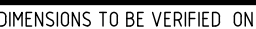


CORNER BLIGH STREET AND RECREATION DRIVE, TAREE, N.S.W 2403
CIVIL ENGINEERING PACKAGE



DRAWING LIST	
DRAWING NUMBER	DRAWING TITLE
DD-C01.01	COVER SHEET, DRAWING LIST AND LOCALITY PLAN
DD-C01.10	CIVIL SPECIFICATIONS - SHEET 1
DD-C01.11	CIVIL SPECIFICATIONS - SHEET 2
DD-C02.01	EROSION AND SEDIMENT CONTROL PLAN
DD-C02.10	EROSION AND SEDIMENT CONTROL DETAILS
DD-C03.01	CIVIL WORKS PLAN - 3 COURT
DD-C03.02	BLADDER TANK PLAN, SECTIONS AND DETAILS
DD-C03.03	CIVIL WORKS PLAN BIKE PATH
DD-C04.01	CIVIL DETAILS - SHEET 1
DD-C04.02	CIVIL DETAILS - SHEET 2

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	 ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	 NORTHROP Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	PROJECT	DRAWING TITLE	JOB NUMBER	
1	ISSUED FOR INFORMATION	JK		KS	28.02.22	 Public Works Advisory	PEDDLE THORP			CORNER BLIGH STREET AND RECREATION DRIVE, TAREE NSW 2403	CIVIL ENGINEERING PACKAGE	NL170290-01	
2	ISSUED FOR TENDER	JK		KS	29.03.22					DRAWING NUMBER	DD-C01.01	REVISION	3
3	ISSUED FOR TENDER	BD		KS	11.04.22								
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD		PROPOSED BASKETBALL IRON ARENA	COVER SHEET, DRAWING LIST AND LOCALITY PLAN	DRAWING SHEET SIZE = A1		

DRAWN: J.KNIGHT DESIGNED: E.GEARING JOB MANAGER: K.SINCLAIR VERIFIER: K.SINCLAIR

NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH MIDCOAST COUNCIL'S DEVELOPMENT GUIDELINES. READ IN CONJUNCTION WITH THE NOTES PROVIDED BELOW.
IF CONFLICT ARISE , MIDCOAST COUNCIL'S GUIDELINES AND SPECIFICATIONS TAKE PRECEDENCE. WHERE MIDCOAST COUNCIL'S GUIDELINES AND SPECIFICATIONS ARE SILENT, THE SPECIFICATION NOTES BELOW TAKE PRECEDENCE

ENGINEERING CERTIFICATION

1.

TO CERTIFY THE CONSTRUCTED CIVIL WORKS, A QUALIFIED EXPERIENCED ENGINEER IS TO VISIT THE SITE TO OBSERVE CONSTRUCTION TECHNIQUES AND VARIOUS ELEMENTS THAT MAY BE CONCEALED WHEN THE WORKS ARE COMPLETE.

2.

THIS SPECIFICATION ALLOWS FOR CERTIFICATION OF WORKS CONTROLLED BY A PRIVATE CERTIFIER FOR LAND DEVELOPMENT WORKS. THIS SPECIFICATION DOES NOT COVER CERTIFICATION REQUIREMENTS FOR AUTHORITIES SUCH AS COUNCIL, RMS OR OFFICE OF WATER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND PROVIDE ALL PROJECT-SPECIFIC CONSTRUCTION COMPLIANCE (WORKS AS EXECUTED) INFORMATION TO THE SATISFACTION OF THE STAKEHOLDER / AUTHORITY. DISCREPANCIES BETWEEN THIS SPECIFICATION AND SPECIFICATIONS OF OTHER EXTERNAL STAKEHOLDERS / AUTHORITIES IS TO BE REPORTED TO THE SUPERINTENDENT FOR CLARIFICATION.

3.

THE CONTRACTOR IS TO AGREE WITH THE ENGINEER AN APPROPRIATE SITE VISIT SCHEDULE PRIOR TO COMMENCEMENT OF THE WORKS. THE CONTRACTOR SHALL ENSURE THAT THE ENGINEER CAN SAFELY ACCESS ALL CIVIL ELEMENTS TO BE REVIEWED. SITE VISITS ARE CONDUCTED DURING NORMAL BUSINESS HOURS. WE REQUIRE TWO (2) WORKING DAY NOTICE FOR ANY SITE VISIT.

4.

TO PROVIDE CERTIFICATION THE ENGINEER MUST VISIT THE SITE TO OBSERVE.

4.1. PAVEMENTS

4.1.1. POOR SUBGRADE CONDITIONS

4.1.2. PROOF ROLLING OF SUB-GRADE

4.1.3. PLACEMENT OF SUB-BASE COURSE, BASE COURSE AND WEARING COURSE.

4.1.4. PLACEMENT OF STEEL REINFORCEMENT , DOWELS AND JOINT CRADLES PRIOR TO POURING OF CONCRETE

4.2. EARTHWORKS

4.2.1. TOPSOIL STRIP

4.2.2. EARTHWORKS BATTER

4.2.3. FILLING

4.3. STORMWATER DRAINAGE

4.3.1. DRAINAGE TRENCHES PRIOR TO BACKFILLING

4.3.2. LEGAL POINT OF CONNECTION PRIOR TO BACKFILLING

4.3.3. ANY OTHER DRAINAGE STRUCTURE THAT MAY BE CONCEALED DURING THE COURSE OF THE WORKS

4.4. CONCRETE STRUCTURES

4.4.1. PLACEMENT OF ANY STEEL REINFORCEMENT PRIOR TO CONSTRUCTION.

5.

THE CONTRACTOR SHALL PROVIDE SURVEYED LEVELS, PREPARED BY A QUALIFIED SURVEYOR FOR SUBGRADE, SUB-BASE COURSE, BASE COURSE AND WEARING COURSE.

6.

THE CONTRACTOR SHALL PROVIDE WORKS AS EXECUTED (WAE) DOCUMENTATION PREPARED BY A QUALIFIED PRACTISING SURVEYOR. THE WAE DRAWINGS SHALL CLEARLY SHOW, STORMWATER GRATE/ COVER LEVELS, STORMWATER PIT INVERT LEVELS AND CORRESPONDING INVERT LEVELS OF ANY INCOMING OR OUTGOING PIPES, DIAMETER OF ALL PIPES, DIMENSIONS AND VOLUME OF ON-SITE DETENTION FACILITIES, INVERT LEVELS OF ORIFICE PLATES, OVERFLOW WEIRS, BASE OF TANK FINISHED LEVELS OF PAVEMENTS. THE WAE SHALL SHOW WHERE THE SIZE OR ALIGNMENT OF CIVIL ENGINEERING ELEMENTS WHEN THEY DEViate FROM THE DESIGN DOCUMENTATION.

7.

THE WAE DRAWINGS SHALL BE STAMPED WITH THE FOLLOWING STATEMENT "THESE WAE DRAWINGS HAVE BEEN PREPARED BY [COMPANY NAME] AND ARE A TRUE AND ACCURATE REPRESENTATION OF THE CONSTRUCTED WORKS". EACH DRAWING SHALL BE SIGNED AND DATED BY THE SURVEYOR WHO PREPARED THE DRAWINGS.

THESE WAE DRAWINGS HAVE BEEN PREPARED BY [COMPANY NAME] AND ARE A TRUE AND ACCURATE REPRESENTATION OF THE CONSTRUCTED WORKS.

SIGNED..... DATE.....

NAME.....

POSITION.....

8.

WAE SHALL BE PROVIDED IN BOTH AUTOCAD AND PDF FORMAT. NORTHROP CONSULTING ENGINEERS WILL PROVIDE ENGINEERING PLANS TO THE CONTRACTOR IN AUTOCAD FORMAT TO AID PREPARATION OF WAE DOCUMENTATION.

9.

THE CONTRACTOR SHALL PROVIDE ALL RELEVANT TEST CERTIFICATES PROGRESSIVELY THROUGHOUT THE DURATION OF THE WORKS. ALL TEST CERTIFICATES SHALL BE PREPARED BY A NATA REGISTERED LABORATORY. TEST CERTIFICATES ARE REQUIRED FOR PROOF ROLLING, SUBGRADE COMPACTION, COMPACTION OF PAVEMENT LAYERS, COMPACTION OF FILLING OPERATIONS, CONCRETE SLUMP TEST, AND CONCRETE STRENGTH TESTS. THE CONTRACT SHALL PROVIDE ALL RELEVANT VALIDATIONS BY A GEOTECHNICAL ENGINEER FOR ALL IMPORTED FILL.

10.

EACH TEST CERTIFICATE WILL NOMINATE THE DATE AND TIME OF THE TEST AND PROVIDE A LOCATION OF WHERE THE TEST SAMPLE WAS TAKEN FROM.

11.

THE CONTRACTOR SHALL ARRANGE FOR THE ENGINEER TO CONDUCT A FINAL VISIT TO REVIEW OF THE CONSTRUCTED WORKS. THIS WILL REVIEW WILL NOT TAKE PLACE UNTIL THE WAE DOCUMENTATION AND RELEVANT TEST CERTIFICATES HAVE BEEN RECEIVED.

12.

IF DEFECTIVE OR INCOMPLETE WORK IS FOUND DURING THE FINAL INSPECTION ANOTHER INSPECTION MAY BE REQUIRED AT THE CONTRACTORS EXPENSE TO VERIFY THE RECTIFICATION WORKS HAVE BEEN COMPLETED.

SOIL AND WATER MANAGEMENT

1.

ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH RELEVANT ORDINANCES AND REGULATIONS; NOTE IN PARTICULAR THE REQUIREMENTS OF LANDCOMS MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" (THE "BLUE BOOK").

2.

THE CONTRACTOR MUST NOTIFY THE PRINCIPAL WITHIN 5 WORKING DAYS OF THE INITIAL EROSION CONTROL MEASURES BEING INSTALLED AND CHECK/MAINTAIN THE INSTALLED CONTROL MEASURES DAILY.

3.

INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.

4.

ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.

5.

INSTALL SEDIMENT FENCING AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.

6.

ALL TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.

7.

THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED THROUGHOUT THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.

8.

ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND REMOVED OFFSITE AS DIRECTED BY THE SUPERINTENDENT.

9.

STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.

10.

CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE). NOTABLY, ENSURE STOCKPILES DO NOT EXCEED 2.0M HIGH. IF MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS, THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC OR ORGANIC).

11.

PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST. WHERE THE PRINCIPAL CONSIDERS THAT THE DUST IS NOT ADEQUATELY CONTROLLED, THE CONTRACTOR MUST INVESTIGATE OTHER DUST MITIGATION MEASURES SUCH AS DUST SUPPRESSANTS. THE CONTRACTOR MUST ENSURE THE CHEMICAL BASED DUST SUPPRESSANT DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.

12.

SHOULD ANY SEDIMENT LADEN WATER LEAVE THE SITE, THE INCIDENT MUST BE REPORTED TO THE PRINCIPAL WITHIN 2 HOURS OF THE SITE MANAGER BECOMING AWARE OF THE INCIDENT.

13.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A WEEKLY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ALL MAINTENANCE, CLEANING & BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.

14.

MEASURES USED TO CONTROL WIND EROSION MUST BE APPROPRIATE FOR THE LOCATION AND PREVENT SOIL EROSION AT ALL TIMES, INCLUDING WORK HOURS, WEEKENDS, PUBLIC HOLIDAYS AND DURING ANY OTHER SHUTDOWN PERIODS.

15.

ONCE CUT/FILL OPERATIONS HAVE BEEN FINALISED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.

16.

PRIORITY MUST BE GIVEN TO THE PREVENTION, OR AT LEAST MINIMISATION, OF SOIL EROSION, RATHER THAN THE TRAPPING OF DISPLACED SEDIMENT. SUCH A CLAUSE SHALL NOT REDUCE THE RESPONSIBILITY OF A CONTRACTOR TO APPLY AND MAINTAIN, AT ALL TIMES, ALL NECESSARY SEDIMENT CONTROL MEASURES.

ACCESS AND SAFETY

1.

THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING (BUT NOT LIMITED TO) TRAFFIC CONTROL.

2.

THE CONTRACTOR SHALL ENSURE SAFE ACCESS TO ALL ADJACENT AND NEIGHBORING BUSINESSES AND RESIDENCES AT ALL TIMES DURING AND AFTER WORK ACTIVITIES.

3.

WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE AT ALL TIMES.

4.

THE CONTRACTOR SHALL ENSURE PUBLIC ACCESS EXTERNAL TO THE SITE IS IN ACCORDANCE WITH COUNCILS REQUIREMENTS AT ALL TIMES.

GENERAL

1.

ALL WORKS TO BE IN ACCORDANCE WITH RELEVANT LOCAL COUNCIL SPECIFICATIONS, REGULATORY AUTHORITIES SPECIFICATIONS, ENGINEERING DRAWINGS AND NOTES, AUSTRALIAN STANDARDS, LANDCOM AND EPA SPECIFICATIONS AND THE LATEST VERSION OF NATSPEC SPECIFICATIONS. CONFLICTS BETWEEN THE ABOVE DOCUMENT SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.

2.

ALL CIVIL ENGINEERING DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS DRAWINGS AND SPECIFICATION DOCUMENTATION, NAMELY ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND LANDSCAPE.

3.

THE CONTRACTOR IS TO DESIGN, OBTAIN APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES BEFORE AND DURING CONSTRUCTION IN ACCORDANCE WITH ALL REGULATORY AUTHORITIES, INCLUSIVE OF LOCAL COUNCILS AND STATE AUTHORITIES AS REQUIRED.

4.

THE CONTRACTOR IS TO OBTAIN ALL AUTHORITY APPROVALS AS REQUIRED PRIOR TO COMMENCEMENT OF WORKS.

5.

RESTORE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION OR AS DIRECTED BY THE SITE SUPERINTENDENT ON COMPLETION OF ALL AND ANY WORKS. WHERE PLANTING OF NEW GRASS IS NECESSARY REFER TO LANDSCAPE ARCHITECT AND / OR ARCHITECT DOCUMENTATION.

6.

THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR PRIOR TO COMMENCEMENT OF WORKS.

7.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ONSITE PRIOR TO LODGMENT OF TENDER AND ONSITE WORKS. THE PRICE AS TENDERED SHALL BE INCLUSIVE OF ALL WORKS SHOWN ON THE TENDER PROJECT DRAWINGS. ADDITIONAL PAYMENTS FOR WORKS SHOWN ON THE TENDER PROJECT DRAWINGS WILL NOT BE APPROVED.

8.

DO NOT OBTAIN DIMENSIONS BY SCALING DRAWINGS.

9.

IN CASE OF DOUBT OR DISCREPANCY REFER TO SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

10.

WHERE NEW WORKS ABUT EXISTING SURFACES AND INFRASTRUCTURE, THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED. MAKE SMOOTH TRANSITION TO EXISTING FEATURES AND MAKE GOOD WHERE JOINED.

11.

ALL CIVIL ENGINEERING DESIGN HAS BEEN DOCUMENTED UNDER THE ASSUMPTION THAT ALL NECESSARY SITE CONTAMINATION REMEDIATION WORKS HAVE BEEN SATISFACTORILY COMPLETED (IF APPLICABLE) AND THAT THE SITE IS NOT AFFECTED BY ANY SOIL STRATA OR GROUNDWATER TABLE CONTAMINATION.

12.

ORIGIN OF LEVELS SHOWN ON THE FOLLOWING DRAWINGS ARE ASSUMED TO BE TO AUSTRALIAN HEIGHT DATUM (AHD) AS PROVIDED BY SURVEY DATA. THE CONTRACTOR IS TO CONFIRM ALL LEVELS AND HEIGHT DATA PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

13.

ALL WORK SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS AND THE DIRECTIONS OF THE SUPERINTENDENT.

14.

THE CONTRACTOR IS TO PROVIDE AND INSTALL 10mm MIN. WIDE COMPRESSIBLE FILLER JOINTS BETWEEN BUILDINGS AND CONCRETE PAVEMENTS.

15.

THE CONTRACTOR IS TO PROVIDE TEMPORARY DIVERSION DRAINS AND MOUNDS AS REQUIRED TO ENSURE THAT AT ALL TIMES EXPOSED SURFACES ARE FREE DRAINING AND WHERE NECESSARY EXCAVATE SUMPS AND PROVIDE PUMPING EQUIPMENT TO DRAIN EXPOSED AREAS.

16.

ANY AND ALL DAMAGE TO EXISTING INFRASTRUCTURE AND/OR PAVEMENTS SHALL BE REPORTED TO THE SUPERINTENDENT AND SHALL BE REPAIRED AND MADE GOOD BY THE CONTRACTOR TO MATCH NEATLY AND FLUSH TO EXISTING AT NO EXTRA COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS.

17.

THE CONTRACTOR IS TO REFER TO HYDRAULIC ENGINEERS DRAWINGS FOR STORMWATER DRAINAGE DETAILS IN ADDITION TO THOSE SHOWN ON THE CIVIL ENGINEERING DRAWINGS. ANY CONFLICTS IDENTIFIED ARE TO BE REFERRED TO THE SITE FORMAN OR SUPERINTENDENT PRIOR TO PROCEEDING WITH WORKS.

18.

THE CONTRACTOR IS TO ENSURE ALL FINISHED SURFACE LEVELS DRAIN TOWARDS THE PROPOSED STORMWATER SYSTEM AND NO AREAS POND/HOLD WATER.

19.

THE CONTRACTOR SHALL ENSURE COUNCIL ASSETS AND UTILITIES ARE PROTECTED AT ALL TIMES. ANY AND ALL DAMAGE TO COUNCIL ASSETS AND/OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF COUNCIL AND THE UTILITIES AUTHORITY AND AT NO COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS.

TREE PROTECTION

1.

REFER TO LANDSCAPE / ARCHITECTS PLAN FOR TREES TO BE RETAINED AND PROTECTED.

2.

ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY,

2.1.

INSTALLING APPROPRIATE PROTECTION BARRIER FENCING OR SIMILAR MATERIALS INSTALLED IN ACCORDANCE WITH ARBORIST SPECIFICATIONS.

2.2.

CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY. COUNCILS AND/OR INDEPENDENT ARBORISTS TO BE CONSULTED WHERE TREE ROOTS ARE TO BE REMOVED AND/OR CUT.

EARTHWORKS (cont)

1.

THE CONTRACTOR SHALL REVIEW THE SITE SPECIFIC GEOTECHNICAL REPORT PREPARED BY RGS (REF RGS 02162.1), REMOVE ALL TOPSOIL, ORGANIC MATTER, RUBBLE, UNCONTROLLED FILL, UNSUITABLE MATERIAL AND THE LIKE AND UNDERTAKE ALL REQUIRED SUBGRADE/BASE LAYER TESTING (PROOF ROLLING ETC) UNDER THE GUIDANCE OF A SUITABLE QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO BACK FILLING WITH CONTROLLED SPECIFIED MATERIAL. NOTE UNCONTROLLED FILL AND UNSUITABLE SHALL ONLY BE REMOVED WHERE DIRECTED BY THE PRINCIPAL.

2.

THE CONTRACTOR SHALL ALLOW TO EXCAVATE IN ALL MATERIALS UNLESS NOTED OTHERWISE

3.

THE CONTRACTOR SHALL STRIP AND STOCKPILE SUFFICIENT TOPSOIL AS REQUIRED FOR LATER REUSE AND SITE REHABILITATION. EXCESS TOPSOIL TO BE REMOVED OFFSITE. ALL MATERIAL STOCKPILES AND UNVEGETATED AREAS SHALL HAVE SEDIMENT AND EROSION CONTROL MEASURES INSTALLED IN ACCORDANCE WITH THE "BLUE BOOK" (MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION, PRODUCED BY LANDCOM). ANY SURPLUS EXCAVATED MATERIAL (INCLUDING TOPSOIL) SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES. LIMIT STOCKPILE TO A MAXIMUM HEIGHT OF 2.0m UNLESS APPROVED OTHERWISE BY THE SUPERINTENDENT.

4.

THE CONTRACTOR IS TO ALLOW FOR A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO PROVIDE ADVICE AND CERTIFICATION OF ANY WORKS ASSOCIATED WITH TREATING OR MANAGING UNSUITABLE GROUND CONDITIONS THROUGHOUT THE CONTRACT (E.G. STABILITY OF EXCAVATIONS, POOR SUBGRADE, ETC).

5.

THE CONTRACTOR SHALL PROOF ROLL ALL EXPOSED NATURAL SUBGRADE FOR BUILDING PLATFORMS, PAVED AREAS, AREAS TO BE FILLED, OR CUT BATTERS IN THE PRESENCE OF A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER WHO WILL CERTIFY THE WORKS AND CONFIRM FILLING METHODOLOGY. ALL SOFT, WET OR UNSUITABLE MATERIAL ENCOUNTERED SHALL BE ADVISED TO THE PRINCIPAL'S AGENT FOR INSTRUCTION REMOVE & REPLACE OR REMEDIATE ALL AREAS AS DIRECTED BY THE PRINCIPAL'S AGENT.

6.

THE CONTRACTOR IS TO OBTAIN AND PROVIDE CERTIFICATES VERIFYING THE QUALITY OF IMPORTED MATERIAL FOR THE SUPERINTENDENTS APPROVAL.

7.

TESTING OF SITE MATERIAL, SUBGRADES AND PAVEMENT LAYERS SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. REGISTERED LABORATORY AND IN ACCORDANCE WITH THE LATEST VERSION OF AS3798. WHERE THE FILL IS TO PROVIDE SUPPORT TO BUILDING FLOOR SLAB, LEVEL 1 TESTING PROCEDURES (IN ACCORDANCE WITH AS3798) SHALL BE FOLLOWED, OTHERWISE LEVEL 2 TESTING SHALL BE UNDERTAKEN. THE TESTING AUTHORITY SHALL BE ENGAGED BY THE BUILDER.

8.

ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200mm THICK LAYERS (LOOSE) AND COMPACTED AT OPTIMUM MOISTURE CONTENT (±0.5% OR - 2%) USING SUITABLE COMPACTION EQUIPMENT TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289.2.1.1, AS1289.5.7.1 AND AS1289.5.8.8 OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY.

LOCATION	COMPACTION REQUIREMENT
- SERVICE TRENCHES (NOT UNDER PAVEMENTS)	95% SMDD
- SERVICE TRENCHES (UNDER PAVEMENTS)	100% SMDD
- TOP 600mm TO SUBGRADE	
- LEVEL UNDER PAVED AREAS	100% SMDD
- LANDSCAPED & GENERAL AREAS	95% SMDD

9.

FREQUENCY OF TESTING SHALL BE IN ACCORDANCE WITH TABLE 8.1 OF AS3798 FOR TYPE 1 EARTHWORKS

10.

DENSITY TESTING SHALL BE UNDERTAKEN WITHIN TRENCHES AT A RATE OF ONE (1) TEST PER TWO (2) LAYERS PER FORTY (40) LINEAL METRES OF TRENCH.

11.

WHERE TEST RESULTS ARE BELOW THE SPECIFIED COMPACTION, RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION STANDARDS ARE ACHIEVED, OTHERWISE SUBGRADE REPLACEMENT IS REQUIRED IF COMPACTION STANDARDS ARE NOT ACHIEVED.

- SCARIFY AND WORK TO ACCELERATE DRYING.

- STABILIZE BY MIXING WITH LIME.

- REPLACE WITH SUITABLE MATERIAL. RE-COMPACT WHEN MOISTURE CONTENT APPROACHES OPTIMUM.

12.

IF SUBGRADE OR FILL IS TOO WET TOO ACHIEVE COMPACTION, UNDERTAKE ONE OR MORE OF THE FOLLOWING.

- SCARIFY AND WORK TO ACCELERATE DRYING.

- STABILIZE BY MIXING WITH LIME.

- REPLACE WITH SUITABLE MATERIAL. RE-COMPACT WHEN MOISTURE CONTENT APPROACHES OPTIMUM.

13.

THE CONTRACTOR CAN REUSE CUT MATERIAL AS DIRECTED BY THE SITE SPECIFIC GEOTECHNICAL AUTHORITY OR PRINCIPALS AGENT. WHERE THERE IS INSUFFICIENT CUT MATERIAL SUITABLE FOR FILLING OR SUBGRADE REPLACEMENT, THE CONTRACTOR IS TO ALLOW TO IMPORT FILL. IMPORTED FILL SHALL COMPLY WITH THE FOLLOWING;

13.1.

APPROVED AND CERTIFIED BY THE SITE GEOTECHNICAL ENGINEER.

13.2.

MAXIMUM PARTICLE SIZE OF 50mm

13.3.

PASSING 37.5mm SIEVE (NOT LESS THAN 80%)

13.4.

PASSING 75 MICRON SIEVE (NOT GREATER THAN 15%)

13.5.

PLASTICITY INDEX BETWEEN 2-15%

13.6.

MINIMUM CBR VALUE OF 8%

14.

THE CONTRACTOR IS TO ALLOW FOR THE REPLACEMENT OF UNSUITABLE AND/OR SENSITIVE GROUND (I.E. SILTS, ORGANIC MATTER ETC) WITH SELECTED MATERIAL FROM EXCAVATIONS IF AVAILABLE OR SELECT IMPORTED FILL.

EARTHWORKS (cont)

17.

THE CONTRACTOR IS TO PROGRAM EXCAVATIONS TO ENSURE THAT BULK EARTHWORKS AND EXPOSED SURFACES ARE ADEQUATELY DRAINED DURING CONSTRUCTION. ALL EXPOSED SURFACES SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLERS 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 AT NO COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS.

18.

THE CONTRACTOR IS TO PROVIDE AND INSTALL TEMPORARY DRAINAGE OR PUMP PUMPING AS REQUIRED UNTIL SUFFICIENT SITE STORMWATER DRAINAGE HAS BEEN INSTALLED. ENSURE THAT ALL SEDIMENT AND EROSION CONTROL PROVISIONS ARE ADHERED TO FOR TEMPORARY DRAINAGE MEASURES (REFER TO THE ENGINEERING SEDIMENT AND EROSION CONTROL DRAWINGS

19.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE AND MAINTAIN THE INTEGRITY OF ALL SERVICES, CONDUITS AND PIPES DURING CONSTRUCTION. SPECIFICALLY DURING THE BACKFILLING AND COMPACTION PROCEDURE. ANY AND ALL DAMAGE TO NEW OR EXISTING SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST.

20.

ALLOWABLE EXCAVATION TOLERANCE IS -25MM (BELOW DOCUMENTED LEVELS) AND +0MM (ABOVE DOCUMENTED LEVELS). NOTE THAT BULK EARTHWORKS LEVELS MAY NOT ALLOW FOR A SAND LEVELING LAYER. ANY SAND THAT IS REQUIRED DUE TO OVER-EXCAVATION SHALL BE PROVIDED AT NO EXTRA COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS

21.

THE CONTRACTOR IS TO INSTALL CUT-OFF DRAINAGE SWALES (AT MIN. 1% LONGITUDINAL GRADE AND MIN. 500MM WIDE) TO THE HIGH SIDE OF ALL BUILDING PLATFORMS TO PROTECT THE PLATFORMS DURING CONSTRUCTION. ALL TEMPORARY DRAINAGE SWALES ARE TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF "THE BLUE BOOK"

22.

ALL EARTH BATTERS SHALL BE CUT/FILLED TO A MAXIMUM 1 (VERTICLE) IN 4 (HORIZONTAL) SLOPE UNLESS NOTED OTHERWISE ON THE DRAWINGS.

23.

ANY CONTAMINATED MATERIAL FOUND ON SITE DURING CONSTRUCTION AND EARTHWORKS ACTIVITIES SHALL BE ADVISED TO THE PRINCIPAL'S AGENT FOR DIRECTION.

STORMWATER DRAINAGE

1.

ALL CONCRETE PIPES SHALL BE CLASS 2 RUBBER-RING JOINTED RCP U.N.O.
ALL uPVC PIPES ARE TO BE SOLVENT WELD- JOINTED SEWER GRADE PIPES WITH THE FOLLOWING PIPE CLASS TO BE ADOPTED U.N.O.

1.1.

ø100mm OR LESS TO BE CLASS 'SN10'

1.2.

ø150mm AND ABOVE TO BE CLASS 'SN8'.

2.

FRC PIPES EQUAL TO THAT OF THE STEEL REINFORCED CONCRETE PIPE CLASS SPECIFIED ON THE DRAWINGS MAY BE USED SUBJECT TO APPROVAL FROM THE SUPERINTENDENT.

3.

ALL PIPE ARE TO BE LAID AT 1.0% MIN GRADE U.N.O ALL

4.

ALL STORMWATER INLET PITS SHOWN ON THE CIVIL ENGINEERING DRAWINGS SHALL BE CAST IN-SITU REINFORCED CONCRETE PITS (U.N.O.). THE USE OF PRE-CAST CONCRETE STORMWATER DRAINAGE PITS ARE TO BE CONFIRMED AND APPROVED BY THE SUPERINTENDENT AND NORTHROP CONSULTING ENGINEERS PRIOR TO THEIR PURCHASE AND INSTALLMENT ON SITE (U.N.O.)

5.

PIT COVERS

5.1.

USE HOT DIPPED GALVANISED COVERS AND GRATES COMPLYING WITH RELEVANT COUNCIL AND AUSTRALIAN STANDARDS U.N.O.

5.2.

ALL COVERS AND GRATES TO BE POSITION IN A FRAME AND MANUFACTURED AS A UNIT TO THE MINIMUM LOAD CLASS SPECIFIED.

5.3.

ALL COVERS AND GRATES TO BE FITTING WITH POSITIVE COVER LIFTING KEYS

5.4.

OBTAIN SUPERINTENDENTS APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES (U.N.O.). CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPERMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.

17.

WHERE SUBSOIL DRAINAGE PASSES BENEATH BUILDINGS / PAVED AREAS AND/OR PAVEMENTS, CONTRACTOR TO ENSURE ø100mm CLASS 'SN10' uPVC DRAINAGE LINE IS USED AND THAT PROPRIETARY FITTINGS ARE USED TO RECONNECT SUBSOIL DRAINAGE LINE.

18.

THE CONTRACTOR SHALL INSTALL INSPECTION OPENINGS / CLEAROUTS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS AND IN ACCORDANCE WITH THE PRINCIPALS CONFORM WITH KS SPECIFICATIONS AT MAXIMUM 30m CENTRE AND AT ALL UPSTREAM ENDPOINTS.

19.

PROVIDE 3.0m LENGTH OF ø100 SUBSOIL DRAINAGE LINE WRAPPED IN NON-WOVEN GEOTEXTILE FILTER FABRIC TO THE UPSTREAM SIDE OF STORMWATER PITS. LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO DRAINAGE PIT.

20.

IN AREAS WHERE DUMPED / HAND PLACED ROCK IS USED AS A MEANS OF SCOUR PROTECTION, CONTRACTOR IS TO EXCAVATE A MINIMUM OF 100mm FROM PROPOSED SURFACE, LEVEL AND COMPACT SUBGRADE AS SPECIFIED. ROCK TO THEN BE PLACED ON GEOTEXTILE FILTER FABRIC.

STORMWATER DRAINAGE (cont)

6.

THE CONTRACTOR IS TO ENSURE A SMOOTH TRANSITION BETWEEN ADJACENT PAVEMENT SURFACES AND STORMWATER PIT COVERS/GRATES

7.

ALL PIPE BENDS, JUNCTIONS, ETC ARE TO BE PROVIDED USING PURPOSE MADE FITTINGS OR STORMWATER PITS.

8.

ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND CEMENT RENDERED TO ENSURE A SMOOTH, WATER TIGHT FINISH.

9.

STORMWATER PIPEWORK TO FINISH FLUSH WITH INTERNAL PIT WALLS AND MUST NOT PROTRUDE. CONNECTION TO BE NEATLY RENDER AND MADE NEAT.

10.

THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.

11.

U.N.O. MATERIAL USED FOR BEDDING OF PIPES SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED AND FREE OF ORGANIC AND CLAY MATERIAL.

12.

WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN 50mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK.

13.

MATERIAL USED FOR ALL PIPE BEDDING AND BACK FILL SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING A HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED, BE FREE FROM ORGANIC AND CLAY MATERIAL AND COMPLY WITH THE CURRENT VERSION OF AS3725. PIPE BEDDING SHALL BE TYPE HS2 U.N.O. UNDER ROADS AND H2 UNDER GENERAL AREAS U.N.O. AND BE IN ACCORDANCE WITH THE CURRENT VERSION OF AS3725.

14.

THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT AND AT NO EXTRA COST.

15.

NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH ARE 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER. REFER KERB DETAILS FOR CONFIRMATION.

SUBSOIL DRAINAGE

16.

ALL SUBSOIL DRAINAGE LINES ARE TO BE ø100mm WITH NON-WOVEN GEOTEXTILE FILTER SOCK SURROUND SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT (AT MIN 1% LONGITUDINAL GRADE) AND PROVIDED IN THE FOLLOWING LOCATIONS;

16.1.

THE HIGH SIDE OF PROPOSED TRAFFICED PAVEMENT AREAS.

16.2.

ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS.

16.3.

BEHIND RETAINING WALLS

16.4.

ALL OTHER AREAS SHOWN ON DRAWINGS.

16.5.

CONTRACTOR IS TO MAKE ALLOWANCE IN BOTH TENDER AND CONSTRUCTION COSTING TO ALLOW FOR SUBSURFACE DRAINAGE BEHIND ALL RETAINING WALLS / ABOVE LOCATIONS AND TO MAKE CONNECTION TO STORMWATER SYSTEM.

17.

WHERE SUBSOIL DRAINAGE PASSES BENEATH BUILDINGS / PAVED AREAS AND/OR PAVEMENTS, CONTRACTOR TO ENSURE ø100mm CLASS 'SN10' uPVC DRAINAGE LINE IS USED AND THAT PROPRIETARY FITTINGS ARE USED TO RECONNECT SUBSOIL DRAINAGE LINE.

18.

THE CONTRACTOR SHALL INSTALL INSPECTION OPENINGS / CLEAROUTS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS AND IN ACCORDANCE WITH THE PRINCIPALS CONFORM WITH KS SPECIFICATIONS AT MAXIMUM 30m CENTRE AND AT ALL UPSTREAM ENDPOINTS.

19.

PROVIDE 3.0m LENGTH OF ø100 SUBSOIL DRAINAGE LINE WRAPPED IN NON-WOVEN GEOTEXTILE FILTER FABRIC TO THE UPSTREAM SIDE OF STORMWATER PITS. LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO DRAINAGE PIT.

20.

IN AREAS WHERE DUMPED / HAND PLACED ROCK IS USED AS A MEANS OF SCOUR PROTECTION, CONTRACTOR IS TO EXCAVATE A MINIMUM OF 100mm FROM PROPOSED SURFACE, LEVEL AND COMPACT SUBGRADE AS SPECIFIED. ROCK TO THEN BE PLACED ON GEOTEXTILE FILTER FABRIC.

VERIFIER: K.SINCLAIR
JOB MANAGER: K. SINCLAIR
DESIGNED: E.GEARING
DRAWN: J.KNIGHT

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR INFORMATION	JK		KS	28.02.22	 DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	 THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD	 Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	CORNER BLIGH STREET AND RECREATION DRIVE, TAREE NSW 2403	CIVIL ENGINEERING PACKAGE CIVIL SPECIFICATIONS - SHEET 1 PROPOSED BASKETBALL IRON ARENA	NL170290-01
2	ISSUED FOR TENDER	JK		KS	29.03.22						
										DRAWING NUMBER	REVISION
										DD-C01.10	2
DRAWING SHEET SIZE = A1											

NOT FOR CONSTRUCTION

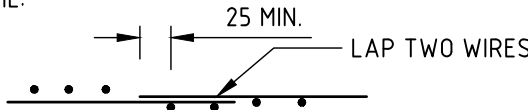
NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH MIDCOAST COUNCIL'S DEVELOPMENT GUIDELINES . READ IN CONJUNCTION WITH THE NOTES PROVIDED BELOW.
IF CONFLICT ARISE , MIDCOAST COUNCIL'S GUIDELINES AND SPECIFICATIONS TAKE PRECEDENCE. WHERE MIDCOAST COUNCIL'S GUIDELINES AND SPECIFICATIONS ARE SILENT, THE SPECIFICATION NOTES BELOW TAKE PRECEDENCE

CONCRETE PAVEMENTS

1. THIS SECTION REFERS TO CIVIL CONCRETE WORKS AND DOES NOT INCLUDE STRUCTURAL ELEMENTS SUCH AS BUILDINGS, BELOW GROUND STRUCTURES OR RETAINING WALLS.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
3. NO CONCRETE IS TO BE POURED ON DAYS FORECAST TO BE GREATER THAN 30 DEGREES CENTIGRADE
4. CONCRETE POURS IN CONDITIONS OF HIGH TEMPERATURE, HIGH WIND OR MODERATE COMBINATIONS OF EACH WILL LEAD TO EXCESSIVE CRACKING. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY OF SUCH CONCRETE FINISHES AND SHALL UNDERTAKE REMEDIATION WORK AS DIRECTED BY THE SUPERINTENDENT AND AT NO EXTRA COST
5. **CONCRETE QUALITY AND REINFORCING COVER**
ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

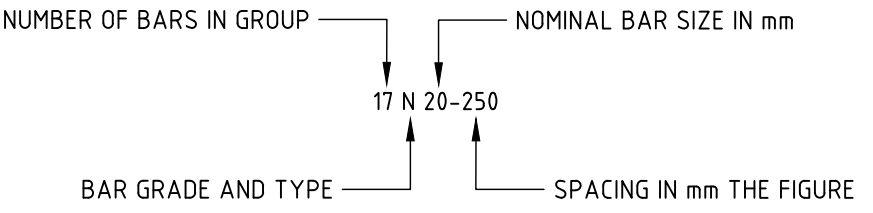
ELEMENT	CONCRETE STRENGTH f'c (MPa)	SPECIFIED SLUMP	NOMINAL AGGREGATE SIZE	MAX. 56 DAY DRYING SHRINKAGE	COVER (mm)
PITS AND PAVEMENTS	32	80	20	1000microns	TOP 40

6. CONCRETE PROPERTIES SHALL BE VARIED FROM NORMAL CLASS AS FOLLOWS
- 6.1. MINIMUM CEMENT CONTENT 250 kg/m³
- 6.2. MAXIMUM 56 DAY SHRINKAGE STRAIN = AS NOMINATED ABOVE
- 6.3. PRIOR TO COMMENCEMENT CONCRETE SUPPLIER TO PROVIDE DRYING SHRINKAGE TEST RESULTS FROM PRODUCTION ASSESSMENT AS EVIDENCE THAT SPECIFIED DRYING SHRINKAGE LIMITS CAN BE ACHIEVED USING NORMAL MIX DESIGN.
7. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS. PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
8. CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL.
9. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379. TEST CYLINDERS ARE TO BE KEPT ON SITE.
10. ALL COMPRESSIVE STRENGTH TEST REPORTS SHALL BE SUBMITTED TO THE CIVIL ENGINEER FOR REVIEW.
11. ALL CONCRETE IS TO BE CONTINUOUSLY CURED FOR A MINIMUM PERIOD OF 10 DAYS AFTER PLACING. CURING TO COMMENCE IMMEDIATELY AFTER FINISHING. SPRAY ON CURING COMPOUNDS TO COMPLY WITH AS3799.
12. PLACE CONCRETE CONTINUOUSLY BETWEEN CONSTRUCTION JOINTS SHOWN ON PLAN. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SUCH THAT COLD JOINTS OCCUR. ANY REVISIONS OR ADDITIONS TO CONSTRUCTION JOINTS SHOWN ON PLAN REQUIRE APPROVAL FROM NORTHPROP CONSULTING ENGINEERS.
13. FALLS IN SLAB AS SHOWN ON PLAN MAINTAIN MINIMUM SLAB THICKNESS AS SHOWN.
14. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY THE DESIGN ENGINEER.
15. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS.
16. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:



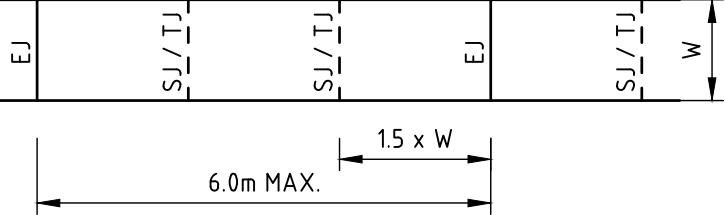
FOLLOWING THE FABRIC SYMBOL SL IS THE REFERENCE NUMBER FOR FABRIC TO AS1304.

17. POLYETHYLENE SHEET SHALL BE PLACED BELOW ALL CONCRETE PAVEMENTS.
18. ALL PENETRATIONS TO HAVE 2/N12 TRIMMER BARS TOP AND BOTTOM TO EACH FACE U.N.O. EXTEND TRIMMERS 700 BEYOND PENETRATION. MAINTAIN 40mm COVER TOP AND BOTTOM.
19. FORMWORK CLASS SHALL BE IN ACCORDANCE WITH AS3600.
20. SURFACE FINISHES:
- | ELEMENT | FORMWORK CLASS |
|----------------|------------------------------|
| STORMWATER PIT | OFF FORM |
| PAVEMENTS | MACHINE FLOAT / BROOM FINISH |
| KERBS | STEEL FLOAT / TROWEL |
21. REINFORCEMENT SYMBOLS:
- N DENOTES GRADE 450 N BARS TO AS1302 GRADE N
- R DENOTES 230 R HOT ROLLED PLAIN BARS TO AS1302
- SL DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS1304



PAVEMENT JOINTS

1. PROVIDE 10mm ABLEFLEX BETWEEN NEW CONCRETE WORKS AND EXISTING STRUCTURES.
2. LOCAL AUTHORITY REQUIREMENTS SHALL TAKE PRECEDENCE WITHIN THE PUBLIC ROAD RESERVE.
3. DOWELS TO BE PLACED ON PROPRIETARY CRADLES TO ENSURE CORRECT SPACING AND ALIGNMENT.
4. **PEDESTRIAN PAVEMENTS**
ALL PEDESTRIAN PAVEMENTS ARE TO BE JOINTED AS FOLLOWS U.N.O. ON THE DESIGN DRAWINGS.
5. EXPANSION JOINTS ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX. 6.0m CENTRES.
6. WEAKENED PLANE JOINTS (SAWN OR TOOL JOINTS) ARE TO BE LOCATED AT A MAX. SPACING OF 15m x WIDTH OF THE PAVEMENT.
7. WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND OR ADJACENT PAVEMENT JOINTS.
8. TYPICAL PEDESTRIAN PAVEMENT JOINT DETAIL



SIGNAGE AND LINEMARKING

1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS 1742 / RMS STANDARDS AND SPECIFICATIONS.
2. LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH AS1742.3 AND RMS STANDARDS.
3. PAINT SHALL BE TYPE 3 CLASS 'A' AND THE COLOUR SHALL BE WHITE AND NOT SUBJECT TO DISCOLOURATION BY BITUMEN FROM ROAD SURFACE. ALL PAINT TO BE APPLIED BY MECHANICAL SPRAYER.
4. LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.
5. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm AND 0.40mm.
6. CARPARK LINEMARKING TO BE 80mm WIDE.

CONCRETE SEALING

1. THE CURING PROCESS FOR NEW CONCRETE IS TO INCORPORATE THE FOLLOWING ASPECTS, GENERALLY AS ORDERED;
- 1.1. SPRAY CURING COMPOUND
- 1.2. SAWCUT JOINTS AS LOCATED AND SPECIFIED AS SOON AS CURING PERMITS.
- 1.3. COVER NEW PAVING WITH HESSIAN AND BLACK PLASTIC SHEETS TAPED AT JOINTS ON COMPLETION OF SAWCUTTING. NOTE COVERING IS TO EXTENT MIN 5m BEYOND PAVEMENT BEING CURED. OVER ADJOINING (EXISTING) PAVEMENT AREAS, MAINTAIN CURING AS SPECIFIED.

RAINWATER RE-USE

1. PROVIDE RAINWATER RE-USE SYSTEM TO SUPPLY WATER FOR TOILET FLUSHING AND EXTERNAL IRRIGATION.
2. A PERMANENT SIGN IS TO BE LOCATED IN THE VICINITY OF THE TANK STATING THE WATER IS "NON POTABLE WATER" WITH APPROPRIATE HAZARD IDENTIFICATION.
3. PIPEWORK USED FOR RAINWATER SERVICES SHALL BE COLOURED LILAC IN ACCORDANCE WITH AS1345.
4. ALL VALVES AND APERTURES SHALL BE CLEARLY AND PERMANENTLY LABELLED WITH SAFETY SIGNS TO COMPLY WITH AS1319.
5. RAINWATER TANK RETICULATION SYSTEM AND MAINS WATER BYPASS ARRANGEMENT TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3500.12-2003 AND THE NSW CODE OF PRACTICE : PLUMBING AND DRAINING
6. A FIRST FLUSH FILTRATION DEVICE IS TO BE PROVIDED AT RAINWATER TANK.

EXISTING SERVICES

1. ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA OR DIAL BEFORE YOU DIG SEARCHES, AND THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY. NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.
2. THE CONTRACTOR IS TO PROTECT AND MAINTAIN ALL EXISTING SERVICES THAT ARE TO BE RETAINED IN THE VICINITY OF WORKS. ANY AND ALL DAMAGES TO EXISTING SERVICES AS A RESULT OF PROPOSED WORKS (INCLUDING ANY ECONOMIC LOSS SUFFERED AS A RESULT OF DAMAGES) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SUPERINTENDENT TO RECTIFY AND MADE GOOD AT NO COST TO THE PRINCIPAL OR NORTHPROP CONSULTING ENGINEERS.
3. CARE TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS AREA TO BE UNDERTAKEN OVER COMMUNICATION, GAS OR ELECTRICAL SERVICES. HAND EXCAVATION ONLY IN THESE AREAS.
4. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE ADJUSTMENT OF EXISTING SERVICE AND INFRASTRUCTURE AS REQUIRED TO FACILITATE PROPOSED WORKS AND CONSTRUCTION REQUIREMENTS.
5. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS UNLESS DIRECTED OTHERWISE ON THE DRAWINGS OR BY THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES, SERVICES TO ALL ADJACENT BUILDINGS NOT AFFECTED BY THE WORKS ARE PROTECTED AND NOT DISRUPTED.
7. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF THE PROGRAM FOR THE RELOCATION AND/OR CONSTRUCTION OF TEMPORARY SERVICES AND FOR ANY ASSOCIATED INTERRUPTION OF SUPPLY FROM THE APPROPRIATE SERVICE AUTHORITY.
8. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING 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.

NOT FOR CONSTRUCTION

DESIGNED: E.GEARING
DRAWN: J.KNIGHT
JOB MANAGER: K.SINCLAIR
VERIFIER: K.SINCLAIR

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR INFORMATION	JK		KS	28.02.22
2	ISSUED FOR TENDER	JK		KS	29.03.22



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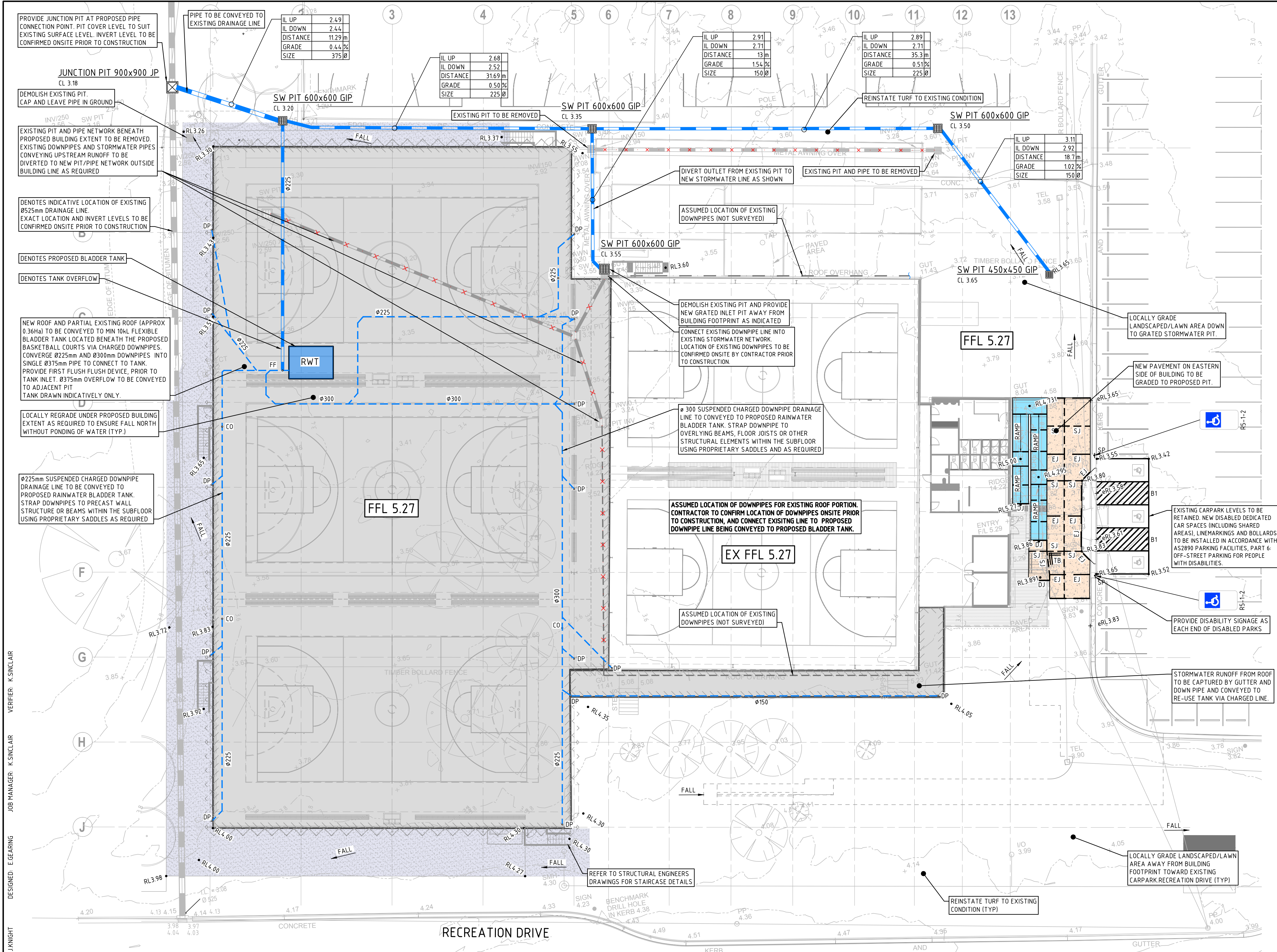
PROJECT
CORNER BLIGH STREET AND
RECREATION DRIVE, TAREE NSW
2403

PROPOSED BASKETBALL
IRON ARENA

DRAWING TITLE
CIVIL ENGINEERING PACKAGE

CIVIL SPECIFICATIONS - SHEET 2

JOB NUMBER NL170290-01	
DRAWING NUMBER DD-C01.11	REVISION 2
DRAWING SHEET SIZE = A1	



LEGEND

DENOTES PROPOSED STORMWATER PIPE. DETAILS TO BE PROVIDED AT CC STAGE

EXISTING STORMWATER PIPE TO BE REMOVED

INDICATIVE LOCATION OF EXISTING DOWNPIPE DRAINAGE LINE

PROPOSED CHARGED DOWNPIPE LINE TO BE CONVEYED TO TANK. PIPE TO BE SUSPENDED BENEATH BUILDING SUBFLOOR

BOLLARD - TYPE 1

FIRST FLUSH DEVICE

PROPOSED DOWNPIPE. REFER TO ARCHITECT/HYDRAULIC DRAWINGS FOR SIZE AND LOCATION

CLEAROUT INSPECTION POINT

DENOTES GRATED INLET PIT (NEW / EXTG)

DENOTES STORMWATER PIT TAG / COVER LEVEL

DENOTES EXISTING SURVEYED SPOT HEIGHT

DENOTES PROPOSED CONCRETE FOOTPATH PAVEMENT

DENOTES PROPOSED RAMP/DECK. REFER TO STRUCTURAL PLANS FOR DETAILS.

PROPOSED GRAVEL PAVEMENT

EXTENT OF PROPOSED BUILDING WORKS

DENOTES PROPOSED SPOT HEIGHT

EXISTING SPOT HEIGHT

DENOTES PROPOSED FINISHED FIRST FLOOR LEVEL

EXISTING FINISHED FLOOR LEVEL

DENOTES DIRECTION OF GRADE

DENOTES PROPOSED PROPRIETARY BLADDER TANK MIN 10KL VOLUME

SHARED ZONE LINEMARKING TO ARCHITECTS DETAILS

CARPARK LINEMARKING TO ARCHITECTS DETAILS

DISABLED PARKING LINEMARKING TO ARCHITECTS DETAILS

EXPANSION JOINT

SAWN JOINT

DOWELLED JOINT

ISOLATION JOINT

TRIMMER BARS

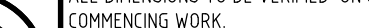
PROPOSED KERB RETURN

PROPOSED DISABILITY SIGNAGE POST

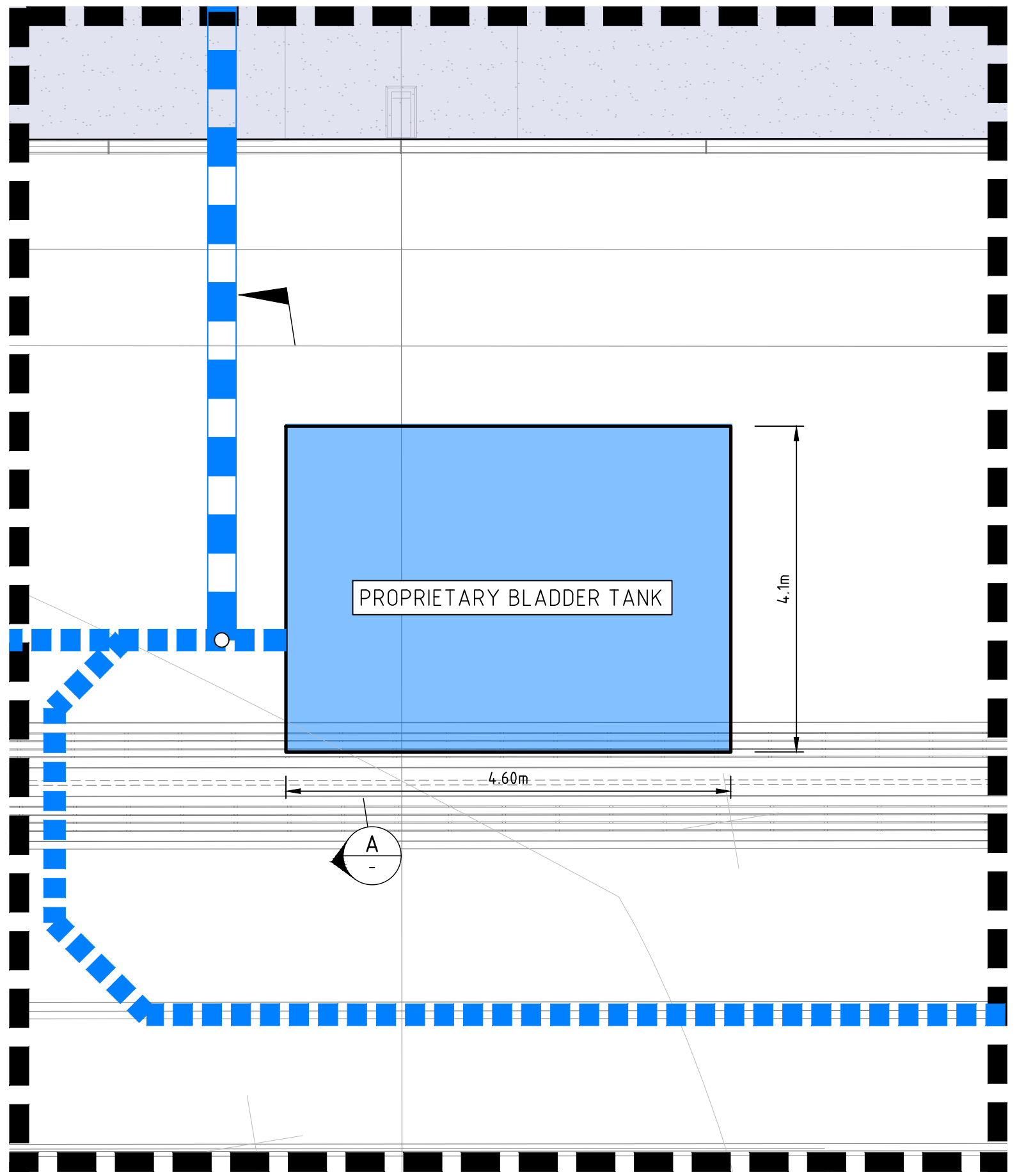
NOTE

ALL WORKS TO BE CARRIED OUT WITH 'SPECIFICATION NOTES' AND 'CIVIL DETAILS'

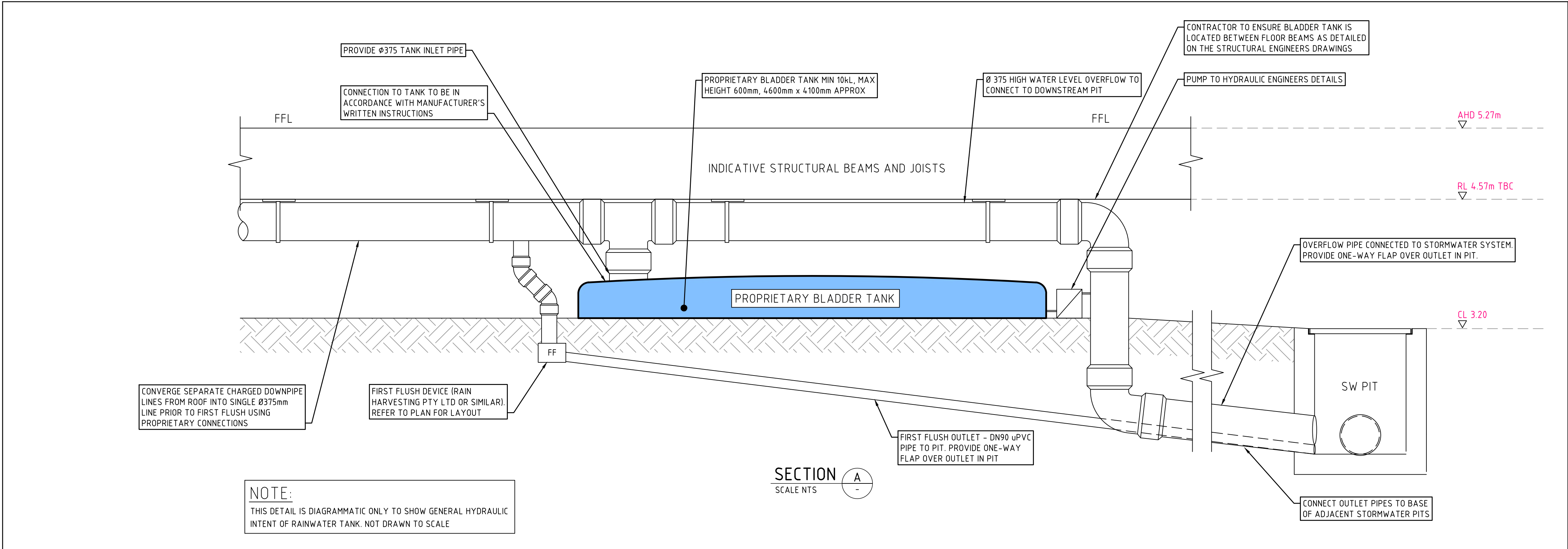
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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	SCALE	PROJECT	DRAWING TITLE	JOB NUMBER	
1	ISSUED FOR INFORMATION	JK	KS		28.02.22	 Public Works Advisory	 PEDDLE THORP	 NORTHROP Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email northrop@northrop.com.au ABN 81 094 433 100	 NORTHROP CORNER BLIGH STREET AND RECREATION DRIVE, TAREE NSW 2403	CIVIL ENGINEERING PACKAGE	NL170290-01	
2	ISSUED FOR TENDER	JK	KS		29.03.22							
3	ISSUED FOR TENDER	BD	KS		11.04.22							
4	ISSUED FOR TENDER	JK	KS		04.05.22							
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED						THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD			PROPOSED BASKETBALL IRON ARENA	CIVIL WORKS PLAN 3 COURT	DRAWING NUMBER	REVISION
											DD-C03.01	4
DRAWING SHEET SIZE = A1												

DRAWN: J. KNIGHT
DESIGNED: E. GEARING
JOB MANAGER: K. SINCLAIR
VERIFIER: K. SINCLAIR



PROPRIETARY BLADDER TANK PLAN
SCALE: NTS



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR TENDER	BD		KS	08.04.22
2	ISSUED FOR TENDER	BD		KS	11.04.22

CLIENT

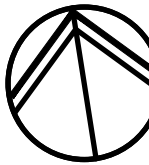
 **Public Works**
Advisory

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ARCHITECT

PEDDLE THORP

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ABN 81 094 433 100

PROJECT

**CORNER BLIGH STREET AND
RECREATION DRIVE, TAREE NSW
2403**

**PROPOSED BASKETBALL
IRON ARENA**

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

**BLADDER TANK PLAN
SECTIONS AND DETAILS**

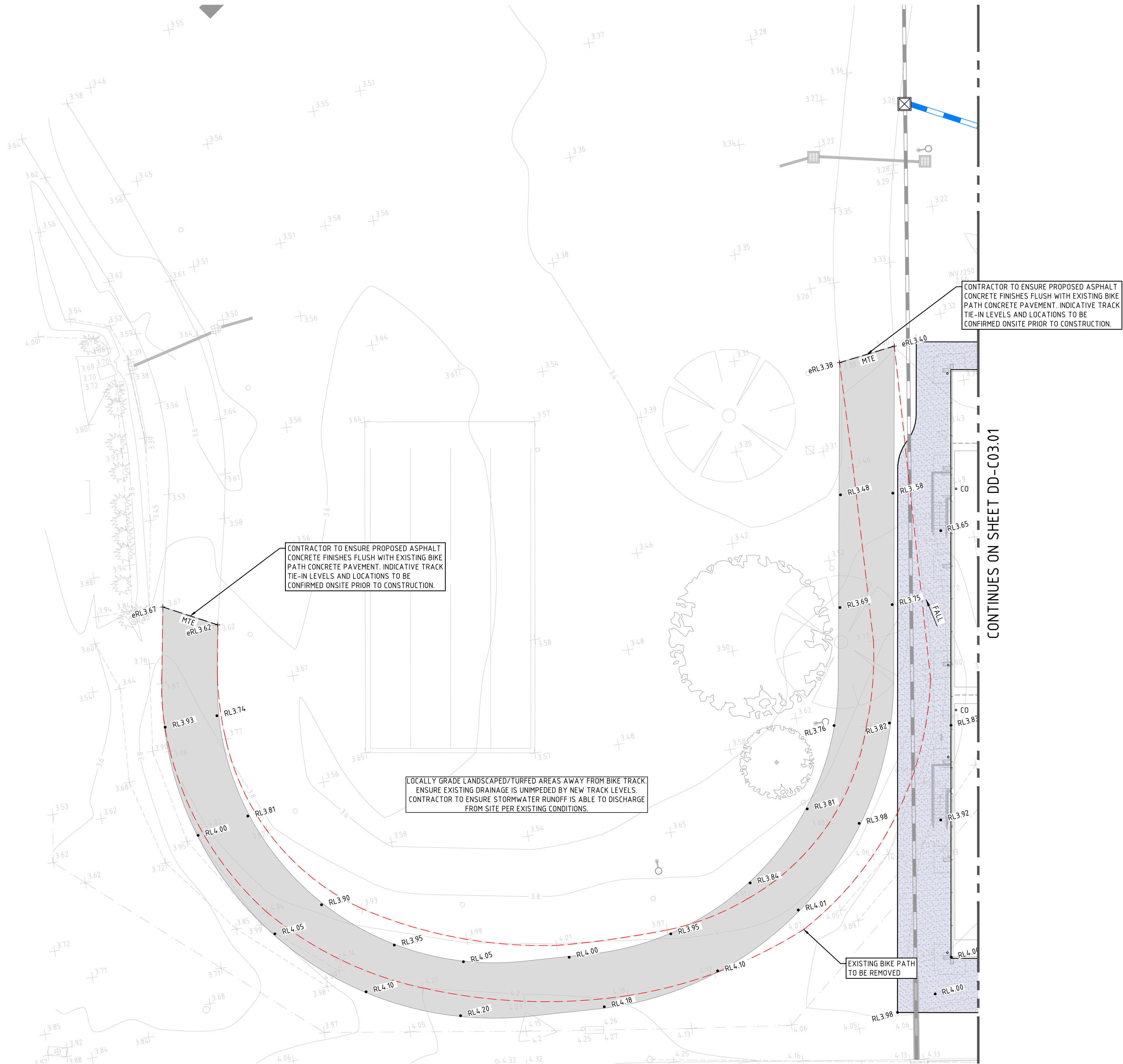
JOB NUMBER

NL170290-01

DRAWING NUMBER	REVISION
DD-C03.02	2

DRAWING SHEET SIZE = A1

DRAWN: J. KNIGHT
DESIGNED: E. GEARING
JOB MANAGER: K. SINCLAIR
VERIFIER: K. SINCLAIR



LEGEND	
• RL4.00	DENOTES PROPOSED SPOT HEIGHT
+ eRL3.61	EXISTING SPOT HEIGHT
	EXTENT OF PROPOSED BIKE PATH ASPHALT CONCRETE
	EXISTING BIKE PATH TO BE REMOVED
	MTE MATCH TO EXISTING

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR TENDER	BD		KS	08.04.22
2	ISSUED FOR TENDER	BD		KS	11.04.22

CLIENT

Public Works Advisory

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ARCHITECT

PEDDLE THORP

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SCALE 1:200@A1

NORTHROP

Newcastle

Level 1, 215 Pacific Hwy, Charlestown NSW 2290
Ph (02) 4943 1777 Email newcastle@northrop.com.au
ABN 81 094 433 100

PROJECT

**CORNER BLIGH STREET AND
RECREATION DRIVE, TAREE NSW
2403**

**PROPOSED BASKETBALL
IRON ARENA**

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

**CIVIL WORKS PLAN
BIKE PATH**

JOB NUMBER

NL170290-01

DRAWING NUMBER

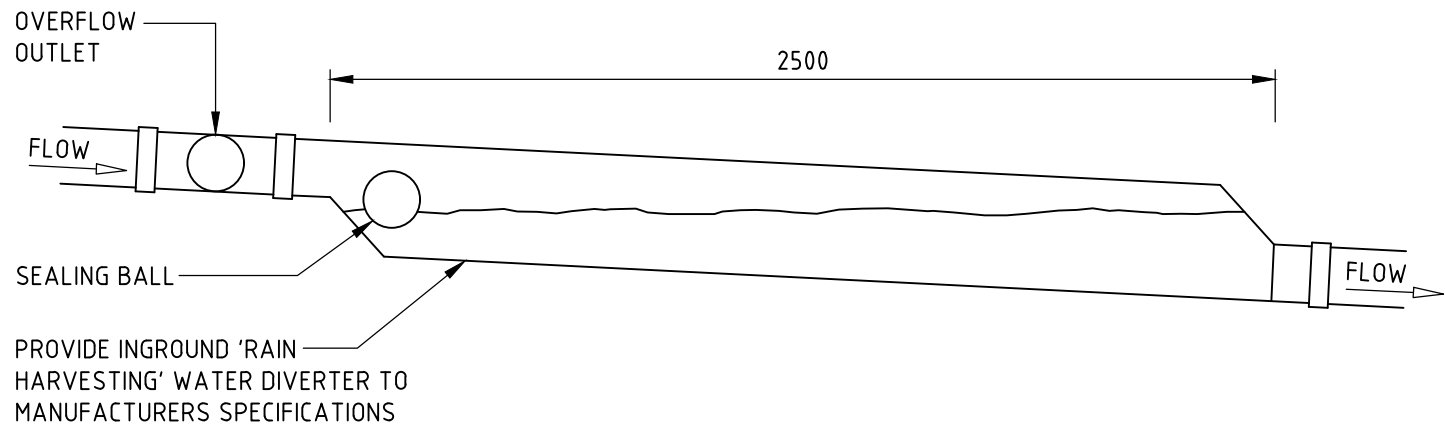
DD-C03.03

REVISION

2

DRAWING SHEET SIZE = A1

VERIFIER: K SINCLAIR
JOB MANAGER: K SINCLAIR
DESIGNED: E GEARING
DRAWN: J KNIGHT



FIRST FLUSH DEVICE

CONCRETE PAVED AREAS: HEAVY DUTY SCREW DOWN uPVC CAP. WRAP PIPE WITH SINGLE LAYER OF 10mm ABLEFLEX OR SIMILAR.

LANDSCAPED AREAS: HEAVY DUTY SCREW DOWN uPVC CAP. PROVIDE MASS CONCRETE SURROUND TO FINISH FLUSH WITH FINISHED SURFACE LEVEL.

CAST IRON HINGED INSPECTION COVER WITH SCREW DOWN LID INSTALLED WITHIN 300mm x 300mm x 150mm DEEP CONCRETE SURROUND. COVER TO BE MARKED 'SS'

Ø100 CLASS 'SN8' uPVC DRAINAGE LINE AND PROPRIETARY FITTINGS / BENDS INSTALLED CONNECTING TO SUBSOIL DRAINAGE LINE

Ø100 CORRUGATED SUBSOIL DRAINAGE LINE 'CLASS 1000' WITHIN NON-WOVEN FILTER FABRIC SOCK SURROUND LAID AT MIN 0.5% LONGITUDINAL GRADE - REFER SUBSOIL TRENCH DETAIL(S)

SUBSOIL DRAINAGE CLEAROUT 'CO'

CLEAROUT TO BE INSTALLED AT INTERMEDIATE POINTS ALONG SUBSOIL DRAINAGE LINES @ MAX 30m CENTRES AND DISCHARGING TO DRAINAGE STRUCTURES @ MAX 60m CENTRES.

CONCRETE PAVED AREAS: HEAVY DUTY SCREW DOWN uPVC CAP. WRAP PIPE WITH SINGLE LAYER OF 10mm ABLEFLEX OR SIMILAR.

LANDSCAPED AREAS: HEAVY DUTY SCREW DOWN uPVC CAP. PROVIDE MASS CONCRETE SURROUND TO FINISH FLUSH WITH FINISHED SURFACE LEVEL.

CAST IRON HINGED INSPECTION COVER WITH SCREW DOWN LID INSTALLED WITHIN 300mm x 300mm x 150mm DEEP CONCRETE SURROUND. COVER TO BE MARKED 'SS'

Ø100 CLASS 'SN8' uPVC DRAINAGE LINE AND PROPRIETARY FITTINGS / BENDS INSTALLED CONNECTING TO SUBSOIL DRAINAGE LINE

Ø100 CORRUGATED SUBSOIL DRAINAGE LINE 'CLASS 1000' WITHIN NON-WOVEN FILTER FABRIC SOCK SURROUND LAID AT MIN 0.5% LONGITUDINAL GRADE - REFER SUBSOIL TRENCH DETAIL(S)

SUBSOIL DRAINAGE CLEAROUT 'CO'

CLEAROUT TO BE INSTALLED AT UPSTREAM POINTS ALONG SUBSOIL DRAINAGE LINES @ MAX 30m CENTRES AND DISCHARGING TO DRAINAGE STRUCTURES @ MAX 60m CENTRES.

PIT COVER, REFER TO PIT SCHEDULE FOR SIZE & SPECIFICATIONS

PROPRIETARY PLASTIC PIT INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN SPECIFICATIONS

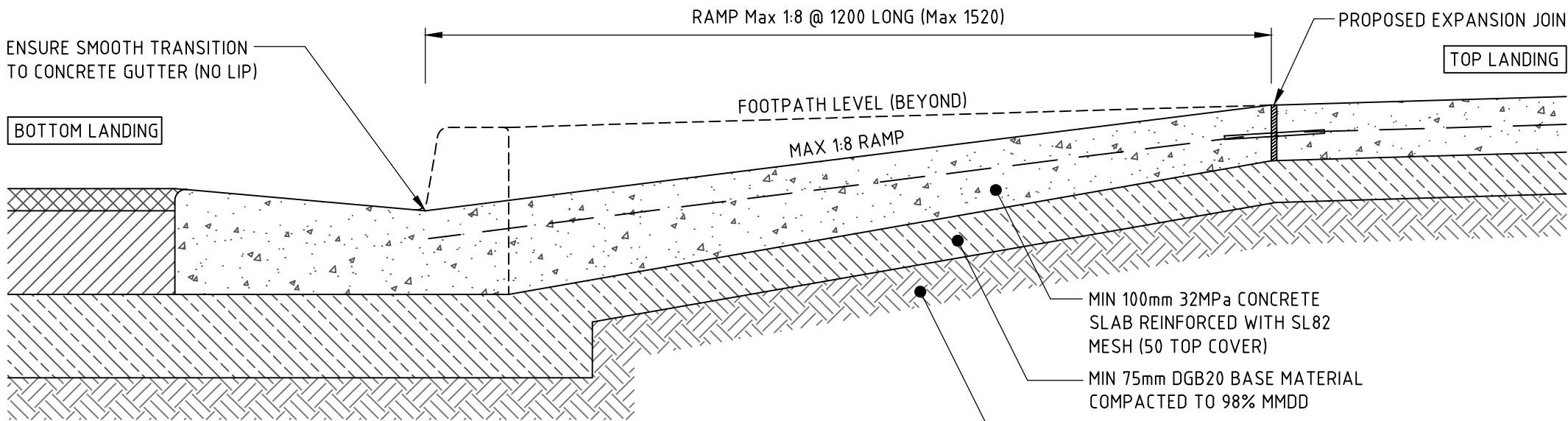
PROVIDE 75mm N20 CONCRETE SURROUND

MINIMUM 3m Ø90 AG. LINE WITH NON-WOVEN GEOTEXTILE FILTER SOCK SURROUND (WITH KNOT TIED IN SOCK TO SEAL) LAID ALONG BASE OF UPSTREAM PIPE TRENCH & CONNECTED TO THE STORMWATER PIT. (PROVIDE TO ALL PITS WITH UPSTREAM/INLET PIPES)

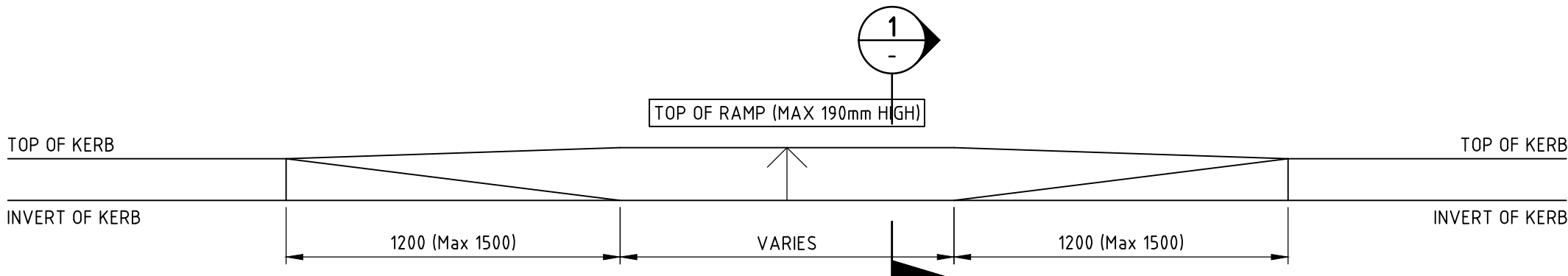
LIGHT DUTY STORMWATER PIT

(FOR PIPES Ø300 OR LESS & DEPTHS 0.6m OR LESS)

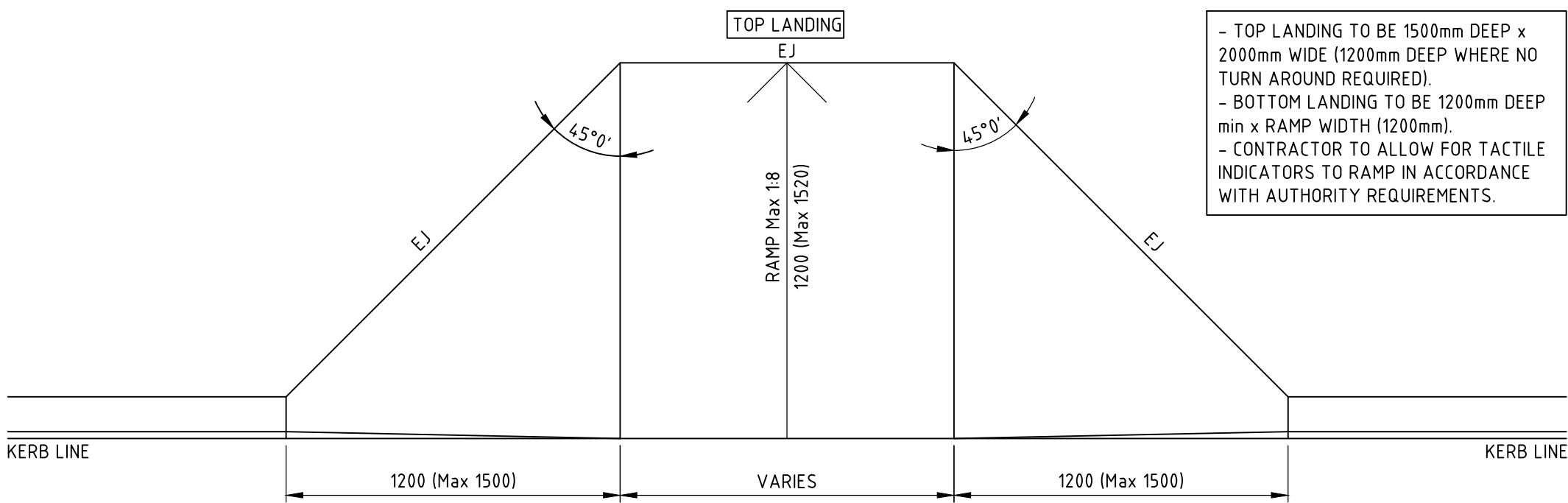
NOTE: - SPARGE INTERNAL PIT FACE AT ALL PIPE PENETRATIONS
- PROVIDE ADEQUATE LEVEL OF COMPACTION AROUND PIT. REFER TO SPECIFICATIONS FOR REQUIREMENTS.



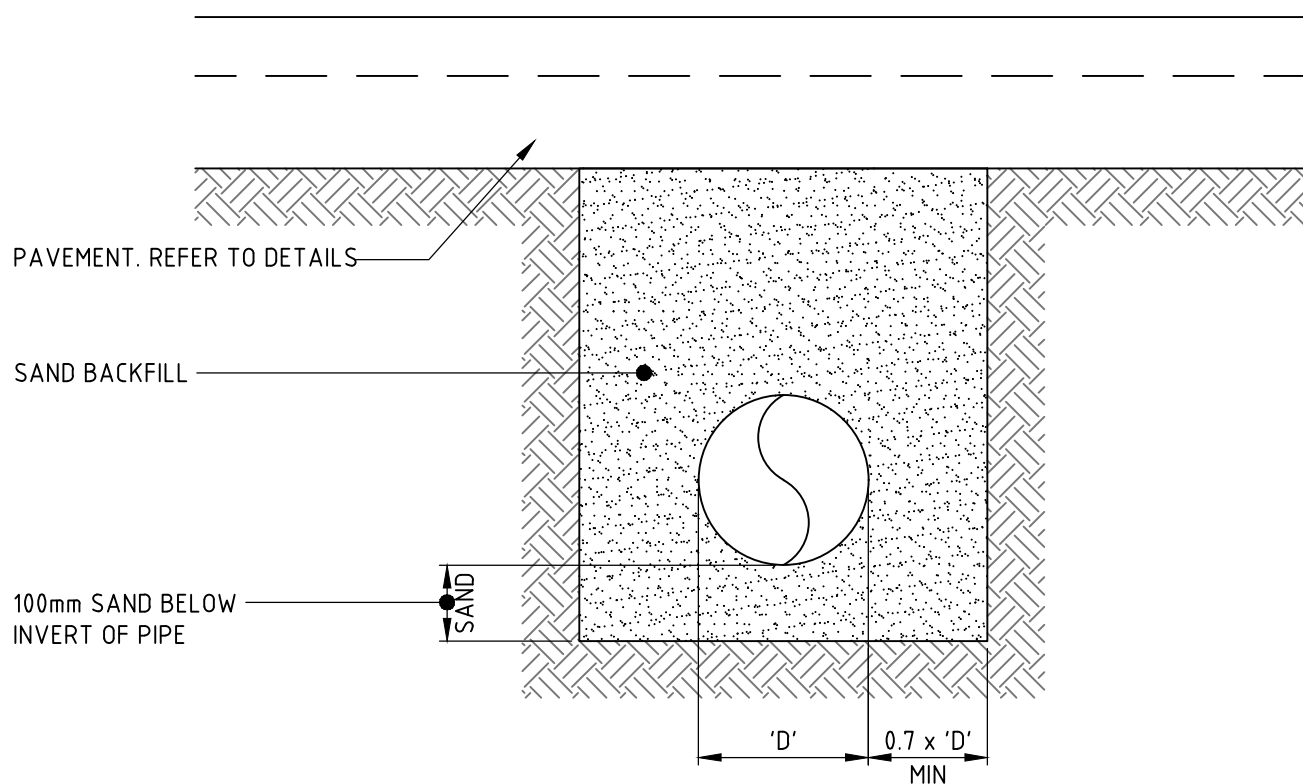
SECTION 1



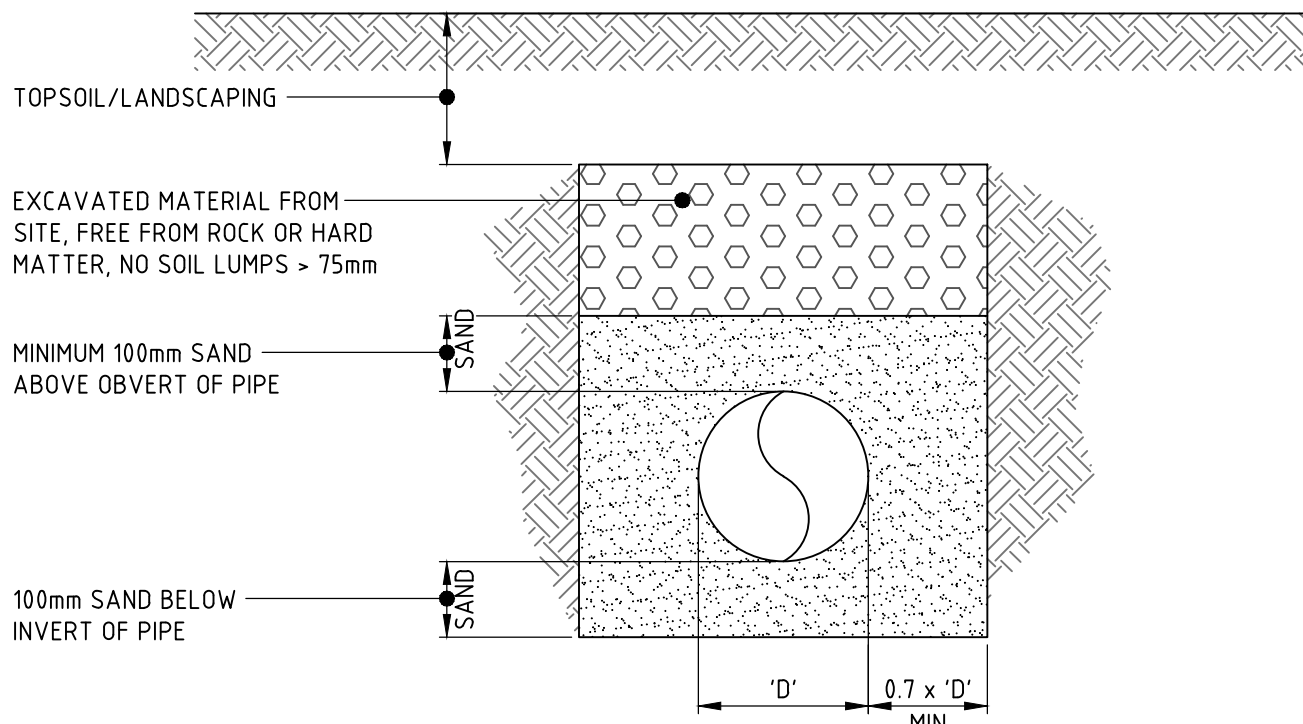
ELEVATION



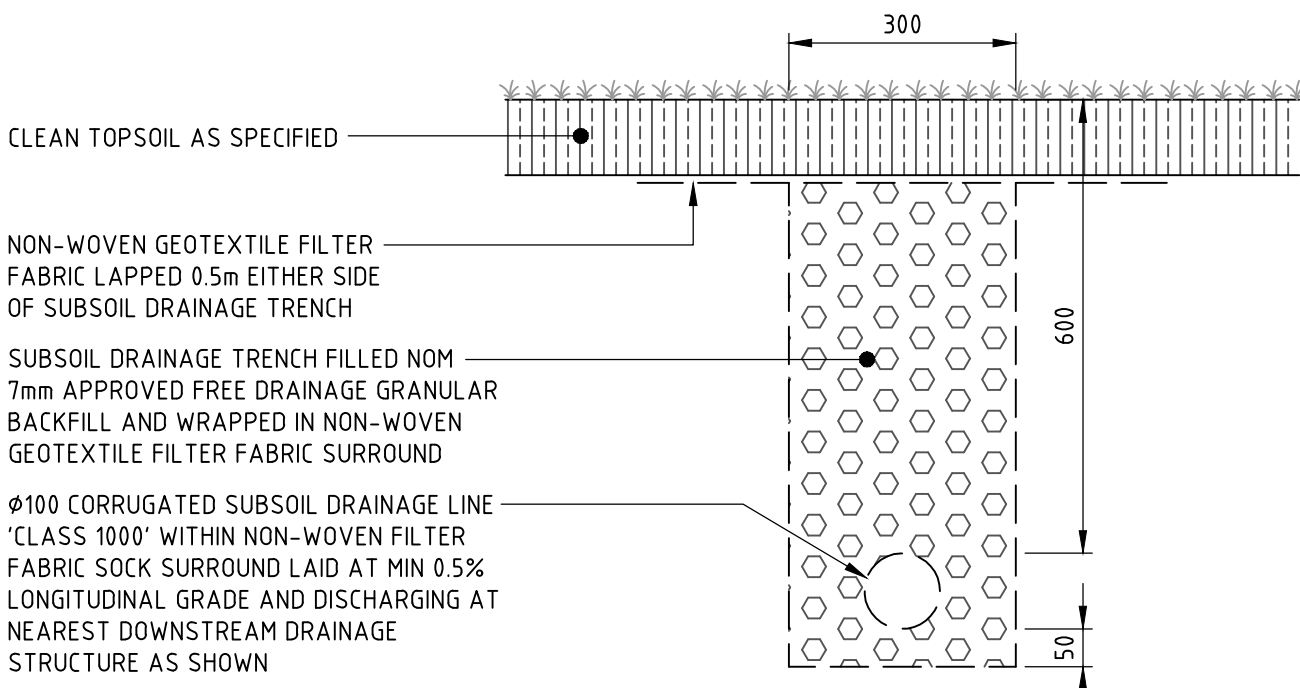
PLAN KERB RAMP 'KR'



PAVED AREAS
PIPE BACKFILLING DETAIL



LANDSCAPED AREAS
PIPE BACKFILLING DETAIL



SUBSOIL DRAINAGE TRENCH - LANDSCAPING 'SSD'

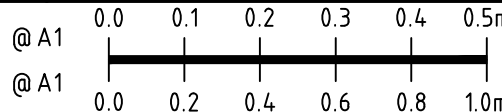
CLEAROUT TO BE INSTALLED @ MAX 30m CENTRES AND DISCHARGING TO DRAINAGE STRUCTURES @ MAX 60m CENTRES.

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR INFORMATION	JK		KS	28.02.22
2	ISSUED FOR TENDER	JK		KS	29.03.22
3	ISSUED FOR TENDER	BD		KS	11.04.22
4	ISSUED FOR TENDER	JK		KS	04.05.22

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ARCHITECT	PEDDLE THORP
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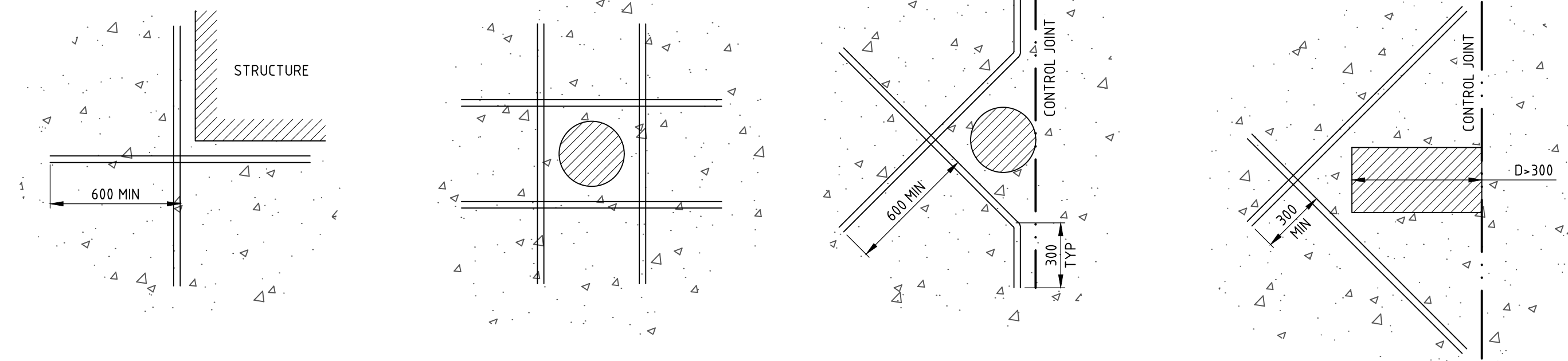
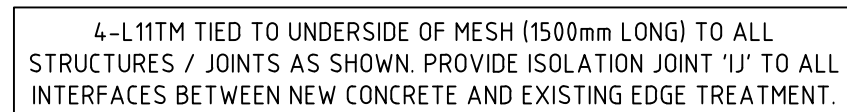
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SCALE 1:10 @ A1 SCALE 1:20 @ A1	

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PROJECT	CORNER BLIGH STREET AND RECREATION DRIVE, TAREE NSW 2403
PROPOSED BASKETBALL IRON ARENA	

DRAWING TITLE	CIVIL ENGINEERING PACKAGE
CIVIL DETAILS - SHEET 1	

JOB NUMBER NL170290-01	
DRAWING NUMBER DD-C04.01	REVISION 4
DRAWING SHEET SIZE = A1	



- PIT STRUCTURE TO BE 150mm THICK MINIMUM (UNLESS SHOWN OTHERWISE)
- REFER TO PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT IF MESH IS USED IN LIEU OF N12-300 EACH WAY.
 - PROVIDE STEEL IRONS IN ACCORDANCE WITH A51657 WHEN PIT DEPTHS ARE GREATER THEN 1200mm
 - SPARGE INTERNAL PIT FACE AT ALL PIPE CONNECTIONS AND PENETRATIONS.
- SHAPE BASE OF PIT TO DIRECT FLOWS TOWARDS OUTLET. PROVIDE A MINIMUM 30mm SMOOTH DROP FROM INLET TO OUTLET
 - PROVIDE ADEQUATE LEVEL OF COMPACTION AROUND PIT. REFER TO SPECIFICATION FOR REQUIREMENTS.



THE ABOVE SHOWN DESIGN INTENT APPLIES TO ALL DRAINAGE / SEWER
PITS, SERVICE PITS, COLUMNS AND SLAB PENETRATIONS



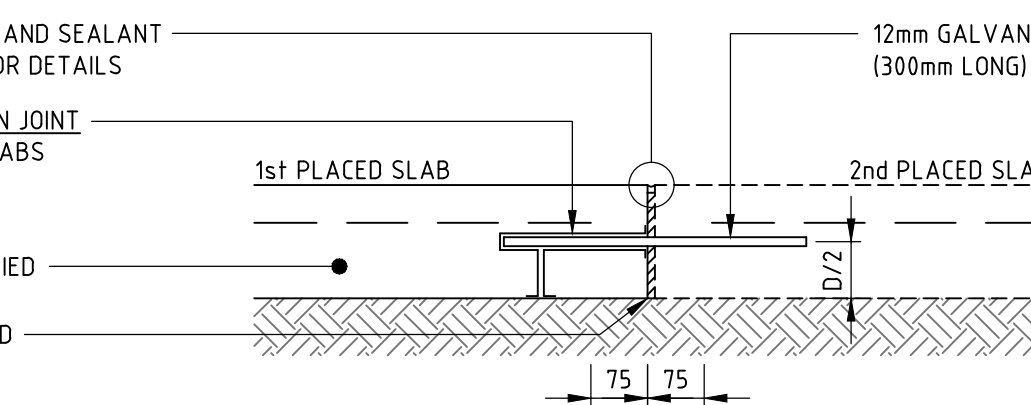
CONTRACTOR TO ALLOW FOR JOINTS - REFER JOINT DETAILS



- TO ALSO BE USED AS A 'STOPWORK JOINT'
- JOINT TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS



- JOINT TO BE SAWN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING (MAX 24HRS)
- REFER SPECIFICATION NOTES FOR JOINT SPACINGS (2m UNO)



FOOTPATH EXPANSION JOINT 'EJ'

- TO ALSO BE USED AS A 'STOPWORK JOINT'
- MAXIMUM CONTINUOUS POUR NOT TO EXCEED 36m
- JOINT TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS
- REFER SPECIFICATION NOTES FOR JOINT SPACINGS (6m UNO)



- PROVIDE JOINT BETWEEN ALL NEW CONCRETE AND EXISTING STRUCTURES
- JOINT TO BE USED AGAINST ALL WALLS, FOOTINGS, COLUMNS, BACK OF KERB, SERVICE PITS, DRAINAGE PITS AND ALL SLAB PENETRATIONS



REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.		 NORTHROP Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	PROJECT	DRAWING TITLE	JOB NUMBER
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2	ISSUED FOR TENDER	JK		KS	29.03.22						DRAWING NUMBER	REVISION	
3	ISSUED FOR TENDER	JK		JK	08.04.22						DD-C04.02	4	
4	ISSUED FOR TENDER	JK		KS	04.05.22						DRAWING SHEET SIZE = A1		
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED						THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD.					PROPOSED BASKETBALL IRON ARENA		