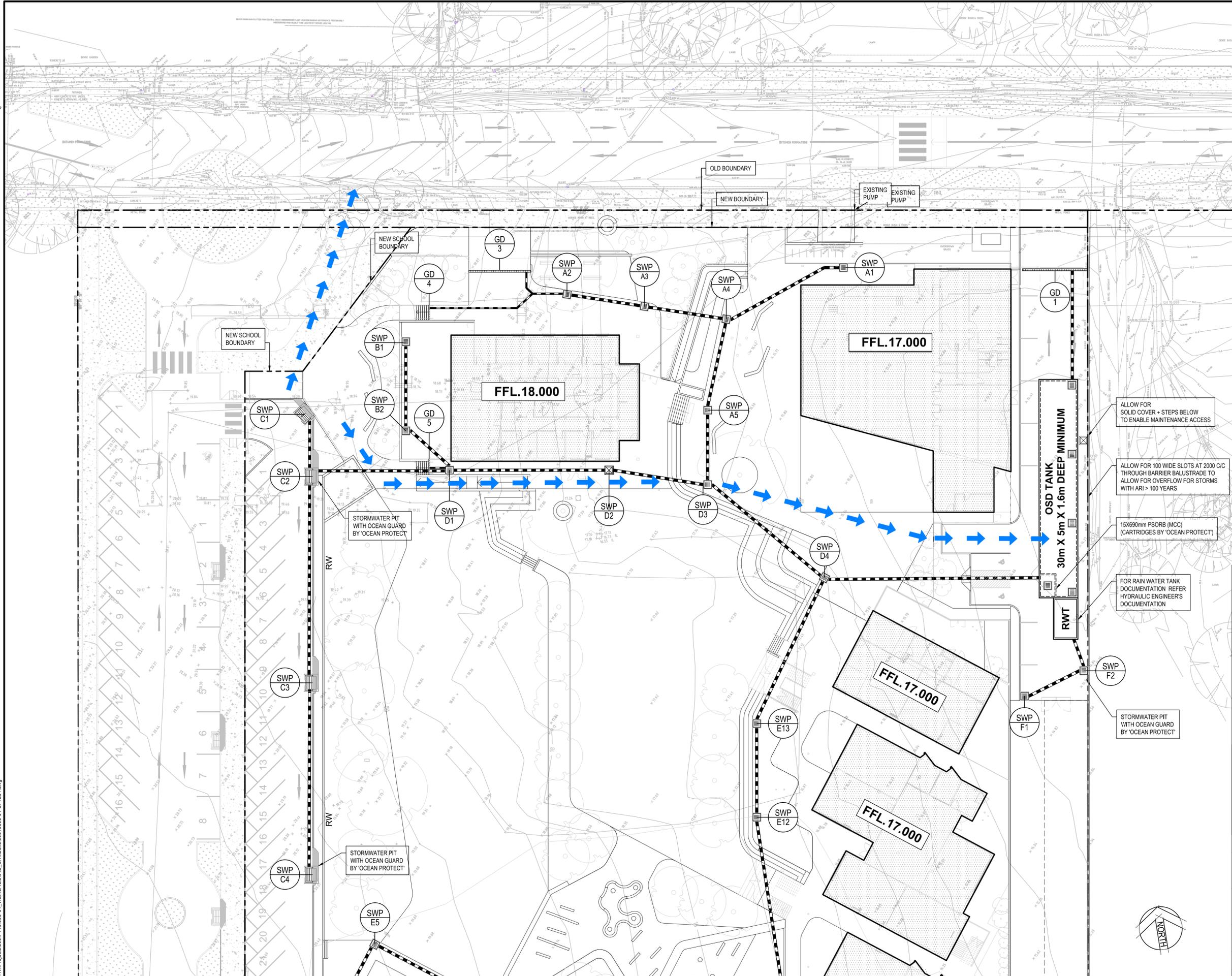
Title: **SITE PLAN LAYOUT 2**

Status: **PRELIMINARY**
 NOT TO BE USED FOR CONSTRUCTION PURPOSES

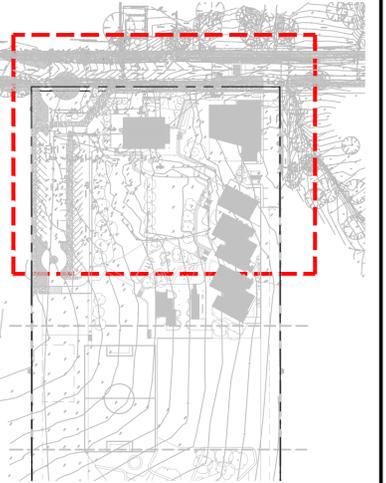
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Drawing Number	80818098-01-CI-1102	Revision	4
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NOTE:
FOR RLS AND STORMWATER DETAILS OF
WARNERVALE ROAD UPGRADE (INCLUDING NEW
ROUNDBOUT REFER ROADS CIVIL PACKAGE)



SITE KEY PLAN
SCALE 1:2000

LEGEND

- PROPOSED STORMWATER PIPE, MINIMUM Ø150, MINIMUM 1% GRADIENT (U.N.O.)
- EXISTING STORMWATER PIPE (C.O.S.)
- SUBSOIL DRAIN
- EXISTING STORMWATER PIT
- PROPOSED JUNCTION PIT - SOLID COVER
- PROPOSED STORMWATER PIT - GRATE COVER
- EXISTING LEVEL
- OVERLAND FLOW

- ALLOW FOR SOLID COVER + STEPS BELOW TO ENABLE MAINTENANCE ACCESS
- ALLOW FOR 100 WIDE SLOTS AT 2000 C/C THROUGH BARRIER BALUSTRADE TO ALLOW FOR OVERFLOW FOR STORMS WITH ARI > 100 YEARS
- 15X690mm PSORB (MCC) (CARTRIDGES BY 'OCEAN PROTECT')
- FOR RAIN WATER TANK DOCUMENTATION REFER HYDRAULIC ENGINEER'S DOCUMENTATION
- STORMWATER PIT WITH OCEAN GUARD BY 'OCEAN PROTECT'

Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ



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Verified	V.J.	Date	MAY 2019	
Approved		Date		

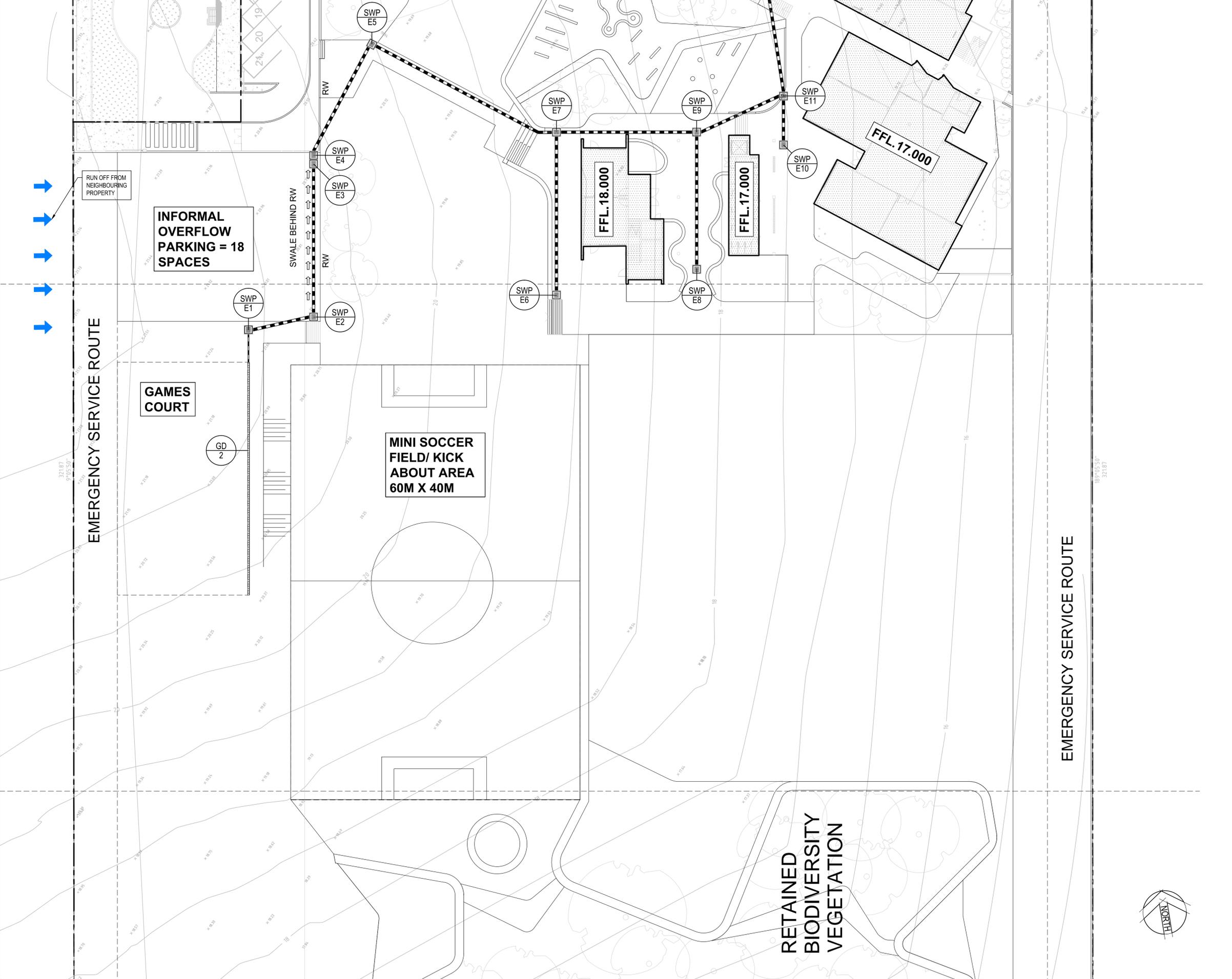
Client **BILLARD LEECE PARTNERSHIP**
Project **THE NEW PRIMARY SCHOOL AT WARNERVALE**
75 WARNERVALE RD
WARNERVALE 2259 NSW
Title **STORMWATER PLAN LAYOUT 1**

Status **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION PURPOSES

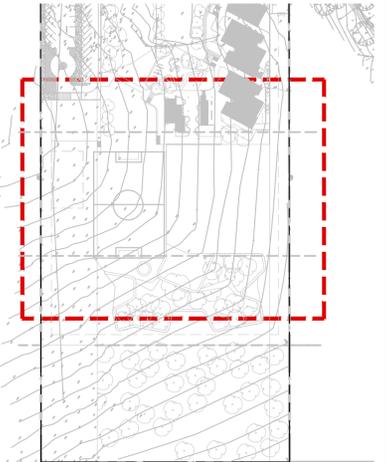
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Drawing Number	80818098-01-CI-1201				Revision	4

FOR CONTINUATION OF STORMWATER PLAN REFER TO DRAWING 80818098-01-CI-1202

FOR CONTINUATION OF STORMWATER PLAN REFER TO DRAWING 80818098-01-CI-1201



NOTE:
FOR RLS AND STORMWATER DETAILS OF
WARNERVALE ROAD UPGRADE (INCLUDING NEW
ROUNDBOUT REFER ROADS CIVIL PACKAGE)



SITE KEY PLAN
SCALE 1:2000

LEGEND

- PROPOSED STORMWATER PIPE, MINIMUM Ø150, MINIMUM 1% GRADIENT (L.N.O.)
- EXISTING STORMWATER PIPE (C.O.S.)
- SUBSOIL DRAIN
- EXISTING STORMWATER PIT
- PROPOSED JUNCTION PIT - SOLID COVER
- PROPOSED STORMWATER PIT - GRATE COVER
- EXISTING LEVEL
- OVERLAND FLOW

Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
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Verified	V.J.	Date	MAY 2019	
Approved		Date		

Client **BILLARD LEECE PARTNERSHIP**
Project **THE NEW PRIMARY SCHOOL AT WARNERVALE
75 WARNERVALE RD
WARNERVALE 2259 NSW**
Title **STORMWATER PLAN
LAYOUT 2**

Status **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	AHD	Scale	1:250	Size	A1	
Drawing Number	80818098-01-CI-1202				Revision	4



STORMWATER PIT SCHEDULE

SWP No.	Pit Cover Level (RL)	Pit Invert Level (IL)	Depth (mm)	Internal Pit Size	Pit Type	Cover Type	Cover Class	Remarks
SWP-A1	16.800			900X900	SIP	GRATE	B	
SWP-A2	17.750			900X900	SIP	GRATE	B	
SWP-A3	16.700			900X900	SIP	GRATE	B	
SWP-A4	16.800			900X900	SIP	GRATE	B	
SWP-A5	16.800			900X900	SIP	GRATE	B	
SWP-B1	17.800			900X900	SIP	GRATE	B	
SWP-B2	17.800			900X900	SIP	GRATE	B	
SWP-C1	19.400			900X450	KIP	GRATE	D	1.2m LINTEL
SWP-C2	19.400			900X450	KIP	GRATE	D	1.8m LINTEL
SWP-C3	19.825			900X450	KIP	GRATE	D	1.8m LINTEL
SWP-C4	20.285			900X450	KIP	GRATE	D	1.8m LINTEL
SWP-D1	17.550			900X900	SIP	GRATE	B	
SWP-D2	17.750			900X900	JP	GRATE	B	
SWP-D3	16.600			900X900	SIP	GRATE	B	
SWP-D4	16.500			900X900	SIP	GRATE	B	
SWP-E1	21.400			900X900	SIP	GRATE	B	
SWP-E2	21.300			900X900	SIP	GRATE	B	
SWP-E3	20.650			900X900	SIP	GRATE	B	
SWP-E4	20.650			900X900	SIP	GRATE	B	
SWP-E5	19.000			900X900	SIP	GRATE	B	
SWP-E6	17.825			900X900	SIP	GRATE	B	
SWP-E7	17.775			900X900	SIP	GRATE	B	
SWP-E8	17.775			900X900	SIP	GRATE	B	
SWP-E9	17.775			900X900	SIP	GRATE	B	
SWP-E10	16.850			900X900	SIP	GRATE	B	
SWP-E11	16.600			900X900	SIP	GRATE	B	
SWP-E12	16.650			900X900	SIP	GRATE	B	
SWP-E13	16.650			900X900	SIP	GRATE	B	
SWP-F1	16.600			900X900	SIP	GRATE	C	
SWP-F2	16.450			900X900	SIP	GRATE	C	

GRATED DRAIN TYPE SCHEDULE

LABEL	TYPE	MINIMUM INTERNAL DEPTH	INTERNAL WIDTH	GRATE LOAD CLASS	REMARK
GD1	81471-"EVOMAX" 200 H	200	300	C	HELLPROOF ANTI- SLIIP OR SIMILAR APPROVED
GD2	81471-"EVOMAX" 200 H	200	200	B	HELLPROOF ANTI- SLIIP OR SIMILAR APPROVED
GD3	81471-"EVOMAX" 200 H	200	200	B	HELLPROOF ANTI- SLIIP OR SIMILAR APPROVED
GD4	81471- "EVOMAX"200 H	200	200	B	HELLPROOF ANTI- SLIIP OR SIMILAR APPROVED
GD5	81471- "EVOMAX"200 H	200	200	B	HELLPROOF ANTI- SLIIP OR SIMILAR APPROVED

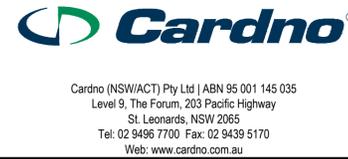
PIT SCHEDULE NOTES

PIT INVERTS SHOWN REFER TO TOP OF BENCHING ON PIT CENTRELINE.

- LEVEL OF INLET AND OUTLET PIPES TO SUIT PIT INVERT LEVELS SHOWN ON PIT SCHEDULE.
- ALL FIGURES ARE IN mm.
- Ex DENOTES EXISTING.
- COVER LEVELS TO JUNCTION PITS SHOWN ARE INDICATIVE ONLY. FINAL LEVEL TO SUIT ADJACENT PAVEMENT/GROUND LEVELS AND GRADE.
- DEPTH OF PIT SHOWN IS THE DIFFERENCE BETWEEN PIT COVER R.L AND INVERT R.L. (I.E. DOES NOT ALLOW FOR BENCHING THICKNESS)

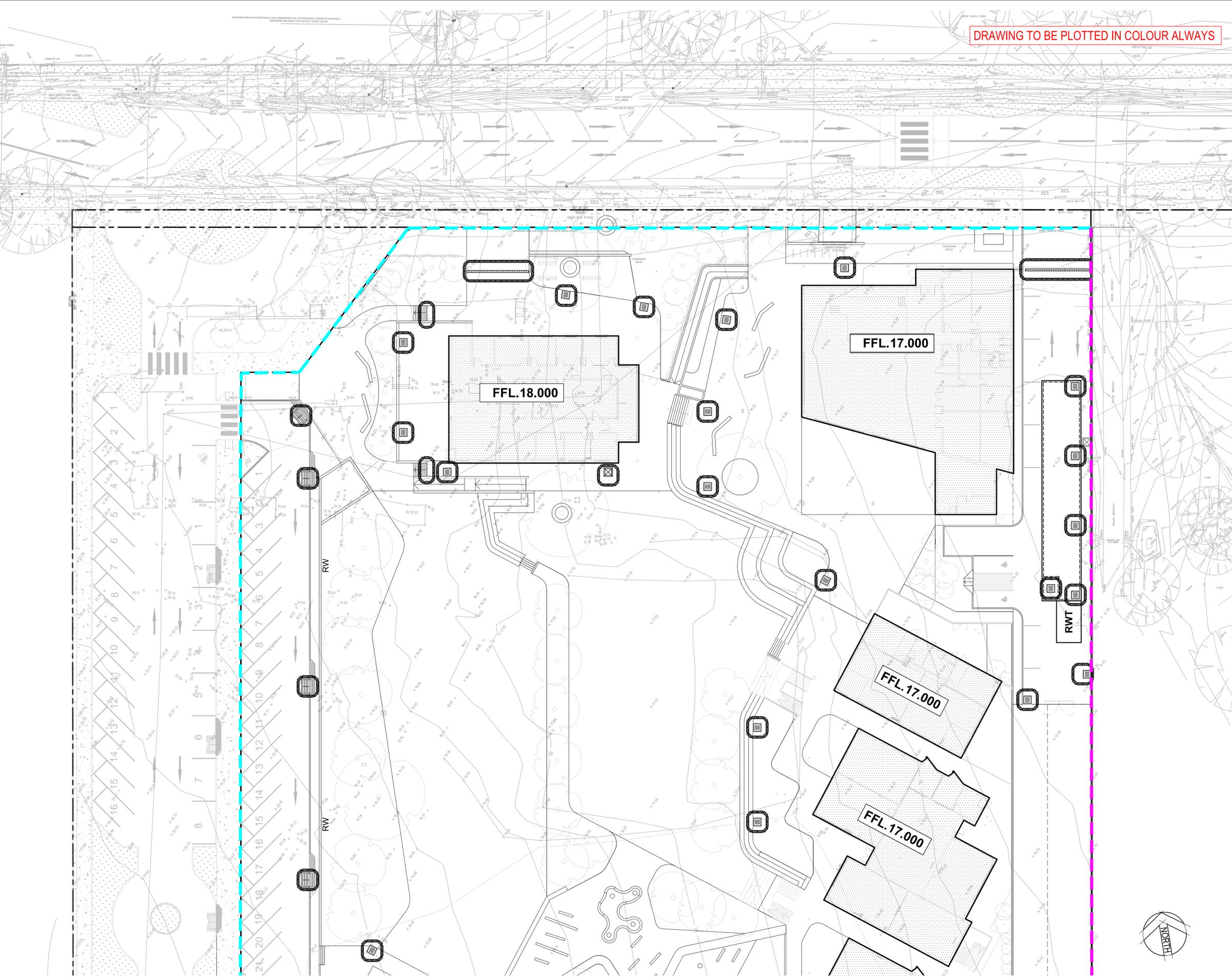
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4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ

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Checked V.J.	Date MAY 2019	Project THE NEW PRIMARY SCHOOL AT WARNERVALE
Designed V.J.	Date MAY 2019	75 WARNERVALE RD WARNERVALE 2259 NSW
Verified V.J.	Date MAY 2019	Title STORMWATER SCHEDULES
Approved		Status PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES
		Datum AHD
		Scale N/A
		Size A1
		Drawing Number 80818098-01-CI-1204
		Revision 4

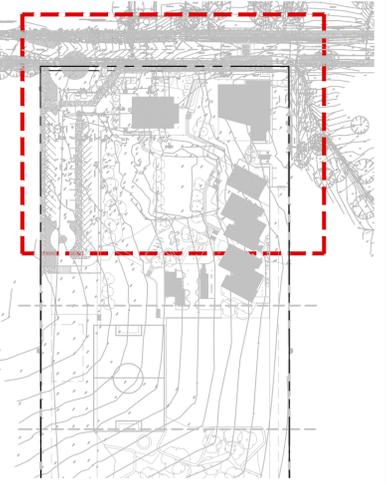
DRAWING TO BE PLOTTED IN COLOUR ALWAYS



LEGEND

-  SITE FENCE
-  SILT FENCE
-  STORMWATER PIT
-  SILT TRAP/SAND BAGS
-  TEMPORARY CONSTRUCTION VEHICLE EXIT

NOTE
 SITE ACCESS AND STOCKPILE LOCATION MAY CHANGE DEPENDING ON CONSTRUCTION PREFERENCE



SITE KEY PLAN
 SCALE 1:2000

Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
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Approved		Date		

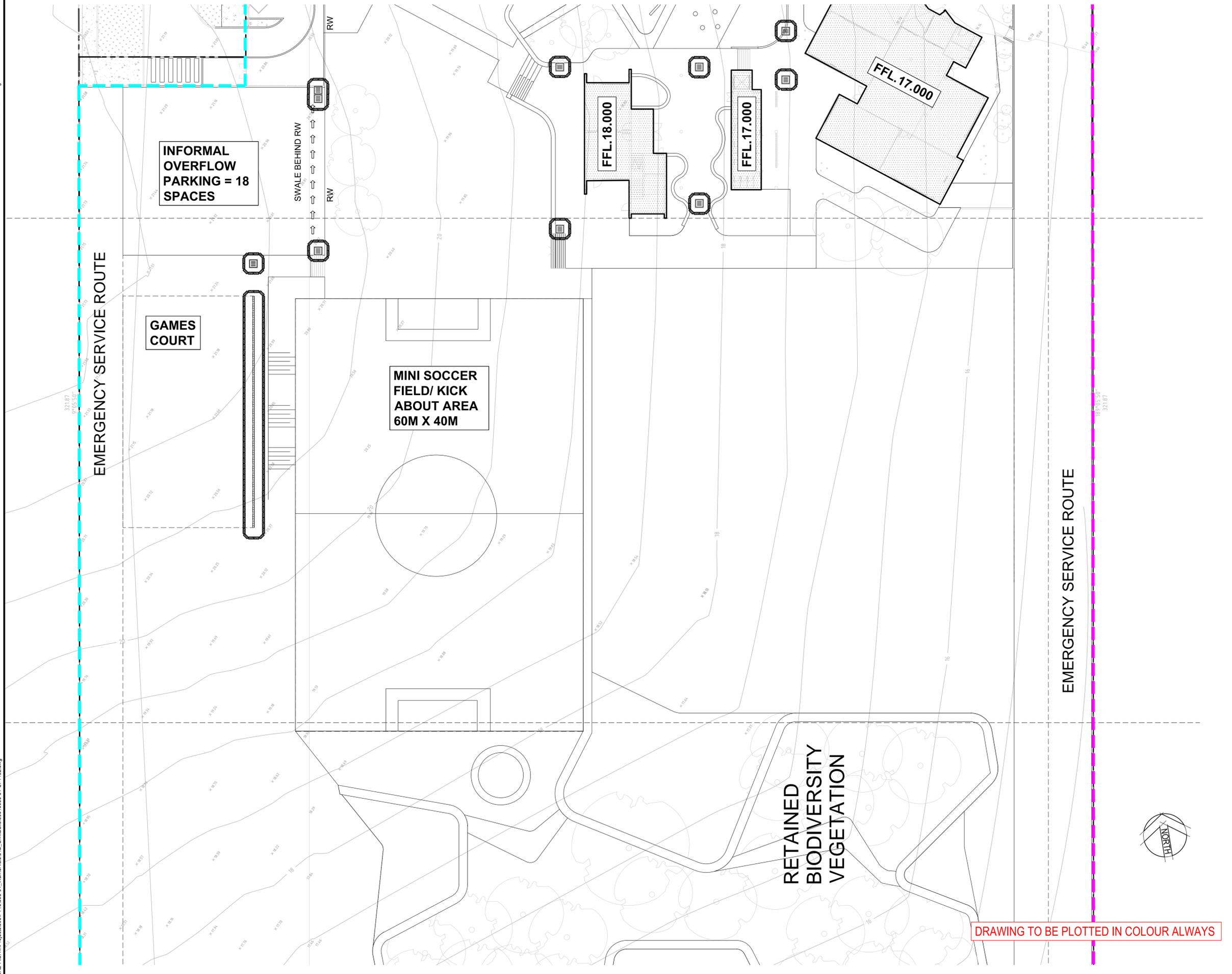
Client **BILLARD LEECE PARTNERSHIP**
 Project **THE NEW PRIMARY SCHOOL AT WARNERVALE**
 75 WARNERVALE RD
 WARNERVALE 2259 NSW
 Title **SEDIMENTATION AND EROSION CONTROL PLAN LAYOUT 1**

Status **PRELIMINARY**
 NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	AHD	Scale	1:250	Size	A1	
Drawing Number	80818098-01-CI-1401				Revision	4

FOR CONTINUATION OF SEDIMENTATION AND EROSION CONTROL PLAN REFER TO DRAWING 80818098-01-CI-1402





LEGEND

- SITE FENCE
- SILT FENCE
- STORMWATER PIT
- SILT TRAP/SAND BAGS
- TEMPORARY CONSTRUCTION VEHICLE EXIT

NOTE
SITE ACCESS AND STOCKPILE LOCATION MAY CHANGE DEPENDING ON CONSTRUCTION PREFERENCE



SITE KEY PLAN
SCALE 1:2000

Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ

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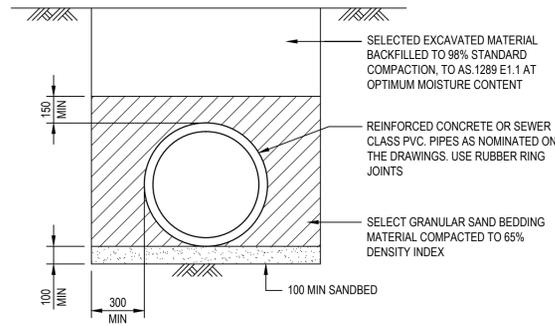
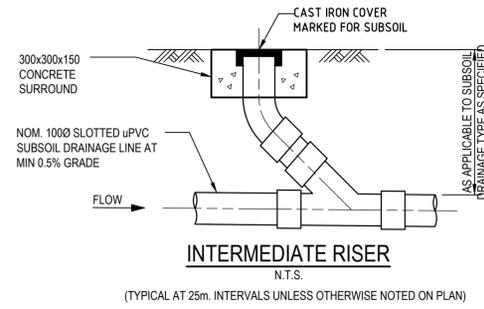
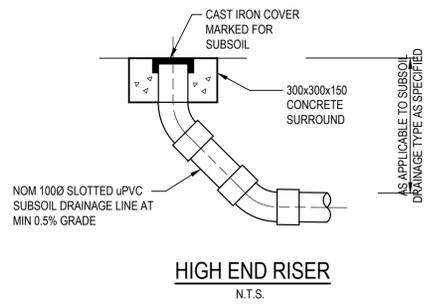
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Verified	V.J.	Date	MAY 2019	
Approved		Date		

Client	BILLARD LEECE PARTNERSHIP
Project	THE NEW PRIMARY SCHOOL AT WARNERVALE 75 WARNERVALE RD WARNERVALE 2259 NSW
Title	SEDIMENTATION AND EROSION CONTROL PLAN LAYOUT 2

Status: **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION PURPOSES

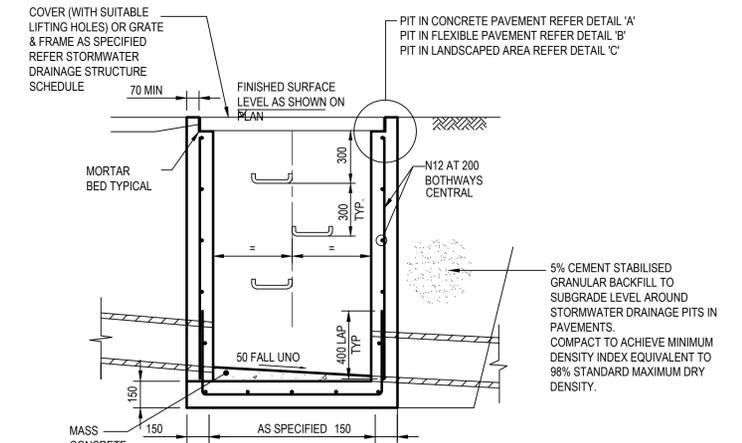
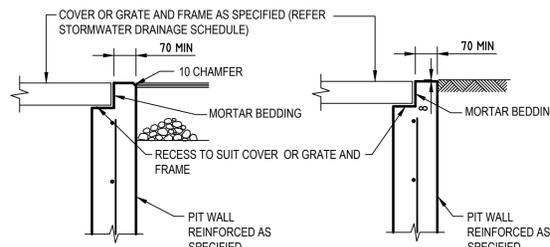
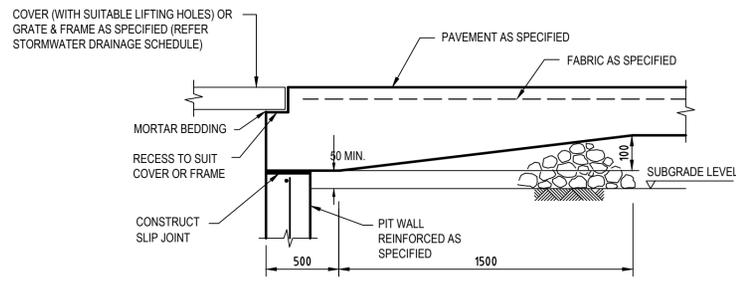
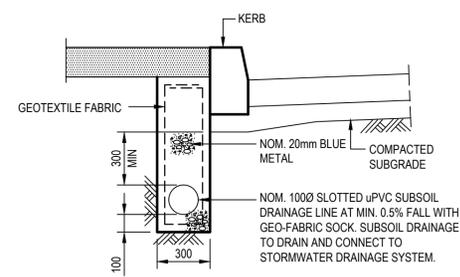
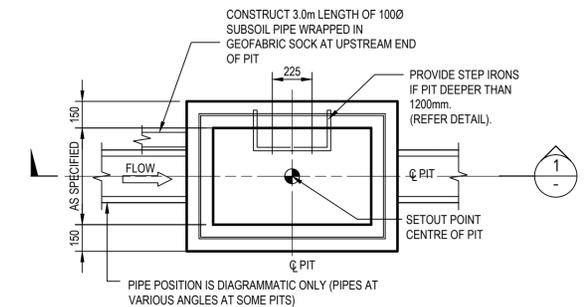
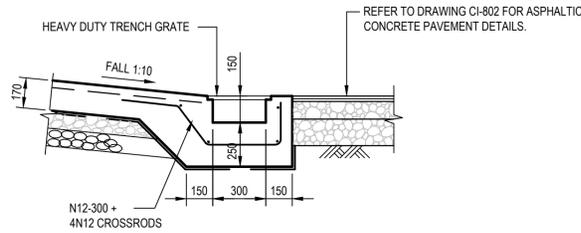
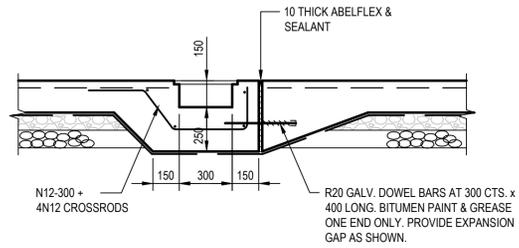
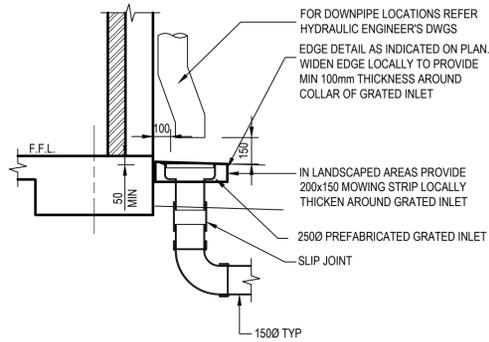
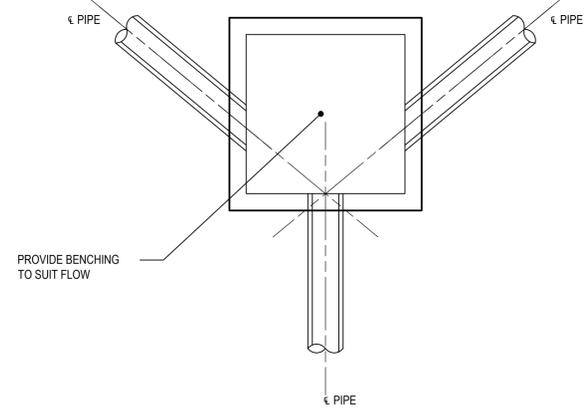
Datum	AHD	Scale	1:250	Size	A1	
Drawing Number	80818098-01-CI-1402				Revision	4

DRAWING TO BE PLOTTED IN COLOUR ALWAYS



TYPICAL PIPE LAYING DETAIL U.N.O.

NOTE: ALLOW TO BUILD 1000 AG. DRAIN IN THE LAST 3.0m OF DRAINAGE PIPE, UPSTREAM OF ALL DRAINAGE PITS.



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2	05/06/2019	ISSUE FOR SSSA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ

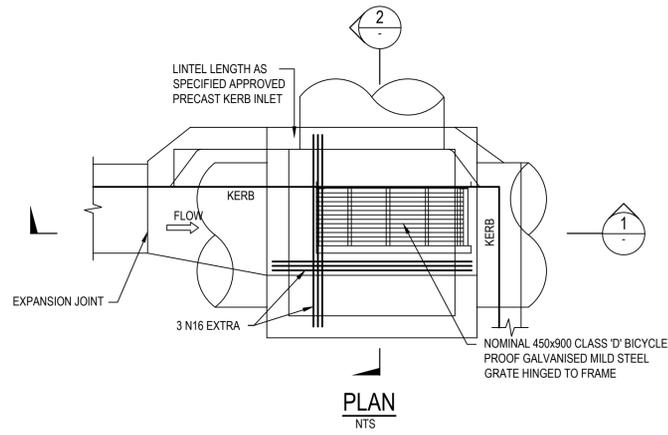
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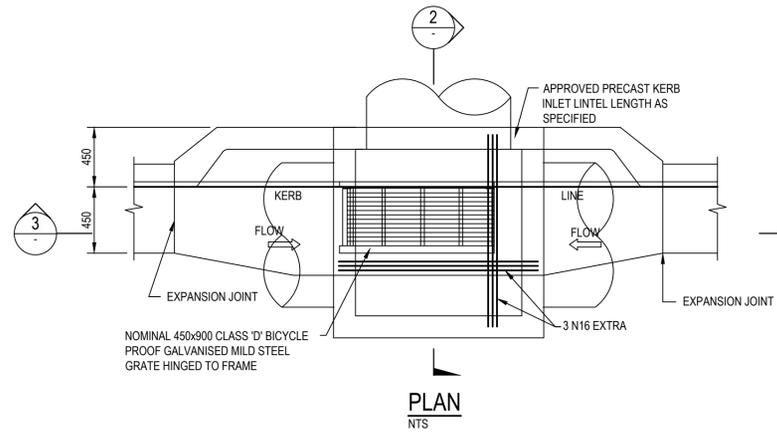
Drawn	G.M.	Date	MAY 2019
Checked	V.J.	Date	MAY 2019
Designed	V.J.	Date	MAY 2019
Verified	V.J.	Date	MAY 2019
Approved		Date	

Client	BILLARD LEECE PARTNERSHIP
Project	THE NEW PRIMARY SCHOOL AT WARNERVALE 75 WARNERVALE RD WARNERVALE 2259 NSW
Title	STORMWATER DETAILS SHEET 1

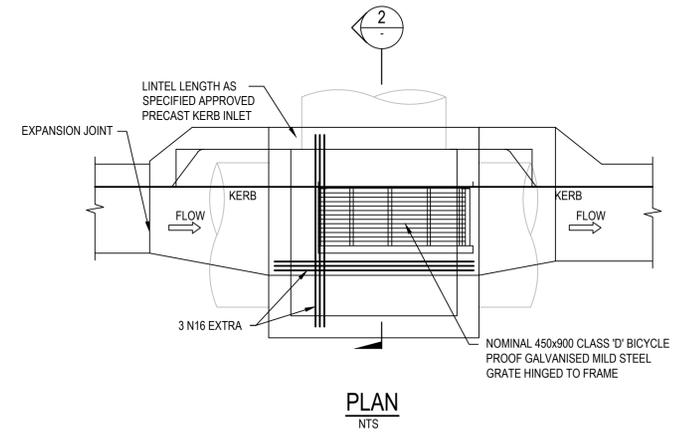
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Size	A1
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Revision	4



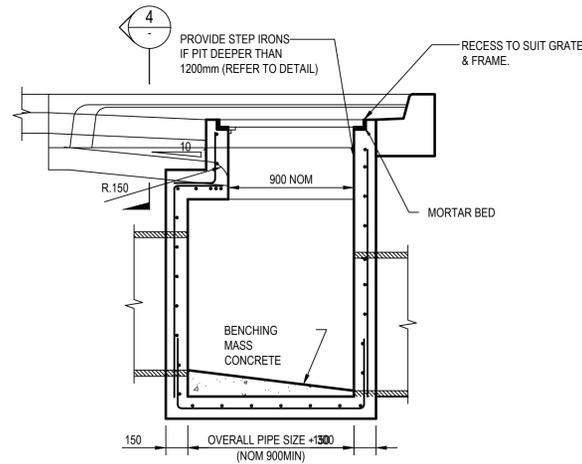
**KERB INLET PIT (KIP-A)
(CORNER)**



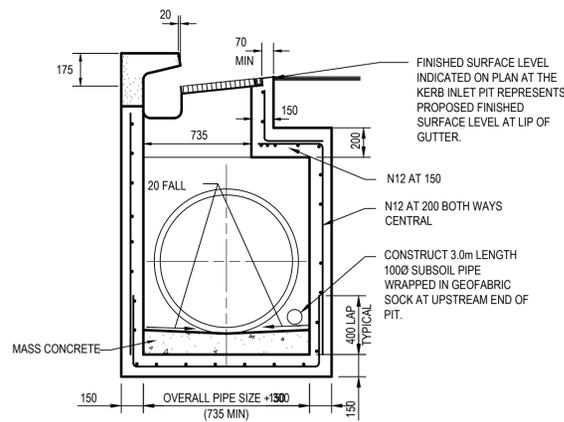
**KERB INLET PIT (KIP-B)
(SAG)**



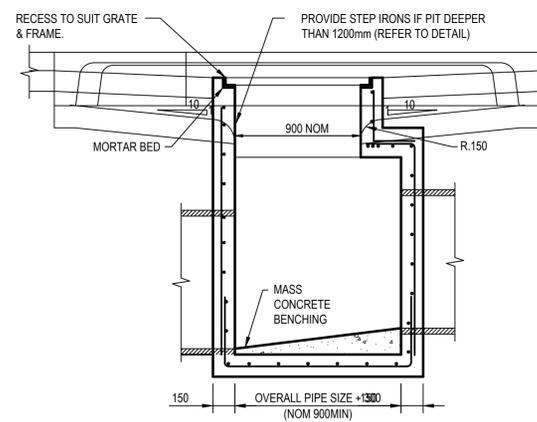
**KERB INLET PIT (KIP-C)
(ON GRADE)**



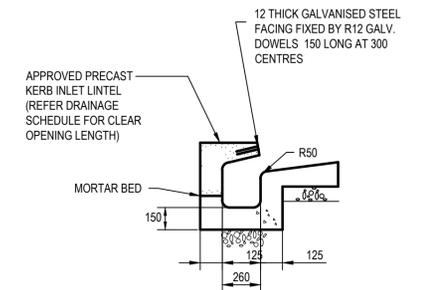
**SECTION 1
SCALE 1:20**



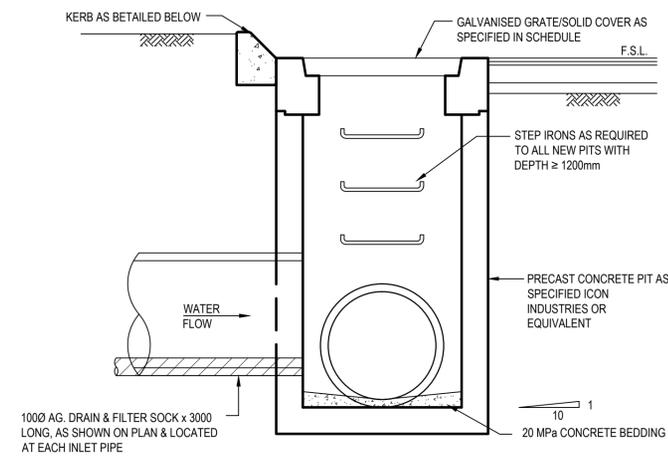
**SECTION 2
SCALE 1:20**



**SECTION 3
SCALE 1:20**



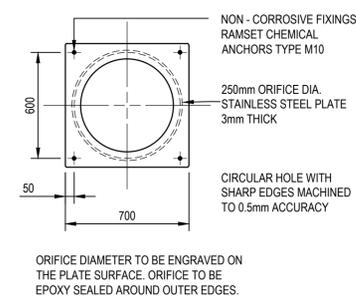
**SECTION 4
SCALE 1:20**



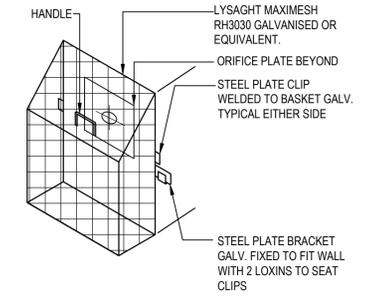
PRECAST STORMWATER PIT
TO BE INSTALLED AND BEDDED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. PROVIDE GALVANISED IRON STEP IRONS EPOXIED INTO CONCRETE FOR PITS DEEPER THAN 1200mm.



STEP IRON DETAIL
N.T.S.

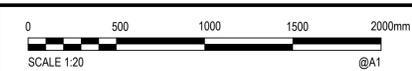


ORIFICE PLATE DETAIL
N.T.S.



TRASH SCREEN DETAIL
N.T.S.

Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ



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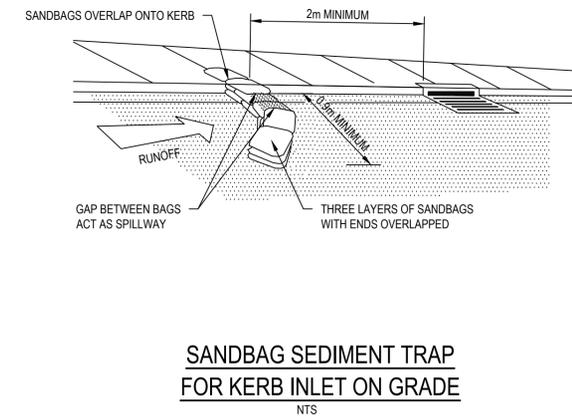
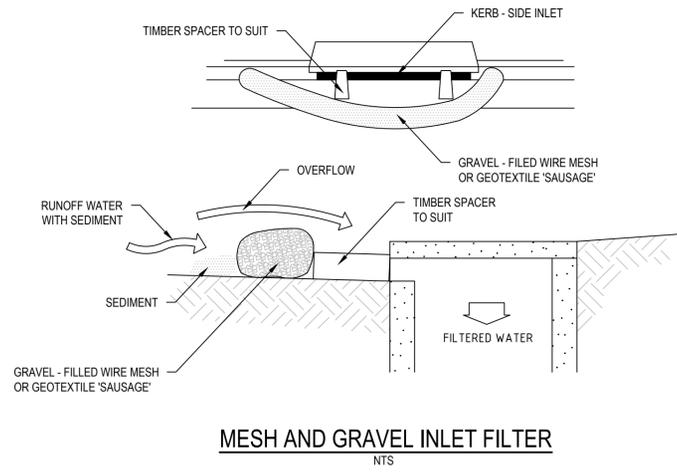
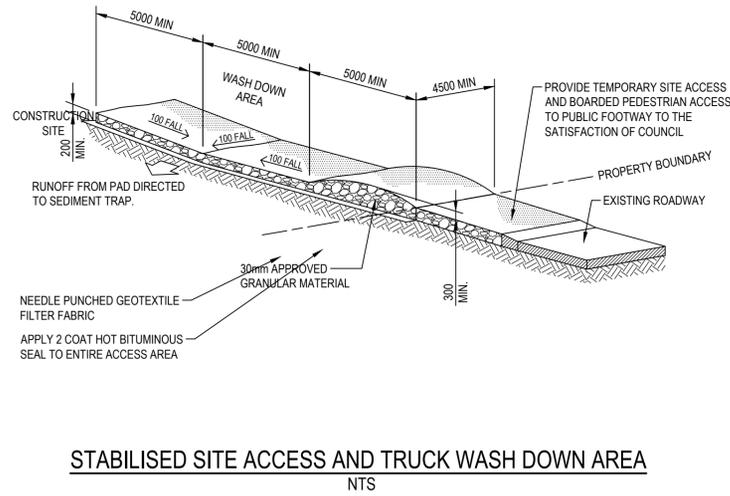
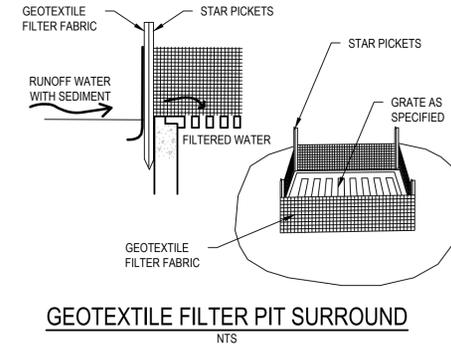
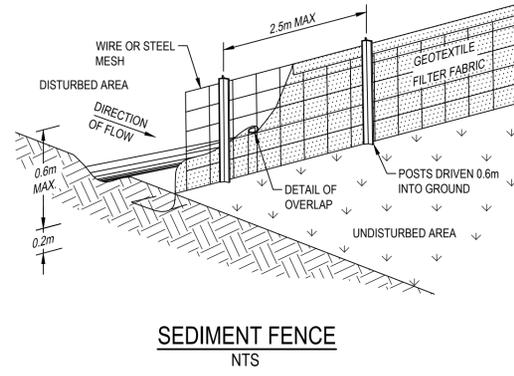
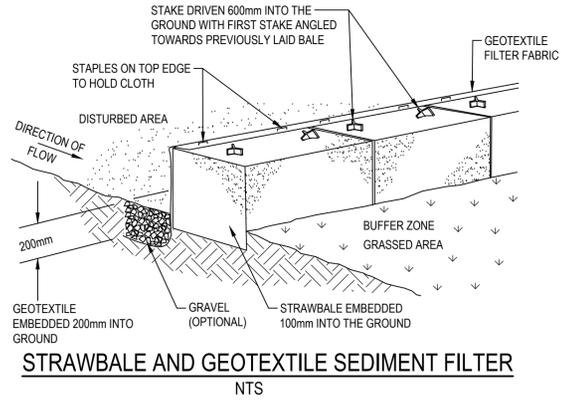
Cardno
Shaping the Future

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Drawn	G.M.	Date	MAY 2019
Checked	V.J.	Date	MAY 2019
Designed	V.J.	Date	MAY 2019
Verified	V.J.	Date	MAY 2019
Approved		Date	

Client	BILLARD LEECE PARTNERSHIP
Project	THE NEW PRIMARY SCHOOL AT WARNERVALE
	75 WARNERVALE RD WARNERVALE 2259 NSW
Title	STORMWATER DETAILS SHEET 1

Status	FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES	
Datum	AHD
Scale	1:20
Size	A1
Drawing Number	80818098-01-CI-2202
Revision	4



Rev.	Date	Description	Des.	Verif.	Appd.
4	05/08/2019	ISSUE FOR SSDA	GM	KP	KL
3	29/07/2019	ISSUE FOR SSDA	GM	KP	KL
2	05/06/2019	ISSUE FOR SSDA	GM	KP	KL
1	16/05/2019	SCHEMATIC SKETCH DESIGN ISSUE	GM	KP	VJ

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Checked	V.J.	Date	MAY 2019
Designed	V.J.	Date	MAY 2019
Verified	V.J.	Date	MAY 2019
Approved		Date	

Client	BILLARD LEECE PARTNERSHIP
Project	THE NEW PRIMARY SCHOOL AT WARNERVALE 75 WARNERVALE RD WARNERVALE 2259 NSW
Title	SEDIMENTATION AND EROSION CONTROL DETAILS

Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Datum	AHD	Scale	N.T.S.
Drawing Number	80818098-01-CI-2401	Size	A1
Revision			4