

# CATHERINE FIELDS PRIMARY SCHOOL

## NEW HIGH QUALITY CLASSROOMS - DETAILED DESIGN CIVIL DOCUMENTATION



LOCALITY PLAN

SOURCE : NEARMAP.COM.AU (©2019)

### CIVIL DRAWING SCHEDULE

| DRG No.                 | DRAWING TITLE                                       |
|-------------------------|-----------------------------------------------------|
| NHQC2-CF-CV-S-DDC201.01 | COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN     |
| NHQC2-CF-CV-S-DDC201.21 | GENERAL ARRANGEMENT PLAN                            |
| NHQC2-CF-CV-S-DDC202.01 | SEDIMENT AND SOIL EROSION CONTROL PLAN              |
| NHQC2-CF-CV-S-DDC202.11 | SEDIMENT AND SOIL EROSION CONTROL DETAILS           |
| NHQC2-CF-CV-S-DDC204.01 | SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 01 |
| NHQC2-CF-CV-S-DDC204.02 | SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 02 |
| NHQC2-CF-CV-S-DDC204.03 | SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 03 |
| NHQC2-CF-CV-S-DDC204.04 | SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 04 |
| NHQC2-CF-CV-S-DDC204.11 | STORMWATER PIT SCHEDULE                             |
| NHQC2-CF-CV-S-DDC204.21 | STORMWATER LONGITUDINAL SECTIONS - SHEET 01         |
| NHQC2-CF-CV-S-DDC204.22 | STORMWATER LONGITUDINAL SECTIONS - SHEET 02         |
| NHQC2-CF-CV-S-DDC204.23 | STORMWATER LONGITUDINAL SECTIONS - SHEET 03         |
| NHQC2-CF-CV-S-DDC204.24 | STORMWATER LONGITUDINAL SECTIONS - SHEET 04         |
| NHQC2-CF-CV-S-DDC204.25 | STORMWATER LONGITUDINAL SECTIONS - SHEET 05         |
| NHQC2-CF-CV-S-DDC204.26 | STORMWATER LONGITUDINAL SECTIONS - SHEET 06         |
| NHQC2-CF-CV-S-DDC204.31 | STORMWATER CATCHMENT PLAN                           |
| NHQC2-CF-CV-S-DDC204.41 | STORMWATER MANAGEMENT DEVICES                       |

NOT FOR CONSTRUCTION

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Printed By: J.O  
Date: 20.12.2019 2:47 PM

DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
VERIFIER: .

| AMMENDMENTS |    |          |                                          | ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE. |
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**NORTHROP**  
Sydney  
Level 11 345 George Street, Sydney NSW 2000  
Ph (02) 9241 4188 Fax (02) 9241 4324  
Email sydney@northrop.com.au ABN 81 094 433 100



**HANSEN YUNCKEN**  
NSW GOVERNMENT Education

MECH. ELEC.  
STEENSEN VARMING  
(02) 9967 2200  
HYD.  
WOOLACOTTS  
(02) 8241 9900  
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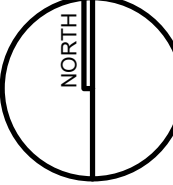
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T: 02 9291 0000  
WEB: www.pp-a.com.au  
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CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS

DRAWING NAME  
**COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN**

PROJECT NORTH



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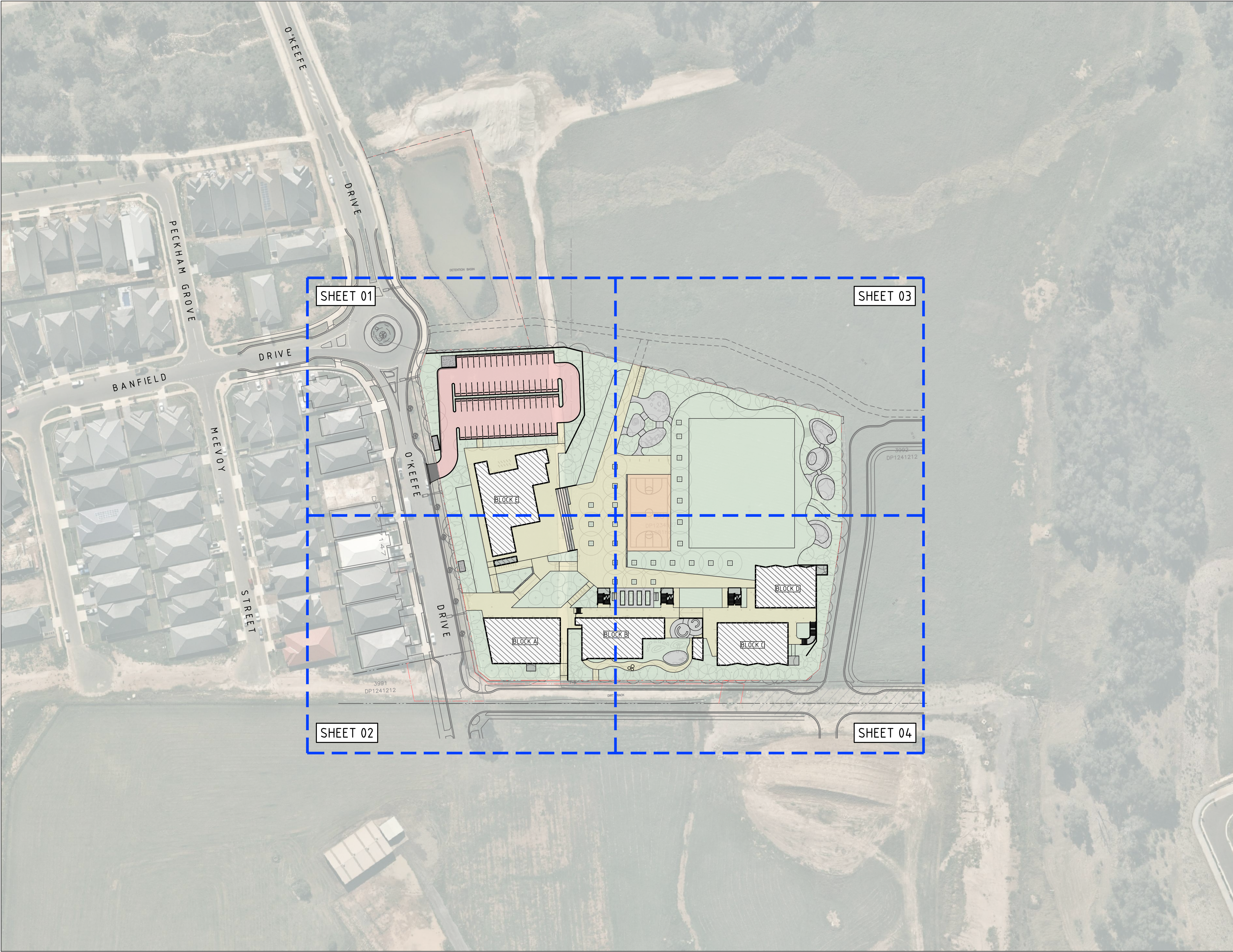
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DRAWING NUMBER  
PROJECT CODE SCH. REF. DISC. TYPE SERIES#  
NHQC2-CF-CV-S-DDC201.01

REVISION  
**2**



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DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
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| LEGEND |                        |  |
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|        | PROPOSED BOUNDARY LINE |  |
|        | EXISTING BOUNDARY LINE |  |
|        | SHEET EXTENTS          |  |

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**NORTHROP**  
Sydney  
Level 11 345 George Street, Sydney NSW 2000  
Ph (02) 9241 4188 Fax (02) 9241 4324  
Email sydney@northrop.com.au ABN 81 094 433 100



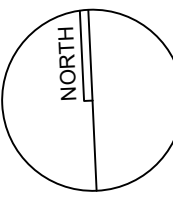
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NSW GOVERNMENT Education

MECH. ELEC.  
STEENSEN VARMING  
(02) 9967 2200  
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(02) 8241 9900  
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(02) 9387 8855

PERUMAL PEDAVOLI ARCHITECTS  
T: 02 9291 0000  
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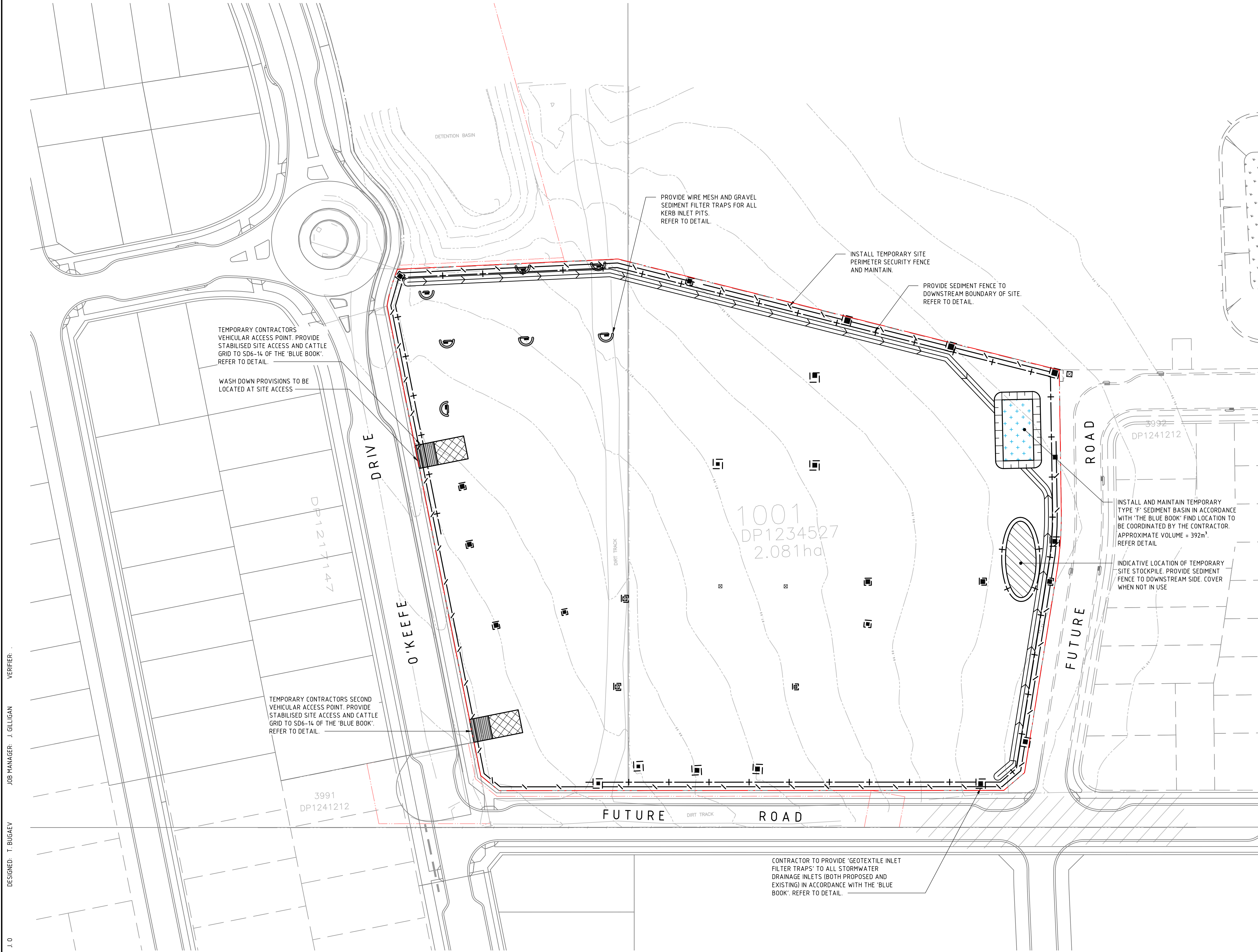
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NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME  
GENERAL ARRANGEMENT PLAN

PROJECT NORTH  


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PROJECT CODE: SCH. REF.: DISC. TYPE: SERIES#: NHQC2-CF-CV-S-DDC201.21  
REVISION: 2



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JOB MANAGER: J. GILLIGAN  
DRAWN: J. O  
Date: 07.02.2020 10:19 AM  
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| LEGEND |                                   |
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|        | PROPOSED BOUNDARY LINE            |
|        | EXISTING BOUNDARY LINE            |
|        | EXISTING CONTOURS                 |
|        | SEDIMENT FENCE                    |
|        | SECURITY FENCE                    |
|        | WIRE MESH AND GRAVEL INLET FILTER |
|        | GEOTEXTILE INLET FILTER TRAPS     |
|        | DRAINAGE SWALE                    |
|        | STABILISED SITE ACCESS            |
|        | STOCKPILE                         |
|        | SEDIMENT BASIN                    |

| SITE PARAMETERS                         |                                 |
|-----------------------------------------|---------------------------------|
| CONSTRAINT                              | VALUE                           |
| SEDIMENT TYPE                           | D                               |
| SOIL HYDROLOGY GROUP                    | C                               |
| K = SOIL ERODIBILITY (K-FACTOR)         | 0.050                           |
| R = RAINFALL ERODIVITY (R-FACTOR)       | 3157                            |
| S = 2 YEAR, 6 HOUR STORM INTENSITY      | 12.1 mm/hr (LAKE HAVEN)         |
| LS = SLOPE LENGTH/GRADIENT              | 0.87 (150m SLOPE @ 3% GRADE)    |
| P = EROSION CONTROL PRACTICE (P-FACTOR) | 1.3 (TYPICAL)                   |
| C = GROUND COVER (C-FACTOR)             | 1.0 (TYPICAL FOR STRIPPED SITE) |
| SOIL LOSS (RUSLE METHOD) (tonnes/ha/yr) | 179                             |
| EROSION HAZARD (TABLE 4.2 BLUE BOOK)    | LOW BASIN/TANKS REQUIRED        |

| SEDIMENT BASIN/TANKS SIZING                     |       |                       |
|-------------------------------------------------|-------|-----------------------|
| CONSTRAINT                                      | VALUE | UNITS                 |
| CV = VOLUMETRIC RUNOFF COEFFICIENT              | 0.5   |                       |
| R = 5 DAY, 75 <sup>TH</sup> PERCENTILE RAINFALL | 25.1  | mm/hr                 |
| A = CATCHMENT AREA                              | 2.08  | ha                    |
| SETTLING ZONE VOLUME (10xCVxRxA)                | 261   | m <sup>3</sup>        |
| SOIL LOSS (CALC ABOVE)                          | 138   | m <sup>3</sup> /ha/yr |
| A2 = DISTURBED CATCHMENT AREA                   | 2.08  | ha                    |
| SEDIMENT STORAGE VOLUME (0.17xSOIL LOSSxA2)     | 131   | m <sup>3</sup>        |
| TOTAL BASIN/TANKS VOLUME REQUIRED               | 392   | m <sup>3</sup>        |

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| 1   | JO | 29.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION          |
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STEENSEN VARMING  
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HYD  
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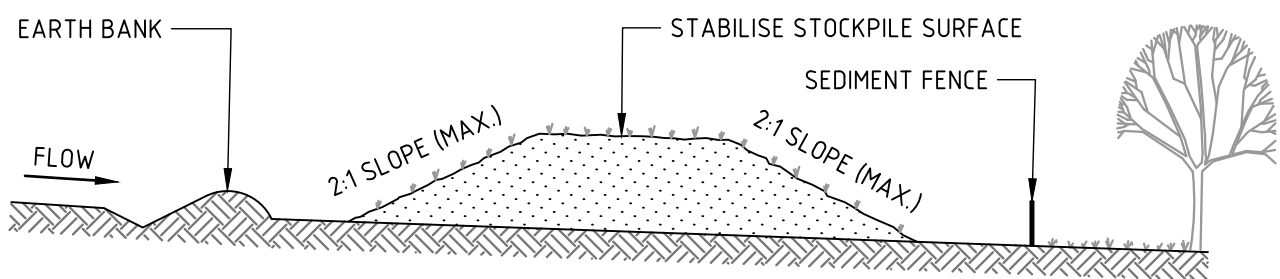
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**SEDIMENT AND SOIL EROSION CONTROL PLAN**

PROJECT NORTH  
SCALE 1:500 @ A1  
DRAWN: JO CHECKED: JG VERIFIED: JG DATE: 20.12.19  
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PROJECT CODE: SCH. REF.: DISC. TYPE: SERIES#: 3



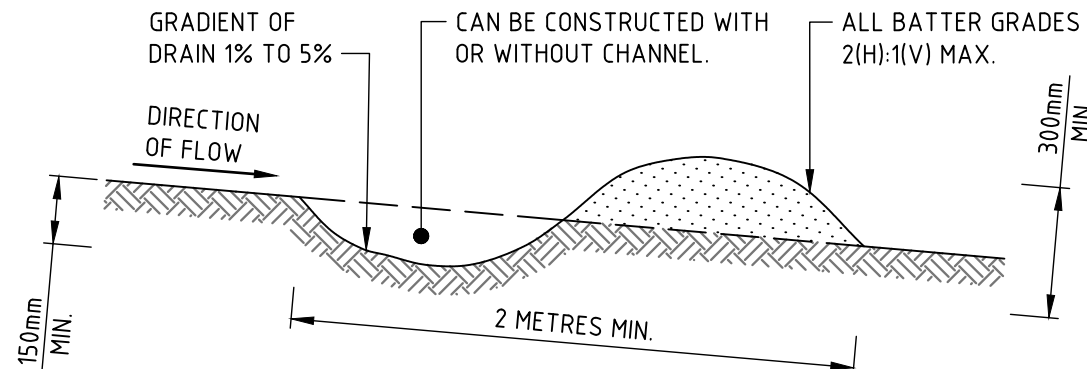
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DRAWN: J. O  
Plotted By: J.O  
Date: 20.12.2019 2:48 PM  
JOB MANAGER: J. GILLIGAN  
VERIFIER: J. GILLIGAN



#### CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) 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 2m 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.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

#### STOCKPILE

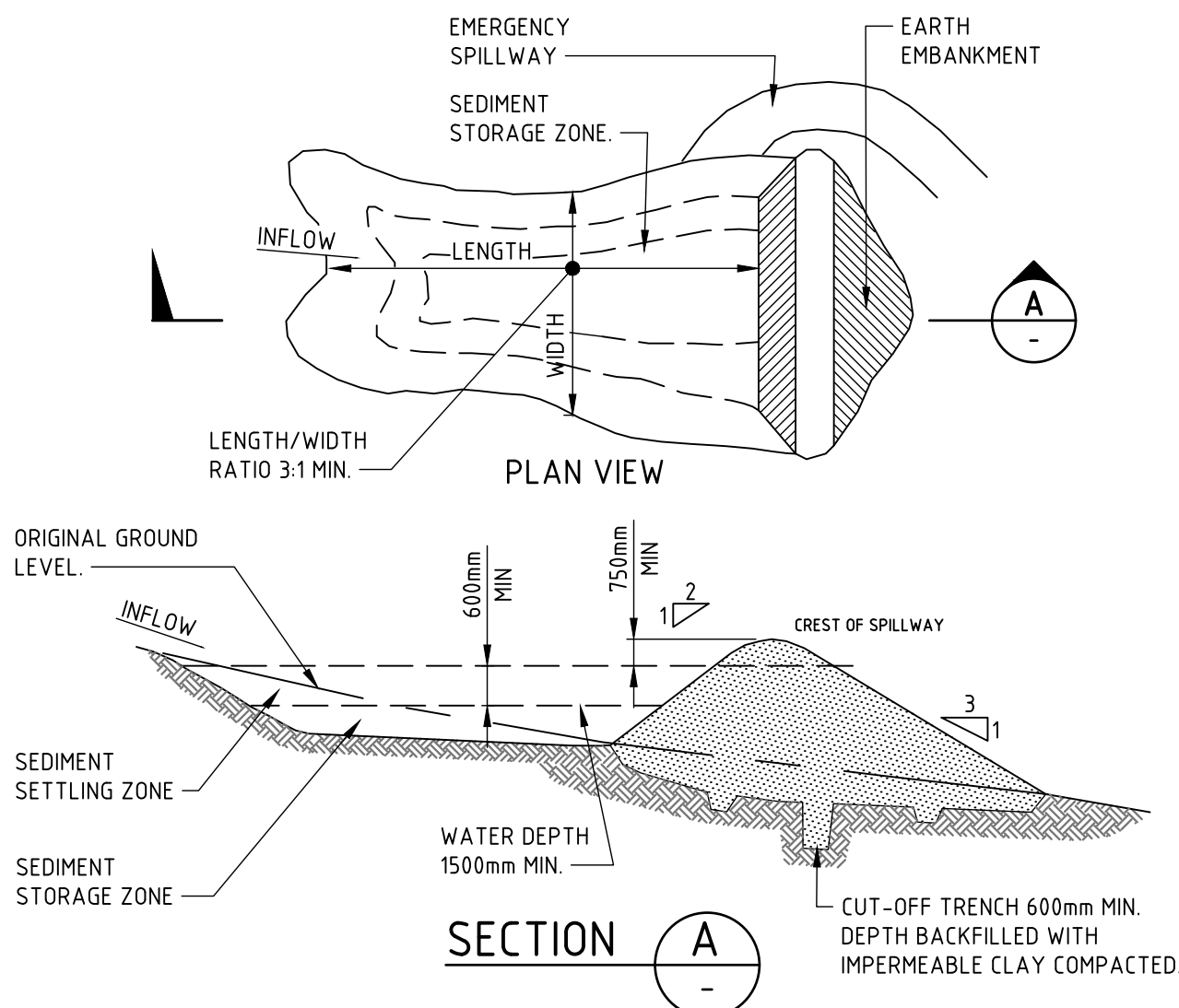


#### CONSTRUCTION NOTES

1. BUILD WITH GRADIENTS BETWEEN 1 AND 5 PERCENT.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES.

#### DRAINAGE SWALE

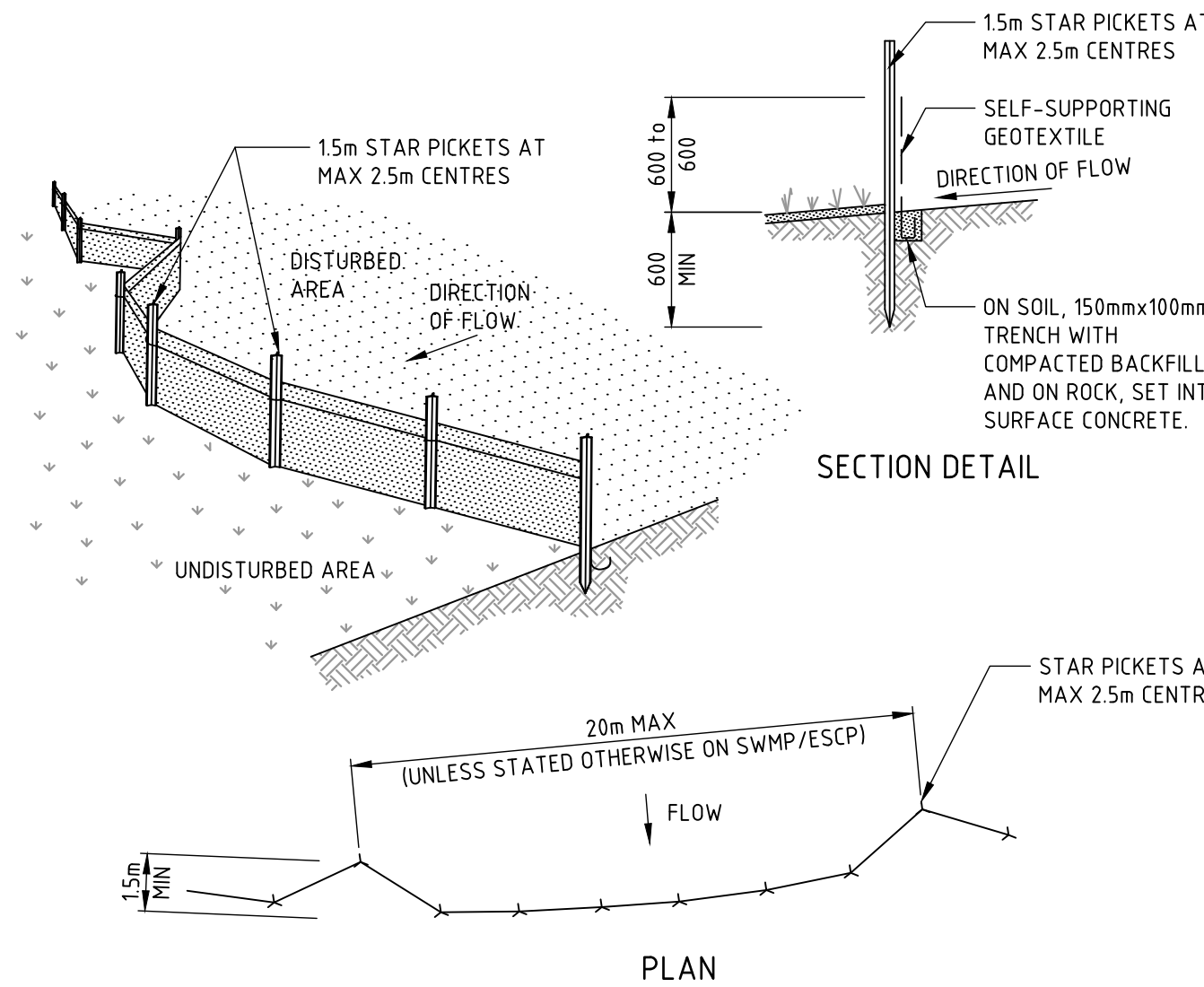


#### CONSTRUCTION NOTES

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1200mm WIDE ALONG THE CENTRELIN 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 SWMP 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 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
7. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

(APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY)

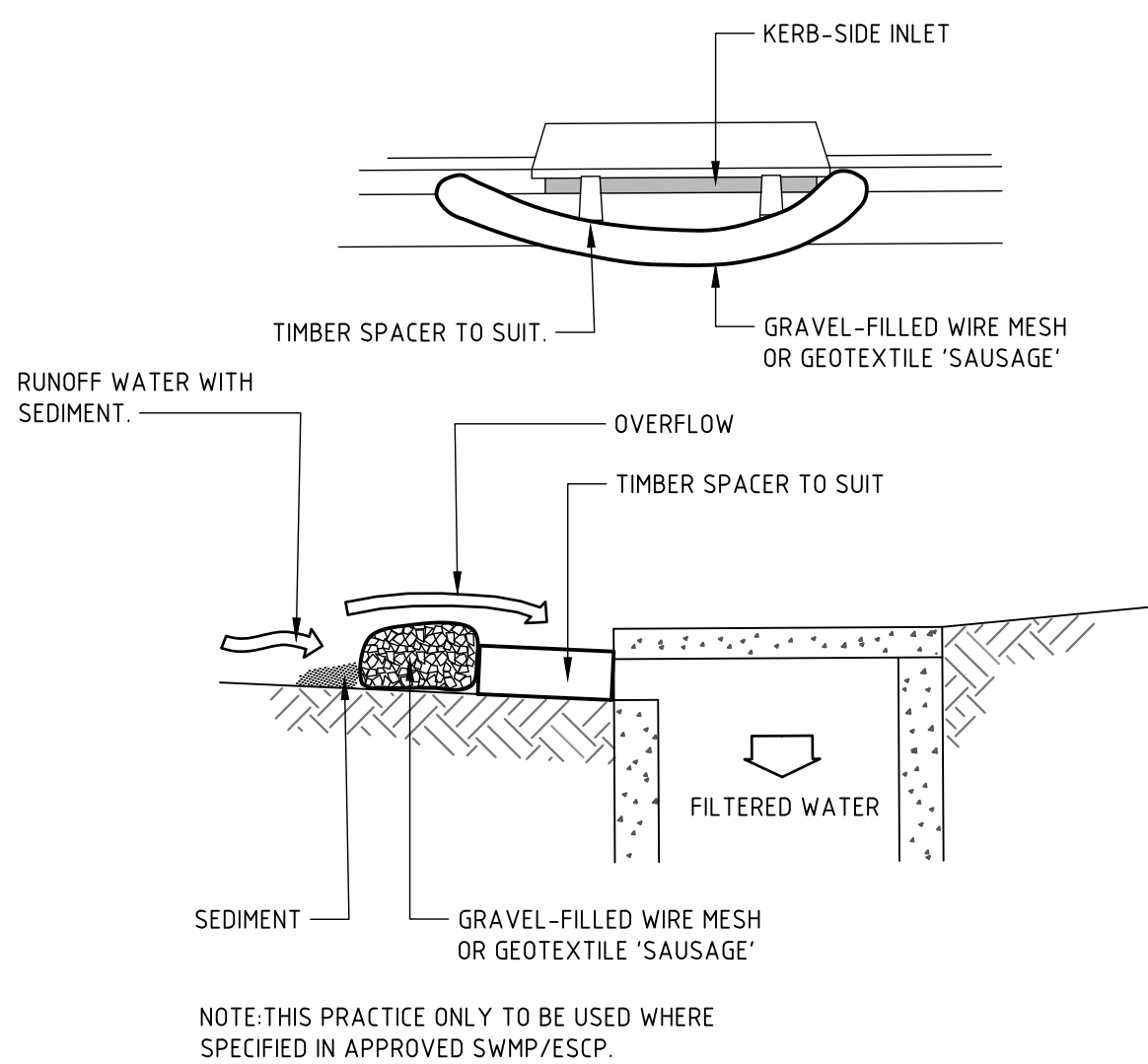
#### SEDIMENT BASIN - WET



#### CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN 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.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 15 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE 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.
5. 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.

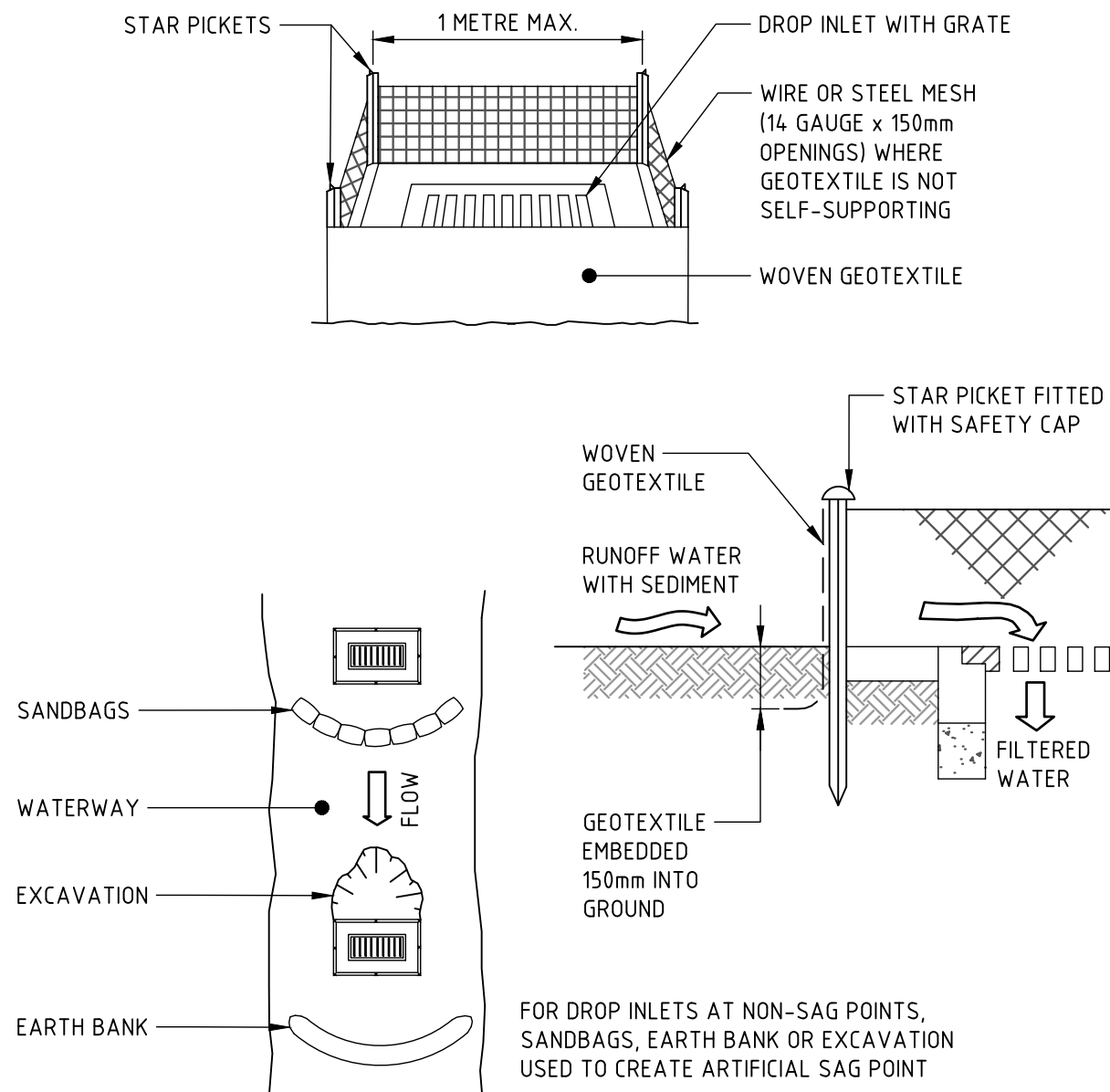
#### SEDIMENT FENCE



#### CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. 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.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

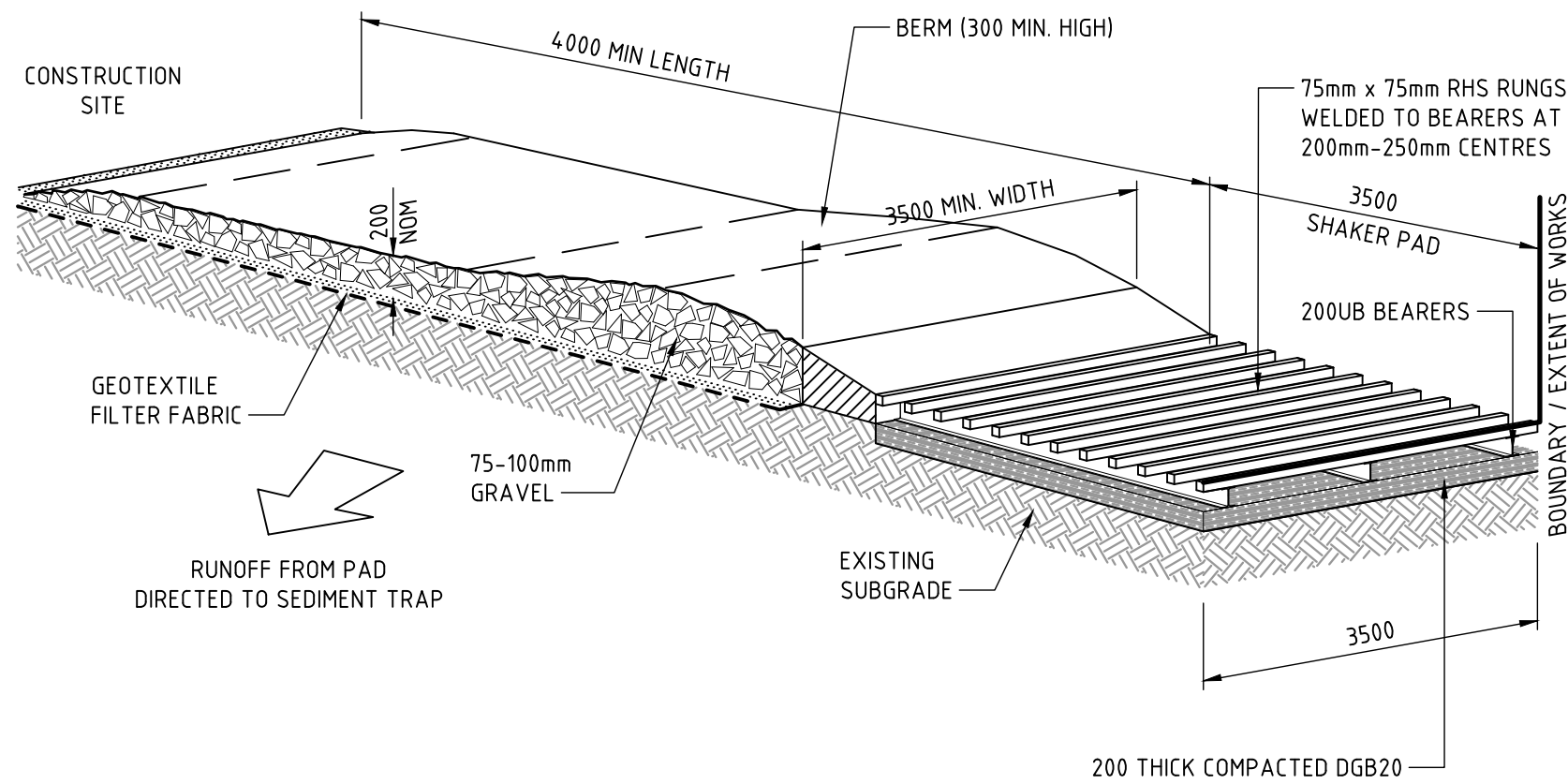
#### WIRE MESH AND GRAVEL SEDIMENT FILTER



#### CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. 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 TRAPS



#### MAINTENANCE

- THE TEMPORARY ACCESS SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.
- 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 ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
- INSTALL BARRIER ON EITHER SIDE OF SHAKER PAD TO ENSURE VEHICLES ARE GUIDED ON TO THE PAD.
- INVERT OF SHAKER PAD TO BE DRAINED VIA AGRICULTURAL PIPE WRAPPED IN GEOTEXTILE FABRIC.

#### STABILISED SITE ACCESS

NOT FOR CONSTRUCTION

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Sydney  
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NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME:  
**SEDIMENT AND SOIL EROSION  
CONTROL DETAILS**

|                         |           |            |          |  |
|-------------------------|-----------|------------|----------|--|
| PROJECT NORTH           |           |            |          |  |
| DRAWN                   | CHECKED   | VERIFIED   | DATE     |  |
| JO                      | JG        | JG         | 20.12.19 |  |
| DRAWING NUMBER          |           |            | REVISION |  |
| PROJECT CODE            | SCH. REF. | DISC. TYPE | SERIES#  |  |
| NHQC2-CF-CV-S-DDC202.11 |           |            | 2        |  |



Found: T:\2019 Jobs\9818 - New High Quality Classrooms Package 2 - HWQ - Catherine Field\Drawings\Northrop\Civil\2-CAD\2-CAD FILES\2-ODN\HQ2-CF-CV-S-DDC204.01.dwg  
Date: 21.01.2020 11:35 AM  
DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
VERIFIER:  
DRAWN: J. O

| REV | BY | DATE     | DESCRIPTION                                 |
|-----|----|----------|---------------------------------------------|
| 1   | JO | 29.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION          |
| 2   | JO | 03.12.19 | RE-ISSUE FOR 75% DESIGN DOCUMENTATION       |
| 3   | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION    |
| 4   | TB | 21.01.20 | RE-ISSUED FOR DETAILED DESIGN DOCUMENTATION |
|     |    |          |                                             |
|     |    |          |                                             |
|     |    |          |                                             |

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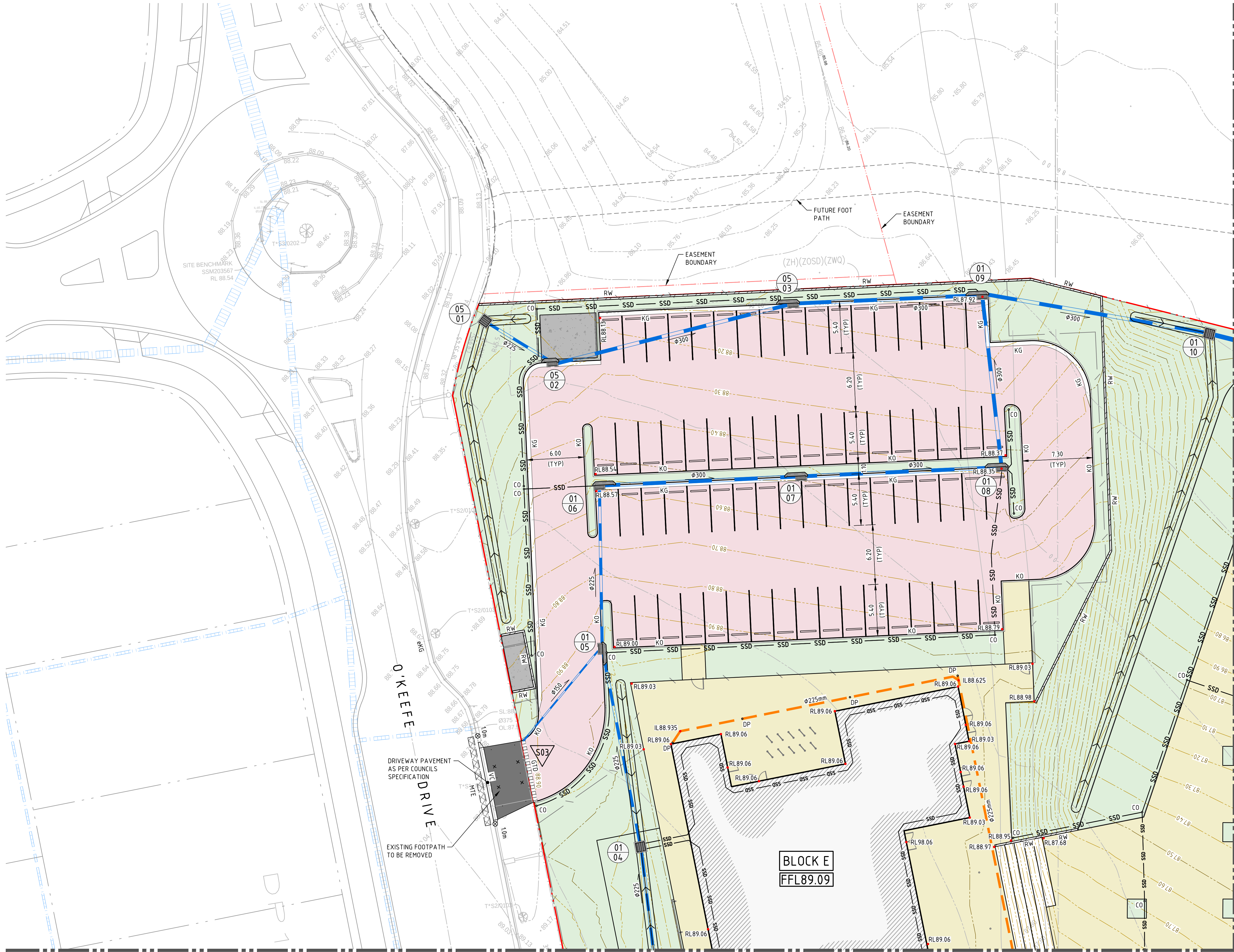
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(02) 9967 2200  
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Vince Pedavoli NSW reg No 5045

**CATHERINE FIELD PS**  
NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME  
**SITeworks AND STORMwater**  
MANAGEMENT PLAN - SHEET 01

**PROJECT NORTH**  
SCALE 1:200 @ A1  
DRAWN: JO CHECKED: JG VERIFIED: JG DATE: 21.01.20  
DRAWING NUMBER: PROJECT CODE: SCH. REF.: DISC. TYPE: SERIES#: NHQC2-CF-CV-S-DDC204.01  
REVISION: **4**



**LEGEND**

PROPOSED BOUNDARY LINE

EXISTING BOUNDARY LINE

PROPOSED KERB

EXISTING KERB

FUTURE KERB

SAWCUT AND PAVEMENT INFILL

EXISTING KERB 'TYPE AS BELOW'

KERB ONLY

KERB AND GUTTER

MATCH TO EXISTING

VEHICULAR CROSSING

EXISTING TO BE REMOVED

PROPOSED FINISHED FLOOR LEVEL

PROPOSED SPOT HEIGHT

PROPOSED INVERT LEVEL

BATTER (1V) : 4(H) MAX UNDO

CONTOURS

EXISTING CONTOURS

RETAINING WALL

DRAINAGE SWALE

STORMWATER PIPE

EXISTING STORMWATER PIPE

FUTURE STORMWATER PIPE (BY OTHERS)

SUBSOIL DRAINAGE LINE

SUBSOIL DRAINAGE (CLEAROUT)

GRATED INLET PIT (NEW / EXTG)

KERB INLET PIT (NEW / EXTG)

JUNCTION PIT (NEW / EXTG)

STRUCTURE No / LINE ID  
STORMWATER PIT TAG

GRATED TRENCH DRAIN

RAINWATER HARVESTING TANK

PROPOSED LANDSCAPING - REFER TO  
LANDSCAPE ARCHITECT'S FOR DETAIL

PROPOSED FLEXIBLE PAVEMENT

PROPOSED FOOTPATH PAVEMENT

PROPOSED RECREATIONAL AREAS  
- REFER TO LANDSCAPE  
ARCHITECT'S FOR DETAIL

PAINTED ACRYLIC HARD COURT  
- REFER LANDSCAPE  
ARCHITECT'S FOR DETAILS

SUBSTATION SLAB

**GENERAL NOTES:**

- REFER SPECIFICATIONS NOTES FOR STORMWATER AND SITEWORKS GENERAL REQUIREMENTS.
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS. CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).
- PROVIDE 'OCEAN GUARD INSERTS' ON ALL GRATED INLET PITS
- SUBSOIL DRAINAGE TO RETAINING WALLS, KERBS AND SWALE DRAINS NOT SHOWN FOR CLARITY - REFER RELEVANT DETAILS.
- BASED ON GEOTECHNICAL INVESTIGATIONS THE CBH = 15%. THEREFORE SUBGRADE TREATMENT IS REQUIRED. REFER DETAIL SHEET.
- ALL ROOF DOWNPIPES TO BE DIRECTLY CONNECTED TO THE RAINWATER TANK, SUBJECT TO CONFIRMATIONS FROM PROJECT HYDRAULIC ENGINEER.

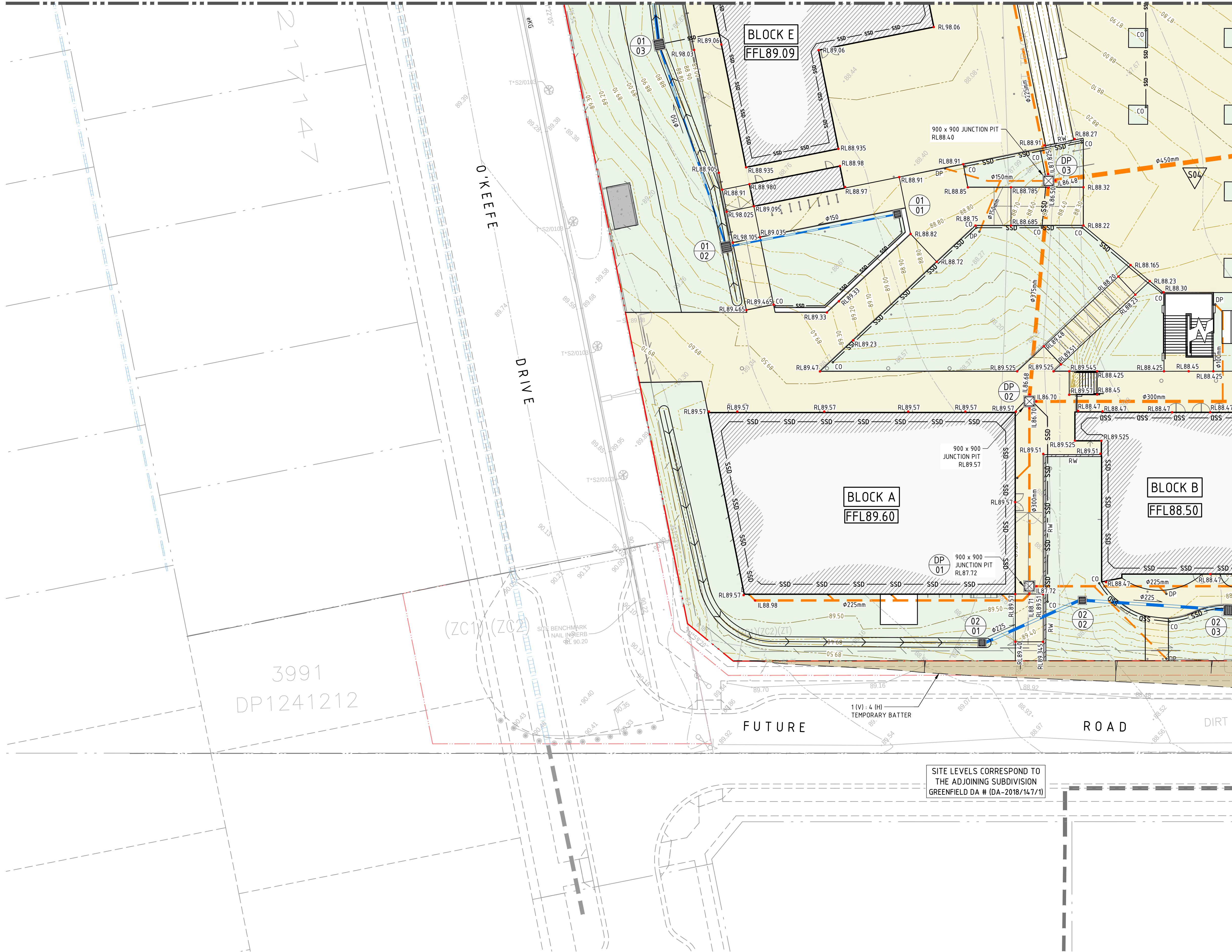


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Found: T:\2019 Jobs\19018 - New High Quality Classrooms Package 2 - HYQ2 - Catherine Field\Site Drawings\DWG\Northrop\CV\112\CA02-CAD FILES\SSD\NHQ2-CF-CV-S-DDC204.02.dwg  
Printed By: TENGAEV  
Date: 21.01.2020 11:36 AM  
DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
VERIFIER: J. GILLIGAN  
DRAWN: J. O

FOR CONTINUATION REFER TO SHEET 01



FOR CONTINUATION REFER TO SHEET 04

## LEGEND

- PROPOSED BOUNDARY LINE
- EXISTING BOUNDARY LINE
- PROPOSED KERB
- EXISTING KERB
- FUTURE KERB
- SAWCUT AND PAVEMENT INFILL
- EXISTING KERB 'TYPE AS BELOW'
- KERB ONLY
- KERB AND GUTTER
- MATCH TO EXISTING
- VEHICULAR CROSSING
- EXISTING TO BE REMOVED
- PROPOSED FINISHED FLOOR LEVEL
- PROPOSED SPOT HEIGHT
- PROPOSED INVERT LEVEL
- BATTER 1(V) : 4(H) MAX UN.O.
- CONTOURS
- EXISTING CONTOURS
- RETAINING WALL
- DRAINAGE SWALE
- STORMWATER PIPE
- EXISTING STORMWATER PIPE
- FUTURE STORMWATER PIPE (BY OTHERS)
- SUBSOIL DRAINAGE LINE
- SUBSOIL DRAINAGE (CLEAROUT)
- GRATED INLET PIT (NEW / EXTG)
- KERB INLET PIT (NEW / EXTG)
- JUNCTION PIT (NEW / EXTG)
- STRUCTURE No / LINE ID
- STORMWATER PIT TAG
- GRATED TRENCH DRAIN
- RAINWATER HARVESTING TANK
- PROPOSED LANDSCAPING - REFER TO LANDSCAPE ARCHITECT'S FOR DETAIL
- PROPOSED FLEXIBLE PAVEMENT
- PROPOSED FOOTPATH PAVEMENT
- PROPOSED RECREATIONAL AREAS - REFER TO LANDSCAPE ARCHITECT'S FOR DETAIL
- PAINTED ACRYLIC HARD COURT - REFER LANDSCAPE ARCHITECT'S FOR DETAILS
- SUBSTATION SLAB

## GENERAL NOTES:

- REFER SPECIFICATIONS NOTES FOR STORMWATER AND SITEWORKS GENERAL REQUIREMENTS.
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS. CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).
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- BASED ON GEOTECHNICAL INVESTIGATIONS THE CBH = 1.5%. THEREFORE SUBGRADE TREATMENT IS REQUIRED. REFER DETAIL SHEET.
- ALL ROOF DOWNPIPES TO BE DIRECTLY CONNECTED TO THE RAINWATER TANK, SUBJECT TO CONFIRMATIONS FROM PROJECT HYDRAULIC ENGINEER.



NOT FOR CONSTRUCTION

| REV | BY | DATE     | DESCRIPTION                                 |
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| 4   | TB | 21.01.20 | RE-ISSUED FOR DETAILED DESIGN DOCUMENTATION |

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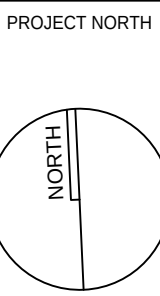


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PERUMAL PEDAVOLI ARCHITECTS

CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME  
SITEWORKS AND STORMWATER  
MANAGEMENT PLAN - SHEET 02



| SCALE 1:200 @ A1       |         |          |          |
|------------------------|---------|----------|----------|
| DRAWN                  | CHECKED | VERIFIED | DATE     |
| JO                     | JG      | JG       | 21.01.20 |
| DRAWING NUMBER         |         |          |          |
| NHQ2-CF-CV-S-DDC204.02 |         |          |          |
| REVISION               |         |          |          |
| 4                      |         |          |          |



Found: T:\2019 Jobs\190318 - New High Quality Classrooms Package 2 - HVAC - Catherine Field\Site Drawings\Northrop\Civil\2-CAD\2-CAD FILES\SSD\NHQ2-CF-CV-S-DDC204.03.dwg  
Date: 21.01.2020 11:39 AM  
Drawn: J.O  
Designed: T. BUGAEV  
Printed By: T. BUGAEV  
Job Manager: J. GILLIGAN  
Verifier:

FOR CONTINUATION REFER TO SHEET 01

FOR CONTINUATION REFER TO SHEET 04

FOR CONTINUATION REFER TO SHEET 04

| REV | BY | DATE     | DESCRIPTION                                 |
|-----|----|----------|---------------------------------------------|
| 1   | JO | 29.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION          |
| 2   | JO | 03.12.19 | RE-ISSUE FOR 75% DESIGN DOCUMENTATION       |
| 3   | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION    |
| 4   | TB | 21.01.20 | RE-ISSUED FOR DETAILED DESIGN DOCUMENTATION |
|     |    |          |                                             |
|     |    |          |                                             |
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|     |    |          |                                             |

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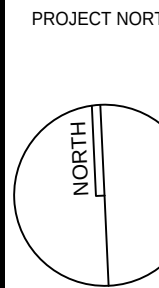
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**PERUMAL PEDAVOLI ARCHITECTS**

CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME  
SITEWORKS AND STORMWATER  
MANAGEMENT PLAN - SHEET 03

PROJECT NORTH  


SCALE 1:200 @ A1  
DRAWN JO  
CHECKED JG  
VERIFIED JG  
DATE 21.01.20  
DRAWING NUMBER  
PROJECT CODE SCH. REF. DISC. TYPE SERIES#  
NHQ2-CF-CV-S-DDC204.03

REVISION  
4

**LEGEND**



PROPOSED BOUNDARY LINE



EXISTING BOUNDARY LINE



PROPOSED KERB



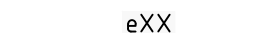
EXISTING KERB



FUTURE KERB



SAWCUT AND PAVEMENT INFILL



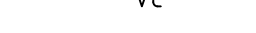
EXISTING KERB 'TYPE AS BELOW'



KERB ONLY



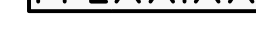
KERB AND GUTTER



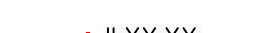
MATCH TO EXISTING



VEHICULAR CROSSING



EXISTING TO BE REMOVED



PROPOSED FINISHED FLOOR LEVEL



PROPOSED SPOT HEIGHT



PROPOSED INVERT LEVEL



BATTER 1(V) : 4(H) MAX U.N.O.



CONTOURS



EXISTING CONTOURS



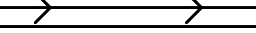
RETAINING WALL



DRAINAGE SWALE



STORMWATER PIPE



EXISTING STORMWATER PIPE



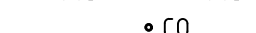
FUTURE STORMWATER PIPE (BY OTHERS)



SUBSOIL DRAINAGE LINE



SUBSOIL DRAINAGE (CLEAROUT)



GRATED INLET PIT (NEW / EXTG)



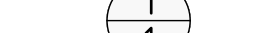
KERB INLET PIT (NEW / EXTG)



JUNCTION PIT (NEW / EXTG)



STRUCTURE No / LINE ID STORMWATER PIT TAG



GRATED TRENCH DRAIN



RAINWATER HARVESTING TANK



PROPOSED LANDSCAPING - REFER TO LANDSCAPE ARCHITECT'S FOR DETAIL



PROPOSED FLEXIBLE PAVEMENT



PROPOSED FOOTPATH PAVEMENT



PROPOSED RECREATIONAL AREAS - REFER TO LANDSCAPE ARCHITECT'S FOR DETAIL



PAINTED ACRYLIC HARD COURT - REFER LANDSCAPE ARCHITECT'S FOR DETAILS



SUBSTATION SLAB

**GENERAL NOTES:**

1. REFER SPECIFICATIONS NOTES FOR STORMWATER AND SITEWORKS GENERAL REQUIREMENTS.

2. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.

3. CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).

4. PROVIDE 'OCEAN GUARD INSERTS' ON ALL GRATED INLET PITS

5. SUBSOIL DRAINAGE TO RETAINING WALLS, KERBS AND SWALE DRAINS NOT SHOWN FOR CLARITY - REFER RELEVANT DETAILS.

6. BASED ON GEOTECHNICAL INVESTIGATIONS THE CBH = 15%. THEREFORE SUBGRADE TREATMENT IS REQUIRED. REFER DETAIL SHEET.

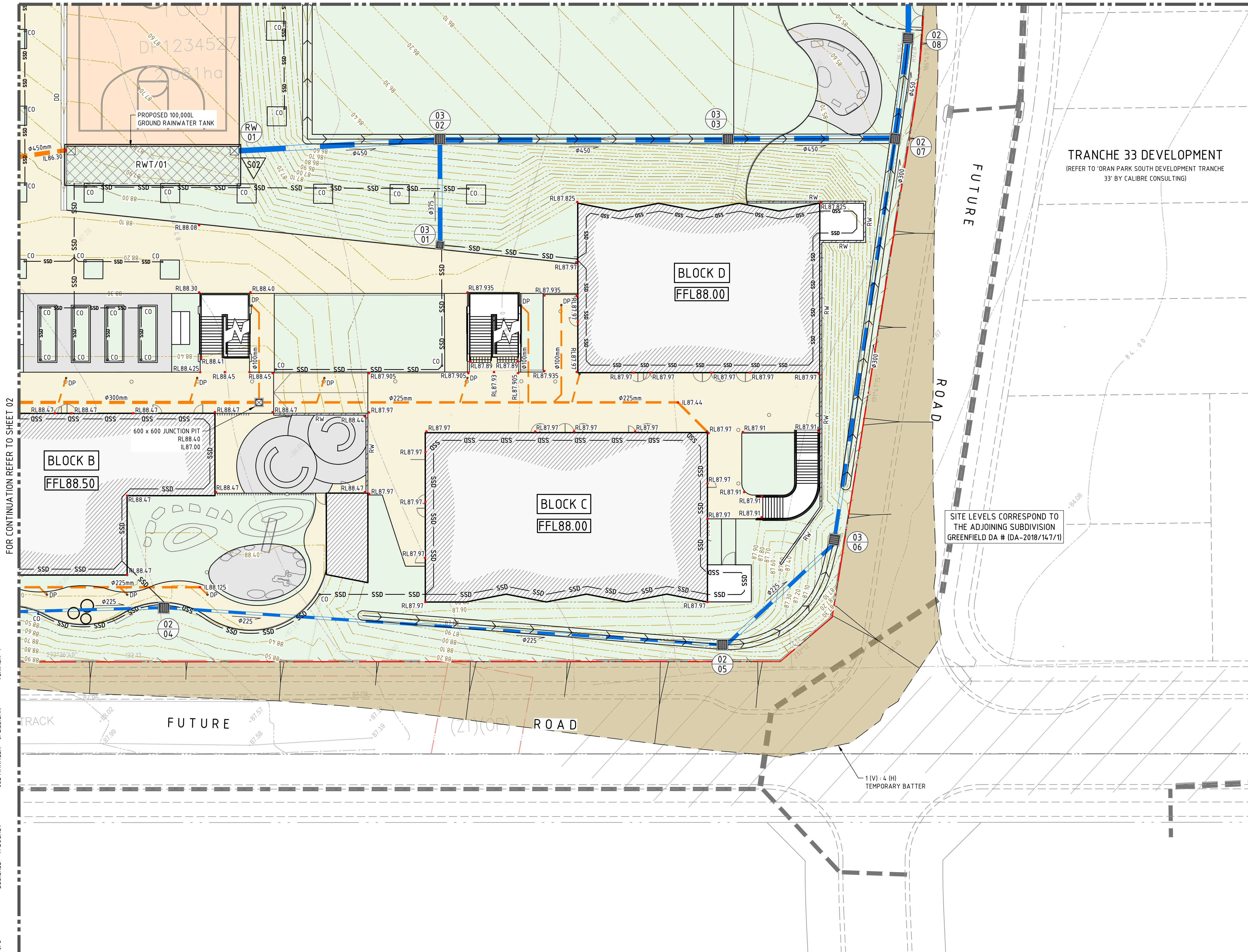
7. ALL ROOF DOWNPIPES TO BE DIRECTLY CONNECTED TO THE RAINWATER TANK, SUBJECT TO CONFIRMATIONS FROM PROJECT HYDRAULIC ENGINEER.



NOT FOR CONSTRUCTION



FOR CONTINUATION REFER TO SHEET 03



### LEGEND

|  |                                                                         |
|--|-------------------------------------------------------------------------|
|  | PROPOSED BOUNDARY LINE                                                  |
|  | EXISTING BOUNDARY LINE                                                  |
|  | PROPOSED KERB                                                           |
|  | EXISTING KERB                                                           |
|  | FUTURE KERB                                                             |
|  | SAWCUT AND PAVEMENT INFILL                                              |
|  | EXISTING KERB 'TYPE AS BELOW'                                           |
|  | KERB ONLY                                                               |
|  | KERB AND GUTTER                                                         |
|  | MATCH TO EXISTING                                                       |
|  | VEHICULAR CROSSING                                                      |
|  | EXISTING TO BE REMOVED                                                  |
|  | PROPOSED FINISHED FLOOR LEVEL                                           |
|  | PROPOSED SPOT HEIGHT                                                    |
|  | PROPOSED INVERT LEVEL                                                   |
|  | BATTER 1(V) : 4(H) MAX U.O.                                             |
|  | CONTOURS                                                                |
|  | EXISTING CONTOURS                                                       |
|  | RETAINING WALL                                                          |
|  | DRAINAGE SWALE                                                          |
|  | STORMWATER PIPE                                                         |
|  | EXISTING STORMWATER PIPE                                                |
|  | FUTURE STORMWATER PIPE (BY OTHERS)                                      |
|  | SUBSOIL DRAINAGE LINE                                                   |
|  | SUBSOIL DRAINAGE (CLEAROUT)                                             |
|  | GRATED INLET PIT (NEW / EXTG)                                           |
|  | KERB INLET PIT (NEW / EXTG)                                             |
|  | JUNCTION PIT (NEW / EXTG)                                               |
|  | STRUCTURE No / LINE ID                                                  |
|  | STORMWATER PIT TAG                                                      |
|  | GRATED TRENCH DRAIN                                                     |
|  | RAINWATER HARVESTING TANK                                               |
|  | PROPOSED LANDSCAPING - REFER TO LANDSCAPE ARCHITECT'S FOR DETAIL        |
|  | PROPOSED FLEXIBLE PAVEMENT                                              |
|  | PROPOSED FOOTPATH PAVEMENT                                              |
|  | PROPOSED RECREATIONAL AREAS - REFER TO LANDSCAPE ARCHITECT'S FOR DETAIL |
|  | PAINTED ACRYLIC HARD COURT - REFER LANDSCAPE ARCHITECT'S FOR DETAILS    |
|  | SUBSTATION SLAB                                                         |

- ### GENERAL NOTES:
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  - PROVIDE 'OCEAN GUARD INSERTS' ON ALL GRATED INLET PITS.
  - SUBSOIL DRAINAGE TO RETAINING WALLS, KERBS AND SWALE DRAINS NOT SHOWN FOR CLARITY - REFER RELEVANT DETAILS.
  - BASED ON GEOTECHNICAL INVESTIGATIONS THE CBH = 1.5%. THEREFORE SUBGRADE TREATMENT IS REQUIRED. REFER DETAIL SHEET.
  - ALL ROOF DOWNPIPES TO BE DIRECTLY CONNECTED TO THE RAINWATER TANK, SUBJECT TO CONFIRMATIONS FROM PROJECT HYDRAULIC ENGINEER.



NOT FOR CONSTRUCTION

FOR CONTINUATION REFER TO SHEET 02

| REV | BY | DATE     | DESCRIPTION                                 |
|-----|----|----------|---------------------------------------------|
| 1   | JO | 29.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION          |
| 2   | JO | 03.12.19 | RE-ISSUE FOR 75% DESIGN DOCUMENTATION       |
| 3   | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION    |
| 4   | TB | 21.01.20 | RE-ISSUED FOR DETAILED DESIGN DOCUMENTATION |

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Sydney  
Level 11 345 George Street, Sydney NSW 2000  
Ph (02) 9241 4188 Fax (02) 9241 4324  
Email sydney@northrop.com.au ABN 81 094 433 100

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MECH. ELEC  
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Vince Pedavoli NSW reg No 5045

**PERUMAL PEDAVOLI**  
ARCHITECTS

CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS

DRAWING NAME  
**SITEWORKS AND STORMWATER  
MANAGEMENT PLAN - SHEET 04**

PROJECT NORTH

SCALE 1:200 @ A1

| DRAWN | CHECKED | VERIFIED | DATE     |
|-------|---------|----------|----------|
| JO    | JG      | JG       | 21.01.20 |

DRAWING NUMBER  
PROJECT CODE SCH. REF. DISC. TYPE SERIES#

NHQC2-CF-CV-S-DDC204.04

REVISION  
**4**



Found: T:\2019 Jobs\19018 - New High Quality Classrooms Package 2 - HYD - Catherine Field\Drawings\Northrop\CV\112-CAD02-CAB FILES\3-DDNHQC2-CF-CV-S-DDC204.11.dwg  
Date: 20.12.2019 3:49 PM  
Printed By: J.O  
DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
VERIFIER: .

| STORMWATER PIT SCHEDULE         |                       |                      |                      |                              |           |                 |            |             |         |
|---------------------------------|-----------------------|----------------------|----------------------|------------------------------|-----------|-----------------|------------|-------------|---------|
| STRUCTURE ID (LINE \ STRUCTURE) | STRUCTURE DESCRIPTION | GRATE AND FRAME SIZE | LINTEL TYPE AND SIZE | ACCESS COVER AND CLASS       | SETOUT RL | DEPTH TO INVERT | EASTING    | NORTHING    | REMARKS |
| 01\01                           | SURFACE INLET PIT     | 600x600              | -                    | GALV GRATE, CLASS B          | 88.86     | 0.75m           | 292143.200 | 6234722.998 | -       |
| 01\02                           | SURFACE INLET PIT     | 600x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 88.90     | 0.99m           | 292125.169 | 6234720.376 | -       |
| 01\03                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 88.62     | 0.95m           | 292119.146 | 6234741.873 | -       |
| 01\04                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 88.76     | 1.27m           | 292117.960 | 6234757.087 | -       |
| 01\05                           | KERB INLET PIT        | 450x900              | 1.8m CONCRETE LINTEL | GALV GRATE, CLASS D          | 88.95     | 1.68m           | 292114.898 | 6234778.026 | -       |
| 01\06                           | KERB INLET PIT        | 450x900              | 1.8m CONCRETE LINTEL | GALV GRATE, CLASS D          | 88.57     | 1.5m            | 292115.380 | 6234795.089 | -       |
| 01\07                           | KERB INLET PIT        | 450x900              | 1.8m CONCRETE LINTEL | GALV GRATE, CLASS D          | 88.46     | 1.62m           | 292136.523 | 6234795.082 | -       |
| 01\08                           | KERB INLET PIT        | 450x900              | 1.8m CONCRETE LINTEL | GALV GRATE, CLASS D          | 88.36     | 1.75m           | 292157.532 | 6234795.076 | -       |
| 01\09                           | KERB INLET PIT        | 450x900              | 1.8m CONCRETE LINTEL | GALV GRATE, CLASS D          | 87.93     | 1.52m           | 292156.356 | 6234813.176 | -       |
| 01\10                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 85.81     | 1.33m           | 292179.897 | 6234808.053 | -       |
| 01\11                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 85.26     | 1.33m           | 292220.673 | 6234795.821 | -       |
| 01\12                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 84.89     | 1.34m           | 292247.481 | 6234787.739 | -       |
| 01\13                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 84.53     | 1.27m           | 292274.284 | 6234779.658 | -       |
| 01\14                           | JUNCTION PIT          | 900x900              | -                    | CONCRETE COVER, CLASS B      | 84.67     | 1.46m           | 292278.131 | 6234779.154 | -       |
| 02\01                           | SURFACE INLET PIT     | 600x600              | -                    | V-SHAPED GALV GRATE, CLASS B | 89.20     | 0.75m           | 292149.973 | 6234677.779 | -       |
| 02\02                           | SURFACE INLET PIT     | 600x900              | -                    | GALV GRATE, CLASS B          | 88.39     | 0.76m           | 292160.659 | 6234681.733 | -       |
| 02\03                           | SURFACE INLET PIT     | 900x900              | -                    | GALV GRATE, CLASS B          | 88.40     | 0.95m           | 292175.944 | 6234679.995 | -       |
| 02\04                           | SURFACE INLET PIT     | 900x900              | -                    | GALV GRATE, CLASS B          | 88.29     | 1.01m           | 292191.775 | 6234679.627 | -       |
| 02\05                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 87.41     | 0.89m           | 292249.968 | 6234673.088 | -       |
| 02\06                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 86.66     | 0.88m           | 292262.173 | 6234683.528 | -       |
| 02\07                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 85.48     | 1.29m           | 292270.449 | 6234725.135 | -       |
| 02\08                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 85.31     | 1.24m           | 292272.286 | 6234735.568 | -       |
| 02\09                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 84.91     | 1.08m           | 292273.400 | 6234757.608 | -       |
| 03\01                           | SURFACE INLET PIT     | 900x900              | -                    | GALV GRATE, CLASS B          | 87.79     | 1.09m           | 292222.372 | 6234716.213 | -       |
| 03\02                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 86.26     | 1.55m           | 292222.882 | 6234727.291 | -       |
| 03\03                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 85.79     | 1.4m            | 292252.988 | 6234725.916 | -       |
| 04\01                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 87.20     | 0.93m           | 292185.054 | 6234759.878 | -       |
| 04\02                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 86.02     | 0.94m           | 292210.424 | 6234758.390 | -       |
| 04\03                           | SURFACE INLET PIT     | 900x900              | -                    | V-SHAPED GALV GRATE, CLASS B | 85.67     | 1m              | 292211.496 | 6234781.859 | -       |
| 05\01                           | SURFACE INLET PIT     | 600x600              | -                    | GALV GRATE, CLASS B          | 88.01     | 0.86m           | 292104.236 | 6234812.858 | -       |
| 05\02                           | KERB INLET PIT        | 450x900              | 1.8m CONCRETE LINTEL | GALV GRATE, CLASS D          | 88.11     | 1.05m           | 292109.945 | 6234808.214 | -       |
| 05\03                           | KERB INLET PIT        | 450x900              | 1.8m CONCRETE LINTEL | GALV GRATE, CLASS D          | 88.03     | 1.26m           | 292136.515 | 6234813.198 | -       |
| RW\01                           | RWT ACCESS LID        | 900x900              | -                    | CONCRETE COVER, CLASS B      | 87.66     | 1.36m           | 292201.360 | 6234727.054 | -       |

| AMMENDMENTS |    |          |                                          | ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE. |
|-------------|----|----------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REV         | BY | DATE     | DESCRIPTION                              |                                                                                                                                                                                                                                                                                       |
| 1           | JO | 20.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION       |                                                                                                                                                                                                                                                                                       |
| 2           | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION |                                                                                                                                                                                                                                                                                       |
|             |    |          |                                          |                                                                                                                                                                                                                                                                                       |
|             |    |          |                                          |                                                                                                                                                                                                                                                                                       |
|             |    |          |                                          |                                                                                                                                                                                                                                                                                       |
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|             |    |          |                                          |                                                                                                                                                                                                                                                                                       |
|             |    |          |                                          |                                                                                                                                                                                                                                                                                       |



**NORTHROP**  
Sydney  
Level 11 345 George Street, Sydney NSW 2000  
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CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS

DRAWING NAME  
STORMWATER PIT SCHEDULE

PROJECT NORTH

|       |         |          |          |
|-------|---------|----------|----------|
| DRAWN | CHECKED | VERIFIED | DATE     |
| JO    | JG      | JG       | 20.12.19 |

|                         |           |            |          |
|-------------------------|-----------|------------|----------|
| DRAWING NUMBER          |           |            | REVISION |
| PROJECT CODE            | SCH. REF. | DISC. TYPE | SERIES#  |
| NHQC2-CF-CV-S-DDC204.11 |           |            | 2        |

NOT FOR CONSTRUCTION



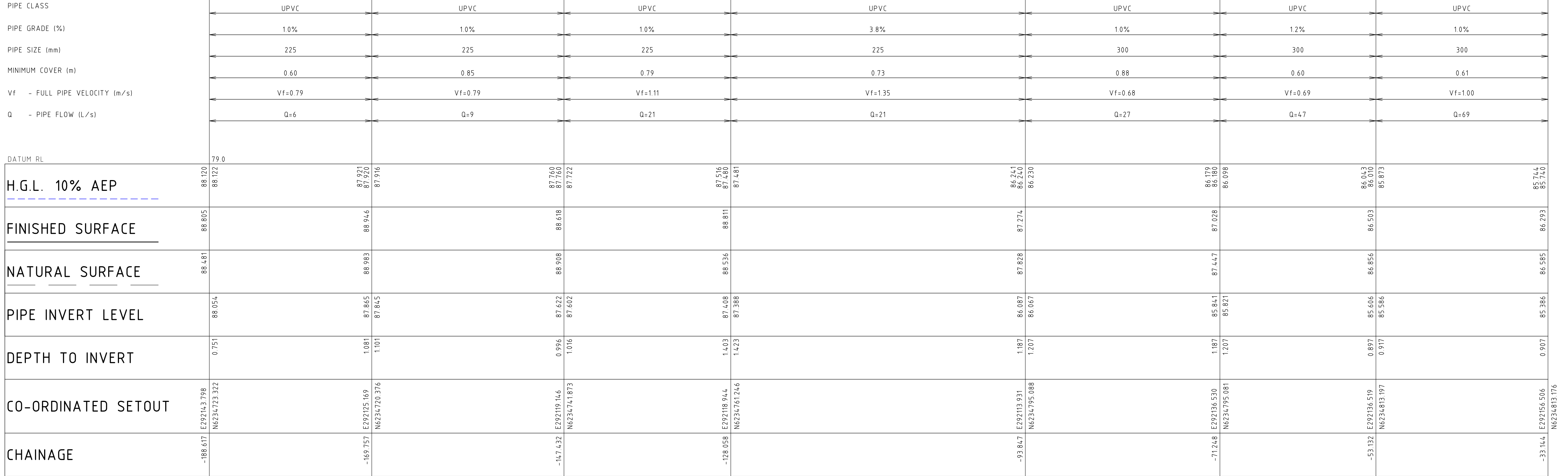
**JOB MANAGER:** J. GILLIGAN

## DESIGN

DESIGNED: T. BUGAEV

**JOB MANAGER:** J. GILLIGAN

VERIFIER: .



SCALE 1:100 @ A1  
SCALE 1:250 @ A1

LINE 01

[illegible]

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PEDAVOLI  
ARCHITECTS

# CATHERINE FIELD PS NEW HIGH QUALITY CLASSROOMS

---

DRAWING NAME

## STORMWATER LONGITUDINAL SECTIONS - SHEET 01

PROJECT NORTH

|                         |           |            |          |          |
|-------------------------|-----------|------------|----------|----------|
| DRAWN                   | CHECKED   | VERIFIED   | DATE     |          |
| JO                      | JG        | JG         | 20.12.19 |          |
| DRAWING NUMBER          |           |            |          | REVISION |
| PROJECT CODE            | SCH. REF. | DISC. TYPE | SERIES#  |          |
| NHQC2-CF-CV-S-DDC204.21 |           |            |          | 2        |

**NOT FOR CONSTRUCTION**



Date: 20.12.2019 3:09 PM Drawn: J.O. DESIGNED: T. BUGAEV JOB MANAGER: J. GILLIGAN VERIFIER: .

Found: T:2019 Job:19019 - New High Quality Classrooms Package 2 - HYQ - Catherine Field\Drawings\Northrop\CV\12-CAD2-CAB FILES\3-ODNHQC2-CF-CV-S-DDC204.22.dwg

PIPE CLASS  
PIPE GRADE (%)  
PIPE SIZE (mm)  
MINIMUM COVER (m)  
Vf - FULL PIPE VELOCITY (m/s)  
Q - PIPE FLOW (L/s)

|                     |                             |      |
|---------------------|-----------------------------|------|
| DATUM RL            |                             | 77.0 |
| H.G.L.              | 85.744<br>85.740            |      |
| FINISHED SURFACE    | 86.293                      |      |
| NATURAL SURFACE     | 86.585                      |      |
| PIPE INVERT LEVEL   | 85.386<br>85.366            |      |
| DEPTH TO INVERT     | 0.907<br>0.927              |      |
| CO-ORDINATED SETOUT | E292156.506<br>N6234813.176 |      |
| CHAINAGE            | -33.144                     |      |

SCALE 1:100 @ A1  
SCALE 1:250 @ A1

LINE 01

01\08  
G.G.P. 2.4m E.K.I. SAG  
LINE 05 106°  
12°

01\09  
900x900 G.S.I.P. SAG  
4°

01\10  
G.S.I.P. 900x900 1m GRASS SWALE  
LINE 02 75°

01\11  
G.S.I.P. 900x900 1m GRASS SWALE

01\12  
G.S.I.P. 900x900 1m GRASS SWALE

01\13  
G.S.I.P. 900x900 1m GRASS SWALE  
-9°  
LINE 03 95°

01\14  
900x900 J.P.

02\01  
900x900 G.S.I.P. SAG

02\02  
G.S.I.P. 600x600 1m GRASS SWALE  
50°  
LINE RW -77°

LINE 02

NOT FOR CONSTRUCTION

| REV | BY | DATE     | DESCRIPTION                              |
|-----|----|----------|------------------------------------------|
| 1   | JO | 20.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION       |
| 2   | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION |
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**NORTHROP**  
Sydney  
Level 11 345 George Street, Sydney NSW 2000  
Ph (02) 9241 4188 Fax (02) 9241 4324  
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MECH. ELEC  
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CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS

DRAWING NAME  
STORMWATER LONGITUDINAL  
SECTIONS - SHEET 02

PROJECT NORTH

|       |         |          |          |
|-------|---------|----------|----------|
| DRAWN | CHECKED | VERIFIED | DATE     |
| JO    | JG      | JG       | 20.12.19 |

|                         |          |
|-------------------------|----------|
| DRAWING NUMBER          | REVISION |
| NHQC2-CF-CV-S-DDC204.22 | 2        |

PROJECT CODE SCH. REF. DISC. TYPE SERIES#



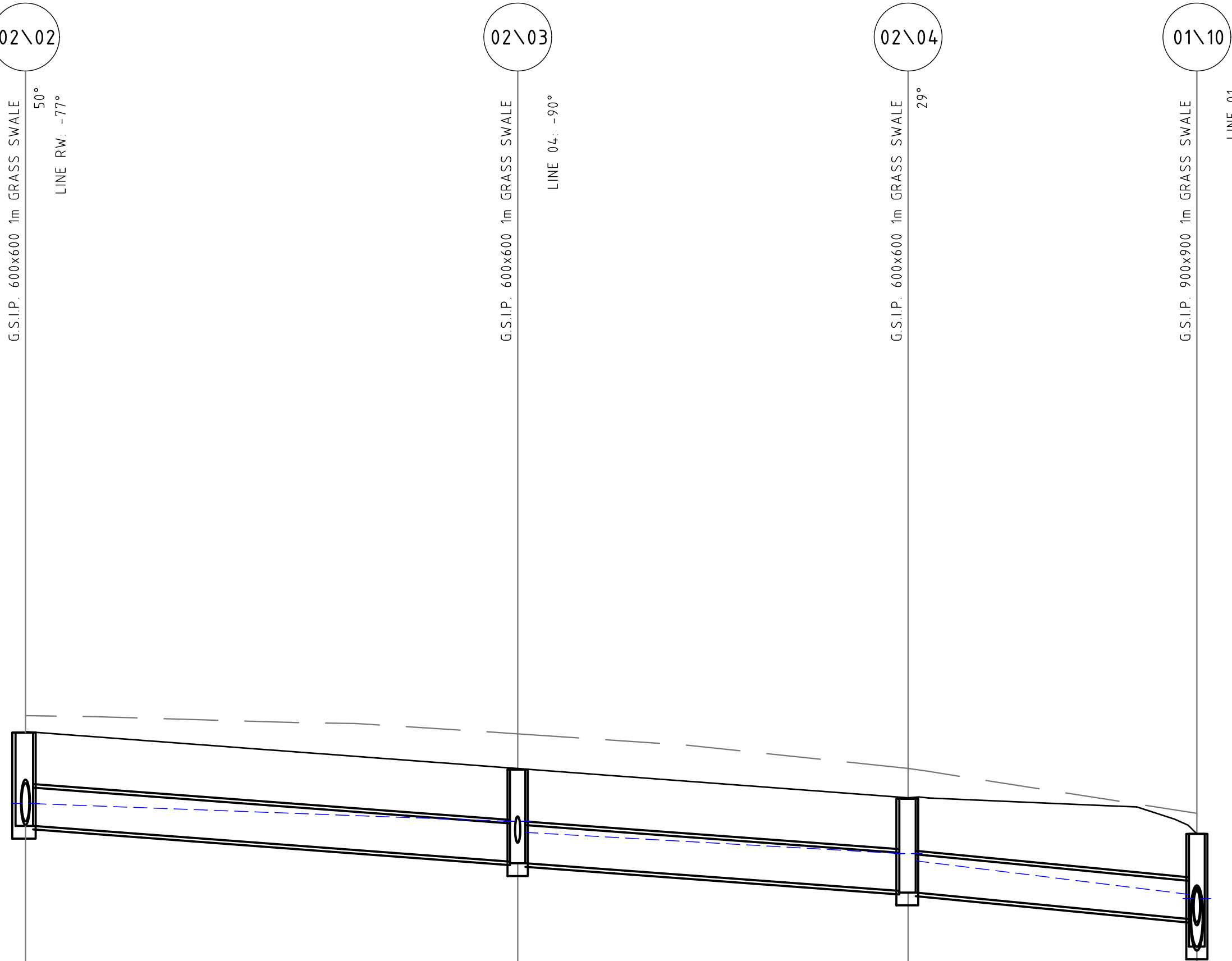
Date: 20.12.2019 3:49 PM Drawn: J. O DESIGNED: T. BUGAEV JOB MANAGER: J. GILLIGAN VERIFIER: . Found: T:2019 Job:19018 - New High Quality Classrooms Package 2 - HYQ2 - Catherine Field\Drawings\Northrop\CV\1\2-CAD\2-CAD FILES\2-OD\NHQ2-CF-CV-S-DDC204.23.dwg Plotted By: J.O

PIPE CLASS  
PIPE GRADE (%)  
PIPE SIZE (mm)  
MINIMUM COVER (m)  
Vf - FULL PIPE VELOCITY (m/s)  
Q - PIPE FLOW (L/s)

|                     |                             |        |
|---------------------|-----------------------------|--------|
| DATUM RL            |                             | 78.0   |
| H.G.L.              | 85.778<br>85.620            | 85.618 |
| FINISHED SURFACE    | 86.467                      |        |
| NATURAL SURFACE     | 86.654                      |        |
| PIPE INVERT LEVEL   | 85.673<br>85.356            |        |
| DEPTH TO INVERT     | 0.794<br>1.111              |        |
| CO-ORDINATED SETOUT | E292209.324<br>N6234729.410 |        |
| CHAINAGE            | -14.384                     |        |

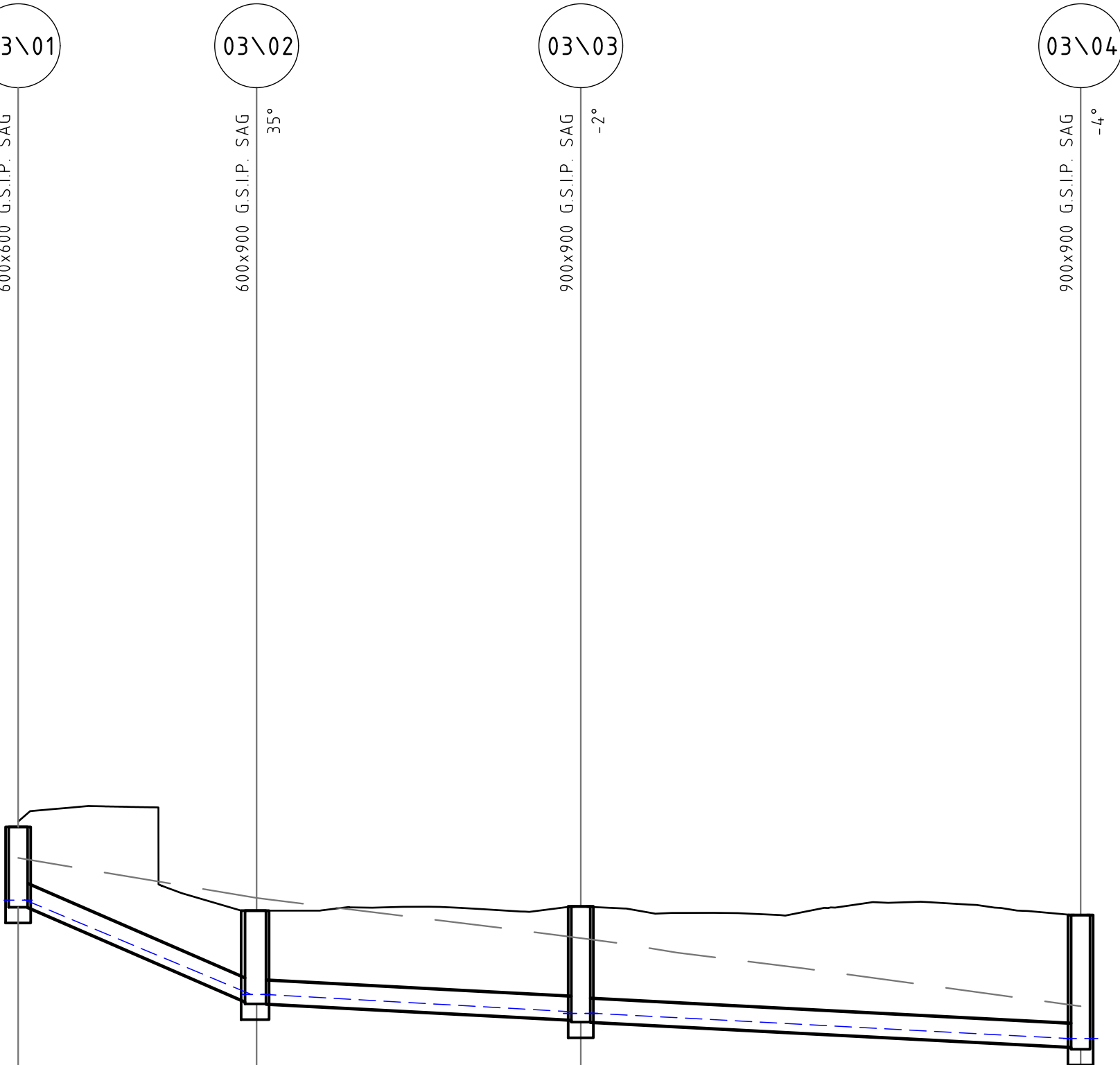
SCALE 1:100 @ A1  
SCALE 1:250 @ A1

LINE 02



|                             |                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                             |                             |                             |                             |
| UPVC                        | UPVC                        | UPVC                        |                             |
| 7.9%                        | 1.0%                        | 1.0%                        |                             |
| 225                         | 225                         | 225                         |                             |
| 0.60                        | 0.73                        | 0.84                        |                             |
| Vf=0.73                     | Vf=0.95                     | Vf=0.92                     |                             |
| Q=8                         | Q=12                        | Q=12                        |                             |
|                             |                             |                             |                             |
| 88.500<br>88.504            | 87.605<br>87.600            | 87.436<br>87.420            | 87.179<br>87.180            |
| 89.250                      | 88.400                      | 88.440                      | 88.358                      |
| 88.903                      | 88.521                      | 88.138                      | 87.489                      |
| 88.433                      | 87.531<br>87.511            | 87.357<br>87.337            | 87.098                      |
| 0.817                       | 0.869<br>0.889              | 1.083<br>1.103              | 1.260                       |
| E292150.423<br>N6234677.756 | E292160.700<br>N6234682.632 | E292175.944<br>N6234679.995 | E292199.549<br>N6234676.606 |
| -56.172                     | -44.797                     | -29.327                     | -5.480                      |

LINE 03



NOT FOR CONSTRUCTION

| REV | BY | DATE     | DESCRIPTION                              |
|-----|----|----------|------------------------------------------|
| 1   | JO | 20.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION       |
| 2   | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION |
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CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS

DRAWING NAME  
**STORMWATER LONGITUDINAL SECTIONS - SHEET 03**

PROJECT NORTH

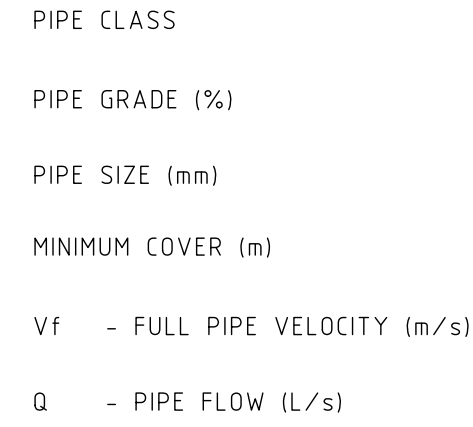
|       |         |          |          |
|-------|---------|----------|----------|
| DRAWN | CHECKED | VERIFIED | DATE     |
| JO    | JG      | JG       | 20.12.19 |

|                                           |          |
|-------------------------------------------|----------|
| DRAWING NUMBER                            | REVISION |
| PROJECT CODE SCH. REF. DISC. TYPE SERIES# |          |
| NHQC2-CF-CV-S-DDC204.23                   | 2        |



**JOB MANAGER:** J. GILLIGAN

DRAWN: J. O.



| CHAINAGE |               | CO-ORDINATED SETOUT | DEPTH TO INVERT | PIPE INVERT LEVEL | NATURAL SURFACE | FINISHED SURFACE | H.G.L. | DATUM RL |  |
|----------|---------------|---------------------|-----------------|-------------------|-----------------|------------------|--------|----------|--|
| -5.480   | E292199.549   | 1.260               | 87.098          | 87.489            | 88.358          | 87.179           | 87.180 | 78.0     |  |
|          | N6234.675.606 | 1.280               | 87.078          |                   |                 |                  | 87.179 |          |  |
| 45.062   | E292249.968   | 0.840               | 86.573          | 85.309            | 87.413          | 86.672           | 86.676 |          |  |
|          | N6234.675.088 | 0.860               | 86.553          |                   |                 |                  | 86.671 |          |  |
| 61.123   | E292262.173   | 0.841               | 85.821          | 84.804            | 86.662          | 85.900           | 85.900 |          |  |
|          | N6234.683.528 | 0.893               | 85.769          |                   |                 |                  | 85.899 |          |  |
| 114.136  | E292272.286   | 0.988               | 84.311          | 85.092            | 85.299          | 84.414           | 84.410 |          |  |
|          | N6234.735.588 | 1.012               | 84.287          |                   |                 |                  | 84.414 |          |  |
| 141.187  | E292273.616   | 1.002               | 83.818          | 84.948            | 84.820          | 84.169           | 84.160 |          |  |
|          | N6234.762.987 | 1.022               | 83.798          |                   |                 |                  | 84.161 |          |  |
| 158.273  | E292274.284   | 1.003               | 83.526          | 84.741            | 84.529          | 84.156           | 84.160 |          |  |
|          | N6234.779.658 | 1.337               | 83.192          |                   |                 |                  | 84.087 |          |  |

SCALE 1:100 @ A1  
SCALE 1:250 @ A1

LINE 03

[illegible]

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| FIRE<br>MCD FIRE ENGINEERING<br>(04) 2392 2745               |
| LANDSCAPING<br>TAYLOR BRAMMER LANDS. ARCH.<br>(02) 9387 8855 |

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NOMINATED ARCHITECT:  
Vince Pedavoli NSW reg No.5045

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CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME  
STORMWATER LONGITUDINAL  
SECTIONS - SHEET 04

PROJECT NORTH

|                         |           |            |          |          |
|-------------------------|-----------|------------|----------|----------|
| DRAWN                   | CHECKED   | VERIFIED   | DATE     | REVISION |
| JO                      | JG        | JG         | 20.12.19 |          |
| DRAWING NUMBER          |           |            |          |          |
| PROJECT CODE            | SCH. REF. | DISC. TYPE | SERIES#  | 2        |
| NHQC2-CF-CV-S-DDC204.24 |           |            |          |          |

**NOT FOR CONSTRUCTION**



Found: T:\2019 Jobs\19019 - New High Quality Classrooms Package 2 - HYQ2 - Catherine Field\Drawings\Northrop\CV\12-CAD2-CAD FILES\3-D\NHQC2-CF-CV-S-DDC204.25.dwg  
Date: 20.12.2019 3:49 PM  
Printed By: J.O  
DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
VERIFIER: .

DRAWN: J.O

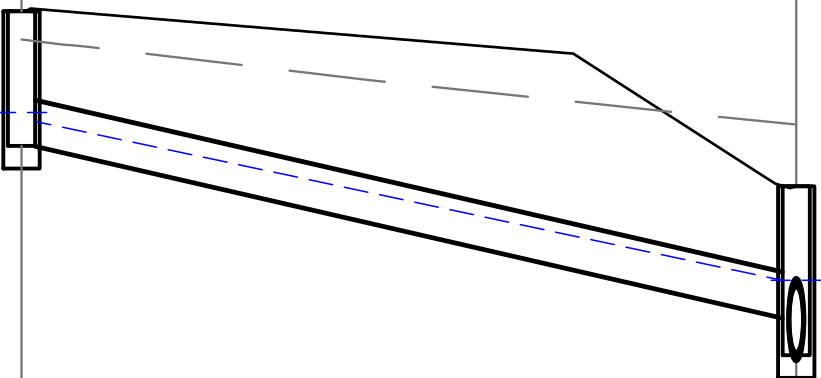
PIPE CLASS  
PIPE GRADE (%)  
PIPE SIZE (mm)  
MINIMUM COVER (m)  
Vf - FULL PIPE VELOCITY (m/s)  
Q - PIPE FLOW (L/s)

|                     |  |  |  |  |  |  |
|---------------------|--|--|--|--|--|--|
| DATUM RL            |  |  |  |  |  |  |
| H.G.L.              |  |  |  |  |  |  |
| FINISHED SURFACE    |  |  |  |  |  |  |
| NATURAL SURFACE     |  |  |  |  |  |  |
| PIPE INVERT LEVEL   |  |  |  |  |  |  |
| DEPTH TO INVERT     |  |  |  |  |  |  |
| CO-ORDINATED SETOUT |  |  |  |  |  |  |
| CHAINAGE            |  |  |  |  |  |  |

SCALE 1:100 @ A1  
SCALE 1:250 @ A1

04\01

WELDLOK 900x600 DCG9UD



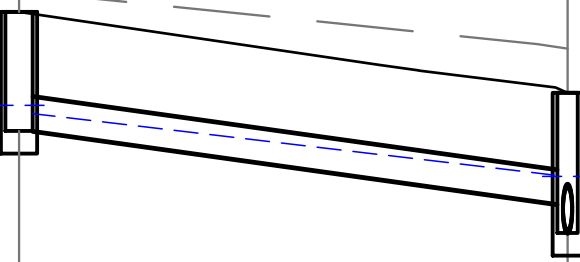
02\03

G.S.I.P. 600x600 1m GRASS SWALE

LINE 02

05\01

G.G.P. 2.4m E.K.I. SAG



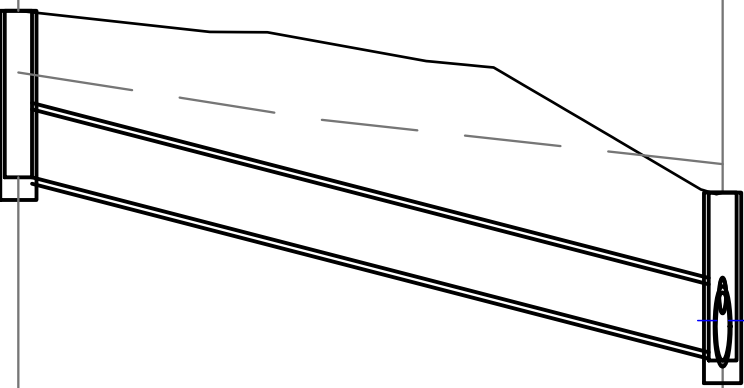
01\08

G.G.P. 2.4m E.K.I. SAG

LINE 01

RW\01

900x900 J.P.



02\02

G.S.I.P. 600x600 1m GRASS SWALE

LINE 02

LINE 04

LINE 05

LINE RW

NOT FOR CONSTRUCTION

| REV | BY | DATE     | DESCRIPTION                              |
|-----|----|----------|------------------------------------------|
| 1   | JO | 20.11.19 | ISSUE FOR 75% DESIGN DOCUMENTATION       |
| 2   | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION |
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**NORTHROP**  
Sydney  
Level 11 345 George Street, Sydney NSW 2000  
Ph (02) 9241 4188 Fax (02) 9241 4324  
Email [sydney@northrop.com.au](mailto:sydney@northrop.com.au) ABN 81 094 433 100



**HANSEN YUNCKEN**  
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MECH. ELEC  
STEENSEN VARMIING  
(02) 9967 2200  
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(02) 9387 8855

PERUMAL PEDAVOLI ARCHITECTS  
T: 02 9291 0000  
WEB: [www.pp-a.com.au](http://www.pp-a.com.au)  
NOMINATED ARCHITECT:  
Vince Pedavoli NSW reg No. 5045

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ARCHITECTS

CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME  
STORMWATER LONGITUDINAL  
SECTIONS - SHEET 05

PROJECT NORTH

|       |         |          |          |
|-------|---------|----------|----------|
| DRAWN | CHECKED | VERIFIED | DATE     |
| JO    | JG      | JG       | 20.12.19 |

|                         |          |
|-------------------------|----------|
| DRAWING NUMBER          | REVISION |
| NHQC2-CF-CV-S-DDC204.25 | 2        |



Found: T:\2019 Jobs\19018 - New High Quality Classrooms Package 2 - HYQ2 - Catherine Field\Drawings\Northrop\CV\113-CAD2-CAB FILES\2-ODNHQ2-CF-CV-S-DDC204.31.dwg  
Date: 20.12.2019 3:41 PM  
Printed By: J.O  
DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
VERIFIER: J. GILLIGAN



LEGEND

PROPOSED BOUNDARY LINE

EXISTING BOUNDARY LINE

EASEMENT LINE

PROPOSED CONTOURS

CATCHMENT BOUNDARY

PERVIOUS CATCHMENT AREA

IMPERVIOUS CATCHMENT AREA

CATCHMENT TAG:  
STORMWATER LINE / PIT STRUCTURE NO.  
AREA (HECTARE)

EXISTING DRAINAGE STRUCTURE

NEW DRAINAGE STRUCTURE

DRAINAGE SWALE

NOT FOR CONSTRUCTION

PROJECT NORTH

SCALE 1:1 @ A1

0 10 20 30 40 50mm

|       |         |          |          |
|-------|---------|----------|----------|
| DRAWN | CHECKED | VERIFIED | DATE     |
| JO    | JG      | JG       | 20.12.19 |

|                         |              |           |            |         |          |
|-------------------------|--------------|-----------|------------|---------|----------|
| DRAWING NUMBER          | PROJECT CODE | SCH. REF. | DISC. TYPE | SERIES# | REVISION |
| NHQC2-CF-CV-S-DDC204.31 |              |           |            |         | 2        |

| REV | BY | DATE     | DESCRIPTION                              |
|-----|----|----------|------------------------------------------|
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| 2   | JO | 20.12.19 | ISSUED FOR DETAILED DESIGN DOCUMENTATION |
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NORTHROP

Sydney  
Level 11 345 George Street, Sydney NSW 2000  
Ph (02) 9241 4188 Fax (02) 9241 4324  
Email sydney@northrop.com.au ABN 81 094 433 100

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MECH. ELEC  
STEENSEN VARIMING  
(02) 9667 2200  
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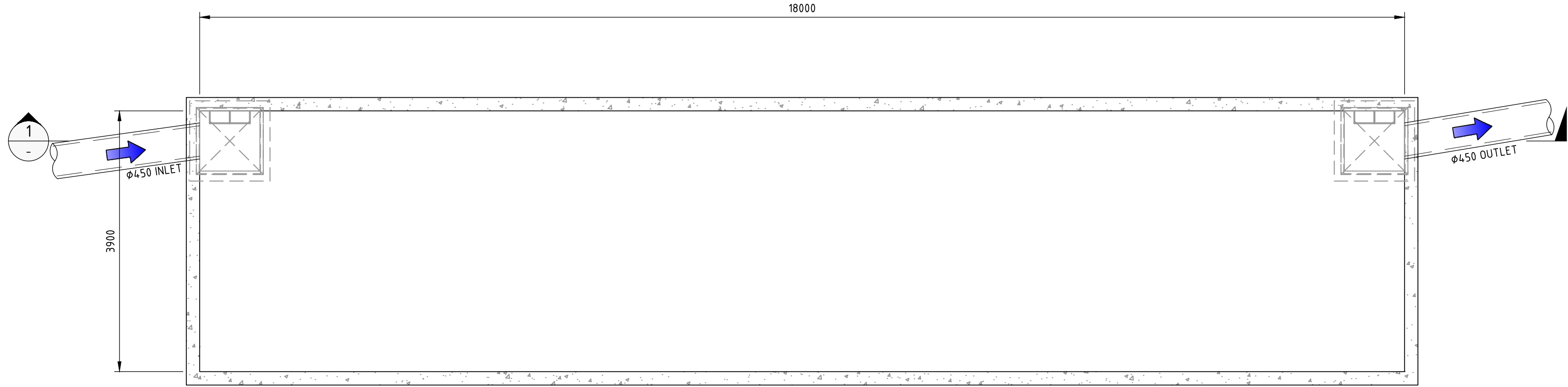
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CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS

DRAWING NAME  
STORMWATER CATCHMENT  
PLAN

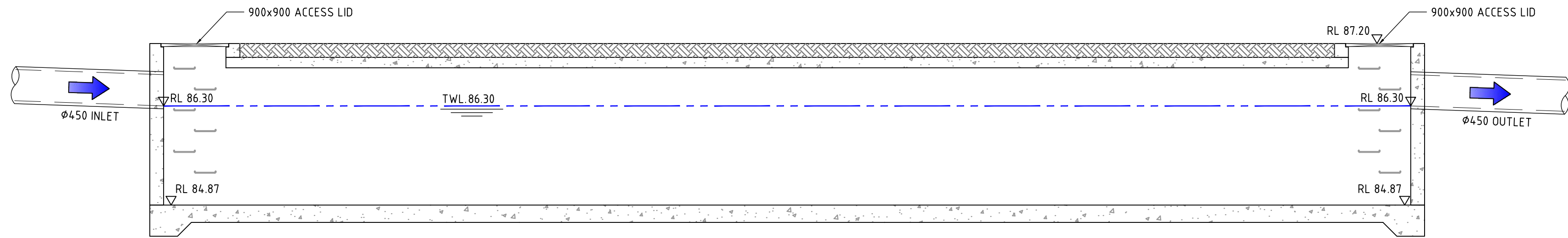


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Printed By: J.O  
Date: 20.12.2019 3:01 PM  
DESIGNED: T. BUGAEV  
JOB MANAGER: J. GILLIGAN  
VERIFIER: .

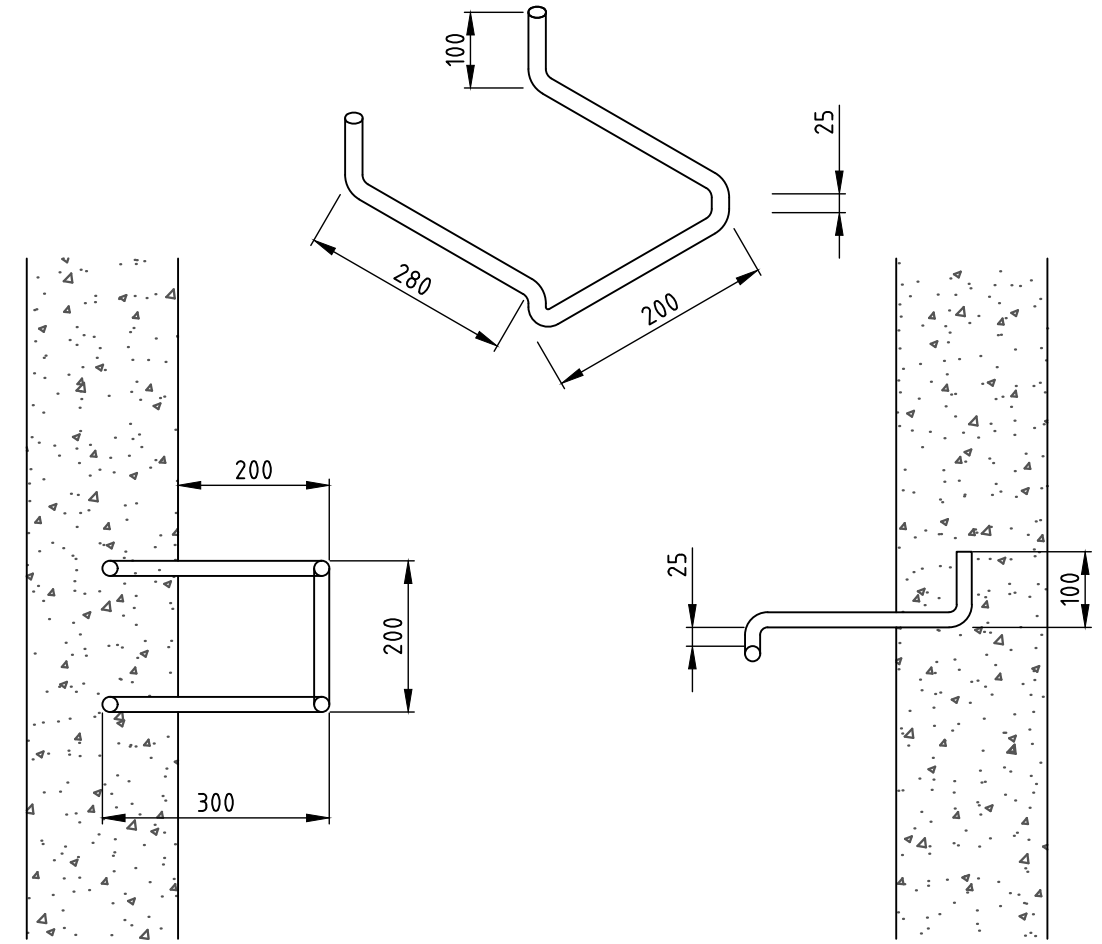


RAINWATER TANK ROOF PLAN  
SCALE 1:50

REFER HYDRAULICS DRAWINGS FOR  
PUMP AND RETICULATION DETAILS.  
REFER STRUCTURAL FOR TANK DETAILS

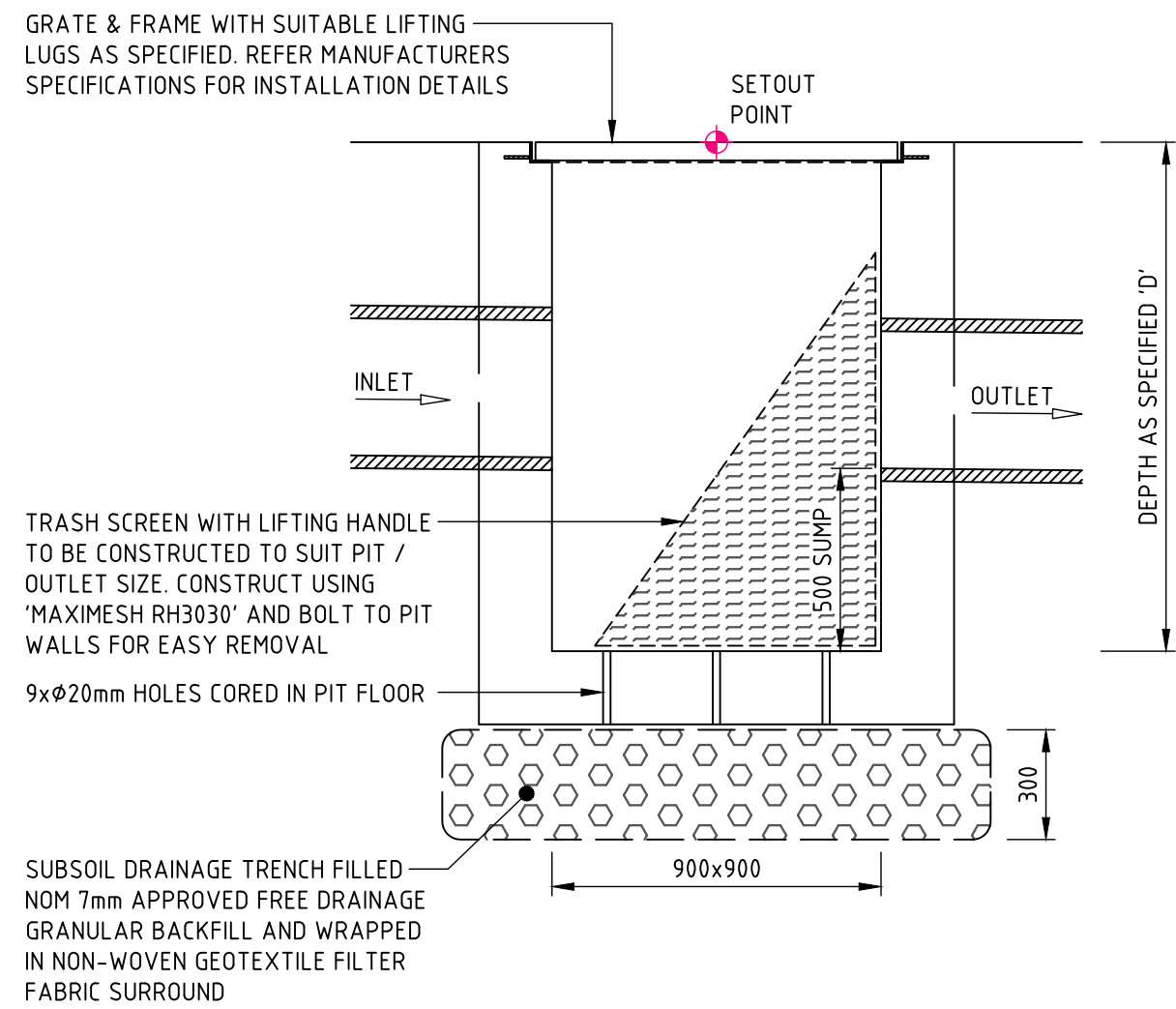


SECTION 1  
SCALE 1:50



STEP IRON DETAIL

STEP IRON OF 20mm GALVANISED STEEL MADE TO SHAPE AND DIMENSIONS AS SHOWN, PLACED AT 300 CENTRES AND STAGGERED HORIZONTALLY FOR ALL PITS DEEPER THAN 1.2m. THE USE OF PROPRIETARY STEP IRONS ARE ACCEPTABLE PROVIDED THE PRODUCT IS IN ACCORDANCE WITH AUSTRALIAN STANDARDS



FIRST FLUSH PIT

PROVIDE 100 CORRUGATED SUBSOIL DRAINAGE LINE 'CLASS 1000' WITHIN NON-WOVEN FILTER FABRIC SOCK SURROUND LAID AT MIN 0.5% LONGITUDINAL GRADE AND DISCHARGING AT NEAREST DOWNSTREAM DRAINAGE STRUCTURE AS SHOWN

NOT FOR CONSTRUCTION

| AMMENDMENTS |    |          |  | DESCRIPTION                              |
|-------------|----|----------|--|------------------------------------------|
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| 1           | JO | 20.12.19 |  | ISSUED FOR DETAILED DESIGN DOCUMENTATION |
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ARCHITECTS

CATHERINE FIELD PS  
NEW HIGH QUALITY CLASSROOMS  
DRAWING NAME  
**STORMWATER MANAGEMENT DEVICES**

| PROJECT NORTH          |         |          |          | DRAWING NUMBER | REVISION |
|------------------------|---------|----------|----------|----------------|----------|
| DRAWN                  | CHECKED | VERIFIED | DATE     |                |          |
| JO                     | JG      | JG       | 20.12.19 |                |          |
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