#### Kane Construction

#### Kellyville Park PNRL Eels - Centre of Excellence and Community Sports Centre

Construction Soil and Water Management Plan

September 2023 Confidential



Kellyville Park PNRL Eels (Source: WSP Flood Report)



## Question today Imagine tomorrow Create for the future

Construction Soil and Water Management Plan
Kellyville Park PNRL Eels - Centre of Excellence and Community Sports Centre

#### Kane Construction

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| Rev | Date       | Details        |
|-----|------------|----------------|
| A   | 13/09/2023 | Issue for Kane |

|              | Name            | Date       | Signature |
|--------------|-----------------|------------|-----------|
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| Approved by: | Aleks Vasiloski | 2023/09/14 |           |

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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#### 1 Executive Summary

#### 1.1 Introduction

WSP Australia Pty Ltd have been engaged by Kane Construction to produce a Construction Soil and Water Management Plan (CSWMP) for the Certifier and Council assessment and approval of the proposed development at Kellyville Park PNRL Eels - Centre of Excellence and Community Sports Centre, Sydney NSW.

#### 1.2 Purpose of the report

The purpose of the report is to define and describe Erosion and Sediment controls which need to be implemented onsite to satisfy SSDA consent and Hills Shire Council Erosion and Sediment control measures and specifically address the following:

- a) describe all erosion and sediment controls to be implemented during construction
- b) provide a plan of how all construction works will be managed in a wet-weather event (i.e. storage of equipment, stabilisation of the Site)
- c) detail all off-site flows from the Site
- d) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 1-year ARI, 1 in 5-year ARI and 1 in 100-year ARI.

#### 1.3 Related Report and documents

The following reports and documents are relevant to this proposed development:

- WSP Civil Drawings Issue for Approval CV-336 and CV-337 provided in Appendix A.
- Kellyville Park PNRL Eels Centre of Excellence and Community Sports Centre Integrated Water Management Plan by WSP Rev E dated 28 July 2022

#### 1.4 The Site

Kellyville Park is situated at 8 Memorial Avenue in Kellyville within The Hills Shire Council Local Government Area. The site borders Memorial Avenue to the north, Stone Mason Drive to the east, residential developments to the South and Strangers Creek to the West. Access to the site is via Memorial Avenue and Stone Mason Drive.

The current developed state of this site mostly consists of various sporting fields (some currently in construction) with surrounding access roads and carparks. A temporary construction compound currently occupies the north-eastern corner of the site.

The works to be completed as part of this proposed development are consigned to the north-eastern section of the site. as shown below in Figure 1.

Page 1



Figure 1 - Locality and Extent of Works Plan (Source: Nearmap, 06/10/2021 True North)

#### 1.5 Proposed development

The proposed development will provide state of the art facilities which enable physical recreation opportunities in conjunction with improved facilities for staff, players, and existing users of the site. The proposed development will be integrated with the existing recreational landscape of the site and complement the upgrades to the existing playing fields being undertaken by Council. The proposed development is defined as a Recreation facility (major), and includes the following components:

- Construction of high-performance Centre of Excellence in the northeast of the site adjacent to Training Field 2:
  - Elite level gymnasium.
  - Medical and rehabilitation facilities.
  - Aquatic recovery and rehabilitation pools.
  - Lecture theatre and meeting rooms.
  - Player education and study areas.
  - Administrative offices for the Paramatta Eels.

- New female facilities including a dedicated female change room, cubicle toilets and shower.
- Balcony and terrace area.
- End of Trip Facilities and bicycle parking.
- Refuse Area.
- Construction of a Community Facility, including a grandstand with approximately 1,500 seats in the centre of the site adjacent to the Main Playing Field 3:
  - Unisex changerooms and amenities.
  - Referee changeroom and amenities.
  - First Aid/Medical room.
  - Community gymnasium.
  - Café/kiosk.
  - Concourse terrace.
  - Multipurpose community function room with kitchen and amenities.
  - Refuse Area.
  - Bicycle parking.
  - Solar arrays will be included on the roof of both the Centre of Excellence and Community Facility.
  - Additional 40 car parking spaces for the proposed facility to operate in conjunction with existing at grade car parking already constructed by Council.
  - Additional landscaping throughout the development footprints.
  - Removal of a small number of trees internal to the site, however noting perimeter trees will be retained where not affected by the proposed building footprints.
  - Hours of operation for the Centre of Excellence and Community Facility are 5:00am to 12:00am, however the following key times are likely:
    - Centre of Excellence: 7.00am 7.00pm.
    - Community Facility: 7.00am 10.00pm.

#### 2 Erosion and Sediment Control

Soil and water management for the project will be implemented during construction in accordance with the Landcom "Blue Book". Refer to Appendix A for Sediment and Erosion Control Plan and typical details.

To prevent the infiltration of litter, sediments and other pollutants from entering the stormwater system or neighbouring properties, erosion and sediment control measures will be implemented during the construction phase. As drainage is constructed on site, any inlets into the system as well as any existing Council drainage infrastructure downstream of the site shall be protected. The following measures are compatible with a development of this nature and may be implemented onsite during construction works to protect downstream properties and stormwater infrastructure:

- Sediment Basins Sediment basin is sized and proposed onsite to treat the disturbed catchment. Basin have been sized according to Landcom's Blue Book. Refer to sediment erosion drawing depicted in Appendix A for calculations.
- Silt Fences are temporary, permeable barriers of geo-textile installed in a trench and supported by star pickets
  or wooden posts. This provides treatment from sediment as the velocity of the runoff is sufficiently slowed
  down whereby it no longer has the energy to hold particles in suspension. Filtration is also provided as runoff
  passes through the silt fence.
- Inlet filters / sediment traps are permeable sacks (geo-textile, synthetic netting or wire) pre-filled or filled by
  the user with materials such as coarse sand or aggregate up to 50mm used most commonly to protect kerb inlets.
   Treatment from sediment is similar to that of silt fences.
- Rumble Grids (shaker pads) remove sediment stuck to the tyres and chassis of vehicles through vibration.
   Many prefabricated rumble grids can open the tread on tyres to increase the amount of sediment removed from them. Rumble grids should be located at all vehicular access points to the site.
- Stockpile areas with sediment fence around it during construction. The stockpile must be located out of water flow paths (and be protected by earth banks/drains as required).

Prior to the commencement of works, the contractor is to submit a construction management plan to the Private Certification Authority (PCA) for approval. The contractor is responsible for maintaining temporary treatment infrastructure throughout the construction period in accordance with Landcom Blue Book. The drawings including sediment erosion plans are endorsed by Hills Shire Council and the stamp will be removed in the construction set drawings

#### 3 Wet Weather Management

When a wet weather event is immanent Kane will carry out the following;

- Check the condition of silt fencing and make good as required
- Check the condition of sediment controls at storm water pits and inlets and make good as required.
- Ensure stockpiles and batters are in good condition and localised sediment controls are in place
- Create temporary swales where possible to direct water away from work areas

#### During a wet weather event;

- Vehicle movements are minimised and vehicles parked on flat/level ground
- Sediment and silt controls are monitored
- Workers relocated to undercover areas (if possible)

#### Following a wet weather event

- Check the condition of silt fencing and make good as required
- Check the condition of sediment controls at storm water pits and inlets and make good as required.
- Ensure stockpiles and batters are in good condition and make good as required
- Work areas are de-watered. Water is tested and treated, if required, before discharge into storm water system
- Worker access routes checked and made good
- Vehicle access routes checked and made good

Equipment not to be placed in the overland flow path as per the WSP Flood Impact Assessment dated July 2022 Overland flow path must remain unobstructed at all times during construction. Refer to Figure 2 extracted from the



flooding report: Figure 2 - Localised overland flow depth in 5% AEP event

(Source: WSP Flood Impact Assessment July 2022)

#### 4 SSDA Condition

The following condition mentioned in the SSD 24452965 needs to be satisfied prior to commencement of any work onsite: CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN

C17. Prior to the commencement of any earthwork or construction, the Applicant must submit to the satisfaction of the Certifier a Construction Soil and Water Management Plan (CSWMP) which must be prepared by a suitably qualified expert, in consultation with Council and address, but not be limited to the following:

- (a) describe all erosion and sediment controls to be implemented during constructionWSP response: Refer to Section 2 of this report and the Erosion and Sediment Control plans prepared by WSP Attached as shown in Appendix A.
- (b) provide a plan of how all construction works will be managed in a wet-weather event (i.e. storage of equipment, stabilisation of the Site).

WSP response: Refer to Section 3 of this report which is to be managed by the Contractor/s.

- (c) detail all off-site flows from the Site
  - WSP response: All flows from the disturbed catchment need to be discharged (pumped out) after allowing adequate time for settling of the basin particle time.
- (d) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 1-year ARI, 1 in 5-year ARI and 1 in 100-year ARI.
  - WSP response: All runoff from the site during storm events up to and including 10% AEP (10Yeear ARI) will by captured by the sediment basin and will be detained onsite. For the major storm event, an emergency overflow spillway is designed to pass the peak flows during the storm event. Refer to CV-337 TYPE D & F Sedimentation Basin Detail as depicted in Appendix A.

#### 5 Conclusion

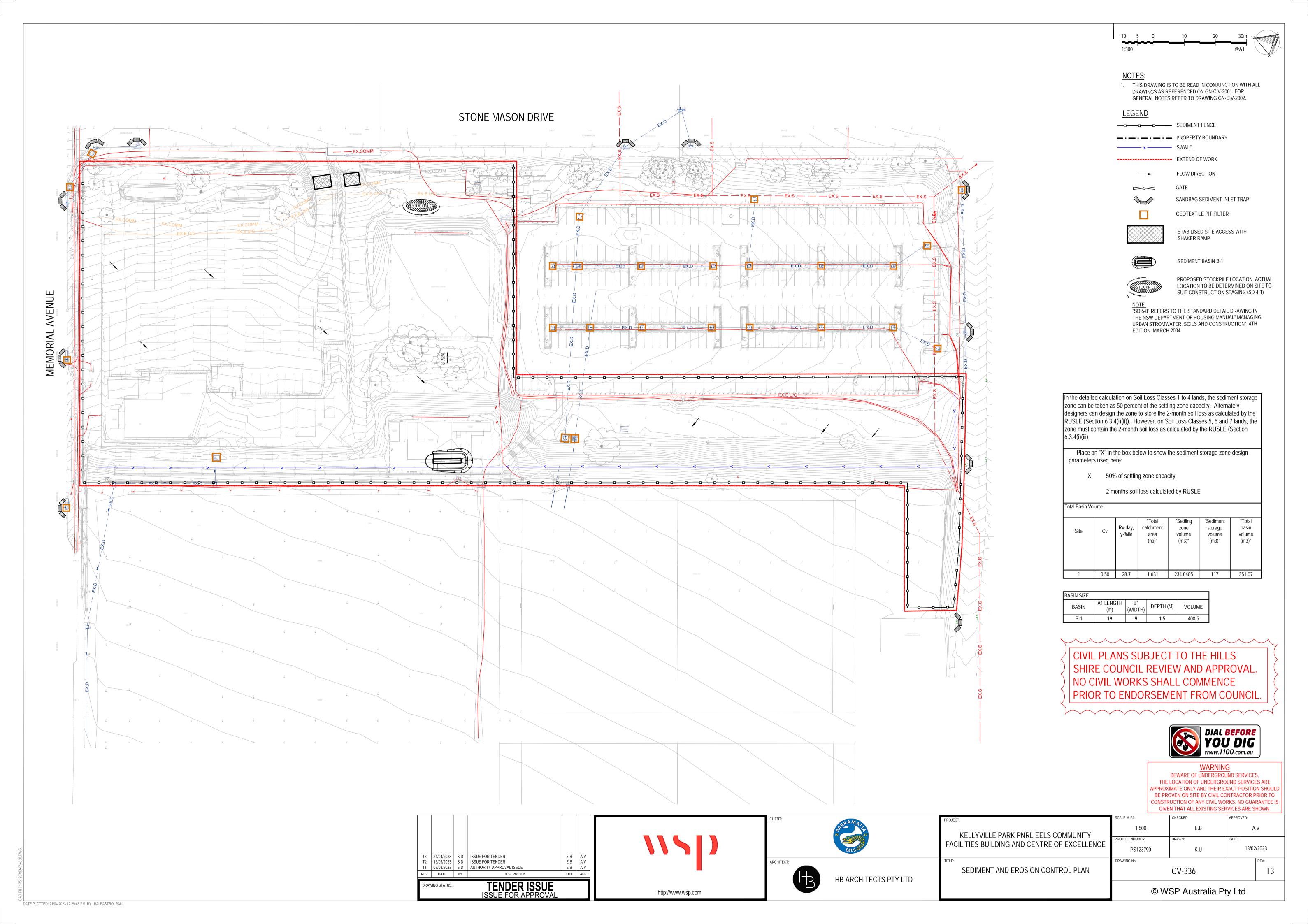
The Erosion and Sediment Control measures outlined in this report for the proposed development ensure that the requirements of the SSD (24452965) Condition 17 are achieved.

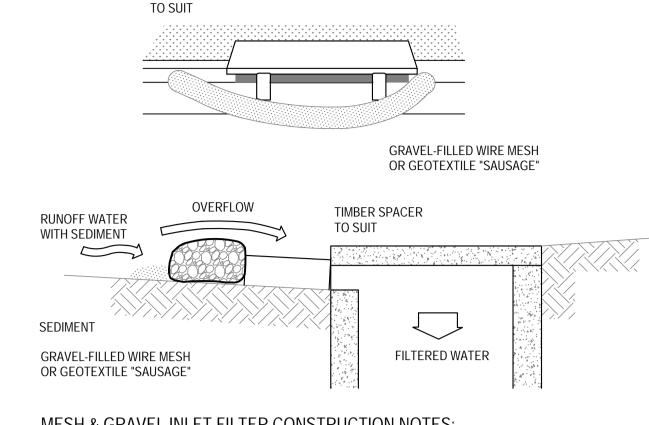
Throughout construction site conditions and construction methodologies can change. Therefore, it is recommended that soil and water management measures are reviewed and amended if necessary, to ensure that the development has minimal to no impact on the local environment.

## Appendix A

**Erosion and Sediment Control Plans** 







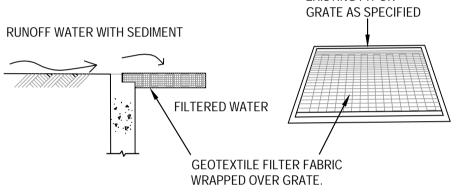
KERB-SIDE INLET

#### MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

TIMBER SPACER

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL. 2. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE. 3. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS. 4. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER. 5. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY CAN FIRMLY ABUT EACH OTHER AND SEDIMENT / LADEN WATERS CANNOT PASS BETWEEN.

#### MESH & GRAVEL INLET FILTER



#### **GENERAL INSTRUCTIONS**

- THIS SEDIMENT AND EROSION CONTROL WORKS FOR THE SITE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION, 4TH EDITION (2004)" BY LANDCOM.
- AS REQUIRED BY CITY OF PARRAMATTA COUNCIL SEDIMENT CONTROL MEASURES WILL BE REQUIRED DURING THE CONSTRUCTION OF ALL DEVELOPMENTS/BUILDING WORKS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY THAT THE WORKS ARE CARRIED OUT IN ACCORDANCE WITH THE SEDIMENT AND EROSION CONTROL PLAN AND COUNCIL'S
- THE CONTRACTOR SHALL ENSURE THAT ALL SUBCONTRACTORS ARE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.
- THE NON-DISTURBED PORTION OF THE CATCHMENT OUTSIDE OF OPERATING AREA IS TO BYPASS THE BASINS BY MEANS OF LINED CATCH DRAINS.
- WHERE PRACTICABLE, THE SOIL EROSION HAZARD SHALL BE KEPT AS LOW AS POSSIBLE. LIMITATIONS TO ACCESS ARE TO BE VIA CHAMBERS COURT UNLESS OTHERWISE APPROVED BY COUNCIL.
- ENSURE THAT ALL DRAINS ARE OPERATING EFFECTIVELY AND SHALL MAKE ANY NECESSARY REPAIRS. REMOVE TRAPPED SEDIMENT WHERE THE CAPACITY OF THE TRAPPING DEVICE FALLS BELOW 60%.
- CONSTRUCT ADDITIONAL EROSION OR SEDIMENT CONTROL WORKS AS MAY BE APPROPRIATE TO ENSURE THE PROTECTION OF DOWNSLOPE LANDS AND WATERWAYS.
- MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION AT ALL TIMES UNTIL THE SITE IS
- REMOVE TEMPORARY SOIL CONSERVATION STRUCTURES AS THE LAST ACTIVITY IN THE REHABILITATION PROGRAM.

1. THIS DEVICE IS TO BE LOCATED AT ALL EXITS FROM CONSTRUCTION SITE. 2. THIS DEVICE IS TO BE REGULARLY CLEANED OF DEPOSITED MATERIAL SO AS TO MAINTAIN A 50mm DEEP SPACE BETWEEN PLANKS.

STABILISED SITE ACCESS WITH SHAKER RAMP

- 3. ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.
- 4. ALTERNATIVELY, THREE(3) PRECAST CONCRETE CATTLE GRIDS (AS MANUFACTURED BY "HUMES CONCRETE MAY BE USED. 1, 2 & 3 ABOVE ALSO APPLY.

# EXISTING PIT OR

CONSTRUCTION

DGB 20 ROAD BASE OR

30mm AGGREGATE. 150mm

THICK MIN TO BE PLACED

OVER GEOTEXTILE FABRIC

RUNOFF DIRECTED TO

INTERMIXING OF SUB GRADE AND BASE

PROPERTIES OF THE SUB-BASE LAYERS.

MATERIALS AND TO MAINTAIN GOOD

SEDIMENT TRAP/ FENCE

GEOTEXTILE FABRIC DESIGNED TO PREVENT

#### GEOTEXTILE PIT FILTER

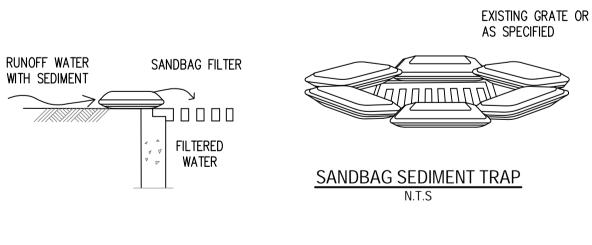
#### **CONSTRUCTION SEQUENCE**

WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:

- INSTALL SEDIMENT FENCING AND CUT DRAINS TO MEET THE REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLAN. WASTE COLLECTION BINS SHALL BE INSTALLED ADJACENT TO SITE OFFICE.
- CONSTRUCT STABILISED SITE ACCESS IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
- REDIRECT CLEAN WATER AROUND THE CONSTRUCTION SITE.
- INSTALL SEDIMENT CONTROL PROTECTION MEASURES AT ALL NATURAL AND MAN-MADE DRAINAGE STRUCTURES. MAINTAIN UNTIL ALL THE DISTURBED AREAS ARE STABILISED.
- CLEAR AND STRIP THE WORK AREAS. MINIMISE THE DAMAGE TO THE GRASS AND LOW GROUND COVER OF NON-DISTURBED AREAS.
- 6. ANY DISTURBED AREAS, OTHER THAN BUILDING PAD AREAS, SHALL IMMEDIATELY BE COVERED WITH SITE TOPSOIL WITHIN 7 DAYS OF CLEARING. BUILDING PAD AREAS SHALL BE COVERED WITH BITUMEN EMULSION AS SPECIFIED.

SANDBAG SEDIMENT INLET TRAP

7. APPLY PERMANENT STABILISATION TO SITE (LANDSCAPING).



STOCKPILE CONSTRUCTION NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING

3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2

4. WHERE THEY ARE TO BE PLACED FOR MORE THAN 10 DAYS, STABILISE FOLLOWING

THE APPROVED E.S.C.P. OR S.W.M.P. TO REDUCE THE C-FACTOR TO LESS THAN 0.10.

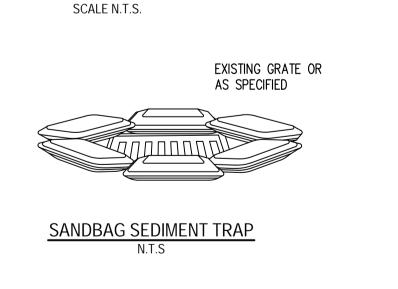
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND

VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.

2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.

STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

**STOCKPILES** 



#### SELF-SUPPORTING GEOTEXTILE DIRECTION OF FLOW ON SOIL, 150mm x 100mm TRENCH WITH COMPACTED BACKFILL AND ON ROCK, SET INTO SURFACE CONCRETE **SECTION DETAIL**

#### SEDIMENT FENCE CONSTRUCTION NOTES:

**EXISTING ROADWAY** 

**EARTH BANK** 

METRES IN HEIGHT.

GEOTEXTILE MAY BE A WOVEN OR NEEDLE

PUNCHED PRODUCT WITH A MINIMUM CBR

BURST STRENGTH (AS3706.4-90) OF 2500N

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.

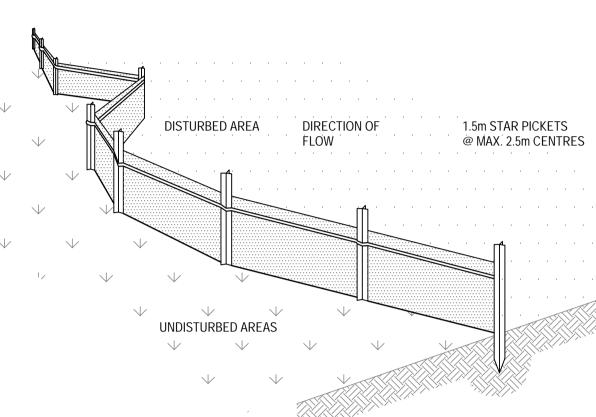
1.5m STAR PICKETS

@ MAX. 2.5m CENTRES

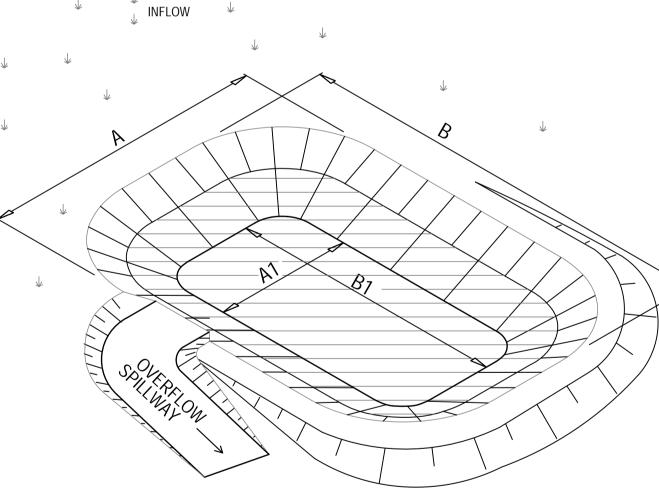
- CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
- 3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND @ 2.5m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
- 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
- JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP. 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

STABILISE STOCKPILE SURFACE

SEDIMENT FENCE



PLAN



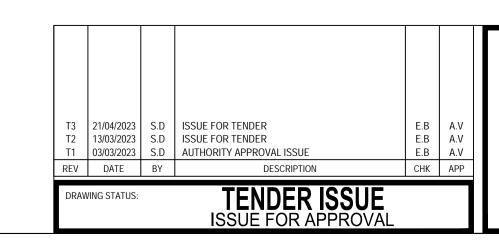
INFLOW SEDIMENT SETTLING ZONE

SEDIMENT STORAGE ZONE

TYPE 'D' & 'F' SEDIMENTATION BASIN

TYPICAL SECTION

PERSPECTIVE VIEW



http://www.wsp.com



HB ARCHITECTS PTY LTD

ARCHITECT:

KELLYVILLE PARK PNRL EELS COMMUNITY FACILITIES BUILDING AND CENTRE OF EXCELLENCE

RAWING No SEDIMENT AND EROSION CONTROL DETAILS

E.B  $\mathsf{A.V}$ N.T.S PROJECT NUMBER: 13/02/2023 PS123790 CV-337 T3 © WSP Australia Pty Ltd

1. FOR GENERAL NOTES REFER TO DRAWING GN-CIV-2002. 2. THE SITE FEATURE AND LEVEL SURVEY WAS PROVIDED BY PROJECT SURVEYORS AND REFLECTS THE EXISTING

NO. B04616-DETAIL, LEVELS SHOWN ARE TO A.H.D

PROJECT SURVEYORS ON (02) 9056 1900.

THAT ALL EXISTING SERVICES ARE SHOWN. 4. ALL EXISTING DRAINAGE CHANNELS ARE LIVE. THE

TEMPORARY RE ROUTING ETC.

FOR OSD TANK.

BE REQUIRED.

SSM90891 WITH A STATED VALUE OF RL101.912. FOR FURTHER INFORMATION RELATING TO SURVEY CONTACT

WARNING: THE LOCATION OF UNDERGROUND SERVICES

SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN

CONTRACTOR MUST MAKE ADEQUATE PROVISIONS TO

BULK EARTHWORK VOLUMES ARE CALCULATED FROM THE

STRIPPING LEVEL. REFER TO PAVEMENT LAYOUR WORKS

DETAILS. EARTHWORKS VOLUMES INCLUDE EXCAVATION

POINTS ARE TO BE VERIFIED ON SITE AS NO SURVEY IS

REFER TO THE TRAFFIC ENGINEERING REPORT AND

PROVIDED. CONSEQUENTLY, ADDITIONAL PIPEWORK MAY

DRAWINGS FOR ANY SPECIFICATION AND REQUIREMENTS.

BEWARE OF UNDERGROUND SERVICES.

THE LOCATION OF UNDERGROUND SERVICES ARE

APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD

BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO

CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS

GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

UNDERSIDE OF THE PAVEMENT LAYER (BEL) TO THE

6. EXISTING STORMWATER AND SEWER CONNECTION

MAINTAIN THESE DURING THE WORKS INCLUDING

ARE APPROXIMATE ONLY AND THE EXACT POSITION

CONDITIONS CURRENT TO OCTOBER 2019. CAD DRAWING

DATE PLOTTED: 21/04/2023 12:30:13 PM BY : BALBASTRO, RAUL DATE PLOTTED: 21/04/2023 12:30:13 PM BY : BALBASTRO, RAUL

