

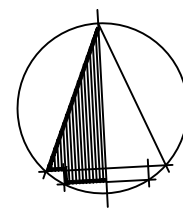
QANTAS GROUP FLIGHT TRAINING CENTRE

enstruct

CIVIL ENGINEERING WORKS

CIVIL ENGINEERING DRAWING LIST:

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03	20.05.19	ISSUED FOR TENDER
02	13.05.19	ISSUED FOR INFORMATION
01	15.04.19	ISSUED FOR INFORMATION
Rev.	Date	Description
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PROJECT NAME		
QANTAS GROUP FLIGHT TRAINING CENTRE		
PROJECT NUMBER: 5728		
DRAWING TITLE		
COVER SHEET - DRAWING LIST		
SCALE AT A0: N.T.S.		
DRAWN BY: AW		
CHECKED BY: PL		
DRAWING STATUS		
FOR INFORMATION ONLY		
DRAWING NUMBER		
ENS-CV-0001	REV.	03

NOT FOR CONSTRUCTION

GENERAL

- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH BAYSIDE COUNCIL DESIGN GUIDELINES AND SPECIFICATIONS. WHERE DISCREPANCIES OCCUR THE MORE STRINGENT SPECIFICATION WILL TAKE PREFERENCE.
- COORDINATES AND REDUCED LEVELS ARE GIVEN IN METRES UNO.
- REDUCED LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
- ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA (MGA) UNO.
- DIMENSIONS ARE IN MILLIMETRES UNO.
- WORKMANSHIP MUST BE IN ACCORDANCE WITH THE DRAWINGS, RELEVANT AUSTRALIAN STANDARDS AND CODES OF PRACTICE.
- DO NOT SCALE OFF FROM DRAWINGS. WRITTEN DIMENSIONS SHALL ALWAYS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
- WHERE REFERENCE IS MADE TO PROPRIETARY COMPONENT NAMES ON THE DRAWINGS, THE CONTRACTOR MAY PROPOSE ALTERNATIVES FOR APPROVAL BY THE ENGINEER IN ADVANCE, AS LONG AS THEY ARE EQUIVALENT OR BETTER.
- SERVICES SHOWN ON THE DRAWINGS ARE FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK THE EXISTENCE AND LOCATION OF SERVICES PRIOR TO COMMENCING CONSTRUCTION.
- ON COMPLETION OF THE WORKS, THE CONTRACTOR MUST RESTORE AREAS DISTURBED FOR HIS OWN CONVENIENCE TO THE ORIGINAL CONDITION AND LEAVE THE SITE NEAT AND TIDY.
- ALL NEW WORKS SHALL MAKE SMOOTH JUNCTION WITH EXISTING CONDITIONS WHERE DETAILS DO NOT EXIST, CONTACT THE ENGINEER.
- SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO SOIL DISTURBANCE IN KEEPING WITH THE 'MANAGING STORMWATER MANUAL', 2004 BY LANDCOM AND TO COUNCIL'S SOIL EROSION AND SEDIMENT CONTROL POLICY.
- CONTRACTOR SHALL MAINTAINED DUST CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
- ALL PITS DEEPER THAN 1.2m SHALL HAVE STEP IRONS PROVIDED IN ACCORDANCE WITH COUNCIL'S STANDARDS.
- ALL DRAINAGE LINES THROUGH LOTS SHALL BE CONTAINED WITH THEIR EASEMENT AND CONFORM WITH COUNCIL'S STANDARDS.
- SUBSOIL DRAINS SHALL BE CONSTRUCTED TO THE SATISFACTION OF THE COUNCIL.
- MINIMUM 100mm THICK TOPSOIL SHALL BE SPREAD ON ALL FOOTPATHS, BERMS, BATTERS AND SITE REGRADING AREAS. EXCESS TOPSOIL SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE MINIMUM 48 HOURS NOTICE TO THE ENGINEER FOR ALL INSPECTIONS.
- THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO THE ADJOINING PROPERTIES.
- THE CONTRACTOR SHALL UNDERTAKE TRAFFIC CONTROL MEASURES TO ENGINEERS SATISFACTION AND SHALL DISPLAY APPROPRIATE WARNING SIGNS THROUGHOUT THE DURATION OF CONSTRUCTION.
- ALL NATURAL SURFACE DATA HAS BEEN DETERMINED BY TERRAIN MODELLING. ALL SITE WORKS MUST BE CARRIED OUT USING THE BENCH MARKS NOTED ON THIS DRAWING.
- 100 YEAR FLOW PATHS TO BE FORMED AT TIME OF CONSTRUCTION.
- ABBREVIATIONS:

ALT	-	ALTERNATE	LV	-	LENGTH VARIES
T	-	TOP	AB	-	ALTERNATE BARS REVERSED
B	-	BOTTOM	NSOE-	-	NOT SHOWN ON ELEVATION
NF	-	NEAR FACE	NSOP-	-	NOT SHOWN ON PLAN
FF	-	FAR FACE	NTS	-	NOT TO SCALE
EF	-	EACH FACE	ADD	-	ADDITIONAL BARS
C	-	CENTRALLY LOCATED	TSB	-	THREADED STARTER BAR
ES	-	EQUAL SPACES	UNO	-	UNLESS NOTED OTHERWISE
EW	-	EACH WAY	MC	-	MASS CONCRETE
GL	-	GROUND LEVEL	C/S	-	BRICKWORK COURSES
RL	-	REDUCED LEVEL	U/S	-	UNDERSIDE
FFL	-	FINISHED FLOOR LEVEL	PL	-	PLATE
SSL	-	STRUCTURAL SLAB LEVEL	BW	-	BOTH WAYS
RC	-	REINFORCED CONCRETE	FW	-	FILLET WELD
IL	-	INVERT LEVEL	KO	-	KERB ONLY
TYP	-	TYPICAL	RK	-	ROLL KERB
CL	-	CENTRE LINE	KT	-	KERB WITH TOE
STA	-	STAGGERED BARS	FK	-	FLUSH KERB
NOM	-	NOMINAL	K&G	-	KERB AND GUTTER
MAX	-	MAXIMUM	A.H.D.	-	AUSTRALIAN HEIGHT DATUM
MIN	-	MINIMUM	ha	-	HECTARE
CJ	-	CONSTRUCTION JOINT	BDY	-	BOUNDARY
LJ	-	LONGITUDINAL JOINT	DD	-	DISH DRAIN
CT	-	CONTRACTION JOINT			

TEMPORARY WORKS

- THE CONTRACTOR MUST MAKE ALL ARRANGEMENTS TO CONTROL PEDESTRIAN AND VEHICULAR TRAFFIC ON FOOTPATHS AND PUBLIC ROADS AROUND THE SITE AND MUST INSTALL AND MAINTAIN WARNING SIGNS AND SAFETY DEVICES IN ACCORDANCE WITH AS1742.3 AND RTA TRAFFIC MANAGEMENT GUIDELINES.
- UPON COMPLETION OF THE WORKS, ALL TEMPORARY WORKS MUST BE REMOVED AND AFFECTED AREAS REINSTATED TO MATCH EXISTING.

SURVEY

- DETAILED GROUND SURVEY WITHIN THE SITE AND BOUNDARIES WERE SUPPLIED BY LAND PARTNERS, DRAWING NUMBER SY014580.000, DATED 21/03/2019.
- THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. ENSTRUCT GROUP DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE.
- SURVEY MARKS SHALL BE MAINTAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE ENGINEER SHALL BE NOTIFIED AND CONSENT PRIOR TO THEIR REMOVAL.
- SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT ENSTRUCT GROUP.
- ALL WORKS TO BE SET OUT BY A REGISTERED SURVEYOR.

DEMOLITION

- DEMOLITION WORKS MUST COMPLY WITH THE REQUIREMENTS OF AS2601.
- EXISTING STRUCTURES MUST BE DEMOLISHED AS NECESSARY WITHIN THE EXTENTS OF THE NEW WORKS. THIS INCLUDES FOUNDATIONS TO EXISTING STRUCTURES. DEMOLITION MATERIAL MUST BE REMOVED OFF-SITE OR AS DIRECTED BY THE PROJECT MANAGER.

STORMWATER DRAINAGE

- ALL PIPES LARGER THAN 2250, SUBJECT TO VEHICLE LOADING, MUST BE REINFORCED CONCRETE CLASS '2' RUBBER RING JOINT TO AS1342 UNO.
- THE CONTRACTOR IS TO ORGANISE AND STAGE CONSTRUCTION WORK AND UNDERTAKE ANY DIVERSION WORKS TO ENSURE THE EXISTING DRAINAGE IS ABLE TO CONVEY ALL STORMWATER FLOWS THAT MAY OCCUR DURING THE PERIOD OF THE CONSTRUCTION WORKS.
- THE CONTRACTOR IS TO PROVIDE DIVERSION WORKS ETC TO PROTECT WORKS IN PROGRESS UNTIL SUCH A TIME AS THE WORKS ARE IN A FINISHED AND STABLE CONDITION.
- ANY DAMAGE TO THE WORKS DUE TO STORMWATER FLOWS OR FLOODING DURING THE CONSTRUCTION PERIOD IS AT THE CONTRACTOR'S RISK.
- SETOUT POINTS FOR STORMWATER STRUCTURES ARE AS INDICATED IN THE DRAWINGS UNLESS OTHERWISE NOTED.
- ALL PAVED SURFACE LEVELS AND GRADES TO BE COORDINATED WITH GULLY PIT LEVELS TO ENSURE NO UNDRAINED AREAS OCCUR.
- THE SIDES OF ALL PIPE TRENCH EXCAVATIONS DEEPER THAN 1.0m SHALL BE FULLY SUPPORTED AT ALL TIMES AND HAVE APPROPRIATE EDGE PROTECTION.
- ALL NEW PIPES TO BE LAID IN AN UPSTREAM DIRECTION. THE LINE, LEVEL AND LOCATION OF EXISTING SERVICES CROSSING THE LINE OF THE PROPOSED STORMWATER PIPE SHALL BE DETERMINED BY EXCAVATION PRIOR TO THE LAYING OF THE PIPE. IF CONFLICT IS APPARENT, THE ENGINEER SHALL BE NOTIFIED AND INSTRUCTIONS AS TO WHETHER THE EXISTING SERVICE IS TO BE ADJUSTED OR THE PROPOSED PIPE INVERT ALTERED WILL BE ISSUED.
- PIPE BEDDING, HAUNCH AND BACKFILL TO BE AS SHOWN ON THE CIVIL DETAILS DRAWINGS AND THE CIVIL SPECIFICATION.
- SUBSOIL DRAINAGE PIPES TO BE SLOTTED PIPE AND FILTER SOCK CLASS 1000 TO AS2439 PART 1 LAID AT PREFERABLE MINIMUM GRADE 1 IN 100 OR ABSOLUTE MINIMUM 1 IN 200 WHERE LIMITED BY OUTFALL LEVELS.
- STORMWATER STRUCTURES ARE TO BE CONSTRUCTED PERPENDICULAR TO THE INCOMING PIPEWORK UNLESS OTHERWISE NOTED.
- PRECAST COMPONENTS SHALL BE CONNECTED BY MEANS OF EPOXY OR CHEMICAL GROUTED BARS OF THE SAME DIAMETER AND SPACING AS THE SMALLER BARS IN THE RESPECTIVE COMPONENTS.
- PRE-CAST PITS MUST HAVE LIFTING ANCHORS.
- WORKING LOADS ARE THOSE DUE TO FILL MATERIAL AND STANDARD HIGHWAY VEHICLES AS PER AS3725. CONSTRUCTION LOADS HAVE NOT BEEN ALLOWED FOR.
- ALL EXPOSED EDGES ON STORMWATER PITS TO BE ROUNDED TO 5mm RAD. UNO.

EARTHWORKS

- ALL TREES AND SHRUBS (UNLESS NOTED TO BE PROTECTED ON THE LANDSCAPE PLANS), RUBBLE, EXISTING PAVEMENT AND EXISTING STRUCTURES WITHIN THE SITE SHALL BE REMOVED AND REUSED OR RECYCLED WHERE POSSIBLE. WHERE NOT POSSIBLE, THIS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF AS PART OF THE CONTRACT.
- ANY TREES WITHIN THE WORKS AREA WHICH, IN THE OPINION OF THE CONTRACT ADMINISTRATOR, ARE UNSOUND OR WOULD CONSTITUTE A DANGER, SHALL BE CUT DOWN AND REMOVED (EXCEPT THOSE IDENTIFIED AS BEING PROTECTED). ALL STUMPS OF TREES CUT DOWN WITHIN THE BOUNDS OF THE CONSTRUCTION AREA WHICH ARE LARGER THAN 250mm IN GIRTH, SHALL BE COMPLETELY REMOVED.
- ALL ROOTS SHALL BE REMOVED FOR A DEPTH OF 1m. CAVITIES FORMED BY THE REMOVAL OF ROOTS SHALL BE BACKFILLED AND COMPACTED.
- AFTER CLEARING AND GRUBBING ARE COMPLETE, THE CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL FROM THE CLEARED AREA (INCLUDING AREAS THAT HAVE BEEN CLEARED AND GRUBBED). REMOVAL OF TOPSOIL FROM ANY SECTION OF THE WORKS SHALL ONLY COMMENCE AFTER SEDIMENT AND EROSION CONTROLS HAVE BEEN IMPLEMENTED.
- TOPSOIL SHALL BE STRIPPED FROM WITHIN THE FORMATION AREAS OF ROADS, PATHWAYS, BUILDING PADS AND MISCELLANEOUS PAVEMENTS, INCLUSIVE OF BATTERS, AND IS TO BE CONSERVED FOR THE TOP-DRESSING OF FORMED FOOTWAYS, BERMS AND BATTERS TO THE SPECIFIED DEPTH, OR WHERE NO DEPTH IS SPECIFIED TO A MINIMUM DEPTH OF 150mm, OR AS DETERMINED ON-SITE.
- EXCAVATED FILL MATERIAL NOT SUITABLE FOR REUSE ON-SITE MUST BE REMOVED OFF-SITE OR OTHERWISE USED IN LANDSCAPING AREAS WHERE AGREED IN ADVANCE WITH ENGINEER.
- EROSION AND SEDIMENT CONTROL MUST BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL CITY COUNCIL DCP, DA AND CC CONDITIONS, AND BE INSTALLED TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO LIMIT THE CREATION OF DUST NUISANCE, WHICH MIGHT ARISE DURING THE EXECUTION OF THE WORKS.
- FILL MATERIAL MUST BE PLACED IN MAXIMUM LAYERS OF 200mm (LOOSE) OR AS OTHERWISE GIVEN IN THE SPECIFICATION AND COMPACTED TO THE LEVELS AS SPECIFIED ON THE DRAWINGS.
- COMPACTED FILL MUST BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF AS3798 AND AS GIVEN IN THE CIVIL SPECIFICATION.
- BEFORE PLACING FILL, PROOF ROLL EXPOSED SUBGRADE WITH AN 15 TONNE (MIN) DEADWEIGHT SMOOTH DRUM VIBRATORY ROLLER TO DIRECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER. PROOF ROLLING SHALL COMPRISE 8 PASSES OF A MINIMUM.
- FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN :
(A) 1 TEST PER 200m² OF FILL PLACED PER 200mm THICK LAYER OF FILL.
(B) 3 TESTS PER LAYER
(C) 1 TEST PER 2000m² OF EXPOSED SUBGRADE
TESTING SHALL BE "LEVEL1" TESTING IN ACCORDANCE WITH AS 3798 (2007) AT CONTRACTOR EXPENSE.
- NO FILLING SHALL TAKE PLACE TO EXPOSED SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF GEOTECHNICAL ENGINEER AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED.
- THE CONTRACTOR SHALL ALLOW FOR AND COORDINATE ALL MONITORING AND MAINTENANCE REQUIREMENTS IN RELATION TO SOIL AND GROUNDWATER CONDITIONS DURING CONSTRUCTION.
- ALL LAND DISTRIBUTED BY EARTHWORKS SHALL BE HYDROMULCHED, OR SIMILARLY TREATED TO ESTABLISH GRASS COVER. SEED MIXTURES ARE TO BE APPROVED BY COUNCIL PRIOR TO SPRAYING. ALL GRASSSED AREAS SHALL BE REGULARLY WATERED AND MAINTAINED UNTIL EXPIRATION OF THE MAINTENANCE PERIOD.

LOCATION	STANDARD DRY DENSITY (AS (1289 E 5.1.1.)
UNDER BUILDING SLABS ON GROUND	98-102%
UNDER PADS, FOOTWAYS AND CARPARKS	98-102%
LANDSCAPED AREAS UNLESS NOTED OTHERWISE	95-102%

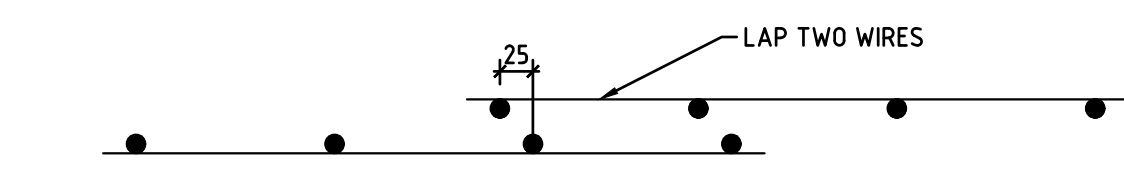
UTILITIES

- LOCATE ALL PIPES, DUCTS, CABLES, RETAINING WALLS AND EXCAVATIONS OUTSIDE A 1:2 (VERTICAL-HORIZONTAL) ZONE OF INFLUENCE FROM THE BOTTOM EDGE OF THE FOOTING.
- THE CONTRACTOR MUST TAKE EVERY PRECAUTION TO PROTECT EXISTING GAS, WATER, STORMWATER, SEWERAGE, ELECTRICITY, TELEPHONE CONDUITS AND OTHER EXISTING WORKS AND SERVICES.
- CIVIL WORKS REQUIRED TO PROTECT EXISTING SERVICES IS TO BE AT THE FULL COST OF THE CONTRACTOR.
- THE LOCATION OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITION OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.

- ENSTRUCT GROUP CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.
- CONTRACTOR SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
- CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
- CONTRACTORS ARE TO UNDERTAKE A SERVICE SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULT ARE TO BE KEPT ON SITE AT ALL TIMES.

CONCRETE

- THE MINIMUM CONCRETE GRADE MUST BE 25MPa UNO. THE GRADE DESIGNATION SPECIFIES THE REQUIRED CHARACTERISTIC CYLINDER STRENGTH (MPa) AT 28 DAYS.
- EXCEPT WHERE OTHERWISE NOTED ON THE DRAWINGS, THE FOLLOWING CLASSES OF FORMWORK MUST BE USED ALL IN ACCORDANCE WITH AS3610; SURFACES THAT WILL BE RENDERED CLASS 4, CONCEALED FROM VIEW BELOW GROUND-CLASS 5, ALL OTHER SURFACES-CLASS 3.
- PROVIDE 10mm WIDE EXPANSION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVEMENTS.
- IN-SITU CONCRETE KERB AND GUTTERING MUST BE PROVIDED WITH JOINTS AT 4m INTERVALS. JOINTS MUST BE FORMED BY CUTTING THE NEWLY PLACED CONCRETE COMPLETELY THROUGH NORMAL TO THE LINE OF KERB AND RADIALY ON CURVES. EVERY FOURTH JOINT IS TO BE FORMED AS AN EXPANSION JOINT.
- KERBS AND GUTTERS MUST BE COVERED AND KEPT DAMP FOR NOT LESS THAN THREE DAYS.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 CURRENT ADDITION WITH AMENDMENTS, AS3735 AND WS-SPEC (WATER SERVICES SPECIFICATION).
- COVER TO REINFORCEMENT SHALL BE OBTAINED BY THE USE OF CONCRETE OR PLASTIC BAR CHAIRS FOR BOTTOM REINFORCEMENT, AND PLASTIC TIPPED WIRE BAR CHAIRS FOR TOP REINFORCEMENT. ALL CHAIRS TO BE SPACED 750 CRS. MAXIMUM.
- FABRIC LAP DETAIL:



- REINFORCEMENT SHALL NOT BE BENT OR HEATED ON-SITE WITHOUT THE ENGINEER'S PRIOR APPROVAL.
- CONCRETE TO BE MECHANICALLY VIBRATED TO ACHIEVE A DENSE HOMOGENOUS MASS. COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS.
- SURFACE FINISH TO BE BROOMED UNLESS SHOWN OTHERWISE.
- DECORATIVE FINISHES, COLORS OR PATTERNS TO BE APPLIED AS SHOWN ON THE ARCHITECT'S PLAN.

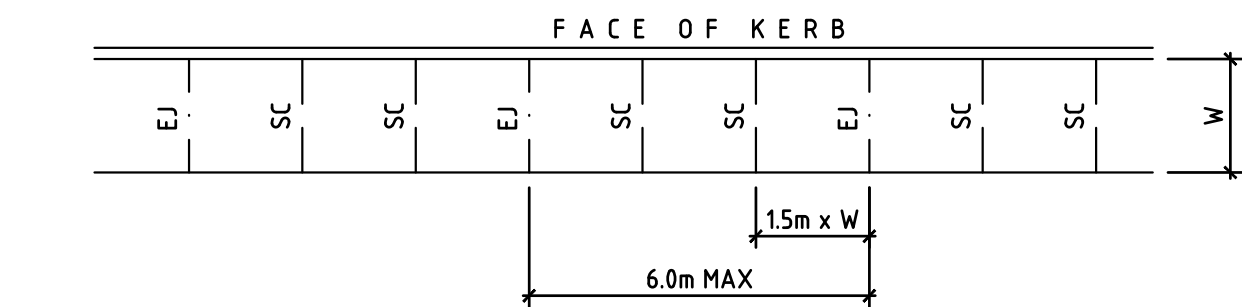
ASPHALT PAVEMENTS

- ASPHALTIC CONCRETE SHALL CONFORM TO RMS SPECIFICATION R116 AND CIVIL SPECIFICATION
- ALL BASECOURSE AND SUB-BASECOURSE MATERIALS SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS
- ALL PROOF ROLLING TO BE CARRIED OUT IN THE PRESENCE OF AND UNDER DIRECTION OF GEOTECHNICAL ENGINEER
- PRIOR TO THE CONSTRUCTION OF NEW ROAD PAVEMENTS, THE SUBGRADE CBR SHALL BE CONFIRMED.
- CONCRETE FOR KERB SHALL HAVE A CONCRETE STRENGTH OF 25MPa AT 28 DAYS, MINIMUM SLUMP OF 60mm AND MAXIMUM AGGREGATE SIZE OF 20mm.
- WHERE NEW WORKS ARE TO MATCH EXISTING, THE LEVELS GIVEN ARE APPROXIMATE ONLY BASED ON SUPPLIED SURVEY AND KNOW CONDITIONS AT TIME OF DESIGN. ALL NEW WORKS MUST NEATLY JOIN IN WITH EXISTING LEVELS.
- ADJUST SERVICE COVERS AS NECESSARY TO SUIT PROPOSED LEVELS PROVIDED ON ENGINEERING DRAWINGS. WHERE LEVELS ARE NOT INDICATED EXISTING SERVICE COVERS ARE TO BE ADJUSTED THE MATCH THE PROPOSED DESIGNS SURFACE.
- ALL JUNCTIONS BETWEEN NEW AND EXISTING PAVEMENT KERB AND GUTTER WORKS SHALL BE NEATLY SAW CUT.

JOINTING NOTES

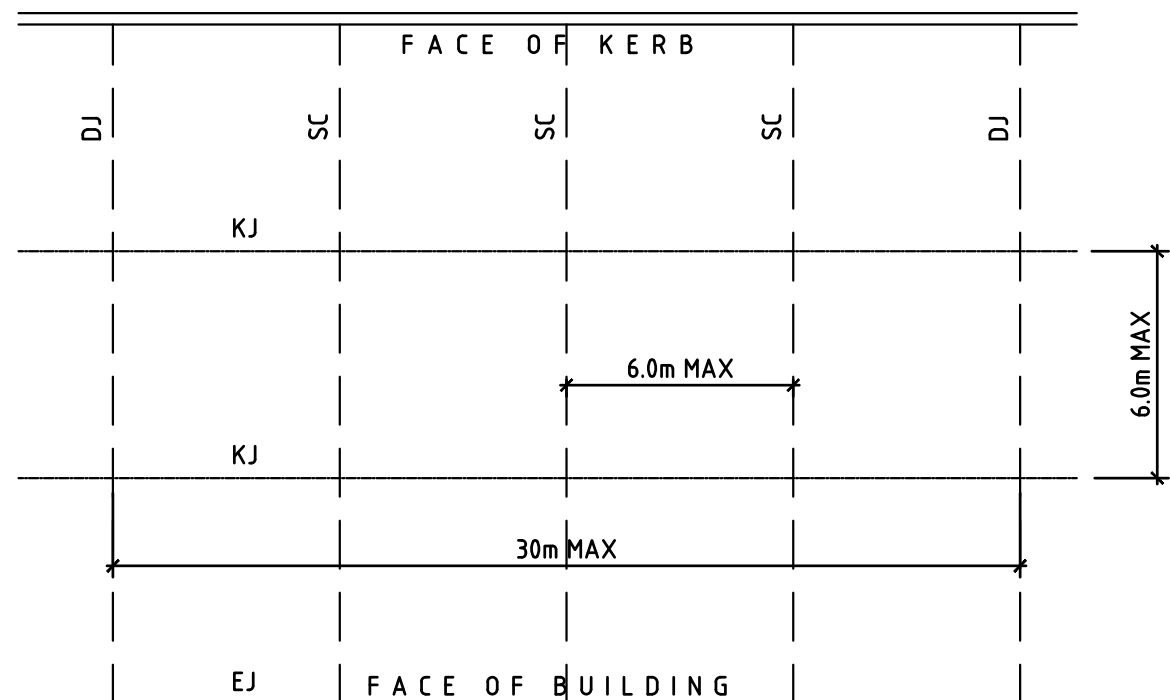
PEDESTRIAN FOOTPATH JOINTS

- EXPANSION JOINTS (EJ) ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT 6m CENTRES.
- SAWCUT JOINTS (SC) ARE TO BE LOCATED AT A MAX 1.5m x WIDTH OF PAVEMENT.
- WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND / OR ADJACENT PAVEMENT JOINTS.
- ALL PEDESTRIAN FOOTPATH JOINTINGS AS FOLLOWS (U.N.O.).



VEHICULAR PAVEMENT JOINTS

- ALL VEHICULAR PAVEMENTS TO BE JOINTED AS SHOWN ON DRAWINGS.
- KEYED CONSTRUCTION JOINTS (KJ) SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 6m CENTRES.
- SAWCUT JOINTS (SC) SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 6m CENTRES OR 1.5 x THE SPACING OF KEYED JOINTS, WHERE KEYED JOINT SPACING IS LESS THAN 4m, WITH DOWELLED EXPANSION JOINTS (DJ) AT MAXIMUM OF 30m CENTRES.
- PROVIDE 10mm WIDE FULL DEPTH EXPANSION JOINTS (EJ) BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVERS.
- VEHICULAR PAVEMENT JOINTING AS FOLLOWS (U.N.O.)
- THE TIMING OF THE SAW CUT IS TO BE CONFIRMED BY THE CONTRACTOR ON SITE. SITE CONDITIONS WILL DETERMINE HOW MANY HOURS AFTER THE CONCRETE POUR BEFORE THE SAW CUTS ARE COMMENCED.



KERBING NOTES

- ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 32 MPa U.N.O.
- ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 75mm GRANULAR BASECOURSE COMPACTED TO A MINIMUM 98% MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289 5.2.1.
- EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLAB.
- WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLAB.
- BROOMED FINISH TO ALL RAMPED AND VEHICULAR CROSSINGS. ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
- IN THE REPLACEMENT OF KERBS:-
 - EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm U.N.O. FROM THE LIP OF GUTTER. UPON COMPLETION OF THE NEW KERB AND GUTTER, NEW BASECOURSE AND SURFACE TO BE LAID 600mm WIDE U.N.O.
 - EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

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PROJECT NAME
**QANTAS GROUP FLIGHT
TRAINING CENTRE**

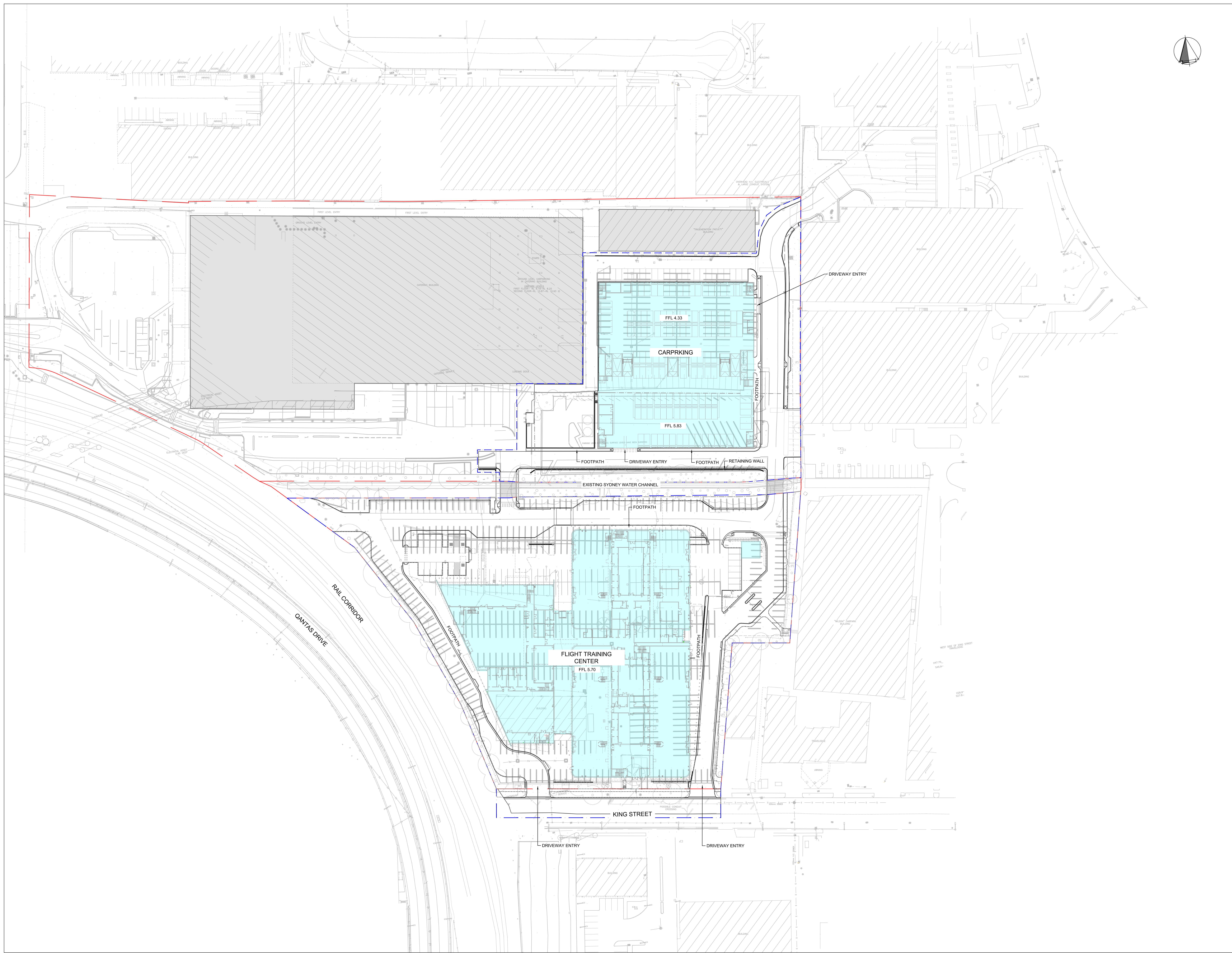
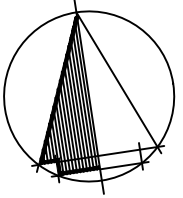
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DRAWN BY: AW
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DRAWING STATUS
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DRAWING NUMBER: ENS-CV-0002
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LEGEND

- SITE BOUNDARY
--- EXTENT OF WORKS
EXISTING BUILDING OUTLINE
PROPOSED BUILDING OUTLINE



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CLIENT
QANTAS
PROJECT NAME
QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NUMBER: 5728
DRAWING TITLE
GENERAL ARRANGEMENT PLAN

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DRAWN BY: AW
CHECKED BY: PL
DRAWING STATUS
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DRAWING NUMBER: ENS-CV-0100 REV. 03

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LEGEND

- SITE BOUNDARY
- EXTENT OF WORKS
- PROPOSED KERB INLET PIT
- GRATED PIT
- KO
- K&G
- DD
- 900 mm DISH DRAIN
- EXISTING BUILDING OUTLINE
- PROPOSED BUILDING OUTLINE
- PROPOSED PAVEMENT WORKS
- PR
- RW
- RETAINING WALL
- PROPOSED LEVEL
- EXISTING LEVEL
- MAJOR CONTOUR
- MINOR CONTOUR

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CLIENT

QANTAS
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QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NUMBER: 5728

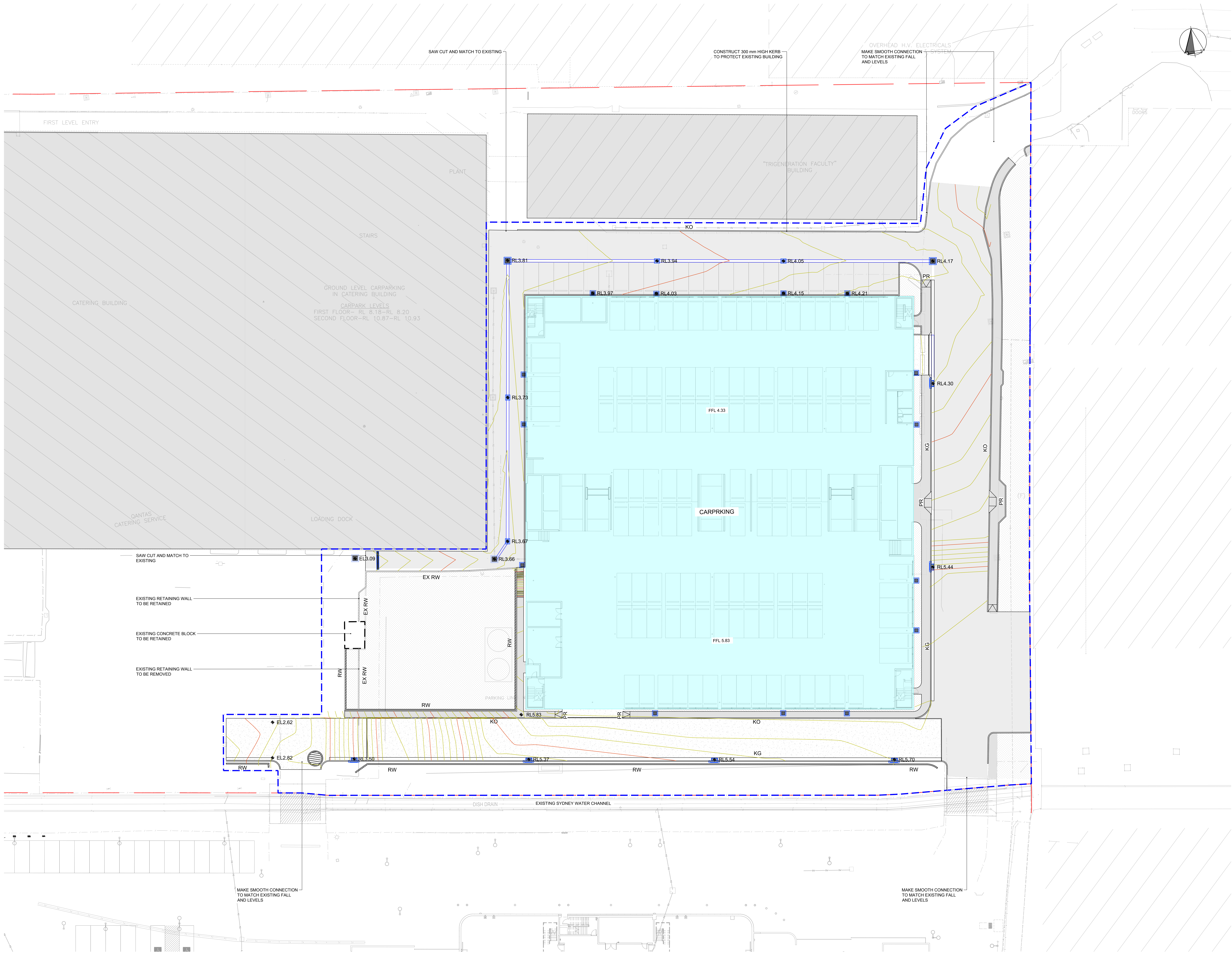
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SITE PLAN - SHEET 01

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CHECKED BY: PL

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FOR INFORMATION ONLY

DRAWING NUMBER: ENS-CV-0101
REV. 03

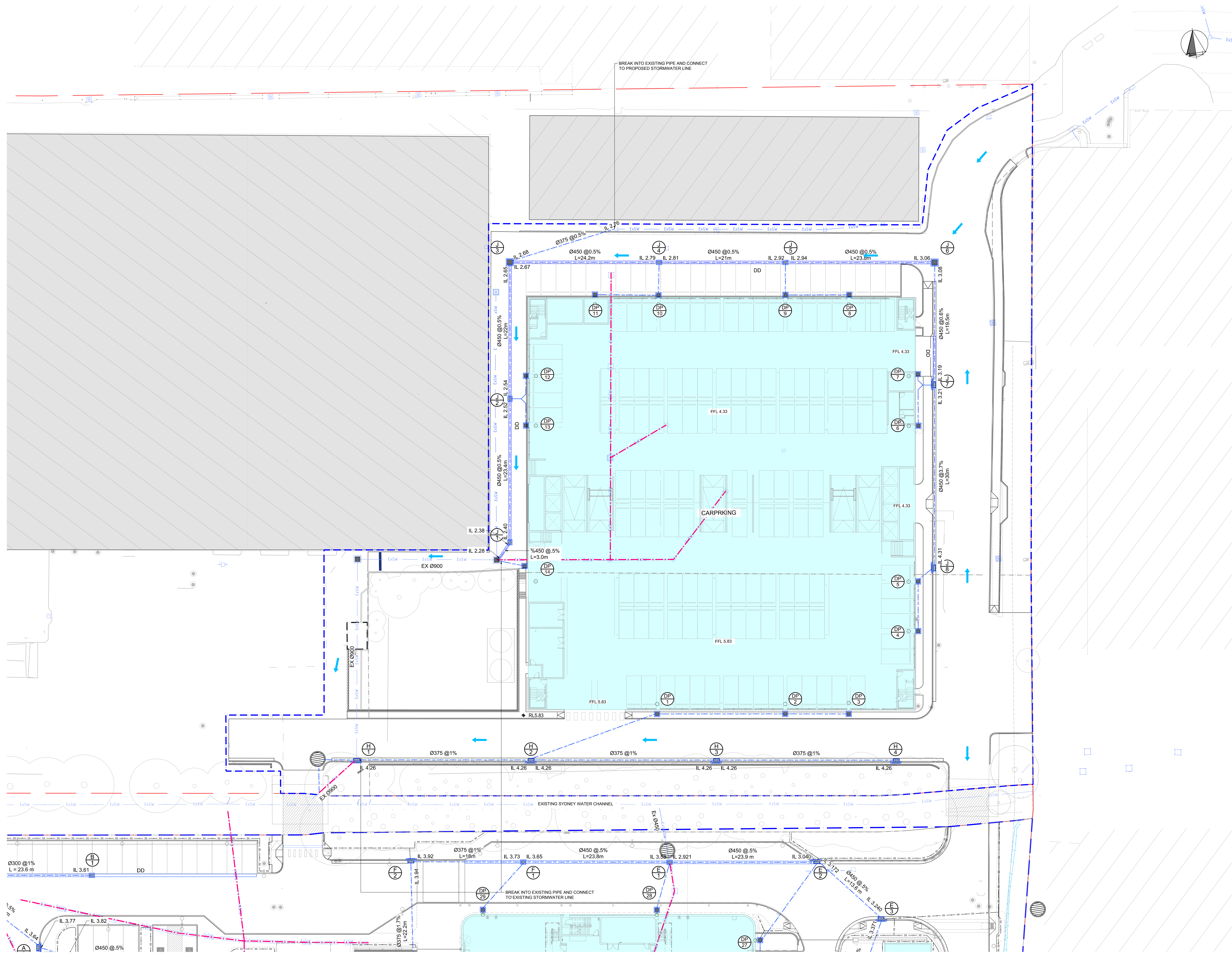
NOT FOR CONSTRUCTION



LEGEND

- SITE BOUNDARY
--- PROPOSED GRATED PIT
SS --- PROPOSED SUBSOIL DRAINAGE
ExSW --- EXISTING STORMWATER LINE
SW --- STORMWATER LINE
--- REDUNDANT STORMWATER LINE
--- PROPOSED KERB INLET PIT
--- PROPOSED GRATE PIT
--- PROPOSED STORMWATER JUNCTION PIT
--- EXISTING STORMWATER PIT
PIT NAME
--- EMERGENCY OVERLAND FLOW
--- EXISTING BUILDING OUTLINE
--- PROPOSED BUILDING OUTLINE

INVERT LEVEL AND DIRECTION OF DISTURBED EXISTING PITS AND PIPES TO BE CONFIRMED ON SITE AND REPORTED TO STORMWATER ENGINEER PRIOR COMMENCING ANY WORK



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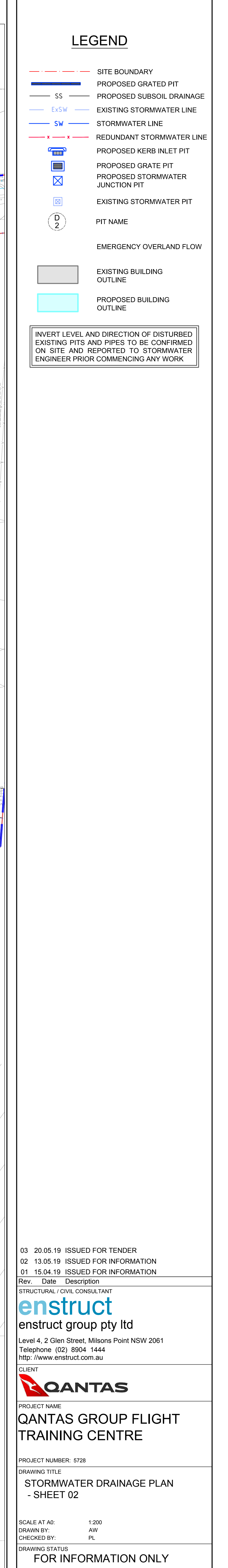
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QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NUMBER: 5728
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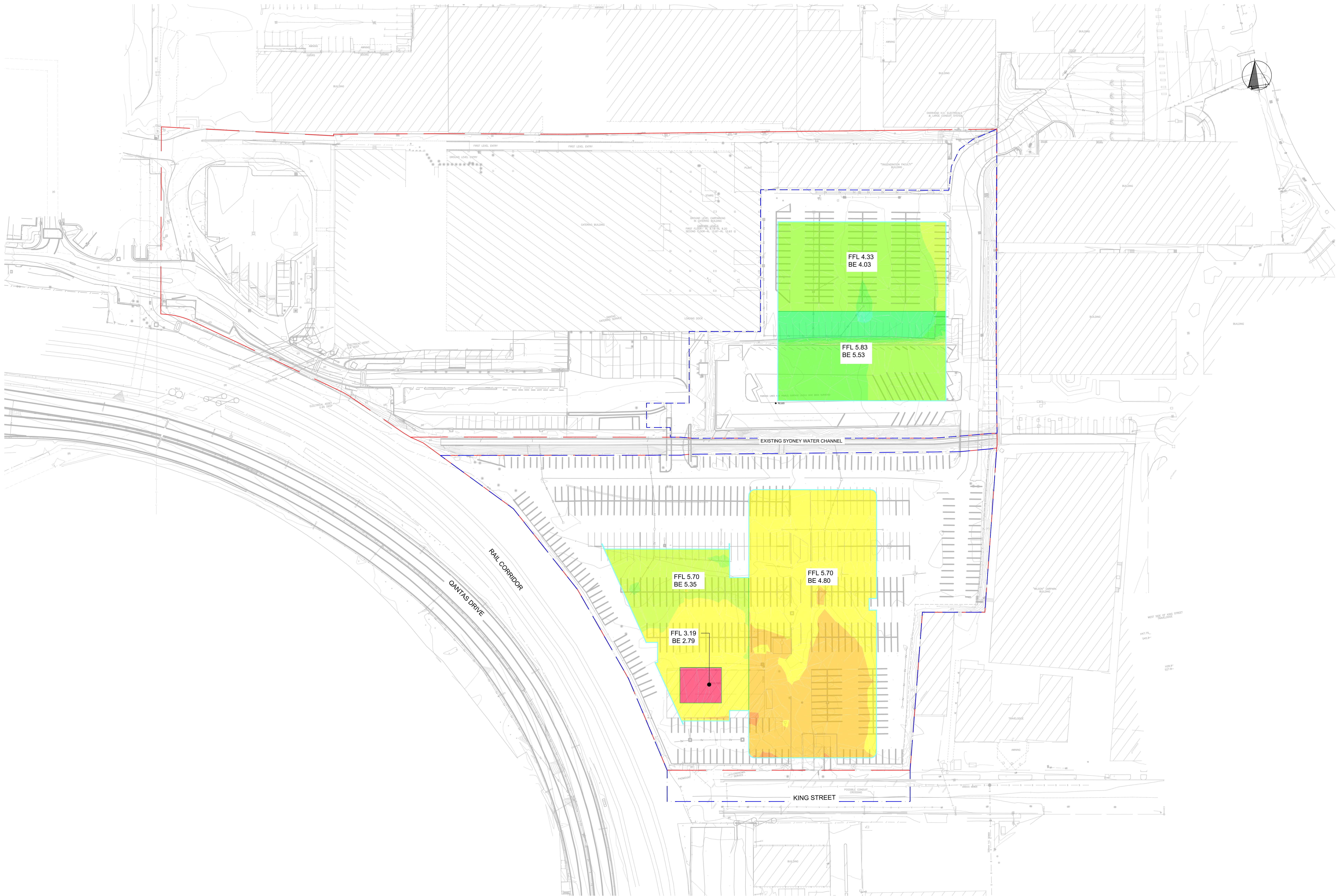
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Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Bulk Excavation Volume Carpark	1.000	1.000	4444.136sq.m	12.292 Cu. M.	2452.752 Cu. M.	2440.460 Cu. M.<Fill>
Bulk Excavation Volume Training Centre	1.000	1.000	7608.750sq.m	2833.473 Cu. M.	349.945 Cu. M.	2483.528 Cu. M.<Cut>
Totals			12052.886sq.m	2845.765 Cu. M.	2802.697 Cu. M.	43.069 Cu. M.<Cut>

Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1		-3.500	-3.000
2		-3.000	-2.500
3		-2.500	-2.000
4		-2.000	-1.500
5		-1.500	-1.000
6		-1.000	-0.500
7		-0.500	0.000
8		0.000	0.500
9		0.500	1.000
10		1.000	1.500
11		1.500	2.000
12		2.000	2.500

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DRAWING TITLE

BULK EARTHWORKS PLAN

PROJECT NUMBER: 5728

DRAWING NUMBER

SCALE AT A0: 1:500

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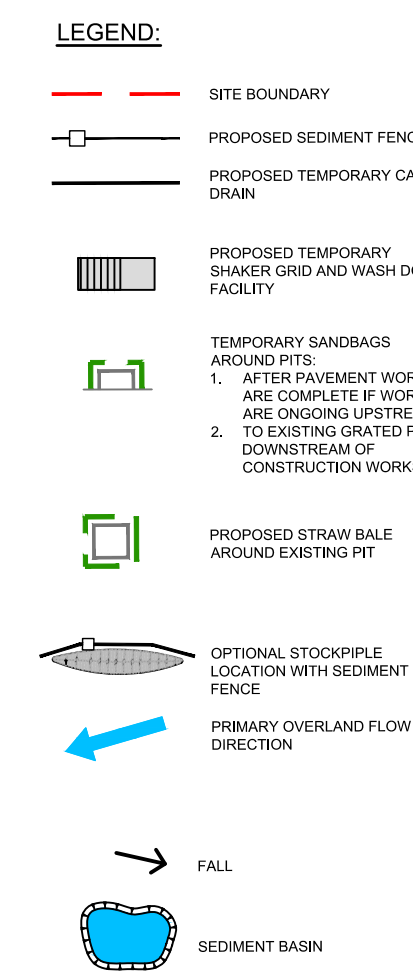
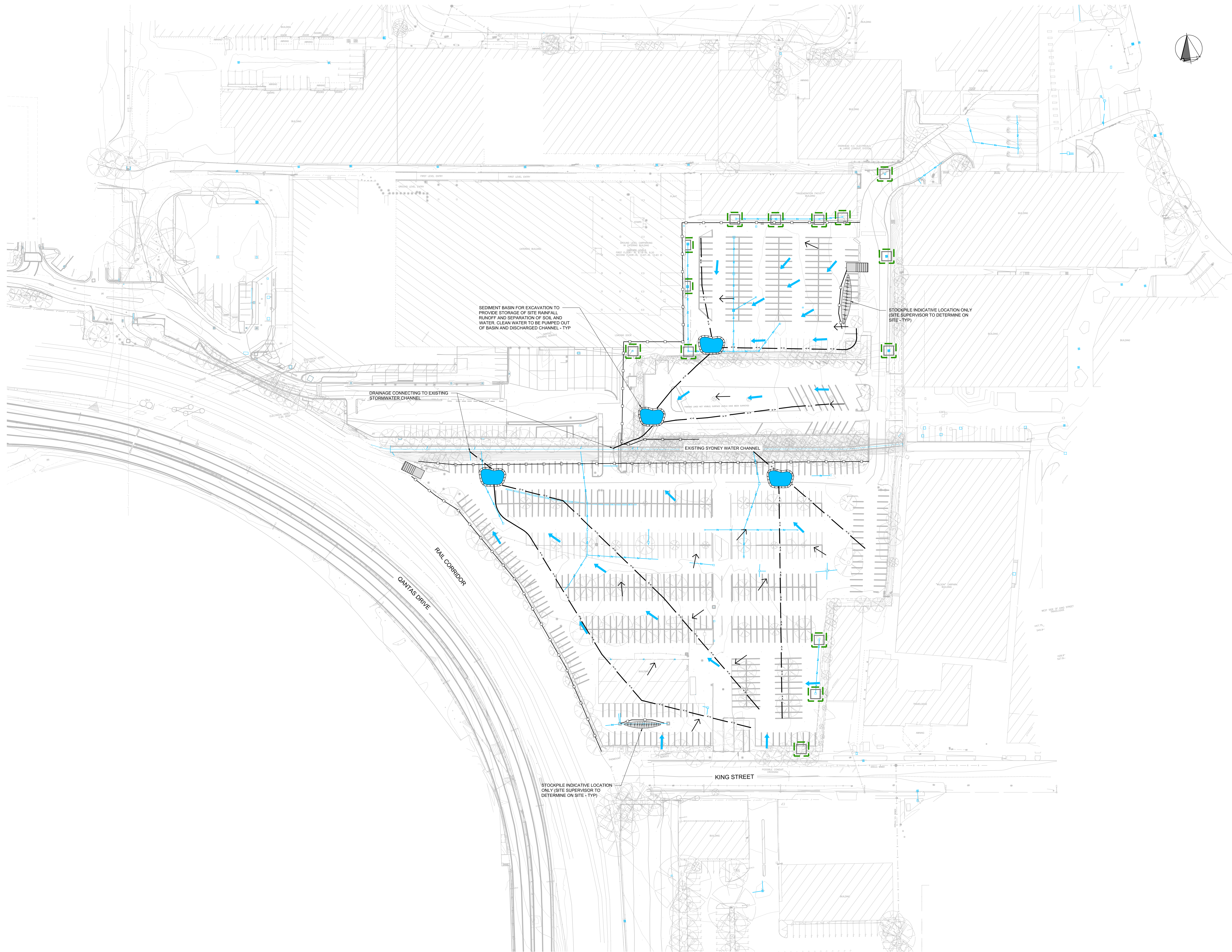
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PROJECT NAME
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PROJECT NUMBER: 5728
DRAWING TITLE
SEDIMENT AND EROSION CONTROL PLAN
SCALE AT A0: 1:500
DRAWN BY: AW
CHECKED BY: PL
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DRAWING NUMBER: ENS-CV-0401
REV. 03

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EROSION AND SEDIMENT CONTROL:

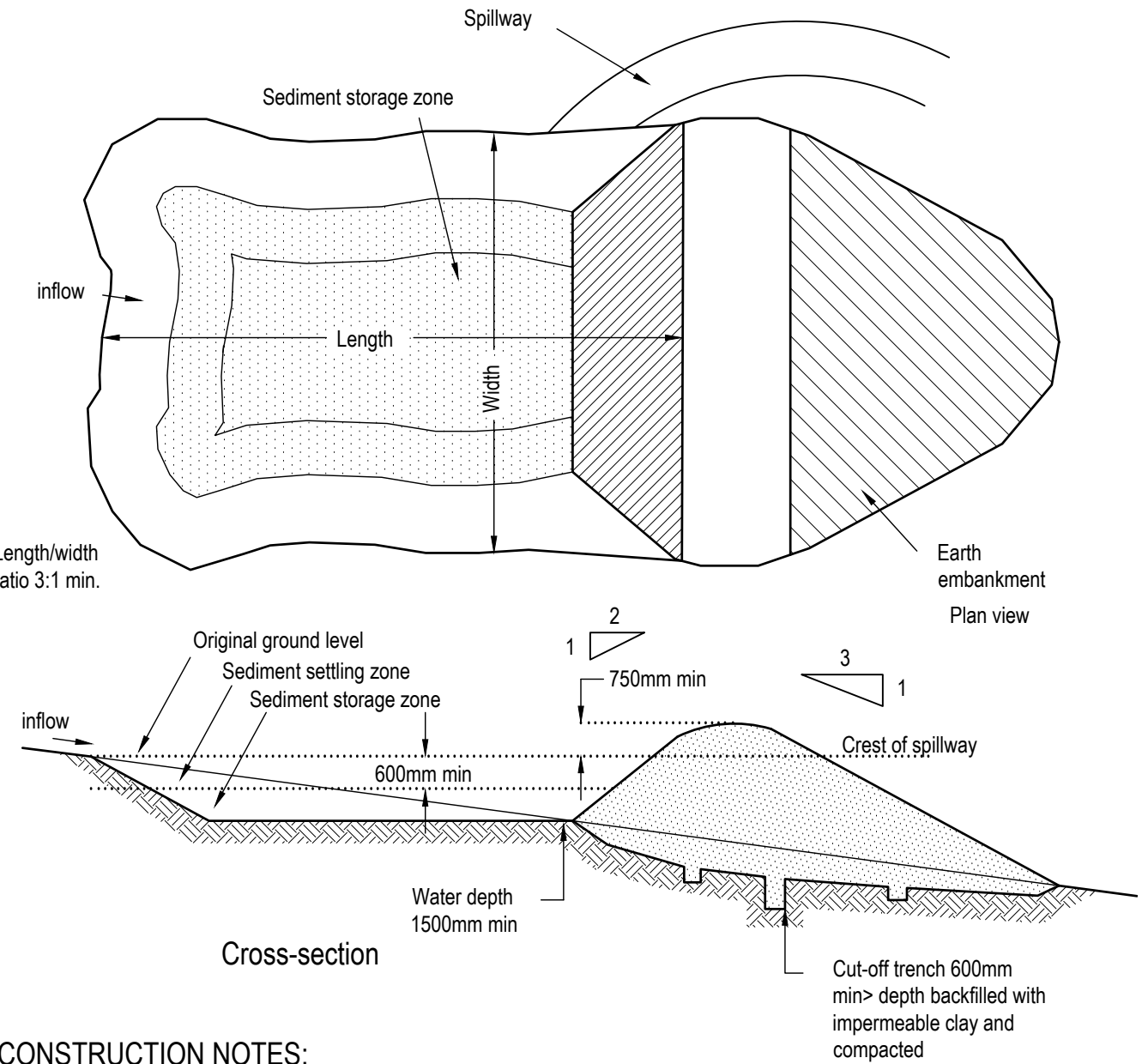
1. THE CONTRACTOR SHALL PROVIDE ADEQUATE TRUCK WASH FACILITIES AT THE SITE EXIT AND SHALL CLEAN ALL VEHICLES EXITING THE SITE TO ENSURE MATERIALS AND MUD IS NOT TRANSPORTED AND DEPOSITED OFF SITE. WATER FROM ANY WASHBAY IS TO BE DIVERTED TO THE SEDIMENT FENCE OR TO THE SEDIMENT BASIN PRIOR TO DISCHARGE
2. NOTWITHSTANDING THE EROSION AND SEDIMENT CONTROL NOTES THE CONTRACTOR SHALL NOTE THEIR OVERARCHING OBLIGATION WITH THE CITY OF RYDE COUNCIL IN RESPECT OF ENVIRONMENTAL CONTROLS. PARTICULARLY ONGOING TESTING OF DISCHARGE, MAINTENANCE, DREDGING OF SEDIMENTATION PONDS AND FINAL FILTRATION AT OUTLETS.
3. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PROTECT THE ENVIRONMENT AND IN PARTICULAR SHALL CONTROL EROSION, SEDIMENTATION AND POLLUTION DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE EPA, DEC, COUNCIL, AND THE EROSION AND SEDIMENT CONTROL PLAN.
4. EROSION AND SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION" (2004 - BLUE BOOK), AND CITY OF RYDE COUNCIL'S DCP.
5. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONFIRMED IN THE QUALITY PLAN PRODUCED BY THE CONTRACTOR AND SHALL BE IMPLEMENTED AND ADJUSTED TO SUIT CONSTRUCTION ACCESS AND STAGING.
6. FOLLOWING EVERY RAINFALL EVENT EXCEEDING 10mm OR WHEN BASINS ARE GREATER THAN 50% FULL, WATER SHALL BE TESTED FOR COMPLIANCE WITH EPA'S STANDARDS AND, IF FOUND NOT TO COMPLY, WATER SHALL BE TREATED BY APPROPRIATE FLOCCULATION, FILTRATION OR OTHER APPROVED METHODS.
7. WATER SHALL NOT BE REMOVED FROM SEDIMENT BASIN UNTIL TESTED WATER MEETS EPA WATER QUALITY REQUIREMENTS ≤ 50 MG/L SUSPENDED SOLIDS.
8. CONTRACTOR TO PROVIDE ALL PERIMETER SITE FENCING FOR SECURITY & SAFETY PURPOSES AS REQUIRED.
9. OBTAIN APPROVALS FROM SYDNEY WATER OR COUNCIL TO PUMP TO RECEIVING PIT.
10. EMPTY SEDIMENT BASIN WITHIN 72 HOURS OF RAINFALL. TREAT WATER AS NECESSARY TO ACHIEVE REQUIRED WATER QUALITY STANDARDS.

REMEDATION NOTES:

1. REMOVE ALL DEBRIS AND SMOOTH ALL EXPOSED AREAS TO GRADE EVENLY TO EXTENT OF EXPOSED AREA TO MATCH EXISTING SURROUNDING GROUND LEVELS.
2. SPRAY GRASS EXTENT OF DISTURBED AREA.
3. MAINTAIN AND WATER SPRAY GRASS UNTIL ESTABLISHMENT OF DENSE GRASS COVER.

NOTE:

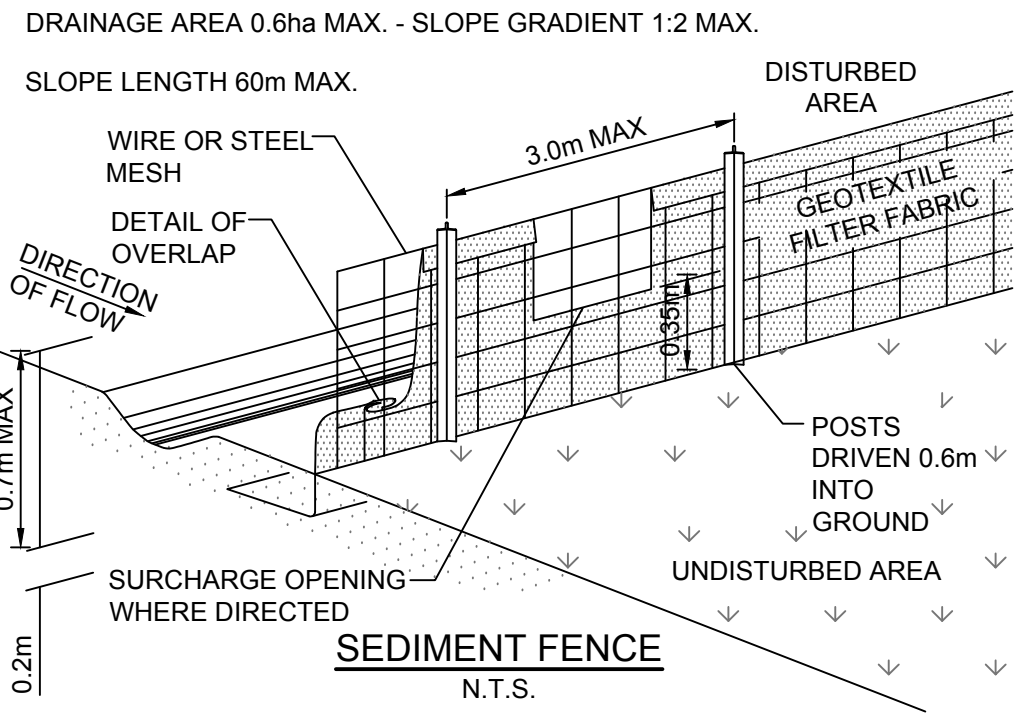
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH MSP-ENS-CV-0401



CONSTRUCTION NOTES:

1. REMOVE ANY VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500 MM DEEP AND 1200 MM WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWAMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
4. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100 MM TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100 MM TO 150 MM LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT.
7. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

EARTH BASIN - WET
(APPLIES TO TYPE D' AND TYPE F' SOILS ONLY)

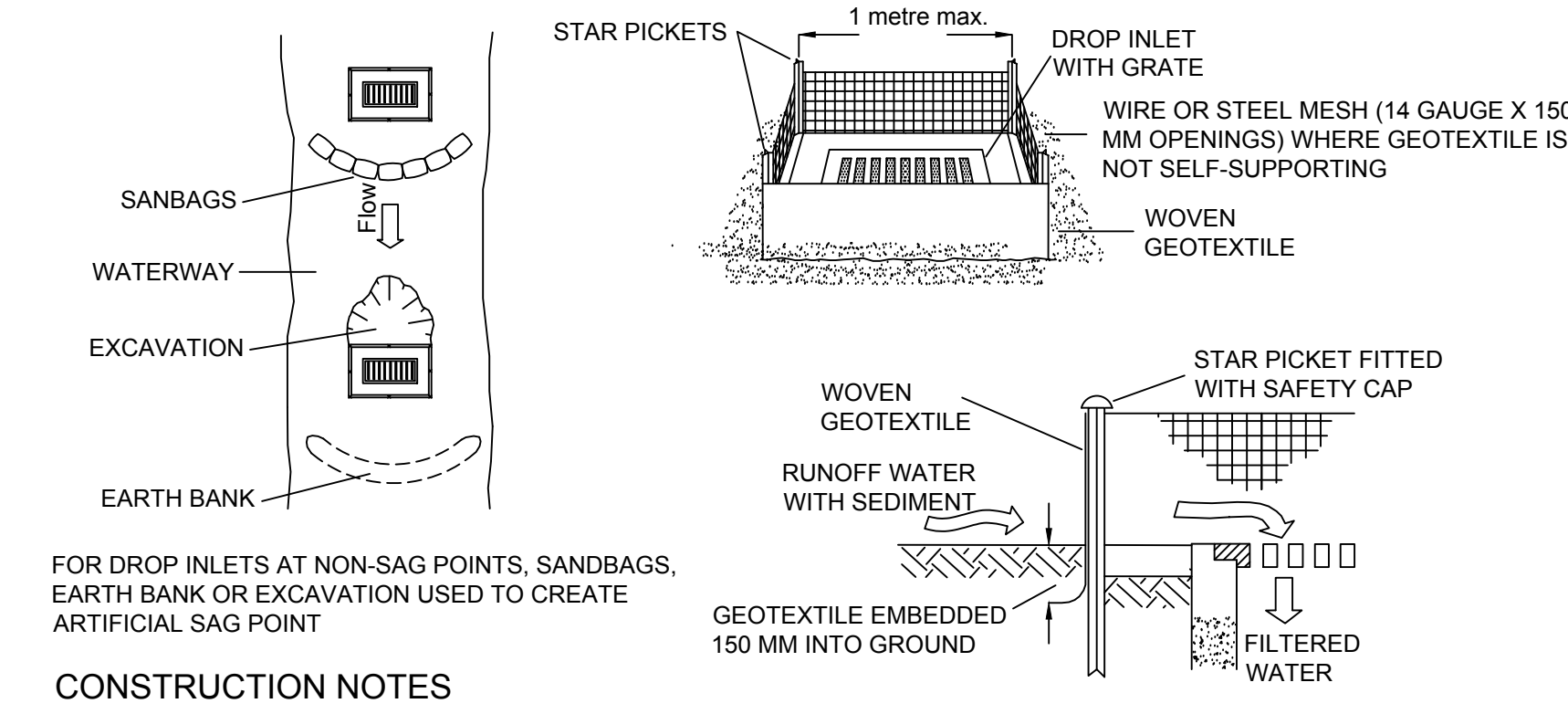


INSTALLATION

1. EXCAVATE A TRENCH 200mm DEEP.
2. DRIVE POSTS 500-700mm INTO GROUND AT A MAXIMUM SPACING OF 3.0m CENTRES.
3. PLACE AND FIX SUPPORT MESH (F52) TO POST.
4. LAY BIDIM GEO-FABRIC (SP 2000) AGAINST THE SUPPORT MESH AND FIX BY THE WIRE, STAPLES OR HOG RINGS.
5. PLACE BIDIM IN TRENCH AND BACKFILL WITH SOIL.

NOTE:

POSITION OF SEDIMENT FENCE AS DIRECTED BY SUPERINTENDENT. FENCE TO REMAIN IN PLACE UNTIL EXCAVATION IS BELOW FOOTPATH LEVEL.

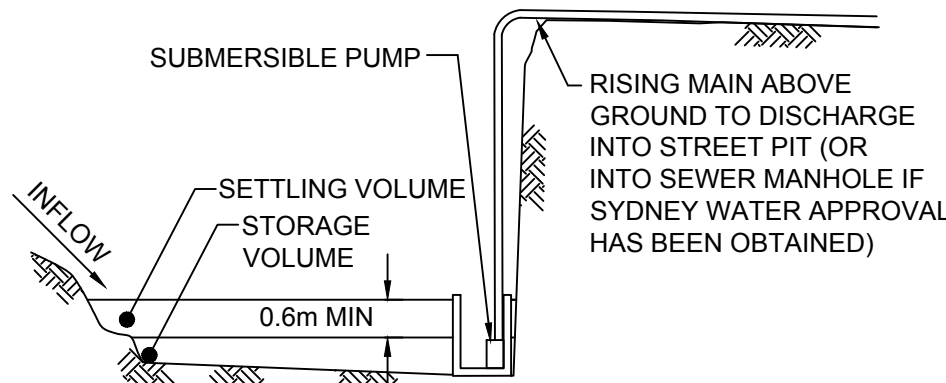


FOR DROP INLETS AT NON-SAG POINTS, SANDBAGS, EARTH BANK OR EXCAVATION USED TO CREATE ARTIFICIAL SAG POINT

CONSTRUCTION NOTES

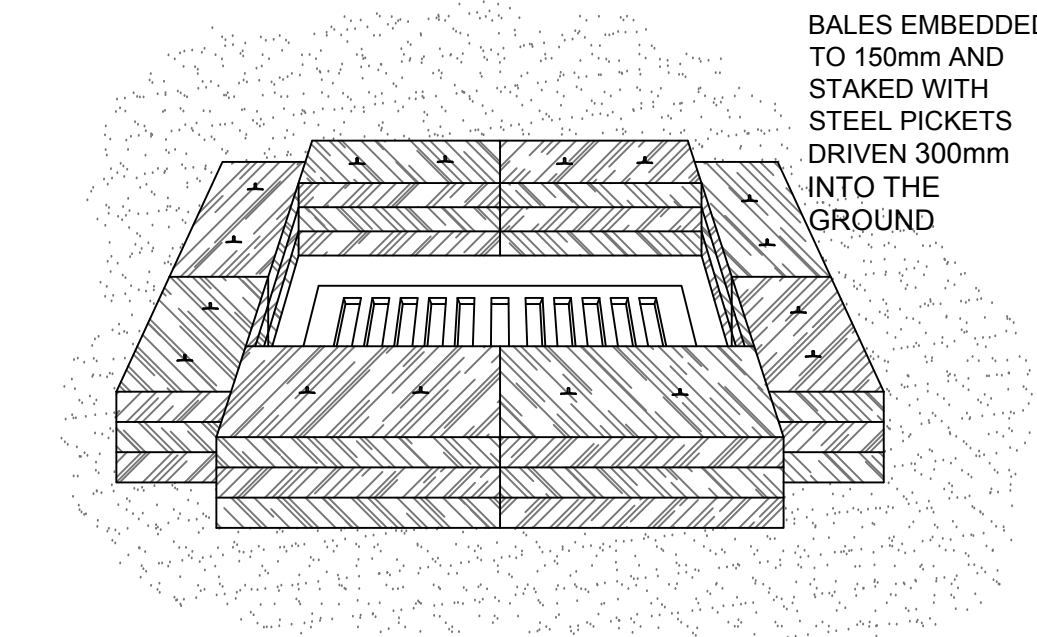
1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARDS DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR GEO-FABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER
N.T.S.

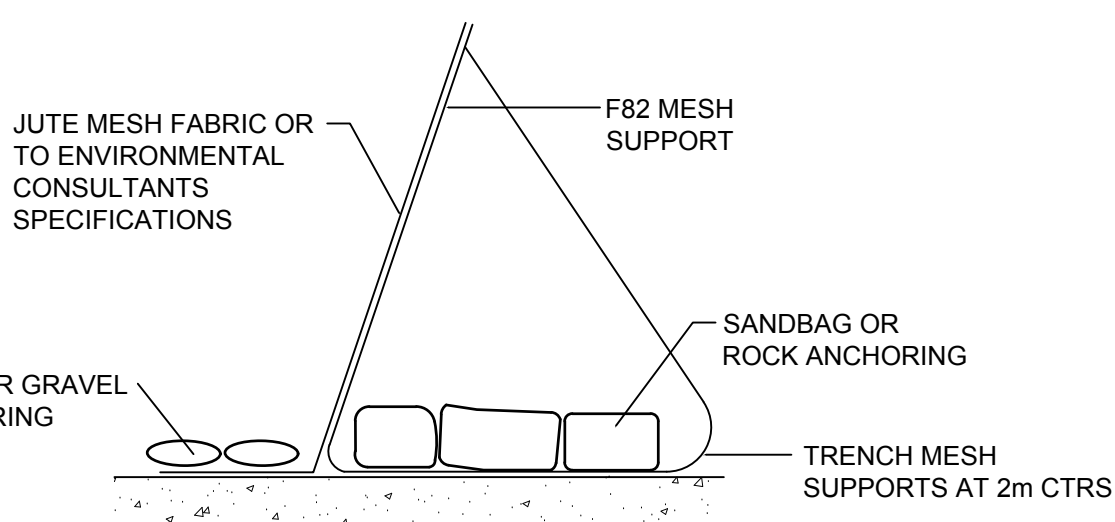


TYPICAL SECTION THROUGH SEDIMENT BASIN
N.T.S.

NOTE:
BASIN SIZE AND DEPTH TO SUIT EXCAVATION CONSTRAINTS



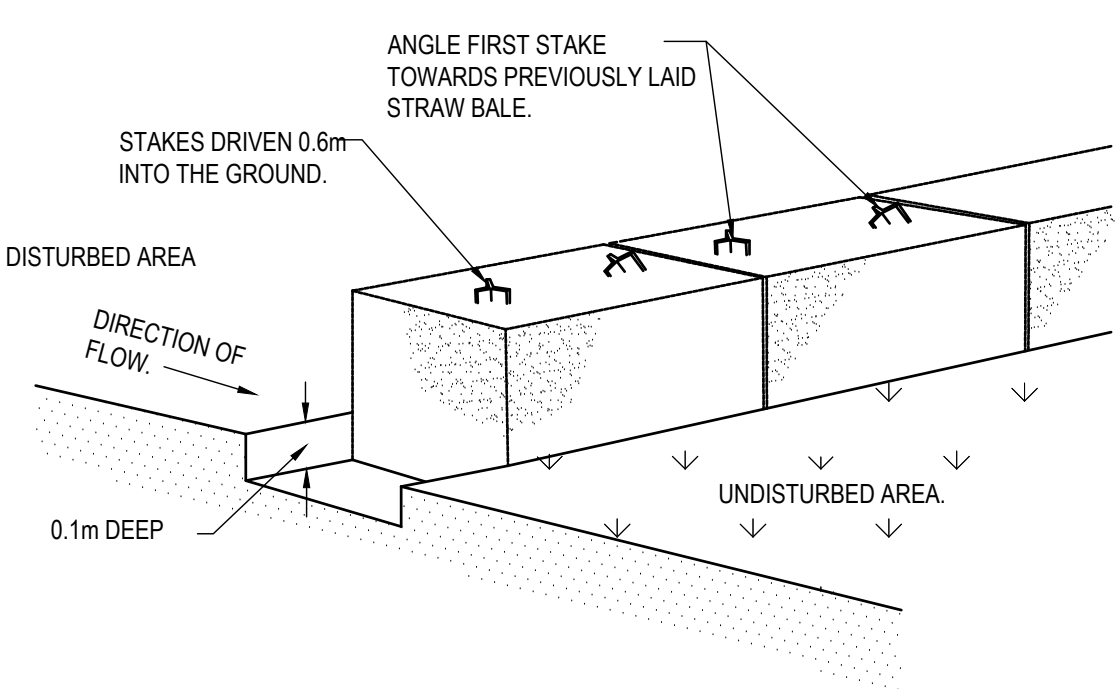
STRAWBALES TO GULLYPIT



ALTERNATIVE SEDIMENT FENCE
N.T.S.

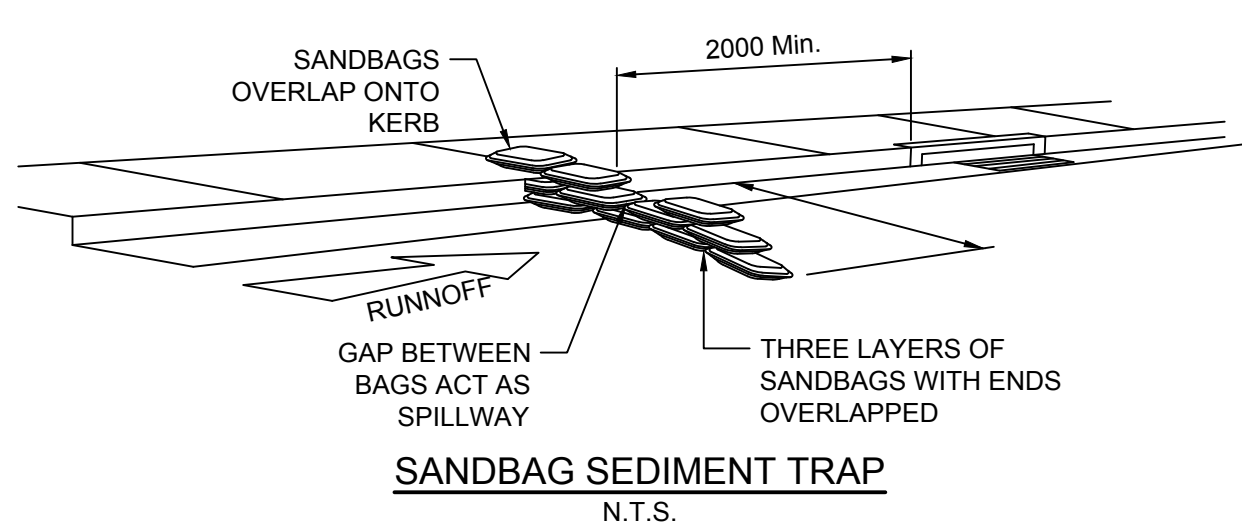
ALTERNATIVE SEDIMENT FENCE NOTES

1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE. SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING ABOVE. ATTACH THE JUTE MESH TO THE WELDED MESH FACING USING UV-RESISTANT CABLE TIES.
3. STABILISE THE WHOLE STRUCTURE WITH SANDBAG OR ROCK ANCHORING OVER THE TRENCH MESH AND THE LEADING EDGE OF THE JUTE MESH. THE ANCHORING SHOULD BE SUFFICIENTLY LARGE TO ENSURE STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.

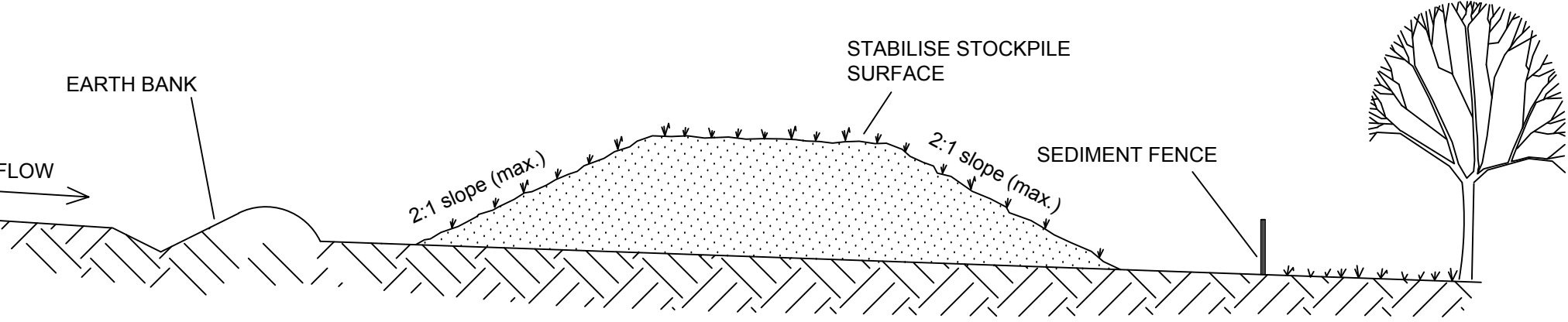


STRAW BALE SEDIMENT FILTER

CONSTRUCT AS SHOWN ON PLAN
N.T.S.



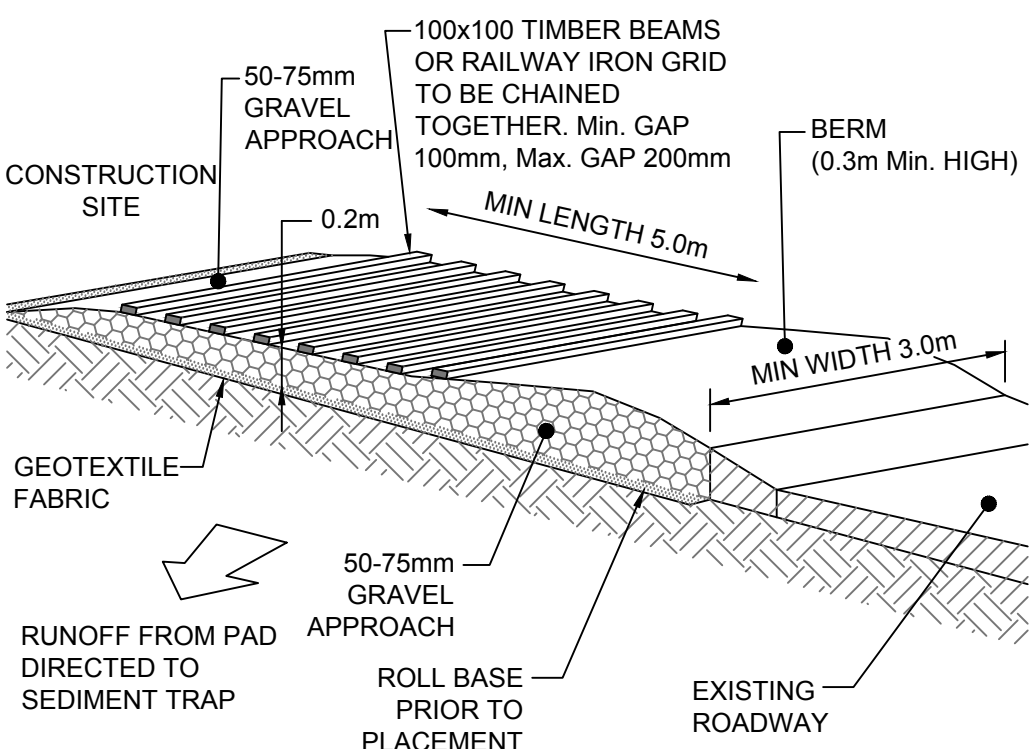
SANDBAG SEDIMENT TRAP
N.T.S.



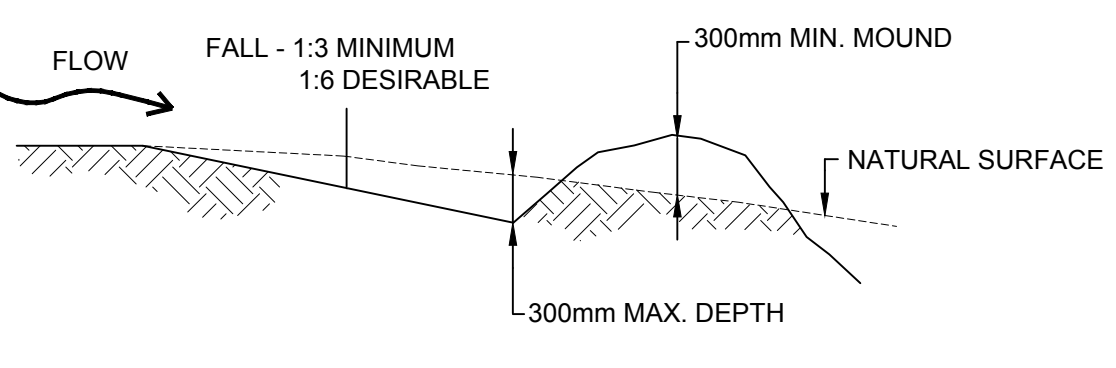
CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.

STOCKPILES
N.T.S.



TEMPORARY CONSTRUCTION EXIT/ENTRANCE
N.T.S.



CATCH DRAIN
N.T.S.

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PROJECT NAME

QANTAS GROUP FLIGHT
TRAINING CENTRE

PROJECT NUMBER: 5728

DRAWING TITLE

SEDIMENT AND EROSION
CONTROL DETAILS

SCALE AT A0: NTS

DRAWN BY: AW

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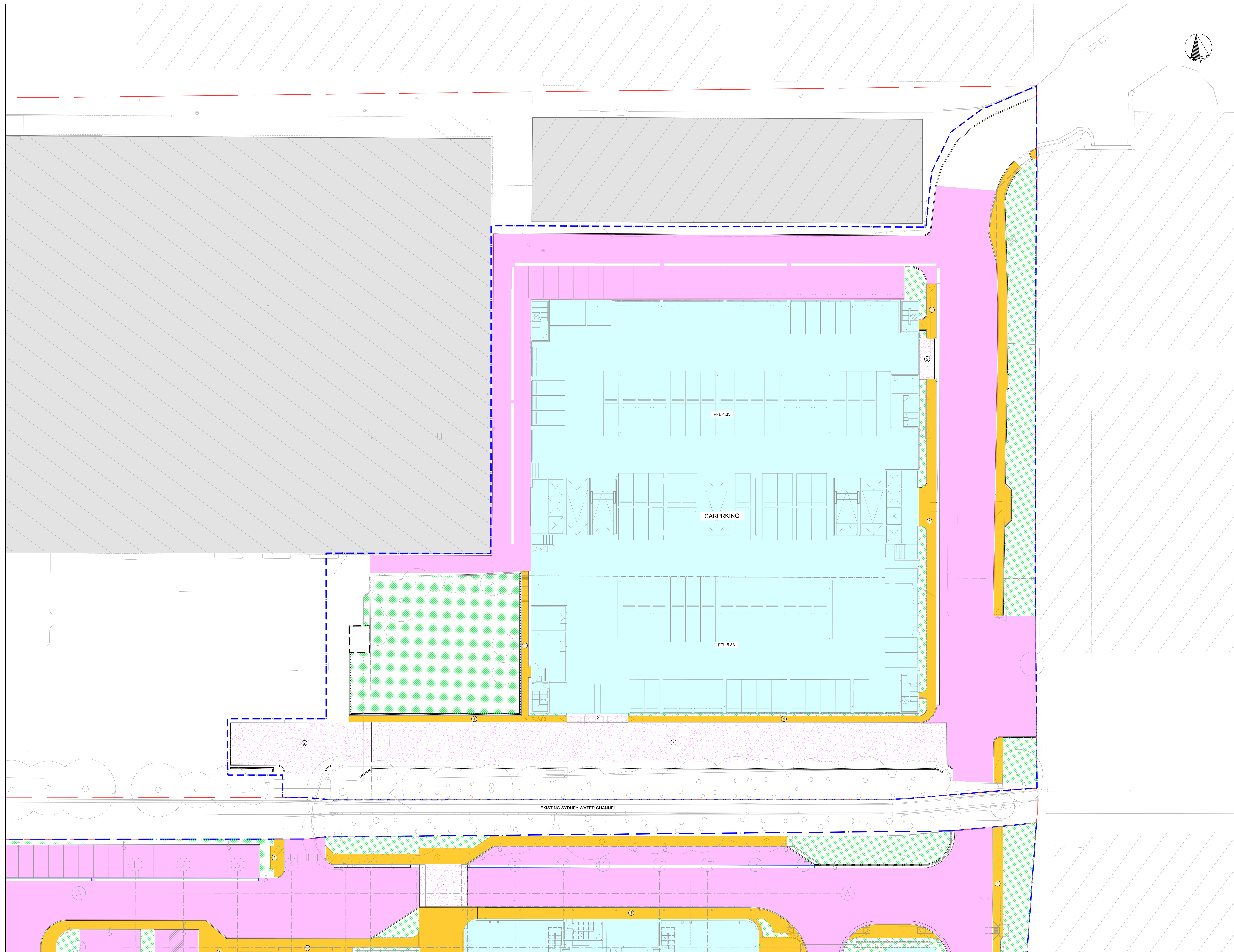
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LEGEND

- BUILDING AREA
- FOOTPATH PAVEMENT FOR SURFACE FINISH REFER TO DETAILS
- ROADWAY PAVEMENT
- CONCRETE ROADWAY PAVEMENT REFER TO DETAILS
- EXISTING BUILDING OUTLINE
- PROPOSED BUILDING OUTLINE
- PROPOSED PAVEMENT WORKS

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PAVEMENT PLAN - SHEET 01

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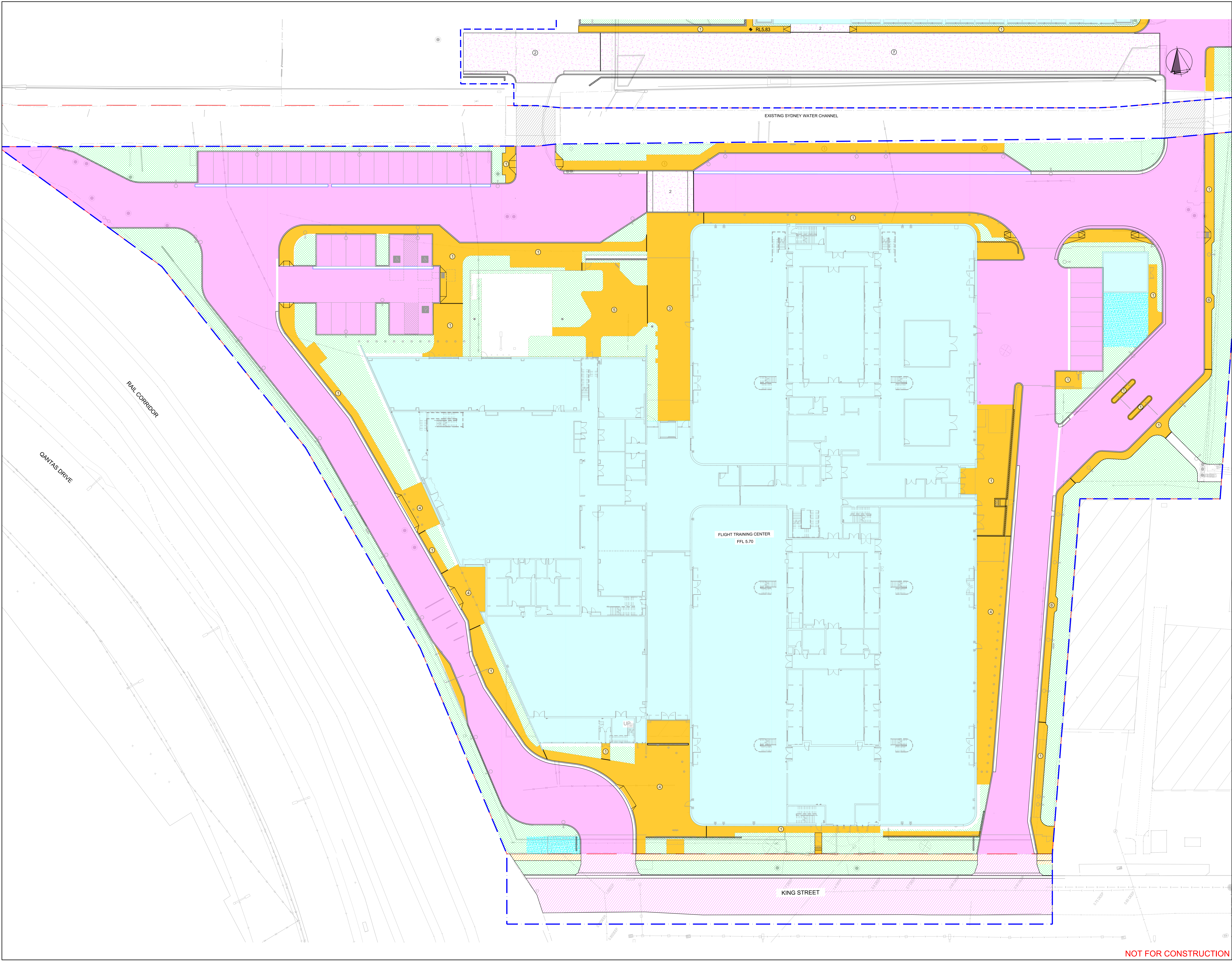
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- LEGEND:**
- SITE BOUNDARY
 - BUILDING AREA
 - FOOTPATH PAVEMENT FOR SURFACE FINISH REFER TO DETAILS
 - ROADWAY PAVEMENT
 - CONCRETE ROADWAY PAVEMENT REFER TO DETAILS
 - LANDSCAPE
 - CONCRETE ASPHALT AS PER COUNCIL STANDARDS

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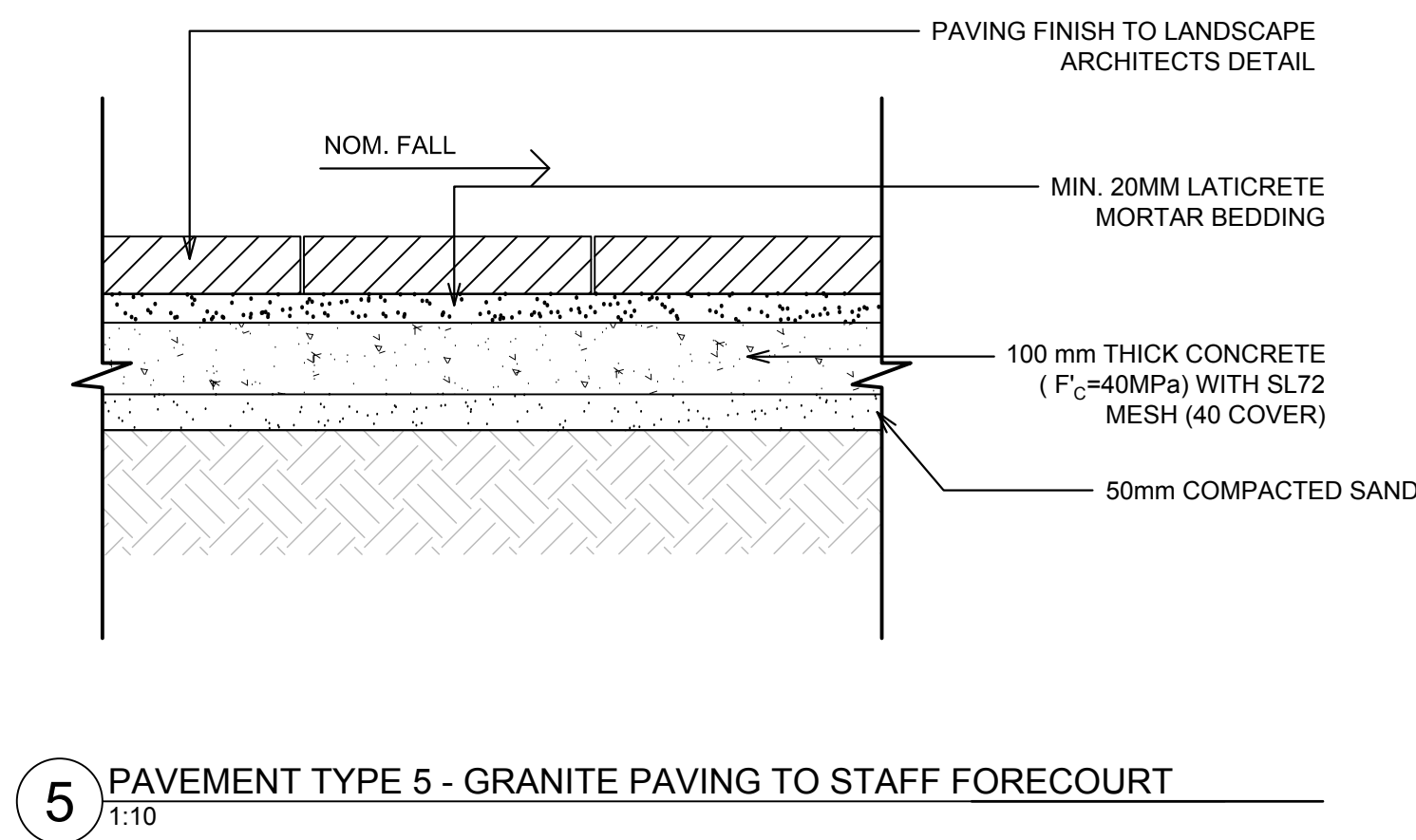
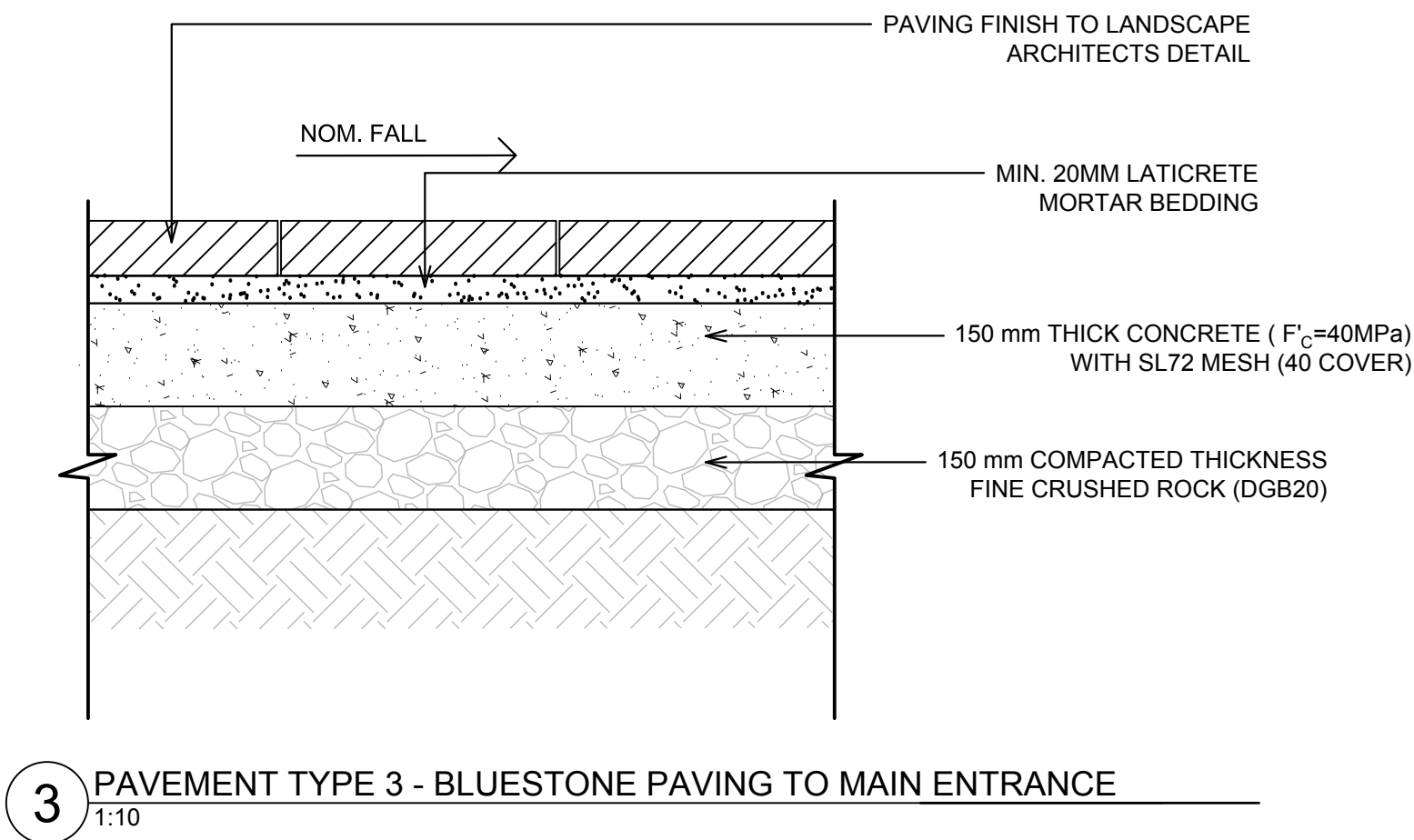
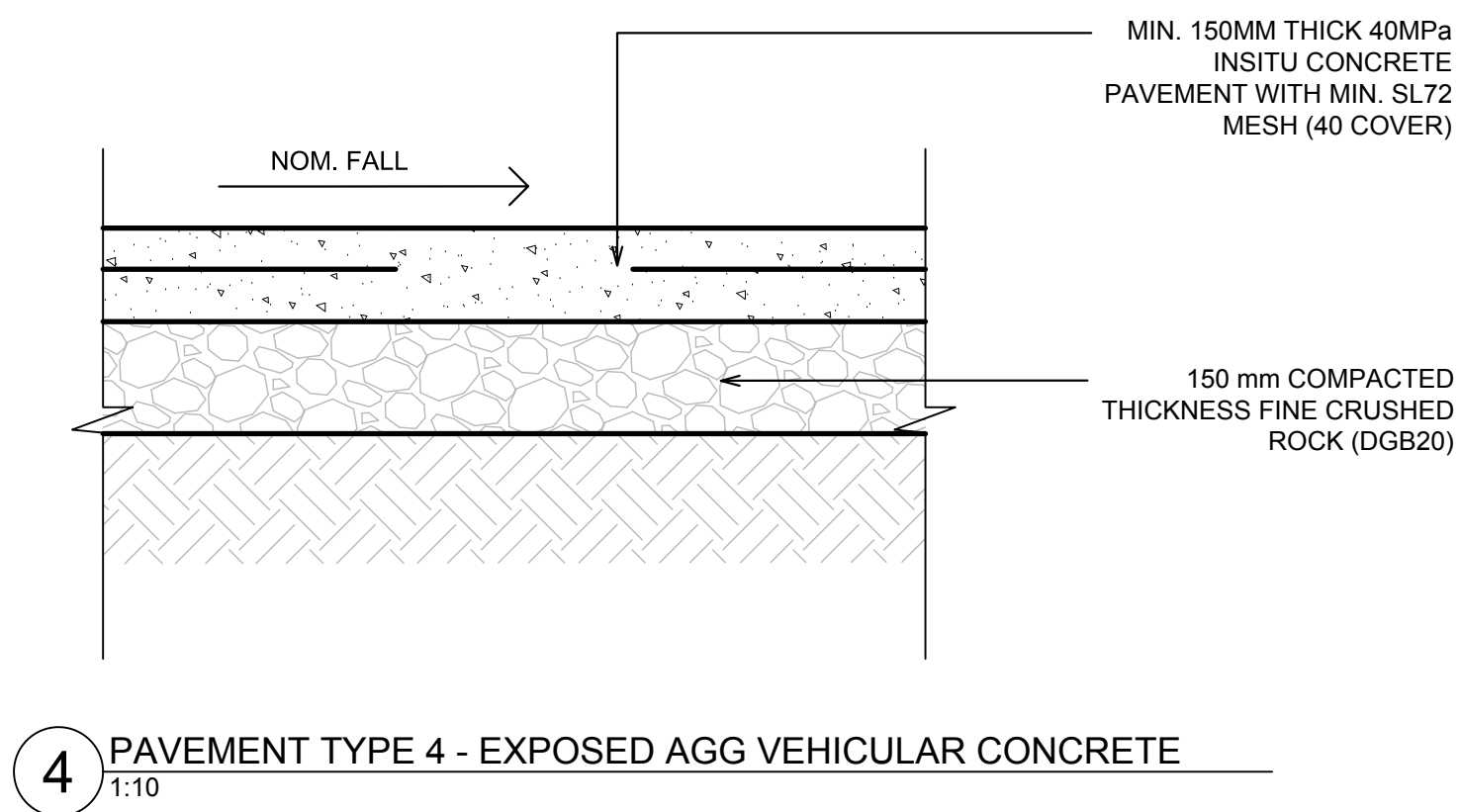
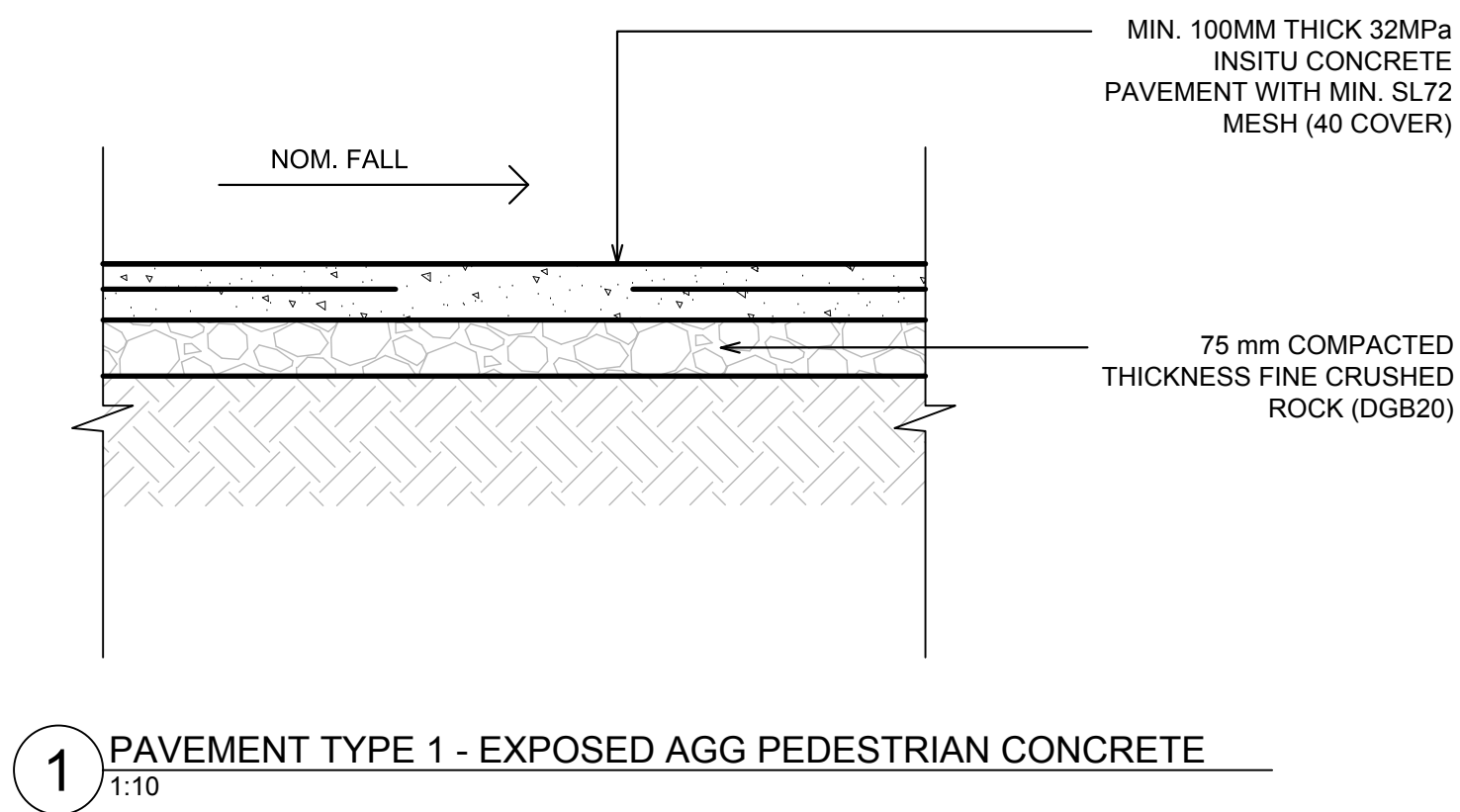
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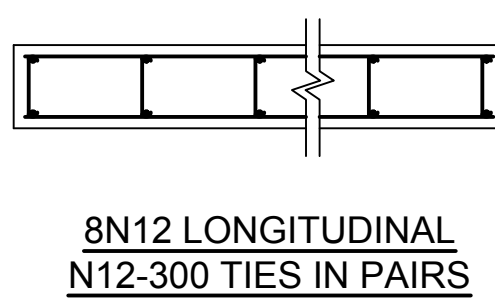
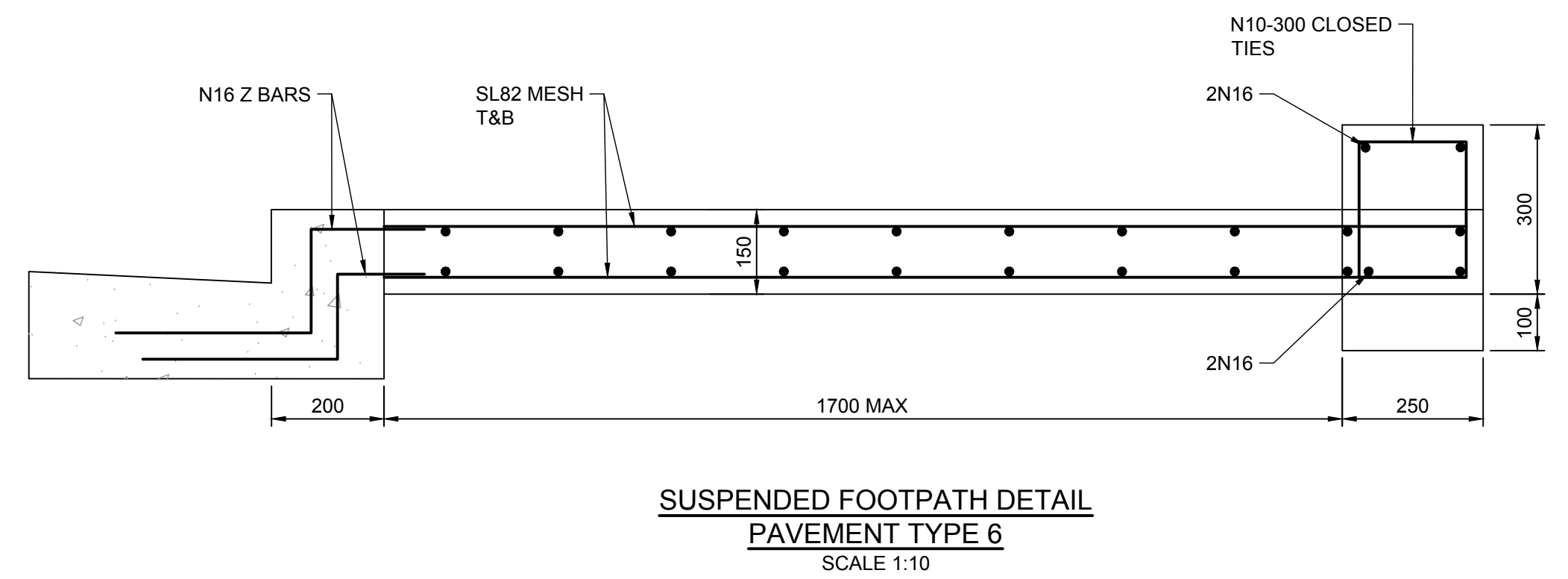
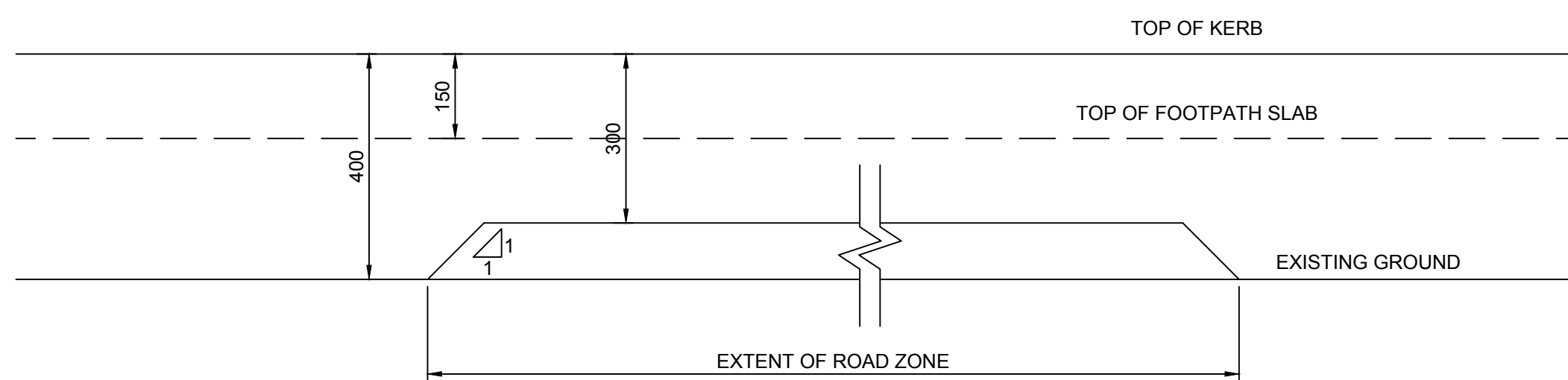
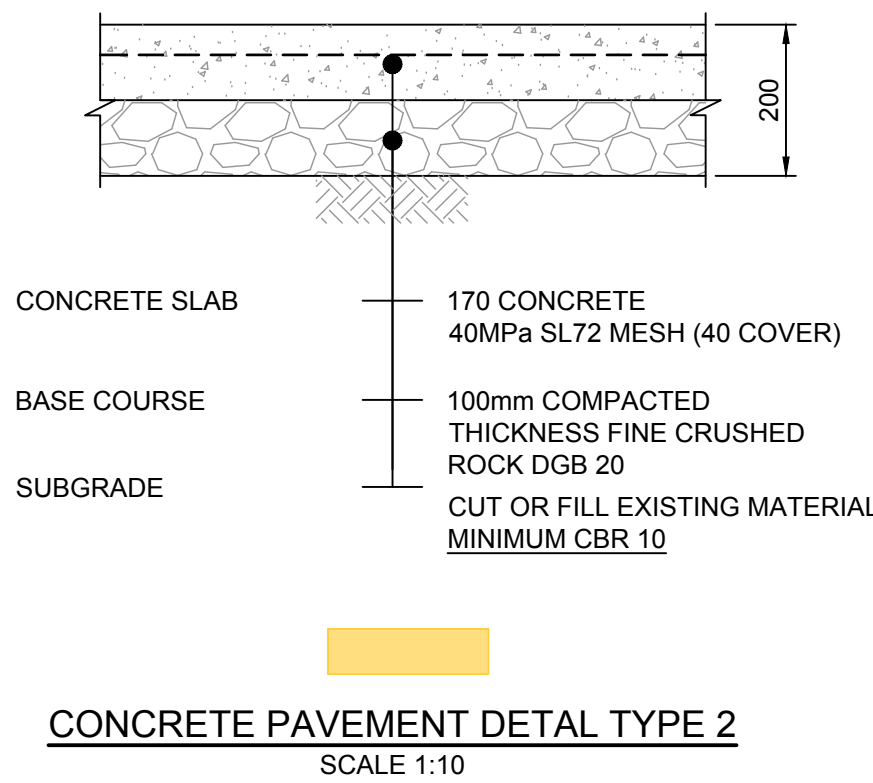
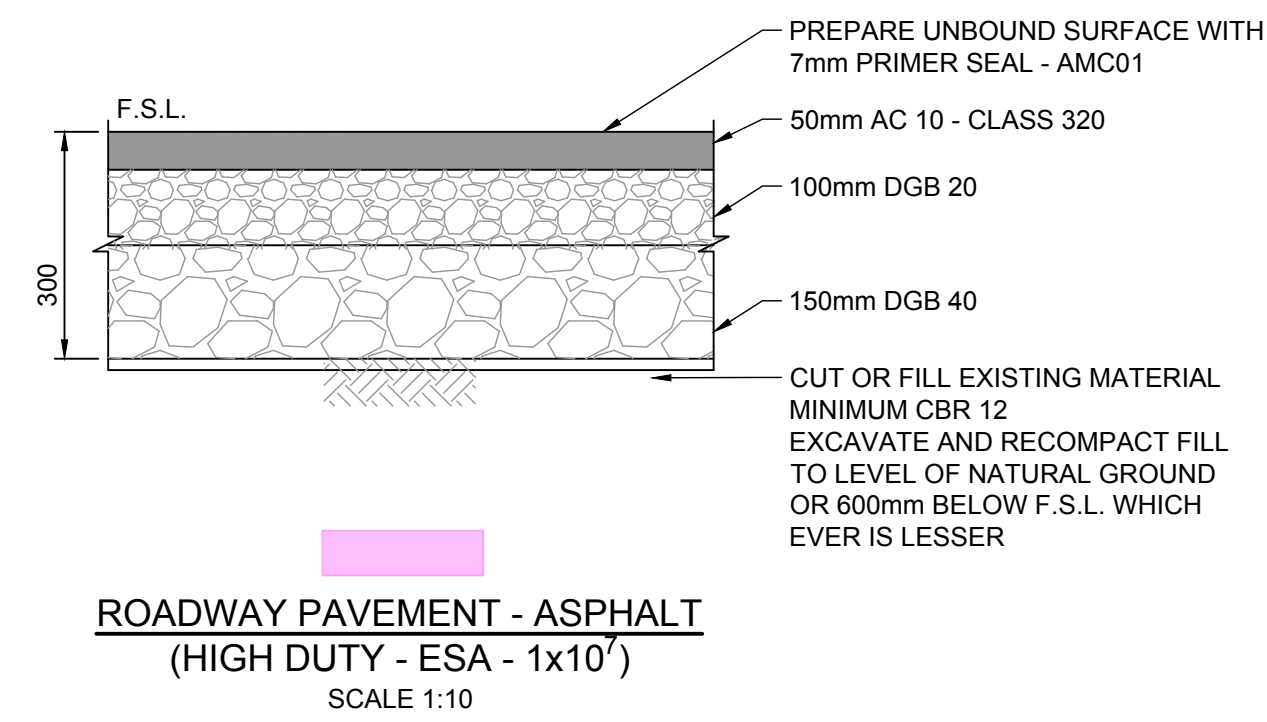
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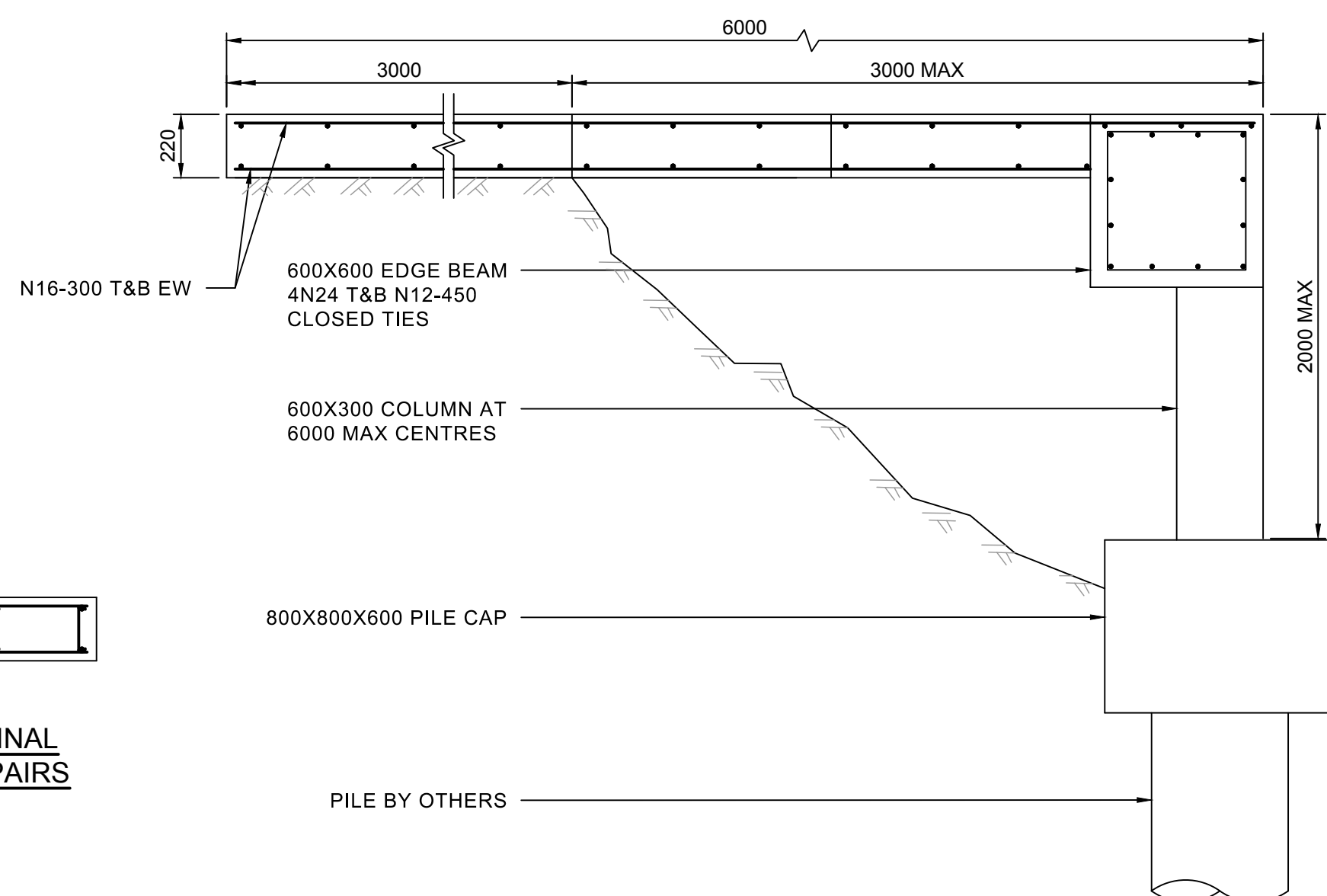
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FOOTPATH PAVEMENT DETAIL
SCALE 1:10



- NOTES :**
1. CONCRETE STRENGTH 40MPa.
 2. CONCRETE COVER 75mm.



GENERAL PAVEMENT NOTES

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL THE PROJECT SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE SITE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
- G2. ALL DIMENSIONS RELEVANT TO SETTING OUT THE OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE DRAWINGS SHALL NOT BE SCALED.
- G3. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT CODES AND STANDARDS INCLUDING ALL AMENDMENTS, AND THE LOCAL STATUTORY AUTHORITIES, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- G4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL CHAINAGES AND LEVELS ARE EXPRESSED IN METRES UNLESS NOTED OTHERWISE.
- G5. ALL LEVELS ARE BASED ON AUSTRALIAN HEIGHT DATUM (AHD).
- G6. THE CONTRACTOR IS TO ADEQUATELY INFORM THEMSELVES AS TO THE LOCATION OF ALL SERVICES BEFORE PROCEEDING WITH ANY EXCAVATION WORK.
- G7. WHERE PROPRIETARY ITEMS ARE SPECIFIED THEY ARE TO BE INSTALLED, FIXED AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. EQUIVALENT ALTERNATIVES MAY BE PROPOSED BY THE CONTRACTOR PRIOR TO INSTALLATION.
- G8. THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE SITE SUPERINTENDENT.
- G9. THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARD CODES.

KERBS

- K1. JOINT FILLER, DEBONDING STRIP & SILICONE SEALANT TO BE PROVIDED AT THE INTERFACE BETWEEN KERB AND CONCRETE PAVEMENT AS SHOWN IN DETAIL.

NOTES:

1. DESIGN SUBGRADE CBR = 12%.
2. REFER CIVIL, ROAD AND PAVEMENTS SPECIFICATION.
3. SUBSOIL DRAINS TO BE PROVIDED ON BOTH SIDES OF ALL ROADS AND CARPARK AND ENCAPSULATED FROM SUBGRADE ON BASE AND SIDES BY MIN 150mm.
4. STRIPPED/EXCAVATED SURFACE (ON WHICH FILL IS TO BE PLACED) SHALL BE SCARIFIED, RECOMPACTED AND PROOF ROLLED (REFER SPECIFICATIONS).

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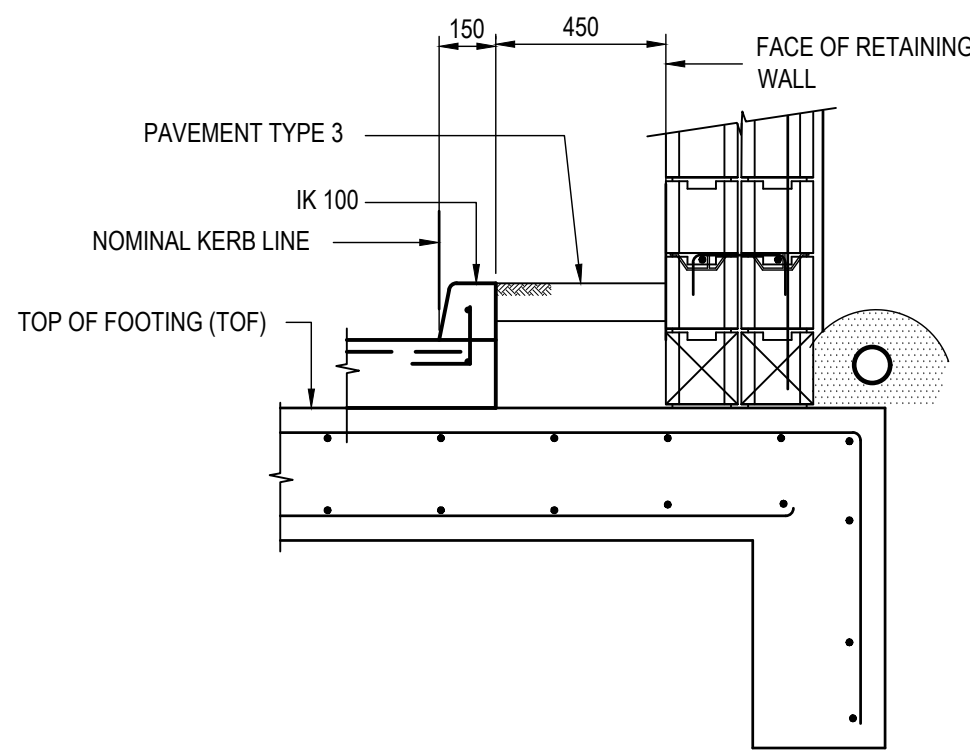
PROJECT NAME
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SITWORKS DETAILS - SHEET 01

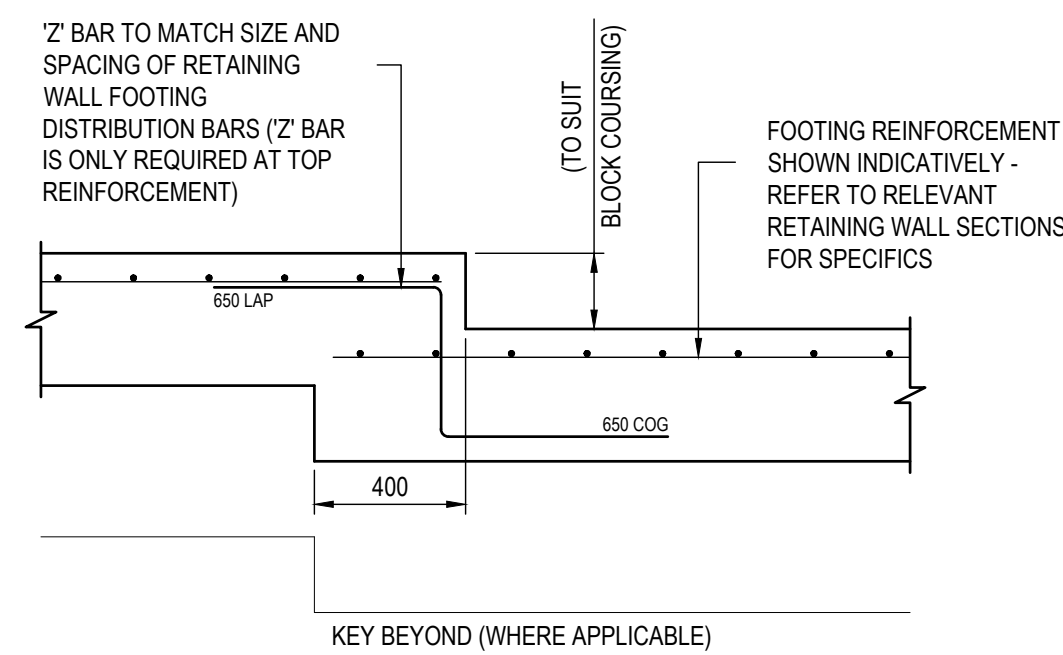
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DRAWING NUMBER	REV.
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TYPICAL KERB ARRANGEMENT ALONG RETAINING WALL WITH CAR PARKING
SCALE 1:20



STEP IN RETAINING WALL FOOTING DETAIL
SCALE 1:20

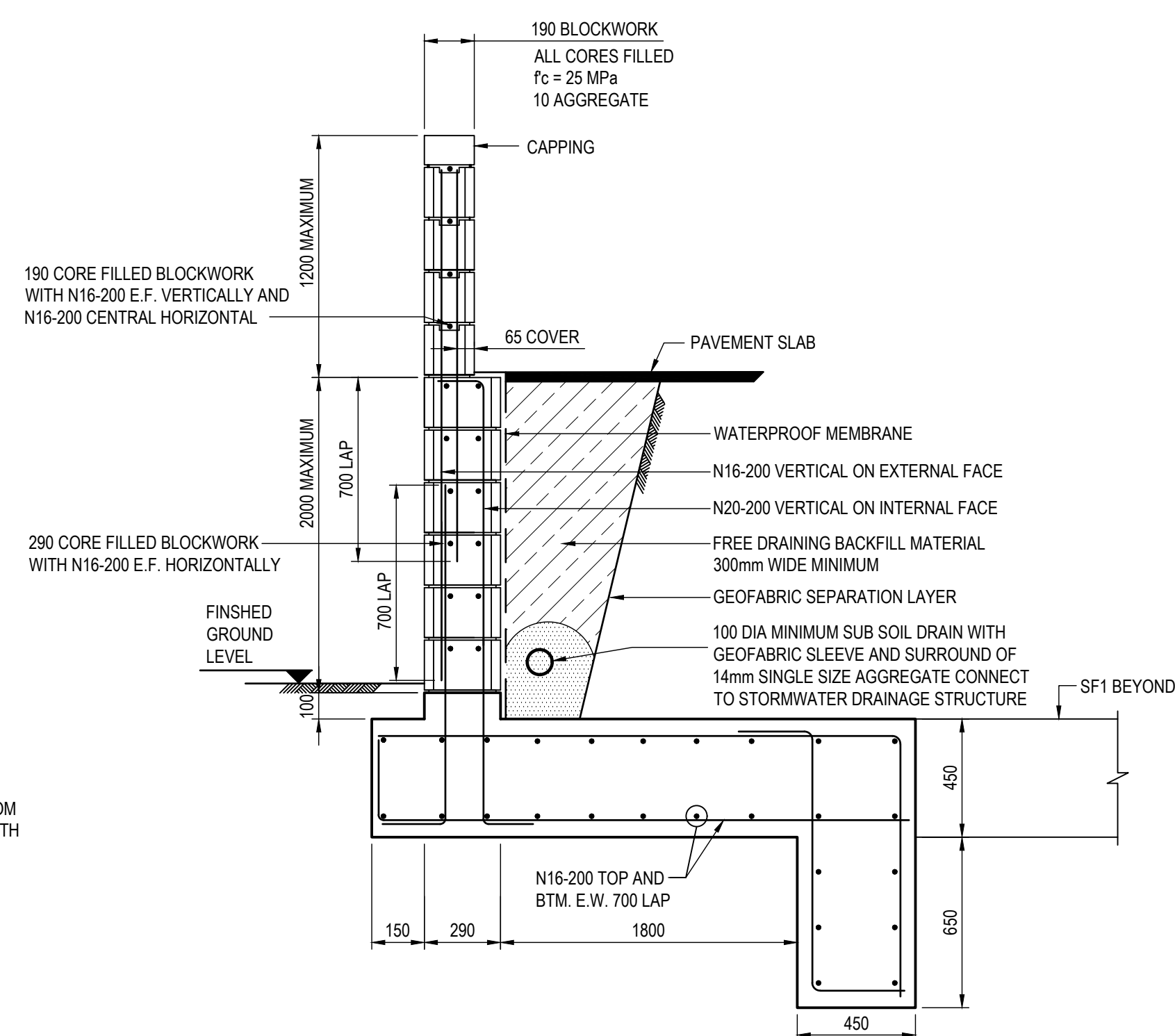
RW TYPE 1 RETAINING WALL SCHEDULE (1801 TO 2800)

WALL HEIGHT 'H' (MM)	BASE WIDTH (B) 5kPa SURCHARGE NO SLOPE	HEIGHT (MM) IN 2x200 BLOCKS	'X' & 'Y' BARS	'X' BARS
1801	1900	1000	800	N16-400
2000	2000	1200	800	N16-400
2200	2200	1200	1000	N20-400
2400	2400	1200	1200	N16-200
2600	2800	1400	1200	N20-200
2800	3100	1200	1600	N20-200

RW TYPE 2 RETAINING WALL SCHEDULE (800 TO 1800)

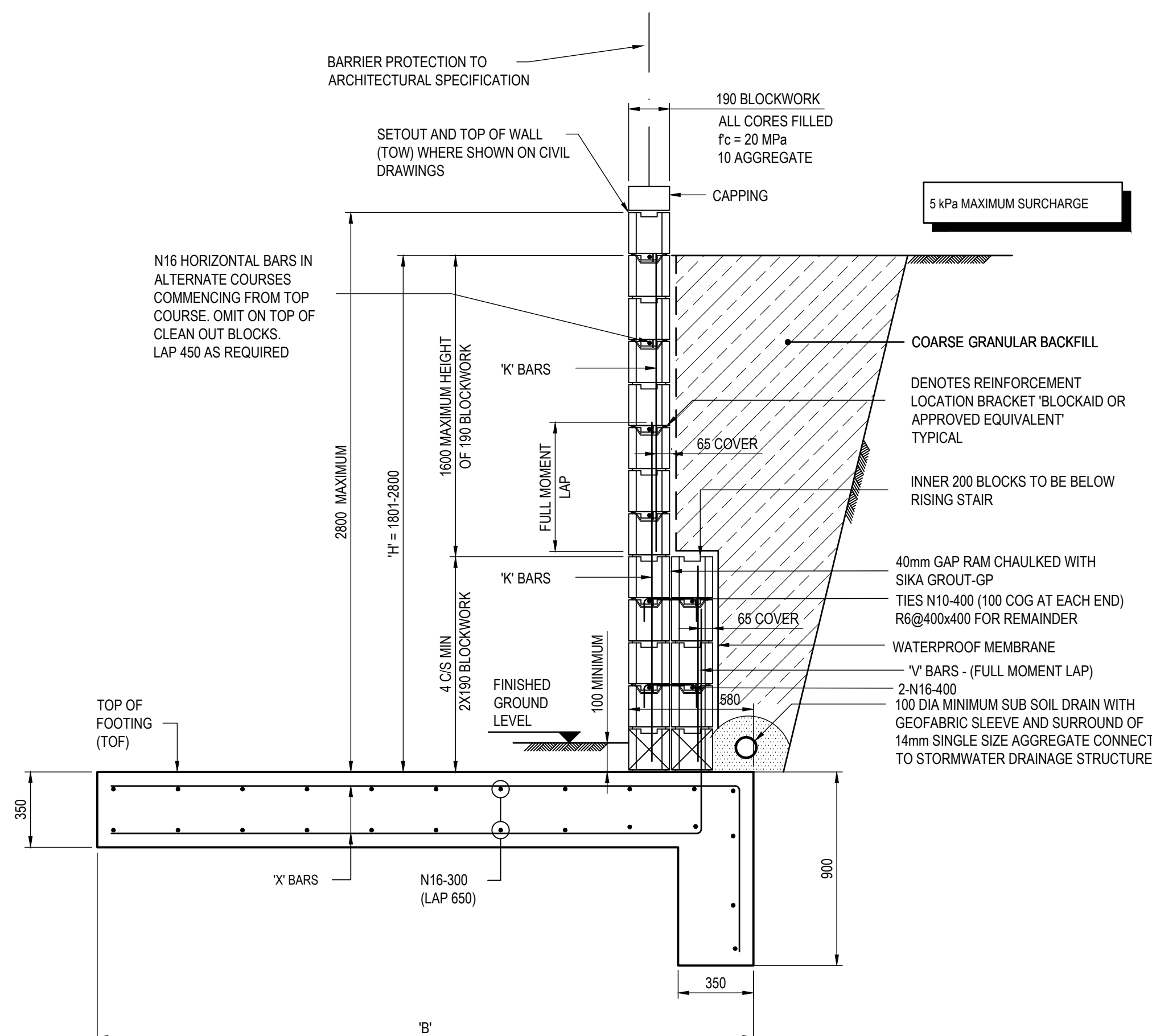
WALL HEIGHT 'H'	BASE WIDTH (B) 5kPa SURCHARGE NO SLOPE	'X' & 'Y' BARS
800	800	N12-400
1000	1100	N12-400
1200	1300	N12-400
1400	1500	N16-400
1600	1600	N16-400
1800	1800	N16-400

NOTE:
THE CANTILEVER RETAINING WALL IS SHOWN AS AN ALTERNATE WALL TO A KEYSTONE WALL IF SITE CONDITIONS DICTATE A KEYSTONE WALL IS NOT HEIGHT SUITABLE.



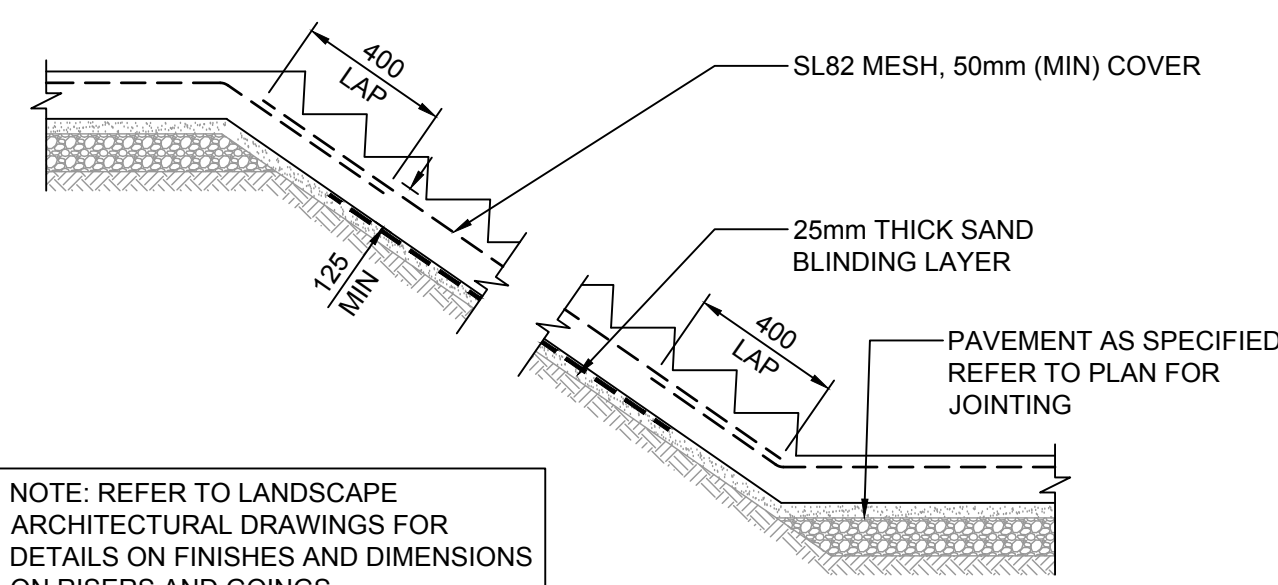
TYPICAL RETAINING WALL DETAIL - RW TYPE 3
SCALE 1:20

NOTES:
CONCRETE STRENGTH $f_c = 25\text{MPa}$
BLOCK WALLS TO BE ADEQUATELY PROPPED DURING BACKFILL AND COMPACTION
ALLOWABLE BEARING CAPACITY UNDER FOOTING TO BE MIN 150 kPa.
WALL FINISH TO LANDSCAPE ARCHITECTS DETAIL.
MAXIMUM 15 kPa LIVE SURCHARGE LOAD ALLOWANCE BEHIND RETAINING WALL.



TYPICAL RETAINING WALL DETAIL - RW TYPE 1 (1801 TO 2800) SPLIT FACE
SCALE 1:20

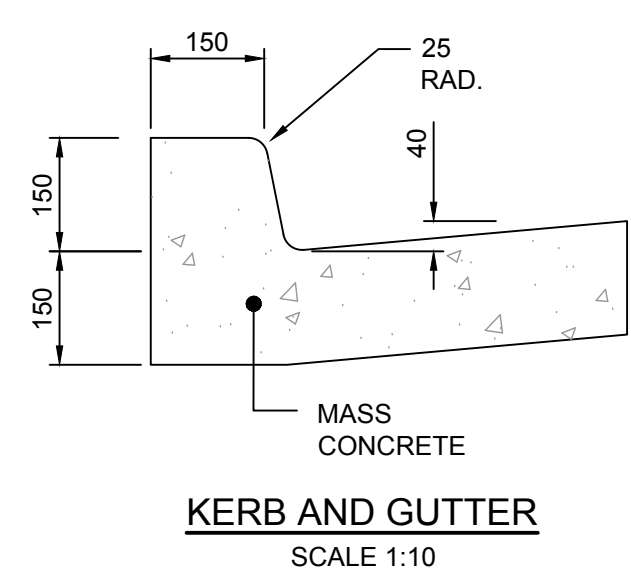
NOTES:
CONTROL JOINTS AT 8000 MAXIMUM CENTRES
CONCRETE STRENGTH $f_c = 25\text{MPa}$
BLOCK WALLS TO BE ADEQUATELY PROPPED DURING BACKFILL AND COMPACTION.
ALLOWABLE BEARING CAPACITY UNDER FOOTING TO BE MIN 150 kPa.
WALL FINISH TO LANDSCAPE ARCHITECTS DETAIL.



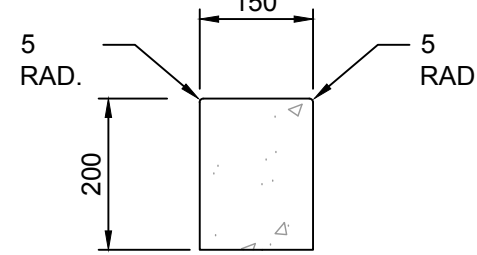
TYPICAL STAIR ON GRADE DETAIL
SCALE 1:20

TYPICAL SF1 DETAIL
SCALE 1:20

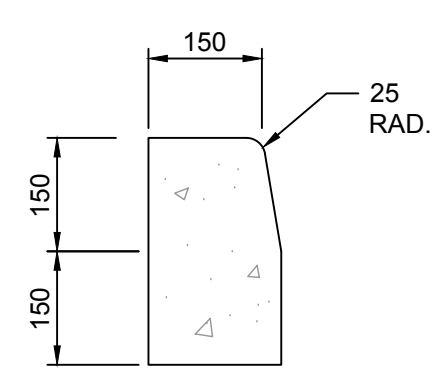
NOTES:
PROVIDE SF1 STRIP FOOTINGS AT A MAXIMUM 6 METRE CENTRES TYPICALLY UNLESS NOTED OTHERWISE



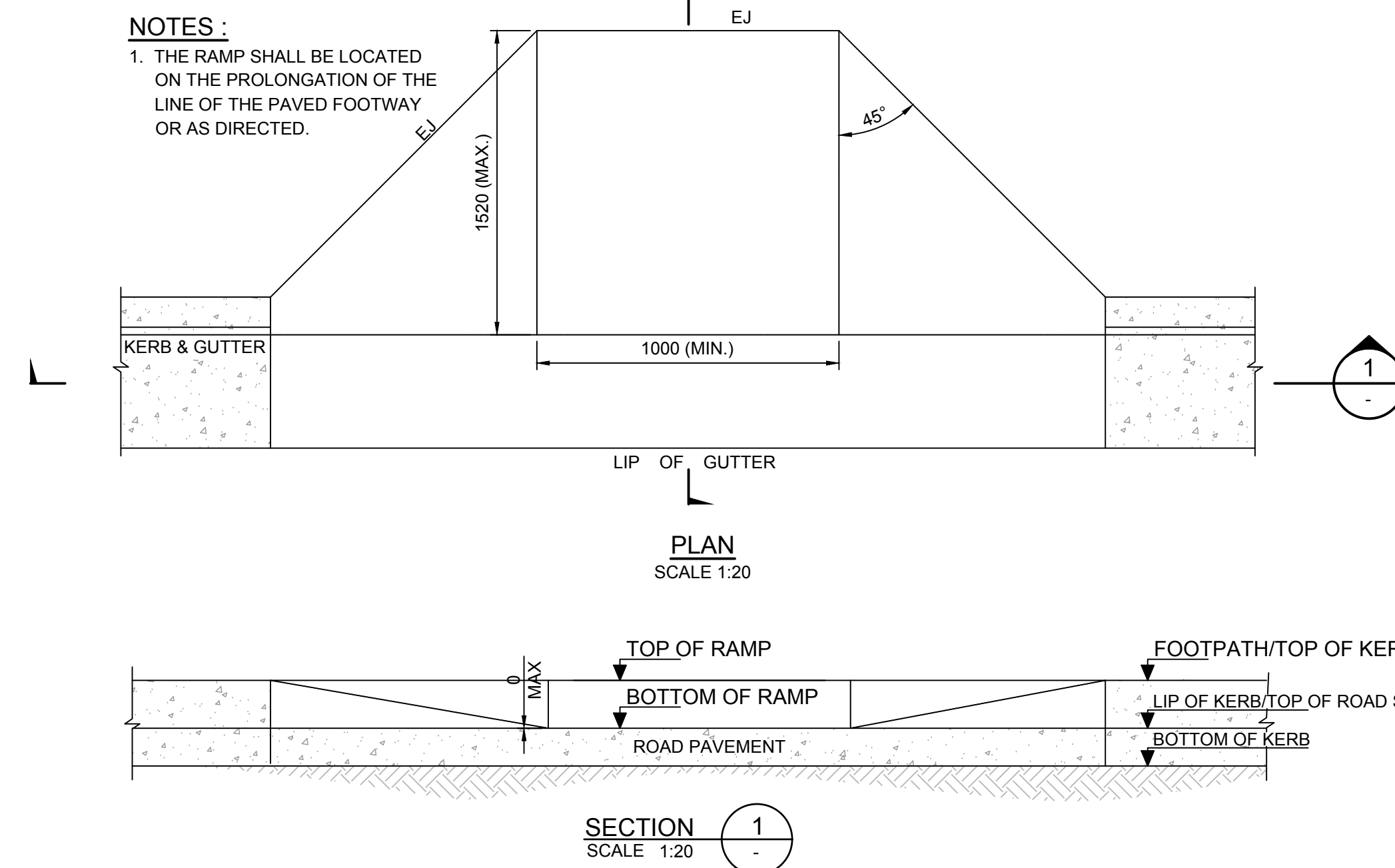
KERB AND GUTTER
SCALE 1:10



EDGE STRIP
SCALE 1:10

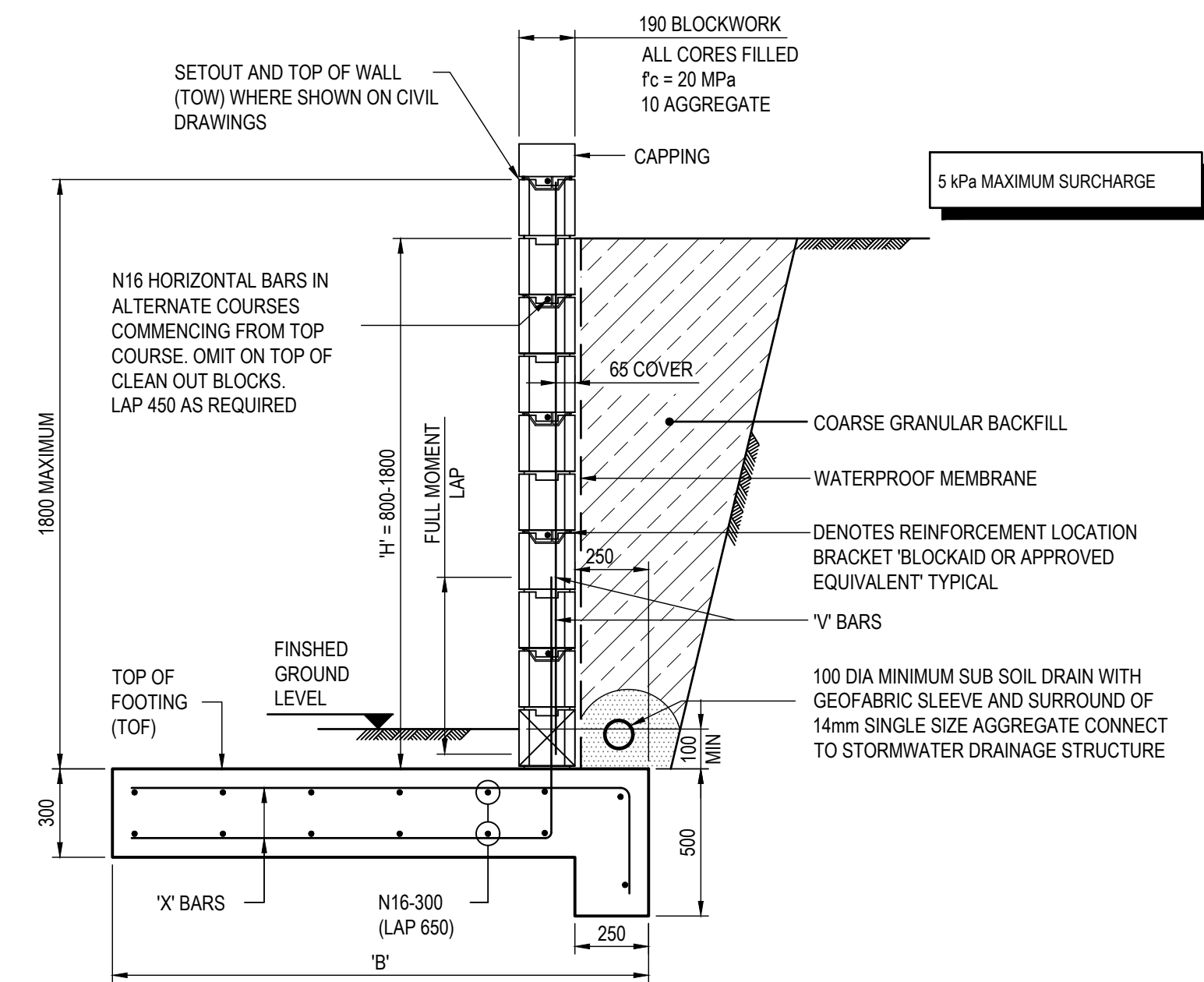


150 KERB ONLY
SCALE 1:10



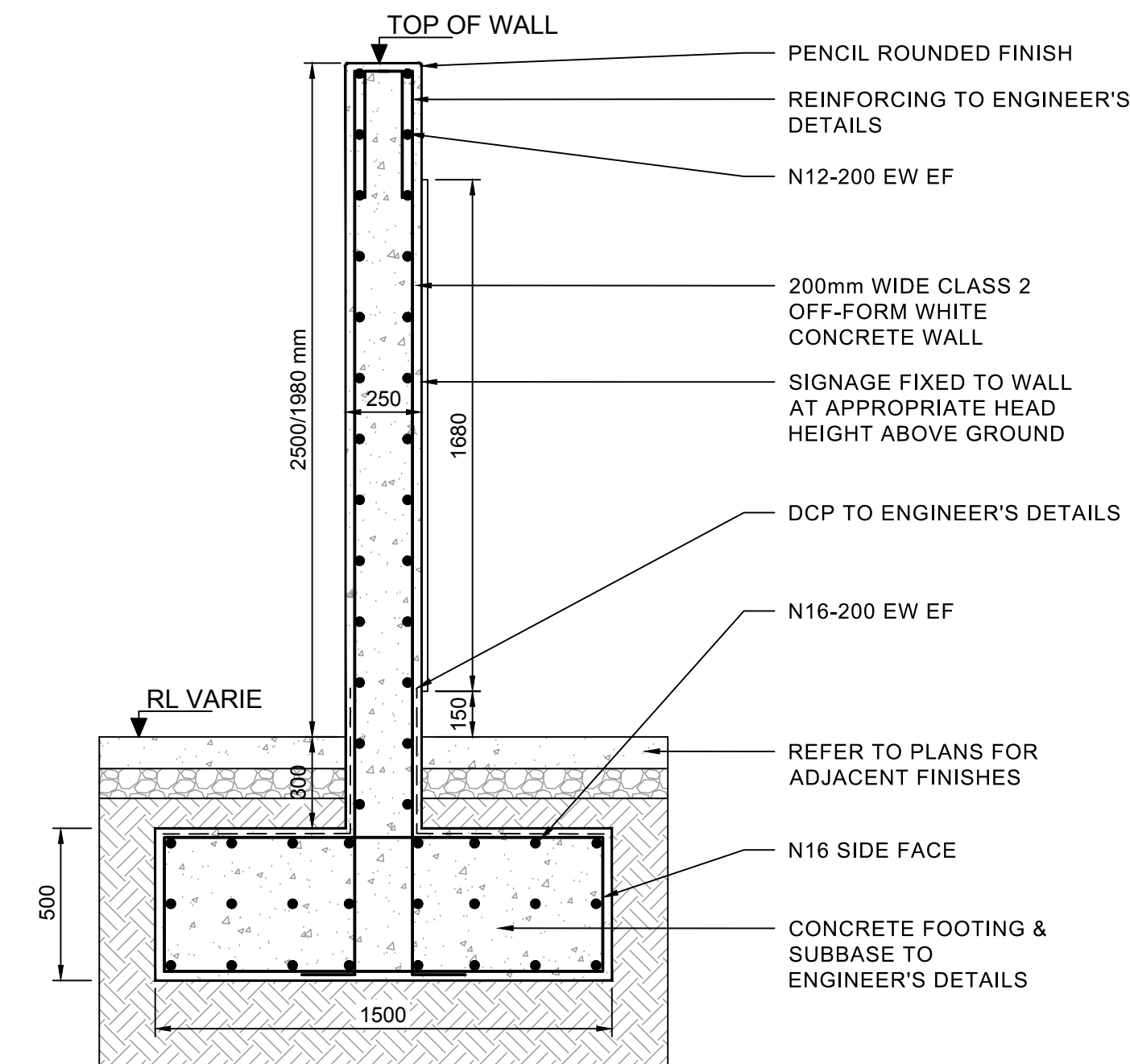
SECTION 1
SCALE 1:20

PEDESTRIAN RAMP DETAIL



TYPICAL RETAINING WALL DETAIL - RW TYPE 2 (800 TO 1800)
SCALE 1:20

NOTES:
CONTROL JOINTS AT 8000 MAXIMUM CENTRES
CONCRETE STRENGTH $f_c = 25\text{MPa}$
BLOCK WALLS TO BE ADEQUATELY PROPPED DURING BACKFILL AND COMPACTION
ALLOWABLE BEARING CAPACITY UNDER FOOTING TO BE MIN 150 kPa.
WALL FINISH TO LANDSCAPE ARCHITECTS DETAIL.



TYPICAL FREESTANDING WALL DETAIL (FW)
SCALE 1:20

NOTES:

1. CONCRETE STRENGTH 40MPa.
2. COVER TO BARS IN ELEMENTS IN CONTACT WITH GROUND 75mm.
3. ASSUMED 250MPa MIN BEARING PRESSURE.

GENERAL PAVEMENT NOTES

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL THE PROJECT SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE SITE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
- G2. ALL DIMENSIONS RELEVANT TO SETTING OUT THE OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE DRAWINGS SHALL NOT BE SCALED.
- G3. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT CODES AND STANDARDS INCLUDING ALL AMENDMENTS, AND THE LOCAL STATUTORY AUTHORITIES, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- G4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL CHAINAGES AND LEVELS ARE EXPRESSED IN METRES UNLESS NOTED OTHERWISE.
- G5. ALL LEVELS ARE BASED ON AUSTRALIAN HEIGHT DATUM (AHD).
- G6. THE CONTRACTOR IS TO ADEQUATELY INFORM THEMSELVES AS TO THE LOCATION OF ALL SERVICES BEFORE PROCEEDING WITH ANY EXCAVATION WORK.
- G7. WHERE PROPRIETARY ITEMS ARE SPECIFIED THEY ARE TO BE INSTALLED, FIXED AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. EQUIVALENT ALTERNATIVES MAY BE PROPOSED BY THE CONTRACTOR PRIOR TO INSTALLATION.
- G8. THE APPROVAL OF A SUBSTITUTION SHALL BE SOUGHT FROM THE SITE SUPERINTENDENT.
- G9. THE STRUCTURAL COMPONENTS DETAILED ON THESE DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARD CODES.

KERBS

K1. JOINT FILLER, DEBONDING STRIP & SILICONE SEALANT TO BE PROVIDED AT THE INTERFACE BETWEEN KERB AND CONCRETE PAVEMENT AS SHOWN IN DETAIL.

NOTES:

1. DESIGN SUBGRADE CBR = 12%.
2. REFER CIVIL, ROAD AND PAVEMENTS SPECIFICATION.
3. SUBSOIL DRAINS TO BE PROVIDED ON BOTH SIDES OF ALL ROADS AND CARPARK AND ENCAPSULATED FROM SUBGRADE ON BASE AND SIDES BY MIN 150mm.
4. STRIPPED/EXCAVATED SURFACE (ON WHICH FILL IS TO BE PLACED) SHALL BE SCARIFIED, RECOMPACTED AND PROOF ROLLED (REFER SPECIFICATIONS).

NOT FOR CONSTRUCTION

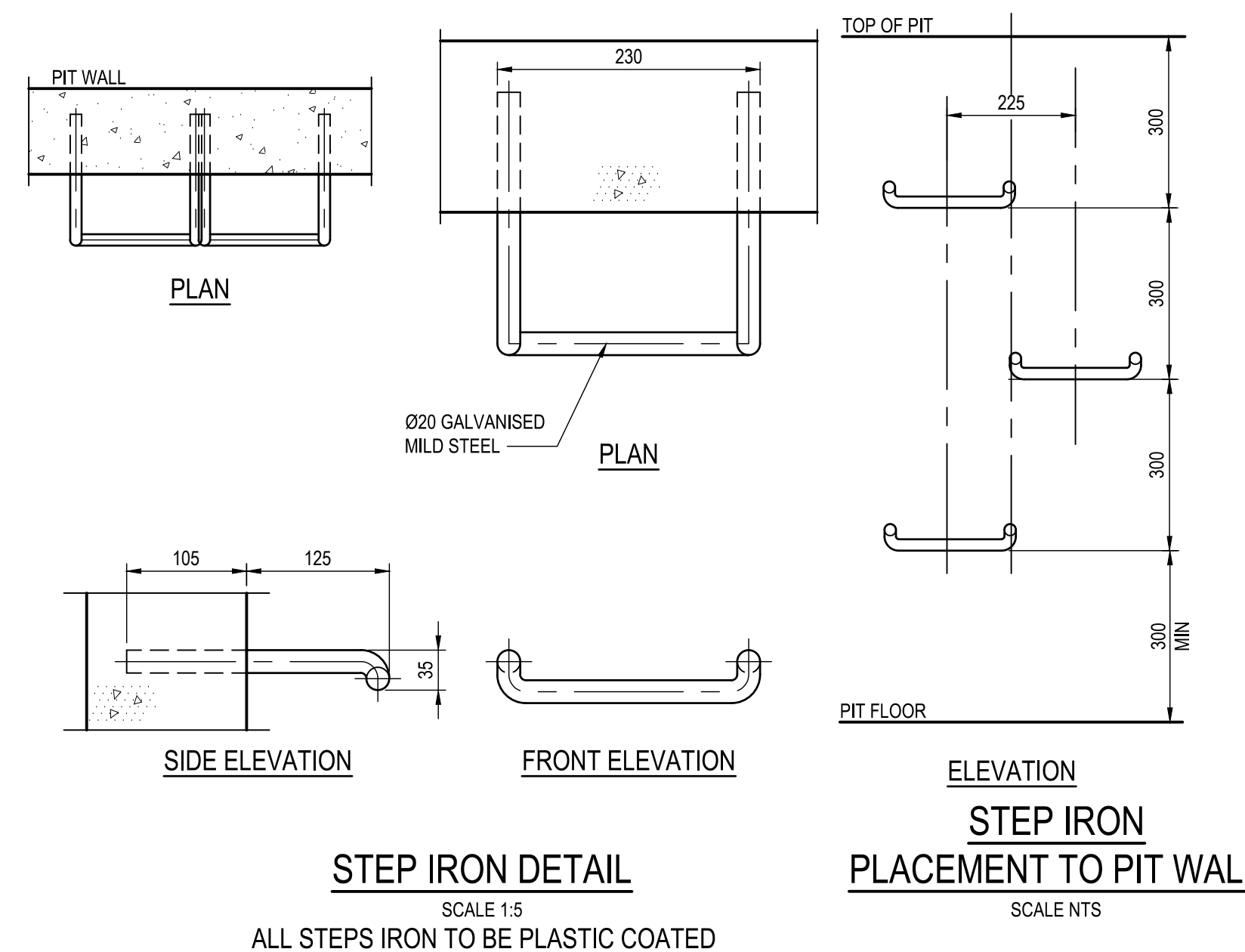
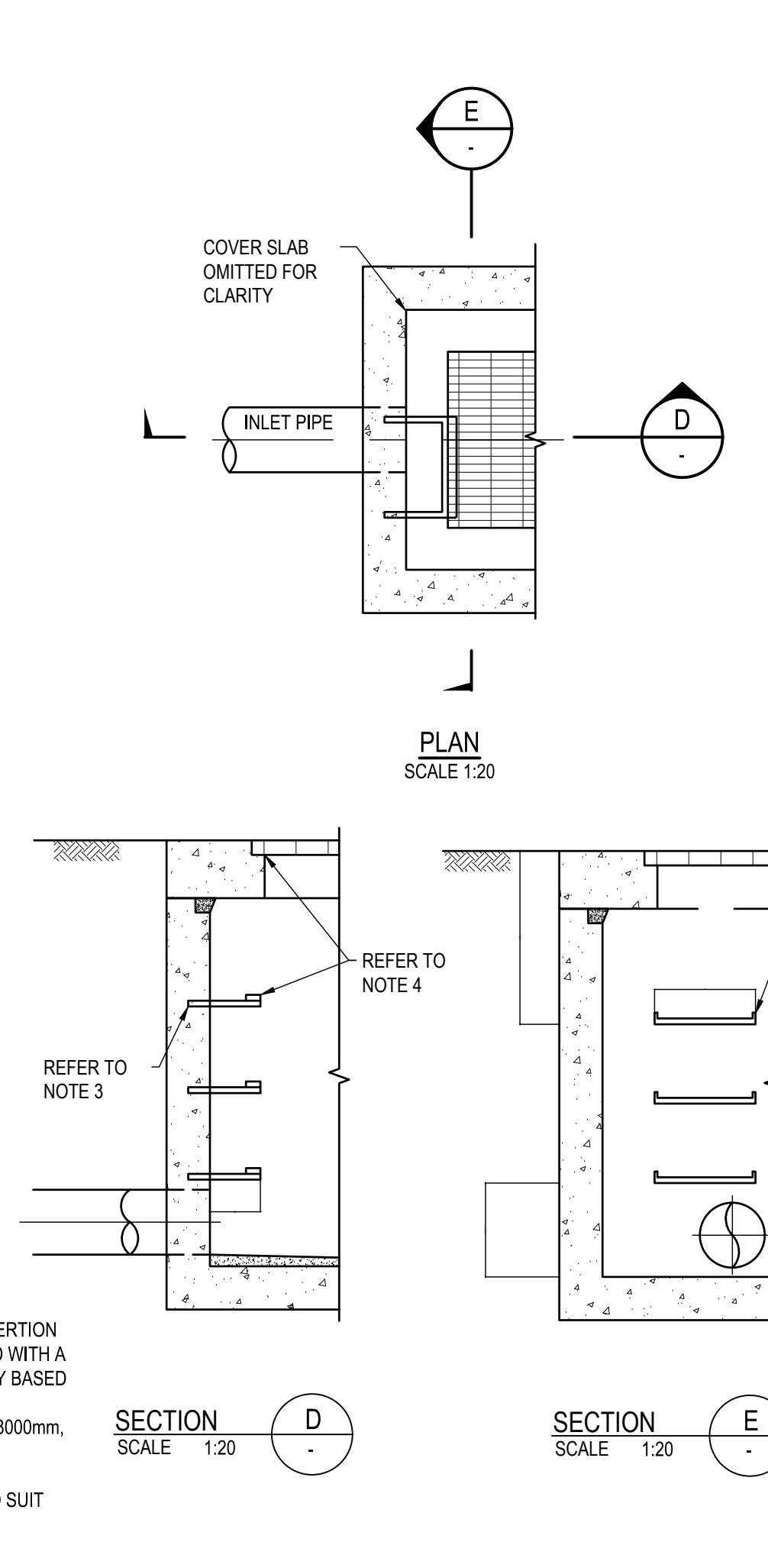
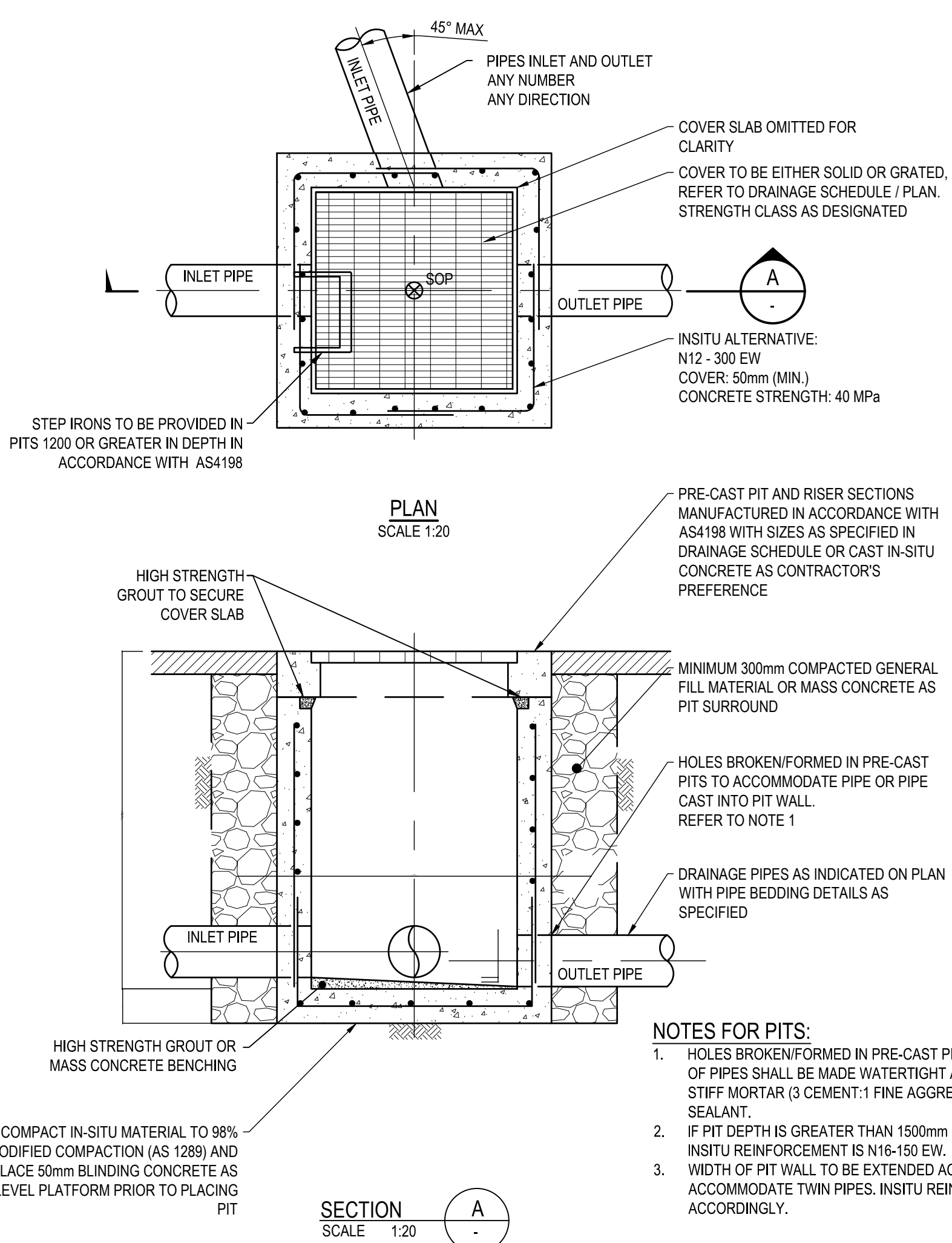
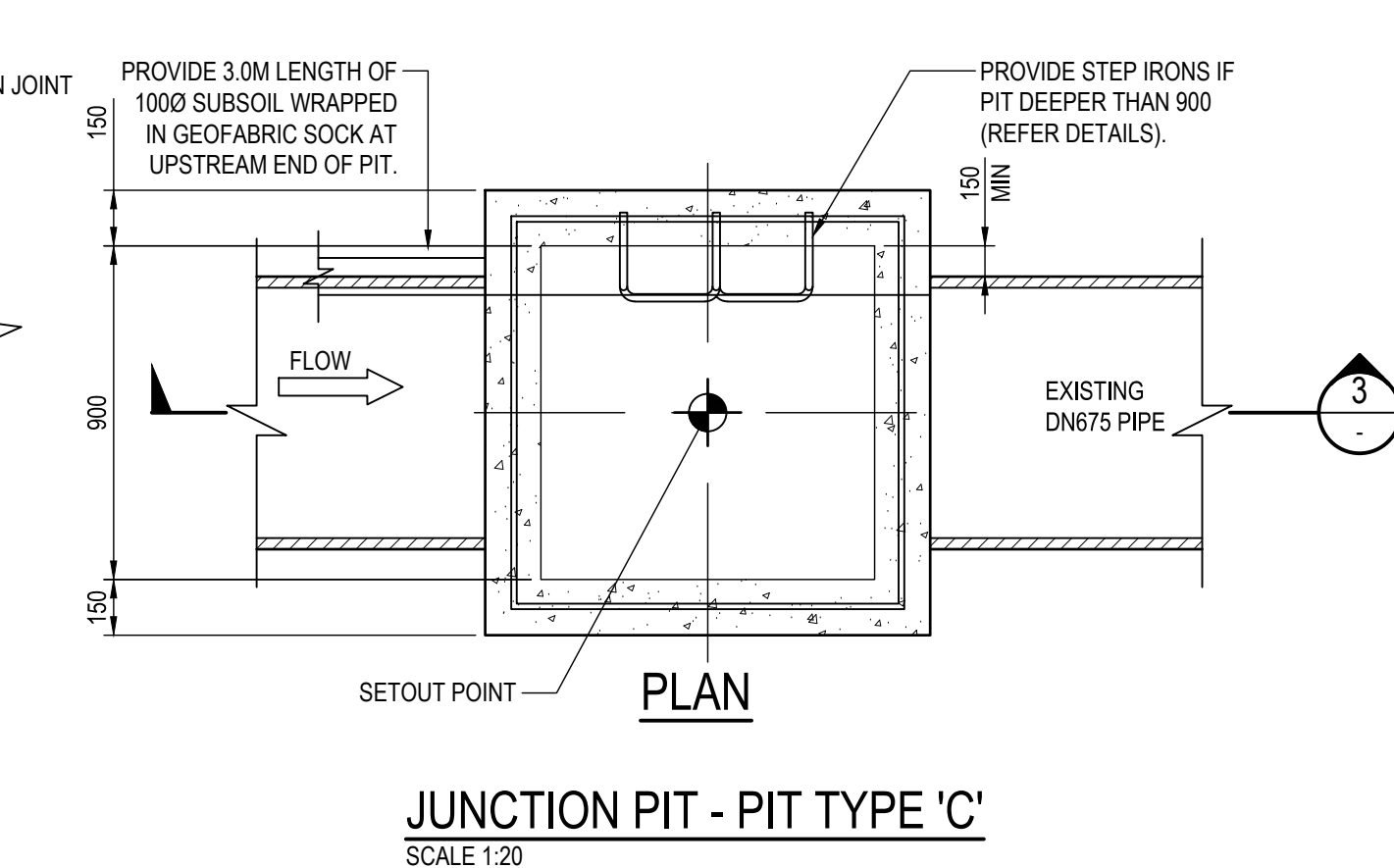
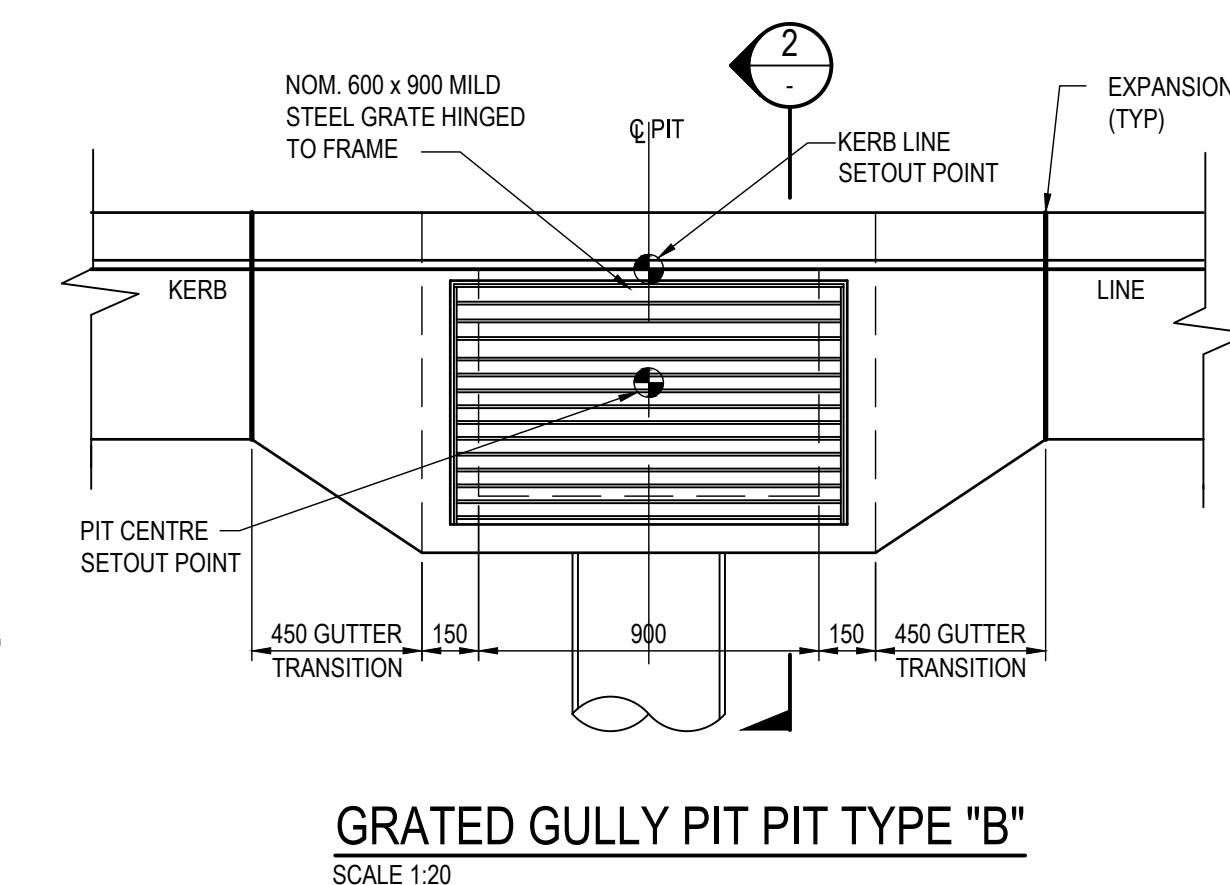
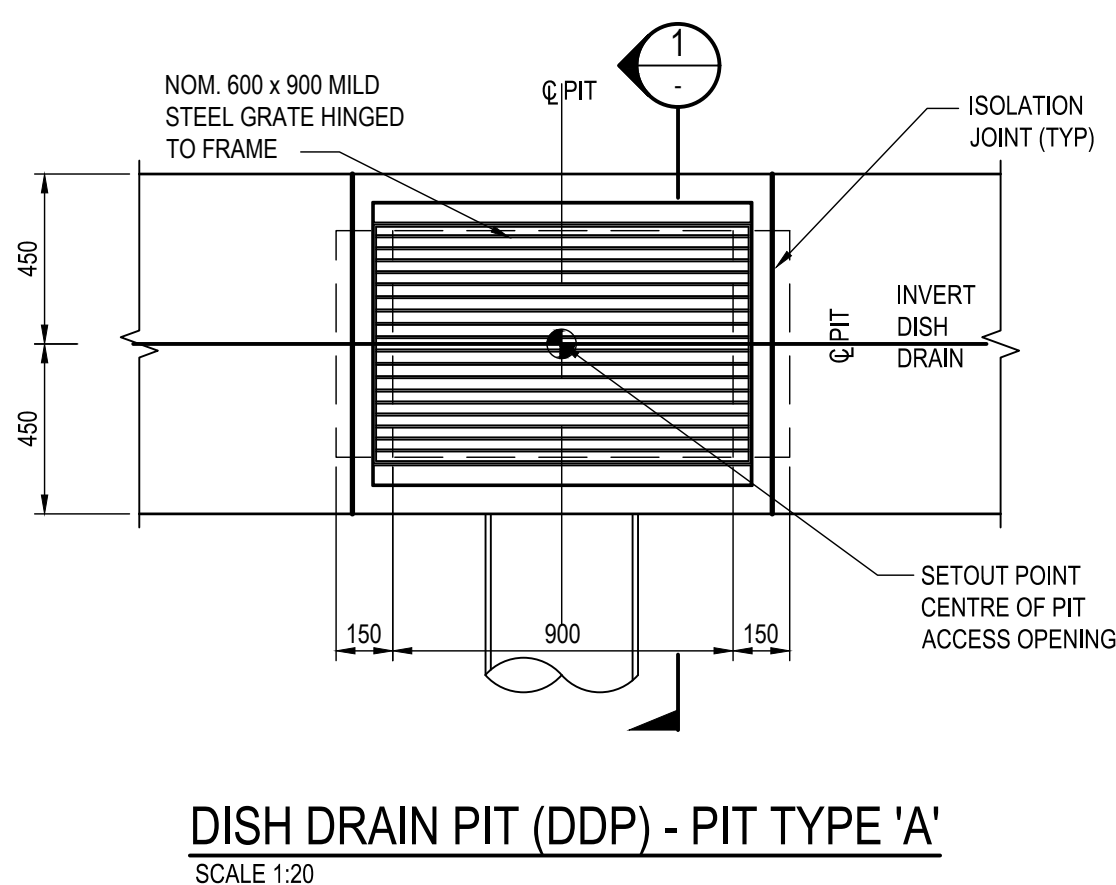
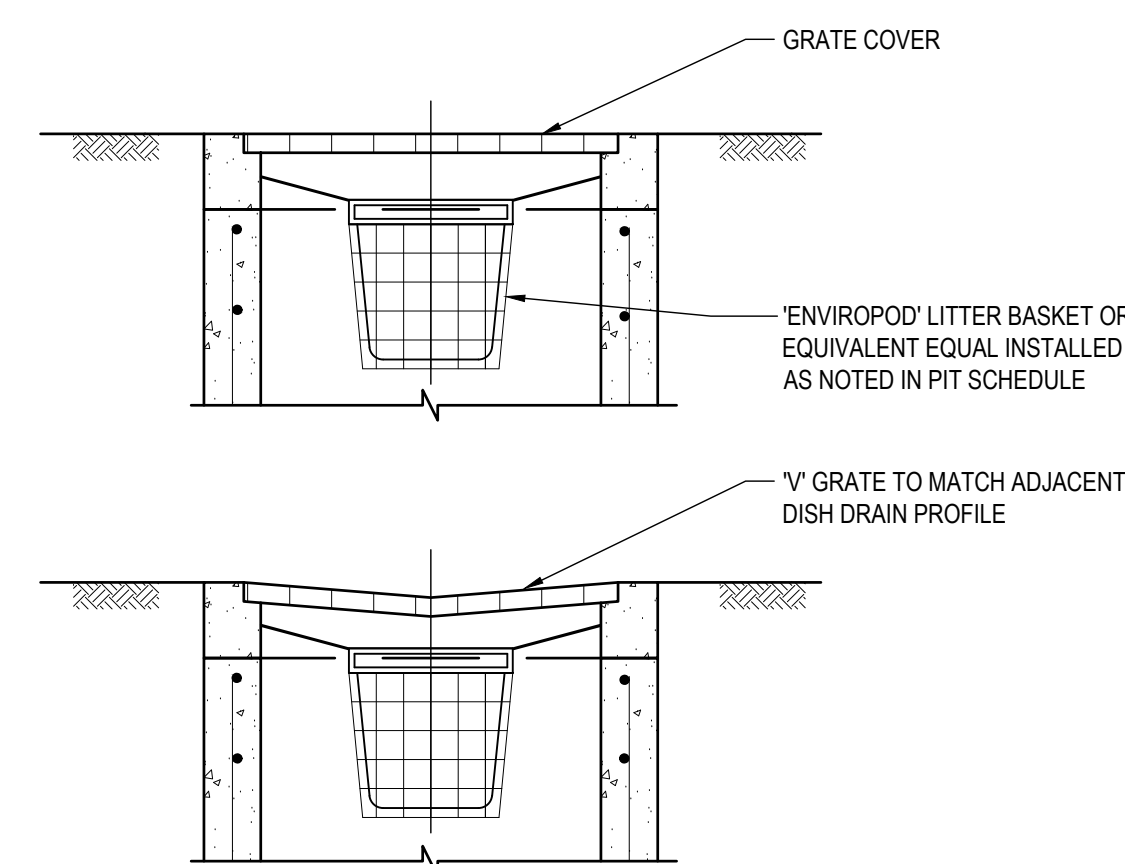
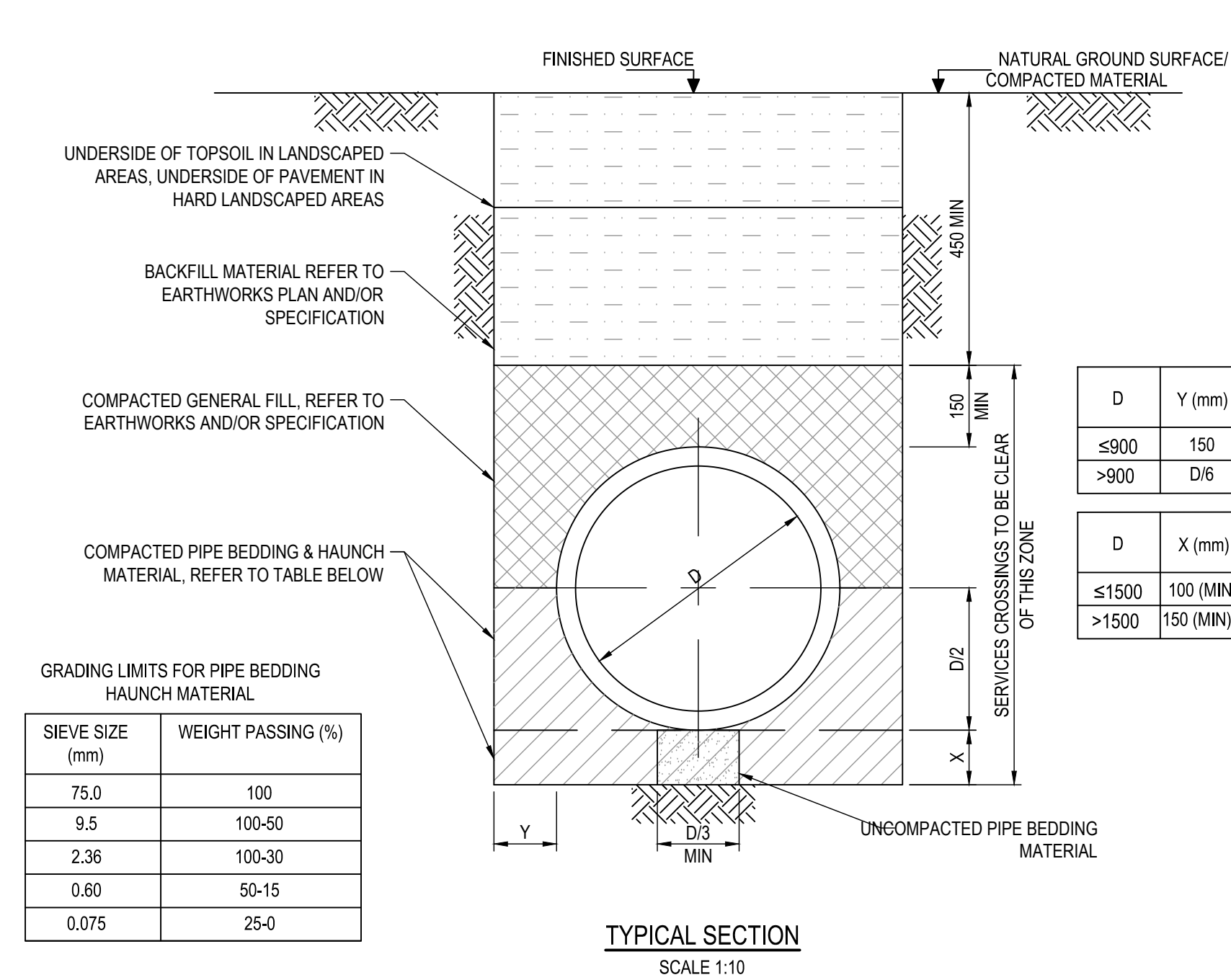
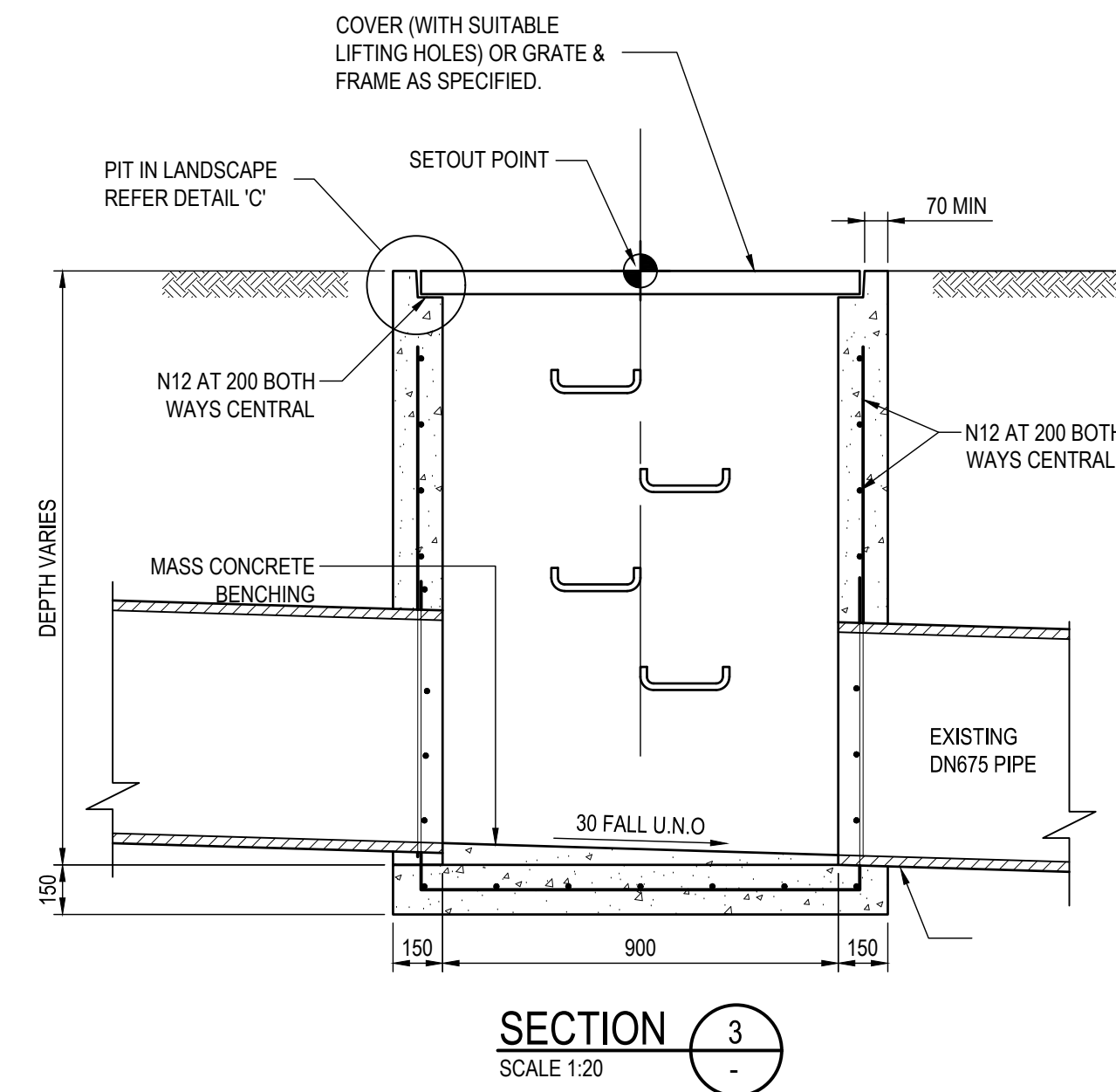
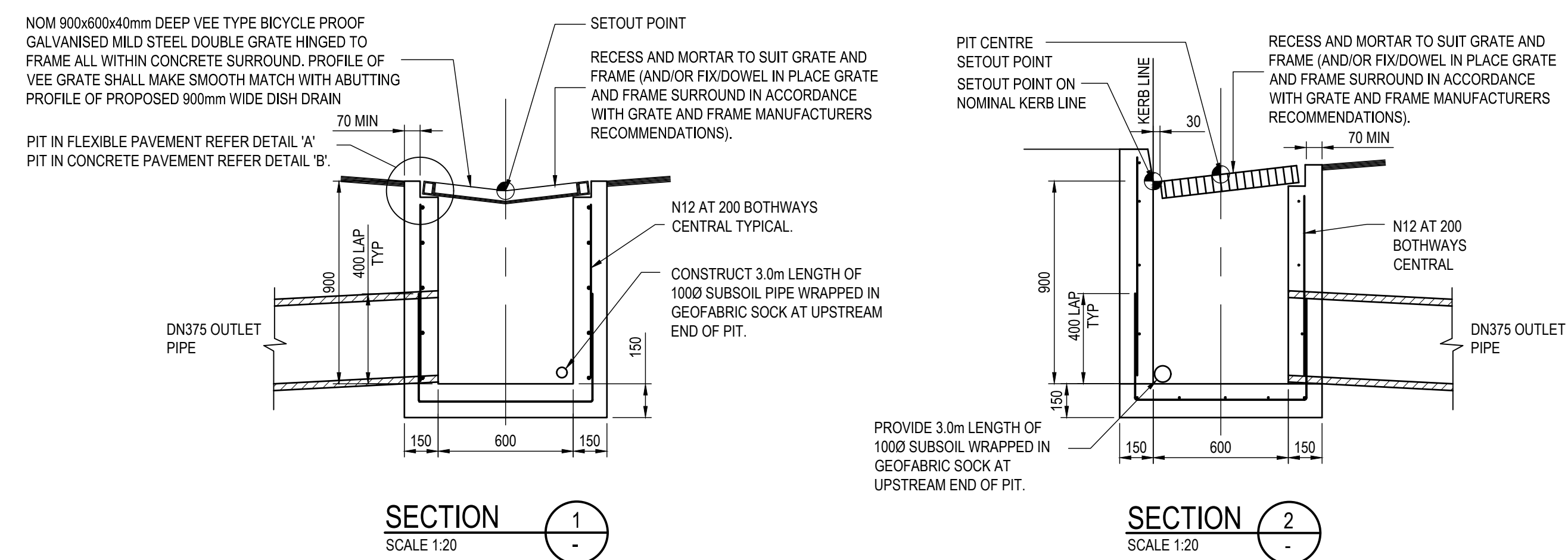
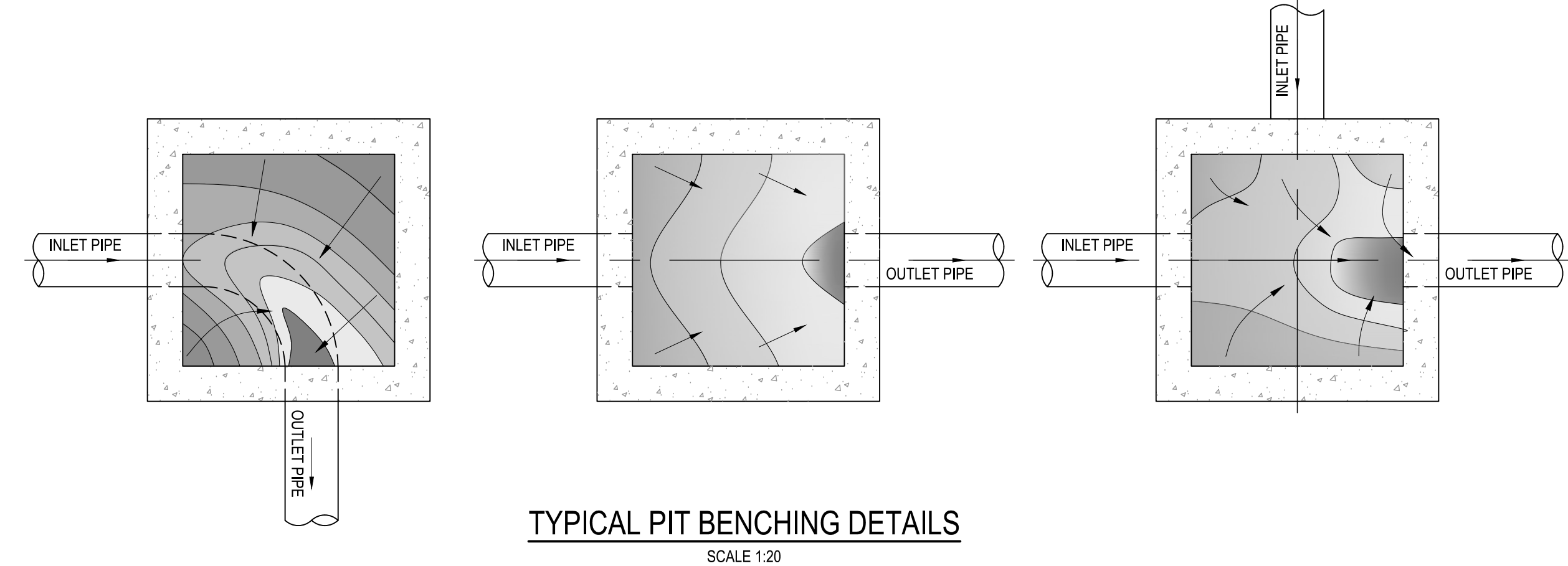
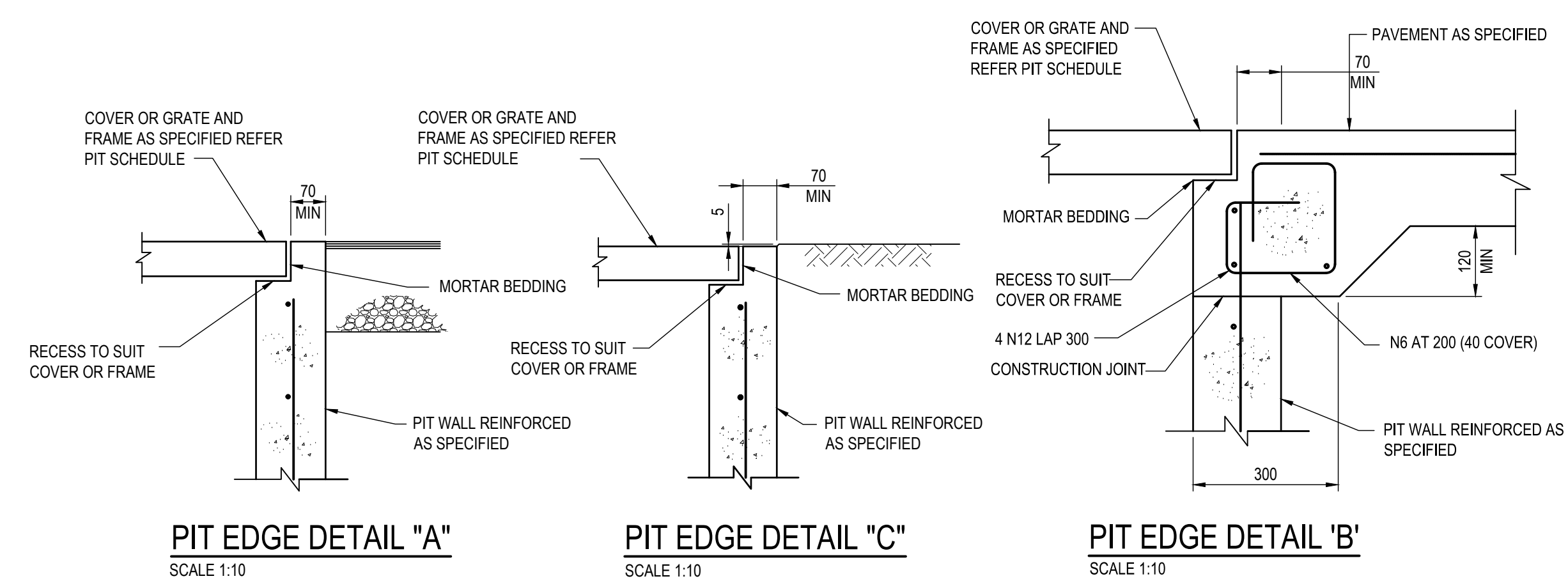
03 20.05.19 ISSUED FOR TENDER
02 13.05.19 ISSUED FOR INFORMATION
01 15.04.19 ISSUED FOR INFORMATION
Rev. Date Description
STRUCTURAL / CIVIL CONSULTANT
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QANTAS

PROJECT NAME
QANTAS GROUP FLIGHT TRAINING CENTRE

DRAWING NUMBER: 5728
DRAWING TITLE
SITWORKS DETAILS - SHEET 02

SCALE AT A0: N.T.S.
DRAWN BY: AW
CHECKED BY: PL
DRAWING STATUS
FOR INFORMATION ONLY
DRAWING NUMBER: ENS-CV-0802
REV: 03



NOTES FOR PITS:

- HOLES BROKENFORMED IN PRE-CAST PITS FOR THE INSERTION OF PIPES SHALL BE MADE WATERTIGHT AND REINSTATED WITH A STIFF MORTAR (3 CEMENT:1 FINE AGGREGATE) OR EPOXY BASED SEALANT.
- IF PIT DEPTH IS GREATER THAN 1500mm BUT LESS THAN 3000mm, INSITU REINFORCEMENT IS N16-150 EW.
- WIDTH OF PIT WALL TO BE EXTENDED ACCORDINGLY TO ACCOMMODATE TWIN PIPES. INSITU REINFORCEMENT TO SUIT ACCORDINGLY.

NOTES FOR BENCHING:

- MASS CONCRETE BENCHING WITHIN PITS MUST BE FORMED SO AS TO CONVEY WATER FROM INLET(S) TO OUTLET.
- BENCHING SHOULD BE ACHIEVE MINIMUM CROSS FALLS WITHIN PITS AS REQUIRED BY ENSTRUCT'S PIT DETAILS AND AUSTRALIAN STANDARDS.
- NO WATER STAND IN PITS WHEN BENCHING IS COMPLETE.

NOTES FOR STEP IRONS:

- STEP IRONS TO AS1867 AND EN13101 ARRANGED IN A SINGLE WIDTH TREAD FORMATION (MIN LENGTH 350mm) OR A SINGLE COLUMN, DOUBLE WIDTH TREAD (MIN LENGTH 150mm) STAGGERED DOUBLE COLUMN.
- STEP IRONS TO BE INDUSTRIAL STEP, SURE-STEP OR SIMILAR APPROVED. MINIMUM THICKNESS OF TREAD 20mm WITH UPSTAND HEIGHT 20mm AT EACH END OF THE TREAD TO PREVENT LATERAL SLIP.
- STEPS TO BE CHEMICALLY/PHYSICALLY ANCHORED INTO THE PIT WALLS IN ACCORDANCE WITH THE STEP IRON MANUFACTURER'S DETAILS.
- STEP IRONS TO BE LOCATED SO AS TO BE READY ACCESSIBLE FROM THE COVER, WHERE INTERNAL PIT SIZE EXCEEDS 1200x1200 THE COVER SLAB, FRAME & COVER POSITION SHOULD BE LOCALLY DISPLACED TO SUIT ACCESS TO THE STEP IRONS. REFER TO ENGINEER FOR CLARIFICATION IF REQUIRED.

SIEVE SIZE (mm)	WEIGHT PASSING (%)
75.0	100
9.5	100-50
2.36	100-30
0.85	50-15
0.075	25-0

TYPE	MIN STD COMPACTION
COHESIVE	50%*
COHESIONLESS	80%*

* IN ACCORDANCE WITH AS3725-2007

Name	Type	INTERNAL PIT DIMENSION			PIT LEVELS	
		LENGTH	WIDTH	DEPTH	SETOUT	INVERT
A1	KERB INLET PIT	1200	-	4.70	EX	
A2	KERB INLET PIT	1200	-	1.11	4.75	3.64
A3	KERB INLET PIT	1200	-	1.11	4.89	3.78
A4	KERB INLET PIT	1200	-	1.11	5.10	3.99
A5	KERB INLET PIT	1200	-	1.20	5.31	4.11
A6	KERB INLET PIT	1200	-	1.22	5.48	4.26
A7	KERB INLET PIT	1200	-	1.13	5.50	4.37
A8	GRATED PIT	900	600	1.09	5.52	4.43
A9	GRATED DRAIN	7000	200	0.78	5.60	4.82
B1	DISH DRAIN PIT	450	600	1.21	4.82	3.61
C1	KERB INLET PIT	1200	-	0.98	4.80	3.82
C2	KERB INLET PIT	1200	-	0.93	4.90	3.97
D1	KERB INLET PIT	1200	-	0.93	4.93	4
E1	DISH DRAIN PIT	450	600	2.07	4.60	2.53
E2	KERB INLET PIT	1200	-	1.14	4.73	3.59
E3	KERB INLET PIT	1200	-	1.07	4.75	3.68
E4	DISH DRAIN PIT	450	600	1.47	5.17	3.7
E5	KERB INLET PIT	1200	-	1.18	5.06	3.88
E6	KERB INLET PIT	1200	-	1.18	5.15	3.97
E7	KERB INLET PIT	1200	-	1.64	5.68	4.04
E8	KERB INLET PIT	1200	-	1.22	5.37	4.15
E9	KERB INLET PIT	1200	-	1.09	5.37	4.28
E10	KERB INLET PIT	1200	-	0.93	5.34	4.41
F1	DISH DRAIN PIT	450	600	1.17	4.82	3.65
F2	KERB INLET PIT	1200	-	1.09	4.95	3.86
F3	GRATED PIT	600	600	1.18	5.50	4.32
F4	GRATED PIT	600	600	1.01	5.45	4.44
G1	KERB INLET PIT	1200	-	0.93	5.10	4.17
G2	KERB INLET PIT	1200	-	0.93	5.22	4.29
H1	KERB INLET PIT	1200	-	2.51	3.54	1.03
H2	KERB INLET PIT	1200	-	1.24	5.37	4.13
H3	KERB INLET PIT	1200	-	1.09	5.54	4.45
H4	KERB INLET PIT	1200	-	0.93	5.70	4.77
J1	DISH DRAIN PIT	450	600	1.36	3.67	2.31
J2	DISH DRAIN PIT	450	600	1.22	3.73	2.51
J3	DISH DRAIN PIT	450	600	1.17	3.81	2.64
J4	DISH DRAIN PIT	450	600	1.15	3.93	2.78
J5	DISH DRAIN PIT	450	600	1.13	4.05	2.92
J6	DISH DRAIN PIT	450	600	1.11	4.17	3.06
J7	KERB INLET PIT	1200	-	1.11	4.30	3.19
J8	KERB INLET PIT	1200	-	1.09	5.40	4.31

PIT SCHEDULE

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QANTAS

PROJECT NAME
QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NUMBER: 5728

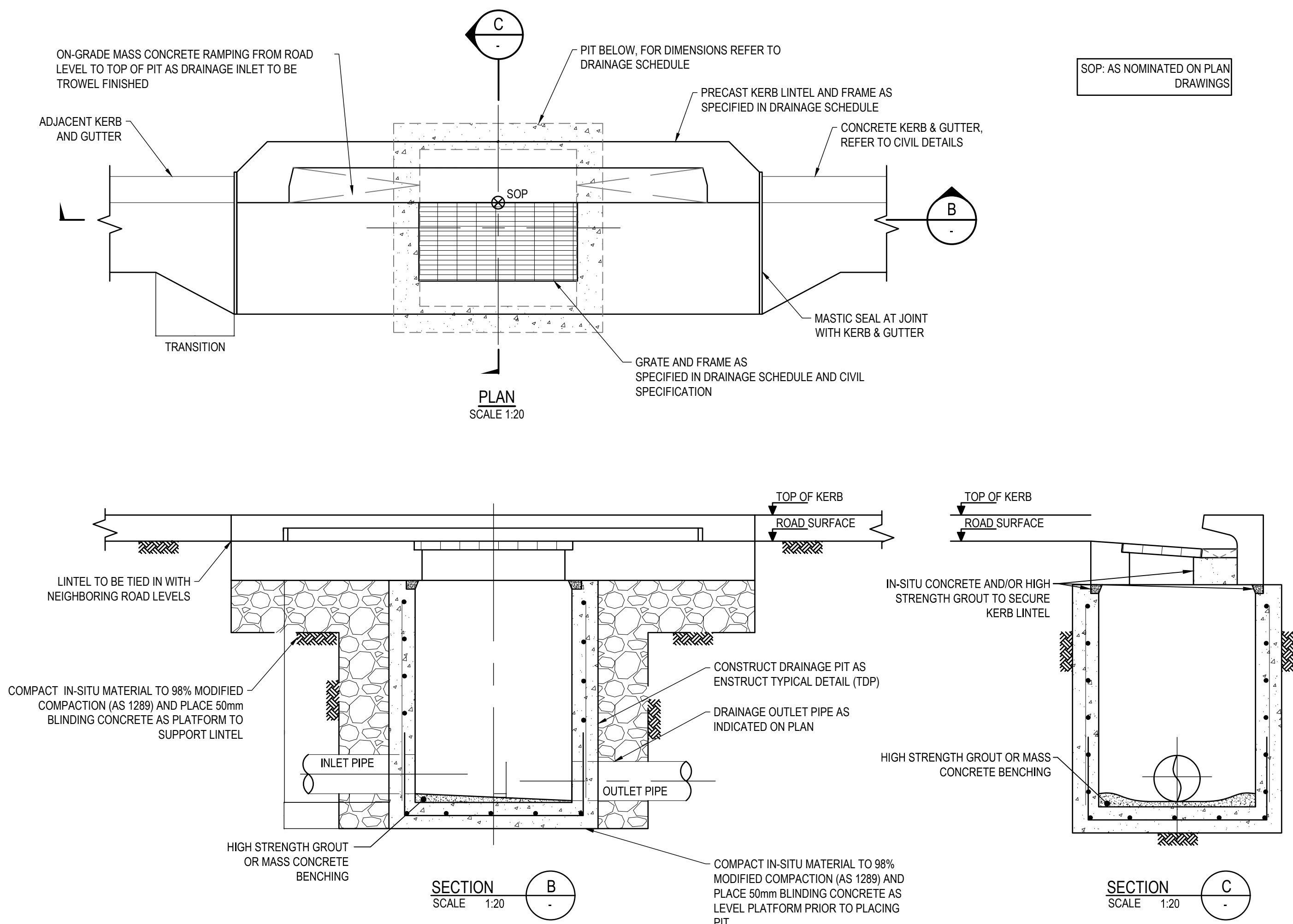
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STORMWATER DETAILS - SHEET 1

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DRAWN BY: AW
CHECKED BY: J.L.
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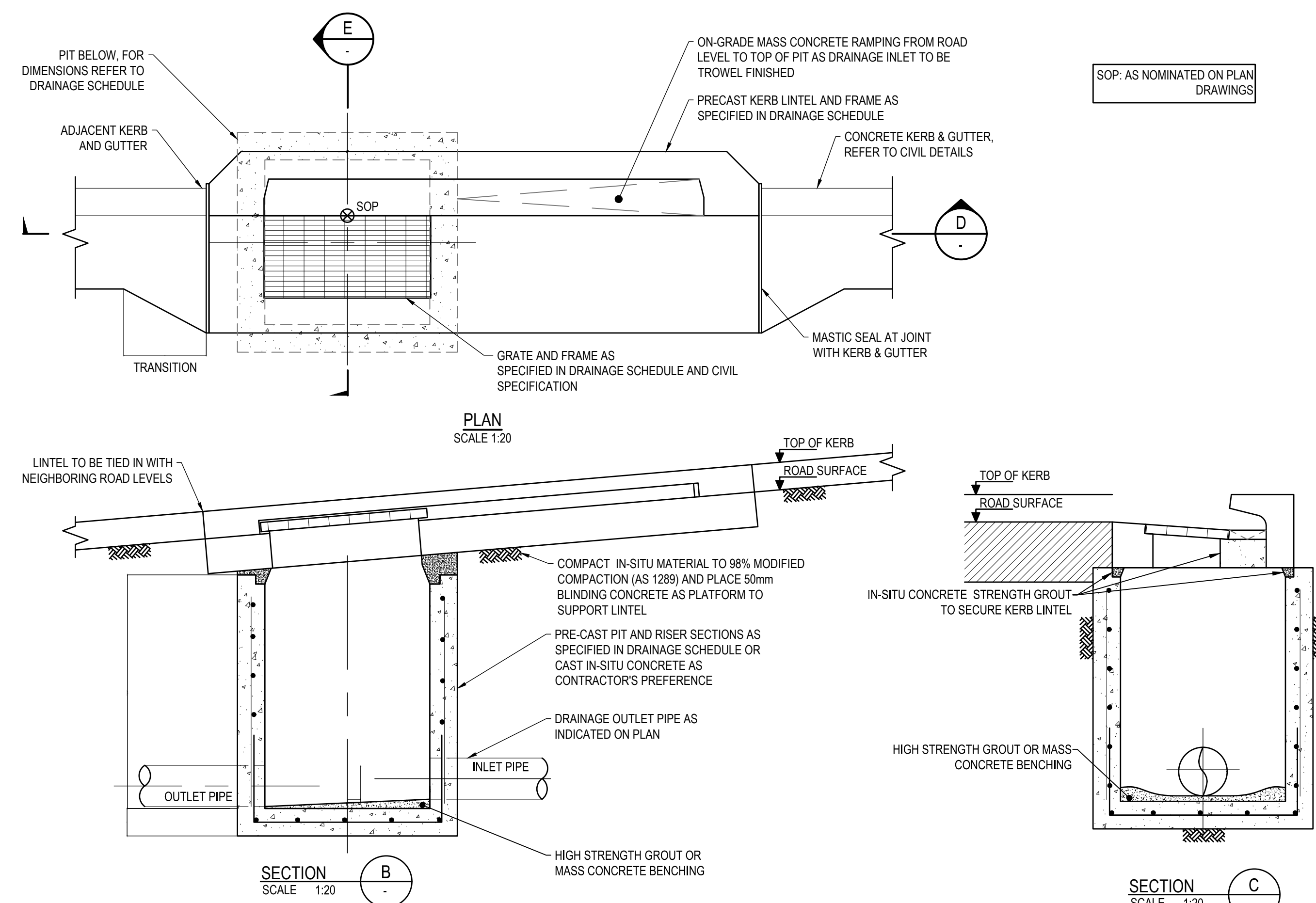
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ENS-CV-0851
REV.
03

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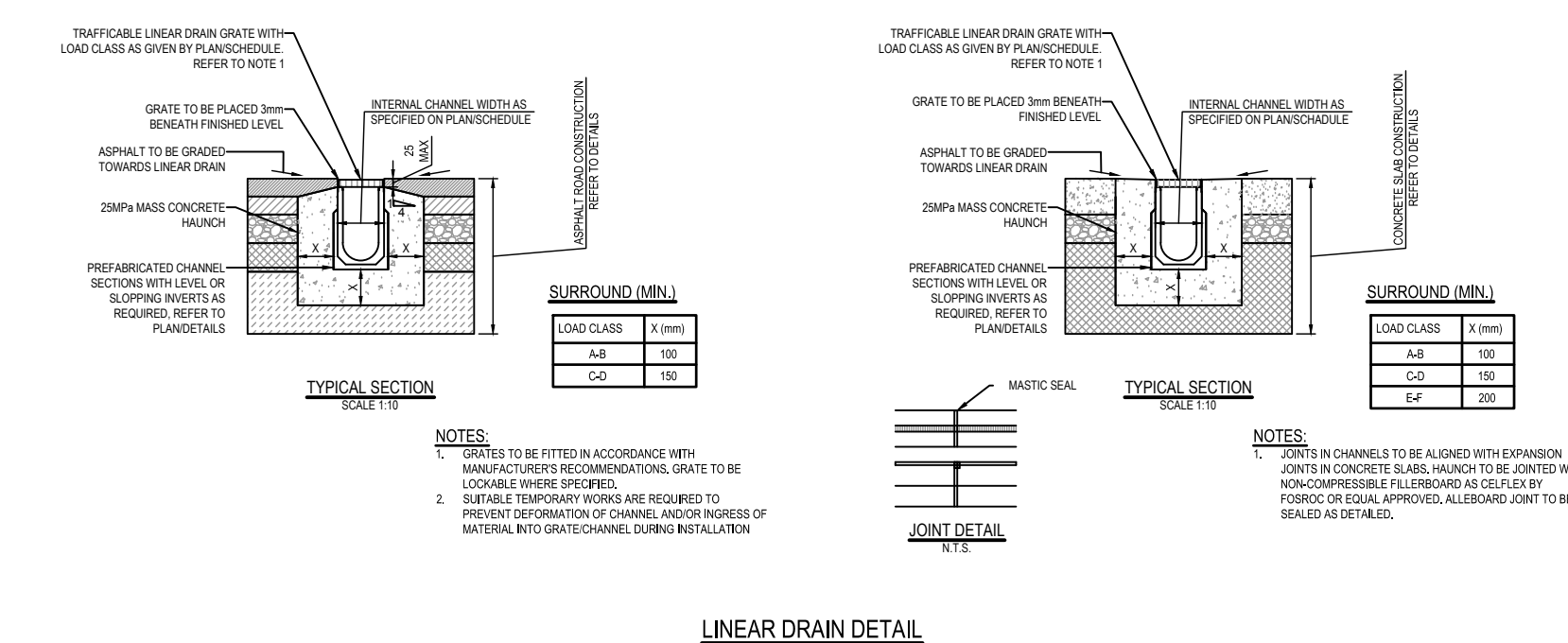
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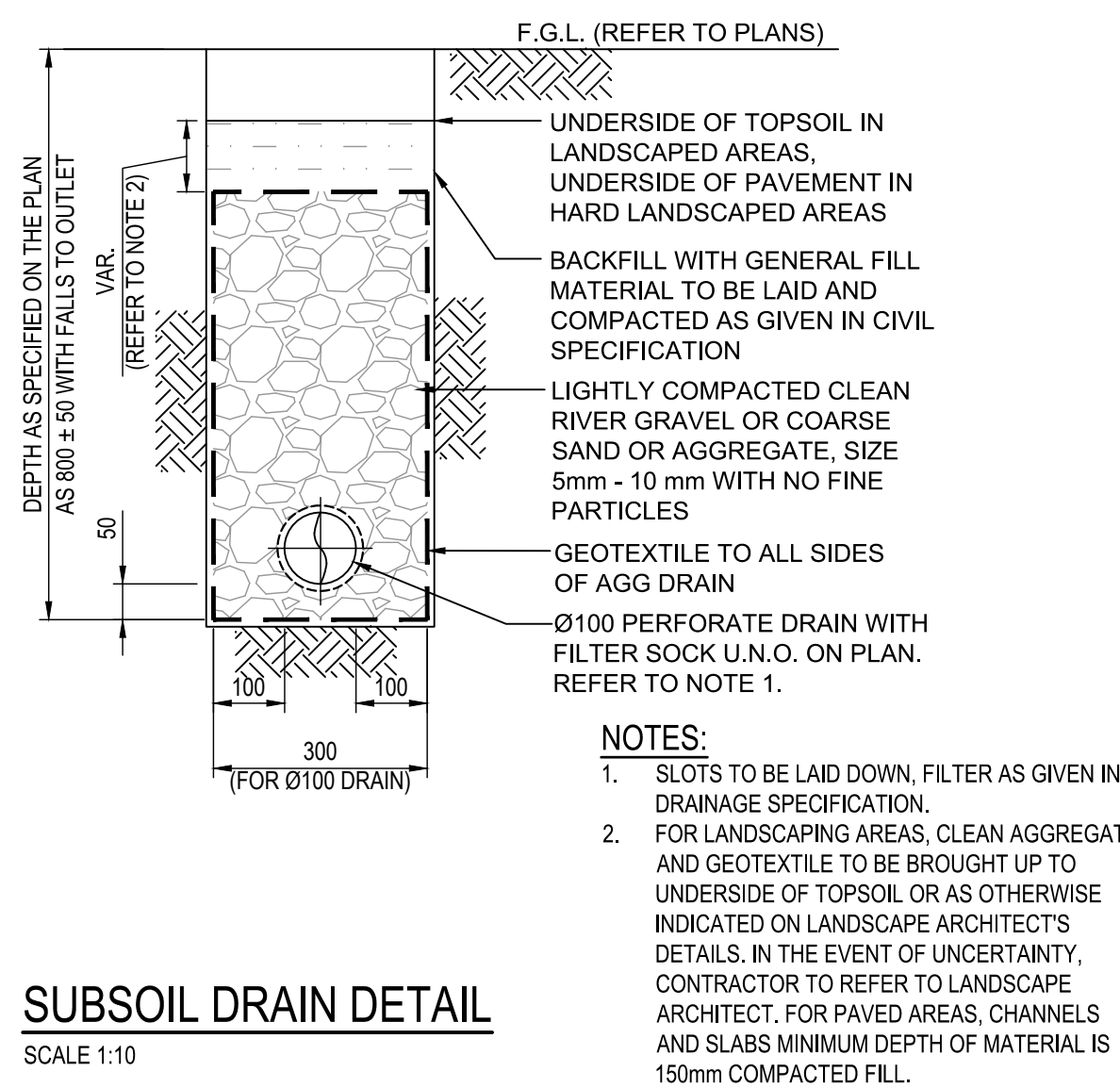
TYPICAL SAG KERB INLET DETAIL [KIP(S)]



TYPICAL ON-GRADE KERB INLET DETAIL [KIP/OG]



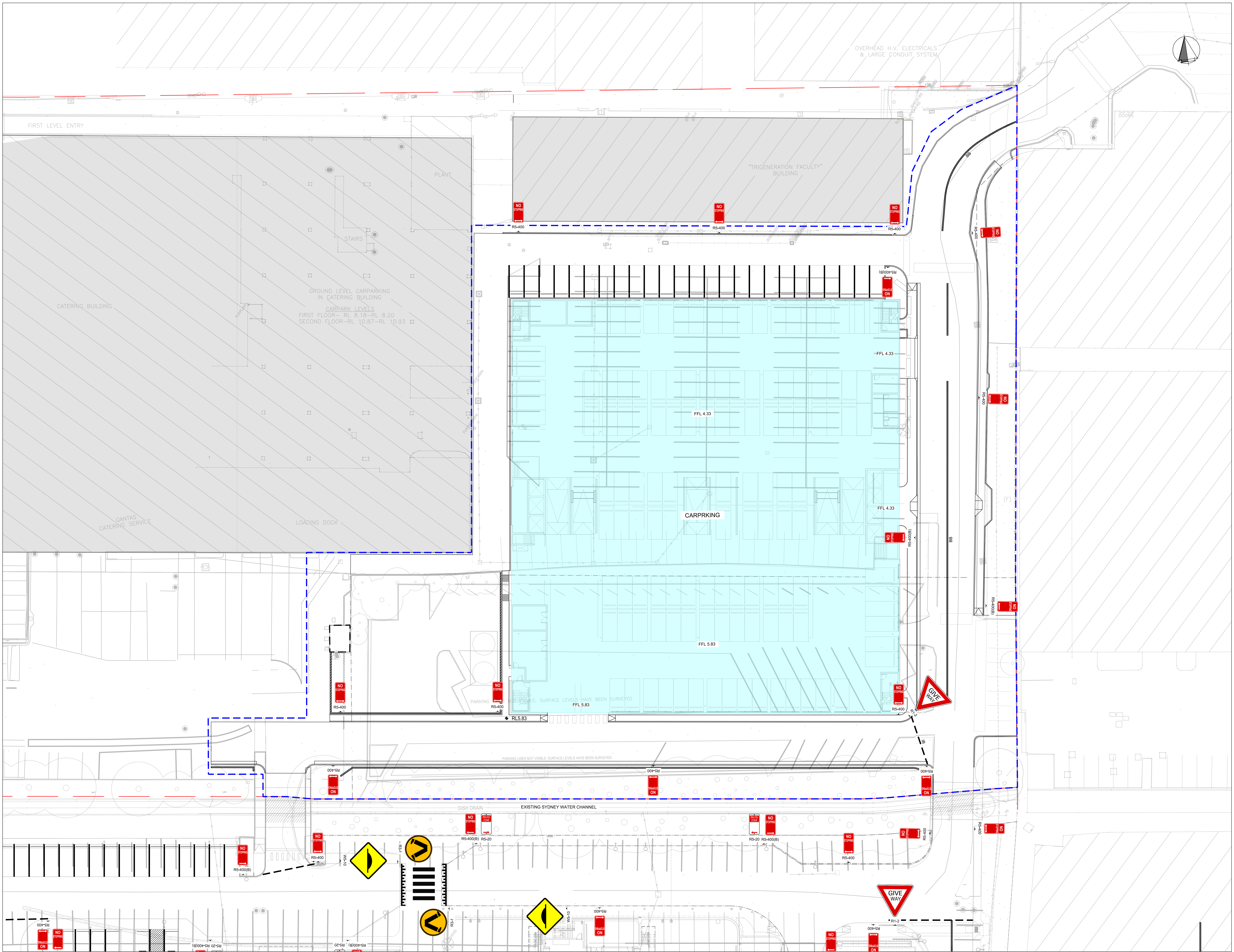
SUBSOIL DRAIN DETAIL
SCALE 1:10



NOT FOR CONSTRUCTION

LEGEND

- SITE BOUNDARY
- EXTENT OF WORKS
- EXISTING BUILDING OUTLINE
- PROPOSED BUILDING OUTLINE



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PROJECT NAME
QANTAS GROUP FLIGHT TRAINING CENTRE

PROJECT NUMBER: 5728
DRAWING TITLE
SIGNAGE AND LINE MARKING PLAN - SHEET 01

SCALE AT A0: 1:200
DRAWN BY: AW
CHECKED BY: PL
DRAWING STATUS
FOR INFORMATION ONLY

DRAWING NUMBER
ENS-CV-0901
REV. 02

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