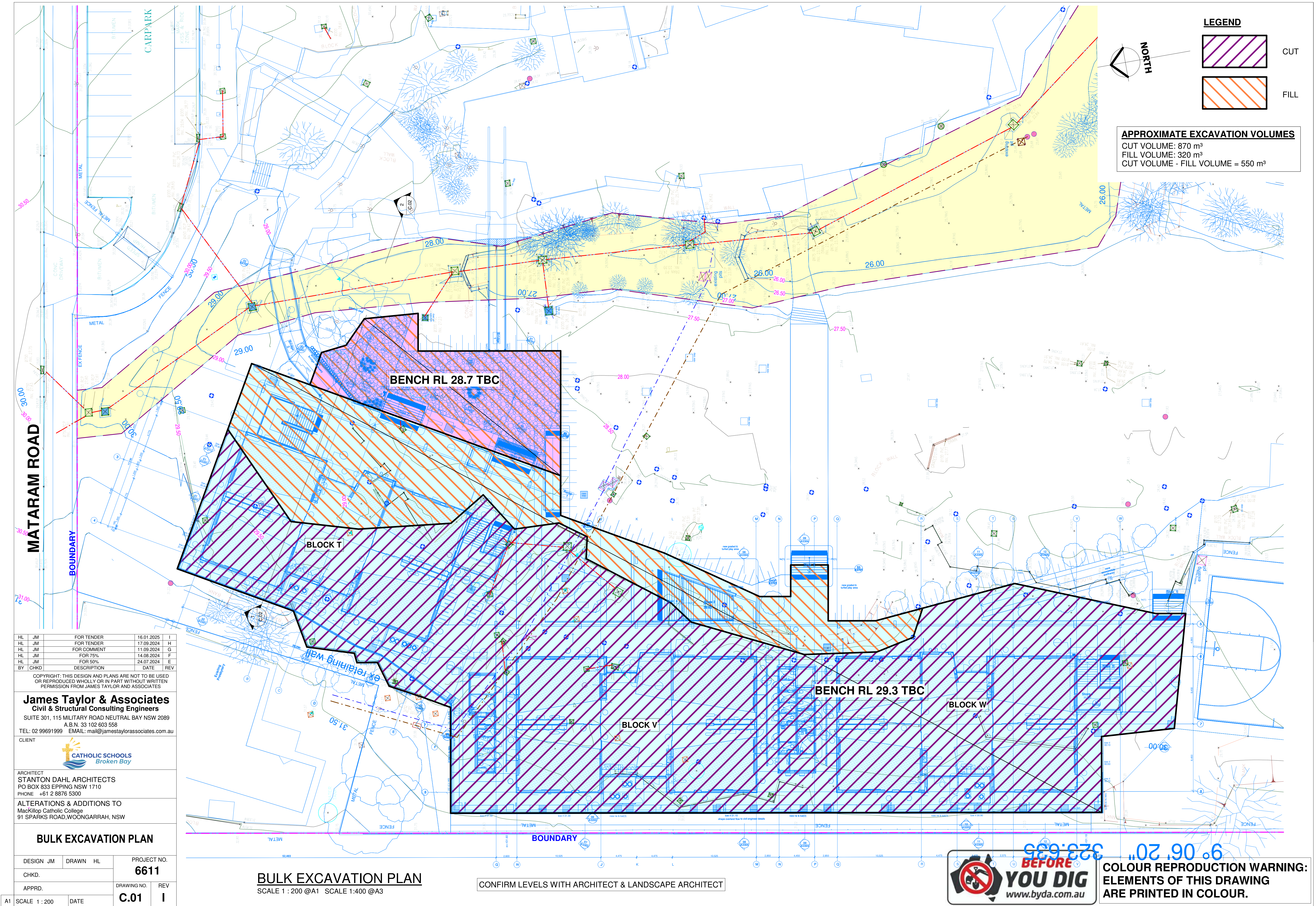
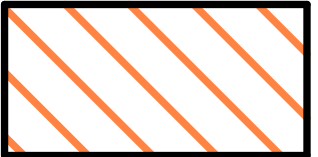




LEGEND



CUT



FILL

APPROXIMATE EXCAVATION VOLUMES

CUT VOLUME: 870 m³

FILL VOLUME: 320 m³

CUT VOLUME - FILL VOLUME = 550 m³

HL	JM	FOR TENDER	16.01.2025	I
HL	JM	FOR TENDER	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
HL	JM	FOR 50%	24.07.2024	E
BY	CHKD	DESCRIPTION	DATE	REV

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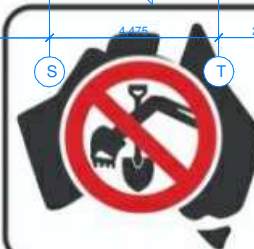
ALTERATIONS & ADDITIONS TO
MacKillop Catholic College
91 SPARKS ROAD, WOONGARRAH, NSW

BULK EXCAVATION PLAN

DESIGN	JM	DRAWN	HL	PROJECT NO.
CHKD.				6611
APPRD.				DRAWING NO.
A1	SCALE 1 : 200	DATE		C.01
				I

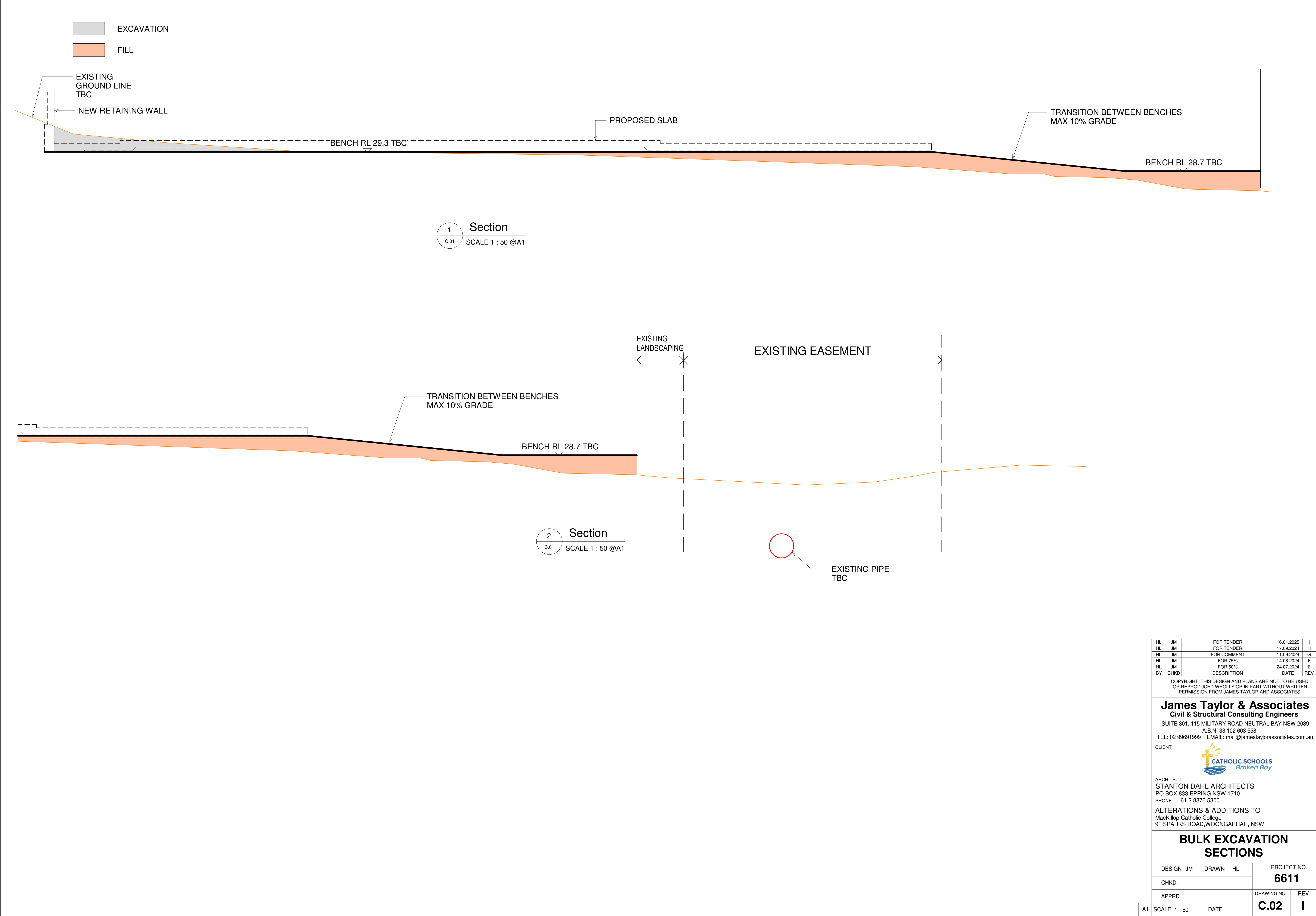
BULK EXCAVATION PLAN
SCALE 1 : 200 @A1 SCALE 1:400 @A3

CONFIRM LEVELS WITH ARCHITECT & LANDSCAPE ARCHITECT



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ELEMENTS OF THIS DRAWING
ARE PRINTED IN COLOUR.



HL	JM	FOR TENDER	16.01.2025	I
HL	JM	FOR TENDER	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
HL	JM	FOR 50%	24.07.2024	E
BY	CHKD	DESCRIPTION	DATE	REV

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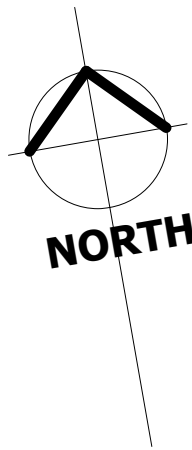
ALTERATIONS & ADDITIONS TO
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BULK EXCAVATION SECTIONS				
DESIGN	JM	DRAWN	HL	PROJECT NO.
CHKD.				6611
APPRD.				DRAWING NO.
A1	SCALE 1 : 50	DATE	C.02	REV
				I

DOCUMENTATION OF STORMWATER DESIGN
ALTERATIONS & ADDITIONS TO
MACKILLOP CATHOLIC COLLEGE
91 SPARKS ROAD,WOONGARRAH, NSW
JAMES TAYLOR AND ASSOCIATES

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STORMWATER DRAWING LIST	
Sheet No.	Sheet Name
SW.1	STORMWATER DESIGN - COVER SHEET
SW.2	STORMWATER DESIGN - GENERAL NOTES
SW.3	STORMWATER CATCHMENT PLAN - EXISTING SITE
SW.4	STORMWATER CATCHMENT PLAN - PROPOSED
SW.5	STORMWATER CATCHMENT BOUNDARIES
SW.9	EXISTING SERVICES PLAN - OVERVIEW
SW.10	STORMWATER CONCEPT PLAN - OVERVIEW
SW.11	STORMWATER CONCEPT PLAN - SHEET 1
SW.12	STORMWATER CONCEPT PLAN - SHEET 2
SW.13	STORMWATER CONCEPT PLAN - SHEET 3
SW.14	STORMWATER CONCEPT PLAN - SHEET 4
SW.15	STORMWATER CONCEPT PLAN - SHEET 5
SW.16	STORMWATER CONCEPT PLAN - STAGING
SW.20	STORMWATER TYPICAL DETAILS
SW.21	STORMWATER SECTIONS SHEET 1
SW.22	STORMWATER SECTIONS SHEET 2
SW.23	STORMWATER SECTIONS SHEET 3
SW.24	STORMWATER SECTIONS SHEET 4
SW.41	RETAINING WALL SECTIONS SHEET 1
SW.42	RETAINING WALL SECTIONS SHEET 2
SW.43	RETAINING WALL SECTIONS SHEET 3



LOCALITY PLAN
NOT TO SCALE

REFERENCE DOCUMENTS

- SURVEY DRAWING PREPARED BY:
Degotardi Smith & Partners
Ph. +61 2 9440 1100
SURVEY REFERENCE: 36174
DRAWING NUMBER: 36174A01.DWG
REV. E
DATED: 01/03/2024
- ARCHITECTURAL DRAWINGS BY:
STANTON DAHL
Ph. +61 2 8876 5300
Project No. 2700.21
- CIVIL WORKS DRAWINGS BY:
Cardno Young
DRAWING No. 239656-3A-201 REV F
DATED: 26.08.05
- HYDRAULIC SERVICES DRAWINGS BY:
ACOR CONSULTANTS
Project No: SY03.0074
Dwg. No: H-02 & H-03
- STRUCTURAL DRAWINGS BY
JAMES TAYLOR & ASSOCIATES
PROJECT No. 6611
DATED: 09.09.2024
- HYDRAULIC DRAWINGS BY
JN RESPONSIVE ENGINEERING
Project No: N0231258
Drawing No: H010 No. 1
DATED: 13.08.24



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HL	JM	FOR TENDER	21.02.2025	J
HL	JM	FOR TENDER	16.01.2025	I
HL	JM	FOR TENDER	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
BY	CHKD	DESCRIPTION	DATE	REV

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ALTERATIONS & ADDITIONS TO
Mackillop Catholic College
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STORMWATER DESIGN -
COVER SHEET

DESIGN JM	DRAWN HL	PROJECT NO. 6611	
CHKD.		DRAWING NO.	REV
APPRD.		SW.1	K

A1	SCALE 1 : 100	DATE
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GENERAL

- G1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTS INCLUDING ALL WORKING DRAWINGS, MAIN CONTRACT, SPECIFICATIONS AND WRITTEN INSTRUCTIONS AS MAY BE ISSUED PRIOR TO OR DURING THE COURSE OF CONSTRUCTION. ALL DISCREPANCIES AND VARIATIONS SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- G2. ALL CIVIL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL RELEVANT AND CURRENT S.A.A. CODES.
- G3. CIVIL DRAWINGS SHALL NOT BE SCALED IN ORDER TO OBTAIN DIMENSIONS. DIMENSIONS WHERE SHOWN ON CIVIL DRAWINGS SHALL BE CO-ORDINATED WITH ALL OTHER RELEVANT DRAWINGS.
- G4. DURING CONSTRUCTION, THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED.

QUALITY ASSURANCE

- 1. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN A QUALITY ASSURANCE SYSTEM MEETING THE REQUIREMENTS OF AS 9002 (LATEST EDITION). THE QUALITY SYSTEM SHALL BE SUCH THAT RECORDS ARE KEPT OF ALL ASPECTS AND STAGES OF THE WORK.
- 2. THE RECORDS FOR EACH CONSTRUCTION TASK SHALL BE STAGED AND ITEMISED TO THE SATISFACTION OF THE CONTRACTOR ADMINISTRATOR. THE PROFORMAS FOR RECORDS SHALL BE SUBMITTED TO THE CONTRACTOR ADMINISTRATOR FOR APPROVAL AND WORK SHALL NOT COMMENCE UNTIL SUCH APPROVAL HAS BEEN GIVEN.
- 3. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN ACCURATE AND UP TO DATE RECORDS AND SHALL MAKE SUCH RECORDS AVAILABLE TO THE CONTRACTOR ADMINISTRATOR IF REQUESTED. FAILURE TO MAINTAIN RECORDS AS SPECIFIED WILL RESULT IN THE CONTRACTOR RE-INSPECTING COMPLETED WORKS IF INSTRUCTED TO DO SO BY THE CONTRACTOR ADMINISTRATOR.
- 4. AT THE COMPLETION OF EACH STAGE OF THE WORKS THE CONTRACTOR SHALL CERTIFY THAT THOSE WORKS HAVE BEEN UNDERTAKEN AND COMPLETED IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATION AND INSTRUCTIONS ISSUED DURING THE COURSE OF THE CONTRACT.

EARTHWORKS

- 1. THE CONTRACTOR SHALL PROVIDE PROPER FENCING, GUARDING, LIGHTING AND OBSERVATION OF ALL EARTHWORKS. TEMPORARY ROADWAYS, FOOTWAYS, GUARDS AND FENCES AS MAY BE RENDERED NECESSARY FOR THE ACCOMMODATION AND PROTECTION OF PEDESTRIANS, VEHICLES, ANIMALS AND THE PUBLIC.
- 2. DURING THE EXECUTION OF WORKS, THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING SERVICES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED TO THE EXISTING SERVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT SERVICE AUTHORITY, AT NO COST TO THE PRINCIPAL.
- 3. WHERE IT IS NECESSARY TO REMOVE, DIVERT OR CUT INTO ANY EXISTING SERVICE, THE CONTRACTOR SHALL GIVE AT LEAST THREE (3) DAYS NOTICE OF ITS REQUIREMENTS TO THE SUPERINTENDENT, WHO WILL ADVISE WHAT ARRANGEMENTS SHOULD BE MADE FOR THE ALTERATION OF SUCH EXISTING WORKS
- 4. THE EXCAVATION SHALL BE CARRIED OUT IN THE LOCATIONS SHOWN AND TO THE LEVELS, WIDTHS AND BATTER SLOPES INDICATED ON THE DRAWINGS.
- 5. EXCAVATED MATERIAL NOT MEETING THE SPECIFICATION FOR FILL MATERIAL SHALL BE DISPOSED OF OFF SITE IN AN APPROPRIATE MANNER.
- 6. WHERE EXCAVATION WORK IS REQUIRED IN THE VICINITY OF EXISTING SERVICES, THE CONTRACTOR SHALL SUPPORT ALL SERVICES DURING THE WORKS.
- 7. WHERE EXCAVATED MATERIAL IS TO BE USED FOR FILLING, THE MATERIAL SHALL BE INSPECTED AND APPROVED BY THE SUPERINTENDENT PRIOR TO USE.
- 8. UNLESS SPECIFIED OTHERWISE ALL FILL SHALL BE COMPACTED TO A STANDARD MAXIMUM DRY DENSITY RATIO BETWEEN 98% - 102% MAXIMUM AT -1% TO +3% OF STANDARD OPTIMUM MOISTURE CONTENT AS DETERMINED BY AS1289.5.4.1 (LATEST ADDITION)
- 9. ALL WASTE MATERIALS SHALL BE DISPOSED OFF-SITE IN AN APPROPRIATE MANNER.
- 10.WHERE ROCK IS EXPOSED DURING EXCAVATION, THE CONTRACTOR SHALL CEASE EXCAVATION AT THIS LOCALITY AND CONTACT THE SUPERINTENDENT WHO WILL THEN ADVISE ON THE LEVEL TO WHICH EXCAVATION IS TAKEN.
- 11.THE CONTRACTOR SHALL AT ITS OWN EXPENSE DO ALL THINGS NECESSARY TO DIVERT ANY WATER INTERFERING WITH THE PROGRESS OF WORKS, KEEP THE EXCAVATIONS AND TRENCHES FREE FROM WATER WHILE THE WORKS ARE IN PROGRESS AND PREVENT ANY DAMAGE TO THE WORKS BY WATER DUE TO FLOODS OR OTHER CAUSES. THE CONTRACTOR SHALL HAVE PUMPING EQUIPMENT FOR KEEPING THE EXCAVATION OR TRENCHES CONSTANTLY DEWATERED DURING THE TIMES THE WORKS ARE IN PROGRESS. ANY WORK OR MATERIAL DAMAGED BY WATER SHALL BE MADE GOOD BY THE CONTRACTOR.
- 12.WHERE DIRECTED BY THE SUPERINTENDENT THE BOTTOM OF TRENCHES OR EXCAVATIONS SHALL BE COMPACTED PRIOR TO THE PLACING OF ANY BEDDING OR CONCRETE MATERIALS.SHOULD, IN THE OPINION OF THE SUPERINTENDENT, THE FOUNDATION MATERIAL BE INCAPABLE OF EFFECTIVE COMPACTION, THE MATERIAL SHALL BE REMOVED AND REPLACED WITH APPROPRIATE MATERIAL.

GENERAL COMPACTION NOTES

- 1. FOUNDATION MATERIAL DEEMED BY THE SUPERINTENDENT AS UNSUITABLE TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW.
- 2. UNLESS OTHERWISE APPROVED OR SPECIFIED, ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING:
 - A) FREE FROM ORGANIC AND PERISHABLE MATTER
 - B) MAXIMUM PARTICLE SIZE 75MM
 - C) PLASTICITY INDEX BETWEEN 2% AND 20%
 - D) CBR > 10
- 3. SELECT FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200MM LOOSE THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289E3.1 OF NOT LESS THAN THE FOLLOWING STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289E1.1:
- 4. LOCATION STANDARD DRY DENSITY
 - AREAS OF SERVICE TRENCHES 98%
 - EMBANKMENTS 100%
 - LANDSCAPED AREAS 90%
 - CONCRETE FOUNDATIONS 100%
- 5. THE CONTRACTOR SHALL PROGRAMME THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED BY THE CONTRACTOR AT HIS COST.
- 6. COMPACTION CONTROL TESTING SHALL BE CARRIED OUT BY AND AT THE COST OF THE CONTRACTOR TO CONFORM WITH LEVEL 1. AS DEFINED IN AS3798 (LATEST EDITION).

FILL

- 1. FOUNDATION MATERIAL DEEMED BY THE SUPERINTENDENT AS UNSUITABLE TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW.
- 2. UNLESS OTHERWISE APPROVED OR SPECIFIED, ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING:
 - A) FREE FROM ORGANIC AND PERISHABLE MATTER
 - B) MAXIMUM PARTICLE SIZE 75MM
 - C) PLASTICITY INDEX BETWEEN 2% AND 20%
 - D) CBR > 10
- 3. SELECT FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200MM LOOSE THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289E3.1 (LATEST EDITION) OF NOT LESS THAN THE FOLLOWING STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289E1.1 (LATEST EDITION):
 - LOCATION STANDARD DRY DENSITY
 - AREAS OF SERVICE TRENCHES 98%
 - EMBANKMENTS 100%
 - LANDSCAPED AREAS 90%
 - CONCRETE FOUNDATIONS 100%
- 4. THE CONTRACTOR SHALL PROGRAMME THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED BY THE CONTRACTOR AT HIS COST.
- 5. COMPACTION CONTROL TESTING SHALL BE CARRIED OUT BY AND AT THE COST OF THE CONTRACTOR TO CONFORM WITH LEVEL 1, AS DEFINED IN AS3798 (LATEST EDITION).
- 6. REPLACEMENT SUBGRADE MATERIAL MAY COMPRISE GRANULAR FILL MATERIAL AND SHOULD HAVE A CBR OF AT LEAST 10%. REPLACEMENT SUBGRADE FILL SHALL BE PLACED ON PROOF ROLLED SUBGRADE IN HORIZONTAL LAYERS OF 200MM TO 250MM MAXIMUM LOOSE THICKNESS (DEPENDING ON THE SIZE OF THE EQUIPMENT) AND COMPACTED TO A MINIMUM DRY DENSITY RATIO (MDDR) OF 98% STANDARD, AT MOISTURE CONTENT WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
- 7. WHERE EXCAVATED MATERIAL IS TO BE USED FOR FILLING, THE MATERIAL SHALL BE INSPECTED AND APPROVED BY THE SUPERINTENDENT PRIOR TO USE.

EXISTING SERVICES

- 1. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA. THE ACCURACY IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCING WORK. ALL CLEARANCES AND APPROVALS SHALL ALSO BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY PRIOR TO THE COMMENCEMENT OF WORK.
- 2. ALL NEW AND EXHUMED SERVICES THAT CROSS EXISTING AND FUTURE ROADS/PAVEMENTS WITHIN THE SITE SHALL BE BACKFILLED WITH DGB20 MATERIAL TO SUBGRADE LEVEL AND COMPACTED TO 98% STANDARD DENSITY RATIO. SUBJECT TO PRIOR APPROVAL FROM RELEVANT AUTHORITY.
- 3. ON COMPLETION OF SERVICES INSTALLATION, ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS,CONCRETE AREAS, GRAVEL AREAS, GRASSED AREAS AND ROAD PAVEMENTS.
- 4. CARE TO BE TAKEN WHEN EXCAVATING NEAR UTILITY SERVICES. NO MECHANICAL EXCAVATION TO BE UNDERTAKEN OVER UTILITIES SERVICES. LIAISE WITH RELEVANT AUTHORITY.
- 5. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS WITHIN THE CONTRACT AREA AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT. ALL TO REGULATORY AUTHORITY STANDARDS AND APPROVAL.
- 6. THE CONTRACTOR IS TO MAINTAIN EXISTING STORMWATER DRAINAGE FLOWS THROUGH THE SITE AT ALL TIMES. MAKE DUE ALLOWANCE FOR ALL SUCH FLOWS AT ALL TIMES.
- 7. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN THE SUPERINTENDENT'S APPROVAL OF THE PROGRAMME FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
- 8. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES AS REQUIRED TO MAINTAIN EXISTING SUPPLY TO ADJOINING PROPERTIES IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- 9. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE OR DAMAGE TO THE ADJACENT RESIDENCES. CONTRACTOR TO GAIN APPROVAL OF THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
- 10.THE CONTRACTOR SHALL UNDERTAKE A DIAL BEFORE YOU DIG (DBYD 1100) SERVICES SEARCH IN ADDITION TO PHYSICAL FIELD LOCATION BEFORE THE COMMENCEMENT OF ANY WORKS.

STORMWATER NOTES

- 1. ALL STORMWATER WORKS ARE TO BE UNDERTAKEN GENERALLY IN ACCORDANCE WITH AS 3500 (LATEST EDITION) STORMWATER DRAINAGE.
- 2. UNLESS OTHERWISE APPROVED ALL DRAINAGE PIPES SHALL BE APPROVED SPIGOT AND SOCKET RCP PIPES WITH RUBBER RING JOINTS, CLASS 2'.
- 3. ALL PIPE JUNCTIONS UP TO AND INCLUDING 450DIA AND ALL TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
- 4. THE CONTRACTOR IS TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION TO DISSIMILAR PIPEWORK.
- 5. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED WITH A NON SHRINK EPDXY GROUT TO ENSURE A SMOOTH FINISH.
- 6. STEP IRONS AT SPACINGS OF 0.3M ARE TO BE PROVIDED IN DRAINAGE PITS MORE THAN 1.0M DEEP.
- 7. PROVIDE 3.0M LENGTH OF 100DIA SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK AT UPSTREAM END OF EACH PIT.
- 8. ALL CONCRETE USED IN DRAINAGE PITS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 32MPA.
- 9. THE EXCAVATED TRENCH WIDTH FOR PIPE LAYING MUST BE AT LEAST 300mm WIDER THAN THE OUTER DIAMETER OF THE PIPE. PIPES ARE TO BE LAID CENTRALLY WITHIN THE EXCAVATED TRENCH.
- 10. ALL PIPES ARE TO BE LAID ON A MINIMUM BEDDING OF 75mm OF SAND GRADED IN ACCORDANCE WITH AS 3500.3 (LATEST EDITION). BEDDING SHALL BE COMPACTED TO AT LEAST 90% OF THE MAXIMUM DRY DENSITY.
- 11.BACKFILL FOR STORMWATER PITS AND PIPES SHALL BE COMPACTED TO AT LEAST 95% (98% UNDER ROADS) OF THE MAXIMUM DRY DENSITY AND GRADED IN ACCORDANCE WITH AS 3500.3 (LATEST EDITION).
- 12.BACKFILL MATERIAL SHALL BE INSPECTED AND APPROVED BY THE SUPERINTENDENT PRIOR TO PLACING AND COMPACTION.
- 13.UNLESS OTHERWISE SPECIFIED PIPE TRENCH TO BE TYPE H2.
- 14.THE CONTRACTOR SHALL ENSURE THAT ANY EXISTING STRUCTURES LOCATED ADJACENT TO EXCAVATED TRENCHES ARE SUPPORTED OR PROTECTED TO PREVENT DAMAGE TO OR MOVEMENT OF THESE STRUCTURES
- 15.UNLESS SPECIFIED ALL DRAINAGE GRATES TO BE CLASS C HEAVY DUTY GALVANISED MILD STEEL TO AS 3996 (LATEST EDITION).
- 16.CHASES SHALL BE FORMED WHERE NECESSARY TO PREVENT SOCKETS, FLANGES OR THE LIKE FROM BEARING ON THE TRENCH BOTTOM OR THE UNDERLAY.
- 17.MATERIAL SHALL BE PLACED IN THE PIPE SURROUND IN LAYERS NOT MORE THAN 200mmn LOOSE THICKNESS AND COMPACT WITHOUT DAMAGING OR DISPLACING THE PIPEWORK. CARE TO BE TAKEN IN VICINITY OF EXISTING SERVICES.
- 18.UPVC PIPES SHALL CONFORM IN ALL RESPECTS WITH THE REQUIREMENTS OF AS1254 (LATEST EDITION). THE CLASS OF PIPES SHALL BE UPVC "STORMWATER HD" DESIGNED FOR SOLVENT WELD SPIGOT AND SOCKET CONNECTION UNLESS NOTED OTHERWISE.
- 19.UPVC PIPES SHALL BE SUPPLIED WITH SUFFICIENT QUANTITIES OF SOLVENT FOR MAKING OF THE PIPE JOINTS.
- 20.UPVC PIPES SHALL BE TRANSPORTED, HANDLED AND STACKED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 21.UPVC PIPE LAYING SHALL BEGIN AT THE DOWNSTREAM END OF THE LINE WITH THE SOCKET END OF THE PIPE FACING UPSTREAM. WHEN THE PIPES ARE LAID, THE BARREL OF EACH PIPE SHALL BE IN CONTACT WITH THE BEDDING MATERIAL THROUGHOUT ITS FULL LENGTH.
- 22.THE UPVC PIPE ENDS SHALL BE THOROUGHLY CLEANED BEFORE THE JOINT IS MADE. JOINTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS DIRECTIONS USING JOINTING SOLVENT AND PRIMER.

SUBSOIL DRAINAGE

- 1. ALL STORMWATER WORKS ARE TO BE UNDERTAKEN GENERALLY IN ACCORDANCE WITH AS 3500 (LATEST EDITION) STORMWATER DRAINAGE.
- 2. ALL PIPEWORK SHALL BE BEDDED ON A CONTINUOUS UNDERLAY OF SAND, NOT LESS THAN 75mm THICK IN OTHER THAN ROCK AND 200mm THICK IN ROCK AFTER COMPACTION. THE SAND SHALL BE GRADED IN ACCORDANCE WITH AS3500 (LATEST EDITION) AND COMPACTED TO AT LEAST 90% OF THE MAXIMUM DRY DENSITY AND SHALL BE GRADED EVENLY TO THE REQUIRED GRADIENT OF THE PIPELINE.
- 3. IN WET OR UNSTABLE GROUND CONDITIONS WHERE THE TRENCH BOTTOM REQUIRES FURTHER STABILIZING, ADDITIONAL BEDDING OF 20mm AND/OR 30mm NOMINAL SIZE GGREGATE (AS DIRECTED BY THE SUPERINTENDENT), SHALL BE PLACED BELOW THE STANDARD BEDDING TO A DEPTH DETERMINED BY THE SUPERINTENDENT. WHERE ORDERED BY THE SUPERINTENDENT AN APPROVED FILTER FABRIC SHALL BE USED IN CONJUNCTION WITH THE ADDITIONAL BEDDING.
- 4. THE BED MATERIAL SHALL BE COMPACTED FOR THE FULL WIDTH OF THE TRENCH BY A MINIMUM OF TWO PASSES OF A VIBRATING PLATE OR HAND TAMPING METHOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- 5. CHASES SHALL BE FORMED WHERE NECESSARY TO PREVENT SOCKETS, FLANGES OR THE LIKE FROM BEARING ON THE TRENCH BOTTOM OR THE UNDERLAY.
- 6. THE CONTRACTOR SHALL ENSURE THAT ANY EXISTING STRUCTURES LOCATED ADJACENT TO EXCAVATED TRENCHES ARE SUPPORTED OR PROTECTED TO PREVENT DAMAGE TO OR MOVEMENT OF THESE STRUCTURES
- 7. THE CONTRACTOR MUST LEAVE ALL SUBSOIL DRAINAGE WORKS UNCOVERED UNTIL ANY TESTING DEEMED NECESSARY BY THE SUPERINTENDENT HAS BEEN PERFORMED.
- 8. PIPE LAYING SHALL BEGIN AT THE DOWNSTREAM END OF THE LINE.
- 9. JOINTS SHALL NOT BE MADE UNDERWATER. THE TRENCH SHALL BE DEWATERED TO FACILITATE JOINT MAKING AND INSPECTION. PRECAUTIONS SHALL BE TAKEN TO PREVENT EROSION OF JOINT MATERIAL BY MOVING CURRENTS OF WATER.
- 10.DRAINAGE LINES SHALL BE CONSTRUCTED TO THE TOLERANCES AS FOLLOWS:

PIPELINE GRADING	LINE TOLERANCE (mm)	LEVEL TOLERANCE (mm)
- LESS THAN 0.6%	50	10
- 0.6% TO 1%	50	20
- GREATER THAN 1%	50	40

NOT WITHSTANDING THE TOLERANCES ABOVE EACH SUBSOIL DRAIN SHALL HAVE A MINIMUM FALL (OF 0.5%) IN THE DIRECTION OF FLOW.
- 11.BACKFILL MATERIAL SHALL BE INSPECTED AND APPROVED BY THE SUPERINTENDENT PRIOR TO PLACING AND COMPACTION.
- 12.ALL BACKFILL FOR SUBSOIL DRAINAGE WORKS IS TO BE COMPACTED IN LAYERS NOT EXCEEDING 300mm LOOSE THICKNESS AND COMPACTED WITHOUT DAMAGING OR DISPLACING THE PIPEWORK.
- 13.BACKFILL FOR SUBSOIL PIPES SHALL BE COMPACTED TO AT LEAST 95% (98% UNDER ROADS) OF THE MAXIMUM DRY DENSITY AT -2% TO +2% OF OPTIMAL MOISTURE CONTENT AND GRADED IN ACCORDANCE WITH AS 3500.3 (LATEST EDITION).
- 14.ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL CEMENT RENDERED WITH AN EPDXY GROUT TO ENSURE A SMOOTH FINISH.

HL	JM	FOR TENDER	05.06.2025	J
HL	JM	FOR TENDER	16.01.2025	I
HL	JM	FOR TENDER	17.08.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
BY	CHKD	DESCRIPTION	DATE	REV

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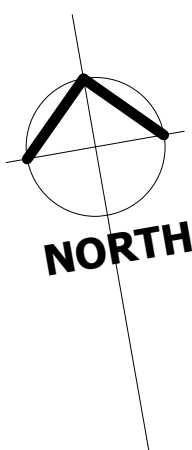
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STORMWATER DESIGN - GENERAL NOTES

DESIGN JM	DRAWN HL	PROJECT NO. 6611	
CHKD.			
APPRD.		DRAWING NO.	REV
SCALE 1 : 1	DATE	SW.2	J



DEVELOPMENT
SITE



LEGEND

- ROOF AREA
- PAVED/IMPERVIOUS AREA
- GRASSED/PERVIOUS AREA

REFER DRAWING SW.1 FOR REFERENCE DOCUMENTS.

EXISTING SITE CONDITIONS - TOTAL SITE

TOTAL SITE AREA = 74870 m²
ROOF AREA = 14742 m²
PAVED/IMPERVIOUS AREA = 34294 m²
GRASSED/PERVIOUS AREA = 25834 m²
TOTAL IMPERVIOUS AREA = 49036 m² OR 65%

EXISTING SITE CONDITIONS - DEVELOPMENT SITE

TOTAL SITE AREA = 9883 m²
ROOF AREA = 3190 m²
PAVED/IMPERVIOUS AREA = 3561 m²
GRASSED/PERVIOUS AREA = 3132 m²
TOTAL IMPERVIOUS AREA = 6751 m² OR 68%

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ARE PRINTED IN COLOUR.

HL	JM	FOR TENDER	16.01.2025	I
HL	JM	FOR TENDER	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
HL	JM	FOR 50%	24.07.2024	E
BY	CHKD	DESCRIPTION	DATE	REV

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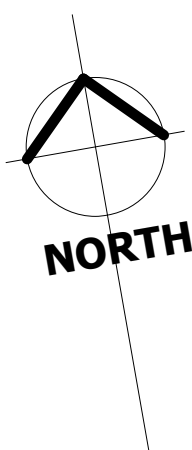

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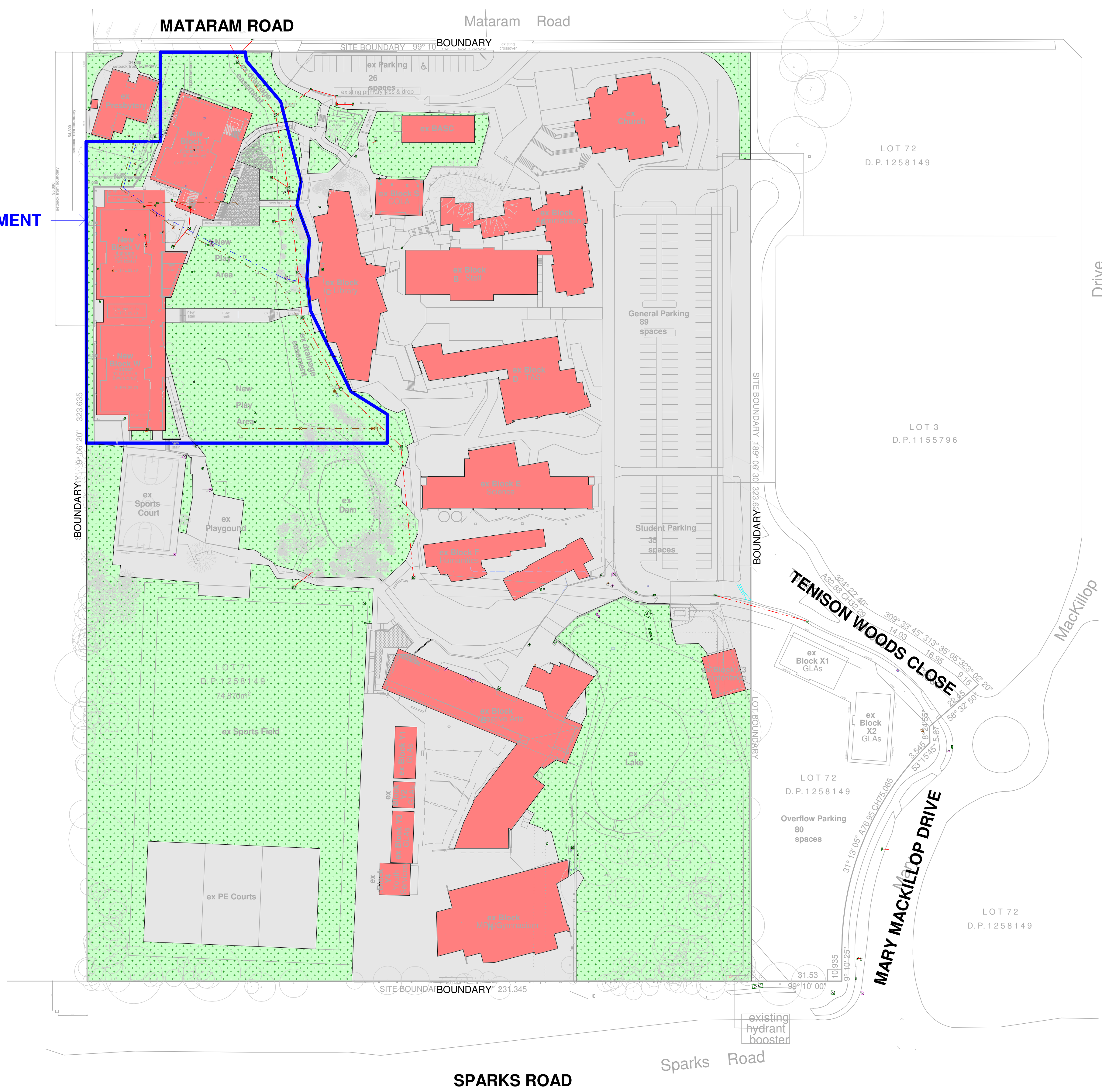
STORMWATER CATCHMENT
PLAN - EXISTING SITE

DESIGN JM	DRAWN HL	PROJECT NO.
CHKD.		6611
APPRD.	DRAWING NO.	REV
A1 SCALE As indicated	DATE	SW.3 I

STORMWATER CATCHMENT PLAN - EXISTING SITE
SCALE1 : 800 @A1



DEVELOPMENT
SITE



STORMWATER CATCHMENT PLAN - PROPOSED
SCALE1 : 800 @A1

LEGEND

ROOF AREA

PAVED/IMPERVIOUS AREA

GRASSED/PERVIOUS AREA

REFER DRAWING SW.1 FOR REFERENCE DOCUMENTS.

PROPOSED SITE CONDITIONS - TOTAL SITE
TOTAL SITE AREA = 74870 m²
ROOF AREA = 13170 m²
PAVED/IMPERVIOUS AREA = 31933 m²
GRASSED/PERVIOUS AREA = 29767 m²
TOTAL IMPERVIOUS AREA = 45103 m² OR 60%

PROPOSED SITE CONDITIONS - DEVELOPMENT SITE
TOTAL SITE AREA = 9883 m²
ROOF AREA = 2930 m²
PAVED/IMPERVIOUS AREA = 1172 m²
GRASSED/PERVIOUS AREA = 5781 m²
TOTAL IMPERVIOUS AREA = 4102 m² OR 42%

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HL	JM	FOR TENDER	16.01.2025	I
HL	JM	FOR TENDER	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
HL	JM	FOR 50%	24.07.2024	E
BY	CHKD	DESCRIPTION	DATE	REV

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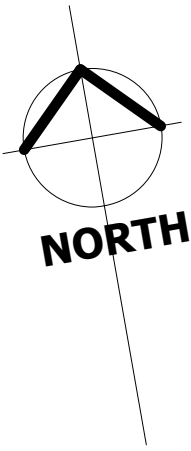
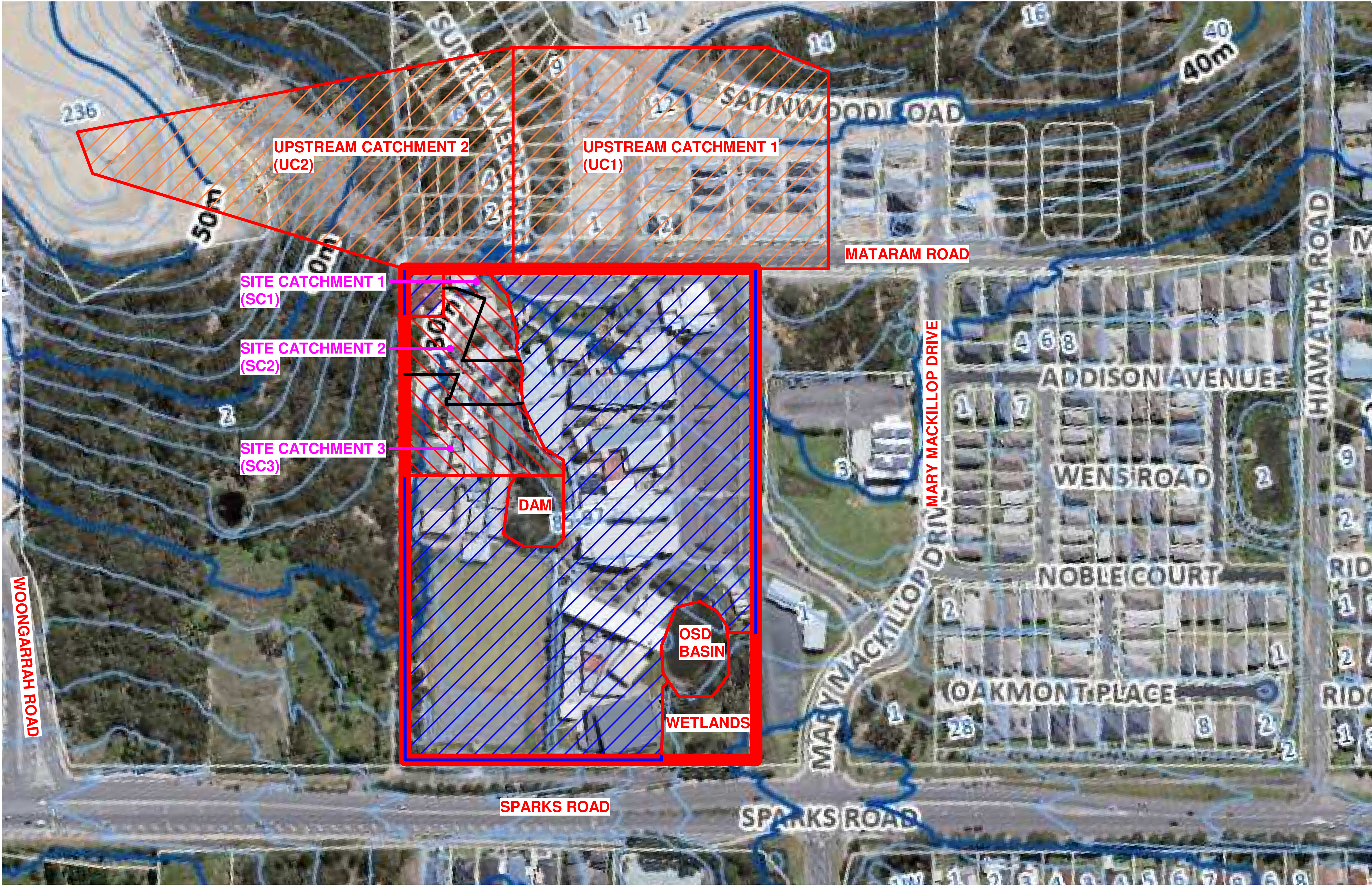
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Broken Bay

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STORMWATER CATCHMENT PLAN - PROPOSED				
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CHKD.				DRAWING NO. SW.4
APPRD.				REV I
A1	SCALE As indicated	DATE		



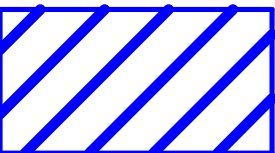
LEGEND



UPSTREAM CATCHMENTS



SITE CATCHMENTS



OUTSIDE DEVELOPMENT AREA

STORMWATER CATCHMENT BOUNDARIES

NOT TO SCALE

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HL	JM	FOR TENDER	17.09.2024	G
HL	JM	FOR COMMENT	11.09.2024	F
HL	JM	FOR 75%	14.08.2024	E
HL	JM	FOR 50%	24.07.2024	D
BY	CHKD	DESCRIPTION	DATE	REV

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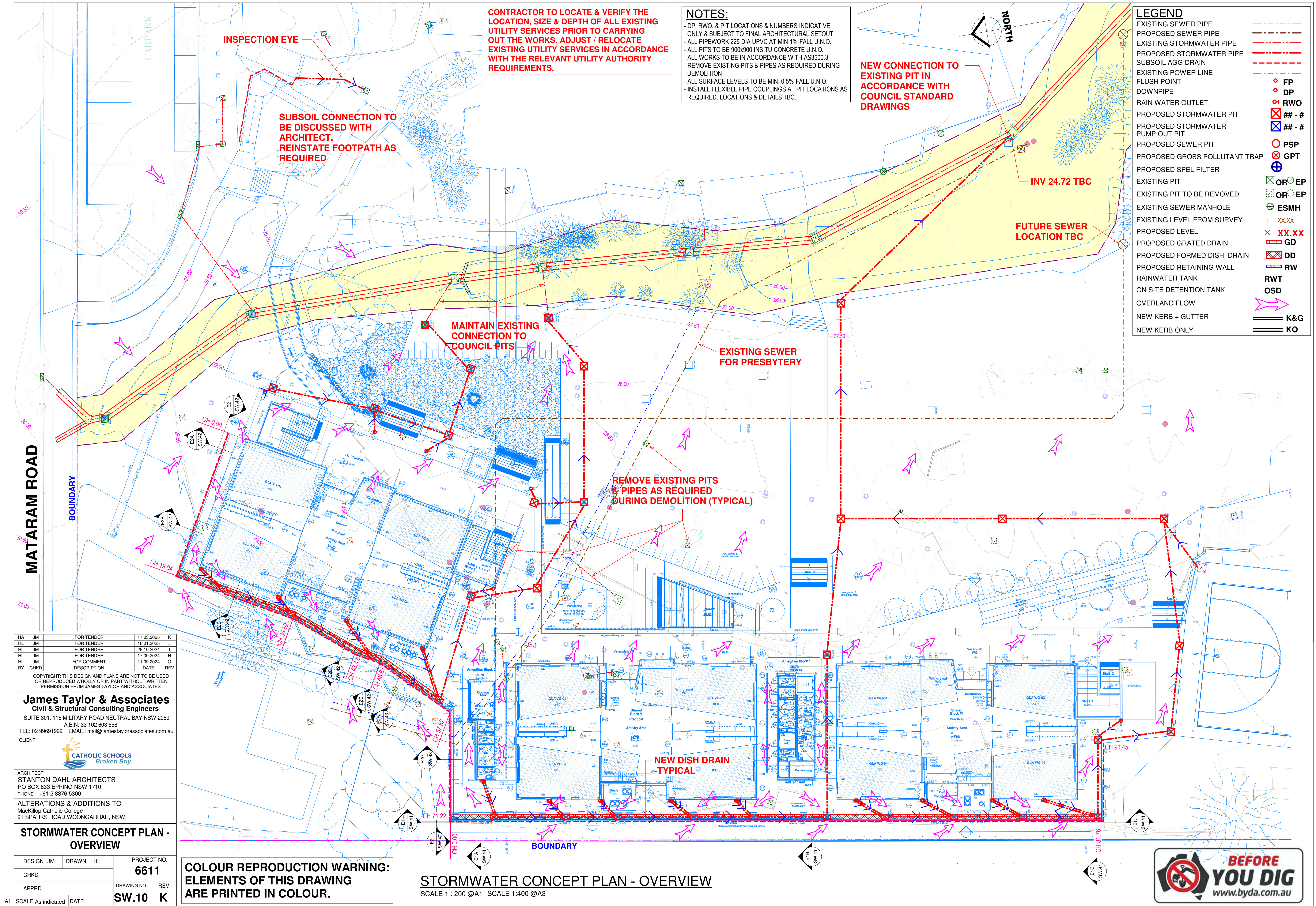
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STORMWATER CATCHMENT
BOUNDARIES

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CHKD.				DRAWING NO.	SW.5
APPRD.				REV	H

A1	SCALE As indicated	DATE
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LEGEND

EXISTING SEWER PIPE	---
PROPOSED SEWER PIPE	---
EXISTING STORMWATER PIPE	---
PROPOSED STORMWATER PIPE	---
SUBSOIL AGG DRAIN	---
EXISTING POWER LINE	---
FLUSH POINT	○ FP
DOWNPIPE	○ DP
RAIN WATER OUTLET	○ RWO
PROPOSED STORMWATER PIT	## - #
PROPOSED STORMWATER PUMP OUT PIT	## - #
PROPOSED SEWER PIT	○ PSP
PROPOSED GROSS POLLUTANT TRAP	⊗ GPT
PROPOSED SPEL FILTER	⊕
EXISTING PIT	OR EP
EXISTING PIT TO BE REMOVED	OR EP
EXISTING SEWER MANHOLE	ESMH
EXISTING LEVEL FROM SURVEY	+ XX.XX
PROPOSED LEVEL	× XX.XX
PROPOSED GRATED DRAIN	GD
PROPOSED FORMED DISH DRAIN	DD
PROPOSED RETAINING WALL	RW
RAINWATER TANK	RWT
ON SITE DETENTION TANK	OSD
OVERLAND FLOW	→
NEW KERB + GUTTER	K&G
NEW KERB ONLY	KO

NOTES:

- DP, RWO, & PIT LOCATIONS & NUMBERS INDICATIVE ONLY & SUBJECT TO FINAL ARCHITECTURAL SETOUT.
- ALL PIPEWORK 225 DIA UPVC AT MIN 1% FALL U.N.O.
- ALL PITS TO BE 900x900 INSITU CONCRETE U.N.O.
- ALL WORKS TO BE IN ACCORDANCE WITH AS3500.3
- REMOVE EXISTING PITS & PIPES AS REQUIRED DURING DEMOLITION
- ALL SURFACE LEVELS TO BE MIN. 0.5% FALL U.N.O.
- INSTALL FLEXIBLE PIPE COUPLINGS AT PIT LOCATIONS AS REQUIRED. LOCATIONS & DETAILS TBC.

**PROTECT SERVICE PITS DURING CONSTRUCTION
ADJUST / RELOCATE
AS REQUIRED TO MEET
UTILITY AUTHORITY
REQUIREMENTS.**

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STORMWATER CONCEPT PLAN - SHEET 1
SCALE 1 : 100 @A1 1:200 @A3

MATARAM ROAD

**CONTRACTOR TO LOCATE & VERIFY THE
LOCATION, SIZE & DEPTH OF ALL EXISTING
UTILITY SERVICES PRIOR TO CARRYING
OUT THE WORKS. ADJUST / RELOCATE
EXISTING UTILITY SERVICES IN ACCORDANCE
WITH THE RELEVANT UTILITY AUTHORITY
REQUIREMENTS.**



KEY PLAN
SCALE1 : 3500 @A1

HL	JM	FOR TENDER	16.01.2025	J
HL	JM	FOR TENDER	29.10.2024	L
HL	JM	FOR TENDER	17.09.2024	L
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
BY	CHKD	DESCRIPTION	DATE	REV

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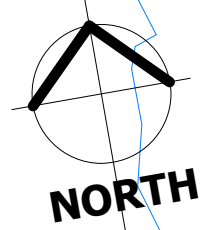
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ALTERATIONS & ADDITIONS TO
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**STORMWATER CONCEPT
PLAN - SHEET 1**

DESIGN	JM	DRAWN	HL	PROJECT NO.	6611
CHKD.				DRAWING NO.	SW.11
APPRD.				REV	J
A1	SCALE As indicated	DATE			





CONFIRM LOCATION & EXTENTS OF PRESBYTERY STORMWATER. IF STORMWATER IS IMPACTED BY DEVELOPMENT, REDIRECT & CONNECT INTO NEW SYSTEM. DETAILS TBC ON SITE.

CONTRACTOR TO LOCATE & VERIFY THE LOCATION, SIZE & DEPTH OF ALL EXISTING UTILITY SERVICES PRIOR TO CARRYING OUT THE WORKS. ADJUST / RELOCATE EXISTING UTILITY SERVICES IN ACCORDANCE WITH THE RELEVANT UTILITY AUTHORITY REQUIREMENTS.



KEY PLAN

SCALE 1 : 3500 @A1

LEGEND

EXISTING SEWER PIPE	---
PROPOSED SEWER PIPE	---
EXISTING STORMWATER PIPE	---
PROPOSED STORMWATER PIPE	---
SUBSOIL AGG DRAIN	---
EXISTING POWER LINE	---
FLUSH POINT	○ FP
DOWNPIPE	○ DP
RAIN WATER OUTLET	○ RWO
PROPOSED STORMWATER PIT	■ ## - #
PROPOSED STORMWATER PUMP OUT PIT	■ ## - #
PROPOSED SEWER PIT	○ PSP
PROPOSED GROSS POLLUTANT TRAP	⊕ GPT
PROPOSED SPEL FILTER	⊕ OR EP
EXISTING PIT	⊕ OR EP
EXISTING PIT TO BE REMOVED	⊕ ESMH
EXISTING SEWER MANHOLE	⊕ ESMH
EXISTING LEVEL FROM SURVEY	+ XX.XX
PROPOSED LEVEL	× XX.XX
PROPOSED GRATED DRAIN	■ GD
PROPOSED FORMED DISH DRAIN	■ DD
PROPOSED RETAINING WALL	■ RW
RAINWATER TANK	■ RWT
ON SITE DETENTION TANK	■ OSD
OVERLAND FLOW	→
NEW KERB + GUTTER	== K&G
NEW KERB ONLY	== KO

NOTES:

- DP, RWO, & PIT LOCATIONS & NUMBERS INDICATIVE ONLY & SUBJECT TO FINAL ARCHITECTURAL SETOUT.
- ALL PIPEWORK 225 DIA UPVC AT MIN 1% FALL U.N.O.
- ALL PITS TO BE 900x900 INSITU CONCRETE U.N.O.
- ALL WORKS TO BE IN ACCORDANCE WITH AS3500.3
- REMOVE EXISTING PITS & PIPES AS REQUIRED DURING DEMOLITION
- ALL SURFACE LEVELS TO BE MIN. 0.5% FALL U.N.O.
- INSTALL FLEXIBLE PIPE COUPLINGS AT PIT LOCATIONS AS REQUIRED. LOCATIONS & DETAILS TBC.

HA	JM	FOR TENDER	17.03.2025	K
HL	JM	FOR TENDER	16.01.2025	J
HL	JM	FOR TENDER	28.10.2024	I
HL	JM	FOR TENDER	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
BY	CHKD	DESCRIPTION	DATE	REV

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STORMWATER CONCEPT PLAN - SHEET 2

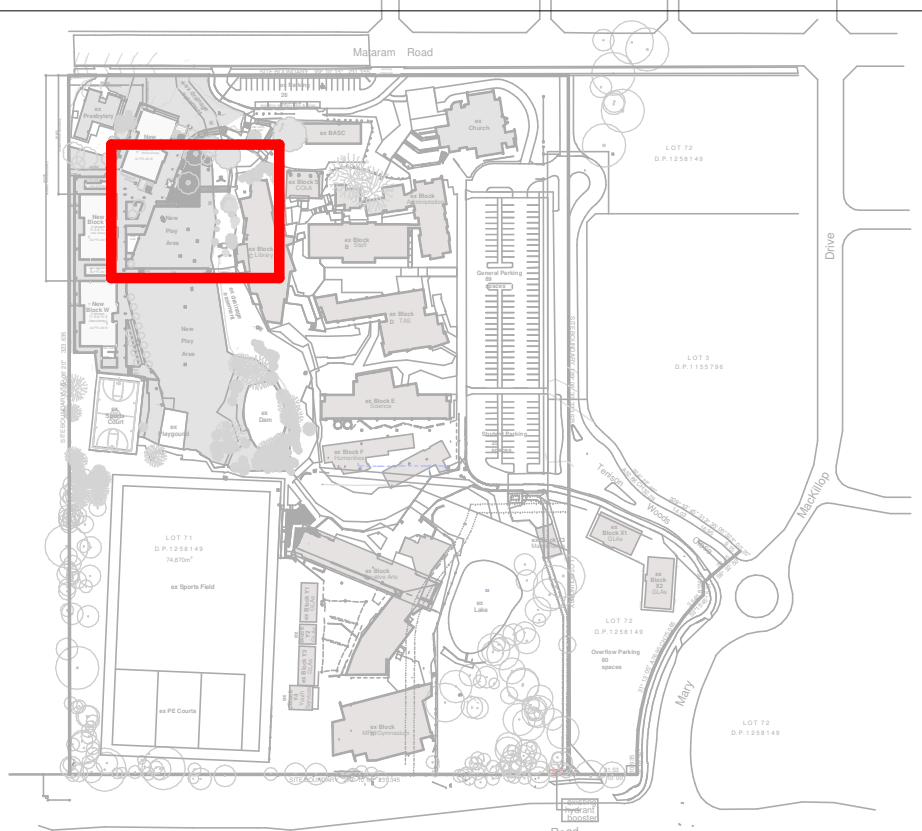
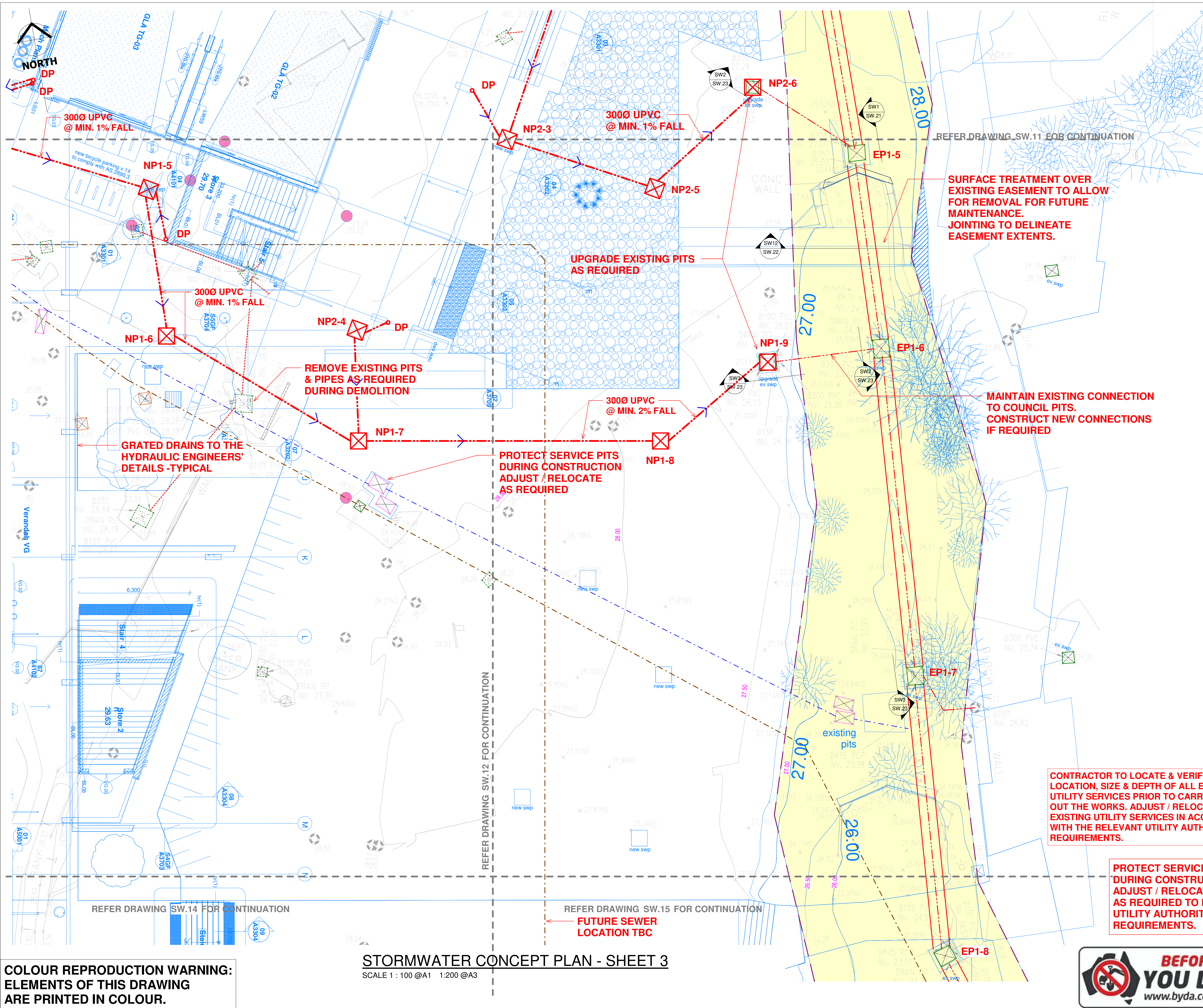
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CHKD.				DRAWING NO.	SW.12
APPRD.				REV	K
A1	SCALE As indicated	DATE			



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STORMWATER CONCEPT PLAN - SHEET 2

SCALE 1 : 100 @A1 1:200 @A3



KEY PLAN
SCALE 1 : 3500 @A1

LEGEND	
EXISTING SEWER PIPE	---
PROPOSED SEWER PIPE	---
EXISTING STORMWATER PIPE	---
PROPOSED STORMWATER PIPE	---
SUBSOIL AGG DRAIN	---
EXISTING POWER LINE	---
FLUSH POINT	○ FP
DOWNPIPE	○ DP
RAIN WATER OUTLET	○ RWO
PROPOSED STORMWATER PIT	□ ## - #
PROPOSED STORMWATER PUMP OUT PIT	□ ## - #
PROPOSED SEWER PIT	□ PSP
PROPOSED GROSS POLLUTANT TRAP	□ GPT
PROPOSED SPEL FILTER	□
EXISTING PIT	□ OR EP
EXISTING PIT TO BE REMOVED	□ OR EP
EXISTING SEWER MANHOLE	○ ESMH
EXISTING LEVEL FROM SURVEY	+ XX.XX
PROPOSED LEVEL	+ XX.XX
PROPOSED GRATED DRAIN	--- GD
PROPOSED FORMED DISH DRAIN	--- DD
PROPOSED RETAINING WALL	--- RW
RAINWATER TANK	RWT
ON SITE DETENTION TANK	OSD
OVERLAND FLOW	→
NEW KERB + GUTTER	== K&G
NEW KERB ONLY	== KO

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- ALL SURFACE LEVELS TO BE MIN. 0.5% FALL U.N.O.
- INSTALL FLEXIBLE PIPE COUPLINGS AT PIT LOCATIONS AS REQUIRED. LOCATIONS & DETAILS TBC.

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HL	JM	FOR TENDER	16.01.2025	L
HL	JM	FOR COMMENT	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
BY	CHKD	DESCRIPTION	DATE	REV

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STORMWATER CONCEPT PLAN - SHEET 3

DESIGN JM	DRAWN HL	PROJECT NO.
CHKD.		6611
APPRD.		DRAWING NO.
A1	SCALE As indicated	DATE
		REV
		SW.13
		J

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STORMWATER CONCEPT PLAN - SHEET 3
SCALE 1 : 100 @A1 1:200 @A3



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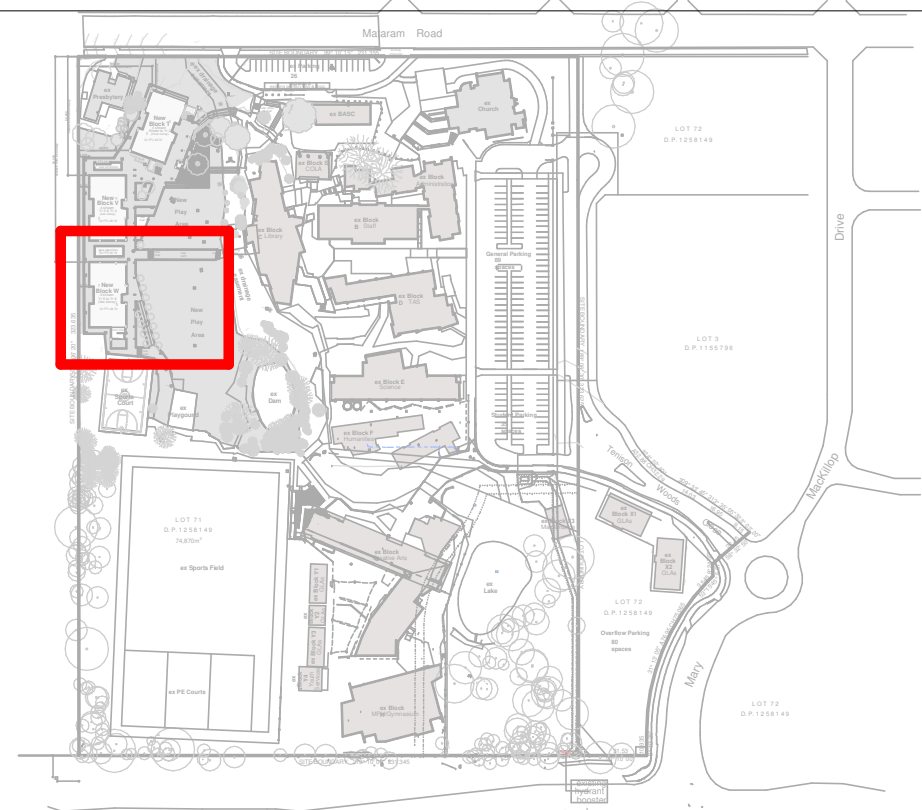
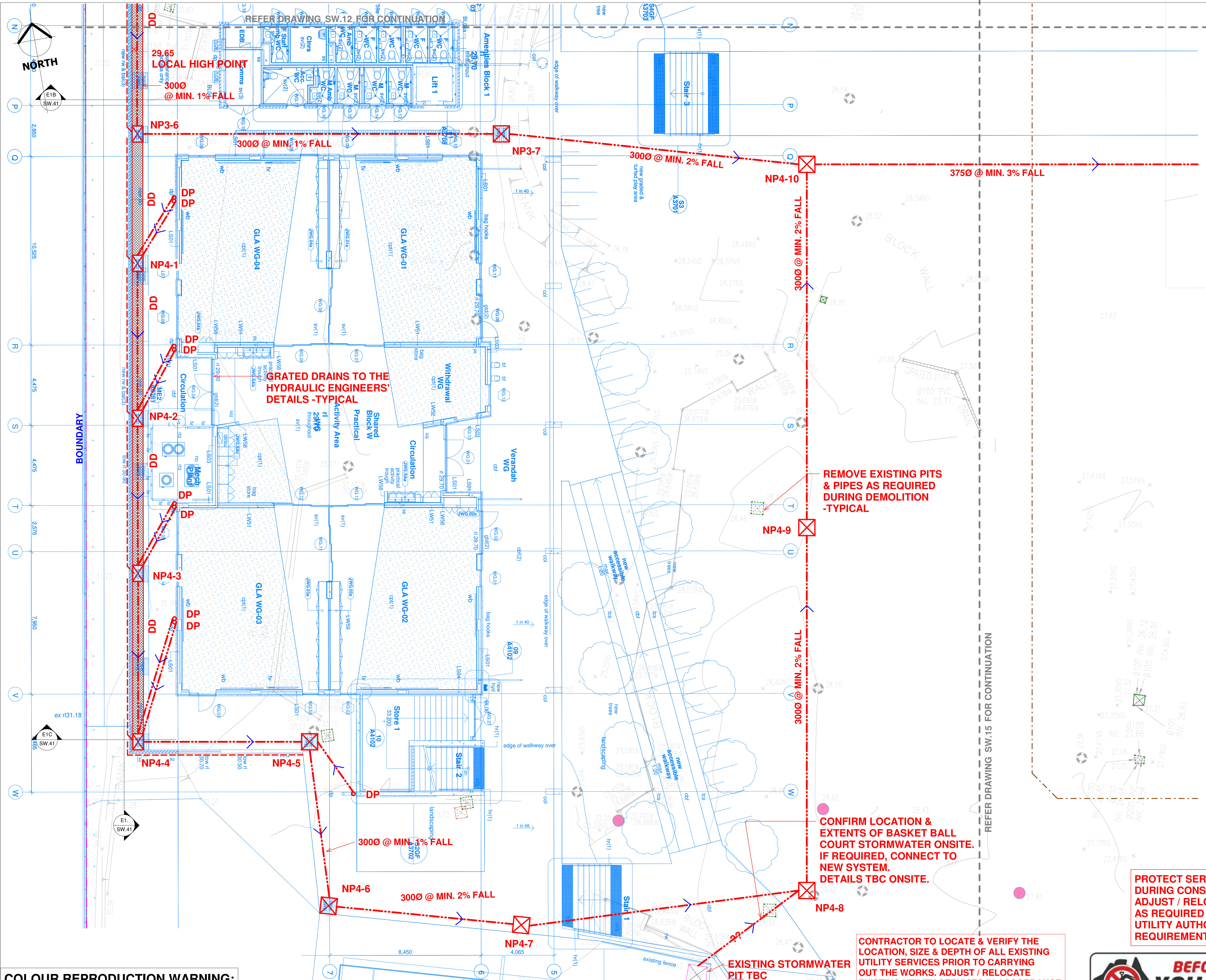
PROTECT SERVICE PITS DURING CONSTRUCTION ADJUST / RELOCATE AS REQUIRED TO MEET UTILITY AUTHORITY REQUIREMENTS.

REFER DRAWING SW.15 FOR CONTINUATION
FUTURE SEWER LOCATION TBC

REFER DRAWING SW.12 FOR CONTINUATION

REFER DRAWING SW.14 FOR CONTINUATION

REFER DRAWING SW.11 FOR CONTINUATION



KEY PLAN
SCALE1 : 3500 @A1

LEGEND	
EXISTING SEWER PIPE	---
PROPOSED SEWER PIPE	---
EXISTING STORMWATER PIPE	---
PROPOSED STORMWATER PIPE	---
SUBSOIL AGG DRAIN	---
EXISTING POWER LINE	---
FLUSH POINT	○ FP
DOWNPIPE	○ DP
RAIN WATER OUTLET	⊗ RWO
PROPOSED STORMWATER PIT	⊗ ## - #
PROPOSED STORMWATER PUMP OUT PIT	⊗ ## - #
PROPOSED SEWER PIT	⊗ PSP
PROPOSED SPOSS POLLUTANT TRAP	⊗ GPT
PROPOSED SPEL FILTER	⊗
EXISTING PIT	⊗ OR ⊗ EP
EXISTING PIT TO BE REMOVED	⊗ OR ⊗ EP
EXISTING SEWER MANHOLE	⊗ ESMH
EXISTING LEVEL FROM SURVEY	+ XX.XX
PROPOSED LEVEL	× XX.XX
PROPOSED GRATED DRAIN	× GD
PROPOSED FORMED DISH DRAIN	⊗ DD
PROPOSED RETAINING WALL	⊗ RW
RAINWATER TANK	RWT
ON SITE DETENTION TANK	OSD
OVERLAND FLOW	→
NEW KERB + GUTTER	== K&G
NEW KERB ONLY	== KO

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HL	JM	FOR TENDER	16.01.2025	J
HL	JM	FOR TENDER	29.10.2024	L
HL	JM	FOR TENDER	17.09.2024	H
HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
BY	CHKD	DESCRIPTION	DATE	REV

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STORMWATER CONCEPT PLAN - SHEET 4

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APPRD.				REV	J
A1	SCALE As indicated	DATE			

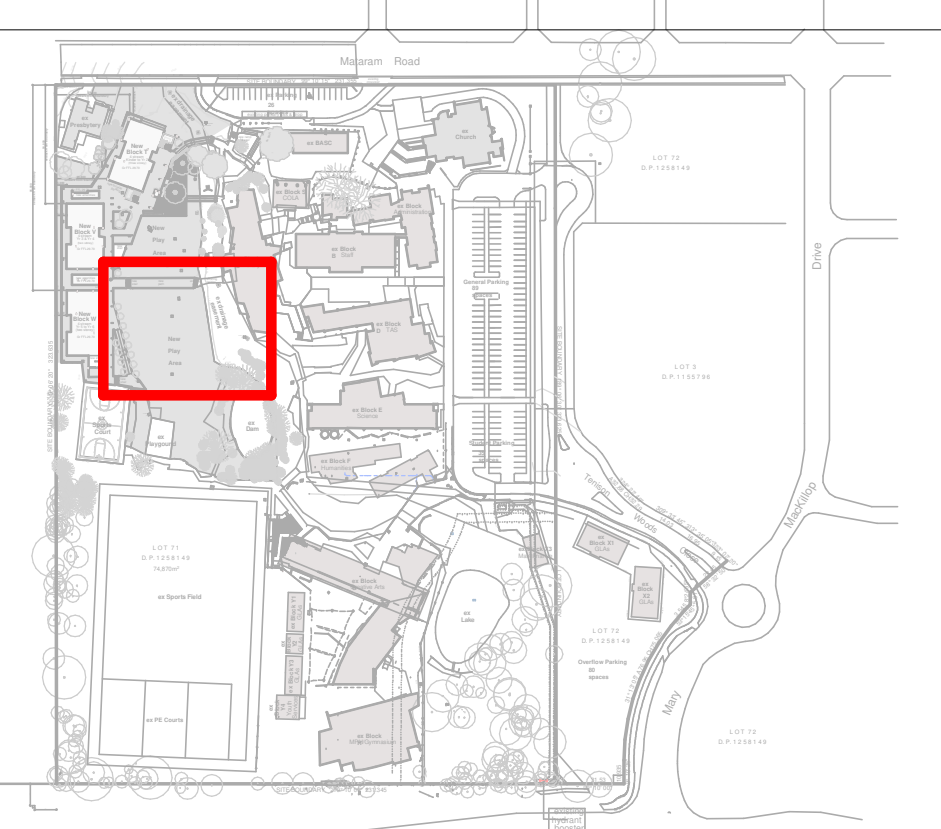
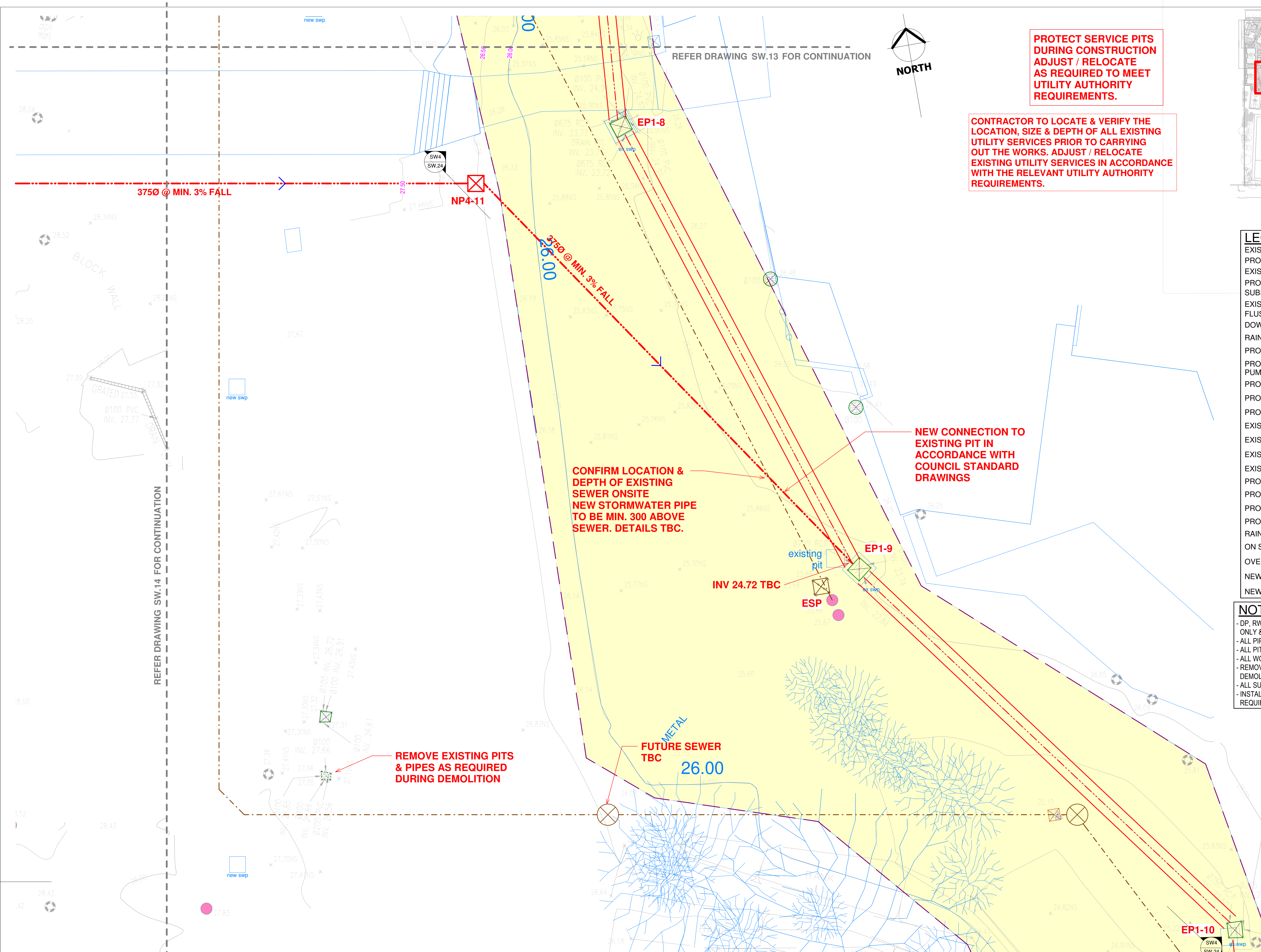
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STORMWATER CONCEPT PLAN - SHEET 4
SCALE 1 : 100 @A1 1:200 @A3

CONTRACTOR TO LOCATE & VERIFY THE LOCATION, SIZE & DEPTH OF ALL EXISTING UTILITY SERVICES PRIOR TO CARRYING OUT THE WORKS. ADJUST / RELOCATE EXISTING UTILITY SERVICES IN ACCORDANCE WITH THE RELEVANT UTILITY AUTHORITY REQUIREMENTS.

PROTECT SERVICE PITS DURING CONSTRUCTION
ADJUST / RELOCATE AS REQUIRED TO MEET UTILITY AUTHORITY REQUIREMENTS.





KEY PLAN
SCALE 1 : 3500 @A1

LEGEND	
EXISTING SEWER PIPE	---
PROPOSED SEWER PIPE	---
EXISTING STORMWATER PIPE	---
PROPOSED STORMWATER PIPE	---
SUBSOIL AGG DRAIN	---
EXISTING POWER LINE	---
FLUSH POINT	FP
DOWNPIPE	DP
RAIN WATER OUTLET	RWO
PROPOSED STORMWATER PIT	## - #
PROPOSED STORMWATER PUMP OUT PIT	## - #
PROPOSED SEWER PIT	PSP
PROPOSED GROSS POLLUTANT TRAP	GPT
PROPOSED SPEL FILTER	+
EXISTING PIT	OR EP
EXISTING PIT TO BE REMOVED	OR EP
EXISTING SEWER MANHOLE	ESMH
EXISTING LEVEL FROM SURVEY	+ XX.XX
PROPOSED LEVEL	XX.XX
PROPOSED GRATED DRAIN	GD
PROPOSED FORMED DISH DRAIN	DD
PROPOSED RETAINING WALL	RW
RAINWATER TANK	RWT
ON SITE DETENTION TANK	OSD
OVERLAND FLOW	→
NEW KERB + GUTTER	K&G
NEW KERB ONLY	KO

NOTES:

- DP, RWO, & PIT LOCATIONS & NUMBERS INDICATIVE ONLY & SUBJECT TO FINAL ARCHITECTURAL SETOUT.
- ALL PIPEWORK 225 DIA UPVC AT MIN 1% FALL U.N.O.
- ALL PITS TO BE 900x900 INSITU CONCRETE U.N.O.
- ALL WORKS TO BE IN ACCORDANCE WITH AS3500.3
- REMOVE EXISTING PITS & PIPES AS REQUIRED DURING DEMOLITION
- ALL SURFACE LEVELS TO BE MIN. 0.5% FALL U.N.O.
- INSTALL FLEXIBLE PIPE COUPLINGS AT PIT LOCATIONS AS REQUIRED. LOCATIONS & DETAILS TBC.

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HL	JM	FOR COMMENT	11.09.2024	G
HL	JM	FOR 75%	14.08.2024	F
HL	JM	FOR 50%	24.07.2024	E
BY	CHKD	DESCRIPTION	DATE	REV

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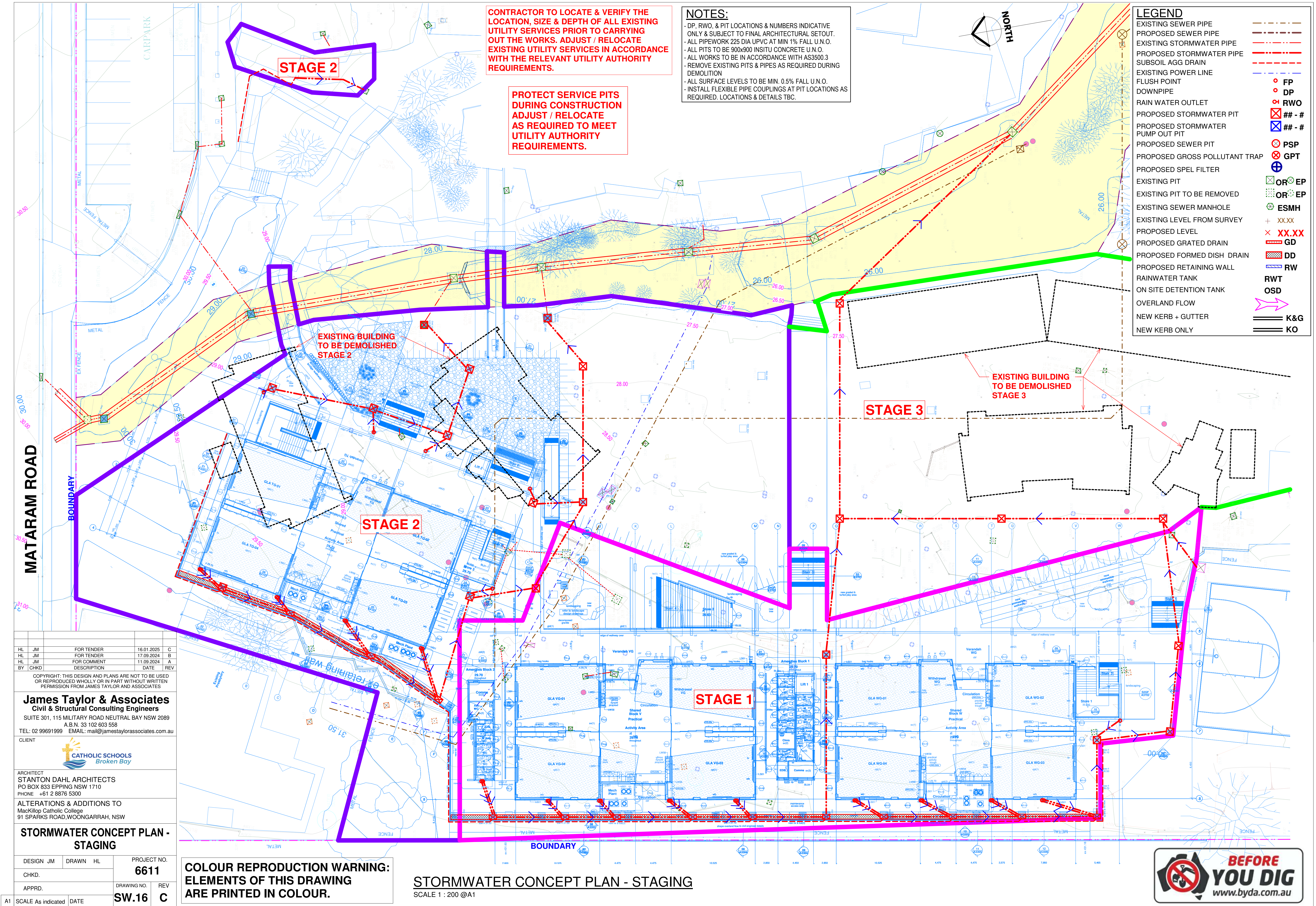
STORMWATER CONCEPT PLAN - SHEET 5

DESIGN	JM	DRAWN	HL	PROJECT NO.	6611
CHKD.				DRAWING NO.	SW.15
APPRD.				REV	I
A1	SCALE As indicated	DATE			

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STORMWATER CONCEPT PLAN - SHEET 5
SCALE 1 : 100 @A1 1:200 @A3





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- ALL SURFACE LEVELS TO BE MIN. 0.5% FALL U.N.O.
- INSTALL FLEXIBLE PIPE COUPLINGS AT PIT LOCATIONS AS REQUIRED. LOCATIONS & DETAILS TBC.

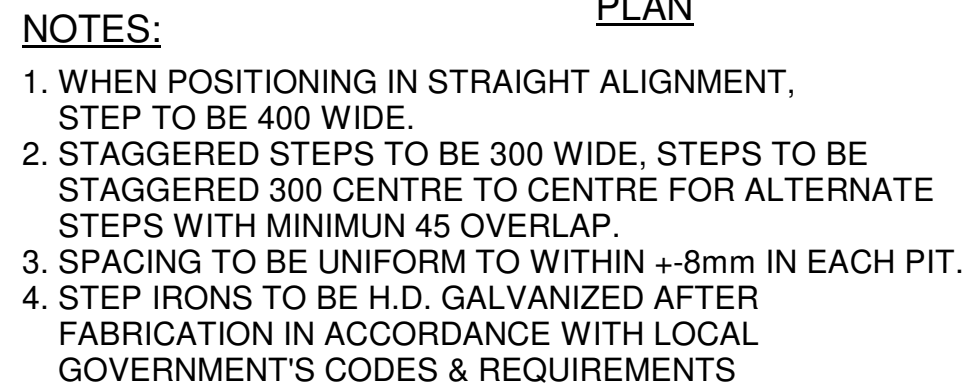
- LEGEND**
- EXISTING SEWER PIPE
 - PROPOSED SEWER PIPE
 - EXISTING STORMWATER PIPE
 - PROPOSED STORMWATER PIPE
 - SUBSOIL AGG DRAIN
 - EXISTING POWER LINE
 - FLUSH POINT
 - DOWNPIPE
 - RAIN WATER OUTLET
 - PROPOSED STORMWATER PIT
 - PROPOSED STORMWATER PUMP OUT PIT
 - PROPOSED SEWER PIT
 - PROPOSED GROSS POLLUTANT TRAP
 - PROPOSED SPFL FILTER
 - EXISTING PIT
 - EXISTING PIT TO BE REMOVED
 - EXISTING SEWER MANHOLE
 - EXISTING LEVEL FROM SURVEY
 - PROPOSED LEVEL
 - PROPOSED GRATED DRAIN
 - PROPOSED FORMED DISH DRAIN
 - PROPOSED RETAINING WALL
 - RAINWATER TANK
 - ON SITE DETENTION TANK
 - OVERLAND FLOW
 - NEW KERB + GUTTER
 - NEW KERB ONLY
- FP
DP
RWO
- #
- #
PSP
GPT
OR EP
OR EP
ESMH
XX.XX
XX.XX
GD
DD
RW
RWT
OSD
K&G
KO

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STORMWATER CONCEPT PLAN - STAGING				
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STORMWATER CONCEPT PLAN - STAGING
SCALE 1 : 200 @A1





NOT TO SCALE



SCALE 1:10



NOTES

1. CONCRETE STRENGTH N25.
2. SIDE DIMENSIONS WILL VARY SUBJECT TO PIPE SIZE. SIDE DIMENSIONS ARE DETERMINED BY LARGEST OUTSIDE PIPE DIMENSIONS PLUS 200.
3. PIT DIMENSIONS ARE ALSO GOVERNED BY THE DEPTH OF THE PIT.
4. REINFORCEMENT IN WALLS/SLAB TO BE IN ACCORDANCE WITH LOCAL GOVERNMENT'S CODES & REQUIREMENTS
5. UNLESS NOTED OTHERWISE, PROVIDE ENVIROPODS TO ALL GRATED PITs.



PIT LID TYPES

PIT NO.	SIZE	SURFACE LEVEL	INVERT LEVEL	GRATE CLASS	LID TYPE
EP1-1	EXISTING	29.83	27.63	EXISTING	EXISTING (D)
EP1-2	EXISTING	29.93	27.61	EXISTING	EXISTING (A)
EP1-3	EXISTING	29.85	27.55	EXISTING	EXISTING (A)
EP1-4	EXISTING	28.70	26.20	EXISTING	EXISTING (A)
EP1-5	EXISTING	27.52	25.03	EXISTING	EXISTING (A)
EP1-6	EXISTING	26.57	24.12	EXISTING	EXISTING (A)
EP1-7	EXISTING	26.72	23.98	EXISTING	EXISTING (A)
EP1-8	EXISTING	25.98	23.72	EXISTING	EXISTING (A)
EP1-9	EXISTING	25.70	22.84	EXISTING	EXISTING (A)
EP1-10	EXISTING	25.40	22.50	EXISTING	EXISTING (A)
EP5-1	EXISTING	30.58	29.98	EXISTING	EXISTING (A)
EP5-2	EXISTING	30.27	29.67	EXISTING	EXISTING (A)
EP5-3	EXISTING	30.05	29.04	EXISTING	EXISTING (D)
EP5-4	EXISTING	29.99	28.42	EXISTING	EXISTING (D)
NP1-1	600x900	29.51**	29.08**	A	V*
NP1-2	600x900	29.44**	28.97**	A	V*
NP1-3	600x900	29.37**	28.84**	A	V*
NP1-4	600x900	29.31**	28.71**	A	V*
NP1-5	900x900	29.26**	28.55**	A	C
NP1-6	900x900	29.40**	28.40**	A	C
NP1-7	900x900	28.58**	28.27**	B	A
NP1-8	900x900	27.80**	27.20**	B	A
NP1-9	900x900	27.40**	25.96**	B	A
NP2-1	900x900	28.87**	28.34**	A	A
NP2-2	900x900	28.62**	28.18**	A	A
NP2-3	900x900	28.60**	28.05**	A	A
NP2-4	900x900	29.58**	28.12**	A	C
NP2-5	900x900	28.50**	27.93**	B	A*
NP2-6	900x900	27.84**	27.23**	B	A
NP3-1	600x900	29.44**	29.01**	A	V*
NP3-2	600x900	29.49**	28.90**	A	V*
NP3-3	600x900	29.53**	28.81**	A	V*
NP3-4	600x900	29.58**	28.69**	A	V*
NP3-5	600x900	29.62**	28.66**	A	V*
NP3-6	600x900	29.62**	28.55**	A	V*
NP3-7	900x900	29.55**	28.32**	A	C
NP4-1	600x900	29.58**	29.15**	A	V*
NP4-2	600x900	29.53**	29.12**	A	V*
NP4-3	600x900	29.48**	29.01**	A	V*
NP4-4	600x900	29.43**	28.90**	A	V*
NP4-5	900x900	29.38**	28.78**	A	A*
NP4-6	900x900	29.33**	28.675**	A	A*
NP4-7	900x900	29.23**	28.20**	A	A*
NP4-8	900x900	28.47**	27.87**	B	A
NP4-9	900x900	28.50**	27.44**	B	A
NP4-10	900x900	28.90**	27.21**	B	A
NP4-11	900x900	26.50**	25.62**	B	A

NOTES

- * HEEL SAFE GRATE TYPE REQUIRED FOR PEDESTRIAN SAFETY.
** LEVELS INDICATIVE ONLY & SUBJECT TO FINAL ARCHITECTURAL LAYOUT.

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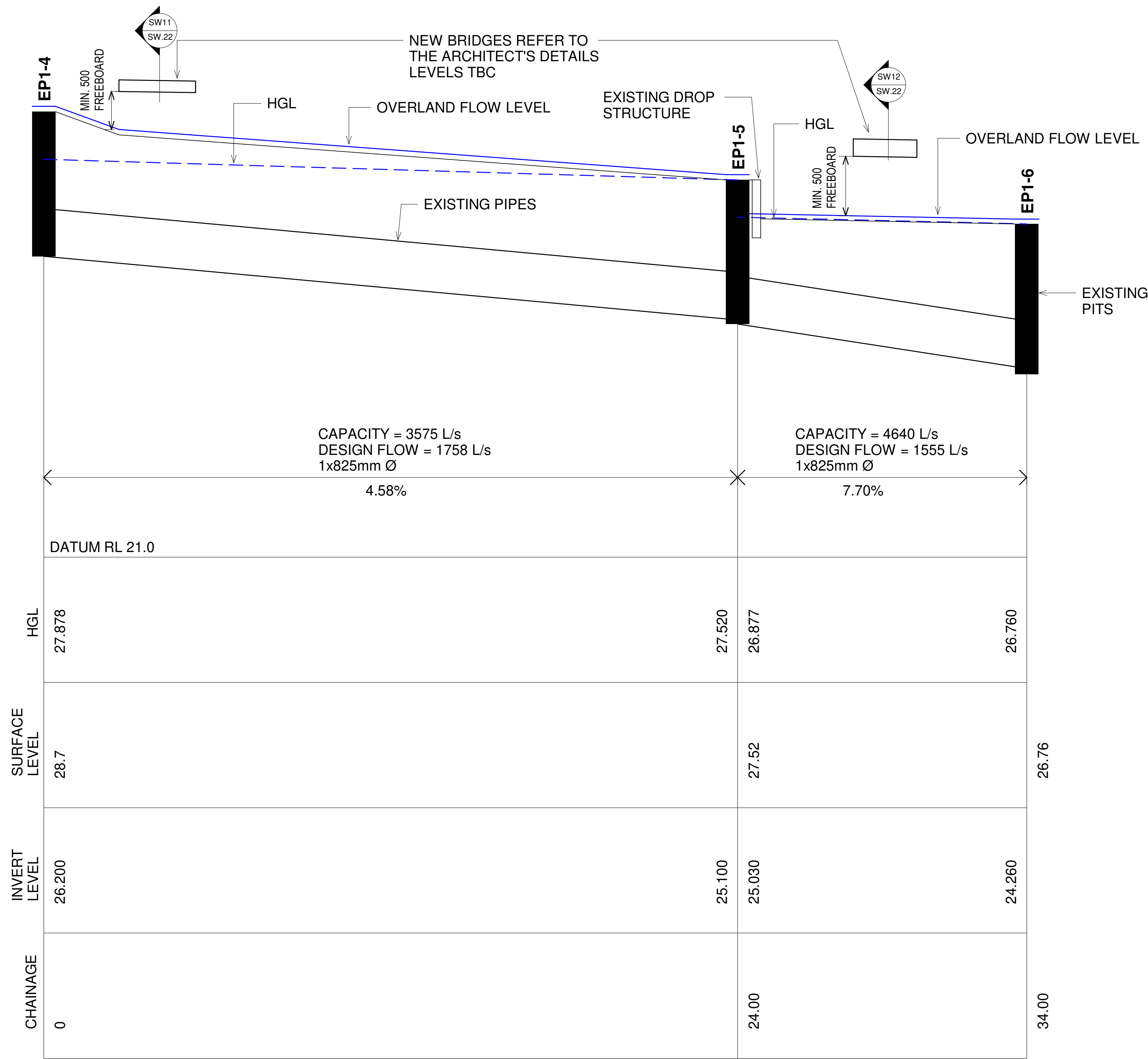


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STORMWATER TYPICAL DETAILS

	DESIGN JM	DRAWN HL	PROJECT NO. 6611	
	CHKD.			
	APPRD.		DRAWING NO.	REV
A1	SCALE As indicated	DATE	SW.20	J



SW1
SW.11

LONGITUDINAL SECTION - EP1-4 TO EP1-6

SCALE 1:100 @A1 HORIZONTAL
SCALE 1:50 @A1 VERTICAL

RESULTS FROM DRAINS MODEL FOR POST DEVELOPMENT CATCHMENTS
RESULTS FOR CRITICAL 1% AEP STORM EVENT

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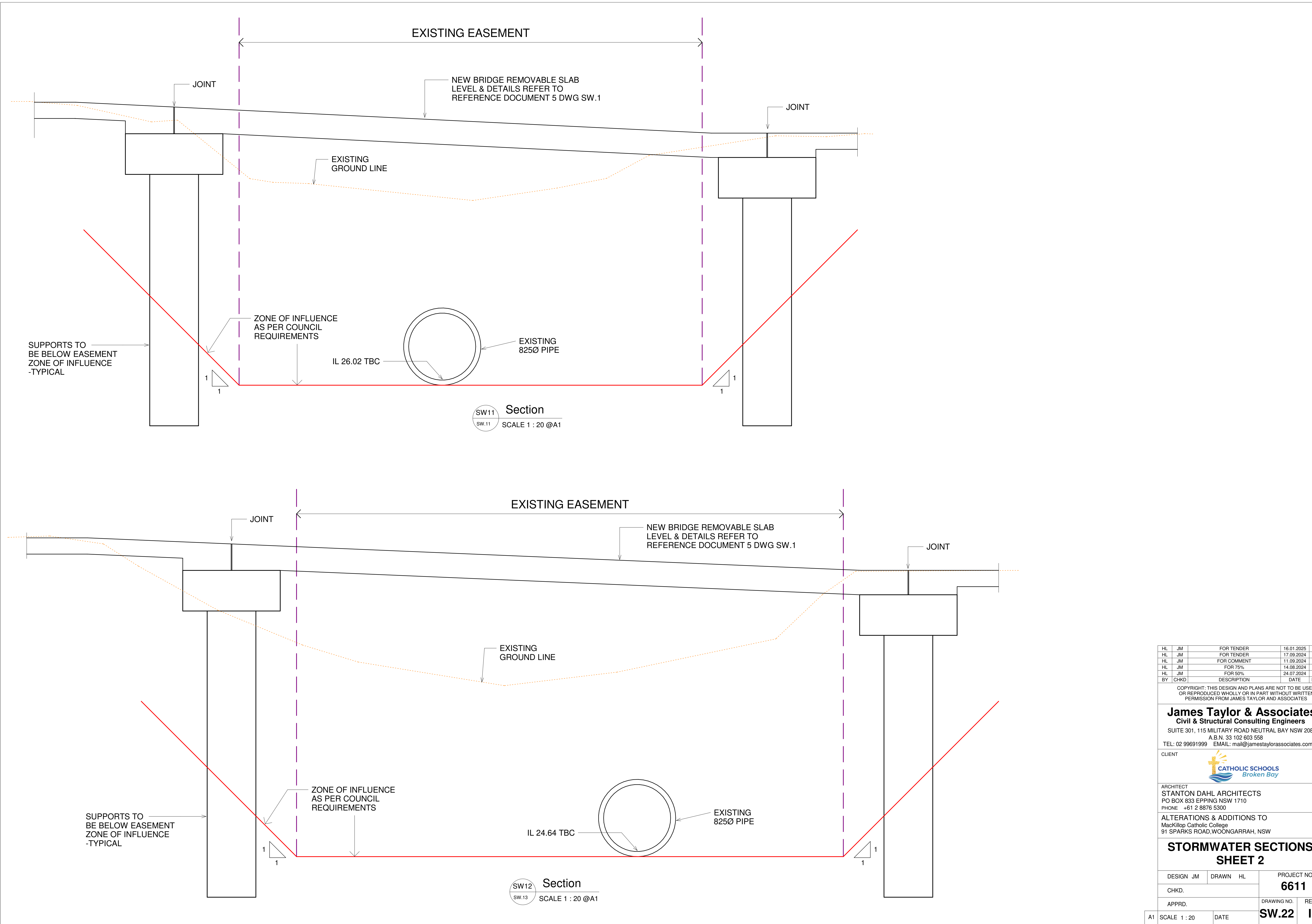
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STORMWATER SECTIONS SHEET 1

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CHKD.		6611
APPRD.	DRAWING NO.	REV
A1 SCALE 1 : 100	DATE	SW.21 I



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BY	CHKD	DESCRIPTION	DATE	REV

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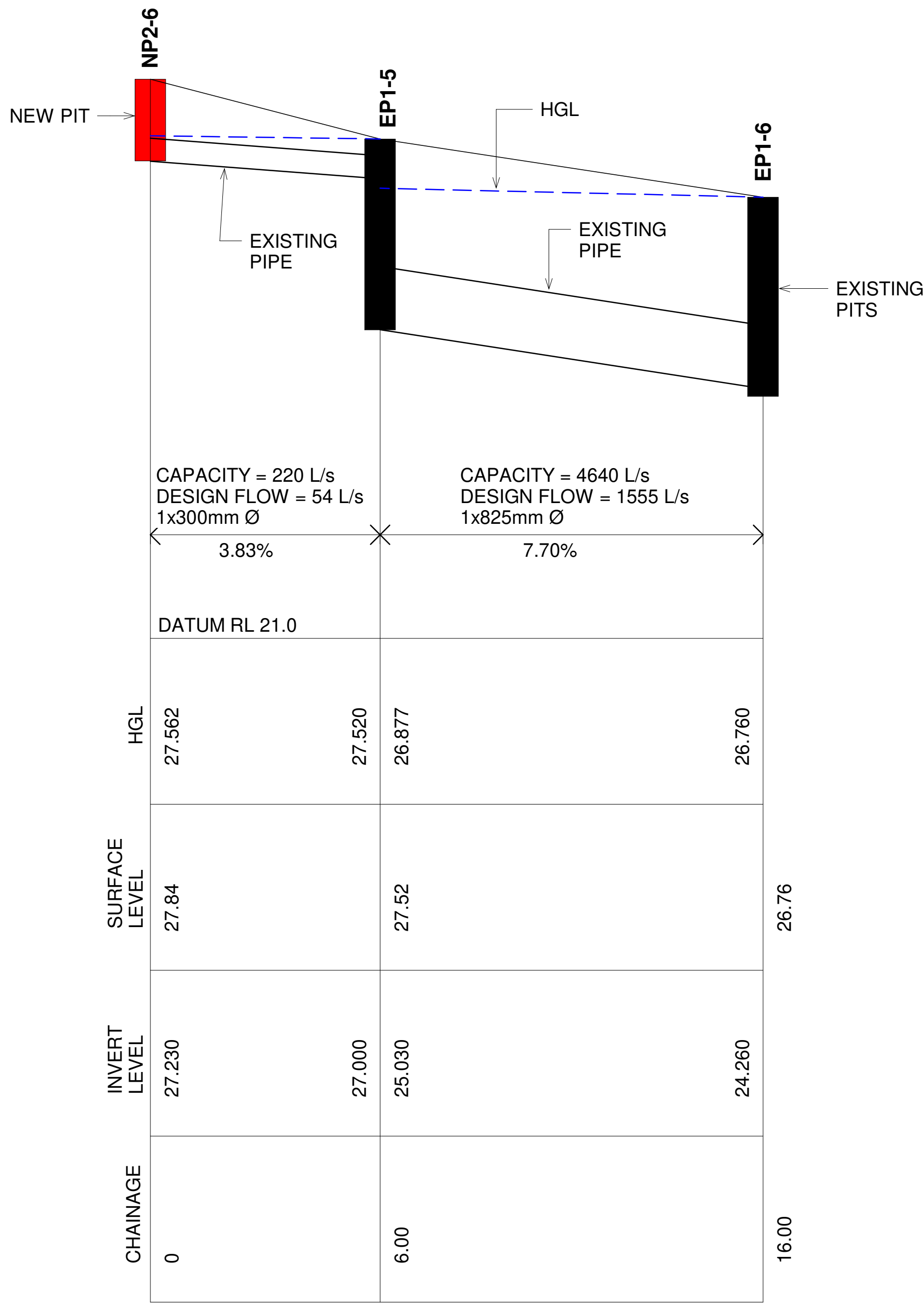
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STORMWATER SECTIONS SHEET 2

DESIGN	JM	DRAWN	HL	PROJECT NO.	6611
CHKD.				DRAWING NO.	SW.22
APPRD.				REV	I
A1	SCALE 1 : 20	DATE			

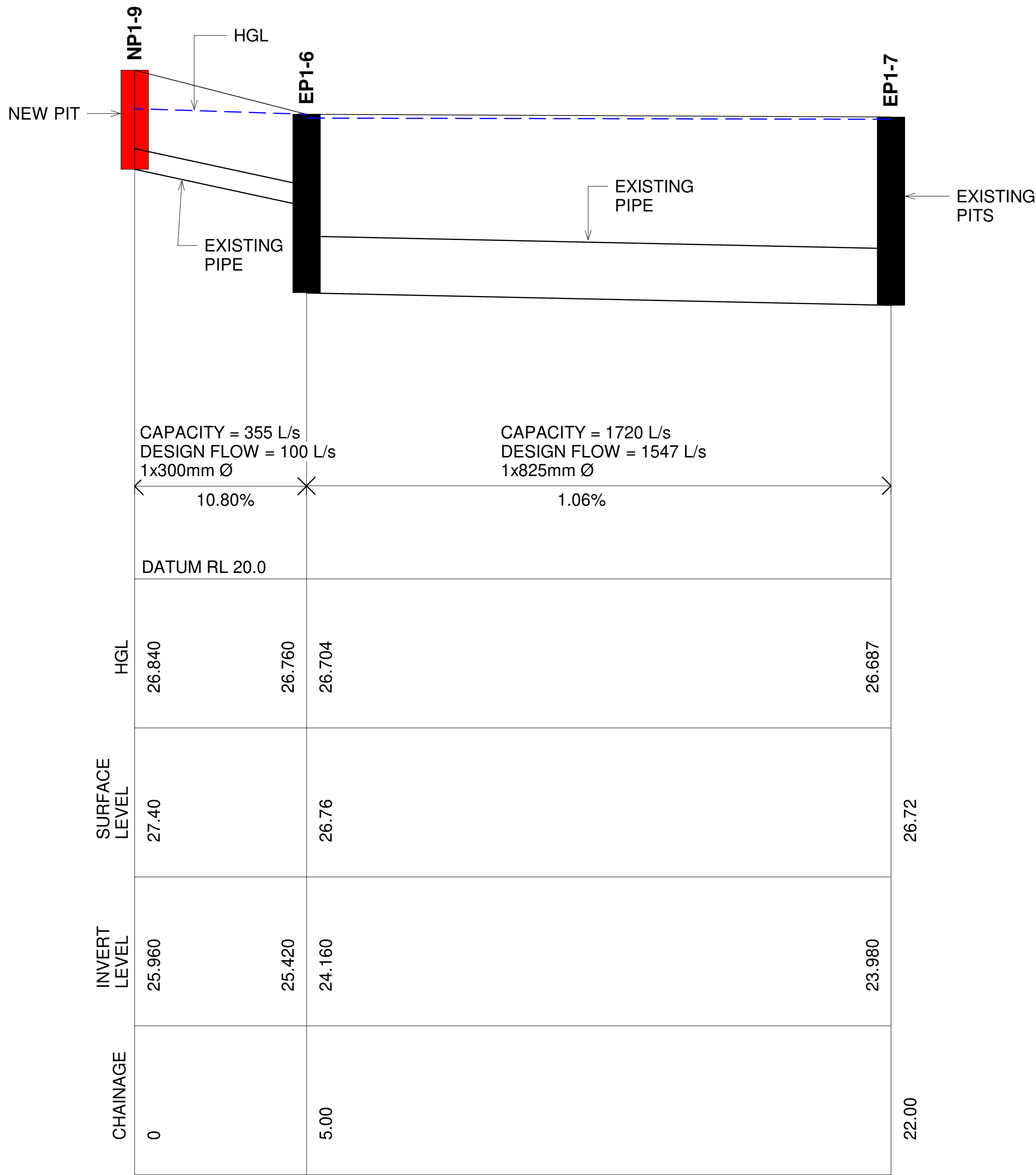


SW2
SW.11

LONGITUDINAL SECTION - NP2-6 TO EP1-6

SCALE 1:100 @A1 HORIZONTAL
SCALE 1:50 @A1 VERTICAL

RESULTS FROM DRAINS MODEL FOR POST DEVELOPMENT CATCHMENTS
RESULTS FOR CRITICAL 1% AEP STORM EVENT



SW3
SW.13

LONGITUDINAL SECTION - NP1-9 TO EP1-7

SCALE 1:100 @A1 HORIZONTAL
SCALE 1:50 @A1 VERTICAL

RESULTS FROM DRAINS MODEL FOR POST DEVELOPMENT CATCHMENTS
RESULTS FOR CRITICAL 1% AEP STORM EVENT

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HL	JM	FOR COMMENT	11.09.2024	E
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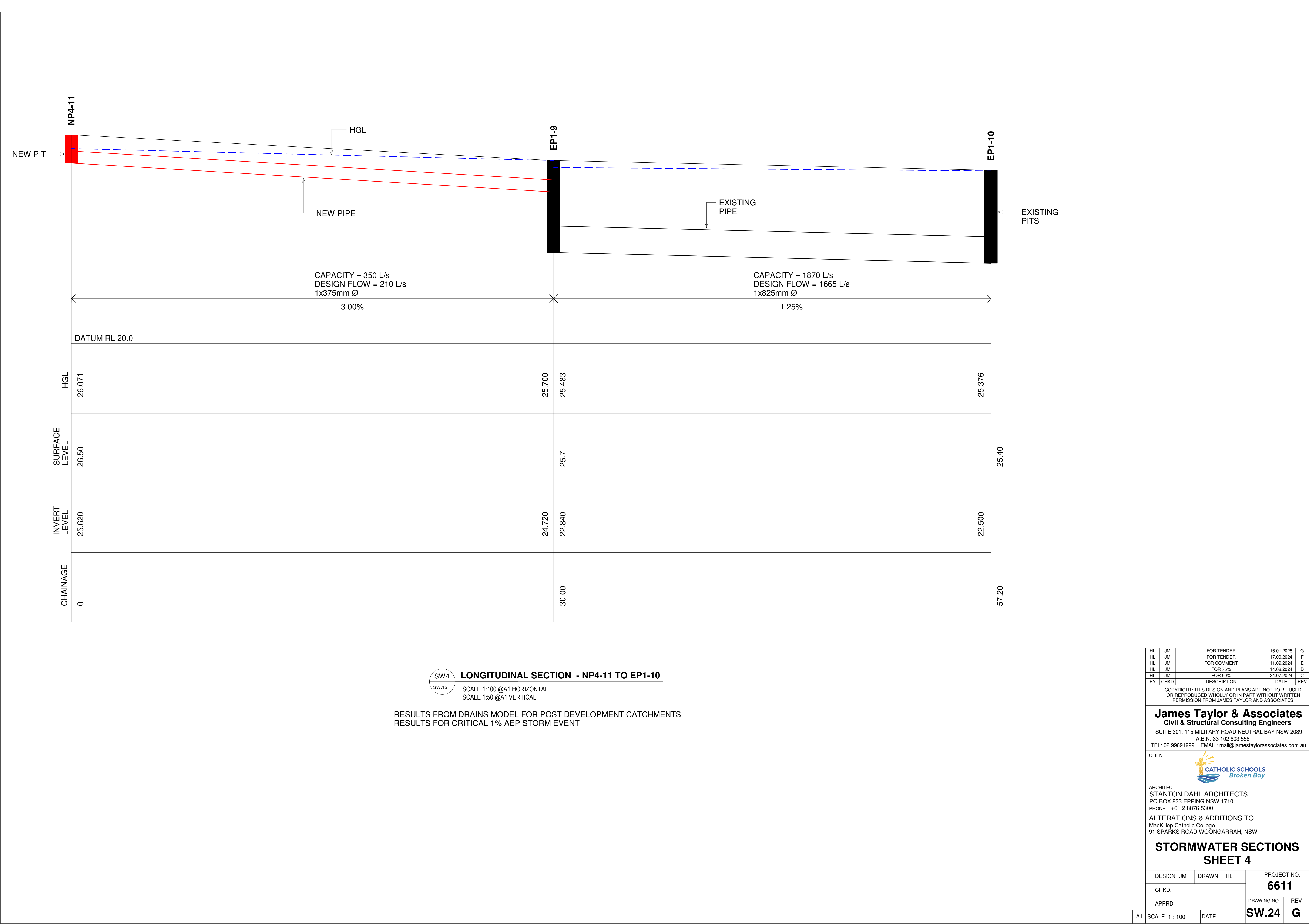


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STORMWATER SECTIONS SHEET 3

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CHKD.		6611
APPRD.	DRAWING NO.	REV
A1	SCALE 1 : 100	DATE
		SW.23
		G



SW4 LONGITUDINAL SECTION - NP4-11 TO EP1-10
SW.15
SCALE 1:100 @A1 HORIZONTAL
SCALE 1:50 @A1 VERTICAL

RESULTS FROM DRAINS MODEL FOR POST DEVELOPMENT CATCHMENTS
RESULTS FOR CRITICAL 1% AEP STORM EVENT

HL	JM	FOR TENDER	16.01.2025	G
HL	JM	FOR TENDER	17.09.2024	F
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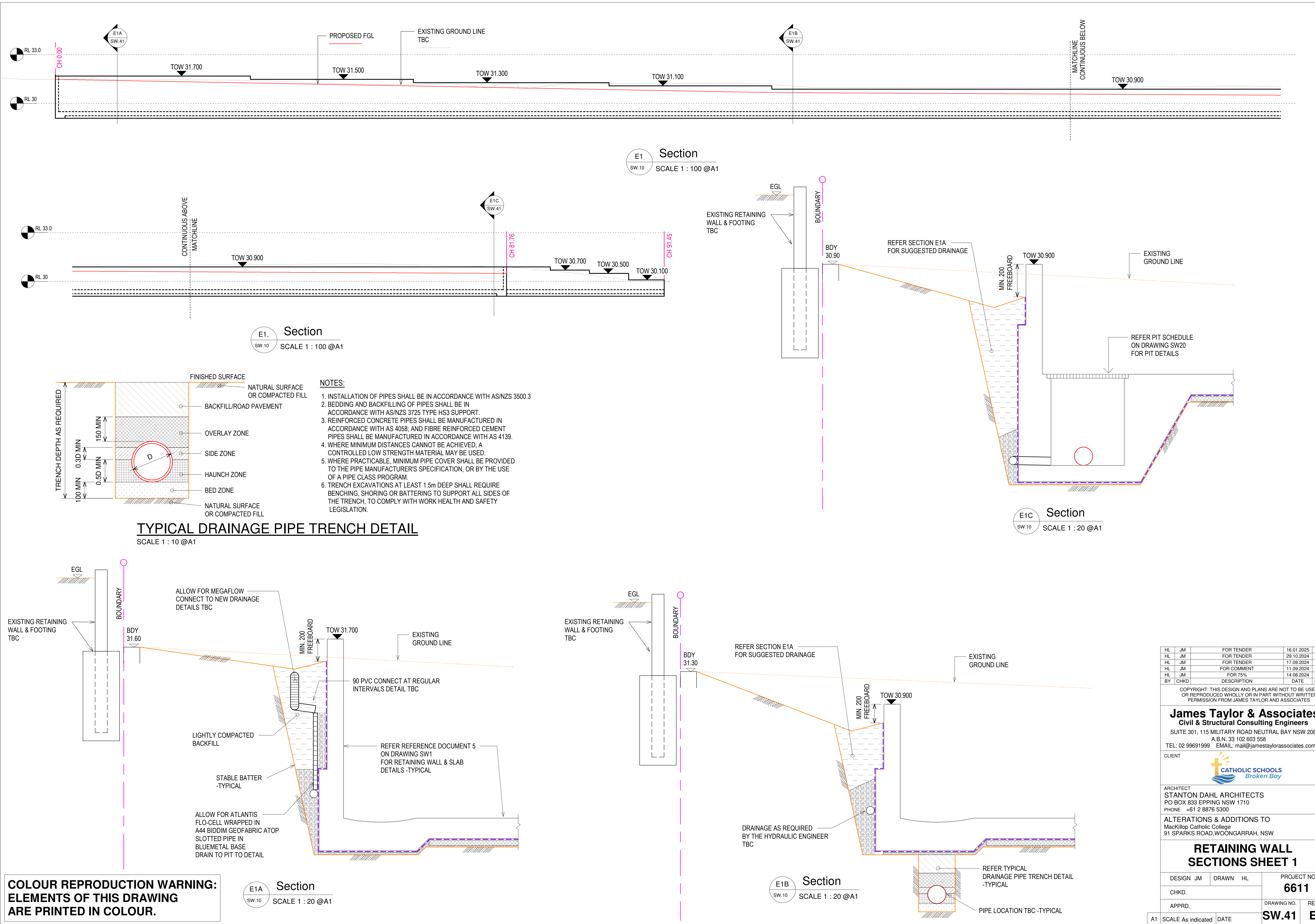
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**STORMWATER SECTIONS
SHEET 4**

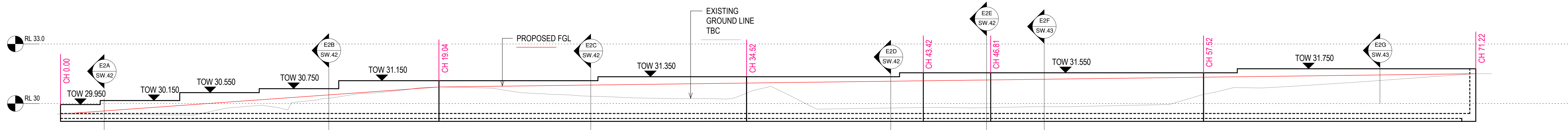
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APPRD.		REV

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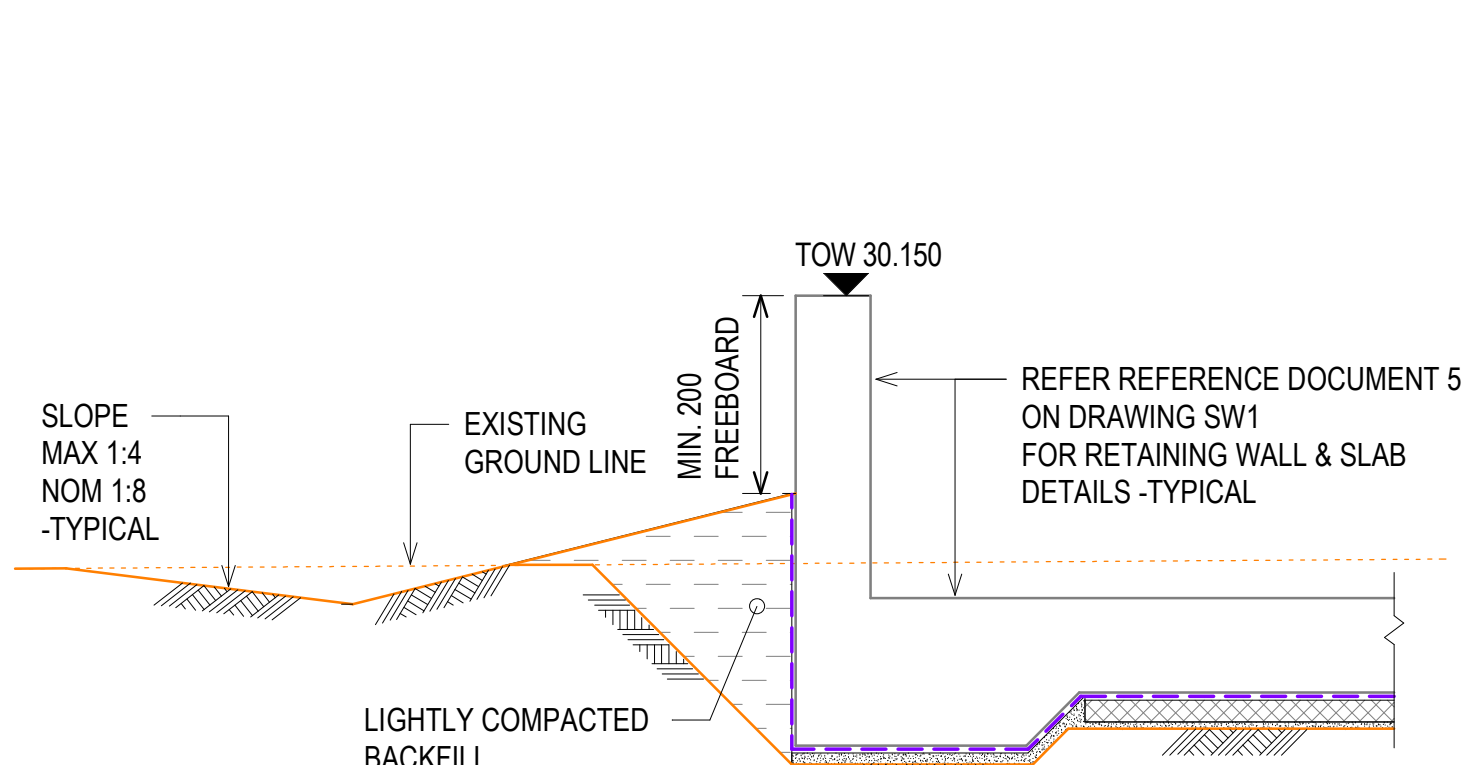


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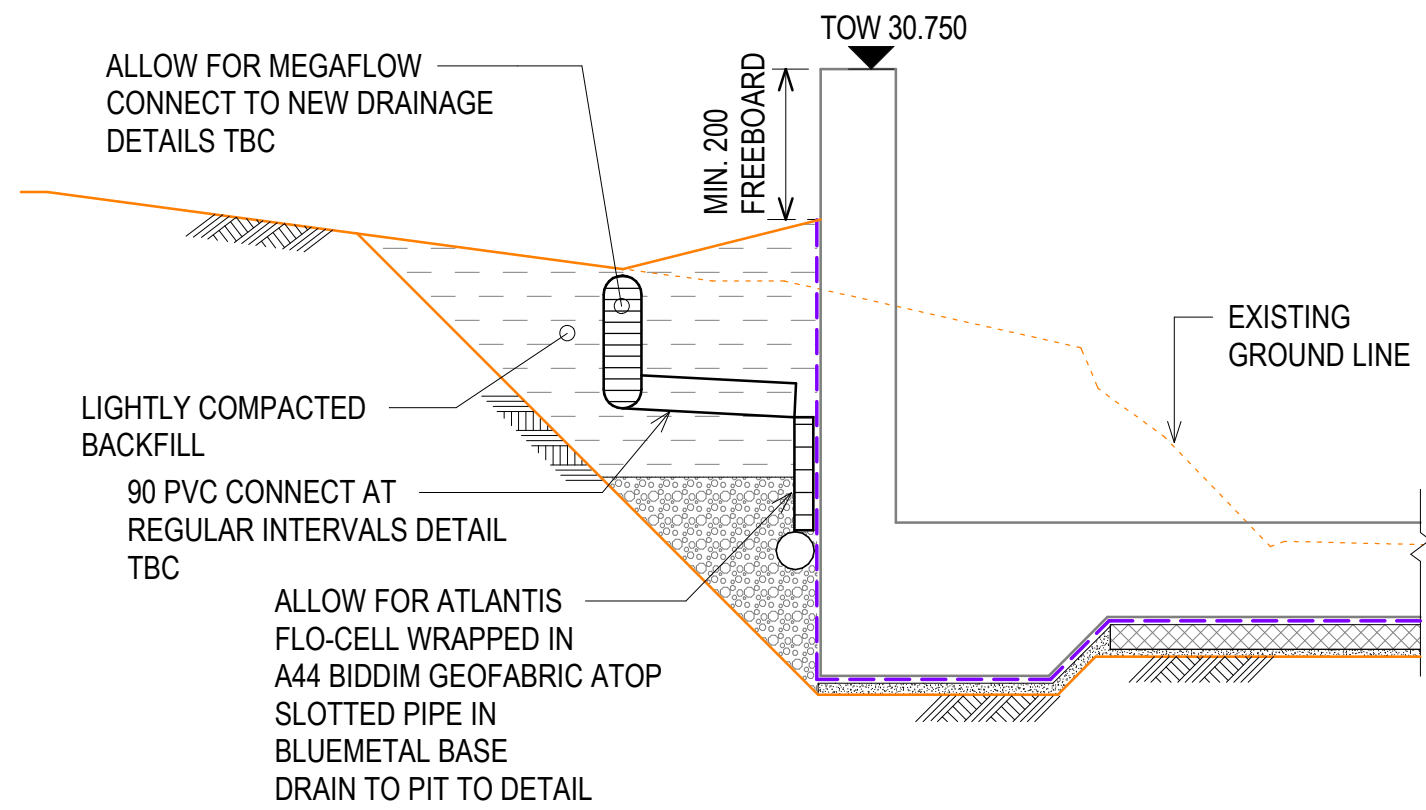
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RETAINING WALL SECTIONS SHEET 1				
DESIGN	JM	DRAWN	HL	PROJECT NO.
CHKD.				6611
APPRD.				DRAWING NO.
A1	SCALE As indicated	DATE		SW.41
				REV
				E



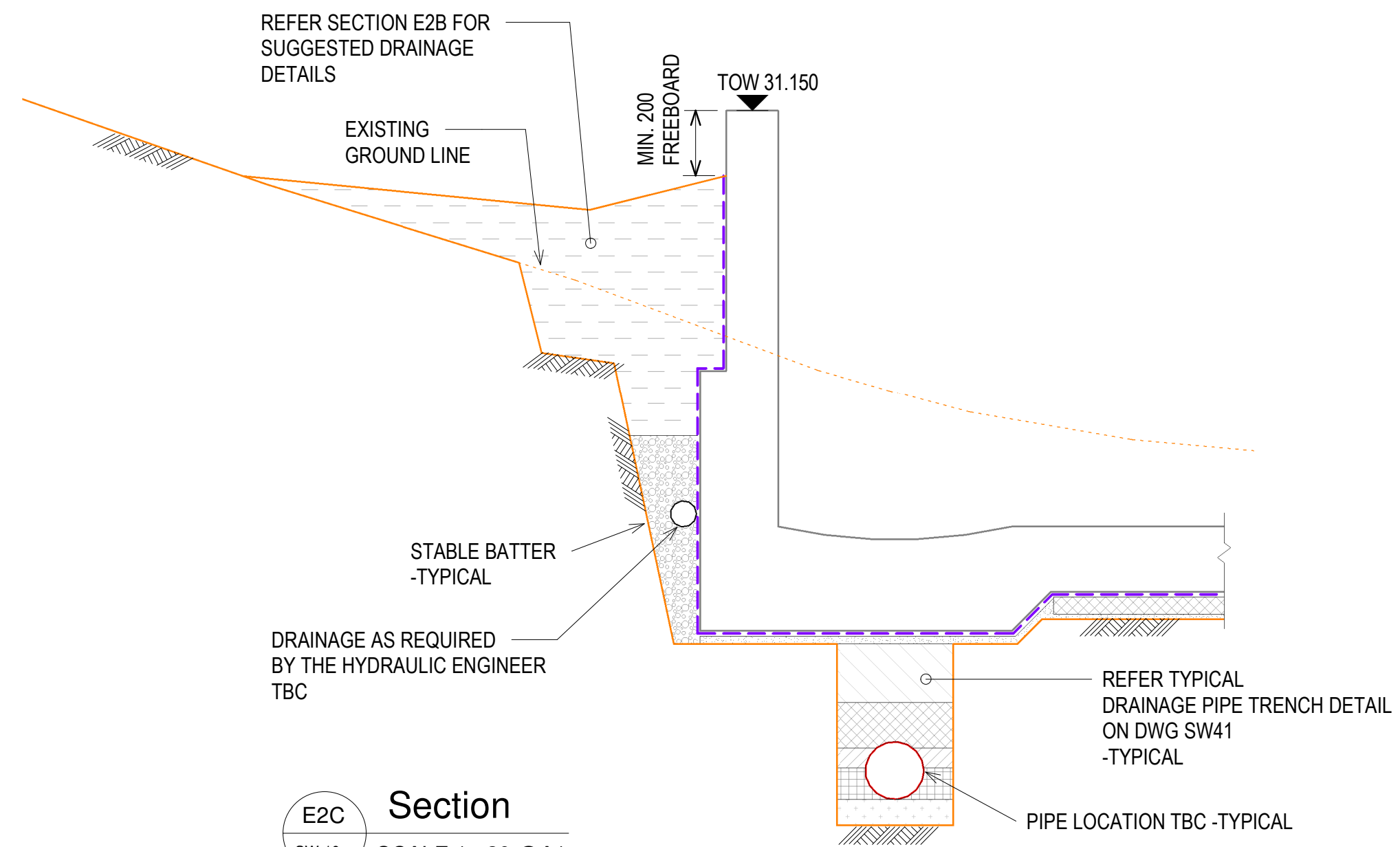
E2 Section
SW.10 SCALE 1 : 100 @A1



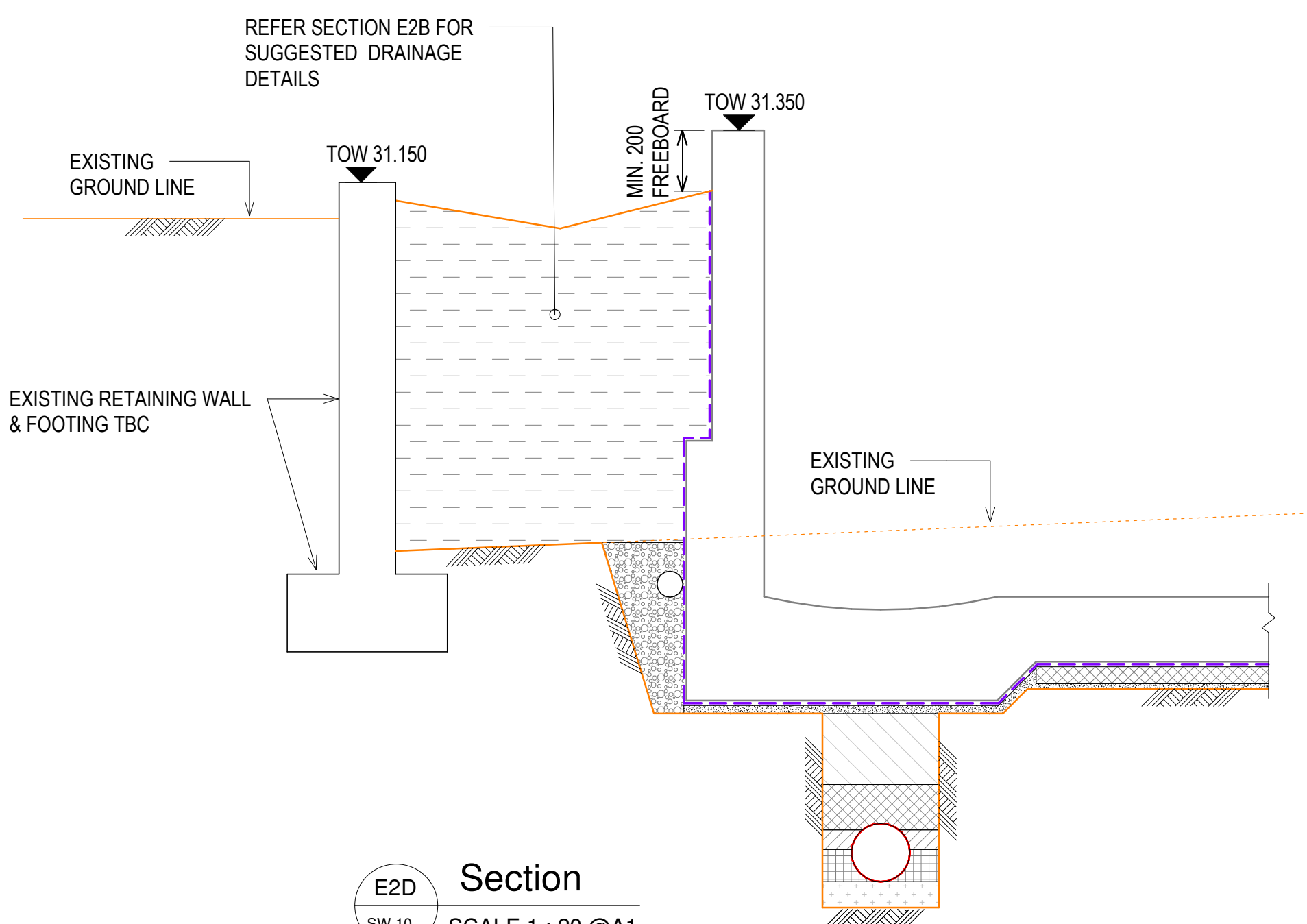
E2A Section
SW.10 SCALE 1 : 20 @A1



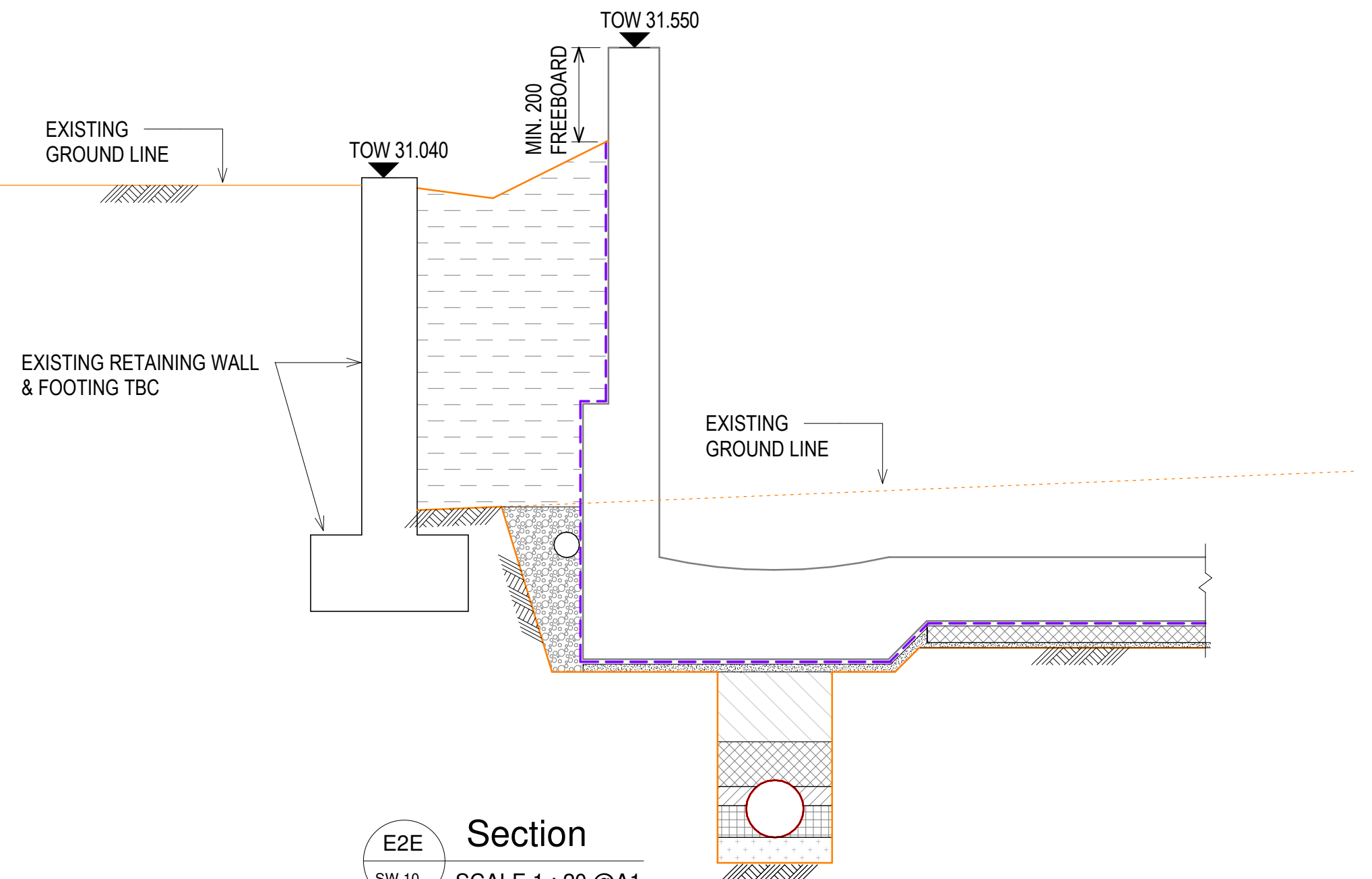
E2B Section
SW.10 SCALE 1 : 20 @A1



E2C Section
SW.10 SCALE 1 : 20 @A1



E2D Section
SW.10 SCALE 1 : 20 @A1



E2E Section
SW.10 SCALE 1 : 20 @A1

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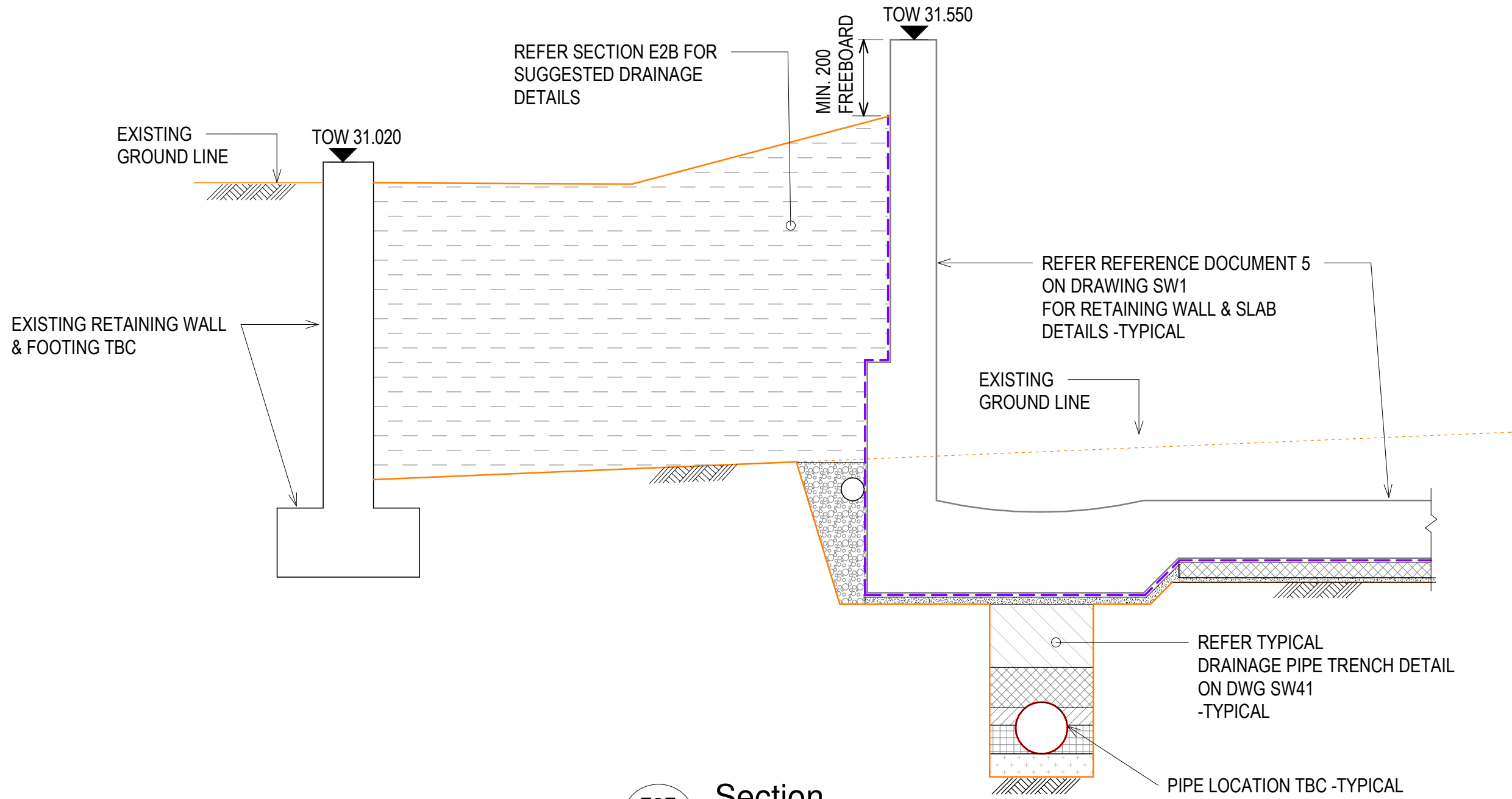
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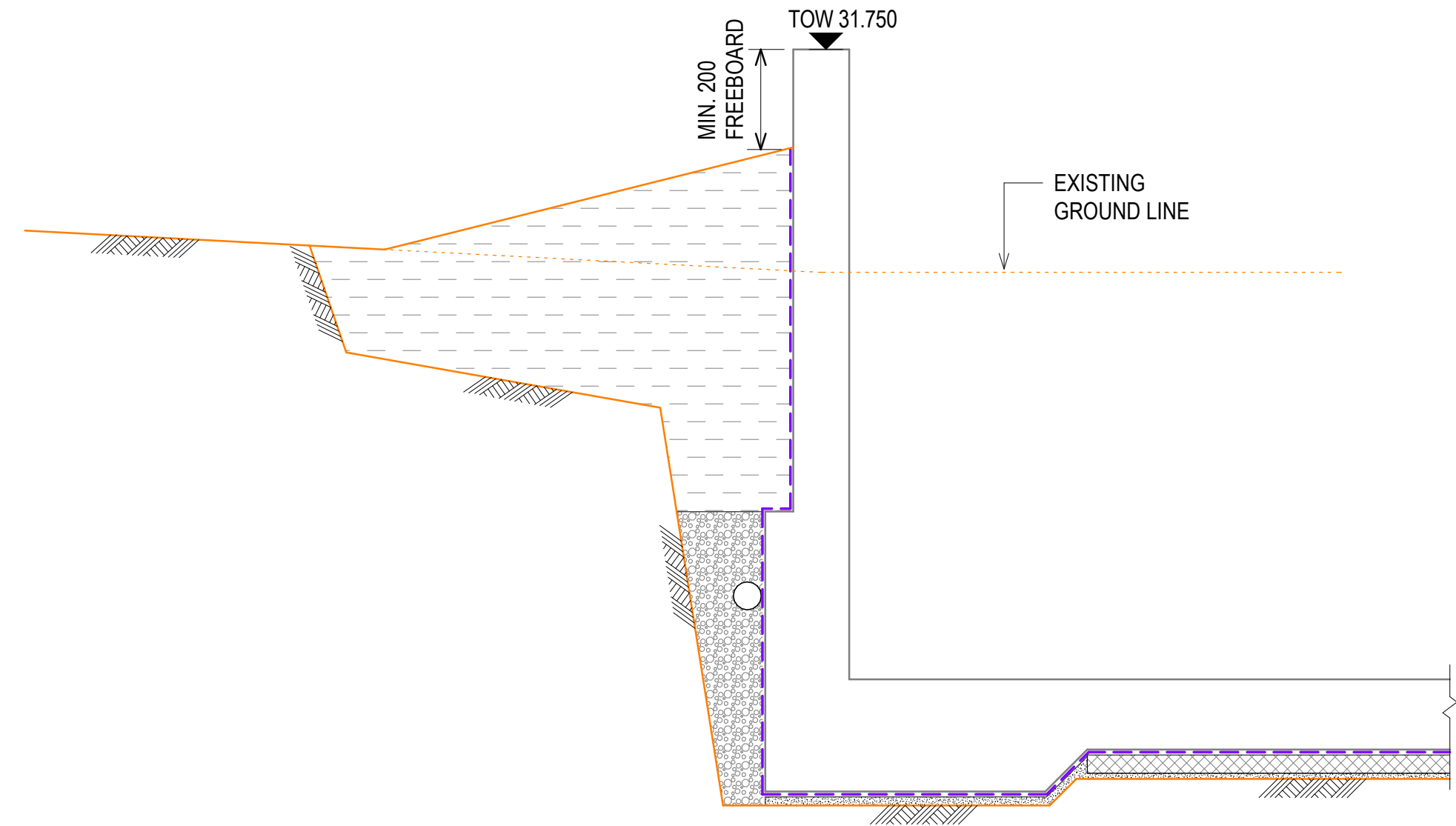
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E2F
SW.10
Section
SCALE 1 : 20 @A1



E2G
SW.10
Section
SCALE 1 : 20 @A1

HL	JM	FOR TENDER	16.01.2025	E
HL	JM	FOR TENDER	29.10.2024	D
HL	JM	FOR TENDER	17.09.2024	C
HL	JM	FOR COMMENT	11.09.2024	B
HL	JM	FOR 75%	14.08.2024	A
BY	CHKD	DESCRIPTION	DATE	REV

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ALTERATIONS & ADDITIONS TO
MacKillop Catholic College
91 SPARKS ROAD, WOONGARRAH, NSW

RETAINING WALL SECTIONS SHEET 3

DESIGN JM	DRAWN HL	PROJECT NO.
CHKD.		6611
APPRD.		DRAWING NO. REV
A1	SCALE 1 : 20	DATE SW.43 E