LEGEND TO HYDRAULIC SERVICES (APPLICABLE TO ALL SHEETS)

SOIL DRAINS
STORMWATER DRAINS
VENT PIPES
COLD WATER
HOT WATER
PRESSURE MAIN
GAS SERVICE
FIRE HYDRANT SERVICE
FLOOR WASTE LINE

ABBREVIATIONS APPLICABLE TO SERVICE DRAWINGS

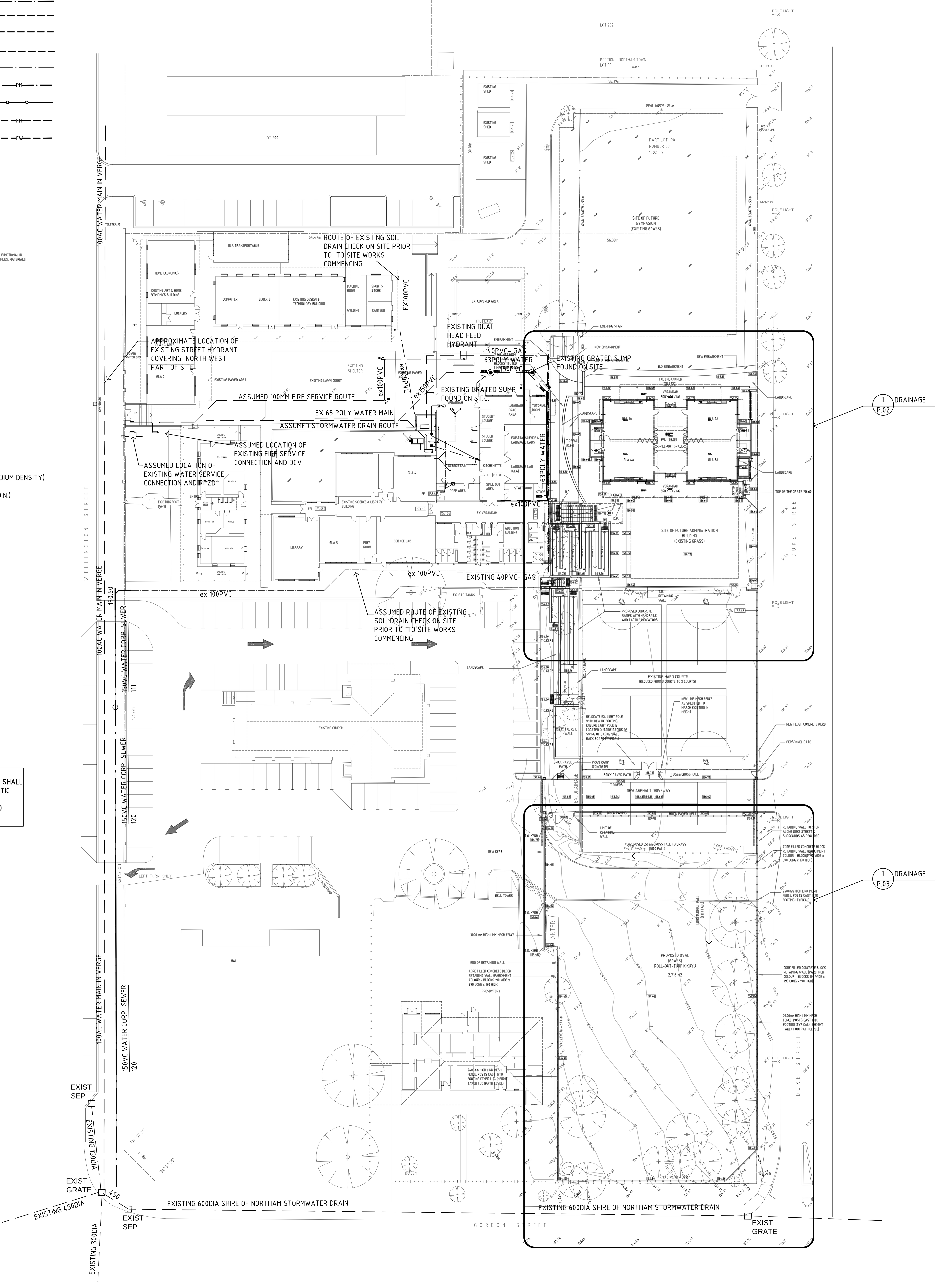
AAV	AIR ADMITTANCE VALVE
AFFL	ABOVE FINISHED FLOOR LEVEL
A/C	AIR CONDITIONING
AP	ACCESS PANEL
BS	BRASS
BV	BALL VALVE
C	COPPER
CI	CAST IRON
CP	CHROME PLATED
CV	CHECK VALVE
CW	COLD WATER
DCV	DOUBLE CHECK VALVE (TESTABLE U.O.N.)
DP	DOWNPIPE
DPO	DOWNPIPE ON LEVEL OVER
DHB	DISABLED HAND BASIN
DWC	DISABLED WATER CLOSET
FA	FROM LEVEL ABOVE (DROPPER)
FB	FROM LEVEL BELOW (RISER)
FFL	FINSIHED FLOOR LEVEL
FG	FLOOR WASTE GULLY
FW	FLOOR WASTE
FWST	FLOOR WASTE STACK
GSP	GAVLANISED STEEL PIPE
GV	GATE VALVE
GAVL'D	GALVANISED
HB	HAND BASIN
HW	HOT WATER
HWU	HOT WATER UNIT
I.O.	INPSECTION OPENING OR INSPECTION GATE
IWSP	INDUSTRIAL WASTE SAMPLING POINT
IWT	INDUSTRIAL WASTE TRAP
LIT	LEVEL INVERT TAPER
NRV	NON RETURN VALVE
PE	POLYETHYLENE (HD- HIGH DENSITY MD MEDIUM DENSITY)
PP	POLYPROPYLENE
PVC	POLY VINYL CHLORIDE (UNPLASTICISED U.O.N.)
RE	ROD END
RS	RISING SHAFT
RPZD	REDUCED PRESSURE ZONE DEVICE
SC	STOPCOCK
SK	SINK
SS	STAINLESS STEEL
SST	SOIL STACK
ST#	STACK (# = DESIGNATION/ NUMBER)
SW	STORMWATER
TA	TO LEVEL ABOVE (RISER)
TB	TO LEVEL BELOW (DROPPER)
TD	TUNDISH
TCV	TEMPERING VALVE
TMV	THERMOSTATIC CONTROL VALVE
WC	WATER CLOSET - (TOILET PAN)
VPR	VENT PIPE RISER

X / P.xx — DETAIL NUMBER / DWG NUMBER

xxx / xx — SERVICE TYPE / NOMINAL BORE

FU / X — NOMINAL FIXTURE UNITS

NOTE:
PRIOR TO WORK COMMENCING ON SITE THE CONTRACTOR SHALL UNDERTAKE A SITE SURVEY TO TRACE EXISTING DOMESTIC WATER SERVICE TO CONFIRM ROUTES AND SIZES.
PROVIDE ALL INFORMATION TO PROJECT ARCHITECT AND CONSULTANT FOR ASSESSMENT



1 / P.01 SITE DRAINAGE PLAN
Scale 1:400

GENERAL NOTE:

ALL POSITIONS OF FIXTURES, TAPWARE AND APPLIANCES SHALL BE CO-ORDINATED WITH ALL DISCIPLINES AND TRADES WITH REFERENCE MADE TO ALL CONTRACT DOCUMENTS RELATIVE TO SETTING OUT OF TILING, CABINETRY,ETC. THE CONTRACTORS SHALL BE RESPONSIBLE FOR CARRYING OUT THE CO-ORDINATION OF THE HYDRAULIC SERVICES SCOPE OF WORKS.

THE CONTRACTOR SHALL PRIOR TO COMMENCING ANY WORKS SHALL EXCAVATE AND LOCATE AND CONFIRM THE LOCATION OF EXISTING SERVICES AT THE NOMINATED CONNECTION POINTS AS SHOWN ON DRAWINGS.

ALL EXISTING SERVICES SHOWN ARE INDICATIVE ONLY BASED UPON PREVIOUS DESIGNS AND AS CONSTRUCTED DRAWINGS.

ALLOW TO TEMPORARILY DIVERT ANY SERVICES AS SHOWN OR NOMINATED ON THIS DRAWING TO MAINTAIN SERVICES TO THE OTHER BUILDINGS.

DA ISSUE
FOR DEVELOPMENT APPROVAL ONLY

Revision	Date	Description
DA	17/07/2018	ISSUED FOR DEVELOPMENT APPROVAL

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AHSCA THE ASSOCIATION OF HYDRAULIC SERVICES CONSULTANTS AUSTRALIA INCORPORATED

NORTH POINT

DESIGN CERTIFICATION
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Authorized Engineering Staff For PJ Wright& Assoc.
17/07/2018
Date

Project
ST JOSEPH'S SCHOOL - SECONDARY CAMPUS
WELLINGTON STREET, NORTHAM
FOR THE CATHOLIC EDUCATION OFFICE

Drawing Title	Date	Drawing Number	Revision
HYDRAULIC SERVICES	JUNE 2018	P.01	DA
	Scale 1:400@A1		
SITE PLAN	Drawn JGT		

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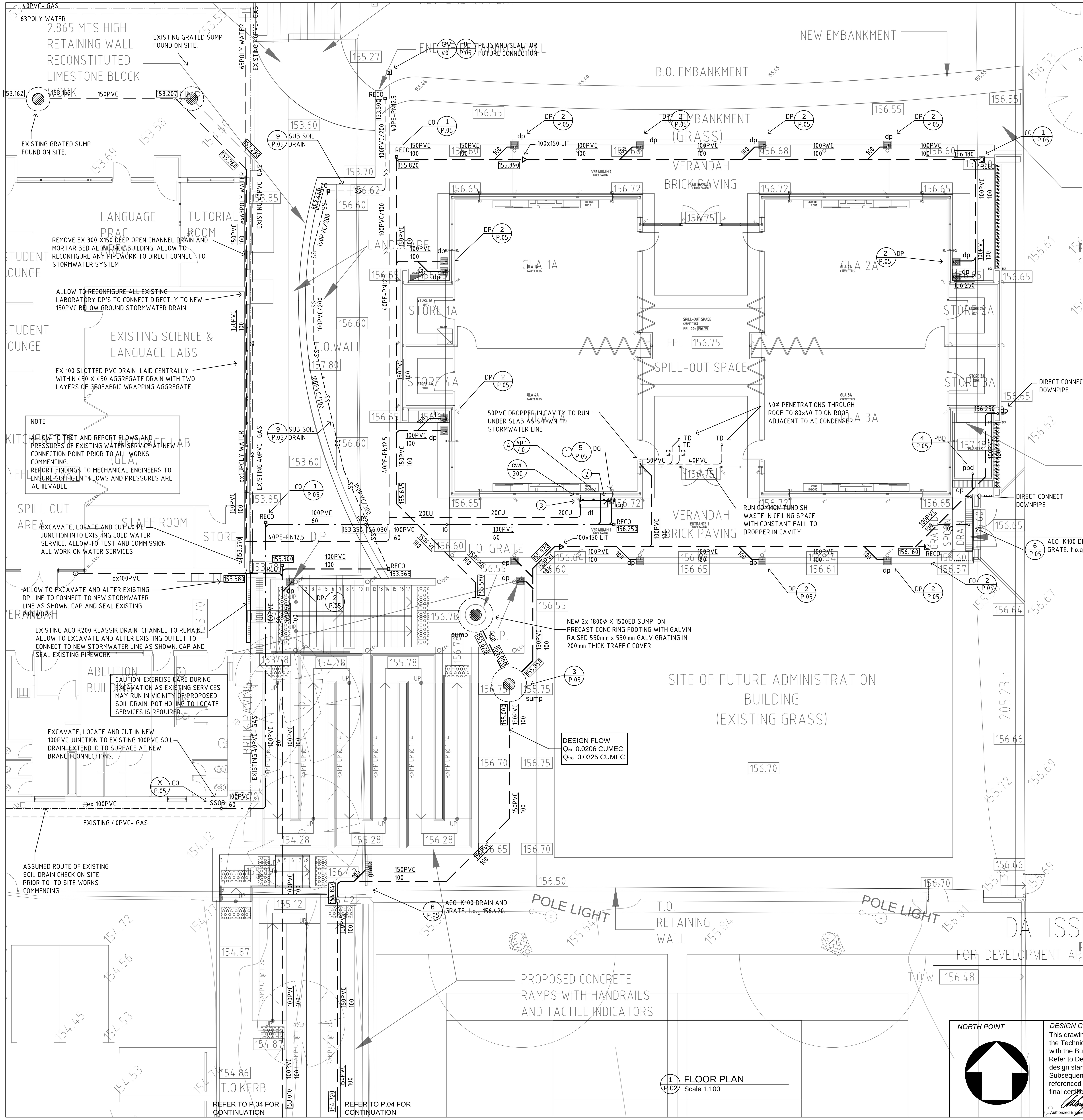

1 P.02 FLOOR PLAN
Scale 1:100

NOTE:
ALL POSITIONS OF FIXTURES, TAPWARE AND APPLIANCES SHALL BE CO-ORDINATED WITH ALL DISCIPLINES AND TRADES WITH REFERENCE MADE TO ALL CONTRACT DOCUMENTS RELATIVE TO SETTING OUT OF TILING, CABINETRY,ETC. THE CONTRACTORS SHALL BE RESPONSIBLE FOR CARRYING OUT THE CO-ORDINATION OF THE HYDRAULIC SERVICES SCOPE OF WORKS.
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ABBREVIATED NOTES APPLICABLE TO THIS DRAWING

1 GALVINS FLAT BACK PRECAST DG SURROUND FINISHED NOMINALLY 75MM ABOVE PAVING 100PVC EXTENSION TO 100PVC P TRAP WITH WASTE CONNECTIONS AS SHOWN 100PVC DRAIN RUN BELOW GROUND TO MAIN SOIL DRAIN AS SHOWN. TYPICAL ALL DG'S.
2 50PVC TRAPPED DRAIN FROM DRINK TROUGH. DROP 50PVC WASTE BELOW GROUND AND RUN TO ADJACENT DG AS SHOWN.
3 NEW 20MM COPPER RISER ON EXTERNAL WALL TO 15MM DUO VALVE AND 500KPA PLV AND CONNECTION TO CHILLED WATER FOUNTAIN AS SPECIFIED.
4 100PVC BEND WITH RISER FITTED WITH LIT IN VERTICAL. VENT RISER (SIZED AS SHOWN) RISES IN CAVITY WITH FULL HEIGHT ALCOR COVER FLASHING. RISE AND OFFSET IN CEILING SPACE (NOT SHOWN) PENETRATES ROOF NOMINALLY 600MM FROM PARAPET WALLS AND EAVES LINE. PENETRATE ROOF WITH SUITABLE DECKTITE FLASHING TO MATCH ROOF SHEET PROFILE. TERMINATE VENT WITH PVC COWL NOMINALLY 150MM ABOVE ROOF LINE. PAINT EXPOSED VENT AND COWL TO MATCH ROOF COLOR.

HOT AND COLD WATER SERVICES

REFER TO HYDRAULIC SERVICES SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
ALL HOT AND COLD WATER PIPEWORK SHALL BE TYPE A COPPER TUBE IN SIZES AS SHOWN WITH REDUCTIONS TO 20MM WHERE SERVING TWO FIXTURES WITH 15MM TO SERVE FINAL FIXTURES OR SINGLE FIXTURE BRANCHES.
NOTE: 12MM (HALF INCH) COPPER SHALL NOT BE USED FOR ANY SERVICE PIPEWORK.
COLD PIPEWORK SHALL BE INSTALLED IN ACCORDANCE WITH CURRENT WATER CORPORATION BYLAWS AND AS / NZS 3500.1
HOT WATER PIPEWORK SHALL BE INSTALLED IN STRICT COMPLIANCE WITH WATER CORPORATION BYLAWS AND AS / NZS 3500. 4 . ALL HOT PIPEWORK SHALL BE INSULATED AS SPECIFIED.
ALL COLD WATER PIPEWORK CHASED IN WALLS SHALL BE WRAPPED USING 6MM POLYFOAM LAGGING PRIOR TO FIXING INTO WALL CHASES.
ALL WALL CHASES SHALL BE IN VERTICAL OR HORIZONTAL PLANES AND SHALL BE SETOUT TO AVOID OTHER SERVICES SUCH AS ELECTRICAL CABLING.
ALL PIPEWORK IN WALL CHASES SHALL BE FIXED INTO POSITION USING COPPER SADDLES WITH ALLOWANCES MADE FOR EXPANSION OF SERVICES. ALL PIPEWORK RUNNING IN CAVITIES SHALL BE FIXED TO THE INNER LEAF OF THE CAVITY WITH BRANCHES AND TAKEOFFS AND BE INSTALLED PROGRESSIVELY WITH BRICKWORK.
REFER TO ARCHITECTURAL DRAWINGS FOR TILING AND CUPB'D DETAILS AND CO-ORDINATE WITH TILER & CABINET MAKER FOR HEIGHTS AND SHELVING REQUIREMENTS.
ALL LOCATIONS OF FIXTURES , TAPWARE SETOUTS AND SPECIFIC REQUIREMENTS MUST BE CO-ORDINATED WITH ALL DRAWINGS PRIOR TO COMMENCING SETOUTS. DISCREPANCIES MUST BE NOTIFIED IMMEDIATELY.

DESIGN PRINCIPLES
THE STORMWATER DESIGN PRINCIPLE IS TO COLLECT ALL RUN OFF AND DISPOSE TO THE CITY OF KALGOORLIE-BOULDER STORMWATER SYSTEM VIA SUMPS AND A PIPED DRAINAGE SYSTEM.

SYSTEM DESIGNED TO CONVEY A 1 IN 20 ARI CRITICAL STORM ON SITE WITH OVERLAND OVERFLOW TO ADJACENT STREETS FOR STORM EVENTS IN EXCESS OF 1 IN 20 ARI

STORMWATER DRAINAGE NOTES
ALLOW TO SUPPLY ALL DRAINAGE COMPONENTS INDICATED ON THIS DRAWING COMPLETE WITH ALL FIXINGS AND ANCILLARY ITEMS AS NOTED.
ALLOW TO MAKE ALL NECESSARY APPLICATIONS AND GAIN ALL APPROVALS PRIOR TO COMMENCING ON SITE. COMPLY WITH ALL STATUTORY AND LOCAL AUTHORITY REQUIREMENTS.
INSTALL STORMWATER DRAINAGE PIPE WORK TO GRADES AND LEVELS AS SHOWN.
ALL PVC SHALL BE INSTALLED TO AS 2032 AND AS/NZS 3500.3.2 AND TO SATISFACTION OF CITY OF KALGOORLIE-BOULDER ENGINEERING DEPARTMENT.
THE SIZES NOMINATED ON THE DRAWINGS SHALL NOT BE REDUCED WITHOUT THE CERTIFYING DESIGN CONSULTANTS WRITTEN APPROVAL.

EXCAVATION AND DEWATERING
ALLOW TO EXCAVATE TO PERMIT INSTALLATION OF DRAINAGE LINES AND SUPPORT EXCAVATION.
ALLOW TO OVER EXCAVATE AND INSTALL A 100MM THICK BLUE METAL AGGREGATE BED (14MM AGGREGATE) TO ALL NEW DRAINAGE STRUCTURES AND A 100MM THICK AGGREGATE BED UNDER NEW DRAINAGE LINES.
COMPACTED TO PROVIDE STABLE AND TRUE BASE FOR STRUCTURES. ALLOW TO STORE ALL SPOIL ON SITE.
ALLOW TO CONTINUOUS DEWATERING OF EXCAVATIONS FROM WHATEVER CAUSE AND MAINTAIN A DRY EXCAVATION UNTIL BACKFILLING IS COMPLETED.

BACKFILL AND COMPACTION.
THE INITIAL 300MM OF BACKFILL OVER DRAINS SHALL BE WITH CLEAN SHARP SAND FREE FROM CLAY, ROCKS OR VEGETABLE MATTER, IN LAYERS NOT EXCEEDING 300MM.
COMPACT WITH TWO PASSES WITH A 50 KG VIBRATORY PLATE COMPACTOR. TO OBTIAN 95% OF EXISTING NATURAL DENSITY.
THE FINAL 300MM OF BACKFILL CAN BE CARRIED OUT USING THE ORIGINAL EXCAVATED MATERIAL FREE FROM ROCK OR CLAY LUMPS AND COMPACTED TO ORIGINAL DENSITY OF SURROUNDING SITE AREA..

OVERFLOW COMPENSATING BASIN
CAR PARK IS TO PROVIDE STORMWATER DETENTION FOR 1 IN 100 ARI CRITICAL STORM (2HR DURATION). ENSURE THAT ALL SOAKWELL GRATES IN THIS AREA ARE A MINIMUM 250MM BELOW FINISHED FLOOR LEVEL OF BUILDING AND AREA IS SURROUNDED BY A MINIMUM 100MM CURB TO RETAIN STORMWATER.

SITE STORMWATER NOTES:

TOTAL SITE AREA		= 21,907m^2
NEW ROOF AREA		= 593m^2
TOTAL CAPACITY REQUIRED		
SHIRE REQUIREMENTS	593m^2 / 80	= 7.41m^3
SUMPS		
PROPOSED 2x Ø1800 x 1500		= 7.634m^3
CALCULATED ADDITIONAL OUTFLOWS TO SHIRE OF NORTHAM STORMWATER SYSTEM		
Q_5	= 0.0135 CUMEC	
Q_{10}	= 0.0165 CUMEC	
Q_{20}	= 0.0206 CUMEC	
Q_{100}	= 0.0325 CUMEC	

NOTE:
PRIOR TO BUILDING LICENSE, ALL EXISTING INVERT LEVELS ARE TO BE CONFIRMED TO ESTABLISH THE EFFECTIVENESS OF THE DESIGN

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17/07/2018
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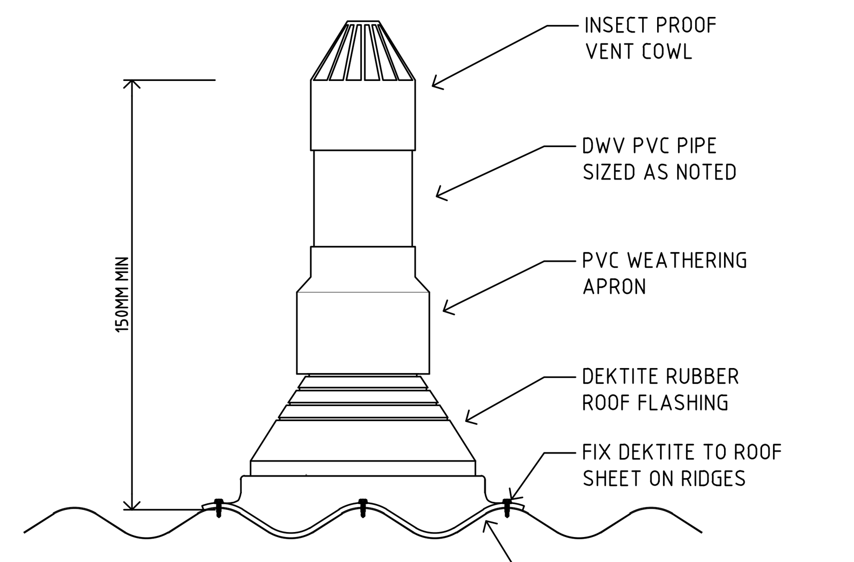
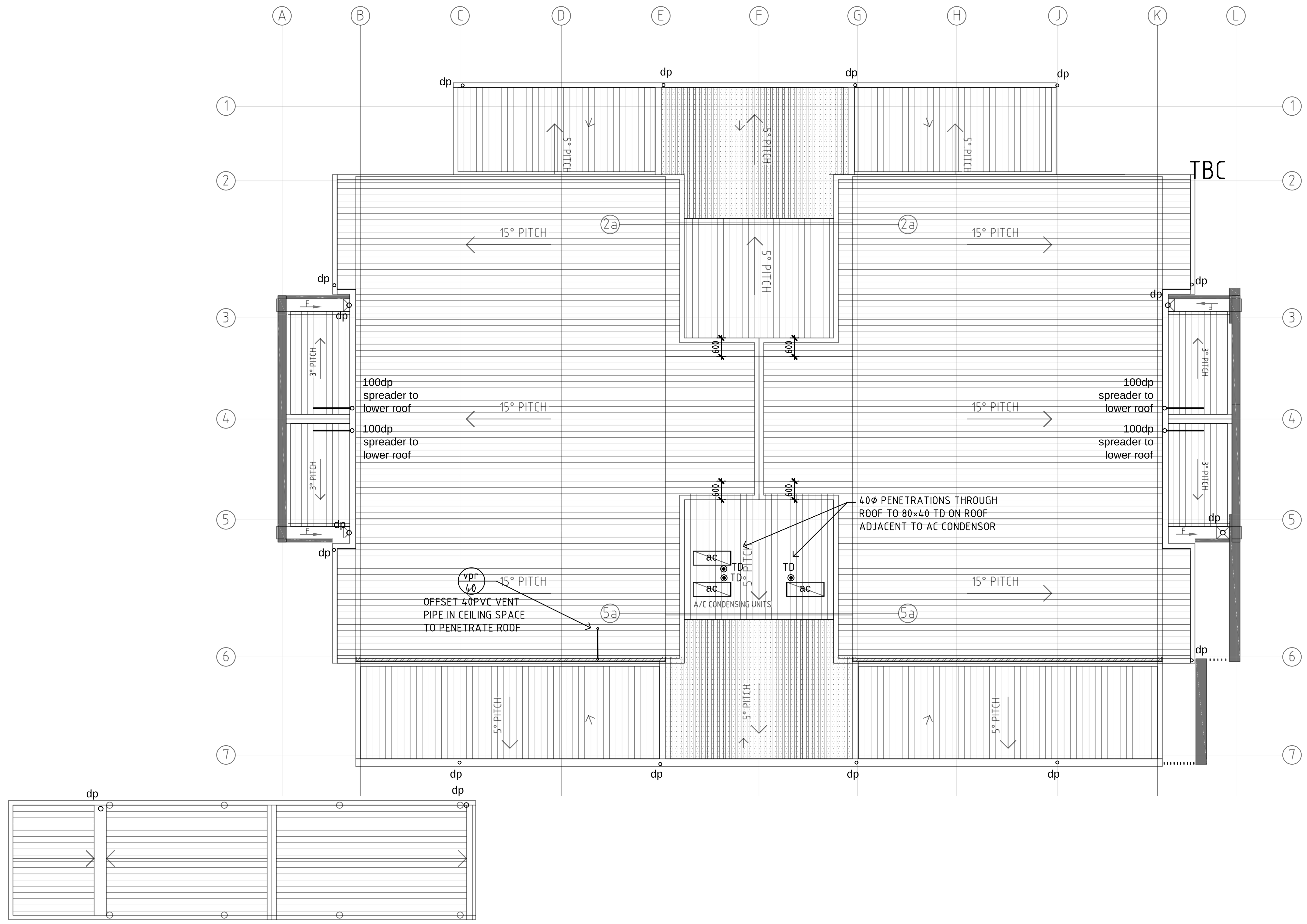
Project
ST JOSEPH'S SCHOOL - SECONDARY CAMPUS
WELLINGTON STREET, NORTHAM
FOR THE CATHOLIC EDUCATION OFFICE

Drawing Title
HYDRAULIC SERVICES
PART SITE PLAN - DRAINAGE SERVICES

Date	Scale	Drawn	Drawing Number	Revision
JUNE 2018	1:100@A1	JGT	P.02	DA



2 P.03 DETAIL : VENT PENETRATION
DIAGRAMMATIC
TERMINATE VENT OPEN TO ATMOSPHERE IN COMPLIANCE WITH THE REQUIREMENTS OF AS3500.2:2003 SECTION 6.8.4 AND FIGURE 6.6



1 P.03 ROOF PLAN: DRAINAGE
Scale 1:100

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WELLINGTON STREET, NORTHAM
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Drawing Title
HYDRAULIC SERVICES
ROOF PLAN

Date	Scale	Drawn	Drawing Number	Revision
JUNE 2018	1:100@A1	JGT	P.03	DA

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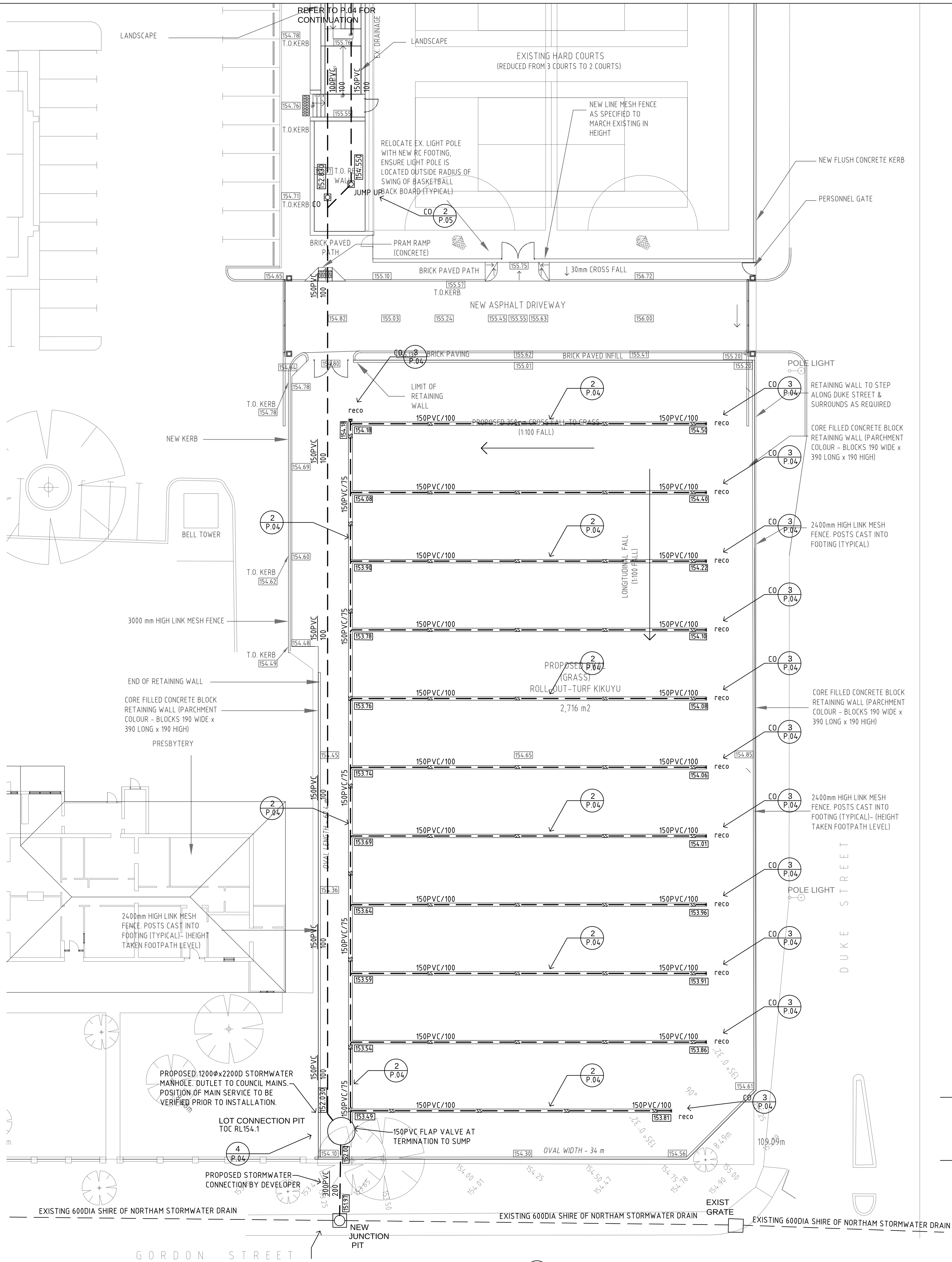
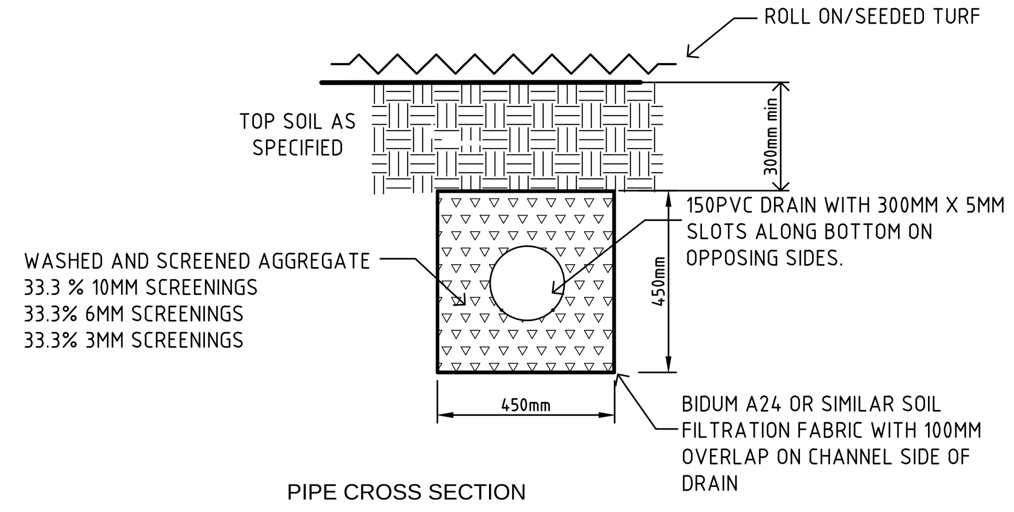
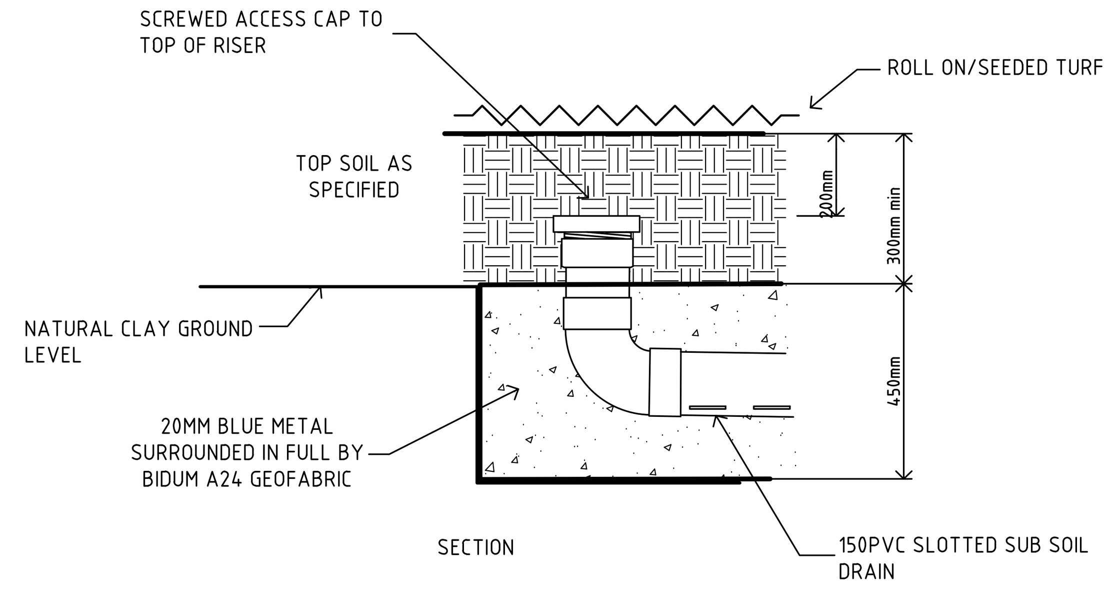


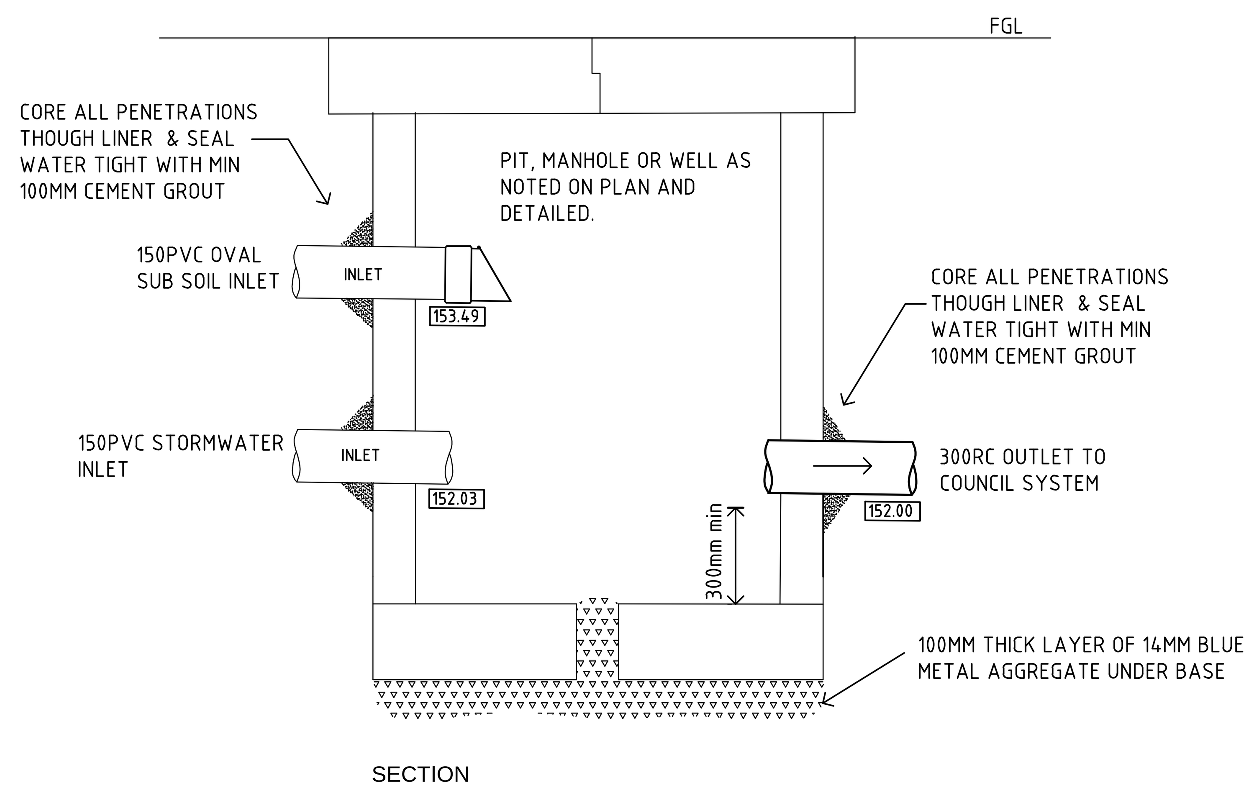
1 PART SITE PLAN
P.04 Scale 1:200



2 DETAIL : SUB SOIL DRAIN
P.04 DIAGRAMMATIC



3 DETAIL: SUBSOIL ROD END/CLEAN OUT
P.04 DIAGRAMMATIC



4 DETAIL : LOT CONNECTION PIT
P.04 1:20 APPROX

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ST JOSEPH'S SCHOOL - SECONDARY CAMPUS
WELLINGTON STREET, NORTHAM
FOR THE CATHOLIC EDUCATION OFFICE

Drawing Title
HYDRAULIC SERVICES
PART SITE PLAN - OVAL DRAINAGE

Date	Drawing Number	Revision
JUNE 2018	P.04	DA
Scale 1:200@A1		
Drawn JGT		

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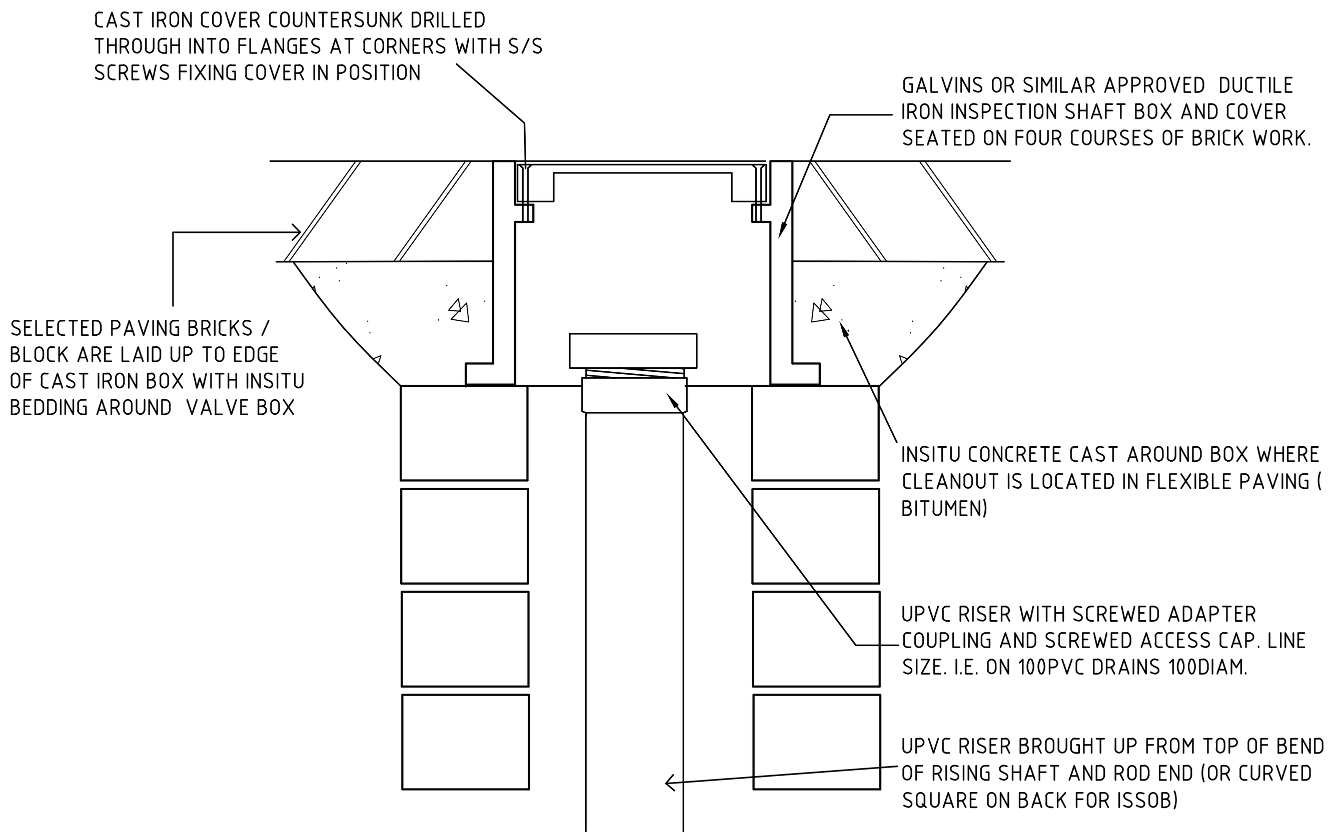
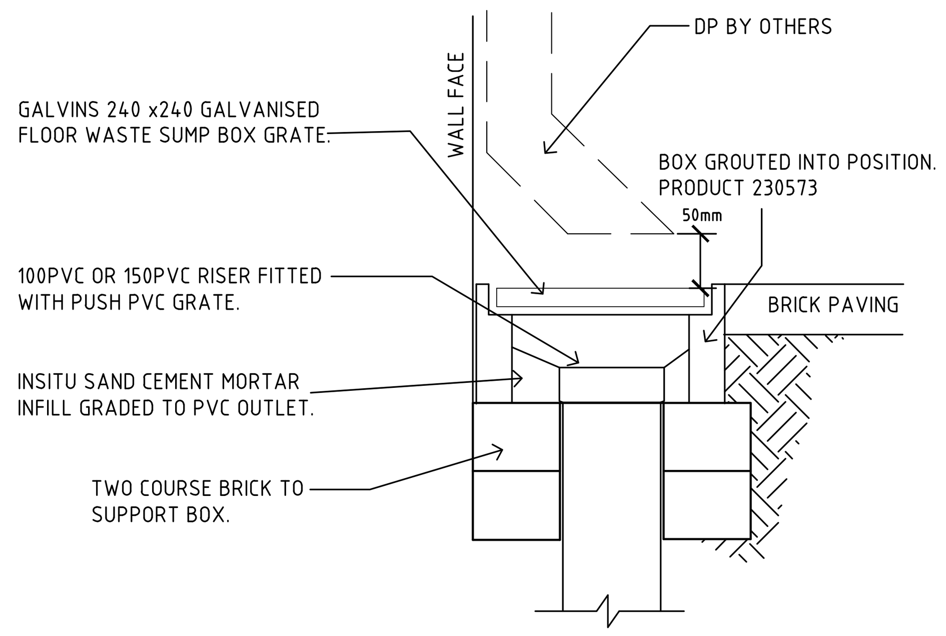
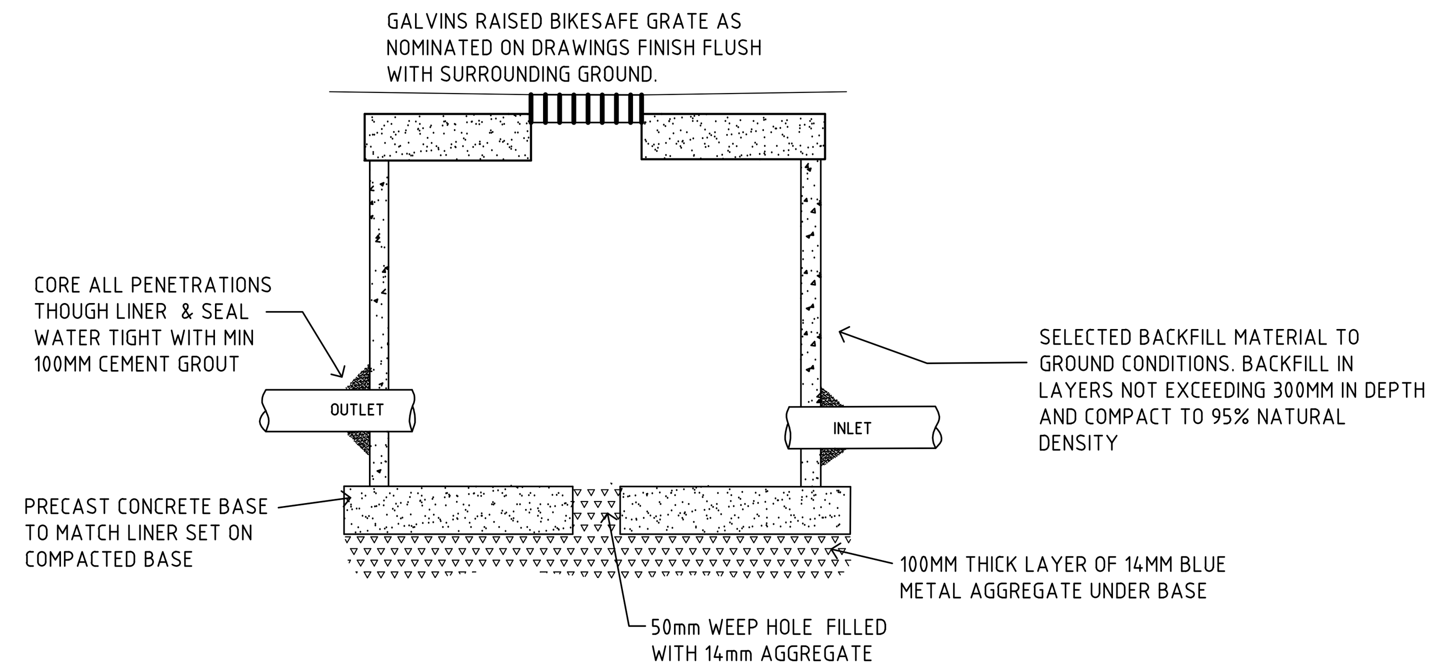


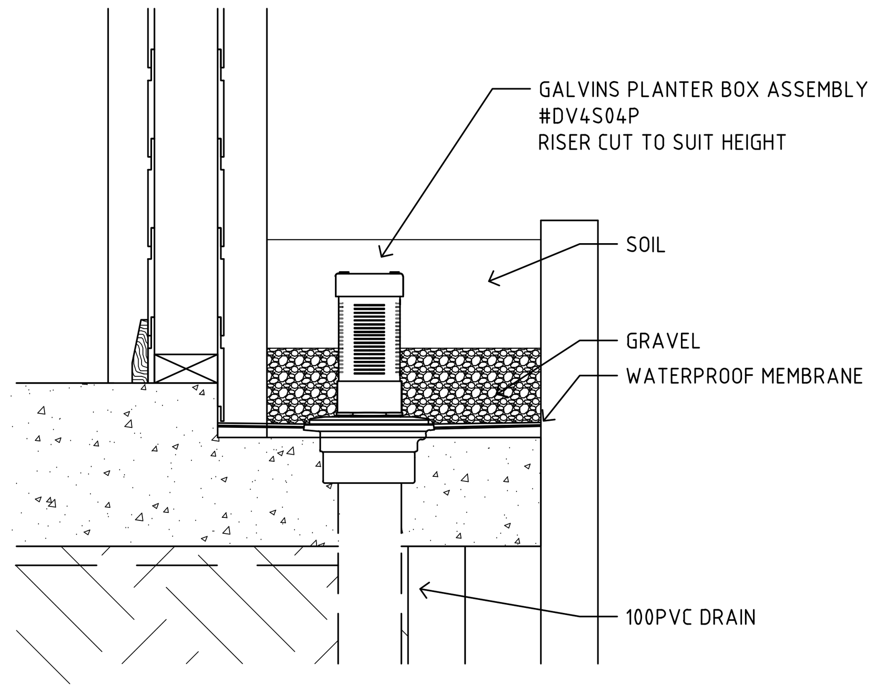
1 P.05 DETAIL : ROD END CLEANOUT DETAIL
DIAGRAMMATIC



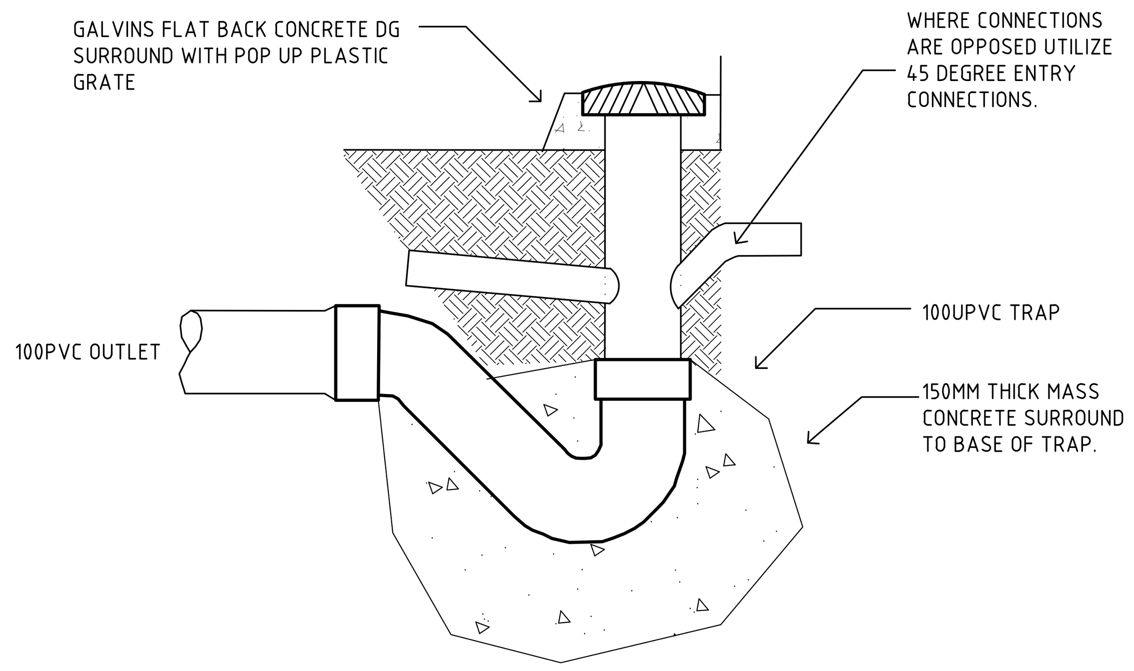
2 P.05 DETAIL: TYPICAL DP WITH SUMP BOX
SCALE 1:20



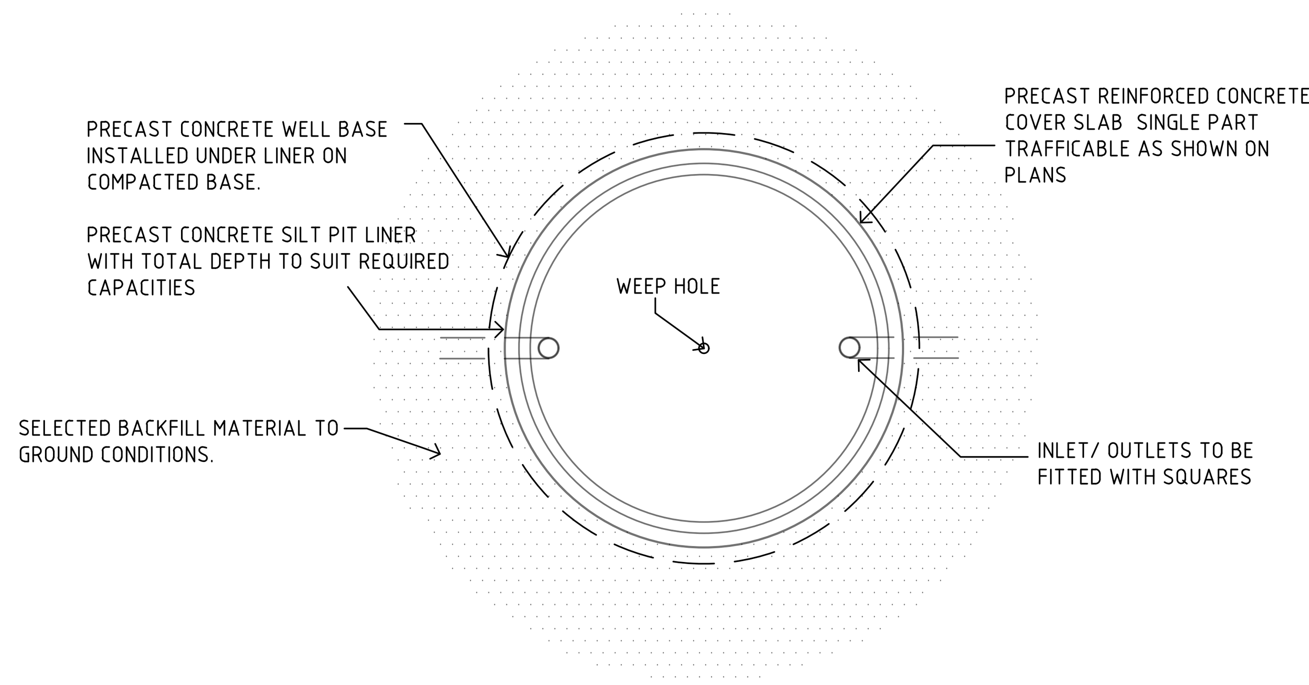
SECTION: GRATED WELL



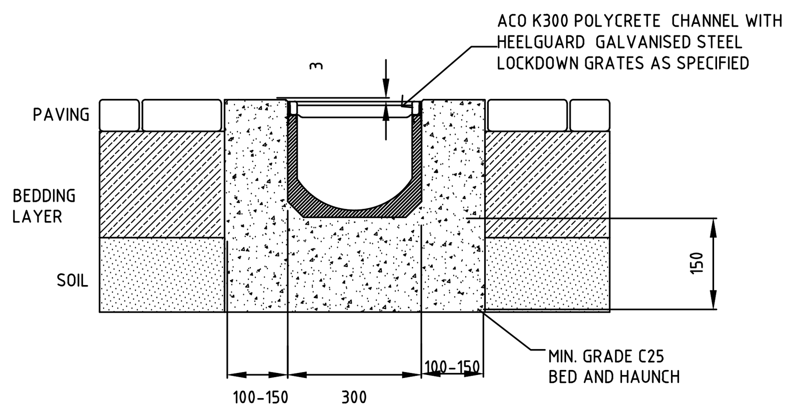
4 P.05 DETAIL : PLANTER BOX FLOOR DRAIN
1:10 APPROX



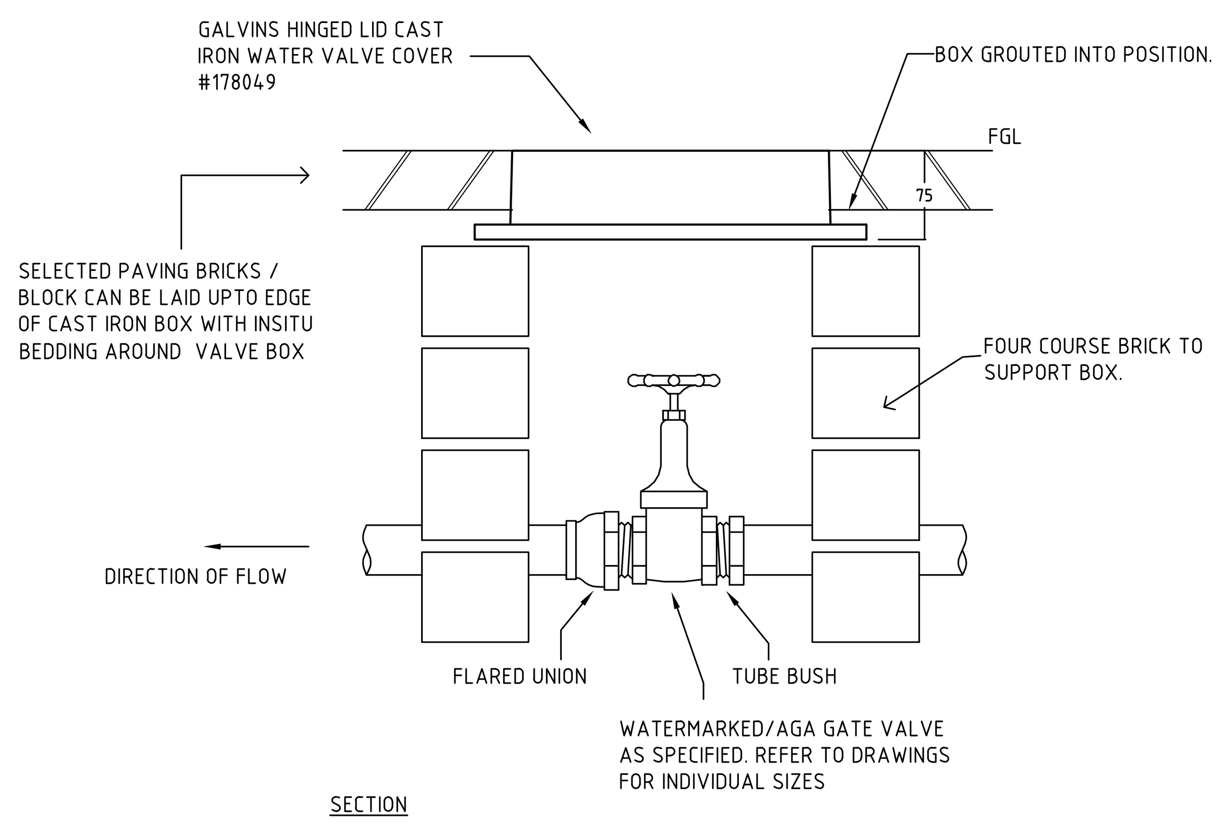
5 P.05 DETAIL : OVERFLOW RELIEF GULLY
1:10 APPROX



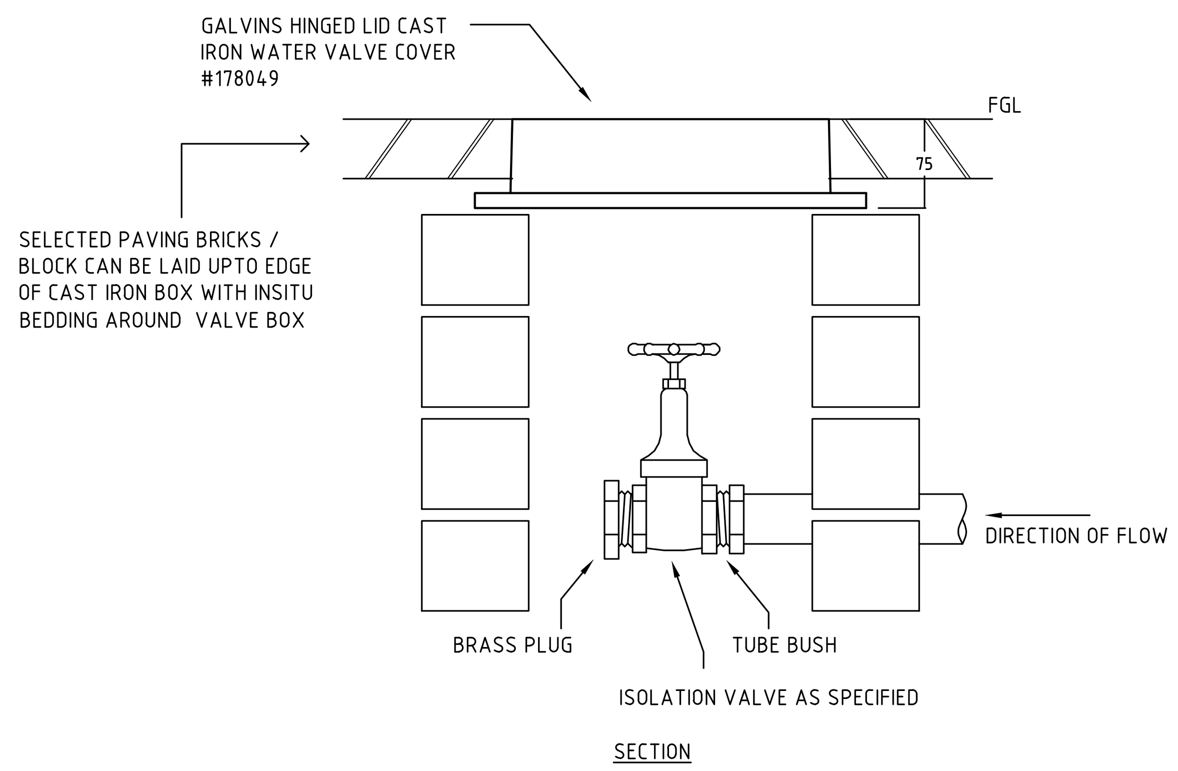
3 P.05 DETAIL : DRAINAGE SUMP
DIAGRAMMATIC



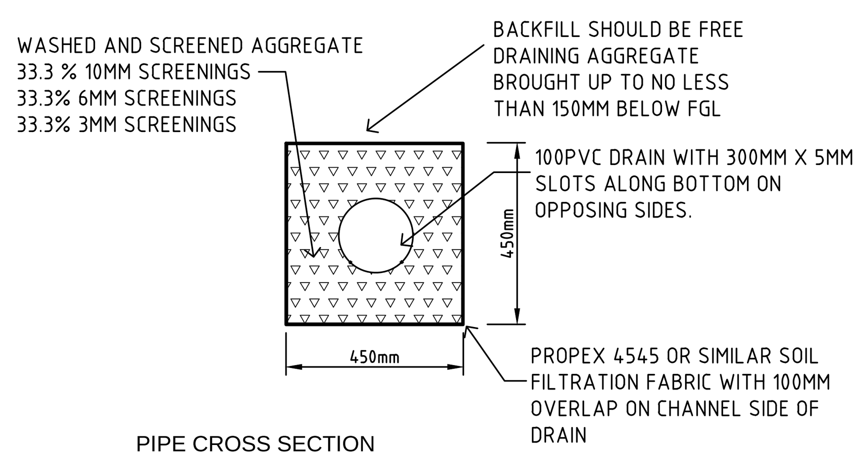
6 P.05 DETAIL : CHANNEL DRAIN
DIAGRAMMATIC



7 P.05 DETAIL: WATER/GAS GATE VALVE AND VALVE COVER
DIAGRAMMATIC



8 P.05 DETAIL: WATER GATE VALVE AND VALVE COVER
DIAGRAMMATIC



PIPE CROSS SECTION

9 P.05 DETAIL : SUB SOIL DRAIN
DIAGRAMMATIC

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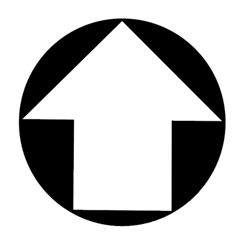

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ST JOSEPH'S SCHOOL - SECONDARY CAMPUS
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Drawing Title
HYDRAULIC SERVICES
DETAIL SHEET 2

Date	Drawing Number	Revision
JUNE 2018	P.05	01
Scale: AS SHOWN		
Drawn		