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CIVIL ENGINEERING

STATE SIGNIFICANT DEVELOPMENT APPLICATION

The Sutherland Hospital - Operating Theatre Upgrade Project

Prepared for: Health Infrastructure NSW

Document no: ACR-CV-RPT-003

Issue no: Rev B

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REVISIONS

Revision	Date	Purpose	Prepared By	Approved By
A	13.11.2020	For Review	CR	NP
B	18.01.2021	State Significant Development Application	CR	NP

Review Panel	
Division/Office	**Name**
St Leonards	Nathan Pearce

Unless otherwise advised, the parties who have undertaken the Review and Endorsement confirm that the information contained in this document adequately describes the conditions of the site located at Sutherland Hospital.

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1 Introduction

ACOR Consultants have been engaged by Health Infrastructure NSW as the Structural and Civil engineering consultants on The Sutherland Hospital – Operating Theatre Upgrade Project.

This report has been prepared to outline the State Significant Development Application (SSDA) Civil engineering requirements for the project, including requirements related to civil elements which have been noted in the Planning Secretary's Environmental Assessment Requirements (SEARs), which are outlined in Section 1.4 below.

1.1 Site Context

The Sutherland Hospital (TSH) Campus is approximately half an hour drive from Sydney CBD and is in the suburb of Caringbah of the Sutherland Shire Council region. The site comprises a single land parcel of approximately 9.5 hectares and is located on the corner of Kingsway and Kareena Road with site access from both roads. A locality plan is shown in Figure 1.

TSH is a 375 bed metropolitan hospital and is part of the South Eastern Sydney Local Health District (SESLHD) that services the local South Sydney area. The hospital provides a range of services including, acute specialist services (surgical, emergency critical care, medical, women's and children health), sub-acute services (aged care and rehabilitation) as well as ambulatory care. TSH is a Centre of Excellence for specialty surgeries including gastroenterology, orthopaedics, and joint replacements.

The campus was initially established in 1958 and has been significantly redeveloped with multiple additions and refurbishments to date. The most recent was the Stage 1 redevelopment involving the construction of a new emergency department off the south wing and new Ambulance NSW building completed in 2017.

Figure 1 - Locality Plan (Source Nearmaps)

1.2 Project Scope

The Sutherland Hospital Operating Theatre Upgrade Project (TSHOTUP) will deliver a world class operating facility in the heart of the Southern Health District. The new facility will increase theatre capacity, improve efficiencies and access to services, and enable implementation of new models of care and surgical clinical pathways. The proposed development is situated in the core of the existing hospital campus and is highly complex because it will combine new build and refurbishment elements in a live operating hospital environment.

TSHOTUP will provide the hospital with the opportunity to meet increased surgical demand due to numerous factors, including future population growth and ageing population, as well as providing additional medical services and an upgrade to the existing infrastructure.

The operating theatres will increase from 5 to 8, as well as the endoscopy suites increasing from 1 to 2, resulting in a total of 10 spaces with associated clinic rooms and supporting spaces. This investment will build on and support The Sutherland Hospital Redevelopment Stage 1, which delivered a new and expanded Emergency Department (ED), as well as expanded Intensive Care, general medical and surgical beds. The project will also consider the campus masterplan and minimise constraints on future expansion of the hospital.

As part of the proposed works the existing access road beneath the proposed building is to be closed and replaced with a pedestrian only landscaped area.

Clinical Services:

- 8 Operating Theatres
- 2 Endoscopy Suites
- Post-Acute Care Unit
- High Volume Short Stay Unit
- New MRI Space
- New CSSD

1.3 Existing Site Description

The proposed development works is located in the western side of the main hospital near the Kareena Road site access and the topography generally falls in a north to south direction. The area is heavily built up and is constrained by existing facilities on all sides including, the ED building to the north, South Wing building to the East and the Ambulance Station and Carpark to the south and west. The new building extension is proposed to be built within the existing building constraints and limit the disturbance of the surrounding area. See Figure 2 below for existing site conditions and proposed development area.

The site area can be currently accessed from both a north and south direction with a road providing a link between the two site accesses off Kareena Road as well forming part of the ring road that provides connection to the entire hospital perimeter. This road was partially upgraded to a rigid concrete pavement as part of the Stage 1 works and is regularly used by Ambulances as it provides easy access between the ED and Ambulance Station.

The road contains multiple inground services and acts as service corridor for the surrounding buildings. Existing services within the road include a Gross Pollutant Trap (GPT) and on-site detention (OSD) tank constructed as part of the Stage 1 redevelopment, as well we stormwater drainage, sewer, watermains, electrical and communication services. The road also acts as an emergency overland flow path for stormwater in the event the existing OSD tank blocks or surcharges.

The existing carpark 3 to the west is also within the proposed development area. This carpark is approximately 500mm higher than the existing access road and surrounding buildings and is supported by both retaining walls and earth batters.

An existing porte-cochere and drop off area near the hospital entry will be required to be demolished to allow for the construction of the new building.

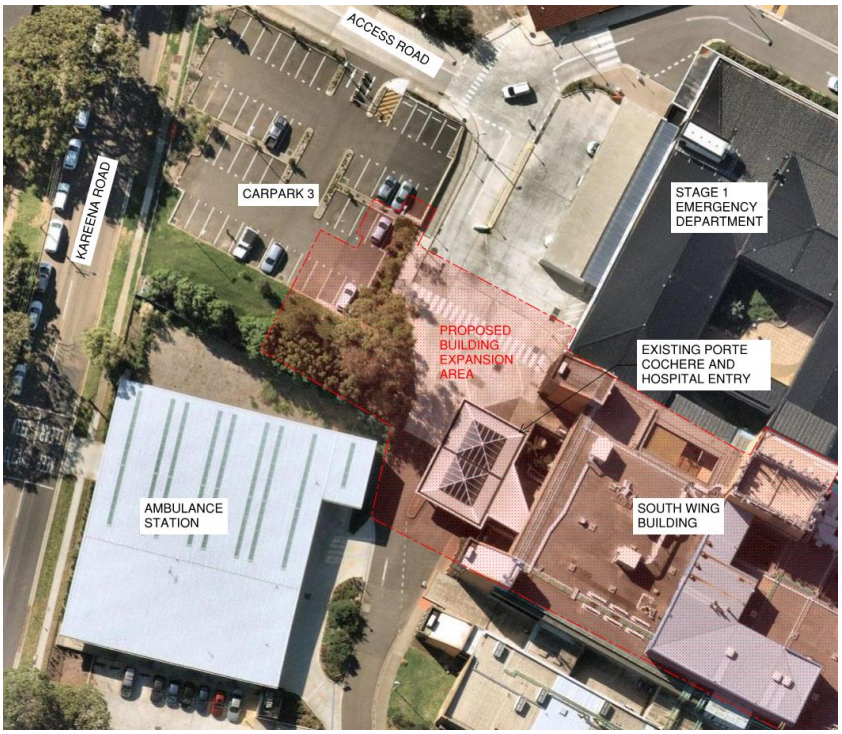

Figure 2 - Existing Site Conditions (Source Nearmaps)

1.4 SEARs Requirements

SEARs requirements for the preparation of an Environmental Impact Statement (EIS) for the SSDA submission were received on 10 December 2020 (Application No.: SSD-11099584) and the applicable Civil items are summarised in Table 1 below.

Table 1 – SEAR's Requirements

SEARs Requirements	
Key Issues	**16. Stormwater Drainage** Provide: ▪ A preliminary stormwater management plan for the development that: – is prepared by a suitably qualified person in consultation with Council and any other relevant drainage authority – details the proposed drainage design for the site including on-site detention facilities, water quality measures and the nominated discharge point – demonstrates compliance with Council or other drainage authority requirements. ▪ Stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties. Where drainage infrastructure works are required that would be handed over to Council, provide full hydraulic details and detailed plans and specifications of proposed works that have been prepared in consultation with Council and comply with Council's relevant standards.
	17. Flooding ▪ Identify any flood risk on-site in consultation with Council and having regard to the most recent flood studies for the project area and the potential effects of climate change, sea level rise and an increase in rainfall intensity. ▪ Assess the impacts of the development, including any changes to flood risk on-site or off-site, and detail design solutions to mitigate flood risk where required.
	18. Soil and Water Provide: ▪ An assessment of potential impacts on surface and groundwater (quality and quantity), soil, related infrastructure and watercourse(s) where relevant ▪ Details of measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles ▪ An assessment of salinity and acid sulphate soil impacts, including a Salinity Management Plan and/or Acid Sulphate Soils Management Plan, where relevant.

2 Stormwater Drainage

2.1 Design Requirements

All stormwater drainage design will be in accordance with the following:

- Australian Rainfall and Runoff (2019) – with AR&R (2016) rainfall datasets sourced from the ARR Data Hub and Bureau of Meteorology (BOM);
- Sutherland Shire Council Development Control Plan (DCP) 2015
- AS3500.3 Plumbing and Drainage: Stormwater Drainage
- Managing Urban Stormwater: Soils and Construction, "The Blue Book" – 4th edition 2004.

2.1.1 Stormwater Quantity

The stormwater drainage for the development will need to be designed in accordance with Sutherland Shire DCP Chapter 38 – Stormwater and Ground Water Management which states that the development must minimise impacts of stormwater runoff and flooding on downstream properties. As such the post development rate of stormwater runoff from the site is not to exceed the pre-development runoff. Where post development rates exceed that of existing, then stormwater discharge must be managed onsite using a combination of onsite detention or retention.

The minor (inground) civil stormwater drainage is designed for a 5% Annual Exceedance Probability (AEP) design storm. Setting this as the minor design storm means that rainfall runoff from all storm events up to and including the 5% AEP design storm are conveyed through formalised in-ground drainage structures to the OSD. This site's drainage system is designed as per Council's stormwater design requirements, Australian Rainfall and Runoff, and AS3500.3

The major (overland) stormwater drainage system is designed for flows above the 5% AEP storm event, up to and including the 1% AEP storm event, which will be conveyed overland to the OSD. Where there is no available overland flow path to direct surface flows to the OSD, the pipe network has been sized to cater for up to the 1% AEP event.

All proposed roofs will collect stormwater via gutters and downpipes which will be connected to the inground drainage system. The hydraulic consultant will document the building stormwater drainage, including roof gutters, downpipes, roof overflow measures and internal courtyards, to ground level. The scope of the civil stormwater drainage commences once the drainage is beyond the external building perimeter.

2.1.2 Stormwater Quality

Chapter 38 of the Council DCP also stipulates that the development will be required to meet Stormwater Quality Control targets to reduce the amount of pollutants and sediments being discharged offsite through the stormwater system.

Council stormwater reduction target are as follows;

- 80% retention of the average annual load of Suspended Solids (SS)
- 40% retention of the annual load of Total Phosphorus (TP)
- 40% retention of the annual load of Total Nitrogen (TN)
- 100% retention of litter and organic matter greater than 50mm for storms up to 1 in 3 month ARI
- 100% retention of oil and grease for storms up to 1 in 3 month ARI

2.2 Existing Stormwater Infrastructure

The hospital site is divided into a north and south catchment which is defined by a localised crest in the access road connecting Kareena Rd with the new ED. The catchment boundary is located north of the development site near the recently constructed emergency department building – see catchment boundary line in Figure 3 below. The north catchment drains towards Kingsway and the South to the railway line and Karimbla Road. The existing inground stormwater drainage network is also split into the above-mentioned catchments. The proposed Operating Theatre development is located wholly within the southern catchment area.

The existing southern catchment is predominately impervious areas with inground drainage collecting stormwater from the surrounding buildings and hardstand pavements. The inground drainage directs stormwater from minor events to an OSD with an upstream GPT which were constructed as part of the Stage 1 works. Both the OSD and GPT are located in the access road which is within the proposed site development area.

The access road that links the emergency department to the southern hospital region acts as an overland flow path to convey the stormwater generated during larger storm events. Refer to Figure 3 below for the existing site stormwater drainage plan.

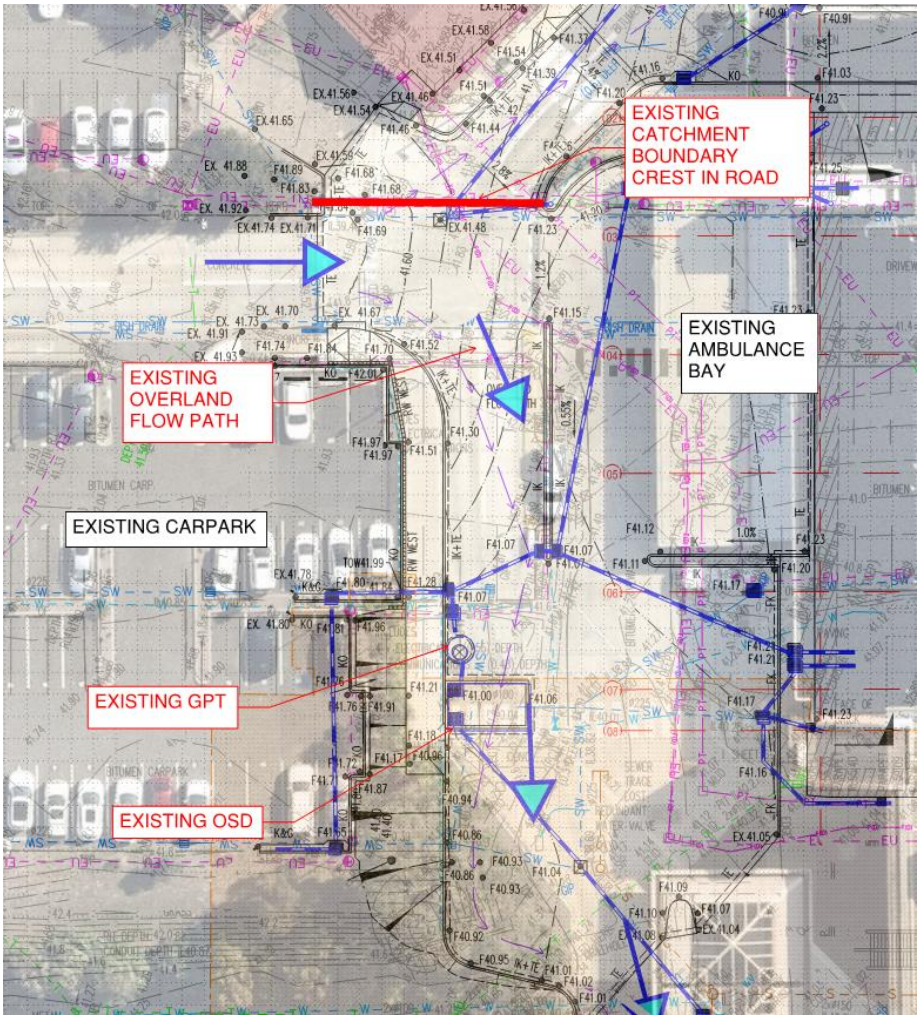

Figure 3 - Existing Site Stormwater Drainage

2.3 Proposed Stormwater Drainage

2.3.1 Stormwater Quantity

The existing site area is predominantly hardstand and roof area, with only a small amount of landscaped area and as such the proposed building will not significantly increase the impervious area of the site.

The existing OSD, GPT and associated stormwater drainage will be required to be demolished and relocated as they are located within the proposed building envelope and will be impacted by the construction of the lift core. These proposed works will ensure that the existing stormwater drainage within the proposed undercroft area has adequate capacity to cater for the additional flows generated from the for the proposed building works. The stormwater drainage will connect into this existing stormwater pit adjacent to the Ambulance Station. These infrastructure upgrade works including the construction of the OSD have been approved by Health Infrastructure (HI) NSW under a Review of Environmental Factors (REF) and as such, do not form part of the SSDA works.

The existing site stormwater catchments remain relatively unchanged and the design ensures that the equivalent post development catchment area is directed to the proposed 45m^3 OSD to ensure that the predevelopment flows are maintained as required by Sutherland Shire Council DCP.

Approximately half of the proposed roof area (northern portion) is draining to the OSD and that the southern half of the roof bypasses. Refer to the catchment plan below.

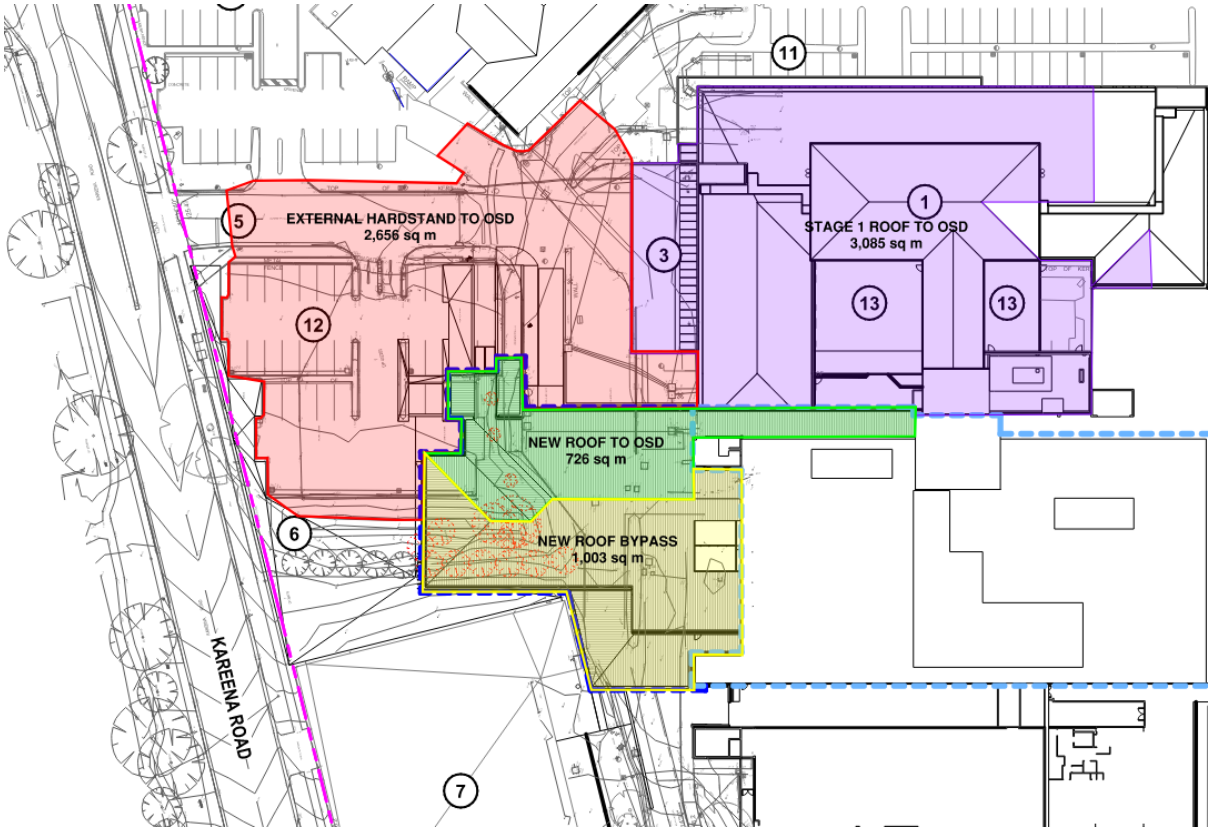

Figure 4 - OSD Catchment Plan

The proposed drainage network has been designed and modelled in DRAINS with post development flows for all storm events up to the 1% AEP have been reduced to less than the pre-development site discharge. Refer to the table below for DRAINS results.

The in-ground pit and pipe network, as well as the OSD has also been sized to cater for the expected increase in rainfall due to Climate Change. An Interim Climate Change Factor from the ARR Data Hub has been included in the Drains modelling. The multiplier (8.5%) is for RCP4.5 for the year 2070.

Table 1 - Site Discharge Flows

Rainfall Event	Pre-development Flow (l/s)	Post-development Discharge (l/s)	Post-development Climate Change Flow (l/s)
1% AEP	361	331	329
2% AEP	330	289	308
5% AEP	228	267	227
10% AEP	254	242	260
20% AEP	221	203	224

The proposed building development is located in a localised onsite overland flow path and therefore the flow path will need to be maintained to prevent nuisance flooding. The design ensures that for all storm events up to the 1% AEP, flows will be managed through the in-ground OSD tank and outlet pipe, with an internal overflow weir chamber within the OSD tank, which discharges flows in excess of the 1% AEP to the outlet pipe. Surcharging of the OSD tank is only anticipated in the event that there is a blockage within the downstream system, or there is a storm event larger than the 1% AEP which is more than the capacity of the in-ground system.

Stormwater works are being undertaken wholly within the TSH property, as such, no drainage infrastructure will be handed over to Council.

2.3.2 Stormwater Quality

The existing site is mostly impervious containing areas of existing concrete vehicular pavement and carparking with a small landscaped space to the south. The stormwater drainage from the existing pavement area is directed to a GPT which was constructed as part of the recently completed Stage 1 Emergence Department works.

The proposed works will result in a roof being constructed over the existing vehicular hardstand which will also be returned to a landscaped area. Sutherland Shir Council consider stormwater runoff from roof areas so be clean water and as such the roof is effectively reducing the pollutant runoff from the site.

The reduction in vehicular pavement will also reduce the amount of oil and grease expected to be generated form the site and as such the development will not generate any additional pollutants,

As such the proposed development will not generate additional pollutant loads and as such a GPT will be used to manage the stormwater quality similar to the measures that are currently implemented on site.

3 Flooding

The Sutherland Shire Council DCP 2015 provides a Flood Risk Management Map which encompasses most of the Council Local Government Area (LGA). Review of flood maps, refer Figure 5 below, indicates that the Sutherland Hospital site is not within a flood risk zone or subject to external flooding and therefore it is not anticipated that additional flood planning requirements for the 1% AEP event or Probable Maximum Flood (PMF) will be required.

Figure 5 - Flooding Extents (Source: Sutherland Shire Flood Risk Management Plan)

4 Soil Erosion and Sedimentation Control

4.1 General Principles

The following general principles of soil and water management have been developed and will be applied to the future re-development works:

- Minimise the area of soil disturbed and exposed to erosion
- Conserve topsoil for later site rehabilitation/revegetation
- Control water flow from the top of, and through the development area
- Rehabilitate disturbed lands quickly
- Maintain soil and water management measures appropriately during the construction phase

4.2 Sources of Pollution

Based on the proposed development activities, the following sources of pollution during construction that could lead to earthworks erosion, sediment and silt transportation and contamination of downstream stormwater systems have been considered:

- Earthworks undertaken prior to rainfall events without sufficient auxiliary measures to manage drainage
- Earthworks areas that have not been stabilised or are exposed prior to temporary or permanent ground cover
- Establishment time for rehabilitation / revegetation of exposed earthworks
- Localised groundwater dewatering activities during earthworks excavations
- Construction works to existing stormwater pipelines and overland flow paths
- Vehicle entry and exit to the construction site and associated tracking of debris out of the site
- Clearing and grubbing of vegetation / organic matter and stripping of topsoil
- Stockpiling of excavated materials or construction materials (e.g. road base, ordinary and select fill, etc)
- Re-fuelling and general maintenance of construction plant and equipment
- Storage of chemicals, fuel and other hazardous materials
- Ineffective / incorrect installation or maintenance of soil erosion and sedimentation control measures

4.3 Soil and Water Management Strategy

The following construction management methodology has been developed for the re-development works and should be included in the soil erosion and sediment control for the site:

- Establish sediment fencing to the downstream perimeter of the zone of disturbed works to protect downstream assets and properties
- Installation of stabilised construction entry and exit grids to prevent construction vehicles tracking debris into adjacent Authority roadways and stormwater systems
- Construction of “clean water” diversion drains with rock check dams to divert unpolluted water to the existing stormwater system in a controlled manner

- Construction of “dirty water” catch drains with rock check dams to divert sediment-laden and silt-laden water to proposed sedimentation basins
- Construction of appropriately sized and maintained sedimentation basins to promote settling of gross pollutants and suspended solids. Dosing and flocculation of fine suspended particulates will also be undertaken depending on tested water quality profiles within the sedimentation basin
- Protection of materials stockpiles by suitable wind protection fencing and / or temporary covering of stockpiles
- Protection of existing and recently constructed surface inlet pits with temporary sediment traps using geotextile filter fabric and sandbags
- Protection of existing and recently constructed overland flow paths with vegetated ground cover
- General expedited revegetation and stabilisation of exposed earthworks to prevent sedimentation of stormwater runoff

4.4 Salinity and Acid Sulphate Soils

The site has not been identified as being affected by salinity in the Environmental Site Assessment (ESA) prepared by JK Environments (ref: E33141PArpt) dated 9 June 2020.

The site has not been identified as affected by Acid Sulphate Soils in the Sutherland Shire Council LEP 2015.

Appendix A - Civil SSDA Drawing Package

THE SUTHERLAND HOSPITAL OPERATING THEATRE UPGRADE PROJECT
MAIN BUILDING WORKS
CIVIL ENGINEERING SERVICES

EXISTING SERVICES LEGEND

EX/S	EXISTING SEWER
EX/W	EXISTING WATER
EX/G	EXISTING GAS
EX/T	EXISTING COMMUNICATIONS
EX/SW	EXISTING STORMWATER
EX/E	EXISTING ELECTRICAL
OHE	EXISTNG OVERHEAD
PT PT	EXISTNG PNEUMATIC TUBE SYSTEM
UP-D UP-D	EXISTNG UNKNOWN SERVICE

SOIL EROSION AND SEDIMENT CONTROL LEGEND

	INLET TRAP
	SEDIMENT CONTROL FENCE
	SANDBAG SEDIMENT TRAP
	STABILISED CONSTRUCTION EXIT

CIVIL LEGEND

SW	PROPOSED STORMWATER LINE
USIL 25.30	INVERT LEVEL UPSTREAM
Ø375 RCP '2'	PIPE SIZE AND MATERIAL CLASS
13.30m @ 1.0%	PIPE GRADE
10m	PIPE LENGTH
DSIL 25.10	INVERT LEVEL DOWNSTREAM
	PROPOSED STORMWATER PIT
K&G	KERB AND GUTTER
KO	KERB ONLY
FK	FLUSH KERB
RW	RETAINING WALL
P56.20	FINISHED SURFACE LEVEL
EX56.20	EXISTING SURFACE LEVEL
TK56.20	TOP OF KERB LEVEL
TOW56.20	TOP OF WALL LEVEL
GD	PROPOSED GRATED DRAIN
	PROPOSED BUILDING ENVELOPE ABOVE
XXXXXXXXXXXXXX	SERVICES TO BE REMOVED OR DECOMMISIONED
B2	BOLLARD
DP	DOWNPIPE
OSD	EXISTING OSD AND TRUNK STORMWATER (NOT IN SCOPE)
	PAVEMENT TYPE 1 CONCRETE PAVEMENT

LOCALITY PLAN
NTS

DRAWING INDEX

DWG No.	DESCRIPTION
CV-DG-1001	COVER SHEET, DRAWING INDEX AND LEGEND
CV-DG-1002	NOTES
CV-DG-1005	DETAILS - SHEET 1
CV-DG-1006	DETAILS - SHEET 2
CV-DG-1007	DETAILS - SHEET 3
CV-DG-3001	CIVIL WORKS PLAN
CV-DG-3100	STORMWATER MANAGEMENT PLAN
CV-DG-5001	SOIL EROSION AND SEDIMENT CONTROL PLAN

DIAL BEFORE YOU DIG

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IMPORTANT: THE CONTRACTOR IS TO MAINTAIN A CURRENT SET OF "DIAL BEFORE YOU DIG" DRAWINGS ON SITE AT ALL TIMES.

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NOT FOR CONSTRUCTION

This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by:

Issue.	Description	Date	Drawn	Approved
B	ISSUE FOR DRAFT SSDA	13.11.20	DK	CR
A	ISSUE FOR SCHEMATIC DESIGN	07.08.20	DK	CR

A1 10m at full size 10cm

North

Key Plan

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Project
THE SUTHERLAND HOSPITAL OPERATING THEATRE UPGRADE PROJECT - MAIN BUILDING WORKS
KINGSWAY & KAREENA RD,
CARINGBAH NSW 2229

Drawing Title
COVER SHEET, DRAWING INDEX AND LEGEND

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Jul-20	N/A		

Designed	Project No.	Dwg No.	Issue
CR	SY191015	CV-DG-1001	B

Nov 12, 2020 - 6:03pm

EXISTING SERVICES AND FEATURES

1. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION, REMOVAL AND DISPOSAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA, AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
2. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
3. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN WRITTEN APPROVAL OF HIS PROGRAMME FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
4. EXISTING BUILDINGS, EXTERNAL STRUCTURES, AND TREES SHOWN ON THESE DRAWINGS ARE FEATURES EXISTING PRIOR TO ANY DEMOLITION WORKS.
5. 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 IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
6. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL OF SUPERINTENDENT FOR TIME OF INTERRUPTION.

SITEWORKS NOTES

1. ORIGIN OF LEVELS :- AUSTRALIAN HEIGHT DATUM (A.H.D.)
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
3. ALL WORK IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS, THE SPECIFICATIONS AND THE DIRECTIONS OF THE PRINCIPAL'S REPRESENTATIVE.
4. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE PRINCIPAL'S REPRESENTATIVE. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
5. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
7. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER COMMUNICATIONS OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
8. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH AN APPROVED NON-NATURAL GRANULAR MATERIAL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS.1289.5.1.1.
9. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
10. ON COMPLETION OF PIPE INSTALLATION ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS.
11. PROVIDE 12mm WIDE EXPANDING CORK JOINTS BETWEEN CONCRETE PAVEMENTS AND ALL BUILDINGS , WALLS, FOOTINGS, COLUMNS, KERBS, DISH DRAINS, GRATED DRAINS, BOLLARD FOOTINGS ETC
12. CONTRACTOR TO OBTAIN ALL AUTHORITY APPROVALS.
13. ALL BATTERS TO BE GRASSED LINED WITH MINIMUM 100 TOPSOIL AND APPROVED COUCH LAID AS TURF.
14. MAKE SMOOTH TRANSITION TO EXISTING SERVICES AND MAKE GOOD.
15. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY DIVERSION DRAINS AND MOUNDS 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. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
17. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
18. ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MIN OF 500mm PAST PAVING.
19. ON COMPLETION OF WORKS ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL INCLUDING, BUT NOT LIMITED TO, KERBS, FOOTPATHS, CONCRETE AREAS, GRASS AND LANDSCAPED AREAS.

STORMWATER NOTES

1. ALL 225 DIA. DRAINAGE PIPES AND LARGER SHALL BE CLASS "2" APPROVED SPIGOT AND SOCKET FRC OR RCP PIPES WITH RUBBER RING JOINTS. (U.N.O.) ALL DOWNPIPE DRAINAGE LINES SHALL BE SEWER GRADE uPVC WITH SOLVENT WELD JOINTS. (U.N.O.)
2. EQUIVALENT STRENGTH REINFORCED CONCRETE PIPES MAY BE USED.
3. ALL PIPE JUNCTIONS UP TO AND INCLUDING 450 DIA. AND TAPERS SHALL BE VIA PURPOSE MADE FITTINGS.
4. MINIMUM GRADE TO STORMWATER LINES TO BE 1%. (U.N.O.)
5. CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
6. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
7. PRECAST PITS SHALL NOT BE USED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE SUPERINTENDENT.
8. 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. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 75MM THICK SAND BED. IN ALL CASES BACKFILL THE TRENCH WITH SAND TO 200MM ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL COMPACTED IN 150MM LAYERS TO 98% STANDARD MAX. DRY DENSITY.
9. BEDDING SHALL BE (U.N.O.) TYPE H1, IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS.
10. WHERE STORMWATER LINES PASS UNDER FLOOR SLABS SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
11. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS UNSLOTTED UPVC SEWER GRADE PIPE SHALL BE USED.
12. PROVIDE 3.0M LENGTH OF 100 DIA. SUBSOIL DRAINAGE PIPE WRAPPED IN FABRIC SOCK, AT UPSTREAM END OF EACH PIT.

SUBGRADE PREPARATION

1. REMOVE ALL TOPSOIL, VEGETABLE MATTER AND RUBBLE.
2. PROOF ROLL NATURAL SURFACE.
3. REMOVE ANY SOFT AREAS.
4. PLACE APPROVED NON ORGANIC FILL WITH A MAXIMUM PARTICLE SIZE OF 75mm AND COMPACT IN 200mm MAX. THICK LAYERS. U.N.O.
5. COMPACTION IS TO BE CARRIED OUT BY ROLLING AT OPTIMUM MOISTURE CONTENT TO OBTAIN A DENSITY EQUIVALENT TO 98% OF MAXIMUM DRY DENSITY WHEN TESTED BY THE STANDARD COMPACTION TEST. No. E1.1 FROM A.S. 1289.5.1.1.
6. COMPACTION SHALL BE CARRIED OUT WITH A VIBRATING ROLLER WITH AT LEAST 10 TONNE STATIC WEIGHT.
7. TESTING OF THE SUBGRADE SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. REGISTERED LABORATORY.

COMPACTION NOTES

1. STRIP TOPSOIL TO EXPOSE NATURALLY OCCURRING MATERIAL AND STOCKPILE ON SITE FOR SELECTIVE RE-USE OR DISPOSE OFF-SITE AS DIRECTED BY THE SUPERINTENDENT.
2. WHERE FILLING IS REQUIRED TO ACHIEVE DESIGN SUBGRADE PROOF ROLL EXPOSED NATURAL SURFACE WITH A MINIMUM OF TEN PASSES OF A VIBRATING ROLLER (MINIMUM STATIC WEIGHT OF 10 TONNES) IN THE PRESENCE OF THE SUPERINTENDENT. REFER TO SPECIFICATION FOR DETAILS.
3. ALL SOFT, WET OR UNSUITABLE MATERIAL TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW.
4. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING :
   a. FREE FROM ORGANIC, PERISHABLE AND CONTAMINATED MATTER
   b. MAXIMUM PARTICLE SIZE 75MM
   c. PLASTICITY INDEX BETWEEN 2% AND 15%
5. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200MM THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS 1289.5.3.1 OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289.5.1.1:

LOCATION	STANDARD DRY DENSITY
UNDER BUILDING SLABS	98%
AREAS OF SERVICE TRENCHES	98%
EXTERNAL PAVED AREAS, ROADS AND CARPARKS	98%
LANDSCAPED AREAS	90%

6. THE CONTRACTOR SHALL PROGRAM THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED BY THE CONTRACTOR AT THEIR COST.
7. TESTING OF THE SUBGRADE SHALL BE CARRIED OUT BY AN APPROVED NATA REGISTERED LABORATORY AT THE CONTRACTORS EXPENSE.

CONCRETE NOTES

GENERAL

1. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH AS 3600 CURRENT EDITIONS WITH AMENDMENTS, AND THE ACSE CONCRETE SPECIFICATION EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. VERIFY ALL SETTING OUT DIMENSIONS WITH THE ARCHITECT AND/OR THE SURVEYOR.
3. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS.
4. IN CASE OF DOUBT - ASK.

DESIGN LOADS

1. N/A

CONCRETE

1. PLACE CONCRETE OF THE FOLLOWING CHARACTERISTIC COMPRESSIVE STRENGTH F"C AS DEFINED IN AS.3600 OR M.R. FORM 609. ADD WATER REDUCING ADMIXTURE EQUAL TO WRDA.

LOCATION	AS.3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
ALL KERB PITS ETC.	25	80	20
VEHICULAR PAVEMENTS	32	80	20

2. USE "A.C.S.E. SPECIFICATION TYPE A" CEMENT.
3. ALL CONCRETE SHALL BE SUBJECT TO PROJECT CONTROL SAMPLE AND TESTING TO AS.3600.
4. CONSOLIDATE BY VIBRATION.

REINFORCEMENT

1. FIX REINFORCEMENT AS SHOWN ON DRAWINGS. THE TYPE AND GRADE IS INDICATED BY A SYMBOL AS SHOWN BELOW. ON THE DRAWING N IS FOLLOWED BY A NUMERAL WHICH INDICATES THE SIZE IN MILLIMETRES. A MARK NUMERAL (IF USED) FOLLOWS THIS NUMERAL.
   N. HOT ROLLED DEFORMED BAR, GRADE 410Y
   S. HOT ROLLED DEFORMED BAR, GRADE 230S
   R. PLAIN ROUND BAR, GRADE 230R
   SL. HARD DRAWN WIRE FABRIC.
2. PROVIDE BAR SUPPORTS OR SPACERS TO GIVE THE FOLLOWING CONCRETE COVER TO ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

   FOOTINGS
   - 75 BOTTOM, 65 TOP AND SIDES SLABS
   - 20 TOP AND BOTTOM, 30 WHEN EXPOSED TO WEATHER.

   BEAMS
   - 50 BOTTOM AND SIDES (TO STIRRIPS) TOP COVER AS DETAILED COLUMNS
   - 40 TO TIES AND SPIRALS 50 WHEN EXPOSED TO WEATHER

   WALLS
   - 25 GENERALLY 30 WHEN CAST IN FORMS BUT LATER EXPOSED TO WEATHER OR GROUND.
   - 65 WHEN CAST DIRECTLY IN CONTACT WITH GROUND.

CURING

1. CURE ALL CONCRETE IN ACCORDANCE TO THE METHOD PROVIDED IN THE SPECIFICATION.

CONCRETE PAVEMENT JOINT NOTES

PJ1. CONCRETE MIX PARAMETERS ;
- MAXIMUM AGGREGATE SIZE 20mm
- FLEXURAL STRENGTH AT 28 DAYS = 3.5MPa
- FLEXURAL STRENGTH AT 90 DAYS = 3.85 MPa
- MAXIMUM WATER / CEMENT RATIO = 0.55
- MAXIMUM SHRINKAGE LIMIT = 650 MICRON STRAINS (AS 1012 Pt 13)
- MINIMUM CEMENT CONTENT = 300kg/m3
- CEMENT TO BE TYPE "A" (NORMAL CEMENT) TO AS.1315
- SLUMP = 80mm

PJ2. JOINT TO BE SAWN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING. IF AN UNPLANNED CRACK OCCURS THE CONTRACTOR SHALL REPLACE WHOLE SLABS EITHER SIDE OF THE UNPLANNED CRACK, UNLESS DIRECTED OTHERWISE.

PJ3.
   a. CONSTRUCT JOINTS AS DETAILED
   b. CONSTRUCTION JOINTS WHERE REQUIRED BUT NOT SHOWN, SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER AND CONSTRUCTED AT THE CONTRACTORS EXPENSE.
   c. ALL LONGITUDINAL CONSTRUCTION JOINTS SHALL BE FORMED AND INCLUDE DOWEL BARS AS SPECIFIED. ALL TRANSVERSE CONSTRUCTION JOINTS SHALL BE FORMED AND INCLUDE DOWEL BARS AS SPECIFIED.
   d. BOND BREAKER TO BE TWO (2) UNIFORM COATS OF BITUMEN EMULSION ALL OVER THE EXPOSED SURFACE AND ON END.

PJ4. DOWELS AND TIE BARS TO MEET STRENGTH REQUIREMENTS OF STRUCTURAL GRADE STEEL IN ACCORDANCE AS. 1302. DOWELS AND TIE BARS SHALL BE ;-
- STRAIGHT
- TO LENGTH SPECIFIED
- CLEAN AND FREE FROM MILL SCALE, RUST AND OIL.
- SAWN TO LENGTH NOT CROPPED.

PJ5. DIMENSIONS OF SEALANT RESERVOIR DEPENDANT ON THE SEALANT TYPE ADOPTED. ENGINEERS APPROVAL TO BE OBTAINED FOR SEALANT AND RESERVOIR DIMENSIONS AND DETAIL PROPOSED BY THE CONTRACTOR. REFER DETAIL "B" FOR TYPICAL ARRANGEMENT AND SEALANT.

PJ6. PRIOR TO THE PLACEMENT OF CONCRETE IN THE ADJACENT SLAB, SELF EXPANDING CORK FILLER SHALL BE ADHERED TO THE ALREADY CAST AND CLEANED CONCRETE FACE USING AN APPROVED WATERPROOF ADHESIVE. ADHESIVE SHALL BE LIBERALLY APPLIED TO THE FULL FACE OF THE CONCRETE SLAB TO BE COVERED BY THE FILLER, AND ON THE FULL FACE OF THE FILLER TO BE ADHERED.

PJ7. REFER TO COMPACTION NOTES FOR PREPARATION OF SUB-BASE AND SUB-GRADE.

PJ8. ALL WORK TO BE BROOM FINISH.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

E1. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT AT THE SUBJECT SITE.

E2. THE SITE SUPERINTENDENT WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THIS SPECIFICATION.

E3. ALL BUILDERS AND SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

CONSTRUCTION SEQUENCE

E4. THE SOIL EROSION POTENTIAL ON THIS SITE SHALL BE MINIMISED. HENCE WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :
   a. INSTALL SEDIMENT FENCES, TEMPORARY CONSTRUCTION EXIT AND SANDBAG KERB INLET SEDIMENT TRAP.
   b. UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

E5. DURING WINDY CONDITIONS, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

E6. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

FENCING

E7. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.

E8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.

E9. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.

E10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS

E11. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.

E12. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.

SITE INSPECTION & MAINTENANCE

E13. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AFTER RAINFALL EVENTS TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIR AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED.

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Issue.	Description	Date	Drawn	Approved
B	ISSUE FOR DRAFT SSDA	13.11.20	DK	CR
A	ISSUE FOR SCHEMATIC DESIGN	07.08.20	DK	CR

-1 0 1cm at full size 10cm

North

Key Plan

Client
NSW GOVERNMENT Health Infrastructure
LEVEL 8, 77 PACIFIC HWY
NORTH SYDNEY, NSW 2060
www.hinfra.health.nsw.gov.au

Architect
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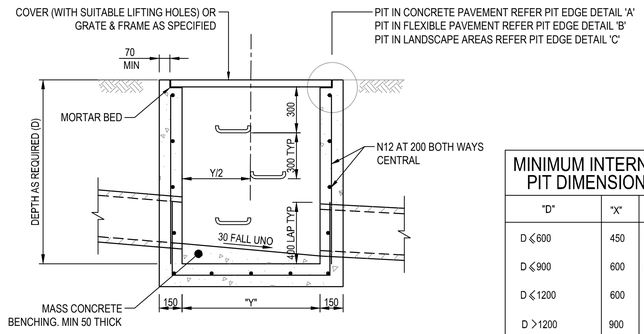
Project
THE SUTHERLAND HOSPITAL OPERATING THEATRE UPGRADE PROJECT - MAIN BUILDING WORKS
KINGSWAY & KAREENA RD,
CARINGBAH NSW 2229

Drawing Title
NOTES

Drawn	Date	Scale	A1	Q.A. Check	Date
DK	Jul-20	N/A			

Designed	Project No.	Dwg No.	Issue
CR	SY191015	CV-DG-1002	B

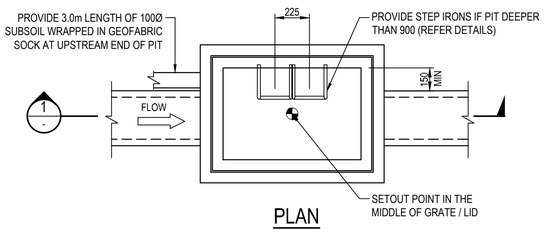
Nov 13, 2020 - 8:00pm



SECTION 1 / -
SCALE 1:20

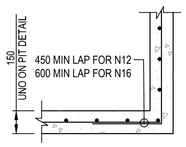
MINIMUM INTERNAL PIT DIMENSIONS		
"D"	"X"	"Y"
D ⩽ 600	450	450*
D ⩽ 900	600	600*
D ⩽ 1200	600	900
D > 1200	900	900

NOTE
PITS DENOTED * SHALL BE USED ONLY WHERE SPECIFIED IN DRAINAGE SCHEDULE OR ON PLAN.



PLAN

SURFACE INLET/JUNCTION PIT
SCALE 1:20



TYPICAL PIT CORNER DETAIL
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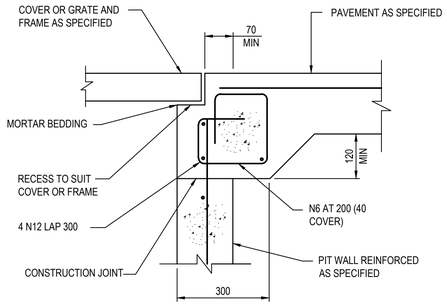

PIT EDGE DETAIL "A"
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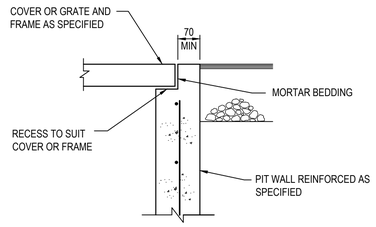

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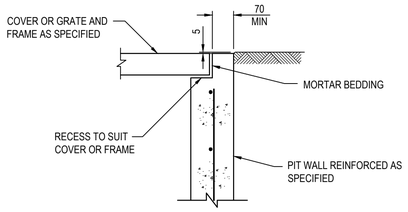

PIT EDGE DETAIL "C"
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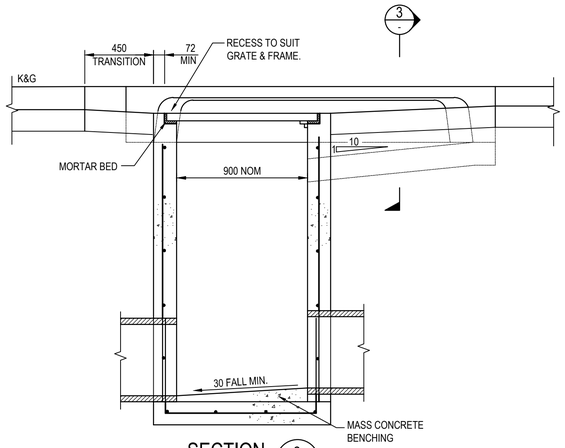

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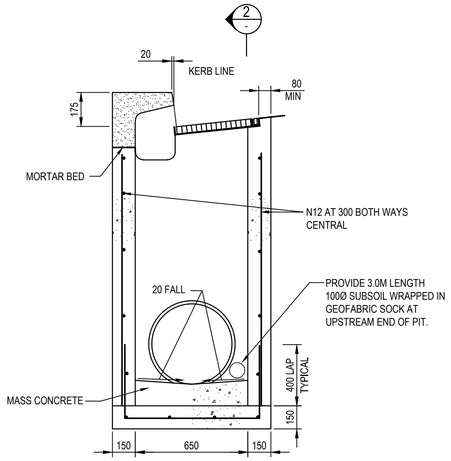

SECTION 1 / -
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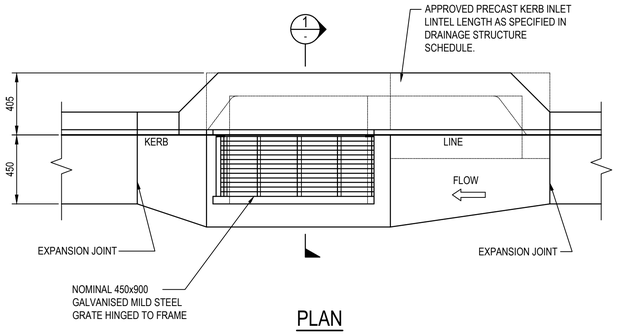
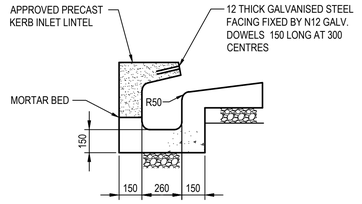


PLAN

KERB INLET PIT TYPE "C"
SCALE 1:20



SECTION 3 / -
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B	ISSUE FOR DRAFT SSDA	13.11.20	DK	CR
A	ISSUE FOR SCHEMATIC DESIGN	07.08.20	DK	CR

1:m at full size 10cm

North

Key Plan

Client
NSW GOVERNMENT | Health Infrastructure
LEVEL 8, 77 PACIFIC HWY
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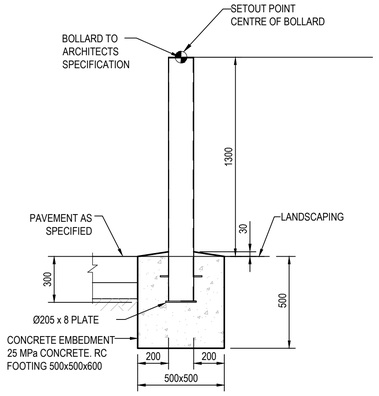
Drawing Title
DETAILS
SHEET 1

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Jul-20	AS SHOWN		
Designed	Project No.		Dwg No.	Issue
CR	SY191015		CV-DG-1005	B

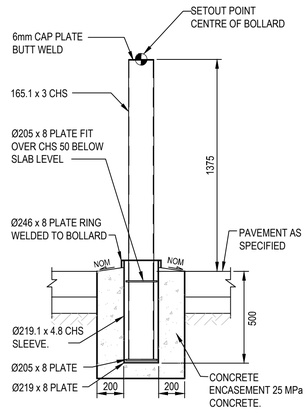
Nov 13, 2020 - 6:04pm



BOLLARD (B1)

NTS

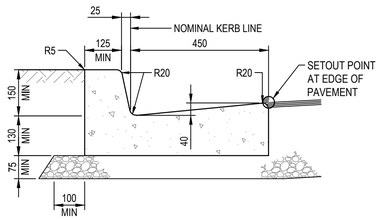
NOTE : ALL ELEMENTS TO BE HOT DIP GALVANIZED.
REFER TO CIVIL DRAWINGS FOR LOCATION. CONTRACTOR SHALL CO-ORDINATE BOLLARDS WITH SERVICES CONTRACTOR TO ENSURE NO INTERFERENCE WITH PROPOSED OR EXISTING SERVICES OCCUR.



REMOVEABLE STEEL BOLLARD (B2)

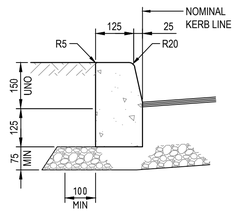
NTS

NOTE : ALL ELEMENTS TO BE GALVANISED.
CONTRACTOR SHALL CO-ORDINATE BOLLARDS WITH SERVICES CONTRACTOR TO ENSURE NO INTERFERENCE WITH PROPOSED OR EXISTING SERVICES OCCUR.



KERB & GUTTER

SCALE 1:10
SHOWN AS 'K&G'



KERB ONLY

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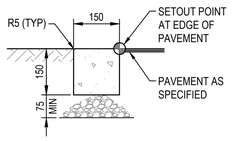

FLUSH KERB TYPE 1

SCALE 1:10
SHOWN AS "FK"

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Project
THE SUTHERLAND HOSPITAL OPERATING THEATRE UPGRADE PROJECT - MAIN BUILDING WORKS
KINGSWAY & KAREENA RD,
CARINGBAH NSW 2229

Drawing Title
DETAILS
SHEET 2

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Jul-20	AS SHOWN		
Designed	Project No.	Dwg No.	Issue	
CR	SY191015	CV-DG-1006	B	

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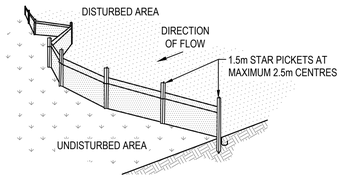
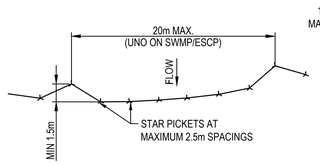
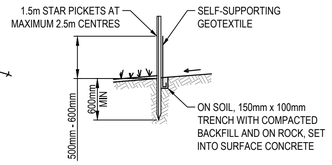
Nov 13, 2020 - 6:03pm





PLAN



SECTION DETAIL

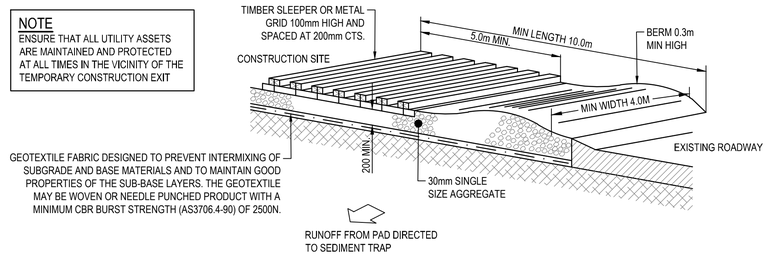
CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 2.5 METRES APART (MAX). ENSURE STAR PICKETS ARE FITTED WITH SAFETY CAPS.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

SEDIMENT CONTROL FENCE

N.T.S.

NOTE
ENSURE THAT ALL UTILITY ASSETS ARE MAINTAINED AND PROTECTED AT ALL TIMES IN THE VICINITY OF THE TEMPORARY CONSTRUCTION EXIT



CONSTRUCTION NOTES

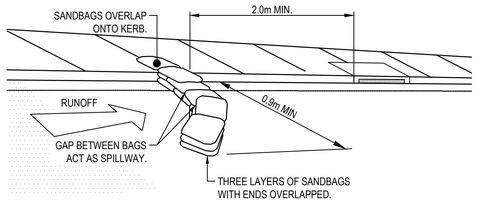
1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING 30mm SINGLE SIZE AGGREGATE.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP WHERE THE SEDIMENT IS COLLECTED AND REMOVED.

MAINTENANCE NOTES

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT OFF THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OFF THE CONSTRUCTION SITE MUST BE REMOVED IMMEDIATELY.

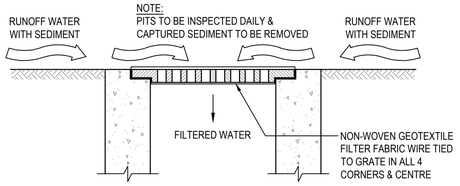
TEMPORARY STABILISED CONSTRUCTION EXIT

N.T.S.



SANDBAG KERB INLET SEDIMENT TRAP

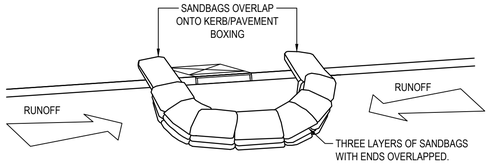
N.T.S.



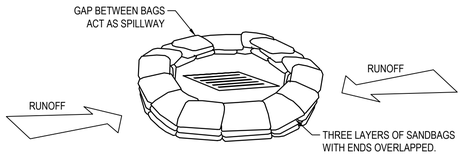
INLET TRAP

N.T.S.

NOTE
TO BE USED IN PAVED AREAS WHERE TRAFFIC ACCESS IS REQUIRED



SANDBAG SEDIMENT TRAP - AT KERB SAG PIT



SANDBAG SEDIMENT TRAP - AT OTHER THAN KERB SAG PIT

SANDBAG SEDIMENT TRAP DETAILS

NTS

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Issue.	Description	Date	Drawn	Approved
B	ISSUE FOR DRAFT SSDA	13.11.20	DK	CR
A	ISSUE FOR SCHEMATIC DESIGN	07.08.20	DK	CR

1m at full size — 10cm

North

Key Plan

Client
NSW GOVERNMENT Health Infrastructure
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Architect
HDR
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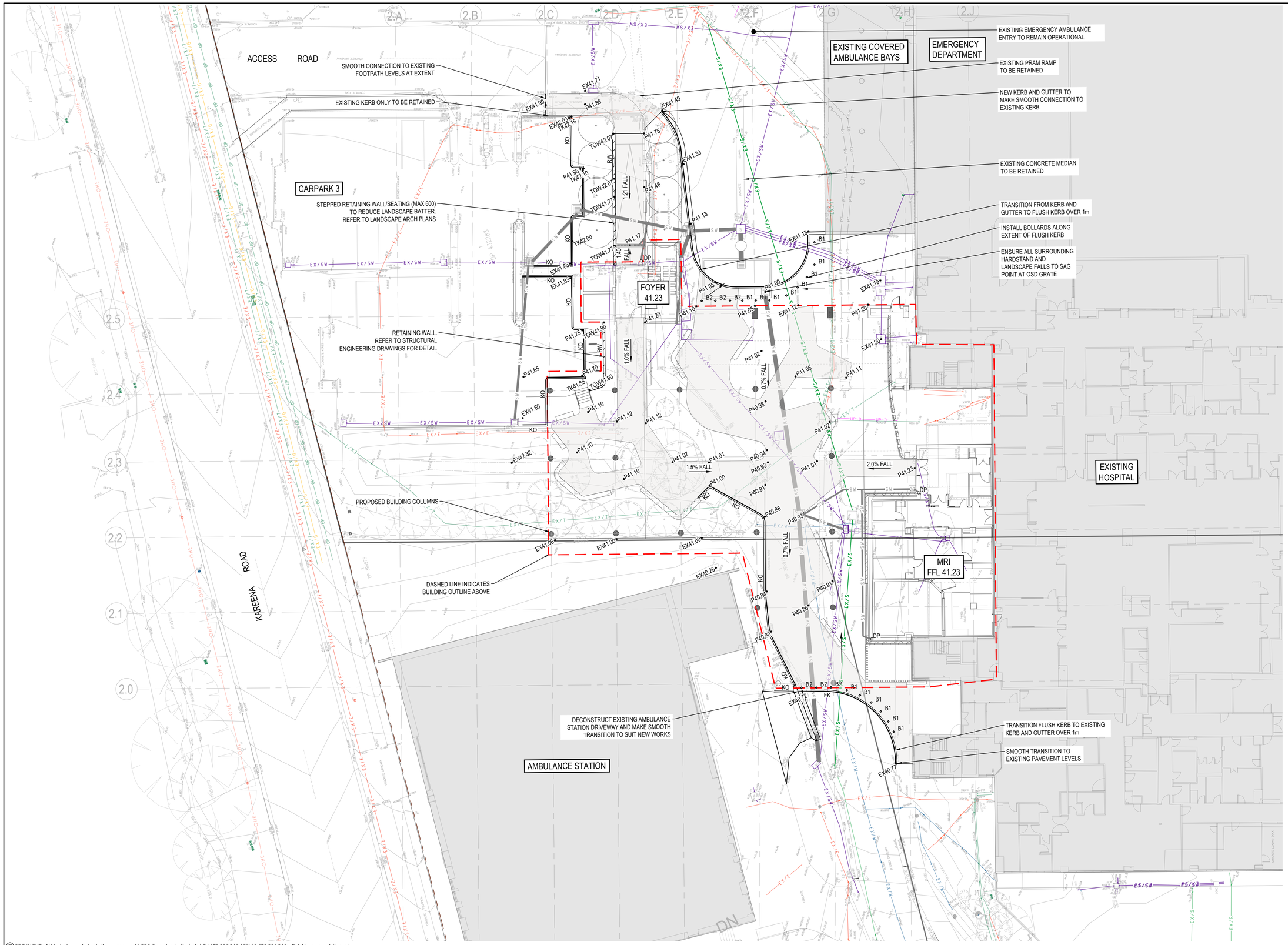
Drawing Title
DETAILS
SHEET 3

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Jul-20	AS SHOWN		

Designed	Project No.	Dwg No.	Issue
CR	SY191015	CV-DG-1007	B

Nov 12, 2020 - 6:03pm



NOTES:

1. REFER TO DRAWING CV-DG-3100 STORMWATER MANAGEMENT PLAN FOR STORMWATER WORKS.
2. EXISTING SERVICES HAVE BEEN PLOTTED FORM SUPPLIED DATA:
   - REFER TO JOB No. 200599 PLAN No 0003, COMPLETED BY RICHARD ABBOTT REGISTERED SURVEYOR N° 9057, DATED 08/05/2020.
   - REFER TO "MQSPSYD100-NHI-SH-PL-SERV-0001" COMPLETED BY MACQUARIE SURVEY Pty Ltd, DATED 07/10/20
3. ON-SITE DETENTION AND TRUNK DRAINAGE LINE TO BE CONSTRUCTED AS PART OF INFRASTRUCTURE UPGRADE WORKS AS APPROVED UNDER REF.
4. REFER TO LANDSCAPE ARCHITECTS DRAWINGS FOR LANDSCAPE FINISHES AND DETAILS.

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Issue.	Description	Date	Drawn	Approved
C	ISSUE FOR DRAFT SSDA	13.11.20	DK	CR
B	ISSUE FOR SCHEMATIC DESIGN	26.08.20	DK	CR
A	ISSUE FOR SCHEMATIC DESIGN	07.08.20	DK	CR

A1 0 1cm at full size 10cm

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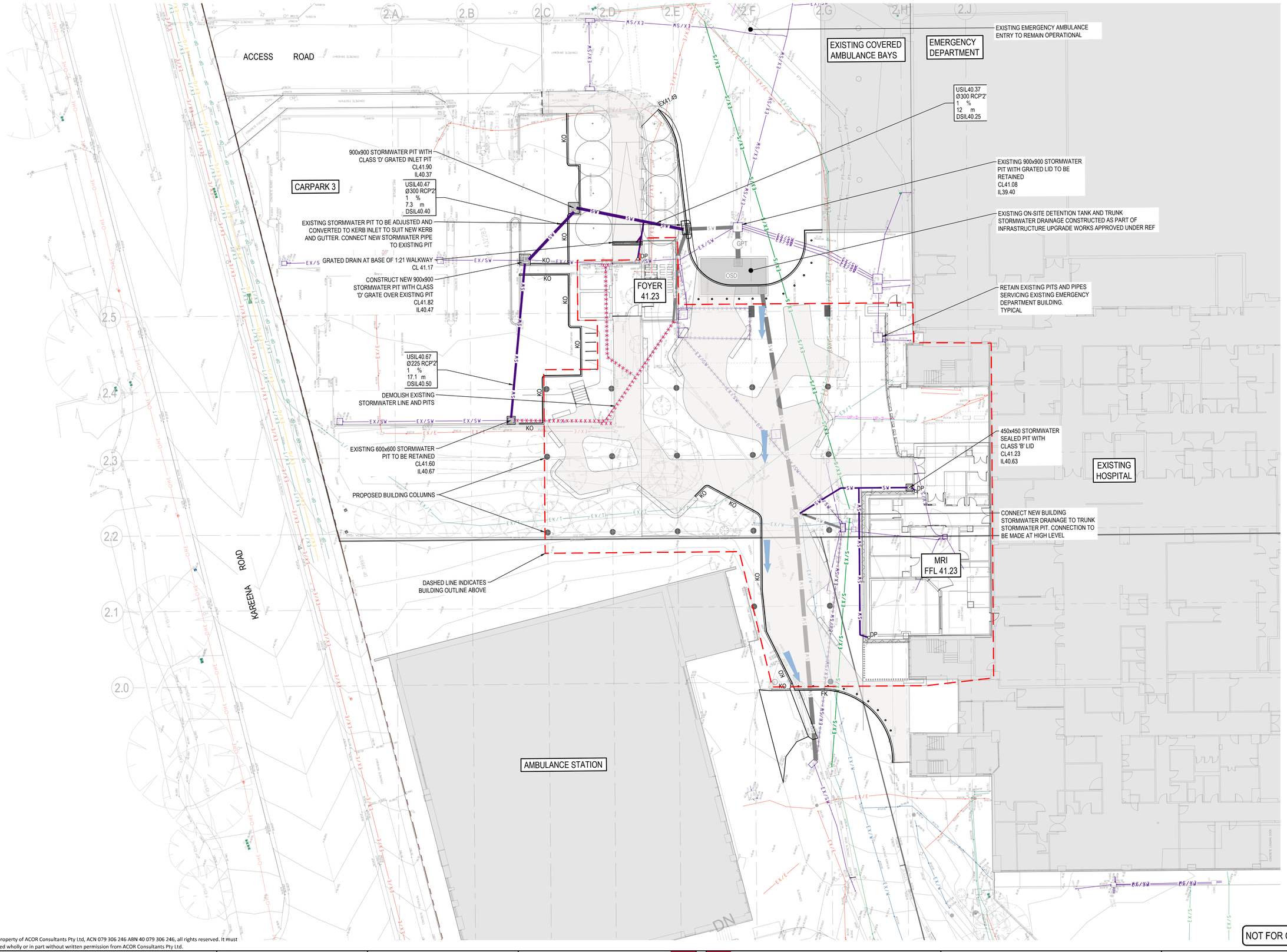
Drawing Title
CIVIL WORKS PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Jul-20	1:200		
Designed	Project No.		Dwg No.	Issue
CR	SY191015		CV-DG-3001	C

Nov 13, 2020 - 6:06pm



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1:1 0 1cm at full size 10cm

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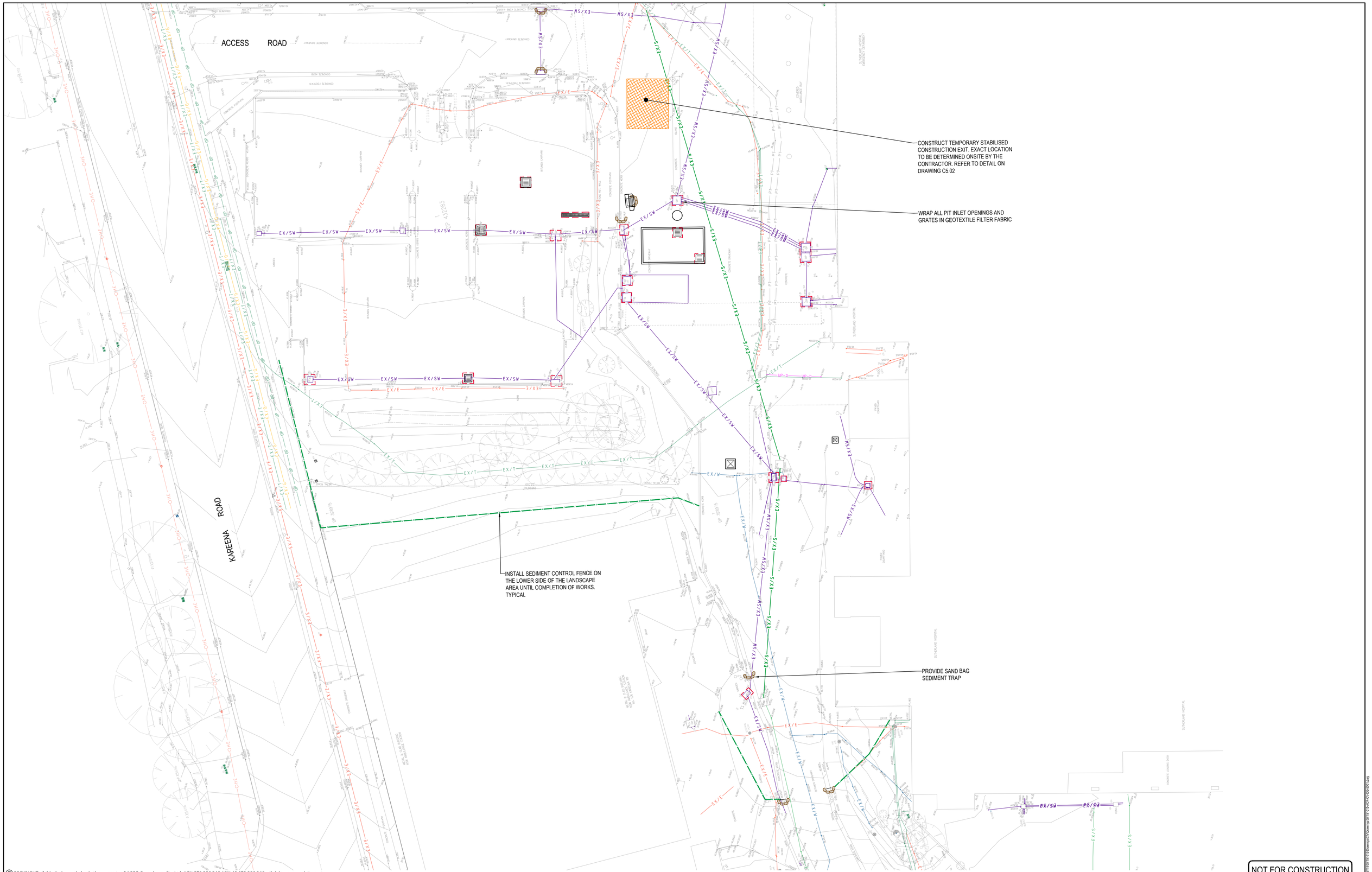
Drawing Title
STORMWATER MANAGENENT PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Jul-20	1:200		
Designed	Project No.	Dwg No.	Issue	
CR	SY191015	CV-DG-3100	A	

Nov 13, 2020 - 8:06pm



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Drawing Title
SOIL EROSION AND SEDIMENT CONTROL PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Jul-20	1:200		
Designed	Project No.	Dwg No.	Issue	
CR	SY191015	CV-DG-5001	B	

Nov 13, 2020 - 4:07pm